

Service Processor (GSP or MP) User's Guide

First Edition

Revision 1.0



i n v e n t

Manufacturing Part Number: A5201-90017

October 2004

Printed in U.S.A.

© Copyright 2004 Hewlett-Packard Development Company, L.P.

Legal Notices

The information in this document is subject to change without notice.

Hewlett-Packard makes no warranty of any kind with regard to this manual, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Hewlett-Packard shall not be held liable for errors contained herein or direct, indirect, special, incidental or consequential damages in connection with the furnishing, performance, or use of this material.

Warranty

A copy of the specific warranty terms applicable to your Hewlett-Packard product and replacement parts can be obtained from your local Sales and Service Office.

Restricted Rights Legend

Use, duplication or disclosure by the U.S. Government is subject to restrictions as set forth in subparagraph (c) (1) (ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013 for DOD agencies, and subparagraphs (c) (1) and (c) (2) of the Commercial Computer Software Restricted Rights clause at FAR 52.227-19 for other agencies.

HEWLETT-PACKARD COMPANY
3000 Hanover Street
Palo Alto, California 94304 U.S.A.

Use of this manual and flexible disk(s) or tape cartridge(s) supplied for this pack is restricted to this product only. Additional copies of the programs may be made for security and back-up purposes only. Resale of the programs, in their present form or with alterations, is expressly prohibited.

Copyright Notice

© Copyright 2004 Hewlett-Packard Development Company, L.P. All rights reserved. Reproduction, adaptation, or translation of this document without prior written permission is prohibited, except as allowed under the copyright laws.

Contents

About This Document	9
Intended Audience	10
Publishing History	11
Document Organization	12
Notational Conventions	13
Chapter 1.	
Overview of the Service Processor	15
Introduction to Service Processor Interfaces	16
Service Processor (MP or GSP) Features	18
Service Processor Accounts and Access Levels	21
Chapter 2.	
Using the Service Processor	23
Accessing and Using the Service Processor	24
Using Service Processor Menus	27
Navigating through Service Processor Menus	29
nPartition Console Features	31
nPartition Console Access versus Direct OS Login	32
Network Configuration for a Service Processor	33
Viewing Console Logs	37
Viewing Chassis Codes or Event Logs	38
Virtual Front Panel (VFP) nPartition Views	41
Appendix A.	
MP Commands	43
Command Reference:	
Service Processor (MP or GSP) Commands	44
Appendix B.	
Extensible Firmware Interface (EFI)	47
EFI System Boot Environment	48
Command Reference:	
EFI Shell Commands	50

Appendix C.

Boot Console Handler (BCH) 55

- Boot Console Handler (BCH)
- System Boot Environment..... 56
- Command Reference:
- BCH Menu Commands 59

Figures

Overview of Service Processor (MP or GSP) Menus	28
Navigating through Service Processor (MP or GSP) Menus	30
Accessing the EFI Environment for an nPartition.	49
Accessing the BCH Interface for an nPartition	58

Tables

Default Configuration for Service Processor Customer LAN (All nPartition Servers)	34
Default Configuration for Service Processor Private LAN (HP Superdome Servers Only)	34
Service Processor (MP or GSP) Command Reference	44
EFI Shell Command Reference	50
Boot Console Handler (BCH) Command Reference	59

About This Document

This book describes procedures, concepts, and principles for using the management processor (GSP or MP) on HP servers that support nPartitions.

This preface has the following sections:

- *Intended Audience* on page 10
- *Publishing History* on page 11
- *Document Organization* on page 12
- *Notational Conventions* on page 13

Intended Audience

Intended Audience

This document is for customers using the management processor (MP) on the HP servers that support nPartitions, including the following servers: rp7400, rp7420, rx7620, rp8400, rp8420, rx8620, and HP Superdome server.

Publishing History

This is the first edition of the *Service Processor (GSP or MP) User's Guide, rev 1.0*.

First Edition October 2004.

Document Organization

Chapter 1 *Overview of the Service Processor* on page 15.

Chapter 2 *Using the Service Processor* on page 23.

Appendix A *MP Commands* on page 43.

Appendix B *Extensible Firmware Interface (EFI)* on page 47.

Appendix C *Boot Console Handler (BCH)* on page 55.

Notational Conventions

The following notational conventions are used in this publication.

WARNING

A warning lists requirements that you must meet to avoid personal injury.

CAUTION

A caution provides information required to avoid losing data or avoid losing system functionality.

NOTE

A note highlights useful information such as restrictions, recommendations, or important details about HP product features.

- Commands and options are represented using this font.
- **Text that you type exactly as shown** is represented using this font.
- *Text to be replaced with text that you supply* is represented using this font.

Example:

“Enter the `ls -l filename` command” means you must replace *filename* with your own text.

- **Keyboard keys and graphical interface items (such as buttons, tabs, and menu items)** are represented using this font.

Examples:

The **Control** key, the **OK** button, the **General** tab, the **Options** menu.

- **Menu → Submenu** represents a menu selection you can perform.

Example:

“Select the **Partition → Create Partition** action” means you must select the **Create Partition** menu item from the **Partition** menu.

- Example screen output is represented using this font.

Notational Conventions

1 **Overview of the Service Processor**

This chapter provides an introduction to the service processor on HP cell-based servers.

Introduction to Service Processor Interfaces

The service processor (MP or GSP) utility hardware is an independent support system for nPartition servers. It provides a way for you to connect to a server complex and perform administration or monitoring tasks for the server hardware and its nPartitions.

The main features of the service processor include:

- Command Menu
- nPartition Consoles
- Console Logs
- Chassis Code Viewer (on HP 9000 servers with HP PA-8700 processors) or Event Log Viewer (on servers based on the HP sx1000 chipset)
- Virtual Front Panels (live displays of nPartition and cell states)

These features are described in more detail in *Service Processor (MP or GSP) Features* on page 18.

The service processor is available when its cabinet has standby power, even if the main (48-volt) cabinet power switch is turned off.

Access to the service processor is restricted by user accounts. Each user account is password protected and provides a specific level of access to the server complex and service processor commands.

Multiple users can independently interact with the service processor because each service processor login session is private. However, some output is mirrored: the Command menu and each nPartition console permit one interactive user at a time and mirror output to all users accessing those features. Likewise, the service processor mirrors live chassis codes to all users accessing the Live Chassis Logs feature (or the Live Events feature).

Up to 32 users can simultaneously login to the service processor through its network (customer LAN) interface and they can independently manage nPartitions or view the server complex hardware states.

Two additional service processor login sessions can be supported by the local and remote serial ports. These allow for serial port terminal access (through the local RS-232 port) and external modem access (through the remote RS-232 port).

In general, the service processor (MP or GSP) on nPartition servers is similar to the service processor on other HP servers, while providing enhanced features necessary for managing a multiple-nPartition server.

For example, the service processor manages the complex profile, which defines nPartition configurations as well as complex-wide settings for the server.

The service processor also controls power, reset, and TOC capabilities, displays and records system events (or chassis codes), and can display detailed information about the various internal subsystems.

Service Processor (MP or GSP) Features

The following list describes the primary features available through the service processor on nPartition-capable HP servers.

- **Command Menu**

The Command menu provides commands for system service, status, and access configuration tasks.

To enter the Command menu, enter **CM** at the service processor Main menu. To exit the service processor Command menu, enter **MA** or type **^b (Control-b)** to return to the service processor Main menu.

See *MP Commands* on page 43 for details.

Service processor commands are restricted based on the three levels of access: Administrator, Operator, and Single Partition User. See *Service Processor Accounts and Access Levels* on page 21 for details.

- **Consoles**

Each nPartition in a server complex has its own console.

Enter **CO** at the service processor Main menu to access the nPartition consoles. To exit the console, type **^b (Control-b)**.

See *nPartition Console Features* on page 31 for details.

Console output for each nPartition is reflected to all users currently accessing the nPartition console.

One console user can have interactive access to each nPartition console, and all other users of the console have read-only access. To gain write access for a console, type **^e cf (Control-e c f)**.

Each nPartition console provides access to:

- The nPartition system boot environment: either BCH or EFI.

The BCH or EFI system boot environment is available when the nPartition is active but has not yet loaded or booted an operating system.

- The Boot Console Handler (BCH) environment is provided on HP 9000 servers only (PA-RISC servers).

