

Part No. 211571-C Rev 00
February 2003

4555 Great America Parkway
Santa Clara, CA 95054

Passport 4400 Release Notes for Release 4.3

NORTEL
NETWORKS™

Copyright © 2003 Nortel Networks

All rights reserved. February 2003.

Originated in Canada and the USA

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, Marathon, Passport, and Preside are trademarks of Nortel Networks.

Adobe and Acrobat Reader are trademarks of Adobe Systems Incorporated.

Ethernet is a trademark of Xerox Corporation.

Microsoft, MS-DOS, Windows, and Windows NT are registered trademarks of Microsoft Corporation.

Netscape and Netscape Navigator are registered trademarks of Netscape Communications Corporation

Pentium is a registered trademark of Intel Corporation.

SPARC and SPARCstation are trademarks or registered trademarks of Sparc International, Inc.

Java, Solaris, Sun, and Sun Microsystems are trademarks or registered trademarks of Sun Microsystems, Inc.

UNIX is a registered trademark of X/Open Company Limited.

All other trademarks and registered trademarks are the property of their respective owners.

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(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

Chapter 1	
Introduction	9
Upgrading to Release 4.3	9
New Software Upgrade Process	10
Troubleshooting	10
Software Distribution Web Site	10
Software and Documentation CD-ROM	11
Passport 4460 System Software	11
System Software Version Numbers	11
Mass Deployment and Reporting Tool	11
Install Tool	12
Network Management Support	12
Getting Started	13
Chapter 2	
New In This Release	15
Master Clock Support (Clock Synchronization)	15
Supported Modules	16
How To Use Master Clocking	17
PANL Support for the 6-Port Serial Data Expansion Module	17
PANL Support Added	17
Limitations and Restrictions	18
IfIndex Ranges for 6-Port Serial Data Expansion Module	18
IP Enhancement: RFC 1490 Voice Prioritization	18
Limitations and Restrictions	19
How To Enable RFC 1490 Voice Prioritization	19
IP Enhancement: DSCP Filter for IP Prioritization	20
Limitations	20
Filter Configuration Based on ToS	20

ToS Filter Example	21
Passport 4460 VoIP ToS value	22
IP Enhancement: Wildcards in IP Filters	22
Using Wildcards in IP Filters	23
Pulse Dialing on FXS and E&M Analog Voice Modules	23
Limitations	24
Setting Dial Pulse Regeneration Format (E&M)	24
X.25 Extended Packet Size	24
Setting the Maximum X.25 Packet Size	24
Increased Maximum SVC (SPVC) Frame Size	24
X.25 Facilities Enhancements	25
CBR Traffic Starts Without Waiting for Sync Char	26
Configurable LAPF parameters	26

Chapter 3

Issues Resolved and Known Open Issues **27**

Issues Resolved in R4.3	27
SNMP Vulnerabilities	27
Passport 4400 System	28
X.25	34
Documentation	36
Known Open Issues	36
Passport 4400 Configurator	36
Passport 4400 Install Tool	37
Passport 4400 System Software	37
Xircom PCMCIA Ethernet Card	41
Passport 4400 - Passport 6400 Interworking	41

Chapter 4

Operational Notes **43**

Flash Card	43
Configurator	43
Install Tool	44
System Software Notes	44
WAN Port IfType Value	44

Defining the IfType	45
Showing the IfType	45
General	45
SNA Services	46
Voice/Fax	47
Passport 4400 and 6400 Interworking	49
Obtaining Technical Bulletins	49
Chapter 5	
Interworking	51
Voice Interworking	51
Premium Voice	51
Passport 4400 and Passport 6400 Interworking	52
Call Forwarding Limitation	52
High Speed WAN Link Limitation	52
For More Information	53
Passport 4400 and Other Routers	53
Chapter 6	
Product Documentation	55
Documentation Web Site	55
List of Manuals	55
Passport 4400 Configurator Documentation URL Update	56
For More Information	57
Index	59

Chapter 1

Introduction

This document provides information on the Passport 4460, Release 4.3, available for general customer release. The Passport 4460 is a part of the Passport 4400 series of products which also includes the Passport 4430, Passport 4450, and Passport 4455.

This section of the Release Notes contains these topics:

- [“Upgrading to Release 4.3”](#) on page 9
- [“Software Distribution Web Site”](#) on page 10
- [“Software and Documentation CD-ROM”](#) on page 11
- [“Network Management Support”](#) on page 12
- [“Getting Started”](#) on page 13

Upgrading to Release 4.3

Passport 4400 units are shipped from the factory with the current software version and associated boot code pre-installed. Therefore, there is no need to install any software on a new unit.

The process of upgrading a unit running pre-4.3 software is described in the following paragraphs.

New Software Upgrade Process

Important: The process of upgrading Passport 4400 software via TFTP has changed, beginning with Release 4.2. The change is as follows:

- If you are currently running release 4.1.3.4 (or later), you can directly upgrade to release 4.3.
- If you are currently running any release *earlier than* 4.1.3.4, you must upgrade in two stages: first, upgrade to release 4.1.3.4, then upgrade to 4.3.

Refer to “Appendix B, Downloading System Software” in *Getting Started with Passport 4460* (part number 209664-C) for detailed information about downloading and installing Passport 4400 software.

Note that there is no change in the upgrade process if you are using FTP (via the boot menu).

Troubleshooting

If you are not running release 4.1.3.4 (or higher), and you are downloading the new Release 4.3 code via TFTP (using the `download base image specific` CLI command), you will receive a “Flash-Error”. The following message appears on the CLI screen:

```
CLI>TFTP sysBankErase: exp6chbin Image not
supported or .bld file is corrupted
```

At this point the CLI screen will freeze until you press the Enter key.

If you receive this error message, you need to first upgrade to release 4.1.3.4, and then upgrade to 4.3.

Software Distribution Web Site

To obtain Passport 4400 software, access the Nortel Networks Web site (www.nortelnetworks.com), then select Downloads from the Support area.

Software and Documentation CD-ROM

Passport 4400 units are shipped from the factory with the current software version and associated boot code pre-installed. The system software is also included on the product CD-ROM.

The following paragraphs identify the versions and formats of the current software.

Passport 4460 System Software

The Release 4.3 system software includes:

- bt43010170.bld (R4.3 boot code loadable image)
- bt43010170.bin (boot code binary format)
- pr43010170.bld (application code)
- pr43010170.tar (MIBs in tar format)
- pr43010170.zip (MIBs in zip format)
- boot0_bt43010170.bin (onboard boot0 image in binary format)
- boot0_bt43010170.hex (onboard boot0 image in hex format)

System Software Version Numbers

The Release 4.3 system software versions are as follows:

- Boot Code Version: Passport_4460_Boot_Rel_4.3.0_Rev 10.17.0 02/13/03 10:34:02
- Application Code Version: Passport_4460_Appl_Rel_4.3.0_Rev 10.17.0 02/13/03 10:35:09

Mass Deployment and Reporting Tool

This version supports Releases 4.0.x and 4.1.x. It is compatible with Releases 4.2 and 4.3, but does not recognize the new features introduced with these releases. The software version and executable name are:

- mdt100029.exe (Version: MDT SCM Release 1.0 Build 28 10/02/2002)

Install Tool

This version supports Releases 3.1, 4.0.x, and 4.1.x, 4.2, and 4.3. The software version and executable name are:

- it430000.exe (Version: IT SCM Release 4.3 Build 0.0 09/24/02)

Network Management Support

The Preside Multiservice Data Manager (MDM) network management platform provides device-specific support (MDM 12.2 and higher) for the Passport 4400 product line. The Preside MDM-Passport 4400 application lets you monitor and provision the Passport 4400 series of devices using MDM software. You use the Preside MDM-Passport 4400 application to:

- receive alarms and state change information from Passport 4400 devices
- provision and download new software to Passport 4400 devices
- backup and restore Passport 4400 software

In addition, you can access the Passport 4400 Configurator from the Preside Multiservice Data Manager (MDM) menus.

MDM supports the Passport 4400 using these tools:

- Passport 4400 releases 4.0 and 4.1 are supported by Base MDM (the embedded DCD).

For detailed information about Preside MDM-Passport 4400 support, refer to *Preside Passport 4400 Device Integration Cartridge User Guide* (241-6003-112).

- For Passport 4400 releases higher than 4.1, a Device Integration (DI) Cartridge must be loaded on top of MDM. The current GA DI cartridge for Passport 4400 V1.0.0 supports device version 4.0.3, 4.1.3 and 4.2.

For detailed information about the DI cartridge, refer to *Preside Passport 4400 Device Integration Cartridge User Guide* (241-6003-112).

The Device Integration Cartridge, together with documentation (241-6003-112) and a support matrix, are available on <http://www.nortelnetworks.com>. Select Support, Software Downloads, then select Product: Preside Multiservice Data Manager Device Integration Cartridges.

