

AVAYA

!

## **Avaya MultiService Network Manager 5.0 for Windows 2000/XP User Guide**

**Copyright 2003 Avaya Inc. All Rights Reserved**

The products, specifications, and other technical information regarding the products contained in this document are subject to change without notice. All information in this document is believed to be accurate and reliable, but is presented without warranty of any kind, express or implied, and users must take full responsibility for their application of any products specified in this document. Avaya disclaims responsibility for errors which may appear in this document, and it reserves the right, in its sole discretion and without notice, to make substitutions and modifications in the products and practices described in this document.

Avaya™, Cajun™, P550™, MSNM™, and SMON™ are trademarks of Avaya Inc.

ALL OTHER TRADEMARKS MENTIONED IN THIS DOCUMENT ARE PROPERTY OF THEIR RESPECTIVE OWNERS.

Release 2.002

# Table of Contents

---

<b>Preface</b> .....	<b>v</b>
The Purpose of This Guide .....	v
Who Should Use This Guide .....	v
Organization of This Guide .....	vi
<b>Chapter 1 — MSNM Overview</b> .....	<b>1</b>
Managing Complex Networks .....	1
MSNM Can Help .....	2
MSNM the Tool .....	2
Overview .....	2
How MSNM Integrates into Your Network .....	4
MSNM Features .....	4
MSNM Device Management Tools .....	5
Overview .....	5
Avaya Device Managers .....	6
MSNM Network Management Tools .....	8
Overview .....	8
The MSNM Network-wide Applications .....	9
<b>Chapter 2 — Getting Started with MSNM</b> .....	<b>12</b>
Getting Started with MSNM in Standalone Mode .....	13
Getting Started with MSNM in HP-OV NNM Mode .....	14
<b>Chapter 3 — Using MSNM</b> .....	<b>15</b>
Setting up the Network Management Environment .....	15
Routine Network Management Activities .....	18
Routine Operating Procedures .....	18
Policies for Adding, Deleting, and Modifying Network Devices .....	19
“Firefighting” Procedures .....	19
Troubleshooting Procedures .....	20
Security-Related Procedure .....	21
Procedure for Emergency Events .....	21
<b>Chapter 4 — MSNM Documentation</b> .....	<b>22</b>
Installation Guide and Release Notes .....	22
Application Documentation .....	23
Application Documentation Overview .....	23
Application User Guides .....	23

## Table of Contents

---

Reference Guide .....	24
Documentation on the Web .....	24
On-line Help .....	24
Finding the Information You Need .....	24

# Preface

---

Welcome to Avaya MultiService Network Manager. This chapter provides an introduction to the structure and assumptions of this guide. It includes the following sections:

- [\*\*The Purpose of This Guide\*\*](#) - A description of the goals of this guide.
- [\*\*Who Should Use This Guide\*\*](#) - The intended audience of this guide.
- [\*\*Organization of This Guide\*\*](#) - A brief description of the subjects contained in the various sections of this guide.

\* **Note:** The term MSNM is used throughout this document as a shortened name for Avaya MultiService Network Manager.

## The Purpose of This Guide

The purpose of the MSNM User Guide is to provide a broad view of the MSNM Suite of applications, act as a guide for getting started with MSNM, and help you maintain your network using MSNM.

## Who Should Use This Guide

This guide is intended for network managers familiar with network management and its fundamental concepts.

## Organization of This Guide

This guide is structured to reflect the following conceptual divisions:

- **Preface** - This section describes the guide's purpose, intended audience and organization.
- **[MSNM Overview](#)** - An overall description of the MSNM network management suite and its various parts.
- **[Getting Started with MSNM](#)** - Information on the initial tasks you should perform when using MSNM.
- **[Using MSNM](#)** - Information on the tasks you should do regularly when managing your network with MSNM.
- **[MSNM Documentation](#)** - A description of the documentation and on-line help provided with MSNM.

# 1 MSNM Overview

---

This chapter provides an overall description of the Avaya MultiService Network Manager and its various parts. It includes the following topics:

- [Managing Complex Networks](#) - A description of the issues and difficulties involved in managing today's complex networks.
- [MSNM Can Help](#) - A look into how MSNM can help network managers.
- [MSNM the Tool](#) - An overall description of MSNM, its different parts, features, and benefits.
- [MSNM Device Management Tools](#) - A general description of the "device manager" concept, and a brief description of device manager features.
- [MSNM Network Management Tools](#) - An overview and description of the MSNM campus-wide management tools.

