



*Quick
Start
Guide*

OmniAccess 600-
series Routers

T1 and E1 products

Related Guides

Installation Guide: OmniAccess 600-series Routers

Refer to this guide for more detailed information about safety and how to install, configure, operate, and troubleshoot this product.

Command Reference Guide

This guide provides detailed information and examples about how to use CLI commands in an E1/J1 network environment.

Routing User Guide

This guide provides detailed information and examples about using routing commands on Alcatel products for RIPv1, RIPv2, OSPF, BGP4, and other routing protocols.

Configurations Guide

This guide provides detailed examples of routing configurations.



CAUTION: To reduce the risk of fire, use only number 26 AWG or larger UL Listed or CSA Certified Telecommunication Line Cord for all network connections.



CAUTION: Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

Hardware Notice

The Lithium battery in this product is part of a non-volatile memory device and will retain data for 10 years in the absence of power. Alcatel does not consider the lithium battery in this unit a field replaceable or serviceable part and should not be accessed by the customer.



WARNING: Before working on this equipment be aware of good safety practices and the hazards involved with electrical circuits.

The Alcatel OmniAccess 601, OmniAccess 602, and OmniAccess 604 multi-scalable router is designed to provide WAN to LAN networking connectivity for branch office communication and primary Internet access for medium-size businesses. The OmniAccess 601, OmniAccess 602, and OmniAccess 604 provides one or two WAN ports, two 10/100 Fast Ethernet ports, an AUX port, and a local/remote management Console port. Alternatively, WAN ports 1 and 2 can be utilized as a DSX interface for connecting to a PBX or key system.

Before You Begin

Unpacking and Inspecting

Inspect the shipping carton for damage. If any items are missing or defective, contact Alcatel at 818 880 3500. Save the original shipping carton and packing material in case you need to return the equipment to Alcatel.

The following items are shipped with this product.

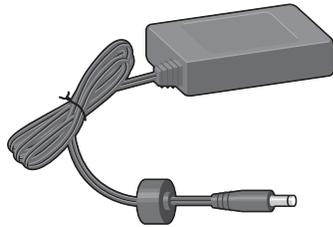
Figure 1 Items Shipped with the OmniAccess 601, OmniAccess 602, and OmniAccess 604 Router



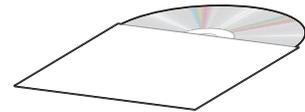
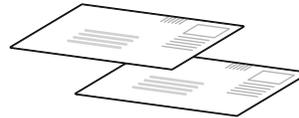
OmniAccess 601, OmniAccess 602, or OmniAccess 604 router
(OmniAccess 604 shown)



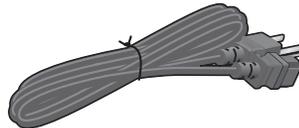
Quick start guide



Power supply for OmniAccess 602 and OmniAccess 604 -
OmniAccess 601 power supply plugs directly into an AC outlet



Product information and documentation CD ROM



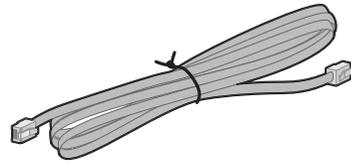
AC power cord



Female DB-9 to RJ-45 adapter (left) and male DB-25 to
RJ-45 modem adapter (right)



DC power cable retainer bracket

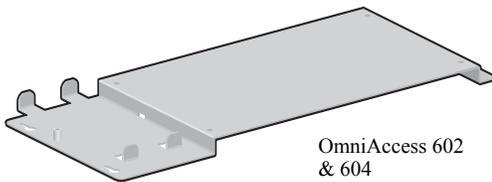


Console cable

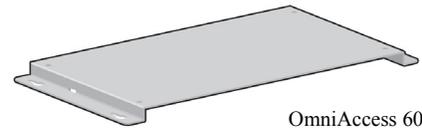
Wall-Mounting Option

An optional wall-mounting assembly is available for mounting the OmniAccess 601, OmniAccess 602, and OmniAccess 604 router on a vertical surface. The wall-mount components are shipped in the same box with the OmniAccess 601, OmniAccess 602, and OmniAccess 604 router and are shown in the following figure.

Figure 2 Wall-Mount Components



OmniAccess 602
& 604



OmniAccess 601

Wall-mount brackets



Power supply strap



Router to wall-mount bracket screws: (4) 4-40 x .250 inch
Phillips pan head



Hollow wall anchors

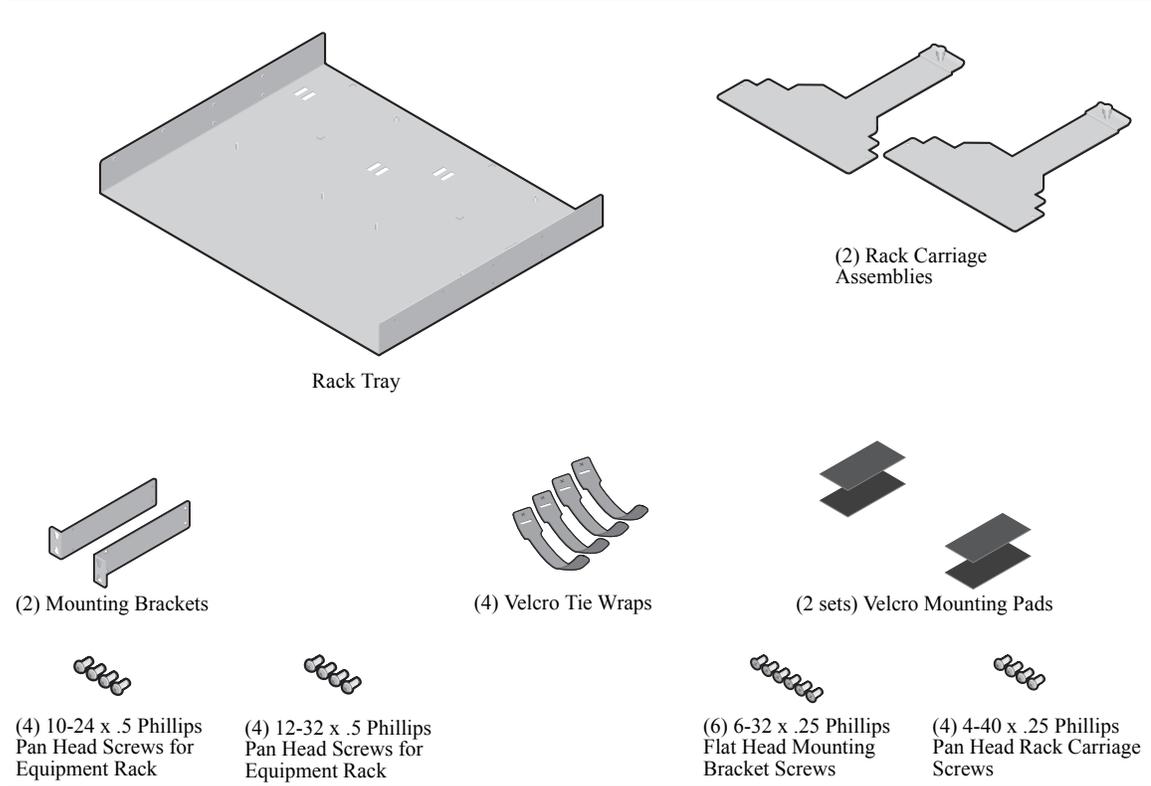


Wall-mount screws: (4) 6 x 1 inch Phillips pan head

Rack-Mounting Option

An optional rack-mounting tray is available for installing the OmniAccess 602 and OmniAccess 604 router in an equipment rack. The following items are shipped in a separate carton:

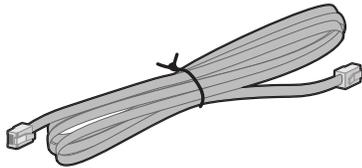
Figure 3 Rack-Mount Components



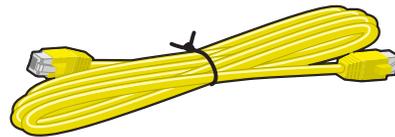
Additional Cables

The following additional cables are required for installing the OmniAccess 601, OmniAccess 602, and OmniAccess 604.