The *Preside MDM Passport 4400 Integration Guide* (241-6001-109) is available from Helmsman Express.

Refer to <http://www.nortelnetworks.com/products/01/preside/> for more information about Preside product portfolio.

Getting Started

It is recommended that you consult the following manuals when setting up a Passport 4460:

- The *Passport 4460 Quick Start Guide* summarizes the tasks involved in the setup process.
- The *Getting Started with Passport 4460* manual provides a comprehensive overview of the startup process.
- The *Using Passport 4400 Install Tool* manual provides detailed information about setting up a management workstation.
- The *Reference for Passport 4460 Hardware* manual provides detailed information about setting up the hardware.
- The *Reference for Passport 4460 Cables* manual identifies the cables needed to set up the hardware.

Refer to [Chapter 6, “Product Documentation,” on page 55](#) for a list of all Passport 4460 documentation.

Chapter 2

New In This Release

This section of the Release Notes provides a description of the new and enhanced features in Passport 4460 release 4.3:

- [“Master Clock Support \(Clock Synchronization\)” on page 15](#)
- [“PANL Support for the 6-Port Serial Data Expansion Module” on page 17](#)
- [“IP Enhancement: RFC 1490 Voice Prioritization” on page 18](#)
- [“IP Enhancement: DSCP Filter for IP Prioritization” on page 20](#)
- [“IP Enhancement: Wildcards in IP Filters” on page 22](#)
- [“Pulse Dialing on FXS and E&M Analog Voice Modules” on page 23](#)
- [“X.25 Extended Packet Size” on page 24](#)
- [“X.25 Facilities Enhancements” on page 25](#)
- [“CBR Traffic Starts Without Waiting for Sync Char” on page 26](#)
- [“Configurable LAPF parameters” on page 26](#)

Master Clock Support (Clock Synchronization)

The Passport 4460 now supports clock synchronization, using a master clocking feature. Master clocking provides the ability for one port to provide clock to the backplane so that other ports on the unit can synchronize their timing to that single clock source. Typically, the port that you designate as the master clock is configured to obtain its timing signals from the network (external clocking).

Passport 4460 base units versions PA4202009, PA4202010, and PA4202011 support the Master Clock feature using software release 4.3 or later (these are specified as Clock-Sync-Enabled 4460 base units), and these have been shipping since late May 2002. Original Passport 4460 base units versions PA4202001, PA4202003, and PA4202004 (versions shipping prior to May 2002) do not support this Master Clocking capability, regardless of software version.

You can use the Configurator or the CLI to determine whether or not your unit supports master clocking:

- In the Configurator, select Unit Hardware from the Attributes menu.
- In the CLI, issue the `show system hardware` command.

If master clocking is supported, the Configurator output shows “Master Clock: Supported”, whereas the CLI output shows “ClockSync: Supported”.

Supported Modules

As of Release 4.3, the following modules fully support the master clock feature. That is, ports on these modules can provide clock to, and receive clock from, the backplane:

- Built-in serial port (“Port 1” on the base unit)
- Serial Port WAN Module
- Two-Port Serial Data Expansion module
- Six-Port Serial Data Expansion module
- ISDN BRI Voice Module
- T1/E1 Voice Modules

Note: Only the first port on the Two-Port Serial Data Expansion module and the Six-Port Serial Data Expansion module can supply clock to the backplane (although all of the ports on these modules can receive clock from the backplane).

The following Passport 4460 modules can provide clock to, but cannot receive clock from, the backplane:

- 56K CSU WAN Module
- T1 CSU WAN Module
- E1 CSU WAN Module
- ISDN S/T and ISDN U WAN Modules

How To Use Master Clocking

Use the following CLI command to designate the port that will serve as the master clock:

```
CLI> set system masterClock <MasterClockIfIndex>
```

Use the following CLI command to designate that the ISDN BRI Voice module will receive the clock from the backplane:

```
CLI> set voice profile briClockSource backplane
```

Use the following CLI command to designate that the T1 Voice module will receive the clock from the backplane:

```
CLI> set t1e1 profile clockSource backplane
```

Use the following CLI command to designate that a WAN serial port will receive the clock from the backplane:

```
CLI> define wan port clockSource <IfIndex> backplane
```

PANL Support for the 6-Port Serial Data Expansion Module

The 6-Port Serial Data Expansion module provides additional WAN and legacy data fan-out for the Passport 4460. Each of the six ports supports multiple physical layer electrical characteristics, and DCE/DTE mode auto-detection. The expansion module has a single 160-pin cable connection which connects to a break-out panel that provides six 50-pin connectors.

A Passport 4460 can support two of these modules. This allows the Passport 4460 to support up to 15 physical ports: six ports in each of two 6-Port Serial Data Expansion Modules, plus ports 1, 2, and 3.

PANL Support Added

Starting with Release 4.3, the 6-Port Serial Data Expansion module provides PANL DCE support for WAN links from child nodes.

Limitations and Restrictions

- The 6-Port Serial Data Expansion module does not support Async over TCP (AOT), RFC 1490, or SDLC traffic in this release.
- None of the six ports can be configured as PANL DTE (primary WAN uplink to central or regional sites).
- The 6-Port Serial Data Expansion module provides a recommended maximum bandwidth of 3 Mb, shared among the six ports. Ports 1 through 3 share a bandwidth of 2.048 Mb, and ports 4 through 6 share a bandwidth of 2.048 Mb. However, it is recommended that you use no more than 3 Mb total for all six ports, due to system limitations. Therefore, all six ports cannot be running at their maximum speed simultaneously.

Ifindex Ranges for 6-Port Serial Data Expansion Module

The 6-port serial data expansion module uses the following ifindexes:

Expansion slot 1: ifindexes 159, 162, 165, 168, 171, 174

Expansion slot 2: ifindexes 183, 186, 189, 192, 195, 198

IP Enhancement: RFC 1490 Voice Prioritization

Beginning with Release 4.3, the Passport 4460 provides a Voice Priority feature that allows VoIP packets to take priority over data packets when transported over RFC 1490 PVCs. When Voice Priority is enabled, The Passport 4460 ensures that, when packets are transmitted over RFC 1490 PVCs, VoIP packets are sent out before data packets. Data packets are sent only when the voice queue is empty. This allows voice and data traffic to use the same Frame Relay PVC link without the data traffic affecting the voice quality.

This feature complements the QoS capabilities already existing for PANL WAN links, now enabling VoIP to operate effectively over standard RFC 1490 WAN links that do not require termination on another compatible Passport device.

Limitations and Restrictions

Note the following limitations and restrictions for the RFC 1490 voice prioritization feature:

- The feature applies only to RFC 1490 PVCs, not to PANL SVCs.
Note that the addition of this basic prioritization mechanism for VoIP over RFC 1490 is in addition to the QoS mechanisms that already exist for PANL WAN Links. PANL WAN links provide mechanisms for defining transfer priorities based on the type of traffic (service) carried.
- The prioritization applies to individual PVCs. There is no prioritization across PVCs.
- The feature is globally enabled. You cannot enable or disable specific ports or PVCs.
- This feature does not apply to VoIP over Ethernet LAN ports, because it is implemented for RFC 1490 WAN Links over Serial, T1, E1, or ISDN BRI WAN ports.
- Because fragmentation is not supported on RFC 1490 links, you must be sure to correctly configure the maximum frame size on the PVC. The default value is 1500 bytes. It is recommended that you change this to 300 bytes when Voice Priority is enabled. (Use the `define fr tunnel tmaxframesize` command to make this change.)

How To Enable RFC 1490 Voice Prioritization

You can use the following command to determine whether the Voice Priority Over RFC 1490 feature is enabled or disabled:

```
CLI> show fr system
```

Use the following command to enable or disable RFC 1490 Voice Prioritization:

```
CLI> define fr system VoicePriority
```

The `VoicePriority` value can be set to *enabled* or *disabled*. The default setting is *enabled*. When enabled, VoIP packets will take priority over data packets on RFC 1490 PVCs.

Example:

```
define fr system VoicePriority disabled
```

IP Enhancement: DSCP Filter for IP Prioritization

The Passport 4460 now provides a mechanism that allows a user to specify the class of service (Low, Medium, or High) which is to be used for passing traffic through the network, based on the Differentiated Services Codepoint (DSCP) field in the IP header. A separate SVC is created for each class of service (CoS). A maximum of three DLCIs can be created for the same destination.

This enhancement provides increased flexibility in the IP Filters for traffic forwarding or IP Prioritization on PANL WAN Links (PANL over Serial, T1, E1, or ISDN BRI WAN ports). It does not apply to Ethernet LAN ports or RFC1490 WAN Links.

Limitations

The current implementation supports the DSCP field within the existing IP Prioritization framework (filtering and mapping to the three classes). It does not provide full support for DiffServ (per RFC 2474, RFC 2597, RFC 2598) or the Nortel Networks guidelines.

