

# A The Boot Line Prompt

When the switch boots, it requires basic information so that it can configure itself. The switch is delivered with factory default configuration parameters that provide basic information; however, you can change or customize the configuration parameters using the Boot Line prompt. You can only access the Boot Line configuration through an ASCII terminal.

Customizing parameters can be helpful when troubleshooting your system. Changing configuration items in the boot process allows you to:

- Stop the boot process
- Boot from a SLIP device
- Boot from a ZMODEM connection
- Revert back to factory default settings
- Boot/load with a different set of parameters

In addition, you can use the Boot prompt to configure an IP address for the Ethernet management port (MPX, MPM-C, and MPM-III only) or you can use the **ethernetc** command (which is described in Chapter 10, “Configuring Management Processor Modules”). You can use the Ethernet management port to Telnet into the UI, perform high-speed software loads, or as a connection to a boot device. See *Configuring a Switch with an MPX/MPM-C/MPM-III* on page A-7 for more information on configuring the Ethernet management port with the Boot prompt.

To enter the Boot line prompt, see the section that follows. See *Boot Prompt Basics* on page A-3 for documentation on basic Boot prompt commands. If you are configuring an Omni Switch/Router or an OmniSwitch with an MPM-C or MPM-III, see *Configuring a Switch with an MPX/MPM-C/MPM-III* on page A-7. If you are configuring an OmniSwitch with an MPM-1G, MPM-II, or an original MPM, see *Configuring a Switch with an MPM/MPM-II/MPM-1G* on page A-10.

# Entering the Boot Prompt

Perform the following steps to reach the Boot prompt.

1. Connect an ASCII terminal (or computer with a terminal emulator) to the console port on the MPX (Omni Switch/Router) or on the MPM (OmniSwitch). The default communication parameters are:
  - 9600 bps
  - 8 data bits
  - 1 stop bit
  - no parity
  - no hardware flow control (Windows 95)
2. Turn on the switch.
3. You should see text scrolling on the terminal, indicating that the boot is starting. If you do not see any text within a few seconds of turning on the switch press the **<Enter>** key. If you still do not see any text on the screen, verify your connections, turn off the switch, and turn it back on again.
4. Once the boot process starts you have approximately two (2) seconds to interrupt the boot. Press any key during this time to enter the Boot prompt.

### ◆ Note ◆

MPXs or MPMs in redundant configurations should not be stopped during the boot process. If you must do this, remove one of the MPXs (or MPMs) while configuring the other.

The following screen prompt displays.

**[Boot]:**

See the following section for documentation on basic Boot prompt commands. If you are configuring an Omni Switch/Router or an OmniSwitch with an MPM-C or MPM-III, see *Configuring a Switch with an MPX/MPM-C/MPM-III* on page A-7. If you are configuring an OmniSwitch with an MPM-1G, MPM-II, or an original MPM, see *Configuring a Switch with an MPM/MPM-II/MPM-1G* on page A-10.

# Boot Prompt Basics

To get a list of commands enter a question mark (?). A screen similar to the following is shown:

```
?                - print this list
@                - boot (load and go)
p                - print boot params
c                - change boot params
l                - load boot file
g adrs           - go to adrs
d adrs[,n]       - display memory
m adrs           - modify memory
f adrs, nbytes, value - fill memory
t adrs, adrs, nbytes - copy memory
e                - print fatal exception
n netif          - print network interface device address
L                - list ffs files
P                - Purge system: removes ALL ffs files
R file [files]   - remove ffs file(s)
S                - save boot configuration
V                - display bootstrap version
$dev(0,procnum)host:/file h=# e=# b=# g=# u=usr [pw=passwd] f=#
                 tn=targetname s=script o=other
Boot flags:
0x02             - load local system symbols
0x04             - don't autoboot
0x08             - quick autoboot (no countdown)
0x20             - disable login security
0x40             - use bootp to get boot parameters
0x80             - use tftp to get boot image
0x100           - use proxy arp
0x1000          - factory reset

available boot devices: sl ffs zm
[Boot]:
```

This menu is the same for both the OmniSwitch and the Omni Switch/Router. The commands for this menu are described in the sections below.

## ◆ Important Note ◆

The Boot prompt is case sensitive. Always enter letters in lowercase or uppercase as indicated in the menus.

## Resuming Switch Boot (@)

If you wish to continue the boot process, enter the @ command at the prompt. This loads the last saved configuration.

