

Part No. 318843-A Rev 00
March 2005

4655 Great America Parkway
Santa Clara, CA 95054

Upgrading to the Passport 8000 Series Switch Software Release 3.7.6



>THIS IS **THE WAY**

>THIS IS **NORTEL™**

Copyright © Nortel Networks Limited 2005. All rights reserved.

The information in this document is subject to change without notice. The statements, configurations, technical data, and recommendations in this document are believed to be accurate and reliable, but are presented without express or implied warranty. Users must take full responsibility for their applications of any products specified in this document. The information in this document is proprietary to Nortel Networks Inc.

The software described in this document is furnished under a license agreement and may be used only in accordance with the terms of that license. The software license agreement is included in this document.

Trademarks

Nortel Networks, the Nortel Networks logo, the Globemark, Unified Networks, OPTera, and BayStack are trademarks of Nortel Networks.

Microsoft, Windows, and Windows NT are trademarks of Microsoft Corporation.

SanDisk is a trademark of SanDisk Corporation.

The asterisk after a name denotes a trademarked item.

Restricted rights legend

Use, duplication, or disclosure by the United States 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.

Notwithstanding any other license agreement that may pertain to, or accompany the delivery of, this computer software, the rights of the United States Government regarding its use, reproduction, and disclosure are as set forth in the Commercial Computer Software-Restricted Rights clause at FAR 52.227-19.

Statement of conditions

In the interest of improving internal design, operational function, and/or reliability, Nortel Networks Inc. reserves the right to make changes to the products described in this document without notice.

Nortel Networks Inc. does not assume any liability that may occur due to the use or application of the product(s) or circuit layout(s) described herein.

Portions of the code in this software product may be Copyright © 1988, Regents of the University of California. All rights reserved. Redistribution and use in source and binary forms of such portions are permitted, provided that the above copyright notice and this paragraph are duplicated in all such forms and that any documentation, advertising materials, and other materials related to such distribution and use acknowledge that such portions of the software were developed by the University of California, Berkeley. The name of the University may not be used to endorse or promote products derived from such portions of the software without specific prior written permission.

SUCH PORTIONS OF THE SOFTWARE ARE PROVIDED “AS IS” AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

In addition, the program and information contained herein are licensed only pursuant to a license agreement that contains restrictions on use and disclosure (that may incorporate by reference certain limitations and notices imposed by third parties).

Nortel Networks Inc. software license agreement

This Software License Agreement (“License Agreement”) is between you, the end-user (“Customer”) and Nortel Networks Corporation and its subsidiaries and affiliates (“Nortel Networks”). PLEASE READ THE FOLLOWING CAREFULLY. YOU MUST ACCEPT THESE LICENSE TERMS IN ORDER TO DOWNLOAD AND/OR USE THE SOFTWARE. USE OF THE SOFTWARE CONSTITUTES YOUR ACCEPTANCE OF THIS LICENSE AGREEMENT. If you do not accept these terms and conditions, return the Software, unused and in the original shipping container, within 30 days of purchase to obtain a credit for the full purchase price.

“Software” is owned or licensed by Nortel Networks, its parent or one of its subsidiaries or affiliates, and is copyrighted and licensed, not sold. Software consists of machine-readable instructions, its components, data, audio-visual content (such as images, text, recordings or pictures) and related licensed materials including all whole or partial copies. Nortel Networks grants you a license to use the Software only in the country where you acquired the Software. You obtain no rights other than those granted to you under this License Agreement. You are responsible for the selection of the Software and for the installation of, use of, and results obtained from the Software.

1. Licensed Use of Software. Nortel Networks grants Customer a nonexclusive license to use a copy of the Software on only one machine at any one time or to the extent of the activation or authorized usage level, whichever is applicable. To the extent Software is furnished for use with designated hardware or Customer furnished equipment (“CFE”), Customer is granted a nonexclusive license to use Software only on such hardware or CFE, as applicable. Software contains trade secrets and Customer agrees to treat Software as confidential information using the same care and discretion Customer uses with its own similar information that it does not wish to disclose, publish or disseminate. Customer will ensure that anyone who uses the Software does so only in compliance with the terms of this Agreement. Customer shall not a) use, copy, modify, transfer or distribute the Software except as expressly authorized; b) reverse assemble, reverse compile, reverse engineer or otherwise translate the Software; c) create derivative works or modifications unless expressly authorized; or d) sublicense, rent or lease the Software. Licensors of intellectual property to Nortel Networks are beneficiaries of this provision. Upon termination or breach of the license by Customer or in the event designated hardware or CFE is no longer in use, Customer will promptly return the Software to Nortel Networks or certify its destruction. Nortel Networks may audit by remote polling or other reasonable means to determine Customer’s Software activation or usage levels. If suppliers of third party software included in Software require Nortel Networks to include additional or different terms, Customer agrees to abide by such terms provided by Nortel Networks with respect to such third party software.

2. Warranty. Except as may be otherwise expressly agreed to in writing between Nortel Networks and Customer, Software is provided “AS IS” without any warranties (conditions) of any kind. NORTEL NETWORKS DISCLAIMS ALL WARRANTIES (CONDITIONS) FOR THE SOFTWARE, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY OF NON-INFRINGEMENT. Nortel Networks is not obligated to provide support of any kind for the Software. Some jurisdictions do not allow exclusion of implied warranties, and, in such event, the above exclusions may not apply.

3. Limitation of Remedies. IN NO EVENT SHALL NORTEL NETWORKS OR ITS AGENTS OR SUPPLIERS BE LIABLE FOR ANY OF THE FOLLOWING: a) DAMAGES BASED ON ANY THIRD PARTY CLAIM; b) LOSS OF, OR DAMAGE TO, CUSTOMER’S RECORDS, FILES OR DATA; OR c) DIRECT, INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS OR SAVINGS), WHETHER IN CONTRACT, TORT OR OTHERWISE (INCLUDING NEGLIGENCE) ARISING OUT OF YOUR USE OF THE SOFTWARE, EVEN IF NORTEL NETWORKS, ITS AGENTS OR SUPPLIERS HAVE BEEN ADVISED OF THEIR POSSIBILITY. The forgoing limitations of remedies also apply to any developer and/or supplier of the Software. Such developer and/or supplier is an intended beneficiary of this Section. Some jurisdictions do not allow these limitations or exclusions and, in such event, they may not apply.

4. General

- a. If Customer is the United States Government, the following paragraph shall apply: All Nortel Networks Software available under this License Agreement is commercial computer software and commercial computer software documentation and, in the event Software is licensed for or on behalf of the United States Government,

the respective rights to the software and software documentation are governed by Nortel Networks standard commercial license in accordance with U.S. Federal Regulations at 48 C.F.R. Sections 12.212 (for non-DoD entities) and 48 C.F.R. 227.7202 (for DoD entities).

- b. Customer may terminate the license at any time. Nortel Networks may terminate the license if Customer fails to comply with the terms and conditions of this license. In either event, upon termination, Customer must either return the Software to Nortel Networks or certify its destruction.
- c. Customer is responsible for payment of any taxes, including personal property taxes, resulting from Customer's use of the Software. Customer agrees to comply with all applicable laws including all applicable export and import laws and regulations.
- d. Neither party may bring an action, regardless of form, more than two years after the cause of the action arose.
- e. The terms and conditions of this License Agreement form the complete and exclusive agreement between Customer and Nortel Networks.
- f. This License Agreement is governed by the laws of the country in which Customer acquires the Software. If the Software is acquired in the United States, then this License Agreement is governed by the laws of the state of New York.

Contents

Preparing the Passport 8600 Series Switch and upgrading the software . 7

Introduction 7

Password encryption: modifying and resetting passwords 9

About the ssladmin user access level 10

Flash/PCMCIA file system 10

Upgrading switch memory 12

Software filenames 12

Configuration files 14

Before upgrading the software 17

Upgrading the software 21

Hot swapping the CPU module or I/O modules 42

Securing your network 42

Reading path 42

Appendix A

Performing a WSM serial download 47

Verifying image compatibility 48

Establishing a serial connection to the WSM 48

Appendix B

8672ATM/ATME/ATMM supported PVCs 53

Preparing the Passport 8600 Series Switch and upgrading the software

Introduction

This upgrade document for the Nortel Networks* Passport 8000 Series Switch Software Release 3.7.6 describes the procedures to upgrade from a previous version of the software.

Passport 8000 Series Switch Software Release 3.7.6 was specifically designed to introduce the 8660 Service Delivery Module (SDM). The 8660 SDM provides firewall security capabilities through a Passport 8600 I/O module. Software Release 3.7.6 supports both the Passport 8600 and 8100 Series Switches, however, the 8660 SDM is supported only in a Passport 8600 Series Switch operating on Software Release 3.7.6 or later. Therefore, this book describes upgrade tasks specific to the Passport 8600 Series Switch.