Filter Configuration Based on ToS

The `add filters`, `define filters`, `delete filters`, and `show filters` commands have been expanded to support DSCP filters.

The expanded port-based commands are:

```
CLI> add filters ip tos port [incoming/outgoing]  
<IfIndex> <ToSMap> <ToSMask> <Action>
```

```
CLI> define filters ip tos port [incoming/outgoing] order  
<IfIndex> <ToSMap> <ToSMask> (<Order>)
```

```
CLI> define filters ip tos port [incoming/outgoing]  
priority <IfIndex> <ToSMap> <ToSMask> (<Priority>)
```

```
CLI> delete filters ip tos port [incoming/outgoing]
<IfIndex> <ToSMap> <ToSMask>
```

```
CLI> show filters ip tos port [incoming/outgoing]
```

The expanded system-wide commands are:

```
CLI> add filters ip tos system <ToSMap> <ToSMask>
<Action>
```

```
CLI> define filters ip tos system order <ToSMap>
<ToSMask> (<Order>)
```

```
CLI> define filters ip tos system priority <ToSMap>
<ToSMask> (<Priority>)
```

```
CLI> delete filters ip tos system <ToSMap> <ToSMask>
```

```
CLI> show filters ip tos system
```

Refer to the *Reference for Passport 4400 Command Line Interface (CLI)* manual, part number 209666-D, for detailed descriptions of these commands.

ToS Filter Example

Following is a small example of how TOS filters can be used to prioritize traffic:

```
add filter ip tos port outgoing 2 0x64 0xFC forward
def filter ip tos port outgoing priority 2 0x64 0xFC high

add filter ip tos port outgoing 2 0x68 0xFC forward
def filter ip tos port outgoing priority 2 0x68 0xFC medium

add filter ip tos port outgoing 2 0x6C 0xFC forward
def filter ip tos port outgoing priority 2 0x6C 0xFC low

add fr port svcLANData 2 "11110000" 0
add fr port svcLANData 2 "11110000" 6
add fr port svcLANData 2 "11110000" 9
```

The effect of this sequence of commands is that all outgoing traffic on WAN port 2 with the TOS field set to 0x64 is forwarded using the high priority SVC; traffic with the TOS field set to 0x68 is using the medium priority SVC; and traffic with the TOS field set to 0x6C is using the low priority SVC. All other outgoing traffic on this port is discarded. (Note that mask 0xFC means that all the bytes from the field are taken into consideration.)

Passport 4460 VoIP ToS value

Passport 4460 VoIP sets the Differentiated Services Codepoint (DSCP) field in the IP header to 11110000.

IP Enhancement: Wildcards in IP Filters

The Passport 4460 now provides the ability to specify a wildcard character as the Protocol type and/or Port ID when setting up IP filters. This enhances the existing filtering capability such that the IP filter can match any and all traffic from or to a particular IP address, without regard to the Protocol type or Port ID.

This enhancement provides increased flexibility in the IP Filters for traffic forwarding or IP Prioritization on PANL WAN Links (PANL over Serial, T1, E1, or ISDN BRI WAN ports). It does not apply to Ethernet LAN ports or RFC1490 WAN Links.

When you add a filter, the Passport 4460 checks the Protocol Type parameter, and processes the filter as follows:

- If ProtocolType is neither TCP (6) nor UDP (17), the Passport 4460 ignores the PortID parameter (whether or not it is a wildcard).
- If ProtocolType is either TCP (6) or UDP (17), the Passport 4460 filters the traffic based on both parameters.
- If both ProtocolType and PortID are wildcards, the Passport 4460 filters all the traffic based on source and destination.

Using Wildcards in IP Filters

The following CLI commands are used to configure IP filters (system-wide and port-specific):

```
CLI> add filter ip forward system <destination mask>
<destination address> <source mask> <source address>
<protocol type> <port ID> <action>
```

```
CLI> add filter ip forward port incoming <IfIndex>
<filter mask> <filter address> <protocol type> <port ID>
<direction> <action>
```

```
CLI> add filter ip forward port outgoing <IfIndex>
<filter mask> <filter address> <protocol type> <port ID>
<direction> <action>
```

You use an asterisk (*) as the wildcard character to designate either or both <protocol type> and <port ID>.

For example:

```
CLI> add filter ip forward port incoming 2
255.255.255.255 192.168.1.1 * * destination forward
```

In this example, both <protocol type> and <port ID> are defined as wildcards. The Passport 4460 forwards all the traffic from the port with IfIndex 2 that is destined for IP address 192.168.1.1. All traffic from that port destined for any other IP address is discarded.

Pulse Dialing on FXS and E&M Analog Voice Modules

The Passport 4460 FXS and E&M Voice Expansion Modules now provide support for voice equipment that uses Dial Pulse regeneration format (in addition to the existing support for DTMF format):

- The FXS analog card now accepts pulsed digits from analog phones.
- The E&M analog card can generate and receive pulsed digits.

This matches the capability provided on the Passport 4430/50/55 units running release 4.0.x software.

Limitations

Only 10 pps (pulses per second) is presently supported on E&M cards. 20 pps is not yet supported.

Setting Dial Pulse Regeneration Format (E&M)

Use the following CLI command to set the Dial Pulse regeneration format for an E&M card:

```
CLI> set voice profile format <Profile> dialPulse
```

X.25 Extended Packet Size

The Passport 4460 now provides support for 4096 byte packets in the Passport 4460 X.25 Annex G service. This follows the optional specification in 199x X.25 standards. Previously, the maximum X.25 packet size was 2048.

Setting the Maximum X.25 Packet Size

Use the following CLI command to set the maximum X.25 packet size:

```
CLI> define x25 parameters locMaxPcktSize 4096
```

```
CLI> define x25 parameters locDefPcktSize 4096
```

```
CLI> define x25 parameters RemMaxPcktSize 4096
```

```
CLI> define x25 parameters RemDefPcktSize 4096
```

Increased Maximum SVC (SPVC) Frame Size

The maximum SVC (SPVC) frame size on a PANL link supported by Passport 6400 (version P7.010) and Passport 4460 is now 8192. Therefore, there is no limitation in using X.25 Extended Packet Size feature for Passport 4460 - Passport 6400 PANL connections.

The following CLI commands have been changed to support this new maximum:

```
CLI> define fr tunnel rxMaxFrameSize <TunnelIfIndex>  
<RxMaxFrameSize> or <TxMaxFrameSize>
```

```
CLI> define fr line user basesvcLMI maxRxFrameSize  
<IfIndex> <MaxRxFrameSize> or <MaxTxFrameSize>
```

```
CLI> define fr port svcLANData maxRxSize <IfIndex> <DNA>  
<TxPriority> <MaxRxSize> or <MaxTxSize>
```

```
CLI> define fr port spvcLANData svc maxRxSize <IfIndex>  
<DNA> <TxPriority> <MaxRxSize> or <MaxTxSize>
```

The parameters RxMaxFrameSize, TxMaxFrameSize, MaxRxFrameSize, MaxTxFrameSize, MaxRxSize, and MaxTxSize take a value of (1..8192). These values are used for negotiated frame size on the SVC (SPVC). In order to send a 4096 X.25 frame, this value should account for X.25, LAPB and FR information. A recommended value is 4200.

X.25 Facilities Enhancements

Release 4.3 includes the following X.25 facilities enhancements:

- The X.25 Calling Address and Called Address facilities are now transparently sent in the Call Request packet, and the supported maximum values are in accordance with the X.25 standard: 40 digits (20 bytes). Reference: CR Q00421254.
- The X.25 Calling Address and Called Address parameters are now present in the Call Connect (CN) packet. Reference: CR Q00419455.
- The X.25 End to End Transit Delay facility is now transparently sent by the Passport 4460. Reference: CR Q00419452.
- The X.25 facilities combination of Address Extension, Packet Size, Window Size, Throughput Class, Fast Select (with restriction), User data (128octets) is now supported in the Call Request packet type. Reference: CR Q00484284.

CBR Traffic Starts Without Waiting for Sync Char

An enhancement has been implemented in release 4.3 that enables the start of CBR traffic without waiting for a Sync character. In prior releases, the Passport 4400 waited for a sync character before passing CBR traffic. If you were running CBR traffic and the primary link failed, the unit would not resume passing CBR traffic when the link recovered. This enhancement resolves this problem.

The following command has been modified to support this enhancement:

```
CLI> define wan port syncChar <IfIndex> <SyncChar>
```

The <SyncChar> range has been changed from (1..255) to (1..256). If you set the SyncChar value to 256, then the port starts receiving CBR traffic as soon as it is up; there is no need to receive the defined syncChar pattern as in the normal cases.

This enhancement is needed by customers who are using CBR service for HDLC traffic and the end devices are using some signaling before HDLC traffic is started.