### Displaying Current Configuration (p)

To display the current configuration, enter a **p** at the Boot prompt. A screen similar to the following will be displayed.

```
Boot device      : ffs
Boot file       : /flash/mpm3.img
Eth IP addr[:mask] : 192.168.11.1
Startup script  : /flash/mpm3.cmd
Console params  : 9600,n81c
Modem params    : 9600,n81
Boot flags      : 0xb
Other           : dvip:no-name,192.168.10.1,255.255.255.0,192.168.10.255;
```

#### ◆ Note ◆

An OmniSwitch with an MPM-1G, MPM-II, or original MPM will not display the Ethernet management port's IP address.

For information on modifying these screens, see *Configuring a Switch with an MPX/MPM-C/MPM-III* on page A-7 or *Configuring a Switch with an MPM/MPM-II/MPM-1G* on page A-10.

To change the configuration of the boot parameters, enter **c** at the prompt. For more information, see *Configuring a Switch with an MPX/MPM-C/MPM-III* on page A-7 or *Configuring a Switch with an MPM/MPM-II/MPM-1G* on page A-10

### Loading the Last Configured Boot File (l)

To load the last configured boot file, enter the **l** command. A screen similar to the following is shown:

```
Boot device      : ffs
Boot file       : /flash/mpx.img
Eth IP addr[:mask] : 172.22.2.20
Startup script  : /flash/mpx.cmd
Console params  : 9600,n81c
Modem params    : 9600,n81d
Boot flags      : 0xb
Other           : dvip:TECHPUB-
120,172.22.2.120,255.255.0.0,172.22.255.255;

Loading /flash/mpx.img...25320 + 2163504 + 314792
entry = 0x40e00000
```

#### ◆ Note ◆

An OmniSwitch with an MPM-1G, MPM-II, or original MPM will not display the Ethernet management port's IP address.

## Listing Available Files in the Flash Memory (L)

To list all of the available files in the flash memory that you could load onto the switch, enter the **L** command. A screen similar to the following is shown:

```
Files available in "/flash":  
  mpm.cmd  
  mpm.log  
  asm.img  
  esm.img  
  mesm.img  
  mpm.img  
  mpm.cnf  
  mpm.cfg  
  switch.ascii
```

[Boot]:

## Deleting All Files in the Flash Memory (P)

To delete all flash memory files, enter the **P** command at the prompt. The following message is displayed:

```
WARNING: This will remove ALL the files in the system.  
Do you want to do this? ->
```

Enter **y** at the prompt to continue. The following message is shown

```
Erasing Flash File System...Done...Rebooting...
```

The switch will automatically reboot at this point. Since there are now no files in the flash memory, you are returned to the boot prompt.

## Deleting Specific Files in the Flash Memory (R)

To delete a specific file from the flash memory, use the **R** command followed by the file name. You can delete a single file or multiple files with a single command. For example, to delete the **mpm.cmd** file, you would enter **R** followed by a space, and then **mpm.cmd**, as shown:

```
R mpm.cmd
```

To delete the **mpm.cmd** and the **mpm.log** files, you would enter **R**, a space, **mpm.cmd**, a space, and then **mpm.log**, as shown:

```
R mpm.cmd mpm.log
```

### Saving Configuration Changes (S)

To save any changes to the configuration parameters, enter the **S** command at the prompt. The following message appears to confirm when the process is complete:

```
Saving boot information...done  
[Boot]:
```

### Viewing Version Number (V)

To view the version number of the bootstrap shell, enter the **V** command at the prompt.

#### ◆ Important Note ◆

Some of the options within the Boot Line configuration menu are for programmer's internal debugging purposes or for Customer Service diagnostics. Alcatel does not recommend that you invoke any menu options not described in this section.

## Configuring a Switch with an MPX/MPM-C/MPM-III

Perform the following steps to configure an Omni Switch/Router (MPX) or an OmniSwitch with an MPM-C or MPM-III. You can press **Ctrl-D** at any time to return to the Boot prompt.

1. At the Boot prompt, enter a lowercase **c** to begin configuring parameters. A prompt similar to the following displays.

```
'.' = clear field;      '.' = go to previous field;      ^D = quit
Boot device             : ffs
```

2. To change the switch's boot device, (i.e., the device it will read the boot file from) enter **ffs** for the flash file system (the default), **pcn** for the Ethernet management port, **sl** for a SLIP device, or **zm** for ZMODEM.

