Third Party System Management Integration Software

Sun Servers Integration 2.2 for CA Unicenter NSM

Servers supported:

- Sun Fire x64 Servers

- Sun SPARC Enterprise Servers

A complete, current list of supported Sun servers, service processors, and service processor firmware is available at the following web site:

http://www.sun.com/system-management/tools.jsp

Please consult this web site before installing the Sun Servers Integration 2.2 for CA Unicenter NSM.

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Contents

Introduction

CA Unicenter Network and Systems Management™ (CA Unicenter NSM) is an enterprise management application that uses industry-standard protocols such as the Simple Network Management Protocol (SNMP) to discover, classify, monitor, and manage servers.

Once you have installed and configured the CA Unicenter NSM integration package from Sun, you will be able to take advantage of the following Sun-specific features in CA Unicenter NSM.

■ Sun-specific icons representing Sun Fire x64 service processors in the Unicenter 2D Map, Unicenter Management Command Center (MCC).

■ Sun-specific menu tools to launch the following Sun services

- Web GUI access to the Sun Integrated Lights Out Manager (ILOM) running on the server service processor

- Web access to the Server Management home page for the Embedded LOM running on the server service processor

- SSH command-line interface access to the ILOM command shell

- Unicenter MIB Browser views into the real-time status of individual hardware-monitoring sensors on your Sun server

- Server-to-service-processor linking. This allows more effective drill-downs from server to service processor to sensors.

■ Sun-specific event monitoring and escalation to the Unicenter NSM Enterprise Management (EM) Console

■ Sun-specific service processor traps translated into readable, user-friendly summaries in the Unicenter NSM Enterprise Management (EM) Console

The integration discussed in this paper has been tested with CA Unicenter NSM release 11.1.

Supported Servers

The Sun Servers Integration 2.2 for CA Unicenter NSM is one of several Sun ISV System Management solutions that provides Sun-specific resources for monitoring Sun servers in enterprise or workgroup data centers.

The matrix of servers and service processors supported by Sun integration packs is expanding dynamically. A complete, current list of supported Sun servers, service processors, and service processor firmware is available at the following web site:

http:/www.sun.com/system-management/tools.jsp

Please consult this web site before installing the Sun Servers Integration 2.2 for CA Unicenter NSM.

Levels of Integration with CA Unicenter NSM

For each category of supported server, you have different options for integration. The following table shows the available options depending on the server architecture and service processor type.

Category	SNMP Integration level	Configure
SPARC/ALOM and SPARC/ILOM servers	Operating system	Sun SNMP Management Agent for Sun Fire and Netra Systems (MASF Agent)
x64/ILOM servers	Operating system	Sun Hardware Management Agent
x64/ILOM, SPARC/ILOM, and x64/Embedded LOM service processors	Service Processor	ILOM or Embedded LOM service processor

Once you have configured CA Unicenter NSM and your Sun servers and service processors, CA Unicenter NSM can discover, classify, and monitor those devices.

This Manual

This manual contains the following chapters:

- Chapter 1 "Introduction"

- Chapter 2 "Installing the Sun Servers Integration 2.2 for CA Unicenter NSM"

- Chapter 3 "Configuring CA Unicenter NSM to Discover and Monitor Sun Devices"

- Chapter 4 "Configuring Sun Devices to be Monitored by CA Unicenter NSM"

- Chapter 5 "Discovering Sun Devices in CA Unicenter NSM"

- Chapter 6 "Monitoring Supported Sun SPARC Enterprise Servers in CA Unicenter NSM"

- Chapter 7 "Monitoring ILOM Processors in CA Unicenter NSM"

- Chapter 8 "Monitoring Embedded LOM Service Processors in CA Unicenter NSM"

- Appendix A "Configuring Links Between Service Processors and Hosts in CA Unicenter NSM"

- Appendix B "Release Notes"

- Appendix C "Sun SNMP MIBs"

- Appendix D "Glossary"

This manual is intended for experienced CA Unicenter NSM administrators and field sales and support engineers.

Requirements

The managed devices and the CA Unicenter NSM server software have different software requirements.

Managed Devices

Managed devices (servers and service processors) must have the following software installed and configured properly. A complete list of the currently supported Sun x64 servers, service processors, and service processor firmware is available at the following web site:

http://www.sun.com/system-management/tools.jsp

Please consult this website before installing Sun Servers Integration 2.2 for CA Unicenter NSM.

