Xerox CentreWare for HP OpenView

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Xerox CentreWare
for
HP OpenView NNM
Users Guide

Version 1.5

Contents

Introduction

This User guide describes the installation and features of Xerox CentreWare for Hewlett Packard OpenView Network Node Manager, Version 1x. As an enterprise network management application, OpenView provides the ability to view and centrally manage network resources. With the addition of the CentreWare snap-in for OpenView NNM, this application can additionally provide the status of Xerox devices on the network.

When successfully installed, you will be able to view all of the discovered Xerox network devices under one map in OpenView NNM.

In addition, CentreWare for HP OpenView NNM enables OpenView NNM to:

- Discover Xerox networked devices with HP OpenView.
- Provide special status and notifications to HP OpenView NNM users about Xerox devices. Device status will be enhanced by a rich MIB data set available via web server in certain Xerox networked devices.
- Display standard OpenView NNM color coding for the Xerox Printer Agent icon.
- Automatically notify the user about Xerox device events and problems through the use of SNMP event traps.
- Launch CentreWare Internet Services using a standard web browser.
  NOTE: this assumes all Xerox networked devices will include an Embedded Web Server.

How to use this Document

This document assumes that you have a working knowledge and familiarity with HP OpenView NNM. Only procedures that result from the installation of the CentreWare for HP OpenView NNM snap-in are described.

You may print all or part of this document at any time from your Adobe Acrobat reader by clicking the **File** menu and then selecting **Print**. You may then select a single page, a range of pages, or the entire document for printing.

For initial installation

Read and follow this section:

CentreWare for HP OpenView NNM Software Installation

For day-to-day tasks

Read and follow these sections:

Using CentreWare for HP OpenView NNM

Troubleshooting

Key Benefits and Features

Feature	Benefits
Device Discovery	Provides the automatic identification of Xerox devices on your network and presents them with recognizable icons.
Color-Coded Device Status	Automatically changes the color in the device icon to reflect the device status in the Xerox Printers map.
Access to the device embedded web server, CentreWare Internet Services	If your device contains an embedded web server (CentreWare Internet Services), you can easily access it by selecting **Server Home Page** under the OpenView **Tool s** menu **Web Browser** selection.
Custom Domain for Xerox Devices	Managing the Xerox devices on your network is made much easier by displaying all the discovered Xerox devices in a single domain.
SNMP Trap Support	Provides option for registering with Xerox networked devices for SNMP Traps automatically, without having to configure each device individually.

System Requirements

Hardware Requirements

This solution modifies existing HP OpenView NNM files and adds a few small files to your hard disk. The total hardware requirements are as follows:

• Pentium PC

• Minimum 64 Megabytes RAM

• Minimum 5 Megabytes Hard Disk Space

Software Requirements

The following software must be installed on your PC before installing CentreWare for HP OpenView NNM.

• Windows NT 4.0 with Service Pack 3.0 or later

• HP OpenView NNM Version 6.0, or later

• Microsoft Internet Explorer 4.1, or greater –
   OR – Netscape Navigator v4.0 or greater.

Before You Start CentreWare for HP OpenView NNM

Connect your device to an active network with appropriate cabling. Ensure the device has a valid, unique IP address.

CentreWare for HP OpenView NNM Software Installation

Web Installation

The latest version of CentreWare for HP OpenView NNM is available from the Xerox Website at:
http://www.xerox.com

Perform the following steps to install CentreWare for HP OpenView NNM:

1 After downloading the file to a temporary folder, double click on the icon to extract the files.

2 Double click on the file **setup.ex**e.

3 The software will begin the installation process. After a few moments, the Install Shield Wizard will load.

4 This software must be installed in the same folder that contains the HP OpenView software. If the folder shown is incorrect, select the **Browse** button and select the correct folder, then select **Nex**t.

5 Select **Next** again to begin. The necessary files in your HP OpenView environment will be modified and copied to the selected folder along with any additional files required.