CR Reference: Q00318523

Configurable LAPF parameters

An enhancement has been implemented in release 4.3 that provides configurable LAPF parameters for PANL links (but not for RFC 1490 links). The following LAPF parameters are now globally configurable: N200, timerT200, and timerT203.

The following command has been established to support this enhancement:

```
CLI> define msm lapfParameters T200|T203|N200 <value>
```

You can use the following CLI command to display these values:

```
CLI> show msm lapfParameters
```

You can use the CLI, the Configurator, and Install Tool to set these values.

Chapter 3

Issues Resolved and Known Open Issues

This section of the Release Notes includes these topics:

- [“Issues Resolved in R4.3” on page 27](#)
- [“Known Open Issues” on page 36](#)

Issues Resolved in R4.3

The following paragraphs describe the issues resolved in Passport 4460 release 4.3.

SNMP Vulnerabilities

Multiple vulnerabilities in SNMP version 1 request and trap handling (as outlined in the CERT advisory CA-2002-03) have been corrected.

- SNMP Agent Vulnerability - getn-req-ber-t-number. (Q00283892)
- SNMP Agent Vulnerability - get-req-ber-l-length. (Q00283886)
- SNMP Agent Vulnerability - getn-req-ber-l-length. (Q00283896)
- SNMP Client Vulnerability. (Q00283939)
- SNMP Client Vulnerability - trap enterprise missing data. (Q00283959)
- SNMP Client Vulnerability trap neighloss missing data. (Q00283956)
- SNMP Client Vulnerability - trap authfail missing data. (Q00283955)
- SNMP Client Vulnerability - trap link missing data. (Q00283951)
- SNMP Client Vulnerability - trap start missing data. (Q00283948)
- SNMP Vulnerability Agent - TC 8331. (Q00283879)
- SNMP Client Vulnerability - trap enterprise OID. (Q00283945)

Passport 4400 System

- Issue: After successfully adding a standard Frame Relay tunnel with ifIndex 210 (and DLCI 210), attempts to delete the tunnel using the CLI “delete” command failed.

Resolution: Now the tunnel with DLCI 210 can be removed using the CLI. The command “sh fr tun con tab” shows that the tunnel has been successfully removed. (Q00092126)

- Issue: In some circumstances, the Passport 4400 unit will lock up after running for 414 days.

Resolution: The problem is caused by the processing of the value of an internal clock-ticks counter. If this counter is initialized at startup with a value close to 2147483647 (248 days), the system locks up and recovers itself after 1hour 15min. This problem has been resolved by modifying the processing of this counter. (Q00138903-01)

- Issue: LocalPVC does not become active after resetting the Passport 4460 with 6-port serial card. The problem only occurs with Port 2 (ifIndex 162) on the 6-port serial card.

Resolution: The problem was due to the deactivation of system interrupts on the 6-port serial card master processor for some seconds during boot time (all the messages from 6-port serial card should generate an interrupt to the master processor). The problem has been resolved by modifying the task scheduling processes to eliminate the delay that caused the problem. (Q00155253)

- Issue: In some circumstances, performance in Release 4.2 was less than that in Release 4.1.3.

Resolution: Data Cache is enabled for slave processor in order to increase the performance. Activating the Data Cache (and with it, the MMU - Memory Management Unit), the performance increases up to the level of Release 4.1.3. (Q00170806)

- With InvArp enabled on a regional node, the routing table will be updating in an incorrect manner. When the link between the regional and branch nodes comes up, the regional node sends an InvArp request. On receiving the reply from the branch, it will change the NextHop from all the static routes (on the interfaces which have InvArp enabled) with the source address received in the reply frame (in our case the wan address of the branch).

Resolution: Modified the system software to correct the error. Inverse ARP no longer causes the branch node to hijack the next hop in the remote routing table. (Q00176854-01)

- Issue: PANL down problem at cascade and CBR configuration with the 6 port Serial Data Expansion module.

Resolution: Service is now available for PANL on the 6 port Serial Data Expansion module. (Q00154561)

- Issue: T1/E1 voice is not working properly in Release 4.2 build 28 on PANL on the 6 port Serial Data Expansion module.

Resolution: Service is now available for PANL on the 6 port Serial Data Expansion module. (Q00173457)

- Issue: If CTS or RTS (or both signals) is off, the ISDN backup link cannot be established. This condition can occur if the V.35 cable is partially unplugged. (Q00174456-01)

Resolution: The problem was that the D-channel on the Central node was down. The problem was resolved by modifying the system software to correct this problem.

- Issue: - ISDN back up cannot establish when the “show msm link table” CLI command is continuously issued.

Resolution: Changes were made in GCM module in order to avoid the failure of the procedure establishing the ISDN backup link. (Q00208142-01)

- PP4460 T1 CSU adapter module does not generate Yellow Alarm.

Resolution: The ds2151 chip (T1 transceiver) has been enabled to send the yellow alarm. (Q00137203-01)

- Issue: T1 Voice Card does not generate Yellow Alarm.

Resolution: A 2.5 second delay was added before generating local Red Alarm in order to comply with T1.231 standard. (Q00217290-01)

- Issue: When a red alarm for E1 voice is generated, an E1csu alarm is also generated, even if no E1 CSU card is present in the unit.

Resolution: This problem has been corrected. The false E1csu alarm is no longer generated. (Q00224581)

- Issue: The RELEASE COMPLETE message is not sent if AdviceOfCharge IE is received.
Resolution: ISDN Wan: The Passport 4460 is not able to disconnect the call if AdviceOfCharge IE is present in RELEASE COMPLETE message. Problem fixed. (Q00248751)
- Issue: 128K ISDN lease line mode does not work when connecting to a Passport 6400.
Resolution: SDS2 data strobe signal is configured in register ADF2 of the ISDN access controller in order to select B2 channel. 128K ISDN lease line mode is now working. (Q00249549)
- Issue: frame switch map does not activate in 4.2 code.
Resolution: Frame switch map is not active when configured for transparent CCS. The service is failing. Problem fixed. (Q00252506)
- The ISDN WAN link is not generating layer 2 ID ASSIGN after the first call.
This problem has been resolved. The TEI is cleared now when the LAPD layer is disconnected. (Q00252642)
- Issue: IP system filters do not work as advertised.
Resolution: System IP filters are now working properly. The current implementation allows the user to use the “discard” filters in order to discard specified traffic (by source destination, protocol and port number) and “forward” filters to forward the information to the destination blocking all other (between the specified source and destination). (Q00247148)
- Issue: The Passport 4460 cannot establish ISDN backup across B2 channel.
Resolution: SDS2 data strobe signal is configured in register ADF2 of the ISDN access controller in order to select B2 channel. The B2 channel can now be used for backup ISDN link. (Q00278742)
- Issue: Continuous ping with 4096 byte packets was not working.
Resolution: The reason of this failure was the baudrate set for physical port 1. By changing this baudrate from 9600 to 64000, the time necessary for a 4096 packet to transit the FR connection between two Passport 4460's is less than 2 seconds, so the continuous ping (4096) works fine and all the packets are transferred correctly. (Q00280076)

- Issue: E&M pulse dialing issue.

Resolution: Calls are now working for a configuration that uses two E&M cards (input and output from Passport network) that use pulse dialing. (Q00283244)

- Issue: ISDN speed should be configurable up to 128K. However, the CLI command (define isdn dial peer speed) supports rates up to 2G.

Resolution: change the following CLI commands to accept a maximum value of 128000: “sh isdn dial peer speed”, “def isdn dial peer ret”, “def isdn dial peer failure”, “def isdn dial peer call” and “def lapb pa t4”. Updated the CLI Reference manual to reflect this change (Q00284662)

- Issue: If the Passport 4460 has two SPVCs configured (one for X.25, the other for NMS), LAPB RNRs increment (as seen in the “show lapb stat entry 80” command) when the NMS SPVC is active, but do not increment when NMS SPVC is inactive.

Resolution: This problem has been resolved by correcting a process that was randomly initializing a variable with a 1 value, which was interpreted at the fr level as a flow control indication. This flow control indication is forwarded to LAPB, where a local busy condition is set and a RNR is sent back. By initializing this variable with a 0 value, we avoid the false RNR incrementation at the LAPB level. (Q00286878)

- Issue: The Passport 4460 does not comply with RFC 1490, section 7 for Address Resolution over Frame Relay. As per RFC 1490, the Hardware type should be 15 which is Frame Relay. Instead the Passport 4460 specifies it as 1 (which is 10 Mb Ethernet).

Resolution: The ARP header parameter has been changed in accordance with RFC 1490 and RFC 1340. (Q00287729)

- Issue: Passport 4460 Virtual Port 2 is always configured for bridging.

Resolution: The system software has been modified to allow virtual ports to be deleted after deleting ProtocolBinding (ProtocolBinding = none). This includes virtual port 2. (Q00306285)

- Issue: Multi-page fax transmissions from an MVPE to a Passport 4460 via MPANL are failing.