CA Unicenter NSM Management Software

The Sun Servers Integration 2.2 for CA Unicenter NSM currently supports CA NSM Manager running on Microsoft Windows Server only and has been tested with CA Unicenter NSM Release 11.1 (r11.1).

Related Documentation

For information about Sun Server Management Solutions, Sun servers, and CA Unicenter NSM, consult the following related documentation:

- *Systems Management: An Integrated Solution for Managing the Performance and Availability of Services* (CA Green Book)

- *Sun SNMP Management Agent Administration Guide for Sun Fire and Netra Servers* (819-7978)

- *Sun Integrated Lights Out Manager 2.0 User's Guide* (820-1188)

- *Sun Integrated Lights Out Manager 3.0 User's Guide* (820-6410)

- *Sun Management Agents User's Guide* (820-7621)

- For documentation on the Sun Embedded Lights Out Manager, consult the product documentation that ships with your particular x64/Embedded LOM server.

Installing the Sun Servers Integration 2.2 for CA Unicenter NSM

This chapter describes how to perform the following tasks:

- Downloading the Sun CA Unicenter NSM Integration Pack

- Installing the Sun CA Unicenter NSM Integration Pack on your CA Unicenter NSM host server

- Verifying successful installation of the Sun CA Unicenter NSM Integration Pack

- Uninstalling the Sun CA Unicenter NSM Integration Pack from your CA Unicenter NSM host server

Pre-installation Checklist

Before you download and install the Sun CA Unicenter NSM Integration Pack, collect the following information.

☐ **NSM version**: Release 11.1 is currently supported.   _____

☐ **Target directory**: The directory on the CA host server into which you plan to install the Sun CA Unicenter NSM Integration Pack   _____

☐ **NSM database name**: The name of the NSM database that will store information about your Sun servers.   _____

☐ **NSM database login information**: User login and user password information for the target NSM database.   _____

☐ **Management Server IP address**: The IP address of the server hosting CA Unicenter NSM.   _____

☐ **SNMP community string**: The string used for device discovery.   _____

☐ **Java Runtime:** The installation wizard requires Java to be installed and configured on the management server. See http://java.sun.com/. for downloads.   _____

Downloading the Sun Servers Integration 2.2 for CA Unicenter NSM

To install the most current version of the Sun Servers Integration 2.2 for CA Unicenter NSM, download it from the following URL:

http://www.sun.com/system-management/tools.jsp

> **Note:** As updated versions of the Sun Management Pack get posted to the web, the name of the compressed archive to download will change. For this release, download the following:
>
> ```
> Sun_Integration_2.2_CA_Unicenter.zip
> ```

Save the Sun Servers Integration 2.2 for CA Unicenter NSM to a working directory on the local system from which you plan to perform the installation and uncompress it.

Installing the Sun Servers Integration 2.2 for CA Unicenter NSM

The Install Wizard for the Sun CA Unicenter NSM Integration Pack is a Windows application that manages the process of installing class definition files, policy files, MIBs, icons, and images to the appropriate directories on your CA Unicenter NSM host server. To install the Sun CA Unicenter NSM Integration Pack, do the following:

1. **Navigate to the folder where you downloaded and extracted the Sun Servers Integration 2.2 for CA Unicenter NSM and double-click the `SunCAR11.exe` file.**

   > **Note:** If Windows displays an Open File – Security Warning message box, click the Run button to proceed.

2. **Click Run to continue installation.**

   The Install Wizard displays the initial screen.

3. **Click Next to continue installation.**

   The Install Wizard provides you the option to specify a target installation directory other than the default location.

   You have two options:

   - To specify an alternate target location, enter the full path to that location in the text box and click the Choose button.

   - To restore the default target location, click the Restore Default Folder button and click the Choose button.

4. **Click Next to continue installation.**

The Install Wizard then detects which CA Unicenter NSM components are installed on the host server and builds the appropriate options for each installation set.

