Lucent Technologies
Bell Labs Innovations

DEFINITY®
Enterprise Communications Server
Release 8
Guide to ACD Call Centers

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- Answered by the attendant
- Routed to a recorded announcement that can be administered by the CPE user

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Lucent Technologies—formed as a result of AT&T's planned restructuring—designs, builds, and delivers a wide range of public and private networks, communication systems and software, consumer and business telephone systems, and microelectronics components. The world-renowned Bell Laboratories is the research and development arm for the company.

Comments
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Preface — About This Document

Overview

This document describes the *DEFINITY* Enterprise Communications Server (ECS) Release 8 (R8) ACD feature. For details about what is new in the *DEFINITY*ECS R8, see the *DEFINITY* Enterprise Communications Server (ECS) Release 8 (R8) Change Description.

*DEFINITY*ECS is a family of cost-effective digital communication systems. These systems:

- Route voice and data information between various endpoints (telephones, terminals, computers)

- Provide highly robust networking capabilities

- Include an extensive set of standard features: attendant consoles, voice processing interface, call coverage, DS1 (T1 and E1) connectivity, hospitality support, recorded announcement, and trunk-to-trunk transfer

- Provide flexibility and allow for the addition of optional features and/or upgrades to the system as business needs change

This document explains the features that comprise the *DEFINITY*ECS ACD. It provides an introduction to each call center feature and presents required forms for administration, detailed descriptions, considerations, and interactions between call center features. This document provides an overall reference for planning, operating, and administering your *DEFINITY*ECS ACD Call Center.

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Contents and Organization of the Guide

This document is organized into chapters by subject. Features are in alphabetical order within each chapter. Pertinent forms follow the features. Basic features and forms are presented in a chapter with the same title.

The following table gives a brief description of each chapter and appendix in this book.

Table 1.   Contents of Document

	Title	**Contents**
Chapter 1	Automatic Call Distribution (ACD) Basics — Overview and Exercises	Gives an overview of the ACD feature and includes exercises that are prerequisite for an Instructor-led course.
Chapter 2	*DEFINITY* Call Center Capacities for ACD Software and Related Features	Includes tables that show the switch capacities for *DEFINITY* ECS R8, R7, R6, R5, *DEFINITY* G3V4, G3V3, G3V2, G3V1, and *CentreVu* CMS. Also includes information on measured extensions, splits, and trunks.
Chapter 3	*DEFINITY* ECS ACD Call Center Features	Contains the call center features available on the *DEFINITY* ECS
Chapter 4	*DEFINITY* ECS ACD Call Center Forms	Contains all of the forms required to administer basic call center features on the *DEFINITY* ECS, descriptions of the fields on each form, and special notes about usage.
Appendix A	Recorded Announcements	Describes the use and requirements around using recorded announcements in a call center environment.
Glossary		Provides a glossary and list of abbreviations for this and other related *DEFINITY* ECS documents
Index		Provides an index for the document.

Audience

This document is intended for the *DEFINITY* ECS system administrators and managers, end-users interested in information about specific features, and Lucent Technologies support personnel responsible for planning, designing, configuring, selling, and supporting the system.

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Reason for Reissue

This document is updated to include *DEFINITY* ECS Release 8 information.

It also now includes the information that formerly resided in the *CentreVu* Call Management System Administration Guide in the ACD Basics appendix and in the Global Learning Solutions ACD Basics precourse material (BTC504S).

How to Use this Document

This document is designed to be used as a reference document. If you are interested in information about a particular feature, use the index or table of contents to locate the page number where the feature is described. Forms also can be located this way. They are listed alphabetically in each chapter in the table of contents. The title that appears on the form is the form name.

Conventions Used in this Document

This document uses the following conventions:

➥ NOTE:
Draws attention to information that you must heed.

⚠ CAUTION:
Denotes possible harm to software, possible loss of data, or possible service interruptions.

⚠ WARNING:
Denotes possible harm to hardware or equipment.

⚠ SECURITY ALERT:
Indicates when system administration may leave your system open to toll fraud.

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When used in this book, these trademark and registered trademark product names are shown in italics. If the name is used in a block of text that already incorporates italics, then the appropriate symbol is included in the call-out.

Related Documents

The following documents may include information related to the *DEFINITY* ECS ACD feature.

Administration Documents

The primary audience for these documents consists of *DEFINITY* ECS administrators who work for external customers and for Lucent's dealers. The satisfaction and needs of our external customers is the primary focus for the documentation.

DEFINITY ECS Release 8 —Administrator's Guide, 555-233-502, Issue 2

Provides complete step-by-step procedures for administering the switch, plus feature descriptions and reference information for SAT screens and commands.

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*DEFINITY*System's Little Instruction Book for basic administration, 555-230-727, Issue 5

Provides step-by-step procedures for performing basic switch administration tasks. Includes managing phones, managing features, and routing outgoing calls.

DEFINITY System's Little Instruction Book for advanced administration,555-233-712, Issue 2

Provides step-by-step procedures for adding trunks, adding hunt groups, writing vectors and recording announcements.

*DEFINITY*System's Little Instruction Book for basic diagnostics, 555-230-713, Issue 2

Provides step-by-step procedures for baselining your system, solving common problems, reading alarms and errors, using features to troubleshoot your system, and contacting Lucent.

*DEFINITY*ECS Release 8 — Overview, 555-230-024, Issue 8

Provides a brief description of the features available with *DEFINITY*ECS R8. This book does not provide a general overview of the switch nor of basic telephony.

*DEFINITY*ECS Release 8 —Reports, 555-230-511, Issue 6

Provides detailed descriptions of the measurement, status, security, and recent change history reports available in the system and is intended for administrators who validate traffic reports and evaluate system performance. Includes corrective actions for potential problems.

*DEFINITY*ECS Release 8 — System Description, 555-230-211, Issue 5

Provides hardware descriptions, system parameters, lists of hardware required to use features, system configurations, and environmental requirements.

*DEFINITY*ECS What's New in R8, 555-233-752, Issue 1

Provides a detailed overview and information on basic administration for the new functionality in this release.

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Installation, Upgrades, and Maintenance Documents

Lucent technicians, design center employees, and customer self-maintainers are the primary audiences for these documents.

DEFINITY ECS Release 8 — Administration for Network Connectivity, 555-233-501, Issue 2

Describes the main types of switch-to-switch connections that use Overlan hardware and software, and the procedures required to administer these connections.

DEFINITY ECS Release 8 — ATM Installation, Upgrades, and Administration, 555-233-106, Issue 1

Step-by-step instructions for how to install, upgrade, and administer ATM switches.

DEFINITY ECS Release 8 — Installation and Maintenance for Survivable Remote EPN, 555-233-102, Issue 3

Describes how to install, cable, test, and perform maintenance on a Survivable Remote Expansion Port Network (SREPN). Provides power, ground, and fiber connections.

DEFINITY ECS Release 8 — Installation and Test for Multi-Carrier Cabinets, 555-230-112, Issue 7

Provides procedures and information for hardware installation and initial testing of multi-carrier cabinets.

DEFINITY ECS Release 8 — Installation and Test for Single-Carrier Cabinets, 555-230-894, Issue 5

Provides procedures and information for hardware installation and initial testing of single-carrier cabinets.

DEFINITY ECS Release 8 — Installation for Adjuncts and Peripherals, 555-230-125, Issue 6

Provides procedures and information for hardware installation and initial testing of ECS adjunct and peripheral systems and equipment.

DEFINITY ECS Release 8 — Installation, Upgrades and Additions for Compact Modular Cabinets, 555-230-128, Issue 5

Provides procedures and information for hardware installation and initial testing of compact modular cabinets.

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DEFINITY ECS Release 8 — Maintenance for R8r, 555-230-126, Issue 5

Provides detailed descriptions of the procedures for monitoring, testing, troubleshooting, and maintaining the R8r ECS. Included are maintenance commands, step-by-step trouble-clearing procedures, the procedures for using all tests, and explanations of the system's error codes.

DEFINITY ECS Release 8 — Maintenance for R8si, 555-233-105, Issue 2

Provides detailed descriptions of the procedures for monitoring, testing, troubleshooting, and maintaining the R8si ECS. Included are maintenance commands, step-by-step trouble-clearing procedures, the procedures for using tests, and explanations of the system's error codes.

DEFINITY ECS Release 8 — Maintenance for R8csi (Compact Modular Cabinets), 555-204-129, Issue 5

Provides detailed descriptions of the procedures for monitoring, testing, troubleshooting, and maintaining the R8csi ECS. Included are maintenance commands, step-by-step trouble-clearing procedures, the procedures for using all tests, and explanations of the system's error codes.

DEFINITY ECS Release 8 — Upgrades and Additions for R8r, 555-230-121, Issue 6

Provides procedures for an installation technician to convert *DEFINITY* Communications System or *DEFINITY* ECS to *DEFINITY* ECS Release 8. Includes upgrade considerations, lists of required hardware, and step-by-step upgrade procedures. Also includes procedures to add control carriers, switch node carriers, port carriers, circuit packs, auxiliary cabinets, and other equipment.

DEFINITY ECS Release 8 — Upgrades and Additions for R8si, 555-233-104, Issue 2

Provides procedures for an installation technician to upgrade an existing *DEFINITY* Communications System or *DEFINITY* ECS to *DEFINITY* ECS Release 8. Included are upgrade considerations, lists of required hardware, and step-by-step upgrade procedures. Also included are procedures to add control carriers, switch node carriers, port carriers, circuit packs, auxiliary cabinets, and other equipment. Task-oriented Technician Documentation New electronic information for customer service engineers who perform G3r upgrades.

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Call Center Documents

These documents are issued for *DEFINITY*ECS Call Center applications. The intended audience is *DEFINITY*ECS administrators.

*DEFINITY*ECS Release 8 — Call Vectoring/EAS Guide, 585-230-521, Issue 4

Provides information on how to write, use, and troubleshoot vectors, which are command sequences that process telephone calls in an Automatic Call Distribution (ACD) environment.

*DEFINITY*ECS Release 8 —Guide to ACD Call Centers, 555-233-503, Issue 2

Provides feature descriptions and some implementation guidance for call center features.

*DEFINITY*ECS — Basic Call Management System (BCMS) Operations, 555-230-706, Issue 2

Provides information on the use of the BCMS feature for ACD reporting.

End Users

The primary audience for these documents consists of people who use the phones and attendant consoles.

*DEFINITY*ECS Console Operations, 555-230-700, Issue 5

Provides operating instructions for the attendant console. Included are descriptions of the console control keys and functions, call-handling procedures, basic system troubleshooting information, and routine maintenance procedures.

*DEFINITY*ECS Release 8 — Console Operations Quick Reference, 555-230-890, Issue 4

Provides operating instructions for the attendant console. Included are descriptions of the console control keys and functions, call handling, basic system-troubleshooting information, and routine maintenance procedures.

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How to Get Help

For those times when you need additional help, the following help services are available. You may need to purchase an extended service agreement to use some of these help services. See your Lucent Technologies representative for more information.

- Lucent Technologies Centers of Excellence

    — Asia/Pacific
      65-872-8686

    — Western Europe/Middle East/South Africa
      441-252-391-889

    — Central/Eastern Europe
      361-270-5160

    — Central/Latin America/Caribbean
      1-303-538-4666

    — North America
      1-800-248-1111

- *DEFINITY*Helpline
  1-800-225-7585

- Lucent Technologies Toll Fraud Intervention
  1-800-643-2353

- Lucent Technologies National Customer Care Center Support Line
  1-800-242-2121

- Lucent Technologies Corporate Security
  1-800-822-9009

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1 Automatic Call Distribution (ACD) Basics — Overview and Exercises
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Automatic Call Distribution (ACD) Basics — Overview and Exercises

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> **NOTE:**
> **This chapter provides knowledge that is prerequisite to attending an Instructor-led Training (ILT) course.**

Introduction

This chapter gives an overview of the Automatic Call Distribution (ACD) feature. It describes basic ACD capabilities for the following Lucent Technologies switches:

- *DEFINITY* Enterprise Communications Server

- *DEFINITY* Communications System Generic 3.

This chapter addresses ACD terminology, switches and switch features, split queues, distributing and handling calls, ACD measurement, ACD capacities, and engineering guidelines.

- ACD terminology define common terms that are used throughout this book.

- The Switches and Switch Features section defines switches and ACDs and explains how the following features work: trunks, trunk groups, and extensions; automatic-in processing; switch attendant; and Direct Inward Dialing (DID) processing.

- Split Queues defines a split queue and explains how to set up call processing to a split, including announcements for calls in a split queue; answer supervision and abandoned calls, intraflow and interflow, and night service for the ECS and Generic 3.

- Distributing and Handling Calls describes how calls are distributed to agents and how agents handle the calls. It also defines the split supervisor voice terminal buttons.

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ACD Terminology

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- ACD Measurement describes how *CentreVu* CMS collects measured data on splits/skills, extensions, trunks, trunk groups, VDNs, and vectors. This section also includes switch features that affect CMS data, such as Hold, Conference, Transfer, Multiple Call Handling, and so forth.

- ACD Capacities contains capacity tables for *DEFINITY* ECS, Generic 3 switches, and *CentreVu* CMS. It also discusses measured extensions and multiple splits on a non-EAS switch and measured and unmeasured trunks.

- Engineering Guidelines presents ACD agent and trunk engineering guidelines for determining the number of agents and trunks required for an ACD. It contains examples and tables of average service times.

Exercises to Test Your Knowledge of ACD

At the end of the chapter are a series of exercises that you can use to demonstrate your knowledge of the information presented in this chapter.

In most cases you should be able to complete this chapter and the associated exercises in one hour.

All of the exercises that you need to complete to be ready for the Instructor-led Training are found in this chapter. Prior to completing the exercises, you should read the chapter, as it introduces the concepts and skills associated with the ACD, and provides instruction on their application.

It is important that you attempt to complete each Exercise. Even if you make mistakes, when you check your answers you'll see how you should have responded and better understand the concept presented.

ACD Terminology

The following terms will provide general familiarity with the ACD environment.

Agent	An agent is a person assigned to one or more splits/skills and handles calls to/from an extension in those splits/skills.
Agent In Multiple Splits/Skills	Depending on the ACD software, an agent can be a member of multiple splits/skills.
Agent State	Agent state is a term or code that represents the current availability status of an agent. The term agent state also represents a user ability to change an agent's availability within the system.

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Call Distribution Methods	The ACD can distribute calls to agents in a split/skill in one of four ways: — Circular Hunting (Generic 2 only) — Direct (linear) Hunting — EAD (Expert Agent Distribution) — UCD (Uniform Call Distribution) and EUCD (Enhanced Uniform Call Distribution) or MIA
CMS	Call Management System. CMS is an adjunct (basic software package or optional enhanced software package) that collects call data from a switch resident ACD. CMS provides call management performance recording and reporting. It can also be used to perform some ACD administration. CMS allows users to determine how well their customers are being served and how efficient their call management operation is.
EAS	Expert Agent Selection. An optional feature available with Generic 3 and Generic 2.2 that uses Call Vectoring and ACD in the switch to route incoming calls to the correct agent on the first try based on skills.
Hunt Groups	A group of trunks/agents selected to work together to provide specific routing of special purpose calls.
Queues (split/skill and/or attendant)	If calls cannot be answered immediately, they are routed to a call collection point (split/skill queue or attendant queue) where calls are held until a split/skill agent or attendant can answer them. Calls are ordered as they arrive and they are served in that order. Depending on the time delay in answering the call, announcements, music, or prepared messages may be employed until the call is answered.
Skill	An ability given to an agent to meet a specific customer requirement or a call center business requirement.
Split	A group of extensions/agents that can receive standard calls and/or special purpose calls from one or more trunk groups.
Trunk Group	A group of similarly administered trunks carrying calls to the switch. An ACD has its own pre-assigned trunk groups.
Trunk state	A term or code that represents the current status of a particular trunk.
Announcements	An announcement is a pre-recorded message delivered to a caller in queue requesting the caller to remain on-line, prompting the caller for information or directing the caller to another destination. When a call is in queue, depending on the length of time in queue, an automatic recording can encourage the caller to hang on, call back later, call another number, leave a message or can be used with call prompting to direct the caller to specific destinations. These announcements can be scheduled to occur periodically.

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ACD Terminology 1-4

Call Prompting	Call Prompting is a call management method that uses specialized call vector commands to provide flexible handling of incoming calls based on information collected from the caller. One example would be where the caller receives an announcement and is then prompted to select (via dialed number selection) a department or an option that was listed in the announcement.
Call Vectoring	Call Vectoring is an optional software package that allows processing of incoming calls according to a programmed set of commands. Call Vectoring provides a flexible service allowing direct calls to specific and/or unique call treatments.
Intraflow	Intraflow is used when a split's/skill's queue is heavily loaded or when a call arrives after normal work hours. Intraflow involves redirecting a call to a destination within the local switch network (the same switch system).
Interflow	Interflow is used when a split's/skill's queue is heavily loaded or when a call arrives after normal work hours. Interflow redirects a call to a destination outside the local switch network (a different switch system).
LAI	Look Ahead Interflow. LAI allows users to balance the call work load between multiple call centers on separate switching systems. LAI uses ISDN to allow multiple switches to communicate and interflow when appropriate.
MCT	Malicious Call Trace. MCT allows an agent to notify a predefined party a malicious caller is on the line. It also involves enabling a recording device to record the call.
Night Service	Night Service is used when a call arrives after normal work hours. The call can be redirected to another destination such as another split/skill, an extension, the attendant, an announcement with forced disconnect, or a message center. Night Service can take one of three forms: — Hunt Group (Split/Skill) Night Service — Trunk Group Night Service — System Night Service
Priority Queue	The priority queue is a segment of a split's/skill's queue from which calls are taken first.
Service Observing	Service observing is a feature used to train new agents and observe in-progress calls. The observer (split/skill supervisor) can toggle between a listen-only mode or a listen/talk mode during calls in progress.
Split/Skill Administration	Split/Skill administration is the ability to assign, monitor, or move agents to specific splits/skills. It also involves changing reporting parameters within the system.

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ACD Terminology 1-5

Split/Skill Supervisor	A split/skill supervisor is assigned to monitor/manage each split/skill and split/skill queue to accomplish specific split/skill objectives. A supervisor can assist agents on ACD calls, be involved in agent training, and control call intra/interflow.
Threshold	A threshold is a point in time or criteria that determines a certain action by the system. For example, the number of calls in queue or the time calls spend in queue determines specific call treatments, or you can set the number of rings prior to announcements or call answers.
Call Center	A call center provides a centralized location where a group of agents or company representatives communicate with customers via incoming or outgoing calls.
CAS	Centralized Attendant Service.
	CAS is a system feature used when more than one switch is employed. CAS is an attendant or group of attendants that handles the calls for all switches in that particular network.
DID	Direct Inward Dialing.
	DID is a process involving calls coming into the switch from the CO. The switch than routes the calls directly to the appropriate extension (as identified by the last four digits).
DNIS	Dialed Number Identification Service.
	DNIS is a feature of the 800 number service that sends the dialed digits to the called destination. This can be used with a display voice terminal to indicate the type of call to an agent. For example, the call by its destination can be classified as a certain type of call or caller (e.g., a Gold Card caller) depending on a product or service the destination number is associated with.
Extensions	Voice terminals connected to a PBX/switch via telephone lines are referred as extensions. Extensions is also the term used to define the 3, 4, or 5 digit numbers used to identify the voice terminal to the PBX/switch software for call routing purposes.
Leave Word Calling	Leave Word Calling is a system feature that allows messages to be stored for any ACD split/skill and allows for retrieval by a covering user of that split/skill or a system wide message retriever.
QDN	Queue Directory Number.
	QDN is an associated extension number of a split. It is not normally dialed to reach a split. The split can be accessed by dialing the QDN. The QDN is also referred to as a split group extension.
Trunk/Trunk Group	Trunks are communication channels between two switching systems or offices. Trunks grouped together to provide identical communications characteristics are called trunk groups. Trunks within trunk groups can be used interchangeably between two communications systems or central offices in order to provide multi-access capability.

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1 Automatic Call Distribution (ACD) Basics — Overview and Exercises
Switches and Switch Features

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Switches and Switch Features

This section defines switches and ACDs and explains how they work. The section contains the following topics:

- Trunks, trunk groups, and extensions

- Automatic-in processing definition

- The attendant

- Switch with attendant and extensions

- Direct Inward Dialing processing with an example

- Automatic-in processing of ACD calls

- DID processing of ACD calls

- Call processing on an ACD switch.

What a Switch Does

A switch is an electronic device that processes incoming, outgoing, and internal calls and connects them to the proper destinations. The telephone company switch in your local area is called a Central Office (CO). A switch owned by a company or organization processes incoming, outgoing, and internal calls. Throughout this chapter, the term switch is used to refer to a company or organization's switch.

Trunks, Trunk Groups, and Extensions

Incoming calls to a company first pass through the CO. The CO sends calls to the company switch over trunks (telephone lines that carry calls between two switches, between a CO and a switch, or between a CO and a phone).

The CO receives dialed digits from the caller, processes the digits, and seizes a trunk that is assigned those digits. After the CO seizes a trunk, it sends a continuing transmission to the destination phone or switch, and no other calls can be sent over that trunk until the current call disconnects.

Since a trunk can carry only one call at a time, trunk groups are usually created. A trunk group is a group of trunks that are assigned to the same digits. With a trunk group, the CO receives the digits of a dialed phone number and checks the trunk group assigned to that number to see if any of the trunks are available. The CO then seizes an available trunk. As many simultaneous calls can be made over a trunk group as there are trunks in that trunk group. A trunk group, therefore, can carry multiple calls for the same phone number. When a trunk group carries incoming calls (that is, calls made outside the company's switch location) to the switch, the switch then connects the calls to their proper destinations within the company.

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The switches previously listed, in addition to connecting incoming calls to the proper destinations, are also like private COs for company employees. That is, employee phones are connected to a switch by telephone lines called extensions. Extensions are then assigned 3- 4- or 5-digit numbers within the switch software, and these numbers become the employee phone numbers for internal (intra-company) calls.

Automatic-In Processing

Automatic-in processing is one type of call processing. With automatic-in processing, the CO processes all of the digits of an incoming call. The CO then seizes a trunk from the trunk group, but since processing is complete, the call connects directly to a destination identified in the switch software. That destination can be a phone, a queue (in which callers wait to be answered in the order in which their call was received), or special treatment like an announcement.

Switch Attendant

Incoming calls can also go to a switch attendant. A switch attendant is a person who manually routes calls to their proper destinations using an attendant console (which is like a call switchboard). Normally an attendant serves as an internal operator who transfers calls to the proper extensions. Often, a switch will have more than one attendant, and all of the switch's attendants will answer calls directed to the attendant queue, which holds calls until an attendant is available. The attendant queue receives internal calls made from employee extensions, and also receives incoming calls through DID processing and automatic-in processing. Attendant call handling varies, depending on the company's needs. However, if the attendant has an automatic-in number, it will normally be the number published in the phone book, and the DID number will most likely be used by off-site employees who know only the attendant's extension number.

Centralized Attendant Service (CAS) is a switch feature that enables attendants to be consolidated at one private-network location. The attended location is called the CAS main and each unattended location is called a CAS branch. At branch locations, calls requiring attendant services route by way of Release Link Trunks to the main location.

Direct Inward Dialing Processing

With Direct Inward Dialing (DID) processing, incoming trunks do not connect the CO directly to an employee's phone; instead, the incoming trunks are pooled by the switch, and this pool of trunks is then shared by employee phones. Extension numbers may serve as the final digits of employee phone numbers for incoming calls. That is the CO may assign a 2- 3- or 4- digit prefix to a trunk group. Then, when a 7-digit employee phone number is dialed, the call is processed as follows:

1. The CO processes the prefix of the dialed number, and then seizes a trunk in the trunk group that is assigned that prefix.

2. The CO passes the remaining digits of the dialed number to the switch.

3. The switch recognizes the remaining digits as an employee extension number and sends the call to that extension.

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DID Processing Example

As an example of DID processing, say that Employee A has the external phone number 538-1000 and the extension number 1000. Employee B has the phone number 538-9999 and the extension number 9999. The steps in completing calls to Employees A and B might be as follows:

1. Employee A's client dials 538-1000.

2. The CO serving Employee A's company identifies the digits 538 (the common prefix for all phone numbers to that company) and seizes Trunk 1 in the trunk group assigned the digits 538.

3. The CO passes the digits 1000 to the switch at Employee A's company.

4. The switch identifies the digits 1000 as Employee A's extension number and sends the call to Employee A's extension.

5. Employee A's phone rings and Employee A answers.

6. Meanwhile, Employee B's client dials 538-9999.

7. The CO identifies the digits 538 and seizes Trunk 2 in the trunk group assigned the digits 538.

8. The CO passes the digits 9999 to the switch.

9. The switch identifies the digits 9999 as Employee B's extension number and sends the call to Employee B's extension.

10. Employee B's phone rings and Employee B answers.

While Employees A and B continue to talk, Trunks 1 and 2 in the 538 trunk group will not accept any more calls, so another call beginning with the digits 538 will seize yet another trunk in the trunk group.

What the ACD Does

Automatic Call Distribution (ACD) is a switch software feature that processes high-volume incoming, outgoing, and internal calls and distributes them to groups of extensions called hunt groups or splits. The switch also sends information about the operation of the ACD to the *CentreVu* CMS which stores and formats the data and produces real-time and historical reports on ACD activity. For more detailed information about ACD, read the feature description in the product documentation that came with your switch.

ACD is used by a call center to route incoming calls to specifically assigned splits/skills and agents. ACD allows a system administrator to create an efficient call management environment. This administrator can add or remove splits/skills from the system, add or remove announcements, add or remove agents, add trunk groups and route calls to the appropriate splits/skills. The administrator can also specify ACD measurement criteria and use an optional CMS package to provide reports on ACD efficiency.

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Things to Know Before You Start

A voice response port or a person who answers ACD calls is called an agent. Companies that operate high-volume call-answering centers, for example, a catalogue sales center, a reservations center, or a customer service center, use the ACD feature to process incoming calls and distribute them to agents. In addition to agents, each ACD split can be assigned a split supervisor. The split supervisor uses various switch and *CentreVu* CMS features to monitor split and agent performance and to provide assistance if necessary. Maintaining trunks from the CO to the switch and hiring agents to answer calls costs money. However, if customers who call to purchase goods or services have difficulty reaching an agent and, therefore, stop trying to get through, the call center loses revenue. Call center management needs, therefore, to determine how many trunks and agents are necessary to minimize costs and maximize the ability of customers to purchase goods or services. Management can then set up and maintain the ACD accordingly.

Automatic-In Processing of ACD Calls

Through switch administration, each automatic-in trunk group is assigned to an ACD split. All calls that come in on an automatic-in trunk group are directed to the assigned split. Then the ACD software distributes the calls to the agent extensions assigned to the split according to the assigned call distribution method (described later).

DID Processing of ACD Calls

Generic 3 enables you to dial directly to various extensions such as a VDN, a hunt group, an agent, or a login ID. Each extension can be assigned to a split as a DID extension.

For DID processing, trunk groups are not assigned to the split. The creation of associated extensions is sufficient to send calls arriving over DID trunk groups to the appropriate split. Each split can receive incoming calls through DID processing, automatic- in processing, or both. Automatic-in trunk groups carry calls only to the split, whereas DID trunk groups carry calls to any extension identified in the switch software, not just a split.

Split Queues

This section defines a split queue and explains how to up call processing to a split. The section contains the following topics:

- Split queue call processing

- Announcements for calls in a split queue

- Answer supervision and abandoned calls

- Intraflow and interflow

- Night service for the ECS and Generic 3.

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Split Queue Call Processing

A split queue is a holding area for calls waiting to be answered, usually in the order in which they were received. When a call is put into queue, the caller may hear one or more delay announcements, music, and/or silence, depending on the treatment assigned for the split. (Treatment of calls in queue is assigned through switch administration.)

Things to Know Before You Start

Calls enter the queue at the bottom and move toward the top or head of the queue. After a call reaches the head of the queue, it connects to the next available agent.

For the *DEFINITY* ECS and Generic 3 switches with the Call Vectoring feature, all call treatment including routing, queuing, announcements, and music is specified by call vectors. When a call arrives at a split, the ACD software checks to see if an agent is available to handle the call. If an agent is not available (that is, all agents are busy), the call enters the split's queue.

For the *DEFINITY* ECS and Generic 3 switches, calls queue only if no agents are available, a queue is assigned to the split, and the queue is not full. If the queue is full, the caller hears a busy tone or the call goes to coverage. If the split is vector controlled, then this step will fail. Furthermore, if no agents are logged into the split or if all agents are in AUX work mode (described later), calls do not queue.

Priority and Normal Split Queues

Each split can have two queues: a normal queue and a priority queue. A split always has a normal queue and can also be assigned a priority queue. The ACD distributes all calls in the priority queue before it distributes any calls in the normal queue. Therefore, the priority queue, if one exists, must be empty before the ACD distributes calls in the normal queue.

For the *DEFINITY* ECS and Generic 3, priority queuing may be assigned in the Class of Restriction (COR) associated with the split extension number. A split may also be assigned Priority Queuing on Intraflow, which means that calls to that split, if rerouted to another local split, will enter the destination split's priority queue.

Split Queue Size for ECS and Generic 3

Queue size is established through switch administration on the *DEFINITY* ECS Release 5 and the Generic 3 switch. Calls arriving after the administered queue limit is reached receive a busy signal or go to the split's busy coverage if administered. (If the split is vector controlled, then this step will fail.) Or, calls can be redirected to a local or remote destination. See the Intraflow and Interflow for more information.

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Announcements for Calls in a Split Queue

When a call enters a split queue, the caller hears ringing until the call is connected to an agent or an announcement. Depending on the treatment assigned to a split, the caller may hear one or two announcements, music, or silence. An announcement is a recorded message that provides information such as the destination the call has reached or a company's business hours, or it tries to persuade the caller to stay on the line.

Things to Know Before You Start

Announcements and delay time are assigned to splits through switch administration. Delay time is the amount of time a call will wait in queue before receiving an announcement. If a call connects to an agent before the delay time expires, the caller does not hear the announcement. If a call connects to an agent while an announcement is playing, the announcement stops. After the first announcement plays, the caller hears music or silence until the second announcement plays or the call connects to an agent. The type of caller feedback (music or silence) is also assigned to a split through switch administration.

For the *DEFINITY* ECS and Generic 3 switches with the Call Vectoring feature, announcement capabilities are more flexible than those described in this section. See Chapter 3, Call Vectoring and

Related ECS/G3 Features

The *DEFINITY* ECS and the Generic 3 switch support both internal and external announcement devices.

The announcement delay time can be from 0 to 99 seconds. A 0-second delay time causes a forced announcement, which means callers always hear the entire first announcement, whether an agent is available or not. A second announcement can be administered to recur each time the announcement delay time expires.

Rules for Generic 3 Announcements

If a Generic 3 announcement queue is full, the system will continue to try every 10 seconds to connect a call to the proper announcement until the call connects to an agent, connects to an announcement, or enters the announcement queue.

The following rules apply to Generic 3 announcements:

- Calls directly entering a split queue always receive a forced first announcement if assigned. The caller also hears first and second delay announcements if administered and delay intervals are met.

- Calls that reach a split by way of Call Coverage from another split (Intraflow) or a station do not receive a forced or delay first announcement at the destination split. The caller hears a second delay announcement if administered and the delay interval is met.

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■ Calls that reach a split by way of Call Forwarding from another split (Interflow) or station do receive delay first and second announcements if administered and the delay intervals are met.

Announcement Queuing

External and internal announcement units are available. The number of calls that can be queued to an announcement depends on the size of the switch/ECS you have. The capacity tables in the *DEFINITY* Feature Description manual have details for each switch/ECS model. Queuing for internal announcements is quite different. Internal announcements are delivered by a 16-channel announcement board, and a call receives an announcement only when it connects to one of the 16 announcement channels. Therefore, all calls wait in a single queue to access a channel on the announcement board regardless of the split announcement they are waiting to receive. The same announcement can be delivered over multiple channels. Announcements are delivered on demand, so a call that connects to a channel receives an announcement immediately and does not have to wait for the announcement to finish and start again.

Answer Supervision and Abandoned Calls

Answer supervision is a signal sent by the switch to the serving Central Office (CO). This signal tells the CO that an incoming call has been answered and that the CO should begin tracking toll charges for the call (if they apply). Answer supervision is sent immediately before a call connects to an agent's voice terminal, to music, or to an announcement.

Abandoned Calls

An abandoned call is a call that reaches a call center, but does not connect to an agent because the caller hangs up. A call can abandon while in queue or while ringing at an agent position. Abandoned calls represent lost sales or lost good will. Adequate split staffing and effective use of announcements can reduce the number of abandoned calls. Splits should be staffed so that calls do not have to wait in queue for an unreasonable amount of time, and announcements can be used to persuade the caller to wait until someone answers the call.

Abandoned Call Search

If answer supervision is sent before a caller abandons, ghost calls can occur. A ghost call is a call that is sent to an agent after the caller hangs up. Ghost calls occur because, after a caller hangs up, some COs wait 2 to 25 seconds before sending a disconnect signal to the switch. Ghost calls are a problem because they waste agents' time, and they can delay or prevent other calls from connecting to an agent. To minimize this problem, Abandoned Call Search can be assigned to specific trunk groups for the *DEFINITY* ECS and Generic 3 switch.

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With Abandoned Call Search, the switch checks the incoming trunk before delivering an ACD call to an agent. If the trunk is on-hook at the CO (the call has been abandoned), the switch releases the trunk and does not deliver the call. If a call is still in progress on the trunk, the switch delivers the call to an agent.

Intraflow and Interflow

Intraflow and interflow allows you to redirect ACD calls to another split or other local or remote destinations. Redirecting calls to a local destination is called intraflow. Redirecting calls to a destination outside the switch is called interflow.

Things to Know Before You Start

Intraflow and interflow are set up differently for the *DEFINITY* ECS, Generic 3 switch. If Call Vectoring is active on the *DEFINITY* ECS or Generic 3 switch, redirection of calls differs significantly from the following intraflow/interflow descriptions. See Chapter 3, Call Vectoring and Related ECS/G3 Features.

DEFINITY ECS and *DEFINITY* Generic 3

As many as three intraflow destinations OR one interflow destination can be established for a split through switch administration. Intraflow uses the Call Coverage feature to redirect ACD calls to a coverage path that contains one, two, or three of the following internal destinations:

- An extension
- An ACD split (including *AUDIX* ® ®and Message Center splits) or Hunt Group. The term "Hunt Group" refers to groups of extensions that receive distributed calls. The term "split" refers to a hunt group that is measured by *CentreVu* CMS.
- An attendant group
- An announcement followed by a forced disconnect.

Call Forwarding and ACD splits can be set up to intraflow calls unconditionally.

Interflow destinations are the same as those listed above for intraflow (plus the CAS attendant), except interflow sends calls to destinations outside the switch.

Setting Up Splits

If a split is assigned more than one intraflow destination, the switch tries each destination in the order in which it was assigned. If no destination can accept the call, the switch leaves the call in the original split's queue. If an interflow destination is specified and activated, the switch tries only that destination. If the interflow destination cannot accept the call, the caller hears a busy signal. ACD splits can be set up to intraflow calls unconditionally. Unconditional intraflow redirects all calls to the specified destination. Unconditional intraflow is normally used to redirect calls when a split is not staffed.

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Splits can also be set up to intraflow calls when one or all of the following criteria are met:

- Don't Answer

  Calls redirect if not answered within the assigned Don't Answer Interval (1 to 99 ringing cycles).

- Busy

  Calls redirect when the split's queue is full; that is, when the number of calls in queue equals the administered queue length.

- No Agents Staffed or All Agents in AUX Mode

  Call redirect if there are no agents staffed or if all agents are in the AUX work mode.

Assigning Queue Status

If an intraflow destination has a queue, that queue may be assigned an inflow threshold. The inflow threshold, which is established through switch administration, is the length of time the oldest call in queue has waited. Once the inflow threshold is reached, that queue does not accept intraflowed calls and the switch tries the next administered destination.

Through switch administration, a split can be assigned Priority Queuing on Intraflow which allows intraflowed calls to enter the priority queue at the destination split.

Types of Calls for a Split

The following types of intraflow/interflow can be used for a split:

- Don't Answer Time Interval intraflow (using the Call Coverage feature)
- Busy intraflow (using the Call Coverage feature)
- Unconditional intraflow (using the Call Forwarding-All feature).

When calls are intraflowed using the Call Coverage feature, *CentreVu* CMS only reports inflowed and outflowed calls if the call queues to the original split. For example, a call that covers using the busy criterion will not be recorded as in/outflowed since it could not queue to the original split. Calls that queue before covering using the Don't Answer criteria are recorded as in/outflowed calls.

Setting Up Intraflow/Interflow

A split can have either intraflow or interflow active, but not both. However, both conditional (Call Coverage) and unconditional (Call Forwarding) intraflow can be active for a split at the same time. In this case, unconditional intraflow is first invoked for the split's incoming calls. Then, after the switch forwards a call to the unconditional destination, the switch uses the conditional intraflow criteria to determine whether to

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redirect the call to the next destination. Thus, when unconditional and conditional intraflow are used together, the conditional intraflow criteria are applied to the forwarded-to destination, not to the original split.

This combination of unconditional and conditional intraflow allows Dialed Number Identification Service (DNIS) numbers to appear on agent display voice terminals. In this case, the DNIS number is actually a dummy split extension (that is, the split extension has no assigned agent extensions). The intraflow destinations are the real splits (with staffed agents). With such a configuration, *CentreVu* CMS will count incoming calls for the DNIS number (that redirected via unconditional intraflow to real splits) as outflows. *CentreVu* CMS will also count the calls to the destination splits as ACD calls and inflowed calls. And regardless of the split where calls actually connect to agents, the agents will see the DNIS (dummy split) number on their display terminals.

The intraflow criteria and destinations are assigned through switch administration. Console permissions and the Call Forwarding dial access code are also assigned through switch administration. Unconditional intraflow or interflow can be activated by entering the Call Forwarding dial access code from a station with console permission, the split's extension, and the interflow or intraflow destination number.

For the *DEFINITY* ECS and Generic 3, the split supervisor cannot establish conditional intraflow from a voice terminal. Furthermore, *CentreVu* CMS cannot be used to set up or activate intraflow/interflow.

Night Service for the *DEFNITY* ECS and *DEFINITY* Generic 3

The *DEFINITY* ECS and Generic 3 switch offer an alternative form of call routing called Night Service. Night Service redirects all calls to one of the following internal destinations:

- An ACD split

- An extension

- An attendant group

- An announcement with forced disconnect.

Night service is available for a hunt group, a trunk group, or a system. These types of night service are explained below.

Hunt Group Night Service

Hunt Group Night Service redirects all calls arriving at a split to an internal destination. The Night Service destination for the split and the voice terminal button used to activate the feature are assigned through switch administration.

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Trunk Group Night Service

Trunk Group Night Service redirects all calls arriving over a split's assigned trunk groups to an internal destination. The Night Service destination for the trunk group and the voice terminal button used to activate the feature are assigned through switch administration.

Trunk Group Night Service by itself does not guarantee that all calls to a split will be redirected. Calls from local extensions and DID calls will still connect to the split.

Trunk Group Night Service and Hunt Group Night Service can both be active at the same time. If the Trunk Group Night Service is active, its destination will be used for calls that come in over the trunk group even if they go to a split that has a Hunt Group Night Service destination assigned.

System Night Service

System Night Service redirects all calls arriving over all trunk groups to the Night Service destination. System Night Service overrides any Hunt Group Night Service set up for an individual split. If Trunk Group Night Service is active for a particular trunk group, System

Night Service does not affect that trunk group. When any type of Night Service becomes effective, calls already in a split's queue are not redirected. To avoid dissatisfied callers, agents should continue to staff the split until the queue is empty.

Distributing and Handling Calls

This section describes how calls are distributed to agents and how agents handle the calls. The section contains the following topics:

- How calls are distributed to agents

- How agents handle calls

- Split supervisor voice terminal buttons.

How Calls are Distributed to Agents

ACD calls are delivered to agents according to the type of call distribution (also known as hunting) that is assigned to the split/skill. This section explains the different types of call distribution.

The following types of call distribution can be assigned to a split/skill through switch administration:

- Direct

- Circular

- Most Idle Agent (MIA) [also called Uniform Call Distribution (UCD)]

- Expert Agent Distribution (EAD).

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The following descriptions of ACD call distribution assume that the Multiple Call Handling (MCH) feature is not assigned. Agent availability is different for splits assigned the MCH feature.

Some types of call distribution are not available with some versions of switch software.

Direct

ACD software searches for an available agent in the order that extensions were assigned to the split (through switch administration), starting with the first extension assigned to the split. This type of call distribution is most useful when management wants the most effective or most experienced agents to handle more calls. Agents are rank-ordered from most to least effective and then are assigned to the split in that order. Direct call distribution is called Direct Department Calling (DDC) for the *DEFINITY* ECS and Generic 3 switches. For the *DEFINITY* ECS and Generic 3 switches that have the Expert Agent Selection feature, DDC cannot be assigned to skills. However, Expert Agent Distribution (EAD) can be used to ensure that the most expert agent available receives the call.

Circular

ACD software searches for an available agent in the order that extensions were assigned to the split, starting with the agent after the agent who handled the last ACD call. This type of call distribution provides a balanced workload. Circular distribution is not available on the *DEFINITY* ECS or on Generic 3 switches.

Most Idle Agent (Uniform Call Distribution)

ACD software searches for the agent extension that has been idle (waiting) the longest and distributes the call to that extension if the agent is available to handle an ACD call. This type of call distribution, which is sometimes called "true ACD", ensures a high degree of equity in agent workloads even when call-handling times vary. For the *DEFINITY* ECS and Generic 3, MIA distribution is called Uniform Call Distribution (UCD).

ACD software determines which agent extension has been idle the longest by maintaining an ordered list (queue) of agents who are eligible to receive the next ACD call. Eligible agents enter the queue at the bottom and move toward the top (also called the head of the queue). The agent at the top of the eligible-agent queue (the agent who has been in queue the longest) receives the next ACD call unless the agent is not available at the time the call is to be distributed. If the agent at the top of the queue is not available, the ACD software checks the availability of the next agent in queue until an available agent is found.

DEFINITY ECS and *DEFINITY* Generic 3

When an agent completes an ACD call, the agent is added to the bottom of the eligible-agent queue for the split or skill associated with the call. (Skills apply only to the *DEFINITY* ECS and Generic 3 switches with the Expert Agent Selection feature.) *DEFINITY* ECS also offers the option called "MIA across splits/skills" to put an agent at the bottom of all agent queues when the agent completes any ACD call. Agents move toward the top of the eligible-agent queue as long as they remain staffed and available or

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on AUXIN or AUXOUT extension calls from the available state, or on an ACD call for another split or skill (unless the "MIA across splits/skills" option is turned on). Agents in ACW are in eligible agent queues on G3 switches. You can choose whether these agents are or are not in the eligible-agent queues for the *DEFINITY* ECS.

An agent is marked as unavailable to take an ACD call if the agent:

- is in ACW,

- is on an AUXIN or AUXOUT extension call from the available state, or

- is on an ACD call for another split or skill.

The agent remains in queue moving toward the top of the queue. Agents in multiple splits or with multiple skills enter multiple eligible-agent queues. The agents' progress in each queue is independent of any activity in other queues. Agents in the AUX state are not in the eligible- agent queue.

Expert Agent Distribution (EAD)

Expert Agent Distribution is only available with the *DEFINITY* ECS or the Generic 3 (Version 2 or later) switches that have the Expert Agent Selection feature. This method of call distribution adds a layer of processing on top of the Most Idle Agent distribution call processing, described in the preceding paragraphs.

Call Distribution for the *DEFINITY* ECS with EAS

This additional layer of processing sorts the agents in the eligible-agent queue into multiple queues based on skill level. Agents with the skill assigned at higher-priority levels will appear in the eligible-agent queue ahead of agents with the skill assigned at lower-priority levels. The call will be delivered to the most idle most expert agent available, rather than to the most idle agent.

Call Distribution for the *DEFINITY* G3V2 or later with EAS

For Generic 3 Version 2, Version 3, and Version 4 switches with EAS, the additional layer of call processing sorts the agents in the eligible-agent queue into primary and secondary skill groups, in effect, creating two eligible-agent queues for each skill. ACD software searches for an available agent extension in the primary skill group before searching the secondary skill group. An ACD call will only be distributed to an available agent in the secondary skill group if no agents are available in the primary skill group. Other aspects of MIA call distribution work the same as described above.

How Agents Handle Calls

An agent can receive split calls and, in most cases, personal calls that are not related to a split. Calls distributed to an agent's voice terminal by the ACD feature on the switch are considered ACD calls. Calls dialed directly to an individual agent using the agent's extension number (such as internal calls and DID extension calls) are called extension-in (EXT- IN) calls. Outgoing calls the agent makes are called extension-out (EXT-OUT) calls. EXT-IN and EXT-OUT calls are considered non-ACD calls.

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Things to Know Before You Start

The capability of a voice terminal to receive EXT-IN calls or to make EXT-OUT calls can be restricted through switch administration. The following descriptions of agent call handling assume that the Multiple Call Handling (MCH) feature is not assigned. Agent availability and call handling are different for splits assigned the MCH feature.

ACD calls are distributed only to available agent extensions. To be considered available, an agent must first staff an agent extension and then select a call-answering mode (automatic in or manual in).

Staffing Agent Extension on the *DEFINITY* ECS/*DEFINITY* G3 Without EAS

To staff an agent extension on the *DEFINITY* ECS or the Generic 3 switch without the EAS feature, an agent must dial a login access code or press the LOGIN button on the agent's voice terminal. The agent must then dial a split number and a login ID. The login ID length, the login dial access code, and, if desired, the LOGIN button are assigned through switch administration. The split number may also be assigned to the LOGIN button or to another voice terminal button.

Staffing Multiple Splits

An agent can log in from any extension assigned to a split. For the *DEFINITY* ECS and the Generic 3 switch, an agent can log into as many as three splits. To the switch and *CentreVu* CMS, each login counts toward the maximum number of agent members that can be measured. That is, if four agents are each logged into three splits, the agent member count is 12.

Agent Login

Agent login lets ACD (and CMS) know an extension is active and logged into the system (AUX work mode). Pressing the login button and then following the appropriate system login procedure makes the extension staffed in AUXWORK. This procedure varies with the type system you have.

Agent Logout

Agent logout lets ACD (and CMS) know an extension is no longer active.

Agent Request for Supervisor Assistance

When supervisor assistance is needed, an agent can press the ASSIST button or dial the ASSIST feature access code and the split/skill group number brings the designated person on line. On G2 the agent must place the current call on hold before pressing ASSIST. On G3 pressing ASSIST automatically places the current call on hold.

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Agent States and Call Answering Modes

Agent State is the current status of an agent. Work modes are the work function(s) the agent is performing at a given time.

When the agent is engaged in an ACD call, the agent is in the ACD agent state.

After staffing an extension, the agent is in the auxiliary work (AUX-WORK) mode, which is considered non-ACD work.

MANUAL-IN versus AUTO-IN

In AUX-WORK mode, the agent is not yet available to receive ACD calls. To become available for ACD calls, the agent must press the MANUAL-IN or AUTO-IN button to select a call answering mode.

Table 1-1.   Manual-In vs. Auto-In

MANUAL-IN	The *MANUAL-IN* button tells the ACD that the agent extension is available for an ACD call. The ACD then distributes a call to the agent according to the established call distribution method. When the call ends, the agent automatically enters the After-Call-Work (ACW) state. While in ACW, the agent is not available to receive ACD calls. When ACW ends, the agent presses MANUAL-IN to receive another ACD call. The manual-in mode is most effective if an agent must perform call-related tasks after finishing each ACD call. MANUAL-IN dial access codes and voice terminal buttons are assigned through switch administration.
AUTO-IN	Like the *MANUAL-IN* button, the AUTO-IN button tells the ACD that the agent is available for an ACD call. However, when the call ends, the agent is immediately available for another ACD call according to the established call distribution method. The agent does not have to press any buttons to receive another ACD call. This type of call answering increases the number of calls that agents can answer in a given period of time and is most effective if agents have little or no call-related work to do after finishing each ACD call. The *DEFINITY* ECS Release 5 has a timed ACW feature for AUTO-IN operation. This option automatically puts the agent into ACW for a preset length of time at the end of an AUTO-IN call. When the time is up, the agent automatically becomes available to take an ACD call. MANUAL-IN and AUTO-IN dial access codes and voice terminal buttons are assigned through switch administration.

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Ringing versus Zip Tone for Incoming Calls

When a call arrives at a voice terminal, the agent may hear ringing or zip tone (beeping), depending on how the voice terminal is administered. Ringing is recommended when an agent answers calls using the handset. When a call connects to the agent's voice terminal, the voice terminal rings, and the agent picks up the handset to answer the call.

Zip tone is recommended when the agent uses a headset to answer calls. (Zip tone can also be used with a handset, but the agent must hold the handset and listen for the zip tone.) When a call connects to an agent's voice terminal, the agent hears one burst of zip tone for calls dialed directly to the split (or agent extension on the *DEFINITY* ECS and the Generic 3 switch) and, without pushing any buttons, the agent greets the caller.

Ringing (called "manual answer" in switch administration) or zip tone (called "automatic answer" in switch administration) is established on a per-voice terminal basis through switch administration.

Auxiliary Work (AUXWORK) and After-Call- Work (ACW)

To temporarily stop ACD calls from arriving at an agent's voice terminal, an agent can press the Auxiliary Work (AUXWORK) or After-Call-Work (ACW) button.

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AUXWORK	The agent is involved in non-ACD work, is on break, in a meeting or at lunch. CMS recognizes the extension as staffed but does not want ACD to route calls there for an extended time. AUX-IN implies that the extension received an extension-in call while in AUX. AUX-OUT implies that the agent placed an outgoing call while in AUX.
	The AUXWORK button temporarily stops ACD calls from arriving at the agent's voice terminal. The agent normally presses this button before doing non-ACD-related work such as taking a break or doing personal business. Instead of unstaffing the extension or logging off, an agent can press this button which places the agent in the auxiliary-work state. To receive ACD calls again, the agent presses the MANUAL-IN or AUTO-IN button.
	The AUXWORK button (or the dial access code, if no button is available) is assigned through switch administration. On the *DEFINITY* ECS and the Generic 3 switch, if an agent is normally logged into more than one split, an AUXWORK button for each split may be assigned. Then, when the agent presses the AUXWORK button for a particular split, the agent will not receive calls from that split. However, the agent will still be available for calls from the other splits the agent is logged into.
	Also, if an agent is logged into more than one split/skill and receives an ACD call for one split/skill, the agent is unavailable for calls for other splits/skills.
ACW	The agent is engaged in work associated with a call, but not on a call. ACW-IN implies that the station received a call while in ACW. ACW-OUT implies that the agent made an outgoing call while in ACW.
	The ACW (After Call Work) button is only available with the *DEFINITY* ECS and Generic 3 switches. This button temporarily stops ACD calls from arriving at the agent's voice terminal. An agent who is in Auto-In mode presses this button during a call so that when the call is finished, the agent will not receive another ACD call and can, instead, do ACD call-related work such as filling out a form, completing data entry, or making an outgoing call. The lamp indicator next to the ACW button lights when the agent is in after- call-work. When in the manual-in mode, an agent automatically enters ACW when the call ends. However, if the agent needs to get out of Auto-In mode or the auxiliary work state to do additional call-related work, the agent can press the ACW button (or dial the appropriate access code). On the *DEFINITY* ECS and, Generic 3 switch, an agent can press the MANUAL-IN button (or dial the appropriate access code) while on an ACD call to automatically enter ACW when the call ends. If an agent is logged into more than one split, pressing the ACW button makes the agent unavailable for calls in all splits. *CentreVu* CMS considers the agent to be in the OTHER state for all splits other than the split in which the agent is currently in ACW.

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Additional Agent State/Work Modes

UNSTAF	Unstaffed (Agent State).
	The agent is not logged in and being tracked by CMS.
DACD	The agent is on a direct agent ACD call.
DACW	The agent is in the after call work state for a direct agent ACD call.
OTHER	The agent is doing other work. If an agent is working in three splits/skills and receives a call from one, the ACD puts the agent in OTHER for the other two.
UNKNOWN	CMS does not recognize the current state. Unknown remains until the condition is cleared, and/or the agent completes the current ACD call and any current ACW, or a current agent state message is sent to CMS from the switch.
RING	The time a call rings at an agent's voice terminal after leaving the queue and before the agent answers.

Trunk States

Trunk State indicates the current status of a specific trunk, or the ability to change that state. Trunk states are:

Idle	The trunk is waiting for a call.
Seized	The trunk is seized by an incoming or outgoing call.
Queued	An ACD caller has the trunk and is waiting for the agent to answer.
Conn	The agent and caller are connected in an ACD call.
Abandoned	The queued caller has just abandoned the call.
Fwrd	A queued call has been intraflowed outside the ACD or has been interflowed to another PBX/Switch.
Mbusy	Maintenance Busy, or out of service for maintenance purposes.
Hold	The agent has put the call on hold.

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Other Voice Terminal Buttons

This section describes other buttons that can be assigned to an agent's voice terminal.

CALL APPEARANCE	These buttons are used to place (originate) and answer calls. Two status lamps (red and green) are next to each call appearance button. The red lamp lights when an agent presses an appearance button to make or answer a call. The green lamp flashes to indicate an incoming call.
	Except with Multiple Call Handling, incoming ACD calls always arrive at the first call appearance. However, voice terminals may be assigned more appearances to provide additional call-handling capabilities. For example, an agent can use a second call appearance to transfer or place calls since the line will be free of ACD calls. On a two-appearance voice terminal on the *DEFINITY* ECS and the Generic 3 switch, the second appearance can only be used to originate calls.
ADD SKILL	For the *DEFINITY* ECS and the Generic 3 Version 2 and later switches with EAS, logged-in agents or voice terminal users with console permissions can press this button to add a skill.
ALERT CHANGE	For the *DEFINITY* ECS and Generic 3 Version 4 and later switches, the lamp associated with this voice terminal button flashes when another user changes an agent's assigned skills or moves an agent from his or her current split to a different split. The lamp does not flash when an agent changes his or her own skills from the voice terminal.
ASSIST	Press this button to request help from the split supervisor. The ASSIST button automatically dials the split supervisor's extension and connects the agent to the supervisor. On the *DEFINITY* ECS and Generic 3 switches, pressing the ASSIST button automatically puts the current call on hold.
AUDIO TROUBLE	*For the DEFINITY ECS and Generic 3* switches, agents press this button to report a call with poor transmission quality to *CentreVu* CMS. The message the switch sends *CentreVu* CMS includes the agent's extension, the trunk being used, and the time of day the trouble occurred. This information is reported in *CentreVu* CMS exception reports and is useful for trouble-shooting trunk and extension problems. For more information, see *CentreVu* Call Management System Release 3 Version 8 Administration (585-210-910).
	Stroke count button 0 is used for reporting audio difficulty.

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CONFERENCE	Press this button to add another person to a two-person call. For the *DEFINITY* ECS and Generic 3 switches, an agent with a multi-appearance voice terminal can add up to four additional people to a 2-person call. For the *DEFINITY* ECS, and single-appearance voice terminals on Generic 3 switches, only one person can be added. Single appearance voice terminals do not have a CONFERENCE button. Agents must use the RECALL button to conference a call. If an agent adds another agent into a conference call, the resulting conference is not considered an ACD call for the added agent. The ACD considers the added agent to be on an extension-in call.
CALL WORK CODE	For *DEFINITY* ECS and Generic 3 switches, agents press this button and enter up to 16 digits to record the occurrence of a customer-defined event. Call Work Codes are stored on *CentreVu* CMS, not on the switch.
CALLER-INFO	For Generic 3 with the Call Prompting feature, agents press this button to display the digits collected by the last **collect digits** *vector command.*
EMERGENCY	Press this button to report a malicious call to the controller. The controller can then trace the call.
HOLD	Press this button to put a call on hold. The ACD will not send any more calls to an agent who has a call on hold. For switches with Multiple Call Handling, an agent can put an ACD or non-ACD call on hold and receive ACD call by pressing the AUTO-IN or MANUAL-IN button. For the *DEFINITY* ECS, and Generic 3 Version 4 and later switches, with Multiple Call Handling, multiple ACD calls can be delivered automatically to an agent in Auto-In or Manual-In work mode, provided that an unrestricted line appearance is available on the voice terminal.
	Single appearance voice terminals do not have a HOLD button. Agents must use the RECALL button or the terminal's switch-hook to put a call on hold. A single appearance voice terminal cannot be used to handle multiple ACD calls.
LOGOUT	Press this button to unstaff the extension and end *CentreVu* CMS collection of agent data. If an agent pressed STAFFED to staff a voice terminal, pressing STAFFED again unstaffs the voice terminal.
RECALL	Agents using single-appearance voice terminals press the RECALL button to put calls on hold, transfer calls, and create conference calls.
RELEASE	Press this button to disconnect a call.
REMOVE SKILL	For the *DEFINITY* ECS and Generic 3 Version 2 and later switches with EAS, logged-in agents or voice terminal users with console permissions can press this button to remove a skill.

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STROKE COUNT	As many as nine STROKE COUNT buttons can be assigned. Agents press these buttons to record call events of interest. *CentreVu* CMS records and reports stroke-count information. Stroke count button 0 is reserved for audio difficulty.
TRANSFER	Agents normally press the TRANSFER button to transfer calls to other agents or the split supervisor. This button is only available on multi-appearance voice terminals.
	Single-appearance terminal users must use the button or the terminal's switch-hook.
	Agents can also use the TRANSFER button to transfer calls to external destinations. External transfer must be assigned to a voice terminal as a feature over and above the normal transfer feature. If an agent transfers a call to another agent, the call is not considered an ACD call for the agent receiving the call unless the transferring agent dialed a split extension, VDN, or agent login ID (an EAS capability known as Direct Agent calling). The ACD considers the agent receiving the transfer to be on an extension-in call. For the agent transferring a call, the call is counted as an EXT-OUT call.
VUSTATS (ECS, Generic 3)	For the *DEFINITY* ECS and Generic 3 Version 3 and later switches, agents with display voice terminals press this button to display agent, split/skill, VDN, or trunk group data similar to that reported by *CentreVu* CMS.

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Queue Status Lamps

The lamps associated with the queue status buttons provide the following information:

NQC	The lamp associated with the NQC (Number of Queued Calls) button tells the agent that calls are in queue and when the number of calls in queue has met or exceeded the assigned queue threshold for the split. If no calls are in the split's queue, the status lamp associated with the button is dark. When one or more calls are in queue, the lamp lights steadily. When the number of calls in queue reaches the assigned queue threshold, the lamp flashes on and off.
OQT	The lamp associated with the OQT (Oldest Queued Time) button tells the agent that calls are in queue and when the oldest call in queue has been waiting longer than the assigned wait time threshold (0 to 999 seconds) for the split. If no calls are in the split's queue, the status lamp is dark. When calls are in queue, the lamp lights steadily. When the assigned wait time threshold has been met or exceeded by the oldest call in queue, the lamp flashes on and off. A flashing queue status lamp tells agents they need to handle calls more quickly. The thresholds that cause the lamps to flash and the voice terminal buttons are assigned through switch administration.
Auxiliary queue status lamps	An auxiliary queue status lamp indicates that either the Number of Queued Calls threshold or the Oldest Queued Time threshold has been reached. The lamp lights when the assigned threshold is met or exceeded. Unlike the lamps on a voice terminal, the auxiliary queue status lamp does not indicate when calls queue to the split.

Display Buttons

The following voice terminal buttons control the information that appears on the display:

NORMAL	Press this button to display information about the active call appearance. Press this button to display incoming call information (either an extension-in call or an intraflowed/interflowed call) for a different call appearance. Voice terminal *display buttons are assigned through switch administration.*on tells the agent that

Split Supervisor Voice Terminal Buttons

A split supervisor is normally assigned to each split. For the *DEFINITY* ECS and Generic 3 switches, the capabilities to monitor agent performance, add and remove agents, and perform other split-related activities must be assigned with separate switch administration procedures.

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Voice Terminal Button Definitions

The following voice terminal buttons are available only to the split supervisor's extension:

NIGHT SERVICE (ECS, Generic 3)	The split supervisor presses this button to send all calls to night service. The Night Service may be Trunk Group Night Service or Split Night Service. Also, a separate button for each type of night service may be available.
RECORD ANNCT (ECS, Generic 3)	The supervisor presses this button to either listen to or to record an announcement for the split.
SERVICE OBSERVE	The supervisor presses this button and dials an agent extension number to listen to conversations on the voice terminal. The Service Observe feature permits the supervisor to check an agent's call- handling technique. An agent's voice terminal may also be assigned the SERVICE OBSERVE button so that the agent can listen to another agent's conversations. This capability is especially useful for agent training. Service observing can be set up for listening only or for both listening and talking.
	The *DEFINITY* ECS and Generic 3 Version 3 and later switches offer the following enhancements to Service Observing:
	• For switches with EAS, a logical agent ID, which is associated with an agent, not the voice terminal the agent is currently using, can be service observed.
	• For switches with Call Vectoring, VDNs can be service observed.
	• Feature Access Codes which allow service observing from an external location or from a voice terminal that does not have feature buttons can be assigned through switch administration.
VU STATS (ECS, Generic 3)	For the *DEFINITY* ECS and Generic 3 Version 3 and later switches, split supervisors and agents with display voice terminals press this button to display agent, split/skill, VDN, or trunk group data similar to that reported by *CentreVu* CMS.

ACD and Call Management Systems — BCMS, CMS R2 and *CentreVu* CMS

This section does the following:

- Describes BCMS (Basic Call Management System)

- Describes R2 CMS (Release 2 - Call Management System)

- Describes R3 CMS (Release 3 - Call Management System)

- Lists what CMS records and reports

- Describes the four main ACD reporting databases.

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Basic Call Management System (BCMS)

BCMS is an optional software package (residing on the PBX/switch) used to provide
real-time and historical reports to assist in managing ACD splits/skills, agents
(extensions), trunk groups and VDNs (G3 only). These reports, provided by the system,
are a subset of those reports available with the CMS adjunct.

CentreVu Call Management System (CMS)

The *CentreVu* CMS is an adjunct that collects specific ACD data on measured splits/skills,
measured agents, measured extensions, measured trunks and measured trunk groups for
reporting purposes. If Call Vectoring is purchased, ACD will report on measured VDNs
and Vectors. CMS provides call management performance recording and reporting. It can
also be used to perform some ACD administration. CMS is used by customers to
determine how well their customers are being served (i.e., speed of call answers, number
of calls) and how efficient their call management operation is (i.e., agents versus traffic
requirements).

How CMS Works with ACD

To collect information on ACD, CMS must be able to communicate with the ACD
resident in the switch. The Switch to CMS Platform communication consists of electronic
messages sent back and forth between the ACD switch and the CMS Platform via a data
link. There are two types of messages:

- ■ **Translations**

  Translations tell CMS the configuration of the ACD. This includes what data is
  measured (to be collected) and the ACD assignments.

- ■ **Status Changes**

  Status Changes tell CMS when the states of agents or trunks change due to call
  activity. Occurrences are counted and durations are tracked.

➡ **NOTE:**
CMS can also be used to change configurations within the ACD. Therefore, CMS
can at times send translations back to the PBX.

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What CMS Measures

CMS measures data on ACD splits, agents, extensions, trunks and trunk groups. If Call Vectoring is purchased, ACD will report on VDNs and Vectors.

- Main ACD reporting databases
    - Agents

        Agent states

    - Splits/Skills

        Events

        Workload

        Distribution

        Split/Skill call totals

    - Trunks

        Trunk states

    - Trunk Groups

        Events

        Workload

        Distribution

        Trunk call totals

ACD Measurement

This section describes how *CentreVu* CMS collects measured data on splits/skills, extensions, and so forth. The section contains the following topics:

- Assigning *CentreVu* CMS measurement of the ACD

- Switch features that affect *CentreVu* CMS data.

Assigning *CentreVu* CMS Measurement of the ACD

CentreVu CMS collects data on splits/skills, agents, extensions, trunks, trunk groups, VDNs, and vectors. However, for *CentreVu* CMS to collect data, the appropriate items (splits/skills, extensions, and so on) must be identified as measured on the *DEFINITY* ECS or switch.

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Things to Know Before You Start

The *CentreVu* CMS ACD Status window (see *CentreVu* Call Management System Release 3 Version 8 Administration (585-210-910) document) lists the total number of measured splits/skills, extensions (Agent Positions), trunks, and trunk groups established in an ACD.

For the *DEFINITY* ECS and Generic 3 Version 2 and later switches, you can add, delete, or change measured trunks, trunk groups, agent extensions, agent login IDs, VDN extensions, splits, and skills without busying out the link to *CentreVu* CMS and losing *CentreVu* CMS data.

Measurement of the *DEFINITY* ECS and *DEFINITY* G3 ACD

For the *DEFINITY* ECS and Generic 3 switches, individual splits and trunk groups are assigned to *CentreVu* CMS measurement through switch administration. Extensions are measured by virtue of their assignment to measured splits. Trunks are measured by virtue of their assignment to measured trunk groups. The number of measured splits cannot be changed using the *CentreVu* CMS ACD Status screen.

Measured splits need not be numbered sequentially. VDNs are measured individually. All vectors are measured.

Switch Features that Affect *CentreVu* CMS Data

There are several switch features that affect CMS data, such Conference, Transfer, Multiple Call Handling, Call Pickup, Intraflow, Interflow, Redirection on No Answer, Phantom Abandon Call Timer, Move Agent While Staffed, Expanded Agent Capabilities, Best Service Routing, and Universal Call ID. These features are explained below.

Hold, Conference, and Transfer

For the *DEFINITY* ECS and Generic 3 switches, *CentreVu* CMS tracks any type of call an agent puts on hold by pressing the Hold button, dialing the hold access code, pressing the Conference or Transfer button, or flashing the switchhook. Information on all calls (split/skill ACD, direct agent ACD, and extension calls) and the time spent on hold is stored in agent database tables. Information on split/skill calls only and the time spent on hold is stored in split/skill tables.

Multiple Call Handling (MCH)

The *DEFINITY* ECS and Generic 3 Version 4 switch have options to the Multiple Call Handling feature that can force agents to receive one or more ACD calls with other ACD calls or extension (non-ACD) calls on hold or active. For these forced options, talk time (and not ringing time) accumulates until the agent puts the current call on hold or releases it.

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For the *DEFINITY* ECS and Generic 3 Version 3 and later switches with Multiple Call Handling, an agent can put a call on hold and press the MANUAL-IN or AUTO-IN button to receive another ACD call. When multiple calls are on hold at the same time, hold time accumulates for each call on hold, and the total hold time can exceed clock time. For example, if two calls are on hold for 5 minutes each, 10 minutes of hold time accumulates.

Support for MCH

Use this table to determine whether a particular ECS/switch type supports multiple call handling.

Table 1-2.

ECS/Switch	On	Request	Forced
DEFINITY ECS R5	G3vs/si	yes	yes
	G3si+M	yes	yes
	G3r	yes	yes

Call Pickup

When an agent uses the Call Pickup feature to pick up an ACD call that rings at another agent's extension, *CentreVu* CMS tracks the call as an AUX-IN call for the agent picking up the call. The split/skill of the agent originally called is credited with an outflow call, even if the agent who picked up the call is in the same split/skill. If an agent is logged into more than one split/skill, the call is counted for the split/skill the agent has been logged into the longest. Thus, when Call Pickup is used, *CentreVu* CMS does not count the call as an ACD call, even though the call queued to a split/skill and was answered. Various other types of data associated with ACD calls (for example, "Percent Answered Within Service Level" and "Average Speed of Answer") will also not include data on calls answered using the Call Pickup feature. Because the split/skill of the agent originally called is credited with an outflow call, the call counts against the "Percent Answered Within Service Level" for that split/skill.

Intraflow and Interflow

When a call is intraflowed or interflowed from a split/skill, *CentreVu* CMS counts the call as an outflow call for the split/skill. If a call is intraflowed into a split/skill, *CentreVu* CMS counts the call as an inflow call for the split/skill. *CentreVu* CMS counts interflowed calls as ordinary incoming calls for the split/skill. However, because calls can be intraflowed/interflowed to destinations that are not splits/skills or are not measured by *CentreVu* CMS, an outflow call from a split/skill will not always show a corresponding inflow call for another split/skill. Conversely, because calls can be intraflowed/interflowed into a split/skill from originating locations that are not measured by *CentreVu* CMS, an inflow call to a split/skill may not show a corresponding outflow from another split/skill.

If an intraflowed/interflowed call connects to an agent in the destination split/skill, that call is counted as an ACD call for the split/skill.

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On the *DEFINITY* ECS and Generic 3 switches, a dummy split/skill may be established which intraflows calls to another split/skill. For *CentreVu* CMS to count outflow calls for dummy splits/skills, intraflow should be established using the Call Forwarding feature. If Call Coverage is used to intraflow calls, at least one agent must log into the dummy split/skill and go into ACW, and the call must queue to the dummy split/skill for at least one ring cycle for an outflow call to be counted.

For switches with the Call Vectoring feature, intraflow and interflow work differently, and *CentreVu* CMS data related to intraflow and interflow are recorded differently.

Redirection on No Answer (RONA)

For the *DEFINITY* ECS, and Generic 3 Version 2 and later switches, when a ringing call times out and is requeued to the same split/skill by the Redirection On No Answer feature, *CentreVu* CMS counts an outflow and an inflow for the split/skill. That is, the redirected call appears as two offered calls to the split/skill. For the *DEFINITY* ECS, if the call redirects from ringing to a VDN, there is outflow from the initial VDN and from the split/skill. If the call was in another VDN prior to redirection to another VDN, then there is inflow to that VDN.

Also, NOANSREDIR is incremented for the split/skill and the VDN. For Release 3 Version 2 and later of CMS, the database item NOANSREDIR is also incremented for split/skill and for VDN, if the call is in a VDN. If a split/skill is set up so that split/skill calls do not redirect back to the split/skill except by way of the Redirection On No Answer feature, the unique calls offered to the split/skill can be calculated by subtracting the value of NOANSREDIR from CALLSOFFERED.

If a call redirects from ringing to a VDN (*DEFINITY* ECS), there is outflow from the split/skill and, if the call was in another VDN, there also is inflow to the new VDN and outflow from the initial VDN. The NOANSREDIR is incremented for split/skill and VDN.

Phantom Abandon Call Timer

CentreVu CMS R3V4 and later switches can collect information about phantom abandon calls. When this capability is enabled, calls with a talk time (duration) shorter than the administered value (1 - 10 seconds) are counted as phantom abandon calls. Setting the timer to zero disables it. *CentreVu* CMS uses the PHANTOMABNS database item to store the number of phantom abandon calls.

This capability is important in areas where the public network switches do not provide disconnect supervision. Without this capability, short-duration calls that queue to a split/skill and are answered by an ACD agent or other answering position are counted as ACD calls, even if the calling party hangs up before the call is answered. This type of call is called a phantom or ghost call.

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Move Agent While Staffed

G3V4 and later switch releases support moving a staffed agent between splits or changing the skill assignments for staffed agents. If the agent has any call on the voice terminal or is in ACW, then the move cannot take place immediately, but is pending the agent voice terminal going idle (all calls have been terminated), or the agent changing out of the ACW mode.

CMS provides two real-time database items in the agent data, MOVEPENDING and PENDINGSPLIT, that can be accessed by using custom reports to provide information about whether agent have moves pending and, if so, the split or skill to which they are being moved. Note that in the case that the agent's skills are being changed and the change adds more than one skill, the PENDINGSPLIT item will show the first skill that is being added. It is also possible for MOVEPENDING to be set, but for PENDINGSAPLIT to be blank (or 0). This can happen, for example, when the link to the switch comes up and a move is pending for an agent. CMS will be notified by the switch that the move is pending, but PENDINGSPLIT will not be set.

Expanded Agent Capabilities

DEFINITY ECS R5 and later releases support Expanded Agent Capabilities. This feature allows EAS agents to have up to 20 skills assigned. Each skill may be assigned a level from 1 to 16, where Reserve 1 and Reserve 2 are the highest levels and 16 is the lowest. (The numeric level replaces the skill type p or s used in earlier G3 EAS releases.) Agents may have a call handling preference based either on the skill level, meaning that the agent will serve calls waiting for his or her highest level skill before serving calls waiting for any lower level skills; or based on greatest need, meaning that the agent will serve the highest-priority, oldest call waiting for any of his or her skills, or percent allocation, based on the percent distribution of calls among the agent's skills.

The expanded agent capabilities feature also allows the specification of the skill to be used for the agent's direct calls. This also allows specification of the level for the direct agent skill, which, in conjunction with the agent's call handling preference, may affect the order in which a direct agent call is delivered to an agent. That is, direct agent calls need to be delivered for all skill ACD calls. A concept introduced in R3V5 CMS, that of the top skill, can be useful in EAS implementations that use skill level call handling preference for agents. An agent's first administered, highest level skill is the agent's top skill, since it is for this skill that the agent is most likely to handle calls. This is the skill that can count on the agent.

Database items track the number of top agents in skills, as well as the time top agents spent available and in AUX.

The expanded agent capabilities on the switch include an increased number of measured splits/skills to 600 and an increase in the number of measured agent/split or agent/skill pairs to 10,000 for the G3r processor, as well as new options for Most Idle Agent (MIA) call distribution. The new options allow selection of MIA distribution across skills, rather than for each skill, and selection of whether agents in ACW are or are not included in the agent free list. These options have no direct impact on CMS, since CMS does not keep track of the most idle agent.

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Best Service Routing (BSR)

DEFINITY ECS R6 and later versions support Best Service Routing (BSR). BSR allows calls to be balanced at a single site or between multiple sites. BSR is enhanced multi-site routing that provides new call vectoring functions that build upon the Look-Ahead Interflow feature to route a call to the "best" split/skill on a single ECS or to the best split/skill in a network of *DEFINITY* ECSs.

The "best" split/skill is defined as the local split/skill or remote ECS that offers the shortest waiting time for the call in a call surplus (calls queued) situation for the application. The waiting time is calculated using the *DEFINITY* ECS's Expected Wait Time (EWT) predictor, and can be adjusted by the user. In an agents available situation, the "best" split/skill is determined based on the assigned available agent strategy. BSR data is tracked in the vector, VDN, and call history tables.

Universal Call ID

DEFINITY ECS R6 and later versions supports Universal Call ID (UCID). UCID is a unique tag that is assigned to a call. The tag allows call-related data to be collected and aggregated from multiple sources (for example, *DEFINITY* and *Intuity Conversant*) and multiple sites. The UCID may then be used to group all the data from various sources about a particular call.

CMS will receive the UCID assigned to calls by a *DEFINITY* ECS R6 or later with this feature enabled. The UCID is then stored, along with data about the call itself, by the call history feature (which includes both internal and external call history). The data will be available to both Custom Reports and the Report Designer. UCID data is stored in the call history and agent trace tables.

CentreVu Advocate

CentreVu Advocate is available on the *DEFINITY* ECS, Release 6 and later. *CentreVu* Advocate has introduced a number of new database

tracking items for CMS, as follows:

- Skill State — Skills can now be in one of four states (unknown, normal, overload 1 or overload 2), based on the Expected Wait Time (EWT) threshold. Time spent in each state except "unknown" is tracked in the split/skill tables. The state is unknown when the link is down or the split is non-EAS, or when a new skill is added and the state message has not yet arrived.

- Reserve Agent — Agents can have a skill level of reserve 1 or reserve 2 that corresponds to skill states overload 1 and overload 2. Only when the skill is in an overload state will the appropriate reserve agents serve that skill. These agents have a special agent service role. When the agents are available, but the skill is not in the appropriate state, the agent is tracked as "other".