Resolution: This problem has been resolved by correcting a Passport 4460 DSP problem. (Q00315608)

- Issue: Some parameters in filtering configuration should allow wildcards.

Resolution: Port and Protocols parameters for IP filtering now accept a wildcard as a valid parameter. (Q00360054-01)

- Issue: E&M dial pulse fails (unable to send pulsed digits) if manipulation string and dial digit timer are used.

Resolution: This problem has been resolved. (Q00386329)

- Issue: When the Passport 4460 is configured for Hoot 'N Holler, the E&M signals are not passed across (specifically, the M lead and the E lead are not grounded).

Resolution: Changes were made in order to have signaling information send for E&M Hoot 'N Holler connection. (Q00417584)

- An interworking problem between Passport 4460 and Passport 4455 E&M interfaces in pulse dial mode: the first call from the Passport 4460 to the Passport 4455 goes fine, but the second call fails.

This problem has been corrected by implementing a correction that eliminates the source of the problem - the "out of buffers" situation. (Q00422098-01)

- Issue: Port IP filter discard does not work correctly (port incoming filters only).

Resolution: This problem has been resolved. (Q00447843)

- Issue: In a case with two different TP (Transfer Priority) SPVCs, where the destination DNA is the same (same fruni port) but a different DLCI is used, the high priority (TP=6) SPVC does not work (ping fails). Only the low priority (TP=0) SPVC works correctly.

Resolution: When using SPVCs with the same destination DNA, filters must be in place to direct traffic for the corresponding SPVC. Otherwise, all the traffic will be routed through the SPVC with the lowest TP. This is what caused the problem. This filtering mechanism is now working correctly. (Q00460905)

- Issue: If the WAN mode configuration is incorrect, the CLI may stop responding and the system may hang. For example, changing from V.35 DCE to V.35 DTE and resetting the unit will cause the CLI to hang after a few minutes.

Resolution: The problem was due to an extraneous function applied to a STREAM message in this circumstance. The problem has been resolved. (Q00464246)

- Issue: Usage of the B1 channel for ISDN BRI WAN card is affecting B2 traffic for multiplug connections.

Resolution: This problem has been resolved. (Q00468027)

- Issue: The usage of leased lines prevents the disconnection of Passport 4460 layer 1 upon a Passport 6400 card reset. In order to remove the SPVC connection on the Passport 4460, LAPF has to be disconnected first. The procedure of LAPF connection checking occurs every T203=30 seconds. Since the card reset takes aprox.15-20 seconds, it is possible for LAPF to remain active during the reset.

Resolution: This problem has been resolved. The T203 timer is now configurable, thus the value can be decreased to cause the verification procedure to occur more often. (Q00474945)

- Issue: When the GCM switching type is set to “BackupManualSwitch” or “ManualSwitch” AND when the primary link is toggled during ISDN backup, primary link cannot recover.

Resolution: This problem has been resolved. The GCM now receives an indication upon the second activation of the primary link. (Q00478284)

- Issue: X.21 PANL-DCE does not work with the 6-port serial data expansion module when the mode is DTE.

Resolution: The problem was that the Rx clock was missing at the SCC. The X.21 cable has only one clock for both receive and transmit. The solution was for the SCC to use the same clock for Rx and Tx, only for X.21. Traffic now passes successfully across PANL over the 6-Port module with X.21 (DTE). Another problem solved was that when the Passport 4460 boots without an X.21 cable plugged in, the initialization of SICR register is done for X.21 (if configured in CLI) (Q00471491)

- Issue: The Passport 4460 takes ten minutes to establish a connection to NMS. This only happens if a second LAN SPVC is up (beside NMS SPVC), whether or not traffic is running on it.

Resolution: This problem has been corrected. The ARP table is now being updated correctly at boot time. (Q00481782)

- Issue: When PANL is configured on one of the ports on 6-port serial data module and the data traffic exceeds the bandwidth, TxLinkOverflow errors can be observed on the WAN port (sh wan statistics port entry). This doesn't happen in the case of 2-port serial modules.

Resolution: This problem has been corrected. M_START and M_STOP messages are now able to pass the cross-bus driver 6-port serial data module. (Q00484678)

- Issue: X.21 cables are not properly detected when unplugged / plugged into WAN ports. Also, the LED on wan port 2 configured as DTE X.21 is green after the box is booted without a cable.

Resolution: This problem has been resolved. Changes were made to set the ifType when no cable is plugged in and corrections were made to ensure that if WAN parameters are defined when no cable is plugged in the configured ifType will be set to “none”. (Q00491531)

- Issue: When a “define wan port” command (other than ifType) was executed, the system software changed the ifType according to the type of cable connected to the port.

Resolution: This problem has been resolved. The IfType value is not changed if other WAN parameters are defined. (Q00499197)

- Issue: Whether the WAN port is Up or Down, or the MPANL is Up or Down, the Passport 4460 does not send out any SNMP trap to the NMS (the Passport 4450 does send these traps).

Resolution: This problem has been corrected. (Q00510186)

- Issue: On some Passport 4460 units, the system time is not incremented.

Resolution: This problem has been resolved. The system clock is now incrementing correctly. (Q00596783)

- Issue: Some Passport 4460 units do not correctly configure the 2-Port Serial Data Expansion module. At boot-up, even if the serial port is configured, the internal clock is not routed to that port.

Resolution: This problem has been corrected. (Q00611563)

X.25

- Issue: The WAN driver for X.25 was not initializing correctly.

Resolution: The problem was that only one stream was opened and, therefore, only one X.25 port was working correctly. This problem has been resolved. (Q00287240)

- Issue: In a configuration of eight X.25 PVCs between two Passport 4460s configured on exp1 of a 6-Port module and exp2 of a 2-Port module; traffic on the first three PVCs from the 6-Port module goes fine but when pinging on the fourth, the first Passport 4460 in the ping path restarts with a “WatchDogTask: es_scheduler task is suspended” message.

Resolution: This problem has been resolved. (Q00302279-01)

- Issue: X.25 End to End Transit Delay facility does not work properly.

Resolution: The original implementation did not correctly distinguish between the X25 CCITT “End To End Transit Delay” facility and the X.25 ISO “Transit Delay Indication” facility. This is the reason why the CCITT facility did not work properly. The system software has been modified to make a distinction between the CCITT and ISO facilities and to allow the first optional parameter of the “End To End Transit Delay” facility to be transported within the network. Now, “End To End Transit Delay” is working according to the X.25 protocol and it is present in Call Request, Incoming Call, Call Accept, and Call Connect. The optional parameters Target Delay and Max Delay are not present in Call Accept or Call Connect, also according to the protocol. (Q00419452)

- Issue: The Passport 4460 stops sending X.25 RR to a remote FRAD in a cascaded configuration. This problem only happens at the parent node of the cascade configuration.

Resolution: This problem has been resolved. (Q00322670)

- Issue: Specific DNA affects X.25 connections at child node of a cascade configuration. When a specific FRUNI DNA (xxxxxxxxxxxx4xx) is used for X.25, the child node of the cascade configuration has an X.25 connection issue. There is no problem with the parent node of cascade. Although the X.25 SPVC link comes up (show fr port spvc c t), the X.25 link does not come up (show x25 con t) and no X.25 data transfer occurs.

Resolution: This problem has been resolved. (Q00422867-01)

Documentation

- Issue: The Release Notes for Release 4.2 (document 211571-A) included the following statement in the description of the call blocking feature: “Note that a call will not be blocked if the number is available in the local cache table, whether or not the call server is down.” This statement (on page 15 of that document) is incorrect: the call blocking feature does not support local cached numbers.

Resolution: Removed the statement from the release 4.3 version of the *Configuring and Operating the Passport 4400* manual (document number 206916-D). Verified that the statement does not appear in the *Reference for Passport 4400 Command Line Interface (CLI)* manual (document number 209666-D). (Q00122628)

Known Open Issues

The following paragraphs describe the known open issues in this release, organized by these categories:

- [“Passport 4400 Configurator” on page 36](#)
- [“Passport 4400 Install Tool” on page 37](#)
- [“Passport 4400 System Software” on page 37](#)
- [“Xircom PCMCIA Ethernet Card” on page 41](#)
- [“Passport 4400 - Passport 6400 Interworking” on page 41](#)

Passport 4400 Configurator

- The Passport 4400 Configurator provides only a limited set of SNA statistics (SDLC Link Station Statistics and SDLC Port Statistics). You can use the CLI `show sna switching circuit` commands to obtain additional statistics and status for SNA links. (60331288)
- The default Documentation URL specified in the Configurator is no longer correct. As a workaround, you can change it to point to either the Passport 4400 Documentation Web site, or the location where you have installed the documentation. For more information, refer to [Chapter 6](#),

[“Product Documentation,” on page 55](#). You can also find a description of this process in the Configurator online help: access the Documentation URL page from the Administrator menu in the Configurator, then select About This Page.