Installation Set	Installation Contents
Typical	Installs the set of Sun CA Unicenter NSM Integration Pack components corresponding to each of the CA Unicenter NSM components installed on your host server. If your host server, for example, has WorldView, Agent Technologies, and EM installed, selecting the Typical install set here installs the WorldView (WV), Agent Technologies (AT), and Enterprise Management (EM) integration components from Sun.
Custom	Provides options for you to install one or more of the integration components corresponding to the CA Unicenter NSM components that you have installed: WorldView (WV), Agent Technologies (AT), or Enterprise Management (EM). **Note**: The Install Wizard displays only as many options as there are installed components on your management host server.

5. **Click the Typical or the Custom button to review or to select integration components.**

   The Install Wizard then displays the integration options that you have selected and prompts you to confirm them before proceeding.

   Tip: To change your selection, click the Previous button to return to the previous screen.

6. **As prompted, provide information about your CA Unicenter NSM installation or confirm options.**

   ● If you have chosen to install the Agent Technologies (AT) integration component, you must run the resetdsm init command as part of the installation process. The Install Wizard prompts you choose whether you run the resetdsm init command now or at a later time.

   Note The resetdsm init command reloads all the DSM policies and polls the status of all discovered devices and entities within each device, so completing the process may require considerable time. Consider running one of these commands at night or contacting your system administrator for information about scheduling this process.

If you choose to run the `resetdsm init` or `resetdsm` command immediately, the Install Wizard updates you on its progress.

7. **Click Done to complete installation.**

If installation completes successfully, the Install Wizard displays the following screen.

8. **Click Done to close the Install Wizard.**

Verifying Successful Installation

The best way to verify that the Sun CA Unicenter NSM Integration Pack has been successfully installed on your CA host server is to view the contents of the installation log files. The Install Wizard saves the following log file to your desktop when it completes installation:

```
Sun_Servers_Integration_2.2_Unicenter_NSMR11_InstallLog.log
```

View the appropriate log file for messages confirming successful installation.

Uninstalling the Sun Servers Integration 2.2 for CA Unicenter NSM

Uninstalling the Sun CA Unicenter NSM Integration Pack involves the following procedures.

Step	Procedure status	Description
1	Recommended	Delete all Sun_SP objects (and their children) from WorldView *before* you run the Uninstall Wizard. This is a manual procedure.
2	Required	Run the Uninstall Wizard.
3	Optional (only if you did not do Step 1)	Delete all Unispace objects for Sun_SP objects *after* you run the Uninstall Wizard to remove the Sun CA Unicenter NSM Integration Pack WorldView (WV) component. This is a manual procedure.

Deleting Sun_SP Objects

If you uninstall the Sun CA Unicenter NSM Integration Pack WorldView (WV) component without deleting Sun_SP objects, the Uninstall Wizard will delete all the Sun_SP objects without deleting the corresponding Unispace icons. This leaves all Unispace icons in the "Unplaced Objects" Window in Classic 2D Map. This also prevents creation of another Unispace object for that node, if that node is rediscovered.

Delete all Sun_SP objects, including all the children beneath, before uninstalling the Sun Fire WorldView (WV) component.

Running the Uninstall Wizard

To run the Uninstall Wizard to remove the Sun CA Unicenter NSM Integration Pack from your host server, do the following:

1. **Choose Start – Control Panel – Add or Remove Programs.**

   Windows displays a list of all applications currently installed on that host.

2. **Click the entry for the Sun CA Unicenter NSM Integration Pack in that list.**

3. **Click the Change/Remove button to begin uninstallation of the Sun CA Unicenter NSM Integration Pack.**

   The Uninstall Wizard prompts you to confirm that you want to uninstall the integration package and then displays options for uninstalling the integration pack.

Uninstall Options	Installation Contents
Complete Uninstall	Uninstalls all the Sun CA Unicenter NSM Integration Components that you have installed on your management host: WorldView (WV), Agent Technologies (AT), or Enterprise Management (EM).
Uninstall Specific Features	Provides options for you to uninstall one or more of the Sun CA Unicenter NSM Integration Components that you have installed on your management host: WorldView (WV), Agent Technologies (AT), or Enterprise Management (EM). **Note**: The Uninstall Wizard displays only as many options as there are installed components on your management host server.

4. **Click the Complete Uninstall or the Uninstall Specific Features button to review or to select integration components to uninstall.**

5. **As prompted, provide information about your CA Unicenter NSM installation or confirm steps in the uninstallation process.**

   - The name of a default management database.