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- Agent Counts — The number of agents in various states are stored in the split/skill tables by agent type. Reserve agents are stored in R1xxx and R2xxx database items. Top agents are stored in Txxx and flex agents are stored in Fxxx database items.

- Agent Time in Skill — Agents' ACD/ACW time can be tracked by skill. Non-ACD time in standard is as follows: agents with the tracked skill as the top skill use 100%, while agents who are percent allocated use the same percentage for both ACD and non-ACD time. Backup, Roving, or Reserve 1 or 2 agents track 0% of their non-ACD time toward this skill.

- Agent Role — ROLE is a database item in the agent tables that describes how an agent participates in a skill. The agent's role is based on both the agent's Skill Level and Call Handling Preference. Agents with a reserve skill have a role of Reserve. Non-EAS agents and agents with Greatest need Call Handling Preference have a role of Roving. Top agents have a role of Top. Skill Level Call Handling Preference agents who are neither top or reserve have a role of Backup. Agents who are Percent Allocated have a role of Allocated.

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1 Automatic Call Distribution (ACD) Basics — Overview and Exercises
Exercise 1 — Automatic Call Distribution (ACD)   1-37

Exercise 1 — Automatic Call Distribution (ACD)

Read the items below and complete as directed. If needed, refer back to the previous Guided Reading. When you finish, compare your answers to those presented on the back of this page.

Fill in the blank. In the space provided, write the term being described.

1. A call distribution method that allows the ACD software to check the split's/skill's agent numbers in the administered sequence, starting with the number of the last agent connected to a call is called _____.

2. A call distribution method that allows ACD software to check the split's/skill's agent numbers in the administered sequence until it finds an agent with an available extension. It then routes the call to that extension, this method is referred to as _____.

3. A call distribution method that allows ACD to find the agent extension that has been idle for the longest period of time and route the call to that agent's extension. This method is referred to as _____.

4. A call distribution method based on agent skill is called _____ _____.

5. An adjunct that collects call data for a switch resident ACD, provides call management performance recording and reporting, and can also be used to perform some ACD administration is called _____.

6. A group of trunks/agents that are selected to work together to provide specific routing of special purpose calls are referred to as _____ _____.

7. A call collection point where calls are held until a split/skill agent or attendant can answer them is called _____.

8. A group of extensions/agents that can receive standard calls and/or special purpose calls from one or more trunk groups are referred to as _____.

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1 Automatic Call Distribution (ACD) Basics — Overview and Exercises
Exercise 1 Evaluation — Automatic Call Distribution (ACD) 1-38

Exercise 1 Evaluation — Automatic Call Distribution (ACD)

Compare your answers to those presented below.

Fill in the blank. In the space provided, write the term being described.

1. A call distribution method that allows the ACD software to check the split's/skill's agent numbers in the administered sequence, starting with the number of the last agent connected to a call is called __**Circular Hunting**_____.

2. A call distribution method that allows ACD software to check the split's/skill's agent numbers in the administered sequence until it finds an agent with an available extension. It then routes the call to that extension, this method is referred to as __**Direct (linear) Hunting**_____.

3. A call distribution method that allows ACD to find the agent extension that has been idle for the longest period of time and route the call to that agent's extension. This method is referred to as __**MIA (Most Idle Agent)**_____.

4. A call distribution method based on agent skill is called __**EAD (Expert Agent Distribution)**_.

5. An adjunct that collects call data for a switch resident ACD, provides call management performance recording and reporting, and can also be used to perform some ACD administration is called _**CMS (Call Management System).**_

6. A group of trunks/agents that are selected to work together to provide specific routing of special purpose calls are referred to as __**Hunt Groups.**_____.

7. A call collection point where calls are held until a split/skill agent or attendant can answer them is called __**a queue**_____.

8. A group of extensions/agents that can receive standard calls and/or special purpose calls from one or more trunk groups are referred to as __**split**_____.

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1 Automatic Call Distribution (ACD) Basics — Overview and Exercises
Exercise 2 — Automatic Call Distribution (ACD)   *1-39*

Exercise 2 — Automatic Call Distribution (ACD)

Read the items below and complete as directed. If needed, refer back to the previous Guided Reading. When you finish, compare your answers to those presented on the back of this page.

Fill in the blank. In the space provided, write the term being described (continued).

1. A call management method that uses specialized call vector commands to provide flexible handling of incoming calls based on information collected from the caller is referred to as _____.

2. An optional software package that allows processing of incoming calls according to a programmed set of commands is _____.

3. Users can balance the call work load between multiple call centers on separate switching systems with _____ _____.

4. A segment of a split's/skill's queue from which calls are taken first is _____ _____.

5. A feature used to train new agents and observe in-progress calls is _____ _____.

6. The ability to assign, monitor, or move agents to specific splits/skills is _____ _____.

7. A point in time or criteria that determines a certain action by the system is called a/an _____.

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1 Automatic Call Distribution (ACD) Basics — Overview and Exercises
Exercise 2 Evaluation — Automatic Call Distribution (ACD)   1-40

Exercise 2 Evaluation — Automatic Call Distribution (ACD)

Compare your answers to those presented below.

Fill in the blank. In the space provided, write the term being described (continued).

1. A call management method that uses specialized call vector commands to provide flexible handling of incoming calls based on information collected from the caller is referred to as **Call Prompting**.

2. An optional software package that allows processing of incoming calls according to a programmed set of commands is **Call Vectoring**.

3. Users can balance the call work load between multiple call centers on separate switching systems with **LAI (look Ahead Interflow)**.

4. A segment of a split's/skill's queue from which calls are taken first is **Priority queue**.

5. A feature used to train new agents and observe in-progress calls is **Service observing**.

6. The ability to assign, monitor, or move agents to specific splits/skills is **split/skill administration**.

7. A point in time or criteria that determines a certain action by the system is called a/an **threshold**.

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1 Automatic Call Distribution (ACD) Basics — Overview and Exercises
Exercise 3 — Automatic Call Distribution (ACD)   1-41

Exercise 3 — Automatic Call Distribution (ACD)

Read the items below and complete as directed. If needed, refer back to the previous Guided Reading. When you finish, compare your answers to those presented on the back of this page.

Fill in the blank. In the space provided, write the term being described.

1. A signal sent to the serving CO by the switch telling the CO that an incoming call has been answered and that the CO should begin tracking charges if appropriate is referred to as _____
   _____.

2. When the CO processes all of the call digits of an incoming call, seizes a trunk from the appropriate trunk group, and connects the call directly to the destination identified in the switch software, it is called _____
   _____.

3. An attendant or group of attendants that handles the calls for all switches in a network is called _____
   _____

4. A feature of the 800 number service that sends the dialed digits to the called destination and can indicate the type of a call to an agent is called _____
   _____.

5. A system feature that allows messages to be stored for any ACD split/skill and allows for retrieval by a covering user of that split/skill or a system wide message retriever is referred to as _____
   _____.

6. An associated extension number of a split/skill, not normally dialed to reach a split/skill, but accessed through direct dialing is called _____
   _____.

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1 Automatic Call Distribution (ACD) Basics — Overview and Exercises
Exercise 3 Evaluation — Automatic Call Distribution (ACD) 1-42

Exercise 3 Evaluation — Automatic Call Distribution (ACD)

Compare your answers to those presented below.

Fill in the blank. In the space provided, write the term being described.

1. A signal sent to the serving CO by the switch telling the CO that an incoming call has been answered and that the CO should begin tracking charges if appropriate is referred to as **answer supervision.**

2. When the CO processes all of the call digits of an incoming call, seizes a trunk from the appropriate trunk group, and connects the call directly to the destination identified in the switch software, it is called **Automatic-in Processing.**

3. An attendant or group of attendants that handles the calls for all switches in a network is called **CAS (Centralized Attendant Service).**

4. A feature of the 800 number service that sends the dialed digits to the called destination and can indicate the type of a call to an agent is called **DNIS (Dialed Number Identification Service).**

5. A system feature that allows messages to be stored for any ACD split/skill and allows for retrieval by a covering user of that split/skill or a system wide message retriever is referred to as **Leave Word Calling.**

6. An associated extension number of a split/skill, not normally dialed to reach a split/skill, but accessed through direct dialing is called **QDN (Queue Directory Number)**.

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1 Automatic Call Distribution (ACD) Basics — Overview and Exercises
Exercise 4 — The ACD Agent and ACD Trunk States

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Exercise 4 — The ACD Agent and ACD Trunk States

Read the items below and complete as directed. If needed, refer back to the previous Guided Reading. When you finish, compare your answers to those presented on the back of this page.

Fill in the blank. In the space provided, write the term being described.

1. The current status or work functions of an agent are known as _____ _____.

2. When the extension is engaged in an ACD call, the agent state is referred to as ___ _____.

3. When the extension is logged in and able to accept an ACD call it is referred to as _____.

4. The agent enters into the _____ mode upon disconnecting from an ACD call. The agent is not available for another ACD call until the manual-in button is depressed.

5. While in the _____ work mode the agent becomes available for another call after an ACD call is disconnected.

6. While in ACW the agent placed an outgoing call. This is referred to as _____ _____.

7. The agent is involved in non-ACD work, is on break, in a meeting or at lunch. CMS recognizes the extension as staffed but does not want ACD to route calls there for an extended time. This is referred to as _____.

8. The agent will hear ringing when the next call comes in and goes off-hook to answer with _____.

9. When the trunk is occupied by an incoming or outgoing call it is considered to be _ _____.

10. An ACD caller has the trunk and is waiting for the agent to answer, the trunk is considered to be _____.

11. The agent and caller are connected in an ACD call, the term for the trunk status is _____.

12. The queued caller has just disconnected the call. The term for this type of call is __ _____.

13. A queued call has been intraflowed outside the ACD or has been interflowed to another switch. The term for this status is _____ _____.

14. When an extension is maintenance busy, or out of service for maintenance purposes, the status code is _____.

15. The agent has just put a call on hold. The status code for this is _____ _____.

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1 Automatic Call Distribution (ACD) Basics — Overview and Exercises
Exercise 4 Evaluation — The ACD Agent and ACD Trunk States   *1-44*

Exercise 4 Evaluation — The ACD Agent and ACD Trunk States

Compare your answers to those presented below.

Fill in the blank. In the space provided, write the term being described.

1. The current status or work functions of an agent are known as **agent states or work modes**.

2. When the extension is engaged in an ACD call, the agent state is referred to as **ACD**.

3. When the extension is logged in and able to accept an ACD call it is referred to as **AVAIL (Available)**.

4. The agent enters into the **After Call Work** mode upon disconnecting from an ACD call. The agent is not available for another ACD call until the manual-in button is depressed.

5. While in the **Auto-In** work mode the agent becomes available for another call after an ACD call is disconnected.

6. While in ACW the agent placed an outgoing call. This is referred to as **ACW-OUT**.

7. The agent is involved in non-ACD work, is on break, in a meeting or at lunch. CMS recognizes the extension as staffed but does not want ACD to route calls there for an extended time. This is referred to as **AUX (Auxiliary Work).**

8. The agent will hear ringing when the next call comes in and goes off-hook to answer with **Manual Answer**.

9. When the trunk is occupied by an incoming or outgoing call it is considered to be **seized**.

10. An ACD caller has the trunk and is waiting for the agent to answer, the trunk is considered to be **queued**.

11. The agent and caller are connected in an ACD call, the term for the trunk status is **Conn**.

12. The queued caller has just disconnected the call. The term for this type of call is **abandoned**.

13. A queued call has been intraflowed outside the ACD or has been interflowed to another switch. The term for this status is **Fwrd**.

14. When an extension is maintenance busy, or out of service for maintenance purposes, the status code is **Mbusy**.

15. The agent has just put a call on hold. The status code for this is **Hold**.

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1 Automatic Call Distribution (ACD) Basics — Overview and Exercises
   Exercise 5 — BCMS and CentreVu CMS   *1-45*

Exercise 5 — BCMS and *CentreVu* CMS

Read the items below and complete as directed. If needed, refer back to the previous Guided Reading. When you finish, compare your answers to those presented on the back of this page.

Fill in the blank. In the space provided, write the term being described.

1. This adjunct that collects call data for a switch resident ACD, provides call management performance recording and reporting, and can be used to perform some ACD administration is called _____

_____.

2. The optional software package (residing on the switch) used to provide real-time and historical reports to assist in managing ACD splits, agents (extensions), trunk groups and VDNs (G3 only) is called _____

_____.

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1 Automatic Call Distribution (ACD) Basics — Overview and Exercises
  Exercise 5 Evaluation — BCMS and CentreVu CMS   1-46

Exercise 5 Evaluation — BCMS and *CentreVu* CMS

Compare your answers to those presented below.

Fill in the blank. In the space provided, write the term being described.

1. This adjunct that collects call data for a switch resident ACD, provides call management performance recording and reporting, and can be used to perform some ACD administration is called **CMS (Call Management System)**.

2. The optional software package (residing on the switch) used to provide real-time and historical reports to assist in managing ACD splits, agents (extensions), trunk groups and VDNs (G3 only) is called **BCMS (Basic Call Management System)**.

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2 DEFINITY Call Center Capacities for ACD Software and Related Features
Introduction   2-1

DEFINITY Call Center Capacities for ACD Software and Related Features

2

Introduction

This chapter describes the ACD capacities of Lucent Technologies products. The section contains the following topics:

- Capacity tables for *DEFINITY* ECS and Generic 3 switches, and *CentreVu* CMS

- Measured extensions and multiple splits on a non-EAS switch

- Measured and unmeasured trunks.

The tables in this chapter show:

1. Capacities for *DEFINITY* ECS Release 8

2. Capacities for *DEFINITY* ECS Release 7 and Release 6.3

3. Capacities for *DEFINITY* ECS Releases 5 and 6

4. Capacities for *DEFINITY* Generic 3 Versions 2 to 4 switches

5. Capacities for *DEFINITY* Generic 3 Version 1 switches

6. Maximum capacities supported on *CentreVu* CMS.

➡ **NOTE:**
Your switch and *CentreVu* CMS are probably configured differently than the maximum values shown in ECS 5 and 6 capacities [1-45] and G3V2, G3V3, and G3V4 switch capacities [1-47]. Note these differences. You need to know your particular *CentreVu* CMS values before administering *CentreVu* CMS. Furthermore, if you have multiple ACDs, you cannot exceed the maximum capacities supported by *CentreVu* CMS across all ACDs.

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2 DEFINITY Call Center Capacities for ACD Software and Related Features
DEFINITY ECS R8 Capacities   2-2

DEFINITY ECS R8 Capacities

This table shows the capacities that are related to Call Center on the *DEFINITY* ECS R8.

Table 2-1. *DEFINITY* **ECS R8 Call Center Capacities**

Item	R8csi	R8si	R8r
Automatic Call Distribution (ACD)			
Announcements per Split	2	2	2
Announcements per System	128	128	1000
Splits	99	99	999
ACD Members per Split	200	200	1500
Maximum Administered ACD members[1]	1000*	1000	10000
Maximum ACD Agents (per system) When Each Logs Into:[2]			
1 Split	500	500	5200
2 Splits	500	500	5000
3 Splits	333	333	3333
4 Splits	250	250	2500
Logged-in Splits per Agent[3]			
No CMS	4	4	4
R2 or R3V1 CMS	3	3	3
R3V2 or newer CMS	4	4	4
Queue Slots per Group[4]	200	200	999
Queue Slots per System[5]	1500	1500	25000
Call Vectoring			
Maximum Skills a to which a Call Can Simultaneously Queue	3	3	3
Priority Levels	4	4	4
Recorded Announcements/Audio Sources for Vector Delay	128	128	256
Steps per Vector	32	32	32
Vector Directory Numbers (VDNs)	512	512	20000[6]
CMS Measured VDNs[7]	512	512	20000
Vectors per System	256	256	999
Number of Collected Digits for Call Prompting or CINFO	16	16	16

Table 2-1.　*DEFINITY* ECS R8 Call Center Capacities

Item	R8csi	R8si	R8r
Number of Dial-Ahead Digits for Call Prompting	24	24	24
Vector Routing Tables	10	10	100
BSR Application-Location Pairs[8]	1000	1000	1000
Expert Agent Selection (EAS)			
Skill Groups	99	99	999
VDN Skill Preferences	3	3	3
Maximum Skills to which a Call Can Simultaneously Queue	3	3	3
Maximum Administered Agent Login IDs[9]	1500	1500	10000
Maximum Staffed Agent Login IDs[10]	500*	500	5200
Max Administered ACD Members (Login ID-skill pairs)[11]	6000	6000	65000
Maximum Staffed ACD Members	1000*	1000	10000
Maximum Skills per Agent			
No CMS	20	20	20
R3V2 through R3V4 CMS	4	4	4
R3V5 or newer CMS	20	20	20
Skill levels (preferences) per Agent Skill	16	16	16
Maximum logged in EAS Agents (per system) When Each Has:[12]			
1 Skill	500*	500	5200
2 Skills	500*	500	5000
4 Skills	250	250	2500
10 Skills	100	100	1000
20 Skills	50	50	500
Trunks and Trunk Groups			
DS1 Circuit Packs	30*	30	166
Queue Slots for Trunks	198	198	1332
Measured Trunks in System	400*	400	4000
Trunk Group Hourly Measurements	25	25	75
Trunk Groups in the System	99	99	666
Trunk Members in Trunk Groups	99	99	256

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2 DEFINITY Call Center Capacities for ACD Software and Related Features
DEFINITY ECS R8 Capacities   2-4

Table 2-1. *DEFINITY* ECS R8 Call Center Capacities

Item	R8csi	R8si	R8r
Basic Call Management System (BCMS)			
Measured Agents or Login IDs	400	400	2000
Measured Agents per Split	200	200	999
Measured Splits	99	99	600
Measured Trunk Groups	32	32	32
Measured VDNs	99	99	512
Maximum Agents Displayed by Monitor BCMS Split Command[13]	100	100	100
Maximum BCMS Terminals	3	3	4
Maximum Active Maintenance Commands for System	1	1	5
Maximum Simultaneous BCMS Terminals in Monitor Mode[14]	1	1	3
Reporting Periods			
Intervals	25	25	25
Days	7	7	7

1. Also called administered agent-split pairs. Member capacity is used by ACD agents, Auto-Available Splits (AAS) ports (e.g., VRUs), non-ACD hunt groups (hunting groups with or without queues, Message Center Service, INTUITY/AUDIX, Remote AUDIX, etc.).
2. The number of agents that can log into the same split/skill is limited by the maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered and, with non-EAS, the additional splits assigned
3. An agent can be assigned more splits during administration but only this number can be simultaneously logged into.
4. Queue slots are shared across non-ACD, ACD (splits/skills) and AAS hunt groups.
5. See Note 4.
6. VDNs are counted as part of the miscellaneous extensions capacity. The total of VDNs, hunt groups, announcements, LDNs, TEGs, PCOL groups, access endpoints, administered TSCs and Code Calling IDs extensions and common shared extensions cannot exceed 20,317 for *DEFINITY* G3r. In addition, the total of stations (station extensions including ACD agent physical set extensions, Logical Agent IDs, and AWOH) assigned and the VDNs assigned can not exceed 25,000 for *DEFINITY* G3r. Also, the total of all extensions assigned for any purpose cannot exceed 36,065 for *DEFINITY* G3r.
7. With *CentreVu* CMS R3V8 (and earlier) when more than 2,000 VDNs are activated, permission checking is made inactive for viewing and modifying individual VDNs. All other permission checking continues for other entities, such as vectors. The 2-GB file size limit imposed by Informix SE (Standard Database Engine) limits the number of intervals of historical VDN data that can be collected for large numbers of VDNs. The limits can be determined using: Days=8,158/VI where V=number VDNs (in thousands) and I=number of collection intervals in a day (I=60h/i where h=collection hours per day and i=interval period in minutes).
8. BSR application numbers and location numbers are limited to a range of 1 to 255 (i.e., each is limited to 255).

9. Total of the administered Login ID skill-pair members (total of the agent skills and AAS ports). This limit can be reached only if 4 skills or less are assigned per Login ID due to the ACD Members Administered (Login ID-skill pair) limits. The following shows this (for *DEFINITY* R6.3.3 or newer).

Max. Login IDs With:	csi/si	r
• 1 to 4 Skills Each	1,500	10,000
• 10 Skills Each	600	6,500
• 20 Skills Each	300	3,250

10. The number of agents that can log into the same split/skill is limited by the maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered and, with non-EAS, the additional splits assigned.

11. Total of the administered Login ID-skill pair members (for agents and AAS ports).

12. The number of agents that can log into the same skill is limited by the Maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered.

13. The Monitor Split command will only display status for the first 100 agents logged into the split regardless of how many additional agents log into the split.

14. 12.2 BCMS monitoring, being a maintenance command, is limited by the active maintenance commands limit, reduced by 2 in the "r" system configuration (since 2 active command slots are reserved for the INADS and SAT logins respectively).

*   Software capacity limit cannot be achieved due to hardware capacity limits for this platform.

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2 DEFINITY Call Center Capacities for ACD Software and Related Features
DEFINITY ECS R7 and DEFINITY ECS R6.3 Capacities   2-6

DEFINITY ECS R7 and *DEFINITY* ECS R6.3 Capacities

This table shows the capacities that are related to Call Center on the *DEFINITY* ECS R7 and the *DEFINITY* ECS R6.3.

Table 2-2. *DEFINITY* ECS R7 and *DEFINITY* ECS R6.3 Call Center Capacities

Item	R6.3/R7 csi	R6.3/R7 si	R6.3/R7 r
Automatic Call Distribution (ACD)			
Announcements per Split	2	2	2
Announcements per System	128	128	256
Splits	99	99	600
ACD Members per Split	200	200	999
Maximum Administered ACD members[1]	1000*	1000	10000
Maximum ACD Agents (per system) When Each Logs Into:[2]			
1 Split	500	500	5200
2 Splits	500	500	5000
3 Splits	333	333	3333
4 Splits	250	250	2500
Logged-in Splits per Agent[3]			
No CMS	4	4	4
R2 or R3V1 CMS	3	3	3
R3V2 or newer CMS	4	4	4
Queue Slots per Group[4]	200	200	999
Queue Slots per System[5]	1500	1500	15000
Call Vectoring			
Maximum Skills a to which a Call Can Simultaneously Queue	3	3	3
Priority Levels	4	4	4
Recorded Announcements/Audio Sources for Vector Delay	128	128	256
Steps per Vector	32	32	32
Vector Directory Numbers (VDNs)	512	512	20000[6]
CMS Measured VDNs[7]	512	512	8000
Vectors per System	256	256	512

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Table 2-2. *DEFINITY* ECS R7 and *DEFINITY* ECS R6.3 Call Center Capacities

Item	R6.3/R7 csi	R6.3/R7 si	R6.3/R7 r
Number of Collected Digits for Call Prompting or CINFO	16	16	16
Number of Dial-Ahead Digits for Call Prompting	24	24	24
Vector Routing Tables	10	10	100
BSR Application-Location Pairs[8]	1000	1000	1000
Expert Agent Selection (EAS)			
Skill Groups	99	99	600
VDN Skill Preferences	3	3	3
Maximum Skills to which a Call Can Simultaneously Queue	3	3	3
Maximum Administered Agent Login IDs[9]	1500	1500	10000
Maximum Staffed Agent Login IDs[10]	500*	500	5200
Max Administered ACD Members (Login ID-skill pairs)[11]	6000	6000	65000
Maximum Staffed ACD Members	1000*	1000	10000
Maximum Skills per Agent			
No CMS	20	20	20
R3V2 through R3V4 CMS	4	4	4
R3V5 or newer CMS	20	20	20
Skill levels (preferences) per Agent Skill	16	16	16
Maximum logged in EAS Agents (per system) When Each Has:[12]			
1 Skill	500*	500	5200
2 Skills	500*	500	5000
4 Skills	250	250	2500
10 Skills	100	100	1000
20 Skills	50	50	500
Trunks and Trunk Groups			
DS1 Circuit Packs	30*	30	166
Queue Slots for Trunks	198	198	1332
Measured Trunks in System	400*	400	4000
Trunk Group Hourly Measurements	25	25	75
Trunk Groups in the System	99	99	666

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Table 2-2. *DEFINITY* **ECS R7 and** *DEFINITY* **ECS R6.3 Call Center Capacities**

Item	R6.3/R7 csi	R6.3/R7 si	R6.3/R7 r
Trunk Members in Trunk Groups	99	99	256
Basic Call Management System (BCMS)			
Measured Agents or Login IDs	400	400	2000
Measured Agents per Split	200	200	999
Measured Splits	99	99	600
Measured Trunk Groups	32	32	32
Measured VDNs	99	99	512
Maximum Agents Displayed by Monitor BCMS Split Command[13]	100	100	100
Maximum BCMS Terminals	3	3	4
Maximum Active Maintenance Commands for System	1	1	5
Maximum Simultaneous BCMS Terminals in Monitor Mode[14]	1	1	3
Reporting Periods			
Intervals	25	25	25
Days	7	7	7

---

1. Also called administered agent-split pairs. Member capacity is used by ACD agents, Auto-Available Splits (AAS) ports (e.g., VRUs), non-ACD hunt groups (hunting groups with or without queues, Message Center Service, INTUITY/AUDIX, Remote AUDIX, etc.).

2. The number of agents that can log into the same split/skill is limited by the maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered and, with non-EAS, the additional splits assigned

3. An agent can be assigned more splits during administration but only this number can be simultaneously logged into.

4. Queue slots are shared across non-ACD, ACD (splits/skills) and AAS hunt groups.

5. See Note 4.

6. VDNs are counted as part of the miscellaneous extensions capacity. The total of VDNs, hunt groups, announcements, LDNs, TEGs, PCOL groups, access endpoints, administered TSCs and Code Calling IDs extensions and common shared extensions cannot exceed 20,317 for *DEFINITY* G3r. In addition, the total of stations (station extensions including ACD agent physical set extensions, Logical Agent IDs, and AWOH) assigned and the VDNs assigned can not exceed 25,000 for *DEFINITY* G3r. Also, the total of all extensions assigned for any purpose cannot exceed 36,065 for *DEFINITY* G3r.

7. With *CentreVu* CMS R3V8 (and earlier) when more than 2,000 VDNs are activated, permission checking is made inactive for viewing and modifying individual VDNs. All other permission checking continues for other entities, such as vectors. The 2-GB file size limit imposed by Informix SE (Standard Database Engine) limits the number of intervals of historical VDN data that can be collected for large numbers of VDNs. The limits can be determined using: Days=8,158/VI where V=number VDNs (in thousands) and I=number of collection intervals in a day (I=60h/i where h=collection hours per day and i=interval period in minutes).

8. BSR application numbers and location numbers are limited to a range of 1 to 255 (i.e., each is limited to 255).

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9. Total of the administered Login ID skill-pair members (total of the agent skills and AAS ports). This limit can be reached only if 4 skills or less are assigned per Login ID due to the ACD Members Administered (Login ID-skill pair) limits. The following shows this (for *DEFINITY* R6.3.3 or newer).

Max. Login IDs With:	csi/si	r
• 1 to 4 Skills Each	1,500	10,000
• 10 Skills Each	600	6,500
• 20 Skills Each	300	3,250

10. The number of agents that can log into the same split/skill is limited by the maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered and, with non-EAS, the additional splits assigned.

11. Total of the administered Login ID-skill pair members (for agents and AAS ports).

12. The number of agents that can log into the same skill is limited by the Maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered.

13. The Monitor Split command will only display status for the first 100 agents logged into the split regardless of how many additional agents log into the split.

14. 12.2 BCMS monitoring, being a maintenance command, is limited by the active maintenance commands limit, reduced by 2 in the "r" system configuration (since 2 active command slots are reserved for the INADS and SAT logins respectively).

* Software capacity limit cannot be achieved due to hardware capacity limits for this platform.

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2 DEFINITY Call Center Capacities for ACD Software and Related Features
DEFINITY ECS R5 and DEFINITY ECS R6.1 and DEFINITY ECS R6.2 Capacities   2-10

DEFINITY ECS R5 and *DEFINITY* ECS R6.1 and *DEFINITY* ECS R6.2 Capacities

This table shows the capacities that are related to Call Center on the *DEFINITY* ECS R5 and on the *DEFINITY* ECS R6.1/6.2.

Table 2-3.   *DEFINITY* ECS R5 and *DEFINITY* ECS R6.1/6.2 Call Center Capacities

Item	R5vs/si	R5si+M	R5r	R6r
Agents per System	150	500	5200	5200
Agents per Split	150	200	999	999
Agent Login IDs	450	500	10000	10000
Skill Groups	24	99	600	600
Splits	24	99	600	600
Trunk Groups	32	99	665	665
Trunks	100	400	4000	4000
Vectors	48	256	512	512
Vector Routing — Tables	5	0	100	100
Vector Routing — Entries per Table	100	100	100	100
Vectoring Audio/Music Sources[1]	128	128	256	256
VDNs — Total	100	512	20000	20000
VDNs — Measured	100	512	2000	8000
Priority Levels — without Vectoring	2	2	2	2
Priority Levels — with Vectoring	4	4	4	4
Queue Slots per Split	200	200	999	999
Queue Slots (Split) per System	200	1500	15000	15000
Recorded Announcements	128	128	256	256
Integrated Announcement Boards	1	5	10	10
Recorded Announcement Queue Slots — Integrated Announcement Board	25	200	4000	4000
Recorded Announcement Queue Slots — Analog and Auxiliary Trunk	50	150	1000	1000

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DEFINITY ECS R5 and DEFINITY ECS R6.1 and DEFINITY ECS R6.2 Capacities   2-11

Table 2-3.   *DEFINITY* **ECS R5 and** *DEFINITY* **ECS R6.1/6.2 Call Center Capacities**

Item	R5vs/si	R5si+M	R5r	R6r
Recorded Announcement Queue Slots — Integrated Announcement Board	25	50	1000	1000
Recorded Announcement Queue Slots — Analog Port	50	150	1000	1000
Recorded Announcement Queue Slots — Auxiliary Trunk	50	150	1000	1000

1.   128 is the system maximum for recorded announcements and music sources. Each announcement subtracts one from the maximum number of music sources and vice versa.

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2   DEFINITY Call Center Capacities for ACD Software and Related Features
DEFINITY G3V2, DEFINITY G3V3, and DEFINITY G3V4 Switch Capacities   2-12

DEFINITY G3V2, *DEFINITY* G3V3, and *DEFINITY* G3V4 Switch Capacities

This table shows the capacities of Generic 3 Version 2 to Version 4 switches. "ABP" is the Advantage Business Package; "PBP" is the Premier Business Package.

Table 2-4.   *DEFINITY* G3V2, *DEFINITY* G3V3, and *DEFINITY* G3V4 Call Center Capacities

Item	G3V/s		G3i		G3r	
	V2 & V3 ABP/PBP	V4 ABP/PBP	V2&V3	V4	V2&V3	V4
Agents per System	150	150	500	500	5200	5200
Agents per Split	150	150	200	200	999	999
Agent Login IDs	NA/450	NA/450	1500	1500	10000	10000
Skill Groups	NA/24	NA/24	99	99	255	255
Splits	12/24	12/24	99	99	255	255
Trunk Groups	16/32	16/32	99	99	665	665
Trunks	50/100	50/100	400	400	4000	4000
Vectors	NA/48	NA/48	256	256	512	512
Vector Routing — Tables	NA	5	NA	10	NA	100
Vector Routing — Entries per Table	NA	100	NA	100	NA	100
Vectoring Audio/Music Sources[1]	1	128	1	128	1	256
VDNs — Total	NA/100	NA/100	512	512	20000	20000
VDNs — Measured	NA/100	NA/100	512	512	2000	2000
Priority Levels — without Vectoring	2	2	2	2	2	2
Priority Levels — with Vectoring	4	4	4	4	4	4
Queue Slots per Split	200	200	200	200	999	999
Queue Slots (Split) per System	200	200	200	1000	10500	10500
Recorded Announcements	128	128	128	128	256	256
Integrated Announcement Boards	1	1	1	5		10
Recorded Announcement Queue Slots — Integrated Announcement Board	50	25	50	50	1000	4000
Recorded Announcement Queue Slots — Analog and Auxiliary Trunk	50	50	150	150	128	1000

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Table 2-4. *DEFINITY* **G3V2,** *DEFINITY* **G3V3, and** *DEFINITY* **G3V4 Call Center Capacities**

Item	G3V/s		G3i		G3r	
Recorded Announcement Calls Connected per Announcement — Integrated Announcement Board	5	25	25	50	255	1000
Recorded Announcement Calls Connected per Announcement — Analog Port	5	50	25	150	128	1000
Recorded Announcement Calls Connected per Announcement — Auxiliary Trunk	5	50	25	150	255	1000

1.   128 is the system maximum for recorded announcements and music sources. Each announcement subtracts one from the maximum number of music sources and vice versa.

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DEFINITY G3V1 Switch Capacities 2-14

DEFINITY G3V1 Switch Capacities

This table shows the capacities that are related to Call Center on the *DEFINITY* G3V1.

Table 2-5.   *DEFINITY* G3V1 Call Center Capacities

Item	G3Vs/s ABP/PBP	G3i	G3r
Agents per System	150	500	3000
Agents per Split	150	200	999
Skill	NA/24	NA	NA
Splits	12/24	99	99
Trunk Groups	16/32	99	666
Trunks	50/100	400	4000
Vectors	NA/48	256	512
VDNs	NA/100	500	3000
Priority Levels — without Vectoring	2	2	2
Priority Levels — with Vectoring	4	4	4
Queue Slots per Split	200	200	999
Queue Slots (Split) per System	200	1000	6000/10500
Recorded Announcements — without Vectoring	128	128	256
Recorded Announcements — with Vectoring	NA/128	128	256
Integrated Announcement Boards	1	1	1
Recorded Announcement Queue Slots — Integrated Announcement Board	50	50	300
Recorded Announcement Queue Slots — Analog and Auxiliary Trunk	50	150	300
Recorded Announcement Calls Connected per Announcement — Integrated Announcement Board	5	5	255
Recorded Announcement Calls Connected per Announcement — Analog Port	5	5	128
Recorded Announcement Calls Connected per Announcement — Auxiliary Trunk	5	5	255

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2 DEFINITY Call Center Capacities for ACD Software and Related Features
CentreVu CMS Maximum Capacities 2-15

CentreVu CMS Maximum Capacities

This table shows maximum *CentreVu* CMS capacities for Lucent switches and ECS. "BHCC" is Busy Hour Call Capacity.

Item	CMS R3V6	CMS R3V8
Automatic Call Distribution (ACD)		
Maximum Number of ACDs (multi-ACD configuration)	8	8
Maximum Staffed ACD members	10000	10000
Maximum administered Agent Login IDs	10000	10000
Maximum Splits	1000	1000
Maximum ACD Agents (per system) When Each Logs Into:[1]		
1 Split	10000	10000
2 Splits	5000	5000
3 Splits	3333	3333
4 Splits	2500	2500
Call Vectoring		
Maximum Skills a to which a Call Can Simultaneously Queue		
Priority Levels		
Recorded Announcements/Audio Sources for Vector Delay		
Steps per Vector	32	32
Vector Directory Numbers (VDNs)	8000	20000
CMS Measured VDNs[2]		
Vectors per System	4096	7992
Expert Agent Selection (EAS)		
Skill Groups	1000	1000
Maximum Skills	1000	1000
Maximum Administered Agent Login IDs[3]	10000	10000
Maximum Staffed Agent Login IDs[4]	10000	10000
Maximum Skills per Agent	20	20
Skill levels (preferences) per Agent Skill	16	16
Maximum logged in EAS Agents (per system) When Each Has:[5]		

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CentreVu CMS Maximum Capacities   2-16

Item	CMS R3V6	CMS R3V8
1 Skill	10000	10000
2 Skills	5000	5000
4 Skills	2500	2500
10 Skills	1000	1000
20 Skills	500	500
Trunks and Trunk Groups		
Measured and Unmeasured Trunks in System	4000	4000
Trunk Groups in the System	666	666
Trunk Members in Trunk Groups		
Other Capacities		
Agent Traces Active	250	250
Agent Trace Records	500000	50000
BHCC	40000	40000
Call Records (internal)	NA	5000

1. The number of agents that can log into the same split/skill is limited by the maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered and, with non-EAS, the additional splits assigned

2. With *CentreVu* CMS R3V8 (and earlier) when more than 2,000 VDNs are activated, permission checking is made inactive for viewing and modifying individual VDNs. All other permission checking continues for other entities, such as vectors. The 2-GB file size limit imposed by Informix SE (Standard Database Engine) limits the number of intervals of historical VDN data that can be collected for large numbers of VDNs. The limits can be determined using: Days=8,158/VI where V=number VDNs (in thousands) and I=number of collection intervals in a day (I=60h/i where h=collection hours per day and i=interval period in minutes).

3. Total of the administered Login ID skill-pair members (total of the agent skills and AAS ports). This limit can be reached only if 4 skills or less are assigned per Login ID due to the ACD Members Administered (skill-pair) limits. The following shows this.

   Max. Login IDs With: csi/si   r
   - 1 to 4 Skills Each   1,500   10,000
   - 10 Skills Each   600   4,000
   - 20 Skills Each   300   2,000

4. The number of agents that can log into the same split/skill is limited by the maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered and, with non-EAS, the additional splits assigned.

5. The number of agents that can log into the same skill is limited by the Maximum Members per Group limits. Maximum agent limits are reduced by the number of non-ACD members and AAS ports administered.

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Measured Extensions and Multiple Splits on a Non-EAS Switch 2-17

Measured Extensions and Multiple Splits on a Non-EAS Switch

On *DEFINITY* G1 and *DEFINITY* G3 Switches

On G1 and G3, you can assign an agent extension to as many splits as desired. Multiple split assignments are commonly used in one or both of the following scenarios:

- The customer has agents who log into multiple splits.

- The customer has more than one shift of agents, where the shifts use the same set of phones but the agents do not work in the same splits.

Each extension-split assignment requires additional storage in *CentreVu* CMS. Therefore, assigning extensions to multiple splits can quickly consume the agent storage capacity on *CentreVu* CMS.

Example

On a G3i, you assign 50 agent extensions to six splits. The switch sends 300 extension-split assignments to *CentreVu* CMS. In this case, *CentreVu* CMS creates space in real-time data storage for 300 agent splits, even if the number of agents logged in is less than 100.

When Assignments Exceed Capacity

The maximum number of agent-split configurations *CentreVu* CMS can measure is defined at installation or in the Data Storage Allocation window. If that number is less than the split-extension assignments *CentreVu* CMS receives from the switch, then the link between the switch and *CentreVu* CMS fails to come up.

Example

Your *CentreVu* CMS allows up to 400 measured agent-split configurations, but the G3i switch has 450 split-extension assignments. The link fails to come up.

Assignments are Not Logins

Do not confuse "agent extensions assigned to multiple splits" and "agents logged into multiple splits." Even if an agent's extension is assigned to six splits, the agent can be logged into only three splits simultaneously. (With EAS, the agent can be logged into four splits.) *CentreVu* CMS always creates space in real-time data storage for six agent-split pairs (one for each split), even though the agent is not logged into all six splits.

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2 DEFINITY Call Center Capacities for ACD Software and Related Features
Measured and Unmeasured Trunks 2-18

Measured and Unmeasured Trunks

System Requirements

The trunk capacities shown in *CentreVu* CMS maximum capacities [1-50] are for measured and unmeasured trunks. A minimum of 100 unmeasured trunks is provided by default. The 100 unmeasured trunks are required for:

■ Internal calls (intraswitch) to a measured split or agent

■ Internal calls to VDNs

■ Calls made by agents to internal destinations or on an unmeasured trunk group

■ Transfers and conferences until the transfer/conference is complete.

Measured vs. Unmeasured Trunks

If more than 100 unmeasured trunks are needed for an ACD, the maximum number of measured trunks decreases accordingly. For example, if you have a G3i switch and choose to have 200 unmeasured trunks, 300 trunks are available for measurement.

A switch can support many more unmeasured trunks than shown in *CentreVu* CMS maximum capacities [1-50] without affecting the available number of measured trunks. However, these additional trunks only can be used for non-ACD purposes. Using additional unmeasured trunks for ACD reduces the available number of measured trunks.

Determining Available Measured Trunks

The measured trunks available can be determined as follows:

```
t=m-max(u-100,0)
```

Where t is the number of measured trunks, m is the maximum number of measured trunks possible, and **u** is the number of unmeasured trunks.

For example, *CentreVu* CMS is used to monitor a G3i ACD with 150 unmeasured trunks. You determine the maximum number of measured trunks that *CentreVu* CMS is able to monitor as follows:

```
0001 t=400-max(u-100,0)

0002 t=400-max(150-100,0)

0003 t=400-50

0004 t=350
```

In this example, *CentreVu* CMS is able to monitor 350 measured trunks.

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3 DEFINITY ECS ACD Call Center Features
Introduction 3-1

DEFINITY ECS ACD Call Center Features

3

Introduction

This chapter contains the definitions of the ACD Call Center features that are administered on the *DEFINITY* ECS/switch.

The *DEFINITY* ECS/switch Call Center forms from which these features are administered are defined in the next chapter.

Feature-Related Information

The information for each feature is usually presented under five headings:

■ **Feature title**

Gives the name and a brief overview of the feature. Tells what it does or how it serves the system.

■ **How to Administer**

Provides a list of the forms that are used to administer a feature. Required fields on these forms also are identified.

■ **Detailed Description**

Provides more detailed, technical information about a feature. When appropriate, additional guidelines and examples are provided. In some cases, expanded technical information is provided on one or several aspects of the feature.

■ **Considerations**

Discusses the applications and benefits of a feature and any other factors to be considered when using the feature.

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3 DEFINITY ECS ACD Call Center Features
List of Call Center Features 3-2

■ **Interactions**

Lists and briefly discusses other features that may significantly affect a feature. Interacting features are those that:

— Depend on each other — if one of the features is provided, the other also must be provided.

— Cannot coexist — if one of the features is provided, the other cannot be provided.

— Affect each other — the normal operation of one feature modifies, or is modified by, the normal operation of the other feature.

— Enhance each other — the features, in combination, provide improved service to the user.

List of Call Center Features

Table 3-1. Call Center Features

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3 DEFINITY ECS ACD Call Center Features
List of Call Center Features

3-3

Table 3-1. Call Center Features — *Continued*

Related Feature or Form

Refer to the *DEFINITY ECS Administrator's Guide* (555-233-502) for more information about the following related features or forms:

- Announcements/Audio Sources

- Calling Party/Billing Number.

- CallVisor Adjunct-Switch Application Interface.

- Class of Restriction.

- Hunt Groups.

- Malicious Call Trace.

- Recorded Announcements (additional information also available in the "Recorded Announcements" appendix of this book).

- Service Observing.

- *Callmaster* phones.

- 500, 2500, K2500, 7101A, 7102A, 7103A, 7104A, 8110, OPS, DS1FD, DS1SA, and VRU phones.

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3 DEFINITY ECS ACD Call Center Features
Abandoned Call Search

3-4

Abandoned Call Search

Abandoned Call Search allows the switch to identify abandoned calls if the central office (CO) does not provide timely disconnect supervision. An abandoned call is one in which the calling party hangs up before the call is answered. Note that Abandoned Call Search is suitable only for older COs that do not provide timely disconnect supervision. Most COs provide timely disconnect supervision and do not require Abandoned Call Search.

Before an incoming Automatic Call Distribution (ACD) split rings a hunt group member or agent, the system checks to make sure that the calling party has not abandoned the call. If the calling party has abandoned the call, the call does not ring the hunt group member or agent.

If a call has been abandoned, the system determines if the calling party is still connected to the ground-start trunk at the CO. To do this, the system flashes (that is, opens the tip-ring loop for 150 to 200 ms) the CO end of the trunk. If the calling party is still connected, the CO does not respond. If the calling party has abandoned the call, the CO sends the system a disconnect signal within 800 ms. The system interprets this as an abandoned call, releases the trunk, and the call does not ring the hunt group member or agent.

Outside of the U.S., a flash of this duration may be handled differently. Refer to *DEFINITY ECS Administrator's Guide* for more information about trunk flash.

How to Administer Abandoned Call Search

Table 3-2. Required Forms

Form	Field
Trunk Group	■ Abandoned Call Search
— CO FX WATS	

You administer Abandoned Call Search on a per-trunk-group basis. Administer each ground-start CO, FX, and WATS trunk group either having Abandoned Call Search or not having it. Abandoned Call Search is not supported for tie trunks.

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Abandoned Call Search

3-5

Considerations

> ⇒ **NOTE:**
> Abandoned Call Search works with ground-start analog trunks that *do not* provide
> disconnect supervision and that *do* react to a 500-ms break.

Some older COs can take as long as two minutes to notify the switch of a disconnect.
Thus, the switch must determine within one second whether the call has been abandoned,
before extending the call. Even with Abandoned Call Search or disconnect supervision,
there is a small probability that a call will be extended to the destination hunt group after
the caller has hung up. Abandoned Call Search and disconnect supervision significantly
reduce that probability.

Abandoned Call Search allows agents and hunt group members to answer more calls
because time is not wasted on abandoned calls. In addition, call-handling statistics that the
Call Management System (CMS) generates are more accurate because it is clear when a
call is abandoned.

Abandoned Call Search adds an overhead of up to one second to each call delivered to an
agent.

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Add/Remove Skills 3-6

Add/Remove Skills

Add/Remove Skills allows an agent using Expert Agent Selection (EAS) to add or remove skills. A skill is a numeric identifier in the switch that refers to an agent's specific ability. For example, an agent who is able to speak English and Spanish could be assigned a Spanish-speaking skill with an identifier of 20. The agent then adds skill 20 to his or her set of working skills. If a customer needs a Spanish-speaking agent, the system routes the call to an agent with that skill.

Each agent can have up to 20 skills active at any one time. Agents can dial feature access codes (FACs) to add or remove a skill. Or a supervisor with console permission can enter an agent's login ID and add or remove an agent's skill. If a supervisor adds or removes a skill for an agent, the agent receives a change notification.

To determine if they need to add or remove a skill, agents and supervisors can use queue-status indications, VuStats, or Call Management System (CMS) or Basic Call Management System (BCMS) information. When adding a skill, the agent must specify the skill priority level (1 — 16).

On phones with displays, the system prompts the agent through the process of adding or removing a skill and displays the updated set of skills.

How to Administer Add/Remove Skills

Table 3-3. Required Forms

Form	Field
Class of Restriction (COR)	■ Add/Remove Agent Skills
Feature Access Code (FAC)	■ Add Agent Skills
	■ Remove Agent Skills
Language Translations	■ 41-44 on Page 5
Hunt Group	■ Skill
Class of Service	■ Administer console permissions for supervisors

Considerations

■ A skill cannot be removed from an agent's skill set if the agent is on a call for that skill or in the After-Call-Work (ACW) state for that skill.

■ With EAS, agents cannot remove their Direct Agent Skill.

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Interactions

- Auto-Available Splits (AAS)

    If an agent adds a skill that is administered as Auto-Available, on the Agent Login
    ID form, you must set the AAS field to **y** for that agent's login ID.

- BCMS

    BCMS begins tracking a new skill as soon as it is added. When an agent removes a
    skill, the real-time agent information specific to that skill is removed from the
    real-time reports, but it still appears on the historical reports.

- EAS-PHD

    When EAS-PHD is set as an option, agents cannot remove their Direct Agent
    Skill. In an EAS environment, agents must have at least one skill assigned to them
    during a login session. With EAS-PHD, agents can specify up to 20 skills.

    If EAS-PHD is not enabled, agents can specify only 4 skills.

- VuStats

    Because VuStats displays information gathered by BCMS whether BCMS is
    enabled or not, the BCMS interaction above applies to VuStats.

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Agent Call Handling

Agent Call Handling allows you to administer functions that Automatic Call Distribution (ACD) agents use to answer and process ACD calls.

You define the following agent capabilities:

- Agent login and logout

- Agent answering options: Automatic Answer (zip tone) or Manual Answer

- ACD work modes: Auxiliary Work (AUX Work), Auto-In, Manual-In, or After Call Work (ACW)

- Timed ACW

- Agent request for supervisor assistance

- ACD call disconnect (Release button)

- Stroke counts

- Call work codes

- Forced entry of stroke counts and call work codes

describes agent-capacity planning.

NOTE:
All of these agent capabilities are also supported through the CallVisor Adjunct/Switch Applications Interface (ASAI). Refer to *DEFINITY ECS Administrator's Guide* for more information about the CallVisor Adjunct-Switch Application Interface.

How to Administer Agent Call Handling

Table 3-4.   Required Forms

Form	Field
Feature Access Code (FAC)	■ Feature Access Codes for ACD features
Hunt Group	■ Forced Stroke Count or Call Work Code
	■ Timed ACW Interval
Vector Directory Number	■ VDN Timed ACW Interval

Continued on next page

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Table 3-4. Required Forms — *Continued*

Form	Field
Station (multi-appearance)	■ Button/Feature Button Assignments
	— manual-in
	— auto-in
	— aux-work
	— after-call
	— assist
	— release
	— work-code
	— stroke-cnt
	■ Active Station Ringing (DCP, Hybrid)
	■ Idle/Active Ringing (*Callmaster*)
	■ VuStats
Stations (all)	■ Auto Answer
Attendant Console	■ Feature Button Assignments
	— after-call
	— assist
	— auto-in
	— aux-work
	— manual-in
	— release
	— work-code
	— stroke-cnt
	■ Auto Answer
Agent LoginID (EAS only)	■ All

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Detailed Description

This section describes how the switch controls agents' work. For details on procedures that agents follow when using the capabilities provided by the switch, see *DEFINITY Enterprise Communications Server Generic 1, Generic 3, and System 75 Automatic Call Distribution (ACD) Agent Instructions*.

> ⇨ **NOTE:**
> This information applies generally to ACD; see for more information on EAS.

Agent Login and Logout

To receive ACD calls, an agent must log into the system. An agent can be logged into multiple splits. If a hunt group is measured by Call Management System (CMS) or Basic Call Management System (BCMS) or is a skill, an agent must enter a login ID; otherwise, the login ID is optional.

Login

To log in, an agent goes off-hook and dials the login feature access code (FAC), followed by the split number and the log-in ID, if required. If login is successful, the agent automatically enters Auxiliary Work mode for that split. The Auxiliary Work button lamp for that split, lights steadily and the agent hears the confirmation tone.

If the split is measured, the system sends messages to CMS or BCMS that the agent (identified by login ID) has logged in and has entered Auxiliary Work mode.

Login is canceled and the agent receives intercept tone if any of the following occur during login:

- The agent dials an invalid login FAC or split number (that is, the number of a split that does not exist or to which the agent is not assigned).

- The agent is already logged into the maximum number of splits.

- The agent dials a split number for a split that he or she is already logged into.

Logout

The agent should log out when he or she leaves for an extended period of time and is unavailable for ACD calls. If the split is measured by CMS or BCMS and an agent logs out, a message is sent to the CMS or BCMS so that the agent's status is no longer measured. If an agent is logged into multiple splits, he or she should log out of each split.

When temporarily unavailable for calls, an agent should use Auxiliary work mode, rather than logging out. CMS or BCMS can continue tracking the agent's auxiliary work time.

To log out of a split, an agent goes off-hook and dials the logout FAC followed by the split number. If logout is successful, the agent hears confirmation tone and work-mode button lamps darken. The logout is canceled and the agent receives an intercept if any of the following occur during logout:

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- The agent dials an invalid logout FAC or split number.

- The agent dials a split number for a split that he or she is not logged into.

If an agent is using a handset in Automatic Answer mode, the agent can log out simply by hanging up or turning off the headset. (This does not mean pressing the release button on a *Callmaster* phone.) This does not apply to quick-disconnect. If the agent pulls the handset to log out, the agent is automatically logged out of all splits that he or she has logged into.

Agent Answering Options

An agent can answer ACD calls by using either a headset, handset, or speakerphone. You can assign an agent as either Automatic Answer or Manual Answer.

⇒ NOTE:
Use Automatic Answer with a headset. See '"Agents with Automatic Answer'' on page 3-19 for more information.

Automatic Answer

The information in this section applies to ACD and EAS environments.

An agent assigned to Automatic Answer hears zip tone and connects directly to incoming calls without ringing.

⇒ NOTE:
You can administer Automatic Answer to apply only to ACD calls or to apply to all calls terminating to the agent's set. If all calls are Automatic Answer and the agent receives direct-extension calls, he or she should always activate Call Forwarding, or Send All Calls when leaving temporarily or for an extended period, so that calls do not terminate to an unstaffed station.

Manual Answer

An agent assigned to Manual Answer hears ringing, and then goes off-hook to answer the incoming call.

ACD Work Modes

At any given time, an agent can be in one of four work modes:

- Auxiliary Work (AUX)

- Auto-In

- Manual-In

- After Call Work (ACW)

An agent can change work modes at any time.

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To enter any work mode, an agent presses the button or dials the FAC for that mode, depending on what you have administered. If the agent has no active or held calls, the work-mode button lamp lights steadily and CMS or BCMS is informed of the agent's mode change. If the agent has active or held calls, the lamp flashes until all calls are dropped, then the new work mode's lamp lights steadily and CMS or BCMS is informed of the agent's mode change.

The attempt is canceled and the agent receives an intercept if the agent:

- Tries to enter a work mode for an invalid split

- Tries to enter the work mode for a split of which he or she is not a member

- Dials an invalid FAC

Auxiliary Work Mode

An agent should enter Auxiliary Work mode for a split whenever taking a temporary break. This makes the agent unavailable for ACD calls to that split and removes them from the most-idle-agent queue. CMS and BCMS can continue to track the agent.

The agent is no longer available to answer other ACD calls to that split. However, the agent may be available for ACD calls to other splits that the agent is logged into, depending on the agent's state in those splits. The agent is still available for non-ACD calls. CMS or BCMS are notified whenever an agent in Auxiliary Work mode receives an incoming non-ACD call or makes an outgoing call. When an agent logs into a split, he or she automatically enters Auxiliary Work mode for that split.

⟹ NOTE:
Agents in vector-controlled splits can go into Auxiliary Work mode even if they are the last agent and calls are queued to that split.

Auto-In Mode

In Auto-In mode, the agent automatically becomes available for answering new ACD calls upon disconnecting from an ACD call.

Manual-In Mode

In Manual-In mode, the agent automatically enters ACW mode for that split upon disconnecting from an ACD call and is not available for any ACD calls. To become available for ACD calls, the agent must manually reenter either Auto-In mode or Manual-In mode.

After Call Work Mode

An agent should enter ACW mode when he or she needs to perform ACD-related activities, such as filling out a form as a result of an ACD call. The agent is unavailable for ACD calls to all splits while in ACW mode. Switch administration determines whether the agent remains in the Most Idle Agent queue while in ACW.

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When an agent is in the Manual-In mode and disconnects from an ACD call, he or she automatically enters ACW mode. Although no longer available for ACD calls, the agent is still available for non-ACD calls. CMS or BCMS is notified whenever an agent in ACW mode receives an incoming non-ACD call or makes an outgoing call.

Timed After Call Work

With Timed ACW administered, an Auto-In agent is immediately placed in ACW mode for a specific length of time after completing the currently-active ACD call. When the Timed ACW interval expires, the agent automatically returns to the Auto-In work mode. If the agent activates ACW while not on a call, the agent is placed in ACW (not timed) mode regardless of whether the agent is in Auto-In or Manual-In mode.

Use Timed ACW to allow agents to rest between incoming ACD calls, or to pace agents when they have to complete work from the previous call within an allotted time. In addition, if you have Home Agent, use Timed ACW to allow agents additional time to dial a FAC to place themselves in a different work mode after the current ACD call is completed.

Timed ACW and VDN

You can administer Timed ACW for all calls to a split/skill and/or to a VDN. Any completed calls to the split/skill or to the VDN, including direct agent calls, are followed by a timed ACW when the answering agent is in Auto-In work mode. If a VDN call routes to a split/skill, the Timed ACW interval for the VDN overrides the Timed ACW interval for the hunt group. VDN override applies to VDN-Timed ACW.

Cancelling Timed ACW

When an agent activates Auto-In or Manual-In mode during Timed ACW, the agent becomes available and timed ACW is cancelled. An agent can change to Manual-In mode before or during a call. The system cancels Timed ACW and applies ACW (not timed) mode when the call is released. The agent remains in ACW until he or she requests another mode. When the agent releases an ACD call, the ACW lamp (if provided) lights. At the end of the administered Timed ACW interval, the ACW lamp goes dark and the Auto-In lamp lights.

Timed ACW also is canceled when an agent presses the ACW button or dials the ACW FAC.

If an agent activates Auxiliary Work mode during Timed ACW, the agent is placed in that mode and Timed ACW is cancelled.

Agent Request for Supervisor Assistance

To request assistance from the split supervisor, an agent, with or without an active ACD call, presses the Assist button or puts the call on hold and dials the Assist FAC plus the split number. The agent must be logged into the split. Assist generates 3-burst ringing at the supervisor's station. If a split supervisor is not assigned, the agent receives intercept tone.

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Attendants should press the Start button before pressing the Assist button. This allows them to later transfer the call. This rings like a priority call at the supervisor's set.

When the agent presses the Assist button, the following happens:

1. If the agent is active on an ACD call, the ACD call is automatically placed on hold and a call is placed to the split supervisor. If the agent is not active on an ACD call, a call is automatically placed to the supervisor.

2. CMS or BCMS is notified of the request and the supervisor's display shows that the call is a request for assistance. This rings like a priority call at the supervisor's set.

3. The caller hears silence or music on hold.

4. After the agent has talked to the supervisor, the agent can drop the assist call and return to the ACD call, set up a conference call with the supervisor and the calling party, or transfer the call to the supervisor.

When the agent puts the call on hold and dials the Assist FAC plus the split number, the system handles the request as if the agent pressed the Assist button, except that the Assist call does not follow the supervisor's coverage path.

Stroke Counts

Stroke counts allow you to record in CMS the number of times that a particular customer-related event occurs. For example, agents could press a button each time a customer requests information on a certain item.

Stroke counts are reported to CMS in real time. The system does not store stroke counts. Use stroke counts only when CMS is connected and you have defined ACD splits to be measured by CMS.

Stroke counts allow agents to record up to nine administrator-defined events on a per-call basis. You can assign 10 Stroke Count button types. Stroke Count 0 is reserved for tracking Audio Difficulty or poor transmission quality.

For troubleshooting purposes, CMS records the equipment location of the trunk that the agent was using when he or she pressed the Audio Difficulty button. Make sure that agents are aware that pressing this does not improve audio transmission quality.

To enter a stroke count, an ACD agent presses a Stroke Count button while off-hook. The system validates that the agent is either active on an ACD call or in the ACW mode for an ACD split. If yes, the feature lamp lights steadily for two seconds to indicate activation and the stroke count is sent to CMS. If not, the feature lamp flutters and no message is sent.

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Call Work Codes

Call work codes are up to 16-digit sequences that ACD agents enter to record such customer-related information as account codes, social security numbers, or phone numbers. You define the codes for your site. Codes that agents enter are sent to CMS for storage for splits measured by CMS and only when the link to the CMS is up. Agents must have multiappearance phones (for example, *Callmaster*) to enter call work codes.

To enter call work codes, the agent must be off-hook and either:

- On an ACD call

- In ACW mode after disconnecting from a call while in Manual-In mode

- In Timed ACW after disconnecting from a call while in Auto-In mode

- In Auto-In mode and pending for ACW mode

The sequence of event is as follows:

1. The agent select Call Work Code (CWC) button.

2. The CWC lamp lights steadily and a C: prompt appears on the agent's display. The agent must wait for the ready indication before entering the call work code or the caller hears the touch-tone digits being dialed.

3. Agent enters up to 16 digits on the dial pad. The agent can press * to erase digits.

4. The agent presses # to send the code entry to CMS.

5. The Call Work Code lamp goes dark and the display returns to normal.

6. If the agent presses any feature button or hangs up during digit collection, the code entry is cancelled and data is sent to CMS. The CWC lamp goes dark and the display is cleared.

Call work codes may be used by as many as 100 agents simultaneously. If 100 agents are simultaneously using this function, and another agent attempts to enter a call work code, the agent receives a display message to try again later.

Forced Entry of Stroke Counts and Call Work Codes

You can administer a split so that agents must enter a stroke count and/or a call work code before becoming available for another call using Manual-In mode.

$\Longrightarrow$ NOTE:

Multiappearance phones or an attendant console are required for agents to enter stroke counts or call work codes.

To enter a stroke count and/or call work code, the agent must be on a call, or in ACW mode after releasing a call in Manual-In mode.

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After releasing a call, the agent automatically enters ACW mode and cannot return to Manual-In mode until entering a stroke count or call work code. If the agent presses the Manual-In button or FAC before entering a stroke count or a call work code, the Manual-In lamp flutters or intercept tone is given.

Once the agent enters a stroke count or call work code and presses the Manual-In button or FAC, he or she returns to Manual-In mode and the Manual-In lamp lights.

Any of the agent's splits can have Forced Entry assigned. If the agent goes into Auxiliary Work mode in any split, the Forced Entry requirement for all other splits is removed.

Expanded Technical Information

Agent Capacity and Related Limits

Agent Sizing adds an overriding capacity limit to the number of logged-in ACD agents. It can be used to limit the number of logged-in ACD agents to a number less than (or equal to) the maximum supported by the system configuration.

The logged-in ACD agents limit applies to ACD agents in traditional (or non-EAS) ACD splits or in Expert Agent Selection (EAS) skills. Auto-Available Split/Skill (AAS) agent ports are logged in and counted when they are first assigned, while the non-AAS agents are counted when they actually log in. Each logged-in agent is counted as a single agent independent of the number of splits or skills logged in to for the Logged-in ACD agents limit. AAS and non-AAS agents are counted towards this limit whether they are BCMS/CMS measured or not.

Effective with the *DEFINITY* ECS R8 and *CentreVu* Advocate, the Logged-in Advocate Agent Count feature counts the number of *CentreVu* Advocate agents who are logged in at the call center. The feature bases the count on whether or not a logged-in agent has any *CentreVu* Advocate feature(s), except Predicted Wait Time, assigned or associated with the agent. With this feature, *CentreVu* Advocate counted agents are still counted as ACD agents.

The agent sizing limit is administered by authorized Lucent Technologies personnel via the Logged-in ACD Agents option (and Logged-in Advocate Agent Count) on the System-Parameters Customer-Options form. The maximum number of allowed logged-in ACD agents is set to correspond to the configuration you purchase.

For agent sizing, if you have agents working in shifts, you should purchase enough agent capacity to allow for a smooth shift change. If agents on a subsequent shift are logging in before agents in the previous shift have logged out, agents could be denied login because too many agents are currently logged in. Additionally, the non-ACD and/or non-agent (AAS/VRU) use of Hunt Group resources must be considered. Call Center managers need to be aware of their logged-in ACD agent and other related limits when adding agents to handle a traffic peak or when planning a special campaign. Some of the resource utilization is displayed dynamically on the Display Capacities form.

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Note that under certain configurations, the limit set in the Logged-In Agents field cannot be reached due to some other system limit being reached. In particular, note that the *DEFINITY* ECS R5r and later configurations with EAS only supports up to 500 agents logged in if each has the maximum 20 skills assigned due to the 10,000 Hunt Group member limit.

In addition to the logged-in ACD agents limit, the number of agents supported is dependent on the upper limits that the system platform supports. The following limits must also be considered.

- Maximum Hunt Group members

  — Non-ACD members include hunting groups with or without queues, Message Center Service groups, *INTUITY/AUDIX* groups and Remote *AUDIX* groups (refer to *DEFINITY ECS Administrator's Guide* for more information about Hunt Groups). Each line or port in a group is counted once when assigned.

  — ACD members (also called agent-split pairs or agent-skill pairs with EAS). For agents in multiple splits/skills, each combination (pair) is counted as a member (e.g., an EAS agent logged into 4 skills or a non-EAS agent assigned to 4 splits counts as 4 members). Non-EAS ACD members are counted when assigned (note that many more splits can be assigned to an agent than can be logged into but each agent-split pair is still counted towards the limit). EAS ACD members are counted when they log in.

  — Advocate Agents.
  Each logged-in *CentreVu* Advocate agent is counted as both an ACD member and as a *CentreVu* Advocate agent.

- Hunt Group members per group — Count of non-ACD or ACD members within a group/split/skill. Counting is done as above for maximum Hunt Group members.

- Additional traditional ACD (non-EAS) agents limits:

  — Maximum logged-in agents system limit

  — Maximum splits an agent can log into

- Additional EAS limits:

  — **ACD members (skill pairs) administered** — Limits skill assignments to agents (each AAS port is counted as one skill pair)

  — **Agent Login IDs Administered** — Limits number of AAS ports and EAS agents that can be pre-assigned

  — **Agent Login IDs Logged-In (staffed) system limit** — Upper limit on the number of EAS agents (and AAS ports) that can be logged-in simultaneously

  — **Skills per Agent** — The maximum number of skills a particular agent can be assigned

- Call Management System (CMS) logged in ACD members (agent-split/skill pairs) limits assigned. Both a Lucent Technologies setup and customer-administered limit is assigned in CMS. These limits are related to the CMS memory/hardware

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configuration equipped and are passed over the link to the *DEFINITY* ECS/switch
to reduce/set the externally measured logged-in ACD member component of the
Hunt Group member limit to that supported by CMS.

- BCMS internally measured ACD agents system limit. Non-EAS ACD agents
counted when assigned while EAS agents are counted when logged in.

When the maximum number of ACD agents are logged in or any of the other above limits
are reached, an agent who attempts to log in hears reorder tone or is otherwise denied log
in. Also with EAS, an agent logging in may not have all the assigned skills logged in if the
ACD member limit is reached.

The administrator of a non-EAS system also can be blocked from adding agents to splits
via the Hunt Group form or the administrator of an EAS system can be blocked from
assigning additional Login IDs or skills to an agent via the Login ID form if the relevant
system limits are reached.

Considerations

Release Button

Agents using Automatic Answer are logged out of all splits when they disconnect from an
ACD call by hanging up. Therefore, agents should use the Release button, if provided.
This button is in addition to the fixed Release button on the attendant console.

Timed ACW

To prevent agents from canceling Timed ACW by pressing the Manual-In or ACW
buttons, do not assign these buttons to the agents' phones. Timed ACW cannot be
assigned to AAS, adjunct-controlled, *AUDIX*, Remote *AUDIX*, or Message Center splits.
In addition, VDN-Timed ACW does not apply to calls routed to a converse split by way of
the *converse-on* vector command. Timed ACW assigned to a converse split hunt group
applies.

BCMS and *CentreVu* CMS track Timed ACW as standard ACW work states. Time spent
in Timed ACW is not specifically identified.

Nonvector-Controlled Splits

For nonvector-controlled splits, the last available agent in a split cannot enter Auxiliary
Work mode if any calls remain in the split queue. (However, the agent can log out.)

When the last available agent tries to enter Auxiliary Work mode, the following occurs:

- The Auxiliary Work button flashes indicating the change is pending.

- New calls on the ACD split either receive busy tone or redirect to coverage. Calls
in the queue continue to route to the last available agent until the queue is empty.

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■ At the last available phone or console, the Auxiliary Work button lamp flashes until the queue is empty. The terminal then enters Auxiliary Work mode and the associated lamp lights steadily.

Agents Logged into Multiple Splits

If an agent is logged into multiple splits, the agent may become unavailable for calls to one split because of activity at another split. For example, if an agent enters After Call Work mode for one split, the agent becomes unavailable for calls to other splits.

An agent should not log into a split while a call is on hold at his or her extension.

Agents with Automatic Answer

Agents who use Automatic Answer should use a headset. The agent hears zip tone through the headset and automatically connects to a call.

If either the incoming trunk group or the agent's extension is data-restricted, the agent does not hear zip tone. Therefore, do not assign data-restriction to a headset user's extension.

It is not recommended that you use Automatic Answer with a handset or speakerphone. The handset or speakerphone must be off-hook (handset lifted or speakerphone turned on) all the time for the agent to hear zip tone.

If automatic answer is assigned for all calls, when a non-ACD call arrives, non-ACD Auto-Answer agents hear Incoming Call ID tone, not ringing.

Callmaster Terminals

Calls for *Callmaster* digital phones and attendant stations are announced by double tones.The tones that are doubled are zip (Auto-Answer ACD agent calls) and Incoming Call ID (for End of VDN of Origin announcements and all other Auto-Answer calls). The user hears part of the first tone and all of the second tone.

Agents Assigned to Hunt-Group and ACD Calls

Do not use agents for hunt-group calls and ACD split calls simultaneously. Otherwise, all of the calls from one split (either ACD or hunt-group) are answered first.

The oldest call-waiting termination is supported only for agents who are servicing ACD calls only.

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Interactions

■ Abbreviated Dialing

Assign Abbreviated Dialing buttons to make agent login easier. You can program an Abbreviated Dialing button to dial access code, split number, and/or agent login ID. With the *DEFINITY* ECS/switch (R4 or later) you can use Autodial feature buttons to assign log and logout feature buttons.

■ Auto-Available Split (AAS)

An AAS cannot be administered for Timed ACW.

■ Bridging

ACD split/skill calls are not bridged.

Station calls are bridged and agents are able to bridge onto them. If an agent bridges onto a call, the call is considered a non-ACD extension-in call. The agent is not available for an ACD call unless the agent is a member of a many-forced, one-forced, or one-per-skill MCH split/skill. The agent can put the call on hold and become available to receive ACD calls even in non-MCH splits/skills if only bridged appearances are active.

■ Call Coverage

If an ACD call routes to an agent as a result of covering to a VDN (where the VDN is the last coverage point in the coverage path), Timed ACW applies as administered for the VDN or split/skill.

■ Call Forwarding

If an ACD call routes to an agent after being call-forwarded to a VDN, Timed ACW applies as administered for the VDN or split/skill.

■ Call Pickup

When an ACD agent answers a call via Call Pickup, the call is treated as an incoming non-ACD call. The agent can put the call on hold and become available for additional calls.

■ Call Work Codes

The CWC 100-agent limit is shared with Reason Codes. Therefore, no more than 100 agents can simultaneously enter either a call work code or reason code.

■ CallVisor ASAI Adjunct

If a split/skill hunt group has CallVisor ASAI as the controlling adjunct, you cannot administer Timed ACW for the split/skill. Additionally, if an ACD call is routed to an agent in an adjunct-controlled split/skill, the agent is not placed in Timed ACW when the call ends.

■ *CentreVu* CMS

Timed ACW is reported on CMS reports in the same way as any other ACW. CMS gives exception notification only on ACW intervals that are longer than the defined threshold.

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■ Conference

If an agent receives an ACD call through a VDN and then conferences in other agents, the agents added to the call use the Timed ACW interval associated with the number dialed to conference them. An ACD agent on conference with more than three parties may cause inaccurate CMS measurements.

■ Expert Agent Selection

When EAS is active, all ACD hunt groups are assigned as vector-controlled skills. Agents log in using Logical Agent IDs. Skills can be preassigned to login IDs, however, assignment on the Login ID form does not actually assign a non-AAS login ID to the skills until the ID is logged in. When the login ID is logged in, each skill is counted as a hunt-group member towards the system hunt-group member limit, the per-group member limit, and each agent is counted as a logged-in ACD agent.

■ Multiple Call Handling

If MCH calls are on hold at an agent's terminal and the agent completes a call that normally is followed by Timed ACW, the agent is not placed in ACW. If no MCH calls are on hold, but one is alerting at the station when the Timed ACW call completes, the agent is placed in ACW.

MCH affects when agents can enter different work modes and when calls are delivered to agents in Manual-In or Auto-In work modes. See "Multiple Call Handling" on page 3-108 for detailed information.

■ Transfer

If an agent receives an ACD call through a VDN and then transfers the call to another agent, the second agent uses the Timed ACW interval assigned to the number that was dialed to transfer the call.

For an EAS agent, this is the Timed ACW interval associated with his or her Direct Agent skill. For an agent receiving a call transferred to a second VDN, this is the VDN Timed ACW interval of the second VDN. The agent who originally transferred the call uses the ACW associated with the VDN or split/skill that first received the call.

■ VDN Override

If a VDN has VDN Override set to no and the vector routes a call to a second VDN, the first VDN's Timed ACW interval is used for Timed ACW. If VDN Override is set to yes, the second VDN's Timed ACW interval is used.

If no interval is set for the second VDN, no Timed ACW is associated with the call.

■ Voice Response Integration

If an ACD call routes on a *converse* vector command, any VDN-Timed ACW associated with the call is ignored for agents in the converse split/skill. However, if the converse split/skill has an administered Timed ACW interval, the answering agent associated with the split/skill is placed in Timed ACW when *converse* vector command processing completes.

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Auto-Available Split

Auto-Available Split (AAS) allows members of an ACD split to be in Auto-In work mode continuously. An agent in Auto-In work mode becomes available for another ACD call immediately after disconnecting from an ACD call.

Use AAS to bring ACD-split members back into Auto-In work mode after a system restart. Although not restricted to such, this feature is intended to be used for splits containing only nonhuman members — for example, recorders or voice-response units (VRUs).

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Table 3-5.   Required Forms

Form	Field
Hunt Group	■ AAS
Agent LoginID (EAS only)	■ AAS

Verify that the ACD field is set to **y** on the System Parameters Customer-Options screen. If this field is not set to **y**, contact your Lucent Services representative.

Verify that the ACD field form is set to **y** on the Hunt Group.

Detailed Description

■ Agent login with AAS

With AAS, ACD splits generally operate as usual. The major difference is in how work modes are handled.

For ACD splits with AAS, agents are automatically logged in under the following circumstances:

— Call Management System (CMS) completes an Agent Move request into an Auto-Available split.

— A maintenance-busied-out port, which is defined as an agent in an Auto-Available split, is released.

— The system reinitializes and requires agents to log in again.

— You administer a split on the Hunt Group form as AAS = y.

— You administer an agent into an existing AAS split.

Once an agent is logged into an Auto-Available split, it is immediately moved to the Auto-In work mode and subsequent requests to change out of that mode are denied.

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■ Agent logout with AAS

For ACD splits with AAS, agents are automatically logged out under the following circumstances:

— CMS completes an Agent Move request out of an Auto-Available split.

— The Auto-Available agent's port is unavailable because maintenance is being performed.

— You administer a split as AAS = n.

— You remove an agent from an existing AAS split.

— Redirection on No Answer (RONA) redirects a call that the agent has not answered after an administered number of rings.

Considerations

■ AAS is intended primarily for non-BX.25 and non-ASAI PBX adjuncts such as *Conversant* VIS, that require extra help in getting PBX ports back online after a restart. *AUDIX* is incompatible with AAS because it uses BX.25 messages to automatically activate its ACD agent ports after a PBX restart.

■ Because AAS is intended for nonhuman agents, do not administer an Auto-Answer terminal as a member of an AAS.

■ AAS is not intended for any agent port hardware that can change its work mode state since a request to move to any state other than AUTO-IN is denied; however, administration of such terminals is not blocked.

Interactions

■ Auto-Answer

Do not administer an Auto-Answer terminal as a member of an AAS.

Auto-Answer was originally implemented for human agents. Currently, if a nonanalog terminal is administered as Auto-Answer and that terminal is logged into a split, when the terminal goes on-hook, the terminal is logged out.

Agents at analog terminals defined as Auto-Answer who are logged into a split must dial a log-out FAC to log out. If a terminal is a member of an AAS, a log-out FAC is denied. To log the agent out, you must either remove the terminal from the split when it is not active on a call or busy-out the terminal.

If an agent in an AAS with an Auto-Answer terminal goes off-hook, his or her terminal is logged into any Auto-Available splits of which it is a member. To log out of the AAS splits, the agent goes on-hook, is placed in AUX work mode, and then presses the RELEASE button on nonanalog sets or disconnects on analog sets. Because agents are not placed immediately in Auto-In work mode, they may place personal or emergency calls rather than answering ACD calls that may be in queue.