Passport 4400 Install Tool

- Invalid entries entered through the X.25-Annex G or SNA 1490 dialog panels may cause incomplete configuration for the feature. (60334618, 60334681)
- All ports on Passport 4460 Dual and Quad E&M modules must be of the same type (E&M Type I, II or V) and cannot (due to hardware limitations) be individually configured for different types. However, Install tool allows you to select different types for individual ports on a card. The selection cannot take effect, however, because all ports on the card must be the same type. (Q00133466)

Passport 4400 System Software

- When upgrading from Release 4.1.2 to Release 4.2, and after downloading the boot code and viewing the image with option 1 on the boot menu, an “image corrupted” message is displayed. This is a false error message that appears because the 4.1.2 boot code does not correctly detect the 6-port serial data module alpha and beta images. Beginning with Release 4.1.3.4, a software upgrade will not display this message because a correction was made in the flash memory software. Refer to [“New Software Upgrade Process” on page 10](#) for a description of the revised software upgrade process. If you follow this process, the error message should not occur. (Q00092116)
- In some circumstances, the Passport 4460 will report Frame Alignment errors when running CBR/Video and IP traffic simultaneously. This has been observed when the 6-Port Serial Data Module is installed in expansion port 1 and CBR/Video is running at 384kbps. The errors have not been observed when the 6-Port Serial Data Module is installed in expansion port 2 or the unit is equipped with a 2-Port Serial Data module in either expansion port. (Q00092131)
- The “show fr line dlci table” reports information incorrectly on channel bundles. (60324201)
- Unit resets when X.25 traffic is present due to Streams running out of buffers when attempting to establish 96 SVC connections. (60330743)

- Unit reset may occur with more than six channel bundles configured as “casBypass”, or with more than one channel bundle configured as “bypass”. Only use one channel in a bundle for CAS per T1/E1 voice expansion slot. (60332364)
- The values, NegRxThroughput and NegRxBurstSize, are not reported properly on LAN SPVCs. (60332794)
- Unit may reset due to improper flow control of switched AOT traffic through a central node. When the Passport 4460 is configured as a “Regional Node,” flow control works normally. (60332800)
- The “set port admin 150 down” command resulted in a “Command Failed” response (it took approximately 10 seconds), and afterwards, any other command executed (such as “show wan pa po o t”) causes a client time-out in approximately 60 seconds. The node lockup portion of this problem has been fixed. However, the command itself has been disabled and has no effect. (60332408, 60334795)
- Unit does not prioritize traffic properly with 1500-byte packets on the LAN SVC. (60335184)
- With a # in the manipulation string of the egress table, the Passport 4460 should forward the dialed DTMF digits, but does not. (60335277)
- CCS Bypass with one bundle of multiple time slots fails. The number of time slots supported by one bundle without running into problems is limited to three to four time slots. This is without any other services. Once the number of time slots increases, CPU utilization increases significantly resulting in calls dropping. (60335288)
- AOT fails to pass traffic on a 2-Port Serial Data Expansion Module (installed into either expansion slot) through a network (Passport 6400) set for PANL. (Q00092081, 60334715)
- When issuing the “show port parameters table” command, the TxErrors statistics field displays an error. Note that this problem occurs only with HTDS cut through; with HTDS store and forward, there are no errors. (Q00092096, 60337515)
- When issuing the “show wan port statistics table” command, the TXLinkUnderruns and TxLinkErrors statistics fields displays errors. (Q00092097, 60337519)
- Passport 4460 ports that are configured for the SDLC role of “secondary” fail to display any value for the IfIndex port numbers in the “sh sna sdlc st p t” command. In addition, when this occurs, the table will continue to scroll until the Q (quit) character is entered. Note: Passport 4460 ports configured for the

SDLC role of “primary” display the IfIndex port numbers properly for the same command. Also, note that both roles of “primary” and “secondary” ports display the proper IfIndex numbers for the Linkstation reference (sh sna sdlc st l t). (Q00092106, 60337811)

- When you issue the “show voice channel” command, the network connection status field for the BRI Voice module is blank if the module is physically disconnected. For example:

```
PP4460>>sh vo ch t

CardNumber           : expl
ChannelNumber        : 1
InterfaceType        : isdn-bri
DSPOperStatus        : idle
NetworkConnect       :
RemoteChHWType       : ""
```

The status value should be “idle”. (Q00102265)

- The “show isdn physicalif basicrate operational table” command fails to display any information. (Q00102443)
- The “show system statistics” command reports bandwidth utilization only for Port 2 and Port 3 PANL links. In the particular case where PANL is active on both ports, the show command displays bandwidth utilization for port 3 only. The values displayed will be reported in LinkTxBwUtilization and LinkRxBwUtilization. For all other ports, the correct Tx and Rx bandwidth utilization statistics per port can be viewed by using the “show wan stat port table” command. (Q00106746)
- The Passport 4460 Wink Start on Hoot & Holler interworks with Passport 4430/50 units. However, it works for wink-to-wink only; wink-to-non-wink protocol or Q.421 will not work. This works the same as the setup between a Passport 4430/50 and a Passport 4430/50. The Passport 4460 to Passport 4460 setup does not have this limitation. All protocols and hardware interface types can talk to each other on Hoot & Holler, as well as switch calls. (60330060)
- If the PCMCIA Ethernet port or the build-in Ethernet port of a Passport 4460 is cross-connected to an auto-sensing device, the two devices are unable to communicate with each other (although they can still ping each other). Until an enhancement is available, it is suggested that one or both of the following

work-arounds be used:

1. Lock the Ethernet speed on the other device to 10 Mb/s.
2. Install a 10/100 Mb/s hub and install both devices on it.
(60325766)

- When using Passport 4460 VoIP over RFC1490 prioritization in a back-to-back configuration of Passport 4460 units, phone calls go through normally in both directions following a reboot of both units. But if you reset only one of the units, the first two attempts at making a call fail. The calls will go through normally after this. (Q00478908)
- A Passport 4460 with an installed 6-port serial data expansion module will hang after multiple resets. A workarround is provided to account for this: a self restart of the box will reinitialise the module. (Q00527983)

Xircom PCMCIA Ethernet Card

- The Xircom PCMCIA Ethernet port does not work correctly at 100Mbps. Connecting a PCMCIA Ethernet port to a 100Mbps hub or directly (with a cross-over cable) to a PC with a 100Mbps Ethernet adapter, the LAN Link Integrity LED is always red. In this case a ping from Passport 4460 to the PC doesn't work, the status of the Ethernet port in the CLI (ifIndex = 5) is down, and the packets are discarded by the Ethernet driver because the link is down (although a ping from the PC to the Passport 4460 is working fine). In this case the Ethernet driver doesn't report that link is down even if in the CLI the port is down. In the case of a 10Mbps hub the Lan Link Integrity LED is always green and the pings are working fine in both directions. The problem was also found in releases 4.1.3 and in 4.1.0. (Q00172160)

Passport 4400 - Passport 6400 Interworking

- Fax traffic between Passport 6400 PRI and Passport 4460 BRI TE mode yields low completion rates when the fax call originates from an MVP or MVPE card (10372023).
 - MVPE to Passport 4460 yields a 75 percent completion rate (a Canon Model B 340 is the destination machine)
 - MVP to Passport 4460 yields an 81.3 percent completion rate
 - Passport 4460 to MVPE or MVP yields a 100 percent completion rate with Passport 6400 version 7.03.
- BRI fax calls from Passport 6400 (NT or TE mode) to Passport 4460 fail. The MPS and MCF signals are repeated two to three times after the transmission of each page. If the direction of the call is reversed, however (that is, the call originates at the Passport 4460 going to the Passport 6400), then there are no errors or repeated signals. (60329391)
- The Lost Control Frames statistics counter for voice channels will register for Passport 4460 to all other Passport 4400-series units. It will not register for Passport 4460 to Passport 6400 units. (60329976)

- The Call Forward feature on the Passport 4460 did not function from an external number. This has been partially corrected and the following list shows which functionality is supported and which is not:
 - Passport 4400 to Passport 4400 - supported
 - Passport 6400 to Passport 6400 - supported
 - Passport 4400 to Passport 6400 - supported
 - Passport 6400 to Passport 4400 - NOT supported(60329975)
- ISDN Generic Functions (GF) Path Replacement was not working properly between Passport 4400 and Passport 6400. Corrections to Passport 4400 Path Replacement and Call Diversion have been implemented to increase the length of Pump messages to allow long messages to pass through PANL links. However, an equivalent implementation is still required on the Passport 6400. (60332649)
- Unable to correctly negotiate G.711 calls initiated by the Passport 6000/7000 to Passport 4460. (60334509)
- The X.21 interface on the Passport 4460 does not currently support the “DTE Signal Element Timing” signal. Refer to [“Passport 4400 and 6400 Interworking” on page 49](#) for more information. (60335312).