If you use a Passport 8690 Switch Fabric (SF) module, and intend to run Software Release 3.7.6, you must upgrade the 8690SF module to 256 megabytes (MByte), using the 256 MByte CPU Memory Upgrade Kit (DS1411016). This is also true for the 8190 Switch Module (SM). This memory upgrade is required for Software Release 3.7.6. If you are using a Passport 8691SF module, the memory upgrade is not required for the 3.7.6 release, but it is recommended.

Because different memory sizes in the same chassis (for example, 256 MBytes for the 8690SF and 8692SF; 128 MBytes for the 8691SF) can cause unpredictable behaviors, Nortel Networks does not recommend nor support a mixed configuration (8690/8691/8692) in a chassis.

The Web Switching Module (WSM) and 8661 SSL Acceleration Module (SAM) must be upgraded prior to upgrading the 8600 Series Switch. Therefore, upgrade processes for the WSM and SAM are described first in this document. If your configuration does not contain these modules, go directly to [“Performing a Passport 8600 Series Switch upgrade” on page 30](#).



Note: Passport 8000 Series Switch Software Release 3.2.0 and later does not support configurations of Passport 8100 modules and Passport 8600 modules simultaneously within the same chassis.

This document contains the following topics:

Topic	Page
Password encryption: modifying and resetting passwords	9
About the ssladmin user access level	10
Flash/PCMCIA file system	10
Flash/PCMCIA file system	10
Upgrading switch memory	12
Software filenames	12
Configuration files	14
Before upgrading the software	17
Upgrading the software	21
Hot swapping the CPU module or I/O modules	42
Securing your network	42
Reading path	42

Password encryption: modifying and resetting passwords

In the Passport 8000 Series Switch Software Release 3.7.6, passwords are stored in encrypted format and are not stored in the configuration file. Encrypted passwords were implemented in Passport 8000 Series Switch Software Release 3.5. If a configuration file saved prior to Release 3.5 is loaded, any saved passwords from the configuration file are not recognized. When the switch is first booted with the Software Release 3.7.6 image, the password is reset to default values and a log that indicates any changes is generated.



Note: For security reasons, Nortel Networks recommends setting the passwords to values other than factory defaults.

If, at any time, you need to reset passwords to their default values, use the following command at the boot-monitor prompt:

reset-passwd

To change passwords, use the following commands (all passwords are case-sensitive):

config cli password <access-level> <username>

Enter the old password:

Enter the new password:

Re-enter the new password:

For more information on securing your network immediately following the upgrade, see *Important Security Information for the Passport 8000 Series Switch* (part number 314997-C). For a more thorough study of configuring security in your network, see *Configuring and Managing Security* (part number 314724-C). Instructions to access these documents can be found in [“Reading path” on page 42](#).

About the ssladmin user access level

The `ssladmin` user access level allows you to perform the following tasks on the SAM:

- configure a SAM in a cluster
- add or delete certificates and keys
- create VLANs
- add the SAM to a VLAN
- upgrade the SAM image using the Passport 8600 copy command
- back up or restore the SAM configuration using the Passport 8600 copy command



Caution: Be aware that `ssladmin` users are granted a broad range of rights that include Passport 8600 read/write access. Users with `ssladmin` access can also add, delete, or modify all Passport 8600 configurations, including the WSM software image and configuration.

Flash/PCMCIA file system

The files that determine how a Passport 8000 Series Switch boots and operates are contained in onboard flash memory. The switch can also download files from an ATA-compatible PCMCIA. The flash file system holds executable images and the switch configuration.

Each Passport 8000 Series Switch has two onboard flash memory devices: the boot flash and the system flash.

The boot flash memory is 2 MBytes, and contains the boot-monitor image file. The boot-monitor image is not directly user-accessible. It is updated using a special boot-monitor update mechanism that writes to the area reserved for the boot image.

The system flash memory is 16 MBytes, and is used primarily for run-time images, configuration files, the system log, and other general storage.



Note: Nortel Networks recommends that you upgrade the WSM if it is running a software version below 10.0.32.1. Nortel Networks recommends that you upgrade the SAM if it is running a software version below 1.0.17.

Before upgrading to the Passport 8000 Series Switch Software Release 3.7.6, ensure that you have adequate memory space available on the 8000 Series Switch flash. Otherwise, you will be unable to copy all the relevant files. For an upgrade with p80s3760.pkg, you need at least 6 Mbytes. For an upgrade with p80s3760.img, you need at least 9.2 Mbytes.

Be aware that the WSM and SAM files are copied to the Passport 8000 Series Switch flash, as well. While it appears that the files are being copied directly to the SAM or WSM modules, they are actually copied temporarily to the flash on the switch, and then are transferred to the WSM or SAM.

Use a PCMCIA for general storage for all file types. PCMCIA's provide a convenient way to move files between switches because they are portable. You can use one PCMCIA to update the configuration and image file on several switches. A Passport 8000 Series Switch accepts an ATA-type, SanDisk-compatible flash memory card.

The 8000 Series Switch file system allows you to use long filenames, such as those used with Microsoft Windows 95*, Windows 98*, and Windows NT* operating systems. The file naming convention for system flash files is /flash/<filename>. The file naming convention for PCMCIA files is /pcmcia/<filename>.

To verify filenames, use the **dir** command in the Command Line Interface (CLI). Filenames can also be verified using the Java Device Manager (JDM) by selecting **Edit > File System**, and select **Flash Files** or **PCMCIA Files**. The CLI and JDM also provide commands and options that allow you to copy files.

Upgrading switch memory

If you are using a Passport 8690SF module and intend to run Passport 8000 Series Switch Software Release 3.7.6, you must upgrade the 8690SF module to 256 MBytes, using the 256 MByte CPU Memory Upgrade Kit (DS1411016). This memory upgrade is required for Software Release 3.5 and later.

If you are using a Passport 8691SF module, the memory upgrade is not required, but it is recommended.

Software filenames

[Table 1](#) describes the Passport 8000 Series Switch Software Release 3.7.6 software files and the hardware they support.

Table 1 Release 3.7.6 software files and associated hardware

Module or file type	File name	Location	File size (bytes)
Passport 8000 Series Switch files			
Boot-monitor image	p80b3760.img	Flash or PCMCIA	747 377
Run-time image	p80a3760.img	Flash or PCMCIA	5 740 175
Run-time image for ATM modules	p80t3760.dld	Flash or PCMCIA	906 024
Run-time image for POS modules	p80p3760.dld	Flash or PCMCIA	701 771
Run-time image for 8100 Ethernet modules	p80e3760.dld	Flash or PCMCIA	263 720
3DES encryption file (required for SSH) Note: Available only on the web.	p80c3760.img	Flash or PCMCIA	49 996

Table 1 Release 3.7.6 software files and associated hardware (continued)

Module or file type	File name	Location	File size (bytes)
SNMP DES encryption file (required for SNMPv3) Note: Available only on the web.	p80c3760.des	Flash or PCMCIA	8 581
MIB	p80a3760.mib		2 591 047
8660 Service Delivery Module (SDM) file			
Boot-monitor/first time install for the SDM	ASF5100_2.2.7.0_SDM_R55.img	Factory-installed on the firewall iSDs.	113 851 130
Web Switching Module (WSM) files			
Bin file (for a binary upgrade)	wsm1003210_bin.img	Copy to WSM	1 376 256
Management protocol (MP) file	wsm1003210_mp.img	Copy to WSM	808 668
Boot file	wsm1003210_boot.img	Copy to WSM	43 004
8661 SAM files			
Self-installing run-time image/upgrade	p80s3760.pkg ²	Copy to SAM	5 988 896
Boot-monitor/first time install for the SAM	p80s3760.img	Copy to SAM	7 528 448
SSL upgrade instructions	p80s3760.upgrade		1 481
SSL installation instructions.	p80s3760.install		2 895
SSL diagnostics	p80s3760.diag		19 460 381

Notes:

1. Prior to release 3.3.1, the WSM configuration was stored in a file called wsmtrunk.bin. With the addition of the 8661 SAM, configuration information for both the WSM and SAM is now stored in the same file, known as asmconfig.bin. For more information, see [“Configuration files” on page 14](#), as well as [“Upgrading the 8600 Series Switch” on page 23](#).
2. Needs space on the /flash dir to decompress.

Configuration files

This section provides information about the config.cfg and asmconfig.bin configuration files.

config.cfg

The config.cfg file stores the configuration of the Passport 8000 Series Switch and its modules.

asmconfig.bin

The asmconfig.bin file allows you to maintain a single binary file, stored in flash memory, that contains the configurations of all the intelligent application switching modules in the Passport 8000 chassis. From an administrative point of view, this allows you to conveniently save your configurations in this exclusive binary file, rather than storing them separately.