6 The installation process will take some time to complete. Follow the instructions on your screen.

7 When the install is complete, start HP OpenView NNM.

Using CentreWare for HP OpenView NNM

This section describes the features of HP OpenView NNM made available by the installation of CentreWare for HP OpenView NNM. Only those features of OpenView that are directly related to the CentreWare functionality will be described. For additional information on HP OpenView NNM, go to the OpenView Home page at:

http://www.hp.com

The HP OpenView NNM Interface

An example of the HP OpenView User Interface is shown ion the figure below. Note that the standard features of the application are accessed via the Menu bar at the top of the display, and the Tool bar situated below it.
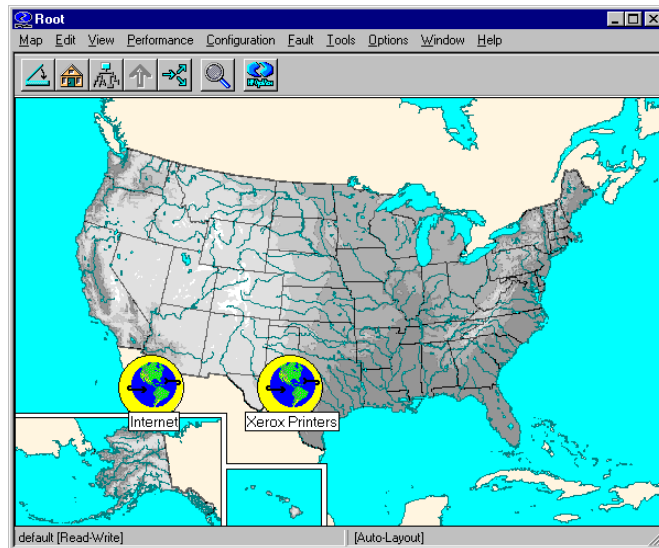
On this display, there are two domains displayed on the "map" that is the work space for the OpenView NNM application. Of these two domains, only the Xerox Printers domain was generated by CentreWare for HP OpenView NNM.

NOTE: The background of the workspace is selectable by the user. Not all OpenView installations will utilize a map of the United States for their background scheme.
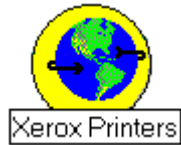
The CentreWare generated Xerox Printers domain represents all of the Xerox devices that were discovered on the network. Double clicking this icon will cause these devices to be displayed in a map view that shows each Xerox device.

If this icon is right-clicked, a secondary dialog is displayed by selecting **Xerox Device Display** from the resulting menu. The dialog is shown below. It is used to provide statistics including the number of devices found under the Xerox Printers icon, and their status.
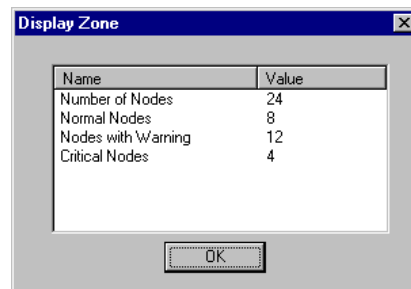
Device Discovery

HP OpenView NNM provides the discovery of Xerox devices. CentreWare for HP OpenView NNM additionally enables the identification of these device types as Xerox devices and the assignment of a unique Xerox icon to them.

Xerox Device Icons

CentreWare for HP OpenView NNM uses two icons to represent individual Xerox devices.
The icons for these devices are:

Xerox Printer - This icon represents those devices that are printers only. An example might be one of the Xerox N-Series printers.

Xerox Multifunctional Device - This icon represents devices that have more than just printing capability. The features of these devices may include copying, network scanning, and faxing. An example of this type of device would be the Xerox Document Centre products.

Xerox Agent Icon

When double-clicked, a Xerox Printer icon or Xerox Multifunctional device icon will display another icon called the Xerox Printer Agent icon. Like the other icons in HP OpenView NNM, this icon will change when the status of the device changes. The function of this icon is to monitor alarms from the Xerox device and report them to HP OpenView NNM. This icon is created when CentreWare for HP OpenView NNM is installed. It is the only icon whose color is controlled by the CentreWare snap-in.