Chapter 4

Operational Notes

This section of the Release Notes contains operational notes for these topics:

- [“Flash Card” on page 43](#)
- [“Configurator” on page 43](#)
- [“Install Tool” on page 44](#)
- [“System Software Notes” on page 44](#)
- [“Voice/Fax” on page 47](#)
- [“Passport 4400 and 6400 Interworking” on page 49](#)
- [“Obtaining Technical Bulletins” on page 49](#)

Flash Card

The Passport 4460 uses a Centennial Linear Flash PC Card (16MB). Note that, unlike the Flash cards used on the BayRS and Passport 2430/5430 products, this card does not support external file manipulations (such as list, delete, compress, and write). Also note that the Passport 4460 does not support standard ATA Flash cards.

For more information about the Passport 4460 Flash card, consult the *Configuring and Operating the Passport 4400* manual (part number 206916-C, provided in PDF and HTML format on the product CD and on the web). Or, launch the Passport 4400 Configurator, select Code Bank from the Administration menu, then click on “About This Page”.

Configurator

- Before opening/starting your Passport 4400 Configurator, ensure that “cookies” is enabled in your web browser (refer to your browser documentation).

- Changing the IP address of the unit without changing the PC dial-in IP address for the PPP (Point-to-Point Protocol) over management port functionality may prevent access to the Configurator or Install Tool. Refer to Appendix D of the *Using Passport 4400 Install Tool* manual for a description of IP address usage in bridging and routing environments.

Install Tool

- All CSU and ISDN WAN ports only allow switching. A serial WAN port, if not configured as either primary or backup, will allow additional protocol selections. Otherwise only switching is allowed. (50338043)
- Several enhancements to SNA support are planned for a future release. These include the following:
 - The ability to configure Switched Node Virtual Segment size. (60318864)
 - The ability to remove the defaulted MAC (Media Access Control) and SAP (Service Access Protocol) addresses. (60318203)
 - The ability to configure SNA over Multi-Point. (60318863)
- Install Tool now supports the configuration of X.25 or SNA over channelized T1/E1 PANL or RFC-1490 links. From a non-primary and non-backup WAN serial port, launch the configuration dialog panel. Select X.25 or SNA from the protocol selection panel, apply, and verify X.25-Annex G panel or SNA 1490 panel works properly. (60322195)

Note that invalid entries entered through the X.25-Annex G or SNA 1490 dialog panels may cause incomplete configuration for the feature. (60334618, 60334681)

System Software Notes

WAN Port IfType Value

Following is a clarification of the effects of setting, and the meanings of the displays of, the WAN port IfType values.

Defining the IfType

- You can use the “def wan port ifType” command to set the IfType value whether or not you have a cable connected to the port. To effect the value that you set, you need to issue a “save” command before resetting the unit.
- If the Passport 4460 is booted with a cable plugged in, the specific port operates according to the cable type. (The unit is able to detect the type of cable plugged in and configure the port according to this information at boot time. In this case, the FLASH stored value has no effect.)
- The “def wan port ifType none” command has no effect.

Showing the IfType

- The “show wan parameter port configured” command displays the interface type of the cable that is connected.
- The “show wan parameter port operational” command shows how the port is currently operating.
- The “show wan parameter port configured” command displays “none” if no cable is connected.

General

- Idle Character: In this release, the default idle character is 126 (7E) flag. To achieve mark (FF), set the idle character to 255.
- The channelized E1 CSU can only run at speeds up to 1.92 Mb/s. This allows the user the use of the 16th time slot which provides for speeds up to 2.048 Mb/s on the E1 CSU. Timeslot 16 may be configured for both channelized and unchannelized E1 ports. On the CLI, Timeslot 16 is referenced by 31. Using “1-31” will select all E1 time slots, including Timeslot 16 (this excludes Timeslot 0 which is typically used for framing). (60323052)
- Call progress tones give a fast busy tone, not a slow busy tone when the channel is busy. The system provides the fast busy tone under the following conditions:
 - When all trunks are busy
 - When no trunk cable is connected
 - When the MPANL (Master Passport Access Network Link) is congested and the call is from the MVP (Multipurpose Voice Processor) side. (60324167)

- CAS/CCS Bypass will only support one bundle per expansion slot (maximum of two per unit: exp1 and exp2). These bundles may contain any number of available timeslots (1-24 for T1 / 1-30 for E1). (60328369)
- The Lost Control Frames statistics counter for voice channels will only register for Passport 4460 to Passport 4400 units. It will not register for Passport 4400 to Passport 6400 units. (60329976)
- The “localRouting” parameter in the voice switching profile allows the administrator to turn off local call routing (switching) if no local routing is needed. It was put in to simplify the ingress/egress table configurations.

For example, if the entire network has four-digit calling numbers and all channels in a node are in the same hunt group, the ingress and the egress phone numbers in all the nodes can be set to a wild card of “*****”. All DN/DNA (Directory Number/Data Network Address) resolutions will be done in VNCS (Voice Networking Call Server). (60330055)

- Ingress profiles give priority to the # sign over the * sign. In the case of the Passport 6400 to Passport 4400 interworking, it should be noted that the Passport 4400 does not support or recognize the octothorpe (#) or asterisk (*) character in the incoming dialed digit string. For this reason, it is recommended that digit manipulation operations involving Passport 6400 to Passport 4400 interworking be restricted to the characters 0 to 9. (60333263)

SNA Services

- In certain network configurations the host may poll the controllers before the Passport unit establishes SNA communications. Some SDLC PUs may not become active immediately. The PUs may require a second poll from the host in order to become active after the Passport unit is restarted.

One or more PUs may require an additional poll from the host before they will become active.

In order to reduce the amount of time the additional polls are sent from the host to the Passport unit, the poll timer can be set to a shorter interval. On the AS/400, within the controller description, the NDMPOLLTMR parameter can be set to a value of 1 which will cause the AS/400 to poll the controller after 0.1 seconds, if there has been no response by the controller. (60317212)

- Local ring enhancement was added to SNA, allowing SDLC interworking over a RFC-1490 link with non-Passport devices. (60322142)

- When the unit is configured as SNA DCE (Data Communications Equipment) with mark fill and frames are fragmented, set the window to 1 (one). This will eliminate possible retransmits. (60322707)

Voice/Fax

- G.711: Passport 4460 supports ten (10) G.711 voice channels with SAD (Speech Activity Detection) turned *off* and twenty (20) G.711 voice channels with SAD turned *on*.
- Fax support for BRI (Basic Rate Interface) Voice Module: Due to the BRI Voice Module (BVM) clocking requirements for fax support, fax is only supported on the BVM when it is used in conjunction with an E1 CSU WAN (Channel Service Unit Wide Area Network) module.

```
CLI> set voice profile bri
<Profile>          : INTEGER (1..3)
<BRIClockSource>  : internal | backplane
```

- For transparent CCS (Common Channel Signaling) connections, T1/E1 cables must be connected to the expansion modules prior to configuration and reset. Otherwise calls may fail to connect.
- Per call Transport Method: For Voice Transport Method, the SNMP index is a value with a numeric starting at “1”, and the internal Ingress table index first number is “0”. Use the following table when configuring Voice Transport Method on a per call basis (`set voice ingressTable transportMethod`). Note: Do not use this table when configuring `ingressNumber` and `manipulationString`. (60324068)

You should configure Ingress Index number:	For the parameter to take effect on Ingress Index number:
2	1
3	2

You should configure Ingress Index number:	For the parameter to take effect on Ingress Index number:
4	3
5	4
.	.
.	.
60	59

- “Dead” DSPs (Data Signal Processors):

When entering the CLI command `show voice channelStatus`, the *DSPOperStatus* may be displayed as “*Dead*”. This can be misleading. It can mean either “Down” or “Not currently in use” (Timeslot not assigned). To determine which, look at the *TimeSlotAssigned* parameter.

- If *TimeSlotAssigned* is “-1”, then it indicates “Not currently in use” or “No timeslot assigned”.
- If *TimeSlotAssigned* is any value *other than* “-1”, then it indicates a “Down” DSP. (60324166)
- When entering the CLI command `show voice channelStatus`, the *DSPOperStatus* may be displayed as “*ChannelDisabled*”. This means a Timeslot is not assigned. If DS0 is bad, it will be displayed as “*Dead*”.
- ISDN BRI Clock source selection:

Since both ports of a 2 port BRI Voice Module (BVM) on the Passport 4460 share one TDM interface internally, a single clock source must be used as primary clock for internal operations.

When one of the ports is configured for TE mode, that port is selected as the primary clock source. When both ports are configured for TE mode, the first port is selected as primary clock source, but the second port still receives clock from trunk to terminate the external interface.