The asmconfig.bin file allows you to do the following:

- move a WSM, SAM, or any other intelligent module from slot to slot within the same chassis
- maintain the VLAN configuration of the Backplane Fabric Module (BFM) ports



Note: The BFM ports provide the interface between the line cards over the chassis backplane.

The asmconfig.bin file stores the association between a WSM or SAM module MAC address and its VLAN configuration. (In the case of the WSM, it stores the MLT configuration, as well).

The asmconfig.bin file does not maintain the VLAN configuration if you replace a WSM or a SAM with a spare module in the same slot. You must reconfigure the BFM VLAN associations if they differ from the default configuration.

Since the `asmconfig.bin` file is a binary file, you cannot edit it. Always back up and restore the `asmconfig.bin` file when backing up and restoring a configuration file.



Note: The `asmconfig.bin` file is forward-compatible for Release 3.5 and later. However, it is not downgradeable. If you wish to downgrade to a Release previous to 3.5, rename the `wsmtrunk.bin.bak` file on the flash to `wsmtrunk.bin` using the following command:

```
mv /flash/wsmtrunk.bin.bak /flash/wsmtrunk.bin
```

This ensures that the WSM modules in the chassis boot up with the configuration last saved in the `wsmtrunk.bin` file.

Automatic update

To automatically update the `asmconfig.bin` file, enter one of the following from the CLI:

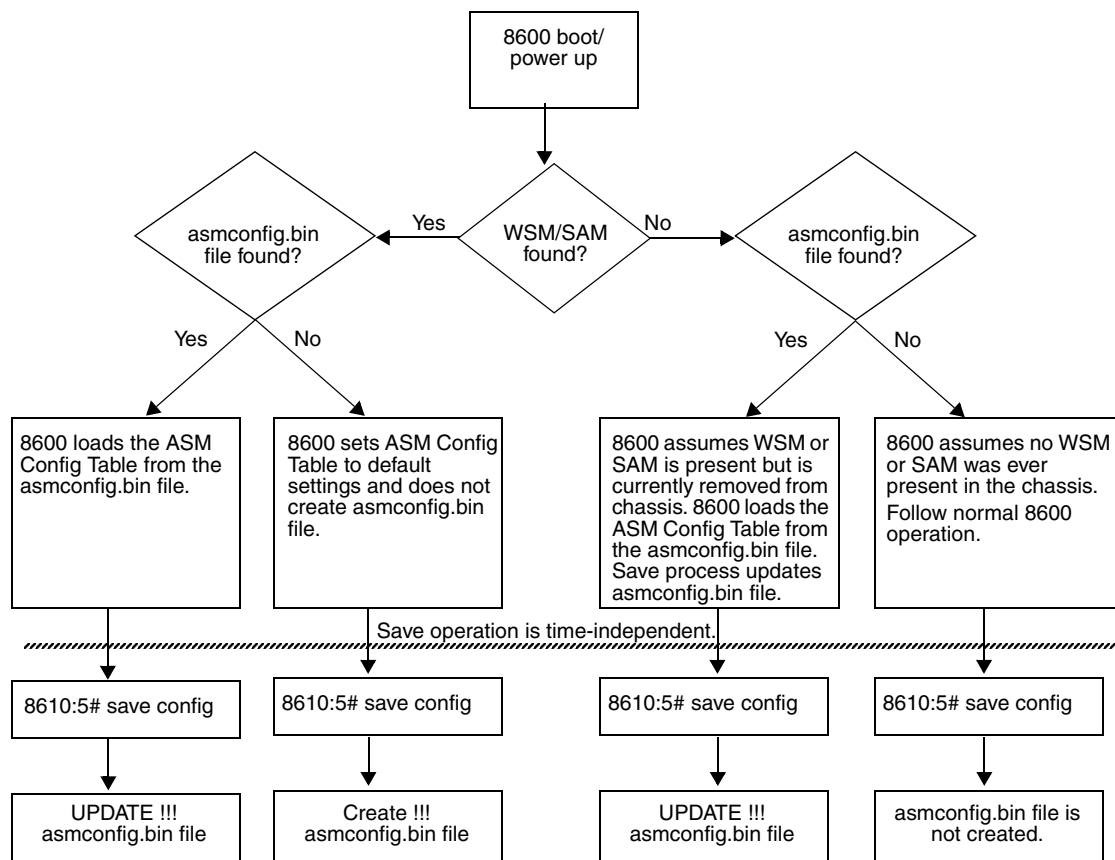
```
save config or save config standby
```



Caution: Do not erase the `asmconfig.bin`. If the file is erased, the association between the WSM/SAM MAC address and its VLAN and MLT configuration is lost.

Read/write process

[Figure 1 on page 16](#) illustrates the read/write process for an `asmconfig.bin` file. A Passport 8600 Series Switch is used in this configuration.

Figure 1 asmconfig.bin file read/write process

Before upgrading the software

Before upgrading to the Passport 8000 Series Switch Software Release 3.7.6, you must do the following:

- upgrade the WSM and SAM, if present.
- consult *Important Security Information for the Passport 8000 Series Switch* (part number 314997-C) for security-related issues.

Special precautions

Take special note of the following before upgrading the Passport 8000 Series Switch software:

- The configuration file generated with Software Release 3.7.6 contains options that are not backward-compatible with Software Release 3.0.x, 3.1.x, 3.2.x, 3.3.x, 3.5.x, or earlier versions of 3.7.x. Loading a 3.7.6 configuration file on a 3.0.x, 3.1.x, or 3.2.x, 3.3.x, 3.5.x, or earlier versions of 3.7.x run-time image generates errors and causes the image to abort loading the configuration file.
- Before executing any **copy** command (that uses the TFTP protocol), be aware that if there is any failure (for example, TFTP server not available, or TFTP Time Out), the file on the flash (or the PCMCIA) is deleted if the name of this file is the same as the one that you specified in the **copy** command. For example:

```
copy 111.111.1.11:p80a3760.img /flash/p80a3760.img
```

To preserve the original file, you can either rename the file, or make a backup copy of it on the PCMCIA or flash before you begin the copy process.

- When installing files on the onboard flash or PCMCIA, ensure that you verify flash capacity before downloading the files.
- Before you upgrade or downgrade the switch software, make a copy of the switch configuration file specified in the boot.cfg file using the following CLI command:

```
copy /flash/config.cfg/<device>/config_backup.cfg
```

where the device can be a PCMCIA, flash, or an IP host.



Note: Before upgrading the boot flash, Nortel Networks recommends that you copy the boot image and the software image to the flash file system of the switch using the following CLI commands:

```
copy /<device>/p80b3760.img /flash/p80b3760.img
```

```
copy /<device>/p80a3760.img /flash/p80a3760.img
```

where **<device>** is a PCMCIA.

Copy the file from the TFTP server to the flash using the following CLI commands:

```
copy <tftpserver IP address>:p80b3760.img /flash/  
p80b3760.img
```

```
copy <tftpserver IP address>:p80a3760.img /flash/  
p80a3760.img
```

After a successful copy of the boot image and software image, use the CLI command **boot /flash/p80b3760.img** at the switch prompt to boot your switch with the boot image.

- With releases prior to 3.7, Nortel Networks recommends that you have a copy of the boot.cfg file in the /flash directory. During the boot process, if the /flash/boot.cfg file is not present, and if a PCMCIA is present, the Passport 8000 Series Switch searches for the file /pcmcia/boot.cfg. If a PCMCIA is not present, or if the file /pcmcia/boot.cfg is not present, the Passport 8000 Series Switch boots using the default boot configuration settings.

In Software Release 3.7 and later, the switch checks for an IP address using the following procedure:

- 1 The switch checks the boot configuration file pcmboot.cfg in the PCMCIA. The pcmboot.cfg file, which has the same syntax as the boot.cfg file, must be created.
- 2 If the switch does not find it in the pcmboot.cfg file, it checks for the address in the boot.cfg file in flash.
- 3 If the switch does not find it in the boot.cfg file in flash, it checks for an address in the boot.cfg file in the PCMCIA.

- 4 If the switch does not find it in the boot.cfg file in the PCMCIA, it attempts to get the IP address for the management port through BootP.
 - 5 The default IP address for the management port is now 192.168.168.168/24 for slots 3 and 5, and 192.168.168.169/24 for slot 6.
- If the flash on your system has not been reformatted since the upgrade to the Release 3.2.2 (May 2002) or later, Nortel Networks recommends that you do so before upgrading to the Software Release 3.7.6. If you do not reformat the system flash first, the result can be that you are unable to access the switch files.
 - Because of the DNS implementation beginning in Release 3.7, the CLI peer command is not available unless you add the peer IP address in a new file called flash/etc/hosts. You must create this file; no default file exists. You can manually create it using a simple text editor, such as the one provided by the Passport 8600. See [Figure 2](#) for an example of this file. For the CPU in slot 5, the peer address corresponds to 127.0.0.6. For the CPU in slot 6, the peer address corresponds to 127.0.0.5. If you swap the CPU (going from slot 5 to 6), you have to manually modify the address in the file.

