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# **Reference for the Contivity Branch Access Command Line Interface Version 7.20**

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# Contents

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<b>Preface</b> .....	<b>13</b>
Before you begin .....	13
Text conventions .....	14
Acronyms .....	15
Related publications .....	18
How to get help .....	19
<b>Chapter 1</b>	
<b>Using the command line interface</b> .....	<b>21</b>
Using out-of-band management .....	21
Enabling the Telnet service .....	21
Accessing the Contivity unit through a Telnet session .....	23
Providing the password .....	25
Entering commands .....	26
<b>Chapter 2</b>	
<b>Configuration command reference</b> .....	<b>29</b>
Available commands .....	29
Command access .....	30
User-level commands .....	30
Privileged-level commands .....	31
Character commands .....	31
? .....	31
Config commands .....	32
alias command .....	32
dhcp command .....	32
dialerd command .....	33
dns command .....	38

encapsulation command	40
filter command	41
framerelay command	44
hostname command	45
icmp command	46
ifconfig command	47
ip command	51
ipsec command	52
isdn command	56
name command	58
nat command	58
ppp command	60
pppoe command	62
route command	63
sync command	64
tcp command	66
time command	67
timezone option	68
offset: hh[:mm[:ss]] option	69
rule: date[/time],date[/time] option	69
wan command	71
Server commands	72
backup command	72
chargend command	72
dhcpcd command	73
discardd command	76
dnstproxyd command	76
echod command	77
identd command	77
logind command	77
ntpd command	78
plserver command	78
ripd command	79
snmp command	80
snmpd command	82

---

socksd command	83
syslog command	84
tcpserver command	86
telnetd command	86
webproxy command	87
webserver command	92
winsocserver command	93
Utility commands	94
arp command	94
cat command	94
commit command	96
config command	96
csu command	97
date command	98
dir command	99
enable command	100
exit command	101
log command	101
memory command	102
password command	102
Removing a password	103
ping command	103
restart command	107
rows command	107
sap command	107
system command	108
trace command	108
traceroute command	110
udp command	110
winsoc command	111
xfer command	111

<b>Chapter 3</b>	
<b>Using the configuration commands</b>	<b>115</b>
Changing between user-level and privileged-level access	115
Using the xfer command	116
Backing up a configuration remotely	116
Restoring a configuration remotely	117
Updating unit firmware remotely	119
Setting up multiple PPPoE interfaces	120
Specifying the workstation name for a cable modem connection	121
Using NetMeeting	122
Accessing secure Web sites	123
Backing up an Ethernet interface with a dial-up connection	123
Spoofing a MAC address	124
Using DHCP	124
Specifying an option by its number and parameter	125
DHCP scope-specific options	126
DHCP BootP support	126
<b>Index</b>	<b>127</b>

---

## Figures

---

Figure 1	Services dialog box	22
Figure 2	Telnet Configuration dialog box	23
Figure 3	AniTa General Settings dialog box	24
Figure 4	Privileged-level command prompt	25
Figure 5	User-level command prompt	26
Figure 6	Sample valid options	27
Figure 7	Sample command statistics	27
Figure 8	Implied OR between options	28
Figure 9	Config, Server, and Utility commands	29
Figure 10	Sample valid options	31



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## Tables

---

Table 1	alias command options	32
Table 2	dhcp command options	33
Table 3	dialerd command options	34
Table 4	dialerd script command options	37
Table 5	dns command options	39
Table 6	encapsulation command options	40
Table 7	filter command options	41
Table 8	framerelay command options	45
Table 9	hostname command options	45
Table 10	icmp command options	46
Table 11	ifconfig command options	48
Table 12	ip command options	51
Table 13	ip counters	52
Table 14	ipsec command options	53
Table 15	isdn command options	57
Table 16	nat command options	59
Table 17	ppp command options	60
Table 18	pppoe command options	62
Table 19	route command options	63
Table 20	sync command options	64
Table 21	tcp command options	66
Table 22	time command options	67
Table 23	timezone command options	68
Table 24	timezone command date formatting methods	69
Table 25	wan command options	71
Table 26	backup command options	72
Table 27	dhcpcd command options	74
Table 28	ntpd command options	78
Table 29	ripd command options	79

Table 30	Supported SNMP trap events	81
Table 31	snmp command options	81
Table 32	snmpd command options	82
Table 33	socksd command options	83
Table 34	syslog command options	85
Table 35	telnetd command options	87
Table 36	webproxy command options	88
Table 37	webserver command options	92
Table 38	winsockserver command options	93
Table 39	arp command option	94
Table 40	cat command option	95
Table 41	commit command option	96
Table 42	csu command option	97
Table 43	date command option	98
Table 44	dir command option	99
Table 45	log command information	101
Table 46	ping command options	105
Table 47	sap command information	108
Table 48	trace command options	109
Table 49	traceroute command options	110
Table 50	xfer command options	112
Table 51	URL components for specifying an FTP server	113

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## Preface

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Contivity\* Branch Access is a network gateway system that enables users to access the Internet safely and efficiently using management tools for tracking and blocking user activities.

### Before you begin

If you are responsible for configuring Contivity Branch Access, you need to read this manual.

The information in this manual can help you:

- Obtain information about enabling and using the Telnet or out-of-band management function to remotely access your Contivity unit.
- Obtain information about the commands you can use to remotely configure your Contivity unit.

Before you use this manual, you must do the following:

- Install the Contivity Branch Access hardware. Depending on your hardware, refer to one of the following manuals on the *Contivity Branch Access Software and Documentation Version 7.20* CD shipped with your Contivity unit:
  - *Setting Up the Contivity 100 Unit*
  - *Setting Up the Contivity 400 Unit*
- Install or locate terminal emulation software on your system. For details on installing the AniTa Terminal Emulator\* software that is on your CD, refer to *Installing the Contivity Branch Access Management Software Version 7.20*.

## Text conventions

This manual uses the following text conventions:

- angle brackets (<>) Indicate that you choose the text to enter based on the description inside the brackets. Do not type the brackets when entering the command.
- Example: If the command syntax is:
- ```
ping <ip_address>, you enter:
```
- ```
ping 192.32.10.12
```
- bold courier text** Indicates text that you need to enter and command names and options.
- Example: Enter **chargend {start | stop}**
- Example: Use the **commit** command.
- braces ({} ) Indicate required elements in syntax descriptions where there is more than one option. You must choose only one of the options. Do not type the braces when entering the command.
- Example: If the command syntax is:
- ```
chargend {start | stop}, you must enter either:
```
- ```
chargend start or chargend stop
```
- brackets ([ ]) Indicate optional elements in syntax descriptions. Do not type the brackets when entering the command.
- Example: If the command syntax is:
- ```
commit [undo], you can enter either:
```
- ```
commit or commit undo
```
- ellipsis points (... ) Indicate that you repeat the last element of the command as needed.
- Example: If the command syntax is:
- ```
backup start <interface> <interface> ...
```
- you enter and start as many interfaces as needed.

|                    |                                                                                                                                                                                                                                                                                                                                       |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>italic text</i> | Indicates file and directory names, new terms, book titles, and variables in command syntax descriptions. Where a variable is two or more words, the words are combined to form one word.<br><br>Example:<br><code>ipsec defaultnetwork &lt;ipadr&gt;</code>                                                                          |
| screen text        | Indicates system output, for example, prompts and system messages.<br><br>Example:<br><code>Instant Internet (tm) version 7.20<br/>Copyright (c) 1995-2000 Nortel Networks<br/>Corporation<br/>ii&gt;</code>                                                                                                                          |
| separator (>)      | Shows menu paths.<br><br>Example: <b>File &gt; Exit</b> identifies the Exit option on the File menu.                                                                                                                                                                                                                                  |
| vertical line ( )  | Separates choices for command keywords and arguments. Enter only one of the choices. Do not type the vertical line when entering the command.<br><br>Example: If the command syntax is:<br><code>chargend {start   stop}</code> , you must enter either:<br><code>chargend start</code> or <code>chargend stop</code> , but not both. |

## Acronyms

The following acronyms are used in this manual:

|       |                                                    |
|-------|----------------------------------------------------|
| AMI   | Alternate Mark Inversion                           |
| ANSI  | American National Standards Institute              |
| ARP   | Address Resolution Protocol                        |
| ASCII | American Standard Code for Information Interchange |
| ATDT  | Attention Dial Tone                                |
| B8ZS  | Bi-polar 8/Zero Substitution                       |
| BootP | Bootstrap Protocol                                 |

|       |                                                                                                    |
|-------|----------------------------------------------------------------------------------------------------|
| BRI   | Basic Rate Interface                                                                               |
| CAS   | Channel Associated Signaling                                                                       |
| CCS   | Common Channel Signaling                                                                           |
| CDT   | Central Daylight Time                                                                              |
| CHAP  | Challenge Handshake Authentication Protocol                                                        |
| CLI   | Command Line Interface                                                                             |
| CST   | Central Standard Time                                                                              |
| CSU   | Channel Service Unit                                                                               |
| CVS   | Contivity VPN Switch                                                                               |
| DDNS  | Dynamic Domain Name Service                                                                        |
| DES   | Data Encryption Standard                                                                           |
| DHCP  | Dynamic Host Configuration Protocol                                                                |
| DNS   | Domain Name Service                                                                                |
| DTR   | Data Transfer Rate                                                                                 |
| ESF   | Extended SuperFrame Format                                                                         |
| EST   | Eastern Standard Time                                                                              |
| FTP   | File Transfer Protocol                                                                             |
| FQDN  | Fully Qualified Domain Name                                                                        |
| GMT   | Greenwich Mean Time                                                                                |
| HDB3  | High Density Bipolar of Order 3                                                                    |
| HTTP  | Hypertext Transfer Protocol                                                                        |
| HTTPS | Hypertext Transfer Protocol Secure                                                                 |
| ICMP  | Internet Control Message Protocol                                                                  |
| IP    | Internet Protocol                                                                                  |
| IPX   | Internet Packet Exchange                                                                           |
| ISDN  | Integrated Services Digital Network                                                                |
| ITU-T | International Telecommunication Union-Telecommunication Standardization on Sector (formerly CCITT) |
| L4    | Layer 4                                                                                            |
| LAN   | Local Area Network                                                                                 |
| LBO   | Line Build Out                                                                                     |
| LCP   | Link Control Protocol                                                                              |
| LMI   | Local Management Interface                                                                         |

|       |                                       |
|-------|---------------------------------------|
| MAC   | Media Access Control                  |
| MD5   | Message Digest 5                      |
| MIB   | Managed Information Base              |
| MTU   | Maximum Transmission Unit             |
| NAT   | Network Address Translation           |
| NTP   | Network Time Protocol                 |
| PAP   | Password Authentication Protocol      |
| PFS   | Perfect Forward Secrecy               |
| PPP   | Point-to-Point Protocol               |
| PPPoE | Point-to-Point Protocol over Ethernet |
| PST   | Pacific Standard Time                 |
| PVC   | Permanent Virtual Circuit             |
| RAM   | Random Access Memory                  |
| RFC   | Request For Comment                   |
| RIP   | Routing Information Protocol          |
| ROM   | Read Only Memory                      |
| SAP   | Service Advertising Protocol          |
| SHA   | Secure Hash Algorithm                 |
| SNMP  | Simple Network Management Protocol    |
| SPID  | Service Profile Identifier            |
| SSL   | Secure Sockets Layer                  |
| TCP   | Transmission Control Protocol         |
| TFTP  | Trivial File Transfer Protocol        |
| UDP   | User Datagram Protocol                |
| URL   | Uniform Resource Locator              |
| UTC   | Coordinated Universal Time            |
| WINS  | Windows Internet Naming Service       |

## Related publications

For more information about using Contivity Branch Access, refer to the following publications:

- *Important Notice for the Contivity Branch Access Version 7.20*  
(part number 313368-A)  
Provides instructions for viewing documentation and installing the Contivity Branch Access management software and third-party applications (Adobe\* Acrobat Reader\*, Netscape Communicator\*, and AniTa Terminal Emulator).
- *Installing the Contivity Branch Access Management Software Version 7.20*  
(part number 313367-A)  
Provides instructions for installing the Contivity Branch Access management software.
- *Setting Up the Contivity 100 Unit* (part number 313369-A)  
Provides instructions for installing and administering the Contivity 100 unit hardware.
- *Setting Up the Contivity 400 Unit* (part number 313370-A)  
Provides instructions for installing and administering the Contivity 400 unit hardware.
- *Using the Contivity Branch Access Management Software Version 7.20*  
(part number 313371-A)  
Provides an introduction to Contivity Branch Access, instructions for administering the product, and procedures for using software features.
- *Contivity Branch Access Software and Documentation Version 7.20 CD*  
(part number 313374-A)  
Provides manuals for using and installing the Contivity Branch Access management software and third-party applications. The CD contains the following documents:
  - *Installing the Contivity Branch Access Management Software Version 7.20*
  - *Setting Up the Contivity 100 Unit*
  - *Setting Up the Contivity 400 Unit*
  - *Using the Contivity Branch Access Management Software Version 7.20*

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Version 7.20*

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# Chapter 1

## Using the command line interface

---

This chapter explains how to use the Contivity Branch Access command line interface (CLI) to set up, view, or modify the unit configuration. There are two ways to access the command line interface: out-of-band management and Telnet.

### Using out-of-band management

Out-of-band management provides an easy method to set up, view, or modify a Contivity unit's configuration either locally or remotely. Among many other suggestions for use, this utility makes it easy for a company with multiple sites but only one system administrator to set up a unit at each site without requiring that the system administrator travel to each site.

Using the AUX port on the Contivity unit, you can connect a PC directly to the unit or you can connect a modem to the unit and dial in to that modem for out-of-band management. For detailed instructions on connecting to the AUX port and setting up a unit for out-of-band management, refer to *Setting Up the Contivity 100 Unit* or *Setting Up the Contivity 400 Unit*.

### Enabling the Telnet service

This section explains how to enable the Telnet service in Contivity Branch Access and how to access and use the Contivity unit's command line interface (CLI). The Telnet service is enabled by default. This section explains how to verify or enable the Telnet service if it has been disabled.

You must use the Contivity Branch Access management software Setup utility to activate the Telnet service so that the Contivity unit can accept connections from a remote Telnet application.

To enable the Telnet service in Setup:

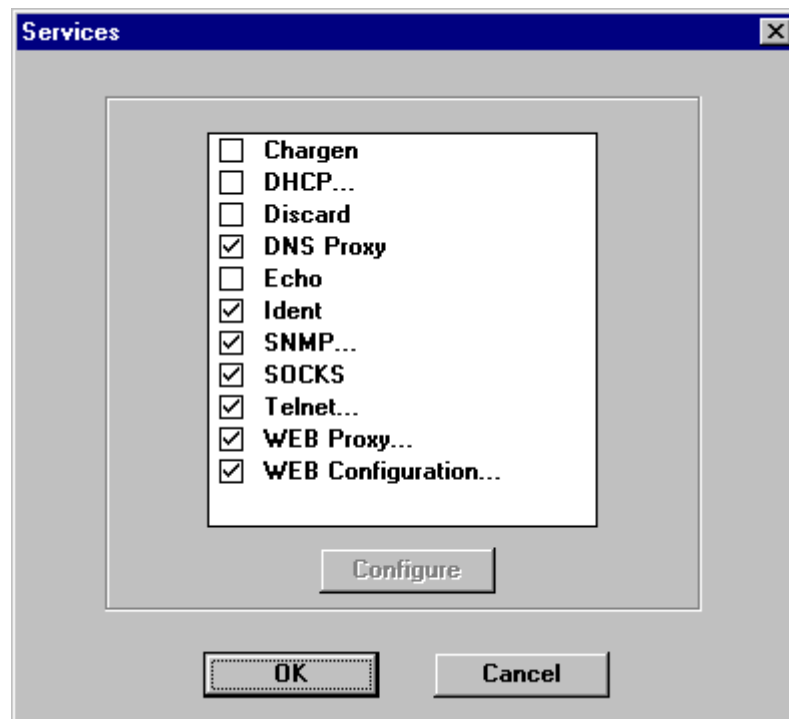
- 1 From the Windows\* 95, Windows 98, Windows Me, Windows NT\*, or Windows 2000 Start menu, choose Programs > Instant Internet > Setup.

The Setup program starts.

- 2 If prompted, select a unit to configure.
- 3 In the Instant Internet Setup main window, choose Support > Services.

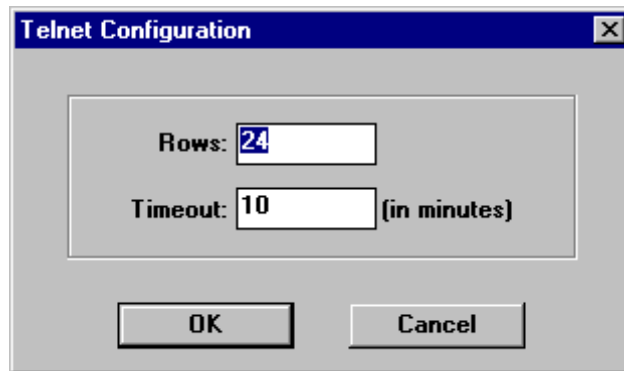
The Services dialog box opens (Figure 1).

**Figure 1** Services dialog box



- 4 Select the Telnet check box and then click Configure.

The Telnet Configuration dialog box opens.

**Figure 2** Telnet Configuration dialog box

- 5 Enter the following information:
  - **Rows** – Enter the number of rows to display on your Telnet client.
  - **Timeout** – Enter the number of minutes the Telnet session should wait for a command before automatically terminating.
- 6 Click OK until you return to the Setup main window.
- 7 Click Save and Exit.

A message box opens prompting you to select if you want the changes to take effect immediately.
- 8 Click Yes.

The Contivity unit restarts, and a message box opens prompting you to test the connection.
- 9 Click Yes.

The Test Connection Results message box opens.
- 10 Click OK.

## Accessing the Contivity unit through a Telnet session

Use this procedure if you want to use the Telnet application provided with Contivity Branch Access (AniTa Terminal Emulator). For instructions on installing AniTa Terminal Emulator, refer to Chapter 5 of *Installing the Contivity Branch Access Management Software Version 7.20*.

If you use a Telnet application other than AniTa Terminal Emulator, set the port in your Telnet application to 23. For instructions, refer to the guide that came with your Telnet application.

To access the Contivity unit through a Telnet session using AniTa Terminal Emulator:

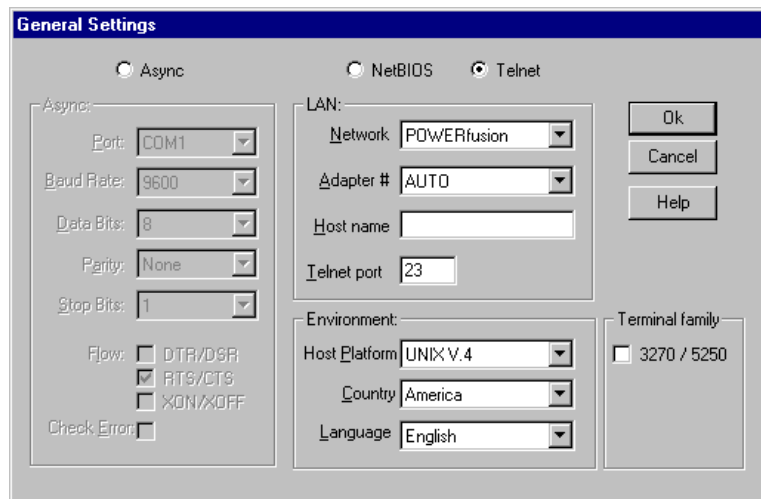
- 1 From the Windows 95, Windows 98, Windows Me, Windows NT, or Windows 2000 Start menu, choose Programs > AniTa 32 > AniTa 32.

The AniTa Terminal Emulator program starts.

- 2 Choose Config > General Settings.

The General Setting dialog box opens.

**Figure 3** AniTa General Settings dialog box



- 3 Select the Telnet option.

- 4 In the LAN area, enter the following information:
  - **Network** – Select Other from the list. If you are using Powerfusion®, select it in the list rather than Other.
  - **Adapter #** – Accept the default of AUTO. Telnet does not use this parameter.
  - **Host name** – Enter the IP address of the Contivity unit to which you want to connect.
  - **Telnet port** – Accept the default of 23.
- 5 Click OK.

## Providing the password

If the Contivity unit is password-protected, the Telnet or out-of-band management session begins by requesting a password. There are two levels of passwords available for Contivity Branch Access:

- **User** – The user-level password provides limited access to some commands in the command line interface (CLI).
- **Privileged** – The privileged-level password provides complete access to Contivity Branch Access configuration and utilities. Only users supplying the privileged password can configure the unit.



**Note:** Contivity units without a password automatically allow privileged access to all commands.

---

When you successfully log on to a Contivity unit, you see one of the following command prompts:

- [Figure 4](#) shows the privileged-level command prompt. Notice the pound sign (#) at the prompt.

### Figure 4 Privileged-level command prompt

```
Instant Internet(tm) version 7.20
Copyright (c) 1995-2001 Nortel Networks Corporation
ii#
```

- [Figure 5](#) shows the user-level command prompt. Notice the right carat (>) at the prompt.