- The Extensible Firmware Interface (EFI) is provided on HP Integrity servers only (Intel® Itanium®-based servers).
- HP-UX console for the nPartition.

The nPartition console provides console login access to HP-UX and serves as `/dev/console` for the nPartition.

- **Console Logs**

Enter **CL** from the service processor Main menu to access the console logs menu. To exit the console log, type **^b (Control-b)**.

Each nPartition has its own console log, which stores a history of console output for the nPartition, including boot output, system boot environment (BCH or EFI) activity, and any HP-UX console login activity.

See *Viewing Console Logs* on page 37 for details.

The console log provides a limited history; it is a circular log file that overwrites the oldest information with the most recent.

All console activity is recorded in the console log, regardless of whether any service processor users are connected to the console.

- **Chassis Logs and Event Logs**

On both HP 9000 systems and HP Integrity systems, you can view real-time (live) system events and can view prior events that have been stored in a log history. Use the **SL** (“show logs”) option from the service processor Main Menu to view events/chassis codes.

- On nPartition-capable HP 9000 servers with HP PA-8700 processors, **SL** provides the Chassis Log Viewer. The chassis log viewer includes options for viewing: activity (level 1 and greater) logs, error (level 2 and greater) logs, and live logs (which optionally may be filtered by cell, nPartition, or alert level).
- On nPartition-capable servers based on the HP sx1000 chipset, **SL** provides the Event Log Viewer. The event log viewer includes options for viewing: forward progress (level 1 and greater) logs, system event (level 2 and greater) logs, and live logs (which optionally may be filtered by cell, nPartition, or alert level).

See *Viewing Chassis Codes or Event Logs* on page 38 for details.

Chapter 1 Overview of the Service Processor

Service Processor (MP or GSP) Features

- **Virtual Front Panel (VFP) for an nPartition**

The Virtual Front Panel (VFP) for each nPartition displays real-time boot activity and details about all cells assigned to the nPartition. The VFP display automatically updates as cell and nPartition status changes. A system-wide VFP also is provided.

Enter **vfp** at the Main menu to access the View Front Panel menu. To exit a Virtual Front Panel, type **^b (Control-b)**.

See *Virtual Front Panel (VFP) nPartition Views* on page 41 for details.

Service Processor Accounts and Access Levels

To access the service processor interface for a server complex, you must have a user account that enables you to login to the service processor.

Each server complex has its own set of service processor user accounts, which are defined for the server complex and may differ from accounts on other complexes.

Service processor user accounts have a specific login name, password, and access level.

The three user account access levels are:

- **Administrator Account**

Provides access to all commands, and access to all nPartition consoles and Virtual Front Panels.

Can manage user accounts (using the Command menu **SO** command) and can reconfigure various service processor settings.

- **Operator Account**

Provides access to a subset of commands, and access to all nPartition consoles and Virtual Front Panels.

- **Single Partition User Account**

Provides access to a restricted subset of commands and provides access to the nPartition console for a single nPartition. However, allows the user to view the Virtual Front Panel for any nPartition.

Can only execute commands that affect the assigned nPartition.

Cannot execute commands that could potentially affect multiple nPartitions or affect the service processor configuration.

Each user account can either permit repeated login sessions (if it is a “multiple use” account), or restrict the account to only login once (for “single use” accounts).

Chapter 1 Overview of the Service Processor

Service Processor Accounts and Access Levels

2 **Using the Service Processor**

Accessing and Using the Service Processor

This section describes how to login to the service processor (MP or GSP) for an nPartition server complex.

You can connect to the service processor for a server complex by using the following methods:

- Connecting through the customer LAN port by using `telnet`, if login access through the customer LAN is enabled for the service processor.

On HP Superdome servers, the customer LAN hardware is labeled “Customer LAN”. On HP rp8400 servers it is “GSP LAN”. On HP rp7405/rp7410 servers it is the only LAN port on the core I/O.

Use `telnet` to open a connection with the service processor, then login by entering the account name and corresponding password.

- Connecting through the local RS-232 port using a direct serial cable connection.

On HP Superdome server hardware, the local RS-232 port is labeled “Local RS-232”. On HP rp8400 servers it is the “Local Console” port. On HP rp7405/rp7410 servers it is the 9-pin D-shaped connector (DB9) labeled “Console”.

- Connecting through the remote RS-232 port using external model (dial-up) access, if remote modem access is configured.

On HP Superdome server hardware, the remote RS-232 port is labeled “Remote RS-232”. On HP rp8400 servers it is the “Remote Console” port. On HP rp7405/rp7410 servers it is the DB9 connector labeled “Remote”.

Example 2-1

Overview of a Service Processor Login Session

The following output shows a sample login session for a server whose service processor hostname is “hpsys-s”.

```
> telnet hpsys-s
Trying...
Connected to hpsys-s.rsn.hp.com.
Escape character is '^]'.
Local flow control off

MP login: Username
MP password:

Welcome to the

S Class 16K-A

Management Processor

(c) Copyright 1995-2001 Hewlett-Packard Co., All Rights
Reserved.

Version 0.23

MP MAIN MENU:

CO: Consoles
VFP: Virtual Front Panel
CM: Command Menu
CL: Console Logs
SL: Show chassis Logs
HE: Help
X: Exit Connection

MP>
```

Logging in to a Service Processor

This procedure connects to and logs in to the service processor (MP or GSP) for a server complex by using `telnet` to access the customer LAN.

If connecting through the local RS-232 port, skip Step 1 (instead establish a direct-cable connection) and begin with Step 2.

- Step 1.** Use the `telnet` command on a remote system to connect to the service processor for the server complex.

You can connect directly from the command line, for example:

```
telnet sdome-g
```

or run `telnet` first, and then issue the `open` command (for example, `open sdome-g`) at the `telnet>` prompt.

All `telnet` commands and escape options are supported while you are connected to the service processor.

- Step 2.** Login using your service processor user account name and password.

```
GSP login: Username
GSP password: Password
```

- Step 3.** Use the service processor menus and commands as needed and log out when done.

To log out, select the Exit Connection menu item from the Main menu (enter `x` at the `GSP>` prompt or `MP>` prompt).

You also can terminate a login session by issuing the `telnet` escape key sequence `^]` (type: **Control-right bracket**) and entering `close` at the `telnet>` prompt.

NOTE

If possible, you should log out of any consoles and menus before terminating your `telnet` session.

If accessing an OS on an nPartition, log out of the OS before exiting the console and service processor sessions. (Otherwise an open OS login session will remain available to any other service processor users.)

Using Service Processor Menus

The service processor (MP or GSP) has a set of menus that give you access to various commands, consoles, log files, and other features.

See *Navigating through Service Processor Menus* on page 29 for details on using these menus.