A screen prompt similar to the following displays.

```
Boot file               : /flash/mpx.img
```

3. Enter the boot file name or press the **<Enter>** key to accept the default (**mpx.img** for the MPX, **mpmc860.img** for the MPM-C, and **mpm3.img** for the MPM-III). For FTP downloads, the path you should enter is relative to the log-in (i.e., remote) directory. A prompt similar to the following displays.

```
Eth IP addr[:mask]      :
```

4. Enter an IP address for the Ethernet management port in dotted decimal notation. As an option, you can also enter an IP subnet mask in hexadecimal notation. If no mask is provided, the switch will try to determine the mask using Internet Control Message Protocol (ICMP) requests.

### ◆ Note ◆

The Ethernet management ports on the MPM-C and MPM-III have a default IP address of 192.168.11.1.

A screen prompt similar to the following displays.

```
Local hostname          :
```

5. Enter a name for the MPX/MPM-C/MPM-III here.

### ◆ Note ◆

Steps 6 through 10 are only important if you are booting your switch from a network.

6. A screen prompt similar to the following displays.

```
Remote IP addr[:mask]   :
```

You can enter an IP address for a remote host. In addition, you can also enter an IP address mask in hexadecimal notation. If no mask is provided, it will infer it from the IP address class.

A screen prompt similar to the following displays.

```
Remote hostname         :
```

7. You can enter a remote host name. A screen prompt similar to the following displays.

```
Gateway IP addr         :
```

8. You can enter an IP address for the first hop router to a remote host (if the host is on a different IP net). A screen prompt similar to the following displays.

**User** :

9. You can enter a log-in name for a remote host. A screen prompt similar to the following displays.

**Remote password** :

10. You can enter a password for a remote host.

11. A screen prompt similar to the following displays.

**Startup script** : /flash/mpx.cmd

Enter the command file name or press the <Enter> key to accept the default (**mpx.cmd** for the MPX, **mpmc860.cmd** for the MPM-C, and **mpm3.cmd** for the MPM-III). A prompt similar to the following displays.

**Console params** : 9600,n81c

12. You can change the parameters for the console port. To change the value, enter the baud rate (**1200**, **9600**, or **19200**, or **38400**), the parity (**n** for none, **e** for even, or **o** for odd), data length (**7** or **8**), stop bits (**0**, **1**, or **2**), and port type (**c** for console, **s** for SLIP, or **d** for down).

For example, **19200n81c** sets the console port to 19,200 baud, no parity, 8-bit data length, 1 stop bit, and console mode.

◆ **Note** ◆

If the default baud rate shunt (E1) has not been removed, any changes to the baud rate you enter will be ignored and a message to that affect is displayed during the boot process.

A screen prompt similar to the following displays.

**Modem params** : 9600,n81d

13. You can change the parameters for the modem port. To change the value, enter the baud rate (**1200**, **9600**, or **19200**, or **38400**), the parity (**n** for none, **e** for even, or **o** for odd), data length (**7** or **8**), stop bits (**0**, **1**, or **2**), and port type (**m** for modem, **s** for SLIP, or **d** for down).

For example, **19200n81m** sets the modem port to 19,200 baud, no parity, 8-bit data length, 1 stop bit, and modem mode.

A screen prompt similar to the following displays.

**Boot flags** : 0xb

**14.** To accept the default (**oxb**) and perform a normal boot, press the **<Enter>** key. To restore the factory-configured boot process, enter **0x1000**. The following flags should only be used for internal debugging or Customer Service diagnosis:

- **0x02** Load the local system symbols.
- **0x04** Do not autoboot.
- **0x08** Quick autoboot (no countdown).
- **0x20** Disable login security.
- **0x40** Use **bootp** to get the boot parameters.
- **0x80** Use **tftp** to get the boot image.
- **0x100** Use proxy arp.

A screen prompt similar to the following displays.

**Other** : **dvip:no-name,192.168.10.1,255.255.255.0,192.168.10.255;**

**15.** You can enter the default VLAN IP parameters by entering them in the following format:

**dvip:<host name>,<IP address>[,<IP mask>[,<IP broadcast address>]]**

**16.** The following screen prompt displays.

**[Boot]:**

Enter an uppercase **S** to save any parameters you changed. The following screen prompt displays.