**Figure 5** User-level command prompt

```
Instant Internet(tm) version 7.20
Copyright (c) 1995-2001 Nortel Networks Corporation
ii>
```

You can use the **enable** command to change your access type from user-level access to privileged-level access. For more information, see [“enable command” on page 100](#) and [“Changing between user-level and privileged-level access” on page 115](#).

For additional information about passwords, refer to [“password command” on page 102](#).



**Note:** If you enter an incorrect password, the message “Incorrect login” is displayed and you are prompted to enter a correct password. You can attempt to log on two more times before Contivity Branch Access ends the session and disconnects you.

---

## Entering commands

Commands take effect immediately but are not preserved across a restart unless you enter the **commit** command. Here are some tips for finding and using commands:

- To view a list of the commands, enter **?** at the command prompt.

For example:

```
ii> ?
```

- To view a list of options and their parameters, enter the command plus **?**.

For example:

```
ii> tcp ?
```

Sample valid options are shown in [Figure 6](#).

**Figure 6** Sample valid options

```
tcp [mss <value>
    window <value>]
```

- Square brackets [ ] enclose optional values and the angle brackets < > contain variables or arguments. For example, [*interface*] denotes an optional interface name.
- You can abbreviate commands and options as long as the abbreviation is long enough to uniquely identify the command. For example, you can abbreviate the **dialerd** command to **dial** because it is unique.
- Use abbreviated commands only in a Telnet or out-of-band management session.



**Note:** If you are using the Setup program or Web configuration to configure advanced TCP/IP settings, you cannot enter abbreviated commands.

- You must enter interface names in their entirety.
- Commands are *not* case-sensitive. For example, **dialerd isdn down** is the same as **DIALERD ISDN DOWN**.
- The command line interpreter maintains a history of entered commands. Press the up arrow to place previously entered commands on the command line.
- To interrupt the command, press [Ctrl]+C.
- To display statistics and settings for the command, type the command. [Figure 7](#) shows an example.

**Figure 7** Sample command statistics

```
ii> trace
eth1: tracing off
eth2: tracing off
```

- To end the Telnet or out-of-band management session, enter the **exit** command.
- All configuration changes you make to the unit through Telnet or out-of-band management take effect immediately; however, they are temporary and are lost when the unit is reset. This feature is useful if you want to experiment with commands, but do not want to change your unit configuration. To make the changes permanently, use the **commit** command.

- When options are listed on separate lines, there is an implied OR between the options.

For example, in [Figure 8](#), both `echo on` and `redirect on` are valid commands for `icmp`.

**Figure 8** Implied OR between options

```
icmp [echo      on | off  
      redirect on | off]
```

- For any command where you can enter an IP address as an option, you can also enter the name of an interface or host name in its place.

---

## Chapter 2

# Configuration command reference

---

This chapter provides definitions and examples of the Contivity Branch Access CLI commands for Telnet and out-of-band management.

## Available commands

Contivity Branch Access divides the CLI commands into three categories: Config, Server, and Utility. [Figure 9](#) lists these commands by category.

**Figure 9** Config, Server, and Utility commands

Config commands:

|               |          |            |          |
|---------------|----------|------------|----------|
| alias         | dhcp     | dialerd    | dns      |
| encapsulation | filter   | framerelay | hostname |
| icmp          | ifconfig | ip         | ipsec    |
| isdn          | name     | nat        | ppp      |
| pppoe         | route    | sync       | tcp      |
| time          | wan      |            |          |

Server commands:

|           |          |           |               |
|-----------|----------|-----------|---------------|
| backup    | chargend | dhcpcd    | discardd      |
| dnsproxyd | echod    | identd    | logind        |
| ntpd      | plserver | ripd      | snmp          |
| snmpd     | socksd   | syslog    | tcpserver     |
| telnetd   | webproxy | webserver | winsockserver |

Utility commands:

|          |         |         |            |
|----------|---------|---------|------------|
| arp      | cat     | commit  | config     |
| csu      | date    | dir     | enable     |
| exit     | log     | memory  | new        |
| password | ping    | restart | rows       |
| sap      | system  | trace   | traceroute |
| udp      | winsock | xfer    |            |



**Note:** Commands take effect immediately but are not preserved if the unit is restarted unless you enter the **commit** command. For details, refer to [“commit command” on page 96](#).

## Command access

Commands that modify the unit's behavior typically require a privileged-level password. Commands that display information can usually be accessed with a user-level password.



**Note:** You can use the **enable** command to change your access type from user-level access to privileged-level access. For more information, see [“enable command” on page 100](#).

---

## User-level commands

The following commands are available for the user-level password:

|        |         |            |
|--------|---------|------------|
| csu    | dir     | dns cache  |
| enable | exit    | log        |
| memory | ping**  | rows       |
| sap    | system  | traceroute |
| udp    | winsock |            |

\*\*Except background, monitor, and control.

The following commands show status or display information for the user-level password:

|            |               |         |
|------------|---------------|---------|
| arp        | backup        | date    |
| dhcp       | dhcpd         | dialerd |
| dns        | encapsulation | filter  |
| framerelay | hostname      | icmp    |
| ifconfig   | ip            | ipsec   |
| isdn       | logind        | name    |
| nat        | ntpd          | ppp     |
| pppoe      | ripd          | route   |
| snmp       | snmpd         | socksd  |

|         |          |           |
|---------|----------|-----------|
| sync    | syslog   | tcp       |
| telnetd | time     | trace     |
| wan     | webproxy | webserver |

User-level access includes the ability to view the help display (?) for any command.

### Privileged-level commands

All of the commands are available for the privileged-level password.

## Character commands

### ?

The question mark (?) displays a list of all available commands on the screen. To view a list of options and their parameters, enter the command plus ?.

For example:

```
ii> dns ?
```

Sample valid options are shown in [Figure 10](#).

#### Figure 10 Sample valid options

```
dns [add server <ipadr>
     drop server <ipadr>
     cache
     flush
     suffix <suffix>]
```

## Config commands

Use config commands to set up and configure interfaces on the unit.

### alias command

The **alias** command allows you to have two or more IP addresses and subnet masks for one physical interface. This capability provides a means for having both public and private IP addresses on the same LAN-side interface.

```
alias <name> <interface>
```

**Table 1** alias command options

| Option           | Definition                                                                                                                                                                                                                                           |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>name</i>      | Specifies an additional name for a physical interface. This name can be arbitrary and have its own IP address, subnet mask, and filters.<br><b>Note:</b> You may not use the <i>name</i> parameter to assign the alias a different hardware address. |
| <i>interface</i> | Specifies the name of the physical interface that is being assigned an alias.                                                                                                                                                                        |

Use the **ifconfig** command to assign an IP address (and subnet mask) to the alias.

#### **Example**

```
ii# alias webserver eth1  
ifconfig webserver 10.1.2.3
```

### dhcp command

The **dhcp** command is used to configure the interface using the Dynamic Host Configuration Protocol (DHCP). The **dhcp** command with no parameters shows the status of the DHCP client. The **dhcp** command is a privileged command.

```
dhcp [configure <interface> [<hostname>]  
      renew      <interface>  
      release    <interface>  
      bootp      <interface>]
```

Table 2 describes the **dhcp** command options.

**Table 2** dhcp command options

| Option    | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| configure | Instructs the specified interface to use DHCP to retrieve its IP address, netmask, default gateway, list of DNS servers, and domain name from a DHCP server.<br><br><i>hostname</i> – Specifies the name that the DHCP client uses to identify itself to the DHCP server. By default, the DHCP client uses the unit name (assigned during system setup). Some ISPs assign names that their customers must use to get an address from their DHCP servers. This parameter allows you to override the default and specify the name assigned by your ISP. |
| renew     | Renews the IP address leased to an interface by a DHCP server.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| release   | Releases the IP address leased to an interface by a DHCP server.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| bootp     | Instructs the specified interface to use BootP to retrieve its IP address, netmask, default gateway, list of DNS servers, and domain name from a BootP or DHCP server.                                                                                                                                                                                                                                                                                                                                                                                |
| interface | Specifies the name of the physical interface to be configured, renewed, released or for which you would like to use BootP.                                                                                                                                                                                                                                                                                                                                                                                                                            |

To undo a **dhcp** command configuration, use the **dhcp release** command. To remove the DHCP client, assign a static IP address with the **ipconfig** command.

### Example

```
ii# dhcp configure eth1
```

## dialerd command

The **dialerd** command displays or configures demand-dialing settings for the specified interface. Displaying the demand-dialing settings is available at the user level; however, configuring these settings is allowed only at the privileged level.

```

ii# dialerd ?
dialerd [<interface> [answer          callback | disable | enable | only
                    backup          <string>
                    command         <string>
                    delay            <seconds>
                    demand          <dialthreshold> <hangupthreshold> [<timeout>]
                    idletimeout     <seconds>
                    mode             coupled | demand | single
                    nodisable       on | off
                    number          <string>
                    up
                    down
                    script           [[line#] [answer] clear
                                    comment <text>
                                    control up | down
                                    delete
                                    dial
                                    parse [timeout]
                                    send <string>
                                    wait <timeout> [string]]

                    start
                    stop]]

```

**Table 3** describes the **dialerd** command options.

**Table 3** dialerd command options

| Option           | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>interface</i> | Specifies the physical interface name.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <i>answer</i>    | <p>Selects answer mode.</p> <p><i>callback</i> – Causes the unit to dial the number specified with the <i>number</i> option when an inbound call is detected. The number previously specified with the <i>number</i> option is dialed.</p> <p><i>disable</i> – Prevents the unit from answering.</p> <p><i>enable</i> – Allows the unit to answer.</p> <p><i>only</i> – Prevents the unit from dialing on the specified interface.</p> <p>(default: disable)</p>                                                           |
| <i>backup</i>    | <p>Sets a backup phone number. This number is dialed in the event that the first number fails.</p> <p>If your unit has multiple physical interfaces that are aggregated but each interface needs to dial a different number, include both numbers separated by a slash (/).</p> <p>For example: dial dialup back "5551234/5551235"</p> <p><b>Note:</b> This may be required on some 128K and 112K ISDN installations as well as some dual-analog installations.</p> <p><i>string</i> – The actual backup phone number.</p> |

**Table 3** dialerd command options (continued)

| Option      | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| command     | <p>Specifies a string to send to the modem when a dial is performed. This string is inserted in the <code>atdt</code> command.</p> <p>For example, using the <b>dialerd</b> dialup command <code>M0</code> results in the following dial string:</p> <pre>atm0dt   string</pre> <p><i>string</i> – The actual string sent to the modem</p>                                                                                                                                                                                                                                                                                                                                                              |
| delay       | <p>Specifies the minimum number of seconds between dial attempts.</p> <p><i>seconds</i> – The number of seconds</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| demand      | <p>Sets the dial and hang up thresholds and the demand timeout.</p> <p><i>dialthreshold</i> – The percentage of bandwidth that must be in use before an additional interface can dial</p> <p><i>hangupthreshold</i> – The percentage of bandwidth below which an interface hangs up</p> <p><i>timeout</i> – The number of minutes to wait before dropping the secondary line</p> <p>These options are relevant only when you use the PPP Multilink Protocol (MP). In addition, they add or delete interfaces only beyond the first. The first interface dials when there is traffic and hangs up when the idle timeout expires.</p> <p>(defaults: dialthreshold 80, hangupthreshold 30, timeout 60)</p> |
| idletimeout | <p>Specifies the number of seconds with no traffic before the interface hangs up. Enter a value of zero to prevent the interface from timing out.</p> <p>(default: 600)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| mode        | <p>Selects the dialing mode.</p> <p><i>coupled</i> – Raises all the interfaces in a bundle when there is any traffic and drops them all when the idletimeout expires.</p> <p><i>demand</i> – Raises one interface when there is any traffic and then raises or drops additional interfaces based on the amount of traffic. The <i>demand</i> option modifies the dial and hang up thresholds for demand mode.</p> <p><i>single</i> – Dials one interface in a bundle. This option is useful when you use callback.</p> <p>(default: coupled)</p>                                                                                                                                                        |
| nodisable   | <p>Enables or disables the addition of interfaces to a bundle in the event of a failure during PPP Multilink negotiation. When <code>nodisable</code> is off and an additional interface fails to join the bundle, the unit no longer attempts to add interfaces to the bundle.</p> <p>(default: off)</p>                                                                                                                                                                                                                                                                                                                                                                                               |

**Table 3** dialerd command options (continued)

| Option | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| number | <p>Sets the telephone number(s) for the dialer. When you configure a group of interfaces that will be bundled using PPP Multilink and a different number is required for each interface, you can enter them separated by a slash (/).</p> <p><i>string</i> – The actual telephone number</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| up     | Brings the line up.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| down   | Takes the line down.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| script | <p>Specifies a sequence of dialer script subcommands that are executed when an outbound call is placed or an inbound call is answered. There are two different scripts, one for dialing and one for answering calls.</p> <p><i>line#</i> – Inserts or deletes a line in the script in the order specified. The <code>delete</code> command requires a line number to be specified. If no line number is specified when inserting a line in a script, the line is added at the end of the script. For example:</p> <pre>ii# dial dialup script dialerd dialup script 1 dial</pre> <p>To add a comment at the beginning of the script, enter the following command:</p> <pre>ii# dial dialup script 1 comment simple script</pre> <pre>ii# dial dialup script dialerd dialup script 1 comment "simple script" dialerd dialup script 2 dial</pre> <p><i>answer</i> – Specifies that you are working on an answer script. If <code>answer</code> is not specified, you are working on a dial script. Answer must be specified on each line. For example:</p> <pre>dialerd dialup script comment "*" dialerd dialup script comment "dial script" dialerd dialup script comment "*" dialerd dialup script dial dialerd dialup script answer comment "*" dialerd dialup script answer comment "answer script" dialerd dialup script answer comment "*" dialerd dialup script answer send "ata/r"</pre> <p><a href="#">Table 4</a> describes the <b>dialerd</b> script subcommands.</p> |
| start  | Starts the dialer service for the specified interface. The <code>start</code> command is not required. Any dialer command implies a start.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| stop   | Stops the dialer on the specified interface.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

Table 4 describes the **dialerd script** subcommand options.

**Table 4** dialerd script command options

| Option  | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| clear   | Deletes all lines in the specified script.                                                                                                                                                                                                                                                                                                                                                                                                                   |
| comment | Indicates that the remainder of the line is a comment and has no effect on the script.                                                                                                                                                                                                                                                                                                                                                                       |
| control | Raises or drops the data transfer rate (DTR) on an analog line.<br>up – Raises the DTR.<br>down – Drops DTR.<br>These commands have no effect on an ISDN line.                                                                                                                                                                                                                                                                                               |
| delete  | Allows you to delete a specified line in the script. You must specify the line number when using the delete command. For example, to delete line 1 from the following script:<br><pre>ii# dial dialup script dialerd dialup script 1 comment "simple script" dialerd dialup script 2 dial</pre> Enter the following line:<br><pre>ii# dial dialup script 1 delete</pre> And the result is:<br><pre>ii# dial dialup script dialerd dialup script 1 dial</pre> |
| dial    | Places a call using the atdt command and waits for the modem to respond with a status. The status will either be connected or one of several strings that indicate that the call has failed.                                                                                                                                                                                                                                                                 |
| parse   | Waits for the modem to respond with connected or one of several strings that indicate that the call has failed. The parse command does not send the atdt command.<br>timeout – Specifies the amount of time the parse command will wait for an answer. The time must be specified in milliseconds. If no time is specified, the parse command waits 90 seconds for a response.                                                                               |

**Table 4** dialerd script command options (continued)

| Option | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| send   | Sends a command to the modem. The command should normally be terminated with "\r". For example:<br><pre>dialerd dialup script send "atdt5551234\r"</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| wait   | Waits for a specified number of milliseconds or optionally a string. Specifying a negative wait timeout number indicates that the timeout period is restarted every time a character is received. Examples:<br><pre>wait 10000 login:</pre><br>Waits for ten seconds or the string "login:", whichever comes first.<br><pre>dialerd dialup script wait -50</pre><br>Waits for 50 milliseconds or until a character is received. If a character is received, the 50 millisecond timer is reset and the system will wait for another 50 milliseconds. This continues until the timer actually expires. This is useful for clearing the input buffers.<br><pre>dialerd dialup script wait 60000 "connect"</pre><br>Waits 60 seconds for the connect message. This is useful for constructing your own "parse" subcommand. |

## dns command

Use the **dns** command to add servers, drop servers, and perform Domain Name Service (DNS)-related maintenance. Displaying DNS information is available at the user level; however, configuring the DNS settings is allowed only at the privileged level.

```
dns [add server <ipadr>
     drop server <ipadr>
     cache
     flush
     suffix <suffix>]
```

Table 5 describes the **dns** command options.

**Table 5** dns command options

| Option        | Definition                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| add server    | Adds the specified server to the DNS list.<br><i>ipadr</i> – The IP address of the server to be added                                                                                                                                                                                                                                                                                                  |
| drop server   | Drops the specified server from the DNS list.<br><i>ipadr</i> – The IP address of the server to be dropped                                                                                                                                                                                                                                                                                             |
| cache         | Displays the DNS cached entries. The <code>dns cache</code> command is available at the user level.                                                                                                                                                                                                                                                                                                    |
| flush         | Empties the DNS cache.                                                                                                                                                                                                                                                                                                                                                                                 |
| <i>suffix</i> | Sets the domain suffix. When a DNS request is received and does not contain a dot (.), this pre-defined suffix is appended.<br>When the Contivity unit has been set as a DNS proxy server, you can set a pre-defined DNS suffix so that any attempt to access another workstation without the DNS suffix appended will result in the unit trying to resolve the request to its pre-defined DNS suffix. |

### Example

```
ii# dns add server 10.0.0.99
ii# dns suffix test.com
```

Entering the **dns** command with no parameters displays a list of DNS servers, a count of queries and responses, and the DNS suffix (if defined).

### Example

```
ii> dns
Server           Queries  Responses
206.210.192.32   242      241
206.210.192.99   80       79
(cache)          415      95
dns suffix perftech.com
```

Entering the **dns cache** command with no parameters displays recently resolved names and IP addresses. The time, in seconds, displays how long the entry stays in the cache.

### Example

```
ii> dns cache
Seconds  Address          Name
   3967  62.20.1.132     endian.net
   2451  63.209.29.151  adfarm.mediaplex.com
  11079  207.25.71.212  i.cnn.net
```

## encapsulation command

The **encapsulation** command sets the encapsulation protocol for the specified interface. This command is normally used only for synchronous interfaces (for example, V.35, X.21, T1, and E1).

Displaying the encapsulation settings is available at the user level; however, configuring these settings is allowed only at the privileged level.

```
encapsulation [<interface> [ppp | framerelay | terminal]
              [mp <interface> <interface> ...]]
```

[Table 6](#) describes the **encapsulation** command options.

**Table 6** encapsulation command options

| Option           | Definition                                                                |
|------------------|---------------------------------------------------------------------------|
| <i>interface</i> | Specifies the physical interface name.                                    |
| ppp              | Specifies the PPP encapsulation protocol.                                 |
| framerelay       | Specifies the frame relay encapsulation protocol.                         |
| terminal         | Supports out-of-band management only for a dial-up connection.            |
| mp               | Joins multiple interfaces together to make a single PPP Multilink bundle. |

**Example**

```
ii# encapsulation serial ppp
```

**filter command**

The **filter** command modifies a filter list. You use filters to block or redirect network traffic that matches a specific set of parameters. The filter options can be broken into two groups: those that specify the matching criteria and those that specify the action to be taken in case of a match. The order of the filters in the list is important. To determine how a given packet is handled, the filter list is processed in order. The action specified in the first matching filter is used to handle the packet.

```
filter [<filterlist> allow
        deny
        l4switch
        nat
        icmp
        ip
        tcp          [established]
        udp
        protocol    icmp | tcp | udp | <number>
        source      [<address>[ /<bits>]][ :<ports>]
        destination [<address>[ /<bits>]][ :<ports>]
        insert
        drop]
```

[Table 7](#) describes the **filter** command options.

**Table 7** filter command options

| Option            | Definition                                                                                                                                                                                                               |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>filterlist</i> | Specifies the name of the filter list.                                                                                                                                                                                   |
| allow             | This setting— without any matching criteria—allows <i>all</i> traffic. Packets matching the criteria are allowed through the filter.                                                                                     |
| deny              | This setting— without any matching criteria—denies <i>all</i> traffic. Packets matching the criteria are discarded. There is an implied deny at the end of each filter list.                                             |
| l4switch          | Specifies that packets matching the criteria are passed to the layer 4 (L4) switch. This option is useful only for Web traffic. Web traffic passed to the L4 switch can then be redirected to the transparent Web cache. |

**Table 7** filter command options (continued)

| Option      | Definition                                                                                                                                                                                                                                                                                       |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| nat         | Specifies that packets matching the criteria are passed to the network address translator.                                                                                                                                                                                                       |
| icmp        | Specifies a matching criterion of ICMP protocol.                                                                                                                                                                                                                                                 |
| ip          | Specifies a matching criterion of any IP protocol.                                                                                                                                                                                                                                               |
| tcp         | Specifies a matching criterion of TCP protocol.<br><i>established</i> – Allows or denies packets from established TCP/IP connections.                                                                                                                                                            |
| udp         | Specifies a matching criterion of UDP protocol.                                                                                                                                                                                                                                                  |
| protocol    | Specifies a matching criterion other than ICMP, TCP, or UDP protocols.                                                                                                                                                                                                                           |
| source      | Specifies matching criteria of source IP address, source port, or both.<br><i>address</i> – The address you want to allow or deny<br><i>bits</i> – The optional subnet mask of the IP address you want to allow or deny<br><i>ports</i> – The port number(s) you want to allow or deny           |
| destination | Specifies matching criteria of destination IP address, destination port, or both.<br><i>address</i> – The address you want to allow or deny<br><i>bits</i> – The optional subnet mask of the IP address you want to allow or deny<br><i>ports</i> – The port number(s) you want to allow or deny |
| insert      | Inserts the filter at the beginning of a list.                                                                                                                                                                                                                                                   |
| drop        | Drops the specified filter from a list.                                                                                                                                                                                                                                                          |



**Note:** If you need to add or modify a large number of filters, use the Setup program.

### Example 1

```
filter inet deny ip source 10.0.0.0/24
```

Discards IP packets with a source address from 10.0.0.0 to 10.0.0.255.