Figure 4 Additional Cables Required



One or two RJ-45, male/male, category 5, twisted-pair cable (Ethernet LAN connection)

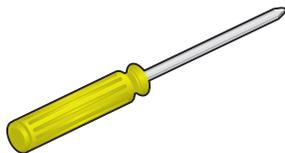


One or two RJ-48C, male/male, 26 AWG (minimum) category 5, straight-through cable (WAN connection)

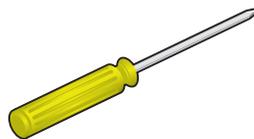
Tools Required

The following tools are required for installing the OmniAccess 601, OmniAccess 602, and OmniAccess 604.

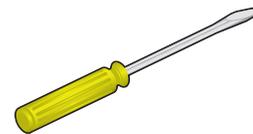
Figure 5 Tools Required for Installation



#2 Phillips screwdriver



#3 Phillips screwdriver



1/4 inch flat blade screwdriver

Installation Site

The OmniAccess 601, OmniAccess 602, and OmniAccess 604 is designed to be installed in an equipment rack; on a vertical surface; or on a flat, stable surface. The installation site should provide ample room for connecting cables and should not be subject to extreme temperature shifts. The router should be located in close proximity to all relevant telecommunication ports.

Important Notice

 **NOTE:** Be sure to read this page before installing your router.

OmniAccess Wide Area Network (WAN) software releases are customized to support individual platforms. Please refer to the sections below to see which software release is supported on your OmniAccess WAN router. You can download the software at:

<http://eservice.ind.alcatel.com/public/oa600.cfm>

For information on contacting Alcatel for further assistance, see [Contacting Alcatel](#).

OA-WAN 601

The following software release is supported on the OmniAccess 601:

- 8.3.1

Do not attempt to install either Release 8.2.2 or 9.0 on this router.

OA-WAN 602 and OA-WAN 604

The following software release is supported on the OmniAccess 602 and 604:

- 8.2.2

Do not attempt to install either Release 8.3.1 or 9.0 on these routers.

OmniAccess 601 Router Components

The following section identifies and describes the OmniAccess 601 router network ports and LEDs. The 601 routers also support a Web User Interface which can be used to configure basic operational and security features. For more information on the Web UI, refer to the *OmniAccess 600-series Router Web User Interface User Guide*.

Figure 6 OmniAccess 601 Router Front Panel

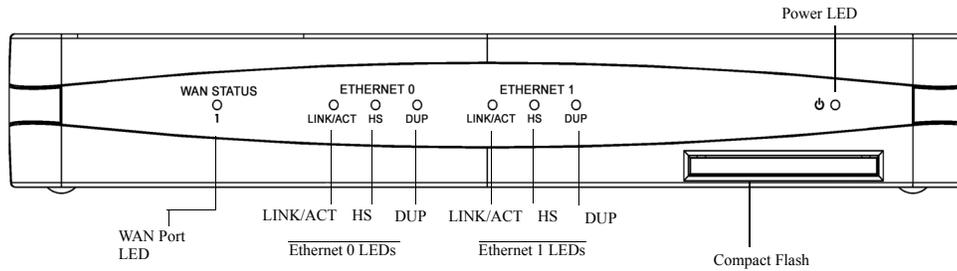
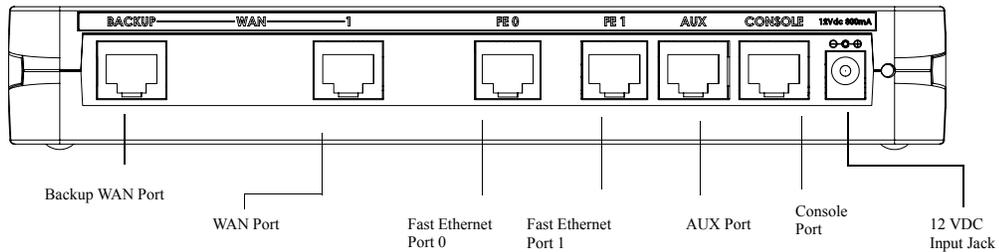


Figure 7 OmniAccess 601 Router Back Panel



Back Panel Ports

Table 1 provides information about ports located on the router back panel.

Table 1 OmniAccess 601 Back-Panel Ports

port	description
WAN 1	WAN connection port. These ports accept cables with RJ-48C connectors.)
Backup WAN	An ISDN backup option is supported in releases 8.3 and higher. This option provides a backup if the primary network connection is lost. This port accepts cables with RJ-45 connectors.
FE 0 - FE 1	Ethernet LAN connection ports. These ports accept cables with RJ-45 cable connectors.
AUX	Reverse telnet connection. This port accepts a cable with an RJ-45 cable connector.
Console	Console management port. This port accepts a cable with an RJ-45 cable connector.
DC power	12 VDC power connection. This port accepts the 2 mm power connector on the power supply cable that ships with the OmniAccess 601 router.

Front Panel LEDs

The Alcatel OmniAccess 601 router front-panel LEDs indicate real-time unit status. Table 2 provides information about how to interpret the LED states. For more detailed LED information and troubleshooting tips, refer to the *OmniAccess 600-series Installation Guide*.

Table 2 *OmniAccess 601 Router LEDs*

LED	description	color
WAN Status	Indicates traffic activity on this interface	Green = normal activity Red = alarm state Yellow = test mode
Ethernet 0/1		
Link/Act	Indicates traffic activity on this interface	Green = link is operational Blinking Yellow = either receiving or sending traffic Red = packet collisions
HS	Indicates traffic speed on the interface	Off = 10 Mbps Green = 100 Mbps
Dup	Indicates the type of duplex mode	Off = Half duplex Green = Full duplex
Power	Indicates router power status	Off = power off Green = power on

OmniAccess 602 Router Components

The following section identifies and describes the OmniAccess 602 router network ports and LEDs. The 602 series routers also support a Web User Interface which can be used to configure basic operational and security features. For more information on the Web UI, refer to the *OmniAccess 600-series Router Web User Interface User Guide*.

Figure 8 OmniAccess 602 Router Front Panel

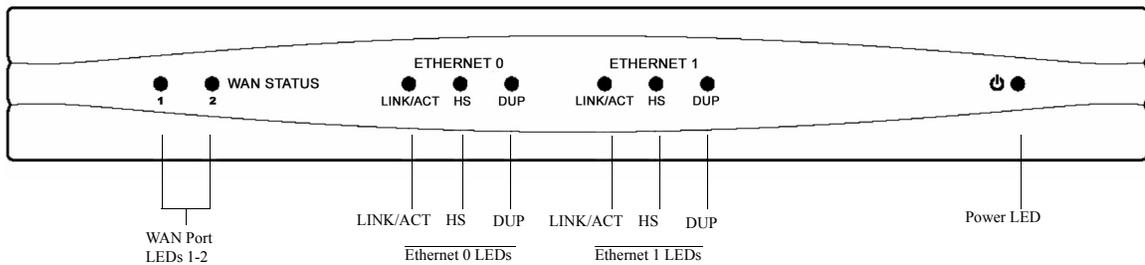
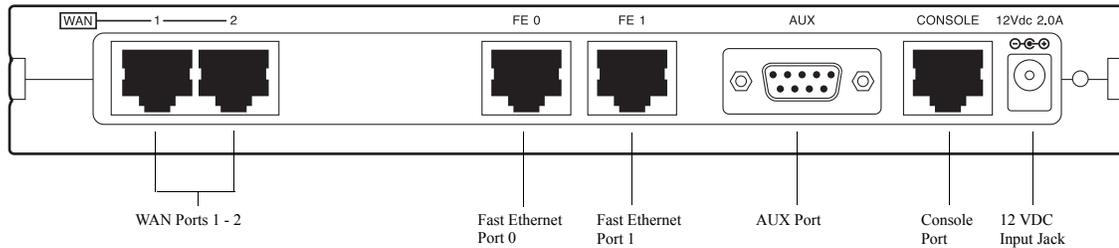


Figure 9 OmniAccess 602 Router Back Panel



Back Panel Ports

Table 3 provides information about ports located on the router back panel.