Device Status

The Xerox Printer Agent icon will be color-coded to represent the current status of the device in the Xerox Printers map. The color-coded status for the Xerox Printers map is provided via the xrxstatus.dll utility.

The Agent icon in the IP map will not affect the status or coloring of the IP map. Therefore the IP map will maintain device status as if CentreWare for HP OpenView NNM was not installed.

The color of the icon is determined by the return code from the device. Under the control of HP OpenView NNM, the color will also propagate to the top of the Xerox Printers map, providing top level indication of problems that exist at lower levels in the map structure.
This propagation is controlled by HP OpenView NNM, *not* CentreWare for HP OpenView NNM.

The relation between the color-code and the device status is presented in the following table.

Xerox Printer Agent	Color
Critical	Red
Warning	Light Blue
Other, or no alert	Green

NOTE: The default propagation rule set used by HP NNM will not propagate the most critical error to the actual printer icon in the Xerox Printers map.

To set the status propagation at the HP NNM GUI select the **Map->Properties->[Status Propagation].** Change the setting from "**Default**" to "**Propagate Most Critical**."

Device Specific Alarms

To view alarms for a specific device:

Select the device and open it to see the Xerox Agent icon.
Select the **Xerox Agent icon**.
Select the pull down menu.
Fault->Alarms.

Menu Items for Xerox Devices

There are a series of OpenView NNM menu items that are created when CentreWare for HP OpenView NNM is installed. These menu items reside on the **Tools** menu on the OpenView Menu bar.

Web Browser Menu Item

Many Xerox devices contain embedded web servers. HP OpenView NNM automatically detects whether a device contains one and launches CentreWare Internet Services though the **Server Home Page** menu selection.

Internet Services provides a variety of features for configuring and monitoring your device.

Consult the manuals and CDs delivered with your device for details on Xerox CentreWare Internet Services. The Web Browser menu item is used to launch CentreWare Internet Services for the selected device. To use this feature perform the following steps:

1 Right click a Xerox device.

2 Select **Server Home Pag**e.

3 The default web browser for the workstation will be launched, and CentreWare Internet Services for the device will be displayed.

NOTE** If the Server Home Page is not available, complete the following steps
.

1 Right click the Xerox device.

2 Select **Object Properties**.

3 In Attributes, select **General Attributes**.

4 Click on the **Edit Attributes** button.

5 Click on **isHTTPSupported**
The value should change to **True**.

6 Click **OK**.

7 Click **OK**.

8 Right click on Xerox device.

9 Select **Server Home Pag**e.

Xerox Trap Registration Menu Items

The Xerox Trap Registration menu item will allow the user to select and enable the type of trap configuration desired for the managing workstation. Traps are used to provide an alert the instant an error at the device occurs, rather than waiting for the next status poll. They also provide more detailed troubleshooting information when a device is experiencing a problem.

There are two possible selections for Trap Registration. With **Single Selection**, the user selects a specific Xerox device. Only the device selected will be registered. Any alerts for that device will be seen in the managing workstation's All Alarms Browser.

With the **Auto Trap Configuration** the managing workstation is registered at all discovered Xerox networked devices to receive traps. As with Single Selection, any alerts for the devices are seen in the managing workstation's All Alarms Browser.

Single Trap Selection Menu

This trap configuration registers the selected device. Only one device can be selected at a time.

To use the Single Selection configuration, perform the following steps:

1 Select a Xerox device.

2 Select the **Tools** -> **Xerox Trap Registration** -> **Single Selection**.

3 The Xerox device will be configured to recognize the managing workstation.

4 The SNMP information for that device will be captured and displayed in the All Alarms Browser for the managing workstation.

Using Auto Trap Configuration Menu

In the Auto Trap Configuration, all discovered Xerox devices are registered.