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- CMS

  For each agent, AAS notifies CMS of any login, logout, or change into the Auto-In work mode. In a non-EAS environment, an AAS agent is identified to CMS with a login ID equivalent to the agent's administered extension. With EAS, the AAS login ID and port are assigned on the Login ID form.

  With CMS Move Agent, you can move a member from one AAS split to another while that member is logged in.

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Automatic Call Distribution

Automatic Call Distribution (ACD) allows incoming calls to connect automatically to specific splits. An ACD split is simply a hunt group that is designed to receive a high volume of similar calls. Calls to a specific split are automatically distributed among the agents, or hunt group members, assigned to that split. Calls queue to the split until an agent is available.

An ACD agent can be a voice-terminal extension, individual attendant extension, or, in an Expert Agent Selection (EAS) environment, an agent login ID. An agent can be logged into multiple splits. However, in a non-EAS environment, agents can be logged into only one split if that split is administered for Multiple Call Handling (MCH).

You can assign a supervisor to each split. The split supervisor can listen in on agent calls, monitor the split queue status, and assist agents on ACD calls. Although split supervisors can assist agents on ACD calls, the supervisors do not normally receive ACD calls unless they are also members of the split.

If you have Call Management System (CMS) or Basic Call Management System (BCMS), you can measure and create reports on the status of ACD agents, splits, and trunks. See "Agent Call Handling" on page 3-8 and "Call Management System" on page 3-56 or "Basic Call Management System" on page 3-41 before setting up your ACD splits. See "Agent Call Handling" on page 3-8 for detail on administering agent functions and operations.

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[Figure 3-1](#) shows an a typical ACD arrangement.
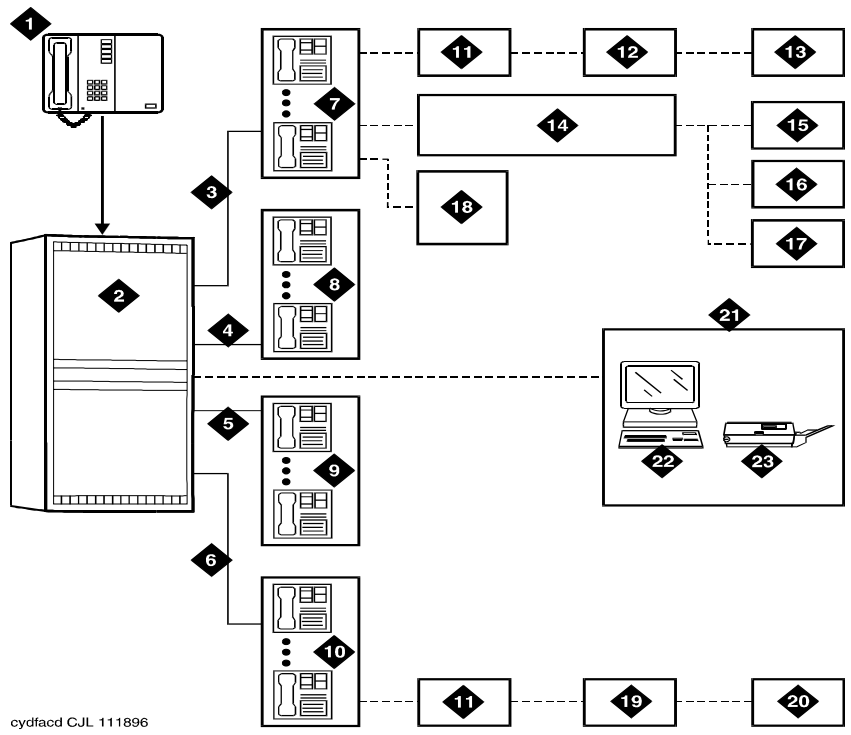
cydfacd CJL 111896

Figure Notes

1. Incoming calls
2. ACD switch
3. Trunk group 1
4. Trunk group 2
5. Trunk group 3
6. Trunk group 4
7. Split 1 Business Travel (10 agents)
8. Split 2 Personal Travel (8 agents)
9. Split 3 Group Travel (5 agents)
10. Split 4 General Information (15 agents)
11. Queues
12. Announcement 1
13. Announcement 2
14. Intraflow (Call Coverage)
15. Split 2 Personal Travel (3rd choice)
16. Split 3 Group Travel (2nd choice)
17. Split 4 General Information (1st choice)
18. Supervisor (with Service Observing)
19. Announcement
20. Disconnect
21. Call Management System (CMS)
22. Terminal
23. Printer

Figure 3-1. Typical ACD Arrangement

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Table 3-6. Required Forms

Form	Field
Trunk Groups CO FX Tie WATS	■ Incoming Destination
Class of Restriction	■ Can Be Service Observer? (optional) ■ Can Be Service Observed? (optional)
Attendant Console	■ Headset, Auto Answer
Station	■ Headset, Auto Answer ■ Button Assignments - Work-Mode, Queue Status, Call Info
Hunt Group	■ All
Feature-Related System-Parameters	■ Service Observing (optional) — Service Observing Warning Tone — Service Observing by FAC ■ Most Idle Agent — MIA Across Splits or Skills — ACW Agents on MIA List ■ Call Management System — ACD Login Identification Length
Feature Access Code (FAC)	■ Automatic Call Distribution page ■ Announcement Access Code ■ Service Observing Listen Only or Listen/Talk Access Code (optional)
Announcements/ Audio Sources	■ All

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■ **Trunk Group forms** — In the Group Number field, assign consecutive Group Numbers to trunk groups when you are using two or more trunk groups to support ACD applications.

■ **Hunt Group form** — When the ACD field is set to y, complete the fields that apply. In the AAS field, enter **y** to enable Auto-Available Split. See for more information.

Detailed Description

You can administer an ACD split to use one of three methods to select an available agent:

■ Direct Department Calling

■ Uniform Call Distribution

■ Expert Agent Distribution

Direct Department Calling

If you administer a split for Direct Department Calling (DDC), an incoming call is routed to the first available agent extension in the administered sequence. If the agent is not available, the call routes to the next available agent, and so on. Incoming calls are always routed to the first agent in the sequence, so calls are not evenly distributed among agents. DDC is not available with EAS.

Uniform Call Distribution

The Uniform Call Distribution (UCD) method selects either the most idle agent or the least occupied agent as each new call is delivered.

The "most idle agent" (MIA) is the agent who has waited the longest since finishing their last ACD call. This method is abbreviated UCD-MIA. The *DEFINITY* ECS/switch maintains a queue of agents who are available to receive calls. With the Most-Idle Agent algorithm, an agent's place in the queue depends on how long they've waited since their last ACD call. The agent who's been idle longest is at the head of the queue and will receive the next ACD call.

You can set the *DEFINITY* ECS/switch to maintain a separate queue for available agents in each split or skill, or you can create one combined queue for agents in all splits or skills. If the MIA Across Splits/Skills? field on the Feature-Related System Parameters form is set to **n**, the switch maintains available agent queues for each split or skill. When agents answer a call, they are only removed from the available agent queue for the split or skill at which that call arrived. If the field is set to **y**, there is only one queue for all agents. In this case, agents are removed from the queue whenever they answer a call for any of their assigned splits or skills.

The agent is returned to the agent queues (or queue if MIA Across Splits/Skills? is **y**), based on how you administer the following:

■ If forced Multiple Call Handling applies, the agent is placed in the queue when the call stops alerting.

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- If the ACW Agents Considered Idle? on the Feature-Related System Parameters form is **y**, the agent is queued when the call completes.

- If ACW Agents Considered Idle? is **n**, the agent is queued when ACW completes.

UCD distributes calls evenly among agents logged in to a particular split/skill. UCD with MIA Across Splits/Skills distributes calls evenly among agents logged into the same splits/skills.

If your switch uses Expert Agent Selection and *CentreVu* Advocate, you can also distribute calls to the least occupied agent. The "least-occupied agent" (LOA) is the agent who has spent the lowest percentage of their time on ACD calls since they logged in. This method is abbreviated UCD-LOA. An agent's place in the queue of available agents is determined by the percentage of their time spent on ACD calls since they logged in. This percentage, known as agent occupancy, is always calculated separately for each split or skill an agent is logged into, so there is an available agent queue for each split or skill.

Expert Agent Distribution

Expert Agent Distribution (EAD) is available only with Expert Agent Selection (EAS). EAD also uses the MIA and LOA methods to select an available agent for a call, and like UCD it maintains a queue of available agents. However, with EAD agents are also distinguished by their skill level in each of their assigned skills and the switch considers both agents' skill level and their idle time or occupancy to select the agent who will receive a call.

When you are using EAS Preference Handling Distribution (EAS-PHD), the agent can enter the MIA queue at one of 16 levels. The lower the level, the higher the level of expertise; so an agent with skill level 1 is the most qualified to answer a call to that skill. Without EAS-PHD, agents enter the MIA queue as either level 1 or level 2 agents. When agents with a lower skill level become idle, they enter the MIA queue in front of agents with a higher skill level. See for more information about EAS Call Distribution.

Comparison of Agent Selection Methods

compares DDC, UCD, and EAD agent selection methods and shows the effect of using each one. Remember that the *DEFINITY* ECS/switch makes two separate decisions to select agents when EAD is used. The switch first identifies the agent or agents with the highest level of expertise in the call's skill. If there are several agents with the same skill level, the switch then selects the most idle or the least occupied, as appropriate, from this subgroup.

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Table 3-7. Agent Selection Methods

If this agent selection method is used…	Each call will be delivered to…
DDC	the first available agent found in the hunt sequence.
UCD-MIA	the available agent who has been idle the longest since their last ACD call.
UCD-LOA	the available agent with the lowest percentage of work time since login.
EAD-MIA	the available agent with the highest skill level who has been idle the longest since their last ACD call (compared to other available agents with the same skill level).
EAD-LOA	the available agent with the highest skill level and the lowest percentage of work time since login (compared to other available agents with the same skill level).

Queuing and Announcements

You create a queue for an ACD split by setting Queue to **y** on the Hunt Group form. When all agents are active on calls or in After-Call Work mode, the queue allows incoming calls to wait for an idle agent. The next available agent is automatically connected to the call in the split queue.

For non-vector-controlled splits, calls do not queue to splits in these cases:

- No agents are logged in
- All logged-in agents are in Auxiliary Work mode
- No queue slots are available

The caller gets a busy signal (or busy coverage, if administered) unless a call comes in via an automatic-in central office (CO) facility. In this case, the caller hears ringback from the CO and the system continues trying to place the call in the queue.

You can assign two announcements to each split and administer a second announcement to repeat. When an incoming call is directed to an ACD split, the call is either directed to an agent or is automatically connected to the first announcement. Refer to *DEFINITY ECS Administrator's Guide* for information on how announcements are affected by call forwarding and call coverage.

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First Announcement

After a call enters a split queue, the caller hears ringing and the first announcement delay interval begins. If an agent becomes available during the first announcement delay interval, the call is connected to the agent. Otherwise, the interval expires and the system tries to connect the incoming call to the first announcement, with one of the following results:

- If the first announcement is available, the caller hears ringing, then the first announcement.

- If the announcement is busy and has no queue, the caller hears ringing and the first announcement delay interval is reset. The system tries to access the announcement again when the interval expires.

- If the announcement is busy and has a queue, then:

  — If the queue is full, the caller hears ringing and the first announcement delay interval is reset. The system tries to access the announcement again when the interval expires.

  — If the queue is not full, the call enters the announcement queue and the caller hears ringing, then the first announcement. The system then tries to connect the call to an agent.

- If the announcement is not busy, but is still unavailable, the second-announcement delay interval begins and the system attempts to connect the call to the second announcement.

If there is no first or second announcement, the call remains in queue until answered or removed from the queue.

Forced First Announcement

The first-announcement delay interval defines how long a call remains in queue before the call is connected to the first announcement. If this interval is 0 seconds, the incoming call is automatically connected to the first announcement. This is a forced first announcement — the call is not routed to an agent until after the caller hears the first announcement.

With a forced first announcement, the following occurs:

- If a first announcement is available, the caller hears ringing and then the first announcement. The system then tries to connect the call to an agent.

- If the announcement is busy and has no queue, the system waits 10 seconds and then tries to access the announcement.

- If the announcement is busy and has a queue, then:

  — If the queue is full, the system waits 10 seconds, then tries to access the announcement.

  — If the queue is not full, the call enters the announcement queue and the caller hears ringing, then the first announcement. The system then tries to connect the call to an agent.

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■ If the announcement is not busy but is still unavailable (for example, it may have been deleted), then the system tries to connect the call to an agent.

After a forced first announcement, the caller always hears ringback (or music-on-hold, if administered) until the call is answered or is connected to a second delay announcement. After a first or second delay announcement, the caller hears music-on-hold, if administered.

Second Announcement

After the first announcement, the second-announcement delay interval begins and the caller hears ringing (if there is no forced first announcement), or music, if provided. If an agent becomes available during the interval, the call is connected. Otherwise, the interval expires and the system tries to connect the incoming call to the second announcement, resulting in one of the following:

■ If the second announcement is available, the caller hears ringing or music, then the second announcement.

■ If the announcement is busy and has no queue, the caller hears ringing and the second-announcement delay interval is reset. The system tries to access the announcement again when the interval expires.

■ If the announcement is busy and has a queue, then:

— If the queue is full, the caller hears ringing (only if the first announcement has not been heard) and the second-announcement delay interval is reset. The system tries to access the announcement again when the interval expires.

— If the queue is not full, the call enters the announcement queue and the caller hears ringing (only if the first announcement has not been heard), then the second announcement. The system then connects the call to an agent.

■ If the announcement is not busy but is still unavailable, the call remains in queue until answered or removed from the queue.

After the second announcement, the caller hears music, if provided, or silence and then:

■ If you administered the split to repeat the second announcement, the system tries to connect the call to the second announcement after the delay expires.

■ If you administered the split not to repeat the second announcement, the call remains in the queue until answered or removed from the queue.

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Forced Disconnect

You can connect an incoming call directly to an announcement and then disconnect the
call after the announcement has completed in one of two ways:

- Administer an announcement extension as the incoming destination. The caller is
  directed to the announcement and is disconnected, without being queued for a
  split.

- Administer an announcement extension as a point in a split's coverage path. Calls
  that have been in the queue for a long time are forced to go directly to the
  announcement and are disconnected.

Announcement Rules

The following rules govern announcements a caller hears:

- Calls that reach a split directly always hear a forced first announcement, if
  assigned, regardless of subsequent call coverage, call forwarding, night service, or
  busy signal processing. If these calls queue long enough, they hear first and second
  announcements.

- Calls that reach a split via call coverage receive a second announcement only, if
  administered. The assumption is that a caller has likely heard a first announcement
  at the original split or station before being redirected.

- Calls that reach a split via call forwarding receive first and second announcements
  at the destination split, if administered. These calls can receive a forced first
  announcement at the original split, if administered, but not at the split they are
  forwarded to.

Entering the Queue

When a forced first announcement is not assigned, the system tries to connect an incoming
call to an available agent. If an agent is available, the call is connected to the agent. If all
agents are active (either on an ACD call or in ACW mode), the call enters the split queue.

If no queue is assigned, or if no queue slots are available and the incoming facility is a CO
trunk, the caller hears ringing. The system continues trying to queue the call until a queue
slot becomes available, or until the call is abandoned or an agent becomes available. When
you have administered Intraflow and Interflow with Call Coverage and Call Forwarding
All Calls, the caller hears a busy tone or the call is redirected in any of these cases:

- No split queue is assigned.

- The queue is full.

- No agents are logged in.

- All logged-in agents are in AUX work mode, and the incoming facility is a
  digit-oriented facility (digits are sent to the PBX as in DID, incoming wink, or
  immediate tie trunks)

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NOTE:

Central office trunk (non-DID) calls receive ringback from the CO, so the PBX cannot give these callers a busy signal. The system tries to put such calls into queue until successful or until the call is abandoned.

Priority Queuing

Priority queuing allows priority calls to be queued ahead of calls with normal priority. You can implement priority queuing in two ways:

- Assign Priority Queuing to a calling party's Class of Restriction (COR).

- Assign Priority on Intraflow to an ACD split. This allows calls from the split, when intraflowed into another split, to be queued ahead of nonpriority calls. For more information, see .

Queue Status Indications

You can assign queue status indications on agents' or supervisors' terminals or consoles for ACD calls in queue. For more information, see .

Direct Agent Calling

NOTE:

Direct Agent Calling requires CallVisor Adjunct-Switch Application Interface (ASAI) or EAS. Both originating and called party Class of Restrictions (CORs) must be set to allow Direct Agent Dialing. See for information on Direct Agent Announcements.

Direct Agent Calling (DAC) causes a call to a particular ACD agent to be treated as an ACD call. Agents can enter After Call Work mode for direct agent calls and CMS and BCMS correctly measure these calls as ACD calls.

If an agent is available to answer an ACD call, the direct agent call is delivered to the agent. An agent in Automatic Answer mode hears a zip tone.

An agent with a multifunction phone or who is on-hook and not available to answer an ACD call hears a ring-ping. An agent with a single-line phone and who is off-hook and not available hears the call-waiting tone, even when Call Waiting Termination is not assigned. The ring-ping or call waiting tone is given only once per call when the direct-agent call is queued. The lit work mode button lamp for the split on the agent's phone flashes, indicating that a direct agent call is waiting. Flashing starts when the call queues and stops when all direct agent calls are removed from the queue (that is, they are answered, abandoned, or sent to coverage).

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While on a direct-agent call, the agent becomes unavailable for subsequent ACD calls. If the agent logs off by unplugging the headset, he or she can still answer a direct-agent call in the queue by logging back in and becoming available. Agents who have direct-agent calls waiting are not allowed to log off using a FAC. If the agent is in Manual In mode or pushes the After Call Work (ACW) button while on a direct-agent call, the agent goes to ACW mode.

Generally, direct-agent calls are queued and served in first-in, first-out order before other calls, including priority calls. However, if you administer a skill level for Call Handling Preference, direct-agent calls must be assigned the highest priority for them to be delivered before other ACD calls. Otherwise, calls with a higher skill level are distributed before direct-agent calls.

Note that you can use Multiple Call Handling (MCH) to allow agents to answer a direct agent call with another ACD call active.

Direct-agent calls follow the receiving agent's coverage and call forwarding paths, if these features are administered. Once a call goes to coverage or is forwarded, the call is no longer treated as a direct-agent call, and CMS is informed that the call has been forwarded.

Considerations

Maximum Number of Agents

If an agent is assigned to more than one split, each assignment applies to the maximum number of agents. When computing the number of agents measured by BCMS, count one agent as one agent regardless of the number of splits that the agent will be logged into. For CMS sizing, count one agent for each agent in each split measured by CMS; one agent logged into three splits counts as three agents.

Using the Number of Agents System Capacity screen, you can view the Used, Available, and System Limit counts.

MIA Across Splits/Skills

MIA Across Splits/Skills distributes calls more equally to agents with multiple splits or skills. When agents handle a call for one split or skill, they go to the back of all their idle agent lists.

With MIA Across Splits/Skills, agents may not receive calls from all of their splits/skills. If, for example, split 20 has a very short average agent idle time and split 22 has a very long average agent idle time, agents with both of these skills may never become the most-idle for skill 22 because they continuously take calls for split 20.

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Announcements

Announcements can be analog, aux trunk, DS1, or integrated. Integrated announcements use the 16-channel announcement board and queuing is based on whether one of the 16 channels is available. When a channel becomes available, any announcements on the board can be accessed, including the announcement already being played. A caller may be in queue for an announcement because a channel is not available, even though that announcement is not being used. The maximum queue length for all digital announcements is shown in the Capacities Table in the *DEFINITY Enterprise Communications Server System Description Pocket Reference*. Queues for analog and aux trunk announcements are on a per-announcement basis. You can also install multiple Integrated Announcement boards to allow for more announcements.

If a delay announcement is used, answer supervision is sent to the distant office when the caller is connected to the announcement. Charging for the call, if applicable, begins when answer supervision is returned.

Storing and Retrieving Messages

Leave Word Calling messages can be stored for an ACD split and retrieved by a split member, a covering user of the split, or a system-wide message retriever. The message retriever must have a phone display and proper authorization. You can also assign a remote Automatic Message Waiting lamp to a split agent's terminal to indicate when a message has been stored for the split.

Class of Restriction

Each ACD split and each individual agent is assigned a Class of Restriction (COR). You can use Miscellaneous Restrictions to prohibit selected users from accessing certain splits. You can use Miscellaneous Restrictions or restrictions assigned through the COR to prevent agents from being accessed individually. Unless you administer such restrictions, each agent can be accessed individually as well as through the split.

An agent with origination and termination restriction can receive ACD calls and use the assist function. A terminal in a COR with termination restriction can receive ACD calls.

If you are using Service Observing, administer a COR for observers and agents being observed.

Trunk Groups and ACD Splits

- If you assign an ACD split extension as the incoming destination of a trunk group and that split's extension is later changed, you must also change the trunk group's incoming destination to a valid extension.

- Calls incoming on a non-DID trunk group can route to an ACD split instead of to an attendant. Calls incoming on any non-DID trunk group can have only one primary destination; therefore, the trunk group must be dedicated to the ACD split or a VDN.

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- For MEGACOM 800 Service with DNIS over a wink/wink-tie trunk, if all agents are logged out or in AUX work mode, incoming MEGACOM calls receive a busy signal if no coverage path is provided (unlike other automatic-in trunk groups, which receive ringback from the central office).

- CO switches usually drop calls that remain unanswered after two to three minutes. Therefore, if an incoming CO call queues to a split without hearing an announcement or music, and the caller hears CO ringback for two to three minutes, the CO drops the call.

Agent Considerations

- Agents should not be used for hunt group calls and ACD split calls simultaneously. Otherwise, all calls from one split (either ACD or hunt group) are answered first. For example, if ACD calls are answered first, none of the hunt-group calls are answered until all of the ACD calls are answered.

- Agents with multiappearance phones can receive only one ACD call at a time unless Multiple Call Handling is active. Without MCH, a phone is available for an ACD call only if all call appearances are idle. The agent may, however, receive non-ACD calls while active on an ACD call.

Vector-Controlled Splits

- You can enhance ACD by using Call Prompting, Call Vectoring and Expert Agent Selection. For detailed information on vector-controlled splits, see the *DEFINITY® Enterprise Communications Server Call Vectoring/EAS Guide* (555-230-521). Vector-controlled splits/skills should not be called directly via the split/skill extension (instead of via a VDN mapped to a vector that terminates the call to a vector controlled split/skill). However, if split/skill extensions are called, the calls do not receive any announcements, are not forwarded or redirected to coverage, and do no intraflow/interflow to another hunt group.

- The oldest-call-waiting termination, which is available with Call Vectoring, is supported for agents who are servicing ACD calls only.

Changing Hunt Groups from ACD to Non-ACD

Before you change a hunt group from ACD to non-ACD, all agents in that hunt group must be logged out. When you change a hunt group from ACD to non-ACD, the system places all agents in that hunt group in busy state. If any phones in the hunt group have an Auxiliary Work button, the button lamp lights. To become available for calls, the agent presses the Auxiliary Work button or dials the Hunt Group Busy Deactivation FAC followed by the hunt-group number.

Interactions

- Attendant Call Waiting

    An attendant can originate or extend a call to an ACD split. Attendant Call Waiting cannot be used on such calls. However, such calls can enter the split queue.

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■ Attendant Intrusion

Attendant Intrusion does not work with ACD split extensions because an ACD extension has many agent extensions. It is not possible to determine which agent extension to intrude upon.

■ Automatic Callback

Automatic Callback calls cannot be activated toward an ACD split.

■ Call Coverage

Calls can redirect to or from an ACD split. A vector-controlled split cannot be assigned a coverage path.

For a call to an ACD split to be redirected to call coverage on the Busy coverage criterion, one of the following conditions must exist:

— All agents in the split are active on at least one call appearance and the queue, if there is one, is full.

— No agents are logged in.

— All agents are in Auxiliary Work mode.

If the queue is not full, a call enters the queue when at least one agent is on an ACD call or in ACW mode. Queued calls remain in queue until the Coverage Don't Answer Interval expires before redirecting to coverage. If any split agent becomes available, the call is directed to the agent.

Calls that redirect on the Don't Answer coverage criterion are reported to BCMS/CMS as intraflowed calls.

If a call is queued for an ACD split and redirects via Call Coverage directly to an announcement, the call is dropped after the announcement.

Calls to a split that are directed to an agent's phone do not follow the agent's call coverage path. If an agent activates Send All Calls it does not affect the distribution of ACD calls. An ACD split call directed to an agent's station follows the split's call coverage path, once the agent's Don't Answer interval is met.

■ Call Forwarding All Calls

Call Forwarding All Calls activated for an individual extension does not affect the extension's ACD functions.

When activated for the split extension, calls directed to the split are forwarded from the split. Calls receive no announcements associated with that split (other than a forced first announcement, if administered). The system reports to BCMS or CMS that calls are queued on the split. The system reports to CMS when the call is removed from the queue and forwarded.

Calls can be forwarded to an off-premises destination to activate Intraflow and Interflow. See in this book for more information.

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■ Data Call Setup

Voice-terminal or data-terminal dialing can be used on calls to or from a member of an ACD split.

■ Data Restriction

If the trunk group used for an ACD call has data restriction activated, agents with Automatic Answer activated do not hear the usual zip tone.

■ DCS

CMS cannot measure ACD splits on a DCS network as if they were one switch. Agents for a split must be all on the same switch. If a call to an ACD split is forwarded to a split at another DCS node, the caller does not hear the forced first announcement at the second split.

If an ACD split is in night service, with a split at second DCS node as the night service destination, a call to the first split is connected to the second split's first forced announcement.

■ Dial Intercom

An agent with origination and termination restriction can receive ACD calls and can make and receive dial intercom calls.

■ Hold

If an agent puts an ACD call on hold, information is reported to the CMS via Personal Call Tracking. CMS records the amount of time the agent actually talks on the call.

■ Individual Attendant Access

Individual attendant extensions can be assigned to ACD splits. Unlike voice-terminal users, individual attendants can answer ACD calls as long as there is an idle call appearance and no other ACD call is on the console.

■ Internal Automatic Answer (IAA)

Internal calls directed to an ACD split are eligible for IAA. You cannot administer IAA and ACD Automatic Answer simultaneously on the same station.

■ Intraflow and Interflow

Intraflow and Interflow, when used with Call Forwarding All Calls or Call Coverage, allows splits to be redirected to other destinations on and outside the system. For more information, see .

■ Multiappearance Preselection and Preference

All assigned call appearances must be idle before an ACD call is directed to a phone.

■ Night Service – Hunt Group

When Hunt Group Night Service is activated for a split and the night-service destination is a hunt group, a caller hears the first forced announcement at the original split. The call is redirected to the night-service destination hunt group. If all agents in the hunt group are busy, the caller hears whatever you have assigned.

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- Terminating Extension Group

  A TEG cannot be a member of an ACD split.

- Transfer

  Calls cannot be transferred to a busy split. The transfer fails and the agent transferring the call is re-connected to the call. If an agent presses the Transfer button, dials the hunt-group extension number, and then disconnects while the split is busy, the call is disconnected.

- Phone Display

  For calls dialed directly to an ACD split extension, the identity of both the calling party and ACD split are shown on the phone display.

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Basic Call Management System

Basic Call Management System (BCMS) provides real-time and historical reports to assist you in managing agents, ACD splits (hunt groups), VDNs, and trunk groups. You can display BCMS reports on the Management Terminal or print them on the printer associated with the Management Terminal. In addition, you can schedule historical reports to print on the system printer.

BCMS provides the following reports:

- Real Time Reports

    — Split Status

    — System Status

    — VDN Status

- Historical Reports

    — Agent

    — Agent Summary

    — Split

    — Split Summary

    — Trunk Group

    — Trunk Group Summary

    — VDN

    — VDN Summary

For a detailed description of BCMS and the reports it provides, see *DEFINITY Enterprise Communications Server Basic Call Management System (BCMS) Operations*.

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Table 3-8.   Required Forms

Form	Field
<u>System Parameters Customer-Options</u>	■ BCMS ■ BCMS Service Level ■ ACD ■ BCMS/VuStats Login ID
<u>Agent LoginID</u>	■ When BCMS is being used with EAS, complete all fields for each agent
<u>BCMS/VuStats Login ID</u>	■ When BCMS is being used without EAS, enter a Login ID and Name for each agent.
<u>Feature-Related System Parameters</u>	■ BCMS Parameters ■ BCMS/VuStats Measurement Interval ■ ACD Login Identification Length ■ BCMS/VuStats Abandoned Call Timer ■ System Printer Extension ■ Lines Per Page
<u>Hunt Groups</u>	■ Measured ■ Acceptable Service Level
<u>Trunk Groups</u>	■ Measured
<u>Vector Directory Number (VDN)</u>	■ Measured ■ Acceptable Service Level

All agents should log off before any changes are made to the BCMS/VuStats Login ID form.

Measurements can be turned off for a split while agents are logged in, but agents must be logged off to start measurements for a split.

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Interactions

For information about how BCMS records redirected and conferenced calls, see
*DEFINITY Enterprise Communications Server Basic Call Management System (BCMS)
Operations*.

■ Move Agents From CMS

If agents are moved from one split to another split by the CMS adjunct,
measurements are stopped for the agent's "from" split and started for the agent's
"to" split.

If the adjunct CMS attempts to move an agent that is not being measured by
BCMS into a split that is being measured by BCMS, and the move would exceed
the maximum number of measured agents, the switch rejects the move. Otherwise,
internal BCMS measurements are started for the agent. If the adjunct CMS moves
an agent from a split that is measured by BCMS to a split that is not
BCMS-measured, internal measurements for the agent stop.

■ Night Service

When night service is activated for a split, new calls go to the alternate destination.
BCMS does not record these calls as OUTFLOW. If the destination is a measured
split, BCMS treats the calls as new incoming calls (that is, BCMS does not record
them as INFLOW).

■ System Measurements

The system can produce BCMS reports, adjunct CMS reports, and switch traffic
measurements simultaneously.

BCMS measurements are not determined in the same way as trunk group and hunt
group measurements although some of the information is similar. Therefore, the
two reports may represent data differently.

Table 3-9. System Capacity

	R8csi/si	R8r
Maximum agents displays by Monitor BCMS Split command	100[1]	100[1]
Maximum BCMS terminals	**3**	4
Maximum active maintenance commands for system	**1**	5
Maximum BCMS terminals in monitor mode at same time[2]	**1**	3

1. The Monitor Split command will only display status for the first 100 agents logged into the split
regardless of how many additional agents log in to the split.

2. BCMS monitoring, being a maintenance command, is limited by the active maintenance commands
limit, reduced by 2 in the "r" system configuration (since 2 active command slots are reserved for
the INADs and SAT logins respectively).

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Best Service Routing

To help you maximize productivity across a network of call centers, *DEFINITY* ECS gives you 3 ways to route calls between centers:

- **Interflow**–*DEFINITY* ECS gives you simple ways to unconditionally route—or interflow—calls from one switch to another. For information on unconditionally interflowing calls from splits that are not vector controlled, see <u>"Information Forwarding" on page 3-93</u>. For information on unconditionally interflowing calls from vector-controlled splits, see <u>"Look-Ahead Interflow" on page 3-102</u>.

- **Look–Ahead Interflow (LAI)**-LAI gives you more control over the interflow process. You can set conditions on a switch to specify when calls should be interflowed to other locations. You can also set conditions on a switch to specify when interflow attempts from other switches will be accepted and when they won't be. For information on using LAI, see <u>"Look-Ahead Interflow" on page 3-102</u>.

Best Service Routing (BSR) allows *DEFINITY* ECS to compare specified splits or skills, identify the split or skill that will provide the best service to a call, and deliver the call to that resource. If no agents are currently available in that split or skill, the call is queued. To respond to changing conditions and operate more efficiently, BSR monitors the status of the specified resources and adjusts call processing and routing as appropriate.

BSR is available in single and multi-site versions. Single-site BSR compares splits or skills on the *DEFINITY* ECS where it resides to find the best resource to service a call. Multi-site BSR extends this capability across a network of *DEFINITY* switches, comparing local splits or skills, remote splits or skills, or both, and routing calls to the resource that will provide the best service.

Best Service Routing is summarized in this chapter. For complete information on how to get the most from BSR, see "Best Service Routing" in the *DEFINITY*® *Enterprise Communications Server Call Vectoring/EAS Guide* (555-230-521).

Benefits of Best Service Routing

Both single- and multi-site BSR intelligently compare specific resources to find the one that can best service a call. In addition, multi-site BSR allows you to integrate a network of call centers for better load balancing and optimal agent utilization. Depending on your specific application, BSR can yield a variety of other benefits as shown below.

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Table 3-10. Best Service Routing Benefits

You can benefit by…	As a result of…
Improved customer satisfaction	■ Lower average speed of answer (ASA), thus more calls handled[1]
	■ Greater probability that expert agents will be available for a specific call type (for centers with EAS)
	■ Lower abandonment rate
	By balancing the load between locations in a network, BSR reduces extremes in wait times between the locations.
Increased revenue	■ Lower average speed of answer (ASA), thus more calls handled
	■ Lower abandonment rate
	■ Lower network cost
	■ Greater probability that high-revenue generating agents will be available for a specific call type (for centers with Expert Agent Selection)
Improved productivity	■ Increased agent occupancy rates
	Improve your service without adding staff, or reduce staff while maintaining your current level of service.
	■ Faster delivery of interflowed calls
	Agents at one location in a network are less likely to sit idle while calls wait in queue at another location.
Increased operating flexibility, easier staffing and scheduling	■ Larger pool of agents available to take calls in a split or skill
	Spikes in call volume at a single call center can be distributed across all centers. Temporarily understaffed centers can be supported by the other centers in the network.
Improved service levels	■ Lower average speed of answer (ASA), thus more calls handled
Increased performance	■ Less messaging and processing required per call
Operating separate sites as an integrated "virtual call center"	■ *DEFINITY* ECS ability to compare resources and queue a call to the best one
	■ *DEFINITY* ECS enhanced information forwarding capabilities

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1. A location's ASA may be low because the location is underutilized and agents are frequently sitting idle. When BSR is implemented at such a location, ASA may rise because of the rise in incoming call volume.

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Before You Start Using BSR

For single-site BSR applications, your switch must meet the requirements shown below
(except for LAI). To use multi-site BSR applications, both the switches involved and the
network connecting them must meet all the requirements described in this section.

⚠ CAUTION:

*To ensure your network meets the requirements for BSR support presented below,
contact your Account Executive about BSR network certification.*

Switch Requirements for BSR

Your switch has to meet *all* of the requirements shown below to support Best Service
Routing. Check the settings shown below before you try to use BSR.

Table 3-11.   Requirements to use Best Service Routing

Form	Page	Field	Must be set to…
Software Version	1	Memory Resident	G3V6i.03 or G3V6r.03
System-Parameters Customer-Options[1]	1	G3 Version	V6 or higher
	2	ISDN-BRI Trunks?	Y
		ISDN-PRI Trunks?	Y
	3	Vectoring (G3V4 Advanced Routing)	Y
		Vectoring (Best Service Routing)	Y
		Lookahead Interflow (LAI)[2]	Y
Feature-Related System Parameters	8	Adjunct CMS Release	R3V6 or higher, or left blank

1. ISDN connectivity is only necessary if you want to use multi-site BSR. One or both of
   these fields must be set to "Y." Multi-site BSR operates over both BRI and PRI trunks.

2. Lookahead Interflow is only necessary if you want to use multi-site BSR. For status poll
   and interflow calls used in multi-site BSR applications, set up trunks as you would for
   LAI. See "Look-Ahead Interflow" on page 3-102, for more information. Information
   Forwarding is not required for polling calls.

➤ NOTE:

If you begin using BSR and then decide to turn it off, you will not be able to set
Vectoring (Best Service Routing) to **n** until you remove all BSR commands from
vectors.

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Network Requirements for BSR

To support BSR, networks must meet both the criteria for LAI call control operation over switched networks (see) and the following criteria:

- The network must support end-to-end transport of codeset 0 user data, either as a User-to-User Information Element (UUI IE) or by QSIG Manufacturer Specific Information (MSI IE), in the ISDN SETUP and DISCONNECT messages. The network must also allow User-to-User Information Elements to be transported in the first call-clearing message prior to answer, while a call is still in the "call proceeding" state. (For more information, see .)

    With BSR poll calls, the information is forwarded back in the DISCONNECT message. In this case the network must support forwarding of UUI in the first call clearing message prior to the active state (i.e., while still in the call proceeding state).

    Private networks can be configured for either QSIG (transport via MSI packaged in a codeset 0 Facility IE) or non-QSIG (transport via a codeset 0 UUI IE). Currently, public networks do not support QSIG and user data can only be transported via the UUI IE when supported by the network. Future public network offerings may support QSIG, possibly by Virtual Private Network.

- *DEFINITY* ECS must support the ISDN country protocol.

- The network byte limit for user information contents (the user data portion) must be large enough to carry the data needed for the customer application.

    > **NOTE:**
    > Some public network providers may require service activation and/or fees for user information transport.

- Response time for ISDN signaling should be fast enough that an entire consider series can execute within a single ring cycle.

Enhanced information forwarding has been tested with several major carriers. To find out if these capabilities work with your carrier, check with your account team for the most current information.

If testing has not been done to verify operation over the public networks involved with the preferred specific configuration, use of private ISDN trunking between the nodes should be assumed until successful testing has been completed.

How to Administer BSR

BSR administration varies, depending on whether your switch is configured for single- or multi-site BSR.

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Single-Site BSR

Table 3-12. Required Forms for administering single-site BSR

Form	Field
System Parameters Customer-Options	■ G3 Version ■ Vectoring (G3V4 Advanced Routing) ■ Vectoring (Best Service Routing)
Feature-Related System Parameters	■ Adjunct CMS Release
VDN	■ BSR Available Agent Strategy
Call Vector	■ Complete a form for each vector that uses BSR commands

Multi-Site BSR

Table 3-13. Required Forms for administering multi-site BSR

Form	Field
System Parameters Customer-Options	■ G3 Version ■ Vectoring (Best Service Routing) ■ Vectoring (G3V4 Advanced Routing) ■ Lookahead Interflow (LAI)
Feature-Related System Parameters	■ Adjunct CMS Release
Trunk Group (ISDN-BRI)[1]	■ Outgoing Display ■ Supplementary Service Protocol ■ UUI Treatment
Trunk Group (ISDN-PRI)	■ Outgoing Display ■ Supplementary Service Protocol ■ UUI Treatment
Best Service Routing Application Plan	■ Complete one form for each BSR application

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Table 3-13. **Required Forms for administering multi-site BSR —** *Continued*

Form	Field
VDN	■ BSR Application
	■ BSR Available Agent Strategy
Call Vector	■ Complete a form for each vector (primary, status poll and interflow vectors) in a BSR application

1. Settings in the fields Codeset to Send TCM, Lookahead and Send Codeset 6/7 LAI IE? on the ISDN trunk forms do not affect BSR.

Multi-site BSR requires that Look-Ahead Interflow (LAI) be enabled. See for a list of required forms and fields. Since BSR can forward information such as VDN name, in-VDN time, and collected digits with interflowed calls, also see for instructions.

Detailed Description

To use Best Service Routing on a single switch, you simply use special commands and command elements that are part of the *DEFINITY* ECS call vectoring language. As a result, BSR for a single location can be easily added to existing vectors without modifying other parts of *DEFINITY* ECS.

Multi-site applications work similarly, but additional administration is required. Since steps in a multi-site BSR vector will contact one or more remote locations, you need to define these locations, tell *DEFINITY* ECS how to contact each one, and set up VDNs and vectors to handle communications between the sending switch and each remote switch.

Three VDN/vector pairs must be used in every multi-site BSR application. The Primary VDN/vector pair, on the sending switch, contacts the specified remote switches, collects information, compares the information, and delivers or queues the call to the resource that is likely to provide the best service. Two VDN/vector pairs are needed on each remote switch. A Status Poll VDN/vector pair provides information about the best resource at its location in response to inquiries from BSR applications on other switches. Finally, an Interflow VDN/vector pair is needed to receive and process the calls interflowed from BSR applications on other switches.

Call Surplus Situations

Every BSR application compares a set of predetermined resources (splits or skills) and selects the "best" resource to service the call. In a call surplus situation (no agents available), the best resource is the split or skill with the lowest Expected Wait Time (EWT). For purposes of calculating the best resource in a call surplus situation, BSR allows you to adjust the EWT figure for any split or skill. The actual EWT for calls in queue isn't changed, of course; only the figure used in the calculations performed by the

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BSR feature is changed. You don't have to enter adjustments, but the ability to adjust the EWT for splits or skills allows you to program preferences in vectors. Because of agent expertise, for example, or the availability or cost of tie trunks, you might prefer that some resources *not* service a call unless doing so significantly decreases the call's time in queue.

Agent Surplus Situations

In an agent surplus situation (one or more agents available to take incoming calls), BSR will deliver a new call according to the BSR Available Agent Strategy specified on the VDN form. The "best" resource will be the split or skill that meets the criteria defined by the strategy you've chosen for that VDN. BSR can use any of the five strategies shown in the table below to select an agent when agents are available.

Table 3-14.   BSR Available Agent Strategies

If BSR Available Agent Strategy is set to…	The call will be delivered to…
1st-found	the first available agent. BSR will not consider any other resources as soon as it finds an available agent.
ucd-mia	the agent who has been idle the longest. BSR will compare all the splits or skills specified in the vector before delivering the call.
ead-mia	the agent with the highest skill level relevant to the call who has been idle the longest. BSR will compare all the splits or skills specified in the vector before delivering the call.
ucd-loa	the least-occupied agent. BSR will compare all the splits or skills specified in the vector before delivering the call.
ead-loa	the agent with the highest skill level relevant to the call who is the least occupied. BSR will compare all the splits or skills specified in the vector before delivering the call.

The LOA agent selection method is available as an option on *DEFINITY* ECS R6.3 and newer ECSs. For more information on LOA, see "Automatic Call Distribution" on page 3-25 or the *CentreVu® Advocate User Guide* (585-210-927).

When agents are available in one or more of the specified resources, BSR does not consider EWT adjustments in selecting an agent for a call.

➡ NOTE:
The BSR Available Agent Strategy assigned to a VDN should match the agent selection method used in the splits or skills considered by a BSR application.

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Vector Commands for Single-Site BSR

The following table shows the vector commands and command elements used in single-site BSR applications.

Table 3-15.   Vector Commands and Command elements for Single-Site BSR

Commands and command elements		Use this …
Commands	*consider split/skill*	to obtain the Expected Wait Time or agent data needed to identify the best local resource. One *consider* step must be written for each split or skill you want to check.[1]
	queue-to	with the *best* keyword to queue calls to the best resource identified by the consider sequence.
	check	with the *best* keyword to queue calls to the best resource identified by the consider sequence if the resource meets certain conditions.
Key word	*best*	in *queue-to, check,* and *goto* commands that refer to the resource identified as best by a series of consider steps
Conditional	*wait-improved*	to prevent calls from being queued to an additional split or skill when the reduction in Expected Wait Time isn't enough to be useful. "Wait improved" means that a call's EWT must be improved by a specific amount (a figure you specify in seconds) over its current EWT or *DEFINITY* ECS won't queue it to the additional split or skill.
User adjustment	*adjust-by*	to specify your preferences for the splits or skills that might handle calls in a particular vector. Any time a *consider* step returns EWT for a local split or skill, you can increase this value.[2] As a result, this split or skill is less likely to service a call unless its EWT is significantly shorter than that of any other available split or skill.
		For example, you may prefer that the main split or skill in a vector handle as many calls as possible but want to use another split or skill as a backup. You can write the *consider* step that checks the backup split or skill to increase the returned EWT by a set amount.

---

1. Since the *consider* command is designed to compare two or more resources, *consider* commands are typically written in sequences of two or more with the sequence terminating in a *queue-to best* step. This set of *consider* commands and a *queue-to best* step is called a consider series.

2. Of course, *DEFINITY* ECS doesn't increase the actual wait time in a split or skill. It only adjusts EWT in the calculations used to identify the "best" split or skill to which to queue a call.

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Vector Commands for Multi-Site BSR

The following table summarizes the vector commands and command elements that support multi-site BSR applications.

Table 3-16.   Vector Commands and Command Elements for Multi-Site BSR

Commands and command elements		Use this…
Commands	*consider split/skill*	to obtain the Expected Wait Time or agent data needed to identify the best local resource. One *consider* step must be written for each split or skill you want to check.[1]
	consider location	to obtain the Expected Wait Time or agent data needed to identify the best resource at a remote switch. One *consider* step must be written for each location you want to check. Routing information is obtained from the BSR Application plan for the active VDN.
	reply-best	to return data to another switch in response to a status poll
	queue-to	with the *best* keyword to queue calls to the best resource identified by the consider sequence.
	check	with the *best* keyword to queue calls to the best resource identified by the consider sequence if the resource meets certain conditions.
Key word	*best*	in *queue-to, check,* and *goto* commands that refer to the resource identified as best by a series of consider steps
Conditional	*wait-improved*	to prevent calls from being queued to an additional split or skill—local or remote—when the reduction in Expected Wait Time isn't enough to be useful. "Wait improved" means that a call's EWT must be improved by a specific amount (a figure you specify in seconds) over its current EWT or *DEFINITY* ECS won't queue it to the additional split or skill.
User adjustment	*adjust-by*	control long-distance costs and limit trunk usage. Any time a vector polls a local or remote resource, you can increase the EWT returned by that resource by a preset amount.[2] You might want to set this adjustment to reflect factors such as the availability of tie trunks or agent expertise at remote locations.

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1.   Since the *consider* command is designed to compare two or more resources, *consider* commands are typically written in sequences of two or more with the sequence terminating in a *queue-to best* step. This set of *consider* commands and a *queue-to best* step is called a consider series.

2.   Of course, *DEFINITY* ECS doesn't increase the actual wait time in a split or skill. It only adjusts EWT in the calculations used to identify the "best" split or skill to which to queue a call.

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Interactions

- Agent Terminal Display

  If collected digits are forwarded with an interflowed call, the forwarded digits are displayed to the answering agent (unless they're overridden with newly collected digits).

- Best Service Routing (BSR)/LAI

  Restrictions and interactions that apply to LAI also apply to BSR status poll and interflow calls. See the *DEFINITY® Enterprise Communications Server Call Vectoring/EAS Guide* (555-230-521) or the for more information.

- BCMS

  BCMS does not report accumulated in-VDN time.

  BCMS does not log LAI attempts and therefore will not log BSR status polls, which are treated as LAI attempts.

- Call Vectoring

  The following considerations apply to ALL vectors when BSR is enabled on your switch.

  route-to **VDN:** If a call is routed to a new VDN, any "best" resource data defined by a series of consider steps in the previous VDN will be initialized (cleared)

  goto vector: If a *goto vector* command is executed, any "best" resource data produced by a series of consider steps in the original VDN will remain with the call and can be used in the subsequent vector.

  best keyword: The *best* keyword cannot be used as a replacement for split/skill in the following vector commands:

  — *converse-on split/skill*

  — *messaging split/skill*

  The *best* keyword can be used in the following commands, but only with the conditionals listed:

  — *goto step* or *goto vector* commands using the *expected-wait* or *wait-improved* conditionals

  — *check* commands using the using the *unconditional*, *expected-wait*, or *wait-improved* conditionals

  Consider command: Don't use other commands within a series of *consider* steps, since these may delay the execution of the series.

  Splits or skills used in *consider* commands must be vector controlled.

  Converse command: Collected digits forwarded with the call will be passed to VRU via the "digits" data passing type.

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■ Direct Department Calling

BSR will function when the considered splits use DDC call distribution. Once the best resource is determined, the actual call distribution will follow the split's DDC setting regardless of the BSR Available Agent Strategy. DDC may not be used as a BSR Available Agent Strategy.

■ Expert Agent Selection

EAS is required to use the EAD-MIA or EAD-LOA Available Agent Strategy. EAS VDN skills (1st, 2nd, 3rd) can be used in *consider skill* commands.

■ Facility Restriction Levels

The FRL applies to status poll and interflow calls in the same way it works with the *route-to number* command.

■ ISDN

Best Service Routing and globally supported information transport are fully functional over ISDN PRI or ISDN BRI trunking facilities.

■ Lucent Distributed Networking via QSIG - Manufacturers Specific Information (MSI)

BSR will not function with systems from other vendors (unless that vendor develops a corresponding capability that works with *DEFINITY* ECS).

■ Multi-Split/Skill Queuing

A call may be queued up to 3 times by *queue-to* or *check* commands in the same vector. One vector may therefore contain up to 3 series of *consider* steps. Each series must be followed by a *queue-to best* step. Each consider series will select the best remote resource from the options you specify and queue the call to that resource.

BSR can only queue simultaneously on the origin switch. BSR gives up control of a call once it queues the call at a remote resource.

■ Network Access

BSR operates over public, private, or virtual private (for example, SDN) ISDN-BRI and -PRI networks that meet the criteria explained in . Best Service Routing requires that the network support transport of user-to-user data via MSI or UUI as a codeset 0 Information Element. The numbers administered on the BSR Application Plan form are expected to access VDNs via ISDN trunks.

Administration or call processing will not prevent access to other types of routing numbers, but BSR is only intended to support the types of applications described in this section. Attempts to use the BSR feature for any other purposes may not work.

■ Operating Support System Interface (OSSI)

The new administration commands, conditionals, keywords and forms are available via OSSI.

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■ QSIG

LAI, BSR, and information forwarding function over QSIG trunk facilities if the remote locations are the *DEFINITY* systems. BSR and information forwarding require R3V6.3 or later switch software.

■ Redirection on No Answer (RONA)

Calls redirected to a VDN by RONA can be subsequently processed and BSR or LAI applications. When the RONA feature redirects a call to a VDN, any best resource data defined in a previous vector will be initialized (cleared).

■ Service Observing

You can observe a call in BSR or LAI processing as long as the call is still connected through the local *DEFINITY* ECS. All current restrictions on Service Observing still apply.

■ Transfer

If a call is transferred to a VDN, any best resource data defined in previous vector processing will be initialized (cleared). In fact, transferred calls do not forward any of the information that is forwarded with interflows (previously collected digits, In-VDN time, etc.).

■ Trunk Access Code (TAC)

Use of routing numbers (status poll or interflow) that utilize TACs is not recommended since the required in-band outpulsing slows the setup operation significantly.

■ VDN Override

VDN Override applies to the BSR Application Number and the Available Agent Strategy option assigned on the VDN form. It also applies to the VDN name forwarded via Information Forwarding. When a *consider* step is executed, the application number and available agent strategy assigned to the active VDN for the call will be used.

■ VDN Return Destination

The best resource data for a call is initialized when the call first leaves vector processing and therefore will not be available should the call return to vector processing.

■ VuStats

No enhancements have been added for BSR.

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Call Management System

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Call Management System

Call Management System (CMS) allows you to collect and monitor ACD facilities and personnel. You can create reports on the status of agents, splits, trunks, vectors, and vector directory numbers. You can store historical CMS reports or display real-time reports at a terminal.

Unlike Basic Call Management System (BCMS), the CMS resides on an adjunct computer that connects to the switch via a data link. See Figure 3-1 for a typical ACD CMS configuration.

This section describes how to administer the interface between the *DEFINITY* ECS and the *CentreVu* CMS. See *CentreVu Call Management System Administration* (585-210-910) for more information on CMS.

How to Administer the *DEFINITY*/CMS Interface

Table 3-17. Required Forms

Form	Field
Feature-Related System Parameters	■ Adjunct CMS Release
	■ Automatic Call Distribution
	■ ACD Log-in Identification Length
	■ Minimum Agent Login ID
	■ Password Length
Processor Interface Data Module (R5si and later configurations only)	■ All (for one CMS link)
Processor/Trunk Data Module (PDM)	■ All (for one CMS link)
X.25 Data Module (R5r and later configurations only)	■ All (for one CMS link)
Processor Channel Assignment	■ All (for one CMS link)
Interface Links	■ All (for one CMS link)
Hunt Group	■ Measured
Trunk Group (All)	■ Measured
Vector Directory Number (VDN)	■ Measured
Packet Gateway Board (PGATE) (R5r and later configurations only)	■ All

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- ■ **Feature-Related System Parameters form** — In ACD Log-in Identification Length, enter the number of digits the agent must dial to log into the ACD split. Enter the appropriate Adjunct CMS Release number.

- ■ **Processor Interface Data Module form** — Assign a physical channel and maintenance extension. For the PDM data module, assign a digital line port. For the X.25 data module, assign DTE/DCE as **dte** and Baud Rate as **9600**.

- ■ **Processor Channel Assignment form** — Enter the CMS link number from the Interface Links Form. Enter the appropriate Interface Channel and Remote Proc Chan. Leave the Machine ID field blank.

- ■ **Communication Interface Link form** — Enter in Destination Digits the extension assigned to the PDM data module. Set the Prot field **bx25.** Set the DTE/DCE field to **dte**.

- ■ Complete the form that applies (Hunt Group, Trunk Group, and VDN Forms) when the Measured field is set to either external or both. See the *DEFINITY Enterprise Communications Server System Description Pocket Reference* for the maximum number of hunt groups, trunk groups, agents, and VDNs that can be measured.

- ■ **Packet Gateway (PGATE) form** — Enter the board location.

Considerations

CMS measurements may be inaccurate on calls to splits that intraflow to the attendant group.

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Call Prompting

See the *DEFINITY® Enterprise Communications Server Call Vectoring/EAS Guide*
(555-230-521) for a detailed description of Call Prompting and its uses. The guide
contains information that is critical to the effective and efficient use of this feature.

Call Prompting uses specialized vector commands to process incoming calls based on
information collected from the caller or from an ISDN-PRI message. It can be used in
various applications to better handle incoming calls. The following list gives a brief
description of some Call Prompting applications.

- Automated Attendant —— Allows the caller to enter the extension of the party that
  he or she would like to reach. The call is routed to that extension.

- Data In/Voice Answer (DIVA) Capability —— Allows the caller to hear an
  announcement based on the digits that he or she enters, or to be directed to a hunt
  group or another system extension.

- Data Collection —— Allows the caller to enter data that can be used by a
  host/adjunct to assist in call handling. This data, for example, may be the caller's
  account number.

- CINFO (Caller Information Forwarding) Routing — Allows a call to be routed
  based on digits supplied by the network in an ISDN-PRI message.

- Message Collection —— Gives the caller the option of leaving a message or waiting
  in queue for an agent.

How to Administer Call Prompting

Required Forms

Form	Field
System Parameters Customer-Options	■ Vectoring (Prompting) ■ Vectoring (CINFO) ■ ISDN-PRI — for CINFO only ■ This form describes other vectoring options that may be required depending upon the application.
Feature-Related System Parameters	■ Prompting Timeout
Vector Directory Number	■ All
Announcements/Audio Sources	■ Complete all fields for each extension that provides a Call Prompting announcement
Hunt Group	■ Vector

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Required Forms

Form	Field
Call Vector	■ Complete a form for each Call Prompting vector
Station (multi-appearance)	■ Button/Feature Button Assignments - callr-info
Attendant Console	■ Feature Button Assignments -callr-info

If Vectoring (Basic) is not enabled on the System-Parameters Customer-Options form, the Call Prompting feature cannot queue calls or make conditional checks based on queue or agent status, time of day, or day of week.

CINFO requires the AT&T Intelligent Call Processing (ICP) service, ISDN-PRI, and Vectoring (Prompting).

You can administer any display-equipped phone or attendant console with a Caller Information CALLR-INFO button. The button displays digits collected for the last *collect digits* command.

You must have Call Vectoring software for CMS to use Call Prompting (with or without Call Vectoring) with CMS.

Considerations

Call prompting, with the exception of CINFO, competes with several features for ports on the call classifier - detector circuit pack or equivalent.

Interactions

The following interactions apply specifically to Call Prompting. For general Call Vectoring interactions that may affect Call Prompting applications see .

■ Authorization Codes

If authorization codes are enabled, and a *route-to* command in a prompting vector accesses AAR or ARS, if the VDN's FRL does not have the permission to use the chosen routing preference, then the system does not prompt for an authorization code and the *route-to* command fails.

■ CallVisor ASAI

ASAI-provided digits can be collected by the Call Vectoring feature via the *collect* vector command as dial-ahead digits. CINFO is passed to CallVisor ASAI.

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■ Hold

With the exception of CINFO, if a call is put on hold during the processing of a *collect* command, the command restarts, beginning with the announcement prompt, when the call is taken off hold. All dialed-ahead digits are lost. Similarly, if a call to a vector is put on hold, vector processing is suspended when a *collect* command is encountered. When the call becomes active, the *collect* command resumes.

■ Inbound Call Management (ICM)

You can use Call Prompting to collect information that may later be used by an adjunct to handle a call.

■ Transfer

If a call to a VDN is transferred during a *collect* command, the *collect* command restarts when the transfer is complete, and all dialed-ahead digits are lost. Similarly, if a call to a vector is transferred, vector processing is suspended when a *collect* command is encountered. When the transfer is complete, the *collect* command resumes. This is not true when a *collect* command collects CINFO digits. In this case vector processing is not suspended. Attendant extended calls do suspend vector processing in the same way as transferred calls.

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Call Vectoring

Call Vectoring processes incoming and internal calls according to a programmed set of commands. These commands, called vector commands, determine the type of processing that calls receive. For example, vector commands can direct calls to on-premise or off-premise destinations, to any hunt group, split, or skill, or to a specific call treatment such as an announcement, forced disconnect, forced busy, or delay. Vectors can queue or route calls based on a variety of different conditions.

There are many different applications for Call Vectoring. However, it primarily is used to handle the call activity of ACD splits/skills.

For more information about administering call vectoring, see "Best Service Routing'' on page 3-44 and "Look-Ahead Interflow'' on page 3-102.

See the *DEFINITY® Enterprise Communications Server Call Vectoring/EAS Guide* (555-230-521) for a detailed description of Call Vectoring and its uses. The guide contains information that is critical to the effective and efficient use of this feature.

How to Administer Call Vectoring

Table 3-18. Required Forms

Form	Field
System Parameters Customer-Options	■ Vectoring (Basic)
	■ Vectoring (G3V4 Enhanced)
	■ Vectoring (G3V4 Advanced Routing)
	■ Vectoring (ANI/II-Digits Routing)
	■ Vectoring (Attendant Vectoring)
Vector Directory Number	■ All
Announcements/Audio Sources	■ Complete all fields for each extension that provides a vectoring announcement
Hunt Group	■ Vector
	■ ACD
Call Vector	■ Complete a form for each vector
Feature-Related System Parameters	■ Vector Disconnect Timer
	■ Music/Tone on Hold
	■ Port
	■ Music (or Silence) on Transferred Trunk Calls
Vector Routing Table	■ All

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Do not change a vector while it is processing calls since calls already in the vector could experience problems. Instead, add a new vector and change the VDN to point to the new vector.

You cannot enter a VDN extension in the fields listed in <u>Table 3-19</u>.

Table 3-19.   VDN Extension Cannot be Entered in these Fields.

Form	Field
<u>Announcements/Audio Sources</u>	■ Extension Number
<u>Call Coverage Answer Group</u>	■ Group Member Assignments
<u>Call Coverage Paths</u>	■ Coverage Point Assignments, other than the last coverage point
<u>Console Parameters</u>	■ CAS Back-up Extension
<u>Feature-Related System Parameters</u>	■ ACA Long Holding Time Originating Extension
	■ ACA Short Holding Time Originating Extension
	■ Extensions With System wide Retrieval Permission
	■ Controlled Outward Restriction Intercept Treatment
	■ Controlled Termination Restriction (Do Not Disturb)
	■ Controlled Station-to-Station Restriction
<u>Hospitality</u>	■ Extension of PMS Log Printer
	■ Extension of Journal/Schedule Printer
	■ Extension of PMS
	■ Extension to Receive Failed Wakeup LWC Messages
<u>Hunt Group and Agent LoginID with EAS</u>	■ Supervisor Extension
	■ Member Extensions
<u>Intercom Group</u>	■ Member Extensions
<u>Listed Directory Numbers</u>	■ LDN Extensions
<u>Loudspeaker Paging and Code Calling Access</u>	■ Extension Numbers Assigned to Codes
<u>Pickup Groups</u>	■ Member Extensions

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**Table 3-19.   VDN Extension Cannot be Entered in these Fields. —
*Continued***

Form	Field
Remote Access	■ Remote Access Extension
Station Forms	■ Hunt to Station
Terminating Extension Group	■ Member Extensions

You can enter a VDN extension in the following fields.

Table 3-20.   VDN Extension Can be Entered in these Fields.

Form	Field
Abbreviated Dialing Lists	
Call Coverage Paths	■ allow it as the last coverage point only
Hunt Group	■ Night Destination
Listed Directory Numbers	■ Night Destination
Trunk Groups	■ Night Destination ■ Incoming Destination

You cannot enter a VDN extension as auxiliary data for the following buttons:

- Bridged Appearance (brdg-app)
- Data Call Setup (data-ext)

You can enter a VDN extension as auxiliary data for the following buttons:

- Remote Message Waiting Indicator (aut-msg-wt)
- Facility Busy Indication (busy-ind)
- Manual Message Waiting (man-msg-wt)
- Manual Signaling (signal)

Interactions

- AP Demand Print

  A VDN cannot be used as an argument to the feature access code for AP Demand
  Print.

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■ Attendant Control of Trunk Group Access

If a *route-to* step in a vector dials a controlled trunk group, vector processing continues at the next step.

■ Attendant Recall

Attendant Recall to a VDN is blocked.

■ *AUDIX* Interface v

A *route-to* step in a vector may call the *AUDIX* extension. If a voice port can be seized to that adjunct, vector processing is terminated. The system sends a message to *AUDIX* requesting retrieval of messages for the originating extension (not the VDN).

AUDIX may also be accessed by the *queue-to split* and *check split* commands. Also, the messaging step may use an *AUDIX* hunt group in its operation.

■ Authorization Codes

If authorization codes are enabled, and if a *route-to* command in a prompting vector accesses AAR or ARS and the VDN's FRL does not have the permission to utilize the chosen routing preference, then no authorization code is prompted for and the *route-to* command fails.

■ Automatic Alternate Routing (AAR)/Automatic Route Selection (ARS)

Any *route-to* command in a vector can dial an AAR/ARS FAC followed by other digits. It cannot dial only the FAC.

■ Automatic Callback

Automatic Callback cannot be used for calls placed to a VDN.

■ Bridged Call Appearance

VDN extensions cannot be assigned to bridged appearance buttons. A *route-to* command to an extension with bridged appearances updates bridged appearance button lamps.

■ Busy Verification of Terminals and Trunks

Busy verification of VDNs is denied and intercept tone is returned.

■ Call Coverage

A VDN may be administered as the last point in a coverage path.

■ Call Forwarding

Calls can be forwarded to a VDN. Calls placed by a *route-to* command to an extension that has call forwarding activated are forwarded.

An attendant or phone with console permission cannot activation/deactivation call forwarding for a VDN.

An attendant or phone with console permission cannot activation/deactivation call forwarding for a vector-controlled hunt group.

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■ Call Detail Recording

You can administer the Feature Related System Parameters form so that the VDN extension is used in place of the Hunt Group or Agent extension. This overrides the "Call to Hunt Group - Record" option of CDR for Call Vectoring calls.

If a vector interacts with an extension or group that has Call Forwarding All Calls active, normal Call Forwarding/CDR interactions apply.

For incoming calls to a VDN, the duration of the call is recorded from the time answer supervision is returned.

— If answer supervision is returned by the vector, and the call never goes to another extension, then the VDN extension is recorded as the called number in the CDR record.

— If the call terminates to a hunt group, then the VDN, hunt group, or agent extension is recorded as the called number as per the administration described above.

— If the call terminates to a trunk, then the following two CDR records are generated:

■ An incoming record with the VDN as the called number and the duration from the time answer supervision was provided to the incoming trunk.

■ An outgoing record containing the incoming trunk information as the calling number and the dialed digits and the outgoing trunk information as the called number.

Outgoing vector calls generate ordinary outgoing CDR records with the originating extension as the calling number.

No Ineffective Call Attempt records are generated for Call Vectoring *route-to* commands that are unsuccessful.

■ Call Detail Recording — Account Code Dialing

If a *route-to number* command in a vector specifies an CDR account code, vector processing continues at the next step.

■ Call Park

Calls cannot be parked on a VDN.

■ Call Waiting Termination

If an extension is busy and has call waiting termination administered, the *route-to with cov n* operation is considered unsuccessful and vector processing continues at the next step. *Route-to with cov y* is successful (call will wait) and vector processing terminates.

■ Class of Restriction

Each VDN in the system has a COR associated with it. This VDN COR is used to determine the calling permissions/restrictions, the AAR/ARS PGN, and the priority queuing associated with a vector.

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■ Code Calling Access

A VDN cannot be used as the argument to the code calling access feature access code.

If a *route-to number* command in a vector specifies the code calling feature access code, vector processing continues at the next step.

■ Conference

A call to a VDN can be included as a party in a conference call only after vector processing terminates for that call.

■ Data Restriction

Music will play on calls from data restricted extensions when the call receives music as the result of a wait-time vector step.

■ Facilities Restriction Level

If a *route-to* command dials an external number via AAR/ARS, the FRL associated with the VDN COR is used to determine the accessibility of a routing preference in an AAR/ARS pattern.

■ Facility Busy Indication

The facility busy lamp indication for a VDN is always off. A facility busy button may be used to call a VDN.

■ Facility Test Calls

If a *route-to number* command in a vector specifies a Facility Test Call, vector processing continues at the next step.

■ Forced Entry of Account Codes

If a COR requiring entry of account codes is assigned to a VDN, the *route-to number* commands executed by the associated vector are unsuccessful and vector processing continues at the next step.

■ Individual Attendant Access

A call sent to an attendant by a *route-to number* command can wait in the attendant priority queue. The call is removed from vector processing.

■ Integrated Directory

VDN names and extensions are not available in the Integrated Directory feature.

■ Intercept Treatment

A VDN cannot be used for Intercept Treatment.

■ Inter-PBX Attendant Calls

A *route-to number* command in a vector can dial the Inter-PBX Attendant. If the call attempts to access a controlled trunk group, vector processing continues at the next step.

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■ Intraflow and Interflow

The functionality of intraflow and interflow may be obtained using the *check* and *goto* Call Vectoring commands.

Calls may intraflow from an ACD split which is not vector-controlled into one that is vector-controlled.

■ Leave Word Calling

LWC messages cannot be stored, canceled, or retrieved for a VDN.

■ Night Service

A VDN can be administered as a night service destination.

Route-to commands that route to destinations with night service activated redirect to the night service destinations.

■ Priority Calling

A VDN cannot be used with the priority calling access code. Intercept tone is supplied to the user. If a *route-to number* in a vector specifies the priority calling access code, vector processing continues at the next step.

■ Property Management System Interface

VDNs cannot be used with the following features and functions: Message Waiting Notification, Check-In, Check-Out, Room Status, and Automatic Wakeup.

■ Recorded Announcement

The first announcement extension, second announcement extension, first announcement delay, second announcement delay, and recurring second announcement do not exist for a vector-controlled hunt group.

■ Redirection on No Answer

If an ACD split/skill or Direct Agent call is not answered after an administered number of rings, RONA can redirect that call to a VDN for alternate treatment.

■ Ringback Queuing

External call attempts made via *route-to* commands with coverage no are not queue via Ringback Queuing when all trunks are busy. External call attempts made via *route-to* commands with coverage yes are.

■ Send All Calls

If the destination of a *route-to with coverage no* command has the Send All Calls feature active, calls are not redirected. If there is an idle appearance, the call terminates and vector processing stops. If not, vector processing continues at the next step.

If the Send All Calls button is pressed after a vector call is terminated, button activation is denied.

■ Time of Day Routing

Since a *route-to number* command in a vector can specify the AAR or ARS access codes, the TOD routing algorithm can be used to route the call.

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■ Timed After Call Work (ACW)

A Timed ACW interval can be assigned to a VDN.

■ Timed Reminder

The attendant Timed Reminder is not available for calls placed, transferred, or extended to a VDN. Vectoring causes all other timers to be ignored.

■ Transfer

Calls can be transferred to a VDN.

■ Traveling Class Mark

A TCM is sent when a *route-to* command dials a seven-digit ETN or 10-digit DDD number via AAR/ARS. This TCM is the FRL associated with the VDN COR.

■ VDN in a Coverage Path

A call covering to a VDN can be routed to any valid destination by the call vectoring command *route-to*. The coverage option for the *route-to digits* command is disabled for covered calls. In other words, the *route-to digits with coverage=y* functions like the r*oute-to digits with coverage=n* command when processing covered calls. When the *route-to* command terminates a covered call locally, information identifying the principal and the reason for redirection are retained with the call. This information can be displayed on display phones or passed to an *AUDIX* or Message Center system.

The class of restriction assigned to a VDN determines the partition group number (PGN). The PGN in turn determines the AAR or ARS routing tables used by *route-to* commands.

When a call covers to a VDN, VDN override has no effect on the display shown on an answering display terminal. This station will show the normal display for a covered call.

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CentreVu Advocate

CentreVu Advocate is a collection of features (only available in the Expert Agent Selection (EAS) environment) for selecting an agent for a call or selecting a call for an agent. These *CentreVu* Advocate features are:

1. Service Level Supervisor—allows you to select calls from a skill or skills in a pre-defined over threshold state.

   When one or more of an agent's skills are in an over threshold state, the agent's normal call handling preference may be ignored. In this situation, calls are selected only from the over threshold skills. In addition, an agent can be administered as a reserve agent for a skill or group of skills. In this situation, the agent receives calls for the skill or group of skills only when the skill or group of skills is in an over threshold state.

2. Percent Allocation—compares an agent's work time in each assigned skill against an administered percentage allocation for each assigned skill to determine which call to select when an agent becomes available.

   The call selected is the call that minimizes the overall deviation between the agent's work time for all assigned skills and the agent's administered percentage allocations for all assigned skills.

   This feature can be used to provide a fixed level of service for one skill or group of skills, relative to other skills.

3. Least Occupied Agent—The Least Occupied Agent feature uses agent occupancy, rather than position in an idle agent queue, to determine which agent to select when a call arrives. Agent selection through Least Occupied Agent is based on the total time an agent has with one or more Automatic Call Distribution (ACD) calls ringing, active, or on hold for any of an agent's assigned skills, and optionally, the total ACW time for any of an agent's assigned skills divided by the total time staffed in any assigned skill. Agent AUX time is not included in the calculation of agent occupancy.

   Prior to *DEFINITY* ECS R8, if an agent logged into a skill at the start of a shift or after being in the AUX work state, that agent's occupancy was low. That agent was then bombarded with calls while agents already logged in maintained their current incoming call level. In *DEFINITY* ECS R8, agents who log into a skill or return from the AUX state are assigned an occupancy similar to existing agents in that skill. This enahncement makes call distribution within a skill fairer to all of the agents in the skill, rather than favoring agents who have been logged in for a longer period of time or who have not been in the AUX state.

   This feature can be used to eliminate "hot seat" agents, for example, agents who receive more calls because they have more assigned skills relative to other agents.

4. Predicted Wait Time—Prior to *CentreVu* Advocate only a single measurement, Current Wait Time, was used to determine which call to select when an agent became available. Now a second measurement, Predicted Wait Time, may be used. Predicted Wait Time is defined as Current Wait Time plus Weighted Advance Time.

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This feature can be used to provide an improved level of service for a split or skill with a smaller number of staffed agents or a longer call handling time relative to other splits or skills.

5. Service Objective—The Service Objective feature uses the ratio of either Current Wait Time or Predicted Wait Time and the administered acceptable service level.

   This feature can be used to provide an improved level of service for a more important skill by administering a lower acceptable service level for that skill, relative to other skills.

6. Agent Counting—The Logged-in *CentreVu* Advocate Agent Count feature (available with *DEFINITY* ECS R8) counts the number of *CentreVu* Advocate agents who are logged in at the call center. The feature bases the count on whether or not a logged-in agent has any *CentreVu* Advocate feature(s), except Predicted Wait Time, assigned or associated with the agent. With this feature, *CentreVu* Advocate counted agents are still counted as ACD agents.

   For example, a call center purchased software capacity for 100 ACD agents and 25 *CentreVu* Advocate agents. This call center could have a maximum of 25 *CentreVu* Advocate agents logged in and 75 additional, non-Advocate ACD agents logged in at the same time.

7. Reserve Agent Time in Queue Activation—Reserve agents can be optionally activated if a call's time in queue exceeds the administered Service Level Supervisor threshold. This means that priority queuing may no longer be required to obtain a higher percentage answered within service level target on small volume (less than one call per minute) skills.

   The Reserve Agent Time in Queue can be activated on the Hunt Group form by enabling the Activate on Oldest Call Waiting field.

   Reserve agents are dropped off the skill only when both of the following conditions are met:

   - The EWT for the skill drops below both administered thresholds,

   - The head call's time in queue no longer exceeds the Service Level Supervisor threshold (oldest call waiting time).

8. Call Selection Override—Within Service Level Supervisor, there is a Call Selection Override system-wide parameter. The default setting for this parameter is ON (set to Y on the System Parameters form). For more information on administering Call Selection Override, see the *CentreVu® Advocate User Guide* (585-210-927).

   When call selection override is on, agents will receive calls based on their assigned call handling preference as long as the skills are in an under-threshold state. Once a standard or reserve skill or skills goes into an over threshold state, agents who become available with this skill are diverted from their primary tasks and start receiving calls from the skill that is over threshold. This includes top, backup, roving, allocated, and reserve agents. All agents who become available ignore their normal tasks and help the skill that is in trouble. As soon as a skill goes over threshold, all agents who have this skill as standard or reserve are automatically reprioritized, giving this skill immediate attention until the skill returns to normal.

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With Call Selection Override off (set to N), agents keep their assigned call handling priorities in skill over threshold situations, and reserve agents are added to handle the skill after other skills. When the overload threshold is exceeded for a skill, standard agents continue with their primary tasks, but will serve a skill to which they are assigned as reserve agents if that skill is over threshold and if none of their standard skills have calls waiting in queue.

Prior to *DEFINITY* ECS R8, Call Selection Override was administered only on a call center-wide basis. With *DEFINITY* ECS R8, Call Selection Override can be administred down to the per-skill basis. When CSO is on, agents receive calls based on their assigned call handling preference as long as the skills are in an under-threshold state. Once a standard or reserve skill/skills goes into an over-threshold state, agents with this skill who become available are diverted from their primary tasks and start receiving calls from the skill that is over-threshold. This enhancement to CSO allows administrators to target the benefits of overriding agent skills to specific skills instead of having to apply the override to the entire call center.

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Table 3-21.   Required Forms

Form	Field
System-Parameters Customer-Options	■ CentreVu Advocate ■ Logged-In Advocate Agents
Feature-Related System-Parameters	■ ACW Agents Considered Idle ■ Call Selection Measurement ■ Service Level Supervisor Call Selection Override
Hunt Group	■ EAD-LOA ■ Level 1 Threshold (sec) ■ Level 2 Threshold (sec) ■ Service Level Supervisor ■ Acceptable Service Level ■ Activate on Oldest Call ■ UCD-LOA
Agent LoginID (Call Handling Preference Greatest-Need or Skill-Level)	■ Service Objective

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Table 3-21. Required Forms

Form	Field
Agent LoginID (Call Handling Preference Percent Allocation)	■ Direct Agent Calls First ■ Percent Allocation ■ Reserve Level
Reason Code Names	■ Affect Agent Occupancy
System Capacity	■ Logged-In Advocate Agents

Considerations

■ Agent Call Handling Preference

A new option, Service Objective, will be added for the existing Greatest Need and Skill Level call handling preferences. A new call handling preference, Percent Allocation, will be added that selects a call based on minimizing the deviation between an agent's work time for all assigned skills and the administered percentage allocations for these skills. A new option, Direct Agent Calls First, will be added for the new Percent Allocation call handling preference.