Figure 2 Sample flash/etc/hosts file

```
198.202.188.44 inthp04.labpc.ernet.in labpc
206.236.134.194 inthp04.labpc1.ernet.in lacpc
198.202.188.174 ipksun05.accelar.wall.com ipksun05
198.202.188.34 dhcp.accelar.wall.com dhcpserver
127.0.0.6 peer cpuslot6
```



Caution: If you are using a PCMCIA manufactured by SanDisk, the Passport 8000 Series Switch is sometimes cannot access the /pcmcia/boot.cfg file during the boot process. This limitation has been only observed during the boot process. No limitation has been observed when accessing the SanDisk device after the boot process is complete.

- Although you can configure higher Virtual Path Identifier (VPI) numbers than those supported Permanent Virtual Connections (PVCs) described in [Appendix B, “8672ATM/ATME/ATMM supported PVCs,” on page 53](#) (without a warning or error message displaying), these higher numbers do not

function properly and must not be used. Note that some values have changed since the previous release of Passport 8600 software, and it is imperative to read this information prior to upgrading your Passport 8600 switch that contains 8672ATM/ATME/ATMM modules.

Upgrading the software



Caution: Prior to starting the upgrade, see [“Software filenames” on page 12](#).

The Passport 8000 Series Switch Software Release 3.7.6 upgrade instructions include the following topics:

Topic	Page
Downloading and installing the software	22
Performing a WSM upgrade	24
Performing a SAM upgrade	27
Performing a Passport 8600 Series Switch upgrade	30

Prior to upgrading either the Passport 8600 or WSM (or both), ensure that the images are compatible. For more information, see [“Verifying image compatibility” on page 48](#).



Caution: You must upgrade the WSM and SAM before upgrading the Passport 8600 CPU software (see [“Introduction” on page 7](#) through to [“Before upgrading the software” on page 17](#)).

Nortel Networks recommends that you upgrade the WSM if it is running a software version below 10.0.32.1. To determine the software version running on the WSM, see [“Performing a WSM upgrade” on page 24](#).

Nortel Networks recommends that you upgrade the SAM if it is running a software version below 1.0.17. To determine the software version running on the SAM, see [“Performing a SAM upgrade” on page 27](#).

To avoid any potential sequence issues, you should ensure that the WSM has been upgraded to 10.0.32.1. In addition, Nortel Networks recommends that the following hardware be present before starting the upgrade:

- a Passport 8000 6- or 10-slot chassis
- a power supply (Nortel Networks recommends that you have two)
- an 8690/8691/8692SF card
- at least one WSM
- at least one 8661 SAM
- a Passport 8000 line card (Fast Ethernet, or Gigabit)



Note: If you obtain WSM and SAM cards after upgrading to Software Release 3.7.6, upgrade the WSM.bin file using the WSM maint port. You do not have to upgrade the SAM card.

Downloading and installing the software

Begin by booting the WSM, SAM, and Passport 8600 CPU with the correct software images. You can download these images from the following web site:

www.nortel.com/support



Note: There are restrictions to accessing the software. You require correct authorization to enter these restricted areas of the website. If you are denied access, contact customer support.

If this is a new Passport 8600 Series Switch SAM installation, you need to download the following images to a TFTP server:

- WSM images (wsm1003210_boot.img and wsm1003210_mp.img)
- SAM image (p80s3760.pkg or p80s3760.img)

Be aware that the file you use depends on the state of the installation. For instance, if the SAM has not been associated with a cluster or configured, use the p80s3760.img file to upgrade. If it has been configured (that is, included in a cluster), use the p80s3760.pkg file instead to ensure that your configurations are saved when the software is upgraded. For more information, see [“Performing a SAM upgrade” on page 27](#).

- Passport 8600 CPU boot-monitor image (p80b3760.img)
- Passport 8600 Series Switch run-time image (p80a3760.img)

When downloading these images, ensure that you specify the acronym for each as it appears on the web page.

WSM and SAM recommendations

The following recommendations apply if you have a WSM and SAM:

- If you are adding a SAM to an existing Passport 8600 Series Switch with various 8600 modules already installed, Nortel Networks recommends that you consult the list of additional files in [Table 1 on page 12](#). Download all files that you require for your configuration.
- If you are on the maintenance console when the WSM boots, ensure that the WSM boot code version is above 10.0 before performing the remainder of the 3.7.6 upgrade.

To check the existing image versions and configuration, connect to the WSM using **wsm connect**, then use the **/boot/cur** command. These CLI commands are described in [“Performing a WSM upgrade” on page 24](#).

Upgrading the 8600 Series Switch

When upgrading the Passport 8600 Series Switch from a previous software release, be aware that the WSM and SAM configuration is read and stored in the following order:

- 1 The WSM VLAN and MLT configuration is read from the wsmtrunk.bin file, if it is present on flash.
- 2 The read configuration is loaded into the ASM config table and is also stored on flash in a new asmconfig.bin file in the new format.

- 3 The wsmtrunk.bin file on flash is renamed wsmtrunk.bin.bak.



Caution: If the wsmtrunk.bin.bak file already exists on the flash, it is overwritten without warning

Performing a WSM upgrade

To upgrade the WSM:

- 1 Insert the WSM.

WSM initialization can take several minutes.

- 2 Wait for the `WSM Initialization Completed` message to display on the Passport 8600 switch console session.

If this message does not appear, perform a serial download as detailed on [page 47](#).

- a Use the `wsm connect <slot number>` command to connect to the WSM (see [Figure 3](#)).

Figure 3 WSM connect command

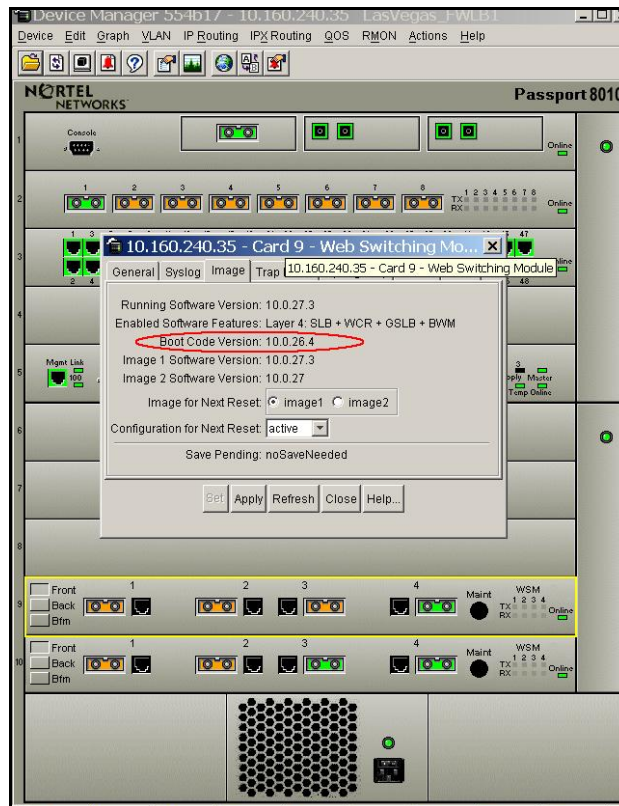
```
Passport-8603:3# wsm connect 1
Connecting...
Connection to WSM made
```

- b Determine the existing image versions and configurations. For example, use the following CLI command to display the image versions as shown in [Figure 4 on page 25](#): `/boot/cur`

Figure 4 /boot/cur command output

```
WSM_1>> Main# /boot/cur
Currently set to boot software image2, active config block.
Current FLASH software:
    image1: version 10.0.32.1, downloaded 18:16:31 Sun Feb 20,
2005
    image2: version 10.0.32.1, downloaded 16:55:34 Sun Feb 20,
2005
    maintenance kernel: version 1.0.24
```

You can also determine the WSM boot code version by accessing the JDM and viewing the **Image** tab as shown in [Figure 5](#).

Figure 5 Boot code version



Note: If the WSM boot code version is lower than 10.0, perform a binary upgrade as explained in [Appendix A, “Performing a WSM serial download,”](#) on page 47.