Table 3 OmniAccess 602 Back-Panel Ports

port	description
WAN 1 - WAN 2	WAN connection port. These ports accept cables with RJ-48C connectors. If drop and insert is configured, then ports 1 and 2 are reserved for that feature.
FE 0 - FE 1	Ethernet LAN connection ports. These ports accept cables with RJ-45 cable connectors.
AUX	Reverse telnet connection. This port accepts a cable with a male DB-9 connector.
Console	Console management port. This port accepts a cable with an RJ-45 cable connector.
DC power	12 VDC power connection. This port accepts the 2 mm power connector on the power supply cable that ships with the OmniAccess 602 router.

Front Panel LEDs

The Alcatel OmniAccess 602 router front-panel LEDs indicate real-time unit status. Table 4 provides information about how to interpret the LED states. For more detailed LED information and troubleshooting tips, refer to the *OmniAccess 601, OmniAccess 602, and OmniAccess 604 Installation Guide*.

Table 4 *OmniAccess 602 Router LEDs*

LED	description	color
WAN Status 1-2	Indicates traffic activity on this interface	Green = normal activity Red = alarm state Yellow = test mode
Ethernet 0/1		
Link/Act	Indicates traffic activity on this interface	Green = link is operational Blinking Yellow = either receiving or sending traffic Red = packet collisions
HS	Indicates traffic speed on the interface	Off = 10 Mbps Green = 100 Mbps
Dup	Indicates the type of duplex mode	Off = Half duplex Green = Full duplex
Power	Indicates router power status	Off = power off Green = power on

OmniAccess 604 Router Components

The following section identifies and describes the OmniAccess 604 router network ports and LEDs. The 604 series routers also support a Web User Interface which can be used to configure basic operational and security features. For more information on the Web UI, refer to the *OmniAccess 600-series Router Web User Interface User Guide*.

Figure 10 OmniAccess 604 Router Front Panel

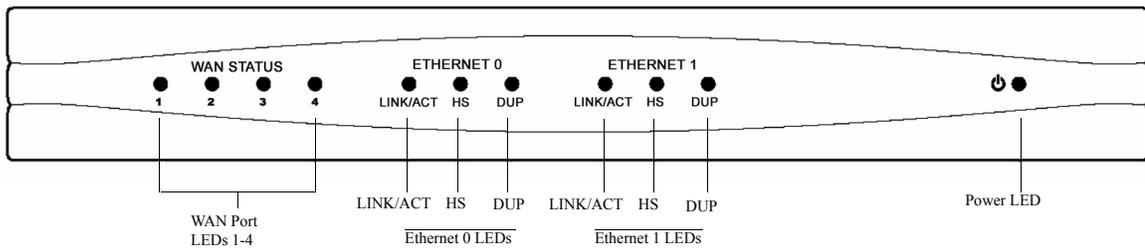
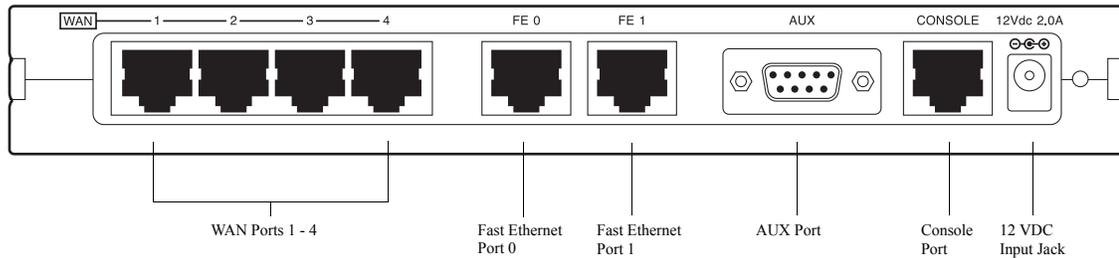


Figure 11 OmniAccess 604 Router Back Panel



Back Panel Ports

Table 3 provides information about ports located on the router back panel.

Table 5 OmniAccess 604 Back-Panel Ports

port	description
WAN 1 - WAN 4	WAN connection port. These ports accept cables with RJ-48C connectors. If drop and insert is configured, then ports 1 and 2 are reserved for that feature.
FE 0 - FE 1	Ethernet LAN connection ports. These ports accept cables with RJ-45 cable connectors.
AUX	Reverse telnet connection. This port accepts a cable with a male DB-9 connector.
Console	Console management port. This port accepts a cable with an RJ-45 cable connector.
DC power	12 VDC power connection. This port accepts the 2 mm power connector on the power supply cable that ships with the OmniAccess 604 router.

Front Panel LEDs

The Alcatel OmniAccess 604 router front-panel LEDs indicate real-time unit status. Table 4 provides information about how to interpret the LED states. For more detailed LED information and troubleshooting tips, refer to the *OmniAccess 601, OmniAccess 602, and OmniAccess 604 Installation Guide*.

Table 6 *OmniAccess 604 Router LEDs*

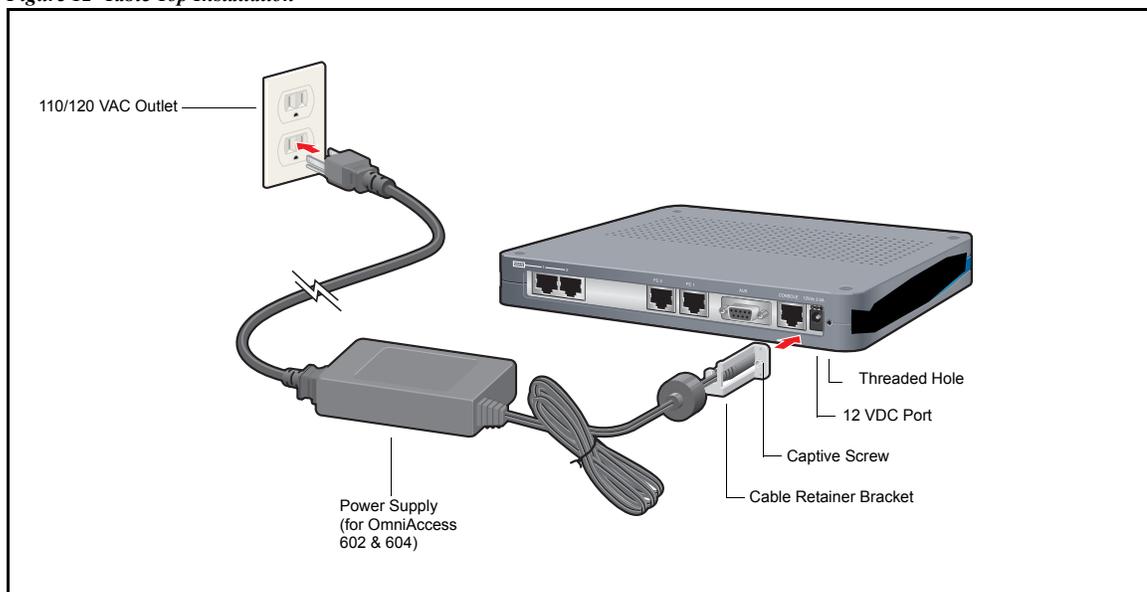
LED	description	color
WAN Status 1-4	Indicates traffic activity on this interface	Green = normal activity Red = alarm state Yellow = test mode
Ethernet 0/1		
Link/Act	Indicates traffic activity on this interface	Green = link is operational Blinking Yellow = either receiving or sending traffic Red = packet collisions
HS	Indicates traffic speed on the interface	Off = 10 Mbps Green = 100 Mbps
Dup	Indicates the type of duplex mode	Off = Half duplex Green = Full duplex
Power	Indicates router power status	Off = power off Green = power on

Installing the OmniAccess 600-Series Router

The OmniAccess 601, OmniAccess 602, and OmniAccess 604 router can be installed on a table top, in a Telco equipment rack (using the optional rack-mounting tray), or on a vertical surface (using the optional wall-mounting assembly). The router ships with a Console cable. You will need to obtain additional cables for your specific application. Refer to Figure 4 for more information.