## Managing Complex Networks

Corporate networks are an assorted collection of shared and switched network devices, different kinds of protocols, and multiple applications. They are often in some stage of migration, and comprise a variety of different routers, switches, and other devices. As networks become larger and more sophisticated, managing them becomes more and more of a challenge.

Today's network manager needs a tool that provides a single access point to all network applications and a complete view of the network. The network management system must be able to configure and control a full range of devices from stackable switches to modular hubs and wireless switches. It must be able to monitor both shared and switched devices. Most of all, the network management system must take this complex network and make it easy to manage and maintain.

## MSNM Can Help

MSNM is a comprehensive suite of SNMP-based applications that simplifies the task of managing Avaya's LAN and backbone switches in complex enterprise networks. It allows enterprises to configure, monitor, and control the array of Avaya's VoIP-ready LAN, backbone, and wireless switches using a single, integrated suite of applications. This includes everything from device configuration to advanced switch monitoring and VLAN management.

MSNM provides network managers with a comprehensive set of tools that provide setup, configuration, fault diagnosis, and management tools for all Avaya stackable and modular switches and plug-in modules. MSNM provides tools that simplify daily tasks in various areas, such as monitoring VLANs, maintaining a library of switch configurations, and switch monitoring. MSNM includes additional tools that perform VLAN management and easy software download to devices.

## MSNM the Tool

This section provides an overall description of MSNM, its different parts, features, and benefits. This section discusses the following topics:

- [Overview](#)
- [How MSNM Integrates into Your Network](#)
- [MSNM Features](#)

## Overview

MSNM is part of the Avaya VisAbility™ Management Suite, which provides you with a complete set of tools and an applications platform. All of the tools in VisAbility are accessible through a common Web-based user interface to facilitate system and network management.

MSNM is a comprehensive suite of SNMP based network management applications. There are different types of applications to fill different network management needs. MSNM consists of the following types of applications:

- **Device Managers** - MSNM includes device managers for Avaya's LAN, backbone switches, and wireless Access Points. These applications allow configuration, management, and fault diagnosis for the specific device. For more information about device managers, refer to [“MSNM Device Management Tools” on page 5](#).
- **Network Management Tools** - MSNM includes applications that help you manage your network as a whole. These applications allow you to monitor switching, configure VLANs, set up rules to enhance quality of service, and perform other important network tasks. For more information about network-wide applications, refer to [“MSNM Network Management Tools” on page 8](#).
- **Network Management Framework** - MSNM runs within the “framework” of a network management application. The framework management application provides easy access to MSNM device managers and network-wide applications. It also provides a view of your entire network.

You can use HP OpenView NNM as the framework. This is called running MSNM in HP-OV NNM Mode. In this mode, the framework also provides an overall view of the multi-vendor network to the network administrator and defines the scope of the network to MSNM applications.

Alternatively, MSNM can be run in Standalone Mode. Avaya MultiService Server and Console provide an overall view of the network of Avaya's LAN and backbone switches, Avaya Wireless Access Points, Avaya MultiVantage Media Servers, Avaya IP phones, and other devices in the network. MSNM applications can be launched from Avaya MultiService Console. MSNM in Standalone Mode also provides a discovery service, trap logs, and other important information to the MSNM applications.

MSNM can be installed in both HP-OV NNM Mode and Standalone Mode on a single computer. However, only one mode can be active at any given time. For more information on installing and running multiple modes of MSNM, refer to the *Avaya MultiService Network Manager 5.0 for Windows 2000/XP Installation Guide*.

## How MSNM Integrates into Your Network

MSNM works together with other basic network management methods to provide a complete network management solution. Basic configuration is available for all Avaya network devices using an ASCII terminal and the Command Line Interface (CLI). You can use the CLI for basic setup. After the basic CLI configuration, you can use MSNM for your network management tasks.

You can use MSNM to manage your network from one centralized computer, or you can take advantage of MSNM's Web management features. Depending on the device you want to manage, you can configure the device remotely using a Web browser or a special version of the Avaya device manager. For more information about the options available for specific devices, refer to the device manager's User Guide.

