Network Management

Open Management System
for Passport (OMS-P) Release 4.0

Features and Benefits

- **Web-Based Access to Management Data** provided by HP OpenView NNM 6.01

- **Updates for Passport 6000 and Passport 4400 Switch Software** allows OMS-P 4.0 support for the latest releases.

- **Extended Integration with Optivity NMS 9.0** facilitates Unified Management solutions in converged telephony/data networks.

- **Improved OpenView User Interface** enables OMS-P 4.0 to offer Web access to Passport management data, providing current information from any location.

- **Unified Management** views integrated networks as a system, unifying the management of campus, WAN, and telephony networks.

A key component of the Unified Management solution from Nortel Networks, Open Management System for Passport* (OMS-P) 4.0 provides open, easy-to-use management services for Passport networks. OMS-P is the Nortel Networks open systems-based network management suite designed for Passport multiservice switches, providing comprehensive surveillance, configuration, and software distribution capabilities across a variety of network management platforms and WAN environments.

Passport is a family of high-performance backbone switches designed for building and consolidating high-speed enterprise telephony/data networks, and OMS-P is the management suite that enables administrators to provide consistency across the areas of fault, configuration, performance, and security management. Designed to operate on the Sun Solaris, HP-UX, and IBM AIX operating systems, OMS-P is an open solution that leverages the HP OpenView Network Node

Manager (NNM) and Tivoli NetView management platforms to provide complete management services to Passport networks. Accounting management for Passport networks is provided by a separate product from Nortel Networks called Management Data Provider (MDP).

Unified Networks and Unified Network Management

The Unified Networks* solution set from Nortel Networks is designed to create greater value for customers worldwide through the integration of telephony, video, and data networking. The Unified Networks strategy extends to solutions, products, and services, including a new approach to network management.

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How the world shares ideas.

Unified Management

Nortel Networks is using its position as the leader in campus, WAN, and telephony management to deliver a new class of Unified Management solutions, bringing the following core values to the enterprise network manager:

- Managing campus, WAN, and telephony networks as an integrated system.
- Delivering pragmatic, directory-based policy management.
- Monitoring and enforcing end-to-end application service levels.
- Operational simplicity.

  Nortel Networks supplies key management tools in the following three areas:

Network Management

Provides fault management, provisioning, accounting, performance analysis, modeling, planning, reporting, and access-level security.

Policy Management

Enables bandwidth management, Quality of Service (QoS), application-level security, IP/address management, and dynamic configuration.

Service Management

Provides service provisioning, service-level monitoring, and network accounting in enterprise and service provider environments.

Means that business-critical applications are receiving expected service levels. Supports end-to-end performance monitoring and single accounting for telephony, video, and data applications.

Management of Passport Multiservice Switches

The OMS-P application suite retrieves network management data from the Passport network in two ways: Simple Network Management Protocol (SNMP) agents are used to report Passport traps, and Telnet sessions (directly to the Passport node) are used for surveillance and configuration.

Through integration with the platform infrastructure, OMS-P 4.0 is fully compatible with application programming interfaces (APIs) supplied with platform software from third-party vendors. In addition, customers can develop their own applications based on these APIs.

System Configuration

Using OMS-P, network managers can view information about Passport switches and easily configure Passport switches and networks. System configuration is implemented in the following ways:

- Passport switches are provisioned using Passport Module Manager (PPMM).
- Software is downloaded to Passport switches using the Passport Software Management application.

- Information about Passport switches and networks is viewed by using the three OMS-P reporting applications: Passport Module Summary, Passport Card Inventory, and List of Passports.
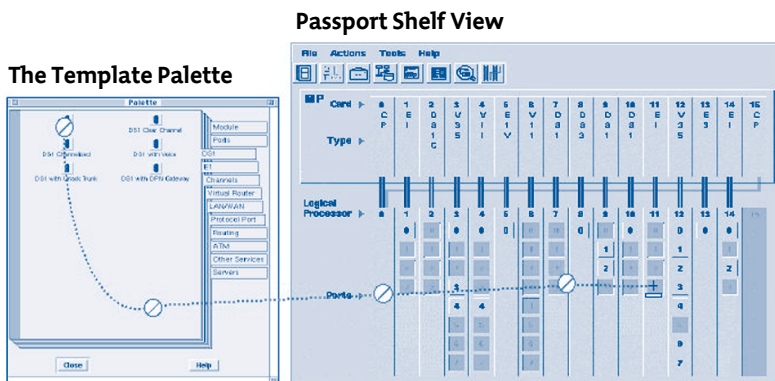
Passport Module Manager

A key component application of OMS-P, Passport Module Manager (PPMM) provides a powerful, simple-to-use graphical user interface that supplies detailed, node-level management for Passport switches. Launched from an open management platform or from Optivity* Network Management System (NMS), PPMM includes a number of graphical windows for viewing and modifying components and attributes. These include a module or "shelf graphic" window, and a number of forms-based windows.