Table Top Installation

Figure 12 Table Top Installation



To install the OmniAccess 601, OmniAccess 602, and OmniAccess 604 router for operation on a table top, follow this procedure. Refer to Figure 12 which shows a Model OmniAccess 602.

- 1 Place the router on the table surface.
- 2 Attach the cable retainer to the DC power cord behind the molded strain relief on the cable.
- 3 Insert the DC power cable jack into the 12 VDC port on the back of the router.
- 4 Engage and secure the captive screw on the cable retainer in the threaded hole adjacent to the DC input jack on the router.
- 5 Connect the appropriate ends of the AC power cord to the power supply and a 110/120 VAC outlet.

i **NOTE:** Ensure that cables are routed out of the way of foot traffic.

Wall-Mount Installation

Figure 13 Wall Mounting the OmniAccess 601 Router

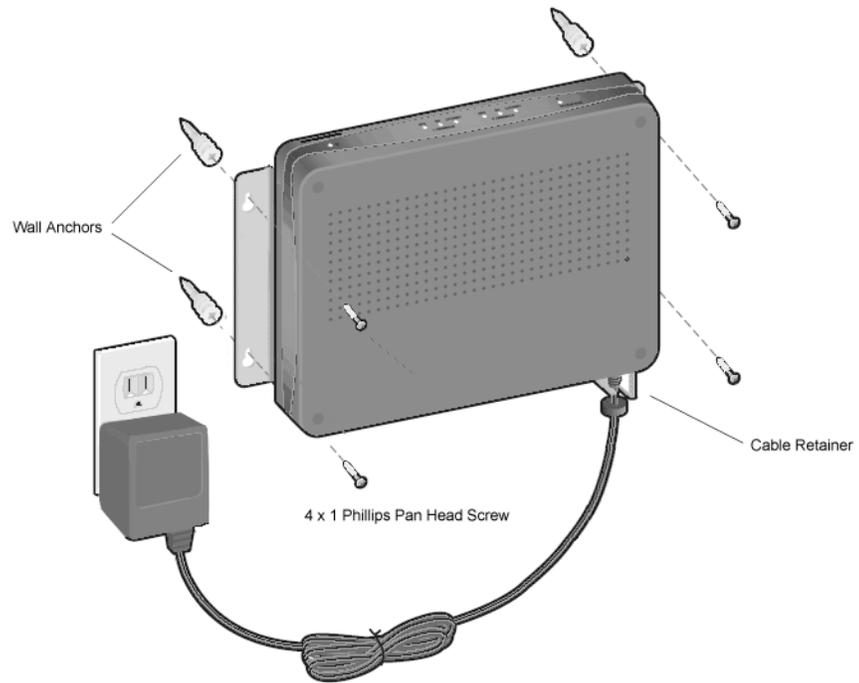
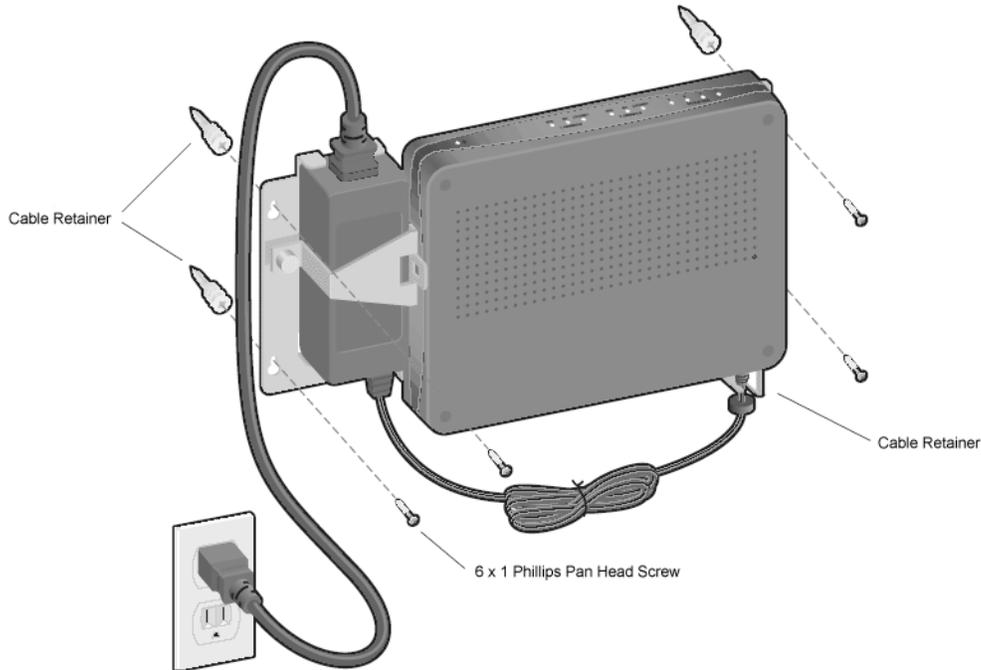


Figure 14 Wall Mounting the OmniAccess 602 and OmniAccess 604 Router



Follow this procedure to mount the Alcatel OmniAccess 601, OmniAccess 602, and OmniAccess 604 router on a vertical surface. Refer to Figure 14.