   - If you have chosen to uninstall the Agent Technologies (AT) integration component, you must run the resetdsm init command as part of the uninstallation process. The Uninstall Wizard prompts you choose whether you run the resetdsm init command now or at a later time.

     Note   The resetdsm init command reloads all the DSM policies and polls the status of all discovered devices and entities within each device, so completing the process may require considerable time. Consider running the resetdsm init command at night or contacting your system administrator for information about scheduling this process.

   - Confirmation that all selected integration components from Sun have been uninstalled.

6. **Click Done to complete uninstallation and to close the Uninstall Wizard.**

Deleting Unispace objects for Sun_SP Objects

If you uninstall the Sun CA Unicenter NSM Integration Pack WorldView (WV) component without deleting Sun_SP objects, the Uninstall Wizard will delete all the Sun_SP objects without deleting the corresponding Unispace icons. This leaves all Unispace icons in the "Unplaced Objects" Window in Classic 2D Map. This also prevents creation of another Unispace object for that node, if that node is rediscovered.

If you have not deleted Sun_SP objects before running the Uninstall Wizard, delete all Unispace objects for Sun_SP objects at this point (after running the Uninstall Wizard to uninstall the Sun CA Unicenter NSM Integration Pack WorldView (WV) component).

Configuring CA Unicenter NSM to Discover and Monitor Sun Devices

This chapter describes how to configure CA Unicenter NSM to discover and monitor supported Sun servers and service processors.

Configuring CA Unicenter NSM to Discover and Monitor Supported Sun SPARC Enterprise Servers

Once you have installed the CA Unicenter NSM integration package, you need to verify one item in your CA Unicenter NSM SNMP configuration. Because CA Unicenter NSM uses SNMP to discover supported Sun SPARC Enterprise servers, at least one of the community strings configured on your CA Unicenter NSM management server must match at least one of the community strings of your Sun server. See Chapter 4 for more information about configuring SNMP on your supported Sun SPARC Enterprise servers.

Configuring CA Unicenter NSM to Discover and Monitor Sun Fire x64 Servers

There are two levels of integration between CA Unicenter NSM and Sun Fire x64 servers, at either the service processor level or at the server operating system level using the Sun Server Hardware Management Agent. There is no configuration work to be performed in CA Unicenter NSM to enable operating system level integration.

Configuring CA Unicenter NSM to Discover and Monitor ILOM and Embedded LOM Service Processors

Once you have successfully installed the Sun Servers Integration 2.2 for CA Unicenter NSM, you may need to perform additional configuration on your CA Unicenter NSM management server before it can discover, classify, and receive alerts from your Sun service processors.

A complete, current list of supported Sun servers, service processors, and service processor firmware is available at the following web site:

http://www.sun.com/system-management/tools.jsp

Please consult this web site before installing the Sun Servers Integration 2.2 for CA Unicenter NSM.

Sun Servers	Type of Monitoring	Configuration Tasks
SPARC/ALOM servers	N/A	N/A
x64/Embedded LOM servers	Embedded LOM	Confirm that one of the community strings configured on your CA Unicenter NSM management server matches one of the community strings of your Embedded LOM service processor. Confirm that the CA Unicenter NSM IP address is included as one of the trap destination server addresses on your Embedded LOM service processor. See Chapter 4 for details on configuring SNMP on Embedded LOM.
x64/ILOM and SPARC/ILOM servers	ILOM	Confirm that one of the community strings configured on your CA Unicenter NSM management server matches one of the community strings of your ILOM service processor. Confirm that the CA Unicenter NSM IP address is included as one of the trap destination server addresses See Chapter 4 for details on configuring SNMP on ILOM. Reclassify previously discovered ILOM service processors. Enable IP Policy monitoring.

Sun Servers	Type of Monitoring	Configuration Tasks
x64/ILOM servers	Sun Hardware Management Agent	Confirm that the CA Unicenter NSM IP address is included as one of the trap destination server addresses in `/etc/snmp/snmpd.conf` See Chapter 4 for details on configuring SNMP on the Sun Hardware Management Agent

Reclassifying Previously Discovered Sun ILOM Service Processors

Any Sun ILOM service processor that CA Unicenter NSM discovered before the installation of the Sun Servers Integration 2.2 for CA Unicenter NSM will not be classified by CA Unicenter NSM into the Sun_SP class. They will not, for example, appear in WorldView with Sun-specific icons and Sun-specific context menus. You must manually reclassify these previously discovered Sun ILOM service processors into the Sun_SP class or rediscover them to have them look and behave the same as the ILOM service processors discovered after the installation of the Sun Servers Integration 2.2 for CA Unicenter NSM.