**Example 2**

```
filter inet allow ip dest 10.0.1.99
```

Allows IP traffic destined to 10.0.1.99.

**Example 3**

```
filter inet allow ip dest 10.0.0.0/24
```

Allows IP traffic with a destination address from 10.0.0.0 to 10.0.0.255.

**Example 4**

```
filter inet allow icmp
```

Allows any ICMP traffic.

**Example 5**

```
filter inet allow tcp dest 10.0.0.99:80
```

Allows TCP traffic destined to 10.0.0.99 port 80.

**Example 6**

```
filter inet allow tcp source:1024-5000 dest 10.0.0.99:1024-5000
```

Allows TCP traffic with a source port from 1024 to 5000, destined to 10.0.0.90 with a port from 1024 to 5000.

### Example 7

This complex example shows many filters applied at one time.

```
Filter test1 deny source-route
                                #optional: drop all source-route packets
Filter test1 deny source 199.200.201.0/24
                                #prevent spoof
Filter test1 allow icmp
                                #allow any ICMP packets
Filter test1 allow tcp established
                                #allow established connections
Filter test1 allow tcp dest:6
                                #Contivity registration
Filter test1 allow tcp dest:echo
                                #allow incoming echo
Filter test1 allow tcp dest:discard
                                #allow incoming discard
Filter test1 allow tcp dest:chargen
                                #allow incoming chargen
Filter test1 allow tcp dest:mail.mydomain.com:smtp
                                #mail server
Filter test1 allow tcp dest ftp.mydomain.com:ftp
                                #anonymous ftp server
Filter test1 allow tcp dest ftp.mydomain.com: 1024-5000
                                #passive ftp transfer to non-well-known port
Filter test1 allow tcp source :ftp-data dest: 1024-5000
                                #active ftp transfer to non-well-know port
Filter test1 allow tcp dest ns1.mydomain.com:domain
                                #primary DNS zone transfer
Filter test1 allow tcp dest ns2.mydomain.com:domain
                                #secondary zone transfer
Filter test1 allow udp dest ns1.mydomain.com:domain
```

## framerelay command

The **framerelay** command is a privileged-level command that allows you to configure frame relay interfaces.

```
framerelay [<interface> dlci len <2-4>
           pvc      add | drop <dlci> <remoteipadr>
           inarp    enable | disable
           type     ansi | itul
```

Table 8 describes the **framerelay** command options.

**Table 8** framerelay command options

| Option           | Definition                                                                                                                                                                                                                                                      |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>interface</i> | Specifies the physical interface name.                                                                                                                                                                                                                          |
| <i>dlcilen</i>   | Sets the frame relay address length to 2, 3, or 4 bytes.<br>(default: 2)                                                                                                                                                                                        |
| <i>pvc</i>       | Normally, permanent virtual circuits (PVCs) are handled automatically, but this command adds or drops a static PVC.<br><i>dldci</i> – A number that identifies the PVC<br><i>remoteipadr</i> – The IP address of the router on the remote end of the connection |
| <i>inarp</i>     | Enables or disables inverse ARP on the frame relay interface.<br>(default: enable)                                                                                                                                                                              |
| <i>type</i>      | Sets the LMI type to ANSI T1.617 Annex D or ITU Q.933 Annex A.<br>(default: ansi)                                                                                                                                                                               |

## hostname command

The **hostname** command sets or displays the local host name. You can set the host name directly by providing the domain name or indirectly by providing an interface name. If you provide an interface name, a reverse name lookup is performed on the IP address of the interface. The result of the reverse name lookup is then used for the host name of the Contivity unit. Only certain IPX client applications use the host name.

Displaying the unit host name is available at the user level; however, configuring the unit host name is allowed only at the privileged level.

```
hostname [<name> | <ipinterface>]
```

Table 9 describes the **hostname** command options.

**Table 9** hostname command options

| Option             | Definition                                                     |
|--------------------|----------------------------------------------------------------|
| <i>name</i>        | Specifies the dotted domain name.                              |
| <i>ipinterface</i> | Specifies the interface for which the DNS name should be used. |

**Example**

```
ii# hostname ii.test.com

ii# hostname eth1

ii> hostname
ii.test.com
```

## icmp command

The **icmp** command modifies settings or displays statistics for Internet Control Message Protocol (ICMP) messages. Displaying the ICMP statistics is available at the user level; however, configuring the ICMP settings is allowed only at the privileged level.

```
icmp [echo      on | off
      redirect on | off]
```

[Table 10](#) describes the **icmp** command options.

**Table 10** icmp command options

| Option   | Definition                                                                                                      |
|----------|-----------------------------------------------------------------------------------------------------------------|
| echo     | Enables or disables echo response messages.<br>(default: on)                                                    |
| redirect | Controls the response to redirect messages. If redirect is off, redirect messages are ignored.<br>(default: on) |

**Example**

```

ii> icmp
inMsgs          78536   outMsgs          78164
inErrors        404     outErrors        0
inDestUnreachs 0       outDestUnreachs 2
inTimeExcds    0       outTimeExcds    0
inParmProbs    0       outParmProbs    0
inSrcQuenchs   0       outSrcQuenchs   0
inRedirects    0       outRedirects    0
inEchos        2       outEchos        78160
inEchoReps     78130   outEchoReps     2
inTimestamps   0       outTimestamps   0
inTimestampReps 0       outTimestampReps 0
inAddrMasks    0       outAddrMasks    0
inAddrMaskReps 0       outAddrMaskReps 0

```

**ifconfig command**

The **ifconfig** command displays or sets parameters for an interface configuration. Displaying the parameters is available at the user level; however, setting these parameters is allowed only at the privileged level.

```

ifconfig [<interface> [disable      [<hhmm> | clear]
                    enable        [<hhmm> | clear]
                    infilter      <filterlist> | clear
                    hwaddress     <adr>
                    ipaddress     <ipadr> [<netmask>]
                    mtu           <size>
                    outfilter     <filterlist> | clear
                    transparent   on | off
                    update        <name> <ipadr>
                    xlate         on | in | out | off]]

```

Table 11 describes the `ifconfig` command options.

**Table 11** ifconfig command options

| Option                 | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>interface</code> | Specifies the physical interface name.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <code>disable</code>   | <p>Disables the specified WAN interface.</p> <p><i>hhmm</i> – Specifies the time, using hours and minutes, to disable the WAN interface.</p> <p><i>clear</i> – Clears the <code>disable</code> command.</p> <p>When <i>&lt;hhmm&gt;</i> is provided, the unit automatically disables the WAN interface at the specified time. The value is entered as four digits based on a 24-hour clock.</p> <p><b>Note:</b> The <code>disable</code> command is available for WAN interfaces (analog modem, ISDN) only.</p>                         |
| <code>enable</code>    | <p>Enables the specified WAN interface.</p> <p><i>hhmm</i> – Specifies the time, using hours and minutes, to enable the WAN interface.</p> <p><i>clear</i> – Clears the <code>enable</code> command.</p> <p>When <i>&lt;hhmm&gt;</i> is provided, the unit automatically enables the WAN interface at the specified time.</p> <p><b>Note:</b> The <code>enable</code> command is available for WAN interfaces (analog modem, ISDN) only.</p>                                                                                            |
| <code>infilter</code>  | <p>Sets or clears the input filter applied to incoming traffic.</p> <p><i>filterlist</i> – Specifies an arbitrary name for the filter list.</p> <p><i>clear</i> – Clears the <code>infilter</code> command.</p>                                                                                                                                                                                                                                                                                                                         |
| <code>hwaddress</code> | <p>Sets the Ethernet* address for the interface. Allows you to transfer the designation of a single MAC address from a particular workstation to the Contivity unit for LAN support.</p> <p><b>Note:</b> Do not configure two or more devices (for example, the Contivity unit and a workstation) with the same MAC address on the same network. For additional information, refer to <a href="#">“Spoofing a MAC address” on page 124</a>.</p> <p><i>adr</i> – The 6-byte MAC address to which you want to set the Contivity unit.</p> |
| <code>ipaddress</code> | <p>Sets the interface’s IP address and netmask.</p> <p><i>ipadr</i> – The IP address to be used for the specified interface</p> <p><i>netmask</i> – The netmask to be used for the specified interface</p>                                                                                                                                                                                                                                                                                                                              |
| <code>mtu</code>       | <p>Sets the maximum transmission unit (MTU) for a packet.</p> <p><i>size</i> – The number of bytes</p> <p>(default: 1500)</p>                                                                                                                                                                                                                                                                                                                                                                                                           |

**Table 11** ifconfig command options (continued)

| Option      | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| outfilter   | Sets the output filter applied to outgoing traffic.<br><i>filterlist</i> – Specifies an arbitrary name for the filter list.<br><i>clear</i> – Clears the <i>outfilter</i> command.                                                                                                                                                                                                                                                                                                              |
| transparent | When <i>transparent</i> is on, all Web traffic received on the specified interface is redirected to the transparent Web cache.<br>(default: off)                                                                                                                                                                                                                                                                                                                                                |
| update      | When <i>update</i> is on, the unit notifies a Dynamic DNS server of the new address for a domain name.<br><i>name</i> – The domain name with the suffix<br><i>ipadr</i> – The IP address of the Dynamic DNS server                                                                                                                                                                                                                                                                              |
| xlate       | When <i>xlate</i> is on, the source address of traffic received on the specified interface is translated to the address of the eventual outbound interface. This option is most often used to hide IP addresses. Address translation can be specified for input or output.<br><i>on</i> – Turns address translation on.<br><i>in</i> – Specifies to translate when received.<br><i>out</i> – Specifies to translate when sent.<br><i>off</i> – Turns address translation off.<br>(default: off) |

**Example**

```
ii> ifconfig
eth1 type Ethernet MAC address 0000AABBCC01
mtu          1500      speed          100000000
adminStatus  1         operStatus     1
inOctets     926569548 inUcastPkts   2506286
inNUcastPkts 1506365    inDiscards    0
inErrors     0         inUnknownProtos 102
outOctets    1687460188 outUcastPkts  2975696
outNUcastPkts 26188      outDiscards    0
outErrors    0         outQLen        0
eth2 type Ethernet MAC address 0000AABBCC02
mtu          1500      speed          100000000
adminStatus  1         operStatus     1
inOctets     1690022429 inUcastPkts   2874970
inNUcastPkts 5786      inDiscards     92
inErrors     8         inUnknownProtos 36
outOctets    624579226 outUcastPkts  2412322
outNUcastPkts 5477      outDiscards    0
outErrors    0         outQLen        0
tok1 type Token Ring MAC address 0000AABBCC03
mtu          1500      speed          40000000
adminStatus  1         operStatus     1
inOctets     1461247    inUcastPkts   10
inNUcastPkts 10830     inDiscards     0
inErrors     0         inUnknownProtos 0
outOctets    1515447    outUcastPkts   10
outNUcastPkts 10830     outDiscards    0
outErrors    0         outQLen        0
ifconfig eth1 infilter net
ifconfig eth1 ipaddress 10.160.92.1 255.255.255.0
ifconfig eth2 ipaddress 10.160.97.2 255.255.255.0
ifconfig tok1 ipaddress 10.160.96.1 255.255.255.0
```



**Note:** The operStatus on an Ethernet interface never changes unless you are running a control ping.

---

## ip command

The **ip** command displays or sets the Internet Protocol (IP) parameters. Displaying the IP parameters is available at the user level; however, configuring these parameters is allowed only at the privileged level.

```
ip [defaultnetwork <ipadr>
   forwarding      on | off]
```

Table 12 describes the **ip** command options.

**Table 12** ip command options

| Option         | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| defaultnetwork | Sets the default network IP address. This option is applicable only when a client is using IPX, SOCKS, or address translation. In these cases, the unit is responsible for the construction of the IP portion of a packet. Normally, the unit uses the IP address of the closest interface to the destination as the source address. When <code>defaultnetwork</code> is set, the specified IP address is used as the source address. This option is useful when the IP address assigned to the default route is not set in the ISP's routing tables.<br><i>ipadr</i> – The IP address to be used as the default network |
| forwarding     | Sets the IP forwarding status. Forwarding must be enabled when setting up IPsec tunnels or when the unit is used to pass IP packets from one interface to another without modification (conventional router function).<br><b>Note:</b> If address translation or SOCKS proxies are being used, forwarding is not required.<br>(default: off)                                                                                                                                                                                                                                                                             |

### Example

```
ii> ip
forwarding          2    defaultTTL          64
inReceives         117581 inHdrErrors          0
inAddrErrors        0    forwDatagrams       12
inUnknownProtos    0    inDiscards          0
inDelivers          119654 outRequests          84680
outDiscards         0    outNoRoutes         0
reasmTimeout        15   reasmReqds          0
reasmOKs            0    reasmFails          0
fragOKs             0    fragFails           0
fragCreates         0    routingDiscards     0
```

The **ip** command shows several counters relating to errors that discard packets. [Table 13](#) describes the ip counters.

**Table 13** ip counters

| Option          | Definition                                                                                                                         |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------|
| inHdrErrors     | The packet has a bad format IP header or bad IP checksum, or its time-to-live value has expired.                                   |
| inAddrErrors    | The packet was not forwarded because IP forwarding is turned off or the packet was received as a MAC broadcast.                    |
| inUnknownProtos | The packet contained a protocol that was not TCP, UDP, or ICMP, or another protocol that is recognized by Contivity Branch Access. |
| inDiscards      | An input filter or NAT rejected the packet.                                                                                        |
| outDiscards     | An output filter rejected the packet.                                                                                              |
| outNoRoutes     | No route for the packet's destination IP address.                                                                                  |
| reassembleFails | Fragmented packet timed out before all pieces were received.                                                                       |
| fragFails       | The packet needed fragmenting but a "do not fragment" flag was set.                                                                |
| routingDiscards | Never set.                                                                                                                         |

## ipsec command

The **ipsec** command sets up encrypted connections or tunnels between two or more routers. The Contivity 100 unit has a limit of five simultaneous site connections to a Contivity VPN Switch (CVS). The Contivity 400 unit has a limit of 30 simultaneous site connections to a CVS. There is no limit to the number of connections to another Contivity 100 unit or Contivity 400 unit. When a tunnel limit is exceeded, an error is logged to the IPsec log and system log (SYSLOG).

For detailed information about IPsec tunnels, refer to *Using the Contivity Branch Access Management Software Version 7.20*.

Displaying the IPsec information is available at the user level; however, configuring an IPsec connection is allowed only at the privileged level.

```

ipsec [<name> key <key>
      mode main | aggressive [metric]
      destination <address>
      local <address>[/<bits>] [drop]
      remote <address>[/<bits>] [<metric>] [drop]
      encrypt des | 3des | null ...
      authorize md5 | sha | null ...
      group 768 | 1024 ...
      pfs on | off
      timeout <number> minutes | kb
      disconnect
      drop
defaultnetwork <ipadr>
log <level>]

```

Table 14 describes the **ipsec** command options.

**Table 14** ipsec command options

| Option             | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>name</i>        | Sets an arbitrary name that is assigned to a tunnel. Settings are established for only the tunnel named.                                                                                                                                                                                                                                                                                                                                                                 |
| <i>key</i>         | Specifies a pre-shared key. If the key begins with 0x, it is considered a hexadecimal key; otherwise, it is considered a text key. A text key is displayed in an encrypted format, not as clear text.                                                                                                                                                                                                                                                                    |
| <i>mode</i>        | Turns aggressive mode on and off.<br><i>main</i> – Establishes a secure, authenticated channel for communicating between peers.<br><i>aggressive</i> – Establishes a channel for communicating between peers using the user name and password for authentication.<br>If you do not use the <i>remote</i> option (as is often the case with an aggressive-mode tunnel), use the <i>metric</i> parameter to specify the ordering of the routes.<br>(default: <i>main</i> ) |
| <i>destination</i> | Sets the endpoint of a tunnel. Specifies the IP address or a fully qualified domain name (FQDN) with which the connection will be established. If a string is specified for the address, that string is “remembered” and a DNS lookup is performed for every attempt to establish the tunnel. If the address is a Dynamic DNS host name, the tunnel interface will automatically adapt to changes in the destination. It also allows the use of round-robin DNS.         |

**Table 14** ipsec command options (continued)

| Option    | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| local     | <p>Specifies the subnet(s) that will be directed over the tunnel. For more information about this option, refer to <i>Using the Contivity Branch Access Management Software Version 7.20</i>.</p> <p><i>address</i> – Specifies the IP address you want to be directed over the tunnel.</p> <p><i>bits</i> – Specifies the optional subnet mask of the IP address you want to be directed over the tunnel.</p> <p><i>drop</i> – Drops the local address in IPsec.</p>                                                                                                 |
| remote    | <p>Specifies the subnet(s) that will be received over the tunnel. For more information about this option, refer to <i>Using the Contivity Branch Access Management Software Version 7.20</i>.</p> <p><i>address</i> – Specifies the IP address you want to receive over the tunnel.</p> <p><i>bits</i> – Specifies the optional subnet mask of the IP address you want to receive over the tunnel.</p> <p><i>metric</i> – Sets the preferred route for an IPsec tunnel. This is useful as a backup route.</p> <p><i>drop</i> – Drops the remote address in IPsec.</p> |
| encrypt   | <p>Specifies the encryption types used to set up a tunnel.</p> <p><i>des</i> – Data Encryption Standard</p> <p><i>3des</i> – Strong cryptography</p> <p><i>null</i> – No encryption</p> <p>You can specify to use as many of the encryption types as you want and specify the order in which you want them used. For example, if you specify <code>3des null</code>, the tunnel first chooses 3DES encryption, skips DES, and then chooses null.</p>                                                                                                                  |
| authorize | <p>Specifies the authorization types used to set up a tunnel.</p> <p><i>sha</i> – Secure Hash Algorithm</p> <p><i>md5</i> – Message Digest 5</p> <p><i>null</i> – No authorization</p> <p>You can specify to use as many of the authorization types as you want and specify the order in which you want them used. For example, if you specify <code>md5 sha</code>, the tunnel first chooses MD5, then chooses SHA, and skips null.</p>                                                                                                                              |
| group     | <p>Specifies the level of encryption strength used for the initial Diffie-Hellman exchange. Group 2 (1024 bit prime modulus in the modular exponentiation Oakley group) provides extra security at the expense of significant additional computational overhead.</p> <p><b>Note:</b> Due to performance issues, group 2 (1024) should not be enabled on the Contivity 100 unit.</p> <p>(default: 768)</p>                                                                                                                                                             |

**Table 14** ipsec command options (continued)

| Option                      | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>pfs</code>            | Specifies perfect forward secrecy (PFS) as the level of encryption strength. Both ends have to be configured with the same level. When PFS is used, compromise of a single key permits access only to data that is protected by that key. This feature affects performance, especially on a Contivity 100 unit.                                                                                                                                                                                                                                                                                                                        |
| <code>timeout</code>        | Establishes when a tunnel gets re-keyed. This may be in kilobytes or in minutes.<br><br><i>number</i> – Specifies that the number of minutes or kilobytes before a tunnel is re-keyed.<br><br><i>minutes</i> – Specifies that the number given will be in minutes. The minimum value is 1 second. Assigning a value of zero will cause the software to revert back to the previously assigned value.<br><br><i>kb</i> – Specifies that the number given will be in kilobytes.<br><br>If the timeout differs between the Contivity unit and the remote end, the device that initiates the tunnel determines the timeout for the tunnel. |
| <code>disconnect</code>     | Cancels the specified tunnel.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <code>drop</code>           | Deletes the specified tunnel and removes the configuration settings.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <code>defaultnetwork</code> | Sets the source address of packets originating in Contivity Branch Access, to allow the Contivity unit to participate in its own IPsec tunnels for services such as DNS and proxies.<br><br><i>ipadr</i> – The IP address to be used as the default network                                                                                                                                                                                                                                                                                                                                                                            |
| <code>log</code>            | Turns on logging for all tunnels defined on the network. Levels are from level 0-9; 9 is the highest level of logging.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

**Example**

```

ipsec freeswan dest 10.10.192.111
ipsec freeswan key \34c(5THN)nB9HP0(cW
ipsec freeswan local 192.168.1.0/24
ipsec freeswan remote 0.0.0.0/0
ipsec freeswan encrypt des 3des null
ipsec freeswan authorize md5 sha null

```



**Note:** A key works like a password and is always displayed in an encrypted format, indicated by a leading backslash (\). **Do not enter an unencrypted key that begins with a backslash.**

You can cut and paste encrypted keys across multiple units while maintaining the integrity of the key.