■ Agents in Multiple Skills

The *CentreVu* Advocate features, including Service Level Routing, are designed for agents with more than one administered skill.

■ Agent Login/Logout

The agents work time measurements will be re-initialized when an agent logs in and will be accumulated until the agent logs out.

The count of logged-in *CentreVu* Advocate agents will be adjusted whenever a non-AAS/non-*AUDIX* agent logs in and out.

When an agent's skill set is changed from CMS using either the Change Agent Skills or Multi-Agent Skill Change command, the agent is logged in with the new skill set and the agent's work time and occupancy measurements will be re-initialized.

The current value of the logged-in *CentreVu* Advocate agents count, the number of *CentreVu* Advocate agents that may be logged-in before reaching the administered Logged-In *CentreVu* Advocate Agents limit, and the current value of the Logged-In *CentreVu* Advocate Agents field on the system-parameters customer-options form may be displayed using the display capacity command.

■ Agent Work States

Following login, an agent's state will be changed to AUX for all reserve and non-reserve skills. When an agent becomes available, the agent's state will be changed to AVAILABLE, for all non-reserve skills and for all reserve skills that are in an over threshold state, or OTHER, for all reserve skills that are not in an

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over thresh-old state. When a reserve agent becomes available to receive ACD calls for a skill and the skill is not in an over threshold state, the agent's state will be changed to OTHER.

■ Alerting Options

All time with one or more ACD calls ringing will be included in the calculation of an agent's work time and occupancy.

■ Auto Answer

If station is entered in the Auto Answer field on the agent loginid form, ACD and non-ACD calls routed to the agent will ring or be answered automatically based on the value entered in the Auto Answer field on the station form. If acd is entered in the Auto Answer field on the agent loginid form, ACD calls routed to the agent will be answered automatically regardless of the value entered in the Auto Answer field on the station form. Non-ACD calls routed to the agent will ring and must be answered manually. If all is entered in the Auto Answer field on the agent loginid form, ACD calls and non-ACD calls routed to the agent will be answered automatically regardless of the value entered in the Auto Answer field on the station form. If none is entered in the Auto Answer field on the agent loginid form, no calls routed to the agent will be answered automatically regardless of the value entered in the Auto Answer field on the station form. All calls routed to the agent will ring and must be answered manually.

The values acd, all, and none entered in the Auto Answer field on the agent loginid form or the station form have an identical meaning. For example, consider two agents and two stations with the first agent logged in at the first station and the second agent logged in at the second station. The first agent is administered as Auto Answer station and the first station is administered as Auto Answer acd; the second agent is administered as Auto Answer acd (the administration of the second station does not matter). ACD calls routed to either agent will be answered automatically. If the first station and second agent are administered as Auto Answer all, all calls routed to either agent will be answered automatically. If the first station and second agent are administered as Auto Answer none, no calls routed to either agent will be answered automatically.

■ Call Coverage

All time with one or more ACD calls ringing is included in the calculation of an agent's work time and occupancy. This includes calls that are later redirected as a result of the Call Coverage feature.

■ Call Forwarding

All time with one or more ACD calls ringing is included in the calculation of an agent's work time and occupancy. This includes calls that are later redirected as a result of the Call Forwarding feature.

■ Call Park

After a call is parked by an agent, the call will not affect that agent's work time or occupancy.

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■ Call Pickup

All time with one or more ACD calls ringing is included in the calculation of an agent's work time and occupancy. This includes calls that are later redirected as a result of the Call Pickup feature.

■ Conference/Transfer

All time with one or more ACD calls on hold as a result of initiating a conference or transfer will be included in the calculation of and agent's work time and occupancy.

■ Direct Agent Calls

An agent will receive direct agent calls before any other ACD calls unless the agent's call handling preference is skill-level, a DAC skill is administered, and the DAC skill is not one of the agent's highest priority (i.e., lowest-numbered skill level) skills, or the agent's call handling preference is percent-allocation or service-level-routing and the Direct Agent Calls First option is not set. The Service Level Supervisor over threshold state has no effect on the selection of direct agent calls before other ACD calls.

If the Direct Agent Calls First option is set, an agent will receive direct agent calls before any other ACD calls. If the Direct Agent Calls First option is not set, an agent will receive direct agent calls only when a call is selected from the Direct Agent Skill (or the "top skill" if the Direct Agent Skill is not administered) using the Percent Allocation call selection.

A direct agent call to a logged in agent with only reserve skills will be denied and intercept tone will be heard.

All time while on a direct agent call will be included in the calculation of an agent's work time and occupancy.

The Service Level Supervisor feature should not be administered for a Direct Agent Skill. If a reserve agent is expected to receive direct agent calls, a Direct Agent Skill (non-reserve) should be administered for the agent. An agent's Direct Agent Skill should never be administered to allow auto reserving.

■ Expected Wait Time

Reserve agents will have no direct effect on the calculation of Weighted Advance Time (i.e., Weighted Advance Time will not be adjusted when a reserve agent logs in or out or is eligible or not eligible to receive ACD calls).

Expected Wait Time, which is based on both Weighted Advance Time and number of calls in queue, will be affected when reserve agents become eligible to receive calls, thus reducing the number of calls in queue. Expected Wait Time calculations will be less accurate when reserve agents are used (Expected Wait Time will be overestimated when re-serve agents are eligible to receive calls and will be underestimated when reserve agents are not eligible to receive calls). Expected Wait Time may be overestimated when the only agents available for a skill are agents that are auto reserved.

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- Expert Agent Distribution (EAD)

  The Least Occupied Agent selection method will be available with Expert Agent Distribution (EAD).

- Multiple Call Handling

  When a reserve agent in an MCH skill becomes available and the skill is in an over threshold state, the agent is eligible to receive calls for that skill and all existing MCH rules apply. When a reserve agent in an MCH skill becomes available and the skill is not in an over threshold state, the agent is not eligible to receive calls for that skill regardless of the MCH type.

  The administered Multiple Call Handling type for a skill will not be changed if that skill is in a level 1 or level 2 over threshold state. The definition of an available agent is changed if one or more of an agent's skills are administered for Multiple Call Handling. This may affect when a reserve agent receives an ACD call for a Multiple Call Handling skill that is in an over threshold state. All time with one or more ACD calls ringing, active, or on hold for two or more skills will be included in the calculation of an agent's work time for only one of the skills (which skill is currently indeterminate). This will affect call selection using the Percent Allocation feature. This time will also be included in the calculation of an agent's occupancy, but this will not affect agent selection using the Least Occupied Agent feature.

- Multiple Priority Queuing

  Queue priority will be used in the call selection process with the Service Level Supervisor (over threshold skills only), Predicted Wait Time, and Service Objective features. Queue priority will not be used in the call selection process with the Percent Allocation feature.

- Non-ACD Calls

  All time with one or more non-ACD calls ringing, active, or on hold will not be included in the calculation of an agent's work time or occupancy.

- Reason Codes

  The inclusion or exclusion of time in the AUX work mode, by reason code, is ignored in the calculation of an agent's occupancy across skills and an agent's work time in a single skill. AUX time by reason code can be considered as work time, idle time, or the time can be ignored.[1]

- Redirect on No Answer (RONA)

  All time with one or more ACD calls ringing is included in the calculation of an agent's work time and occupancy. This includes calls that are later redirected as a result of the Redirect on No Answer (RONA) feature. A call queued as a result of the Redirect on No Answer (RONA) feature may cause a change in the over threshold state of a skill (from normal to over level 1 or from over level 1 to over level 2). A call, which was queued as a result of the RONA feature, may be routed to a reserve agent. Routing a call, which was queued as a result of the RONA feature, to an agent, either reserve or non-reserve, may cause a change in the over threshold state of a skill (from over level 2 to over level 1 or from over level 1 to normal).

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- Timed ACW

    The administered Time ACW Interval value for a skill will not be changed, if that
    skill is in a level 1 or level 2 over threshold state. Timed ACW time will be
    included in the calculation of an agent's work time and occupancy if the "Time in
    ACW Counted as Work Time" option is set.

- Uniform Call Distribution (UCD)

    The Least Occupied Agent selection method will be available with Uniform Call
    Distribution (UCD).

- VDN of Origin Announcement

    All time listening to a VDN of Origin Announcement will be included in the
    calculation of an agent's work time and occupancy.

Interactions

- Add/Remove Skill Via FAC

    If percent-allocation is entered in the Call Handling Preference field on the agent
    loginid form, the Add and Remove Skill features cannot be used to modify the
    agent's skill set, including the addition or removal of a reserve skill. If an attempt
    is made to add or remove a skill in this situation, the request will be denied and
    intercept tone will be heard.

- Agent Hold – With and Without Multiple Call Handling

    All time with one or more ACD calls on hold, with or without the Multiple Call
    Handling feature activated, will be included in the calculation of an agent's work
    time and occupancy.

- Agent Login/Logout

    The count of logged-in *CentreVu* Advocate agents will be adjusted whenever a
    non-AAS/non-*AUDIX* agent logs in and out. If the count of logged-in *CentreVu*
    Advocate agents is equal to the value specified in the Logged-In *CentreVu*
    Advocate Agents field on the system-parameters customer-options form, a login
    attempt by a *CentreVu* Advocate agent will be blocked and reorder tone will be
    heard.

- Attendants

    Attendant consoles administered as members of Expert Agent Selection (EAS)
    agents logged in on attendant consoles will have the same interactions as other
    phones with respect to the *CentreVu* Advocate features.

- *AUDIX*

    An EAS *AUDIX* agent cannot be administered with a reserve skill.

- Auto Available Splits/Skills (AAS)

    An EAS Auto Available agent cannot be administered with a reserve skill.

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■ Basic Call Management System (BCMS)

No existing BCMS reports will be modified and no new BCMS reports will be added for these features. No existing BCMS measurements will be modified and no new BCMS measurements will be added for these features. Reserve agents for skills that are not in an over threshold state will be counted as "Other" on the MONITOR BCMS SKILL report; reserve agents for skills that are in an over threshold condition will be counted as "ACD," "ACW," or "Other" depending on the work mode and state of the agent. Agents that are available and auto reserved will not be distinguished from agents that are available but not auto reserved on the MONITOR BCMS SKILL report. Thus, it will be possible to simultaneously see non-zero values in the Calls Waiting and Available Agents fields on this report.

■ Call Abandon

A call abandon may cause a change in the over threshold state of a skill (from over level 2 to over level 1 or from over level 1 to normal).

■ Distributed Communications System (DCS)

The *CentreVu* Advocate features are not transparent over the Distributed Communications System (DCS) link.

■ Move Agent While Staffed

If the "move from" skill is a reserve skill, the "move to" skill must also be a reserve skill. Any attempt to change a skill from reserve to non-reserve, or vice versa, by changing the Reserve Level field will be denied.

■ Multiple Skill Queuing

A call queued as a result of the Multiple Skill Queuing feature may cause a change in the over threshold state of a skill (from normal to over level 1 or from over level 1 to over level 2). Dequeuing a call queued as a result of the Multiple Skill Queuing feature may cause a change in the over threshold state of a skill (from over level 2 to over level 1 or from over level 1 to normal).

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Expert Agent Selection

See the *DEFINITY® Enterprise Communications Server Call Vectoring/EAS Guide* (555-230-521) for a detailed description of Expert Agent Selection. The guide contains information that is critical to the effective and efficient use of this feature.

Use Expert Agent Selection (EAS) to route incoming Automatic Call Distribution (ACD) calls to the agent who is best qualified to handle the call, that is, the agent with the specialized skills or experience required to best meet the caller's needs.

In addition, EAS provides the following capabilities:

- You assign all agent functions to the agent login ID and not to a physical phone. Therefore, EAS agents can login to and work at any phone in the system.

- Using the agent login ID, a caller places a call directly to a specific agent. These calls can be treated and reported as ACD calls.

EAS ensures the best possible service to the caller.

How to Administer EAS

Table 3-22.   Required Forms

Form	Field
System Parameters Customer-Options	■ ACD
	■ Expert Agent Selection (EAS)
	■ EAS-PHD
	■ Vectoring (Basic)
Agent LoginID	■ All
Hunt Group	■ Skill
	■ ACD
	■ Vector
	Set all three fields to y.[1]
	■ Group Type (ucd/ead)
Vector Directory Number	■ 1st/2nd/3rd Skill (optional)
Class of Restriction	■ Direct Agent Calling

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Table 3-22.   Required Forms — *Continued*

Form	Field
CDR System Parameters	■ Record Called Agent Login ID Instead of Group or Member
Call Vector	■ All
Feature-Related System Parameters	■ Expert Agent Selection (EAS) Enabled ■ Minimum Agent-LoginId Password Length ■ Direct Agent Announcement Extension/Delay ■ Message Waiting Lamp Indicates Status For

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1.   If the Message Center field is set to *AUDIX* on the Hunt Group form, the Skill and ACD fields must be set to y, but the Vector field can be set to either y or n.

EAS must be both optioned on the System Parameters Customer-Options form, and enabled on the Feature-Related System Parameters form. Once EAS is optioned, you can complete most of the EAS-related administration prior to enabling the feature.

When EAS is optioned on the System-Parameters Customer-Options form, Skill Hunt Groups replace splits. In addition, help messages, error messages and field titles change from "Split" to "Skill" on various forms.

Any EAS agent Login ID must be part of the station numbering plan.

Physical aspects of the phone, such as the set type and button layout, are associated with the phone and not the Login ID. On the Station form with the EAS featured optioned, when a work-mode button is selected, no "Gp" information can be entered. The assist and queue status buttons require that "Group" be entered.

How to Administer Direct Agent Announcement

Direct Agent Announcement (DAA) enhances Direct Agent Calling capabilities for CallVisor Adjunct-Switch Application Interface (ASAI) and Expert Agent Selection (EAS). It plays an announcement to Direct Agent callers waiting in a queue. The following forms should be administered for DAA.

You must also have enabled either Expert Agent Selection (EAS) or ASAI Adjunct Routing (or both).

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Table 3-23.   Required Forms

Form	Field
System-Parameters Customer-Options	■ ACD
	■ Vectoring (Basic)
	■ Expert Agent Selection (EAS)
	OR
	■ ASAI Adjunct Routing
Feature-Related System Parameters	■ Direct Agent Announcement Delay
	■ Direct Agent Announcement Extension
Announcements/Audio Sources	■ All

Detailed Administration for EAS

In general, EAS uses vectors to route calls to agents with the required skills. To administer EAS you must:

- Assign skills to VDNs on the Vector Directory Number form.

- Create vectors that will route a call to the correct skill.

- Assign skills with priority levels to agents on the Agent Login ID form.

VDN Administration

You can administer up to three VDN skill preferences on the Vector Directory Number form in the 1st Skill, 2nd Skill and 3rd Skill fields. These fields indicate the skills that are required to handle calls to this VDN. All of the VDN skills on the VDN form are optional. For example, only the first and third, or only the second and third VDN skills might be assigned. Vector steps can then refer back to these fields to route calls. For example, *queue-to skill 1st* routes calls the skill administered as 1st on the VDN form.

Vector Administration

When a call routes to a VDN, the VDN directs the call to the vector that is specified on the Vector Directory number form. The vector then queues the call to the skill specified in a vector step. You can write vectors that route calls either to specific skill numbers or to the skill preferences administered on the Vector Directory Number form.

Agent Administration

Assign skills to each agent. In addition, assign a skill level to each skill for the agent. When a vector routes incoming calls to a skill, the call is delivered to an available agent with the skill assigned. If no agents are available, the call is queued until it can be answered by an agent who has the skill required to handle the call.

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Detailed Description

Agent Selection

The administered agent selection method and Call Handling Preference determine which agent will receive an incoming call.

Agent Selection Method

EAS can use either Uniform Call Distribution (UCD) or Expert Agent Distribution (EAD) to select agents for calls. Both methods can use the Most-Idle Agent (MIA) or the Least Occupied Agent (LOA) algorithm to select agents. For more information on agent selection methods, see .

Call Handling Preference Administration

The call handling preference selected on the Agent Login ID form can route calls based on either greatest need or agent skill level. summarizes how a call is routed based on greatest need or agent skill level administration with either UCD or EAD distribution.

Table 3-24. Call Handling Preference Call Distribution

	EAD with Skill Level	EAD with Greatest Need	UCD with Skill Level	UCD with Greatest Need
Agents are available. When a new call arrives it is delivered to:	Most-idle agent with the highest skill level for the calls' skill.	Most-idle agent with the highest skill level for the call's skill.	Most-idle agent with the call's skill.	Most-idle agent with the call's skill.
Agents are not available, calls are in queue. When an agent becomes available, he or she receives:	Highest priority oldest call waiting for agent's highest level skill with calls in queue.	Highest priority oldest call waiting for any of the agent's skills.	Highest priority oldest call waiting for the agent's highest level skill with calls in queue.	Highest priority oldest call waiting for any of the agent's skills.

MIA Across Splits/Skills

In addition, both UCD and EAD can be used in conjunction the MIA Across Splits/Skills option. With MIA Across Splits/Skills, one available agent queue is set up for the entire system. When an agent answers a call for any skill, the agent is removed from the MIA queue.

See, for more information about UCD, EAD, and MIA Across Splits/Skills.

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Additional Agent Login ID Capabilities

The following capabilities are also associated with agents' login IDs.

- Auto-Answer — When EAS is optioned, auto answer settings can be assigned to agents on the Agent LoginID form. An agent's auto answer setting will apply to the station where the agent logs in. If the auto answer setting for that station is different, the agent's setting overrides the station's.

- Calls — to call an EAS Agent, the caller dials the Login ID extension. The call is extended to the physical extension where the agent with that Login ID is logged in. Calls to the Login ID reach the agent independent of the phone the agent is currently using. For example, when agents use multiple phones because they have multiple offices or rotate desks, login IDs allow these agents to be reached independent of their current location.

- Name — calls to the Login ID display the name associated with the Login ID and not the name associated with the phone. This is also true for calls made from a phone with an agent logged in.

- Coverage — when the agent is logged out, or when calls go to coverage because the agent is busy, or does not answer, calls to the Login ID go to the coverage path associated with the agent and not the phone. When an agent is logged out, calls go to the agent's busy coverage destination.

- Restrictions — calls to the Login ID or from the agent use the restrictions associated with the agent and not the phone.

Phones are fully functional when an agent is not logged in. The restrictions, coverage, and name revert to the phone administration when the agent logs out.

Direct Agent Calling

Calls to an agent's Login ID are treated as Direct Agent calls if the caller and the agent have the "Direct Agent Calling" class of restriction. Direct Agent calls can be originated by stations or trunks. If the caller or agent does not have the proper COR, the call is treated as a normal non-ACD (personal) call.

Direct Agent Calls are treated as ACD calls. For example they receive zip tone answer, queuing, after call work and are measured by BCMS and CMS.

Any of the agent's skills can be his or her Direct Agent skill. When greatest need is optioned as the Call Handling Preference, the agent will always get Direct Agent calls before any skill calls. This is because Direct Agent calls have a higher priority than skills calls. However, when skill level is optioned as the Call Handling Preference, the agent will get direct agent calls first only if the direct agent skill has the agent's highest skill level. Otherwise calls from a skill with a higher level will be distributed before Direct Agent calls. If the Direct Agent skill and another skill are the same skill level, the agent will always receive Direct Agent calls before the other skill calls because Direct Agent calls have a higher priority.

A *route-to* vector command with an EAS Login ID as the destination is treated as a Direct Agent call if the VDN and agent have the COR and the Direct Agent field is set to "y".

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Considerations

Station User records cannot be shared between TTI ports and EAS LoginID extensions. This causes a reduction in the number of possible EAS LoginID extensions allowed by the System depending on the number of administered TTI ports. For example, if 2,000 TTI ports are administered, the maximum number of allowable EAS LoginIDs is reduced by 2,000.

EAS agent Login IDs are also tracked for personal calls. CMS uses the first skill an EAS Agent is logged into to track personal calls. If the first logged-into skill is unmeasured, CMS credits the agent Login ID with the personal call, but no skill hunt group is credited with the personal call.

The system can have either splits or skill hunt groups but not both simultaneously. Non-ACD hunt groups can exist with either splits or skill hunt groups. Skill hunt groups are required when using EAS.

Interactions

Unless otherwise specified, the feature interactions for skill hunt groups are the same as for vector-controlled splits.

- Abbreviated Dialing

  Abbreviated dialing can be used to log in/out EAS agents. Abbreviated dialing lists/buttons can only be administered for stations.

- Add/Remove Skills

  In the EAS environment, agents have the ability to add and remove skills during a login session by dialing a FAC. Other phone users with console permissions can add or remove an agent's skill on behalf of the agent. (Note that the ability to add and remove skills depends on whether a user has a class of restriction (COR) that allows adding and removing skills.)

- Administration Without Hardware

  EAS Login ID extensions are extensions without hardware. Login ID extensions require space in the dial plan.

- Agent Work Mode States

  With EAS, agents can only be in a single work mode at any one time for all their skills.

- Assist

  The Assist feature can be used with a skill hunt group (for example, where there is one supervisor per skill hunt group). When assist is selected, a call is placed to the supervisor associated with the skill for the active call.

- *AUDIX*

  Calls to the EAS agent Login ID can cover to *AUDIX*.

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- Auto-Available Splits

  If a skill hunt group is administered as an Auto-Available Skill (AAS) the EAS Login IDs assigned to this skill must also be administered as Auto-Available. When the switch reinitializes, these Login IDs are automatically logged in with the Auto-In work-mode. If any switch features attempt to change the work-mode to anything except to Auto-In, this attempt is denied. This feature is not intended for human agents.

- Automatic Answering with Zip Tone

  The Automatic Answer option can only be administered for a physical extension.

- Automatic Callback

  Users can't activate Automatic Callback to an EAS agent's Login ID. They can activate Automatic CallBack to the phone where the agent is logged in.

- Call Forwarding

  Skill hunt groups (since they are vector-controlled) cannot be call forwarded. EAS agent Login IDs cannot be forwarded, but the physical extension where the EAS agent is logged in can be forwarded.

- Call Park

  Calls cannot be parked on the skill hunt group extension.

- Call Pickup

  Skill hunt group extensions and EAS Login ID extensions cannot be members of a call pickup group.

- Class of Restriction (COR)

  Skill hunt groups do have a class of restriction. This is used if the skill hunt group extension is called directly.

  The COR for an EAS agent Login ID overrides the physical extension's COR of the phone an EAS agent logs into.

- Class of Service (COS)

  EAS agents do not have a COS associated with their Login ID. Therefore, the COS of the phone is not affected when an EAS agent logs into that terminal.

- Directed Call Pickup

  An EAS agent can use the Directed Call Pickup feature to pick up a call and/or have his or her calls picked up by another terminal user. The Class of Restriction of the agent will override the Class of Restriction of the station where the agent is logged in.

  If both the station's COR and the logged-in agent's COR allow the call to be picked up using Directed Call Pickup, the user picking up the call can use either the station's extension or the agent's loginID.

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■ Displays - Phone

When an EAS agent logs in, the display for originators who call the Login ID shows the Login ID and agent name (as administered via the Agent Login ID form). Calls that the agent originates show the Agent Login ID and agent name at the receiving terminal's display. However, the user can display the name of the physical terminal where the EAS agent is logged in. To do this, the user must be active on a call with the agent, and must have a terminal with an alphanumeric display and an inspect button. When the inspect button is pressed during a call to or from the EAS agent, the physical terminal name of the agent is displayed.

Calls to the physical extension show the physical extension's number and name on the originator's display.

■ Leave Word Calling

When an EAS agent is logged into a station, the agent can only retrieve LWC messages left for that agent's login ID. To retrieve LWC messages left for that station, the agent must log out.

When an EAS agent is logged into a station, its Message lamp defaults to tracking the status of LWC messages waiting for the station. However, you can assign the Message lamp to track the status of LWC messages waiting for the agent's login ID.

■ Look Ahead Interflow

VDN skills are not sent to another ACD/PBX when a call interflows using Look Ahead Interflow. If skills have the same meaning on both ACDs, then a Look Ahead Interflow command to a VDN with the same skills assigned can provide a mapping of the skills.

■ Message Waiting Lamp

The Message Waiting Lamp by default tracks the status of messages waiting for the logged in EAS agent LoginID rather than messages for the physical terminal. The operation of the Message Waiting Lamp can be changed so that it tracks the status of messages waiting for the physical terminal where the agent is logged in. Refer to *DEFINITY ECS Administrator's Guide* for more information about Feature-Related System Parameters.

■ Queue Status Indications

Physical extensions can be administered with Queue Status Indicator buttons and lamps for skill hunt groups. Queue Status Indicators can be administered for all skills needed by agents using that physical extension, given that enough buttons are available.

■ Service Observing

The Service Observing feature is activated in the EAS environment by dialing either the physical extension of the terminal where an EAS agent is logged in or the Login ID of the agent.

■ VuStats

VuStats displays can show an agent's skill assignments and can show some measurements by skill.

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Inbound Call Management

Inbound Call Management (ICM) allows you to integrate features of the *DEFINITY* ECS/switch with host-application processing and routing, and automate delivery of caller information to agents' displays. You can create a sophisticated system to handle inbound calls for applications such as telemarketing and claims processing.

To implement ICM, you integrate features of the *DEFINITY* ECS/switch such as Automatic Call Distribution (ACD), Expert Agent Selection (EAS) Call Vectoring, Direct Agent Calling, and Call Prompting with an application on a host processor. The host application, or adjunct, can be a CallVisor/PC, *Conversant* voice system, Telephony Services Server serving a local-area network, or a vendor application using the CallVisor Adjunct/Switch Applications Interface (ASAI). A CallVisor ASAI link between the switch and adjunct allows the adjunct to control incoming call processing and routing.

In addition, you can automate ACD agent terminal displays and associate them with new and transferred calls, and assist calls to a supervisor. You can display incoming call information such as Calling Party Number (CPN), Billing Number (BN), and Dialed Number Identification Service (DNIS). Or, you can set up the adjunct to retrieve caller information from a database and display it on a particular agent's screen, based on the service dialed.

See for more information on applications. See the *DEFINITY Enterprise Communications Server CallVisor ASAI Planning* for information on vendor application partners.

How to Administer ICM

Display the System-Parameters Customer-Options and ensure that the ACD option is enabled. If you are using CallVisor ASAI or Call Vectoring, ensure appropriate ASAI Capability Groups options or the Vectoring (Basic) and/or Vectoring (Prompting) options are enabled.

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Table 3-25. Required Forms

Form	Field
System-Parameters Customer-Options	■ ACD
	■ Vectoring (Basic)
	■ Vectoring (Prompting)
	■ ASAI Capability Groups
Trunk Group (ISDN-PRI)	■ Per Call CPN/BN
Hunt Groups	■ Group Type
	■ ACD
	■ Queue
	■ Vector
	■ Measured
	■ Supervisor Extension
	■ Controlling Adjunct
	■ Queue Length
	■ Calls Warning Threshold
	■ Calls Warning Port
	■ Time Warning Threshold
	■ Time Warning Port
Class of Restriction	■ Direct Agent Calling (optional)
Call Vector	■ All
Station (agent stations)	■ All
Agent LoginID (EAS only)	■ All

- **Trunk Group form** — Administer the Per Call CPN/BN field for the appropriate ISDN-PRI trunk group. The corresponding information is sent with a call-offered event report to the adjunct.

- **Hunt Group form** — Complete a Hunt Group form for each split that the ICM adjunct will monitor.

- **Call Vector form** — If you are using Call Vectoring, an ASAI link interface extension number is required for **adjunct routing** vector commands. This extension is the same as the one you enter on the Station form.

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Detailed Description

Applications

The following are some typical ICM applications:

- The system passes calling party/billing number (CPN/BN) information and the call is routed to an adjunct application for screen pop and supervisory transfers, with screen duplication.

- The system sends to the adjunct application both caller and prompter information about all incoming calls to a particular number. According to caller information in a database, the application directs the switch to route the call. For example, the call could be routed to a preferred agent, to best customer treatment, or to accounts receivable.

- The system uses Call Prompting to obtain a customer account number and then passes this information to the adjunct for call routing or screen pop.

- The system connects the caller to a voice response unit (VRU), along with caller CPN/BN and DNIS information.The caller then interacts with the VRU to direct how the call is handled. The system can verify a caller's identity and provide access to database information such as claims status or account balance.

- With Direct Agent Calling, an adjunct application can transfer a call to a specific ACD agent and have the call treated as an ACD call and tracked on Call Management System (CMS).

- An adjunct application can attach information used by another application to an ICM call using User-to-User Information fields. The adjunct transfers the call, along with the application-specific information, over primary rate interface (PRI) trunk to a CallVisor ASAI application at another switch. For example, an application at one switch can determine a caller's account or claim number and pass this information to a special list on another switch, where an application will transfer the call.

See the *DEFINITY Enterprise Communications Server CallVisor ASAI Technical Reference* for additional application scenarios.

Agent Data Screen Delivery Applications

You can use the *Conversant* voice system to deliver appropriate display data about callers to agents. You can pass information such as CPN/BN, DNIS, and Lookahead Interflow information, digits collected from Call Prompting, and which agent is selected to a *Conversant* voice system. *Conversant* delivers the appropriate data screen to the agent who takes the voice call. *Conversant* can transfer or duplicate data screens for transferred or conferenced calls. A simplified configuration of this type of application is shown in

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Figure 3-2. *Conversant* VIS is used as an example — other adjunct processors have similar capabilities but should be verified for a particular application. If the host supports ASAI, *Conversant* is not needed.
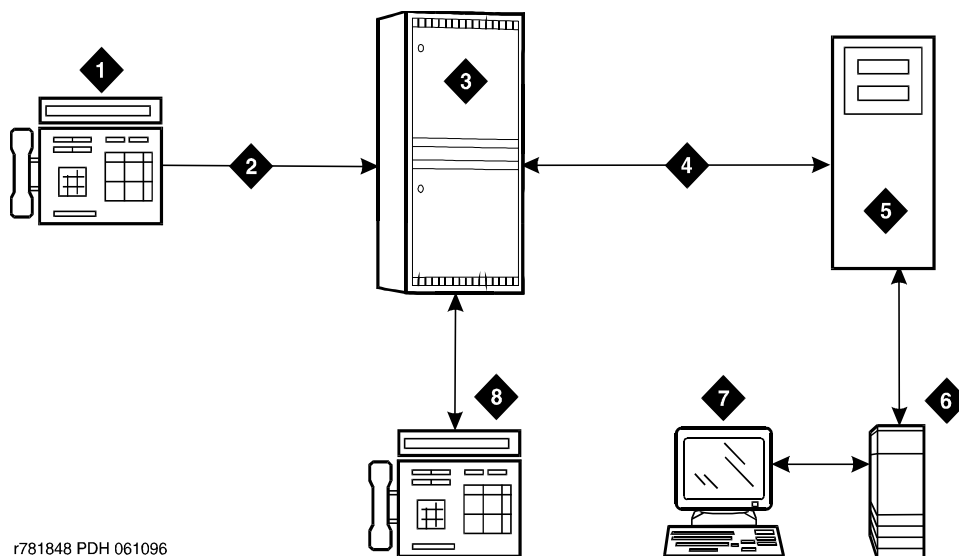
r781848 PDH 061096

Figure Notes

1. Phone	5. *Conversant*
2. ISDN-PRI	6. Host
3. *DEFINITY* ECS	7. Agent data terminal
4. ASAI	8. Agent phone

Figure 3-2.   Simplified ICM Configuration for Data Screen Delivery

General processing for this type of application occurs as follows.

1. The *Conversant* voice system or host requests notification for events such as call offered, call ended, call connected, call dropped, call transfer, and alerting.

2. The switch notifies *Conversant* with event reports when the call arrives, when the agent answers, when the call drops, and so on.

3. *Conversant* sends information to the host application so that it can send a data screen to the agent's data terminal.

Conversant can determine when a call drops before being answered and can track abandoned calls or use CPN/BN information for callbacks.

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Integration with Speech Processing Adjuncts

ICM can be used to provide integration with VRUs. The advantages of using ICM with CallVisor ASAI in addition to tip/ring interfaces are as follows:

- Data-screen integration is provided on transferred calls.

- Answer notification is provided on internal calls (CallVisor ASAI capabilities let you know what happens with the call).

- ISDN network information such as CPN/BN and DNIS is delivered to agents (call prompting for this information is not necessary).

A simplified configuration of this application is shown in Figure 3-3.
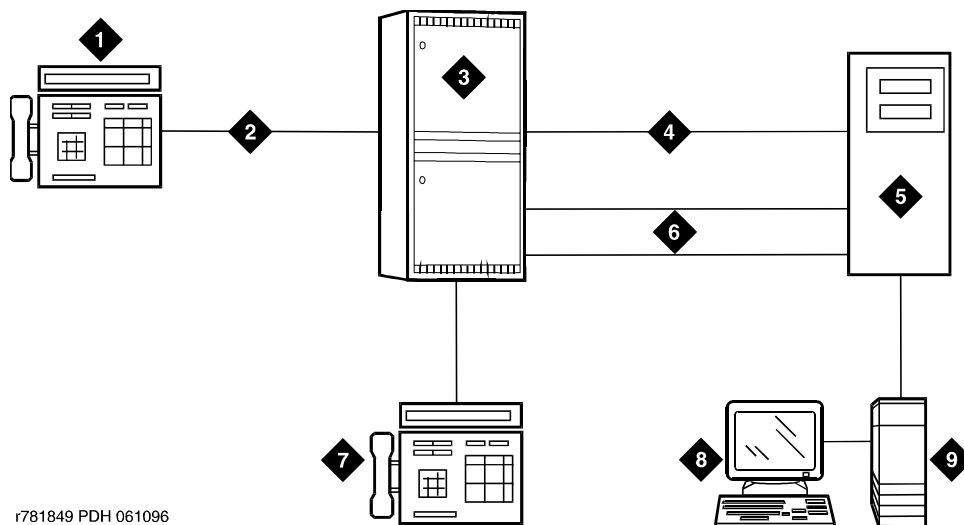
r781849 PDH 061096

Figure Notes

1. Phone

2. ISDN-PRI

3. *DEFINITY* ECS

4. ASAI

5. Speech processor

6. Tip/ring lines

7. Agent phone

8. Agent data terminal

9. Host

Figure 3-3.   Simplified ICM Configuration for Speech Processor Integration

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General processing for this type of application occurs as follows

1. The switch uses CallVisor ASAI link to pass incoming call information to the *Conversant* voice system.

2. The ACD split or EAS skill on the switch distributes the call to an available voice line.

3. After digits are collected via a DTMF keypad, *Conversant* transfers the call back to an ACD split or specific agent on the switch via CallVisor ASAI.

4. If the call is transferred to a split agent, the switch uses CallVisor ASAI link to pass an event report on which agent receives the call.

5. *Conversant* forwards the agent ID to the host application, which delivers a data screen to the agent.

6. Agents can display collected digits on their data terminals. Except for the dialed number, information from a *Conversant* voice system cannot be carried with the call and displayed on a phone. For example, digits collected in a *Conversant* voice system adjunct cannot be passed to the switch for display.

7. If the collected digits are the extension where the call is being routed, these routing digits are passed to the switch as the destination in the CallVisor ASAI third-party make-call request. *Conversant* uses the request to set up various types of calls.

Host/Adjunct Call Routing

The host or *Conversant* adjunct uses incoming call information to route the call to a split, vector, particular agent, or location off the switch. *Conversant* can also direct the system to handle the call as a priority call. Routing can be based on the caller's area code or country code, digits collected via Call Prompting, dialed number or service, agent availability, or information in a customer database.

To implement this type of call routing, make sure that calls come into a vector that contains an *adjunct routing* vector command. This command causes the switch to initiate the route CallVisor ASAI capability. Vector processing occurs while the caller waits. A default split or answering position can also be specified in the vector, in case *Conversant* does not respond in the administered amount of time (determined by the announcement/wait steps). Announcement and wait steps are needed to give the host time to respond.

For adjunct routing, if the call queues to a split or leaves vector processing, a route-end request is sent to *Conversant*.

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Considerations

Administrators and planners must consider:

- ICM traffic

- Rated switch capacity

- CallVisor ASAI interface traffic

- Rated capacity of the adjunct application processor

Lucent Technologies Technical Design Center can provide planning assistance.

In addition, you must consider the following:

- CallVisor ASAI and BX.25 CPN/BN-ANI are not supported simultaneously.

- Direct Agent Calls (DACs) are allowed only if the caller and the receiving agent have a Class of Restriction (COR) that allows Direct Agent Calling.

- DACs cannot go through vectors.

- DACs cannot be made over a DCS link. If the receiving agent is not an internal extension, the call is denied.

Interactions

- Call Prompting

  Digits collected by Call Prompting are passed with current call information to a *Conversant* adjunct.

- Direct Agent Calling

  Direct Agent Calling allows an adjunct to direct a call to a particular ACD agent and have the call treated as an ACD call. Calls that enter the switch as ACD calls and are routed to a particular agent via adjunct routing, or are transferred via a third-party make-call request, are treated as ACD calls for the duration of the call. See <u>"Automatic Call Distribution" on page 3-25</u> for more information on Direct Agent Calls.

- Priority Calling

  CallVisor ASAI allows both Priority Calling and Direct Agent Calling for the same call.

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Information Forwarding

Whenever the *DEFINITY* ECS interflows a call over ISDN trunk facilities (for example, PRI or BRI) by means of a *route-to* (with Lookahead Interflow active), *queue-to best,* or *check best* command, the following information is sent with the call via user-to-user information transport (via UUI IE) and can be used by adjuncts or displayed at the receiving switch:

- ASAI user information

- the name of the active VDN (LAI DNIS)

- other LAI information (a time stamp showing when the call entered the current queue, the call's priority level in its current queue, and the type of interflow)

- any collected digits (this does not include dial-ahead digits). These digits are available for processing at remote vectors and/or displaying to the agent.

- the number of seconds that the call has already spent in vector processing (called "in-VDN time")

- Universal Call ID (UCID)

> **NOTE:**
> Sending of information depends on priority settings and activated features. Also the switch version must be V6 or later.

Forwarding of the last three items, collected digits, in-VDN time, and UCID applies to the *DEFINITY* ECS R6.3 and newer.

Interactions

- Best Service Routing

    Best Service Routing-related data is sent in addition to the associated ASAI user data and UCID. For more information, see the *DEFINITY*® *Enterprise Communications Server Call Vectoring/EAS Guide* (555-230-521).

User-to-User Information Transport

In the past, lookahead interflow transported the LAI Information Element (IE) in codeset 6 or 7, which functioned over non-QSIG private networks, but only over certain public networks.

Now, call centers can transport application information (including the LAI information) over many more public ISDN networks because of using User to User Signaling (UUS) Supplementary Services that incorporate user-to-user information (codeset 0 UUI). Information passes over QSIG private networks using manufacturer specific information (MSI—codeset 0 Facility IE) in various messages.

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This feature:

■ enables multiple applications on the *DEFINITY* ECS/switch to share the contents of the UUI IE or MSI

■ allows for backwards compatibility with software prior to the *DEFINITY* ECS 6.3.

For more information about how to administer user-to-user information transport, see the Information Forwarding chapter in the *DEFINITY® Enterprise Communications Server Call Vectoring/EAS Guide* (555-230-521).

Support of Call Center Features

Information transport supports these call center features:

■ Enhanced Look-Ahead Interflow—routes calls from busy call centers to centers that are less busy (see "Look-Ahead Interflow" on page 3-102).

> **NOTE:**
> Look-Ahead Interflow information can be forwarded using information transport or the traditional codeset 6/7 LAI IE. The switch version must be *DEFINITY* ECS R6 or newer.

■ Best Service Routing—routes calls to the best available agents wherever they are (see "Best Service Routing" on page 3-44).

■ Universal Call ID—provides a means to collect and trace call data from multiple call centers (see "Universal Call ID" on page 3-148).

Administering User-to-User Information Transport

This section outlines the procedure to administer your incoming and outgoing trunk groups to send user data over your network. Before administering the trunk group, review these guidelines:

■ If you are using shared UUI (any Supplementary Service other than **b**), then you must administer the `UUI Treatment` for the trunk groups (both outgoing and incoming at the remote end) as **shared**. Use this option when you want to forward information to the *DEFINITY* ECS R6.3 (or newer) in non-QSIG networks.

■ With QSIG (Supplementary Service **b**), you need to administer Shared UUI to include ASAI user information with MSI transport. If `UUI Treatment` is the default **service-provider**, *DEFINITY* forwards the ASAI user data (if provided) in a non-shared codeset 0 UUI IE while forwarding the other data as MSI.

> **NOTE:**
> You do not need to complete this procedure if you do not intend to send user data over the network.

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Table 3-26 lists the form and fields needed to administer information transport on trunk groups.

Table 3-26.   Forms Needed to Administer Information Transport

Form	Fields	Why is this field needed?	Is field optional?
ISDN Trunk Group (BRI or PRI)	UUI IE Treatment	Set field to either ■ **shared** (for trunk groups connected to the *DEFINITY* ECS R6.3 or newer if you want shared data). ■ **service-provider** (for trunk groups connected to the *DEFINITY* ECS prior to R6.3 or if you want service provider functionality).	Y However, this field cannot be blank.
	Maximum Size of UUI IE Contents	Set according to what the network supports. 128 (default) is recommended for private networking.	Y
	Shared UUI Feature Priority fields	Set the priority for each type of user data (such as UCID, ASAI, and other application information). Only needed for non-QSIG trunk groups.	Y If blank, info not sent.

To administer Shared UUI information transport:

1. In the command line, enter **change trunk-group n** and press RETURN**.**

    The Trunk Group administration form comes up. *n* is the number of the trunk group you want to administer.

2. Go to page 2 of the form.

3. In the UUI Treatment field, enter **shared** and press RETURN.

⚠ CAUTION:
> *If the trunk group is connected to a pre-DEFINITY ECS 6.3 switch or if you want service provider functionality, do not enter **shared**. Instead, leave the default **service-provider** in this field. You cannot use Shared UUI unless the trunk group is connected to a the DEFINITY ECS R6.3 (or newer).*

The Maximum Size of UUI IE Contents field appears.

If you enter **shared** and the Send Codeset 6/7 LAI trunk group option is on, you send the LAI information twice (unless the LAI Name and Other LAI data items' priorities are blank with non-QSIG—with QSIG, both are always sent), and you may exceed the maximum ISDN message size.

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4. If you want to change the default size of 128 in the `Maximum Size of UUI IE Contents` field, then enter the number for the maximum UUI size. If you want to keep the default size, go to Step 5.

   You must administer the trunk groups to send the appropriate amount of user information over the connected network. For example, if the public network only supports 32 bytes of user information, and you enter a number larger than 32, the network may reject the entire UUI IE.

   The *DEFINITY* ECS/switch accepts a range from 32 to 128.

5. Go to page 4 (the Shared UUI Feature Priorities page which comes up only when the `UUI Treatment` field is set to **shared**).

   Notice that all feature names (whether enabled or not) appear on this page. The default values were assigned when Shared UUI was enabled.

6. Either leave the default settings, or reassign numbers from 1 to 6 (1 is the highest priority) to each feature. For more information about user needs, see Determining User Information Needs in the next section.

   $\Longrightarrow$ **NOTE:**
   If you leave a feature field blank, that feature will not transport in the UUI IE. If the public network supports less than 128 bytes, you need to choose what feature information you want to send, and give that feature field a higher priority.

7. Press (ENTER) to save your changes.

Determining User Information Needs

The network byte limit on user information contents (the user data part of the UUI IE) must be large enough to carry the data needed for the customer application.

If you want to forward information over a network that does not support at least 82 bytes of user data, you must determine the space required for the application and adjust priorities accordingly. For more information, see "Determining User Information Needs" in the Information Forwarding chapter of the *DEFINITY*® *Enterprise Communications Server Call Vectoring/EAS Guide* (555-230-521)

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Considerations

— Enhanced information forwarding has been tested with several major carriers. To find out if these capabilities work with your carrier, check with your account team for the most current information. If testing has not been done to verify operation over the public networks involved with the preferred specific configuration, use of private ISDN trunking between the nodes should be assumed until successful testing has been completed.

— Any switch that acts as tandem node *must* have priorities assigned to the Shared UUI features for non-QSIG trunk groups. Even if this switch does not create anything, the priorities must be set correctly to pass the information along. For more information, see the Troubleshooting section.

— The `Send codeset 6/7 LAI` trunk group option operates independently of the `UUI IE Treatment` trunk group option. However, if you turn both of these options on, you'll send the same information twice and possibly exceed the maximum ISDN message size. The *DEFINITY* ECS/switch provides a warning message when both options are administered. There are two ways to correct when the user data exceeds the maximum message size, either:

■ put a blank in the priority fields for `VDN Name` and `Other LAI Information` on the Shared UUI Feature Priorities form, or

■ disable the `Send codeset 6/7 LAI` option.

— For non-QSIG or QSIG trunk groups to the *DEFINITY* ECS R6.3 (or newer) that require information forwarding, the `UUI IE Treatment` should be **shared** and the `Send Codeset 6/7 LAI IE` should be **n**. For more information, see the *DEFINITY*® *Enterprise Communications Server Call Vectoring/EAS Guide* (555-230-521).

— Information transported via the Shared UUI is *DEFINITY*-proprietary; the information will not work with switches other than the *DEFINITY* ECS/switch unless these switches adhere to the proprietary encoding.

Troubleshooting

The following troubleshooting hints should be reviewed when information is not forwarded, even though you received no error messages while administering the Shared UUI feature, and all software and connections meet the minimum requirements:

— If DCS is used, make sure *all* ISDN trunks between the *DEFINITY* ECS/switch used for DCS or remote *AUDIX* are configured in the D-channel mode.

— For each ISDN trunk administered with the Shared UUI option, make sure the UUI size does not exceed the UUI IE size that the network can support.

— For all non-QSIG ISDN trunks, make sure the `UUI IE Treatment` field is set to **shared**.

— Make sure trunk group options are set correctly for the application and configuration.

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— Applications may fail on networks supporting limited UUI transport. Administration determines which application's UUI will be transported in these cases. If a given application is failing, first check the administration to determine if the application in question has the highest priority. This applies to tandem nodes as well as originating nodes.

Applications that originate UUI on tandem nodes can request that assigned priorities at the tandem node be applied to the resulting UUI. Therefore, it is possible for a tandem node to erase UUI information received from the originator.

In other words, passing UUI through a tandem node transparently, as required for UUS Service 1, does not apply to the proprietary shared UUI procedures of the *DEFINITY* ECS/switch.

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Intraflow and Interflow

Intraflow and Interflow allow you to redirect ACD calls from one split to another split when the splits are not vector-controlled. Intraflow redirects calls to other splits within the system using Call Coverage or Call Forwarding All Calls. Interflow redirects calls to an external split or location using Call Forwarding All Calls.

Intraflow

Use Call Coverage with Intraflow to redirect ACD calls from one split to another *conditionally*, according to the coverage path's redirection criteria. For example, you can define a split's coverage path to automatically redirect incoming ACD calls to another split when a terminal is busy or unanswered. You can redirect calls to less busy splits, for more efficient call handling.

Use Call Forwarding with Intraflow to *unconditionally* forward a split's calls.

Interflow

Interflow allows you to redirect ACD calls from a split on one switch to a split on another switch or external location. Use Call Forwarding All Calls with Interflow to *unconditionally* forward calls directed to a split extension to an off-premises location. Calls can be forwarded to destinations off the PBX (that is, phone numbers on the public telephone network). You cannot use Call Coverage with Interflow. If a coverage point station or split is forwarded/interflowed, it is taken out of the coverage path.

For details on how to forward calls to an external extension, refer to *DEFINITY ECS Administrator's Guide*. See and for information on advanced Interflow capabilities. Refer to *DEFINITY ECS Administrator's Guide* for information on Call Coverage redirection criteria.

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How to Administer Intraflow and Interflow

Table 3-27.   Required Forms

Form	Field
Feature-Related System Parameters	■ Coverage — Don't Answer Interval for Subsequent Redirection
Feature Access Code (FAC)	■ Call Forwarding Activation
	■ Call Forwarding Deactivation
Hunt Group	■ Inflow Threshold
	■ Priority on Intraflow
Coverage Paths	■ Don't Answer
	■ Busy
	■ Number of Rings

Detailed Description

Assign an inflow threshold for each split receiving Intraflow and Interflow calls. This threshold prevents a split from receiving new ACD calls if the oldest call in the queue has been there longer than the threshold. If an ACD call is forwarded or redirected through Call Coverage, but cannot be routed to another split or coverage path point, it remains in queue at the original split even though coverage tone may be heard.

For a split with Intraflow and Call Coverage assigned, you can also assign Priority on Intraflow. When an ACD call intraflowing from a split with Priority on Intraflow to a covering split enters the split's queue, that call is placed ahead of nonpriority calls but behind other priority calls already in the queue. All priority calls are answered before any nonpriority calls.

Calls intraflowed via Call Coverage to a covering split are never connected to the first delay announcement at the covering split. Calls redirected via Call Forwarding receive the delay first announcement at the forwarded-to split, but never receive a forced first announcement.

As an illustration of how Intraflow works, assume the following:

- A call is intraflowed from split 1 to split 2 via Call Coverage.

- Split 1 is assigned priority on intraflow.

- Split 2 has a queue with three priority calls and four nonpriority calls.

- Split 2 has an inflow threshold of 90 seconds and the oldest call in queue at split 2 has been in queue for 60 seconds.

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- Split 2 has been assigned a second delay announcement and has a second delay announcement interval of 45 seconds.

- Music-on-Hold is provided.

When the call is intraflowed from split 1 to split 2, the call is placed in the split 2 queue as the fourth priority call, ahead of the four nonpriority calls. The call stays in the queue for 45 seconds and is still not answered. Then the call is connected to the second delay announcement for split 2. After the announcement, the caller hears music until an agent answers the call.

You can assign a Coverage ICI button to an agent's multiappearance phone. The agents use the button to identify a call that is intraflowed from another split. When an agent receives such a call, the button lamp lights.

Considerations

The same coverage path can be used for as many splits as desired. You should administer redirection criteria for a split's coverage path so that calls are redirected under Busy or Don't Answer conditions. Do not use All or Send All Calls as redirection criteria.

Interactions

- Call Coverage

  All splits with the same coverage path are automatically assigned the same Don't Answer Interval. The default Don't Answer Interval is 2.

  If Intraflow via Coverage is active, the Coverage Don't Answer Interval associated with Call Coverage begins when a call enters the split queue.

  If the Coverage Don't Answer interval expires before either of the two delay-announcement intervals expires, a call is redirected to coverage. If either of the delay-announcement intervals expires before the Coverage Don't Answer interval, the call is connected to a delay announcement, if available.

  If no coverage point is available to handle a call, a call remains in queue and may then be connected to a delay announcement.

- Temporary Bridged Appearance

  If an ACD call is routed to a split agent but is intraflowed to another split before being answered, the Temporary Bridged Appearance at the agent's terminal or console is no longer maintained.

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Look-Ahead Interflow

Use Look-Ahead Interflow to balance the load of ACD calls across multiple locations.
With Look-Ahead Interflow, you can optionally route a call to a backup location based on
your system's ability to handle the call within parameters defined in a vector. In turn, the
backup system can accept or deny the call also based on parameters defined in a vector.

Look-Ahead Interflow requires end-to-end ISDN connections, and it works over private
and public networks.

Look-Ahead Interflow can:

- produce First in First Out (FIFO) or near FIFO call routing

- provide globally-supported information forwarding over public or private ISDN
  (PRI and BRI) networks using non-QSIG or QSIG protocols. For more
  information, see "Information Forwarding" on page 3-93.

NOTE:
The rest of this section assumes you will read the *DEFINITY*® *Enterprise
Communications Server Call Vectoring/EAS Guide* (555-230-521) for a detailed
description of Look-Ahead Interflow and its uses. The guide contains information
that is critical to the effective and efficient use of this feature.

How to Administer Look-Ahead Interflow

Table 3-28. Required Forms

Form	Field
System Parameters Customer-Options	■ Vectoring (Basic) ■ ISDN-PRI ■ Lookahead Interflow
Trunk Group (ISDN)	■ Outgoing Display ■ Codeset to Send TCM, Lookahead ■ Supplementary Service Protocol ■ UUI Treatment
Feature-Related System Parameters	■ Interflow-Qpos EWT Threshold
ISDN Numbering - Public/Unknown	■ Ext Len ■ Ext Code ■ CPN Prefix
Call Vector	■ Complete a form for each Look-Ahead Interflow vector

See "Call Vectoring" on page 3-61 for associated Call Vectoring administration.

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- System-Parameters Customer-Options — For full functionality, options must be enabled at both the sending and receiving switches. If Look-Ahead Interflow is not optioned on the receiving switch, interflow still results on a look-ahead basis. However, the forwarded Dialed Number Identification Service (DNIS) (sending switch VDN name) information is ignored and tandem Look-Ahead Interflow is not provided.

- Trunk Group Form (ISDN) — If you do not want the call originator's display to update on each Look-Ahead Interflow call attempt, look-ahead calls should be routed over trunk groups with the Outgoing Display field set to **n**.

- Feature-Related System Parameters Form — Administer the Interflow-Qpos EWT Threshold field when working with enhanced Look-Ahead Interflow. Any calls that will be answered before this threshold will not be interflowed (therefore saving CPU resources).

- ISDN Numbering - Public/Unknown Form — Administer a CPN Prefix for each Vector Directory Number (VDN) that maps to a vector used to place Look-Ahead Interflow calls. If you do not, a Look-Ahead Interflow DNIS of all blanks displays on the answering agent's phone.

For private network non-QSIG connectivity with direct facilities between the *DEFINITY* ECS/switch, administer Look-Ahead Interflow DS1/E1 circuit packs with Country Protocol Option 1 independent of the country where the system is located.

Considerations

- LAI has been tested with several major carriers. To find out if these capabilities work with your carrier, check with your account team for the most current information. If testing has not been done to verify operation over the public networks involved with the preferred specific configuration, use of private ISDN trunking between the nodes should be assumed until successful testing has been completed.

- All calls routed over ISDN facilities by a **route-to number with cov n** or **route-to digits with cov n** vector command on a switch where Look-Ahead Interflow is enabled are treated as Look-Ahead Interflow call attempts.

  A vector may route a call over an ISDN facility to a destination that is not a VDN. The sending switch processes this call as a Look-Ahead Interflow call even though it is not. ISDN processing at the receiving switch causes the call to always be accepted. However, the DNIS and any other information in the Look-Ahead Interflow information forwarded with the call are ignored.

- Until the lookahead attempt is accepted by the receiving switch, the caller continues to hear any feedback applied by the sending switch vector and will remain in any split/skill queues.

- **Route-to number with coverage y** or **route-to digits with coverage y** commands never result in a Look-Ahead Interflow call attempt. The sending end assumes the call is always going to be accepted. This command always completes the call. Moreover, the command should not be used if the vector at the receiving switch might deny the call, since the caller in this case would be given a busy

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signal or would be disconnected. Use this command with coverage y only when you want unconditional interflow (with Look-Ahead Interflow active) and the terminating switch is set up accordingly.

■ Audible feedback may be provided to the caller before interflow is attempted. Therefore, another audible feedback from the receiving switch may confuse the caller. For example, a caller hearing ringback on the sending switch may be confused if music is applied suddenly when the call interflows to the receiving switch.

■ For backward compatibility of LAI applications between the *DEFINITY* ECS R6.3 and older *DEFINITY* switches, leave the "Send Codeset 6/7 LAI IE" option on the Trunk Group form set to its default **y**. Existing LAI applications will continue to operate as before, even after you upgrade.

You can use enhanced LAI available in the *DEFINITY* ECS R6.3 (and newer), without any network or trunk administration changes, by adding the *interflow-qpos* conditional to original LAI vectors (the conditional applies only to calls in queue). The *DEFINITY* ECS does not have to have R6.3 (and newer) software to receive LAI calls from another *DEFINITY* ECS with the R6.3 software. However, if both the local and remote switches in LAI applications are upgraded to the *DEFINITY* ECS R6.3 (and newer), Enhanced Information Forwarding and Best Service Routing capabilities can also be used. However, the *interflow-qpos* conditional is not necessary for enhanced information forwarding.

Interactions

■ AAR/ARS

ISDN facilities used to provide Look-Ahead Interflow to a VDN on another switch in a private network can use the AAR feature if private facilities are to be used for call routing.

■ Agent Terminal Display

If collected digits are forwarded with an interflowed call, the forwarded digits are displayed to the answering agent (unless they're overridden with newly collected digits).

■ Attendant Control of Trunk Group Access

Calls will not route over a trunk with Attendant Control of Trunk Group Access set.

■ Authorization Codes

Authorization Codes must not be required for interflow routing. Assign a high enough FRL to the VDN so that the route desired for routing interflow calls can be used without requiring an Authorization Code entry. If a route choice is encountered that requires a higher FRL, the interflow is considered an invalid destination (rejected for Look-Ahead Interflow or not available for standard interflow) without the application of recall dial tone.

■ BCMS

BCMS does not log LAI attempts, nor does it report accumulated in-VDN time.

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■ Call Detail Recording — Sending Switch

No Ineffective Call Attempt or Outgoing Call CDR records are generated for vector *route-to* commands that are unsuccessful including denied Look-Ahead Interflow attempts.

If a local (on-switch) call to a VDN generates a Look-Ahead Interflow call attempt that is accepted, and answer supervision is returned from the receiving switch, then one Outgoing Call CDR record is generated with the originating extension as the calling number.

If an incoming (off-switch) call to a VDN generates a Look-Ahead Interflow call attempt that is accepted, and no answer supervision is returned from the receiving switch, then one incoming CDR record is generated. The VDN is the called number, and the duration is from the time answer supervision was provided to the incoming trunk.

If an incoming (off-switch) call to a VDN generates a Look-Ahead Interflow call attempt that is accepted, and answer supervision is returned from the receiving switch, then two incoming CDR records are generated:

— An incoming record with the VDN as the called number and the duration as the time since answer supervision was provided to the incoming trunk. This is generated if the call is initially answered in the sending switch before interflow takes place.

— An outgoing record containing the incoming trunk information as the calling number and the dialed digits and the outgoing trunk information as the called number.

■ Call Detail Recording — Receiving Switch

On the receiving switch, an incoming Look-Ahead Interflow call is treated like any other incoming vector call.

If answer supervision is returned by the vector, and the call is never terminated to another destination, then the VDN extension is recorded as the called number in the CDR record.

If the call terminates to a hunt group, then the VDN, hunt group, or agent extension is recorded as the called number. If the `Record VDN in Record` field of the Feature Related System Parameters is **y**, then the VDN extension overrides the `Call to Hunt Group - Record` administration option for vector calls.

■ Call Prompting

Digits collected at the sending switch, no matter how they are collected (caller-entered, ASAI provided, CINFO provided, etc.) are forwarded with interflowed calls and available at the remote switch via information forwarding. For more information, see .

> **NOTE:**
> Dial-ahead digits are not forwarded with the call. There is a maximum of 16 forwarded digits.

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■ Centralized Attendant Service

A centralized attendant can be a Look-Ahead Interflow destination.

■ Display - 27 Character

The VDN name (part of the LAI information forwarded with calls) can be up to 15 characters long. Any characters over this limit will be dropped.

■ Facilities Restriction Level and Traveling Class Marks

The FRL for interflow over ARS/AAR route choices is assigned to the original VDN used for the incoming call.

■ Incoming Call Management

The adjunct routing capabilities of vectoring can be used at the sending switch to determine if a call should be interflowed. Adjunct routing at the receiving switch can be used to tandem the call to a far-end switch.

If the call terminates to a trunk (tandem), then two CDR records are generated:

— An incoming record with the VDN as the called number and the duration as the time since answer supervision was provided to the incoming trunk.

— An outgoing record containing the incoming trunk information as the calling number and the dialed digits and the outgoing trunk information as the called number.

■ Lucent Distributed Networking - Manufacturers Specific Information (MSI)

LAI (whether enhanced or not) may not function with systems from other vendors (unless that vendor develops a corresponding capability that works with the *DEFINITY* ECS/switch).

■ Network Access

LAI operates over public, private, or virtual private (for example, SDN) ISDN-BRI and -PRI networks that meet minimum network requirements.

The sending of a Look-Ahead Interflow codeset 6/7 information element is counted toward Message Associated User-to-User Information (MA-UUI) counts.

■ QSIG

LAI and information forwarding function over QSIG trunk facilities if the remote locations are the *DEFINITY* systems. You may get LAI call control functionality with other vendors if the *DEFINITY* ECS/switch is the starting point.

■ Redirect on No Answer (RONA)

Calls redirected to a VDN by RONA can be subsequently processed and routed by LAI applications.

■ Service Observing

You can observe a call in LAI processing via VDN observing throughout the life of the call (as long as the call is still connected through the local *DEFINITY* ECS). All current restrictions on Service Observing still apply. Incoming calls can be service observed at the remote switch.

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■ Trunk-to-Trunk Transfer

Interflowed calls may be transferred by a receiving switch to another trunk connection.

■ VDN Override

The name of the active VDN for a call is displayed at the remote answering agent.

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Multiple Call Handling

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Multiple Call Handling

Multiple Call Handling (MCH) allows agents to receive an ACD call while other types of calls are alerting, active, or on hold.

How to Administer MCH

Table 3-29.   Required Forms

Form	Field
Hunt Group	■ ACD
	■ Multiple Call Handling

The MCH column on the List Hunt Group form contains the value that you enter in Multiple Call Handling.

Detailed Description

Applications

Use Multiple Call Handling in applications where you want agents to take additional calls without dropping the active call. Examples of applications include:

- An agent and a caller may need to wait on a call for information. MCH allows the agent to put the call on hold and handle other ACD calls until information is available.

- ACD calls may be more important to your business than non-ACD calls. Use MCH to interrupt agents on non-ACD calls with an ACD call.

- In an EAS environment, calls from one skill may be more important than calls from another skill. Use MCH to interrupt an agent who has a call from the less-important skill with a call from the more-important skill.

You can use MCH in an Expert Agent Selection (EAS) or non-EAS environment.

- With EAS, you can administer any combination of MCH and non-MCH skills for an agent. If an EAS agent is a member of both MCH and non-MCH skills, he or she can handle multiple simultaneous ACD or Direct Agent Calls only in the MCH skills.

- Without EAS, agents can be logged into only one split if it is an MCH split. Similarly, am agent logged in to a non-MCH split cannot log into an MCH split.

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MCH Settings

On Request

In on-request splits or skills, the following is true.

- If an agent goes into Auto-In or Manual-In work mode, but there are no calls in the queue, the agent is placed at the bottom of the MIA queue or at the bottom of their skill level in the EAD queue, or is made available in the DDC queue.

- Agents must select Auto-In or Manual-In work mode for each new ACD call they take while a call is on hold.

- The agent can take additional ACD calls as long as there is an available line appearance.

Use on-request MCH in conjunction with a feature such as VuStats, which agents can use to see when the split queue is getting full and take additional calls.

One Forced

An agent who is idle or active on a non-ACD call is automatically interrupted with an ACD call from this split or skill when no other ACD call for any of the agent's splits or skills are alerting, active, or held. In addition, the following must also be true:

- The agent is in Manual-In or Auto-In work mode.

- The agent is the most idle or next available.

- An unrestricted line appearance is available.

- AUX work or Move from CMS are not pending.

As long as an ACD call is active or held, the agent does not automatically receive an additional call from the one-forced split or skill. An agent in a one-forced split/skill in Auto-In or Manual-In work mode is unavailable for that split/skill from the time that an ACD call rings until all ACD calls are abandoned, redirected, or dropped. However, the agent can request another ACD call from a one-forced split or skill by placing the active call on hold and selecting Manual-In or Auto-In work mode.

If an agent with multiple skills is active on an ACD call for a group with one-forced MCH, the agent could be forced to take an ACD call for one of his or her other skills, depending on that skill's MCH settings.

Because one-forced MCH forces an ACD call to alert an agent who is not on an ACD call, use it when you want ACD calls to take precedence over other calls.

One per Skill

You must have EAS to use one-per-skill MCH. An agent with no ACD calls for this skill is automatically interrupted with a single ACD call from this skill under the same conditions listed for one-forced.

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If a one-per-skill call is active or held, the agent does not automatically receive additional calls from that skill. However, the agent can request another ACD call from a one-per-skill in the usual way.

If an agent with multiple skills is active on an ACD call for a one-per-skill group, the agent could be forced an ACD call for one of his or her other skills if those skills are many-forced or one-per-skill MCH.

Use one-per-skill MCH when calls from one skill are higher priority than other ACD calls.

Many Forced

Agents are automatically interrupted with an ACD call under the same conditions listed for one-forced. As soon as an agent answers an alerting ACD call, the agent immediately becomes available to receive another ACD call from a many-forced split or skill.

Agents in many-forced groups in Auto-In or Manual-In work mode are unavailable only when an ACD call is ringing.

Use many-forced MCH when agents must answer important or urgent calls, even when they must put equally important calls on hold. It can also be used to force Direct Agent calls to an agent.

MCH Example

In this example, an agent is logged into 4 skills, each with a different MCH option. shows how calls are delivered when an unrestricted-line appearance is available and the agent is in Auto-In or Manual-In work mode (AUX work mode is not pending).

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Table 3-30. MCH Call Delivery Example

Condition	Calls Delivered?			
	Skill 1 (MCH=on-request)	**Skill 2 (MCH=one-forced)**	**Skill 3 (MCH=one-per-skill)**	**Skill 4 (MCH=many-forced)**
No calls on set	yes	yes	yes	yes
One active extn call	no	yes	yes	yes
Skill 1 call active	no	yes	yes	yes
Skill 2 or 4 call active	no	no	yes	yes
Skill 3 call active	no	no	no	yes
Extn call held, no other action	no	yes	yes	yes
Skill 1, 2, or 4 call held, no other action	no	no	yes	yes
Skill 3 call held, no other action	no	no	no	yes
Extn call held, then AI/MI selected	yes	yes	yes	yes
Skill 1,2,3, or 4 call held, then AI/MI selected	yes	yes	yes	yes

Agents and supervisors in on-request MCH splits/skills can use Queue Status, VuStats, and BCMS/CMS reports to determine if a waiting call must be answered immediately.

Considerations

- Agents can receive multiple calls only when in Auto-In or Manual-In work mode. All forced MCH calls are delivered with ringing at the agent's station, not with zip tone. Requested MCH calls are delivered with ringing or zip tone.

- Agents can toggle between Auto-In and Manual-In work mode.

- If an agent selects ACW or AUX work mode with calls on hold, the work mode is pending until all calls complete or until an Manual-In call completes. New ACD calls are not delivered when AUX work is pending. When an ACD or Direct Agent call with pending ACW completes, the agent enters ACW. When an agent is active on a non-ACD call with ACW pending, the agent can receive forced MCH calls.

- If an agent is either in Auto-In work mode and active on an ACD or Direct Agent call, or in Auto-In or Manual-In work mode and active on a non-ACD call and a Manual-In ACD or Direct Agent call abandons from hold, the agent is pending for ACW work mode and the after-call button lamp flashes.

- If an agent reconnects to an ACD or Direct Agent call on hold, his or her work mode changes to the call's work mode (Auto-In or Manual-In).

- Do not use forced MCH with DDC distribution because the first agent continues to receive calls until all line appearances are busy.

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Interactions

- Automatic Hold

  To answer a ringing ACD call, an agent in a many-forced, one-forced, or one-per-skill split/skill pushes the line-appearance button. If automatic hold is administered, the active call is automatically placed on hold. Otherwise, the agent must first push hold.

- Call Work Codes and Stroke Counts

  Agents handle multiple ACD calls simultaneously with MCH can enter CWCs and Stroke Counts. When an agent does so with multiple calls on the station, the code/count is associated with the last call the agent handled. If an agent enters a code/count during an active call with calls on hold, the code/count is associated with the active call.

  If an agent with on-request MCH is active on a call that requires forced entry of CWC or stroke counts and places the call on hold without entering a code/count, he or she cannot request another call.

  If agents with many-forced MCH are in a split/skill with forced entry of CWC or stroke counts, they are forced to handle an ACD call even if they have not entered a code/count.

- Direct Agent Calling

  Agents can handle multiple Direct Agent calls if their direct agent skills have MCH. The queue-status indicator is not lit when a Direct Agent call queues to a split/skill. Agents are notified that calls are waiting with a ring ping and a flashing current-work-mode lamp.

- Move Agent While Staffed

  An agent with a move pending can place a call on hold and request another ACD call. All calls and ACW must complete before the pending move occurs.

- Non-ACD calls

  If an agent activates Auto-In or Manual-In work mode with calls on hold, he or she can answer or originate a non-ACD call. With on-request MCH, the agent is temporarily unavailable for ACD or Direct Agent calls. With forced MCH, a call can be delivered. If an agent in ACW reconnects to an AUXIN/AUXOUT call, the agent remains in ACW.

- Queueing

  When an agent is available, the agent is placed at the end of the queue for Uniform Call Distribution (UCD) hunt groups or at the bottom of the skill type for Expert Agent Distribution (EAD) hunt groups, or is made available for Direct Department Calling (DDC) hunt groups. When the agent becomes the most available according to group type (UCD, EAD, or DDC), he or she receives a queued ACD or Direct Agent call.

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If the last agent on a forced MCH split is pending for AUX work mode in a nonvector-controlled split, the agent must empty the queue before going to AUX work mode. The agent continues receiving ACD calls until the queue is emptied.

■ Redirection on No Answer

If an agent has a call active or on hold and the RONA timer expires for another ringing ACD call, RONA redirects the alerting call back to the split/skill or administered VDN. The agent is not taken out of service when the call redirects, but is placed at the bottom of the Most Idle Agent (MIA) or Expert Agent Distribution (EAD) queue.

■ Restricted line appearance

If you administer last-available line appearance as Restricted Last Appearance for an agent's terminal, the agent does not receive additional ACD calls because the appearance is reserved for making conference or transfer calls.

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Queue Status Indications

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Queue Status Indications

Queue Status Indications allows you to assign queue-status indicators for Automatic Call Distribution (ACD) calls based on the number of calls queued and time in queue. You can assign these indications to lamps on agent, supervisor, or attendant terminals or consoles to help users monitor queue activity.

In addition, you can define auxiliary queue warning lamps to track queue status. On phones and consoles with displays, you can display the number of calls queued and time in queue of a split's oldest call.

How to Administer Queue Status Indications

Table 3-31.   Required Forms

Form	Field
Hunt Groups	■ Queue Length
	■ Calls Warning Threshold (per split or attendant group)
	■ Time Warning Threshold (per split or attendant group)
	■ Time Warning Port (per split)
	■ Calls Warning Port (per split)
Station (multi-appearance)	■ Button/Feature Button Assignments
	— q-calls
	— q-time
Attendant Console	■ Feature Button Assignments
	— atd-qcalls
	— atd-qtime
	— q-calls
	— q-time
System Capacity	■ Queue Status Buttons

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Queue Status Indications

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Detailed Description

There are two types of Queue Status Indications:

- Number of queued calls (NQC)

  The system report the total number of calls, excluding direct agent calls (DACs), in queue at a hunt group.

- Oldest queued time (OQT)

  The system reports the time in queue of the oldest call in a split queue.

You can also use auxiliary queue warning lamps to provide both types of indications. Install the lamps at any location convenient to split agents.

If a queue status threshold is reached, the lamp next to the associated button flashes. If calls are queued but the threshold is not reached, the lamp lights steadily. If no calls are queued, the lamp goes dark.

If agents at phones and consoles with displays press either the OQT or NQC button, the following information is briefly displayed:

- Split name (or extension, if name is not assigned)

- Oldest queued time

- Number of queued calls

You can use Queue Status Indications to provide status information for attendant groups or other hunt group types (DDC and UCD). With attendant groups, the button names (AQT and AQC) are different than for split queues, the display shows OPERATOR instead of split name or extension, and all status information applies to the attendant group queue.

If you need to know how many queue status buttons you've administered, or how many your system will allow you to administer, check page 5 of the System Capacity form.

Interactions

- Attendant and Phone Displays Timer

  The timer and the queue status information can be displayed at the same time. On 1-line displays, the timer is displayed in the last eight display positions and the number of queued calls is not displayed. On 2-line displays, the timer is displayed on the first line and the queue status information is displayed on the second line.

- CMS

  When you use CMS to move an agent from one split to another, all buttons associated with the first split, including NQC and OQT buttons, become associated with the second split.

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Reason Codes

Reason Codes allows agents to enter a numeric code that describes their reason for entering Auxiliary (AUX) work mode or for logging out of the system. Reason codes give call center managers detailed information about how agents spend their time. Use this data to develop more precise staffing forecasting models or use it with schedule-adherence packages to ensure that agents are performing scheduled activities at the scheduled time.

You can administer the codes so that entry is forced or optional. Ten reason codes are available, including a default code. You can assign two system-wide names to each code — one for entering AUX work mode and one for logging out.

You can use VuStats to display the reason code name or number. Use VuStats or CMS to gather historical and real-time reason-codes statistics.

You must have Expert Agent Selection (EAS) enabled to use reason codes.

How to Administer Reason Codes

Table 3-32. Required Forms

Form	Field
System Parameters Customer-Options	■ ACD
	■ EAS
	■ Reason Codes
Attendant Console	■ RC
Feature-Related System Parameters	■ EAS
	■ Aux Work Reason Code Type
	■ Logout Reason Code Type
	■ CMS Release (Release 5 and later configurations, or none)
Feature Access Code (FAC) (optional)	■ Aux Work Reason Code Type
	■ Logout Reason Code Type
Language Translations	■ Line 49
Reason Code Names	■ All
Station	■ RC

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Detailed Description

Forced Reason Codes

If you have administered forced reason codes, agents cannot enter AUX work mode or log out until they enter a code. Agents can enter codes 1 — 9, but not default code 0.

If an agent enters an invalid code or fails to enter a code within the administered timeout interval, the change is denied and the agent remains in the current work mode. If the agent dialed a FAC, the agent hears an intercept tone. If the agent pressed the AUX button, the AUX lamp flutters and then goes dark (or lights steadily if the agent was already in AUX with a different reason code).

Requested Reason Codes

If you have administered requested reason codes, agents need not enter a code to enter AUX work mode or log out. Agents can enter the codes 0 — 9. If an agent enters an invalid code or fails to enter a code within the timeout interval, the agent enters AUX work mode or logs out with default code 0.

Entering AUX Work Mode

An agent can enter an AUX reason code in one of three ways:

- Pressing an AUX work button with an assigned code

- Pressing an AUX work button with no assigned code and responding to the prompt for a reason code

- Dialing an AUX work FAC and responding to the dialtone prompt for a reason code

If there are no calls ringing, active, or held at the phone, agents enter AUX work mode immediately and the AUX lamp lights steadily. Otherwise, the AUX lamp blinks until the agent completes all calls at the terminal.

If a button for AUX work is associated with the reason code that the agent entered, the button lamp lights. If no such AUX button exists, the system lights the first AUX button lamp with no administered reason code.

You can assign an AUX button without a reason code to an agent's phone. This allows agents with a limited number of buttons to use all 10 reason codes.

Logging Out

To log out with a reason code, the agent dials the logout FAC, hears a second dial tone and enters a reason code. The agent hears confirmation tone and is logged out.