To use Auto Trap Configuration, perform the following steps:

1 Select a **Xerox device**.

2 Select the **Tools** menu, **Xerox Trap Registratio**n, and **Auto Trap Configuratio**n.

3 The managing workstation will be registered at all discovered and managed Xerox networked devices.

4 The SNMP information for that device will be captured and displayed in the All Alarms Browser for the managing workstation.

Confirming SNMP Trap Registration at the Device

To confirm SNMP Trap Registration on a specific Xerox device, perform the following steps:

1 Right click the Xerox device.

2 Select **Server Home Pag**e.

3 The default web browser for the workstation will be launched, and CentreWare Internet Services for the device will be displayed.

4 Select the **Properties** tab.

5 Select **Connectivit**y, **Protocols** and **SNMP.**

6 The screen below is displayed.

NOTE: The procedure and screen may vary between Xerox devices. If the device supports traps, locate the SNMP configuration page for your device.
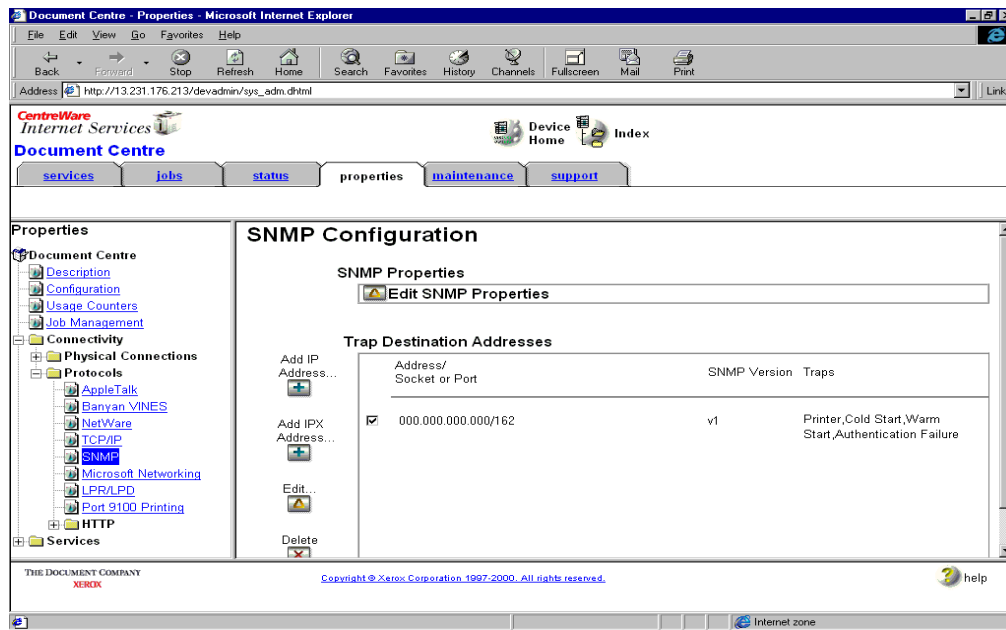
NOTE***If the Server Home Page is not available, complete the following steps.

1 Right click the Xerox device.

2 Select **Object Properties**.

3 In **Attributes**, select **General Attributes**.

4 Click on the **Edit Attributes** button.

5 Click on **isHTTPSupported**
The value should change to **True**.

6 Click **OK**.

7 Click **OK**.

8 Right click the Xerox device.

9 Select **Server Home Pag**e.

SNMP MIB Browser Menu Item

The Tools -> SNMP MIB Browser selection will display a MIB browser that allows the user to search for, select, view, and set values for MIB OIDs.