---

Phase 1 creates an initial Security Association (SA). In phase 2, there is one SA per tunnel; therefore, the total number of tunnels shown in the IPsec log is always one more than the actual number of tunnels.

A phantom tunnel is a tunnel with 0 in-bytes and 0 out-bytes (no traffic has ever passed through the tunnel). A phantom tunnel is often caused by a control ping. To minimize the occurrence of phantom tunnels, increase the ping interval setting from the unit default of 1 second.

An inactive tunnel is one that shows in-bytes and out-bytes but no traffic is passing through the tunnel. An inactive tunnel is generally caused by rebooting the remote endpoint device or by a disruption in the WAN connection between endpoints.

Both inactive and phantom tunnels are dropped after their re-key timeout has expired.

Using the `ipsec` command with no parameters displays the number of IPsec connections with a Contivity VPN Switch (CVS) and the number of possible IPsec connections to a CVS.

### **Example**

```
ii> ipsec
0 out of 5 CVS connections
```

## **isdn command**

The `isdn` command provides device-specific control for an ISDN BRI interface. This command automatically builds a PPP Multilink bundle for the specified interface. Three PPP encapsulated interfaces, ISDN-B1, ISDN-B2, and ISDN, are built as a result. ISDN is the aggregate of ISDN-B1 and ISDN-B2.

```

isdn [<interface> [calltype      <val>
                    inboundvoice pots | dovbs
                    number       clear
                               <num1> [<num2>]
                    priority     data | pots
                    speed        56 | 64 | 112 | 128
                    spid         clear
                               <spid1> [<spid2>]
                    switch       auto | att | aus | dms | etsi | ins64
                               net3 | nil | nti | sing
                    trace        on | off
                    voice        on | off]]

```

Table 15 describes the **isdn** command options.

**Table 15** isdn command options

| Option              | Definition                                                                                                                                                                                  |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>interface</i>    | Specifies the physical interface name.                                                                                                                                                      |
| <i>calltype</i>     | Specifies a number that describes the call type.<br><i>val</i> – This value should normally be left at the default setting.<br>(default: 0)                                                 |
| <i>inboundvoice</i> | Specifies the port to which an inbound call marked as voice is sent.<br><i>pots</i> – The phone line<br><i>dovbs</i> – The B-channel                                                        |
| <i>number</i>       | Sets the phone number(s) assigned to the ISDN line.<br><i>clear</i> – Erases the phone number.<br><i>num1</i> – Sets the first phone number.<br><i>num2</i> – Sets the second phone number. |
| <i>priority</i>     | Allows you to specify whether data or voice gets first priority for control of the line.<br><i>data</i> – Sets data as first priority.<br><i>pots</i> – Sets voice as first priority.       |
| <i>speed</i>        | Selects the speed of the ISDN interface. The speeds of 112 and 128 are achieved by using PPP Multilink to bundle the two B-channels.<br>(default: 128)                                      |
| <i>spid</i>         | Specifies the SPIDs assigned to the ISDN line.<br><i>clear</i> – Erases the SPIDs.<br><i>spid1</i> – Sets B-channel 1.<br><i>spid2</i> – Sets B-channel 2.                                  |

**Table 15** isdn command options (continued)

| Option | Definition                                                                                                                                                                                                       |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| switch | Specifies the protocol on the ISDN line. Options include: auto, att, aus, dms, etsi, ins64, net3, nil, nti, sing.<br><b>Note:</b> You can enter values other than those listed, but doing so displays a warning. |
| trace  | Turns on D-channel tracing.<br><b>Note:</b> Use this option only as directed by Nortel Networks support personnel.                                                                                               |
| voice  | When voice is on, all outbound calls are no longer made as data calls, but as voice calls (data over voice). You can enable the voice option only when the speed is set to 56K or 112K.<br>(default: off)        |

**Example**

```
ii> isdn
isdn ISDN switch nil spid 015550000001 speed 128
channel 1=active call state=idle (0)
channel 2=active call state=idle (0)
```

**name command**

The **name** command sets or displays the name of the unit. Displaying the unit name is available at the user level; however, creating or changing the unit name is allowed only at the privileged level.

```
name [<name>]
```

**Example**

```
ii> name
name SERVER0000000
```

**nat command**

The **nat** command displays or sets parameters for the network address translation (NAT) facility. You can specify address translation for a specified interface regardless of its current IP address.

```

nat [add <local>:<port> <remote>:<port> [<protocol>]
    drop <local>:<port> <remote>:<port> [<protocol>]
    flush
    timeout <unconnectedminutes> [<connectedminutes>]]

```

Table 16 describes the **nat** command options.

**Table 16** nat command options

| Option | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| add    | <p>Adds a static NAT entry.</p> <p><i>local</i> – The legal (or public) IP address that will reach the Contivity unit. This is the IP address available on the Internet. It does not need to be the address of the Contivity unit. It can also be the name of the interface of the local unit. In this case, remote users must still resolve the interface's actual IP address; however, you do not need to reconfigure the unit if your public address changes.</p> <p><i>port</i> – The port to be translated with the protocol specified. If you use an asterisk (*) in place of the port number, Contivity Branch Access translates all ports with the specified protocol.</p> <p><i>protocol</i> – The protocol used for address translation. Can be TCP, UDP, ICMP,IP, or a protocol number. Specifying IP includes all protocols and the port number must be specified as an asterisk (*). (default: tcp)</p> <p><i>remote</i> – The IP address (and port) on your network of the server you want to publish. This can be a private or reserved address.</p> |
| drop   | <p>Drops a static NAT entry.</p> <p><i>local</i> – The legal (or public) IP address that will reach the Contivity unit. This is the IP address available on the Internet. It does not need to be the address of the Contivity unit. It can also be the name of the interface of the local unit. In this case, remote users must still resolve the interface's actual IP address; however you do not need to reconfigure the unit if your public address changed.</p> <p><i>port</i> – The port to be translated with the protocol specified. If you use an asterisk (*) in place of the port number, Contivity Branch Access translates all ports with the specified protocol.</p> <p><i>protocol</i> – The protocol used for address translation. Can be TCP, UDP, ICMP,IP, or a protocol number. Specifying IP includes all protocols and the port number must be specified as an asterisk (*). (default: tcp)</p> <p><i>remote</i> – The IP address (and port) on your network of the server you want to publish. This can be a private or reserved address.</p> |

**Table 16** nat command options (continued)

| Option  | Definition                                                                                                                                  |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------|
| flush   | Deletes all dynamic entries.                                                                                                                |
| timeout | Sets the timeout value in minutes for UDP and unconnected TCP sessions (default: 1) and, optionally, connected TCP sessions. (default: 900) |

## ppp command

The **ppp** command displays or sets the point-to-point protocol (PPP) parameters. Displaying the PPP parameters is available at the user level; however, configuring these parameters is allowed only at the privileged level.

```
ppp [<interface> [authentication [local | remote] disable | pap | chap | any
      dns on | off
      echo on | off
      mp on | off
      password <password>
      username <username>
      reset]]
```

[Table 17](#) describes the **ppp** command options.

**Table 17** ppp command options

| Option           | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>interface</i> | Specifies the physical interface name.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| authentication   | Selects the authentication the unit will require from the remote unit. (default: any)<br><i>local</i> – Specifies what your workstation requires if authentication is requested.<br><i>remote</i> – Specifies what your workstation requires when a remote end requires authentication.<br><i>disable</i> – Turns authentication off.<br><i>pap</i> – Makes PAP authentication required.<br><i>chap</i> – Makes CHAP authentication required.<br><i>any</i> – Makes authentication required, but either PAP or CHAP can be used. |
| dns              | Turns negotiating DNS servers on or off.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

**Table 17** ppp command options (continued)

| Option   | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| echo     | Controls the use of the LCP echo protocol, which provides a method for Contivity Branch Access to determine if a line goes down. If enabled, Contivity Branch Access periodically sends a low-level echo packet when the interface is idle. If no response is received from the remote router after several attempts, Contivity Branch Access considers the line to be down and restarts PPP negotiation.<br>(default: enabled for PPPoE and leased-line interfaces, disabled for all others) |
| mp       | Enables or disables Multilink Protocol negotiation.                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| password | Sets the password used for authentication. The password is displayed in an encrypted format, not as clear text.                                                                                                                                                                                                                                                                                                                                                                               |
| username | Sets the user name used for authentication.                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| reset    | Causes a PPP connection to drop and reestablish. This option is useful for troubleshooting or if you want to renegotiate with a new parameter such as MTU.                                                                                                                                                                                                                                                                                                                                    |



**Note:** A key works like a password and is always displayed in an encrypted format, indicated by a leading backslash (\). **Do not enter an unencrypted key that begins with a backslash.**

You can cut and paste encrypted keys across multiple units while maintaining the integrity of the key.



**Note:** A status command, such as **ppp**, that provides passwords in its commit information does not show a password, encrypted or otherwise.

---

**Example**

```

ii> ppp
ppp :ISDN-B1          mp:ISDN
lcp  :starting       Opened:0
ipcp :initial        IpAdr local:0.0.0.0 peer:0.0.0.0
queue:0              bps:0(in) 0(out)
state:down

ppp  :ISDN-B2          mp:ISDN
lcp  :starting       Opened:0
ipcp :initial        IpAdr local:0.0.0.0 peer:0.0.0.0
queue:0              bps:0(in) 0(out)
state:down

ppp  :ISDN
lcp  :opened         Opened:0
ipcp :initial        IpAdr local:0.0.0.0 peer:0.0.0.0

ppp ISDN username "user" password \34c(5THN)nB9HP0(cW

```

**pppoe command**

The **pppoe** command allows you to set up PPPoE encapsulation on an Ethernet interface. This command is added to the advanced TCP/IP settings when you complete the advanced configuration for PPPoE in Setup.

```
pppoe <pppoe> <interface> [demand [<idletimeout>]]
```

[Table 18](#) describes the **pppoe** command options.

**Table 18** pppoe command options

| Option           | Definition                                                                                                                 |
|------------------|----------------------------------------------------------------------------------------------------------------------------|
| <i>pppoe</i>     | Specifies the name for the virtual PPPoE interface.                                                                        |
| <i>interface</i> | Specifies the name of the interface used for PPPoE.                                                                        |
| <i>demand</i>    | Sets the demand timeout. The interface hangs up when the <i>idletimeout</i> expires. The idle timeout feature is optional. |

Use the **ppp** command to assign a user name and password to the PPP protocol. You can define more than one virtual PPPoE interface for this command. Use the **route** command to direct traffic over the proper PPPoE interface.

**Example**

```
pppoe pppoe2 eth2
ppp pppoe2 username "me@isp" password \34c(5THN)nB9HP0(cW
route add default pppoe2
```

**route command**

The **route** command displays or changes settings for IP routes. Displaying the IP route settings is available at the user level; however, configuring these settings is allowed only at the privileged level.

```
route [add <dest>[/<bits>] [<interface>] [<gateway>] [<metric>]
      default          [<interface>] [<gateway>] [<metric>]
      drop <dest>[/<bits>]
      default]
```

[Table 19](#) describes the **route** command options.

**Table 19** route command options

| Option  | Definition                                                                                                                                                                                                                                                                                                                                             |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| add     | Adds a static route.<br><i>dest</i> – Destination address of the static route<br><i>bits</i> – If bits are used, the destination address is a subnet<br><i>interface</i> – The name of the interface on which packets go out<br><i>gateway</i> – Where an interface sends a packet<br><i>metric</i> – The number of hops it takes to reach the gateway |
| default | Specifies the route used when the destination does not match any other route in the routing table.<br><i>interface</i> – The name of the interface on which packets go out<br><i>gateway</i> – Where an interface sends a packet<br><i>metric</i> – The number of hops it takes to reach the gateway                                                   |
| drop    | Removes a route.<br><i>dest</i> – Destination address of the static route to be removed<br><i>bits</i> – If bits are used, the destination address is a subnet                                                                                                                                                                                         |

**Example**

```

ii> route
Type          Destination          Interface  Gateway          Metric
localhost    127.0.0.0/8         _
broadcast    255.255.255.255    _
directed     10.0.0.255         eth1
local        10.0.0.1           eth1
remote       10.0.0.0/24        eth1
directed     10.0.1.255         eth2
local        10.0.1.2           eth2
remote       10.0.1.0/24        eth2
gateway      10.0.3.0/24        eth1      10.0.0.2          2
gateway      0.0.0.0/0          eth2      10.0.1.1          1

```

**sync command**

The **sync** command sets or displays the parameters for a synchronous (T1, V.35, or X.21) interface.

```

sync [<interface> clock          internal | external
      framing                    ESF | D4 | CCS | CAS
      format                      AT54016 | T1.403
      coding                      AMI | B8ZS | HDB3
      lbo                          0 | 7.5 | 15 | 22.5
      rate                        56 | 64
      data                        normal | inverted
      crc4                        enable | disable
      autoloopback               enable | disable
      fractional                  0xFFFFFFFF]

```

[Table 20](#) describes the **sync** command options.

**Table 20** sync command options

| Option           | Definition                                                |
|------------------|-----------------------------------------------------------|
| <i>interface</i> | Specifies the physical interface name.                    |
| clock            | Specifies the source of the clock.<br>(default: external) |

**Table 20** sync command options (continued)

| Option       | Definition                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| framing      | Selects the type of framing.<br>ESF – Specifies ESF as the T1 framing format.<br>D4 – Specifies D4 as the T1 framing format.<br>CCS – Specifies CCS as the E1 framing format.<br>CAS – Specifies CAS as the E1 framing format.                                                                                                                                                                                     |
| format       | Selects either AT54016 or T1.403 format for the performance monitoring data.<br>(default: T1.403)                                                                                                                                                                                                                                                                                                                  |
| coding       | Selects the type of coding.<br>AMI – Specifies AMI as the line encoding for either T1 or E1.<br>B8ZS – Specifies B8ZS as the line encoding for T1.<br>HDB3 – Specifies HDB3 as the line encoding for E1.                                                                                                                                                                                                           |
| lbo          | Sets the line build-out to 0, 7.5, 15, or 22.5 db.<br>(default: 0)                                                                                                                                                                                                                                                                                                                                                 |
| rate         | Sets the bit per channel to 56K or 64K.<br>(default: 64)                                                                                                                                                                                                                                                                                                                                                           |
| data         | The <i>inverted</i> option inverts the data before transmission. The <i>normal</i> option transmits the data.<br>(default: normal)                                                                                                                                                                                                                                                                                 |
| crc4         | Enables or disables the CRC4 checksum bits.<br>(default: enable)                                                                                                                                                                                                                                                                                                                                                   |
| autoloopback | Enables or disables the ability to set the interface into loopback from a remote site.<br>(default: enable)                                                                                                                                                                                                                                                                                                        |
| fractional   | Sets a 6-hex digit pattern for T1 or an 8-hex digit pattern for E1 indicating which of the T1 or E1 channels can carry data. A 1 indicates that the channel carries data. A 0 indicates that the channel is idle. The farthest right bit in the 24-bit or 32-bit pattern corresponds to channel 1. The farthest left bit corresponds to channel 24 or channel 32.<br>(defaults: 0FFFFFFF for T1, 0FFFFFFFF for E1) |

**Example 1**

```
sync t1 fractional 0ffffff
```

Enables the use of all 24 channels.

**Example 2**

```
sync t1 fractional 0x000fff
```

Enables the use of channels 1–12.

**Example 3**

```
sync t1 framing ESF
sync t1 coding b8zs
sync t1 lbo 0
sync t1 rate 64
```

## tcp command

The **tcp** command sets and displays parameters controlling the transmission control protocol (TCP). Displaying the TCP control parameters is available at the user level; however, configuring these settings is allowed only at the privileged level.

```
tcp [mss <value>
    window <value>]
```

[Table 21](#) describes the **tcp** command options.

**Table 21** tcp command options

| Option | Definition                                                                                       |
|--------|--------------------------------------------------------------------------------------------------|
| mss    | Sets the maximum segment size.<br><i>value</i> – The maximum segment size<br>(default: 1460)     |
| window | Sets the advertised window size.<br><i>value</i> – The advertised window size<br>(default: 7300) |

**Example**

```

ii> tcp
State      Local Socket      Remote Socket      Rcv Data  Snd Data
listen    0.0.0.0:19
listen    0.0.0.0:9
listen    0.0.0.0:7
listen    0.0.0.0:113
estab     127.0.0.1:23      127.0.0.1:1025
listen    0.0.0.0:3006
listen    0.0.0.0:6
estab     127.0.0.1:1025   127.0.0.1:23
listen    0.0.0.0:23

rtoAlgorithm    1    rtoMin        2000
rtoMax          4000  maxConn      10000
activeOpens     1    passiveOpens  1
attemptFails    0    estabResets   0
currEstab       2    inSegs        912
outSegs         912  retransSegs   0
inErrs          0    outRsts       0

```

**time command**

The **time** command displays or sets the system time. Displaying the system time is available at the user level; however, configuring the system time is allowed only at the privileged level.

```
time [<hhmm>] [<timezone>]
```

[Table 22](#) describes the **time** command options.

**Table 22** time command options

| Option          | Definition                                                                                        |
|-----------------|---------------------------------------------------------------------------------------------------|
| <i>hhmm</i>     | Sets the time in hours followed by minutes.                                                       |
| <i>timezone</i> | Sets the time zone. For more information, refer to <a href="#">“timezone option” on page 68</a> . |

**Example**

```
ii# time 1904
Wed Aug 9 19:04:00 2000

ii# time cst6cdt
Wed Aug 9 19:04:00 2000
```

**timezone option**

The **timezone** option for the **time** command sets the system time zone. To display the current setting of the **timezone** option, use the **config** command ([page 96](#)).

```
stdoffset[dst[offset][,rule]]
```

[Table 23](#) describes the **timezone** command options.

**Table 23** timezone command options

| Option                | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>std, dst</code> | Three or more letters that are the designation for the standard (STD) or daylight saving time (DST) zone. Only <code>std</code> is required. If <code>dst</code> is omitted, then summer time (DST) does not apply in this locale.<br>Note the following: <ul style="list-style-type: none"> <li>• Uppercase and lowercase letters are allowed.</li> <li>• Any characters are allowed, except for the following: a leading colon (:), digits, comma (,), minus sign (-), plus sign (+), and ASCII NUL (\0).</li> </ul> |
| <code>offset</code>   | Indicates the value that should be added to the local time to arrive at Coordinated Universal Time (UTC). The offset has the form <code>hh[:mm[:ss]]</code> . See " <a href="#">offset: hh[:mm[:ss]] option</a> " on <a href="#">page 69</a> for more information.                                                                                                                                                                                                                                                     |
| <code>rule</code>     | Indicates when to change to and from daylight saving time (DST). The rule has the form <code>date[/time],date[/time]</code> . See " <a href="#">rule: date[/time],date[/time] option</a> " on <a href="#">page 69</a> for more information.                                                                                                                                                                                                                                                                            |

## offset: hh[:mm[:ss]] option

You must define the following information when you use the **hh[:mm[:ss]]** option to specify the value that must be added to the local time to arrive at UTC.

- The hour (**hh**) is required and may be a single digit.
- The minutes (**mm**) and seconds (**ss**) are optional.
- The **offset** following **std** is required.
- If no **offset** follows **dst**, daylight saving time is assumed to be one hour ahead of standard time. One or more digits may be used, and the value is always interpreted as a decimal number.
- The hour can be between 0 and 24, and the minutes (and seconds, if present), can be between 0 and 59. If preceded by a minus sign (-), the time zone is east of the Prime Meridian; otherwise, the time zone is west of the Prime Meridian, indicated by an optional preceding plus sign (+).

## rule: date[/time],date[/time] option

You must define the following information when you use the **date/time,date/time** option to change to and from daylight saving time:

- The first date specifies when the change from standard to daylight saving time occurs.
- The format of the date can be displayed in one of three ways ([Table 24](#)).

**Table 24** timezone command date formatting methods

| Method | Definition                                                                                                                                                                                       |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| jn     | Indicates Julian day n (1 <= n <= 365).<br>Leap days are not counted. That is, in all years (including leap years) February 28 is day 59 and March 1 is day 60. February 29 cannot be specified. |

**Table 24** timezone command date formatting methods (continued)

| Method              | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>n</code>      | Indicates zero-based Julian day ( $0 \leq n \leq 365$ ). Leap years are counted, and February 29 can be specified.                                                                                                                                                                                                                                                                                                                                                                                  |
| <code>mm.n.d</code> | The <code>d</code> day ( $0 \leq d \leq 6$ ) of week <code>n</code> of month <code>m</code> of the year ( $1 \leq n \leq 5$ , $1 \leq m \leq 12$ , where week 5 means “the last <code>d</code> day in month <code>m</code> .” This may occur in the fourth or fifth week.). Week 1 is the first week in which <code>d</code> day occurs. Day zero is Sunday.<br>The time has the same format as offset except that no leading sign (+ or -) is allowed.<br>(default: 02:00:00 (if time is omitted)) |

- The second date specifies when the change back to standard time occurs.
- The time parameters specify when (in current local time) the change to the other time is made.