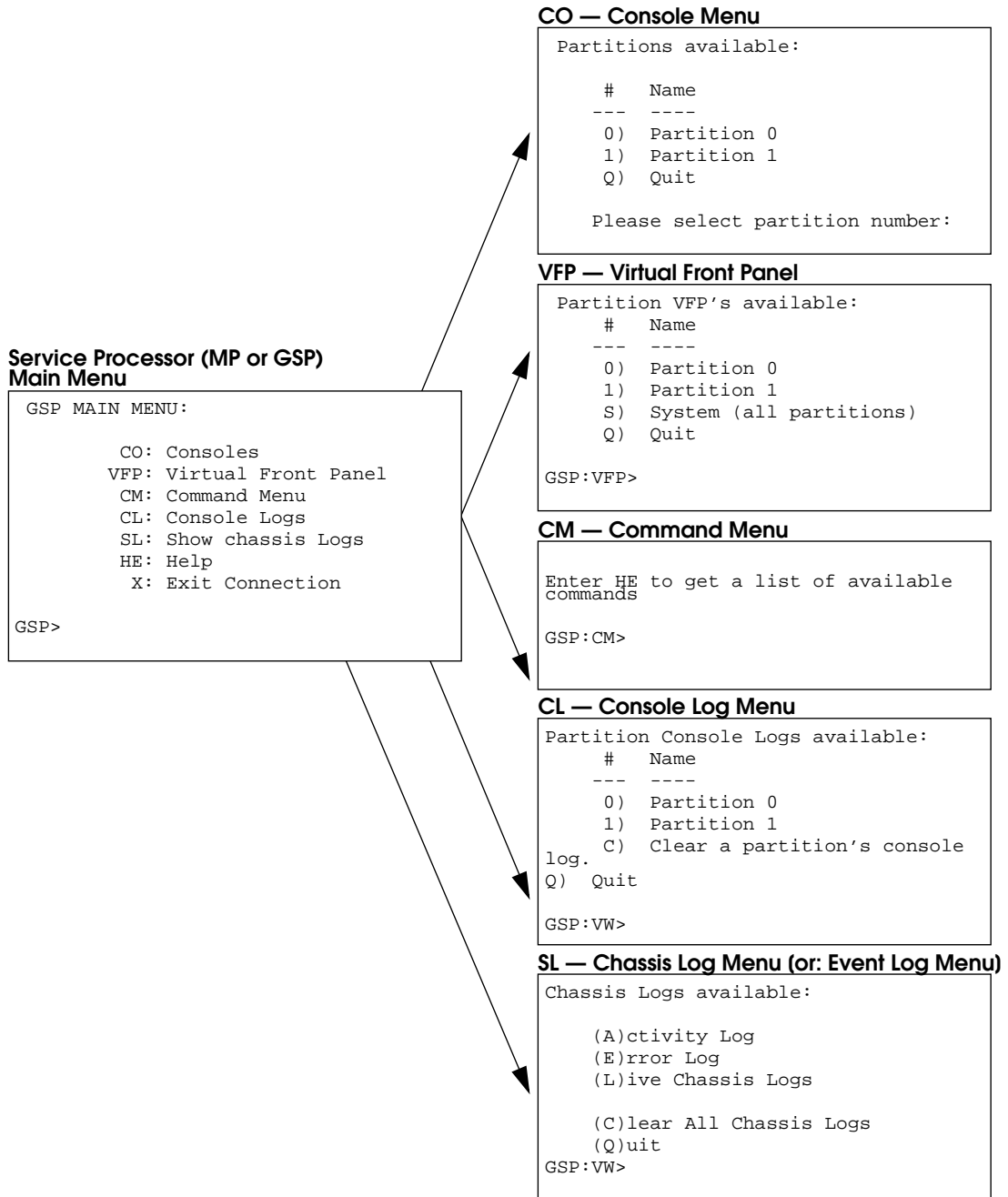
The following menus are available from the service processor Main menu (which is the menu you first access when logging in):

- Console Menu—Provides access to nPartition consoles for the server.
- Virtual Front Panel Menu—Provides a Virtual Front Panel for each nPartition (or for the entire server complex).
- Command Menu—Includes service, status, system access, and other commands.
- Console Log Viewer Menu—Allows access to the console logs for nPartitions.
- Chassis Log Viewer Menu or Event Log Viewer Menu—Allows access to the server chassis code logs (on HP 9000 servers with HP PA-8700 processors) or event logs (on servers based on the HP sx1000 chipset). Chassis logs and event logs are functionally equivalent: they record system activities. However, event logs are more descriptive.
- Help Menu—Provides online help on a variety of service processor topics and on all service processor Command menu commands.

These menus provide a central point for managing an nPartition server complex outside of an operating system.

The service processor menus provide many tools and details not available elsewhere. More administration features also are available from the nPartition system boot environments (BCH or EFI), the nPartition tools, and various operating system commands.

Figure 2-1 Overview of Service Processor (MP or GSP) Menus



Navigating through Service Processor Menus

Figure 2-2 on page 30 shows the commands and options for returning to the service processor Main menu and for ending a service processor login session.

The following list also includes tips for navigating through service processor menus and using various menu features:

- **Control-b**

Exit current console, console log, chassis log, or Virtual Front Panel.

When accessing the Command menu, an nPartition console, any log files, or any Virtual Front Panel (VFP), you can exit and return to the Main menu by typing **^b** (**Control-b**).

- **Q** (or lower-case **q**)

Exit or cancel current menu prompt.

Enter **Q** (or lower-case **q**) as response to any menu prompt to exit the prompt and return to the previous sub-menu.

You can do this throughout the service processor menus, including the console menus, various command menu prompts, and the log and VFP menus.

Note that, from the Command menu prompt (**GSP:CM>** or **MP:CM>**) you must enter **MA** (not **Q**) to return to the Main menu. However, you can enter **Q** or **q** to cancel any command.

- **Control-]**

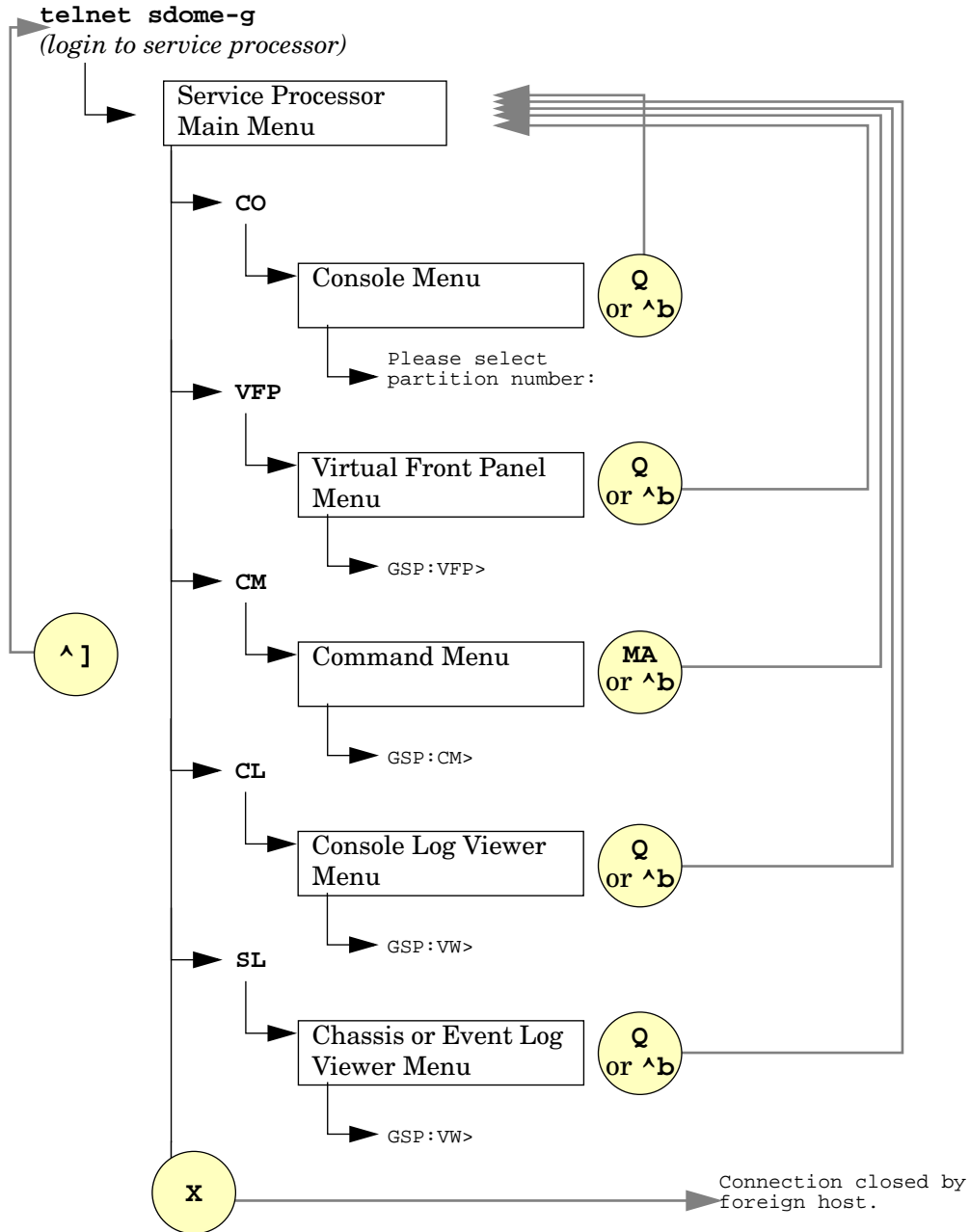
Escape the service processor connection and return to the telnet prompt.

At any time during your telnet connection to a service processor, you can type the **^]** (**Control-right bracket**) escape sequence.

This key sequence escapes back to the telnet prompt. When at the **telnet>** prompt you can use the following commands, among others: **?** (print telnet command help information), **close** (close the current connection), and **quit** (exit telnet).