## MSNM Features

MSNM's main features and benefits include:

- Performance Monitoring for Switched Environment (SMON)
- Multilayer Switch Monitoring
- VLAN Management
- Comprehensive and Easy-to-Use Device Configuration
- Backup and Easy Distribution of Device Configurations
- Easy Configuration of Network Traffic Management Policies
- Easy Updating of Device Software
- Easy Mapping of Hosts to Switch Ports
- Fault Diagnosis and Management
- Remote Access via the Internet
- Multiple User Access

# MSNM Device Management Tools

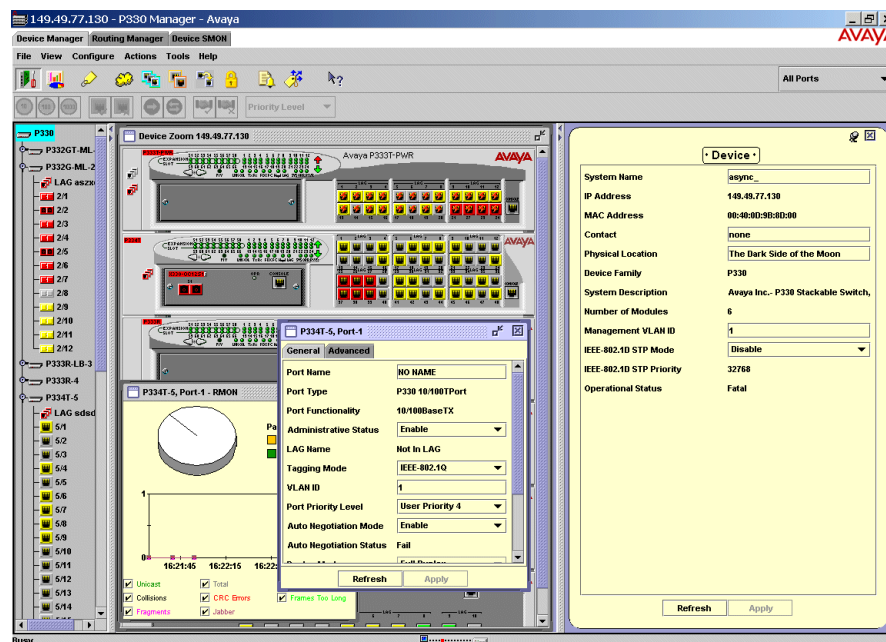
This section provides a general description of the “device manager” concept, and a brief description of the device managers. This section discusses the following topics:

- [Overview](#)
- [Avaya Device Managers](#)

## Overview

The MSNM suite includes applications tailored to manage and monitor each family of Avaya’s LAN and backbone switches. The device managers allow you to set up, configure, monitor, manage, and diagnose all Avaya network devices. The device managers provide a real-time view of each device, called the “chassis view”. The view uses color coding to indicate individual port, module, and LAG statuses. You can use the device manager to configure port, LAG, and VLAN settings, port security, redundancy modes, and all other device parameters. An example of an Avaya device manager is shown in the figure below.

Figure 1-1. Avaya Device Manager



In addition, each device can be monitored using Avaya's Device SMON applications. Device SMON provides switch monitoring capabilities, as well as graphs and pie charts displaying traffic types on ports, VLANs, and switches.

## Avaya Device Managers

This section provides a brief description of the features that the Avaya device managers allow you to configure. Not all features are applicable for all devices. This section also provides a list of the Avaya devices that can be managed with Avaya device managers. For more details about a specific application, refer to the device manager's User Guide.

Avaya device managers provide the following features:

- Bridge and Port Level Spanning Tree Configuration
- Connected Stations Monitoring
- Device Security Configuration
- Event Log Configuration
- LE-ARP Information
- LEC Information
- Link Aggregation Group (LAG) Configuration
- Load Sharing Configuration
- OSPF Routing Configuration
- Packet Filtering Configuration
- Performance Monitoring
- Port and Error Counters
- Port Mirroring Configuration
- Port Redundancy Configuration
- Port RMON Statistics
- Port Security Configuration
- Power over Ethernet (PoE) Configuration
- Routing Path Protocol Configuration
- Routing Redundancy Configuration

- Static Routes Table Configuration
- Trap Managers Configuration
- VLAN Configuration
- WAN Connection Configuration
- Wireless Access Point

\* **Note:** For information on the features supported by a specific device manager, refer to the device's User Guide.