The MIB Browser is a standard feature of the HP OpenView application, and is not installed with CentreWare for HP OpenView NNM. However, when CentreWare for HP OpenView NNM is installed, the OIDs for Xerox networked devices are installed, and can be viewed with the SNMP MIB Browser.
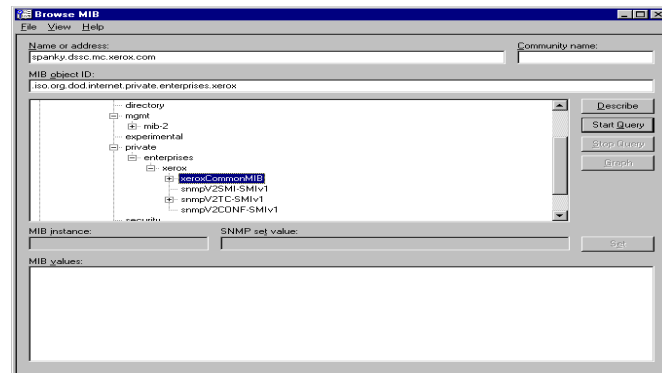
Using this browser, the user can access any MIB OID in the configuration. The browser will then allow the user to view the contents of the OID for evaluation and troubleshooting.

MIBs Loaded During Installation

In the following table is a list of the MIBs loaded during installation of CentreWare for HP OpenView NNM, accompanied by a brief description of the MIB.

NOTE: All Xerox devices support a subset of the included MIB modules. IETF MIBs are supported by all Xerox devices.

MIB Name	Description
02common_xrx.mib	The root of the Xerox Common MIB module.
06gentc_xrx.mib	Xerox General Textual Conventions
07gen_xrx.mib	Xerox General MIB
10hosttc_xrx.mib	The TC module for textual conventions, enumerated types, OIDs and other volatile elements of the companion Host Resources Extensions MIB ('xcmHrMIB'), which supports extended configuration and management of various host resources for network accessible host systems. These modules augment and extend the original IETF Host Resources MIB (RFC 1514).
11hostx_xrx.mib	The MIB module for extended configuration and management of various host resources for network accessible host systems. This module augments and extends the original IETF Host Resources MIB (RFC 1514).
15prtxtc_xrx.mib	Xerox Printer MIB Extensions Textual Conventions. This Module provides Xerox extensions of the IETF Printer MIB.
16prtx_xrx.mib	Xerox Printer MIB Extensions Module. This Module provides extension to the IETF Printer MIB.
21rsrctc_xrx.mib	XCMI Document Resources MIB Textual Conventions
22rsrc_xrx.mib	Document Resources General Group (Mandatory)

40jobtc_xrx.mib	This textual-convention module defines textual conventions for use with the Job Monitoring MIB, module: XEROX-JOB-MONITORING-MIB. Also the explanatory material with this module explains the Job Monitoring MIB. These textual-conventions and explanations are in a separate module from the Job Monitoring MIB, so that they may be republished when additional enums are added or more explanatory material is added without needing to republish the Job Monitoring MIB. This increases the stability of the Job Monitoring MIB.
41jobmon_xrx.mib	This MIB specifies job and document objects for monitoring print jobs, including accounting of print jobs. This MIB does not provide for management or control of print jobs, such as canceling or modifying them.
42jobmtc_xrx.mib	Textual Conventions companion to the XCMI Simple Job Mgmt MIB. The MIB module for performing lightweight management of jobs in network accessible host systems.
43jobman_xrx.mib	The MIB module for performing lightweight management of jobs in network accessible host systems.
50commtc_xrx.mib	The TC module supports textual conventions, enumerated types, OIDs, and other volatile elements of the companion Communications Engine MIB. This allows detailed protocol stack graphing, and active management of communications protocol stacks, communications end system applications, communications intermediate systems, and communications gateways for network accessible host systems.
51comms_xrx.mib	The MIB module for detailed protocol stack graphing, and active management of communications protocol stacks, communications end system applications, communications intermediate systems, and communications gateways for network accessible host systems.
52conftc_xrx.mib	The TC module for textual conventions, enumerated types, OIDs, and other volatile elements of the companion Communications Config MIB, which supports active configuration discovery of communications end system applications, communications intermediate systems, and communications gateways for network accessible host systems.
53config_xrx.mib	The MIB module which supports active configuration discovery of communications protocol stacks, communications end system applications, communications intermediate systems, and communications gateways for network accessible host systems.