- 3 Copy the new WSM MP and boot files to the WSM using the following command:

```
copy <tftpServerIPAddr>:<absolute path of the WSM image>/  
wsm/<slot number>/imageX (where X= image1 or image2)
```

For example, use the following commands to copy the WSM MP and boot files from TFTP server 10.10.10.1 to the WSM:

```
copy 10.10.10.1:/wsm1003210_mp.img /wsm/1/image2
```

```
copy 10.10.10.1:/wsm1003210_boot.img /wsm/1/boot
```

- 4 Use the following commands to set the WSM to boot from the new image and reboot the module:

```
wsm setboot <slot number> image2
```

```
wsm wsmreset <slot number>
```

- 5 Wait for the WSM Initialization Completed message to display on the Passport 8600 Series Switch CLI console.

You have now finished upgrading the WSM. You must now upgrade the SAM (see [“Performing a SAM upgrade”](#) on page 27).

For more information on the WSM, refer to the following technical configuration guides:

- *Configuring Basic Server Load Balancing (SLB) with a Passport 8600 Web Switching Module (WSM)* (part number 316434-A)
- *Getting Started with a Web Switching Module for the Passport 8600* (part number 316435-A)
- *Deviating from the Passport 8600 and Web Switching Module (WSM) Factory Defaults* (part number 316436-A)
- *Understanding the Passport 8600 & Web Switching Module (WSM)* (part number 316437-A)

Performing a SAM upgrade

To determine whether or not to upgrade the SAM, enter the **sam info** command from the 8600 Series Switch CLI. You use this command to determine which version of the SAM is running.



Note: Ensure that the SAM is running software version 1.0.17 or later.

To upgrade the SAM:

- 1 Insert the SAM.

The SAM initialization may take several minutes.

- 2 Wait for the SAM Initialization Completed message to display on the 8600 Series Switch console session.
- 3 Use the appropriate SAM upgrade image (the image you use is determined by whether or not the SAM has previously been configured).

In the case of a new SAM installation, (that is, when the SAM has not been configured), use the p80s3760.img file to upgrade. If this is not a new installation, use the p80s3760.pkg file to upgrade.



Note: If you copy the SAM .pkg or .img image directly to the SAM, ensure that there is still space available on the flash file system. The .pkg file requires 6 Mbytes, while the .img file requires 9.2 Mbytes.

The .pkg and .img files are temporarily copied to the Passport 8600 Series Switch flash, and then transferred to the SAM. An error occurs if there is not enough space on the flash.

- 4 Enter the **sam connect <slot number>** command to determine if the SAM has already been configured.

One of two menus will display:

- a If the menu shown in [Figure 6 on page 28](#) appears, the SAM has not been configured and you should use p80s3760.img to upgrade.

Figure 6 SAM menu for an .img upgrade

```
Passport-8610 5# sam c 7

Connecting...

Alteon isD SAM
Software version 1.0.17

-----

[Setup Menu]

    join      - Join an existing iSD cluster
    new       - Initialize iSD as a new installation
    boot      - Boot Menu
    exit      - Exit [global command, always available]
```

Download the SAM p80s3760.img image with the following command:

```
copy <tftpServerIPAddr>:<absolute path of the SAM  
image>/sam/<slot number>/image
```

For example, use the following command to download the SAM image from TFTP server 10.10.10.1:

```
copy 10.10.10.1:p80s3760.img /sam/2/image
```

This operation activates the backup image and reboots the SAM automatically.

Note that this upgrade method eliminates the existing SAM configuration.

- b** If you see the menu shown in [Figure 7 on page 29](#), the SAM has already been configured and you should use p80s3760.pkg to upgrade.

Figure 7 SAM menu for a .pkg upgrade

```

Passport-8610 5# sam c 7

Connecting...

Alteon isD SAM
Software version 1.0.17

-----

[Main Menu]

info      - Information Menu
stats     - Statistics Menu
cfg       - Configuration Menu
boot      - Boot menu
maint     - Maintenance Menu
diff      - Show pending config changes [global command]
apply     - Apply pending config changes [global command]
revert    - Revert pending config changes [global command]
paste     - Restore saved config with key [global command]
help      - Show command help [global command]
exit      - Exit [global command]

```

- i. Download the SAM p80s3760.pkg image with the following command:

copy <tftpServerIPAddr>:<absolute path of the SAM pkg image>/sam/<slot number>/image

For example, use the following command to download the SAM pkg image from TFTP server 10.10.10.1:

copy 10.10.10.1:p80s3760.pkg /sam/2/image

- ii. Use the following command to activate the new image and reboot the SAM:

sam activate-backup-image <slot-number>

This upgrade method preserves the existing SAM configuration.



Note: The **activate-backup-image** command requires that you have Passport 8600 Series Switch *rwa* access. If you login to the 8600 switch as an *ssladmin* user, the **activate-backup-image** command is not visible. For more information on *ssladmin* user access, see [page 10](#).

You have now finished upgrading the SAM. You can now perform the 8600 Series Switch upgrade. See [“Performing a Passport 8600 Series Switch upgrade” on page 30](#).

Performing a Passport 8600 Series Switch upgrade

This section discusses upgrading the software on a Passport 8600 Series Switch in different configurations, and has the following topics:

Topic	Page number
Upgrading the boot flash image file	30
Upgrading the software image on a non-redundant 8600 CPU	32
Upgrading the software image on a redundant 8600 CPU in High Availability mode	33
Upgrading the software image on a redundant 8600 CPU in non-HA mode	38

Upgrading the boot flash image file

[Figure 8 on page 31](#) shows an example of the input required to upgrade the boot flash image in your Passport 8600 Series Switch and shows the CLI output as the upgrade is performed.



Caution: Do not attempt to downgrade an 8692SF image to Passport 8000 Series Switch code that is earlier than Release 3.7. Doing so can yield unexpected results.

Figure 8 Upgrading the boot flash image

```
monitor#
monitor# boot /flash/p80b3760.img
Loading /flash/p80b3760.img ... xxxxxxxx to yyyyyyyy (yyyyyyy)
Starting at 0x10000...

##### 8K CPU BOOT FLASH Update #####

File p80b3760.rom found in loaded image
File size: xxxxxxx bytes
Number of flash sectors to be programmed: 10

WARNING: You are about to re-program your Boot Monitor
FLASH image. Do NOT turn off power or press reset until this
procedure is completed. Otherwise the card may be
permanently damaged!!!

Press <Return> to stop monitor upgrade....
erased 10 sectors of bootflash
programmed bootflash
Verifying new BOOTFLASH Image...
xxxxxxx matches, 0 mismatches
Update complete!

Press return to reboot

Copyright (c) 2005 Nortel Networks, Inc.
CPU Slot 3: PPC 740 Map B
Version: 3.7.6.0/055
Creation Time: January 13 2005, 02:15:39
Hardware Time: January 15 2005, 11:10:44 UTC
Memory Size: 0x04000000
Start Type: cold
/flash/ - Volume is OK
Loaded boot configuration from file /flash/boot.cfg
```

Upgrading the software image on a non-redundant 8600 CPU

Before upgrading your 8600 switch CPU:

- Copy the configuration file currently used by the switch in memory, *at the switch prompt*, by entering the following command:

```
save config file /<device>/<config file name>
```

- Copy the configuration file specified by the boot.cfg file, by entering the following command:

```
copy /<device>/<config file name> /<device>/<backup  
config file name>
```

where *device* is flash or PCMCIA.

To upgrade the non-redundant 8600 CPU with the 3.7.6 software image:

- 1 Download the Passport 8600 CPU boot-monitor and Passport 8600 run-time images to a TFTP server.
- 2 Copy the image and boot files from the TFTP server to flash using the following command:

```
copy <tftpServerIPAddr>:<filename> /flash/<filename>
```

For example, you use the following commands to copy the main image and boot files from TFTP server 10.10.10.1 to flash:

```
copy 10.10.10.1:p80a3760.img /flash/p80a3760.img
```

```
copy 10.10.10.1:p80b3760.img /flash/p80b3760.img
```

- 3 Verify that the software has been copied to the CPU by using the CLI command **dir**.
- 4 Change the primary run-time image for the Passport 8600 using the following command:

```
config bootconfig choice primary image-file  
/<location>/filename
```

For example, use the following command to change the primary image file to p80a3760.img:

```
config bootconfig choice primary image-file /flash/  
p80a3760.img
```

- 5 Save boot config using the following command:

save bootconfig

- 6 Boot the 8600 Series Switch with the boot-monitor image you downloaded previously in Step 1.

boot <source>:<absolute path of boot monitor image>

For example, enter the following command to boot the p80b3760.img file from flash:

boot /flash/p80b3760.img

The screen displays the following message:

WARNING: You are about to re-program your Boot Monitor FLASH image. Do NOT turn off power or press reset until this procedure is completed. Otherwise the card may be permanently damaged!!!

- 7 Save the boot.cfg file to flash using the following **save** command:

save bootconfig

- 8 Reboot the switch using the CLI command **boot -y**.