To return to the service processor connection, type enter (or return) one or more times.

Figure 2-2 Navigating through Service Processor (MP or GSP) Menus



nPartition Console Features

The service processor Console menu provides access to all nPartition consoles within the server complex.

Enter **CO** from the service processor Main menu to access an nPartition console. To exit the nPartition console, type **^b** (**Control-b**) to return to the Main menu.

Each nPartition in a complex has a single console. However, multiple connections to the console are supported, allowing multiple users to simultaneously view the console output. Only one connection per console permits write-access.

To force (gain) console write access for an nPartition console, type **^ecf** (**Control-e c f**).

Each nPartition console can display a variety of information about the nPartition, including:

- Partition startup, shutdown, and reset output.
- The system boot environment: either Boot Console Handler (BCH, on HP 9000 servers) or Extensible Firmware Interface (EFI, on HP Integrity servers).

The system boot environment is available when the nPartition has not yet booted an operating system and has completed Power-On Self Tests (POST) and completed nPartition rendezvous to become active.

- The HP-UX login prompt and “console shell access”.

CAUTION

When you use an nPartition console connection to login to an operating system running on the nPartition, logout from the operating system when you have finished using it before you type **^B** (**Control-b**) to disconnect from the nPartition console.

If you fail to logout from the operating system console session, then any other service processor user who has permission to access the nPartition could connect to the nPartition console and use the open login session.

Disconnecting from an nPartition console does not close any open operating system login sessions.

nPartition Console Access versus Direct OS Login

You may need to consider the following factors when deciding whether to interact with an nPartition through the service processor console interface or a direct operating system (OS) login session.

- Whether you want to log your activity to the console log for the nPartition (all console activity is stored at least temporarily).
- Whether the OS is installed, booted, and properly configured on the nPartition.

If the OS is not installed on an nPartition, you should access the nPartition console (through the service processor) in order to install and configure the OS.

You should use the network to login to the OS running on an nPartition when you do not need to use service processor features and do not want to record a log of your activity.

Before an OS has booted, the service processor nPartition consoles are the primary method of interacting with an nPartition.

After an nPartition has booted the OS, you should be able to connect to and login to the nPartition by using `telnet` or `rlogin` or `ssh` to remotely login to HP-UX or Linux, or by using remote desktop for a remote Windows session.

Network Configuration for a Service Processor

This section describes how to list and configure the network settings for service processor (MP or GSP) hardware. These settings are used for connections to the service processor and are not used for HP-UX networking.

Details on configuring service processor networking are given in the procedure *Configuring Service Processor Network Settings* on page 35.

The service processor utility hardware on HP Superdome servers has two network connections: the customer LAN and private LAN.

The service processor on other (non-Superdome) nPartition-capable servers does not have a private LAN; only a customer LAN connection is provided.

Features of service processor LANs are given in the following list.

- **Customer LAN for Service Processor**

The customer LAN is the connection for login access to the service processor menus, consoles, commands, and other features.

All HP nPartition servers have a customer LAN.

On HP Superdome servers, the customer LAN port is labeled “Customer LAN”. On HP rp8400 servers it is “GSP LAN”. On HP rp7405/rp7410 servers it is the only LAN connection on each core I/O board.

- **Private LAN for Service Processor (Superdome Only)**

The private LAN is the connection to the Superdome service support processor (SSP) workstation, also called the service management station (SMS).

Only Superdome servers have a private LAN. It typically is not used on the Superdome server models based on the HP sx1000 chipset.

To configure service processor network settings, you can use the LC command from the Command menu.

To list the current service processor network configuration use the LS command.

Chapter 2 Using the Service Processor

Network Configuration for a Service Processor

The following examples show service processor LAN status for various HP nPartition servers.

Service Processor LAN Status: HP rp7405/rp7410, HP rp8400, HP rx7620, HP rx8620

```
MP:CM> Ls
Current configuration of MP customer LAN interface
  MAC address   : 00:30:6e:05:19:ac
  IP address    : 15.99.84.140      (0x0f63548c)
  Hostname      : redxii-c
  Subnet mask   : 255.255.255.0    (0xffffffff00)
  Gateway       : 15.99.84.254    (0x0f6354fe)
  Status        : UP and RUNNING
  AutoNegotiate : Enabled
  Data Rate    : 100 Mb/s
  Duplex        : Half
  Error Count   : 0
  Last Error    : none
MP:CM>
```

HP Superdome Service Processor LAN Status

```
GSP:CM> Ls
Current configuration of GSP customer LAN interface
  MAC address   : 00:10:83:27:04:5a
  IP address    : 15.99.49.129     0x0f633181
  Name          : feshd5-u
  Subnet mask   : 255.255.248.0   0xffffffff800
  Gateway       : 15.99.49.254   0x0f6331fe
  Status        : UP and RUNNING

Current configuration of GSP private LAN interface
  MAC address   : 00:a0:f0:00:83:b1
  IP address    : 192.168.2.15     0xc0a8020f
  Name          : priv-05
  Subnet mask   : 255.255.255.0   0xffffffff00
  Gateway       : 192.168.2.100   0xc0a80264
  Status        : UP and RUNNING
GSP:CM>
```

Default Service Processor Network Settings

Table 2-1 and Table 2-2 list the default customer LAN and private LAN network settings for nPartition servers. Only Superdome servers have a private LAN.

Table 2-1 **Default Configuration for Service Processor Customer LAN (All nPartition Servers)**

Customer LAN IP Address	192.168.1.1
Customer LAN Host Name	gsp0

Table 2-1 **Default Configuration for Service Processor
Customer LAN
(All nPartition Servers) (Continued)**

Customer LAN Subnet Mask	255.255.255.0
Customer LAN Gateway	192.168.1.1

Table 2-2 **Default Configuration for Service Processor
Private LAN
(HP Superdome Servers Only)**

Private LAN IP Address	192.168.2.10
Private LAN Host Name	priv-00
Private LAN Subnet Mask	255.255.255.0
Private LAN Gateway	192.168.2.10

Configuring Service Processor Network Settings

This procedure (Command menu, **LC** command) configures the service processor customer LAN and private LAN network settings from the service processor Command menu.

- Step 1.** Connect to the service processor for the complex, login as an administrator, and enter **CM** to access the Command menu.

If a service processor is at its default configuration (including default network settings), you can connect to it using either of these methods:

- Establish a direct serial cable connection through the service processor local RS-232 port, a 9-pin D-shaped connector (DB9).

On HP Superdome servers this port is labeled “Local RS-232”. On HP rp8400 servers it is the “Local Console” port. On HP rp7405/rp7410 servers use the DB9 connector that is labeled “Console”.

- Access a PC or workstation on the same subnet as the service processor, modify its network routing tables to include the default customer LAN IP address, then `telnet` to the service processor. The procedure to modify networking and connect is:

Chapter 2 Using the Service Processor

Network Configuration for a Service Processor

1. Access a PC or workstation on the same subnet as the service processor.
2. Modify the network routing tables for the PC or workstation by using the `route add 192.168.1.1 ClientName` command, where *ClientName* is the network name of the PC or workstation.

From a PC command prompt: `route add 192.168.1.1 ClientName`

On an HP-UX workstation login as `root` and use this command:

```
/usr/sbin/route add 192.168.1.1 ClientName
```

After you reconfigure the service processor network settings, you can remove these network routing table changes with the `route delete...` command.

3. Enter this command to confirm the new network connection to the service processor: `ping 198.168.1.1 -n 2`
4. Use the `telnet 192.168.1.1` command from the PC or workstation to connect to the service processor.

- Step 2.** From the service processor Command menu, enter `LS` to list the current network settings, and if needed use the `LC` command to reconfigure the network settings for the service processor.

You must be logged in as an administrator to use the `LC` command.

The `LC` command enables you to modify the customer LAN and/or the private LAN configuration.

You can cancel all changes to the service processor LAN configuration at any time by replying `Q` to any of the `LC` command prompts.

Viewing Console Logs

Each nPartition in a server complex has its own console log that stores a record of the most recent nPartition console activity.

To access the console log for an nPartition, enter **CL** from the service processor Main menu and select which nPartition console log you want to view. To exit the console log viewer, type **^b** (**Control-b**) to return to the Main menu.

When viewing an nPartition console log, type **P** to view the previous page of the console log, or type **N** (or **Enter**) to view the next page.