GMT is the default when the time zone variable is not set.

### **Example 1**

```
time EST5EDT
```

Eastern Standard Time (EST) is five hours earlier than Coordinated Universal Time (UTC). Standard time and daylight saving time both apply to this locale. By default, Eastern Daylight Time (EDT) is one hour ahead of standard time (that is, EDT4). Because it is not specified, daylight saving time starts on the first Sunday of April at 2:00 a.m. and ends on the last Sunday of October at 2:00 a.m.

### **Example 2**

```
time EST5EDT4,M4.1.0/02:00:00,M10.5.0/02:00:00
```

Eastern Standard Time (EST) is five hours earlier than Coordinated Universal Time (UTC). Standard time and daylight saving time both apply to this locale. Eastern Daylight Time (EDT) is one hour ahead of standard time. Daylight saving time starts on the first (1) Sunday (0) of April (4) at 2:00 a.m. and ends on the last (5) Sunday (0) of October (10) at 2:00 a.m.

**Example 3**

```
time PST8PDT
```

Pacific Standard Time (PST) is 8 hours earlier than Coordinated Universal Time (UTC). Standard time and daylight saving time both apply to this locale. By default, Pacific Daylight Time (PDT) is one hour ahead of standard time (that is, PDT7). Because it is not specified, daylight saving time starts on the first Sunday of April at 2:00 a.m. and ends on the last Sunday of October at 2:00 a.m.

**Example 4**

```
time "Central Europe Time-2:00"
```

Central European Time is 2 hours later than Coordinated Universal Time (UTC). Daylight saving time does not apply in this locale.

**wan command**

The **wan** command enables or disables the use of the differential services (diffserve) octet for prioritized queuing on the specified interface. Displaying the diffserve information is available at the user level; however, configuring this information is allowed only at the privileged level.

Currently, the supported diffserv code points are only those that maintain compatibility with the IP Precedence Field: bits 0-2 of the IPv4 TOS octet. A strict priority queuing methodology is used to order the packets assigned to these code points.

The only interfaces that currently support the use of the diffserve octet are single analog, T1, V.35, and X.21.

```
wan <interface> diffserve on | off
```

**Table 25** wan command options

| Option           | Definition                                                                   |
|------------------|------------------------------------------------------------------------------|
| <i>interface</i> | Sets the name of the interface on which to perform diffserve.                |
| <i>diffserve</i> | Turns the use of the differential services octet on or off.<br>(default: on) |

**Example**

```
ii# wan T1 diffserve on
```

## Server commands

Use server commands to control the services and daemons that run on the Contivity unit.

### backup command

The **backup** command specifies a list of interfaces that can establish a backup connection if the first interface fails. If the first interface fails, Contivity Branch Access attempts to establish a connection on the second interface. If the second interface fails, Contivity Branch Access tries the third, and so on through the list of interfaces.

```
backup start <interface> <interface> ...  
stop
```

[Table 26](#) describes the **backup** command options.

**Table 26** backup command options

| Option | Definition                                                                                                                                          |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| start  | Starts the backup connection in the order of the specified interfaces.<br><i>interface</i> – The name of the interface to which you want to connect |
| stop   | Stops the backup connection process.                                                                                                                |

### chargend command

The **chargend** command starts or stops the chargen service. This command executes a diagnostic facility that accepts TCP connections on port 19 and sends data to the client at the maximum possible rate.

```
chargend start | stop
```

**Example**

```
ii# chargend start
```

**dhcpcd command**

The **dhcpcd** command displays or configures the unit's Dynamic Host Configuration Protocol (DHCP) service. Displaying the DHCP service status is available at the user level; however, configuring the DHCP service is allowed only at the privileged level.

Configuration parameters are passed from a DHCP server to a DHCP client in tagged data items that are stored in the options field of the DHCP message. The data items themselves are also called options.

As a DHCP server, Contivity Branch Access supports the most commonly used options by name: lease, dns, domain, wins, and node. The Contivity Branch Access management software provides a generic option mechanism to support other options without placing an undue burden on the size and maintenance of the server. The generic option mechanism allows you to specify any option by number, rather than by name.

```
dhcpcd [start
scope <scope name> <first IP addr> <last IP addr> <netmask> <router>
exclude <first IP addr> [<last IP addr>]
reserve <IP addr> <MAC addr>
delete <scope name>
relay <IP addr of DHCP server>
lease <lease period (in seconds)>
dns <IP addr of Domain Name Server>...
domain <domain name>
tftp <IP addr of TFTP server>
boot <bootfile name>
wins <IP addr of Windows Internet Name Server>...
node <TCP/IP NetBIOS node type (B, P, M, or H)>
option <option number> ip <IP addr>
option <option number> hex <xx:xx:xx>
option <option number> text "<text>"
stop]
```

Table 27 describes the `dhcpcd` command options.

**Table 27** dhcpcd command options

| Option               | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>start</code>   | Starts the DHCP service.<br><b>Note:</b> You must use the <code>start</code> command to start the DHCP service, which differs from many of the other services where the <code>start</code> command is implied when any command is issued.                                                                                                                                                                                                                                                                                                                                                                       |
| <code>scope</code>   | Creates a pool of IP addresses with an appropriate set of parameters such as netmask and default gateway.<br><i>scope name</i> – An identifier for use when deleting the scope or setting scope specific options<br><i>first IP addr</i> – The first address in a range of addresses to be leased to DHCP clients<br><i>last IP addr</i> – The last address in a range of addresses to be leased to DHCP clients<br><i>netmask</i> – The netmask for all DHCP clients that acquire addresses from this scope<br><i>router</i> – The default gateway for all DHCP clients that acquire addresses from this scope |
| <code>exclude</code> | Prevents the DHCP service from using the specified range of IP addresses.<br><i>first IP addr</i> – The first address in a range of excluded addresses<br><i>last IP addr</i> – The last address in a range of excluded addresses                                                                                                                                                                                                                                                                                                                                                                               |
| <code>reserve</code> | Supports BootP and DHCP clients by reserving an IP address for a particular MAC address.<br><i>IP addr</i> – The IP address to be assigned to the specified MAC address<br><i>MAC addr</i> – The MAC address of a particular device                                                                                                                                                                                                                                                                                                                                                                             |
| <code>delete</code>  | Deletes the specified scope.<br><i>scope name</i> – The identifier assigned when the scope was created                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <code>relay</code>   | Converts DHCPD from a DHCP server to a BootP/DHCP relay agent for the specified IP address.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <code>lease</code>   | Specifies the number of seconds a client can use a requested IP address without renewing it.<br>(default: 259200 seconds (3 days))                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <code>dns</code>     | Specifies a list of domain name service (DNS) servers for all scopes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <code>domain</code>  | Specifies the domain name for all scopes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <code>tftp</code>    | Specifies the TFTP server to be used.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

**Table 27** dhcpd command options (continued)

| Option | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| boot   | Specifies the boot file name.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| wins   | Specifies a list of Windows Internet name servers for all scopes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| node   | <p>Selects the node type (B, P, M, or H) for the WINS servers to use. The node type specifies which one of four different NetBT name resolution methods is used.</p> <ul style="list-style-type: none"> <li>B – Uses IP broadcast messages.</li> <li>P – Uses point-to-point (PPP) communications.</li> <li>M – Uses a mix of B and P, trying to broadcast first and then using PPP communications if necessary.</li> <li>H – Uses a hybrid of B and P, attempting PPP communications first, then broadcasting only if the P mode fails.</li> </ul> <p>For more information about these modes, refer to your WINS server documentation.</p>                                                                                                                                                                                                             |
| option | <p>Specifies a numbered option as defined in RFC2132.</p> <p><i>number</i> – Specifies a number corresponding to a specified option, as defined in RFC2132 and other RFCs (as shown in the examples, 2 is the time offset option; 8 is the cookie server option).</p> <p><i>ip</i> – Specifies that the following parameter is an IP address.</p> <p><i>ipaddress</i> – Specifies the actual IP address parameter for this particular option. For example, the IP address of a cookie server.</p> <p><i>hex</i> – Specifies that the following parameter is ASCII text.</p> <p><i>xx:xx:xx</i> – Specifies the actual hex parameter for this particular option.</p> <p><i>text</i> – Specifies that the following parameter is a string of hexadecimal values.</p> <p><i>text</i> – Specifies the actual text parameter for this particular option.</p> |
| stop   | Stops the DHCP server.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

**Example**

```
ii> dhcpd
DHCP Server is enabled
Scope name: net
  Total addresses in Scope: 254      Available: 251(99%)
  10.116.116.3  0000AABBCCD8  07/17/98,19:49:45

dhcpd scope net 10.116.116.1 10.116.116.254 255.255.255.0 10.116.116.1
dhcpd exclude 10.116.116.1 10.116.116.2
dhcpd lease 259200
dhcpd dns 10.116.116.1
dhcpd start
```

**discardd command**

The **discardd** command starts or stops the discard service. This is a diagnostic facility that accepts TCP connections on port 9 and discards all incoming data.

```
discardd start | stop
```

**Example**

```
ii# discardd start
```

**dnstproxyd command**

The **dnstproxyd** command starts or stops the domain name server (DNS) proxy service.

```
dnstproxyd start | stop
```

**Example**

```
ii# dnstproxyd start
```

## echod command

The **echod** command starts or stops the echo service. This diagnostic facility accepts TCP connections on port 7 and echoes all incoming data back to the sender.

```
echod start | stop
```

### **Example**

```
ii# echod start
```

## identd command

The **identd** command starts or stops the ident service. This facility provides servers with the actual name of the connecting client. It is required by some servers.

```
identd start | stop
```

### **Example**

```
ii# identd start
```

## logind command

The **logind** command displays the users that are logged in. With privileged-level access, you can also use the **logind** command to start or stop the iiLogin interface program.

```
logind [start | stop]
```

## ntpd command

The **ntpd** command provides a means for the user to select the external clock to be used for the Contivity unit's time. The unit synchronizes time to this external clock using the network time protocol (NTP). The clock is synchronized on a regular basis (every 12 hours), but provisions are included so that a demand-based Internet connection, such as ISDN or analog, is not initiated solely for the purpose of synchronizing the clock.

```
ntpd [start
      add <server>
      drop <server>
      stop]
```

[Table 28](#) describes the **ntpd** command options

**Table 28** ntpd command options

| Option | Definition                                                                                                              |
|--------|-------------------------------------------------------------------------------------------------------------------------|
| start  | Starts the service.                                                                                                     |
| add    | Adds a host name or IP address of an NTP server to be used.<br><i>server</i> – The host name of the server to be added  |
| drop   | Drops a host name or IP address of an NTP server from use.<br><i>server</i> – The host name of the server to be dropped |
| stop   | Stops the NTP service.                                                                                                  |

### Example

```
ii> ntp
    ntpd add ntp.tmc.edu
```

## plserver command

The **plserver** command configures the specified interface to support Powerlan® clients.

```
plserver <interface>
```

**Example**

```
ii# plserver eth1
```

**ripd command**

The **ripd** command configures the use of the routing information protocol (RIP).

```
ripd [start
      accept <gateway>[/<bits>]]
      add <interface>
      drop <interface>
      multicast on | off
      refuse <gateway>[/<bits>]
      version 1 | 2
      stop]
```

[Table 29](#) describes the **ripd** command options.

**Table 29** ripd command options

| Option    | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| start     | Instructs the unit to use RIP to update its routing tables. This command is not required; Any RIP option implies a start.                                                                                                                                                                                                                                                                                                                        |
| accept    | Builds a list of gateways from which this unit accepts RIP announcements. If there are no gateways in the acceptance list, the unit accepts RIP announcements from any gateway.<br><i>gateway</i> – Specifies the IP address of the gateway that Contivity Branch Access will accept RIP announcements from.<br><i>bits</i> – Specifies the optional subnet mask of the gateway that Contivity Branch Access will accept RIP announcements from. |
| add       | Builds a list of interfaces on which the unit will broadcast RIP announcements. By default, the unit does not send out RIP announcements.<br><i>interface</i> – The IP address or host name to be added                                                                                                                                                                                                                                          |
| drop      | Cancels a previously entered add command.<br><i>interface</i> – The IP address or host name to be dropped                                                                                                                                                                                                                                                                                                                                        |
| multicast | Turns on RIP Multicast to make Contivity Branch Access more compatible with RIP Version 2. Multicast must be specified or the unit will use RIP Version 2 Broadcast.                                                                                                                                                                                                                                                                             |

**Table 29** ripd command options (continued)

| Option  | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| refuse  | <p>Cancels a previously entered <code>accept</code> command.</p> <p><b>Note:</b> If <code>refuse</code> is used to cancel all of the previously entered <code>accept</code> commands, RIP announcements are accepted from all interfaces.</p> <p><i>gateway</i> – The IP address of the gateway(s) that you want removed from the accept list</p> <p><i>bits</i> – The optional subnet mask of the gateway that you want removed from the accept list</p> |
| version | <p>Specifies the version of RIP used by the unit.</p> <p><b>Note:</b> Multicast is now supported in version 2. However, just selecting Version 2 will enable broadcast. To enable Multicast you must specify Version 2 Multicast.</p> <p>(default: 1)</p>                                                                                                                                                                                                 |
| stop    | Instructs the unit to no longer use RIP.                                                                                                                                                                                                                                                                                                                                                                                                                  |

**Example**

```

ii> rip
IFC adr=10.0.0.1 mask=255.255.255.0
IFC adr=10.0.1.2 mask=255.255.255.0
NET adr=10.0.0.0 mask=255.255.255.0 gw=10.0.0.1 metric=1 timer=0
NET adr=10.0.1.0 mask=255.255.255.0 gw=10.0.1.2 metric=1 timer=0
NET adr=190.186.100.0 mask=255.255.255.0 gw=190.186.98.32 metric=2 timer=30
rip accept
rip add 10.0.0.1
rip add 10.0.1.2

```

**snmp command**

The `snmp` command allows you to activate or deactivate an SNMP host to receive traps. Contivity Branch Access events can be monitored using a third-party network management tool that accepts SNMP traps.

```

snmp [community "<string>"
      add <ipadr>
      drop <ipadr>]

```

Table 30 shows supported SNMP trap events.

**Table 30** Supported SNMP trap events

| Trap                   | Description                                                                                                                               |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Cold start             | Unit has restarted due to power-up or restart.                                                                                            |
| Authentication failure | Unit has received an SNMP “get” request, but the community string on the remote end does not match the Contivity unit’s community string. |

Table 31 describes the **snmp** command options.

**Table 31** snmp command options

| Option    | Definition                                                                                                                   |
|-----------|------------------------------------------------------------------------------------------------------------------------------|
| community | Defines a community name used when the unit sends an SNMP trap.<br><i>string</i> – The community string<br>(default: public) |
| add       | Specifies an SNMP host to receive SNMP traps.                                                                                |
| drop      | Deactivates the specified SNMP host.                                                                                         |

The **snmp** command with no parameters shows the current settings for both the user and privileged access levels; however, configuring or removing SNMP trap hosts or defining the community string is allowed only at the privileged level.

### **Example**

```
ii> snmp
snmp community "my unit"
snmp add 192.168.1.11
```

The Contivity Branch Access management software sends SNMP traps for all supported events; you cannot specify trap events individually.

## snmpd command

The **snmpd** command enables or disables the SNMP daemon to support SNMP get requests from a management tool that requests SNMP information.

```
snmpd [community "<string>"
      start
      stop]
```

[Table 32](#) describes the **snmpd** command options.

**Table 32** snmpd command options

| Option    | Definition                                                                                                                                                                                                                                                                                                               |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| community | Defines a community name that serves as a password to validate that the requestor has the right to retrieve the requested information.<br><i>string</i> – The community string<br>(default: public)                                                                                                                      |
| start     | Starts the SNMP daemon so that an SNMP agent can receive the standard MIB II groups: <ul style="list-style-type: none"> <li>• system</li> <li>• interfaces</li> <li>• at</li> <li>• ip</li> <li>• icmp</li> <li>• tcp</li> <li>• udp</li> <li>• transmission (frame relay, T1/E1, VPN tunnel)</li> <li>• snmp</li> </ul> |
| stop      | Stops the SNMP daemon from returning SNMP information.                                                                                                                                                                                                                                                                   |

Entering the **snmpd** command with no parameters displays the status of the SNMP daemon. Displaying the status of the SNMP daemon is available at the user level.

### Example

```
ii> snmpd
snmpd community "secretcode"
snmpd start
```

If an SNMP get request is sent with an incorrect community string, the Contivity unit sends an “Authentication failure” SNMP trap. [Table 30 on page 81](#) shows the supported SNMP trap events.

## socksd command

The **socksd** command displays or changes settings for the SOCKS service. Displaying the SOCKS service settings is available at the user level; however, configuring these settings is allowed only at the privileged level.

```
socksd [start
        log on | off
        stop]
```

[Table 33](#) describes the **socksd** command options.

**Table 33** socksd command options

| Option | Definition                                           |
|--------|------------------------------------------------------|
| start  | Starts the SOCKS service.                            |
| log    | Enables or disables SOCKS logging.<br>(default: off) |
| stop   | Stops the SOCKS service.                             |

### Example

```
ii> socks
Address          Ref  TTL  ID
10.0.0.247      0    88   1D29A0
```

## syslog command

The **syslog** command configures a system log (SYSLOG) host to receive notification of pre-defined significant events. You can view SYSLOG messages for DHCP, IPsec, line state, and other modules. In privileged mode, the **syslog** command facilitates remote management by providing the ability to use a third-party SYSLOG daemon for logging events. Some examples of events that are logged include:

- Tunnel initiation
- Tunnel timeout
- Tunnel deletion
- Tunnel limits exceeded
- Rogue DHCP server detected
- Conflicting IP addresses detected
- Scope full (all available IP addresses leased)
- IP address lease assignment to client
- Renewal of lease
- Release of lease
- Denial of IP address lease request

SYSLOG does not replace existing logging mechanisms. There is no limit to the number of SYSLOG daemons or hosts you can define. System logging can also be deactivated by dropping all hosts. For a complete list of SYSLOG events, refer to *Using the Contivity Branch Access Management Software Version 7.20*.

```
syslog [facility local<0-7>
        priority emerg|alert|crit|err|warning|notice|info|debug
        add      <ipadr>
        drop     <ipadr>]
```

Table 34 describes the **syslog** command options.

**Table 34** syslog command options

| Option   | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| facility | Identifies the Contivity unit as the originator of the SYSLOG message.<br><i>local&lt;0-7&gt;</i> – Facility name such as local0, local1, and so forth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| priority | Specifies the lowest level for messages to be logged. For example, priority err indicates that messages with priority, emerg, alert, crit, and err should be logged. Priority debug causes all messages to be logged.<br><br><i>emerg</i> – System is unusable. Take action immediately.<br><i>alert</i> – System may become unusable. Take action immediately.<br><i>crit</i> – System is in critical conditions. Take action immediately.<br><i>err</i> – System produced an error condition. Take action as soon as possible.<br><i>warn</i> – System produced a warning condition. Take action as soon as possible.<br><i>notice</i> – System produced a normal but significant condition. Not an error condition, but take action as soon as possible.<br><i>info</i> – Information only. No action required.<br><i>debug</i> – Debug message used only when debugging the software. No action required.<br><br>For a list of messages and their appropriate priority levels, refer to <i>Using the Contivity Branch Access Management Software Version 7.20</i> . |
| add      | Specifies a SYSLOG host to receive SYSLOG messages. Enter <i>&lt;ipadr&gt;</i> as either an IP address or a host name.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| drop     | Deactivates the specified SYSLOG host. Enter <i>&lt;ipadr&gt;</i> as either an IP address or a host name.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |



**Note:** The Contivity Branch Access management software version 7.20 does not allow individual specification for each event that is logged.

The presentation of the SYSLOG message depends on the SYSLOG daemon receiving the message from Contivity Branch Access. The SYSLOG daemon might stamp the message with the time and date and usually displays the priority. The SYSLOG daemon might also add the host name.

### **Example**

```
05-10-2001 11:38:44 Local2.Notice 192.168.1.1 Telnet: login from [192.168.1.11]
```

The **syslog** command with no parameters displays the SYSLOG facility, priority and list of hosts, for example:

```
ii> syslog
syslog facility local2
syslog priority debug
syslog add 192.168.1.12
```

## **tcpserver command**

The **tcpserver** command allows the Contivity Branch Access administrative programs (Setup, Admin, Monitor, Tools, and AutoLog) to communicate with the unit over IP. There are no parameters.

If you execute this command and receive an “invalid arguments” error, the tcpserver is already running.

```
tcpserver
```

## **telnetd command**

The **telnetd** command starts or stops the Telnet service.

```
telnetd [start
        port    <value>
        rows    <value>
        timeout <seconds>
        stop]
```

Table 35 describes the `telnetd` command options.