In addition, Device SMON provides switch level (Layer 2) monitoring of the information passing through the devices in your network. AnyLayer SMON provides information about higher level (Layer 3 and above) packets passing through the routers in your network. These include the following statistics:

- Ethernet Segment Statistics
- Extended Port Statistics
- Host Matrix
- Host Statistics
- Network Layer Host Statistics
- Network Layer Subnet Statistics
- Port History Statistics
- Port Statistics
- Protocol Distribution Statistics
- Router Statistics
- Switch Statistics
- VLAN Statistics
- Voice Port Statistics

The MSNM device managers allow you to manage the following devices:

- Avaya P130
- Avaya P330
- Avaya P460
- Avaya P580
- Avaya P882
- Avaya Access Points 3, 4, 5

## MSNM Network Management Tools

This section provides a general description of the MSNM network management tools, and a brief description of each of the network applications. This section discusses the following topics:

- [Overview](#)
- [The MSNM Network-wide Applications](#)

### Overview

The MSNM suite includes network-wide applications that allow you to manage the Avaya LAN and backbone switches, and the Avaya Media Gateway and wireless Access Points in your network as a whole. These applications allow you to configure VLANs, monitor switching, and perform other important network tasks. For example, MSNM includes Avaya MultiService SMON Manager for advanced switch monitoring (MSNM includes a 90 day trial version of SMON). Avaya MultiService SMON Manager monitors the Ethernet switching fabric and gives you a complete top-down view of all switched traffic across your network.

Other network-wide applications include Avaya MultiService Configuration Manager for multiple device and port configuration, Avaya QoS Manager for configuring policy-based management, Avaya MultiService VLAN Manager for configuring and monitoring VLANs, Avaya MultiService Address Manager for mapping hosts to switch ports, and Avaya MultiService Software Update Manager for automatically updating your network devices with the most up to date software.

---

## The MSNM Network-wide Applications

This section provides a brief description of each of the MSNM network-wide applications. For more details about a specific application, refer to the application's User Guide.

- **MSNM in Standalone Mode** - MSNM in Standalone Mode includes Avaya MultiService Server and Avaya MultiService Console, an application that allows you to view the devices in your network. Avaya MultiService Console also provides a platform from which you can launch applications to manage network devices and monitor the traffic on your network. In addition, MSNM in Standalone Mode provides a Discovery service that searches your network for devices.

MSNM in Standalone Mode uses a client/server architecture, allowing multiple users to access the Avaya MultiService Server simultaneously. Web based technology provides a method for accessing and managing your network from any computer with Internet access.

- **Avaya MultiService SMON Manager** - A collection of applications that work together with the other MSNM components to provide a full spectrum of in-depth monitoring of switch traffic and network performance. Avaya MultiService SMON Manager consists of a software console application on a workstation and remote monitoring probes in network devices that support SMON.

The Avaya MultiService SMON Manager console constantly communicates with the SMON devices on your network. The console uses SNMP to gather information from the devices. Avaya MultiService SMON Manager provides a suite of powerful graphic display tools to view this information.

Avaya MultiService SMON Manager provides you with detailed analysis of the traffic flow on your switched network, from a global view down to a specific host, and from total MAC layer traffic down to a specific application protocol - all in real-time.

Using SMON monitoring, you can get:

- A global view of traffic for all switches on the network.
- An overall view of traffic passing through a specific switch.
- Detailed data about the hosts transmitting packets or cells through a switch.
- An analysis of traffic passing through each port connected to a switch.

These are just a few examples of the information that SMON can provide.

- **Avaya MultiService Configuration Manager** - An application that allows you to save device and module configurations, and apply them to devices and modules across the network. Device and module configurations can be stored and applied to selected devices and modules. Avaya MultiService Configuration Manager makes it easy to create an accurate and consistent network configuration.
- **Avaya MultiService QoS Manager** - An application that allows you to configure policy-based management of the traffic on the network. Policy-based management is one of the newest and fastest growing trends in network management. Policy-based management allows network managers to implement forwarding and routing information bandwidth prioritization based on policies and rules, and focus on QoS. Instead of routing packets only by their destination address, Avaya MultiService QoS Manager allows you to assign a priority or block packets based on the source and destination addresses, and protocols. This can help you provide services that rely on consistent levels of forwarding service.
- **Avaya MultiService Software Update Manager** - An application that downloads software to managed Avaya devices. Avaya MultiService Software Update Manager can also check the software versions currently in use against the latest versions available from Avaya, and recommend updates when a newer version is available. You can use Avaya MultiService Software Update Manager to retrieve a new release from Avaya's Web site, store it on your hard disk, and subsequently download it to the appropriate device.

- **Avaya MultiService Address Manager** - Avaya MultiService Address Manager is an application that allows you to see which network devices are directly attached to the ports on your network devices.

Using advanced network searches, Avaya MultiService Address Manager helps you build, maintain, and display a centralized list of hosts discovered in the network with their MAC and IP addresses, and device port connectivity. In addition, Avaya MultiService Address Manager enables you to print or export the list. You can also import connections into Avaya MultiService Address Manager.

Avaya MultiService Address Manager helps you rapidly locate a host or switch port on the network, and find duplicate IP addresses in the network.