When you enter a console log viewer it displays the oldest data in the log first and allows you to page through the log to view the more recently recorded activity.

Each console log is a circular log file that records approximately 30 to 40 pages of data. All nPartition console activity is written to this log file, regardless of whether a user is connected to the nPartition console.

As a console log is written the oldest data in the log is overwritten by current data, as needed, so that the last 30 to 40 pages of console output always is available from the console log viewer.

Viewing Chassis Codes or Event Logs

The event log and chassis code viewers enables you to view chassis codes or event logs that are emitted throughout the entire server complex.

NOTE

On HP 9000 servers with HP PA-8700 processors, the equivalent of event logs is chassis codes.

To enter the event log viewer enter **SL** at the service processor Main menu. To exit the viewer type **^b (Control-b)** to return to the Main menu.

Event logs are data that communicate information about system events from the source of the event to other parts of the server complex. Event log data indicates what event has occurred, when and where it happened, and its severity (the alert level).

All event logs pass from the event source through the service processor. The service processor takes any appropriate action and then reflects the event logs to all running nPartitions. If an nPartition is running event monitoring software, it may also take action based on the event logs (for example, sending notification e-mail).

System administrators, of course, may have interest in viewing various event logs—especially event logs that indicate failures or errors.

Hardware, software, and firmware events may emit event logs as a result of a failure or error, a major change in system state, or basic forward progress. For example: a fan failure, an HPMC, the start of a boot process, hardware power on or off, and test completion all result in event logs being emitted.

NOTE

The front panel attention LED for each nPartition server cabinet is automatically turned on when one or more event logs of alert level 2 or higher have not yet been viewed by the administrator. When this attention LED is on, entering the chassis log viewer turns the LED off.

You can remotely check the on/off status of this attention LED by using the **PS** command, **G** option, from the service processor Command menu.

On nPartition servers, event logs are recorded in the server complex activity log (for events of alert level 0 or alert level 1) or the error log (for events alert level 2 or higher).

```
GSP> SL
```

```
Chassis Logs available:
```

```
(A)ctivity Log
(E)rror Log
(L)ive Chassis Logs

(C)lear All Chassis Logs
(Q)uit
```

```
GSP:VW> L
```

```
Entering Live Log display
```

```
A)lert filter
C)ell filter
P)artition filter
U)nfiltered
V)iew format selection
^B to Quit
```

```
Current filter: ALERTS only
```

Log Viewing Options: Activity, Error, and Live Chassis Logs

When you enter the chassis log viewer by entering **SL** at the service processor (MP or GSP) Main menu, you can select from these viewers:

- **Activity Log Viewer**

Allows you to browse recorded event logs of alert level 0 or 1.

- **Error Log Viewer**

Allows you to browse recorded event logs of alert level 2 or higher.

- **Live Chassis Logs Viewer**

Displays event logs in real time as they are emitted.

By default, the live event log viewer has the Alert filter enabled, which causes it to display only the events of alert level 3 or higher.

To view all event logs in real-time, type **U** for the Unfiltered option.

Chapter 2 Using the Service Processor

Viewing Chassis Codes or Event Logs

You also can filter the live codes by cell (**C**) or nPartition (**P**).

Cell filter: only display event logs emitted by a specific cell in the server complex. Partition filter: only display event logs emitted by hardware assigned to a specific nPartition.

When viewing event log logs, type **v** to change the display format. The viewers can show event logs in text format (**T**), keyword format (**K**), or raw hex format (**R**).

Virtual Front Panel (VFP) nPartition Views

The Virtual Front Panel (VFP) provides ways to monitor the boot or run status of each cell in an nPartition and of the nPartition itself. The VFP provides the sort of information typically displayed on the LCD of a non-partitionable server.

The VFP presents a real-time display of activity on the selected nPartition(s) and it automatically updates when cell and nPartition status change.

To access the VFP feature, enter **vfp** from the service processor Main menu. To exit the VFP, type **^b (Control-b)** to return to the Main menu.

When you access a Virtual Front Panel, you can either select the nPartition whose VFP you want to view or select the system VFP to view summary information for all nPartitions in the server complex.

E indicates error since last boot

```
Partition 0 state      Activity
-----
Cell(s) Booting:      710 Logs
```

```
# Cell state          Activity
- -----
0 Early CPU selftest  Cell firmware test    232 Logs
1 Early CPU selftest  Processor test         230 Logs
2 Memory discovery    Physical memory test   242 Logs
```

GSP:VFP (^B to Quit) >

Chapter 2 Using the Service Processor

Virtual Front Panel (VFP) nPartition Views

A **MP Commands**

Command Reference: Service Processor (MP or GSP) Commands

Table A-1 lists the commands available from the service processor command menu (the `MP:CM>` or `GSP:CM>` prompt).

The following categories of commands are available:

- *Service Commands* — *Service Processor (MP or GSP)* on page 44.
- *Status Commands* — *Service Processor (MP or GSP)* on page 45.
- *System and Access Configuration Commands* — *Service Processor (MP or GSP)* on page 45.

Some commands are restricted to users with Operator or Administrator authority. Also note that the available set of commands may differ depending on the utility revision level and server hardware model.

For details on these commands, use the help (`HE: HeLp`) feature at the service processor Main Menu. Enter the command name at the `MP:HELP` or `GSP:HELP` prompt for syntax, restrictions, and other information.

Table A-1 Service Processor (MP or GSP) Command Reference

Command	Description
Service Commands — Service Processor (MP or GSP)	
Commands for general server complex administration and nPartition management.	
BO	Boot an nPartition past Boot is Blocked (BIB).
DF	Display FRU information of an entity.
MA	Return to the Main menu.
MR	Modem reset.
PCIOLOAD	Activate/deactivate a PCI card.
PE	Power entities on or off.
RE	Reset entity.

Table A-1 Service Processor (MP or GSP) Command Reference (Continued)

Command	Description
RR	Reset an nPartition for reconfiguration; the nPartition remain inactive, in the shutdown for reconfig state.
RS	Reset an nPartition.
TC	Send a TOC signal to an nPartition.
TE	Broadcast a message to all users of the MP Command Handler.
VM	Margin the voltage in a cabinet.
WHO	Display a list of MP connected users.
Status Commands — Service Processor (MP or GSP) Commands for displaying hardware and nPartition information.	
CP	Display nPartition cell assignments.
HE	Display the list of available commands.
IO	Display IO chassis/cell connectivity.
LS	Display LAN connected console status.
MS	Display the status of the modem.
PS	Display detailed power and hardware configuration status.
SYSREV	Display revisions of all firmware entities in the complex.
System and Access Configuration Commands — Service Processor (MP or GSP) Commands for managing server complex accounts, security, and nPartition configuration.	
PARPERM	Restrict/unrestrict nPartition Reconfiguration Privilege.
PD	Modify default nPartition for this login session.
RL	Rekey Complex Profile locks.
SA	Display and set (enable/disable) MP remote access methods.
SO	Configure security options and access control (user accounts and passwords).

Appendix A *MP Commands*

Command Reference: Service Processor (MP or GSP) Commands

Table A-1 **Service Processor (MP or GSP) Command Reference (Continued)**

Command	Description
XD	MP diagnostics and reset.

B **Extensible Firmware Interface (EFI)**

EFI System Boot Environment

On HP Integrity servers the system boot environment is provided by the Extensible Firmware Interface (EFI).

EFI is available through an nPartition console interface before an operating system has booted and after the cells have booted and performed nPartition rendezvous (to make the nPartition active).

The EFI environment enables you to manage and configure the operating system boot process for an nPartition. You also can configure some settings for the local nPartition, get information about the nPartition and its server complex, and perform other tasks such as reboot.

The EFI boot environment has two main components:

- **EFI Boot Manager** — A menu-driven interface that enables to you configure and select boot options. From the EFI Boot Manager you can load an operating system, reset the nPartition, and configure various system boot and console options.
- **EFI Shell** — A command-line system boot interface that you can enter by selecting the **EFI Shell** option from the EFI Boot Manager Menu.

Type `exit` to leave the EFI Shell interface and return to the EFI Boot Manager Menu.