Caution: The configuration file generated with Software Release 3.7.6 contains options that are not backward compatible with Software Releases 3.0.x, 3.1.x, 3.2.x, 3.3.x, 3.5.x, or earlier versions of 3.7.x. Loading a 3.7.6 configuration file on a 3.0.x, 3.1.x, 3.2.x, 3.3.x, 3.5.x, or earlier versions of 3.7.x run-time image generates errors and causes the image to abort loading the configuration file.

Upgrading the software image on a redundant 8600 CPU in High Availability mode



Note: Hitless upgrade is not supported in a single chassis with two SFs. Before upgrading in High Availability (HA) mode, ensure your `ha-cpu` and `savetostandby` flags are set to `true` (enabled). To check if flags are set to `true`, use the CLI command **config boot flags info**. (In HA mode, the `verify-config` flag is set to `false` automatically.)

To upgrade the redundant 8600 CPU in HA mode with the 3.7.6 software image:

- 1 Telnet to the master CPU or connect to the console port using an external modem. Save the current bootconfig and config on the flash of both CPUs using the following CLI commands:

```
save config
```

```
save bootconfig
```

- 2 TFTP both configuration files to a TFTP server on the network using the following CLI commands:

```
copy /flash/boot.cfg <tftp ip address>:boot.cfg
```

```
copy /flash/config.cfg <tftp ip address>:config.cfg
```

- 3 Verify flash capacity on both master and backup CPUs before downloading the files.
- 4 Disable the ha-cpu flag on the master CPU. The standby CPU reboots automatically. Wait for the standby CPU to come online.
- 5 Load the 3.7.6 image to the flash of the master and the standby CPU.

For the **master CPU**, use the following CLI command at the prompt:

```
copy <tftpserver IP address>:p80a3760.img /flash/  
p80a3760.img
```

For the **standby CPU**, use the following CLI command at the prompt on the master CPU:

```
copy /flash/p80a3760.img peer:/flash/p80a3760.img
```



Note: Because of the DNS implementation in Release 3.7, the peer command is not available unless you add the peer IP address in a new file called /etc/hosts. You must create this file; no default file exists. You can manually create it using a simple text editor, like the one provided by the Passport 8600. See [Figure 2 on page 19](#) for an example of this file.

- 6 Load the new boot-monitor image to the flash of both CPUs.

For the **master CPU**, use the following CLI command at the prompt:

```
copy <tftpserver IP address>:p80b3760.img /flash/  
p80b3760.img
```

For the **standby CPU**, use the following CLI command at the prompt:

```
copy /flash/p80b3760.img peer:/flash/p80b3760.img
```

- 7** Verify that the software has been copied to the master and the standby CPU.

For the **master CPU**, use the following CLI command at the prompt:

```
dir
```

For the **standby CPU**, use the following CLI command at the prompt of the master CPU:

```
peer telnet
```

```
dir
```

- 8** Ensure that bootconfig is set properly by entering the following commands:

```
config bootconfig choice primary image /<device>/  
p80a3760.img
```

```
save bootconfig
```

- 9** Reboot the standby CPU in slot 6 by entering the following command:

```
boot p80b3760.img
```

This command also loads the new boot-monitor image to the flash of the standby CPU. Wait for the standby CPU to come back online.

- 10** Reboot the master CPU in slot 5 by entering the following command:

```
boot p80b3760.img
```

This command also loads the new boot-monitor image to the flash of the master CPU. The standby CPU in slot 6 becomes the master CPU.

- 11** Enable the ha-cpu flag for slot 6; slot 5 reboots automatically.

- 12** Reset slot 6; slot 5 becomes the new master.

- 13** Exit the **standby CPU** using the following CLI command:

```
exit
```

- 14** On the **master CPU**, at the prompt, set the primary image choice to the new image file (this will automatically synchronize to the standby CPU in HA-mode) using the one of the following CLI commands:

- a** If the software image is stored on the flash:

```
config bootconfig choice primary image-file /flash/
p80a3760.img
```

- b** If the software image is stored on the TFTP server:

```
config bootconfig choice primary image-file
<tftp-server IP address>:p80a3760.img
```

- 15** On the **master CPU**, at the prompt, save the boot configuration and run-time configuration (the configurations are automatically saved to the standby CPU in HA mode) using the CLI commands:

```
save bootconfig
```



Note: Before upgrading in HA mode, be sure your `ha-cpu` and `savetostandby` flags are set to `true` (enabled). To check if flags are set to `true`, use the CLI command **config boot flags info**. (In HA-mode, the **verify-config** flag is set to `false` automatically.)

- 16** Boot the standby CPU and then the master CPU with the new boot-monitor image.

- a** Enter **peer telnet**

- b** For the standby CPU, use the one of the following CLI commands at the prompt:

- i. If the software image is stored on the flash:

```
boot /flash/p80b3760.img
```

- ii. If the software image is stored on the TFTP server:

```
boot <tftp-server IP address>:p80b3760.img
```



Warning: Do not wait for the standby CPU to complete the boot process before booting the master CPU. This results in different images on each CPU. While in HA-mode, booting the master CPU and the standby CPU with different software images can cause the standby CPU to crash. For example, if the CPU master is using the 3.7.6 image and the standby CPU is booted with a 3.3.x image, you will see multiple error messages on the console and the standby CPU will reboot. Nortel Networks does not support different software versions on the master and standby CPUs. (Q0041745)

-
- c** For the **master CPU**, use the one of the following CLI commands at the prompt:

- i. If the software image is stored on the flash:

boot /flash/p80b3760.img

- ii. If the software image is stored on the TFTP server:

boot <tftp-server IP address>p80b3760.img

The screen displays the following message:

WARNING: You are about to re-program your Boot Monitor FLASH image. Do NOT turn off power or press reset until this procedure is completed. Otherwise the card may be permanently damaged!!!

If the response from the switch does not show the file being saved to the standby, try copying the bootconfig and config file using the following CLI commands:

copy /flash/boot.cfg peer:/flash/boot.cfg

copy /flash/config.cfg peer:/flash/config.cfg

The copy command uses TFTP as the default protocol for transferring the files. To use FTP, set the FTPD flag on the destination CPU to true. On the source CPU, set the parameters config boot host users and config boot host password to match the login name/password of the destination CPU. (FTP will not work without setting the two config boot host parameters).



Note: If the peer is not recognized, you can use the internal IP address used by the system, which is 127.0.0.5 for slot 5 and 127.0.0.6 for slot 6.

Upgrading the software image on a redundant 8600 CPU in non-HA mode



Note: Before upgrading in non-HA mode, be sure your `ha-cpu` flag is set to `false` and `savetostandby` flag is set to `true`. To check the flag settings, use the CLI command **`config boot flags info`**.

To upgrade the software image on a redundant 8600 CPU in non-HA mode, follow these steps:

- 1 Telnet to the master CPU or connect to the console port using an external modem.
- 2 Save the current bootconfig and config on the flash of both CPUs using the following CLI commands:

```
save config
```

```
save bootconfig
```

- 3 Use TFTP to send both configuration files to a TFTP server on the network using the following CLI commands:

```
copy /flash/boot.cfg <tftp ip address>:boot.cfg
```

```
copy /flash/config.cfg <tftp ip address>:config.cfg
```

- 4 Verify flash capacity before downloading the files.
- 5 Download the new software to the **master CPU**, using the following CLI commands:

```
copy <tftp server ip address>:p80a3760.img /flash/  
p80a3760.img
```

```
copy <tftp server ip address>:p80b3760.img /flash/  
p80b3760.img
```

- 6 Copy the new software to the **standby CPU** using the CLI commands:

```
copy /flash/p80a3760.img peer:/flash/p80a3760.img
```

```
copy /flash/p80b3760.img peer:/flash/p80b3760.img
```



Note: Because of the DNS implementation in Release 3.7, the `peer` command is not available unless you add the peer IP address in a new file called `/etc/hosts`. You must create this file; no default file exists. You can manually create it using a simple text editor, such as the one provided by the Passport 8600. See [Figure 2 on page 19](#) for an example of this file.

- 7 Verify that the software has been copied properly to the standby CPU, using the following CLI command at the prompt of the master CPU:

```
peer telnet
```

```
dir
```

- 8 Exit the standby CPU using the following CLI command:

```
exit
```

- 9 From the master CPU, change your `bootconfig` choice `primary-image` file to the new run-time image file using the following CLI command:

```
config bootconfig choice primary image-file /flash/  
p80a3760.img
```

- 10 Save the `boot.cfg` file on both CPUs using the following CLI command:

```
save bootconfig
```

If the file was not automatically copied to the standby CPU, use the following command:

```
copy /flash/boot.cfg peer:/flash/boot.cfg
```

- 11 Boot the standby CPU.