- **Avaya AP (Access Point) Manager** - Avaya AP Manager is an application that allows you to manage Avaya wireless access points on the network. A tree view provides information about the wireless devices in the network and enables you to configure selected devices.

# 2 Getting Started with MSNM

---

This chapter provides instructions on how to get started with MSNM. It includes the following sections:

- **[Getting Started with MSNM in Standalone Mode](#)** - Instructions on what to do after installing MSNM in Standalone Mode.
  - **[Getting Started with MSNM in HP-OV NNM Mode](#)** - Instructions on what to do after installing MSNM in HP-OV NNM Mode.
- \* **Note:** The tasks listed in this chapter should only be performed after completing the post-installation tasks documented in the *Avaya MultiService Network Manager 5.0 for Windows 2000/XP Installation Guide*.
- \* **Note:** MSNM can be installed in Standalone Mode and HP-OV NNM Mode on the same computer. For information about running MSNM in Standalone Mode and HP-OV NNM Mode on the same computer, refer to *Avaya MultiService Network Manager 5.0 for Windows 2000/XP Installation Guide*.

---

# Getting Started with MSNM in Standalone Mode

After installing MSNM to run in Standalone Mode, the following steps will help you start managing your network using MSNM:

- 1. Ensure that Avaya MultiService Server is running.**  
Avaya MultiService Server is a Windows service and should start automatically when you boot the server station. To check the status of MSNM Server, select **Start > Programs > Avaya > MultiService Network Manager > Avaya MultiService Server Status**. A dialog box opens with the current MSNM Server status. If MSNM Server is not running, start MSNM Server. To start MSNM Server, select **Start > Programs > Avaya > MultiService Network Manager > Start Avaya MultiService Server**.
- 2. Start Avaya MultiService Console.** To start Avaya MultiService Console, double-click the Avaya MultiService Console icon on the Windows Desktop.
- 3. Discover the subnets and objects in your network and save the results in the current Network Map.** For instructions on discovering your network, refer to “Discovering Your Network” in the *MSNM in Standalone Mode User Guide*.
- 4. Add Avaya MultiService Server to the device’s list of Trap Managers.** For more information, refer to each device manager’s User Guide or on-line help.
- 5. Configure the devices in your network.** Device configuration can be performed using the device managers and Avaya MultiService Configuration Manager. For instructions on configuring devices, refer to each device manager’s User Guide, *Avaya MultiService Configuration Manager User Guide*, or the on-line help.
- 6. Set up custom views of your network.** For instructions on creating custom views of your network, refer to “Custom Views” in the *MSNM in Standalone Mode User Guide*.

## Getting Started with MSNM in HP-OV NNM Mode

After installing MSNM to run in HP-OV NNM Mode, the following steps will help you start managing your network using MSNM:

- 1. Ensure that HP NNM's background processes are running.**  
HP NNM background processes are a Windows service and should start automatically when you boot the server station. If HP NNM's background processes are not running, start them. To start HP NNM's background processes, select **Start > Programs > HP OpenView > Network Node Manager Admin > NNM Services - Start**.
- 2. Start HP-OV NNM.** To start HP-OV NNM, double-click the Network Node Manager icon on the Windows Desktop.
- 3. Discover the subnets and nodes in your network.** For instructions on discovering your network, refer to *HP Network Node Manager for Windows NT User Guide*.
- 4. Add the HP-OV NNM server to the device's list of Trap Managers.** For more information, refer to each device manager's User Guide or on-line help.
- 5. Configure the devices in your network.** Device configuration can be performed using the device managers and Avaya MultiService Configuration Manager. For instructions on configuring devices, refer to each device manager's User Guide, *Avaya MultiService Configuration Manager User Guide*, or the on-line help.

# 3 Using MSNM

---

This chapter provides a general description of how to use MSNM in the context of the tasks that constitute effective network management. It includes the following topics:

- [Setting up the Network Management Environment](#) - A description of the steps involved in setting up the network management environment.
- [Routine Network Management Activities](#) - A description of routine network management activities.
- [“Firefighting” Procedures](#) - A description of the various “firefighting” procedures that should be developed as part of effective network management.

## Setting up the Network Management Environment

In order to set up the network management environment, do the following:

- **Plan and implement a network management topology.** This involves the consideration of a number of issues, including whether to implement a separate virtual management network, a separate physical management network, a separate VLAN for key devices, and whether to delegate tasks between different network administrators.
- **Configure network management assets.** Create a consistent device configuration on your network. Avaya MultiService Configuration Manager provides a method for saving and distributing module and device configurations. For more information, refer to *Avaya MultiService Configuration Manager User Guide*.