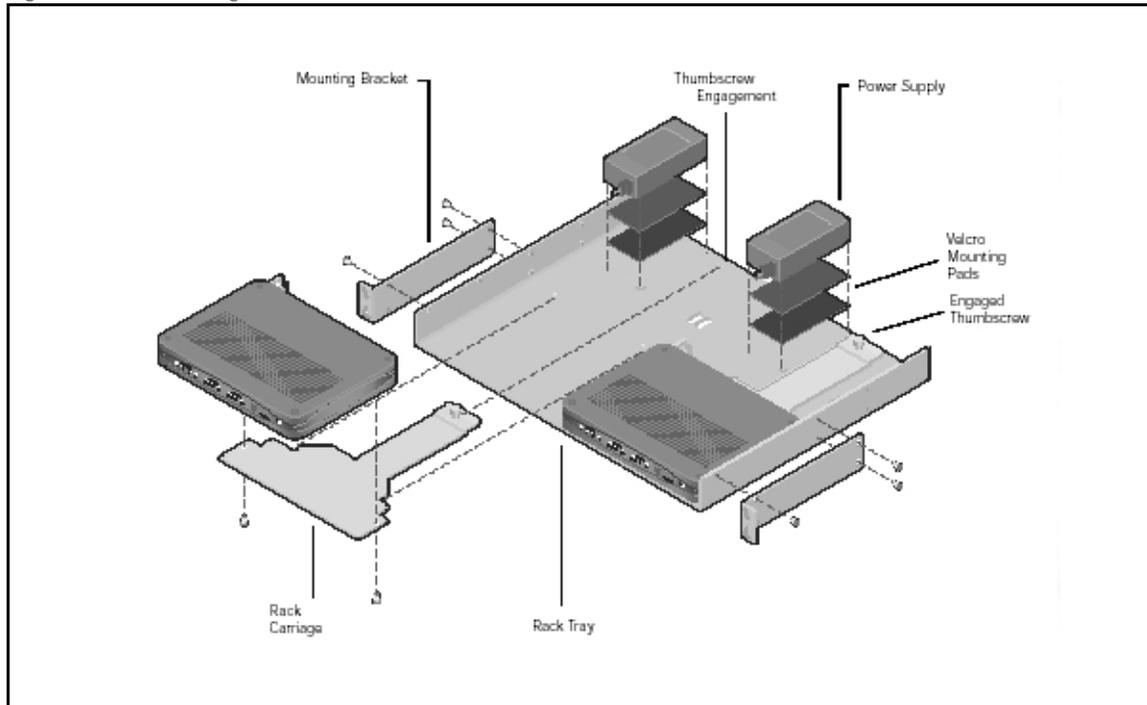
- 1 Attach the router to the wall mount bracket using the four (provided) Phillips pan head 4-40 x .250 inch screws. Ensure that the router is oriented in a manner that allows the LEDs to be visible.
- 2 Attach the assembly with the mounted router to the wall surface using the four (provided) 6 x 1 inch (for OmniAccess 602 and OmniAccess 604) screws or 4 x 1 inch screws (for OmniAccess 601) and hollow wall plastic anchors.

NOTE: The provided hollow wall anchors are not designed for installation in hard walls. These anchors should only be installed in a sheet rock (gypsum wall board) wall.

- 3 Fit the AC strap over the power supply and then place the power supply on the wall mount bracket within the four locating tabs.
- 4 Engage and tighten the AC strap captive screw to secure the power supply to the wall mount assembly.
- 5 Attach the cable retainer to the DC power cord behind the molded strain relief on the cable.
- 6 Insert the DC power cable jack into the 12 VDC port on the back of the router.
- 7 Engage and secure the captive screw on the cable retainer in the threaded hole adjacent to the DC input jack on the router.
- 8 Connect the appropriate ends of the AC cord to the secured power supply and a 110/120 VAC outlet.

Rack-Mount Installation

Figure 15 Rack Mounting the OmniAccess 602 and OmniAccess 604 Router



Follow this procedure to install the Alcatel OmniAccess 602 and OmniAccess 604 router in an equipment rack using the optional rack tray assembly. Refer to Figure 15.

- 1 Determine the mounting position for the rack tray in the equipment rack (*front or mid-mount*). Attach the mounting brackets using the six provided 6-32 x .25 inch flat head Phillips screws. Use two screws for the rear bracket holes and one screw for the front upper hole. (The bottom front hole on each bracket is not used.)
- 2 Attach the router to the rack carriage using two of the four provided Phillips pan head 4-40 x .25 inch screws.
- 3 Attach mating Velcro mounting pads to the rack tray and the bottom of the power supply, and then attach the power supply to the rack tray.
- 4 Attach the cable retainer bracket to the DC power cord just behind the molded strain relief on the cord.
- 5 Insert the jack connector on the DC power cord into the 12 VDC port on the back of the router.
- 6 Engage the captive screw on the cable retainer bracket into the threaded hole adjacent to the DC input jack on the router. Tighten the captive screw.
- 7 Slide the mounted router and rack carriage onto the rack tray and engage the thumbscrew on the rack carriage into the hole provided near the back edge of the rack tray. Tighten the thumbscrew.
- 8 Connect the network cables to the router ports and roughly dress the cables.

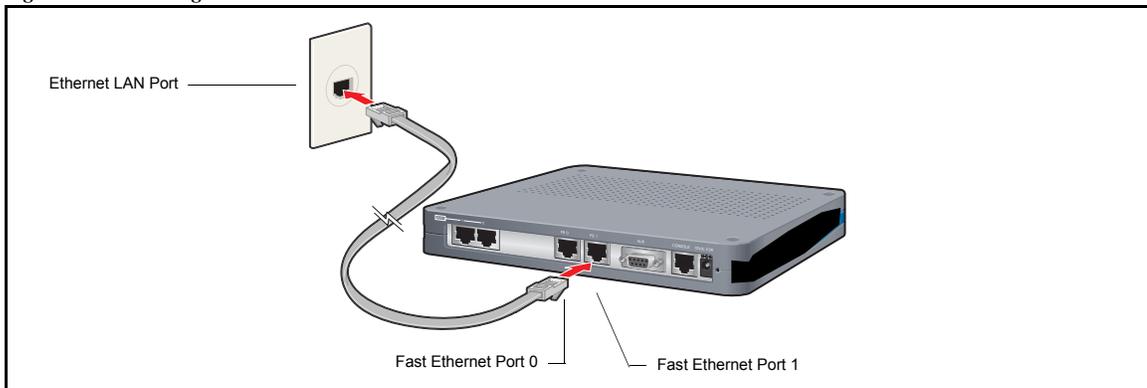
- 9 Position the populated rack tray in the equipment rack.
- 10 Secure the rack tray to the equipment rack with either set of the four provided screws. (Select the screw set that is compatible with the equipment rack hole threads.)
- 11 Complete the cable dressing. Coil the excess power cord and secure it on the tray behind the router using the provided Velcro tie wraps.
- 12 Plug the AC power cord into a standard 110/220 VAC outlet.

Network Connections

The following sections describe how to connect various network cables to the router.

Connecting the Ethernet Cable

Figure 16 Connecting the Ethernet Cable



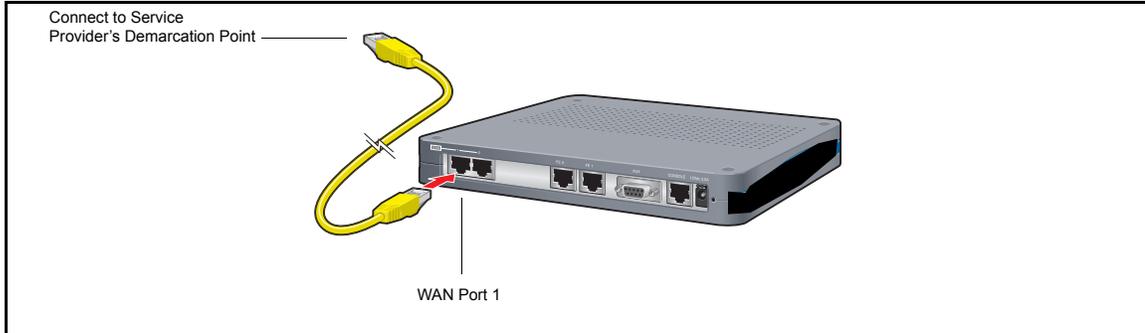
Follow this procedure to connect the OmniAccess 601, OmniAccess 602, and OmniAccess 604 to an Ethernet LAN network. Refer to Figure 16.

- 1 Connect the RJ-45 connector of a category 5 rated Ethernet cable to either the Ethernet 0 or Ethernet 1 port.
- 2 Connect the other end of the Ethernet cable to the LAN port.

Make sure that the cable connectors are locked and secure in the ports.

For cable pinout information, refer to Appendix A in the *OmniAccess 601, OmniAccess 602, and OmniAccess 604 Installation Guide*.

Figure 17 Connecting the WAN Cable



Follow this procedure to connect a WAN port to the network. Refer to Figure 17.

- 1 Connect the RJ-48C connector of a WAN cable to an active license-enabled WAN port.
- 2 Connect the other end of the WAN cable to the service provider's demarcation point.