The following table lists the effective primary clock source depending on mode of operation of each port of a 2-port BVM:

Operation mode: Port1 - Port2	Primary clock source for internal operation	Resulting clock source for Port1	Resulting clock source for Port2
NT - NT	Internal/backplane	Internal/backplane	Internal/backplane
NT - TE	From Port2	From Port2	External trunk on port2
TE - NT	From Port1	External trunk on port1	From Port1
TE - TE	From Port1	External trunk on port1	External trunk on port2

Passport 4400 and 6400 Interworking

For further information, refer to [Chapter 5, "Interworking,"](#) on page 51.

Obtaining Technical Bulletins

To obtain Passport 4400 technical bulletins online, access the Nortel Networks Web site (www.nortelnetworks.com), select Technical Documents from the Customer Support menu, then choose Passport 4400. (The Passport 4400 documentation is included with the Access Products product family.) Scroll down the page to the Technical Bulletins heading. These bulletins are available in PDF and/or HTML format.

Chapter 5

Interworking

Voice Interworking

For Release 4.3, the following voice interworking functionality has been tested and is supported:

Passport 4460	to Passport 6400 MVP		to Passport 6400 MVPe		to Passport 4430/50/55	to Passport 4460
	<i>Rel 5.1¹</i>	<i>Rel 7.0</i>	<i>Rel 5.1¹</i>	<i>Rel 7.0</i>	<i>Rel 4.0 & earlier</i>	<i>Rel 4.1</i>
G.729	X	X	X	X	X	X
G.711	-	-	-	- ²	-	X
¹ Tested with 5.1.20 (SSUP #20—BEO1SKB) ² Working if initiated by a Passport 4460 to a Passport 6400 (see SR 60334509)						



Note: Not all Passport 4460 features are supported on all releases of Passport 6400. Check with your Certified Distributor or Account Manager to understand the feature set compatibility.

Premium Voice

Premium Voice on the Passport 4460 interworks with Marathon products, but does not interwork with Passport 4400 products Release 4.0 and earlier.

Passport 4400 and Passport 6400 Interworking

Release 4.2 of the Passport 4460 provides interworking support for the following Passport 6400 release levels:

- Release 4.2
- Release 5.0
- Release 5.1
- Release 7.0



Note: Support for Passport 6400 Release 4.2 and 5.0 is not available after June 30, 2000. For more information, contact your Certified Distributor or Account Manager.

Call Forwarding Limitation

The Call Forward feature on the Passport 4460 did not function from an external number. This has been partially corrected and the following list shows which functionality is supported and which is not (60329975):

- Passport 4400 to Passport 4400 - supported
- Passport 6400 to Passport 6400 - supported
- Passport 4400 to Passport 6400 - supported
- Passport 6400 to Passport 4400 - NOT supported

High Speed WAN Link Limitation

On the Passport 4460, if Transmit Signal Element Timing (DTE Source) is not used on the Passport 6400 side, the WAN link will not establish a connection through the serial port if the baud rate is above 1.344 Mbps. If the baud rate is set lower, the SVC and link will establish a connection. When using a V.35 or V.36 interface, it is recommended that the “Transmit Signal Element Timing (DTE Source)” signal be used on Passport 6400, especially at high data rates.

However, the X.21 interface on the Passport 4460 does not currently support the “DTE Signal Element Timing” signal (60335312). Use the following table to determine the appropriate maximum cable length for the desired data rate:

Cable Length (in feet)	Data Rates	
	X.21 Terminated	X.21 Unterminated
15	2,048,000.0000	1,024,000
25	2,048,000.0000	400,000
50	2,048,000.0000	200,000
100	1,523,229.2460	100,000
150	1,173,364.6230	70,000
200	954,198.4733	50,000
250	804,020.1005	45,000
300	694,685.6547	38,000
400	546,149.6450	28,000
500	449,943.7570	24,000

For More Information

Refer to [“Passport 4400 - Passport 6400 Interworking”](#) on page 41 for more information about known issues involving Passport 4400 and Passport 6400 interworking.

Passport 4400 and Other Routers

The Passport 4400 interworks with third-party routers. The Passport 4400 supports frame relay PVC connection with third-party routers using RFC 1490 standard encapsulation method. In addition, the Passport 4400 interworks with Passport 6400 and Passport 7400 Virtual Routers and Bay RS Routers.

Chapter 6

Product Documentation

Documentation Web Site

To obtain Passport 4400 documentation online, access the Nortel Networks Web site (www.nortelnetworks.com), then select Technical Documents from the Products, Services and Solutions area. The Passport 4400 documentation is included with the Access Products product family.



Note: Any reference to a URL for documentation in any of the manuals should now refer to www.nortelnetworks.com.

List of Manuals

The Passport 4460 includes the following product documentation, available from Nortel Networks Web site (www.nortelnetworks.com), and delivered on the product CD-ROM:

- *Getting Started with Passport 4460*, 209664-C
- *Using Passport 4400 Install Tool Version 4.2*, 206906-E
- *Configuring and Operating the Passport 4400*, 206916-D (provided in PDF and HTML format on the product CD and on the web)
- *Reference for Passport 4460 Hardware*, 205677-D
- *Reference for Passport 4460 Cables*, 205678-D
- *Reference for Passport 4400 / 6400 Interworking*, 209372-C
- *Getting Started with Passport 4400 and 6400 Interworking*, 209371-C

- *Passport 4400 Release Notes for Release 4.2*, 211571-B (this document)
- *Reference for Passport 4400 Command Line Interface (CLI)*, 209666-D
- *Using the Passport 4400 Mass Deployment and Reporting Tool*, 209665-C

Passport 4400 Configurator Documentation URL Update

If you install the HTML-version of the Passport 4460 online documentation (*Configuring and Operating Passport 4400*, 206916-D) on a web site, you must set the Documentation URL for the Passport 4400 Configurator before you can access the documentation from within the Configurator. You change this URL through the Passport 4400 Configurator web pages.

To change the Documentation URL:

- 1 Click on *Administration*.
- 2 Click on *Document URL*.

The Documentation URL window opens:

Documentation URL [Pub: B]

Documentation Server URL:

The URL displayed in this window indicates where the online documentation is located (either at the Nortel Networks site (the default), or at a location that you designate).

- 3 If you have downloaded the documentation elsewhere, enter the URL in the Documentation Server URL field, and click *Save*.

A “*Command Successful*” message appears.

For More Information

Refer to the *Getting Started with Passport 4460* manual (part number 209664-C) for information about accessing the HTML-based documentation (delivered on the product CD-ROM).

Index

Numbers

10372023	41	60334509	42, 51
50338043	44	60334618	37, 44
60317212	46	60334681	37, 44
60318203	44	60334715	38
60318863	44	60334795	38
60318864	44	60335184	38
60322142	46	60335277	38
60322195	44	60335288	38
60322707	47	60335312	42, 53
60323052	45	60337515	38
60324166	48	60337519	38
60324167	45	60337811	39
60324201	37		
60325766	40	Q	
60328369	46	Q00092081	38
60329391	41	Q00092096	38
60329975	42, 52	Q00092097	38
60329976	41, 46	Q00092106	39
60330055	46	Q00092116	37
60330060	39	Q00092126	28
60330743	37	Q00092141	37
60331288	36	Q00102265	39
60332364	38	Q00102443	39
60332408	38	Q00106746	39
60332649	42	Q00122628	36
60332794	38	Q00133466	37
60332800	38	Q00137203	29
60333263	46	Q00138903	28
		Q00154561	29

Q00155253	28	Q00322670	35
Q00170806	28	Q00360054	32
Q00172160	41	Q00386329	32
Q00173457	29	Q00417584	32
Q00174456	29	Q00419452	25, 35
Q00176854	29	Q00419455	25
Q00208142	29	Q00421254	25
Q00217290	29	Q00422098	32
Q00224581	29	Q00422867	35
Q00247148	30	Q00447843	32
Q00248751	30	Q00460905	32
Q00249549	30	Q00464246	32
Q00252506	30	Q00468027	33
Q00252642	30	Q00471491	33
Q00278742	30	Q00474945	33
Q00280076	30	Q00478284	33
Q00283244	31	Q00478908	40
Q00283879	27	Q00481782	33
Q00283886	27	Q00484284	25
Q00283892	27	Q00484678	34
Q00283896	27	Q00491531	34
Q00283939	27	Q00499197	34
Q00283945	27	Q00510186	34
Q00283948	27	Q00527983	40
Q00283951	27	Q00596783	34
Q00283955	27	Q00611563	34
Q00283956	27		
Q00283959	27		
Q00284662	31		
Q00286878	31		
Q00287240	34		
Q00287729	31		
Q00302279	35		
Q00306285	31		
Q00315608	31		

Passport 4400 Release Notes for Release 4.3

Address comments to:

Manager, Technical Publications

Nortel Networks

4555 Great American Parkway

Santa Clara, CA 95054

U.S.A.

© 2003 Nortel Networks

All rights reserved

Information subject to change without notice

Publication: 211571-C Rev 00

Date: February 2003