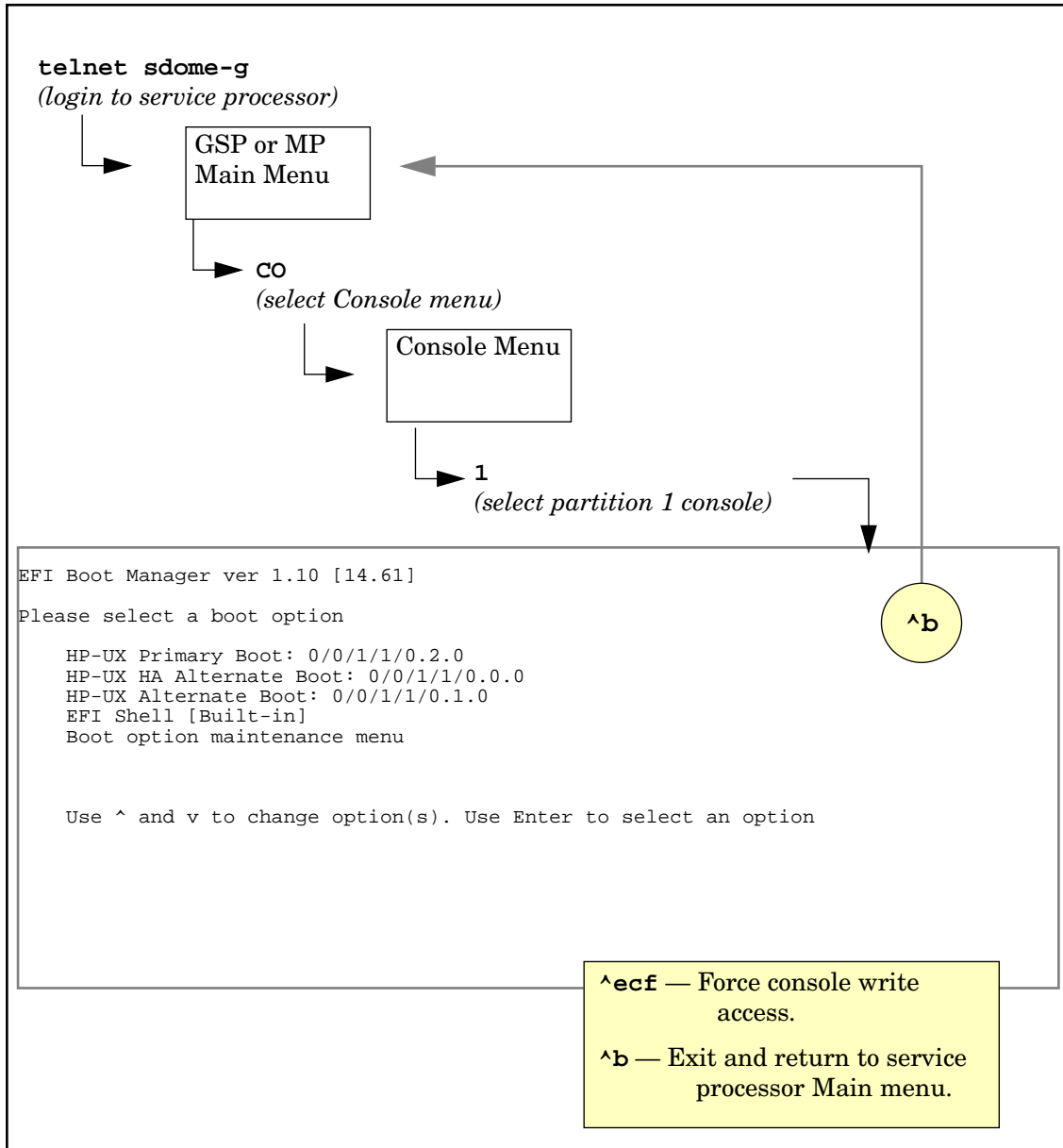
The EFI Shell provides much of the same functionality as the Boot Console Handler (BCH) interface on HP 9000 systems (PA-RISC systems).

For details on using the EFI Shell use the `help` command.

Figure B-1 on page 49 shows details on accessing and using the EFI system boot environment for the nPartition, including the following points:

- To access an nPartition console type `CO` from the service processor (MP or GSP) Main menu.
- To force console write access, type `^ecf` (**Control-e c f**).
- To exit the console, type `^b` (**Control-b**) to return to the Main Menu.

Figure B-1 Accessing the EFI Environment for an nPartition



Command Reference: EFI Shell Commands

Table B-1 lists the commands supported by the EFI Shell interface on HP Integrity Superdome servers.

The EFI Shell is accessible from an nPartition console when the nPartition is in an active state but has not booted an operating system.

The following categories of commands are available:

- *Boot Commands — EFI Shell* on page 50.
- *Configuration Commands — EFI Shell* on page 51.
- *Device, Driver, and Handle Commands — EFI Shell* on page 52.
- *Filesystem Commands — EFI Shell* on page 52.
- *Memory Commands — EFI Shell* on page 53.
- *Shell Navigation and Other Commands — EFI Shell* on page 54.
- *Shell Script Commands / Programming Constructs — EFI Shell* on page 54.

For details on these commands, enter `help command` at the EFI shell prompt.

Table B-1 **EFI Shell Command Reference**

Command	Description
Boot Commands — EFI Shell	
Commands related to nPartition booting.	
autoboot	Set/view autoboot timeout variable.
bcfg	Display/modify the driver/boot configuration.
boottest	Set/view BootTest bits.
lanboot	Boot over the LAN.
reconfigreset	Reset the system (nPartition) for reconfiguration; the nPartition remains inactive, in the shutdown for reconfig state.

Table B-1 **EFI Shell Command Reference (Continued)**

Command	Description
reset	Reset the system (nPartition).
search	Connect drivers for bootables devices.
Configuration Commands — EFI Shell	
Commands for changing and retrieving system (nPartition) information.	
acpiconfig	Set/view ACPI configuration mode.
cellconfig	Deconfigure/reconfigure cells. (Set cell use-on-next-boot values.)
cpuconfig	Deconfigure/reconfigure CPUs.
date	Display the current date or set the date of the system (nPartition).
dimmconfig	Deconfigure/reconfigure memory (DIMMs).
err	Display/change the error level.
errdump	View/clear logs.
fru	View FRU data.
info	Display hardware information.
monarch	Set/view a monarch processor.
palproc	Make a PAL call.
romdrivers	Enable/disable PCI expansion ROM drivers.
rootcell	Set/view preferred root cells. (Set nPartition core cell choices.)
salproc	Make a SAL call.
tftp	Performs TFTP operation to a bootp/DHCP enabled Unix boot server.
time	Display the current time or set the time of the system (nPartition). EFI time is set and presented in GMT (Greenwich mean time).
variable	Save/restore specific EFI variables.
ver	Display the version information.

Appendix B Extensible Firmware Interface (EFI)

Command Reference: EFI Shell Commands

Table B-1 **EFI Shell Command Reference (Continued)**

Command	Description
Device, Driver, and Handle Commands — EFI Shell Commands for managing devices, drivers, and handles.	
baud	View serial port com settings.
connect	Bind a driver to a device.
dblk	Hex dump of BlkIo devices.
devices	Display devices managed by EFI drivers.
devtree	Display tree of devices.
dh	Dump handle info.
disconnect	Disconnect driver(s) from device(s).
drivers	Display list of drivers.
drvcfg	Invoke the Driver Config Protocol.
drvdiag	Invoke the Driver Diagnostics Protocol.
guid	Dump known GUID IDs.
lanaddress	Display core I/O MAC address.
load	Load EFI drivers.
map	Map shortname to device path.
openinfo	Display the open protocols for given handle.
pci	Display PCI devices or PCI function configuration space.
reconnect	Reconnect driver(s) from a device.
unload	Unload a protocol image.
Filesystem Commands — EFI Shell Commands for managing files, directories, and attributes.	
attrib	Display/change the attributes of files/directories.

Table B-1 **EFI Shell Command Reference (Continued)**

Command	Description
cd	Update/view the current directory.
comp	Compare the contents of two files.
cp	Copy one or more files/directories to another location.
edit	Edit an ASCII or UNICODE file in full screen.
eficompress	Compress infile and write to outfile.
efidecompress	Decompress infile and write to outfile.
hexedit	Edit a file, block device, or memory region using hex.
ls	Display a list of files and subdirectories in a directory.
mkdir	Create one or more directories.
mount	Mount a filesystem on a block device.
rm	Delete one or more files/directories.
setsize	Set the size of a file.
touch	Update time of file/directory with current time.
type	Display the contents of a file.
vol	Display volume information of the file system.
Memory Commands — EFI Shell	
Commands for listing and managing memory, EFI variables, and NVRAM details.	
default	Set the default NVRAM values.
dmem	Dump memory or memory mapped IO.
dmpstore	Display all EFI variables.
memmap	Display the memory map.
mm	Display/modify MEM/IO/PCI.
pdt	View/clear partition or cell PDT.