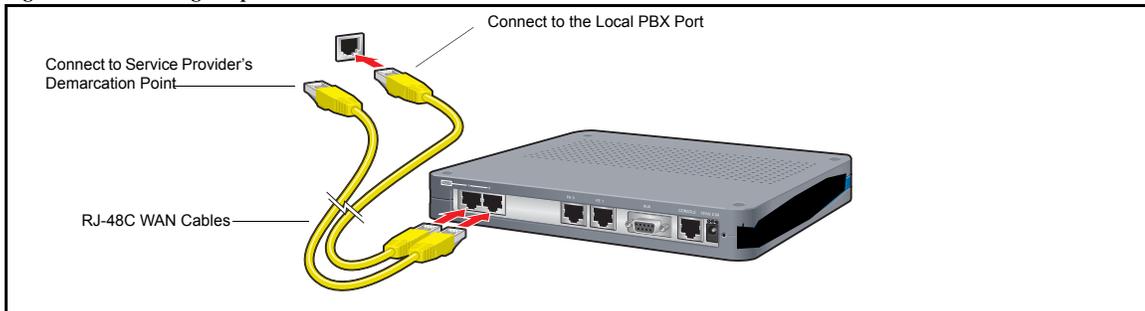
Make sure that the cable connectors are locked and secure in the ports.

For cable pinout information, refer to Appendix A in the *OmniAccess 601, OmniAccess 602, and OmniAccess 604 Router Installation Guide*.

Connecting Cables for Drop and Insert Multiplexing

The OmniAccess 602 and OmniAccess 604 router can be used to connect a PBX to a carrier facility. If this mode is used, the PBX is connected to WAN port 1 and the DS0s are mapped to the carrier facility on WAN port 2. To establish drop and insert connectivity, use two 26 AWG (minimum) category 5, twisted-pair cables with RJ 48C connectors.

Figure 18 Connecting Drop and Insert Cables



To connect drop and insert cables, follow this procedure. Refer to Figure 18.

- 1 Insert the RJ-48C connector of one end of one WAN cable in WAN port 1 on the router.
- 2 Connect the other end of this cable to the local PBX port.
- 3 Insert the connector on one end of the second cable to WAN port 2 on the router.
- 4 Connect the other end of this cable to the service provider's demarcation point.

For information about configuring drop and insert, refer to the *OmniAccess 601, OmniAccess 602, and OmniAccess 604 Installation Guide* and the *Command Reference Guide*.

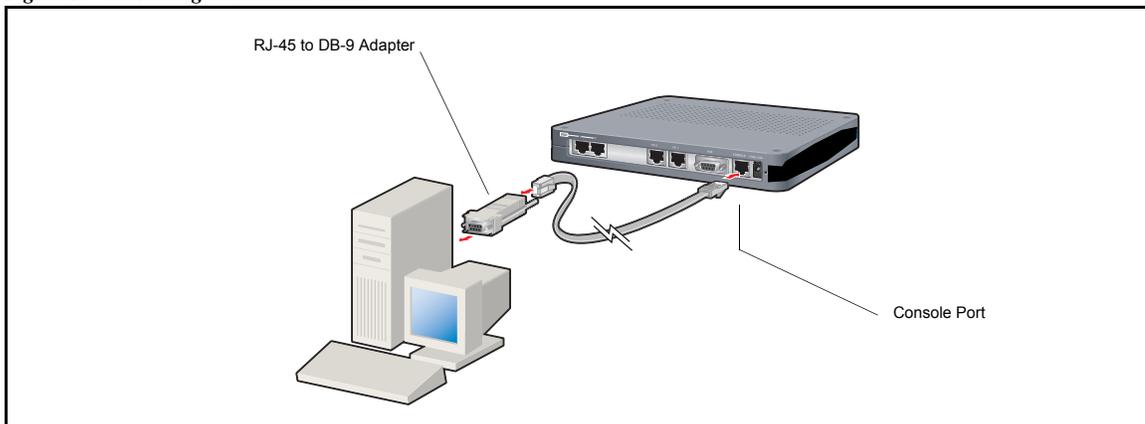
Management Interface

To configure and manage the OmniAccess 601, OmniAccess 602, and OmniAccess 604 router using the Alcatel command line interface (CLI), an operator console must be connected to the router. Refer to “Connecting the Ethernet Cable” on page 18 for connection details. The operator console can be connected with either a local or a remote connection. It is also possible to telnet to the OmniAccess 601, OmniAccess 602, and OmniAccess 604 router once an IP address has been configured on an Ethernet port.

Local Management

To configure, operate, and manage the OmniAccess 601, OmniAccess 602, and OmniAccess 604 locally, connect the Console port to a workstation or a terminal (VT-100 or equivalent) that is running terminal emulation software.

Figure 19 *Connecting the Console Cable*



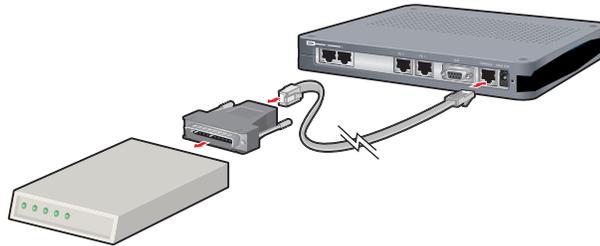
Follow this procedure to connect the Console cable: Refer to Figure 19.

- 1 Connect the Console cable to the Console port on the router.
- 2 Connect the other end of the Console cable to the RJ-45 end of the DB-9 to RJ-45 modular adapter.
- 3 Connect the DB-9 end of the modular adapter to a management terminal or workstation.

Remote Management

A modem can be connected to the Console port and used to configure, operate, and manage the OmniAccess 601, OmniAccess 602, and OmniAccess 604 remotely.

Figure 20 Connecting the OmniAccess 601, OmniAccess 602, and OmniAccess 604 to a Modem



Follow this procedure to connect the OmniAccess 601, OmniAccess 602, and OmniAccess 604 to a modem. Refer to Figure 20.

- 1 Connect the male end of the DB-25 adapter to the female DB-25 port on the modem.
- 2 Connect one end of a supplied RJ-45 cable to the RJ-45 port in the DB-25 adapter.
- 3 Connect the other end of the RJ-45 cable to the Console port on the OmniAccess 601, OmniAccess 602, and OmniAccess 604.
- 4 Configure the modem for 9600 bps, 8 data bits, 1 stop bit, no parity, and XON/XOFF flow control. Refer to your modem documentation, if necessary. Consult the Alcatel Support website for additional configuration information.
If a workstation is used for the remote management console, use VT-100 terminal emulation software or equivalent, and configure the software as specified for modems.

Configuring the Router

The following sections introduce commands that you can use to log in as the system administrator, choose a host name, change the password, set the system date and time, enter an Ethernet IP address, establish a default route, switch modes, and save the configuration.

Logging In

```
Login: alcatel  
Password: switch
```

Choosing a Host Name

```
Alcatel> configure term  
Alcatel/configure> hostname ISP_name  
ISP_name/configure>
```

Changing the Password

```
Alcatel> password  
name: alcatel  
old password: switch  
new password: new_pass
```

```
re-enter password: new_pass
```

Passwords are case-sensitive and must be a minimum of three to a maximum of eight characters. For future reference, make a note of the password that you use.

Changing the Administrator Account Name

You can change the administrator login name (Level 1 access) to a user-specified name. The default is Alcatel.

The following commands change the administrator account name to Greg:

```
Alcatel> configure term  
Alcatel/configure> admin_name Greg
```

Configuring the Date and Time

Date and time are set using the **configure date** and the **configure utc** commands.

To configure the date, enter the month, day, and year. For example, to set the date to April 30, 2005, enter:

```
Router/configure> date 04 30 2005
```

To set the current time for the router in Universal Time Coordinated time, specify the time zone offset ahead (+) or behind (-) the time in Greenwich England), the number of hours ahead or behind Greenwich time, and the number of minutes ahead or behind the time in Greenwich.