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Default Code

Default code 0 is used when the system puts an agent into AUX work mode or logs the agent out without the involvement of the agent. For example:

- When an agent logs in and is put into AUX mode

- When an agent makes or receives a non-ACD call from the available state

- When a call is redirected as a result of Redirection on No Answer (RONA) and the agent is logged out or put into AUX mode

- When agent skill assignments are changed while an agent is staffed (the system automatically logs the agent out and back in)

- When an agent forces a logout without entering a code (for example, by pulling the headset)

- When an agent who is requested to enter a reason code fails to enter a valid code within the 10-second timeout period

- When an agent with requested reason codes enters # or *

Considerations

- If an agent in Auto-In or Manual-In work mode dials the logout FAC but fails to enter a reason code and logout reason codes are forced, the agent is returned to the available state. ACD calls are delivered even if the agent has left the phone. To prevent this, be certain that agents enter AUX or ACW work mode before logging out.

- When an agent changes to AUX work mode and the AUX Work Reason Code Type is set to none, the agent is put into AUX work mode with the default reason code even if you have administered a different reason code for the AUX button. Setting AUX Work Reason Code in this way allows you to complete button administration before activating the feature.

- Do not administer AUX buttons without a reason code for hybrid station sets.

- When an agent in AUX work mode is active on a non-ACD call, the agent cannot immediately change the reason code. A change is pending until the call drops.

- There is a limit to the number of agents who can simultaneously be entering either a reason code or a Call Work Code. See the *DEFINITY Enterprise Communications Server System Description Pocket Reference* for this limit.

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Interactions

■ Abbreviated Dialing

You can program FACs for AUX work mode or logout with or without an associated Reason Code on automatic-dial buttons or in abbreviated-dial lists. At the reason code prompt, when an agent selects an abbreviated-dial or automatic-dial button, the first digit of the button is taken as the reason code.

■ Agents in Multiple Skills

When an agent who is assigned to multiple skills enters AUX work mode with a reason code, the agent enters AUX work for all of his or her skills with the same reason code.

■ ASAI

ASAI allows a host to log an agent out and place an agent in AUX work mode with a reason code. The host can query the agent's current work mode and receive the reason code associated with the AUX work mode.

■ Auto-Available Split

The system logs AAS agents out for Redirection on No Answer with the default reason code.

■ Basic Call Management System

Statistics about AUX work mode by reason code are not available in BCMS reports.

■ CMS

CMS tracks time in AUX work mode by reason code and displays reason codes for agents currently in that mode. When an agent is moved from CMS while the agent is staffed, the system logs the agent out using the default code, and then logs the agent back in again. If an agent is in AUX work mode when moved, the agent is returned to AUX work mode with the same reason code when the move is completed.

■ Direct Agent Calling

When a Direct Agent call is queued for an agent in AUX work mode with a reason code, the appropriate AUX button lamp flutters to alert the agent to the queued call. If there is no AUX button lamp, agents receive an audible alert (ring-ping or call-waiting tone). If there is an AUX button with no assigned reason code administered, then that lamp flutters.

■ Redirection on No Answer

When a call is redirected via RONA, an agent is placed into AUX work mode with the default code or is logged out with the default code if the agent is in an auto-available skill.

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Redirection on No Answer

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Redirection on No Answer

Redirection on No Answer (RONA) redirects a ringing ACD split or skill call or Direct Agent Call after an administered number of rings. RONA prevents an unanswered call from ringing indefinitely. The call can redirect either to the split or skill to be answered by another agent or to a VDN for alternative call handling. Direct Agent Calls route to the agent's coverage path, or to a VDN if no coverage path is administered.

You must have ACD enabled to use RONA. Administer RONA for each ACD split hunt group as required. RONA can be used in Auto-Available Splits (AAS), or in splits and skills with agents operating in Manual-In work mode. You can administer RONA for vector-controlled or nonvector-controlled splits or skills.

Do not administer RONA for splits controlled by adjuncts or *AUDIX* or for auto-answer agents assigned splits or skills because calls must ring at a terminal to be redirected.

How to Administer RONA

Table 3-33.   Required Forms

Form	Field
Hunt Group	■ ACD
	■ AAS
	■ Vector
	■ Controlling Adjunct
	■ Message Center
	■ Redirect On No Answer (Rings)
	■ Redirect to VDN
Station (multifunction)	■ Button Assignments — noans-alrt

You must set Controlling Adjunct to **none**.

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Detailed Description

When RONA is invoked for a call, the system:

- Places an agent in AUX work mode, and thus unavailable to receive calls from other splits or skills. In an AAS, the agent is logged out.

- Redirects split or skill calls back to the split or skill or administered VDN.

  Redirected calls are requeued at the highest priority so that they are distributed before any other split or skill calls. See for more information about call redirection.

- Sends a message to CMS.

  When a RONA timeout occurs, the Noans-alrt lamp for the split/skill lights steadily. The supervisor presses the Noans-alrt button to display the login ID or the extension and name of the last agent timed out with RONA.

- Records the redirection in BCMS or CMS. See for additional information.

RONA Application Examples

VRU Applications

Typically, RONA is used with VRU applications in AAS configurations. RONA detects VRU failures and provides alternate operation. For example, an adjunct port failure is not detected by ACD call processing. RONA detects the failure, takes the port out of service, and provides notification of the failure.

Use Call Vectoring for flexible call handling in case of a VRU failure. Assign RONA a converse split connected to the *Conversant* or to equivalent VRU ports. Whenever RONA times out on a ringing call delivered via the *converse-on* command to a VRU port, the agent is logged out and the call is redirected back to the converse split.[1] With a complete VRU failure, all VRU ports are eventually logged out and vector processing for the *converse-on* command bypasses that step for new calls.

---

1. RONA can't redirect a call to an administered VDN from a *converse* step.

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The Screen 3-1 vector shows how to provide automatic backup for a complete VRU failure.

```
                        CALL VECTOR

01 wait-time 0 secs hearing ringback
02 converse-on split...  (VRU returns the digit "1" as a return code
        followed by additional digits for the application)
03 collect 1 digits after announcement none
04 goto step 6 if digits = "1"
05 goto vector xxx  (for backup when the VRU fails)
06 collect 2 digits after announcement none
07 ...
```

Screen 3-1.   Call Vector

In Screen 3-1, the application works as expected as long as the VRU returns the digit string, which includes a return code of 1. In this case, the condition in Step 4 is satisfied and the program branches to Step 6, which provides normal application processing.

On the other hand, if all VRU ports in an AAS split are logged out by a RONA timeout, the *converse-on* command step (Step 2) is skipped, and no digits are collected by Step 3 (after the 10-second timeout). The condition in Step 4 is not satisfied and vector processing proceeds to Step 5, which branches to vector xxx to connect the call to an agent.

Other Applications

You can use RONA for applications that involve human agents with manual answering and other adjunct applications, such as Home Agent. For example, a call may not be answered because an agent left without entering AUX work mode or logging out. You can use RONA to make the nonanswering agent unavailable and redirect calls to another agent or to the RONA VDN.

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RONA Routing Sequences

and describe how RONA redirects split or skill calls and Direct Agent calls.

Table 3-34.   RONA Routing Sequence for Direct Agent Calls

Redirection Destination	Explanation
Coverage path	Direct Agent calls redirect to a coverage path, if one exists. Priority calls do not route to coverage.
RONA VDN	If no coverage path exists but a VDN is administered for RONA, Direct Agent calls redirect to the VDN.
VDN return destination	For external calls, if neither a coverage path nor a RONA VDN are administered, then Direct Agent calls redirect to the VDN Return Destination extension.
None	Calls continue ringing.

Table 3-35.   RONA Routing Sequence for Split/Skill Calls

Redirection Destination	Explanation
RONA VDN	If a RONA VDN is administered, calls redirect to the VDN.
Requeue to split/skill	If a RONA VDN is not administered, calls redirect to the split or skill.
Coverage path	In nonvector-controlled splits, if calls cannot requeue to the split, they redirect to the split's coverage path if one is administered.
VDN return destination	For external calls, if a split coverage path or a RONA VDN is not administered and calls can not requeue, they redirect to the VDN Return Destination extension.

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Using BCMS/CMS Reports with RONA

You can use BCMS and CMS reports to determine which agents had RONA timeouts and how calls were redirected.

With R3V2 and later releases of CMS, the exception report lists agents who were timed out and made unavailable. With BCMS and earlier releases of CMS, you can determine which agents were in AUX work mode or logged-out with AAS.

With R3 CMS, you can use the real-time "Split Status" report to see which agents are in AUX work mode, but you need a custom report to see logged-out agents.

With BCMS, use SAT to create a list of unstaffed agents for the split to see which agents are logged out (for AAS applications). With EAS, list agent-loginid specifying unstaffed and AAS = yes.

With BCMS, agents' changes to AUX work mode appears in the BCMS Split (AGENT) Status report. In an AAS split, agents log out, so they do not appear in the Split Status report. When the call is requeued, the System Status report shows only the AVG ANSW SPEED time and AVG ABAND TIME time for the requeued call. The Historical Split and System reports show both a FLOWOUT (primary split) and FLOWIN (redirected split) for requeued calls, while the VDN report shows only a FLOWOUT.

Direct Agent calls are recorded as ACD split calls but the flowout is recorded only if an agent's coverage path requeues the call to a split.

Since BCMS does not report exceptions, RONA events are not reported. If you have BCMS, use the RONA split lamp indicator for RONA event indication.

Returning AAS Agents to Service

When RONA redirects a call that was directed to an AAS, the agent is logged out. To return an AAS agent to service, readminister the agent as a member of the AAS split to be logged in again in one of the following ways:

- For ACD splits, remove the agent from the split and then resubmit the split Hunt Group form with the agent added to it. Alternatively, administer the agent in a different location in the split members list on the Hunt Group form. Use the *list unstaffed-agents* command to get a list of all AAS agents that have been logged out, not just AAS agents that were logged out because of a RONA timeout.

- For EAS skills, readminister the Agent LoginID form so that the AAS agent is automatically logged in. To determine which EAS agents are logged out, use the *list agent-loginid* command.

- For ACD splits and for EAS skills, you can busy-out the AAS agent station with the *G3-MT busyout station* command and release it with the *release station* command. Releasing the AAS agent station automatically logs the agent in. If all AAS agent ports on the circuit pack had a RONA timeout, busy-out and release the entire circuit pack.

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■ Use CMS Move Agents to move up to 32 agents at a time into a dedicated unused split/skill and then move the agents back into the AAS split/skill. You can set this up using the timetable on a manual-scheduled basis to activate when the VRU has been restored to service after a failure.

■ Use ASAI to log the logged-out agents back in via ASAI login request messages.

Considerations

■ RONA can timeout while an agent is actually at the terminal if the agent does not answer soon enough or has selected another work mode while a call is ringing. RONA handles the call as usual, making the agent unavailable. With ACD splits, agents at multifunction terminals know that they have been made unavailable when they see the AUX-Work lamp lit. They press the Auto-In or Manual-In button to become available.

■ Specify a coverage path or VDN for redirection for nonvector-controlled splits or for Logical Agent IDs with EAS Direct Agent Calls to ensure that calls are always redirected.

Interactions

■ AAS

Use AAS with RONA for VRU ACD non-ASAI adjunct-controlled split applications. Assign AAS only to ACD hunt groups. When all lines in a vector-controlled AAS split are logged out, the split is considered unavailable, and vector processing skips the step in the vector for new calls.

If RONA occurs on the last VRU port in an AAS split, the call is not requeued to the converse split, but is processed by the next vector step.

Any calls queued to a split that has been taken out of service may be left at this split. When the system reinitializes, all busied-out ports are automatically logged back into the AAS splits. New calls cause a RONA timeout if the adjunct or agent still does not answer after the system reinitializes.

■ Abandoned Call Search

Abandoned Call Search, if defined for a trunk, is reapplied to call on that trunk that RONA requeued whenever the calls are routed to another agent.

■ Agents in multiple splits

When a RONA timeout occurs, an ACD split agent is placed in AUX work mode with notification to CMS for all splits that the agent is logged into. The agent is responsible for becoming available in each split. In an AAS, agents are logged out of all splits that they are logged into. You must log agents back into the AAS splits.

■ Agent logout

An agent can log out from a multifunction set while an ACD call subject to RONA is ringing the set. However, if the agent logs out before RONA times out, RONA timing is canceled, and RONA redirection and notification occur immediately.

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■ Agent work modes

If an agent presses the ACW button with an ACD call ringing, the change request is pending. If the agent has a pending change to ACW before a RONA timeout occurs on a ringing ACD call, RONA timing continues. At timeout, the call is redirected, CMS is notified, and the agent is placed in AUX work (overriding the pending ACW request).

If an agent presses the AUX-Work button with an ACD call ringing, the change request is pending. With ACD splits, since the RONA time-out changes the state to AUX-Work, there is no conflict with the pending AUX-Work change request. With AAS splits, an agent-initiated AUX-Work change is denied per existing operation.

■ ASAI

RONA applies to vector-processed calls that are routed by an adjunct to an ACD split or agent as a Direct Agent Call.

You can assign RONA to ASAI adjunct-monitored splits and adjunct-monitored calls. An event report is not sent to the ASAI adjunct when a RONA timeout puts an agent into AUX work mode.

The adjunct makes an agent query (as part of the value query capability group) to determine the agent's state. Once the call is requeued to the split, the adjunct receives a call-queued event report if event reporting is active for the domain (VDN or nonvector-controlled split).

An adjunct-monitored split can be assigned as an auto-available split. The logout event for an AAS split is sent to the adjunct when RONA timeout logs an agent out.

You cannot assign RONA to an adjunct-controlled split. An adjunct-controlled split cannot be an AAS.

ASAI *Conversant* VRU applications are configured with nonvector-controlled splits using manual-answer operation on analog lines to *Conversant* ports. The ASAI link provides event notification for the ACD split for enhanced services. In addition, you can log in and log out the ports as required. (AAS splits are not used for this application because the ASAI link controls the login or logout).

You can assign RONA to these splits to detect failure conditions in the same manner as non-ASAI VRU applications. RONA does not notify *Conversant* of AUX work mode changes. ASAI *Conversant* cannot query to determine the states of its ports. You must restore ports manually after a failure via *Conversant* management screens. Complete failure is automatically restored when *Conversant* reinitializes. Table 3-36 describes ASAI events that the switch sends the adjunct for various stages of the RONA call. Also included are the ASAI associations (assuming that they are active) for which the events are provided. For the split to have Notification association active, the split must not be vector-controlled or adjunct-controlled.

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Table 3-36. RONA/ASAI Events

Stage of Call	ASAI Event	ASAI Associations
1. RONA timeout	Logout (for AAS)	Domain (agent) control
2. Call redirected to split	Call redirected	Domain (station) control (for agent ext call is leaving)
	Call queued (only if the call queues)	Domain (station) control, (for new agent & for internal originator) call control, notification
3. Call redirected to VDN processing	Call redirected	Domain (station) control (for agent ext that call is leaving)
	Call redirected (only if call is redirected to a VDN with Notification active)	Notification
	Call offered to Domain	Notification (VDN)
4. Call delivered to agent	Alerting	Domain (station) control, (for new agent & for internal originator) call control, notification
5. Call routed to split's coverage path	Call redirected followed by existing operation of ASAI Events	Domain (station) control (for agent ext that call is leaving)
6. Infinite feedback to caller	Call redirected	Domain (station) control (for agent ext that call is leaving)
7. Continue vector processing	Call redirected followed by existing ASAI events	Domain (station) control (for agent ext that call is leaving redirecting to VDN)
8. Call routed to direct agent's coverage path	Call redirected followed by existing operation of ASAI events	Domain (station) control (for agent ext that call is leaving)

When a call is redirected via ASAI Redirect Call, the RONA timer is canceled.

■ Attendant return call

If an attendant extends a call to an ACD split or VDN for which the return call timer is not activated, the call does not interact with RONA. The Attendant Return Call Timer is *not* set if an attendant extends the call to another attendant.

■ *AUDIX* Transfer

RONA applies to a call transferred by *AUDIX* to an ACD split.
A redirected call to *AUDIX* does not go to split or agent coverage after it is transferred out of *AUDIX*. If RONA times out on this type of call, the call cannot be redirected.

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■ Automatic answering

If an agent with automatic answering receives a call with zip tone instead of ringing, RONA timing is canceled.

■ Call Coverage

Direct Agent calls are redirected to the agent's coverage path if a path is administered. A temporary bridged call appearance is not maintained for a call directed to an ACD hunt group or VDN, or for a Direct Agent call.

When a call is redirected to an ACD split or direct agent logical ID as a point in the coverage path via Expert Agent Selection (EAS), the Coverage Subsequent Redirection/CFWD No Answer timer is started on the call. Covered calls go to the next point in the split's coverage path.

If no other point is available to accept the call, the call remains queued or continues to ring the current coverage point. When RONA times out at the coverage point, the following occurs:

— RONA does not reset the Subsequent Redirection/CFWD No Answer timer. The timer that expires first controls the call.

— If the coverage point for a covered call is a direct agent logical agent ID whose split has RONA, and if RONA times out first, the call is sent to the next point in the split's coverage path, not to the agent's coverage path. The Subsequent Redirection/CFWD No Answer timer is reset when the call is redirected to the next coverage point.

— If RONA was applied to an ACD call that was a previously redirected coverage call (that is, the RONA split was a point in the coverage path), RONA is used to requeue the call as specified for a noncovered call. However, the call is not designed to go to split coverage or forwarding. The Subsequent Redirection/CFWD No Answer timer is reset if RONA requeues the call to the RONA split. Both the RONA timer and Subsequent Redirection/CFWD No Answer timer are reapplied.

— If RONA applies to an ACD call that was a previously-redirected coverage call (for example, the RONA split was the second point in the coverage path), the call is redirected to the next coverage point in the principal's coverage path if the call cannot be requeued to the RONA split. The Subsequent Redirection/CFWD No Answer timer is reset.

— If no other point in the coverage path exists or other points are unavailable, the split-covered call that cannot be requeued or the direct-agent-covered call receives call-cannot-be-redirected handling.

■ Call Detail Recording (CDR)

When an agent is assigned to be recorded on the CDR record as the called number, the RONA redirected-to answering destination is recorded as the final called number. You can administer CDR to record the VDN, the hunt group, or the answering agent as the called number.

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■ Call Forwarding All

If an adjunct Direct Agent call is made to an agent's extension that has Call Forwarding All assigned and it is redirected by RONA, the call follows the agent's coverage path.

A call forwarded via Call Forwarding to a split or logical agent ID with RONA is sent to the principal's coverage path instead of going to the split's coverage path (if the call cannot be requeued) or to the agent's coverage path (for a Direct Agent call) on RONA redirection.

■ Call Pickup

A member of an agent's pickup group can pick up an ACD call that is being timed for RONA. RONA is cancelled.

■ Call Vectoring

RONA applies to vector-controlled ACD splits when calls are queued via the *queue-to split*, or *converse-on split*, or *check split* commands. Also, RONA applies to nonvector-controlled and vector-controlled ACD splits when calls are routed to the split via a *route-to* or a *messaging split* command. Basic Call Vectoring handles an AAS with all agents logged out as unavailable and skips the relevant step, just as it does for a split with all queue slots busy. With an *adjunct routing* or *route-to with coverage* step that routes to a vector-controlled split with all agents logged out, the call is given a busy tone just as when the call cannot queue to a nonvector controlled split according to the existing operation.

Vector events are generated for a RONA timeout when *converse-on* processes a call or results in a RONA redirection failure, and when a vector step is skipped because all AAS agents are logged out.

Do not assign vector-controlled splits coverage, forwarding, or night service, because Call Vectoring provides these functions. These functions do not apply to RONA-redirected calls involving vector-controlled splits.

■ Calling/Called Number Display

A call to a split that RONA redirects is similar to a direct call to the split. If the call goes to coverage, the destination display looks like it does for a normal covered call.

An internal or DCS caller to an ACD hunt group or VDN sees displayed the hunt-group or VDN name and extension. This display remains when the call rings an agent. A Direct Agent call (with EAS) initiated at a phone displays the agent name and logical ID when the call rings the agent's terminal. If the ACD-split or Direct Agent call goes to coverage, the name remains, but the extension or logical ID portion changes to "cover." This also happens when RONA redirects a call.

■ Delay announcements

Delay announcements assigned to non-vector-controlled splits are applied to requeued RONA calls as usual for redirected calls.

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■ Direct Agent Calling

RONA applies to Direct Agent calls from splits with RONA assigned. RONA timing applies when a Direct Agent call (from an adjunct or phone) is delivered to and rings an agent with manual answering. Agents are placed in AUX work mode or logged out even if they are the last agent in the split and ACD split calls are queued. Direct agent calls that are queued for an agent remain queued and are not delivered because the agent is unavailable. Don't-answer (DA) coverage continues for the queued calls.

If an agent with a coverage path is made unavailable by a RONA time-out on a non-covered Direct Agent call, the call follows the agent's coverage path. With EAS, the agent's logical extension coverage path for Direct Agent calls is used. If the agent has no coverage path or if the path is unavailable, the call cannot be redirected and the caller hears previously-provided feedback.

If Direct Agent call comes from a split that has forwarding or night service, the call is forwarded, precluding RONA timing. If the agent has forwarding or Send-All-Calls, the Direct Agent call is forwarded (ACD calls only) or goes to coverage, precluding RONA timing.

■ Direct Department Calling

RONA applies to DDC-type hunt-group ACD calls.

■ Home Agent

RONA applies to Home Agent lines that terminate on the *Conversant* Home Agent system as a means to detect port failures. Home Agent lines use Manual Answer and are not present in AAS. Once RONA notification is made, you can correct the failure and restore service manually on *Conversant*.

■ Inbound Call Management (ICM)

RONA applies to ICM-managed calls that ring an agent in an ACD split with RONA assigned.

■ Message Center/Server Service

You can assign RONA to Message Center/Server ACD splits.

■ Multiple Call Handling (MCH)

If an MCH agent has a call active or on hold and the Redirection on No Answer timer expires for another ringing ACD call, the ringing call is redirected to the split/skill or administered VDN. When the call redirects, the agent is not made unavailable, but is placed in the queue of available agents.

■ Music-on-Hold access — Music on Transferred trunk call

Trunk callers who are transferred to another destination continue to hear administered music (or silence), not ringback, while the call rings. This applies while the transferred call queues to a split.

If the trunk call (an ACD call or Direct Agent call) is transferred to a split with RONA, timeout applies to the call, but the caller continues to hear the previous feedback instead of ringback.

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- Night Service

  When Night Service is activated, calls (including RONA calls) for the hunt group redirect to the night station extension. If the night service split has RONA assigned, RONA timing is reapplied to the redirected call.

- Queue status indications

  Calls that RONA requeues are counted in the queued calls total. When a RONA call is queued, the call's call-wait time is reset, so RONA does not affect the oldest call waiting (OCW) time.

- Queuing

  When redirected to a split, RONA timed-out ACD calls in a nonvector-controlled split are queued at the highest priority. These calls are distributed before any other calls, except Direct Agent calls.

- Stations

  RONA applies to ACD split or direct agent ACD calls that ring at multifunction or hybrid stations with Manual Answering in an ACD hunt group.

  RONA applies to Off-Premises Station (OPS) lines in an ACD split.

- Voice Response Integration (VRI)

  You can assign RONA to *converse* splits. RONA timing applies to calls that a *converse-on* command queues and delivers. RONA timing is canceled if a call is delivered to an agent in another split to whom the system previously tried to queue a call.

  RONA interacts with *a converse* split that is an AAS like any other AAS.

  If RONA must redirect a call to an agent port in a converse split and the queue is full or all AAS agents are logged out, the call is processed by the next vector step while the caller continues to hear the previous vector feedback.

Interactions with Other Ringing Call Timers

Several features time the ringing when an ACD call is delivered to an agent. You can use RONA's timer in conjunction with other timers.

⇒ NOTE:
The timer that expires first applies to the call. RONA is canceled if any of the other timers expires first, except in the case of coverage timers.

When a coverage timer expires, RONA timing is canceled only when the call goes to coverage. If RONA times out first, the other timers continue timing or are stopped and may later be reset. The timers that may interact with RONA are listed in Table 3-37 and Table 3-38. Table 3-38 indicates what happens to the timer if RONA times out first

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Table 3-37. Timer Description

Timer	Description
Split DA	Split Call Coverage Don't Answer (nonvector-controlled)
Covering DA	Covering Point DA - Subsequent Redirection No Answer
Agent DA	Agent DA Coverage (Direct Agent Calls)
NATO	DID/CO Trk No Answer Timeout
WAST	Wait Answer Supervision Timer

Table 3-38. RONA/Timer Interaction

Timer	RONA Timeout	Restarted After Redirection?
Split DA	Stopped	If requeued or delivered to another agent
Covering DA	Stopped	If redirects to covering point
Agent DA	Stopped	If covers to Direct Agent with coverage
NATO	Continues	N/A
WAST	Stopped	If ringing destination or RONA redirection fails

If you want RONA notification and redirection, set the number of rings (or equivalent time) for a RONA timeout to shorter than other timeout periods. DA timers start when a call is placed in queue and continue when the call rings the station. Since RONA starts only when the call is ringing, the RONA interval is usually set to two or three rings, while the DA interval is set to 10 or more rings.

Since queue time is variable, assign a coverage timeout period that is greater than the longest expected queue time plus three or four rings (the time the call could ring the agent).

The NATO timer starts when the call seizes the incoming trunk. The timer could thus be timing before the call is queued by vector processing. Therefore, set the NATO timer to greater than the longest expected time before the call rings the agent (including time before and after being queued) plus three or four rings.

The WAST timer starts when the call rings the agent. Set the RONA timer to a slightly shorter interval (fewer than 10 rings) than the WAST 50-second interval.

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Service Observing

Service Observing allows a specified user, such as a supervisor, to observe or monitor another user's calls. In this section, "observer" refers to the supervisor who is observing calls. "Agent" refers to the terminal, attendant, or logical agent being observed. A vector directory number (VDN) call can also be observed. Observers can observe in listen-only or listen-and-talk mode.

Note that you set up Service Observing to observe a particular extension, not all calls to all extensions at a terminal.

$\Longrightarrow$ NOTE:

Service Observing may be subject to federal, state, or local laws, rules, or regulations or require the consent of one or both of the call parties. Familiarize yourself and comply with all applicable laws, rules, and regulations before using this feature.

How to Administer Service Observing

Table 3-39. Required Forms

Form	Field
System Parameters Customer-Options	■ Service Observing (Basic) — for basic or Logical Agent ID observing
	■ Service Observing (Basic) and Service Observing (Remote/By FAC) — for remote observing or observing via feature access code
	■ Service Observing (Basic) and the Service Observing (VDNs) — for VDN observing
	■ Vectoring (Prompting) — for vector-initiated observing
Class of Restriction	■ Can Be Service Observed
	■ Can Be Service Observer
	■ Service Observing COR Table
Feature-Related System Parameters	■ Service Observing Warning Tone
	■ Expert Agent Selection (Logical Agent ID)

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Table 3-39. Required Forms — *Continued*

Form	Field
Station (multiappearance)	■ Button/Feature Button Assignment (basic, VDN, Logical Agent ID)
	— serv-obsrv
Feature Access Code (FAC)	■ Service Observing Listen Only Access Code (remote/by FAC, VDN, Logical Agent ID)
	■ Service Observing Listen/Talk Access Code (remote/by FAC, VDN, Logical Agent ID)

■ Class of Restriction form

— On the agent's COR form, set the `Can Be Service Observed` field to **yes** to allow the extension to be observed.

— On the observer's COR form, set the `Can Be Service Observer` field to **yes** to allow the extension owner to observe others' extensions.

— On the observer's COR form, grant permission to observe specific CORs. On the Service Observing COR table, enter **y next to the CORs to be observed.**

Detailed Description

To begin observing, the observer presses the Service Observing button plus the agent's extension number. Initially, the observer is in listen-only mode. The observer presses the Service Observing button to toggle between listen-only and listen/talk mode. The lamp indicates which mode the observer is in.

To deactivate Service Observing, the observer hangs up, selects another call appearance, or presses the disconnect or release button.

An observer can observe an agent who is not active on a call. The observer is in the wait state until the agent receives a call, then the observer is bridged onto the call.

You can administer a warning tone on each system to let agents and callers know when someone is observing a call. Before connection, the conference tone may add 2-3 seconds delay if enabled. The parties hear a 2-second, 440-Hz warning tone before an observer connects to a call, followed by a half-second burst of this tone every 12 seconds during observation.

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Observing Logical-Agent IDs

With EAS, an observer can observe agents based on their logical-agent ID rather than their physical phone. The observer enters the logical-agent ID extension number of an agent, who must be logged in to a phone. The observer can monitor every ACD, personal, and Direct Agent call delivered to or placed by the agent, including calls placed to the physical extension.

Only one observer can observe a physical terminal at one time. An observer cannot observe a logical agent ID extension at a physical terminal that is already being observed. Likewise, an observer cannot observe a physical extension that is being observed as a logical-agent ID extension.

Observing VDNs

To observe a VDN, the observer enters a specific VDN extension and bridges onto calls (one call at a time) that have started vector processing for that VDN. The observer hears all tones, call prompting, caller dialing, announcements, music, and speech that the agent and caller hear. If an observer is in a COR administered to hear VDN of Origin announcements and has a VOA Repeat button, he or she can hear and replay VDN of Origin announcements.

The observer sees the name of the VDN, agent, or trunk as each is accessed in sequence by the VDN. For example, during vector processing the VDN name is displayed, but when the call connects to an agent, the agent name is displayed.

When the observer connects to a call in vector processing, the system maintains the connection until the call is disconnected or the observer hangs up, even if the call is routed or transferred externally. If the observer does not disconnect after one observed call is disconnected, the observer is connected to another call on the same VDN. Observing is listen-only as long as the call is in vector processing. Once the call is out of vector processing, an observer with listen/talk capability can talk as well as listen.

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Observing Remotely or by FAC

Observers can observe calls from a remote location or local terminal using Service Observing FACs. When observing remotely, observers must use FACs. Different FACs are required for listen-only and listen/talk modes. When observing locally or remotely by FAC, the observer cannot toggle between modes. Physical extensions, logical-agent ID extensions, and VDNs can be observed remotely.

Remote observing is initiated through Remote Access or Call Vectoring.

- With Remote Access, an observer accesses a switch via a trunk group dedicated to Remote Access or via a DID to the Remote Access extension. Remote observing works with all types of DID trunks, including ISDN-PRI and tie trunks, and DCS over analog, T1, or PRI.

- With Call Vectoring, an observer accesses a switch by dialing a VDN extension or a central office (CO) trunk that has a VDN extension as its incoming destination. Using route-to commands, you can design a Service Observing vector to allow a VDN call to directly access a specific extension to be observed or a Service Observing dial tone. At the dial tone, observers can enter any extension that they are authorized to observe. The following is a simple example of a Service Observing vector.

```
1.wait-time 0 seconds hearing ringing
2.collect 5 digits announcement 2300
  ("please dial your 5- digit security code")
3.goto step 5 if digits = 12345
4.disconnect after announcement 2000
5.collect 1 digits announcement 2310
  ("enter 1 to observe sales, 2 to observe billing")
6.route-to number 113001 with cov n if digit = 1
  (11=listen-only observe, 3001="Sales" VDN)
7.route-to number 113002 with cov n if digit = 2
  (11=listen-only observe, 3002="Billing" VDN)
8.goto step 5 if unconditionally
```

You can combine Call Prompting and Call Vectoring to provide security and to limit observation. See the *DEFINITY® Enterprise Communications Server Call Vectoring/EAS Guide* (555-230-521) for information about creating a Service Observing vector.

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Service Observing Indicators

Table 3-40 shows general Service Observing indicators that observers receive.

Table 3-40. General Indications to Observer

Condition	Button Lamp	Tone
Not active	Dark	None
Denied activation	Broken flutter	Intercept/busy/reorder
Activated	Steady/Winking	Confirmation tone followed by silence or connection to call.
Observing (listen only)	Steady	Hear call
Observing (listen/talk)	Winking	Hear/talk on call
In wait state	Flash	None
Denied observing	Flash (wait state)	Silence/ineligible tone followed by silence

Table 3-41 through Table 3-43 show the indicators that observers receive when they activate and use Service Observing. In these tables:

■ Wait state means that the observer has activated Service Observing but there are no calls or a call cannot be observed. A call appearance is not reserved. The observer must have an idle call appearance available to be used by Service Observing when an observable call comes in.

■ Ineligible tone is heard when an observed call becomes ineligible for observation. See "Considerations" on page 3-142 for conditions that make a call ineligible. This tone is the "hold confirmation tone"— a rapid series of 5 short 440-Hz beeps. The observer does not hear this tone if the agent receiving the ineligible call hears zip tone.

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Table 3-41.   Feedback When Activation Denied

Condition	State	Lamp	Tone
No such extension	denied	broken flutter	intercept
Extension not observable	denied	broken flutter	intercept
Not allowed COR[1]	denied	broken flutter	intercept
Extension has Data Restriction	denied	broken flutter	intercept
Extension has Exclusion Active	denied	broken flutter	busy
Extension has Data Privacy Active on call	denied	broken flutter	busy
Extension already observed	denied	broken flutter	busy
Extension is an observer	denied	broken flutter	busy
Extension being busy-verified	denied	broken flutter	reorder
Extension has a 6-party conference	denied	broken flutter	reorder
COR doesn't allow SO activation	denied	broken flutter	intercept
Observe VDN not optioned	denied	broken flutter	intercept
Logical ID not logged In	denied	broken flutter	busy
Activation to logical with physical observed	denied	broken flutter	busy
Activation to physical with logical ID observed	denied	broken flutter	busy
Maximum VDNs being observed	denied	broken flutter	reorder

1. Extension COR cannot be observed or COR for observer calling permission does not allow observing the COR of extension to be observed.

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Table 3-42.   Feedback When Activation Allowed — At Time of Activation

Condition	State	Lamp	Tone
Active-eligible call	observing	steady/ winking	confirmation tone followed by connection to call
No active call	wait state	flash	confirmation tone followed by silence
Call ineligible	wait state	flash	confirmation tone followed by silence
Call has "No Observe" COR	wait state	flash	confirmation tone followed by silence
VDN call already being observed	wait state	flash	silence

Table 3-43.   Feedback When Activation Allowed — After Observe Activated

Condition	State	Lamp	Tone
No active/eligible Call	wait state	flash	silence
Call in 6-party conference	wait state	flash	silence
Call already being observed	wait state	flash	silence
Call is being busy-verified	wait state	flash	silence
Call has Data Privacy active	wait state	flash	silence
Call has Data Restriction	wait state	flash	silence
Call has Exclusion Active	wait state	flash	silence
Active-eligible call (in listen-only mode)	SO listen	steady	hear call
Active-eligible call (in listen/talk mode)	SO listen/talk	winking	hear/talk on call
Press button while observing in listen-only mode	SO listen/talk	winking	hear/talk on call
Observer presses Release	not observing	dark	none
Call has "No Observe" COR	wait state	flash	silence
VDN call already being observed	wait state	flash	silence
No active eligible call	wait state	flash	silence

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Table 3-43.   Feedback When Activation Allowed — After Observe Activated — *Continued*

Condition	State	Lamp	Tone
Eligible VDN call	observing	steady/ winking	hear call
Eligible VDN call (in vector processing)	SO listen	steady	hear call
Eligible VDN call (out of vector processing in listen-only)	SO listen	steady	hear call
Eligible VDN call (out of vector processing in listen/ talk)	SO listen/talk	winking	hear/talk on call
Press button while observing in vector processing	SO listen	steady	no change to mode
Press button while not in vector and in listen-only	SO listen/talk	winking	hear/talk on call
Call being observed becomes ineligible	wait state	flash	ineligible tone followed by silence
Active call disconnects	wait state	flash	silence
Logical agent logs out	denied	broken flutter	busy, then silence
Observer (without button) hangs up	deactivates observing	n/a	n/a

While observing, the observer should press only the following buttons:

- Call Appearance

- Service Observing

- Position Busy

- Auto-ckt Assure

- Release (ACD) (This will end Service Observing)

- Bridged Appearance

- Auxiliary Work

- Queue Status (NQC, OQT, AQC, and AQT)

- System Night Service

- Hold (ignored)

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⚠ SECURITY ALERT:

General Security

Use the following COR restrictions to prevent unauthorized observing.

- For the observer, set the `Can Be An Observer` field on the COR form to **y**.

- For the agent to be observed, set the `Can Be Observed` field on the COR form to **y**.

- For the observer, grant permissions to all CORs to be observed on the Service Observing Permissions COR table.

VDN-Call Security

Use the following COR restrictions for VDN-call observing.

- For the VDN extension to be observed, set the `Can Be Observed` field on the COR form to **y**.

- For the VDN destination, set the `Can Be Observed` field on the COR form to **y**.

- Enter the VDN extensions to be observed in the observer's Service Observing Permissions COR table.

Vector-Initiated Security

Use the following guidelines for vector-initiated observing.

- Use Call prompting commands in Service Observing vectors to provide passcode protection and limit access to specific destinations or vector-verified, caller-entered digits.

- Use Time of Day/Day of Week checks in Service Observing vectors.

- Create a vector used exclusively for Service Observing.

- If you use route-to commands to observe a VDN extension, ensure the extension has an observable COR.

- If the observer is observing locally, grant calling permission to the observer on the VDN's COR.

In vector-initiated Service Observing, the COR assigned to the VDN used to initiate Service Observing, the COR assigned to the internal caller extension, and the COR assigned to agent to be observed are used to determine if Service Observing will be allowed. If the agent's COR is not observable, observation fails regardless of the VDN or caller COR. When a call routes through multiple VDNs, the COR of the last VDN is used for calling/observing permissions regardless of VDN Override settings.

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If you have administered the optional warning tone, the caller and the observer hear the tone only when the system connects the call to the answering or routed-to destination after vector processing is finished. The periodic tone is heard during the call even if the call is transferred off-switch. Use a warning announcement at the beginning of vector processing to inform the caller of observation since the system cannot give a warning tone until the call is out of vector processing.

Remote-Access Security

Use the following guidelines for remote observing.

- Use Barrier Codes and Authorization Codes to limit the use of Remote Access to authorized users. Refer to *DEFINITY ECS Administrator's Guide* for information about these codes and other Remote Access security measures.

- Use different Authorization Codes for different Service Observing permissions.

- Use Facility Restriction Levels (FRLs) and restrictions such as the Authorization Code COR to restrict Remote Access service observer access to other destinations (for example, stations or trunks).

- Use Call Prompting to create additional access security.

Assign the VDN, Barrier Code, and Authorization Code calling and Service Observing permissions and set Can Be Observer to yes on the associated COR form. The last COR encountered is used to determine observer permissions.

Considerations

Observability

Although an agent can be a member of multiple splits or skills, an agent can be observed by only one observer at a time. If two agents with different supervisors are observed and one agent calls the other, the originator's supervisor observes the call, and the other supervisor is placed in the wait state.

An attendant can be observed but *cannot* be an observer.

Ineligibility

A call to an agent extension or VDN is ineligible for observing when the call:

- Is already being observed

- Is being busy-verified

- Has Data Privacy active

- Has Data Restriction active, is conferenced with an extension that has Data Restriction active, or is a VDN call that reached an extension that has Data Restriction active

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- Has Privacy — Manual Exclusion active, is conferenced with an extension that has Privacy — Manual Exclusion active, or is a VDN call that reached an extension that has Privacy — Manual Exclusion active

- Is in a conference where adding the observer results in more than 6 parties (see for more detail on conferences)

- Is a VDN-observed call that reaches an unobservable extension or VDN. (Note that the COR of the hunt group, split, or skill used to distribute the call to the station/agent is not checked. The CORs of stations/agents conferenced with the call are not checked.)

Trunk Calls

If an agent being observed makes an trunk-call, observation starts after the agent finishes dialing. For central office (CO) trunks, dialing is considered complete when answer supervision is returned or when answer supervision timeout occurs.

Multiple Observers

Multiple observers can observe a single VDN simultaneously, but only one observer is observing a given call to the VDN. There is no limit to the number of observers observing a single VDN as long as the total number of observers actively observing VDNs does not exceed 50.

Conferenced Calls

An observer cannot initiate a conference while observing.

If an observed agent conferences a call and the number of conferenced parties is less than 6, the observer is placed in the wait state until the call is connected. Then the observer observes the conference. In addition, the observer is bridged onto any call on which the agent becomes active before the conference is complete. When the conference is complete, the observer is again bridged onto that call.

If an observed agent conferences a call and the number of conferenced parties (including the observer) is 6, the conference is denied.

A call to an observed VDN cannot be monitored if the observer, caller, and other parties bridged onto the call constitutes more than 6 parties.

If a conference is being observed because an observed agent entered the conference, when the agent hangs up, the conference is no longer observed. If a conference is being observed because an observed VDN call entered the conference, observing continues until the call is routed to an unobservable destination.

Conference members are observed during a conference regardless of their COR setting.

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If a VDN call being observed is conferenced to an agent call being observed, the VDN observer continues to observe and the agent observer goes into wait state. If two observers (of either VDN or agent calls) are conferenced to a call, the first observer conferenced-in continues to observe and the second observer goes into the wait state. VDN or agent call observers hear the ineligible tone before going into wait state.

The same rules apply when multiple observers monitor transferred calls.

Transferred Calls

Observers cannot initiate a transfer while observing.

If an agent being observed transfers a call, the observer is placed in wait state. The observer is bridged on after the transfer is complete.

A VDN observer continues to monitor the transferred call until it is transferred or routed to a unobservable destination.

Interactions

- ASAI

  A call to an observed VDN continues to be observed after it routes to an adjunct. A call can be routed to a Service Observing FAC by the adjunct routing command in the same way that it can be with the route-to command.

- Assist

  A VDN observer continues to observe a call during an assist operation. The observer observes the caller on hold and the conference, when the agent conferences the assist call with the VDN call.

- BCMS

  BCMS does not report on Service Observing. BCMS reports show normal measured-call and agent activity related to Service Observing calls. When a physical agent (non-EAS) is observed, the BCMS Report By Login ID shows the physical extension along with the login ID.

- Bridged appearances

  If an observer observes agent extension 3082, the observer is bridged onto calls only to 3082. If the agent with extension 3082 has a bridged appearance for extension 3282, calls to extension 3282 are not observed. Although extensions 3082 and 3282 have a call appearance on the same terminal, the observer cannot observe both extensions at the same time.

- Busy-verification

  An observer cannot observe an agent call that is bridged onto by busy-verification. Also, an agent's call that is being bridged onto by an observer cannot be busy-verified.

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■ Call Coverage/Call Pickup

An observer cannot observe a call answered by a covering agent or member of a pickup group until the called agent bridges onto the call. The observer continues observing a call to an observed VDN call if the call is routed to a destination that forwards the call (via Call Coverage, Call Forwarding, or Call Pickup).

■ Call Park

An observer cannot park a call while observing the call. An observer observing a VDN continues observing after a call is parked.

■ Call Waiting

A call cannot wait on a single-line phone that is being observed.

■ Call Work Codes/Integrated Directory

The observer does not hear agent dialing with these features because the digits are passed to the switch in S-channel messages.

■ CMS

When an observer is bridged onto a VDN call, CMS is notified.

■ Converse command

Converse-split extension ports can be observed as physical extensions. A call to an observed VDN continues to be observed if the call is answered by a VRU through the converse command.

■ DCS

To observe stations on another node (a DCS station extension), you must set up remote-access service observing. A DCS station can only observe another node using remote service observing. Service observing displays are not supported across DCS.

■ Dialed Number Identification Service

Observing by VDN provides monitoring by DNIS since the VDNs represent the DNIS of the service dialed.

■ Direct Agent Calling

A Direct Agent call to a logical-agent ID is monitored by observing the Logical Agent not by monitoring the physical extension.

■ Hold

Observers cannot place calls on hold while observing.

If an observed agent places a call on hold, the observer is put in wait state. A VDN observer continues to monitor the caller placed on hold.

■ Leave Word Calling

Parties on an observed call cannot use LWC.

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■ Look Ahead Interflow

If an observed VDN call routes to another location via Look Ahead Interflow, the call continues to be observed. The observer hears a warning tone, if administered at the sending switch, when the call arrives at the receiving switch. The observer continues to hear the periodic tone while observing the VDN call.

■ Move Agent/Change Skills

Moves or changes of physical of logical agents being observed occur according to the move or change rules. Observing continues.

■ Multiple Call Handling

While an agent extension or logical ID is observed, only the active call is monitored. If all calls are put on hold, the observer hears silence.

■ Music-on-Delay/Music-on-Hold

If an observer is in listen/talk mode, neither caller nor observer hears music-on-hold. If an observer is in listen-only mode, the caller hears music-on-hold, but the observer does not. A VDN observer hears music provided to the caller.

■ Night Service

A VDN observer continues to observe when a call routes to night service.

■ Recorded Announcement

A VDN observer continues to monitor a call connected to an announcement. A Verify Announcement call placed by an observed physical or logical agent can also be observed.

■ Redirection on No Answer

A VDN observer continues observing a call after it is redirected or rings "in limbo".

■ Trunks without disconnect supervision

Service observing cannot be activated over no-disconnect-supervision trunks. The caller hears denial indication.

■ VDN in a Coverage Path

Observers can observe calls that route to a VDN that is being observed or VDN calls that route to another VDN.

■ VDN Return Destination

You can create a prompting VDN with a return destination assigned so that, if you activate observing and it fails or the denial indication times out, the prompting VDN allows you to retry activation. This is true only if the denial and disconnection occur after the call leaves vector processing.

If a vector step fails, the system proceeds to the next vector step. Disconnect or busy commands cause calls to be dropped and do not trigger return destination.

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When return destination is triggered, the call is monitored through each return destination operation until the caller disconnects.

■ Voice-terminal displays

Non-remote observers' voice-terminal displays mirror exactly what is displayed on the observed physical or logical agent's display. For example:

```
a="3035001234 to Sales SO"
```

While observing a VDN, an observer sees displayed the name of the VDN being observed while in vector processing. After the call leaves vector processing, the name of the agent or trunk group that the call is connected to is displayed.

■ VuStats

Nonremote observers using 2-line displays can activate VuStats for an agent. An observer must activate VuStats before using Service Observing. The agent's statistics appear on the second line of the observer's display.

■ Zip tone

VDN observers do not hear the zip tone that the answering agent hears.

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Universal Call ID

Universal Call ID (UCID) is a unique tag assigned to a call.

In simple call scenarios, the tag stays with that call within a network that is based on the *DEFINITY* ECS/switch connected by ISDN lines. In complex call scenarios, the tag often merges with other tags.

NOTE:
The UCID data element is "universal" because it does not just identify a call on one particular *DEFINITY* switch; a UCID uniquely identifies a call across a network of *DEFINITY* switches.

What is UCID's Purpose?

The purpose of UCID is to tag a call with a unique identifier.

UCID provides a way to track calls across multiple *DEFINITY* switches and Voice Response Units (INTUITY CONVERSANT for the *DEFINITY* ECS R6.3 and newer).

Call centers can use UCID to track call history. Because UCID can uniquely identify every call in a network of any size, it possible to track call-related data from multiple sources (the *DEFINITY* ECS/switch and INTUITY CONVERSANT) and multiple sites. For example, you can combine data from many locations and print reports that enable you to track a call throughout its lifecycle. For information about such reports, refer to the *CentreVu® Call Management System Reports* (585-210-929) document.

NOTE:
Although UCID is intended for call centers, a *DEFINITY* ECS configured to create UCIDs will assign one to *every* call—not just to Automatic Call Distribution (ACD) calls.

What Does UCID Look Like?

The Universal Call ID is an 8-byte data element that displays as a 20-character number. It looks something like this:

```
01035051001071518260
```

How Does UCID Work?

For every new call that comes into or is originated by the *DEFINITY* ECS or *Conversant* product, the product creates a UCID. Depending on the call scenario, the UCID will either remain unique to that call or merge with other UCIDs.

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What Creates UCIDs?

Both DEFINITY ECS and *Conversant* can create UCIDs once the capability has been enabled. In other words, neither product automatically creates UCIDs until the feature is enabled.

When are UCIDs Created?

Once DEFINITY ECS or *Conversant* is administered to create UCIDs, these products assign a UCID to each call. For incoming calls over ISDN trunks, DEFINITY ECS determines whether or not the call already has a UCID. If so, the switch preserves the existing UCID and does not create a new one. If the call does not have a UCID, the switch creates one when call processing begins. For incoming calls over non-ISDN trunks, DEFINITY ECS creates a UCID for the call because non-ISDN trunks do not support the transmission of UCID.

For outgoing calls, DEFINITY ECS creates a UCID when the caller goes off-hook.

How are UCIDs Transmitted?

How DEFINITY ECS transmits UCIDs depends on the sending and receiving equipment. See Table 3-44 for an overview.

Table 3-44. UCID Transmission

Sender	Receiver	Connection	UCID contained in
DEFINITY ECS	DEFINITY ECS	ISDN (BRI or PRI) trunks using QSIG service protocol	codeset 0 Facility IE as manufacturer specific information (MSI) IE[1]
DEFINITY ECS	DEFINITY ECS	ISDN (BRI or PRI) trunks using Shared UUI service protocol	codeset 0 shared user-to-user information (UUI) IE[1]
DEFINITY ECS	INTUITY CONVERSANT	ASAI	various ASAI messages
INTUITY CONVERSANT	DEFINITY ECS	ISDN-PRI	codeset 0 shared UUI IE[1]
DEFINITY ECS	*CentreVu* CMS	BX.25	SETUP5 CMS message
DEFINITY ECS	CTI adjunct	ASAI	various ASAI messages

1. Refer to Information Forwarding section.

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How are UCIDs Tracked?

The way a network maintains and tracks a UCID depends on the call path. To illustrate UCID transport throughout a call's life cycle, this section describes several call scenarios:

- Station-to-station Calls

- Incoming Trunk Calls

- Outgoing Trunk Calls

- Simple Transfer or Conference

- Complex Transfer *and* Conference

Station-to-Station Calls

This scenario describes what happens when Phone I calls Phone II (both phones are on the same switch).
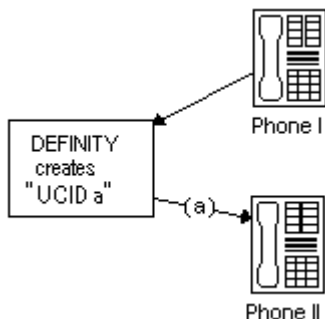
The *DEFINITY* ECS creates a new UCID (such as UCID "a") for any call originated by an internal station user.

Incoming Trunk Calls

UCID is assigned to an incoming call.

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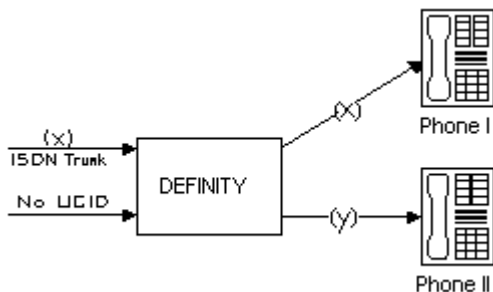
The *DEFINITY* ECS either

- receives UCID **x** information from an incoming call over an ISDN trunk.

- creates UCID **y** for incoming calls that do not already have a UCID.

There is one CMS call history record for each incoming call.

Outgoing Trunk Calls

UCID is associated with the outgoing trunk call from Phone I.
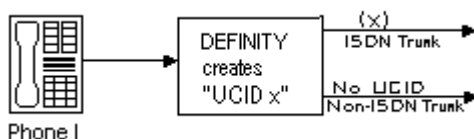
The *DEFINITY* ECS creates a UCID (such as UCID **x**) for an outgoing trunk call and then sends it over an outgoing shared UUI or QSIG ISDN trunk.

The *DEFINITY* ECS creates a UCID (such as UCID **x**) for an outgoing trunk call even if the trunk (such as a non-ISDN trunk) does not support the transmission of a UCID.

Simple Transfer or Conference

This scenario describes a simple transfer or conference call scenario.

When an incoming trunk or station call is received by the station user at Phone I and transferred to or conferenced with another station user or outside party:

1. The *DEFINITY* ECS creates a UCID for the incoming call if it needs one.

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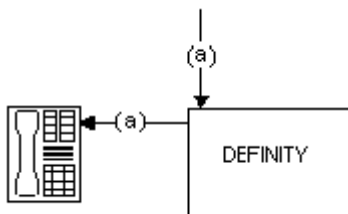
2. The *DEFINITY* ECS creates a new UCID for the temporary conference or transfer portion of the call.
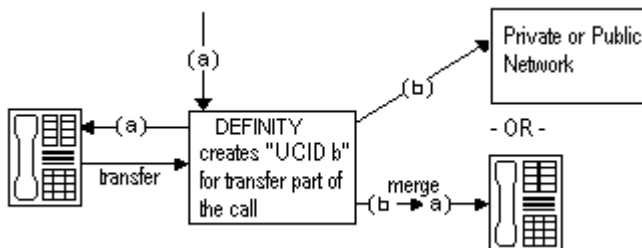
3. The *DEFINITY* ECS merges the temporary portion of the call with the original call when the conference or transfer is completed within the *DEFINITY* ECS. This is when the overriding UCID (such as UCID "a"), becomes the UCID for all parties within the *DEFINITY* ECS.

> **NOTE:**
> If the outgoing trunk does not support the sending of UCIDs, then the UCID of the outgoing call at the receiving switch will be "null".

If the call is transferred to another switch, only the UCID for the transfer (UCID "b") gets passed on. This is because the *DEFINITY* ECS cannot merge UCIDs if the call is not completed within the switch.

> **NOTE:**
> If, during the conference or transfer, the incoming call drops before the operation is complete, the two UCIDs will not appear to be associated because no merge of the two parts of the call was done.

Complex Conference

The following complex call scenario illustrates when a station user adds an incoming call to an existing conference.

In this scenario,

1. Phones I, II, and III are in the same conference call with UCID "x".

2. The person at Phone III receives an incoming call from Phone IV (this call has UCID "y" associated with it).

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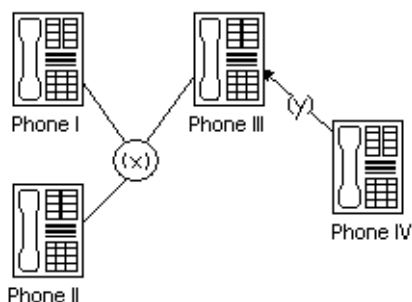
3. The person at Phone III puts the conference call on hold and answers the incoming call from Phone IV.

4. The person at Phone III decides to add Phone IV into the conference call.

5. The person at Phone III

    a. presses the Conference button

    b. presses the call appearance button to return to the conference call

    c. presses the Conference button again.

This brings the conference call into the call between Phones III and IV.

6. UCID "y" overrides UCID "x" because the *DEFINITY* ECS views Phone IV as the primary party in the conference initiated by step 5.
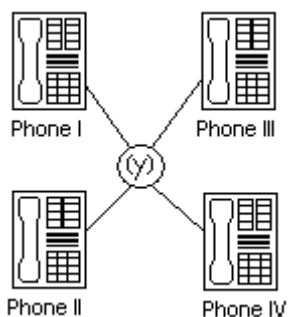
7. The UCIDs associated with each segment of the complex conference are sent to CMS if the parties in the call are measured (for this example, if the parties are ACD agents in a measured split/skill).

The *DEFINITY* ECS/switch Before *INTUITY* Conversant

The following scenarios describe what happens to UCID information when a call comes in to the *DEFINITY* ECS/switch before it goes to INTUITY CONVERSANT. In this configuration, the INTUITY CONVERSANT serves as a Voice-Response Unit (VRU) that controls the routing of incoming ACD calls.

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⟹ **NOTE:**

This configuration is more common than a call coming in to INTUITY CONVERSANT before reaching the *DEFINITY* ECS/switch.

This section describes two scenarios:

■ Simple call tracking

■ *Conversant* transfers a call

Simple Call Tracking

The following call scenario describes when a call comes in to the *DEFINITY* ECS/switch before INTUITY CONVERSANT.
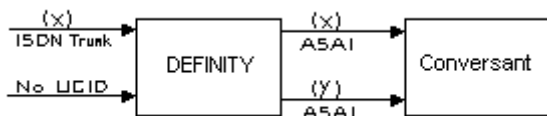
When the *DEFINITY* ECS is before INTUITY CONVERSANT:

1. The *DEFINITY* ECS receives an incoming call over an ISDN trunk.

2. The *DEFINITY* ECS does one of two things:

   ■ If the incoming call has a UCID (such as UCID "x"), then the *DEFINITY* ECS passes it along.

   ■ If the incoming call does not have an associated UCID, the *DEFINITY* ECS creates a new one (such as UCID "y").

3. The *DEFINITY* ECS passes the UCID to INTUITY CONVERSANT through an ASAI connection (via the activation of split/skill or VDN "event notification" by the INTUITY CONVERSANT).

4. UCID information is sent to CMS if trunk, VDN(s), and/or split/skill(s) involved in the call are measured.

INTUITY CONVERSANT Transfers a Call

The following call scenario involves a *Conversant* behind the *DEFINITY* ECS/switch configuration when *Conversant* initiates a call transfer after the call is answered by a port on the INTUITY CONVERSANT that serves as an ACD agent.

1. Call is directed to INTUITY CONVERSANT VRU port (typically by call vectoring) with UCID information (UCID "x" or UCID "y").

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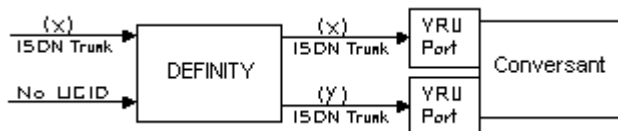
2. INTUITY CONVERSANT determines the call's destination and transfers the call (via an ASAI "third-party transfer" operation).
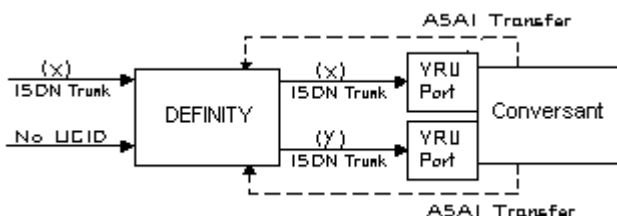
3. The *DEFINITY* ECS temporarily creates a new UCID (such as UCID "a" or UCID "b") for the transfer portion of the call (the original UCID is quickly merged into the call).
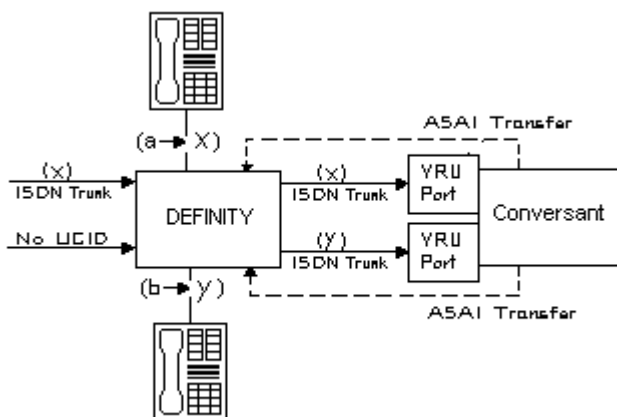
4. The UCIDs of the transfer segment and merged call are returned to INTUITY CONVERSANT in ASAI acknowledgment messages.

5. The *DEFINITY* ECS sends UCID information to CMS if trunk, VDN(s), and/or split/skill(s) involved in the call are measured.

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INTUITY **CONVERSANT** before the *DEFINITY* ECS/switch

This scenario illustrates a system configuration where a call comes in to INTUITY CONVERSANT before reaching the *DEFINITY* ECS/switch. In this configuration, INTUITY CONVERSANT provides voice response services and/or call screening so that the number of incoming calls to the *DEFINITY* ECS/switch is reduced.

> **NOTE:**
> This configuration is less common than the *DEFINITY* ECS/switch before INTUITY CONVERSANT configuration.
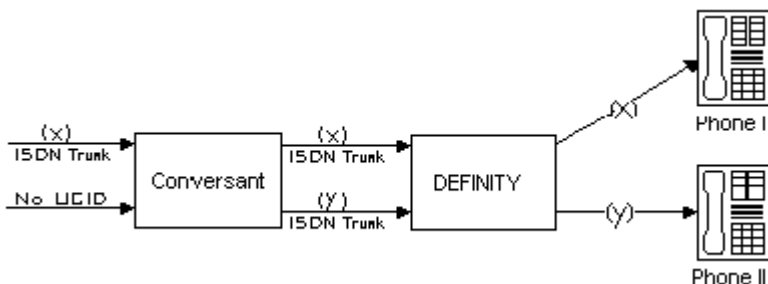
When INTUITY CONVERSANT is before the *DEFINITY* ECS/switch

1. INTUITY CONVERSANT receives an incoming call with UCID "x".

   or

   INTUITY CONVERSANT creates a new UCID "y" and associates it with the incoming call (if the call has no UCID already associated with it).

   > **NOTE:**
   > For INTUITY CONVERSANT to recognize an incoming UCID (such as UCID "x") from an ISDN trunk, special INTUITY CONVERSANT scripting is required. When INTUITY CONVERSANT receives a call from the public network, it automatically creates a new UCID because it cannot recognize whether or not the call already has a UCID.

2. INTUITY CONVERSANT sends UCID to the *DEFINITY* ECS over an ISDN-PRI trunk.

3. The *DEFINITY* ECS receives UCID and reuses it for the incoming call.

4. The *DEFINITY* ECS reports UCID to CMS if the trunks, VDNs, and/or splits/skills associated with the call are measured.

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Interactions

■ Distributed Communications System (DCS)

If DCS is used in a network of *DEFINITY* ECS/switches where UCIDs are tracked, the DCS feature must be configured with ISDN trunks having the Shared UUI service protocol. Otherwise, calls that are handled through one of the many DCS features (such as DCS Coverage) will not retain the UCID initially assigned to the call.

■ Remote *AUDIX*

For remote *AUDIX* over DCS, the DCS trunk(s) used to accomplish the remote *AUDIX* operation must be configured (as described previously in "Distributed Communications System") to retain the UCID associated with a call.

■ Tandem Calls

When a call is tandemed through the *DEFINITY* ECS, the UCID information may be blocked or passed through the tandem switch. To pass a UCID through a tandem switch, both the incoming and outgoing trunks at the tandem switch must be configured to handle UCIDs. See <u>"Information Forwarding" on page 3-93</u> for proper private and public network information forwarding administration.

Before You Start

Before you start to administer the UCID feature, be aware that UCIDs are successfully transmitted *only* when all of the *DEFINITY* ECS/switch network components meet the requirements (software and connections) specified below.

Some requirements vary, depending on how you want to use UCID. <u>Table 3-45</u> shows the requirements for different applications of UCID.

Table 3-45.   Requirements for UCID Applications

What do you want to do?	Your system must meet the following *software* requirements…	Your system must have the following *connections*…
Have *DEFINITY* create UCIDs	*DEFINITY* R6.3 or newer	
Have *DEFINITY* send UCID to another *DEFINITY*	*DEFINITY* R6.3 or nweer	ISDN (BRI/PRI) trunks with Shared UUI or QSIG service protocol
Have *DEFINITY* send UCID to CONVERSANT	*DEFINITY* R6.3 or newer CONVERSANT 7.0 or newer	ASAI link to CONVERSANT

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Table 3-45. Requirements for UCID Applications

What do you want to do?	Your system must meet the following *software* requirements…	Your system must have the following *connections*…
Have *DEFINITY* receive UCID from CONVERSANT	*DEFINITY* R6.3 or newer CONVERSANT 7.0 or newer	ISDN-PRI connection (with shared UUI) between switch and CONVERSANT
Have *DEFINITY* send UCIDs to CMS	*DEFINITY* R6.3 or newer CMS R3V6 or newer	BX.25 connection from switch to CMS
Have *DEFINITY* send UCIDs to a CTI Application	*DEFINITY* R6.3 or newer T-Server R3.1.0 or newer *DEFINITY* PBX Driver (G3PD)- R3.1.0 or newer CallVisor PC V6 or newer	ASAI link to adjunct

➡️ NOTE:
You can check your software version numbers by typing **list config software** at the SAT terminal. Because "R6" (Release 6) includes 6.1 through 6.3, you may have to check that your network has the separate 6.3 upgrade (this is the earliest version of the *DEFINITY* ECS software to support UCID).

To maximize the benefits of UCID, it is recommended that all switches be configured with the *DEFINITY* ECS R6.3 (or newer) software. However, because upgrading a network is often a gradual process, there may be a switch that cannot yet support UCIDs. In this environment, disallow the UCID transmission for any trunk group connected to a pre-*DEFINITY* ECS R6.3 switch. For information about enabling or disabling UCID transmission on a trunk group, see "How to Administer Universal Call ID" later in this chapter.

In the case of a *DEFINITY* network component that cannot support UCIDs, it is recommended that the component (ISDN trunk group, ASAI connection, or CMS software) be administered to disallow the sending or receiving of UCID. For example, if a *DEFINITY* ECS is connected to a non-Lucent Technologies PBX, then the connecting ISDN trunk must be administered to not send UCID over that trunk for outgoing calls.

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How to Administer Universal Call ID

These instructions assume you're using the SAT (Subscriber Access Terminal) screen or a terminal emulator to access the *DEFINITY* software.

There are three tasks involved in administering UCID on DEFINITY ECS. Complete these tasks in the following order:

Task A. Check ASAI Interface before enabling UCID

Task B. Set DEFINITY ECS to create and send UCIDs

Task C. Enable UCID Transmission on Trunk Groups

Task A: Check ASAI Interface before Enabling UCID

If this procedure is not performed, you may encounter the "ASAI Interface feature not assigned" error message in later steps.

Table 3-46.   Form Needed to Check ASAI Interface

Form needed	Field needed?	Why is this field needed?	Is field optional?
Optional Features	ASAI Interface	Global setting to send UCIDs to ASAI	Y

To check the ASAI interface:

1. In the command line, enter **change system-parameters customer-options** and press RETURN.

2. On page 1, enter **y** in the `ASAI Interface` field.

3. Log out and log back in if this and any other fields in this form have changed.

Task B: Set DEFINITY ECS to Create and Send UCIDs

You must administer each *DEFINITY* ECS/switch that you want to create UCIDs. If you do not administer a switch, it will pass along an already-created UCID, but it won't create one if a call comes to it first.

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**Table 3-47.   Forms Needed for the *DEFINITY* ECS/switch to Create and
Send UCID**

Form needed	Fields needed	Why is this field needed?	Is field optional?
Feature-Related System Parameters	Create Universal Call ID (UCID)?	To generate a UCID for each call when necessary.	N
	UCID Network Node ID	Important component of the UCID tag.	N
	Send UCID to ASAI?	So that ASAI receives UCIDs.	Y
	Adjunct CMS Release	So that CMS receives UCIDs.	Y

For the *DEFINITY* ECS/switch to create and send UCIDs:

1. If your network includes CMS and you want CMS to track UCIDs, then enter **busyout mis** in the command line. If not, go to step 2.

2. In the command line, enter **change system-parameters feature** and press RETURN.

    The Feature-Related System Parameters form comes up.

3. Go to page 4 of the form.

4. In the Create Universal Call ID (UCID)? field, enter **y**.

5. In the UCID Network Node ID field, enter the node ID number.

    Valid numbers are from 1 to 32,767.

> ⚠ **CAUTION:**
> *The UCID Network Node ID **must** be unique for every DEFINITY ECS/switch and Conversant in the system. If it is not unique, the integrity of the UCID is compromised.*

6. If your network includes ASAI, go to page 7 of the form. If not, go to step 8.

7. In the Send UCID to ASAI? field, enter **y**.

8. If you have performed the **busyout mis** command, go to step 9. If not, you are done with this task (Task b), so press ENTER to save your work and go to Task c.

9. Go to page 8 of the form.

10. In the Adjunct CMS Release field, enter **R3V6**.

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11. Press ⌈ENTER⌉ to save your work.

12. In the command line, enter **release mis**.

Task C: Enable UCID Transmission on Trunk Groups

When you send UCIDs over ISDN trunks, it is administered on a trunk group basis. Table 3-48 provides the form and field information that you need to perform this task.

Table 3-48.   Enabling UCID transmission on trunk groups

Form needed	Fields needed	Why is this field needed?	Is field optional?
Trunk Group	Group Type	To specify correct trunk type: ISDN is the only type that supports UCID.	N
	Supplementary Service Protocol	Specify correct service type. **b** is for QSIG, others are for UUI.	N
	Send UCID?	Allows or blocks UCID transmission.	N

To enable UCID transmission on a trunk group:

1. In the command line, enter **change trunk-group n** and press RETURN**.**

    The Trunk Group administration form comes up. *n* is the number of the trunk group you want to administer.

2. On page 1, enter **ISDN** in the Group Type field.

3. In the Supplementary Service Protocol field, enter the letter of the service protocol you want for this trunk group.

    b is for QSIG, other protocols are for UUI.

4. Go to page 2 of the form.

5. In the Send UCID? field, enter **y**.

6. Press ⌈ENTER⌉ to save your changes.

You also need to administer your trunk groups to send user data over your private and public networks. To administer the trunk groups, see "Information Forwarding" on page 3-93.

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Considerations

— UCID has been tested with several major carriers. To find out if these capabilities work with your carrier, check with your account team for the most current information. If testing has not been done to verify operation over the public networks involved with the preferred specific configuration, use of private ISDN trunking between the nodes should be assumed until successful testing has been completed.

Troubleshooting

The following troubleshooting hints should be reviewed when UCIDs are not transmitted, even though you received no error messages while administering the UCID feature, and all software and connections meet the minimum requirements:

— A tandem switch has the `Send UCID?` option set to **y** for all trunk groups that AAR/ARS or station users may use to tandem an incoming call.

— If DCS is used, make sure *all* ISDN trunks between the *DEFINITY* ECS/switches used for DCS or remote *AUDIX* are configured in the D-channel mode.

— For CMS tracking purposes, make sure all trunks, VDN, and split/skills that handle calls for which UCIDs are tracked are administered as "measured" (either "both" or "external").

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VDN in a Coverage Path

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VDN in a Coverage Path

VDN in a Coverage Path (VICP) enhances Call Coverage and Call Vectoring. If Basic
Call Vectoring or Call Prompting is enabled on your switch, you can assign a Vector
Directory Number (VDN) as the last point in a coverage path. Calls that reach this
coverage point can be processed by a vector or by Call Prompting.

How to Administer VICP

Table 3-49. Required Forms

Form	Field
Coverage Paths	■ All
Call Vector	■ All
Vector Directory Number	■ All

■ Call Coverage Path form — Set one of the following to the extension of the VDN
you want to use as a coverage point: Point 1, Point 2, Point 3, Point 4, Point 5,
Point 6.

Considerations

Once a call has covered to a VDN, it cannot be further redirected by features such as Call
Coverage, Call Forwarding, or Night Service.

A VDN is not allowed to be a member of a coverage answer group. A vector cannot route
a covered call to a coverage answer group — a coverage answer group can only be a point
in a coverage path.

Removing a VDN from the system with the *remove vdn <extension>* command
automatically removes the VDN from any coverage paths.

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VDN in a Coverage Path

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Interactions

- AAR/ARS Partitioning

  The class of restriction assigned to the VDN determines the partition group number (PGN). The PGN in turn determines the AAR or ARS routing tables used by *route-to* commands.

- ASAI

  For direct calls to a VDN, the *adjunct routing* command operates like the command *route to digits with coverage=y.* For calls that cover to a VDN, however, the *adjunct routing* command operates the same as a *route to digits with coverage=n* command. Since calls redirected once to coverage should not be redirected again, the coverage option is disabled for the *adjunct routing* command in this situation.

- Attendant

  A call covering to a VDN can be connected to an attendant queue or hunt group by a vector. Internal calls that route to an attendant display the class of restriction of the originating station if the attendant presses the "display COR" button.

  An attendant cannot establish a conference with a call covering to a VDN if the call is in vector processing. If a call placed to a local destination has covered to a VDN and the attendant attempts to add this call to a conference, the conference will be denied until the call has completed vector processing.

  An attendant-extended call that covers to a VDN will not return. If the attendant extends a call to a local destination that covers the call to a VDN, the attendant's return call timer is canceled when vector processing begins and the Return Call button will not affect the call.

  If a call covers to a VDN and is then routed to an attendant, the attendant can transfer the call to another VDN.

- *AUDIX*

  Calls that cover to a VDN can be routed to an *AUDIX* by the *route-to* or *messaging* vector commands. Calls that cover to a VDN may be subsequently transferred to *AUDIX*. Calls may also be transferred out of *AUDIX* to a VDN.

- Automatic Call Distribution (ACD)

  A VDN can be the last point in an agent's coverage path for direct agent calls.

- Call Coverage

  A VDN cannot be a member of a coverage answer group. A vector cannot route a covered call to a coverage answer group.

  Calls that have covered to a VDN cannot be redirected again by Call Coverage.

  Coverage Callback and Leave Word Calling work normally when a vector delivers a call to a covering user.

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◼ Call Forwarding

Calls that have covered to a VDN cannot be redirected by Call Forwarding.

◼ Call Park

A parked call will not cover to a VDN. When a call is parked at an extension with a VDN in its coverage path, the call will continue ringing the extension. If the call is parked to a hunt group extension and the call is in queue, the call will remain in the queue until it is retrieved, or answered by an agent, or abandoned by the caller. A vector event is generated for these calls when the administered coverage criteria are met.

Once a call covers to a VDN, Call Park cannot be established until the call is delivered to an extension and vector processing ends.

◼ Call Vectoring

The class of restriction assigned to a VDN determines the partition group number (PGN). The PGN in turn determines the AAR or ARS routing tables used by *route-to* commands.

When a call covers to a VDN, VDN override has no effect on the display shown on an answering display terminal. This station will show the normal display for a covered call.

adjunct routing: For direct calls to a VDN, the *adjunct routing* command operates like the *route to digits with coverage=y* command. For calls that cover to a VDN, however, the *adjunct routing* command operates the same as a *route to digits with coverage=n* command. Calls redirected once to coverage should not be redirected again, however, so in this situation the coverage option is disabled for the *adjunct routing* command.

converse: Covered calls to a VDN work with the *converse* command. If a call in vector processing is connected to an agent in a "converse split," the agent cannot activate Consult, Coverage Callback, or Coverage Leave Word Calling.

messaging: The *messaging* command handles covered calls differently depending on whether an extension is specified in the command. If the command *messaging split xxxx extension none* is used, the mailbox of the principal extension is used for the call. The number of the principal extension and the reason for redirection are passed to the messaging adjunct in the CONNECT message.

When an extension is specified in the *messaging* command, no information about the principal extension is passed to the adjunct. Instead, the number of the extension specified in the command is passed to the adjunct in the CONNECT message along with the reason for redirection. The mailbox for the specified extension is used.

route-to: A call covering to a VDN can be routed to any valid destination by the call vectoring command *route-to*. The coverage option for the *route-to digits* command is disabled for covered calls. In other words, the *route-to digits with coverage=y* functions like the r*oute-to digits with coverage=n* command when processing covered calls. When the *route-to* command terminates a covered call

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locally, information identifying the principal and the reason for redirection are retained with the call. This information can be displayed on display phones or passed to an *AUDIX* or Message Center system.

■ Class of Restriction (COR)

The COR assigned to the covering VDN governs the vector routing of the call.

■ Conference

Calls in an established conference will not cover to a VDN.

Once a call covers to a VDN, a conference cannot be established until the call is delivered to an extension and vector processing ends.

■ Consult

The Consult feature normally uses a Temporary Bridged Appearance on the principal's set. Call coverage to a VDN removes the Temporary Bridged Appearance from the principal's set, but the Consult feature still works.

■ Hunt Groups

A VDN can be the last point in a hunt group's coverage path. If the coverage vector for a split or hunt group routes calls to another via a *route-to* or *messaging* command, calls will queue at the second resource with the queue priority assigned for the first split or hunt group. If a *queue-to*, *check*, or *converse* command is used, calls will queue at the second split or hunt group with the priority specified in the command.