The PPMM application provides basic fault management functions, including status and operational attribute monitoring, and also supports end-to-end provisioning capabilities for Passport switches. Network managers can establish connections across the Passport network simply by clicking on endpoints. New services and switch components can be added and configured using an intuitive, drag-and-drop approach. This simple, straightforward process significantly reduces the time required for network provisioning.

Managers can select a template from the palette, drag the template to a component on the shelf view of the Passport switch, and drop it on the component view to complete the provisioning process. PPMM prompts for any values that are not defaults, and also supports the creation of custom templates. Commands are also available on the Passport switch, such as confirm and activate, that can be quickly selected from the pull-down menus of the Passport provisioning shelf view (see Figure 1).

Figure 1:   Drag-and-drop provisioning for Passport switches.

The Template Palette

Passport Shelf View

PPMM supports advanced configuration functions, including:

- End-to-end provisioning for Frame Relay Data Link Connection Identifiers (DLCIs), permanent virtual circuits (PVCs), as well as voice and ATM PVCs. PPMM provides a simple GUI with step-by-step instructions for provisioning endpoints.

- Default templates provide users with a quick, simple method of provisioning Passport switches.

- Drag-and-drop capability enables managers to select a template from a palette window, drag the template to a component on the shelf view of the Passport switch, and drop it on a component to complete the provisioning process.

- Customizable templates tool for configuration enables users to create an original template, modify an existing default template, or copy existing components from a Passport shelf view into a new template.

- On-switch commands can be issued from within PPMM to manage Passport file systems and implement configuration changes.

- Configuration shelf view displays a graphical representation of all Passport components.

Features and Benefits

Unified Management

The Nortel Networks Unified Management approach is designed to manage integrated networks as a system, using the Optivity suite of products to unify the management of campus, WAN, and telephony networks. Optivity NMS is the campus management application suite, and OMS-P provides WAN management capabilities to the system.

OMS-P 4.0 can be integrated with Optivity NMS 9.0 to deliver Unified Management for enterprise networks. The Unified Management approach enables network managers to manage both campus and WAN resources from the same workstation.

Open, Integrated Solution

OMS-P currently supports two network management platforms: HP OpenView Network Node Manager and Tivoli NetView. Enhanced flexibility is provided through a choice of supported network management platforms and operating systems to manage Passport switches. Tight integration with the network management platforms delivers full integration with other compatible applications, including those created by third-party vendors.

Regular-Interval/ Event-Driven Polling

OMS-P supplements traditional SNMP polling with event-driven polling to determine the state of network elements, displaying accurate and reliable status information. The combination of regular-interval and event-driven polling has two major benefits:

- Regular-interval polling can be done at longer intervals, thereby reducing excessive or unnecessary network traffic.

- Event-driven polling minimizes the latency of status updates because it is initiated as soon as a trap is received.

Automatic Discovery

Passport switches are automatically added to the network management database either when they send a trap for the first time, or through the platform discovery mechanism. This eliminates the need to manually reconfigure the management system's topology map as Passport switches are added or relocated within the network.

Support for HP OpenView 6.01 and its Web Interface

OMS-P 4.0 now offers Web access to Passport management data, which enables managers to obtain key information about the network from any location. The new release provides support for HP OpenView NNM 6.01, which features Web access through its Network Presenter and Launcher interfaces. The HP OpenView Web interface provides access to a number of Passport tools and diagnostic information about OMS-P, including:

- **Card Inventory.** Provides a list of the cards installed in a Passport switch selected by the user.

- **Module Summary.** Generates lists of all cards and trunk connections on a selected Passport switch.

- **List of Passports.** Creates a list of all Passport switches in the Passport network.

- **OMS Status.** Offers a complete status update, including all OMS components, disk space used, swap space available, and the output from the OMS status command.

Support for the Latest Passport Software

OMS-P 4.0 supports the latest versions of Passport switch software, as well as providing full backwards compatibility with previous switch software releases. This enables network managers to upgrade their network management software and retain full management capability, ensuring a seamless transition.

OMS-P supports the following new Passport switch software releases:

- Passport 6000 switch software Release 5.1.10.

- Passport 4400 switch software Release 4.0.