**[Boot]:**

**17.** Enter an **@** to boot your switch.

## Configuring a Switch with an MPM/MPM-II/MPM-1G

Perform the following steps to configure an OmniSwitch with an original MPM, MPM-II, or MPM-1G. (See *Configuring a Switch with an MPX/MPM-C/MPM-III* on page A-7 if you have an MPM-C or MPM-III.) You can press **Ctrl-D** at any time to return to the Boot prompt.

1. At the Boot prompt, enter a lowercase **c** to begin configuring parameters. A prompt similar to the following displays.

'.' = clear field;      '-' = go to previous field;      ^D = quit  
Boot device                : ffs

2. To change the switch's boot device, (i.e., the device it will read the boot file from) enter **ffs** for the MPM's flash file system (the default), **sl** for SLIP, or **zm** for ZMODEM.

For SLIP boots, you will be downloading the switch's image file from another computer, so you must have an assigned IP address for the SLIP connection. Also, you must configure other SLIP specific parameters for you computer as well as for the other computer. Leave these fields blank if you are not using SLIP. For ZMODEM boots, you can enter the **zm** command, followed by the baud rate. For example, to use a ZMODEM boot with a baud rate of **192000**, you would enter:

zm:19200.

By entering the baud rate, you can run the ZMODEM connection temporarily at a higher baud rate. 19200 is the maximum transfer rate for ZMODEM transfers. Due to limitations in some PC's and other equipment, you may be limited to a 9600 baud rate.

A screen prompt similar to the following displays.

**Boot file** : /flash/mpm.img

3. Enter the boot file name or press the **<Enter>** key to accept the default. For FTP downloads, the path you should enter is relative to the log-in (i.e., remote) directory. A screen prompt similar to the following is displayed:

Local SLIP addr:

4. If you are using SLIP, enter the local SLIP host name and its IP address. Otherwise, press the **<Enter>** key and leave it blank. A screen prompt similar to the following displays:

**Startup script** : /flash/mpm.cmd

5. Enter the MPM command file name or press the **<Enter>** key to accept the default (**mpm.cmd**). A prompt similar to the following displays.

**Console params** : 9600,n81c

6. You can change the parameters for the console port. To change the value, enter the baud rate (**1200**, **9600**, or **19200**, or **38400**), the parity (**n** for none, **e** for even, or **o** for odd), data length (**7** or **8**), stop bits (**0**, **1**, or **2**), and port type (**c** for console, **s** for SLIP, or **a** for auxiliary).

For example, **19200n81c** sets the console port to 19,200 baud, no parity, 8-bit data length, 1 stop bit, and console mode.

A screen prompt similar to the following displays.

Modem params : 9600,n81d

7. You can change the parameters for the modem port. To change the value, enter the baud rate (**1200**, **9600**, or **19200**, or **38400**), the parity (**n** for none, **e** for even, or **o** for odd), data length (**7** or **8**), stop bits (**0**, **1**, or **2**), and port type (**m** for modem, **s** for SLIP, or **a** for auxiliary).

For example, **19200n81m** sets the modem port to 19,200 baud, no parity, 8-bit data length, 1 stop bit, and modem mode.

A screen prompt similar to the following displays.

**Boot flags** : **0xb**

8. To accept the default (**0xb**) and perform a normal boot, press the **<Enter>** key. To restore the factory-configured boot process, enter **0x1000**. The following flags should only be used for internal debugging or Customer Service diagnosis:.

- **0x02** Load the local system symbols.
- **0x04** Do not autoboot.
- **0x08** Quick autoboot (no countdown).
- **0x20** Disable login security.
- **0x40** Use **bootp** to get the boot parameters.
- **0x80** Use **tftp** to get the boot image.
- **0x100** Use proxy arp.
- **0x1000** Factory reset.

A screen prompt similar to the following displays.

**Other** : **dvip:no-name,192.168.10.1,255.255.255.0,192.168.10.255;**

9. You can enter the default VLAN IP parameters by entering them in the following format:

**dvip:<host name>,<IP address>[,<IP mask>[,<IP broadcast address>]]**

10. The following screen prompt displays.

**[Boot]:**

Enter an uppercase **S** to save any parameters you changed. The following screen prompt displays.

**[Boot]:**

11. Enter an **@** to boot your OmniSwitch.