- **Plan and implement the network management access policy.** Set up read-write communities for all devices and read-only communities for key devices. If you are using SNMPv3, set up user names and passwords. For more information, refer to *Avaya MultiService Network Manager in Standalone Mode User Guide* and *Using Network Node Manager HP OpenView*.

MSNM offers secure “login mode” which allows definitions of user names and passwords. In this mode, every network-wide application, as well as device manager operation in SNMPv3 mode, are prompted for a login name and password. For more information, refer to *Avaya MultiService Network Manager User Administration User Guide*.

- **Plan and implement the network security policy.** Ensure that the machine running the network management application is secure. Security encompasses two aspects:
  - **Physical security** - The machine should be located in a secure place, such as a locked room.
  - **Electronic security** - The machine should be made “electronically” secure. Common practices include:
    - Using usernames and good passwords.
    - Installing security patches.
    - Refraining from operating Intranet and Internet services from the same host.
    - Disabling superfluous services and daemons.
    - Installing or enabling security auditing and anti-virus software to monitor the system and network management files.
    - Configuring the Web server to require authentication.
    - Using device managers’ Port Security feature to prevent unauthorized hosts from connecting with the ports in the network.
- **Implement policy-based management.** Control network traffic by applying rules to packets, based on the packets’ classification, application, source, and destination. This helps you ensure that critical data reaches its destination in a timely fashion. The Avaya MultiService QoS Manager enables you to create rules governing the forwarding of traffic on your network. For more information, refer to *Avaya MultiService QoS Manager User Guide*.

- 
- **Perform network Discovery.** If you are using MSNM in Standalone Mode, perform network Discovery. Discovery is performed automatically in HP-OV NNM. Ensure that the required network elements are located and that the SNMP Access communities (for SNMPv1), and user names and passwords (for SNMPv3), configured in the network management platform match those assigned to the devices. For more information, refer to *Avaya MultiService Network Manager in Standalone Mode User Guide*.
  - **Organize the network information in a way that will facilitate both routine and troubleshooting procedures.** This can be accomplished by:
    - Assigning meaningful values to the System Name, System Contact, and System Location fields in the devices' parameters. For more information, refer to each device manager's User Guide.
    - Creating custom views of your network (using MSNM in Standalone Mode) or submaps of your network (using HP-OV NNM) based on criteria important to you, such as device location or the functions that devices perform. For more information, refer to *Avaya MultiService Network Manager in Standalone Mode User Guide* and *Using Network Node Manager HP OpenView*.
  - **Plan and implement a fault monitoring policy.** This involves the following actions:
    - Deciding which fault conditions will be detected, on which devices they will be detected, and what actions will be defined for each condition.
    - Configuring the relevant devices to send specific traps to specific network management stations. For more information, refer to each device manager's User Guide.
    - Configuring the network management application to define and assign actions to specific traps. For more information, refer to *Avaya MultiService Network Manager in Standalone Mode User Guide* and *Using Network Node Manager HP OpenView*.
  - **Plan and implement a baseline monitoring policy.** This will involve performing baseline monitoring and configuring traffic threshold alarms accordingly. For more information, refer to the appropriate *Avaya MultiService SMON User Guide*.

## Routine Network Management Activities

As part of ongoing network management, develop the following important work procedures:

- [Routine Operating Procedures](#)
- [Policies for Adding, Deleting, and Modifying Network Devices](#)

### Routine Operating Procedures

In order to ensure that your network is operating efficiently, the network management console should ideally be manned at all times. In addition, periodically perform the following tasks:

- **Backup module and device configurations.** Avaya MultiService Configuration Manager provides a method for saving module and device configurations. For more information, refer to *Avaya MultiService Configuration Manager User Guide*.
- **Update your network devices' embedded software.** Avaya MultiService Software Update Manager provides a simple way to check Avaya's Web site for new software, retrieve the software from the Web site, and download it to network devices. For more information, refer to *Avaya MultiService Software Update Manager User Guide*.
- **Monitor network traffic on switches and key interfaces.** Port RMON provides a view of traffic on a specific port. For more information on Port RMON for a device, refer to the device manager's User Guide or on-line help. Avaya MultiService SMON Manager provides a high level view of all the traffic on your network, as well as the details of the types of traffic on a specific device. Avaya Device SMON provides detailed views of the amounts and types of traffic on individual devices. For more information, refer to *Avaya MultiService SMON Manager User Guide* and the Avaya SMON User Guides.