If an inflow threshold has been assigned to a hunt group, the group will not allow new calls to queue when the oldest call in queue has exceeded the threshold. Therefore, covered calls are not connected to a hunt group when the group's inflow threshold has been exceeded. Note that this interaction can also occur when a *messaging split* or *route-to* command routes a covered call to a split that isn't vector-controlled.

■ Look-Ahead Interflow

For calls that have covered to a VDN, LAI works like a *route-to digits/number with cov=n* vector command. Any Dialed Number Identification Service (DNIS) digits sent with the interflowed call will indicate the VDN to which the call covered, not any VDN the call encountered before it went to coverage.

■ Night Service

Calls that have covered to a VDN cannot be redirected by Night Service.

■ Personal CO lines (PCOL)

A VDN may be assigned as the last point in a PCOL coverage path.

■ Redirection on No Answer (RONA)

RONA applies to calls that cover to a VDN. If the vector associated with the VDN queues the call to a resource (for example, a split or agent) that uses RONA, the call can be requeued for the same resource. The call cannot be redirected, however, since it has already covered to the VDN.

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■ Terminating Extension Groups

A VDN may be assigned as the last point in the coverage path for a Terminating Extension Group.

■ Transfer

Calls may be transferred to extensions that cover to a VDN. Users who receive a covered call may transfer it to a VDN. If a transfer attempt goes to coverage and covers to a VDN, the user at the answering station can complete the transfer by pushing the Transfer button (or by flashing the switchhook on an analog station).

Calls that cover to a VDN may be subsequently transferred to *AUDIX*. Calls may also be transferred out of *AUDIX* to a VDN.

■ Phone Display

Calls covering to a VDN and then directed to an agent in a split or hunt group by a *queue-to*, *check*, *converse*, or *route-to* command display the following information to the agent:

```
a=EXT 3174    to    EXT 3077     b
```

In this example, station A called station B. Station B was busy, and the call covered to a VDN.

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VDN of Origin Announcement

VDN of Origin Announcement (VOA) provides agents with a short message about a caller's city of origin or requested service based on the VDN used to process the call.

Use VOA messages to help agents to respond appropriately to callers. For example, if you have two 800 numbers, one for placing orders and one for technical support, you can administer two VDNs to route calls to the same set of agents. When an incoming call is routed to a VDN with a VOA assigned (for example, "new order" or "tech help"), the VDN routes the call to a vector, which can place the call in an agent queue. When an agent answers the call, he or she hears the VOA message and can respond appropriately to the caller's request.

How to Administer VOA

Table 3-50.   Required Forms

Form	Field
Attendant Console	■ Feature Button Assignments — VOA Repeat
Class of Restriction (COR)	■ VDN of Origin Announcements
Feature-Related System Parameters	■ Hear Zip Tone Following VOA?
Announcements/Audio Sources	■ All
Vector Directory Number	■ VDN of Origin Annc. Extension
Phones	■ Feature Button Assignments — VOA Repeat

■ Announcements/Audio Sources — Assign each VOA you want to use. You can administer aux-trunk types with queue, without queue, and with barge-in. You can administer integrated types with queue and without queue. Do not administer analog and integrated repeating announcement types as VOAs.

The VDN for which you are administering a VOA must be in a vector command line.

Detailed Description

The agent cannot hear the caller while the VOA message is playing. The caller is not connected to the agent until after the message completes and cannot hear the message or the agent during the message. The caller hears ringback while the agent is listening to the VOA.

Agents logged in at multiline terminals see the call-appearance button for an incoming call flash until after the VOA completes. An agent can press the flashing call-appearance button to stop the VOA.

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To repeat the VOA, an agent presses the VOA Repeat button. The VOA Repeat button lamp lights during the VOA. The VOA Repeat button lamp remains lit if the repeat request is queued. If an agent presses the VOA Repeat button while the lamp is lit, the VOA is stopped. If an agent presses the VOA Repeat button but there is no VOA or the system cannot play the VOA within three seconds, the lamp flutters.

You assign VOAs for each VDN. However, the VOA applies to a COR, so you must administer a COR for agents who will receive VOAs.

You can set up VOAs in four ways:

■ Agents can hear a unique announcement based on the dialed number identification service (DNIS) received from the service office or carrier switch. Assign each DNIS as the VDN of a vector. Set up the VOA to announce the services associated with the DNIS.

> **NOTE:**
> The announcement associated with the current VDN only plays if the VDN Override for the previous VDN is set to y. If VDN Override for the previous VDN is set to n, the VOA associated with that VDN plays.

■ Use vector steps, an integrated prompting, or *converse-on* step to route calls to a VDN. Set up the VOA to announce the service the caller requested or to announce a condition that caused the call to *route-to* the VDN.

■ You can route calls to a voice response system, directly or through a vector. Use voice prompting to direct the caller to enter a touchtone response, and route the call to a specific VDN based on the caller's response. Set up the VOA to indicate the service the caller selected.

■ If agents require a caller's city of origin, assign the trunk group to a particular VDN. Set up the VOA to provide the location of the origin of the trunk group. Subsequent VDNs can be used to handle the call, or multiple VDNs can be assigned to a single vector.

> **NOTE:**
> VDN Override applies to VOA in the same way that VDN Override applies to display information. If a VDN with a VOA has VDN Override enabled, the system overrides the original VOA with VOAs in subsequent VDNs to which the call is routed.

Considerations

■ Because callers are kept waiting while a VOA plays, messages should be kept very brief — no more than 1.5 seconds in length. Agents should use a speakerphone or headset, so they do not miss the VOA while they are picking up the handset. If agents cannot use a speakerphone or headset, administer phones with a VOA Repeat button.

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■ If you have multiple announcement boards, you should place shorter VOAs on one board and longer recorded announcements on the other to avoid delaying delivery of VOAs. If you have only one announcement board, place VOAs on the integrated board and consider installing an auxiliary announcement device for longer announcements.

■ Agents must be on the same switch as the VOA.

■ A VOA can be assigned to multiple VDNs, but a VDN can have only one VOA.

■ If you use the TN750 circuit board for integrated announcements, the system maintains a separate logical queue for VOAs. If the VOA cannot be delivered to the agent within 1 second because of traffic or inoperative equipment, the system does not provide the announcement. VOAs are higher priority than other announcements on the TN750. A burst of VOAs can delay other announcements. Therefore, record non-VDN of Origin Announcements as auxiliary or analog.

■ Auxiliary announcements are connected for a duration of 1 to 2 seconds on a barge-in basis, immediately after the agent answers (or is assigned the call for auto-answer) and the incoming call is extended to the agent. Integrated and non-barge-in auxiliary announcements are connected for the duration of the announcement. The switch does not ensure that the integrated announcement is shorter than the allowed playback time.

■ VOA supports Auxiliary Trunks (aux-trunk) with barge-in, queue, or without queue. For aux-trunk with or without queue, when the trunk is idle, a VDN call seizes the trunk to start the VOA and the system plays the entire announcement (not just 1 to 2 seconds). However, if the announcement is busy and if aux-trunk has barge-in, the call does not queue but bridges onto the announcement for 1 to 2 seconds. When the VOA completes, the trunk is released along with the listeners, and the next call requiring the VOA starts the process over again. For this reason, your aux-trunk announcements should consist of one short announcement that repeats during the full announcement time. For example, you might want to record "New Order" as many times as possible, so that when a call bridges to the announcement, the agent hears "New Order" no matter where the agent bridges into the announcement.

■ If you use aux-trunk or integrated announcement without queue and a port is busy when a VDN call comes in, the system cannot play an announcement. If you use aux-trunk or integrated announcement with queue, the system plays the current announcement for an agent and then connects the next agent in the queue.

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Interactions

- Agent Call Handling (Answering Options)

    — Automatic Answer

    ACD agents at phones in Auto Answer mode hear a zip tone, then the VOA. You can also administer a zip tone after the VOA completes, to alert agents that an announcement is complete and a caller is connected.

    Non-ACD agents can receive a VOA if a call is routed to them via vector processing. When non-ACD agents at phones in Automatic Answer mode receive calls, they hear a call ID tone then the VOA. Agents hear a second zip tone after the VOA indicating connection to the caller.

    — Manual Answer

    When non-ACD agents at phones in Manual Answer mode receive calls they hear ringing, answer the call, and hear the VOA.

- ASAI Adjunct Routing

  If a vector step includes Adjunct Routing, the VOA is played for the agent to whom the call is routed.

- Auto-Available Split (AAS)

  AAS is intended to be used for splits containing only nonhuman adjuncts such as *AUDIX* or *Conversant*; however, VOAs can be directed to Auto-Available splits.

- Call Forwarding

  VOAs apply to forwarded calls, including those forwarded to a hunt group. The answering station must be on the same switch. If a VOA is forwarded, the message is played only if the destination extension is administered with a COR that allows VOA.

- Call Pickup

  Call Pickup allows an agent to pick up a ringing call on another extension. If the pick-up extension has COR permissions for VOA, the agent can receive a VOA.

- Conference

  If an agent receives a call and then conferences in additional stations, any station on the connection can use VOA Repeat button to replay the VOA. Only the person using the button can hear the VOA unless the call is being service observed.

- Converse-on split

  A converse-on split is one used in a *converse-on* vector step. When a *converse-on* vector step is executed, a VOA is not applied. After returning to the vector, the call can *be routed to* a station or VDN where the answering agent receives the VOA (as if the *converse-on* step had not been processed).

- Coverage

  VOA applies to coverage paths.

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■ Data Restriction

Data Restriction prevents tones from being applied to line or trunk circuits during a data call. VOAs are not played for data-restricted calls.

■ Direct Agent Calling

Direct Agent Calling allows a vector to route a call to particular ACD agent and have the call treated as an ACD call. The VOA only applies to direct agent calls if the calls reach an agent through vector processing. Direct agent calls from a phone on a switch are not vector-processed and cannot cause a VOA to be played.

■ Enhanced Automatic Wake-up

If you are using enhancements to Automatic Wake-up with integrated announcements, there can be contention for integrated announcement ports. VOAs have priority over Automatic Wake-Up announcements.

■ Expert Agent Selection (EAS)

When you are using EAS, the logical agent COR definition determines the assignment of VOAs for each extension. EAS uses the COR of the logical agent instead of the COR for the terminal being used by the agent.

■ Hold

Agents cannot use the VOA Repeat button if their calls are all on hold. The VOA Repeat button only applies to active calls.

■ Home Agent

You can assign an initial VOA to a home-agent port on the switch. However, home agents cannot use a VOA Repeat button because home agents need a dial access code (DAC) to reach features and VOA replay does not use a DAC.

■ Hunt Groups

VOAs apply to calls routed to a hunt group. The COR for the answering station's extension determines whether the station can receive a VOA.

■ Lookahead Interflow

VOAs apply only to the switch where the VDN is defined. If a call interflows to another switch, the VOA is lost. You can have the interflow to another switch access a VDN with the same VOA message as on the original switch.

■ Redirection on No Answer (RONA)

If a call re-queues to a split or skill because the RONA timer expired, the VOA applies to the call when an agent answers the call.

■ Service Observing

The system handles Service Observing calls as conference connections. If the observer presses the VOA Repeat button only he or she hears the announcement. However, if another party on the call presses the VOA Repeat button, the user and the observer hear the VOA.

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■ Supervisor Assist

If an agent requests supervisor assistance and conferences the supervisor into a call, either the agent or the supervisor can use their VOA Repeat button to replay the VOA, but only the person who presses the button hears the VOA.

■ Transfers

If an agent receives a VDN call and transfers the call, the answering party can use the VOA Repeat button to replay the message.

■ VOA distribution

If you use long VOAs or multiple VOAs, there may be a delay between the zip tone and the announcement. The system provides multiple announcement circuit packs to help prevent announcement delays. Contact your Lucent representative for more information.

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Voice Response Integration

Voice Response Integration (VRI) integrates Call Vectoring with the capabilities of voice response units (VRUs) such as the Lucent Technologies *Conversant* Voice Information System (CVIS). With VRI, you can:

- Run a VRU script while retaining control of a call in vector processing

- Run a VRU script while a call is queued, retaining its position in the queue

- Pool *Conversant* ports for multiple applications

- Use a VRU as a flexible external-announcement device

- Pass data between the system and a VRU

- Tandem VRU data through a switch to an ASAI host

The *converse-on* command, which is part of Basic Call Vectoring, provides these capabilities. Use a *converse-on* call-vector step to integrate a VRU with Automatic Call Distribution (ACD). VRI allows you to use VRU capabilities while controlling a call in ACD.

Include VRUs with vector processing to take advantage of the following:

- Access to local and host databases

- Validation of caller information

- Text-to-speech capabilities

- Speech recognition

- Increased recorded announcement capacity

- Audiotex applications

- Interactive voice-response (IVR) applications

- Transaction-processing applications

VRI allows users to make productive use of queuing time. For example, while a call is queued, a caller can listen to product information via an audiotex application or can complete an interactive voice-response transaction. It may be possible to resolve the caller's questions while the call is queued, which helps reduce queuing time for other callers during peak times.

For more information on VRI and the *converse-on* command, see the *DEFINITY*® *Enterprise Communications Server Call Vectoring/EAS Guide* (555-230-521).

How to Administer VRI

Enable Call Prompting to allow the system to collect digits from the caller and *Conversant* to return data. You must have Call Prompting to administer the Converse Data Return Code and use the digits keyword for the <data_1> or <data_2> fields on the *converse-on* command.

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Table 3-51. Required Forms

Form	Field
System Parameters Customer-Options	■ Call Prompting
Feature Access Code (FAC)	■ Converse Data Return Code
Feature-Related System Parameters	■ Converse Delay Data1/Data2
	■ Converse Signaling Tone/Pause
Call Vector	■ All

Detailed Description

A call queued to an ACD split retains position in the queue while a VRU script is being run. When an agent becomes available, the line to the VRU is dropped and the caller connects to the agent.

The *converse-on* command delivers a call to a predetermined converse split (skill). A converse split is administered and operates exactly like other splits. Nonconverse splits are ACD splits accessed by *queue-to* and *check* vector steps.

Members of a converse split are the ports connected to the VRU. If all VRU ports are busy, a call queues to the converse split with the administered priority. After the VRU answers the call, the *converse-on* command may pass up to 2 data items to the VRU, depending on command parameters specified. You can pass data required by a VRU script or data that selects the VRU script to be run.

Whether or not you pass data, a caller is connected to the VRU, which runs the VRU script. Audible feedback provided by the vector is not heard and no further vector steps are run until the VRU script completes. The VRU may return data to the system and then drops the line to the system. Vector processing continues at the step following the *converse-on* command.

If the call was queued to a nonconverse split before the *converse-on* command was run, the call retains its queue position. If an agent becomes available while the VRU script runs, the system drops the line to the VRU and connects the caller to the agent. The VRU detects the disconnect and terminates the VRU script. For *converse-on* command syntax, see the *DEFINITY*® *Enterprise Communications Server Call Vectoring/EAS Guide* (555-230-521).

Call Prompting allows you to collect and use digits that the VRU returns. These digits are handled as dial-ahead digits. Rules for collecting and processing VRU digits are the same as for Call Prompting.

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You can use digits returned from the VRU in the following ways:

■ To display for the answering agent's (automatically for 2-line displays or with the CALLR-INFO button for other displays)

■ As an extension in a *route-to digits* vector step. For example:

```
converse-on split. . . . (VRU returns 4 digits)
collect 4 digits after announcement none
route-to digits coverage y
```

■ For vector-conditional branching in an *if digits equals* vector step. For example:

```
converse-on split . . . (VRU returns 1 digit)
collect 1 digit after announcement none
goto vector 101 if digits = 1
goto vector 102 if digits = 2
goto vector 103 if unconditionally
```

■ Tandemed to an ASAI host

Collected digits are passed to ASAI hosts in Call Offered to Domain Event reports and in **route request** messages, thus caller digits or database information returned from the VRU can be tandemed through the system to ASAI hosts. For example:

```
converse-on split ... (VRU returns 9 digits)
collect 9 digits after announcement none
adjunct route link Y
```

In this vector, the digits returned from the VRU are forwarded to the ASAI host in the adjunct routing *route request* message.

⚠ SECURITY ALERT:

When you use a VRU application that returns data for a collect-digits step, the opportunity for toll fraud exists when the VRU application does not return any data. Take the following precautions:

■ If the collected digits are used to route calls internally, ensure that the Class of Restriction (COR) for the vector directory number (VDN) does not allow calls to route externally.

■ If the collected digits are used to route calls externally, use a password to verify that the collected digits have been passed by the VRU application. For example, in the following vector, the VRU application returns a 3-digit password followed by the 8-digit external number. The vector routes calls without the correct password to a vector 23.

```
converse-on split 10 pri m passing none and none (VRU returns
11 digits)
collect 3 digits after announcement none
goto vector 23 if digits <> 234
collect 8 digits after announcement none
route-to digits with coverage n
```

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Interactions

Converse splits interact like other vector-controlled splits unless noted here.

■ Adjunct Switch Applications Interface (ASAI)

When a *converse-on* vector step places a call to an ASAI-monitored domain, ASAI event messages are sent over the ASAI link. When a *converse-on* step places an ASAI-monitored call, the ALERT message sent to the ASAI adjunct includes a cause IE, Coding Standard 3 value 23 (CS3/23), which informs the adjunct that the call has not been dequeued from any nonconverse splits.

If a *converse-on* step is run while an adjunct routing request is outstanding, the request is canceled.

ASAI cannot transfer or conference calls, but can direct the system to do this.

■ Agents

Although not recommended, you can use a *converse-on* step to deliver a call to a group of human agents. To agents, the call looks like an ACD call, except they cannot use certain features, such as Transfer, Conference, and Supervisor Assist.

The agent can return data to vector processing by pushing the transfer button (or flash hook on analog) and dialing the converse-on data return code and required digits.

■ Answer supervision

Answer supervision is returned only once during a call. If a call is answered because of a *converse-on* step, answer supervision is sent if it hasn't previously been sent. If digits are passed to the VRU, answer supervision is sent after digits are sent.

■ *INTUITY AUDIX*

If a *converse-on* step calls *AUDIX*, the call is handled as a direct call to *AUDIX*. The caller hears the *AUDIX* welcome message and can retrieve messages as usual.

If a call is forwarded to a VDN and then delivered to an *AUDIX* hunt group by a *converse-on* step, the call to *AUDIX* is treated as a redirected call, and the caller may leave a message.

■ Auto-Available Split (AAS)

A *converse-on* vector step can place a call to an AAS. Use auto-available converse splits for VRI except when ASAI controls the converse split.

■ Automatic answering

When you administer *Conversant* ports as agents of a converse split, do not administer agents as automatic answer. The system-provided zip tone may interfere with the interaction between *Conversant* and the calling party.

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■ BCMS/CMS

BCMS tracks calls that a *converse-on* step places to a BCMS-measured hunt group. CMS tracks calls that a *converse-on* step places to a CMS-measured hunt group, split, or skill.

The VDN tracks such calls as waiting in the vector. A call is considered answered when answered by a nonconverse split agent, not when answered by a *converse split agent*. The *converse split* tracks this as a separate "answered" call when the VRU answers. Though trunk and split totals may no longer match, VDN and trunk totals match.

■ Call Detail Recording

The duration of a call to a VDN is recorded from when answer supervision is returned after a successful *converse-on* step. Unsuccessful *converse-on* steps do not generate ineffective call-attempt records. *Converse-on* steps cannot place calls; these steps simply direct a call to a hunt group.

■ Call Park

Calls that a *converse-on* step placed cannot be parked.

■ Call Pickup

Do not use Call Pickup with *converse-on* steps.

■ Class of Restriction

The system does not check CORs when a *converse-on* vector step routes a call to a split.

■ Conference

You cannot conference a call routed by a *converse-on* step.

■ Direct Department Calling

You can administer a *converse split* as a DDC split.

■ Distributed Communications System

If an incoming DCS call is placed to a vector with a *converse-on split x pri m passing ani...* step, the caller's DCS extension is sent to the VRU.

■ Expert Agent Selection

C*onverse-on* steps can place calls to a skill hunt group.

■ Hold

An agent answering a converse call can put the call on hold, but the caller does not hear music on hold. If a call is queued to a backup split before it was sent to the VRU and a nonconverse split agent answers the call on hold, the agent who placed the call on hold is dropped, and the caller connects to the answering agent.

■ Hold — Automatic

Automatic hold applies to converse-on calls.

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■ Hunt Groups

A *converse-on* step can deliver a call to a vector-controlled or *AUDIX* hunt group, ACD split, agent skill, or message center.

■ ISDN

You can administer a *converse-on* step to send a caller's calling party/ billing number (CPN/BN) to *Conversant* using the caller keyword.

■ Intraswitch CDR

If a converse-on call is answered and either the caller or the VDN associated with the call is administered for intraswitch recording, timing for the call is started and the CDR record shows "calling party to VDN" as the originating and answering parties.

■ Line-side T1 connectivity

T1 connectivity between the *DEFINITY* ECS/switch and *Conversant* is supported for VRI. The DS1 board must be a TN767E (or later) or TN464F (or later). Administer all converse agents as DS1FD-type stations. Operation of the converse step using Line-side T1 is identical to that over a tip/ring line. In particular, delay-timing and outpulsing speed is the same as for analog lines. T1 connectivity to *Conversant* is supported only in the United States and Canada.

■ Look-Ahead Interflow

If an incoming call or a call routed by a *converse-on* vector step is answered by a VRU, or is queued to the converse split while a Look-Ahead Interflow call attempt is outstanding, the attempt is accepted.

■ Message Center

Converse-on steps can deliver calls to message hunt groups. Such calls are handled as direct calls to the message hunt group.

If a call is forwarded to a VDN and a *converse-on* step delivers it to a message split, it is handled as a redirected call.

A *converse-on* step can queue a call to three different skills and then to a converse skill group or split.

■ Music-on-Hold

During the data return phase of a *converse-on* step, the caller is placed on hold, but does not hear music.

■ Nonvector-controlled splits

A *converse-on* step cannot route a call to a nonvector-controlled split.

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■ Queuing

Converse-on calls queue when they are delivered to busy hunt groups. Call Vectoring audible feedback is not disconnected while a converse-on call is queued.

If a *converse-on* step is run while a call is queued to a non-converse split, the call remains in queue, even after being answered by the VRU.

C*onverse-on* steps can queue calls at one of four priority levels: low, medium, high or top. You administer the queue priority of a call on the *converse-on* step.

■ R2-MFC Signaling

R2-MFC signaling trunks can send ANI to VRUs via the ani data item on the *converse-on* step.

■ Recorded announcement

Use VRI to increase the system's recorded announcement capacity by offloading some recorded announcements to a VRU, such as *Conversant*. Using the *converse-on* step, redirect callers to a group of VRU ports by passing the number of the announcement to be played. *Conversant* can play any announcement on any port.

Although only one caller can be connected to each port, up to 48 callers can be connected simultaneously to *Conversant*. The maximum number of callers that can be connected to a VRU simultaneously varies with each VRU.

■ Redirection on No Answer (RONA)

If a *converse-on* step calls a hunt group with "no answer timeout" administered, and the call rings an agent/port for longer than the timeout interval, the call redirects and the agent/port is put into AUX work mode (or logged out if the agent is an AAS member).

With RONA, the call is requeued to the split. The call cannot requeue to the split if it is an AAS with all agents logged out or if the queue is full. If the call cannot be requeued, the *converse-on* step fails, a vector event is logged, and processing restarts at the next vector step.

■ Service Observing

Calls delivered by a *converse-on* step can be observed. To prevent the observer from hearing tones associated with data being sent to the VRU, the observer is not connected to the call until after data is passed. If the VRU returns data, the observer is put in service-observing-pending mode and the caller is put on hold while the data is sent. When the converse-on session ends and the VRU drops the line, the observer remains in service-observing-pending mode and waits for the next call.

In addition, the observer observing a VDN does not hear data being sent. After data is sent, the observer rejoins the call.

Do not administer a service observing warning tone because the warning tone may interfere with the interaction between *Conversant* and the caller.

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■ System measurements

System measurements track converse-on calls to hunt groups.

■ Touch-tone dialing

A caller can use touch-tone dialing while digits are passed in a converse-on session. The data is not corrupted. The system does not collect the dialed numbers as dial-ahead digits.

After the system sends digits to *Conversant*, a caller can enter touch-tone digits at a *Conversant* prompt. After *Conversant* has returned data to the system and an additional *collect <#> digits* vector step is run, a caller can enter a touch-tone response to a system prompt.

■ Transfer

A call delivered by a *converse-on* step cannot be transferred.

If an attempt to transfer a converse-on call is made, a vector event is logged, the line to *Conversant* is dropped, and processing restarts at the next vector step.

If a human agent tries to transfer a call, the transfer fails and the agent reconnects to the call.

■ Transfer out of *AUDIX*

If a *converse-on* step delivers a call to an *AUDIX* hunt group and the caller tries to transfer out of *AUDIX*, the transfer fails and processing continues at the next vector step.

■ Uniform Call Distribution (UCD)

You can administer a converse split as a UCD split.

■ VDN display override

If a call that accesses multiple VDNs encounters a *converse-on* step that passes vdn, normal display override rules determine which VDN number is sent to the VRU.

■ Vector-controlled splits

Converse-on steps can deliver calls only to skills or vector-controlled splits.

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VuStats

VuStats presents Basic Call Management System (BCMS) statistics on phone displays. Agents, supervisors, call center managers, and other users can press a button and view statistics for agents, splits or skills, VDNs, and trunk groups.

These statistics reflect information collected during the current BCMS interval, information collected since the agent logged in or since the day began, or historical data accumulated over an administered number of intervals. The information is limited to 40 characters displayed at a time. VuStats can display on demand or update periodically.

With VuStats, any digital-display voice-terminal user can view BCMS statistics otherwise available only on BCMS reports or management terminals. These statistics can help agents monitor their own performance or can be used to manage splits or small call centers.

⟹ NOTE:
Although VuStats can run with either BCMS or CMS enabled, neither is required.

Figure 3-4 illustrates a *Callmaster* terminal with a VuStats display.
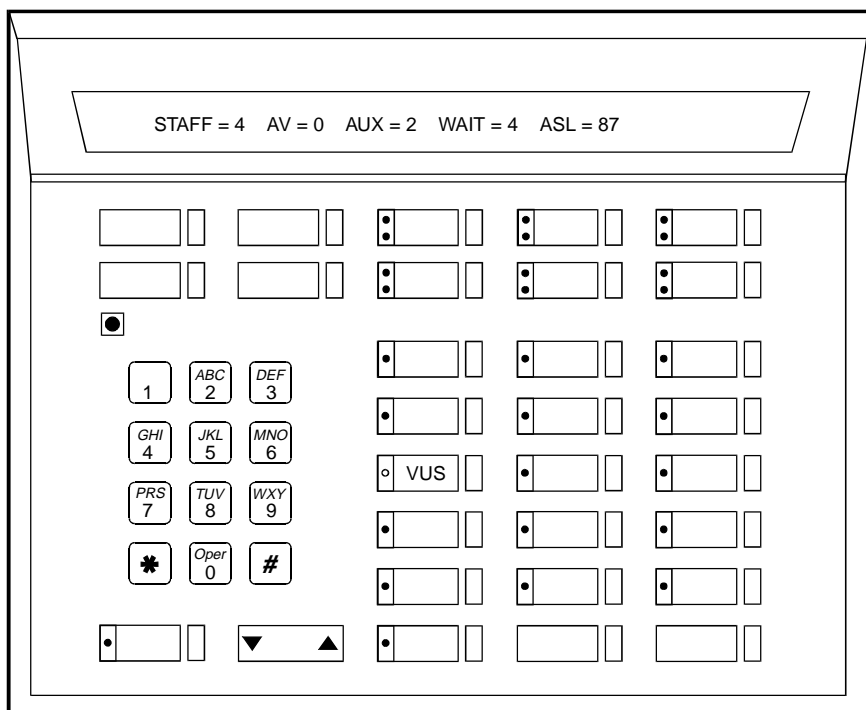
callmstr CJL 061896

Figure 3-4. *Callmaster* **Terminal with VuStats Display**

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How to Administer VuStats

Table 3-52. System-Parameter Customer-Options form

Form	Field
System Parameter Customer-Options	■ ACD
	■ BCMS/VuStats Login ID
	■ BCMS/VuStats Service Level
	■ VuStats or VuStats (G3V4 Enhanced)

Display the System-Parameter Customer-Options form and ensure that ACD, BCMS/VuStats Login IDs, BCMS/VuStats Service Level, and VuStats or VuStats (G3V4 Enhanced) are set to **yes.**

Table 3-53. Required Forms

Form	Field
Feature-Related System Parameters	■ ACD Login Identification Length
	■ BCMS/VuStats Measurement Interval
	■ BCMS/VuStats Abandoned Call Timer
	■ Validate BCMS/VuStats Login IDs
	■ Clear VuStats Shift Data
Trunk Group	■ Measured
Attendant Console	■ Feature Buttons
BCMS/VuStats Login ID	■ Login ID, Name
Hunt Group	■ ACD
	■ Acceptable Service Level
	■ Measured
	■ Objective
Station	■ Feature Buttons
Vector Directory Number	■ Acceptable Service Level
	■ Measured
VuStats	■ All

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- Feature-Related System-Parameters form

  — **ACD Login Identification Length —** If you are not using EAS, enter a number (1–9) that identifies the length of Agent Login IDs used by BCMS/VuStats. If you are not using BCMS/VuStats Login IDs, accept the default 0. This field defines the ACD login ID length and the BCMS login ID length, so you must coordinate with the BCMS administrator before changing this field.

  — **BCMS/VuStats Measurement Interval —** This interval determines how frequently BCMS polls and records data for BCMS reports and VuStats displays. Set this field to **half-hour** or **hour**.

    If you specify **hour**, an entire day of traffic information is available for BCMS history reports. Otherwise, only half a day is available.There is a maximum of 25 measurement intervals, including the current interval.

  — **BCMS/VuStats Abandon Call Timer —** Set this field to 1–10, or leave blank. This value is the number of seconds a call can last and still be recorded as an abandoned call. For example, if you set this field to 5, a call could last up to 5 seconds and be recorded as abandoned. Thus, very short calls are not included as ACD calls in BCMS and VuStats statistics. Abandoned time is measured from the time the call is answered until the agent hangs up. Any time an agent is on a call that is within the abandon call timer value is recorded as total AUX time with the default reason code. Use this timer if your central office does not provide disconnect supervision.

  — **Validate BCMS/VuStats Login IDs —** Set to **n** to allow entry of any ACD login of the proper length. Set to **y** to allow entry only of login-IDs that have been entered on the BCMS/VuStats Login-ID form.

  — **Clear VuStats Shift Data.** Set to **on-login** or **at-midnight** to specify when shift data for an agent is cleared.

- Agent Login ID form — Administer Agent Login IDs for EAS. With EAS, VuStats accesses agent and agent-extension object type information based on agent login ID. Agents logging in agent IDs (administered on this form or BCMS/VuStats Login ID form) can view their own statistics on any VuStats phone they are using. If agent IDs are not administered, VuStats displays only statistics collected for the agent's extension.

- Trunk Group form — For each trunk group that will have VuStat display statistics, set Measured to **internal** or **both**. Specify **internal** to record statistics for BCMS/VuStats. Specify **both** to record statistics for BCMS/VuStats and CMS.

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■ Attendant Console form — Administer a VuStats feature button (vu-display**)** to
  allow an attendant to display VuStats statistics. There is no limit to the number of
  VuStats buttons that can be administered.

  — **Fmt** — When you assign VuStats feature buttons, an Fmt field appears.
    You can associate a VuStats feature button with a particular display format.
    The Fmt value identifies the VuStats format used to display the
    information. Specify 1 — 50 in the Fmt (1 is the default format). See
    "Format Number" in this section for additional information.

  — **ID number** — Optionally administer an ID number for each vu-display
    button. Use the ID number to define the agent, split, trunk group, or VDN
    that the VuStats display will describe. The ID can be an agent login ID or
    extension number, a split or trunk group number, or a VDN extension. For
    example, a vu-display button administered with split ID 6 is used to view
    statistics for split number 6.

    Do not administer IDs for VuStats displays with the agent object type.
    Agent object type displays are limited to statistics for the logged-in agent.

    IDs allow supervisors and agents to bypass entering an agent extension,
    split, or VDN number when viewing statistics. IDs can also be used to limit
    access to certain statistics to designated phones.

■ BCMS/VuStats Login ID form — Administer Agent Login IDs if you do not have
  EAS. BCMS/VuStats Login IDs can be used to track statistics by specific agent
  rather than extension number. Specify any character, except a space, to be used as a
  placeholder for data in Format Description text. $ is the default. Each character
  holds a place for one character of data. See "Data Field Character" in this section
  for more information.

■ Hunt Group form

  — **ACD** — Set this field to **y**.

  — **Acceptable Service Level** — Specify the number of seconds within
    which calls to this hunt group are answered. Calls answered within this
    time are considered acceptable. BCMS and VuStats use this value to
    determine the percentage of calls that meet the acceptable service level.

  — **Measured** — Set this field to **internal** or **both**. Specify **internal** to
    record statistics for BCMS/VuStats. Specify **both** to record statistics for
    BCMS/VuStats and CMS.

  — **Objective** — Specify an objective, or goal, for the split. Examples include
    an agent objective of a number of ACD calls to be handled, an average talk
    time, or a percent of calls to be answered within the acceptable service
    level.

■ Station form — Administer a VuStats feature button (vu-display) to allow agents
  to display VuStats statistics. See "Attendant Console form" above for more
  information.

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■ Vector Directory Number form

For each VDN that has statistics displayed by VuStats, administer the following fields:

— **Acceptable Service Level** — Specify the number of seconds within which calls to this VDN are answered. Calls answered within this time are considered acceptable. BCMS and VuStats use this value to determine the percentage of calls that meet the acceptable service level.

— **Measured —** Set this field to **internal** or **both**. Specify **internal** to record statistics for BCMS/VuStats. Specify **both** to record statistics for BCMS/VuStats and CMS.

■ VuStats Display Format form

— **Format Numbe**r — The system generates a format number automatically when it creates a VuStats display. You cannot change this number. You can create 50 different display formats. Format Number 1 is a predefined sample format that you can modify. See "Attendant Console form" in this section for more information.

— **Next Format Number** — Specify the number of the display to be shown after the current display when a user presses the "next" button. To link displays, administer a next button Attendant Console or Station form. In general, you only link displays with the same object type.

— **Number of Intervals** — Specify the number of BCMS intervals used to collect data when you have specified **interval** as the period for a historical Data Type. For example, if the BCMS interval is 1 hour and you specify 8 in this field, historical data with a period of interval is based on the previous 8 hours. See "Period" in this section for more information.

■ **Object Type** — Set this field to one of five object types: **agent**, **agent-extension**, **split**, **trunk-group**, and **VDN**. Each object type displays specific types of data.

— **Agent** — Provides agents with their own statistics, or statistics about the splits/skills they log into.

— **Agent-extension** — Provides supervisors with statistics about agents or the splits/skills the agents log into. VuStats can automatically display statistics for a specific agent (if you administer agent login ID or BCMS/Vustats Login ID). Or, supervisors can enter the ID of any agent they want to review.

— **Split** — Displays statistics about a specific split/skill. You must administer the split as Measured (internal or both) on the Hunt Group form.

— **Trunk-group** — Displays statistics about a specific trunk group. You must administer the trunk group as Measured (internal or both) on the Trunk Group form.

— **VDN** — Displays statistics about a specific VDN. You must administer the VDN as Measured (internal or both) on the Vector Directory Number form.

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— **Data Type** — Specify data types to define what data is displayed for each object type. You can specify up to 10 data types for each display. See "Tables of Data Types'' on page 3-192 for a description of data types associated with each object type.

— **Period** — Set the amount of time to be used to collect the historical data for display. Set this field to **day**, **interval**, or leave blank. Day displays all data collected for a Data Type since midnight. Interval displays all data collected for a Data Type during the number of intervals specified in Number of Intervals ending with the current interval. Leaving the field blank displays only the data collected for the current interval.

— **Threshold** — Specify the conditions under which the VuStats button lamp flashes, alerting agents when there is a problem. Set both a comparator and a threshold value. For example, if you want to alert agents when the percent of calls within acceptable service level drops below 90%, specify the split-percent-in-service-level data type with a Threshold comparator of <= and a threshold value of 90.

— **Split Reference** — Some data types associated with agent and agent-extension object types display statistics about the split/skill an agent is logged into. These data types usually begin with the word split. For example, the data type "split-agents-available" displays how many agents are available on a specific split or all splits the agent is logged into.

— Specify a reference number with the data type to define which split the displayed data is for. The reference number also describes the order in which an agent logged into the split. For example, specifying reference number 1 for the data type "split-agents-available" displays the number of agents available on the first split the agent is logged into.

   Specify **Top** to display the first-administered highest-level skill for EAS agents, or the first split logged into for non-EAS agents. Specifying **All** displays data for all splits the agent is logged into and is valid only for acd-calls, average-acd-talk-time, shift-acd-calls, and shift-average-acd-talk-time data types.

— **Data Field Character** — Specify any character, except a space, to be used as a placeholder for data in the Format Description. $ is the default. For example, in the entry "AUX=$$" the dollar signs each hold a place for one character of data.

— **Format Description** — Specify the text to be displayed with a data type, followed by Data Field Characters needed as placeholders for data-type data. List data types in the Data Type fields in the same order that the data type text appears in Format Description.

   For example, in Screen 3-2, STAFF, AV, AUX, WAIT, and ASL are all text labels for data types. STAFF is associated with the first data type, split-agents-staffed, AV is associated with the second data type, split-agents-available, and so on.

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```
                      VUSTATS DISPLAY FORMAT
       Format Number: 1                    Object Type: agent
  Next Format Number: 2                    Update Interval: 30    On Change? n
Data Field Character: $
 Number of Intervals:

  Format Description: STAFF=$$ AV=$$ AUX=$$ WAIT=$$$$$ ASL=$$$

     Data Type                        Format    Period   Threshold  Ref
  1: split-agents-staffed                                            1
  2: split-agents-available                                          1
  3: split-agents-in-aux-all                                         1
  4: split-oldest-call-waiting          m:ss                         1
  5: split-acceptable-service-level     m:ss                         1
     .
     .
     .
```

Screen 3-2. **Format Description Example**

If the data for a field is too large for the number of data field characters entered, VuStats displays asterisks. If name database items are too large for the number of data field characters, VuStats truncates the data. VuStats also displays Split Objective (assigned on the Hunt Group form) as asterisks if the information exceeds the data field size.

— **Format** — Specify the format of data that has a time value. Format is required for time-value data types such as "split-oldest-call-waiting". Specify one of the following:

- **ccs** -- Hundred-call seconds (CCS) rounded to the nearest CCS

- **h** -- Hours rounded to the nearest hour

- **h:mm** -- Hours and minutes rounded to the nearest minute

- **h:mm:ss** -- Hours, minutes, and seconds

- **m** -- Minutes rounded to the nearest minute

- **m:ss** -- Minutes and seconds

- **s** -- Seconds

— **Update Interval** — Set the interval at which the VuStats display data is updated to one of the following:

- **no-update** — The display does not update and appears only for the interval specified in the Display Interval field.

- **polled** — The display updates every hour or half-hour depending upon the value in BCMS/ VuStats Measurement Interval on the Feature-Related System-Parameters form.

  Specifying polled may impact system performance at the time of the measurement interval.

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- **10, 20, 30, 60, 120** — The display updates every 10, 20, 30, 60, or 120 seconds.

— **On Change** — Specify whether the display will update whenever the agent changes work state. Set this field to **y** or **n**. If set to y, the display updates when the agent changes state and updates according to the Update Interval.

— **Display Interval** — Administer only if you specified a no update Update Interval. Specify one of the following:

- **not-cleared** — The display does not clear. The display remains until it is overwritten by another feature or the user presses the normal button.

- **5, 10, 15, 30** — The display clears after 5, 10, 15, or 30 seconds.

Detailed description

The following forms and fields determine information that VuStats displays.
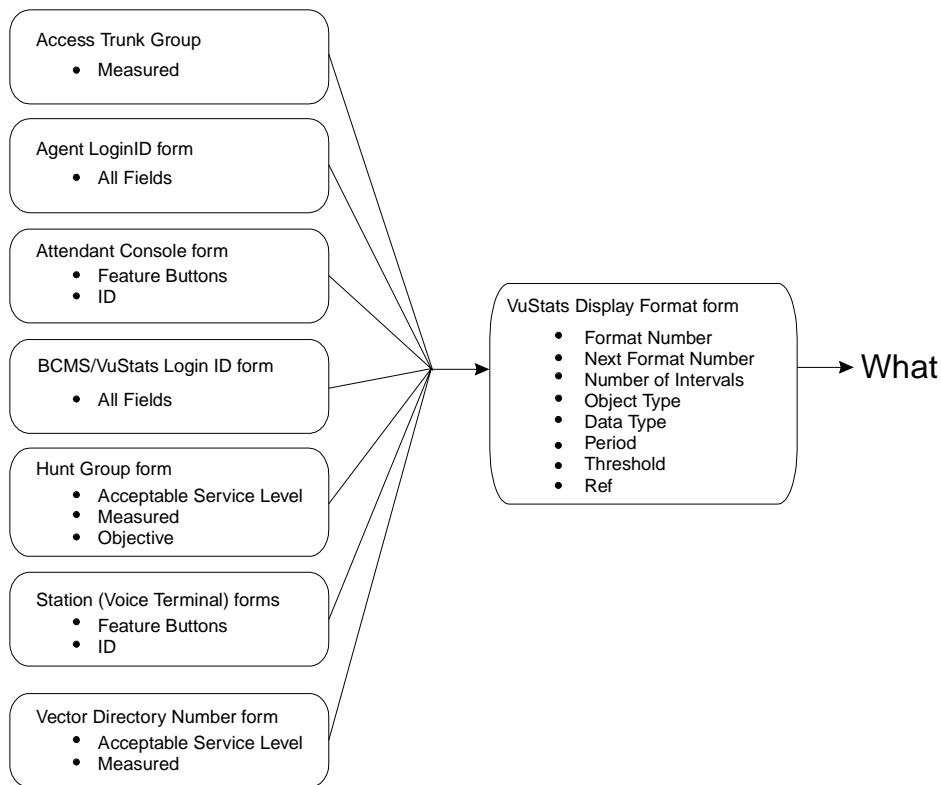
Figure 3-5. Forms that Determine What Information Appears on the VuStats Display

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Data Type

Data type defines what data is displayed for an object type. For example, for an agent object type, VuStats can display information agents are interested in, such as the total number of calls the agent has answered since login, the average time the agent has spent on ACD calls, the number of agents available to receive calls for a split, and the percent of calls within the acceptable service level.

For split object types, VuStats can display split description and performance information, such as average speed of answer, number of calls waiting, and agent work states. VuStats can also display an objective, acceptable service level, or percent of calls answered within the acceptable service level for a split.

See Table 3-54 and Table 3-57 for more information on data types.

Period

VuStats can show statistics that have accumulated for the day, or for an administered number of intervals. For example, if you administer VuStats to display the number of ACD calls for the past 4 completed intervals, it displays the number of ACD calls received in the past 2 hours (1/2-hour intervals) or 4 hours (1-hour intervals) plus those completed during the current interval. Using historical data can affect processor occupancy, depending upon the number of active users, their update rates, and the number of historical data types.

With agent or agent-extension object types, shift data is available for the number of ACD calls answered, the average ACD talk time, and AUX work mode time by Reason Code for an agent. You can clear shift data at midnight or the next time an agent logs in.

Threshold

Many data types can be administered with a threshold comparator and value. When the condition defined by the threshold is true, and the data type is shown on the display, the VuStats button lamp flashes. For example, suppose a format is created in which the oldest call waiting data type is administered with a threshold of >= (greater than or equal to) five minutes. Whenever that VuStats format is displayed, if the oldest call in queue has been waiting for five minutes or longer, the VuStats lamp flashes on the phone. Each time the display updates, the threshold is checked for each data type being displayed.

Format Description

Use Format Description to create labels on the display to identify data. For example, in Figure 3-4 "AUX=" identifies the data type "split-agents-in-aux-all" (that is, the number of agents currently in AUX work mode for a specified split). Text appears on the display exactly as you enter it in the field. Text is optional.

Because of the 40-character limit, use abbreviations when possible. For example, use "S=" to indicate "split number".

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Display Linking

Link display formats to increase the amount of information users can view. For example, link a display of information for an agent's first split to a display of information for the agent's second split. Or, link a display of information about the work states of all agents on a split linked to another display of information about calls waiting, number of calls abandoned, or oldest call waiting for the split.

If you use display linking, assign a Next button on agent terminals.

How the Information Looks

The following fields on the VuStats Display form determine how information looks on the VuStats display.
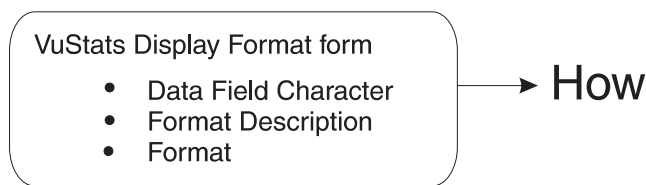
Figure 3-6.   Fields that Determine What Information Appears on the VuStats Display

VuStats statistics appear on the second line of 2-line DCP terminal displays or on the first line of 1-line DCP terminals and all BRI terminals. On phones with 2 x 24 displays, the display automatically wraps to the second line of the display. When VuStats is activated, it overwrites and cancels any display feature on the second line of a 2-line display and on the first line of a 1-line display.

You define the following format information on the VuStats Display Format form:

- Labels for data types and the amount of space reserved for data

- Order in which data types appear on the display

- Format for time-related data types

- Display links

When the Information Updates

The following forms and fields determine when VuStats displays update.

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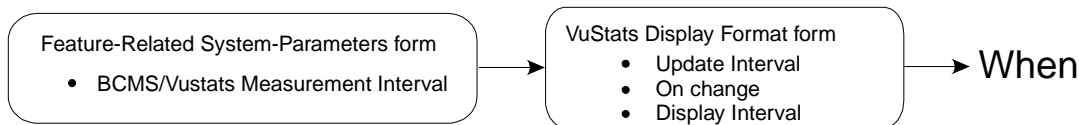
Figure 3-7. Fields that Determine When Information Updates on the VuStats Display

Most display features that use the second line of a 2-line display or the first line of a 1-line display overwrite and cancel VuStats. Reason Codes and Call Work Codes only suspend VuStats; when the prompt is removed, the VuStats display reappears.

User press the normal button to clear the VuStats display.

Administer VuStats to display information until agents press the normal button or another operation overwrites the VuStats display. Or, administer VuStats to display for an interval of 5, 10, 15, or 30 seconds.

You can also administer VuStats to update displayed statistics every 10, 20, 30, 60 or 120 seconds or every time an agent changes work mode or a BCMS Measurement Interval is completed, or not update at all.

Tables of Data Types

Table 3-54 through Table 3-57 describe the data types you can define for each object type.

Table 3-54. Agent and Agent-Extension Data Types

VuStats Data Type	Description	BCMS Report: Field Name/Column Heading
acd-calls	Split/skill calls and direct agent calls answered by an agent	Split status/VDN Status/Agent Report: ACD CALLS
agent-extension	The extension for a specific agent; if either BCMS/VuStats Login IDs or EAS is optioned, then this shows the agent's login ID.	Split Status: Login ID or EXT
agent-name	The administered name for a specific agent.	Split Status/Agent Report/Agent Summary Report: Agent
agent-state	The agent's current work state	Split Status: STATE

Continued on next page

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Table 3-54. Agent and Agent-Extension Data Types — *Continued*

VuStats Data Type	Description	BCMS Report: Field Name/Column Heading
average-acd-call- time	The average of hold-time plus talk-time.	None
average-acd-talk- time	The average time a specific agent has spent talking on completed ACD calls during a specified time period for all internally-measured splits/skills that the agent was logged into. This does not include the time a call was ringing or was on hold at an agent's terminal.	Agent Report/Agent Summary Report: AVG TALK TIME
average-extension- time	The average amount of time an agent spent on non-ACD calls while logged into at least one split/skill during the reported interval. This average does not include time when the agent was holding the EXTN call.	Agent Report/Agent Summary Report: AVG EXTN TIME
call-rate	The current rate of ACD calls handled per agent per hour for all split/skills.	None
current-reason-code	The number of the Reason Code associated with the agent's current AUX work mode, or with the agent's logout.	None
current-reason-code- name	The name of the Reason Code associated with the agent's current AUX work mode or with the agent's logout.	None
elapsed-time-in-state	The amount of time an agent has been in the current state.	None
extension-calls	The number of incoming and outgoing non-ACD calls that an agent completed while logged into at least one split/skill.	Agent Report: EXTN CALLS
extension-incoming- calls	The number of non-ACD calls that an agent receives while logged into at least one split/skill.	Split Report: EXT IN CALLS
extension-outgoing- calls	The number of non-ACD calls that an agent places while logged into at least one split/skill.	Split Report: EXT OUT CALLS
shift-acd-calls	The number of ACD calls answered by an agent during the administered period.	None
shift-aux-time-1	The amount of time an agent has spent in AUX work mode for Reason Code 1 during the administered period.	None
shift-aux-time-2	The amount of time an agent has spent in AUX work mode for Reason Code 2 during the administered period.	None

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Table 3-54.   Agent and Agent-Extension Data Types — *Continued*

VuStats Data Type	Description	BCMS Report: Field Name/Column Heading
shift-aux-time-3	The amount of time an agent has spent in AUX work mode for Reason Code 3 during the administered period.	None
shift-aux-time-4	The amount of time an agent has spent in AUX work mode for Reason Code 4 during the administered period.	None
shift-aux-time-5	The amount of time an agent has spent in AUX work mode for Reason Code 5 during the administered period.	None
shift-aux-time-6	The amount of time an agent has spent in AUX work mode for Reason Code 6 during the administered period.	None
shift-aux-time-7	The amount of time an agent has spent in AUX work mode for Reason Code 7 during the administered period.	None
shift-aux-time-8	The amount of time an agent has spent in AUX work mode for Reason Code 8 during the administered period.	None
shift-aux-time-9	The amount of time an agent has spent in AUX work mode for Reason Code 9 during the administered period.	None
shift-aux-time-all	The amount of time an agent has spent in AUX work mode for all Reason Codes during the administered period.	None
shift-aux-time-default	The amount of time an agent has spent in AUX work mode for the default Reason Code (code 0) during the administered period.	None
shift-aux-time-non- default	The amount of time an agent has spent in AUX work mode for Reason Codes 1 through 9 during the administered period.	None
shift-aux-time-reason-code	The amount of time an agent has spent in AUX work mode for the agent's current Reason Code during the administered period.	None
shift-average-acd-talk-time	The average talk time for ACD calls for a specific agent during the administered period.	None
skill-level	The skill level at which the skill was assigned to the agent.	None

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Table 3-54.   Agent and Agent-Extension Data Types — *Continued*

VuStats Data Type	Description	BCMS Report: Field Name/Column Heading
split-acceptable- service-level	The number of seconds within which calls must be answered to be considered acceptable. Identified on a per-hunt group basis. Timing begins when the call enters the hunt group queue.	Split Status: Acceptable Service Level
split-acd-calls	Split/skill calls and direct agent calls answered by an agent.	System Status/Split Report/Split Summary Report: ACD CALLS
split-after-call- sessions	The number of times all agents have entered After Call Work (ACW) for a specific split/skill.	None
split-agents-available	The number of agents currently available to receive ACD calls for a specific split. This includes agents in Auto-In or Manual-In work mode.	Split Status: Avail
split-agents-in-after- call	For a specific split, the number of agents currently in ACW.	Split Status: ACW
split-agents-in-aux-1	For a specific skill, the number of agents currently in Aux work mode with Reason Code 1.	None
split-agents-in-aux-2	For a specific skill, the number of agents currently in Aux work mode with Reason Code 2.	None
split-agents-in-aux-3	For a specific skill, the number of agents currently in Aux work mode with Reason Code 3.	None
split-agents-in-aux-4	For a specific skill, the number of agents currently in Aux work mode with Reason Code 4.	None
split-agents-in-aux-5	For a specific skill, the number of agents currently in Aux work mode with Reason Code 5.	None
split-agents-in-aux-6	For a specific skill, the number of agents currently in Aux work mode with Reason Code 6.	None
split-agents-in-aux-7	For a specific skill, the number of agents currently in Aux work mode with Reason Code 7.	None

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Table 3-54.   Agent and Agent-Extension Data Types — *Continued*

VuStats Data Type	Description	BCMS Report: Field Name/Column Heading
split-agents-in-aux-8	For a specific skill, the number of agents currently in Aux work mode with Reason Code 8.	None
split-agents-in-aux-9	For a specific skill, the number of agents currently in Aux work mode with Reason Code 9.	None
split-agents-in-aux- all	For a specific split/skill, the total number of agents currently in Aux work mode for all Reason Codes.	Split Status: AUX
split-agents-in-aux- default	For a specific split/skill, the number of agents currently in Aux work mode with the default Reason Code (code 0).	None
split-agents-in-aux- non-default	For a specific skill, the number of agents currently in Aux work mode with Reason Codes 1 through 9.	None
split-agents-in-other	The number of agents currently who: are on a call for another split, are in ACW work mode for another split, have a call on hold but are not in another state, or have a call ringing at their terminals, or are dialing a number while in AI/MI.	Split Status: Other
split-agents-on-acd- calls	The number of agents currently on split/skill or direct agent ACD calls for a specific split.	Split Status: ACD
split-agents-on- extension-calls	The number of agents in a specific split who are currently on non-ACD calls.	Split Status: Extn
split-agents-staffed	The number of agents currently logged into a split.	Split Status: Staffed
split-average-acd- talk-time	The average talk time for ACD calls during a specific period/day for a specified split.	System Status/Split Report/Split Summary Report: AVG TALK TIME

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Table 3-54. Agent and Agent-Extension Data Types — *Continued*

VuStats Data Type	Description	BCMS Report: Field Name/Column Heading
split-average-after-call-time	The average time for call-related ACW completed by agents for this split (the same as average-after-call-time, but only available for agent and agent-extension object types). Call-related ACW time is recorded when an agent leaves the ACW state. If an agent is in call-related ACW when an interval completes, all of the ACW time will be recorded for the interval in which the agent leaves ACW.	System Status: AVG AFTER CALL
split-average-speed-of-answer	The average speed for answering split and direct agent ACD calls that have completed for a specified split/skill.	System Status/Split Report/Split Summary Report: AVG SPEED ANS
split-average-time-to-abandon	The average time calls waited in queue and ringing before abandoning.	System Status/Split Report/Split Summary Report: AVG ABAND TIME
split-call-rate	The current rate of ACD calls handled per agent per hour for a specific split or skill.	None
split-calls- abandoned	The number of calls that abandoned from queue (provided this is the first split/skill queued to) or abandoned from ringing.	System Status/Split Report/Split Summary Report: ABAND CALLS
split-calls-flowed-in	The total number of calls for a specific split/skill that were received as a coverage point (intraflowed) from another internally-measured split/skill, or were call-forwarded (interflowed) to the split/skill.	Split Report/Split Summary Report: FLOW IN
split-calls-flowed-out	The total number of calls for a specific split/skill that successfully extended to the split/skill's coverage point, were call-forwarded out, or were answered via call pick-up.	Split Report/Split Summary Report: FLOW OUT
split-calls-waiting	The number of calls that have encountered a split but have not been answered, abandoned, or outflowed.	System Status: CALLS WAIT
split-extension	The administered extension for a split.	None
split-name	The administered name for a split/skill.	Split Report/Split Status: Split Name System Status: SPLIT

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Table 3-54. Agent and Agent-Extension Data Types — *Continued*

VuStats Data Type	Description	BCMS Report: Field Name/Column Heading
split-number	The administered number for a split/skill.	Split Report/Split Status: Split Name System Status: SPLIT
split-objective	The administered objective for a split/skill.	None
split-oldest-call- waiting	The time the oldest call has been waiting for a specific split/skill.	System Status: OLDEST CALL
split-percent-in- service-level	For a specific split/skill, the percentage of calls answered within the administered service level on the hunt group form.	System Status/Split Report/Split Summary Report: % WITHIN SERVICE LEVEL
split-total-acd-talk- time	For a specified split/skill, the total time agents spent talking on split/skill calls and direct agent calls for this split.	None
split-total-after-call- time	The total time an agent spent in call-related ACW for this split/skill and non-call-related ACW for any split/skill during a specific time period, excluding time spent on incoming or outgoing extension calls while in ACW.	Split Report/Split Summary Report: TOTAL AFTER CALL
split-total-aux-time	The total time an agent spent in AUX mode for this split/skill.	Split Report/Split Summary Report: TOTAL AUX/OTHER
total-acd-call-time	The total talk time plus the total hold time for split/skill and Direct Agent ACD calls.	None
total-acd-talk-time	The total time agents spent talking on split/skill calls and direct agent calls.	None
total-after-call-time	The total time an agent spent in call-related or non-call-related ACW for any split during a specific time period, excluding time spent on incoming or outgoing extension calls while in ACW. (With EAS, all non-call related ACW time is associated with the first skill logged into.)	Agent Report/Agent Summary Report: TOTAL AFTER CALL
total-aux-time	The total time an agent spent in AUX work for all splits/skills (simultaneously) that the agent was logged into. If an agent entered AUX in one interval, but ended AUX in another, each of the intervals will reflect the appropriate amount of time spent in the interval (agent reports also include OTHER time).	Agent Report/Agent Summary Report: TOTAL AUX/OTHER

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Table 3-54. Agent and Agent-Extension Data Types — *Continued*

VuStats Data Type	Description	BCMS Report: Field Name/Column Heading
total-available-time	The time an agent was available in at least one split/skill.	Agent Report: TOTAL AVAIL TIME
total-hold-time	The total amount of time ACD calls were on hold at a specific agent's phone. This time is the "caller's hold time" and is independent of the agent's state. This time does not include hold time for non-ACD calls on hold.	Agent Report: TOTAL HOLD TIME
total-staffed-time	The total amount of time an agent was logged into one or more splits/skills during a specific period/day. An agent is clocked for staff time as long as he or she is logged into any split.	Agent Report: TOTAL TIME STAFFED

Table 3-55. Split Data Types

VuStats Data Type	Description	BCMS Report: Field Name/Column Heading
acceptable-service-level	The number of seconds within which calls must be answered to be considered acceptable. Identified on a per-hunt group basis. Timing begins when the call enters the hunt group queue.	Split Status/Split Report: Acceptable Service Level
acd-calls	Split calls and direct agent calls answered by an agent	Split status/VDN Status/Agent Report: ACD CALLS
after-call sessions	The number of times all agents have entered After Call Work (ACW).	None
agents-available	The number of agents currently available to receive ACD calls. This includes agents in Auto-In or Manual-In work mode.	Split Status: Avail
agents-in-after-call	The number of agents currently in ACW mode.	Split Status: ACW
agents-in-aux-1	The number of agents currently in Aux work mode for Reason Code 1 for the referenced skill.	None

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Table 3-55.   Split Data Types — *Continued*

VuStats Data Type	Description	BCMS Report: Field Name/Column Heading
agents-in-aux-2	The number of agents currently in Aux work mode for Reason Code 2 for the referenced skill.	None
agents-in-aux-3	The number of agents currently in Aux work mode for Reason Code 3 for the referenced skill.	None
agents-in-aux-4	The number of agents currently in Aux work mode for Reason Code 4 for the referenced skill.	None
agents-in-aux-5	The number of agents currently in Aux work mode for Reason Code 5 for the referenced skill.	None
agents-in-aux-6	The number of agents currently in Aux work mode for Reason Code 6 for the referenced skill.	None
agents-in-aux-7	The number of agents currently in Aux work mode for Reason Code 7 for the referenced skill.	None
agents-in-aux-8	The number of agents currently in Aux work mode for Reason Code 8 for the referenced skill.	None
agents-in-aux-9	The number of agents currently in Aux work mode for Reason Code 9 for the referenced skill.	None
agents-in-aux-all	The number of agents currently in Aux work mode for all Reason Codes for the referenced split/skill.	Split Status: AUX
agents-in-aux-default	The number of agents currently in Aux work mode for the default Reason Code (code 0) for the referenced split/skill.	None
agents-in-aux-non- default	The number of agents currently in Aux work mode for Reason Codes 1 through 9 for the referenced skill.	None

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Table 3-55.   Split Data Types — *Continued*

VuStats Data Type	Description	BCMS Report: Field Name/Column Heading
agents-in-other	The number of agents who currently: are on a call for another split, are in ACW work mode for another split, have a call on hold but are not in another state, or have a call ringing at their terminal, or are dialing a number from AI/MI mode.	Split Status: Other
agents-on-acd-calls	The number of agents currently on split/skill or direct agent ACD calls for a specific split.	Split Status: ACD
agents-on-extension- calls	The number of agents in a specific split who are currently on non-ACD calls.	Split Status: Extn
agents-staffed	The number of agents currently logged into the specified split.	Split Status: Staffed
average-acd-talk-time	The average talk time for ACD calls during a specific period/day for a specified split.	System Status/Split Report: AVG TALK TIME
average-after-call- time	The average time for call-related ACW completed by agents in this split. Call-related ACW time is recorded when an agent leaves the ACW state. If an agent is in call-related ACW when an interval completes, all of the ACW time will be recorded for the interval in which the agent leaves ACW.	System Status: AVG AFTER CALL
average-speed-of- answer	The average speed for answering split/skill and direct agent ACD calls that have completed for a specified split/skill during a specified time. This includes queue time and ringing time for this split.	System Status/Split Report: AVG SPEED ANS
average-time-to- abandon	The average time calls waited before abandoning.	System Status/Split Report: AVG ABAND TIME
call-rate	The current rate of ACD calls handled per agent per hour for all split/skills.	none
calls-abandoned	The number of calls that abandoned.	System Status/Split Report: ABAND CALLS

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Table 3-55. Split Data Types — *Continued*

VuStats Data Type	Description	BCMS Report: Field Name/Column Heading
calls-flowed-in	The total number of calls for a specific split that were received as a coverage point (intraflowed) from another internally-measured split, or were call-forwarded (interflowed) to the split. This does not include calls that were interflowed from a remote switch by the Look Ahead Interflow feature.	Split Report/Split Summary Report: FLOW IN
calls-flowed-out	The number of calls the split extended to its coverage point, calls that call-forward out or are answered by call pickup, calls that queued to this split as a primary split and were answered or abandoned from ringing in another split.	Split Report/Split Summary Report: FLOW OUT
calls-waiting	The number of calls that have encountered a split/skill but have not been answered, abandoned, or outflowed.	System Status: CALLS WAIT
oldest-call-waiting	The time the oldest call has been waiting in the split/skill. Timing begins when the call enters the split/skill.	System Status: OLDEST CALL
percent-in-service- level	The percentage of calls offered to the split that were answered within the service level administered on the hunt group form.	System Status/Split Report/Split Summary Report: % IN SERV LEVL
split-extension	The administered extension for a split.	None
split-name	The administered name for a split.	Split Report/Split Status: Split Name System Status: SPLIT
split-number	The administered number for a split.	Split Report/Split Status: Split Name System Status: SPLIT
split-objective	The administered objective for a split.	None
total-acd-talk-time	The total time agents spent talking on split/skill calls and direct agent calls for this split.	None

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Table 3-55. Split Data Types — *Continued*

VuStats Data Type	Description	BCMS Report: Field Name/Column Heading
total-after-call-time	The total time agents spent in call-related or non-call-related ACW for any split during a specific time period.	Split Report/Split Summary Report: TOTAL AFTER CALL
total-aux-time	The total time agents spent in AUX work mode for all Reason Codes for the referenced split/skill during the administered period.	Split Report/Split Summary Report: TOTAL AUX/OTHER

Table 3-56. VDN Data Types

VuStats Data Type	Description	BCMS Report: Field Name/Column Heading
acceptable-service- level	The number of seconds within which calls must be answered to be considered acceptable. Identified on a per-VDN basis. Timing begins when the call enters the vector.	VDN Status/VDN Report: Acceptable Service Level
acd-calls	Split calls and direct agent calls answered by an agent	VDN Status: ACD CALLS
average-acd-talk-time	The average talk time for ACD calls during a specific period/day for a specified VDN.	VDN Status/Split Report: AVG TALK HOLD
average-speed-of- answer	The average speed for answering ACD and CONNect calls that have completed for a specified VDN during a specified time. This includes time in vector processing.	VDN Status/VDN Report/VDN Summary Report: AVG SPEED ANS
average-time-to- abandon	The average time calls waited before abandoning.	VDN Status/VDN Report: AVG ABAND TIME
calls-abandoned	The number of calls that abandoned.	VDN Status/VDN Report/VDN Summary Report: ABAND CALLS
calls-flowed-out	The total number of calls for a specific VDN that successfully routed to another VDN or off the switch.	VDN Status/VDN Report/VDN Summary Report: FLOW OUT

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Table 3-56.   VDN Data Types — *Continued*

VuStats Data Type	Description	BCMS Report: Field Name/Column Heading
calls-forced-busy-or- disc	The number of calls given forced busy or forced disconnect.	VDN Status/VDN Report/VDN Summary Report: CALLS BUSY/DISC
calls-offered	All calls offered to a VDN, including ACD calls, connected calls, abandoned calls, busy calls (calls that received a busy signal), disconnected calls (calls disconnected by the switch), and outflow calls (calls directed to another VDN or off-switch destination).	VDN Status/VDN Report/VDN Summary Report: CALLS OFFERED
calls-waiting	The number of calls that have encountered a VDN, but have not been answered, abandoned, or outflowed.	VDN Status: CALLS WAIT
non-acd-connected-calls	The number of non-ACD calls routed from a specific VDN that were connected to an extension.	VDN Status/VDN Report/VDN Summary Report: CONN CALLS
oldest-calling-waiting	The time the oldest call has been waiting in the VDN. Timing begins when the call enters the vector.	VDN Status: OLDEST CALL
percent-in-service- level	The percentage of calls offered to the VDN that were answered within the service level administered for the VDN.	VDN Status/VDN Report/VDN Summary Report: % IN SERV LEVL
total-acd-talk-time	The total time agents spent talking on split/skill calls and direct agent calls.	None
vdn-extension	The extension of a vector directory number (VDN).	VDN Status/VDN Report: VDN EXT
vdn-name	The name of a vector directory number (VDN).	VDN Status/VDN Summary Report: VDN NAME

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Table 3-57. Trunk Group Data Types

VuStats Data Type	Description	BCMS Report: Field Name/Column Heading
average-incoming-call-time	Average holding time for incoming trunk calls.	Trunk Group: INCOMING TIME
average-outgoing-call-time	Average holding time for outgoing trunk calls.	Trunk Group: OUTGOING TIME
incoming-abandoned-calls	Incoming calls abandoned during a specified time period for a specified trunk group.	Trunk Group: INCOMING ABAND
incoming-calls	Incoming calls carried by a specified trunk group.	Trunk Group: INCOMING CALLS
incoming-usage	The total trunk holding time for incoming calls in hundred call seconds.	Trunk Group: INCOMING CCS
number-of-trunks	The number of trunks in a specified trunk group.	Trunk Group: Number of Trunks
outgoing-calls	The number of outgoing calls carried by a specified trunk group.	Trunk Group: OUTGOING CALLS
outgoing-completed- calls	The number of outgoing calls that received answer supervision or answer timeout.	Trunk Group: OUTGOING COMP
outgoing-usage	The total trunk holding time for outgoing calls in hundred call seconds.	Trunk Group: OUTGOING CCS
percent-all-trunks- busy	The percent of time all the trunks in a specified trunk group were busy during a specified period/day. Timing for a call begins when the last trunk is seized.	Trunk Group: % ALL BUSY
percent-trunks-maint-busy	The percent of time trunks were busied out for maintenance during a specified period/day.	Trunk Group: % TIME MAINT
trunk-group-name	The name administered for a specific trunk group.	Trunk Group: Trunk Group Name
trunk-group-number	The number administered for a specific trunk group.	Trunk Group: Trunk Group Number
trunks-in-use	The number of trunks currently in use (not idle).	None
trunks-maint-busy	The number of trunks currently busied out for maintenance.	None

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Considerations

Some VuStats data is accumulated for an agent's login session. This shift data clears either at midnight or the next time the agent logs in depending upon how the system is administered. If the data clears at login and agents log out to go to lunch, the system clears their accumulated data when they log back in after lunch.

To accumulate a full day's statistics, you can require agents and supervisors to keep a running total of all their login sessions, or, to avoid this, use historical data, require agents to use AUX work mode when temporarily unavailable, or administer the system to clear shift data at midnight.

Interactions

■ BCMS

You must have BCMS activated to receive BCMS reports. VuStats displays data collected by BCMS, but BCMS need not be enabled for you to use VuStats.

■ Call Prompting

When Call Prompting digits are displayed, VuStats is canceled. When an agent reactivates VuStats, the VuStats display overwrites the Call Prompting display.

■ Call Work Codes (CWC)

The CWC-display prompt suspends VuStats, so when the CWC prompt is removed, the VuStats display reappears.

If VuStats is activated while a CWC is being entered (that is, the pound (#) sign is not yet dialed), the CWC display is overwritten. The CWC must be reentered.

■ Change skills

An agent changing skills automatically cancels VuStats. Display of the new skills overwrites the VuStats display. When the agent reactivates VuStats, the VuStats display overwrites the new skills display.

■ CMS

Moving an agent from one split or skill to another does not affect the ID assigned to the vu-display button.

If an agent is moved from one split or skill to another, the system does not associate VuStat buttons from the agent's previous split or skill to the new split or skill. Therefore if you must frequently move agents between splits or skills, do not associate agents' VuStats buttons with a specific split or skill. Instead, associate the VuStats button with the agent format (without an ID) on each agent's phone and use a split reference to view the agent's split/skill.

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- EAS-PHD

  When you have EAS-PHD enabled, VuStats can provide statistical data for all twenty skills. However, agent statistics by skill (agent or agent-extension object types) are available only for the current interval or for the "shift-acd-calls" and "shift-average-acd-talk-time" data types.

- Integrated Directory

  If an agent activates Integrated Directory, VuStats is automatically cancelled. The Integrated Directory display overwrites the VuStats display and the VuStats button extinguishes. When VuStats is reactivated, the VuStats display overwrites the Integrated Directory display.

- Queue-Status Indications

  The queue-status button display automatically cancels VuStats. When VuStats is reactivated, the VuStats display overwrites the queue-status display.

- Reason Codes

  Using certain VuStats data types, you can report real-time and historical AUX work mode time by Reason Code or AUX work mode time summed for each Reason Code.

  The Reason Codes display prompt suspends VuStats; when the Reason Codes prompt is removed, the VuStats display reappears.

- Service Observing

  On terminals with a 1-line display, the Service Observing button display automatically cancels VuStats. When VuStats is reactivated, the VuStats display overwrites the Service Observing display.

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DEFINITY ECS ACD Call Center Forms

4

Introduction

This chapter defines the *DEFINITY* ECS forms that are used to administer the ACD Call Center features.

List Call Center Forms

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Agent LoginID

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Agent LoginID

This form is used to administer Agent LoginIDs for the Expert Agent Selection feature.

Administration Commands

Use the following administration commands to administer the Agent LoginID form.

Action	Object	Qualifier[1]
add	agent-loginid	xxxxx (extension) or **next**
change	agent-loginid	xxxxx (extension)
display	agent-loginid	xxxxx (extension) [**print** or **schedule**]
remove	agent-loginid	xxxxx (extension)
list	agent-loginid	[**staffed** |**unstaffed** [**name** x][**aas** y/n]]

1. Brackets [ ] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on the form:

■ **Login ID** — Display-only field. Contains the identifier for the Logical Agent as entered on the command line.

■ **Name** — Enter up to a 27-character string naming the agent. Any alpha-numeric character is valid. Default is blank.

■ **TN** — Enter the Tenant Partition number. Valid entries are **1**-**20**. Default is **1**.

■ **COR** — Enter the Class of Restriction for the agent. Valid entries are **0**-**95**. Default is **1**.

■ **Coverage Path** — Enter the number of the Coverage Path used by calls to the LoginID. Valid entries are a path number between **1**-**999**, time of day table **t1**-**t999** or blank (default). This is used when the agent is logged out, busy, or does not answer.

■ **Security Code** — Enter the 4-digit security code (password) for the Demand Print messages feature. This field may be blank (default).

■ **Direct Agent Skill** — Enter the number of the skill that is used to handle Direct Agent calls. Valid entries are **1**-**99**, or blank (default).

■ **Call Handling Preference** — Choices are **skill-level** (default), **greatest-need**, and **percent-allocation**. When calls are in queue and an agent becomes available, **skill-level** delivers the oldest, highest priority call waiting for the agent's highest level skill. **Greatest-need** delivers the oldest, highest priority call waiting for any of the agent's skills. **Percent allocation** delivers a call from

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the skill that will otherwise deviate most from its administered allocation. **Percent-allocation** is available only with the *CentreVu* Advocate software. For more information, see the *CentreVu*® *Advocate User Guide* (585-210-927).

- **Service Objective** —This field is displayed only when the call handling preference is **greatest-need** or **skill-level**. You may enter **y** or **n** in this field. When Service Objective is enabled, each time the agent becomes available the agent receives a call from the assigned skill that is the furthest over its acceptable service level. If none of the agent's skills exceed their acceptable service level, Service Objective selects the skill that is closest to exceeding its acceptable service level. Service Objective is a new feature that is part of the *CentreVu* Advocate software. For more information, see the *CentreVu*® *Advocate User Guide* (585-210-927).

- **Direct Agent Calls First** (not shown) — This field replaces the `Service Objective` field when **percent-allocation** is entered in the `Call Handling Preference` field. Enter **y** if you want direct agent calls to override the percent-allocation call selection method and be delivered before other ACD calls. Enter **n** if you want direct agent calls to be treated like other ACD calls. For more information, see the *CentreVu*® *Advocate User Guide* (585-210-927).

- **AAS** — Enter **y** if this extension will be used as a port for an Auto Available Split/Skill. Default is **n**.

  ### ⚠ WARNING:
  *Entering **y** in the AAS field clears the password and requires execution of the **remove agent-loginid** command. To set AAS to **n**, this logical agent must be removed then re-added.*

  ### ⚠ WARNING:
  This option is intended for DEFINITY ECS/switch adjunct equipment ports only, not human agents.

- **AUDIX** — Enter **y** if this extension will be used as a port for an *AUDIX*. Default is **n**.

  ### ➡ NOTE:
  The AAS and *AUDIX* fields cannot both be **y**.

- **LWC Reception** — Enter where LWC messages will be stored for this Agent LoginID. For the *DEFINITY* ECS R5r and newer configurations, valid entries are **audix**, **msa spe** (default), and **none**. For the *DEFINITY* ECS R5si and newer configurations, valid entries are **audix**, **msa-spe** (default), and **none**.

- **Port Extension** (not shown) — Only displayed if either the AAS or *AUDIX* field is **y**. Enter the assigned extension for the AAS or *AUDIX* port. This extension cannot be a VDN or an Agent LoginID. Default is blank.

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- **AUDIX Name for Messaging** –– Only applicable to the *DEFINITY* ECS R5r and newer configurations. Enter the name of the *AUDIX* used for LWC Reception and/or the name of the *AUDIX* that provides coverage for this Agent LoginID or leave blank (default).

- **Messaging Server Name for Messaging** –– Only applicable to the *DEFINITY* ECS R5r and newer configurations. Enter the name of the Messaging Server used for LWC Reception and/or the name of the Messaging Server that provides coverage for this Agent LoginID or leave blank (default).

- **LoginID for ISDN Display** –– Enter **y** if the Agent LoginID CPN and Name field is to be included in ISDN messaging over network facilities. In this case, the physical station extension CPN and Name is sent. Default is **n**.

- **Password** –– Only displayed if both the AAS and *AUDIX* fields are **n**. Enter up to nine digits as the password the Agent must enter upon login. Valid entries are the digits 0 through 9. The minimum number of digits that must be entered in this field is specified in the Minimum Agent-LoginID Password Length field on the Feature-Related System Parameters form. Default is blank.

  > **NOTE:**
  > Values entered into this field will not be echoed to the screen.

- **Password (enter again)** –– Only displayed if both the AAS and *AUDIX* fields are **n**. Reenter the same password exactly as it was entered in the Password field. Default is blank.

  > **NOTE:**
  > Values entered into this field will not be echoed to the screen.

- **Auto Answer** –– Valid entries are **all**, **acd**, **none**, and **station**. When Expert Agent Selection is optioned, the agent's auto answer setting will apply to the station where the agent logs in. If the auto answer setting for that station is different, the agent's setting will override the station's.

  The entries **all**, **acd**, and **none** have the same effect as the corresponding entries on the Station form. Enter **all** to allow all calls (ACD and non-ACD) terminated to the agent to be cut through immediately. Enter **acd** to allow only ACD split /skill calls and direct agent calls to auto answer. If this field is **acd**, Non-ACD calls terminated to the agent ring audibly. Enter **none** (default) to cause all calls terminated to this agent to receive an audible ringing treatment. Enter **station** if you want auto answer for the agent to be controlled by the auto answer field on the Station form.

- **SN (Skill Number)** –– Enter the Skill Hunt Group(s) that this agent handles. The same skill may not be entered twice. If EAS-PHD is not optioned, up to 4 skills can be entered. If EAS-PHD is optioned, up to 20 skills can be entered.

- **RL (Reserve Level)** –– Enter the reserve level (if any) assigned to this agent with the Service Level Supervisor feature. You may assign a reserve level of **1** or **2**. When this skill reaches the corresponding EWT threshold set on the Hunt Group form, this agent will automatically be logged into the skill and will take calls until

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the skill's EWT drops below the threshold. Service Level Supervisor is available as part of the *CentreVu* Advocate software. For more information, see the *CentreVu® Advocate User Guide* (585-210-927).

- **SL (Skill Level)** –– Enter the priority level that each skill has for this particular agent. If EAS-PHD is not optioned, 2 priority levels are available. If EAS-PHD is optioned, 16 priority levels are available. In releases prior to R3V5, level 1 was the primary skill and level 2 was the secondary skill.

- **PA (Percent Allocation)** –– If the call handling preference is **percent-allocation**, you must enter a percentage for each of the agent's skills. Enter a number between **1–100** for each skill. Your entries for all of the agent's skills together must total 100. Percent Allocation is available as part of the *CentreVu* Advocate software. For more information, see the *CentreVu® Advocate User Guide* (585-210-927).