**Table 35** telnetd command options

| Option               | Definition                                                                                                                                                                                                                                                                                                                 |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>start</code>   | Starts the Telnet service.                                                                                                                                                                                                                                                                                                 |
| <code>port</code>    | Sets the Telnet port.<br><i>value</i> – The actual port number to be used<br>(default: 23)                                                                                                                                                                                                                                 |
| <code>rows</code>    | Sets the number of consecutive lines of output that are displayed before the Telnet service inserts a pause. A value of zero causes all lines to be displayed with no pause.<br><i>value</i> – The actual number of consecutive lines of output to be displayed before the Telnet service inserts a pause<br>(default: 24) |
| <code>timeout</code> | Number of consecutive idle seconds before the Telnet service automatically disconnects a client Telnet session. A value of zero disables the timeout.<br><i>value</i> – The actual number of consecutive idle seconds before the Telnet service automatically times out<br>(default: 600)                                  |
| <code>stop</code>    | Stops the Telnet service.                                                                                                                                                                                                                                                                                                  |

## webproxy command

The `webproxy` command starts or stops the Web proxy service. You can configure the Contivity unit to function as a Web (HTTP) proxy server which enables you to direct all workstations to a remote proxy. You can also configure the Contivity unit as a Web cache in addition to or instead of the cache on an individual workstation. Web caching is available only for Contivity 400 units.

The Web proxy service supports only HTTP requests (port 80), not HTTPS (port 443). If you want to use a proxy server for Web access and require access to port 443, refer to [“Accessing secure Web sites” on page 123](#).

```

webproxy [start
  active      on | off
  activetime  <minutes from midnight to start the Active Refresh>
  activeend   <minutes from the start time to stop the Active Refresh>
  activedays  <bit map of the days to run the Active Refresh>
              (bit 1=Sunday, 2=Monday... 7=Saturday)
  address     <proxy address>
  binpercent  <expiry percent for binary>
  bintime     <min expiry time for binary (in minutes)>
  bypass      on | off
  cgi         on | off
  level       1 | 2 | 3 (conservative | moderate (default) | aggressive)
              binpercent, bintime, cgi, nocache, query, textpercent, and
              time are defined by this option.
  maxentries  <max entries>
  maxsize     <max cache entry>
  nocache     on | off
  port        <port number>
  query       on | off
  refresh     on | off
  reserved    <reserved from cache>
  textpercent <expiry percent for text>
  time        <min expiry time for text (in minutes)>
  transparent on | off
stop]

```

[port] [reserved] [transparent] must be on the initial command line

[Table 36](#) describes the **webproxy** command options.

**Table 36** webproxy command options

| Option     | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| start      | Starts the Web proxy service. This command is not required; any Web proxy option implies a start.                                                                                                                                                                                                                                                                                                                                                                                                                    |
| active     | Enables or disables active refreshing. The active refresh option attempts to keep the most frequently requested Web entries fresh. Rather than wait for a request for an entry, Contivity Branch Access actively evaluates the elements in the cache, and tests them and reloads them before they expire. Disable the active refresh or limit its use if you pay Internet access fees based on usage time.<br><br><i>minutes</i> – The number of minutes from midnight to start the active refresh<br>(default: off) |
| activetime | Sets the number of minutes from midnight that you want to start the active refresh.<br><br><i>minutes</i> – The number of minutes from start time to stop the active refresh<br>(default: 460 (8:00 AM))                                                                                                                                                                                                                                                                                                             |

**Table 36** webproxy command options (continued)

| Option     | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| activeend  | Sets the number of minutes from the start time to stop the active refresh.<br>(default: 540 (5:00 PM))                                                                                                                                                                                                                                                                                                                                                                                                                    |
| activedays | Specifies the days of the week that the active refresh will run.<br><i>bitmap</i> – The bit map of the days to run the Active Refresh.<br>Bit 1=Sunday, 2=Monday . . . 7=Saturday.<br>(default: 62 (Monday through Friday))                                                                                                                                                                                                                                                                                               |
| address    | Sets the address of an HTTP proxy server. This command redirects HTTP requests through another proxy server (for additional filtering, caching, and so forth). Specifying an illegal URL disables the proxy setting.                                                                                                                                                                                                                                                                                                      |
| binpercent | Sets the percentage of the current date Contivity Branch Access should use when calculating a binary Web entry's expiration date. When an entry stored in the cache has no expiration time stamp, Contivity Branch Access calculates the expiration time based on a percentage of the current date and time minus the entry's last modified date and time.<br><i>percent</i> – The expiry percent for the binary<br>(default: 40%. <b>Note:</b> This default value is based on the <code>level</code> option set to <2>.) |
| bintime    | Specifies the minimum number of minutes a binary Web entry with no expiration time can be expired before it is checked against the original Web server.<br><i>time</i> – The actual minimum number<br>(default: 20 minutes. <b>Note:</b> This default value is based on the <code>level</code> option set to <2>.)                                                                                                                                                                                                        |
| bypass     | Enables or disables the use of the Web cache. When on, no searching or caching of results occur. This option takes precedence over all other caching options.                                                                                                                                                                                                                                                                                                                                                             |
| cgi        | Enables or disables the caching of CGI entries.<br>(default: on. <b>Note:</b> This default value is based on the <code>level</code> option set to <2>.)                                                                                                                                                                                                                                                                                                                                                                   |

**Table 36** webproxy command options (continued)

| Option     | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| level      | <p>Sets the expiration and request and response options for Contivity Branch Access for <code>binpercent</code>, <code>binptime</code>, <code>cgi</code>, <code>nocache</code>, <code>query</code>, <code>textpercent</code>, and <code>time</code>.</p> <p>1 (Conservative) – This level reduces Internet traffic with minimal risk of returning “stale” data. Select this option if you are concerned that the information a client receives is up-to-the-minute and your users cannot risk receiving old information.</p> <p>2 (Moderate) – This level extends entry expiration times and allows cached responses to CGI and query results.</p> <p>3 (Aggressive) – This level further extends expiration times to further reduce Internet traffic.</p> <p>(default: 2)</p> |
| maxentries | <p>Specifies the maximum number of Web entries to cache.</p> <p><i>max_entries</i> – The actual number of maximum entries</p> <p>(default: 8500)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| maxsize    | <p>Specifies the maximum number of bytes for an individual Web entry to cache.</p> <p><i>max_cache_entry</i> – The actual maximum byte number</p> <p>(default: 100,000)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| nocache    | <p>Enables or disables the Web proxy server's ability to ignore “no-cache” requests. Setting <code>nocache</code> to on causes no-cache requests to be ignored. A user reloading a Web page from a browser or holding down the [Shift] key and reloading causes a no-cache request.</p> <p><b>Note:</b> Setting this option can be dangerous. If a “bad” entry gets cached, there will be no way to reload the value until it expires.</p> <p>(default: off. <b>Note:</b> This default value is based on the <code>level</code> option set to &lt;2&gt;.)</p>                                                                                                                                                                                                                  |
| port       | <p>Specifies the Web proxy server port number. To use the Web proxy server directly, the client's browser must also be set to this value.</p> <p><b>Note:</b> This option must be on the initial command line.</p> <p><i>portnumber</i> – The actual port number</p> <p>(default: 8080)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| query      | <p>Enables or disables the caching of query entries. Set this value to on to retrieve the same query requests to a search engine, for example, from the cache. Set this value to off to serve query requests from the server.</p> <p>(default: on. <b>Note:</b> This default value is based on the <code>level</code> option set to &lt;2&gt;.)</p>                                                                                                                                                                                                                                                                                                                                                                                                                            |

**Table 36** webproxy command options (continued)

| Option      | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| refresh     | Enables or disables the return of a potentially stale response from the Web cache. A stale response may occur after the cache received an error from the real server trying to verify that it is up to date. Set this value to <code>on</code> to allow the return of the potentially stale cached entry.<br>(default: <code>on</code> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| reserved    | Sets the number of bytes reserved for use by other parts of the system. The Web cache attempts to use all of the system space it needs, but it is prevented from using the reserved space.<br><b>Note:</b> This option must be on the initial command line.<br>(default: 2 MB)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| textpercent | Sets the percentage of the current date Contivity Branch Access should use when calculating a text Web entry's expiration. When an entry stored in the cache has no expiration time stamp, Contivity Branch Access calculates the expiration time based on a percentage of the current date and time minus the entry's last modified date and time.<br>(default: 20%. <b>Note:</b> This default value is based on the <code>level</code> option set to <code>&lt;2&gt;</code> .)                                                                                                                                                                                                                                                                                                                                         |
| time        | Sets the number of minutes to extend the expiration time of a text Web entry. The expiration time is the time after which the cached entry may no longer be valid. Prior to this time the Web proxy server does not need to check with the actual Web server to determine if the cache needs to be updated. It is often the case that the expiration time is not provided and the entry must always be verified. This setting artificially extends the expiration.<br>(default: 10 minutes. <b>Note:</b> This default value is based on the <code>level</code> option set to <code>&lt;2&gt;</code> .)                                                                                                                                                                                                                   |
| transparent | Enables or disables the transparent Web proxy server. To run the transparent Web proxy server, the Web proxy server must be started and the <code>transparent</code> option must be <code>on</code> . In addition, any traffic that needs to use the Web proxy server must be redirected to it. You can do this by selecting an interface and setting its <code>transparent</code> parameter to <code>on</code> . An alternative is to construct a filter with the <code>I4switch</code> action and assign the filter to an interface. When this option is enabled, the port is automatically set to 80. When you use the proxy server in transparent mode, the individual Web browsers do not need to be reconfigured.<br><b>Note:</b> This option must be on the initial command line.<br>(default: <code>off</code> ) |
| stop        | Stops the Web proxy service.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

If `port`, `reserved`, or `transparent` are set, they must be set on the initial command line.

**Example**

```
ii> webproxy
webproxy start transparent on
```

## webserver command

The **webserver** command allows you to use a Web browser to configure the unit. Displaying the Web server information is available at the user level; however, configuring the Web server service is allowed only at the privileged level.

```
webserver [start
           port <portnumber>
           stop]
```

[Table 37](#) describes the **webserver** command options.

**Table 37** webserver command options

| Option | Definition                                                                                                                                                                                                                                                                                                                                                                                     |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| start  | Starts the Web server.                                                                                                                                                                                                                                                                                                                                                                         |
| port   | Specifies the port for the Web server.<br><i>portnumber</i> – The actual port number on which you want to start the server<br><b>Note:</b> If you change the port number from the default of 80, you must specify the port number when you use a Web browser to access the Contivity unit. For example, if you change the port number to 100, you use: http://192.168.1.1:100<br>(default: 80) |
| stop   | Stops the Web server.                                                                                                                                                                                                                                                                                                                                                                          |

**Example**

```
ii# webserver
webserver is running on port 80
```

## winsockserver command

The **winsockserver** command allows IPX clients to use the unit. The optional parameter specifies the IPX frame type. If no frame type is specified, **Ethernet II** is used for Ethernet interfaces or **tokenring** for token ring interfaces. Multiple frame types can run on a single physical interface.

The **winsockserver** command is a privileged-level command. It is enabled by default, but you can disable it by editing the unit's advanced TCP/IP settings using Setup or Web configuration. For details, refer to *Using the Contivity Branch Access Management Software Version 7.20*.

```
winsockserver <interface> [802.3 | 802.2 | snap | tokenring | tokenringsnap]
```

[Table 38](#) describes the **winsockserver** command options.

**Table 38** winsockserver command options

| Option           | Definition                                                                                                                                                                                              |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>interface</i> | Specifies the name of the physical interface that you want to configure.<br>Select one of the following frame types to be run on the specified interface: 802.3, 802.2, snap, tokenring, tokenringsnap. |

### Example

```
winsockserver eth1
winsockserver eth1 802.3
winsockserver eth1 802.2
winsockserver eth1 SNAP
```

## Utility commands

Use the utility commands to determine the status of processes on a unit or to control a Telnet or out-of-band management session. Utility commands are also useful to restart a unit or to start tracing and logging.

### arp command

The **arp** command displays or flushes the address resolution protocol (ARP) cache. Displaying the ARP cache is available at the user level; however, flushing the cache is allowed only at the privileged level.

```
arp [flush]
```

[Table 39](#) describes the **arp** command option.

**Table 39** arp command option

| Option | Definition           |
|--------|----------------------|
| flush  | Removes all entries. |

#### **Example**

```
ii> arp
Seconds IP Address      MAC Address
   834  10.0.0.32         026AABBCCD93
   834  10.0.0.99         006AABBCCD76
   847  10.0.0.137        008AABBCCD99
```

The Seconds column indicates the number of seconds before the entry expires from the list.

### cat command

The **cat** command is a privileged-level command that displays the contents of the specified file.

```
cat <filename>
```

Table 40 describes the **cat** command option.

**Table 40** cat command option

| Option          | Definition                                                                                                                                                                                                                                |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>filename</i> | Specifies the name of the file to be displayed. You can specify the file's location in the file name. Files are retrieved from temporary storage by default. If the file resides in nonvolatile storage, precede the file name with "a:". |

### Example

```

ii# cat a:config
dns add server 10.0.0.32
dns add server 10.0.0.99
dns suffix test.com
isdn isdn switch nil spid 015550000001 speed 128
name SERVER0000000
dialerd isdn number "555-0000"
dialerd isdn idletimeout 60
ppp isdn username "user" password \rGrf6oC11pRgT6kNcW
ifconfig eth1 ipaddress 10.0.0.61 255.255.255.0
ifconfig eth1 xlate on
dialerd isdn mode demand
dialerd isdn demand 80 40
route add default isdn
chargend start
discardd start
dnsproxyd start
echod start
identd start
plserver eth1
tcpserver
telnetd start
winsockserver eth1
winsockserver eth1 802.3
winsockserver eth1 802.2
winsockserver eth1 SNAP

```

## commit command

The **commit** command is a privileged-level command that commits the current system configuration by writing it to nonvolatile storage. When you make configuration changes, use this command to store the changes so that they are in effect whenever the system is restarted. Each time the **commit** command is executed, it saves the previous configuration in a backup file.

```
commit [undo]
```

[Table 41](#) describes the **commit** command option.

**Table 41** commit command option

| Option | Definition                                 |
|--------|--------------------------------------------|
| undo   | Restores the previously saved backup file. |

### *Example*

```
ii# commit
```

## config command

The **config** command displays the unit's current configuration to users with privileged access.

```
config
```



**Note:** If a configuration parameter is set to its default state, it is not displayed.



**Note:** PPP passwords and IPsec keys are displayed in an encrypted format, not as clear text.

---

**Example**

```

ii# config
dns add server 10.0.0.32
dns add server 10.0.0.99
dns suffix test.com
isdn isdn switch nil spid 015550000001 speed 128
name SERVER0000000
dialerd isdn number "555-0000"
dialerd isdn idletimeout 60
ppp isdn username "user" password \rGrf6oC1lpRgT6kNcW
ifconfig eth1 ipaddress 10.0.0.61 255.255.255.0
ifconfig eth1 xlate on
dialerd isdn mode demand
dialerd isdn demand 80 40
route add default isdn
chargend start
discardd start
dnsproxyd start
echod start
identd start
plserver eth1
tcpserver
telnetd start
winsockserver eth1
winsockserver eth1 802.3
winsockserver eth1 802.2
winsockserver eth1 SNAP

```

**csu command**

The **csu** command is a user-level command that displays diagnostic information for the T1 channel service unit (CSU). This command provides information that is helpful in diagnosing T1 lines that are down or slow.

```
csu <interface>
```

[Table 42](#) describes the **csu** command option.

**Table 42** csu command option

| Option           | Definition                             |
|------------------|----------------------------------------|
| <i>interface</i> | Specifies the physical interface name. |

**Example**

```

ii> csu t1
Totals :                               Current:                               Last 24 Hours:
ElapsedSeconds/ValidIntervals :        377                               96
ErroredSeconds :                        0
BurstyErroredSeconds :                  0
SeverelyErroredSeconds :                0
SeverelyErroredFramingSeconds :         0
UnavailableSeconds :                    0
ControlledSlipSeconds :                 0
DegradedMinutes :                       0
PathCodeViolations :                    0
LineErroredSeconds :                    0
LineCodeViolations :                     0

```

**date command**

The **date** command displays or sets the date for the unit. Displaying the unit date is available at the user level; however, setting the unit date is allowed only at the privileged level.

```
date [<mmddyyyy>]
```

[Table 43](#) describes the **date** command option.

**Table 43** date command option

| Option          | Definition                                                            |
|-----------------|-----------------------------------------------------------------------|
| <i>mmddyyyy</i> | Specifies a 2-digit month and 2-digit day followed by a 4-digit year. |

**Example**

```

ii> date
Wed Jun 16 15:56:35 2001

ii# date 06292001
Tue Jun 29 15:57:19 2001

```

## dir command

The **dir** command is a user-level command that displays the files in the temporary or nonvolatile storage.

```
dir [<path>]
```

[Table 44](#) describes the **dir** command option.

**Table 44** dir command option

| Option      | Definition                                                                            |
|-------------|---------------------------------------------------------------------------------------|
| <i>path</i> | Specifies the directory name (for example, webcache) or "a:" for nonvolatile storage. |

### Example 1

```
ii> dir
nos.log          892 10:42 07/16/98  isdn-b1.log    3751 09:16 07/20/98
isdn-b2.log     3661 12:53 07/20/98  iissetup.lck   29 12:18 07/17/98
config.new      648 12:18 07/17/98  39dd8          0 16:26 07/20/98
trace.log       5401 08:47 07/20/98
7 files. 1005568 bytes free. Disk size 2080256 bytes.
```

**Example 2**

```
ii> dir a:

ibmbio.com      50818 15:51 11/01/96  ibmdos.com      75 15:51 11/01/96
command.com     27543 06:22 10/24/96  autoexec.bat    647 16:40 06/15/98
boot.bat        163 14:53 05/26/98  boot.exe        27448 14:39 06/15/98
config          657 14:49 07/15/98  copyrite        187 17:44 06/15/98
finali.exe     11331 09:48 04/29/98  hosts           438 18:02 07/19/95
iiuser.grp      272 08:27 04/10/98  mainzip.exe     406732 08:40 07/15/98
ptos.map        17575 23:03 07/07/98  ptos.rex        92884 23:03 07/07/98
reboot.com      16 11:50 05/25/95  reset.bat       346 10:21 04/29/98
services        9211 10:25 04/10/98  settleds.exe    7333 07:59 06/12/97
testswch.exe    7139 17:09 06/30/97  hardware        354 09:47 06/30/98
config.rst      216 10:26 06/19/98  hardware.cfg    58 09:47 06/30/98
digi.bin        62148 12:35 09/15/97  services.rst    9211 10:25 04/10/98
hosts.rst       438 18:02 07/19/95  iiuser.rst      272 08:27 04/10/98
serial.num      55 09:47 06/30/98  version         76 09:47 06/30/98
isdn.up         137 11:58 06/30/98  iisetup.rgs     26 11:05 06/30/98
dumpfile        2839 08:34 07/06/98  setinfo.bat     18 11:05 06/30/98
iisetup.pwd     24 11:05 06/30/98  register.log    32 11:06 06/30/98
pipe0.$$$       500 17:09 07/02/98  newdebug        256740 09:26 07/03/98
config.sav      526 17:38 07/07/98

37 files. 1005568 bytes free. Disk size 2080256 bytes.
```

**enable command**

Contivity Branch Access provides two levels of passwords: privileged and user. When you log in, your password determines whether the access level is user or privileged. If the first password is at the user level, then the **enable** command allows you to switch from user level to privileged level without logging out. However, to return to the user level from the privileged level you must log off and log back on with the user-level password.

```
enable
```

The Contivity Branch Access administrative utilities require the privileged password. The Monitor program requires the privileged password for those functions now protected by the administrator password. Monitor displays statistic and diagnostic information without requiring any password.

**Example**

```
ii> enable
password:
```



**Note:** The Contivity Branch Access management software does not support user names associated with the multi-level passwords.

**exit command**

The **exit** command is a user-level command that ends the current Telnet or out-of-band management session. Any changes you have made are lost unless you commit them. For details, refer to [“commit command” on page 96](#).

```
exit
```

**log command**

The **log** command is a user-level command that displays the usage log for users.

```
log
```

**Example**

```
ii> log
User                Sent      Received  Time On      Last                Active
IPXUSER            2630      29277    01:00:23:17  Jul 17 11:09:27    1
10.0.0.99          714       0        00:19:36:31  Jul 16 15:35:56    0
```

[Table 45](#) describes the information displayed for the **log** command.

**Table 45** log command information

| Column | Meaning                                                                                                                                                                                                                        |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| User   | IP address or name of the user created in Contivity Branch Access or adopted from a directory service (for more information, refer to Chapter 3 of <i>Using the Contivity Branch Access Management Software Version 7.20</i> ) |
| Sent   | Number of bytes sent by the user                                                                                                                                                                                               |

**Table 45** log command information (continued)

| Column   | Meaning                                                                    |
|----------|----------------------------------------------------------------------------|
| Received | Number of bytes received by the user                                       |
| Time On  | Length of time the user has been logged on                                 |
| Last     | Time the user last accessed the unit                                       |
| Active   | Number of open application sessions (instances) of Contivity Branch Access |

## memory command

The **memory** command is a user-level command that displays memory statistics for the unit.

```
memory
```

### *Example*

```
ii> memory  
bytes used 2191384 free 3123992 blocks used 2082 free 518
```

## password command

The **password** command allows you to specify or change a user-level password or a privileged-level password. The password is case-sensitive and supports up to 15 characters, including spaces. This command defines the new password immediately. If you do not specify the `user` or `privileged` option, the password is assumed to be privileged. The **commit** command is not required.

```
password [user | privileged]
```



**Note:** If only one password is assigned, logging in with that password provides privileged access.

When upgrading from a previous version that has only one password assigned, both the privileged and user passwords are set to that password.