---

## Policies for Adding, Deleting, and Modifying Network Devices

You should develop policies for adding and deleting network devices, and modifying network device parameters, in order to ensure that device parameters are always accurate and embedded software is up-to-date. These policies should include the following:

- **Consistently update the SNMP Access, Device Name, Contact, and Physical Location parameters of new devices.** For more information, refer to each device's User Guide, Manager User Guide, or on-line help.
- **Backup the configuration of network devices before changing them.** Avaya MultiService Configuration Manager provides a method for saving device configurations. For more information, refer to *Avaya MultiService Configuration Manager User Guide*.
- **Keep track of devices, modules, and software versions.** Avaya MultiService Software Update Manager provides a method for displaying device, module, and software information. For more information, refer to *Avaya MultiService Software Update Manager User Guide*.
- **Use Telnet and Web Sessions to manage devices when the devices' Managers cannot be used.** If you are using MSNM remotely, you can use Telnet to manage those devices whose device managers cannot be run remotely. In addition, you can use MSNM either locally or remotely to manage both Avaya and non-Avaya devices that support Web sessions. For more information, refer to *Avaya MultiService Network Manager in Standalone Mode User Guide*.

## "Firefighting" Procedures

In order to effectively deal with problems when they arise and minimize disruptions to the network, you should develop the following types of "firefighting" procedures:

- [Troubleshooting Procedures](#)
- [Security-Related Procedure](#)
- [Procedure for Emergency Events](#)

---

## Troubleshooting Procedures

Develop a procedure to handle network problems. This procedure should include the following:

- **Manage and monitor events.** The event log browser reports events that can alert you to possible problems on your network. You should decide who monitors the log, and when and how the log is monitored. In addition, you can configure event severity levels, event forwarding, and event actions. For more information on monitoring and managing events using MSNM in Standalone Mode, refer to *Avaya MultiService Network Manager in Standalone Mode User Guide*. For more information on managing events in HP-OV NNM, refer to *Using Network Node Manager HP OpenView*.
- **Act on user requests for help.** Possible actions include:
  - Examining the Network Map for fault indications. For more information on the MSNM Console Network Map, refer to the *Avaya MultiService Network Manager in Standalone Mode User Guide*.
  - Examining the event log.
  - Checking connectivity via PING. For more information on PING, refer to the *Avaya MultiService Network Manager in Standalone Mode User Guide*.
  - Checking for traffic congestion, faulty NICs, etc. using Avaya MultiService SMON Manager's top-down monitoring capabilities. For more information, refer to the *Avaya MultiService SMON Manager User Guide* and the *Avaya Device SMON User Guides*.

## Security-Related Procedure

Develop a procedure to handle a breach of computer or network security, whether it be a virus infection or a system intrusion. This procedure should include the following actions:

- Evaluate the event to determine whether it is really security-related.
- Evaluate the scope and impact of the event.
- Notify the appropriate people, including technical, administrative, and law enforcement personnel.
- Contain the event.
- Eradicate the cause of the event.
- Return the network to normal.
- Document in a log book all details relating to the event, including all system events, actions taken, and phone conversations.
- Conduct a post-mortem analysis that includes “lessons learned”, a formal chronology of events, and a monetary estimate of the amount of damage caused by the event.

## Procedure for Emergency Events

Develop a procedure for “emergency” events, such as fires and earthquakes. This procedure should include the following actions:

- Shut down all electronic gear.
- Place backups of the following in a remote, secure location:
  - Network topology at layers 1,2, and 3 (wires, VLANs and subnets).
  - Device configurations.
  - Important data on servers.

# 4 MSNM Documentation

---

This chapter provides information on the different types of documents and on-line help included with Avaya MultiService Network Manager 5.0 for Windows 2000/XP, and includes the following sections:

- [Installation Guide and Release Notes](#) - A description of the information found in the Avaya MultiService Network Manager 5.0 for Windows 2000/XP Installation Guide and Release Notes.
- [Application Documentation](#) - A description of the application documentation included with MSNM.
- [On-line Help](#) - A description of the help files accompanying MSNM applications, and their functionality.
- [Finding the Information You Need](#) - A guide to finding information in the MSNM documentation.

## Installation Guide and Release Notes

The *Avaya MultiService Network Manager 5.0 for Windows 2000/XP Installation Guide* is the starting point for all information about MSNM. It is recommended that you read the entire Installation Guide before installing MSNM.

The Installation Guide provides information on installing, updating, and upgrading to MSNM 5.0. In addition, it includes instructions on how to run MSNM from a remote station, and post-installation instructions.