- a Log in to the standby CPU, using the following CLI command at the prompt of the master CPU:

```
peer telnet
```

- b Use the one of the following CLI commands:

- i If the software image is stored on the flash:

```
boot /flash/p80b3760.img
```

- ii. If the software image is stored on the TFTP server:

```
boot <tftp-server IP address>:p80b3760.img
```

- 12** Exit the standby CPU using the following CLI command:

```
exit
```

- 13** Boot the master CPU with the new boot image and the new run-time image using the CLI command:

```
boot /flash/p80b3760.img.
```

The screen displays the following message:

```
WARNING: You are about to re-program your Boot Monitor  
FLASH image. Do NOT turn off power or press reset until  
this procedure is completed. Otherwise the card may be  
permanently damaged!!!
```



Note: Nortel Networks does not support different software versions on the master and standby CPU. For example, Releases 3.3.2 and 3.7.6 on the master and standby CPUs. Also, both CPUs must have the same amount of memory.

- 14** Telnet to the standby CPU after the boot process is complete to verify that the new image is running. The run-time image is shown in the Nortel Networks banner displayed before the login prompt, as shown in [Figure 9 on page 41](#).

Figure 9 Sample login banner

```

Passport-8610:6# peer telnet
Trying 127.0.0.5 ...
Connected to 127.0.0.5
Escape character is '^]'

*****
* Nortel Networks, Inc.                *
* Copyright (c) 1996-2004              *
* All Rights Reserved                  *
* Passport 8010                        *
* Software Release 3.7.6.0             *
*****

Login:

```

15 Telnet to the master CPU to verify the new image.

Note: If the standby CPU is not running the new software version, repeat the procedures (if the CPU allows you to log in). If you cannot log in, access the console port on the standby CPU and stop at the boot-monitor to fix the problem.

Most common failures are caused by improperly typing the image filename in the bootconfig file, or because the software is not present on the flash on the standby CPU. Using the console port to stop at the boot-monitor allows you to re-enter the bootconfig choice primary information if it has been improperly entered. You can also verify that the software is present on the flash of the standby CPU.

If the software is not present on the standby CPU, try copying it from the master CPU to a PCMCIA on the master and then move the PCMCIA to the standby CPU. You can then either copy it to the flash or change the bootconfig choice primary to use the PCMCIA.

Hot swapping the CPU module or I/O modules

When hot swapping the active CPU module in an 8600 Series Switch with redundant CPU modules, wait until the redundant CPU module is stabilized before inserting any other modules. When stabilized, the redundant CPU module will display a login prompt on the console screen. If no console connection is available, wait for at least 30 seconds before inserting the replacement CPU module, or before reinserting the removed CPU module.

In addition, during a CPU failover, do not hot swap Input/Output (I/O) modules until the new CPU becomes the master CPU.



Caution: Do not hot swap or insert modules in an 8600 Series Switch chassis while the switch is booting. Doing so can cause module initialization failure, and the module will not be recognized.

Securing your network

For additional security-related information, consult the *Important Security Information for the Passport 8000 Series Switch* (part number 314997-C) and *Configuring and Managing Security* (part number 314724-C). For a list of the documents contained in the 3.7.6 documentation set, see “[Books specific to 8660 SDM installation and configuration](#)” on page 43.

Reading path

This section lists the documentation specific to the Passport 8000 Series Switch platform. You can find documentation on the Nortel Networks customer support web site at www.nortel.com/support.

If, for any reason, you cannot find a document using the above method, use the **Search** function in the top right-hand side of the web site:

- 1 Click **Search**.

The **Search** page opens.

- 2 Ensure the **Support** tab is selected on the **Search** page.
- 3 Enter the title or part number of the document in the **Search** field.
- 4 Click **Search**.

You can print the listed technical manuals and Release Notes free, directly from the Internet. Use Adobe* Acrobat Reader* to open the manuals and Release Notes, search for the sections you need, and print them on most standard printers. Go to Adobe Systems at www.adobe.com to download a free copy of the Adobe Acrobat Reader.

Books specific to 8660 SDM installation and configuration

- *Installing the 8660 Service Delivery Module (SDM) for the Passport 8600 Series Switch* (part number 217314-A)
- *Getting Started* (part number 320095-A)
- *Firewall User's Guide and Command Reference* (part number 217315-A)
- *Release Notes for the Passport 8600 Switch Series Software Release 3.7.6* (part number 217316-A)
- *System Messaging Platform Reference Guide* (part number 320094-A)
- *Installing and Using Device Manager* (part number 320096-A)
- *Important Information about the 8600 Series Switch Modules* (part number 320180-A)
- *Upgrading to Passport 8000 Switch Series Software Release 3.7.6* (part number 318843-A)

Important information and release notes

- *Adding MAC Addresses to the 8000 Series Chassis* (part number 212486-B)
- *Important Information about the 8600 Series Switch Modules* (part number 320180-A)
- *Installing a CPU Memory Upgrade* (part number 314832-B)
- *Read Me First for the 8000 Series Chassis* (part number 315249-C)
- *Important Security Information for the Passport 8000 Series Switch* (part number 314997-C)
- *Release Notes for the Passport 8600 Switch Series Software Release 3.7.6* (part number 217316-A)

Upgrading your switch

- *Upgrading to Passport 8000 Switch Series Software Release 3.7.6* (part number 318843-A)

Chassis and module installation

- *Installing and Maintaining the 8600 Series Chassis and Components* (part number 316314-D)
- *Installing the 8661 SSL Acceleration Module (SAM) for the 8600 Series Switch* (part number 316315-A)
- *Installing the Web Switching Module for Passport 8600 Series Switches* (part number 314969-B)

Solution overview

- *Using the SSL acceleration module with the Web switching module for the 8600 Series switch* (part number 316350-A)

Module configuration

- *Configuring the Web Switching Module using Device Manager (Passport 8000 Series Software Release 3.7)* (part number 314995-B)
- *Configuring the SSL Acceleration Module for the 8600 Series Switch* (part number 316351-A)
- *(Alteon) Web OS Switch Software 10.0 Application Guide* (part number 212777-A)
- *(Alteon) Web OS Switch Software 10.0 Command Reference* (part number 212778-A)

Engineering notes

- *Understanding the Passport 8600 & Web Switching Module (WSM)* (part number 316437-A)
- *Deviating from the Passport 8600 and Web Switching Module (WSM) Factory Defaults* (part number 316436-A)
- *Configuring Basic Server Load Balancing (SLB) with a Passport 8600 Web Switching Module (WSM)* (part number 316434-A)

-
- *Getting Started with a Web Switching Module for the Passport 8600* (part number 316435-A)

Related publications

This section describes common documentation related to the Passport 8000 Series Switch.

Tools

- *System Messaging Platform Reference Guide* (part number 320094-A)
- *Using the Packet Capture Tool* (part number 315023-C)

Hardware

- *Installing the Breaker Interface Panel for the 8010co Chassis* (part number 312755-E)
- *Installing 8600 Switch Modules* (part number 312749-H)
- *Installing Media Dependent Adapters for the 8683POSM Module* (part number 313072-B)
- *Installing Media Dependent Adapters for the 8672ATME and 8672ATMM Modules* (part number 313071-B)
- *Installing a DC Power Supply in an 8000 Series Switch* (part number 313070-C)
- *Installing an AC Power Supply in an 8000 Series Switch* (part number 312751-C)
- *Installing a Fan Tray in an 8000 Series Switch* (part number 312752-C)
- *Replacing an Air Filter in the 8010co Chassis* (part number 313592-C)
- *Installing Gigabit Interface Converters* (part number 316342-A)
- *Installing Media Dependent Adapters (MDAs)* (part number 302403-G)
- *Installing CWDM Gigabit Interface Converters (GBICs)* (part number 212256-B)
- *Installation and Networking Guidelines for Optical Routing* (part number 212257-B)

Software

- *Getting Started* (part number 320095-A)
- *Configuring and Managing Security* (part number 314724-C)
- *Managing Platform Operations* (part number 315545-C)
- *Installing and Using Device Manager* (part number 320096-A)
- *Configuring Network Management* (part number 314723-C)
- *Configuring QoS and IP Filtering* (part number 316433-C)
- *Configuring IP Routing Operations* (part number 314720-D)
- *Configuring VLANs, Spanning Tree, and Link Aggregation* (part number 314725-C)
- *Configuring BGP Services* (part number 314721-C)
- *Configuring IP Multicast Routing Protocols* (part number 314719-C)
- *Configuring Internet membership Group Authentication Protocol (IGMP)* (part number 316343-B)
- *Configuring IPX Routing Operations* (part number 314722-B)
- *Network Design Guidelines* (part number 313197-D)
- *Using Diagnostic Tools* (part number 317359-A)
- *Using the 10 Gigabit Ethernet Modules: 8681XLR and 8681XLW* (part number 315893-C)
- *Using the 8672ATME and 8672ATMM Modules* (part number 209195-E)
- *Using the 8683POSM Module* (part number 209564-B)

Appendix A

Performing a WSM serial download

This appendix provides instructions for performing a serial download of the WSM Web OS software. Perform a serial download for the following reasons:

- to load a new binary image
- if you are unable to boot the WSM because of:
 - corrupted firmware
 - corrupted firmware and configuration as a result of rebooting with an older firmware image

Note that this latter situation can occur when you replace the current software version with an earlier version without first resetting the WSM to factory default configuration.