---

### Example

```
ii# password [ user | privileged ]
New password: *****
Confirm password: *****
```



**Note:** You can use the **enable** command to change your access type from user-level access to privileged-level access. For more information, see [“enable command” on page 100](#).

---

In general, commands that display information can be accessed with a user-level password. An exception, however, is the **config** command. In addition, **ping** and **traceroute** can be executed.

Typically, commands that modify the unit’s behavior require the privileged-level password.

### Removing a password

To remove a password, press [Enter] after each prompt.

### Example

```
ii# password user
New password: [Enter]
Confirm password: [Enter]
```

## ping command

The **ping** command sends a packet to the specified host name or IP address. The **length** option specifies the length to extend the packet beyond its normal header. Running a ping (except background, monitor, and control) is available at the user level.



**Note:** Running **ping** for a long period of time in the foreground does not maintain the Telnet or out-of-band management session which could time out before the **ping** command completes.

---

You can use the background ping facility to control or monitor the connection state of a virtual private network (VPN) and serve as a “keep-alive” for the tunnel.

There are three ping modes:

- **Control mode** – Use a control ping when you want to maintain a permanent tunnel connection, switch to a backup interface when a primary interface becomes unavailable and the primary interface does not have a reliable indication of its availability, or both.

For example, in xDSL and cable modem environments, the BayStack Instant Internet interface that connects to the Internet is usually an Ethernet interface, and that interface is always active as long as the link exists between BayStack Instant Internet and the xDSL or cable modem. A ping in control mode always attempts to use the specified interface (even if it is considered inactive for normal use), and if three consecutive responses are not received, the interface is made inactive (if an IPsec interface is used, any associated tunnels are dropped). The ping continues to transmit on the interface, even while it is unavailable for normal traffic. After a response is received, the interface is made available again.



**Note:** The control ping initiates a connection and is considered to be activity. A control ping attempts to keep the path to the destination active at all times.

---

- **Monitor mode** – Use a monitor ping when you do not want to keep the connection active but you still want to check the status of a tunnel. This type of ping is typically used with a dial-up connection. A monitor ping does not initiate a connection and is not considered to be activity against a dial-up interface’s idle timeout. This mode does not keep a connection active.



**Note:** A monitor ping is considered to be activity on the CVS but is not considered to be activity against the Contivity unit’s dial-up timeout; therefore, BayStack Instant Internet is free to drop the line. After the line is dropped, the monitor ping disables the connection. The CVS’s idle timeout disables the other end of the connection.

---

In monitor mode, if the specified interface is not active the ping does not occur. Also, in the case of an IPsec interface, if the interface used to reach the corresponding remote gateway is not active, the ping does not occur. If an IPsec interface is specified and no response is received for three consecutive pings, the tunnel is dropped and is re-established as required by normal VPN activity.

If the ping fails for three consecutive times, the interface is brought down, but is not disabled from further activity. This is normally used for IPsec interfaces because the ping failure indicates that the IPsec tunnel is no longer operating properly. If this happens, any active IPsec tunnels are dropped and are re-established as required by normal activity.

- **Background mode** – Background mode is a standard ping with no other special provisions. This mode sends a ping to the specified destination, which initiates a connection if required, and is considered to be activity. The receipt of a response (or the lack of one) has no effect on system operation.

For all modes of ping, the destination should be some device that is reachable and for which a response is representative of the desired connectivity. For example, if the purpose of the ping is to validate a VPN connection, then it is best to choose a destination that is reached through the VPN tunnel, such as the private address of the remote Contivity unit or the Contivity VPN Switch (CVS).

```
ping [<hostid> count <0 - 1024>
      length <0 - 1024>
      interval <0 - 3600>
      timeout <1 - 60>
      failures <1 - 60>
      source <ipadr>
      control <interface>
      monitor <interface>
      background start | stop]
```

[Table 46](#) describes the **ping** command options.

**Table 46** ping command options

| Option        | Definition                                                                                                 |
|---------------|------------------------------------------------------------------------------------------------------------|
| <i>hostid</i> | Specifies the IP address or name of the unit to contact.                                                   |
| count         | Specifies the count or number of packets to send. A value of 0 sends packets indefinitely.<br>(default: 1) |

**Table 46** ping command options (continued)

| Option     | Definition                                                                                                                                                                                                                                                                                  |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| length     | Specifies the length of the data.<br>(default: 64)                                                                                                                                                                                                                                          |
| interval   | Specifies the time in seconds between packets.<br>(default: 1)                                                                                                                                                                                                                              |
| timeout    | Determines the length of time to wait for a ping to return.<br>(default: 5 seconds)                                                                                                                                                                                                         |
| failures   | When used with the <code>control</code> or <code>monitor</code> options, specifies the number of failed pings that can be returned before the line is dropped.<br>(default: 3)                                                                                                              |
| source     | Forces the packet to have the specified IP address.                                                                                                                                                                                                                                         |
| control    | Manages the operating status of an interface.<br><i>interface</i> – The name of the physical interface<br><b>Note:</b> A control ping shows up as encrypted messages in a trace.                                                                                                            |
| monitor    | Used for IPsec, this option checks the validity of a tunnel. After a series of failed pings, this option destroys the tunnel.<br><i>interface</i> – The name of the physical interface                                                                                                      |
| background | Runs the ping in the background.<br><code>start</code> – Starts a background ping.<br><code>stop</code> – Stops the active monitor or control ping.<br><b>Note:</b> All background pings running when you issue a <code>commit</code> command are written to the unit's configuration file. |

You can stop a background ping (such as `monitor` or `control`) with the background `stop` option for the `ping` command.

### Example

```
ii> ping 10.0.0.1 count 10 interval 3
pinging 10.0.0.1
succeeded      failed          avg time
      10           0          00:00:00.0015
```



**Note:** Press [Ctrl]+C to stop a ping.

## restart command

The **restart** command immediately restarts the unit. Any changes you have made are lost unless you commit them. For details, refer to [“commit command” on page 96](#).

```
restart confirm
```



**Note:** To perform a restart, you must spell out **confirm** completely.

---

## rows command

The **rows** command sets the number of rows of output displayed in a Telnet or out-of-band management session before the output is paused (default: 24). Setting the number of rows is available at the user level. Entering the **rows** command with no parameter shows the current setting.

```
rows [<rows>]
```

## sap command

The **sap** command runs the SAP (Service Advertising Protocol) service and displays a list of known Contivity units. The **sap** command displays the time, IPX network numbers, hops, and names of Contivity units that have sent service advertisements to the unit.

```
sap
```

### **Example**

```
ii> sap
Time Network Hops Name
0      12     1  00008AABBCCC5_II-ONE
273    1     1  00008AABBCC25_II-TWO
```

Table 47 describes the information displayed for the **sap** command.

**Table 47** sap command information

| Column  | Meaning                                                                                                |
|---------|--------------------------------------------------------------------------------------------------------|
| Time    | Number of seconds before the unit expires from the list, unless it sends another service advertisement |
| Network | IPX network number of the unit or blank if the network is non-IPX                                      |
| Hops    | Number of routers between the two Contivity units                                                      |
| Name    | MAC address and unit name of the Contivity unit sending the service advertisement                      |

## system command

The **system** command displays the unit serial number, total installed memory, firmware version, system start time, current system time, and system uptime.

```
system
```

### **Example**

```
ii> system
Serial number:  I500C0A8D00A0A
System memory:  12 MB
Version:        7.20
System started: Wed Jun  20 10:28:31 2001
Current time:   Fri Jun  22 12:04:36 2001
Up time:       49:36:05
```

## trace command

The **trace** command controls tracing on an interface. If a file is not specified, trace data is written to the default file *trace.log*. All trace files are written to temporary storage and are flushed when you restart the unit.

```
trace [<interface> oibxhar [<file> [<size>]]
      off]
```

When the **trace** command is used without any parameters, it displays the current status. Displaying the current status is available at the user level; however, configuring a trace is allowed only at the privileged level.

Table 48 describes the `trace` command options.

**Table 48** trace command options

| Option           | Definition                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>interface</i> | Specifies the name of the interface to be traced.                                                                                                                                                                                                                                                                                                                                             |
| <i>flags</i>     | Specifies the trace command flags included: <code>oibxhar</code> <ul style="list-style-type: none"> <li>• <i>o</i> – Transmitted (output) packets</li> <li>• <i>i</i> – Received (input) packets</li> <li>• <i>b</i> – Broadcast packets</li> <li>• <i>x</i> – Non-IP packets</li> <li>• <i>h</i> – Hex/ASCII dump</li> <li>• <i>a</i> – ASCII dump</li> <li>• <i>r</i> – Raw dump</li> </ul> |
| <i>file</i>      | Specifies the file name for trace output.<br>(default: <i>trace.log</i> )                                                                                                                                                                                                                                                                                                                     |
| <i>size</i>      | Limits the size (in bytes) of the trace file.<br><b>Note:</b> Be careful not to exceed the free bytes indicated by the <code>dir</code> command.<br>(default: 1 MB)                                                                                                                                                                                                                           |
| <i>off</i>       | Stops tracing.                                                                                                                                                                                                                                                                                                                                                                                |

### Example

```
ii# trace dialup io
Tracing dialup

ii> trace
eth1: tracing off
dialup: out+in
eth2: tracing off
```

When attempting to debug problems with the Admin access control lists, you can use the access trace log, which contains information about what was happening in the access control logic. The information from this trace is stored in the *access.log* file.

```
ii# access trace <level>
```

Turn an access trace log off with **access trace 0**. The level can be 1-9. The recommended level is 1.

## traceroute command

The **traceroute** command displays the individual hops in the trace route to the specified destination. Displaying the trace route is available at the user level.

```
traceroute <hostid> [nodnslookup  
                    ttl <1 - 255>  
                    wait <1 - 255>  
                    source <ipadr>]
```

[Table 49](#) describes the **traceroute** command options.

**Table 49** traceroute command options

| Option             | Definition                                                                                                    |
|--------------------|---------------------------------------------------------------------------------------------------------------|
| <i>hostid</i>      | Specifies the host name or IP address of the desired destination.                                             |
| <i>nodnslookup</i> | Disables address-to-name lookups.                                                                             |
| <i>ttl</i>         | Specifies the time-to-live or maximum number of hops to display. The range is 1 to 255.<br>(default: 30)      |
| <i>wait</i>        | Specifies the maximum number of seconds to wait for an individual hop. The range is 1 to 255.<br>(default: 3) |
| <i>source</i>      | Forces the packet to use the specified IP address as its source IP address.                                   |

## udp command

The **udp** command displays user datagram protocol (UDP) statistics.

```
udp
```

**Example**

```
ii> udp
0.0.0.0:1024
0.0.0.0:53
0.0.0.0:3006
inDatagrams      162
noPorts          41
inErrors         0
outDatagrams     180
```

## winsock command

The **winsock** command displays Winsock statistics.

```
winsock
```

**Example**

```
ii> winsock
IPXUSER threads 2 sockets 1
```

## xfer command

The **xfer** command facilitates remote management by providing the ability to remotely backup and restore configurations and to upgrade units in the field. The Contivity Branch Access management software can transfer files as a passive FTP client so that files can be loaded from or stored to an FTP server.

```
xfer get config|services|hosts|webhosts|usergroups|all URL
put config|services|hosts|webhosts|usergroups|all URL
get update URL
log <log file> URL
```

where URL = ftp://[<username>:<password>@]<hostid>/<path>/[<file>]

Table 50 describes the **xfer** command options.

**Table 50** xfer command options

| Option     | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| get        | Transfers the indicated information from an FTP server to the unit and specifies a path for that transfer. You can specify the source file name in the URL but the type ( <code>config</code> , <code>services</code> , <code>hosts</code> , <code>webhosts</code> , or <code>usergroups</code> ) determines the destination file name.                                                                                                                                                                                                                                                                                                                              |
| put        | Backs up the indicated information from the unit to an FTP server and specifies the path for that backup. The file name in the URL, if any, overrides the default file name.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| config     | Refers to all of the unit's configuration settings. When you perform a <code>put</code> , the default file name is <code>config</code> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| services   | Lists port mappings. When you perform a <code>put</code> , the default file name is <code>services</code> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| hosts      | Resolves host names to IP addresses for a DNS override. When you perform a <code>put</code> , the default file name is <code>hosts</code> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| webhosts   | Lists Web sites and cookie control settings. When you perform a <code>put</code> , the default file name is <code>webhosts</code> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| usergroups | Saves all the access controls defined for users and groups. When you perform a <code>put</code> , the default file name is <code>iiuser.grp</code> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| all        | Refers to <code>config</code> , <code>services</code> , <code>hosts</code> , <code>webhosts</code> and <code>usergroups</code> . Files are saved or restored using their default file names. Do not specify a file name in the URL.                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| update     | Upgrades the unit from the file located in the specified path on the FTP server. The default file name is <code>update.bin</code> ; however, another file name may be specified.<br><br>The unit is not automatically restarted after the firmware has been downloaded and saved. To complete the upgrade, submit the command <code>restart confirm</code> . The result of the update (either a confirmation or error message) is displayed as the welcome message for the next login.<br><br>Update information is also logged in the file <code>update.log</code> . For more information, refer to <a href="#">"Updating unit firmware remotely" on page 119</a> . |
| log        | Indicates to store the specified log file to the FTP server. When you specify the <code>log</code> option, the default file name is <code>&lt;log file name&gt;_.log</code> .<br><br><code>log file</code> – Specifies which log file to save. The extension <code>_.log</code> is automatically added to the specified log file name.                                                                                                                                                                                                                                                                                                                               |
| URL        | Indicates that you will be using the FTP protocol. Also indicates the location of the files being transferred.<br><br><b>Note:</b> You must end the URL with a slash (/) unless you specify a file name.                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

[Table 51](#) describes the URL components for specifying an FTP server

**Table 51** URL components for specifying an FTP server

| Option   | Definition                                                                                                       |
|----------|------------------------------------------------------------------------------------------------------------------|
| username | Sets an optional user ID for the FTP host.<br>(default: anonymous)                                               |
| password | Sets an optional password for the FTP host. The default password uses the format: <unitname>@<domain name>.      |
| hostid   | Indicates the required host name or IP address of the FTP server.                                                |
| path     | Names the path (hierarchical directory specification) on the FTP server where files are to be saved or restored. |
| file     | Provides a file name to override the default file name.                                                          |



**Note:** When a parameter has an embedded “@” or space, that character should be represented with an escape sequence, %40 or %20, respectively.

---

For examples of the **xfer** command, refer to [“Using the xfer command”](#) on [page 116](#).



---

## Chapter 3

# Using the configuration commands

---

This chapter provides examples for using some of the Contivity Branch Access configuration commands.

## Changing between user-level and privileged-level access

If your unit has multi-level passwords configured, you can change from user-level access to privileged-level access without logging off.

The user-level password provides limited access to unit configuration and administration utilities. If you need to change a unit configuration when you are logged on with only user-level privileges, you can use the **enable** command to log on with privileged access and make changes to the unit configuration.

To use the **enable** command to change from user-level access to privileged-level access on a unit with multi-level passwords configured:

```
ii> enable <cr>
```

Following is an example of the **enable** command:

```
ii> enable
password: *****
ii#
```

The prompt changes depending on the current access level. The prompt for privileged access is `ii#`. The prompt for user access is `ii>`. If you are not prompted for a password after you use the **enable** command, make sure that you are not already logged on with privileged access.

Changing from privileged access to user access, however, requires that you log off and log back on with the user-level password.

## Using the `xfer` command

Use the `xfer` command to remotely backup and restore configurations and to upgrade units in the field.

### Backing up a configuration remotely

You can back up all or parts of your unit configuration by placing a copy of all or some of the unit's configuration files on an FTP server. This remote store feature is useful if your unit needs to be serviced. The ability to back up a configuration also allows you to copy a configuration from one unit to another remotely.

Use the `xfer put` command to back up your configuration to an FTP server.

```
xfer put config|services|hosts|webhosts|usergroups|all URL
```

#### **Example**

In this example, the FTP server is running on a workstation with an IP address of 192.168.1.12. The FTP server allows anonymous logins as long as the supplied password contains the "@" symbol.

To back up the configuration of your Contivity unit:

- 1 Use Telnet or out-of-band management to access the Contivity unit.

The remote store feature requires the privileged password.

- 2 Enter the `xfer` command.

```
ii# xfer put all ftp://192.168.1.12/cba/backup/
```



**Note:** You must enter a slash (/) at the end of the `xfer` command when you use either the `get` or `put all` option. The slash specifies that the path is a directory. If you omit the slash, the following error message is displayed: invalid arguments to "xfer"

---

**3** The unit responds with status information about the file transfers:

```
cba/backup/config:1163 bytes in 0.01 seconds, 116300 bytes/s.  
cba/backup/services:9236 bytes in 0.06 seconds, 153933 bytes/s.  
cba/backup/hosts:438 bytes in 0.01 seconds, 43800 bytes/s.  
cba/backup/webhosts:8 bytes in 0.01 seconds, 800 bytes/s.  
cba/backup/iiuser.grp:413 bytes in 0.01 seconds, 41300 bytes/s.
```

For details on restoring this configuration to your unit, refer to [“Restoring a configuration remotely,”](#) next.

## Restoring a configuration remotely

If you backed up your unit configuration to an FTP server, you can restore or modify the configuration using the configuration files that have been placed the FTP server. This feature allows a network administrator to configure a group of units, for example, update the host names files for all of the branch offices for a company. You can also use this feature to restore a saved configuration to a replacement unit when the original unit is serviced.

Use the **xfer get** command to restore your configuration from a saved copy on an FTP server.

```
xfer get config|services|hosts|webhosts|usergroups|all URL
```

### **Example**

In this example, the FTP server is running on a workstation with an IP address of 192.168.1.11. The FTP server requires the login “admin” and the password “drowssap.” You have organized a directory scheme of cba\branch1, cba\branch2, and so forth. You used the **xfer** command to save the complete configuration for each of your branch offices’ Contivity units (see [“Backing up a configuration remotely” on page 116](#)). In the directory, there are five files: *config*, *services*, *hosts*, *webhosts*, and *iiuser.grp*.

To restore the unit configuration at Branch Office 5:

**1** Use Telnet or out-of-band management to access the Contivity unit.

The remote restore feature requires the privileged password.

- 2 Enter the **xfer** command to restore your configuration from an FTP server.

```
ii# xfer get all ftp://admin:drowssap@192.168.1.11/cba/branch5/
```



**Note:** You must enter a slash (/) at the end of the **xfer** command when you use either the `get` or `put all` option. The slash specifies that the path is a directory. If you omit the slash, the following error message is displayed: invalid arguments to “xfer”

---

- 3 The unit responds with status information about the file transfers:

```
cba/branch5/config:1163 bytes in 0.05 seconds, 23260 bytes/s.  
CONFIG will not take effect until after RESTART command.  
cba/branch5/services:9236 bytes in 0.05 seconds, 184720 bytes/s.  
cba/branch5/hosts:438 bytes in 0.01 seconds, 43800 bytes/s.  
cba/branch5/webhosts:8 bytes in 0.01 seconds, 800 bytes/s.  
cba/branch5/iuser.grp:413 bytes in 0.01 seconds, 41300 bytes/s.
```

- 4 Use the **restart confirm** command to make the restore take effect.

```
ii# restart confirm
```

When you confirm the restart, your connection to the unit is temporarily lost and the Telnet session is ended.



**Caution:** Do not use the **commit** command with the **xfer get config** command. Using these commands together will undo what you just did.

---

To confirm that the configuration file was restored:

- 1 Wait a few minutes for the restore to take effect and the unit to restart.
- 2 Access the unit again using Telnet or out-of-band management.
- 3 At the command prompt, enter the **config** command.

```
ii# config
```

The restored configuration information is displayed.

## Updating unit firmware remotely

You can update your Contivity unit to the latest unit firmware remotely using FTP. This feature allows you to place the update file in a central location for all of your remote sites.

### Example

In this example, your FTP server has the host name “ftp://ftp.instant.net.” The FTP server requires you to login with a user name and password. The latest version of the Contivity Branch Access firmware is stored on the FTP server in the cba/720 directory, in the file *update.bin*.

To update a Contivity unit’s firmware remotely:

- 1 Use Telnet or out-of-band management to access the Contivity unit.
- 2 Enter the **xfer** command.

```
xfer get update ftp://myname:mypassword@ftp.instant.net/cba/720/update.bin
```



**Note:** The default login name is *anonymous* and the default password follows the format: *<unitname>@<domain name>*. Many FTP servers allow the login name *anonymous* with the user’s email address as the password. Therefore, you can often just type:

```
ii# xfer get update ftp://ftp.instant.net/cba/720/update.bin
```

- 3 The unit responds with status information about the file transfer:

```
cba/720/update.bin: 618934 bytes in 3.90 seconds, 158701 bytes/s.  
Update will not take effect until after RESTART command.
```

- 4 Use the **restart confirm** command to make the update take effect.

```
ii# restart confirm
```

When you confirm the restart, your connection to the unit is temporarily lost and the Telnet session is ended.