For detailed information about reclassifying objects in CA Unicenter NSM, consult the CA Unicenter NSM online help system on your host management server and related CA Knowledge Base articles at technical support documents at http://supportconnect.ca.com.

Note: Sun Fire x64 service processors with earlier versions of the ILOM firmware will not be classified as Sun_SP devices automatically by CA Unicenter NSM. If your Sun Fire x64 server has a service processor with ILOM 1.0 or 1.0.1, you must also reclassify those devices into the Sun_SP class manually.

Enabling IP Policy Monitoring for Sun ILOM Service Processors

CA Unicenter NSM classifies Sun ILOM service processors as Sun_SP objects. By default, Sun_SP objects are not monitored by IP Policy. For managing Sun_SP objects using IP Policy, do the following:

1. **Open into a text editor the following file on the server hosting CA Unicenter NSM:**

   ```
   %AGENTWoRKS_DIR%\SERVICES\CONFIG\AWS_NSM\SYS\caautogp.atph
   ```

2. **Search for the following section:**

   ```
   define parents group CAWVGrp_OtherDevices
   ```

3. **Insert the following line in that section:**

   ```
   OtherDevices:Sun_SP,
   ```

   Note: Terminate every line preceding the last line in this section with a comma (,).

4. **Save the modified file.**

5. **Execute the following commands to reload the IP Policy into CA Unicenter NSM.**

   ```
   # resetdsm init
   ```

   ```
   # awservices start
   ```

CA Unicenter NSM will now use the new IP Policy to monitor Sun_SP objects.

Configuring Sun Devices to be Monitored by CA Unicenter NSM

This chapter describes how to configure your Sun devices to be discovered and monitored by CA Unicenter NSM. Instructions are provided to configure Sun servers at both the operating system level and the service processor level.

Choosing How to Configure Managed Nodes

CA Unicenter NSM uses SNMP to discover and communicate with managed nodes. To be discovered and monitored properly your servers must be configured to communicate with CA Unicenter NSM. Depending on the Sun server you want to monitor, you must choose how to send SNMP messages to CA Unicenter NSM.

The following table shows the options available.

Server	Service Processor	Level of Management	Configuration Process
SPARC	ALOM or ILOM	Operating system	SeeConfiguring SPARC/ALOM and SPARC/ILOM Servers
SPARC	ILOM	Service Processor	See Configuring ILOM and Embedded LOM Service Processors to be Monitored by CA Unicenter NSM
x64	ILOM	Operating System	See Configuring Operating System Level Monitoring with Sun Server Hardware Management Agent
x64	ILOM or Embedded LOM	Service Processor	See Configuring ILOM and Embedded LOM Service Processors to be Monitored by CA Unicenter NSM

For more information on your Sun server and service processor type, see your server documentation.

Configuring SPARC/ALOM and SPARC/ILOM Servers

To monitor supported SPARC servers at the operating system level in CA Unicenter NSM, you must configure the Sun SNMP Management Agent for Sun Fire and Netra Systems (MASF Agent) on each of the SPARC Solaris nodes.

Installation

To evaluate SNMP system requirements for your SPARC Solaris server and to learn how to install the MASF Agent on it, consult the following Sun manual:

▪ *Sun SNMP Management Agent Administration Guide for Sun Fire and Netra Servers* (Part Number 819-7978). You can download this manual from http://docs.sun.com.

Configuration

For integration between the MASF Agent and CA Unicenter NSM to work correctly, you must verify that the MASF configuration file on your managed SPARC Solaris nodes contains the following entries. To update that configuration file, do the following:

1. **On the managed server, open the following configuration file in a text editor:**

   `/etc/opt/SUNWmasf/conf/snmpd.conf`

2. **Configure (or verify) that the Read Only community string matches at least one of the community strings configured on the CA Unicenter NSM management server, for example `rocommunity public`.**

3. **Configure (or verify) that the MASF Agent is listening on port 9161 on your SPARC Solaris server.**

   `agentaddress   9161`

   The Sun Servers Integration 2.2 for CA Unicenter NSM is designed to poll SPARC Solaris servers through port 9161. If you decide to use another port, then you may need to modify a policy on the CA Unicenter NSM management server.