To replace corrupted firmware, perform a serial download of a new binary firmware image.



Note: The procedure for a serial download is different from the procedure for a TFTP download.

This serial download procedure requires the following:

- A computer that has terminal emulation software.
- A standard serial cable with a male DB9 connector (DB9-DIN) (for more information, see the hardware installation guide for your switch).
- A binary switch firmware image (not the .tftp file used for TFTP download).

Verifying image compatibility

Before upgrading the WSM image, verify the present image on both the Passport 8600 Series Switch and the WSM. Ensure that the WSM image will operate in your current Passport 8600 Series Switch by entering the CLI command `wsm info`. [Table 2](#) lists the compatible Passport 8600 Series Switch and WSM software.

Table 2 Passport 8600 Series Switch and WSM software

8600 series software version	WSM software version
3.1.3	9.0.2x.x
3.2.2	9.0.4x.x
3.3.0	10.0.27.x
3.3.1	10.0.28.x
3.5.0–3.5.7	10.0.30.7
3.5.8	10.0.32.1
3.7.0–3.7.3	10.0.30.7
3.7.4–3.7.6	10.0.32.1

If you attempt to upgrade to a WSM image that is not compatible with the Passport 8600 Series Switch version, the WSM may not initialize correctly and can stall at booting state. If this happens, you must connect to the serial port of the WSM and either download or reload the correct WSM Web OS image.

Establishing a serial connection to the WSM

The port labeled **Maint** provides direct terminal access to the WSM. A serial connection is necessary when performing a serial download of a software image to the WSM, or when you cannot login to the WSM CLI using the Passport 8600 Series Switch CLI.

When connecting directly to the WSM module through the maintenance port, you have direct access to the WSM Web OS CLI. You will not see the top-level Passport 8600 Series Switch CLI. For information about the Web OS CLI, see the *Web OS Switch Software 10.0 Command Reference* (part number 212778-A).



Note: When performing a soft or hard reset on a Passport 8600 Series Switch, be sure to restart the Java Device Manager (JDM) to avoid displaying the wrong version of the WSM Web OS.

Connection requirements

To establish a console (DCE) connection with a WSM, you need an ASCII terminal or a computer running ASCII terminal emulation software set to the parameters shown in [Table 3](#).

Table 3 Console configuration parameters

Parameter	Value
Baud Rate	9600
Data Bits	8
Parity	None
Stop Bits	1
Flow control	None



Note: If using a terminal server, turn flow control OFF at the server port that is connected to the WSM.

The WSM ships with a DIN-8-M to DB9-F cable to allow connection to a standard PC COM port (DCE).



Note: Console cables are not intended for permanent installation. Disconnect console cables from the console port after configuring the WSM.

Performing a serial download for the WSM card

To perform a serial download for the WSM card, follow these instructions:

- 1 Obtain the binary firmware (for example, wsm1003210_bin.img).
- 2 Connect the serial cable to the Maint port on the WSM and to the COM port on the PC.
- 3 Start the terminal emulation software and set the parameters as listed in [Table 3 on page 49](#).
- 4 Power cycle the WSM by removing and then re-inserting it.
- 5 Press <Shift-F> while the WSM is attempting to boot. When performed correctly, the following message appears:

```
Xmodem flash download 1.0.5  
To download to flash use xmodem at 57600 baud
```

- 6 Reconfigure your terminal emulation software to the parameters shown in [Table 4](#).

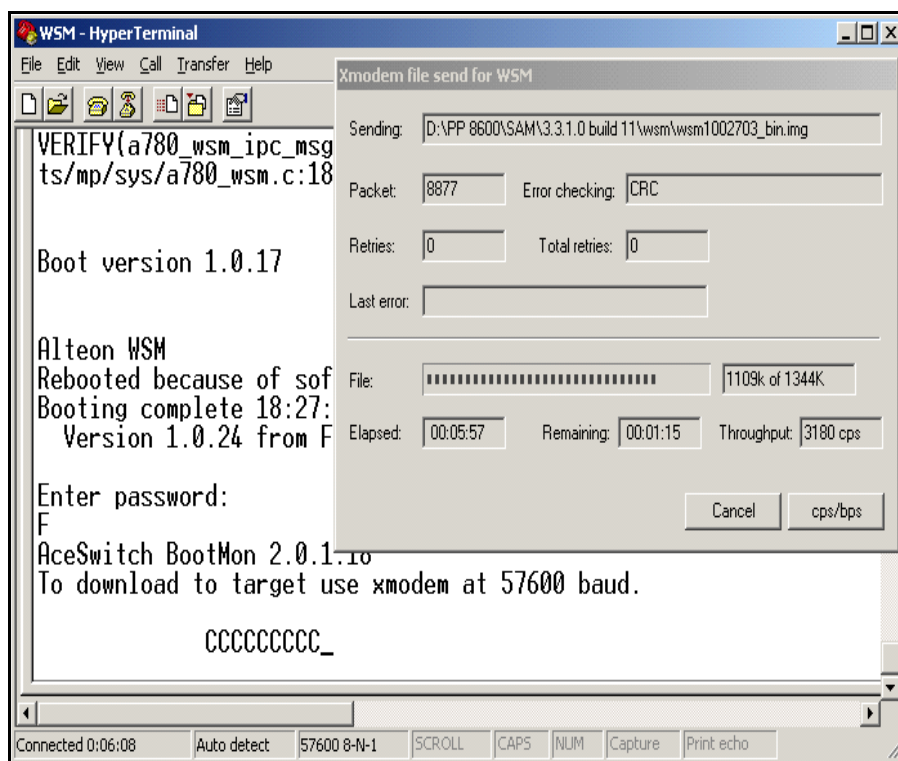
Table 4 Reconfigured software emulation parameters

Parameter	Value
Baud Rate	57,600
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	none

- 7 Start the transfer of the binary firmware image to the WSM in Xmodem mode.

If you are using Hyperterm, click on the transfer and send and choose the Xmodem protocol. Then browse and select the binary image from the local drive, and start the transfer.

You should see information similar to [Figure 10 on page 51](#). The transfer process takes about 7 minutes. When the transfer is complete, the file decompresses and installs the image on the WSM.

Figure 10 Hyperterm and Xmodem output

Note: If you are running Windows 2000 with Hyperterm, you need to enable the **Use FIFO Buffers** option configured under:

Control Panel > System > Hardware > Device Manager > Ports > Com > Port Settings > Advanced

If you fail to do so, overflows can occur and the image will not load correctly.

- 8 Disconnect the terminal emulation session and reconfigure the emulation software to the parameters listed in [Table 3 on page 49](#).
- 9 Remove the WSM and then re-insert it.

Appendix B

8672ATM/ATME/ATMM supported PVCs

Although you can configure higher VPI numbers than those supported PVCs specified in [Table 5](#) (without a warning or error message displaying), these higher numbers do not function properly and must not be used. Read through this table carefully prior to upgrading your Passport 8600 switch. (Q00536665)

Table 5 Supported /unsupported PVCs on the 8672ATM/ATME/ATMM module

Interface	VPI bits	Unavailable PVCs
OC12	1 (VCI Bit max value 4095) 2 (VCI Bit max value 2047) 3 (VCI Bit max value 1023) 4 (VCI Bit max value 511) 5 (VCI bit max value 255) 6 (VCI bit max value 127) 7 (VCI bit max value 63) 8 (VCI bit max value 31)	1.3324 through 1.4095 3.1276 through 3.2047 7.252 through 7.1023 14.252 through 14.511 28.252 through 28.255 None (that is, all values are available) None (that is, all values are available) None (that is, all values are available)
OC3	1 through 6	None (that is, all values are available)
DS3	1 (VCI Bit max value 2047) 2 (VCI Bit max value 1023) 3 (VCI Bit max value 511) 4 (VCI Bit max value 255) 5 (VCI Bit max value 127) 6 (VCI Bit max value 63) 7 (VCI Bit max value 31)	1.0 through 1.2047 2.0 through 3.1023 4.0 through 7.511 8.0 through 15.255 16.0 through 31.127 32.0 through 63.63 64.0 through 127.31