Appendix B Extensible Firmware Interface (EFI)

Command Reference: EFI Shell Commands

Table B-1 **EFI Shell Command Reference (Continued)**

Command	Description
Shell Navigation and Other Commands — EFI Shell	
Commands for basic EFI Shell navigation and customization.	
alias	Set/get alias settings.
cls	Clear the standard output with an optional background color.
exit	Exit EFI Shell environment.
getmtc	Display current monotonic counter value.
help or ?	Display help.
mode	Display the mode of the console output device.
set	Set/Get environment variable.
xchar	Turn on/off extended character features.
Shell Script Commands / Programming Constructs — EFI Shell	
EFI shell-script commands.	
echo	Echo message to stdout or toggle script echo.
else	Script-only: Use with IF THEN.
endfor	Script-only: Delimiter for FOR loop construct.
endif	Script-only: Delimiter for IF THEN construct.
for	Script-only: Loop construct.
goto	Script-only: Jump to label location in script.
if	Script-only: IF THEN construct.
input	Take user input and place in efi variable.
pause	Script-only: Prompt to quit or continue.
stall	Stall the processor for some microseconds.

C Boot Console Handler (BCH)

Boot Console Handler (BCH) System Boot Environment

Each nPartition in a server complex has its own Boot Console Handler (BCH) interface.

The BCH interface is available through an nPartition console interface before an operating system has booted and after the cells have booted and performed nPartition rendezvous (to make the nPartition active).

The nPartition BCH interface enables you to manage and configure the HP-UX boot process for an nPartition. You also can configure some settings for the local nPartition, get some information about the nPartition and its server complex, and perform other tasks such as reboot.

Figure C-1 on page 58 shows details on accessing and using the BCH interface for an nPartition, including the following points:

- To access an nPartition console type **CO** from the service processor (MP or GSP) Main menu.
- To force console write access, type **^ecf** (**Control-e c f**).
- To exit the console, type **^b** (**Control-b**) to return to the Main Menu.

The BCH interface is available after one or more core-capable cells assigned to the nPartition has been powered on; its hardware has completed all Power-On Self Tests (POST); and the cells have booted past boot-is-blocked, rendezvoused, and BCH has started executing.

Once you begin the HP-UX boot process and load ISL, the BCH interface is no longer available.

The BCH menus and commands for nPartitions differ slightly from the commands menus for BCH on other HP 9000 server systems.

To display the current BCH menu and commands, type **DI**.

The BCH interface **HELP** command lists BCH command or menu details.

Appendix C Boot Console Handler (BCH)
Boot Console Handler (BCH) System Boot Environment

Main Menu: Enter command or menu > **HELP MA**

----- Main Menu Help -----

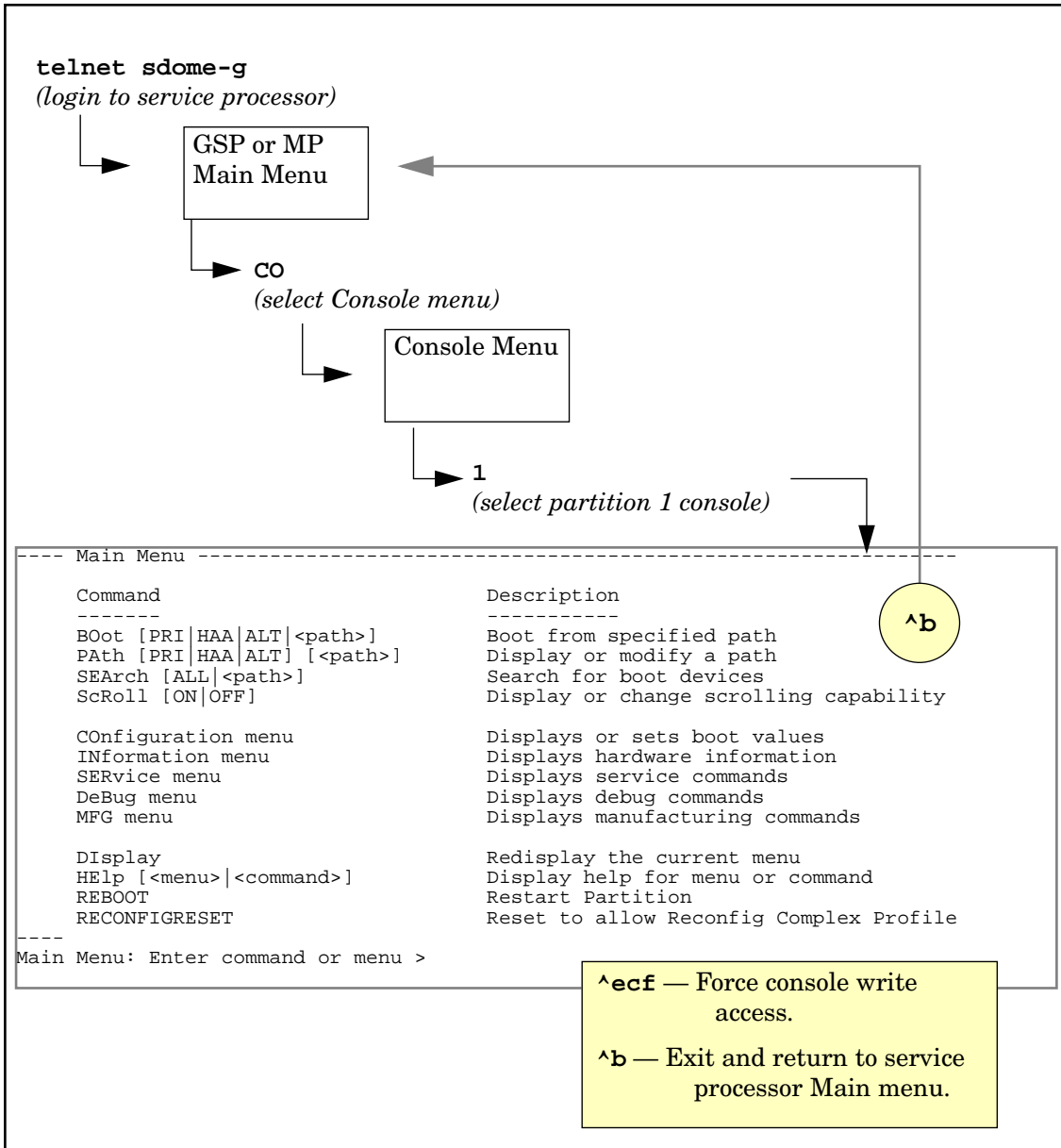
The following submenus are available from the main menu:

COntfiguration-----	-----	-----	BootID
INformation-----	-----	ALL	BootTimer
SERvice-----	BAttery	BootINfo	CEllConfig
	CLEARPIM	CAche	COreCell
	MemRead	ChipRevisions	CPUConfig
	PDT	ComplexID	DataPrefetch
	PIM	FabricInfo	Default
	SCSI	FRU	FastBoot
		FwrVersion	KGMemory
		IO	PathFlag
		LanAddress	PD
		MEemory	ResTart
		PRocessor	Time

...

Appendix C Boot Console Handler (BCH)
 Boot Console Handler (BCH) System Boot Environment

Figure C-1 Accessing the BCH Interface for an nPartition



Command Reference: BCH Menu Commands

Table C-1 lists the commands available from the Boot Console Handler (BCH) menus for an nPartition.

The BCH Menu is accessible from an nPartition console when the nPartition is in an active state but has not booted an operating system.

The following categories of commands are available:

- *General Commands — Boot Console Handler (BCH)* on page 59.
- *Main Menu Commands — Boot Console Handler (BCH)* on page 60.
- *Configuration Menu Commands — Boot Console Handler (BCH)* on page 60.
- *Information Menu Commands — Boot Console Handler (BCH)* on page 61.
- *Service Menu Commands — Boot Console Handler (BCH)* on page 62.