```
add agent-loginID 9011                                          Page  1 of  1
                           AGENT LOGINID

                Login ID: 9011_                           AAS? _
                    Name: _____       AUDIX? _
                      TN: 1__                    LWC Reception: msa-spe
                     COR: 1              AUDIX Name for Messaging: _____
           Coverage Path: ____   Messaging Server Name for Messaging: _____
           Security Code: ____            LoginID for ISDN Display? n
      Direct Agent Skill: ___                           Password: _____
Call Handling Preference: skill-level        Password (enter again): _____
       Service Objective? _                           Auto Answer: _____

    SN  RL SL  PA        SN  RL SL  PA        SN  RL SL  PA        SN  RL SL  PA
1:  __  _  __  ___   6:  __  _  __  ___  11:  __  _  __  ___  16:  __  _  __  ___
2:  __  _  __  ___   7:  __  _  __  ___  12:  __  _  __  ___  17:  __  _  __  ___
3:  __  _  __  ___   8:  __  _  __  ___  13:  __  _  __  ___  18:  __  _  __  ___
4:  __  _  __  ___   9:  __  _  __  ___  14:  __  _  __  ___  19:  __  _  __  ___
5.  __  _  __  ___  10:  __  _  __  ___  15:  __  _  __  ___  20:  __  _  __  ___

     WARNING:  Agent must log in again before skill changes take effect
```

Screen 4-1.   Agent LoginID Form

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```
list agent-loginID                                        Page  1 of  1
                            AGENT LOGINID

Login                   Dir AAS/      Agt
ID    Extn  Name        Agt AUD  COR  Prf SO Skl/Lv Skl/Lv Skl/Lv Skl/Lv
```

Screen 4-2.   List Agent LoginID Form

The following fields appear only on the List Agent LoginID form. All of these fields are display-only:

- **Extn** — The physical extension at which this agent is currently logged in. This field is blank if the agent is not logged in.

- **Dir Agt** — Shows the entry in the Direct Agent Skill field.

- **AAS/AUD** — This field is **y** if the login ID is assigned as an auto-available split/skill or an *AUDIX* port.

- **Agt Pref** — Shows the call handling preference assigned to this loginID.

- **SO** — Shows the entry in the Service Objective field. If you are not using Service Objective, this field is blank.

- **Skl/Lv** — Shows the agent's assigned skills and the skill level for each one.

Implementation Notes

The Auto Answer field is only displayed if G3 Version on the System Parameters Customer-Options form is set to **V6** or later.

The *AUDIX* Name for Messaging and Messaging Server Name for Messaging fields are only displayed for the *DEFINITY* ECS R5r and newer configurations.

The Password and Password (enter again) fields are only displayed when both the AAS and *AUDIX* fields are **n**.

The Port Extension field is only displayed if either the AAS or *AUDIX* field is **y**.

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Best Service Routing (BSR) Application Plan

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Best Service Routing (BSR) Application Plan

Use this form to identify the remote locations used in each BSR application.

➡ NOTE:

For an explanation of BSR application plans see "Best Service Routing" on page 3-44.

For more information about Best Service Routing, refer to the *DEFINITY® Enterprise Communications Server Call Vectoring/EAS Guide* (555-230-521).

Administration Commands

Use the following administration commands to administer the Best Service Routing form.

Action	Object	Qualifier[1]
add	best-service-routing	xxx (application number) or 'next'
change	best-service-routing	xxx (application number)
display	best-service-routing	xxx (application number)
remove	best-service-routing	xxx (application number)
list[2]	best-service-routing	

1. Brackets [ ] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.
2. The command **List best-service-routing** displays the List Best Services Routing Applications form. This is a display-only form and is shown below.

Valid application numbers are 1–255.

Form Instructions

Make assignments as required for the following fields on the form:

- **Number**—This display-only field shows the identifying number of the plan you're working with. Numbered from 1 to 255.

- **Name**—Give the application plan a name with up to 15 characters.

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Best Service Routing (BSR) Application Plan

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- ■ **Maximum Suppression Time** — Enter the maximum poll suppression time in seconds from **0**-**60**. This value applies when a subsequent Call Vector consider command replaces a location as the best. For example, if the poll suppression time is set to 30 seconds, the remote location polling is suppressed for up to 30 seconds if the adjusted Expected Wait Time (EWT) is very far from being the best.

- ■ **Lock** — When set to **y**, this field provides extra security by not sending the information over the CMS. When set to **n**, the system sends the information.

- ■ **Location Number**—One plan may have 1–255 locations. Location numbers are identifiers, and therefore need not be in sequential order. For example, you could assign locations with the identifiers 1, 3, 14 and 89 to one application plan.

- ■ **Location Name**—Give each location a name with up to 15 characters.

- ■ **Switch Node**—This is an optional field. If you're using Universal Call ID, enter the UCID Network Node ID for each *DEFINITY* ECS/switch. Valid Network Node IDs range from 1–32,767.

- ■ **Status Poll VDN**—In this field, enter the routing number (including the dial access code) your *DEFINITY* ECS/switch will use to access the Status Poll VDN at the remote location. Valid entries may be up to 16 characters long and contain the digits 0–9, * or #, p (pause), w/W (wait), m (mark), and s (suppress) characters.

- ■ **Interflow VDN**—In this field, enter the routing number (including the dial access code) your *DEFINITY* ECS/switch will use to access the Interflow VDN at the remote location. Valid entries may be up to 16 characters long and contain the digits 0–9, * or #, p (pause), w/W (wait), m (mark), and s (suppress) characters.

```
              BEST SERVICE ROUTING APPLICATION PLAN

  Number: 15     Name: International    Maximum Suppression Time: 60     Lock? y

Num  Location Name   Switch Node   Status Poll VDN   Interflow VDN
  1  New Jersey      320           919081234015      919081234115
  3  Denver          18            913031234015      913031234115
  4  New York        12345         912121234015      2121234115
___  _____  _____         _____    _____
___  _____  _____         _____    _____
___  _____  _____         _____    _____
___  _____  _____         _____    _____
___  _____  _____         _____    _____
___  _____  _____         _____    _____
___  _____  _____         _____    _____
___  _____  _____         _____    _____
___  _____  _____         _____    _____
___  _____  _____         _____    _____
___  _____  _____         _____    _____
___  _____  _____         _____    _____
___  _____  _____         _____    _____
___  _____  _____         _____    _____
___  _____  _____         _____    _____
```

Screen 4-3. Best Service Routing Application Plan Form

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Best Service Routing (BSR) Application Plan 4-9

```
list best-service-routing
             BEST SERVICE ROUTING APPLICATIONS

          Number              Name

          xxx                 International
          xxx                 Tech Support
          xxx                 Sales
```

Screen 4-4.   List Best Service Routing Applications Form

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BCMS/VuStats Login ID

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BCMS/VuStats Login ID

If you want to monitor call activity by agent login IDs, and if the BCMS/VuStats Login ID field on the System-Parameters Customer-Options form is set to **y** but the EAS feature is not optioned, the administrator uses this form to administer valid logins.

You do not have to enter names. If you do not use names with the login IDs, the data you receive from BCMS and/or VuStats defaults to **ID xxxxxxxxx** where **xxxxxxxxx** is the login ID.

$\Longrightarrow$ NOTE:

Only agents using one of the administered login IDs can successfully log in to a split measured by BCMS.

Administration Commands

Use the following administration commands to administer the BCMS/VuStats Login ID form.

Action	Object	Qualifier[1]
add	bcms/vustats login IDs	
change	bcms/vustats login IDs	[login ID]
display	bcms/vustats login IDs	[login ID]
list	bcms/vustats login IDs	[login ID] count X

1. Brackets [ ] indicate the qualifier is optional.

Form Instructions

Make assignments as required for the following fields on the form:

■ **Login ID** — A number up to nine digits that an agent must enter to be measured in a split by BCMS. The login IDS are restricted to up to five digits if you are using EAS. The system validates each login ID. If you enter a duplicate login ID, the system displays an error message and places the cursor at the duplicate field. Also, the login ID must be the same length as the number in the **ACD Login Identification Length** field on the Feature-Related System-Parameters form. If the login ID you enter does not match the length specified in the **ACD Login Identification Length** field, the system displays an error message and places the cursor at the field that is incorrect.

$\Longrightarrow$ NOTE:

The administered login length may change to another value, but doing so changes the allowed length for all IDs entered on this form. Before agents with logins that do not match the administered login length can log on, you

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BCMS/VuStats Login ID

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must readminister either the ACD login identification length to fit the
existing logins or change the logins to match the ACD login identification
length.

■ **Name** –– A name associated with the login ID (optional).

```
change bcms/vu-stats login IDs
                                                          Page 1 of x
                         BCMS/VU-STATS LOGIN IDS
      Assigned Numbers: 300 of 400
        Login Id   Name                    Login Id   Name
    1: _____ _____     17: _____ _____
    2: _____ _____     18: _____ _____
    3: _____ _____     19: _____ _____
    4: _____ _____     20: _____ _____
    5: _____ _____     21: _____ _____
    6: _____ _____     22: _____ _____
    7: _____ _____     23: _____ _____
    8: _____ _____     24: _____ _____
    9: _____ _____     25: _____ _____
   10: _____ _____     26: _____ _____
   11: _____ _____     27: _____ _____
   12: _____ _____     28: _____ _____
   13: _____ _____     29: _____ _____
   14: _____ _____     30: _____ _____
   15: _____ _____     31: _____ _____
   16: _____ _____     32: _____ _____
```

Screen 4-5. BCMS/VuStats Login IDs Form

Implementation Notes

The form appears only two pages (64 IDs) at a time. If you are adding login IDs, you can
fill two pages and then reissue the command to fill an additional two pages, and so on. If
you are changing or displaying login IDs, the system displays two pages of login IDs
beginning with the ID you specified; if you did not specify a login ID when you issued the
command, the display begins with the first login ID. The **list** command lists all login IDs
and may run to 63 pages.

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4 DEFINITY ECS ACD Call Center Forms
Call Center System Parameters

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Call Center System Parameters

Call Center System Parameters are listed on pages 7 and 8 of the Feature-Related System Parameters form. They are duplicated here for your convenience.

Page 7 of the form

```
                                                              Page 7 of 8
                         CALL CENTER SYSTEM PARAMETERS

EAS
        Expert Agent Selection (EAS) Enabled? n
      Minimum Agent-LoginID Password Length:
         Direct Agent Announcement Extension: _____              Delay: ___
   Message Waiting Lamp Indicates Status For: station

VECTORING
                     Converse First Data Delay: 0      Second Data Delay: 2
             Converse Signaling Tone (msec): 100          Pause (msec): 70_
                    Prompting Timeout (secs): 10
               Interflow-qpos EWT Threshold: 2
SERVICE OBSERVING
             Service Observing Warning Tone? n

ASAI
 Call Classification After Answer Supervision? n      Send UCID to ASAI? n
```

Screen 4-6.   Feature-Related System Parameters form (page 7 of 8)

EAS parameters:

■ **Expert Agent Selection (EAS) Enabled** — Only displays if Expert Agent Selection (EAS) on the System-Parameters Customer-Options form is **y**. Enter **y** to enable Expert Agent Selection. To enable this field, either no ACD or vectoring hunt groups may exist or, existing ACD or vectoring hunt groups must be skilled. Default is **n**.

■ **Minimum Agent-LoginID Password Length** — Only displays if Expert Agent Selection (EAS) on the System-Parameters Customer-Options form is **y**. Enter the minimum number of digits that must be administered as an EAS Agent's LoginID password. Valid entries are **0** through **9** or blank. Entering a **0** or blank indicates no password is required. Default is blank.

■ **Direct Agent Announcement Extension** — Only displays if Expert Agent Selection (EAS) or ASAI on the System-Parameters Customer-Options form is **y**. Enter a valid announcement extension (consistent with the dial plan).

■ **Direct Agent Announcement Delay** — Only displays if Expert Agent Selection (EAS) or ASAI on the System-Parameters Customer-Options form is **y**. Enter the number of seconds (**0** to **99**) the caller will hear ringback before the Direct Agent Announcement is heard by the calling party.

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Call Center System Parameters

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■ **Message Waiting Lamp Indicates Status For** –– Only displays if `Expert Agent Selection (EAS)` on the System-Parameters Customer-Options form is **y**. If `Expert Agent Selection (EAS) Enabled` is **y**, you can enter either **station** or **loginID**, otherwise you can only enter **station**.

Vectoring parameters:

■ **Converse First Data Delay/Second Data Delay** –– Only displays if `Vectoring (Basic)` on the System-Parameters Customer-Options form is **y**. The `First Data Delay` prevents data from being outpulsed (as a result of a converse vector step) from the system to a voice response unit (VRU) before the unit is ready. The delay commences when the VRU port answers the call. Enter the number of seconds (**0** to **9**) for the delay. Default is **0**. The `Second Data Delay` is used when two groups of digits are being outpulsed (as a result of a converse vector step) from the system to the VRU. The `Second Data Delay` prevents the second set from being outpulsed before the VRU is ready. The delay commences when the first group of digits has been outpulsed. Enter the number of seconds (**0** to **9**) for the delay. Default is **2**.

■ **Converse Signaling Tone/Pause** –– Only displays if `Vectoring (Basic)` and `DTMF` on the System-Parameters Customer-Options form are **y**. In the `Signaling Tone` field, enter the length in milliseconds of the digit tone for digits being passed to a voice response unit (VRU). In the `Pause` field, enter the length in milliseconds of the delay between digits being passed. The optimum timers for the VRU are a 100 msec tone and 70 msec pause.

Values entered in the `Tone/Pause` fields are rounded up or down depending upon the type of circuit pack used to outpulse the digits.

   ■ **TN742B or later suffix analog board** –– Tone and pause round up or down to the nearest 25 msecs. For example a 130 msec tone rounds down to 125 msecs, a 70 msec pause rounds up to 75 msec for a total of 200 msecs per tone.

   ■ **TN464F, TN767E or later suffix DS1 boards** –– Tone and pause round up to the nearest 20 msecs. For example a 130 msec tone rounds up to 140 msecs, a 70 msec pause rounds up to 80 msecs for a total of 220 msecs per tone.

If a circuit pack has been used for end-to-end signalling to the VRU, and has then been used to send digits to a different destination, the VRU timers may stay in effect. To reset your timers to the system default, pull and reseat the circuit pack.

■ **Prompting Timeout (secs)** –– Only displays if `Vectoring (Prompting)` on the System-Parameters Customer-Options form is **y**. Enter the number of seconds, from **4** to **10** (default), before the Collect Digits command times out for callers using rotary dialing.

■ **Interflow-qpos EWT Threshold** –– Part of enhanced Look-Ahead Interflow. Any calls predicted to be answered before this threshold will not be interflowed (therefore saving CPU resources). Enter the number of seconds for this threshold. The default is 2 seconds.

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Call Center System Parameters

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Service Observing parameters:

- **Service Observing Warning Tone** — `Service Observing (Basic)` on the System-Parameters Customer-Options form must be **y** before this field may be administered. Enter **y** to assign a warning tone to be given to voice terminal users and calling parties whenever their calls are being monitored using the Service Observing feature. Default is **n**.

   ⟹ **NOTE:**
   The use of Service Observing features may be subject to federal, state, or local laws, rules or regulations or require the consent of one or both of the parties to the conversation. Customers should familiarize themselves and comply with all applicable laws, rules, and regulations before using these features.

ASAI parameters

- **Call Classification After Answer Supervision?** — For use with ASAI Outbound Call Management (OCM). Enter **y** to force the *DEFINITY* ECS/switch to rely on the network to provide answer/busy/drop classification to the *DEFINITY* ECS/switch. After the call has been answered, a call classifier can be added to perform answering machine, modem and voice answering detection. Enter **n** for standard operation.

- **Send UCID to ASAI?** — Enter **y** to enables transmission of Universal Call ID (UCID) information to ASAI. Enter **n** (default) to prevent transmission of UCID information to ASAI.

Page 8 of the form

```
                                                          Page 8 of 8
                         CALL CENTER SYSTEM PARAMETERS

AGENT AND CALL SELECTION
                       MIA Across Splits or Skills? n
                        ACW Agents Considered Idle? y
                        Call Selection Measurement: current-wait-time
   Service Level Supervisor Call Selection Override? y

REASON CODES
                             Aux Work Reason Code Type: none
                              Logout Reason Code Type: none

CALL MANAGEMENT SYSTEM
                               Adjunct CMS Release:
                   ACD Login Identification Length: 0
                BCMS/VuStats Measurement Interval: hour
      BCMS    /VuStats Abandon Call Timer (seconds):
                    Validate BCMS/VuStats Login IDs? n
                          Clear VuStats Shift Data: on-login
```

Screen 4-7.   Feature-Related System Parameters form (page 8 of 8)

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Call Center System Parameters

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Agent and Call Selection Parameters:

■ **MIA Across Splits or Skills?** — Enter **y** to remove an agent from the MIA queue for all the splits/skills/hunt groups that he or she is available in when the agent answers a call from any of his or her splits/skills/hunt groups. The default is **n**.

■ **ACW Agents Considered Idle?** — Enter **y** (default) to have agents who are in After Call Work included in the Most-Idle Agent queue. Enter **n** to exclude ACW agents from the queue.

■ **Call Selection Measurement** — Valid entries are **current-wait-time** (default) and **predicted-wait-time**. This field determines how the *DEFINITY* ECS selects a call for an agent when the agent becomes available and there are calls in queue. Current Wait Time selects the oldest call waiting for any of the agent's skills. Predicted Wait Time is a feature of the *CentreVu* Advocate software. For more information, see the *CentreVu® Advocate User Guide* (585-210-927).

■ **Service Level Supervisor Call Selection Override**? — Enter **y** (default) to enable an agent to receive a lower priority call from a skill in an over threshold state before receiving an higher priority call from a skill not in an over threshold state.

Reason Codes Parameters:

■ **Aux Work Reason Code Type** — Enter **none** if you do not want an agent to enter a Reason Code when entering AUX work. Enter **requested** if you want an agent to enter a Reason Code when entering AUX mode but do not want to force the agent to do so. Enter **forced** to force an agent to enter a Reason Code when entering AUX mode. To enter **requested** or **forced**, the Reason Codes and EAS on the System-Parameters Customer-Option form must be **y**.

■ **Logout Reason Code Type** — Enter **none** if you do not want an agent to enter a Reason Code when logging out. Enter **requested** if you want an agent to enter a Reason Code when logging out but do not want to force the agent to do so. Enter **forced** to force an agent to enter a Reason Code when logging out. Enter **forced** to force an agent to enter a Reason Code when entering AUX mode. To enter **requested** or **forced**, the Reason Codes and EAS on the System-Parameters Customer-Option form must be **y**.

Call Management System Parameters:

■ **Adjunct CMS Release** — Specifies the release of the CMS adjunct used with the system. For CMS, this field cannot be blank. Default is blank.

■ **ACD Login Identification Length** — Enter the number of digits (**0** through **9**) for an ACD Agent Login ID if Expert Agent Selection (EAS) on the System-Parameters Customer-Options form is **n**. Default is **0**. If BCMS/VuStats Login IDs is **y**, the ACD Login ID length must be greater than 0. This field identifies an ACD agent to CMS. The number you enter in this field must equal the number of characters in the agent's login ID. For CMS, this field cannot be 0.

■ **BCMS/VuStats Measurement Interval** — You can enter **half-hour** or **hour** (default) for polling and reporting measurement data if the BCMS (Basic) and/or the VuStats on the System-Parameters Customer-Options form is **y**. If

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Call Center System Parameters

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neither of these features is optioned, and if you enter a value in the BCMS
Measurement Interval field, the system displays the following error
message:

<value> cannot be used; assign either BCMS or VuStats first

If you receive this message, see your Lucent Technologies representative to turn
on BCMS (Basic) and/or VuStats on the System-Parameters
Customer-Options form.

There are a maximum of 25 time slots available for measurement intervals. If
hour is specified, an entire day of traffic information will be available for history
reports; otherwise, only half a day will be available. This does not affect daily
summaries as they always reflect traffic information for the entire day. The interval
may be changed at any time, but will not go into effect until the current interval
completes.

- **BCMS/VuStats Abandon Call Timer (seconds)** — Enter **none** or **1**–**10** to
  specify the number of seconds for calls to be considered abandoned. Calls with
  talk time that is less than this number (and that are not held) are tracked by BCMS
  and displayed by VuStats as ABAND calls.

- **Validate BCMS/VuStats Login IDs** — Enter **n** to allow entry of any ACD
  login of the proper length. Enter **y** to allow entry only of login-IDs that have been
  entered on the BCMS Login-ID form.

- **Clear VuStats Shift Data** — Enter **on-login** to clear shift data for an agent
  when the agent logs in. Enter **at-midnight** to clear shift data for all agents at
  midnight.

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4 DEFINITY ECS ACD Call Center Forms
Call Vector

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Call Vector

This form programs a series of commands that specify how to handle calls directed to a Vector Directory Number (VDN). Refer to the *DEFINITY® Enterprise Communications Server Call Vectoring/EAS Guide* (555-230-521) for additional information.

Administration Commands

Use the following commands to administer the Call Vector form.

Action	Object	Qualifier[1]
change[2]	vector	1-MAX
display	vector	1-MAX ['print' or 'schedule']
list	vector	1-MAX ['count' 1-MAX] ['print' or 'schedule']

1. Brackets [ ] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration.

2. Do not change a call vector while it is processing a call. It is recommended to add a new vector with the Call Vector form, and then use the Vector Directory Number form to point an existing VDN to the new vector.

Form Instructions

```
change vector xxx                                                page 1 of 3
                              CALL VECTOR

    Number: xxx      Name: _____
 Multimedia? n      Attendant Vectoring? n            Lock?
     Basic? n    EAS? n  G3V4 Enhanced? n  ANI/II-Digits? n  ASAI Routing? n
  Prompting? n   LAI? n G3V4 Adv Route? n           CINFO? n          BSR? n

 01 _____
 02 _____
 03 _____
 04 _____
 05 _____
 06 _____
 07 _____
 08 _____
 09 _____
 10 _____
 11 _____
```

Screen 4-8.   Call Vector Form (Page 1 of X)

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Call Vector

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```
                                                        Page 2 of 3
                              CALL VECTOR

     12 _____
     13 _____
     14 _____
     15 _____
     16 _____
     17 _____
     18 _____
     19 _____
     20 _____
     21 _____
     22 _____
```

Screen 4-9.   Call Vector Form (Page 2 of X)

```
                                                        Page 3 of 3
                              CALL VECTOR

     23 _____
     24 _____
     25 _____
     26 _____
     27 _____
     28 _____
     29 _____
     30 _____
     31 _____
     32 _____
```

Screen 4-10.   Call Vector Form (Page 3 of X)

Make assignments as required for the following fields on the form:

- **Number** — Display-only field when the form is accessed using a **change** or **display** administration command. Enter a vector number when completing a paper form.

- **Name** — Enter up to 27 alphanumeric characters to represent the vector name. This is an optional field. Default is blank.

- **Multimedia** — Indicates whether the vector should receive early answer treatment for multimedia calls. This only applies if Multimedia Call Handling is enabled. If you expect this vector to receive multimedia calls, set this field to **y**. Valid values are **y** or **n** (default). If this value is **y**, the call is considered to be answered at the start of vector processing, and billing for the call starts at that time. Refer to 46 for more information about Multimedia Call Handling.

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Call Vector

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- **Attendant Vectoring** —— Appears only when Attendant Vectoring is optioned. Valid entries are **y** and **n** (default). The Attendant Vectoring field defaults to **n** and changes are allowed to the field. If Basic Vectoring and Vector Prompting are both set to **n**, then the Attendant Vectoring field defaults to **y** and no changes are allowed to the field.

  To associate VDNs and vectors for attendant vectoring, a field has been added to both the VDN and the call vectoring forms to indicate attendant vectoring. When attendant vectoring is indicated for VDNs and vectors, all call center-associated fields (such as Skills and BSR) are removed.

- **Lock**—This field controls access to the vector from the *CentreVu* CMS or *CentreVu* Visual Vectors. Valid entries are **y** and **n**(default). Enter **n** to give *CentreVu* CMS and *CentreVu* Visual Vectors users the ability to administer this vector from these client programs. Enter **y** if you do not want this vector to be accessible to these client programs. Locked vectors can only be displayed and administered through the SAT or a terminal emulator.

  > **NOTE:**
  > Always lock vectors that contain secure information (for example, access codes).

- **Basic** —— Display-only field. Indicates whether the `Vectoring (Basic)` option is enabled on the System-Parameters Customer-Options form. Valid values are **y** or **n**.

- **EAS** —— Display-only field. Indicates whether the `Expert Agent Selection (EAS)` option is enabled on the System-Parameters Customer-Options form. Valid values are **y** or **n**.

  > **NOTE:**
  > When Expert Agent Selection (EAS) is enabled, the help messages and error messages associated with this form will reflect a terminology change from Split to Skill. In addition, the vector commands entered also will be affected by this terminology change (for example, *check backup split* becomes *check backup skill* when EAS is enabled).

- **G3V4 Enhanced** —— Display-only field. Indicates whether you can use G3V4 Enhanced Vector Routing commands and features.

- **ANI/II-Digits** —— Display-only field. Indicates whether you can use ANI and II-Digits Vector Routing Commands. ANI/II-Digits Routing requires that `G3V4 Enhanced` be set to **y**.

- **ASAI Routing** —— Display-only field. Indicates whether or not the `CallVisor Adjunct/Switch Applications Interface (ASAI) Routing` option is enabled on the System-Parameters Customer-Options form. Valid values are **y** or **n**.

- **Prompting** —— Display-only field. Indicates whether the `Vectoring (Prompting)` option is enabled on the System-Parameters Customer-Options form. Valid values are **y** or **n**.

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Call Vector

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- **LAI** –– Display-only field. Indicates whether Look-Ahead Interflow is enabled.

- **G3V4 Adv Route** –– Display-only field. Indicates whether you can use the G3V4 Advanced Vector Routing commands.

- **CINFO** –– Display-only field. Indicates whether the Vectoring (CINFO) option is enabled on the System-Parameters Customer-Options form. Valid values are **y** or **n**.

- **BSR**—A **y** in this display-only field indicates that the Vectoring (Best Service Routing) option is enabled on the System-Parameters Customer-Options form. Thus, you can use BSR commands and command elements in your vectors. An **n** indicates that the BSR option is not enabled.

- **01 through XX** –– Enter vector commands as required (up to the maximum allowed in your configuration). Valid entries are **adjunct**, **announcement**, **busy**, **check**, **collect**, **consider**, **converse-on**, **disconnect**, **goto**, **messaging**, **que-to**, **reply-best**, **route-to**, **stop**, **wait-time**. Default is blank.

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4 DEFINITY ECS ACD Call Center Forms
Reason Code Names

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Reason Code Names

Use the Reason Code Names form to assign names to Reason Codes. You can assign a different name to each Reason Code for Aux Work and for Logout.

Administration Commands

Use the following administration commands to access the Reason Code Names form.

Action	Object
display	reason-code-names
change	reason-code-names

Form Instructions

Make assignments as required for the following fields on the form.

- **Aux Work** — For each Reason Code enter the name to be associated with this Reason Code when the agent uses this Reason Code to enter Aux Work mode. Names can be up to ten characters long. Default is blank.

- **Logout** — For each Reason Code enter the name to be associated with this Reason Code when the agent uses this Reason Code to log out. Names can be up to ten characters long. Default is blank.

- **Affect Agent Occupancy** — For each Reason Code enter **y** (yes) or **n** (no). Enter **y** to include the total AUX time in the agent work time and total samples while in AUX work mode in the **staffed any skill** measurement. The default is **n**.

```
                    REASON CODE NAMES

                Aux Work     Logout      Affect Agent Occupancy

     Reason Code 1: _____  _____  _
     Reason Code 2: _____  _____  _
     Reason Code 3: _____  _____  _
     Reason Code 4: _____  _____  _
     Reason Code 5: _____  _____  _
     Reason Code 6: _____  _____  _
     Reason Code 7: _____  _____  _
     Reason Code 8: _____  _____  _
     Reason Code 9: _____  _____  _

Default Reason Code: _____  _____  _
```

Screen 4-11.   Reason Code Names form (Page 1 of 1)

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4 DEFINITY ECS ACD Call Center Forms
SIT Treatment for Call Classification

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SIT Treatment for Call Classification

This form is used to provide the capability of specifying the treatment of Special Information Tones (SITs) used for Outbound Call Management type calls with USA tone characteristics. The TN744 Call Classifier circuit pack ports are used to detect SITs. The TN744 is capable of detecting the following six SITs:

- SIT Ineffective Other

- SIT Intercept

- SIT No Circuit

- SIT Reorder

- SIT Vacant Code

- SIT Unknown

- AMD Treatment

Administration Commands

Use the following administration commands to administer the SIT Treatment For Call Classification form. In some cases, just the most commonly used commands are shown. Refer to *DEFINITY ECS Administrator's Guide*, for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier[1]
change	sit-treatment	—
display	sit-treatment	['print' or 'schedule']

1. Brackets [ ] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word can be entered.

Form Instructions

Make assignments as required for the following fields on the form:

In the field following each type of SIT, enter **answered** to specify that the call is classified as answered, and is therefore sent to an agent; or enter **dropped** to specify that the call is classified as not answered, and is therefore not sent to an agent.

- **SIT Ineffective Other** –– Sample announcement following this SIT –– "You are not required to dial a "1" when calling this number." Valid entries are **answered** and **dropped**. Default is **dropped**.

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SIT Treatment for Call Classification

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- **SIT Intercept** —— Sample announcement following this SIT —— "XXX-XXXX has been changed to YYY-YYYY, please make a note of it." Valid entries are **answered** and **dropped**. Default is **answered**.

- **SIT No Circuit** —— Sample announcement following this SIT —— "All circuits are busy, please try to call again later." Valid entries are **answered** and **dropped**. Default is **dropped**.

- **SIT Reorder** —— Sample announcement following this SIT —— "Your call did not go through, please hang up and dial again." Valid entries are **answered** and **dropped**. Default is **dropped**.

- **SIT Vacant Code** —— Sample announcement following this SIT —— "Your call cannot be completed as dialed, please check the number and dial again." Valid entries are **answered** and **dropped**. Default is **dropped**.

- **SIT Unknown** —— A situation or condition that is unknown to the network is encountered. Valid entries are **answered** and **dropped**. Default is **dropped**.

- **AMD (Answering Machine Detected)** —— An ASAI adjunct can request AMD for a *DEFINITY* ECS/switch-classified call. If Answering Machine is detected, one of two treatments is specified. Valid entries are **dropped** and **answered**. Default is **dropped**.

  AMD Treatment has two separately administrable subfields. Talk Duration is for full seconds and Pause Duration is for fractions of a second, separated by a display-only decimal point. Talk Duration defaults to 2.0 seconds and allows a range from 0.1 seconds to 5.0 seconds in increments of 0.1 seconds. Pause duration defaults to 0.5 seconds and allows a range from 0.1 seconds to 2.0 seconds in increments of 0.1 seconds.

```
                    SIT TREATMENT FOR CALL CLASSIFICATION
       SIT Ineffective Other:  dropped
               SIT Intercept:  answered
             SIT No Circuit:  dropped
                 SIT Reorder:  dropped
           SIT Vacant Code:  dropped
                 SIT Unknown:  dropped
             AMD Treatment:  dropped
    Pause Duration (seconds): 0.5
     Talk Duration (seconds): 2.0
```

Screen 4-12.   SIT Treatment For Call Classification Form

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4   DEFINITY ECS ACD Call Center Forms
Vector Directory Number

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Vector Directory Number

This form is used to define vector directory numbers (VDNs) for the Call Vectoring feature. A VDN is an extension number used to access a call vector. Each VDN is mapped to one call vector.

VDNs are software extension numbers (that is, not assigned to physical equipment). A VDN is accessed via direct dial CO trunks mapped to the VDN (incoming destination or night service extension), DID trunks, and LDN calls. The VDN may be Night Destination for LDN.

For more information, refer to the *DEFINITY® Enterprise Communications Server Call Vectoring/EAS Guide* (555-230-521).

Administration Commands

Use the following administration commands to administer the Vector Directory Number form.

Action	Object	Qualifier[1]
add	vdn	xxxxx (extension number of VDN to be added) or 'next'
change	vdn	xxxxx (extension number of VDN to be changed)
display	vdn	xxxxx (extension number of VDN to be displayed) ['print' or 'schedule']
list	vdn	xxxxx (extension number of VDN to be listed) ('count' 1-MAX) ['print' or 'schedule']
	vdn	bsr xxx (number of a BSR application plan)
remove	vdn	xxxxx (extension number of VDN to be removed)

1. Brackets [ ] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word can be entered. MAX is the maximum number available in your system configuration. Refer to the *DEFINITY* ECS System Description Pocket Reference.

Form Instructions

Make assignment as required for the following fields on the form:

■ **Extension** — Enter the extension associated with the VDN when completing a paper form. The extension is a 1- to 5-digit number that starts with a valid first digit and length as defined by the System's dial plan. This is a display-only field when using an administration command such as add or change to access the form.

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Vector Directory Number

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- **Name** –– Enter up to a 27-character alphanumeric name that identifies the VDN. This is an optional field that need not contain any data. The name may be truncated on agents' displays depending on the application. When information is forwarded with an interflowed call, only the first 15 characters are sent. Default is blank.

- **Allow VDN Override?** –– Valid entries are **y** and **n** (default). This entry affects the operation of an agent's display and certain options/data assigned to the VDN when a call is routed through several VDNs. If it is set to **n**, the name of this VDN appears on the agent's display and the VDN's *AUDIX* mail is accessed. If any subsequent VDNs are used to process this call, their names will not appear on the terminating display and the *AUDIX* mail for the original VDN is accessed. If the field is set to **y**, the name of the VDN appearing on the terminating display will depend on the administration and chaining of the subsequent VDNs and the *AUDIX* mail for the last VDN is accessed. Default is **n**.

  For Expert Agent Selection (EAS), if this field is **y** on the original VDN, the Skills of the new VDN will be used. If this field is **n** on the original VDN, the Skills of the original VDN will be used.

  For Best Service Routing (BSR), if this field is **y** on the original VDN, the BSR Application and Available Agent Strategy of the new VDN will be used. If this field is **n** on the original VDN, the BSR Application and Available Agent Strategy of the original VDN will be used.

- **COR** –– Enter a 1- to 2-digit number that specifies the class of restriction (COR) to be assigned the VDN. The default value is **1**. The field cannot be blank and must have an entry in the range from **0**-**95**.

- **TN** –– Enter the Tenant Partition number. Valid entries are **1**-**20**. The default value is **1**.

- **Vector Number** –– Enter a 1- to 3-digit vector number that specifies a particular call vector that is accessed through the VDN. Valid entries for the *DEFINITY* ECS R8csi/si are **1**-**512** and for the *DEFINITY* ECS R8r are **1**-**999**. Valid entries for the *DEFINITY* ECS R7vs/csi/si are **1**-**256** and for the *DEFINITY* ECS R7r are **1**-**512**. See the capacities tables for valid entries prior to the *DEFINITY* ECS R7. Default is **1**. The field cannot be blank.

- **Attendant Vectoring** –– When Attendant Vectoring is optioned, a field on the VDN form identifies if this is an Attendant Vectoring VDN. If this field is **n**, there are no changes on the VDN form. If this field is **y**, the form appearance changes (see below).

  When removing a VDN, validation verifies that this VDN is not being used on either the Console Parameters form or the Tenant Partitioning forms.

  ### ⇒ NOTE:
  Attendant Vectoring is used in non-call center environments. See the *DEFINITY*® *Enterprise Communications Server Call Vectoring/EAS Guide* (555-230-521) for more information.

- **AUDIX Name** –– Only displayed for the *DEFINITY* ECS R5r and newer configurations. If this VDN is associated with the *AUDIX* vector, enter the name of the *AUDIX* machine as it appears in the Adjunct Names form.

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Vector Directory Number

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- **Messaging Server Name** –– Only displayed for the *DEFINITY* ECS R5r and newer configurations. If this VDN is associated with MSA, enter the name of the server as it appears in the Adjunct names form.

- **Measured** –– Used to collect measurement data for this VDN. Valid entries are **internal**, **external**, **both**, or **none**. Data may be collected for reporting by BCMS or CMS. Default is **none**.

  <img>➡ **NOTE:**</img>
  > The BCMS feature must be enabled on the System-Parameters Customer-Options form for the Measured field to be set to **internal** or **both**. In addition, the appropriate CMS release must be administered on the Feature-Related System Parameters form if the field is being changed to **external** or **both**.

- **Acceptable Service Level (sec)** –– Only displayed when the BCMS/VuStats Service Level option is enabled on the System-Parameters Customer-Options form and the Measured field is **internal** or **both**. Enter the number of seconds within which calls to this VDN should be answered. This will allow BCMS to print out a percentage of calls that were answered within the specified time. Valid entries are 0 through 9999 seconds. Default is blank.

  The following field appears only if VDN of Origin Announcements is enabled on the System-Parameters Customer-Options form.

- **VDN of Origin Annc. Extension** –– Enter the extension number of the VDN of Origin announcement. Default is blank.

- **1st/2nd/3rd Skill** –– Only displayed when Expert Agent Selection is enabled on the System-Parameters Customer-Options form. Enter the desired Skill numbers (or leave blank) in each field. Valid entries are **1**-**99**, or blank (default).

- **Return Destination** –– The VDN extension number to which an incoming trunk call will be routed if it returns to vector processing after the agent drops the call. Valid entries are the VDN extension, or blank (default).

- **VDN Timed ACW Interval** –– When a value is entered in this field, an agent in auto-in work mode who receives a call from this VDN is automatically placed into After Call Work (ACW) when the call drops. Enter the number of seconds the agent should remain in ACW following the call. When the administered time is over, the agent automatically becomes available. This field has priority over the **Timed ACW Interval** field on the Hunt Group form.

- **BSR Application** –– To use multi-site Best Service Routing with this VDN, enter a 1- to 3-digit number to specify an application plan for the VDN. This field only appears if Lookahead Interflow (LAI) and Vectoring (Best Service Routing) are enabled on the System Parameters Customer-Options form.

- **BSR Available Agent Strategy** –– The available agent strategy determines how Best Service Routing identifies the best split or skill to service a call in an agent surplus situation. To use Best Service Routing with this VDN, enter an agent selection strategy in this field. Acceptable entries are 1st-found, UCD-LOA, UCD-MIA, EAD-LOA, and EAD-MIA.

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This field only appears if Vectoring (Best Service Routing) is enabled on the System Parameters Customer-Options form.

When this field is set to **n**, the VDN form appears like this:

```
change vdn xxxxx                                                 page 1 of 2
                          VECTOR DIRECTORY NUMBER

                          Extension: 2001
                               Name: vdn 2001
                      Vector Number: 1
                 Attendant Vectoring? n
                 Allow VDN Override? n
                                COR: 1
                                 TN: 1
                           Measured: internal
        Acceptable Service Level (sec): 20
         VDN of Origin Annc. Extension:
                          1st Skill:
                          2nd Skill:
                          3rd Skill:
```

```
change vdn xxxxx                                                 page 2 of 2
                          VECTOR DIRECTORY NUMBER

                          Audix Name:
                Messaging Server Name:
                   Return Destination:
              VDN Timed ACW Interval:
                     BSR Application:
         BSR Available Agent Strategy: 1st-found
            Delay ISDN CONNECT message? n
```

Screen 4-13. Vector Directory Number (Attendant Vectoring set to n) — Add/Change Form

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Vector Directory Number

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```
change vdn xxxxx                                              page 1 of 1
                       VECTOR DIRECTORY NUMBER

                         Extension: 2001
                              Name: vdn 2001
                     Vector Number: 1
              Attendant Vectoring? y

                              COR: 1
                               TN: 1
                         Measured:
```

Screen 4-14.   Vector Directory Number (Attendant Vectoring set to y) — Add/Change Form

```
                 VECTOR DIRECTORY NUMBERS
                                                          Event
                         VDN          Vec         Orig  Notif  Skills
Name                Ext  Ovrd  COR TN Num  Meas    Annc  Adj 1st 2nd 3rd
Tech Support        50000  y    59  1 234  none    301
Customer Serv.      50001  n    1   1   1  none    302
New Orders          50002  y    23  1   5  none    303
Denver              50003  y    23  1 123  int     304
San Francisco       50004  y    39  1 123  ext     305
Chicago             50005  y    12  1 123  both    306
```

Screen 4-15.   Vector Directory Numbers — List Form

Implementation Notes

■ AUDIX Name and Messaging Server Name are only displayed for the *DEFINITY* ECS R5r and newer configurations.

■ The BCMS feature must have been optioned if the Measured field is set to **internal** or **both**. In addition, the appropriate CMS release must be administered on the Feature-Related System Parameters form if the field is being changed to **external** or **both**.

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Vector Directory Number

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■ The 1st/2nd/3rd Skill fields are only displayed when Expert Agent Selection is
enabled on the System-Parameters Customer-Options form.

■ The BCMS Acceptable Service Level (sec) field is only displayed if the BCMS
Acceptable Service Level option is enabled on the System-Parameters
Customer-Options form and the Measured field is **internal** or **both**.

■ Data for the Orig Annc column appears only when VDN of Origin Announcement
is enabled on the System-Parameters Customer-Options form.

■ To list all VDNs using the same BSR Application Plan, type the administration
command **list VDN BSR *xxx*** (xxx is the number of the BSR Application Plan
used by one or more VDNs).

■ To associate VDNs and vectors for attendant vectoring, a field has been added to
both the VDN and the Call Vectoring forms to indicate attendant vectoring. When
attendant vectoring is indicated for VDNs and vectors, all call center-associated
fields (such as Skills and BSR) are removed.

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Vector Routing Table 4-30

Vector Routing Table

This form is used to store ANI or Digits that you refer to in *goto* vector steps. It is available to you only if the Vectoring (G3V4 Enhanced) field on the System-Parameters Customer-Options form is set to **y**.

For more information, refer to or to *DEFINITY*®
Enterprise Communications Server Call Vectoring/EAS Guide (555-230-521).

Administration Commands

You can use the commands listed in the table below to administer Vector Routing Tables. In addition, you can use the **List Usage** command to see the vectors and digit fields used by a Vector Routing Table.

Action	Object	Qualifier
add	vrt	1 through x, or next
change	vrt	1 through x, or next
display	vrt	1 through x, or next
remove	vrt	1 through x, or next
list	vrt	none - all Routing Tables will display

Form Instructions

Make assignment as required for the following fields on the form:

- ■ **Number** — This is the table number that you entered on the command line. It is a display only field.

- ■ **Name** — Enter a 1 to 15-character alphanumeric table name. You may leave this field blank. Default is blank.

- ■ **Sort?** — Enter **y** if you want the digit fields to be sorted. Default is **n**. If you elect not to sort the numbers, they will remain in the order that you entered them. If you elect to sort the number fields, they will be sorted as described below. Remember that leading zeros are significant. That means that 02 will sort ahead of a 2 followed by a space.

    — Any Plus signs (+) will sort first.

    — Any question marks (?) will sort second.

    — All numbers (0–9) will sort last.

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■ **Number (1-32)** — Enter a number. Default is blank. Entries in this field also can include the **+** and/or **?** wildcard. The **+** represents a group of digits. The **?** represents a single digit. The field is limited to 16 characters and these characters are restricted as follows:

— You may enter only a plus sign (+), a question mark (?), or the numbers 0 through 9. No other entries are valid.

— You may enter one plus sign (+) as either the first or last character in the number field. However, you cannot use this character as the sixteenth character of the number field.

— You may use as many question marks (?) as you wish, anywhere in the number field.

— You may not embed blanks in the number field.

— You may leave the field entirely blank. If you leave the field blank, the *DEFINITY* ECS will store the entry as a null value.

```
                                                         Page 1 of 3
                           VECTOR ROUTING TABLE

     Number: ___      Name: _____      Sort? n

          1:_____            17: _____
          2:_____            18: _____
          3:_____            19: _____
          4:_____            20: _____
          5:_____            21: _____
          6:_____            22: _____
          7:_____            23: _____
          8:_____            24: _____
          9:_____            25: _____
         10:_____            26: _____
         11:_____            27: _____
         12:_____            28: _____
         13:_____            29: _____
         14:_____            30: _____
         15:_____            31: _____
         16:_____            32: _____
```

Screen 4-16. Vector Routing Table Form (1 of 3)

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VuStats Display Format

Use the VuStats Display Format form to define the content and layout of information on VuStats voice terminal displays. The system has 50 different display formats; the first display is a predefined example format, which can be changed; displays 2 through 50 are blank. Each display format can contain up to ten data items. However, the amount of data to be displayed is limited to 40 characters, due to the physical limitations on display voice terminals.

Administration Commands

Use the following administration commands to access the VuStats Display Format form.

Action	Object	Qualifier[1]
change	vustats-display-format	1-50
display	vustats-display-format	1-50
list	vustats-display-format	1-50 count ##

1. Specify a number from 1 to 50 to indicate the number of the display format to be to changed or displayed. **Count ##** is the number of display formats to list.

Form Instructions

Enter the data as required for the following fields on the form:

- **Format Number** — This is the display format number you entered on the command line. It is a display only field and cannot be modified.

- **Next Format Number** — To link this display to another display, enter the number of the display format (between **1**-**50**) that should appear when a VuStats user presses the next button, or enter **none** (default).

- **Data Field Character** — The character that will be used in the Format Description field to identify the position and length of each data field (see the Format Description field description below). The default is **$**. Enter another character if the **$** is needed for fixed text in the Format Description field. Any character is valid except a space.

- **Number of Intervals** — If you intend to display interval-based historical data, specify the number of measurement intervals in this field. You can enter a number between **1** and **25**, or blank for current interval. The default is blank. If you enter 24, and the BCMS measurement interval on the Feature-Related System Parameters form is set to 1 hour, you will receive information on the previous 24 hours. If the BCMS measurement interval is set to half-hour, you will receive information on the previous 12 hours. You can also leave this field blank. If you do, you will receive information on the current interval.

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- **Object Type** — The type of object for which data will be displayed. Enter one of the following values: **agent**" (for staffed agents to view their own statistics), **agent-extension** (for other users to view agent statistics), **split** (default), **trunk-group**, or **vdn**.

- **Update Interval** — The interval, in seconds, between display updates. Enter one of the following values:

Valid Input	Description
no-update	The display is not updated, and appears only for the interval specified in the Display Interval field
polled	Updates the display hourly or half-hourly, based on the value in **BCMS Measurement Interval** (System-Parameters Features form)
10	Updates every 10 seconds
20	Updates every 20 seconds
30	Updates every 30 seconds, default value
60	Updates every 1 minute
120	Updates every 2 minutes

- **On Change** — Enter **y** to update the display whenever the agent's state changes. The update on agent state change is in addition to the update as a result of the value entered in the Update Interval field. If **n** is entered, an update will only occur based on the Update Interval and not on the agent state change.

- **Display Interval** — The interval, in seconds, for which data is displayed if **no update** is entered in the Update Interval field. Enter one of the following values:

Valid Input	Description
Body	
5	Display clears after 5 seconds
10	Display clears after 10 seconds, default value
15	Display clears after 15 seconds
30	Display clears after 30 seconds
not-cleared	The display does not clear, and the data appears until the display is used for another operation or until you press the Normal button.

- **Format Description** — The definition of the layout for the 40-character display. Specify the starting position and the length of the data items by entering, for each data field, an optional label for the field followed the appropriate number of data field characters (such as $s). Each **$** represents one character in the display. For example, if the data will be a maximum of five characters long (for example, to display 5-digit agent extensions), enter **$$$$$**.

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> **NOTE:**
> Some data types have preset maximum field length limits based on the
> *DEFINITY* ECS/switch administration. For example, the data type
> **acceptable-service-level** is taken from the BCMS Acceptable Service
> Level field on the Hunt Group and Vector Directory Number forms; on this
> form, the field allows a maximum number of four characters. Therefore, for
> the acceptable-service-level, you should not create a VuStats display field
> that consists of more than four characters (that is, **$$$$**). Other data types
> have similar limits.

Field lengths for data items that appear as time must match the value in the Format
field, which is discussed below. Remember to account for possible colons when
the display will be in a time format.

Format descriptions can be all text (such as a message of the day) or they can be all
data fields, in which case users will have to memorize the labels or use
customer-provided overlays above or below the display.

> **NOTE:**
> If the numeric data for a field is too large for the number of data field
> characters entered, the VuStats display will show asterisks instead of data. If
> name database items are too large for the number of data field characters, the
> VuStats display will truncate the data to fit the data field size. The split
> objective, as entered on the Hunt Group form, will display as asterisks if the
> information exceeds the data field size.

Data Item Fields

On lines 1 through 10, beneath the Data Type field label enter data items for the display
format. These data items are associated with the sets of data field characters in the Format
Description field. Each data item is defined by one or more of the following fields: Data
Type, Format, Period, Threshold, and Split Reference. Input for these fields is described in
more detail below.

Enter each data item in the same order as data fields are defined in the Format Description
field. For example, Line 1 of the Data Type field must contain the data item for the first
data field (that is, the first set of $s).

- **Data Type** — The data item to be included in the current display format. For a
  complete list of data types available for each object type, see the Tables of Data
  Type. Default is blank.

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■ **Format** –– The format for displaying the data type. The format is required only for a data type with a time value. Enter one of the following Format values.

Valid Input	Description	Minimum Input Length
ccs	Hundred call seconds (CCS) rounded to the nearest CCS	1
h	Hours rounded to the nearest hour	1
h:mm	Hours and minutes rounded to the nearest minute	4
h:mm:ss	Hours, minutes, and seconds	7
m	Minutes rounded to the nearest minute	1
m:ss	Minutes and seconds	4
s	Seconds	1

Default is blank.

■ **Period** –– Enter the measurement period for the data type. If the data type is historical data, you cannot leave this field blank. Valid entries are **day** (midnight to the current time), **interval** (the time specified in the **Number of Intervals** field), or blank. Refer to "Tables of Required and Allowed Fields" on page 4-39 to determine if a measurement period is required for a particular Data Type. Default is blank.

■ **Threshold** –– The threshold field is always an optional field. It contains two subfields, the threshold comparator and the threshold value. The threshold value is used with the threshold comparator to determine if a threshold warning should be generated. A threshold warning is generated if the specified condition is met for one or more of the data items. If the specified condition is not met for any of the data items, then no threshold warning is generated. The threshold value can be any numeric value from **0** to **9999**. Default is blank. Valid threshold comparators are:

— =   (equal to)

— <>   (not equal to)

— <   (less than)

— <=   (less than or equal to)

— >   (greater than)

— >=   (greater than or equal to)

■ **Ref** –– A reference to a split/skill; this field does not appear unless the Object Type is either **agent** or **agent-extension**. This field is required only if the data type is an agent-related data type collected on a per-split basis or a split-related data type for one of the agent's logged-in splits. Enter one of the following values:

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— **Top** references the first-administered, highest-level skill for EAS agents, or the first split logged into for non-EAS agents.

> **NOTE:**
> With EAS, the top skill for VuStats is the first administered, highest level skill measured **internally** or **both**. For CMS it is the first-administered, highest-level skill measured **externally** or **both**. Therefore, it is possible for the top skill to be a different number skill for CMS than it is for VuStats. To avoid this, measure all skills as **both**.

— **All** displays the combined data for all splits the agent is logged into.

— Any number from **1-20**. The number represents a split to which the agent has logged in. For example, if the Ref field contains **1**, VuStats displays the data for the first split the agent logged into, if the Ref field contains **2**, VuStats displays the data for the second split the agent logged into, and so on.

```
                           VUSTATS DISPLAY FORMAT
          Format Number: ___              Object Type: _____
     Next Format Number: _____         Update Interval: _____ On Change? _
   Data Field Character: _            Display Interval: _____
    Number of Intervals:__

     Format Description: _____

       Data Type                           Format   Period   Threshold Ref
     1: _____ _____ _____  __ ___    ___
     2: _____ _____ _____  __ ___    ___
     3: _____ _____ _____  __ ___    ___
     4: _____ _____ _____  __ ___    ___
     5: _____ _____ _____  __ ___    ___
     6: _____ _____ _____  __ ___    ___
     7: _____ _____ _____  __ ___    ___
     8: _____ _____ _____  __ ___    ___
     9: _____ _____ _____  __ ___    ___
    10: _____ _____ _____  __ ___    ___
```

Screen 4-17. VuStats Display Format — Blank Change/Display Form

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Screen 4-18 shows an example of a completed VuStats Display Format screen.

```
change display-format 11                                      Page   1 of   1
                          VUSTATS DISPLAY FORMAT
        Format Number: 11                  Object Type: agent
   Next Format Number: 12             Update Interval: 30        On Change? n
 Data Field Character: $
 Number of Intervals: 16


   Format Description: SPLIT=$$ ASL=$$ ASA=$$ PSL=$$$

     Data Type                            Format   Period    Threshold  Ref
  1: split-number                                                         1
  2: split-acceptable-service-level         s                             1
  3: split-average-speed-of-answer          s       interval              1
  4: split-percent-in-service-level                 interval              1
  5:
  6:
  7:
  8:
  9:
 10:
```

Screen 4-18. VuStats Display Format — Example Change/Display Form

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List VuStats Display Format Screen

A second VuStats Display Format screen is available with the **list** command. The purpose of this screen is to present the format of all, or a selected number, of VuStats displays. The List VuStats Display Format screen displays the Format Number, Next Format Number, Number of Intervals, Object Type, Update Interval, and Format Description fields, and all designated data items, including the Data Type, Format, Threshold, and Ref (split reference).

Use this screen to compare VuStats displays to each other. This list presentation is most helpful when trying to see how displays are linked to each other. The screen includes the Next field, which contains the number of the next display (if any) to which a display is linked.

Screen 4-19 shows an example of the List VuStats Display Format screen. The fields for this screen are described below. Refer to the previous field descriptions in this section for more information.

No — Number. The unique identifying number of each display format.

Next — The number of the next display if the current display is linked to (followed by) another display format, or **none** if the current display format is not linked to another display format.

Int — Number of Intervals. The number of measurement intervals.

Object Type — The type of object for which data will be displayed.

Update — Update Interval. The time between display updates.

Format Description — The definition of the display's layout. The first line of the Format Description contains the text that precedes the data on a display plus the length of each data field (indicated by $s). The succeeding lines of the Format Description identify the data items, in the order they are to appear. The data items are the actual measurements and other information that tell how agents, splits, vector directory numbers (VDNs), trunk groups, and the call center are performing. The data items are followed by the format (if any), which identifies how the data is to appear in the display, the period and threshold (if any), and the split reference (if any).

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```
                                                              Page   1
                           VUSTATS DISPLAY FORMATS
No Next Int Object Type      Update     Format Description
1  none    split            30           SPLIT=$$ WAITING=$$$ OLDEST=$$$$$
           split-number
           calls-waiting
           oldest-call-waiting            m:ss
2  none    agent-extension  on-change AGENT=$$$$ STATE=$$$$$$$$$ TIME=$$$$$$$$
           agent extension
           agent state                                            1
           time-agent-entered-state                               1