For example, to set the local Pacific Standard Time to UTC time, enter:

```
Router_LA/configure> utc - UTCHours 8
```

Configuring an Ethernet IP Address and Subnet Mask

```
Alcatel> configure term  
Alcatel/configure> interface ethernet 0  
Alcatel/configure/interface/ethernet 0> ip address 10.1.100.28 255.255.255.0
```

Configuring a Default Route

```
Alcatel/configure> ip route 0.0.0.0 0 10.1.100.xxx
```

In the above example, "xxx" represents the gateway.

Switching Routing/IPMux Modes

To switch from dynamic routing mode to IPMux mode, issue the following command:

```
Alcatel/configure> no system routing
```

To switch from IPMux back to dynamic routing mode, issue the following command:

```
Alcatel/configure> system routing
```

Interface Port Configuration

The following are examples of T1, CT3, and DS3 interface configurations. To scroll through the options available at any command prompt, press the Tab key. For descriptions of the options available at any command prompt, type **help** and press Enter.

E1 Interface

```
Router> configure term  
Router/configure> module e1 4  
Router/configure/module/e1 4> clock_source line  
Router/configure/module/e1 4> framing crc  
Router/configure/module/e1 4> exit 2  
Router/configure> cabletype monitor_port 1 twisted_pair  
Router/configure> module e1 4  
Router/configure/module/e1 4> linecode hdb3  
Router/configure/module/e1 4> yellow_alarm gen_det  
Router/configure/module/e1 4> exit 3
```

T1 Interface

```
Router> configure term  
Router/configure> module t1 4  
Router/configure/module/t1 4> clock_source line  
Router/configure/module/t1 4> framing esf  
Router/configure/module/t1 4> linecode b8zs  
Router/configure/module/t1 4> yellow_alarm gen_det  
Router/configure/module/t1 4> exit 3
```

Bundle Configuration

Alcatel systems support PPP, MLPPP, FR, MFR, and Cisco-compatible HDLC for WAN data transmission.

NOTE: Bundle names cannot exceed eight characters.

E1/PPP Bundle

```
Router> configure term
Router/configure> interface bundle HongKong
Router/configure/interface/bundle HongKong> link e1 4
Router/configure/interface/bundle HongKong> encapsulation ppp
Router/configure/interface/bundle HongKong> ip address 199.1.1.1 255.255.255.0
Router/configure/interface/bundle HongKong> exit 3
```

NxE1/MLPPP Bundle

```
Router> configure term
Router/configure> interface bundle Paris
Router/configure/interface/bundle Paris> link e1 5-8
Router/configure/interface/bundle Paris> encapsulation ppp
Router/configure/interface/bundle Paris> ip address 200.1.1.1 255.255.255.0
Router/configure/interface/bundle Paris> exit 3
```

NxE1/MFR Bundle

```
Router> configure term
Router/configure> interface bundle Madrid
Router/configure/interface/bundle Madrid> link e1 3-4
Router/configure/interface/bundle Madrid> encapsulation fr
Router/configure/interface/bundle Madrid> fr
Router/configure/interface/bundle Madrid/fr> intf_type dce
Router/configure/interface/bundle Madrid/fr> lmi
Router/configure/interface/bundle Madrid/fr/lmi> keepalive 12
Router/configure/interface/bundle Madrid/fr/lmi> exit
Router/configure/interface/bundle Madrid/fr> pvc 16
Router/configure/interface/bundle Madrid/fr/pvc 16> shaping cir 1920000
Router/configure/interface/bundle Madrid/fr/pvc 16> exit
Router/configure/interface/bundle Madrid/fr> enable interface
Router/configure/interface/bundle Madrid/fr> exit 4
```

Fractional E1/Cisco-compatible HDLC Bundle

```
Router> configure term
Router/configure> interface bundle London
Router/configure/interface/bundle London> link e1 3:1-6
```

```
Router/configure/interface/bundle London> encapsulation hdlc  
Router/configure/interface/bundle London> hdlc keepalive 20  
Router/configure/interface/bundle London> ip address 192.168.2.1 255.255.255.0  
Router/configure/interface/bundle London> exit 3
```

Fractional T1/Cisco-compatible HDLC Bundle

```
Router> configure term  
Router/configure> interface bundle Denver  
Router/configure/interface/bundle Denver> link t1 3:1-6  
Router/configure/interface/bundle Denver> encapsulation hdlc  
Router/configure/interface/bundle Denver> hdlc keepalive 20  
Router/configure/interface/bundle Denver> ip address 192.168.2.1 255.255.255.0  
Router/configure/interface/bundle Denver> exit 3
```

T1/PPP Bundle

```
Router> configure term  
Router/configure> interface bundle Boston  
Router/configure/interface/bundle Boston> link t1 4  
Router/configure/interface/bundle Boston> encapsulation ppp  
Router/configure/interface/bundle Boston> ip address 199.1.1.1 255.255.255.0  
Router/configure/interface/bundle Boston> exit 3
```

NxT1/MLPPP Bundle

```
Router> configure term  
Router/configure> interface bundle Houston  
Router/configure/interface/bundle Houston> link ct3 1 5-8  
Router/configure/interface/bundle Houston> encapsulation ppp  
Router/configure/interface/bundle Houston> ip address 200.1.1.1 255.255.255.0  
Router/configure/interface/bundle Houston> exit 3
```

The following are examples of frame relay and PPP bundles configured for DS3 WAN transmission.

NxT1/MFR Bundle

```
Router> configure term  
Router/configure> interface bundle Seattle  
Router/configure/interface/bundle Seattle> link t1 3-4  
Router/configure/interface/bundle Seattle> encapsulation fr  
Router/configure/interface/bundle Seattle> fr  
Router/configure/interface/bundle Seattle/fr> intf_type dce  
Router/configure/interface/bundle Seattle/fr> lmi  
Router/configure/interface/bundle Seattle/fr/lmi> keepalive 12  
Router/configure/interface/bundle Seattle/fr/lmi> exit  
Router/configure/interface/bundle Seattle/fr> pvc 16
```

```
Router/configure/interface/bundle Seattle/fr/pvc 16> shaping cir 3072000 bccmax 30720000 bcmin 1536000  
Router/configure/interface/bundle Seattle/fr/pvc 16> exit  
Router/configure/interface/bundle Seattle/fr> enable interface  
Router/configure/interface/bundle Seattle/fr> exit 4
```

Frame Relay Bundle

```
Router> configure term  
Router/configure> interface bundle Rome  
Router/configure/ interface/bundle Rome> link e1 3  
Router/configure/ interface/bundle Rome> encapsulation fr  
Router/configure/ interface/bundle Rome> fr  
Router/configure/ interface/bundle Rome/fr> intf_type dce  
Router/configure/ interface/bundle Rome/fr> lmi  
Router/configure/ interface/bundle Rome/fr/lmi> keepalive 12  
Router/configure/ interface/bundle Rome/fr/lmi> exit  
Router/configure/ interface/bundle Rome/fr> pvc 16  
Router/configure/ interface/bundle Rome/fr/pvc 16> shaping cir 2048000  
Router/configure/ interface/bundle Rome/fr/pvc 16> exit  
Router/configure/ interface/bundle Rome/fr> enable interface  
Router/configure/ interface/bundle Rome/fr> exit 4
```

Routing Configuration

Alcatel products support RIP, OSPF, and BGP4 routing protocols.