For details on these commands, use the help (HE) command. At any BCH menu enter **HE** *command* for details about the specified *command*, or enter **HE** for general help.

Table C-1 **Boot Console Handler (BCH) Command Reference**

Command	Description
General Commands — Boot Console Handler (BCH)	
These BCH commands are available from all BCH menus.	
BOot [PRI HAA ALT <i>path</i>]	Boot from the specified path.
REBOOT	Restart nPartition.
RECONFIGRESET	Reset the nPartition to allow Complex Profile reconfiguration; the nPartition remains inactive, in the shutdown for reconfig state.
DIisplay	Redisplay the current menu.

Table C-1 Boot Console Handler (BCH) Command Reference (Continued)

Command	Description
HElP [<i>menu</i> <i>command</i>]	Display help for the current menu or the specified <i>menu</i> or <i>command</i> .
Main Menu Commands — Boot Console Handler (BCH) Commands to find devices, set boot paths (PRI,HAA, ALT), and access other BCH menus.	
BOot [PRI HAA ALT <i>path</i>]	Boot from the specified path.
PAth [PRI HAA ALT] [<i>path</i>]	Display or modify a device boot path.
SEArch [ALL <i>cell</i> <i>path</i>]	Search for boot devices.
ScRoll [ON OFF]	Display or change scrolling capability.
COntfiguration	Access the Configuration Menu, which displays or sets boot values.
INformation	Access the information menu, which displays hardware information.
SERvice	Access the Service Menu, which displays service commands.
Configuration Menu Commands — Boot Console Handler (BCH) Commands to display or set boot values.	
MAin	Return to the BCH Main Menu.
BootID [<i>cell</i> [<i>proc</i> [<i>bootid</i>]]]	Display or set Boot Identifier.
BootTimer [0-200]	Seconds allowed for boot attempt.
CEllConfig [<i>cell</i>] [ON OFF]	Configure or deconfigure the specified <i>cell</i> .
COreCell [<i>choice cell</i>]	Display or set core cell choices for the nPartition.

Table C-1 Boot Console Handler (BCH) Command Reference (Continued)

Command	Description
CPUconfig [<i>cell</i> [<i>cpu</i> [ON OFF]]]	Configure or deconfigure the processor (<i>cpu</i>) on the specified <i>cell</i> .
DataPrefetch [ENABLE DISABLE]	Display or set data prefetch behavior.
Default	Set the nPartition to predefined (default) values.
FastBoot [test][RUN SKIP]	Display or set boot tests execution (self tests).
KGMemory [<i>value</i>]	Display or set KGMemory requirement.
PathFlags [PRI HAA ALT] [<i>value</i>]	Display or set boot path flags (boot actions).
PD [<i>name</i>]	Display or set the nPartition name.
ResTart [ON OFF]	Set nPartition restart policy.
TTime [<i>cn</i> : <i>yr</i> : <i>mo</i> : <i>dy</i> : <i>hr</i> : <i>mn</i> : [<i>ss</i>]	Read or set the real time clock, the local nPartition date/time setting. The BCH time is set and presented in GMT (Greenwich mean time).
Information Menu Commands — Boot Console Handler (BCH)	
Commands to display hardware information.	
MAin	Return to the BCH Main Menu.
ALL [<i>cell</i>]	Display all of the information available for the nPartition.
BootINfo	Display boot-related information.
CAche [<i>cell</i>]	Display cache information.
ChipRevisions [<i>cell</i>]	Display revisions of major VLSI.

Appendix C Boot Console Handler (BCH)

Command Reference: BCH Menu Commands

Table C-1 **Boot Console Handler (BCH) Command Reference (Continued)**

Command	Description
ComplexID	Display Complex information.
FabricInfo	Display Fabric information.
FRU [cell] [CPU MEM]	Display FRU information
FwrVersion [cell]	Display versions for PDC, ICM, and complex.
IO [cell]	Display I/O interface information.
MEmory [cell]	Display memory information.
PRocessor [cell]	Display processor information
Service Menu Commands — Boot Console Handler (BCH) Commands related to nPartition system service tasks.	
MAin	Return to the BCH Main Menu.
BATtery [cell]	Display cell battery status.
CLEARPIM [cell]	Clear the nPartition NVM PIM data.
DimmDealloc [cell] [dimm] [ON OFF]	Display, deallocate, or re-allocate the DIMM identified by <i>dimm</i> in cell number specified by <i>cell</i> .
ErrorLog [cell][MEMORY IO FABRIC CELL]	Display error log information.
LanAddress	Display Core I/O LAN station address.
MemRead <i>address</i> [<i>len</i>]	Read memory locations scope of nPartition.
PDT [cell] [CLEAR]	Display or clear the PDT.

Table C-1 **Boot Console Handler (BCH) Command Reference (Continued)**

Command	Description
PIM [<i>cell</i> [<i>proc</i>]] [HPMC LPMC TOC]	Display PIM information.
SCSI [<i>path</i> [INIT RATE TERM WIDTH DEFAULT [<i>id</i>]]]	Display or set SCSI device parameters.

Appendix C *Boot Console Handler (BCH)*

Command Reference: BCH Menu Commands

Index

About This Document 9
Accessing and Using the Service Processor 24
Accessing the BCH Interface for an nPartition 58
Accessing the EFI Environment for an nPartition 49
Activity Log Viewer 39
Administrator Account 21
Boot Commands — EFI Shell 50
Boot Console Handler (BCH) 55
Boot Console Handler (BCH) Command Reference 59
Boot Console Handler (BCH)
 System Boot Environment 56
Chassis Logs and Event Logs 19
Command Menu 18
Command Reference:
 BCH Menu Commands 59
Command Reference:
 EFI Shell Commands 50
Command Reference:
 Service Processor (MP or GSP) Commands 44
Configuration Commands — EFI Shell 51
Configuration Menu Commands — Boot Console Handler (BCH) 60
Configuring Service Processor Network Settings 35
Console Logs 19
Consoles 18
Copyright Notice 2
Customer LAN for Service Processor 33
Default Configuration for Service Processor Customer LAN
 (All nPartition Servers) 34
Default Configuration for Service Processor Private LAN
 (HP Superdome Servers Only) 35
Default Service Processor Network Settings 34
Device, Driver, and Handle Commands — EFI Shell 52
Document Organization 12
EFI Shell Command Reference 50
EFI System Boot Environment 48
Error Log Viewer 39
Extensible Firmware Interface (EFI) 47
Filesystem Commands — EFI Shell 52
General Commands — Boot Console Handler (BCH) 59
Information Menu Commands — Boot Console Handler (BCH) 61
Intended Audience 10
Introduction to Service Processor Interfaces 16
Legal Notices 2
Live Chassis Logs Viewer 39

Log Viewing Options: Activity, Error, and Live Chassis Logs 39
 Logging in to a Service Processor 26
 Main Menu Commands — Boot Console Handler (BCH) 60
 Memory Commands — EFI Shell 53
 MP Commands 43
 Navigating through Service Processor (MP or GSP) Menus 30
 Navigating through Service Processor Menus 29
 Network Configuration for a Service Processor 33
 Notational Conventions 13
 nPartition Console Access versus Direct OS Login 32
 nPartition Console Features 31
 Operator Account 21
 Overview of a Service Processor Login Session 25
 Overview of Service Processor (MP or GSP) Menus 28
 Overview of the Service Processor 15
 Private LAN for Service Processor (Superdome Only) 33
 Publishing History 11
 Restricted Rights Legend 2
 Service Commands — Service Processor (MP or GSP) 44
 Service Menu Commands — Boot Console Handler (BCH) 62
 Service Processor (GSP or MP)
 User's Guide 1
 Service Processor (MP or GSP) Command Reference 44
 Service Processor (MP or GSP) Features 18
 Service Processor Accounts and Access Levels 21
 Shell Navigation and Other Commands — EFI Shell 54
 Shell Script Commands / Programming Constructs — EFI Shell 54
 Single Partition User Account 21
 Status Commands — Service Processor (MP or GSP) 45
 System and Access Configuration Commands — Service Processor (MP or GSP)
 45
 Using Service Processor Menus 27
 Using the Service Processor 23
 Viewing Chassis Codes or Event Logs 38
 Viewing Console Logs 37
 Virtual Front Panel (VFP) for an nPartition 20
 Virtual Front Panel (VFP) nPartition Views 41
 Warranty 2