The *Avaya MultiService Network Manager 5.0 for Windows 2000/XP Release Notes* provides late-breaking information about MSNM applications and features. It provides a list of the new applications included in the suite, and describes the new features in updated applications. In addition, the Release Notes contain a list of known issues in MSNM applications with appropriate workarounds, where applicable.

# Application Documentation

This section provides information on the application documentation included with MSNM, and includes the following sections:

- [Application Documentation Overview](#) - An overview of the application documentation.
- [Application User Guides](#) - A description of the User Guides for MSNM applications.
- [Reference Guide](#) - A description of the Avaya MultiService Reference Guide and the type of information it includes.
- [Documentation on the Web](#) - Instructions on accessing MSNM documentation on the Internet.

## Application Documentation Overview

The application documentation for Avaya MultiService Network Manager 5.0 includes separate user guides for each of the applications in the MSNM Suite and the Reference Guide. The documentation is in PDF format and can be found on the Documentation and Utility CD.

## Application User Guides

Each MSNM application is accompanied by at least one User Guide. Information about device managers that include Device SMON can be found in the User Guide for the device manager and the User Guide for the appropriate Device SMON. For example, the *Avaya P330 Manager User Guide* contains information about the Avaya P330 Device Manager and Avaya P330 Routing Manager. Information about Avaya P330 SMON and Avaya P330 AnyLayer SMON can be found in the *Avaya P330 SMON User Guide*. Information about load sharing using Avaya P333R-LB modules can be found in the *Avaya P330 Load Balancing Manager User Guide*.

In addition, some aspects of device configuration are performed using network-wide applications. Information about these tasks is included in the network-wide application's User Guide. For example, information on configuring policy-based traffic management on Avaya P330 Devices can be found in the *Avaya MultiService QoS Manager User Guide*.

Each User Guide contains an overview of the application, instructions on how to start the application, and detailed instructions on using the functions in the application. In addition, each User Guide contains descriptions of the fields found in the dialog boxes in the application.


## Reference Guide

The Avaya Reference Guide provides background information on networking concepts, such as LAN protocols, and VLANs. It also provides information on networking features, such as SMON, port mirroring, and LAGs. In addition, the Reference Guide includes a Glossary of networking terms used in MSNM documentation.

## Documentation on the Web

The full set of MSNM documentation, including documentation for upgraded applications, can be found on the Internet at <http://support.avaya.com>.

## On-line Help

MSNM applications are accompanied by on-line help files providing the information necessary to run the application efficiently. Help files are installed with the application. All MSNM help files include context-sensitive help functionality. Newer applications include a  icon in the toolbar, providing help about any feature you click in the application. MSNM help files generally include a table of contents, index, and full text search capability. In addition, the help files can be browsed in sequential order.

For information on using a particular application's on-line help, refer to the application's User Guide.

## Finding the Information You Need

This section explains where you can find various types of information in the MSNM documentation.

- An overview of MSNM explaining its features and how to use MSNM to manage your network can be found in the *Avaya MultiService Network Manager User Guide*.

- Information about running MSNM in Standalone Mode, Avaya MultiService Server, and Avaya MultiService Console can be found in the *Avaya MultiService Network Manager in Standalone Mode User Guide* and Avaya MultiService Console's on-line help.
- Information about getting started with MSNM can be found in the *Avaya MultiService Network Manager User Guide*.
- Information about managing your network using MSNM can be found in the *Avaya MultiService Network Manager User Guide*.
- Background information on networking concepts, such as LAN protocols, and VLANs, and networking features such as LAGs and port mirroring, can be found in the *Avaya MultiService Network Manager Reference Guide*.
- Information about starting an MSNM application and accessing the application's dialog boxes and windows can be found in the specific application's User Guide.
- Information about an MSNM application's user interface and information about configuration and monitoring features in the application can be found in the application's User Guide and on-line help.
- A glossary of networking concepts can be found in the *Avaya MultiService Network Manager Reference Guide*.
- Information about installing MSNM, updating an MSNM installation, and upgrading from a previous version of MSNM, can be found in the *Avaya MultiService Network Manager for Windows 2000/XP Installation Guide*.
- Issues and workarounds for MSNM applications can be found in the *Avaya MultiService Network Manager for Windows 2000/XP Release Notes*.
- Late-breaking news about MSNM can be found in the *Avaya MultiService Network Manager for Windows 2000/XP Release Notes*.
- A list of new applications and new features in updated applications can be found in the *Avaya MultiService Network Manager for Windows 2000/XP Release Notes*.