RIP

Configuring RIP for Ethernet 0 and WAN 1 interfaces.

```
Router> configure terminal  
Router/configure> router rip  
Router/configure/router rip> interface ethernet0  
Router/configure/router rip/interface ethernet0> exit  
Router/configure/router rip> interface wan1  
Router/configure/router rip/interface wan1> exit 3
```

OSPF

Configuring OSPF between a LAN and a WAN over multiple CT3 links running MLPPP.

```
Router> configure terminal  
Router/configure> interface ethernet 0  
Router/configure/interface/ethernet 0> ip address 10.10.10.1 24  
Router/configure/interface/ethernet 0> exit 2  
Router/configure> interface bundle Dallas
```

```

Router/configure/interface/bundle Dallas> link ct3 1 1-10
Router/configure/interface/bundle Dallas> encapsulation ppp
Router/configure/interface/bundle Dallas> ip address 20.20.20.1 24
Router/configure/interface/bundle Dallas> exit 2
Router/configure> router routerid 10.10.10.1
Router/configure> router ospf
Router/configure/router/ospf> area 760
Router/configure/router/ospf/area 760> exit
Router/configure/router/ospf> interface Dallas area_id 760
Router/configure/router/ospf/interface Dallas> cost 10
Router/configure/router/ospf/interface Dallas> exit
Router/configure/router/ospf> interface ethernet0 area_id 760
Router/configure/router/ospf/interface ethernet0> cost 10
Router/configure/router/ospf/interface ethernet0> priority 0
Router/configure/router/ospf/interface ethernet0> exit 3

```

BGP4

Configuring EBGP between two different autonomous systems.

```

Router/configure> interface bundle Chicago
Router/configure/interface/bundle Chicago> link ct3 1 1-10
Router/configure/interface/bundle Chicago> encapsulation ppp
Router/configure/interface/bundle Chicago> ip address 20.20.20.1 24
Router/configure/interface/bundle Chicago> exit
Router/configure> router bgp 10
Router/configure/router/bgp 10> neighbor 20.20.20.2 20
Router/configure/router/bgp 10/neighbor 20.20.20.2 20> exit 3

```

Configuring IBGP between two neighbors in the same autonomous system.

```

Router/configure> interface ethernet 0
Router/configure/interface/ethernet 0> ip address 10.10.10.1 24
Router/configure/interface/ethernet 0> exit
Router/configure> router bgp 10
Router/configure/router/bgp 10> neighbor 10.10.10.2 10
Router/configure/router/bgp 10/neighbor 10.10.10.2 10> exit 3

```

Redistributing static and connected routes.

```

Router/configure> ip route 9.9.0.0 255.255.0.0 10.10.10.10
Router/configure> router bgp 10
Router/configure/router/bgp 10> redistribute static
Router/configure/router/bgp 10> redistribute connected
Router/configure/router/bgp 10> exit 2

```

Saving Configurations

Execute the following command to save new configurations to system memory.

```
Alcatel> write memory
```

i **NOTE:** Before powering down the OmniAccess 601, OmniAccess 602, and OmniAccess 604, execute a **write memory** command to save the router configuration.

Execute the following command to save new configurations to a network host. You must identify the host name or IP address, the host directory that the file is being transferred to, and the new file name.

```
Alcatel> write network 10.1.100.149 /maindir/config01.txt
```

i **NOTE:** When saving to a network host, the host directory and file name must already exist.

About the Alcatel Router Documentation CD-ROM

This product ships with a CD that includes the following:

- Alcatel Router Quick Start Guides*
- Alcatel Router Installation Guides*
- Command Reference Guide*
- Router User Guide*
- Configuration Guide*

Navigation

Upon inserting the *Alcatel Router Documentation* CD into your PC's CD-ROM drive, a browser session is initiated and the navigation screen is displayed. Click a link to open a pdf version of the target documentation. If you do not have Adobe Acrobat (version 4.0 or later) or Acrobat Reader installed on your PC, click the Adobe icon on the navigation screen to download a free Acrobat Reader application.

Printing Documents

- 1 Open the desired pdf document by clicking the document link in the CD navigation window.
- 2 Click the "Printer" icon on the Adobe Acrobat tool bar.
- 3 In the "Windows Print" dialog box, select a local default printer in the printers drop down selection box.
- 4 Click "OK."

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Alcatel warrants that the Hardware sold hereunder shall be free of defects in workmanship for a period of one (1) year from the Date of Shipment. In the event that Alcatel receives notice from the Customer during the warranty period that any Hardware does not conform to this warranty, Alcatel, shall, at its sole option, either repair or replace the non-conforming Hardware. If said notice is received within ninety (90) days of shipment from the Alcatel factory in 26801 West Agoura Road Calabasas, CA 91301, such replacement shall be "Next Business Day." If said notice is received after ninety (90) days from shipping from Alcatel, the Customer must ship the defective Hardware to Alcatel for repair. Such repair shall take no more than ten (10) business days. Cost of shipping to Alcatel shall be at the Customer's expense. Cost of shipping the repaired unit to the Customer shall be at Alcatel's expense. Under the terms of any such warranty, Hardware may be replaced with refurbished or new Hardware at Alcatel's option.

For instructions on obtaining Return Material Authorization (RMA), which is required before Hardware under warranty can be returned to Alcatel, refer to Procedures below.

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Alcatel warrants that the media on which the Software is recorded shall be free from defects in material and workmanship under normal use for a period of ninety (90) days from the Date of Shipment. The Customer's sole and exclusive remedy, and Alcatel sole and exclusive liability, shall be replacement of the media in accordance with this limited warranty. The Customer shall be entitled to free

Software upgrades (bug fixes and feature enhancements not listed as separate cost options of the Alcatel price list) from the Alcatel website for the first ninety (90) days after shipment from Alcatel.

Technical Support

Online, phone, and email Technical Support is provided free of charge for a period of ninety (90) days from the Date of Shipment. Technical Support is available online at the Alcatel website: www.alcatel.com, by phone at: 800 995 2696 (within the United States) or 800 995 4507 (outside the United States), or by email at: support@ind.alcatel.com. Technical Support provides the following services:

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- Technical Support will provide assistance to the Customer regarding questions concerning the installation of Software updates and configuration questions arising from Software updates.
- Technical Support will work with the Customer to develop and implement appropriate network configurations.

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A product may only be returned with the prior written approval of Alcatel. Such approval shall reference a Return Material Authorization (RMA) number issued by authorized Alcatel Technical Support personnel. To contact Alcatel Technical Support, call 800 995 2696 (within the United States) or 800 995 4507 (outside the United States), or email at support@ind.alcatel.com. Transportation costs, if any, incurred in connection with the return of a defective item to Alcatel shall be borne by the Customer. Transportation costs incurred in connection with the re-delivery of a repaired or replaced item to the Customer shall be borne by Alcatel. However, such costs shall be borne by the Customer if Alcatel reasonably determines that the product is not defective. If Alcatel determines, in its sole discretion, that the allegedly defective product is not covered by the terms of the warranty provided hereunder, or that a warranty claim is made after the warranty period, the cost of repair by Alcatel, including all shipping expenses, shall be reimbursed by the Customer. Alcatel, shall have no liability with respect to data contained in any system returned to Alcatel.

For complete contact information for Alcatel, see Contacting Alcatel below.

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In the event this equipment should fail to operate properly, disconnect the unit from the telephone line and contact Alcatel Technical Support at the address and phone number listed in below. **DO NOT DISASSEMBLE THIS EQUIPMENT.** This equipment does not contain any user-serviceable components. If the equipment is causing harm to the network, the telephone company may request that you disconnect this equipment from the telephone network until the problem is resolved.



Contacting Alcatel

Telephone	818 880 3500
Fax	818 880 3505
Mail	26801 West Agoura Road Calabasas, CA 91301
Sales	818 880 3500
Support	800 995 2696 (US) 800 995 4507 (International)
Email	support@ind.alcatel.com
Internet	http://eservice.ind.alcatel.com