58svctc_xrx.mib	Textual Conventions companion to XCMI Service Monitoring MIB, the MIB module for basic configuration and active management of application services for network accessible host systems.
59svcmon_xrx.mib	The MIB module for basic configuration and active management of application services for network accessible host systems.
93pidtc_xrx.mib	Product ID Module
RFC1213	IETF MIB II
RFC1514	IETF Host Resource MIB
RFC1759	IETF Printer MIB
RFC1902,1903,1904	Allows compilation of SNMP v2 format MIBs that were downgraded to V1 format.

Troubleshooting

If you have problems after you have installed CentreWare for HP OpenView NNM, consult the table below.

Symptoms	Possible Causes	Solution
Installation gives a message box reading *"HP OpenView demand level is not set to All Levels. Please exit the setup, set the demand level to All Levels from the NNM GUI and then proceed with setup process."* and then exits.	The Demand level of the NNM application is not set to the appropriate value.	1. Before running the CentreWare install, open the NNM GUI. 2. From the menu bar, click Map->Properties. It will open a new window named "Map Properties" 3. Click on the "Applications" tab, select IP Map from the List Box and press the button labeled "Configure for this map". 4. Highlight the field named On-Demand: 5. Select "All Levels". 6. Click the "Verify" button, and upon verification, press the "OK" button. 7. On the "Map Properties" click the "OK" button. It performs some configuration. 8. After the NNM completes configuration, close the NNM window. 9. Begin the installation again.
A Xerox device is not discovered.	The SNMP agent is not working properly in the node. There is a problem with the network connectivity. The Network in which the Device exists is unmanaged.	Ping the Xerox device. Ping the Xerox device. Contact the Network Administrator.
A Xerox device is still not discovered.	The sysObjectId entry in the oid_to_sym , or oid_to_type is missing.	Make the sysObjectId entries in each file using the proper format.
Icon on the map is not the proper Xerox device icon.	The object's SysObjectId in the file oid_to_sym is not properly entered.	Make the sysObjectId entries in the oid_to_sym file in the proper format.

NOTE: Most of the errors generated by the CentreWare for HP OpenView NNM are logged in a log file. For more information, look into the log file ("install directory"\Xrx_Device_log.txt).

Appendix A – Xerox Installer / Un-Installer

Installer

The installer is a simple Install-Shield application that will automate the addition of the files and perform the required configuration.
The installer will copy bitmap images and registration files into the HP OpenView installation directory. It will also edit several files to enable the identification of Xerox devices in HP OpenView.

In the information below, the installation directory is given as C:\OpenView. The installation directory drive is selectable and may be different for your installation.

The modifications performed by the installer are as follows. The installer will:

1 Edit the file c:\OpenView\conf\oid_to_type.

2 Edit the file c:\OpenView\conf\oid_to_sym.

3 Add new .exes and .dlls under c:\OpenView\bin directory.

4 Add new file xrx_fields under c:\OpenView\fields\C for Xerox device specific database fields.

5 Add new bitmaps for Xerox devices to the C:\OpenView\bitmaps\C folder and register them.

6 Add the new files to the C:\OpenView\symbols\C folder to add new Xerox printer device symbol class definitions.

7 Modify trapd.conf file under C:\OpenView\conf\C, to enable CentreWare to log traps received from Xerox devices.

8 Create the domain Xerox Printers.

9 Copy the Xerox MIB files to C:\OpenView\snmp_mibs\vendor\Xerox and load them.

Uninstaller

To run the un-installer, use **Add/Remove Programs** in the Windows Control Panel. The un-installer will remove all files copied by the Installer, undo any file changes, and run the custom executable **XPlugin_Uninstall.exe**. This will remove the Xerox printer icon, subclass definition, and the alarm object corresponding to CentreWare for HP OpenView.

It will additionally:

1 Remove the lines added to files during installation.

2 Delete all files copied.

3 Start services by executing ovstart.