To check the status of the update:

- 1 Wait a few minutes for the update to take effect and the unit to restart.
- 2 Access the unit again using Telnet or out-of-band management.

The update status is displayed.

```
Instant Internet(tm) version 7.20
Copyright (c) 1995-2001 Nortel Networks Corporation

July 1, 2001 13:45:44 - Unit successfully updated to version 7.20

ii#
```

Detailed information about the update is contained in the update.log file. To view the contents of the update.log file, use the **cat** command ([page 94](#)).

```
ii# cat a:update.log
July 1 2001 13:45:44 - Unit successfully updated to version 7.20
06/15/01
```

You can also use the **xfer** command to store the log file on the FTP server.

```
ii# xfer log update ftp://ftp.instant.net/uploads/
uploads/update_.log: 78 bytes in 0.01 seconds, 7800 bytes/s.
```



**Note:** The slash (/) at the end of the **xfer** command specifies that the path is a directory. If you omit the slash, it is assumed that the last name is a file name.

---

## Setting up multiple PPPoE interfaces

You can configure multiple PPPoE connections for a single interface. This feature allows you to use a single DSL connection to connect to two or more different Internet service providers. For example, you can have a connection to the Internet over one PPPoE connection and a connection to the office over another PPPoE connection without having to have two separate DSL lines. This feature creates a more secure network by eliminating Internet traffic from the network.

To configure multiple connections for a single PPPoE interface:

**1** Create the interface.

The following shows an example of creating two PPPoE interfaces (office and internet) on the Eth2 interface:

```
ii# pppoe office Eth2
ii# pppoe internet Eth2
```

**2** Configure each interface using the **ppp** command.

You can configure the interface using any of the **ppp** commands but you must assign at least a user name and password. For example:

```
ii# ppp office username test password secret
ii# ppp internet username sample password secure
```

**3** Specify the traffic that is to be routed over each connection.

Use the **route** command to specify which traffic is to be routed over each interface. For example:

```
ii# route add 10.0.0.0/24 office
```

You need to specify the route only for the traffic that is not being sent over the default connection.

## Specifying the workstation name for a cable modem connection

ISPs that provide cable modem service occasionally require that the workstation that is connected to the modem have a specific name. This name is sent with the DHCP request to identify the cable modem account.

Use the **dhcp configure** command to assign the required name to the unit by specifying that name as the unit's host name in the DHCP client request.

```
ii# dhcp configure <interface> <host name>
```

**Example**

```
ii# dhcp configure eth2 myhostname
```

## Using NetMeeting

You can use Microsoft's NetMeeting\* (version 3.01 or later) to conference two or more individuals together over the Internet. NetMeeting allows you to talk to one another, view presentations together, or work on a white board together regardless of your location.



**Note:** Connecting to a directory server or Microsoft's MSN\* Messenger service works only for outgoing calls. However, a person on the same network as the Contivity unit can initiate a call to the Messenger service because the call is initiated from inside the network and the request uses port 80.

---

Contivity Branch Access automatically configures itself for holding a NetMeeting with external computers. However, you must configure Contivity Branch Access to route incoming NetMeeting data to a particular workstation.

Use the **nat** command to configure Contivity Branch Access to permit incoming NetMeeting calls. You will:

- 1 Add port 1720 to the local and WAN IP address.
- 2 Specify the TCP protocol.

The following is an example of the **nat** command to use:

```
nat add <local ip address>: 1720 <wan ip address or interface>:1720 TCP
```

After you set up the workstation to accept incoming NetMeeting calls, remote users can call a workstation on your network using the IP address or the fully qualified domain name (FQDN) of the Contivity unit.

If your unit is using a dynamic IP address, you can use the Dynamic DNS facility and enter the unit's FQDN that is registered in the Dynamic DNS.

## Accessing secure Web sites

Contivity Branch Access does not have a secure sockets layer (SSL) proxy for accessing secure Web sites. If you require access to secure Web sites, you can use either NAT or a SOCKS proxy.

The following example shows how to access secure Web sites using NAT.

```
filter https l4switch tcp dest :www
filter https allow
```

## Backing up an Ethernet interface with a dial-up connection

You can use a dial-up connection to back up your Ethernet connection to the Internet. This feature provides a cost-effective way for you to maintain continuous connectivity to the Internet in the event that your primary connection becomes unavailable.

The **backup** command is an optional command that causes a backup interface to become active and remain active when the primary interface is down. If you do not use the **backup** command to configure a backup connection, the backup interface is activated as warranted by normal traffic, and the idle timeout determines when the backup interface is inactivated, if applicable to that type of interface.

### *Example*

In this example, you configure the default route to switch from Eth2 to the dial-up interface when Eth2 becomes unavailable.

To back up an Ethernet interface with a dial-up connection:

- 1 Use Telnet or out-of-band management to access the Contivity unit.
- 2 Set the redundant route to the dial-up interface with a higher metric.

```
route add default eth2
route add default dialup 0.0.0.0 2
backup start eth2 dialup
```

- 3 Assign a control ping to the Ethernet interface so that it can be brought down when communications are not working. Therefore, when the control ping marks Eth2 as unavailable, the less-preferential route to the dial-up interface is used instead.

```
ping 1.2.3.4 interval 5 timeout 2 failures 5 control eth2
```

Five failed pings to 1.2.3.4 over the primary link causes Eth2 to be deactivated. Traffic from computers on the Contivity unit's subnet activate the dial-up interface. The ping continues to run over the primary interface (Eth2). Once a successful ping occurs over the primary interface, that interface is reactivated and the traffic once again travels through that interface. The dial-up interface hangs up when its assigned timeout expires.

## Spooing a MAC address

Contivity Branch Access provides a feature that allows you to “spoo” the workstation's MAC address if your ISP has recorded your workstation's MAC address and configured your cable modem to connect only to that MAC address.

There are no adverse affects to the LAN from spooing your workstation's MAC address. The spooing occurs only on the WAN interface to the cable modem's ISP.

To spoo your workstation's MAC address, use the following command:

```
ifconfig <interface> hwaddress <adr>
```

The following example, shows a cable modem connected to Eth2 and a workstation MAC address of 00C00A8D00082.

```
ii# ifconfig eth2 hwaddress 00C00A8D00082
```

## Using DHCP

Configuration parameters are passed from a DHCP server to a DHCP client in tagged data items that are stored in the options field of the DHCP message. The data items themselves are also called options.

As a DHCP server, Contivity Branch Access supports the most commonly used options by name: `lease`, `dns`, `domain`, `wins`, and `node`. The Contivity Branch Access management software provides a generic option mechanism to support other options without placing an undue burden on the size and maintenance of the server. The generic option mechanism allows you to specify any option by number, rather than by name.

## Specifying an option by its number and parameter

You can use the `dhcpd` command to specify any DHCP option by its number and parameter. The command uses one of three forms, depending on the parameter type:

```
dhcpd option <number> ip <ip address>
dhcpd option <number> text <text>
dhcpd option <number> hex <xx:xx:xx...>
```

The first form is used for specifying an IP address. In the following example, an option number (option 4) specifies a time server.

```
dhcpd option 4 ip <ip address>
```

The second form is used for specifying text. The following example specifies the parameters for a Nortel Networks Etherphone\* using site-specific option 128:

```
dhcpd option 128 text "Nortel-i2004-
A,47.142.8.119:5000,1,10;47.142.8.119:5000,1,10."
```

The third form is used for specifying numbers or any other data that is not covered by one of the first two forms. The following example specifies the time offset from UTC (option 2):

```
dhcpd option 2 hex FF:FF:AB:A0
```

In this example, `FFFFABA0` is the 32-bit hex representation of `-21600`, the offset, in seconds, of CST from UTC. Note that, because `option` is specified in RFC2132 to take four octets of data, and the DHCP server has no built-in knowledge of the format of generic or site-specific options, all four octets must be specified.

## DHCP scope-specific options

Options can be made specific to a particular scope by preceding the command that specifies the option with the command `scope` and the name of the scope.

In the following example, the commands configure workstations in the scope named “main” with a lease time of 2 hours (7600 seconds), and using DNS server 206.210.192.1; workstations in the scope named “test” get a 10 minute (600 second) lease and use DNS server 10.10.1.1; workstations in any other defined scope get the default lease period and use DNS server 10.10.73.88.

```
dhcpd scope main lease 7200
dhcpd scope main dns 206.210.192.1
dhcpd scope test lease 600
dhcpd scope test dns 10.10.1.1
dhcpd dns 10.10.73.88
```

The options `lease`, `dns`, `domain`, `wins`, `node`, `tftp`, `boot`, and generic options can all be made scope-specific. When the server inserts a requested (by the DHCP client) option into a DHCP reply message, it checks first for an option specified for the particular scope. If none is found, it then checks for an option specified without a scope prefix—a global option. If none is found, it then checks for a built-in default. If no value is found at all, the server does not include that option in its reply.

## DHCP BootP support

The **reserve** command supports BootP clients by allowing an IP address to be reserved for a particular MAC address. This feature enables the Contivity unit (as a DHCP server) to supply IP addresses to devices such as routers, printers, and servers that need a fixed, known address but may not support DHCP, for example:

```
dhcpd reserve 206.210.192.163 00C04F027BFF
```

A TFTP server can be specified with the `tftp` command, and a boot file can be specified with the `boot` command, for example:

```
dhcpd tftp 206.210.192.32
dhcpd boot voyager.img
```

Both the `boot` command and the `tftp` command can be made scope-specific.

---

# Index

---

## Symbols

? command 26, 31

## A

acronyms 15, 18

Address Resolution Protocol 94

alias command 32  
  interface 32  
  name 32

AniTa, using 23

ARP cache  
  displaying 94  
  flushing 94

arp command 94  
  flush 94

authorization 54

## B

backup command  
  example 123  
  start 72  
  stop 72  
  using 72

brackets  
  angle 27  
  square 27

## C

cable modem, specifying the workstation  
  name 121

cat command  
  example 120  
  filename 95  
  using 94

changes, storing 96

channel service unit 97

chargend command  
  start 72  
  stop 72  
  using 72

chargend service  
  starting 72  
  stopping 72

command line interpreter 27

commands  
  abbreviating 27  
  and case-sensitivity 27  
  displaying a list 31  
  entering 26  
  interrupting 27  
  list 29

commit command  
  undo 96  
  using 96

config command 96  
  example 118

- configuration
  - committing 96
  - displaying 96
  - saving 96
- configuration, remote backup 116
- configuration, remote restore 117
- conventions, text 14
- csu command
  - interface 97
  - using 97
- CSU diagnostics, displaying 97
- current system time, displaying 108
- customer support 19

## D

- date
  - displaying 98
  - setting 98
- date command
  - mmddyyyy 98
  - using 98
- daylight savings time, setting 69
- demand-dialing settings
  - configuring for an interface 33
  - displaying for an interface 33
- DHCP
  - configuring an interface 32
  - configuring for a unit 73
  - viewing the status for a unit 73
- dhcp command
  - bootp 33
  - configure 33
  - example 121
  - interface 33
  - release 33
  - renew 33
  - view 32

- dhcpd command
  - boot 75
  - delete 74
  - dns 74
  - domain 74
  - exclude 74
  - lease 74
  - node 75
  - option 75
  - relay 74
  - reserve 74
  - scope 74
  - start 74
  - stop 75
  - tftp 74
  - using 73
  - wins 75
- dial backup 123
- dialerd command
  - answer 34
  - backup 34
  - command 35
  - configure settings 33
  - delay 35
  - demand 35
  - down 36
  - idletimeout 35
  - interface 34
  - mode 35
  - nodisable 35
  - number 36
  - script 36
  - start 36
  - stop 36
  - up 36
  - view settings 33
- diffserve 71
- dir command
  - path 99
  - using 99

discard service  
  starting 76  
  stopping 76

discaridd command  
  start 76  
  stop 76  
  using 76

dns command  
  add server 39  
  cache 39  
  configure 38  
  drop server 39  
  flush 39  
  suffix 39

DNS proxy service  
  starting 76  
  stopping 76

dnsproxy command  
  start 76  
  stop 76

dnsproxycmd command 76

Domain Name Server 76

Dynamic Domain Name Server (DDNS),  
  updating 49

Dynamic Host Configuration Protocol  
  (DHCP) 32, 73

## E

echo service  
  starting 77  
  stopping 77

echod command  
  start 77  
  stop 77  
  using 77

enable command  
  example 115  
  using 100

encapsulation command 40  
  framerelay 40  
  interface 40  
  mp 40  
  ppp 40  
  terminal 40

encapsulation protocol, setting for an interface 40

encryption 54, 55

exit command 27, 101

## F

file, viewing contents 95

filter command  
  allow 41  
  deny 41  
  destination 42  
  drop 42  
  filterlist 41  
  icmp 42  
  insert 42  
  ip 42  
  l4switch 41  
  nat 42  
  protocol 42  
  source 42  
  tcp 42  
  udp 42  
  using 41

filter list, modifying 41

filters, about 41

firmware version, displaying 108

frame relay interface, configuring 44

framerelay command  
  configuring 44  
  dlcilcn 45  
  inarp 45  
  interface 45  
  pvc 45  
  type 45

FTP, passive 111

**H**

- hardware address
  - using an alias 32
- hops, displaying in a trace route 110
- host name, pinging 103
- hostname command 45
  - ipinterface 45
  - name 45

**I**

- icmp command
  - echo 46
  - redirect 46
  - using 46
- ICMP messaging
  - displaying statistics 46
  - modifying 46
- ident command
  - stop 77
- ident service
  - starting 77
  - stopping 77
- identd command
  - start 77
  - using 77
- ifconfig command
  - disable 48
  - enable 48
  - hwaddress 48
  - infilter 48
  - interface 48
  - ipaddress 48
  - mtu 48
  - outfilter 49
  - transparent 49
  - update 49
  - using 47
  - xlate 49

- iiLogin program
  - starting 77
  - stopping 77
- inactive tunnel 56
- interface
  - backup connection 72
  - configuring to support Powerlan clients 78
  - T1 64
  - tracing 108
  - V.35 64
  - X.21 64
- interface configuration
  - displaying 47
  - setting 47
- Internet Control Message Protocol (ICMP) 46
- Internet Protocol 51
- IP
  - displaying 51
  - setting 51
- IP address, pinging 103
- ip command
  - defaultnetwork 51
  - forwarding 51
  - ip counters
    - fragFails 52
    - inAddrErrors 52
    - inDiscards 52
    - inHdrErrors 52
    - inUnknownProtos 52
    - outDiscards 52
    - outNoRoutes 52
    - reasmFails 52
    - routingDiscards 52
  - using 51
- IP routes
  - changing 63
  - displaying 63

ipsec command  
  authorize 54  
  defaultnetwork 55  
  destination 53  
  disconnect 55  
  drop 55  
  encrypt 54  
  group 54  
  key 53  
  local 54  
  log 55  
  mode 53  
  name 53  
  pfs 55  
  remote 54  
  timeout 55  
  using 52

IPX clients, allowing 93

ISDN BRI interface, controlling 56

isdn command  
  calltype 57  
  inboundvoice 57  
  interface 57  
  number 57  
  priority 57  
  speed 57  
  spid 57  
  switch 58  
  trace 58  
  using 56  
  voice 58

## L

local host name  
  displaying 45  
  setting 45

log 55  
  access trace log 109  
  ipsec log 55

log command 101

logind command 77  
  start 77  
  stop 77

## M

MAC address  
  reserving an IP address 74  
  spoofing 124  
  transferring designation 48

management, out-of-band 21  
  command syntax 27  
  connecting 21  
  exiting 27  
  using 21

memory command 102

memory statistics, displaying 102

memory, displaying 108

## N

name command 58  
name, setting for a unit 58

nat command  
  add 59  
  drop 59  
  example 122  
  flush 60  
  timeout 60  
  using 58

NetMeeting 122

Network Address Translation (NAT) 58, 59  
  configuring by interface 49  
  displaying 58  
  setting 58

nonvolatile storage 96  
  displaying files 99

NTP 78

ntpd command 78  
  add 78  
  drop 78  
  start 78  
  stop 78

## O

out-of-band management  
  command syntax 27  
  commands 29  
  connecting 21  
  exiting 27, 101  
  using 21

## P

passive FTP 111  
password  
  changing 102  
  incorrect 26  
  privileged 115  
  providing 25  
  switching 115  
  user 115  
password command  
  privileged 102  
  user 102  
  using 102  
phantom tunnel 56  
ping  
  background 105  
ping command  
  background 106  
  control 106  
  count 105  
  failures 106  
  hostid 105  
  interval 106  
  length 106  
  monitor 106  
  source 106  
  timeout 106

  using 103  
plserver command 78  
Point-to-Point Protocol (PPP) 60  
Powerlan clients, supporting 78

## PPP

  displaying 60  
  setting 60  
ppp command  
  authentication 60  
  dns 60  
  echo 61  
  example 121  
  interface 60  
  mp 61  
  password 61  
  reset 61  
  username 61  
  using 60

## PPPoE

  multiple interfaces 120  
pppoe command  
  demand 62  
  interface 62  
  pppoe 62  
product support 19  
publications  
  hard copy 19  
  related 18

## R

redundant route 123  
remote backup 116  
remote management 111  
remote restore 117  
remote update 119  
restart command 107  
  example 118  
RIP, configuring 79

- ripd command
  - accept 79
  - add 79
  - drop 79
  - multicast 79
  - refuse 80
  - start 79
  - stop 80
  - using 79
  - version 80
- route command
  - add 63
  - default 63
  - drop 63
  - example 121
  - using 63
- Routing Information Protocol 79
- rows command 107
- rows of output, setting 107
- S**
- sap command 107
- secure Web sites 123
- serial number, displaying 108
- server
  - adding 38
  - dropping 38
- snmp command
  - community 81
- SNMP trap events 81
- snmpd command
  - add 81
  - community 82
  - drop 81
  - start 82
  - stop 82
  - using 80, 82
- SOCKS
  - changing settings 83
  - displaying settings 83
- socksd command
  - log 83
  - start 83
  - stop 83
  - using 83
- start time, displaying 108
- statistics
  - displaying 27
- support, Nortel Networks 19
- sync command
  - autoloopback 65
  - clock 64
  - coding 65
  - crc4 65
  - data 65
  - format 65
  - fractional 65
  - framing 65
  - interface 64
  - lbo 65
  - rate 65
  - using 64
- synchronous interface
  - displaying parameters 64
  - setting parameters 64
- syslog command
  - add 85
  - drop 85
  - facility local 85
  - limits 84
  - priority 85
  - using 84
- system command 108
- system uptime, displaying 108
- T**
- TCP
  - displaying 66
  - setting 66

## tcp command

- mss 66
- using 66
- window 66

## tcpserver command 86

## technical publications 19

## technical support 19

## Telnet

- enabling 21
- exiting 101
- using 23

## Telnet service

- starting 86
- stopping 86

## Telnet session, ending 27

## telnetd command 86

- port 87
- rows 87
- start 87
- stop 87
- timeout 87

## text conventions 14

## time

- displaying 67
- setting 67

## time command

- hhmm 67
- timezone 67
- using 67

## time zone, setting 68

## timezone command

- dst 68
- jn 69
- mm.n.d 70
- n 70
- offset 68
- rule 68
- std 68
- using 68

## trace command

- a 109
- b 109
- file 109
- flags 109
- h 109
- i 109
- interface 109
- o 109
- off 109
- oibxhar 109
- r 109
- size 109
- using 108
- x 109

## traceroute command

- hostid 110
- nodnslookup 110
- source 110
- ttl 110
- using 110
- wait 110

## Transmission Control Protocol (TCP) 66

## tunnel

- inactive 56
- phantom 56

**U**

## udp command 110

## UDP statistics, displaying 110

## unit

- current system time 108
- displaying a list running IPX 107
- firmware version 108
- memory 108
- restarting 107
- serial number 108
- setting the date 98
- setting the name 58
- start time 108
- system uptime 108
- using with administrative programs 86

usage log, displaying 101  
User Datagram Protocol 110  
UTC, setting 69

## W

wan command 71  
    diffserve 71  
    interface 71  
Web proxy service  
    starting 87  
    stopping 87  
webproxy command  
    active 88  
    activedays 89  
    activeend 89  
    activetime 88  
    address 89  
    binpercent 89  
    bintime 89  
    bypass 89  
    cgi 89  
    level 90  
    maxentries 90  
    maxsize 90  
    nocache 90  
    port 90  
    query 90  
    refresh 91  
    reserved 91  
    start 88  
    stop 91  
    textpercent 91  
    time 91  
    transparent 91  
    using 87  
webservers command  
    port 92  
    start 92  
    stop 92  
    using 92  
winsock command 111

Winsock statistics, displaying 111  
winsockserver command  
    interface 93  
    using 93

## X

xfer command  
    all 112  
    config 112  
    example 116  
    get 112  
    hosts 112  
    log 112  
    put 112  
    services 112  
    update 112  
    url 112  
    URL component  
        file 113  
        hostid 113  
        password 113  
        path 113  
        username 113  
    usergroups 112  
    using 111  
    webhosts 112