press CANCEL to quit --  press NEXT PAGE to continue
```

Screen 4-19.   VuStats Display Formats — List Form

Tables of Required and Allowed Fields

**Table 4-1.   Required and Allowed Fields — Agent and
Agent-Extension Data Types**

VuStats Data Type	Format	Period	Threshold	Reference
acd-calls		required	allowed	required
agent-extension				
agent-name				
agent-state				required
average-acd-call-time	required	required	allowed	
average-acd-talk-time	required	required	allowed	required
average-extension-time	required	required	allowed	
call-rate		required	allowed	
current-reason-code			allowed	
current-reason-code-name			allowed	
elapsed-time-in-state				
extension-calls		required	allowed	
extension-incoming-calls			allowed	
extension-outgoing-calls			allowed	

Continued on next page

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**Table 4-1.   Required and Allowed Fields — Agent and
                  Agent-Extension Data Types — *Continued***

VuStats Data Type	Format	Period	Threshold	Reference
shift-acd-calls			allowed	required
shift-aux-time-1	required		allowed	
shift-aux-time-2	required		allowed	
shift-aux-time-3	required		allowed	
shift-aux-time-4	required		allowed	
shift-aux-time-5	required		allowed	
shift-aux-time-6	required		allowed	
shift-aux-time-7	required		allowed	
shift-aux-time-8	required		allowed	
shift-aux-time-9	required		allowed	
shift-aux-time-all	required		allowed	
shift-aux-time-default	required		allowed	
shift-aux-time-non-default	required		allowed	
shift-aux-time-reason-code	required		allowed	
shift-average-acd-talk-time	required		allowed	required
skill-level				required
split-acceptable-service-level	required			required
split-acd-calls		required	allowed	required
split-after-call-sessions			allowed	required
split-agents-available			allowed	required
split-agents-in-after-call			allowed	required
split-agents-in-aux-1			allowed	required
split-agents-in-aux-2			allowed	required
split-agents-in-aux-3			allowed	required
split-agents-in-aux-4			allowed	required
split-agents-in-aux-5			allowed	required
split-agents-in-aux-6			allowed	required
split-agents-in-aux-7			allowed	required
split-agents-in-aux-8			allowed	required

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**Table 4-1. Required and Allowed Fields — Agent and
Agent-Extension Data Types — *Continued***

VuStats Data Type	Format	Period	Threshold	Reference
split-agents-in-aux-9			allowed	required
split-agents-in-aux-all			allowed	required
split-agents-in-aux-default			allowed	required
split-agents-in-aux-non-default			allowed	required
split-agents-in-other			allowed	required
split-agents-on-acd-calls			allowed	required
split-agents-on-extension-calls			allowed	required
split-agents-staffed			allowed	required
split-average-acd-talk-time	required	required	allowed	required
split-average-after-call-time	required		allowed	required
split-average-speed-of-answer	required	required	allowed	required
split-average-time-to-abandon	required	required	allowed	required
split-call-rate			allowed	required
split-calls-abandoned		required	allowed	required
split-calls-flowed-in		required	allowed	required
split-calls-flowed-out		required	allowed	required
split-calls-waiting			allowed	required
split-extension				required
split-name				required
split-number				required
split-objective				required
split-oldest-calling-waiting	required		allowed	required
split-percent-in-service-level		required	allowed	required
split-total-acd-talk-time	required	required	allowed	required
split-total-after-call-time	required	required	allowed	required
split-total-aux-time	required	required	allowed	required
time-agent-entered-state				required
total-acd-call-time	required	required	allowed	
total-acd-talk-time	required	required	allowed	

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**Table 4-1. Required and Allowed Fields — Agent and
            Agent-Extension Data Types — *Continued***

VuStats Data Type	Format	Period	Threshold	Reference
total-after-call-time	required	required	allowed	
total-aux-time	required	required	allowed	
total-available-time	required	required	allowed	
total-hold-time	required	required	allowed	
total-staffed-time	required	required	allowed	

**Table 4-2. Required and Allowed Fields —
            Split Data Types**

VuStats Data Type	Format	Period	Threshold
acceptable-service-level	required		
acd-calls		required	allowed
after-call sessions			allowed
agents-available			allowed
agents-in-after-call			allowed
agents-in-aux-1			allowed
agents-in-aux-2			allowed
agents-in-aux-3			allowed
agents-in-aux-4			allowed
agents-in-aux-5			allowed
agents-in-aux-6			allowed
agents-in-aux-7			allowed
agents-in-aux-8			allowed
agents-in-aux-9			allowed
agents-in-aux-all			allowed
agents-in-aux-default			allowed
agents-in-aux-non-default			allowed
agents-in-other			allowed
agents-on-acd-calls			allowed

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**Table 4-2. Required and Allowed Fields —
Split Data Types — *Continued***

VuStats Data Type	Format	Period	Threshold
agents-on-extension-calls			allowed
agents-staffed			allowed
average-acd-talk-time	required	required	allowed
average-after-call-time	required		allowed
average-speed-of-answer	required	required	allowed
average-time-to-abandon	required	required	allowed
call-rate			allowed
calls-abandoned		required	allowed
calls-flowed-in		required	allowed
calls-flowed-out		required	allowed
calls-waiting			allowed
oldest-calling-waiting	required		allowed
percent-in-service-level		required	allowed
split-extension			
split-name			
split-number			
split-objective			
total-acd-talk-time	required	required	allowed
total-after-call-time	required	required	allowed
total-aux-time	required	required	allowed

Table 4-3. Required and Allowed Fields — VDN Data Types

VuStats Data Type	Format	Period	Threshold
acceptable-service-level	required		
acd-calls		required	allowed
average-acd-talk-time	required	required	allowed
average-speed-of-answer	required	required	allowed
average-time-to-abandon	required	required	allowed

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Table 4-3.   Required and Allowed Fields — VDN Data Types

VuStats Data Type	Format	Period	Threshold
calls-abandoned		required	allowed
calls-flowed-out		required	allowed
calls-forced-busy-or-disc		required	allowed
calls-offered		required	allowed
calls-waiting			allowed
non-acd-connected-calls		required	allowed
oldest-calling-waiting	required		allowed
percent-in-service-level		required	allowed
total-acd-talk-time	required	required	allowed
vdn-extension			
vdn-name			

**Table 4-4.   Required and Allowed Fields — Trunk Group
             Data Types**

VuStats Data Type	Format	Period	Threshold
average-incoming-call-time	required	required	allowed
average-outgoing-call-time	required	required	allowed
incoming-abandoned-calls		required	allowed
incoming-calls		required	allowed
incoming-usage	required	required	allowed
number-of-trunks			
outgoing-calls		required	allowed
outgoing-completed-calls		required	allowed
outgoing-usage	required	required	allowed
percent-all-trunks-busy		required	allowed
percent-trunks-maint-busy		required	allowed
trunk-group-name			

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Table 4-4. Required and Allowed Fields — Trunk Group Data Types

VuStats Data Type	Format	Period	Threshold
trunk-group-number			
trunks-in-use			allowed
trunks-maint-busy		required	allowed

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A Recorded Announcements
Introduction A-1

Recorded Announcements

A

Introduction

The Recorded Announcement feature provides an announcement to callers under a variety of circumstances. For example, announcements let callers know that their call is in queue or that the lines are busy.

This appendix gives you extended information about using the recorded announcement feature of the *DEFINITY* ECS. The sections included in this appendix are:

- How to Administer Recorded Announcements

- Recorded Announcement Types

- When to Use Recorded Announcements

- About Barge-in

- Integrated Announcements and Announcements Recorded on External Devices

- Procedures for Recorded Announcements

- Recorded Announcements, the ACD, and other Call Center Features

- Recorded Announcements and Automatic Wakeup

Refer to the "Managing announcements" and "Recorded announcements" chapters in the *DEFINITY ECS Release 8 Administrator's Guide* (555-233-502) for procedural instructions on adding, recording, saving, copying, restoring, and deleting announcements.

➤ NOTE:

You must specify an announcement number on the command line with the "change or display" commands to access admin for more than 256 announcement extensions. When this is done, a block of 256 announcements (16 pages) will be accessible starting with the number specified. [also the CC Release field must be set to R8.1 or later] For example: "change announcement 250" will provide access to announcements 250 through 505

How to Administer Recorded Announcement

The following table lists the forms that you will use to administer announcements.

Table A-1.   Required Forms for Administering Announcements

Form	Field
Announcements/Audio Sources (includes Integrated Announcement Translations)	■ All
Feature Access Code (FAC)	■ Announcement Access Code
Station	■ COS
Data Modules (for Save/Restore/Copy) ■ Netcon Data Module ■ System Port Data Module (SAP) ■ Announcement Data Module	■ All
Circuit Packs[1]	■ All
Feature-Related System Parameters[2]	■ DID/Tie/ISDN Intercept Treatment ■ Controlled Outward Restriction Intercept Treatment ■ Controlled Termination restriction (DoNot Disturb) ■ Controlled Station-to-Station Restriction
Hospitality[2]	■ Announcement Type ■ Length of Time to Remain Connected to Announcement
Trunk Groups (All)[2]	■ Incoming Destination
Coverage Path[2]	■ Coverage Points
Hunt Group[2]	■ First Announcement Extension ■ Second Announcement Extension
Call Vector[2]	■ All fields that require announcements

---

1. You only need to complete the Circuit Pack form if you administer the Board Location on the Announcements/Audio sources form or Data Module form and do not have the circuit pack plugged in.
2. You only need to complete this form if you plan to use Recorded Announcements with the form's associated feature. For example, if you want to use announcements with the Hospitality features, you need to complete the Hospitality form.

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A Recorded Announcements
Recorded Announcement Types

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Recorded Announcement Types

The *DEFINITY* supports several recorded announcement types. Each support announcement type is described below.

Analog Line

If you are using an analog line, then it is required that you use an external announcement machine for recorded announcements. The external announcement machine must be connected by an analog line port.

Analog

The analog announcement type provides an analog voice terminal interface via an analog line port for use with an announcement/audio source device that emulates analog voice terminals. The *DEFINITY* starts playback by applying ringing; the device indicates playback has stopped by going on-hook (opening the loop). The *DEFINITY* does not indicate to the device to stop playback. Use the analog type for announcements that play for a specific period and then go on-hook at the end. When the device goes on-hook to indicate that the playback ended, the caller listening to the announcement hears a click. (See ds1, aux-trk, or integrated types for alternative types).

Analog-m

Like the analog type, analog-m provides an analog line interface. However, ringing is not applied to start playback. Use this type for continuous playing music or audio sources. The device stays in an off-hook state when active and goes on-hook when it is not playing, is turned off, or is disconnected.

Analog-fd

Like the analog type, analog-fd provides an analog line interface and ringing starts the playback. However, a forward disconnect signal (open loop for about one-half second) is sent to the device to stop playback when there are no callers left to hear it. This type is used for a barge-in repeating announcement.

DS1

The DS1 types provide analog-like interfaces via DS1 line ports, which are called Line Side DS1 or Line Side T1. Each of these types indicate to the announcement, music, or audio-source device to start playback via the Line Side T1 equivalent of ringing. The DS1 types also expect off-hook from the device to indicate that the playback is active and on-hook to indicate that the playback is not active.

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The ds1-id and ds1-sa types provide a forward disconnect via transitions of the "A" signaling bit to the device, which indicates when playback should be stopped. Callers listening to announcements do not hear clicks when the device disconnects (goes on-hook).

ds1-id

The ds1-id announcement type provides an EIA/TIA foreign-exchange (FX) type DS1 interface. The forward disconnect signal is a toggle of the "A" bit from 0 to 1 and then back to 0 after 600 msecs. This type is used for *Conversant* Line Side T1 ports when they are used as an analog-like announcement device and is the recommended method for interfacing.

ds1-sa

The ds1-sa announcement type provides an EIA/TIA special-access type DS1 interface. The forward disconnect signal is a toggle of the "A" bit from 1 to 0 and then back to 1 after 600 msecs.

ds1-ops

The ds1-ops announcement type provides an EIA/TIA off-premises-station type DS1 interface that is used when the device does not support forward disconnect.

Auxiliary Trunk

The Auxiliary Trunk announcement type requires an external announcement machine connected via a 4-wire auxiliary trunk interface, such as a 15A announcement system. The *DEFINITY* indicates to the device to start or stop the playback on the S lead; the device indicates that the playback is active on the S1 lead.

Integrated

The integrated announcement type is stored internally on the *DEFINITY* on an Integrated Announcement circuit pack (TN750). Each circuit pack has 18 ports that are available for playing announcements. This is the recommended source for VDN or Origin Announcements and other general announcement needs.

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A Recorded Announcements
When to Use Recorded Announcements *A-5*

When to Use Recorded Announcements

The following list summarizes the most common instances of recorded announcement use:

- DID calls cannot be completed as dialed.

- Incoming private-network access calls cannot be completed as dialed.

- Calls enter a split or skill (first announcement).

- DDC, UCD, or direct-agent calls have been in queue for an assigned interval.

- ACD and Call Vectoring calls have been in queue for an assigned interval.

- A call's destination is a recorded-announcement extension.

- A call routes to a vector that contains an announcement step.

- An announcement extension is specified as a coverage point.

- An announcement is the incoming destination of a trunk group.

- VDN of Origin announcement.

- Security violation notification.

- The Hospitality Automatic Wakeup feature is in use.

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A Recorded Announcements
About Barge-in   A-6

About Barge-in

Normally, the system connects multiple callers to the beginning of an announcement, regardless of announcement type. However, you can also administer auxiliary trunk announcements, DS1 announcements, and integrated announcement to allow callers to begin listening to an announcement after the system has begun playing its message. This capability is called "barge-in."

What Happens When You Use Barge-in

When you administer "barge-in", only one port plays the announcement at any one time. When the system routes a call to that announcement, the call immediately connects to the port and the caller hears the announcement as it is playing. Most administrators administer barge-in announcements to repeat continually while callers are connected to the port. In this way, the caller listens until the system plays the entire announcement.

What happens When you do not use barge-in

If an announcement port i available when a call arrives, the system connects the call to the announcement.

If an announcement port is not available and the announcement is administered with "no" as the queue option, the call does not enter the queue for the announcement and the caller hears busy or other feedback, depending upon how the announcement was accessed.

If an announcement port is not available and the announcement is administered with 'yes" as the queue option, the call enters the announcement queue. When a port becomes available, the *DEFINITY* connects the calls waiting in the queue to the beginning of the announcement. The system first connects the call that has been waiting in queue the longest and then connects as many calls as it can.

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A Recorded Announcements
Integrated Announcements and Announcements Recorded on External Devices A-7

Integrated Announcements and Announcements Recorded on External Devices

Recorded Announcement allows you to administer either integrated announcements or announcements recorded on external devices. The external devices connect to the switch via analog line circuit packs or auxiliary trunk interfaces, such as a TN2183 or a TN763.

The system stores an integrated announcement on a TN750 integrated-announcement circuit pack. The system can store multiple announcements on each circuit pack up to the system capacity. See the *DEFINITY Enterprise Communications Server System Description Pocket Reference* for capacity information.

Each Integrated Announcement circuit pack has 16 ports and can ply up to 16 simultaneous announcements. The *DEFINITY* ECS can connect multiple users to each of these announcements.

Any announcement stored on a a circuit pack can play through any port on the circuit pack. Any announcement (not administered for barge-in) can play simultaneously through multiple ports. For instance, all 16 ports can play the same announcement at the same time.

You must set the Q field to **y** on the Announcements/Audio Sources form for each extension that you want to queue for Integrated Announcements. Calls to hear integrated announcements at extensions that have queue assigned only queue when all 16 ports (on the circuit pack that contains the announcement) are busy. The same queueing pool is used over all boards. The *DEFINITY* controls the announcement queue length for integrated announcements, but you must set the queue length for analog or aux-trunk announcements.

Single Integrated Announcement Boards

When your switch has one integrated announcement circuit pack, the circuit pack can be a TN750, a TN750B, or a TN750C.

You need to back up a TN750 or TN750B in the following situations:

- Before someone removes a TN750 or TN750B from the switch

- Before someone shuts down power to the switch.

TN750 and TN750B

In both situations, the system loses any announcements stored on the circuit pack. Therefore, you need to backup announcements stored on the TN750 or TN750B circuit packs to the Mass Storage System (MSS). When someone inserts or resets a circuit pack, or when someone powers up the system, the *DEFINITY* checks the circuit pack for announcements. If the system determines that there are no announcements on the circuit pack, then it automatically restores the announcements from the MSS.

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> ⚠️ **CAUTION:**
>
> *The announcements from MSS that are automatically restored are the last*
> *announcement saved to MSS. If multiple circuit packs are used, MSS might not*
> *contain the announcement for the B or A circuit pack.*

TN750C

The TN750C circuit pack has on-board FLASH memory backup, which substantially
reduces the time required for power-up restore and eliminates the need for a manual save
of the circuit pack contents.

The system retains announcements on the TN750C circuit packs, even when someone
removes the circuit pack or when the system loses power. Therefore, the TN750C does not
require the save and restore procedure. However, you can still use the save a nd restore
procedure to copy the contents of a TN750C to another circuit pack.

Multiple Integrated Announcement Circuit Packs

Multiple integrated announcement circuit packs can be installed in the *DEFINITY* si and r
packages. However, only one of these circuits can be a TN750 or a TN750B. Any
additional circuit packs must be TN750C circuit packs.

> ⚠️ **CAUTION:**
>
> *Do not copy announcements from a TN750C to a TN750 or TN750B. This action*
> *may corrupt the announcement data.*

Compression Rates

The system stores integrated announcements on a TN750 at a compression rate of 32
Kbps. The system can store integrated announcements at one of three compression rates
on the TN750B and TN750C circuit packs. You administer the compression rate
separately for each announcement extension. In this way, the system can store
announcements with different compression rates on the same circuit pack. During
playback, the switch sets the port to the correct compression rate for the announcement
that is playing.

- A 64-Kbps compression rate allows for 128 seconds of recorded announcement
  per circuit pack.

- A 32-Kbps compression rate allows for 256 seconds of recorded announcement
  per circuit pack. This is the default compression rate.

- A 16-Kbps compression rate allows for 512 seconds of recorded announcement
  per circuit pack. The 16-Kbps rate does not provide a high-quality recording. It is
  not recommended for customer announcements, but is adequate for VDN of Origin
  announcements.

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Procedures for Recorded Announcements A-9

Procedures for Recorded Announcements

You can record, play back, or delete integrated announcements by initiating an announcement session. To do this, you must have console permissions assigned to your Class of Service (COS) for the internal station or Remote Access barrier code in order to initiate an announcement session.

Announcement sessions always use port 0 on the integrated announcement circuit pack. To begin an announcement session, the user must dial the administered feature access code (FAC) followed by the announcement extension. If an announcement session is already in progress, or if a save or restore command is in progress, then the user hears reorder tone (fast busy) and the system drops the call.

If port 0 is in use, then the user hears reorder tone followed by silence. This indicates that the port will be reserved for an announcement session. The user should redial the FAC and extension every 45 seconds to gain access to the port.

Once an end user accesses an announcement session, the user can dial **1** to record an announcement, **2** to play an announcement, or **3** to delete an announcement. If the circuit pack memory is more than 90% full, then the *DEFINITY* gives stutter dial tone when the user gains access to an announcement session. Even if the user hears stutter tone, the user should begin speaking to record the announcement.

Record the Announcement

If the you dial 1, then the *DEFINITY* attempts to start a recording session. If an announcement already exists and is protected (designated as protect=y), then you will hear an intercept tone. If the announcement is currently being played to callers, then you will hear the reorder tone. If the *DEFINITY* is starting the recording session, then you will hear a record tone and can begin recording the announcement.

Stop Recording the Announcement

When the recording is complete, dial **#** from a hybrid or digital telephone or hang up from an analog telephone. If you are using an analog telephone to record announcements, then ending with a # puts the tone in the message. If you are using an analog telephone that is not connected via lineside T1 (DS1 type), then the system records a click when you hang up. With a hybrid or digital station, the # tones or a click will not be recorded. Ending the recording with a # returns you to the dial tone, allowing a playback, delete, or record over operation to be requested. After hanging up, you must redial the FAC plus announcement extension to start a new recording session, then you can record another announcement for this extension or rerecord the same announcement before 15 seconds by you must wait 15 seconds to record a different announcement. If the circuit pack memory becomes full during recording, you will hear a reorder tone, the system will drop you, and the announcement is not retained.

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Recorded Announcements, the ACD, and Other Call Center Features   A-10

Play Back the Announcement

After you have completed a recording and hung up, do not immediately dial the extension. The announcement just recorded remains busy for approximately 15 seconds. The announcement just recorded can be played back by dialing the FAC plus the announcement extension, the **2** before the 15 second timer expires.

Upon completion of the recording session (drop), the *DEFINITY* sets a 15-second timer. During this interval, the system restricts you to one of two tasks: to listen to the announcement just recorded or to record another announcement.

If you want to listen to the announcement before it is available to others, then dial the FAC, the extension, and 2. The announcement plays and then generates dial tone. You can then perform another operation, such as record a message.

Delete the Announcement

If you dial the FAC, the extension, and then 3, then the *DEFINITY* deletes the announcement and you hear a confirmation tone. If the announcement is protected or is currently being played, then the system does not delete the announcement an you will hear a reorder tone.

Recorded Announcements, the ACD, and Other Call Center Features

Recorded announcements are used extensively for ACD, Call Vectoring, Call Prompting, Expert Agent Selection, VDN of Origin Announcement, Direct Department Calling, and UCD features. See the individual features for interaction details.

Recorded Announcements and Automatic Wakeup

Recorded announcements allow Automatic Wakeup to use the built-in TN750B or later announcement circuit pack in place of the Audichron adjunct.

If you us an integrated, multiple integrated, or external type of announcement for Automatic Wakeup, then you can also administer the announcement to repeat and to allow barge-in as a queue type. The benefit of repeating announcements and barge-in queues is that you do not need to a separate port for each wakeup announcement. When guests go off-hook to receive an announcement at a particular time, they use only one port and the message repeats on the port until the last guest goes off-hook and the message ends.

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Glossary and Abbreviations

GL-1

Glossary and Abbreviations

Numerics

3B2 Message Server
A software application that combines voice and data messaging services for voice-terminal users whose extensions are connected to a system.

800 service
A service in the United States that allows incoming calls from certain areas to an assigned number for a flat-rate charge based on usage.

A

AA
Archangel. See angel.

AAC
ATM access concentrator

AAR
See Automatic Alternate Routing (AAR).

abandoned call
An incoming call in which the caller hangs up before the call is answered.

Abbreviated Dialing (AD)
A feature that allows callers to place calls by dialing just one or two digits.

AC
1. Alternating current.
2. See Administered Connection (AC).

AAR
Automatic Alternate Routing

ACA
See Automatic Circuit Assurance (ACA).

ACB
See Automatic Callback (ACB).

ACD
See Automatic Call Distribution (ACD).

ACD agent
See agent.

ACU
See Automatic calling unit (ACU)

ACW
See after-call work (ACW) mode.

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GL-2

access code

A 1-, 2-, or 3-digit dial code used to activate or cancel a feature, or access an outgoing trunk.

access endpoint

Either a nonsignaling channel on a DS1 interface or a nonsignaling port on an analog tie-trunk circuit pack that is assigned a unique extension.

access tie trunk

A trunk that connects a main communications system with a tandem communications system in an electronic tandem network (ETN). An access tie trunk can also be used to connect a system or tandem to a serving office or service node. Also called access trunk.

access trunk

See access tie trunk.

ACCUNET

A trademarked name for a family of digital services offered by AT&T in the United States.

ACD

See Automatic Call Distribution (ACD). ACD also refers to a work state in which an agent is on an ACD call.

ACD work mode

See work mode.

active-notification association

A link that is initiated by an adjunct, allowing it to receive event reports for a specific switch entity, such as an outgoing call.

active-notification call

A call for which event reports are sent over an active-notification association (communication channel) to the adjunct. Sometimes referred to as a monitored call.

active notification domain

VDN or ACD split extension for which event notification has been requested.

ACU

See Automatic calling unit (ACU).

AD

See Abbreviated Dialing (AD).

ADAP

AUDIX Data Acquisition Package

ADC

See analog-to-digital converter (ADC).

adjunct

A processor that does one or more tasks for another processor and that is optional in the configuration of the other processor. See also application.

adjunct-control association

A relationship initiated by an application via *Third Party Make Call*, the *Third Party Take Control,* or *Domain (Station) Control* capabilities to set up calls and control calls already in progress.

adjunct-controlled call

Call that can be controlled using an adjunct-control association. Call must have been originated via *Third Party Make Call* or *Domain (Station) Control* capabilities or must have been taken control of via *Third Party Take Control* or *Domain (Station) Control* capabilities.

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GL-3

adjunct-controlled split

An ACD split that is administered to be under adjunct control. Agents logged into such splits must do all telephony work, ACD login/ logout, and changes of work mode through the adjunct (except for auto-available adjunct-controlled splits, whose agents may not log in/out or change work mode).

adjunct-monitored call

An adjunct-controlled call, active-notification call, or call that provides event reporting over a domain-control association.

Adjunct-Switch Application Interface (ASAI)

A recommendation for interfacing adjuncts and communications systems, based on the CCITT Q.932 specification for layer 3.

ADM

Asynchronous data module

administer

To access and change parameters associated with the services or features of a system.

Administered Connection (AC)

A feature that allows the switch to automatically establish and maintain end-to-end connections between access endpoints (trunks) and/or data endpoints (data modules).

administration group

See capability group.

administration terminal

A terminal that is used to administer and maintain a system. See also terminal.

Administration Without Hardware (AWOH)

A feature that allows administration of ports without associated terminals or other hardware.

ADU

See asynchronous data unit (ADU).

AE

See access endpoint.

after-call work (ACW) mode

A mode in which agents are unavailable to receive ACD calls. Agents enter the ACW mode to perform ACD-related activities such as filling out a form after an ACD call.

AG

ASAI Gateway

agent

A person who receives calls directed to a split. A member of an ACD hunt group or ACD split. Also called an ACD agent.

agent report

A report that provides historical traffic information for internally measured agents.

AIM

Asynchronous interface module

AIOD

Automatic Identification of Outward Dialing

ALBO

Automatic Line Build Out

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Glossary and Abbreviations

GL-4

All trunks busy (ATB)

The state in which no trunks are available for call handling.

ALM-ACK

Alarm acknowledge

American Standard Code for Information Interchange

See ASCII (American Standard Code for Information Interchange).

AMW

Automatic Message Waiting

AN

Analog

analog

The representation of information by continuously variable physical quantities such as amplitude, frequency, and phase. See also digital.

analog data

Data that is transmitted over a digital facility in analog (PCM) form. The data must pass through a modem either at both ends or at a modem pool at the distant end.

analog telephone

A telephone that receives acoustic voice signals and sends analog electrical signals along the telephone line. Analog telephones are usually served by a single wire pair (tip and ring). The model-2500 telephone set is a typical example of an analog telephone.

analog-to-digital converter (ADC)

A device that converts an analog signal to digital form. See also digital-to-analog converter (DAC).

angel

A microprocessor located on each port card in a processor port network (PPN). The angel uses the control-channel message set (CCMS) to manage communications between the port card and the archangel on the controlling switch-processing element (SPE). The angel also monitors the status of other microprocessors on a port card and maintains error counters and thresholds.

ANI

See Automatic Number Identification (ANI).

ANSI

American National Standards Institute**.** A United States professional/technical association supporting a variety of standards.

answerback code

A number used to respond to a page from a code-calling or loudspeaker-paging system, or to retrieve a parked call.

AOL

Attendant-offered load

AP

Applications processor

APLT

Advanced Private-Line Termination

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GL-5

appearance
> A software process that is associated with an extension and whose purpose is to supervise a call. An extension can have multiple appearances. Also called call appearance, line appearance, and occurrence. See also call appearance.

application
> An adjunct that requests and receives ASAI services or capabilities. One or more applications can reside on a single adjunct. However, the switch cannot distinguish among several applications residing on the same adjunct and treats the adjunct, and all resident applications, as a single application. The terms application and adjunct are used interchangeably throughout this document.

applications processor
> A micro-computer based, program controlled computer providing application services for the DEFINITY switch. The processor is used with several user-controlled applications such as traffic analysis and electronic documentation.

application service element
> See capability group.

architecture
> The organizational structure of a system, including hardware and software.

ARS
> See Automatic Route Selection (ARS).

ASAI
> See Adjunct-Switch Application Interface (ASAI)

ASCII (American Standard Code for Information Interchange)
> The standard code for representing characters in digital form. Each character is represented by an 8-bit code (including parity bit).

association
> A communication channel between adjunct and switch for messaging purposes. An active association is one that applies to an existing call on the switch or to an extension on the call.

asynchronous data transmission
> A method of transmitting data in which each character is preceded by a start bit and followed by a stop bit, thus permitting data characters to be transmitted at irregular intervals. This type transmission is advantageous when transmission is not regular (characters typed at a keyboard). Also called asynchronous transmission. See also synchronous data transmission.

asynchronous data unit (ADU)
> A device that allows direct connection between RS-232C equipment and a digital switch.

asynchronous Transfer Mode (ATM)
> A packet-like switching technology in which data is transmitted in fixed-size (53-byte) cells. ATM provides high-speed access for data communication in LAN, campus, and WAN environments.

ATB
> See All trunks busy (ATB).

ATD
> See Attention dial (ATD).

attendant
> A person at a console who provides personalized service for incoming callers and voice-services users by performing switching and signaling operations. See also attendant console.

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GL-6

ATM

See asynchronous Transfer Mode (ATM).

attendant console

The workstation used by an attendant. The attendant console allows the attendant to originate a call, answer an incoming call, transfer a call to another extension or trunk, put a call on hold, and remove a call from hold. Attendants using the console can also manage and monitor some system operations. Also called console. See also attendant.

Attention dial (ATD)

A command in the Hayes modem command set for asynchronous modems.

Audio Information Exchange (AUDIX)

A fully integrated voice-mail system. Can be used with a variety of communications systems to provide call-history data, such as subscriber identification and reason for redirection.

AUDIX

See Audio Information Exchange (AUDIX).

auto-in trunk group

Trunk group for which the CO processes all of the digits for an incoming call. When a CO seizes a trunk from an auto-in trunk group, the switch automatically connects the trunk to the destination — typically an ACD split where, if no agents are available, the call goes into a queue in which callers are answered in the order in which they arrive.

Auto-In Work mode

One of four agent work modes: the mode in which an agent is ready to process another call as soon as the current call is completed.

Automatic Alternate Routing (AAR)

A feature that routes calls to other than the first-choice route when facilities are unavailable.***

Automatic Callback (ACB)

A feature that enables internal callers, upon reaching a busy extension, to have the system automatically connect and ring both parties when the called party becomes available.

Automatic Call Distribution (ACD)

A feature that answers calls, and then, depending on administered instructions, delivers messages appropriate for the caller and routes the call to an agent when one becomes available.

Automatic Call Distribution (ACD) split

A method of routing calls of a similar type among agents in a call center. Also, a group of extensions that are staffed by agents trained to handle a certain type of incoming call.

Automatic calling unit (ACU)

A device that places a telephone call.

Automatic Circuit Assurance (ACA)

A feature that tracks calls of unusual duration to facilitate troubleshooting. A high number of very short calls or a low number of very long calls may signify a faulty trunk.

Automatic Number Identification (ANI)

Representation of the calling number, for display or for further use to access information about the caller. Available with Signaling System 7.

automatic restoration

A service that restores disrupted connections between access endpoints (nonsignaling trunks) and data endpoints (devices that connect the switch to data terminal and/or communications equipment). Restoration is done within seconds of a service disruption so that critical data applications can remain operational.

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Automatic Route Selection (ARS)

A feature that allows the system to automatically choose the least-cost way to send a toll call.

automatic trunk

A trunk that does not require addressing information because the destination is predetermined. A request for service on the trunk, called a seizure, is sufficient to route the call. The normal destination of an automatic trunk is the communications-system attendant group. Also called automatic incoming trunk and automatic tie trunk.

AUX

Auxiliary

auxiliary equipment

Equipment used for optional system features, such as Loudspeaker Paging and Music-on-Hold.

auxiliary trunk

A trunk used to connect auxiliary equipment, such as radio-paging equipment, to a communications system.

Aux-Work mode

A work mode in which agents are unavailable to receive ACD calls. Agents enter Aux-Work mode when involved in non-ACD activities such as taking a break, going to lunch, or placing an outgoing call.

AVD

Alternate voice/data

AWOH

See Administration Without Hardware (AWOH).

AWG

American Wire Gauge

AWT

Average work time

B

B8ZS

Bipolar Eight Zero Substitution.

bandwidth

The difference, expressed in hertz, between the defined highest and lowest frequencies in a range.

barrier code

A security code used with the Remote Access feature to prevent unauthorized access to the system.

baud

A unit of transmission rate equal to the number of signal events per second. See also bit rate and bits per second (bps).

BCC

See Bearer capability class (BCC).

BCMS

Basic Call Management System

BCT

See business communications terminal (BCT).

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Bearer capability class (BCC)

Code that identifies the type of a call (for example, voice and different types of data). Determination of BCC is based on the caller's characteristics for non-ISDN endpoints and on the Bearer Capability and Low-Layer Compatibility Information Elements of an ISDN endpoint. Current BCCs are 0 (voice-grade data and voice), 1 (DMI mode 1, 56 kbps data transmission), 2 (DMI mode 2, synchronous/asynchronous data transmission up to 19.2 kbps) 3 (DMI mode 3, 64 kbps circuit/packet data transmission), 4 (DMI mode 0, 64 kbps synchronous data), 5 (temporary signaling connection, and 6 (wideband call, 128–1984 kbps synchronous data).

BER

Bit error rate

BHCC

Busy-hour call completions

bit (binary digit)

One unit of information in binary notation, having two possible values: 0 or 1.

bits per second (bps)

The number of binary units of information that are transmitted or received per second. See also baud and **bit rate**.

bit rate

The speed at which bits are transmitted, usually expressed in bits per second. Also called data rate. See also baud and bits per second (bps).

BLF

Busy Lamp Field

BN

Billing number

BOS

Bit-oriented signaling

BPN

Billed-party number

bps

See bits per second (bps).

bridge (bridging)

The appearance of a voice terminal's extension at one or more other voice terminals.

BRI

The ISDN Basic Rate Interface specification.

bridged appearance

A call appearance on a voice terminal that matches a call appearance on another voice terminal for the duration of a call.

BTU

British Thermal Unit

buffer

1. In hardware, a circuit or component that isolates one electrical circuit from another. Typically, a buffer holds data from one circuit or process until another circuit or process is ready to accept the data.
2. In software, an area of memory that is used for temporary storage.

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bus
 A multiconductor electrical path used to transfer information over a common connection from any of several sources to any of several destinations.

business communications terminal (BCT)
 A digital data terminal used for business applications. A BCT can function via a data module as a special-purpose terminal for services provided by a processor or as a terminal for data entry and retrieval.

BX.25
 A version of the CCITT X.25 protocol for data communications. BX.25 adds a fourth level to the standard X.25 interface. This uppermost level combines levels 4, 5, and 6 of the ISO reference model.

bypass tie trunks
 A 1-way, outgoing tie trunk from a tandem switch to a main switch in an ETN. Bypass tie trunks, provided in limited quantities, are used as a last-choice route when all trunks to another tandem switch are busy. Bypass tie trunks are used only if all applicable intertandem trunks are busy.

byte
 A sequence of (usually eight) bits processed together.

C

CACR
 Cancellation of Authorization Code Request

cabinet
 Housing for racks, shelves, or carriers that hold electronic equipment.

cable
 Physical connection between two pieces of equipment (for example, data terminal and modem) or between a piece of equipment and a termination field.

cable connector
 A jack (female) or plug (male) on the end of a cable. A cable connector connects wires on a cable to specific leads on telephone or data equipment.

CAG
 Coverage answer group

call appearance
 1. For the attendant console, six buttons, labeled a–f, used to originate, receive, and hold calls. Two lights next to the button show the status of the call appearance.
 2. For the voice terminal, a button labeled with an extension and used to place outgoing calls, receive incoming calls, or hold calls. Two lights next to the button show the status of the call appearance.

call-control capabilities
 Capabilities (*Third Party Selective Hold, Third Party Reconnect, Third Party Merge*) that can be used in either of the Third Party Call Control ASE (cluster) subsets (Call Control and Domain Control).

Call Detail Recording (CDR)
 A feature that uses software and hardware to record call data (same as CDRU).

Call Detail Recording utility (CDRU)
 Software that collects, stores, optionally filters, and outputs call-detail records.

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Call Management System (CMS)

An application, running on an adjunct processor, that collects information from an ACD unit. CMS enables customers to monitor and manage telemarketing centers by generating reports on the status of agents, splits, trunks, trunk groups, vectors, and VDNs, and enables customers to partially administer the ACD feature for a communications system.

call-reference value (CRV)

An identifier present in ISDN messages that associates a related sequence of messages. In ASAI, CRVs distinguish between associations.

call vector

A set of up to 15 vector commands to be performed for an incoming or internal call.

callback call

A call that automatically returns to a voice-terminal user who activated the Automatic Callback or Ringback Queuing feature.

call-waiting ringback tone

A low-pitched tone identical to ringback tone except that the tone decreases in the last 0.2 seconds (in the United States). Call-waiting ringback tone notifies the attendant that the Attendant Call Waiting feature is activate and that the called party is aware of the waiting call. Tones in international countries may sound different.

call work code

A number, up to 16 digits, entered by ACD agents to record the occurrence of customer-defined events (such as account codes, social security numbers, or phone numbers) on ACD calls.

CAMA

Centralized Automatic Message Accounting

carrier

An enclosed shelf containing vertical slots that hold circuit packs.

carried load

The amount of traffic served by traffic-sensitive facilities during a given interval.

CARR-POW

Carrier Port and Power Unit for AC Powered Systems

CAS

Centralized Attendant Service or Call Accounting System

CCS or hundred call seconds

A unit of call traffic. Call traffic for a facility is scanned every 100 seconds. If the facility is busy, it is assumed to have been busy for the entire scan interval. There are 3600 seconds per hour. The Roman numeral for 100 is the capital letter C. The abbreviation for call seconds is CS. Therefore, 100 call seconds is abbreviated CCS. If a facility is busy for an entire hour, then it is said to have been busy for 36 CCS. See also **Erlang**.

capability

A request or indication of an operation. For example, *Third Party Make Call* is a request for setting up a call; *event report* is an indication that an event has occurred.

capability group

Set of capabilities, determined by switch administration, that can be requested by an application. Capability groups denote association types. For example, *Call Control* is a type of association that allows certain functions (the ones in the capability group) to be performed over this type of association. Also referred to as administration groups or application service elements (ASEs).

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CA-TSC
  Call-Associated Temporary Signaling Connection

cause value
  A value is returned in response to requests or in event reports when a denial or unexpected condition occurs. ASAI cause values fall into two coding standards: Coding Standard 0 includes any cause values that are part of AT&T and CCITT ISDN specifications; Coding standard 3 includes any other ASAI cause values. This document uses a notation for cause value where the coding standard for the cause is given first, then a slash, then the cause value. Example: CS0/100 is coding standard 0, cause value 100.

CBC
  Call-by-call or coupled bonding conductor

CC
  Country code

CCIS
  Common-Channel Interoffice Signaling

CCITT
  CCITT (Comitte Consultatif International Telephonique et Telegraphique), now called *International Telecommunications Union* (ITU). See International Telecommunications Union (ITU).

CCMS
  Control-Channel Message Set

CCS
  See CCS or hundred call seconds.

CCSA
  Common-Control Switching Arrangement

CDM
  Channel-division multiplexing

CDOS
  Customer-dialed and operator serviced

CDR
  See Call Detail Recording (CDR).

CDRP
  Call Detail Record Poller

CDRR
  Call Detail Recording and Reporting

CDRU
  See Call Detail Recording utility (CDRU).

CEM
  Channel-expansion multiplexing

center-stage switch (CSS)
  The central interface between the processor port network and expansion port networks in a CSS-connected system.

central office (CO)
  The location housing telephone switching equipment that provides local telephone service and access to toll facilities for long-distance calling.

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GL-12

central office (CO) codes

The first three digits of a 7-digit public-network telephone number in the United States.

central office (CO) trunk

A telecommunications channel that provides access from the system to the public network through the local CO.

CEPT1

European Conference of Postal and Telecommunications Rate 1

channel

1. A circuit-switched call.

2. A communications path for transmitting voice and data.

3. In wideband, all of the time slots (contiguous or noncontiguous) necessary to support a call. Example: an H0-channel uses six 64-kbps time slots.

4. A DS0 on a T1 or E1 facility not specifically associated with a logical circuit-switched call; analogous to a single trunk.

channel negotiation

The process by which the channel offered in the Channel Identification Information Element (CIIE) in the SETUP message is negotiated to be another channel acceptable to the switch that receives the SETUP message and ultimately to the switch that sent the SETUP. Negotiation is attempted only if the CIIE is encoded as *Preferred*. Channel negotiation is not attempted for wideband calls.

CI

Clock input

circuit

1. An arrangement of electrical elements through which electric current flows.

2. A channel or transmission path between two or more points.

circuit pack

A card on which electrical circuits are printed, and IC chips and electrical components are installed. A circuit pack is installed in a switch carrier.

CISPR

International Special Committee on Radio Interference

Class of Restriction (COR)

A feature that allows up to 64 classes of call-origination and call-termination restrictions for voice terminals, voice-terminal groups, data modules, and trunk groups. See also Class of Service (COS).

Class of Service (COS)

A feature that uses a number to specify if voice-terminal users can activate the Automatic Callback, Call Forwarding All Calls, Data Privacy, or Priority Calling features. See also Class of Restriction (COR).

cm

Centimeter

CM

Connection Manager

CMDR

Centralized Message Detail Recording

CMS

Call Management System

CO

See central office (CO).

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GL-13

common-control switching arrangement (CCSA)
A private telecommunications network using dedicated trunks and a shared switching center for interconnecting company locations.

communications system
The software-controlled processor complex that interprets dialing pulses, tones, and keyboard characters and makes the proper connections both within the system and external to the system. The communications system itself consists of a digital computer, software, storage device, and carriers with special hardware to perform the connections. A communications system provides voice and data communications services, including access to public and private networks, for telephones and data terminals on a customer's premises. See also switch.

confirmation tone
A tone confirming that feature activation, deactivation, or cancellation has been accepted.

connectivity
The connection of disparate devices within a single system.

console
See attendant console.

contiguous
Adjacent DS0s within one T1 or E1 facility or adjacent TDM or fiber time slots. The first and last TDM bus, DS0, or fiber time slots are not considered contiguous (no wraparound). For an E1 facility with a D-channel, DS0s 15 and 17 are considered contiguous.

control cabinet
See control carrier.

control carrier
A carrier in a multicarrier cabinet that contains the SPE circuit packs and, unlike an R5r control carrier, port circuit packs. Also called control cabinet in a single-carrier cabinet. See also switch-processing element (SPE).

controlled station
A station that is monitored and controlled via a domain-control association.

COR
See Class of Restriction (COR).

COS
See Class of Service (COS).

coverage answer group
A group of up to eight voice terminals that ring simultaneously when a call is redirected to it by Call Coverage. Any one of the group can answer the call.

coverage call
A call that is automatically redirected from the called party's extension to an alternate answering position when certain coverage criteria are met.

coverage path
The order in which calls are redirected to alternate answering positions.

coverage point
An extension or attendant group, VDN, or ACD split designated as an alternate answering position in a coverage path.

covering user
A person at a coverage point who answers a redirected call.

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GL-14

CP

Circuit pack

CPE

Customer-premises equipment

CPN

Called-party number

CPN/BN

Calling-party number/billing number

CPTR

Call-progress-tone receiver

CRC

Cyclical Redundancy Checking

critical-reliability system

A system that has the following duplicated items: control carriers, tone clocks, EI circuit packs, and cabling between port networks and center-stage switch in a CSS-connected system. See also duplicated common control, and duplication.

CSA

Canadian Safety Association

CSCC

Compact single-carrier cabinet

CSCN

Center-stage control network

CSD

Customer-service document

CSM

Centralized System Management

CSS

See center-stage switch (CSS).

CSSO

Customer Services Support Organization

CSU

Channel service unit

CTS

Clear to Send

CWC

See call work code.

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D

DAC

    1. Dial access code or Direct Agent Calling

    2. See digital-to-analog converter (DAC).

data channel

    A communications path between two points used to transmit digital signals.

data-communications equipment (DCE)

    The equipment (usually a modem, data module, or packet assembler/disassembler) on the network side of a communications link that makes the binary serial data from the source or transmitter compatible with the communications channel.

data link

    The configuration of physical facilities enabling end terminals to communicate directly with each other.

data module

    An interconnection device between a BRI or DCP interface of the switch and data terminal equipment or data communications equipment.

data path

    The end-to-end connection used for a data communications link. A data path is the combination of all elements of an interprocessor communication in a DCS.

data port

    A point of access to a computer that uses trunks or lines for transmitting or receiving data.

data rate

    See bit rate.

data service unit (DSU)

    A device that transmits digital data on transmission facilities.

data terminal

    An input/output (I/O) device that has either switched or direct access to a host computer or to a processor interface.

data terminal equipment (DTE)

    Equipment consisting of the endpoints in a connection over a data circuit. In a connection between a data terminal and host, the terminal, the host, and their associated modems or data modules make up the DTE.

dB

    Decibel

dBA

    Decibels in reference to amperes.

dBrnC

    Decibels above reference noise with C filter.

DC

    Direct current

DCE

    Data-communications equipment

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GL-16

D-channel backup

Type of backup used with Non-Facility Associated Signaling (NFAS). A primary D-channel provides signaling for an NFAS D-channel group (two or more PRI facilities). A second D-channel, on a separate PRI facility of the NFAS D-channel group, is designated as backup for the D-channel. Failure of the primary D-channel causes automatic transfer of call-control signaling to the backup D-channel. The backup becomes the primary D-channel. When the failed channel returns to service, it becomes the backup D-channel.

DCO

Digital central office

DCP

Digital Communications Protocol

DCS

Distributed Communications System

DDC

Direct Department Calling

DDD

Direct Distance Dialing

delay-dial trunk

A trunk that allows dialing directly into a communications system (digits are received as they are dialed).

denying a request

Sending a negative acknowledgement (NAK), done by sending an FIE with a *return error* component (and a cause value). It should not be confused with the denial event report that applies to calls.

designated voice terminal

The specific voice terminal to which calls, originally directed to a certain extension, are redirected. Commonly used to mean the forwarded-to terminal when Call Forwarding All Calls is active.

dial-repeating trunks

A PBX tie trunk that is capable of handling PBX station-signaling information without attendant assistance.

dial-repeating tie trunk

A tie trunk that transmits called-party addressing information between two communications systems.

DID

Direct Inward Dialing

digit conversion

A process used to convert specific dialed numbers into other dialed numbers.

digital

The representation of information by discrete steps. See also analog.

digital communications protocol (DCP)

- A proprietary protocol used to transmit both digitized voice and digitized data over the same communications link. A DCP link is made up of two 64-kbps information (I-) channels and one 8-kbps signaling (S-) channel. Digital Communications Protocol. The DCP protocol supports 2 information-bearing channels, and thus two telephones/data modules. The I1 channel is the DCP channel assigned on the first page of the 8411 station form. The I2 channel is the DCP channel assigned on the analog adjunct page of the 8411 station form or on the data module page.

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- Digital Communications Protocol. The DCP protocol supports 2 information-bearing channels, and thus two telephones/data modules. The I1 channel is the DCP channel assigned on the first page of the 8411 station form. The I2 channel is the DCP channel assigned on the analog adjunct page of the 8411 station form or on the data module page.

digital data endpoints

In DEFINITY ECS, devices such as the 510D terminal or the 515-type business communications terminal (BCT).

digital multiplexed interface (DMI)

An interface that provides connectivity between a communications system and a host computer or between two communications systems using DS1 24th-channel signaling. DMI provides 23 64-kbps data channels and 1 common-signaling channel over a twisted-pair connection. DMI is offered through two capabilities: bit-oriented signaling (DMI-BOS) and message-oriented signaling (DMI-MOS).

digital signal level 0 (DS0)

A single 64-kbps voice channel. A DS0 is a single 64-kbps channel in a T1 or E1 facility and consists of eight bits in a T1 or E1 frame every 125 microseconds.

digital signal level 1 (DS1)

A single 1.544-Mbps (United States) or 2.048-Mbps (outside the United States) digital signal carried on a T1 transmission facility. A DS1 converter complex consists of a pair, one at each end, of DS1 converter circuit packs and the associated T1/E1 facilities.

digital terminal data module (DTDM)

An integrated or adjunct data module that shares with a digital telephone the same physical port for connection to a communications system. The function of a DTDM is similar to that of a PDM and MPDM in that it converts RS-232C signals to DCP signals.

digital-to-analog converter (DAC)

A device that converts data in digital form to the corresponding analog signals. See also analog-to-digital converter (ADC).

digital transmission

A mode of transmission in which information to be transmitted is first converted to digital form and then transmitted as a serial stream of pulses.

digital trunk

A circuit that carries digital voice and/or digital data in a telecommunications channel.

DIOD

Direct Inward and Outward Dialing

direct agent

A feature, accessed only via ASAI, that allows a call to be placed in a split queue but routed only to a specific agent in that split. The call receives normal ACD call treatment (for example, announcements) and is measured as an ACD call while ensuring that a particular agent answers.

Direct Extension Selection (DXS)

A feature on an attendant console that allows an attendant direct access to voice terminals by pressing a group-select button and a DXS button.

Direct Inward Dialing (DID)

A feature that allows an incoming call from the public network (not FX or WATS) to reach a specific telephone without attendant assistance.

Direct Inward Dialing (DID) trunk

An incoming trunk used for dialing directly from the public network into a communications system without help from the attendant.

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disk drive
An electromechanical device that stores data on and retrieves data from one or more disks.

distributed communications system (DCS)
A network configuration linking two or more communications systems in such a way that selected features appear to operate as if the network were one system.

DIVA
Data In/Voice Answer

DLC
Data line circuit

DLDM
Data-line data module

DMI
Digital-multiplexed interface

DND
Do not disturb

DNIS
Dialed-Number Identification Service

DOD
Direct Outward Dialing

domain
VDNs, ACD splits, and stations. The VDN domain is used for active-notification associations. The ACD-split domain is for active-notification associations and domain-control associations. The station domain is used for the domain-control associations.

domain-control association
A *Third Party Domain Control Request* capability initiates a unique CRV/link number combination, which is referred to as a domain-control association.

domain-controlled split
A split for which *Third Party Domain Control* request has been accepted. A domain-controlled split provides an event report for logout.

domain-controlled station
A station for which a *Third_Party_Domain_Control* request has been accepted. A domain-controlled station provides event reports for calls that are alerting, connected, or held at the station.

domain-controlled station on a call
A station that is active on a call, and which provides event reports over one or two domain-control associations.

DOSS
Delivery Operations Support System

DOT
Duplication Option Terminal

DPM
Dial Plan Manager

DPR
Dual-port RAM

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DS1

Digital Signal Level 1

DS1C

Digital Signal Level-1 protocol C

DS1 CONV

Digital Signal Level-1 converter

DSI

Digital signal interface

DSU

Data service unit

DTDM

Digital-terminal data module

DTE

Data-terminal equipment

DTGS

Direct Trunk Group Select

DTMF

Dual-tone multifrequency

DTS

Disk-tape system

duplicated common control

Two processors ensuring continuous operation of a communications system. While one processor is online, the other functions as a backup. The backup processor goes online periodically or when a problem occurs.

duplication

The use of redundant components to improve availability. When a duplicated subsystem fails, its backup redundant system automatically takes over.

duplication option

A system option that duplicates the following: control carrier containing the SPE, EI circuit packs in carriers, fiber-optic cabling between port networks, and center-stage switch in a CSS-connected system.

DWBS

DEFINITY Wireless Business System

DXS

Direct extension selection

E

E1

A digital transmission standard that carries traffic at 2.048 Mbps. The E1 facility is divided into 32 channels (DS0s) of 64 kbps information. Channel 0 is reserved for framing and synchronization information. A D-channel occupies channel 16.

E & M

Ear and mouth (receive and transmit)

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GL-20

EA

Expansion archangel

EAL

Expansion archangel link

ear and mouth (E & M) signaling

Trunk supervisory signaling, used between two communications systems, whereby signaling information is transferred through 2-state voltage conditions (on the E and M leads) for analog applications and through a single bit for digital applications.

EEBCDIC

Extended Binary-Coded Decimal Interexchange Code

ECC

Error Correct Code

ECMA

European Computer Manufacturers Association

EFP

Electronic power feed

EI

Expansion interface

EIA

Electronic Industries Association

EIA-232

A physical interface specified by the EIA. EIA-232 transmits and receives asynchronous data at speeds of up to 19.2 kbps over cable distances of up to 50 feet. EIA-232 replaces RS-232 protocol in some DEFINITY applications.

electronic tandem network (ETN)

A tandem tie-trunk network that has automatic call-routing capabilities based on the number dialed and the most preferred route available. Each switch in the network is assigned a unique private network office code (RNX), and each voice terminal is assigned a unique extension.

Electronics Industries Association (EIA)

A trade association of the electronics industry that establishes electrical and functional standards.

emergency transfer

If a major system failure occurs, automatic transfer is initiated to a group of telephones capable of making outgoing calls. The system operates in this mode until the failure is repaired and the system automatically returns to normal operation. Also called power-failure transfer.

EMI

Electromagnetic interference

end-to-end signaling

The transmission of touch-tone signals generated by dialing from a voice terminal to remote computer equipment. These digits are sent over the trunk as DTMF digits whether the trunk signaling type is marked as tone or rotary and whether the originating station is tone or rotary. Example: a call to a voice-mail machine or automated-attendant service. A connection is first established over an outgoing trunk. Then additional digits are dialed to transmit information to be processed by the computer equipment.

enhanced private-switched communications service (EPSCS)

An analog private telecommunications network based on the No. 5 crossbar and 1A ESS that provides advanced voice and data telecommunications services to companies with many locations.

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EPN

Expansion-port network

EPROM

Erasable programmable read-only memory

EPSCS

Enhanced Private Switched Communications Services

ERL

Echo return loss

Erlang

A unit of traffic intensity, or load, used to express the amount of traffic needed to keep one facility busy for one hour. One Erlang is equal to 36 CCS. See also CCS or hundred call seconds.

ESF

Extended superframe format

ESPA

European Standard Paging Access

ETA

Extended Trunk Access; also Enhanced Terminal Administration

ETN

Electronic tandem network

ETSI

European Telecommunications Standards Institute

expansion archangel (EAA)

A network-control microprocessor located on an expansion interface (EI) port circuit pack in an expansion port network. The EA provides an interface between the EPN and its controlling switch-processing element.

expansion-archangel link (EAL)

A link-access function on the D-channel (LAPD) logical link that exists between a switch-processing element and an expansion archangel (EA). The EAL carries control messages from the SPE to the EA and to port circuit packs in an expansion port network.

expansion control cabinet

See expansion control carrier.

expansion control carrier

A carrier in a multicarrier cabinet that contains extra port circuit packs and a maintenance interface. Also called expansion control cabinet in a single-carrier cabinet.

expansion interface (EI)

A port circuit pack in a port network that provides the interface between a PN's TDM bus/ packet bus and a fiber-optic link. The EI carries circuit-switched data, packet-switched data, network control, timing control, and DS1 control. In addition, an EI in an expansion port network communicates with the master maintenance circuit pack to provide the EPN's environmental and alarm status to the switch-processing element.

expansion port network (EPN)

A port network (PN) that is connected to the TDM bus and packet bus of a processor port network (PPN). Control is achieved by indirect connection of the EPN to the PPN via a port-network link (PNL). See also port network (PN).

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extension-in

Extension-In (ExtIn) is the work state agents go into when they answer (receive) a non-ACD call. If the agent is in Manual-In or Auto-In and receives an extension-in call, it is recorded by CMS as an AUX-In call.

extension-out

The work state that agents go into when they place (originate) a non-ACD call.

external measurements

Those ACD measurements that are made by the External CMS adjunct.

extension

A 1- to 5-digit number by which calls are routed through a communications system or, with a Uniform Dial Plan (UDP) or main-satellite dialing plan, through a private network.

external call

A connection between a communications system user and a party on the public network or on another communications system in a private network.

F

FAC

Feature Access Code

facility

A telecommunications transmission pathway and associated equipment.

facility-associated signaling (FAS)

Signaling for which a D-channel carries signaling only for those channels on the same physical interface.

FAS

Facility-associated signaling

FAT

Facility access trunk

FAX

Facsimile

FCC

Federal Communications Commission

FEAC

Forced Entry of Account Codes

feature

A specifically defined function or service provided by the system.

feature button

A labeled button on a telephone or attendant console used to access a specific feature.

FEP

Front-end processor

FIC

Facility interface codes

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GL-23

fiber optics

A technology using materials that transmit ultrawideband electromagnetic light-frequency ranges for high-capacity carrier systems.

fixed

A trunk allocation term. In the fixed allocation scheme, the time slots necessary to support a wideband call are contiguous, and the first time slot is constrained to certain starting points.

flexible

A trunk allocation term. In the flexible allocation scheme, the time slots of a wideband call can occupy noncontiguous positions within a single T1 or E1 facility.

floating

A trunk allocation term. In the floating allocation scheme, the time slots of a wideband call are contiguous, but the position of the first time slot is not fixed.

FNPA

Foreign Numbering-Plan Area

foreign-exchange (FX)

A CO other than the one providing local access to the public telephone network.

foreign-exchange trunk

A telecommunications channel that directly connects the system to a CO other than its local CO.

foreign numbering-plan area code (FNPAC)

An area code other than the local area code, that must be dialed to call outside the local geographical area.

FRL

Facilities Restriction Level

FX

Foreign exchange

G

G3-MA

Generic 3 Management Applications

G3-MT

Generic 3 Management Terminal

G3r

Generic 3, RISC (Reduced Instruction Set Computer)

generalized route selection (GRS)

An enhancement to Automatic Alternate Routing/Automatic Route Selection (AAR/ARS) that performs routing based on call attributes, such as Bearer Capability Classes (BCCs), in addition to the address and facilities restriction level (FRL), thus facilitating a Uniform Dial Plan (UDP) that is independent of the type of call being placed.

glare

The simultaneous seizure of a 2-way trunk by two communications systems, resulting in a standoff.

GM

Group manager

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GL-24

GPTR
General-purpose tone receiver

grade of service
The number of call attempts that fail to receive service immediately. Grade of service is also expressed as the quantity of all calls that are blocked or delayed.

ground-start trunk
A trunk on which, for outgoing calls, the system transmits a request for services to a distant switching system by grounding the trunk ring lead. To receive the digits of the called number, that system grounds the trunk tip lead. When the system detects this ground, the digits are sent.

GRS
Generalized Route Selection

H

H0
An ISDN information transfer rate for 384-kbps data defined by CCITT and ANSI standards.

H11
An ISDN information transfer rate for 1536-kbps data defined by CCITT and ANSI standards.

H12
An ISDN information transfer rate for 1920-kbps data defined by CCITT and ANSI standards.

handshaking logic
A format used to initiate a data connection between two data module devices.

hertz (Hz)
A unit of frequency equal to one cycle per second.

high-reliability system
A system having the following: two control carriers, duplicate expansion interface (EI) circuit packs in the PPN (in R5r with CSS), and duplicate switch node clock circuit packs in the switch node (SN) carriers. See also duplicated common control, duplication, duplication option, and critical-reliability system.

HNPA
See home numbering-plan area code (HNPA).

holding time
The total length of time in minutes and seconds that a facility is used during a call.

home numbering-plan area code (HNPA)
The local area code. The area code does not have to be dialed to call numbers within the local geographical area.

hop
Nondirect communication between two switch communications interfaces (SCI) where the SCI message passes automatically without intermediate processing through one or more intermediate SCIs.

host computer
A computer, connected to a network, that processes data from data-entry devices.

hunt group
A group of extensions that are assigned the Station Hunting feature so that a call to a busy extension reroutes to an idle extension in the group. See also ACD work mode.

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GL-25

Hz

See hertz (Hz).

I

I1

The first information channel of DCP.

I2

The second information channel of DCP.

I2 Interface

A proprietary interface used for the DEFINITY Wireless Business System for the radio-controller circuit packs. Each interface provides communication between the radio-controller circuit pack and up to two wireless fixed bases.

I3 Interface

A proprietary interface used for the DEFINITY Wireless Business System for the cell antenna units. Each wireless fixed base can communicate to up to four cell antenna units.

IAS

Inter-PBX Attendant Service

ICC

Intercabinet cable or intercarrier cable

ICD

Inbound Call Director

ICDOS

International Customer-Dialed Operator Service

ICHT

Incoming call-handling table

ICI

Incoming call identifier

ICM

Inbound Call Management

IDDD

International Direct Distance Dialing

IDF

Intermediate distribution frame

IE

Information element

immediate-start tie trunk

A trunk on which, after making a connection with a distant switching system for an outgoing call, the system waits a nominal 65 ms before sending the digits of the called number. This allows time for the distant system to prepare to receive digits. On an incoming call, the system has less than 65 ms to prepare to receive the digits.

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IMT

Intermachine trunk

in

Inch

INADS

Initialization and Administration System

incoming gateway

A PBX that routes an incoming call on a trunk *not* administered for Supplementary Services Protocol B to a trunk *not* administered for Supplementary Services Protocol B.

information exchange

The exchange of data between users of two different systems, such as the switch and a host computer, over a LAN.

Information Systems Network (ISN)

A WAN and LAN with an open architecture combining host computers, minicomputers, word processors, storage devices, PCs, high-speed printers, and nonintelligent terminals into a single packet-switching system.

INS

ISDN Network Service

inside call

A call placed from one telephone to another within the local communications system.

Integrated Services Digital Network (ISDN)

A public or private network that provides end-to-end digital communications for all services to which users have access by a limited set of standard multipurpose user-network interfaces defined by the CCITT. Through internationally accepted standard interfaces, ISDN provides digital circuit-switched or packet-switched communications within the network and links to other ISDNs to provide national and international digital communications. See also Integrated Services Digital Network Basic Rate Interface (ISDN-BRI) and Integrated Services Digital Network Primary Rate Interface (ISDN-PRI).

Integrated Services Digital Network Basic Rate Interface (ISDN-BRI)

The interface between a communications system and terminal that includes two 64-kbps B-channels for transmitting voice or data and one 16-kbps D-channel for transmitting associated B-channel call control and out-of-band signaling information. ISDN-BRI also includes 48 kbps for transmitting framing and D-channel contention information, for a total interface speed of 192 kbps. ISDN-BRI serves ISDN terminals and digital terminals fitted with ISDN terminal adapters. See also Integrated Services Digital Network (ISDN) andIntegrated Services Digital Network Primary Rate Interface (ISDN-PRI).

Integrated Services Digital Network Primary Rate Interface (ISDN-PRI)

The interface between multiple communications systems that in North America includes 24 64-kbps channels, corresponding to the North American digital signal level-1 (DS1) standard rate of 1.544 Mbps. The most common arrangement of channels in ISDN-PRI is 23 64-kbps B-channels for transmitting voice and data and 1 64-kbps D-channel for transmitting associated B-channel call control and out-of-band signaling information. With nonfacility-associated signaling (NFAS), ISDN-PRI can include 24 B-channels and no D-channel. See alsoIntegrated Services Digital Network (ISDN) andIntegrated Services Digital Network Basic Rate Interface (ISDN-BRI).

intercept tone

An tone that indicates a dialing error or denial of the service requested.

interface

A common boundary between two systems or pieces of equipment.

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internal call

A connection between two users within a system.

International Telecommunications Union (ITU)

Formerly known as International Telegraph and Telephone Consultative Committee (CCITT), ITU is an international organization that sets universal standards for data communications, including ISDN. ITU members are from telecommunications companies and organizations around the world. See also BX.25.

International Telegraph and Telephone Consultative Committee

See International Telecommunications Union (ITU).

interflow

The ability for calls to forward to other splits on the same PBX or a different PBX using the Call Forward All Calls feature.

intraflow

The ability for calls to redirect to other splits on the same PBX on a conditional or unconditional basis using call coverage busy, don't answer, or all criteria.

internal measurements

BCMS measurements that are made by the system. ACD measurements that are made external to the system (via External CMS) are referred to as external measurements.

in-use lamp

A red light on a multiappearance voice terminal that lights to show which call appearance will be selected when the handset is lifted or which call appearance is active when a user is off-hook.

INWATS

Inward Wide Area Telephone Service

IO

Information outlet

ISDN

See Integrated Services Digital Network (ISDN).

ISDN Gateway (IG)

A feature allowing integration of the switch and a host-based telemarketing application via a link to a gateway adjunct. The gateway adjunct is a 3B-based product that notifies the host-based telemarketing application of call events.

ISDN trunk

A trunk administered for use with ISDN-PRI. Also called ISDN facility.

ISDN-PRI terminal adapter

An interface between endpoint applications and an ISDN PRI facility. ISDN-PRI terminal adapters are currently available from other vendors and are primarily designed for video conferencing applications. Accordingly, currently available terminal adapters adapt the two pairs of video codec data (V.35) and dialing (RS-366) ports to an ISDN PRI facility.

IS/DTT

Integrated Services/digital tie trunk

ISN

Information Systems Network

ISO

International Standards Organization

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ISV

Independent software vendor

ITP

Installation test procedure

ITU

International Telecommunications Union

IXC

Interexchange carrier code

K

kHz

Kilohertz

kbps

Kilobits per second

kbyte

Kilobyte

kg

Kilogram

L

LAN

Local area network

LAP-D

Link Access Procedure on the D-channel

LAPD

Link Access Procedure data

LATA

Local access and transport area

lb

Pound

LBO

Line buildout

LDN

Listed directory number

LDS

Long-distance service

LEC

Local exchange carrier

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LED

See light-emitting diode (LED).

light-emitting diode (LED)

A semiconductor device that produces light when voltage is applied. LEDs provide a visual indication of the operational status of hardware components, the results of maintenance tests, the alarm status of circuit packs, and the activation of telephone features.

lightwave transceiver

Hardware that provides an interface to fiber-optic cable from port circuit packs and DS1 converter circuit packs. Lightwave transceivers convert electrical signals to light signals and vice versa.

line

A transmission path between a communications system or CO switching system and a voice terminal or other terminal.

line appearance

See appearance.

line buildout

A selectable output attenuation is generally required of DTE equipment because T1 circuits require the last span to lose 15–22.5 dB.

line port

Hardware that provides the access point to a communications system for each circuit associated with a telephone or data terminal.

link

A transmitter-receiver channel that connects two systems.

link-access procedure on the D-channel (LAPD)

A link-layer protocol on the ISDN-BRI and ISDN-PRI data-link layer (level 2). LAPD provides data transfer between two devices, and error and flow control on multiple logical links. LAPD is used for signaling and low-speed packet data (X.25 and mode 3) on the signaling (D-) channel and for mode-3 data communications on a bearer (B-) channel.

LINL

Local indirect neighbor link

local area network (LAN)

A networking arrangement designed for a limited geographical area. Generally, a LAN is limited in range to a maximum of 6.2 miles and provides high-speed carrier service with low error rates. Common configurations include daisy chain, star (including circuit-switched), ring, and bus.

logical link

The communications path between a processor and a BRI terminal.

loop-start trunk

A trunk on which, after establishing a connection with a distant switching system for an outgoing call, the system waits for a signal on the loop formed by the trunk leads before sending the digits of the called number.

LSU

Local storage unit

LWC

Leave Word Calling

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M

MAC
Medium access

MADU
Modular asynchronous data unit

main distribution frame (MDF)
A device that mounts to the wall inside the system equipment room. The MDF provides a connection point from outside telephone lines to the PBX switch and to the inside telephone stations.

main-satellite-tributary
A private network configuration that can either stand alone or access an ETN. A main switch provides interconnection, via tie trunks, with one or more subtending switches, called satellites; all attendant positions for the main/satellite configuration; and access to and from the public network. To a user outside the complex, a main/satellite configuration appears as one switch, with one listed directory number (LDN). A tributary switch is connected to the main switch via tie trunks, but has its own attendant positions and LDN.

maintenance
Activities involved in keeping a telecommunications system in proper working condition: the detection and isolation of software and hardware faults, and automatic and manual recovery from these faults.

management terminal
The terminal that is used by the system administrator to administer the switch. The terminal may also be used to access the BCMS feature.

major alarm
An indication of a failure that has caused critical degradation of service and requires immediate attention. Major alarms are automatically displayed on LEDs on the attendant console and maintenance or alarming circuit pack, logged to the alarm log, and reported to a remote maintenance facility, if applicable.

Manual-In work mode
One of four agent work modes: the mode in which an agent is ready to process another call manually. *See* Auto-In Work mode for a contrast.

MAP
Maintenance action process

MAPD
Multiapplication platform for DEFINITY

MA-UUI
Message-Associated User-to-User Signaling

Mbps
Megabits per second

M-Bus
Memory bus

Mbyte
Megabyte

MCC
Multicarrier cabinet

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MCS

Message Center Service

MCT

Malicious Call Trace

MCU

Multipoint control unit

MDF

Main distribution frame

MDM

Modular data module

MDR

Message detail record

MEM

Memory

memory

A device into which information can be copied and held, and from which information can later be obtained.

memory shadowing link

An operating-system condition that provides a method for memory-resident programs to be more quickly accessed, allowing a system to reboot faster.

message center

An answering service that supplies agents to and stores messages for later retrieval.

message center agent

A member of a message-center hunt group who takes and retrieves messages for voice-terminal users.

MET

Multibutton electronic telephone

MF

Multifrequency

MFB

Multifunction board

MFC

Multifrequency code

MHz

Megahertz

MIM

Management information message

minor alarm

An indication of a failure that could affect customer service. Minor alarms are automatically displayed on LEDs on the attendant console and maintenance or alarming circuit pack, sent to the alarm log, and reported to a remote maintenance facility, if applicable.

MIPS

Million instructions per second

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MIS

Management information system

MISCID

Miscellaneous identification

MMCS

Multimedia Call Server

MMCH

Multimedia call handling

MMI

Multimedia interface

MMS

Material Management Services

MO

Maintenance object

modem

A device that converts digital data signals to analog signals for transmission over telephone circuits. The analog signals are converted back to the original digital data signals by another modem at the other end of the circuit.

modem pooling

A capability that provides shared conversion resources (modems and data modules) for cost-effective access to analog facilities by data terminals. When needed, modem pooling inserts a conversion resource into the path of a data call. Modem pooling serves both outgoing and incoming calls.

modular processor data module (MPDM)

A processor data module (PDM) that can be configured to provide several kinds of interfaces (RS-232C, RS-449, and V.35) to customer-provided data terminal equipment (DTE). See also processor data module (PDM).

modular trunk data module (MTDM)

A trunk data module that can be configured to provide several kinds of interfaces (RS-232, RS-449, and V.35) to customer-provided data terminal equipment.

modulator-demodulator

See modem.

monitored call

See active-notification call.

MOS

Message-oriented signaling

MPDM

Modular processor data module

MS

Message server

ms

Millisecond

MS/T

Main satellite/tributary

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MSA

Message servicing adjunct

MSG

Message service

MSL

Material stocking location

MSM

Modular System Management

MSS

Mass storage system

MSSNET

Mass storage/network control

MT

Management terminal

MTDM

Modular trunk data module

MTP

Maintenance tape processor

MTT

Multitasking terminal

multiappearance voice terminal

A terminal equipped with several call-appearance buttons for the same extension, allowing the user to handle more than one call on that same extension at the same time.

Multicarrier cabinet

A structure that holds one to five carriers. See also single-carrier cabinet.

Multifrequency Compelled (MFC) Release 2 (R2) signaling

A signal consisting of two frequency components, such that when a signal is transmitted from a switch, another signal acknowledging the transmitted signal is received by the switch. R2 designates signaling used in the United States and in countries outside the United States.

multiplexer

A device used to combine a number of individual channels into a single common bit stream for transmission.

multiplexing

A process whereby a transmission facility is divided into two or more channels, either by splitting the frequency band into a number of narrower bands or by dividing the transmission channel into successive time slots. See also time-division multiplexing (TDM).

multirate

The new N x DS0 service (see N x DS0).

MWL

Message-waiting lamp

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N

N+1

Method of determining redundant backup requirements. Example: if four rectifier modules are required for a DC-powered single-carrier cabinet, a fifth rectifier module is installed for backup.

N x DS0

N x DS0, equivalently referred to as N x 64 kbps, is an emerging standard for wideband calls separate from H0, H11, and H12 ISDN channels. The emerging N x DS0 ISDN multirate circuit mode bearer service will provide circuit-switched calls with data-rate multiples of 64 kbps up to 1536 kbps on a T1 facility or up to 1920 kbps on an E1 facility. In the switch, N x DS0 channels will range up to 1984 kbps using NFAS E1 interfaces.

NANP

North American Numbering Plan

narrowband

A circuit-switched call at a data rate up to and including 64 kbps. All nonwideband switch calls are considered narrowband.

native terminal support

A predefined terminal type exists in switch software, eliminating the need to alias the terminal (that is, manually map call appearances and feature buttons onto some other natively supported terminal type).

NAU

Network access unit

NCA/TSC

Noncall-associated/temporary-signaling connection

NCOSS

Network Control Operations Support Center

NCSO

National Customer Support Organization

NEC

National Engineering Center

NEMA

National Electrical Manufacturer's Association

NETCON

Network-control circuit pack

network

A series of points, nodes, or stations connected by communications channels.

network-specific facility (NSF)

An information element in an ISDN-PRI message that specifies which public-network service is used. NSF applies only when Call-by-Call Service Selection is used to access a public-network service.

network interface

A common boundary between two systems in an interconnected group of systems.

NFAS

See Nonfacility-associated signaling (NFAS).

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GL-35

NI

Network interface

NID

Network Inward Dialing

NM

Network management

NN

National number

node

A switching or control point for a network. Nodes are either tandem (they receive signals and pass them on) or terminal (they originate or terminate a transmission path).

Nonfacility-associated signaling (NFAS)

A method that allows multiple T1 and/or E1 facilities to share a single D-channel to form an ISDN-PRI. If D-channel backup is not used, one facility is configured with a D-channel, and the other facilities that share the D-channel are configured without D-channels. If D-channel backup is used, two facilities are configured to have D-channels (one D-channel on each facility), and the other facilities that share the D-channels are configured without D-channels.

NPA

Numbering-plan area

NPE

Network processing element

NQC

Number of queued calls

NSE

Night-service extension

NSU

Network sharing unit

null modem cable

Special wiring of an RS-232-C cable such that a computer can talk to another computer (or to a printer) without a modem.

NXX

Public-network office code

O

OA

Operator assisted

occurrence

See appearance.

OCM

Outbound Call Management

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offered load

The traffic that would be generated by all the requests for service occurring within a monitored interval, usually one hour.

ONS

On-premises station

OPS

Off-premises station

OPX

Off-premises extension

OQT

Oldest queued time

OSHA

Occupational Safety and Health Act

OSI

Open Systems Interconnect

OSS

Operations Support System

OSSI

Operational Support System Interface

OTDR

Optical time-domain reflectometer

othersplit

The work state that indicates that an agent is currently active on another split's call, or in ACW for another split.

OTQ

Outgoing trunk queuing

outgoing gateway

A PBX that routes an incoming call on a trunk administered for Supplementary Services Protocol B to a trunk *not* administered for Supplementary Services Protocol B.

P

PACCON

Packet control

packet

A group of bits (including a message element, which is the data, and a control information element (IE), which is the header) used in packet switching and transmitted as a discrete unit. In each packet, the message element and control IE are arranged in a specified format. See also **packet bus** and **packet switching**.

packet bus

A wide-bandwidth bus that transmits packets.

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packet switching

A data-transmission technique whereby user information is segmented and routed in discrete data envelopes called packets, each with its own appended control information, for routing, sequencing, and error checking. Packet switching allows a channel to be occupied only during the transmission of a packet. On completion of the transmission, the channel is made available for the transfer of other packets. See also BX.25and **packet**.

PAD

Packet assembly/disassembly

paging trunk

A telecommunications channel used to access an amplifier for loudspeaker paging.

party/extension active on call

A party is on the call if he or she is actually connected to the call (in active talk or in held state). An originator of a call is always a party on the call. Alerting parties, busy parties, and tones are not parties on the call.

PBX

Private branch exchange

PC

See personal computer (PC).

PCM

See pulse-code modulation (PCM).

PCOL

Personal central-office line

PCOLG

Personal central-office line group

PCS

Permanent switched calls

PDM

See processor data module (PDM).

PDS

Premises Distribution System

PE

Processing element

PEC

Price element code

PEI

Processor element interchange

personal computer (PC)

A personally controllable microcomputer.

PGATE

Packet gateway

PGN

Partitioned group number

PI

Processor interface

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PIB

Processor interface board

pickup group

A group of individuals authorized to answer any call directed to an extension within the group.

PIDB

Product image database

PKTINT

Packet interface

PL

Private line

PLS

Premises Lightwave System

PMS

Property Management System

PN

Port network

PNA

Private network access

POE

Processor occupancy evaluation

POP

Point of presence

port

A data- or voice-transmission access point on a device that is used for communicating with other devices.

port carrier

A carrier in a multicarrier cabinet or a single-carrier cabinet containing port circuit packs, power units, and service circuits. Also called a port cabinet in a single-carrier cabinet.

port network (PN)

A cabinet containing a TDM bus and packet bus to which the following components are connected: port circuit packs, one or two tone-clock circuit packs, a maintenance circuit pack, service circuit packs, and (optionally) up to four expansion interface (EI) circuit packs in DEFINITY ECS. Each PN is controlled either locally or remotely by a switch processing element (SPE). See also expansion port network (EPN) and processor port network (PPN).

port-network connectivity

The interconnection of port networks (PNs), regardless of whether the configuration uses direct or switched connectivity.

PPM

1. Parts per million
2. Periodic pulse metering

PPN

See processor port network (PPN).

PRI

See Primary Rate Interface (PRI).

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primary extension

The main extension associated with the physical voice or data terminal.

Primary Rate Interface (PRI)

A standard ISDN frame format that specifies the protocol used between two or more communications systems. PRI runs at 1.544 Mbps and, as used in North America, provides 23 64-kbps B-channels (voice or data) and one 64-kbps D-channel (signaling). The D-channel is the 24th channel of the interface and contains multiplexed signaling information for the other 23 channels.

PRI endpoint (PE)

The wideband switching capability introduces PRI endpoints on switch line-side interfaces. A PRI endpoint consists of one or more contiguous B-channels on a line-side T1 or E1 ISDN PRI facility and has an extension. Endpoint applications have call-control capabilities over PRI endpoints.

principal

A terminal that has its primary extension bridged on one or more other terminals.

principal (user)

A person to whom a telephone is assigned and who has message-center coverage.

private network

A network used exclusively for the telecommunications needs of a particular customer.

private network office code (RNX)

The first three digits of a 7-digit private network number.

PROCR

Processor

processor carrier

See control carrier.

processor data module (PDM)

A device that provides an RS-232C DCE interface for connecting to data terminals, applications processors (APs), and host computers, and provides a DCP interface for connection to a communications system. See also modular processor data module (MPDM).

processor port network (PPN)

A port network controlled by a switch-processing element that is directly connected to that PN's TDM bus and LAN bus. See also port network (PN).

processor port network (PPN) control carrier

A carrier containing the maintenance circuit pack, tone/clock circuit pack, and SPE circuit packs for a processor port network (PPN) and, optionally, port circuit packs.

Property Management System (PMS)

A stand-alone computer used by lodging and health-services organizations for services such as reservations, housekeeping, and billing.

protocol

A set of conventions or rules governing the format and timing of message exchanges to control data movement and correction of errors.

PSC

Premises service consultant

PSDN

Packet-switch public data network

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PT

Personal terminal

PTC

Positive temperature coefficient

PTT

Postal Telephone and Telegraph

public network

The network that can be openly accessed by all customers for local and long-distance calling.

pulse-code modulation (PCM)

An extension of pulse-amplitude modulation (PAM) in which carrier-signal pulses modulated by an analog signal, such as speech, are quantized and encoded to a digital, usually binary, format.

Q

QPPCN

Quality Protection Plan Change Notice

quadrant

A group of six contiguous DS0s in fixed locations on an ISDN-PRI facility. Note that this term comes from T1 terminology (one-fourth of a T1), but there are five quadrants on an E1 ISDN-PRI facility (30B + D).

queue

An ordered sequence of calls waiting to be processed.

queuing

The process of holding calls in order of their arrival to await connection to an attendant, to an answering group, or to an idle trunk. Calls are automatically connected in first-in, first-out sequence.

R

RAM

See random-access memory (RAM).

random-access memory (RAM)

A storage arrangement whereby information can be retrieved at a speed independent of the location of the stored information.

RBS

Robbed-bit signaling

RC

Radio controller

RCL

Restricted call list

read-only memory (ROM)

A storage arrangement primarily for information-retrieval applications.

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recall dial tone

Tones signalling that the system has completed a function (such as holding a call) and is ready to accept dialing.

redirection criteria

Information administered for each voice terminal's coverage path that determines when an incoming call is redirected to coverage.

Redirection on No Answer

An optional feature that redirects an unanswered ringing ACD call after an administered number of rings. The call is then redirected back to the agent.

remote home numbering-plan area code (RHNPA)

A foreign numbering-plan area code that is treated as a home area code by the Automatic Route Selection (ARS) feature. Calls can be allowed or denied based on the area code and the dialed CO code rather than just the area code. If the call is allowed, the ARS pattern used for the call is determined by these six digits.

Remote Operations Service Element (ROSE)

A CCITT and ISO standard that defines a notation and services that support interactions between the various entities that make up a distributed application.

REN

Ringer equivalency number

reorder tone

A tone to signal that at least one of the facilities, such as a trunk or a digit transmitter, needed for the call was not available.

report scheduler

Software that is used in conjunction with the system printer to schedule the days of the week and time of day that the desired reports are to be printed.

RFP

Request for proposal

RHNPA

See remote home numbering-plan area code (RHNPA).

RINL

Remote indirect neighbor link

RISC

Reduced-instruction-set computer

RLT

Release-link trunk

RMATS

Remote Maintenance, Administration, and Traffic System

RNX

Route-number index (private network office code)

ROM

See read-only memory (ROM).

RPN

Routing-plan number

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RS-232C

A physical interface specified by the Electronic Industries Association (EIA). RS-232C transmits and receives asynchronous data at speeds of up to 19.2 kbps over cable distances of up to 50 feet.

RS-449

Recommended Standard 449

RSC

Regional Support Center

ROSE

See Remote Operations Service Element (ROSE).

S

S1

The first logical signalling channel of DCP. The channel is used to provide signaling information for DCP's I1 channel.

S2

The second logical signaling channel of DCP. The channel is used to provide signaling information for DCP's I2 channel.

SABM

Set Asynchronous Balance Mode

SAC

Send All Calls

SAKI

See sanity and control interface (SAKI).

sanity and control interface (SAKI)

A custom VLSI microchip located on each port circuit pack. The SAKI provides address recognition, buffering, and synchronization between the angel and the five control time slots that make up the control channel. The SAKI also scans and collects status information for the angel on its port circuit pack and, when polled, transmits this information to the archangel.

SAT

System access terminal

SCC

1. See single-carrier cabinet.
2. Serial communications controller

SCD

Switch-control driver

SCI

Switch communications interface

SCO

System control office

SCOTCH

Switch Conferencing for TDM Bus in Concentration Highway

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SCSI

See small computer system interface (SCSI).

SDDN

Software-Defined Data Network

SDI

Switched Digital International

SDLC

Synchronous data-link control

SDN

Software-defined network

SFRL

Single-frequency return loss

SID

Station-identification number

simplex system

A system that has no redundant hardware.

simulated bridged appearance

The same as a temporary bridged appearance; allows the terminal user (usually the principal) to bridge onto a call that had been answered by another party on his or her behalf.

single-carrier cabinet

A combined cabinet and carrier unit that contains one carrier. See also Multicarrier cabinet.

single-line voice terminal

A voice terminal served by a single-line tip and ring circuit (models 500, 2500, 7101A, 7103A).

SIT

Special-information tones

small computer system interface (SCSI)

An ANSI bus standard that provides a high-level command interface between host computers and peripheral devices.

SMDR

Station Message Detail Recording, known as Call Detail Recording in DEFINITY ECS.

SN

Switch Node

SNA

Systems Network Architecture

SNC

Switch Node Clock

SNI

Switch Node Interface

SNMP

Simple Network Management Protocol

software

A set of computer programs that perform one or more tasks.

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Glossary and Abbreviations

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SPE

Switch Processing Element

SPID

Service Profile Identifier

split

See ACD work mode.

split condition

A condition whereby a caller is temporarily separated from a connection with an attendant. A split condition automatically occurs when the attendant, active on a call, presses the start button.

split number

The split's identity to the switch and BCMS.

split report

A report that provides historical traffic information for internally measured splits.

split (agent) status report

A report that provides real-time status and measurement data for internally measured agents and the split to which they are assigned.

SSI

Standard serial interface

SSM

Single-site management

SSV

Station service

ST3

Stratum 3 clock board

staffed

Indicates that an agent position is logged in. A staffed agent functions in one of four work modes: Auto-In, Manual-In, ACW, or AUX-Work.

STARLAN

Star-Based Local Area Network

Station Message Detail Recording (SMDR)

An obsolete term now called CDR — a switch feature that uses software and hardware to record call data. See Call Detail Recording (CDR).

standard serial interface (SSI)

A communications protocol developed for use with 500-type business communications terminals (BCTs) and 400-series printers.

status lamp

A green light that shows the status of a call appearance or a feature button by the state of the light (lit, flashing, fluttering, broken flutter, or unlit).

stroke counts

A method used by ACD agents to record up to nine customer-defined events per call when CMS is active.

SVN

Security-violation notification

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switch

Any kind of telephone switching system. See also communications system.

switchhook

The buttons located under the receiver on a voice terminal.

switch-node (SN) carrier

A carrier containing a single switch node, power units, and, optionally, one or two DS1 converter circuit packs. An SN carrier is located in a center-stage switch.

switch-node (SN) clock

The circuit pack in an SN carrier that provides clock and maintenance alarm functions and environmental monitors.

switch-node interface (SNI)

The basic building block of a switch node. An SNI circuit pack controls the routing of circuit, packet, and control messages.

switch-node link (SNL)

The hardware that provides a bridge between two or more switch nodes. The SNL consists of the two SNI circuit packs residing on the switch nodes and the hardware connecting the SNIs. This hardware can include lightwave transceivers that convert the SNI's electrical signals to light signals, the copper wire that connects the SNIs to the lightwave transceivers, a full-duplex fiber-optic cable, DS1 converter circuit cards and DS1 facilities if a company does not have rights to lay cable, and appropriate connectors.

switch-processing element (SPE)

A complex of circuit packs (processor, memory, disk controller, and bus-interface cards) mounted in a PPN control carrier. The SPE serves as the control element for that PPN and, optionally, for one or more EPNs.

SXS

Step-by-step

synchronous data transmission

A method of sending data in which discrete signal elements are sent at a fixed and continuous rate and specified times. See also association.

SYSAM

System Access and Administration

system administrator

The person who maintains overall customer responsibility for system administration. Generally, all administration functions are performed from the Management Terminal. The switch requires a special login, referred to as the system administrator login, to gain access to system-administration capabilities.

system printer

An optional printer that may be used to print scheduled reports via the report scheduler.

system report

A report that provides historical traffic information for internally measured splits.

system-status report

A report that provides real-time status information for internally measured splits.

system manager

A person responsible for specifying and administering features and services for a system.

system reload

A process that allows stored data to be written from a tape into the system memory (normally after a power outage).

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T1

A digital transmission standard that in North America carries traffic at the DS1 rate of 1.544 Mbps. A T1 facility is divided into 24 channels (DS0s) of 64 kbps. These 24 channels, with an overall digital rate of 1.536 Mbps, and an 8-kbps framing and synchronization channel make up the 1.544-Mbps transmission. When a D-channel is present, it occupies channel 24. T1 facilities are also used in Japan and some Middle-Eastern countries.

TAAS

Trunk Answer from Any Station

TABS

Telemetry asynchronous block serial

TAC

Trunk-access code

tandem switch

A switch within an electronic tandem network (ETN) that provides the logic to determine the best route for a network call, possibly modifies the digits outpulsed, and allows or denies certain calls to certain users.

tandem through

The switched connection of an incoming trunk to an outgoing trunk without human intervention.

tandem tie-trunk network (TTTN)

A private network that interconnects several customer switching systems.

TC

Technical consultant

TCM

Traveling class mark

TDM

See time-division multiplexing (TDM).

TDR

Time-of-day routing

TEG

Terminating extension group

terminal

A device that sends and receives data within a system. See also administration terminal.

tie trunk

A telecommunications channel that directly connects two private switching systems.

time-division multiplex (TDM) bus

A bus that is time-shared regularly by preallocating short time slots to each transmitter. In a PBX, all port circuits are connected to the TDM bus, permitting any port to send a signal to any other port.

time-division multiplexing (TDM)

Multiplexing that divides a transmission channel into successive time slots. See also multiplexing.

time interval

The period of time, either one hour or one-half hour, that BCMS measurements are collected for a reports.

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time slice

See **time interval**.

time slot

64 kbps of digital information structured as eight bits every 125 microseconds. In the switch, a time slot refers to either a DS0 on a T1 or E1 facility or a 64-kbps unit on the TDM bus or fiber connection between port networks.

time slot sequence integrity

The situation whereby the N octets of a wideband call that are transmitted in one T1 or E1 frame arrive at the output in the same order that they were introduced.

to control

An application can invoke *Third Party Call Control* capabilities using either an adjunct-control or domain-control association.

to monitor

An application can receive *event reports* on an active-notification, adjunct-control, or domain-control association.

TOD

Time of day

tone ringer

A device with a speaker, used in electronic voice terminals to alert the user.

TOP

Task-oriented protocol

trunk

A dedicated telecommunications channel between two communications systems or COs.

trunk allocation

The manner in which trunks are selected to form wideband channels.

trunk-data module

A device that connects off-premises private-line trunk facilities and DEFINITY ECS. The trunk-data module converts between the RS-232C and the DCP, and can connect to DDD modems as the DCP member of a modem pool.

trunk group

Telecommunications channels assigned as a group for certain functions that can be used interchangeably between two communications systems or COs.

TSC

Technical Service Center

TTI

Terminal translation initialization

TTR

Touch-tone receiver

TTT

Terminating trunk transmission

TTTN

See tandem tie-trunk network (TTTN).

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TTY

Teletypewriter

U

UAP

Usage-allocation plan

UART

Universal asynchronous transmitter

UCD

Uniform call distribution

UCL

Unrestricted call list

UDP

See Uniform Dial Plan (UDP).

UL

Underwriter Laboratories

UM

User manager

Uniform Dial Plan (UDP)

A feature that allows a unique 4- or 5-digit number assignment for each terminal in a multiswitch
configuration such as a DCS or main-satellite-tributary system.

UNMA

Unified Network Management Architecture

UNP

Uniform numbering plan

UPS

Uninterruptible power supply

USOP

User service-order profile

UUCP

UNIX-to-UNIX Communications Protocol

UUI

User-to-user information

V

VAR

Value-added reseller

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VDN

See vector directory number (VDN).

vector directory number (VDN)

An extension that provides access to the Vectoring feature on the switch. Vectoring allows a customer to specify the treatment of incoming calls based on the dialed number.

vector-controlled split

A hunt group or ACD split administered with the vector field enabled. Access to such a split is possible only by dialing a VDN extension.

VIS

Voice Information System

VLSI

Very-large-scale integration

VM

Voltmeter

VNI

Virtual nodepoint identifier

voice terminal

A single-line or multiappearance telephone.

W

WATS

See Wide Area Telecommunications Service (WATS).

WCC

World-Class Core

WCR

World-Class Routing

WCTD

World-Class Tone Detection

WFB

Wireless fixed base

Wide Area Telecommunications Service (WATS)

A service in the United States that allows calls to certain areas for a flat-rate charge based on expected usage.

wideband

A circuit-switched call at a data rate greater than 64 kbps. A circuit-switched call on a single T1 or E1 facility with a bandwidth between 128 and 1536 (T1) or 1984 (E1) kbps in multiples of 64 kbps. H0, H11, H12, and N x DS0 calls are wideband.

wideband access endpoint

Access endpoints, extended with wideband switching to include wideband access endpoints. A wideband access endpoint consists of one or more contiguous DS0s on a line-side T1 or E1 facility and has an extension. The Administered Connections feature provides call control for calls originating from wideband access endpoints.

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wink-start tie trunk

A trunk with which, after making a connection with a distant switching system for an outgoing call, the system waits for a momentary signal (wink) before sending the digits of the called number. Similarly, on an incoming call, the system sends the wink signal when ready to receive digits.

work mode

One of four states (Auto-In, Manual-In, ACW, AUX-Work) that an ACD agent can be in. Upon logging in, an agent enters AUX-Work mode. To become available to receive ACD calls, the agent enters Auto-In or Manual-In mode. To do work associated with a completed ACD call, an agent enters ACW mode.

work state

An ACD agent may be a member of up to three different splits. Each ACD agent continuously exhibits a work state for every split of which it is a member. Valid work states are Avail, Unstaffed, AUX-Work, ACW, ACD (answering an ACD call), ExtIn, ExtOut, and OtherSpl. An agent's work state for a particular split may change for a variety of reasons (example: when a call is answered or abandoned, or the agent changes work modes). The BCMS feature monitors work states and uses this information to provide BCMS reports.

write operation

The process of putting information onto a storage medium, such as a hard disk.

WSA

Waiting session accept

WSS

Wireless Subscriber System

Z

ZCS

Zero Code Suppression

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