Extended Integration with Optivity NMS 9.0

Unified Management is a concept developed by Nortel Networks to facilitate the management of integrated telephony/data networks as a system. OMS-P 4.0 enhances the WAN management capabilities of Optivity NMS 9.0, the industry-leading campus management solution from Nortel Networks. Specifically, OMS-P 4.0 extends the capabilities of Optivity NMS 9.0 by expanding the performance-monitoring capabilities of the NMS OmniView application, delivering enhanced visibility into the operation of Passport switches. Through Unified Management, campus, WAN, and telephony networks can be managed as an integrated whole, instead of as a series of separate procedures.

Enhanced Network Map Display

OMS-P 4.0 improves the topological information available in the network map by displaying link capacity at a glance. The connections between nodes vary in thickness, clearly differentiating link capacity. Links are displayed in four size categories, from DS1 through OC-12, and the available bandwidth on a connection can also be graphically displayed.

Extended Operating System Support

OMS-P 4.0 now supports the latest releases of the following operating systems:

- 32-bit HP-UX 11.0
- IBM AIX 4.3.2.

Year 2000 Compliant

All versions of OMS-P are Year 2000 compliant, beginning with Version 2.2 through Version 4.0.

Hardware and System Requirements

Table 1: Open Management System for Passport (OMS-P) 4.0 Hardware and System requirements.

Sun SPARC Systems	
Hardware	Sun UltraSPARC series 128 MB RAM 4 GB of free disk space 21" Color monitor CD-ROM drive
Operating System	Solaris 2.6
Network Management Platform	HP OpenView NNM 6.01

HP Systems	
Hardware	HP 9000 C200 or better 128 MB RAM 4 GB of free disk space 21" Color monitor CD-ROM drive
Operating System	32-bit HP-UX 11.0
Network Management Platform	HP OpenView NNM 6.01

IBM Systems	
Hardware	IBM RS/6000 series
	128 MB RAM
	4 GB of free disk space
	21" Color monitor
	CD-ROM drive
Operating System	IBM AIX 4.3.2
Network Management Platform	Tivoli NetView 5.0
Supported Passport Releases	OMS-P 4.0 is compatible with all previous releases of OMS-P, and also supports Passport 6000 4.2, 5.0, 5.1.10, and Passport 4400 3.1.2, and 4.0.

OMS-P 4.0 is also compatible with the following operating systems and management platforms:

Supported Operating Systems	Sun Solaris Release 2.6 (with HP OpenView NNM)
	HP-UX Release 10.20 and 32-bit HP-UX 11.0 (with HP OpenView NNM)
	IBM AIX Release 4.2.1, 4.3.2 (with Tivoli NetView)
Network Management Platforms	HP OpenView NNM Release 6.01
	Tivoli NetView Release 5.0 (TME10 Management Server)

Ordering Information

Table 2: Ordering and availability for Open Management System for Passport (OMS-P) 4.0.

OMS-P 4.0 is provided on CD-ROM. Separate CD-ROMs are offered for each operating system and network management combination. These CDs do not include the operating system or the network management platform software, which must be ordered from the appropriate vendor.

Order Number	Description
NTJ500FA	Media code for OMS-P 4.0 in CD-ROM format (HP and Solaris operating systems).
NTJ500FB	OMS-P 4.0 for use with Solaris 2.6 and HP OpenView NNM 5.01/6.01. Requires NTJ500FA. Supports Passport 6000 series switches.
NTJ500FC	OMS-P 4.0 for use with 32 bit HP-UX 11.0 and HP OpenView NNM 6.01. Requires NTJ500FA. Supports Passport 6000 series switches.
NTJ099GH	OMS-P 4.0 for use with Solaris 2.6 with HP OpenView 5.01 or 6.01 from electronic software download (ESD) site. Supports Passport 6000 series switches.

Table 2: *Ordering and availability for Open Management System for Passport (OMS-P) 4.0 (continued).*

Order Number	Description
NTJ099GK	OMS-P 4.0 for use with 32-bit HP-UX 11.0 with HP OpenView 6.01, or HP-UX 10.20 with HP OpenView 5.01 from ESD site. Supports Passport 6000 series switches.
NTJ500GA	OMS-P 4.0 for use with IBM AIX 4.3.2 and Tivoli TME NetView 5.0. Supports Passport 6000 series switches.
NTJ500FF	ATM PVC end-to-end provisioning supplement for OMS-P 4.0. For use with Solaris 2.6. Requires NTJ500FA and NTJ500FB.
NTJ500FE	OMS-P 4.0 for use with Solaris 2.6 and HP OpenView NNM 5.01 or 6.0.1. Combines support for Passport 4400 and 6000 series switches. Requires NTJ500FA. Required to support Passport 4400 series switches.

Online context-sensitive documentation is provided on all OMS-P software CDs. Documentation is also separately available in the following formats:

NTJ500HA	OMS-P 4.0 documentation in hard-copy printed format.
NTJ500DB	OMS 4.0 documentation on CD-ROM.

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