4. **Add an entry to specify whether you want to send SNMP v1 or SNMP v2 traps.**

SNMP format	Entry
v1	`trapsink <destination_hostname>`
v2c	`trap2sink <destination_hostname>`

   where `<destination_hostname>` specifies the name or IP address of the destination server receiving the SNMP v1 (trapsink) or v2c (trap2sink) traps from the MASF Agent.

   Note: Adding both lines will result in the MASF Agent sending CA Unicenter NSM two traps for each alert and those redundant alerts appearing in the event console.

5. **Save the modified file.**

   For these changes to take effect, you must force the MASF Agent to re-read the configuration file.

6. **Enter the following commands in a terminal window to force the MASF Agent to re-read its configuration file.**

   ```
   # ps -ef | grep SUNWmasf | grep -v grep
   ```

   This command returns the process ID of the MASF Agent daemon running on your SPARC Solaris system.

   ```
   # kill -HUP <snmpd_pid>
   ```

   where *<snmpd_pid>* is the process ID of the MASF Agent obtained in the previous sub-step.

   The MASF Agent re-reads its configuration file automatically when it restarts.

Your managed SPARC Solaris servers are now ready to forward traps to CA Unicenter NSM.

Configuring Operating System Level Monitoring with Sun Server Hardware Management Agent

Sun x64/ILOM servers can be monitored at the operating system level using the Sun Server Hardware Management Agent, which runs on the host operating system. Sun Server Hardware Management Agent is a part of Sun Server Management Agents.

To monitor Sun servers running the Sun Server Hardware Management Agent in CA Unicenter, configure the Sun Server Hardware Management Agent to send SNMP version 1 or SNMP version 2c traps to CA Unicenter.

For more information on the Sun Server Hardware Management Agent, please refer to the *Sun Server Management Agents User's Guide* (820-7621) available from:

http://www.sun.com/system-management/managementtools.jsp

Configuring ILOM and Embedded LOM Service Processors to be Monitored by CA Unicenter NSM

For a SPARC/ILOM, x64/ILOM, or x64/Embedded LOM service processor to be monitored by CA Unicenter NSM, you must configure SNMP on it.

A complete, current list of supported Sun servers, service processors, and service processor firmware is available at the following web site:

http://www.sun.com/system-management/tools.jsp

Please consult this web site before installing theSun Servers Integration 2.2 for CA Unicenter NSM.

Sun Server	Configuration Tasks
SPARC/ILOM and x64/ILOM	Configure SNMP on your ILOM service processor
x64/Embedded LOM	Configure SNMP on your Embedded LOM service processor running firmware Version 2.91.

To monitor Sun servers at the service processor level in CA Unicenter, configure the service processor to send SNMP version 1 or SNMP version 2c traps to CA Unicenter.

For more information, see your service processor documentation.

Verifying Successful Configuration for CA Unicenter NSM

To the extent that the Sun Servers Integration 2.2 for CA Unicenter NSM employs a variety of system management technologies to monitor different types of Sun servers, there is no one procedure that exercises every interface on each monitored system in order to verify that the entire integration has been installed and configured properly. If you are physically located with your monitored systems, you could always manually remove and re-insert a non-critical component on one Sun server after another. See the topic "Verifying Configuration Manually" below for more information on manual verification. This manual procedure becomes impractical at large installations and impossible at remote locations. Performing remote verification is more convenient, but requires different procedures for OS-level or SP-level integrations and for different types of Sun servers (x64 or SPARC).

To determine which remote procedures are appropriate for your test plan and for the types of Sun servers supported by your management application, consult the following table.

CPU Type	SP Type	OS-level Procedure(s)	SP-level Procedure(s)
x64	ILOM	See "Verifying Configuration Remotely Using IPMItool"	See "Verifying Configuration Remotely Using IPMItool"
	Embedded LOM	See "Verifying Configuration Remotely Using IPMItool"	See "Verifying Configuration Remotely Using IPMItool"

CPU Type	SP Type	OS-level Procedure(s)	SP-level Procedure(s)
SPARC	ILOM	See "Verifying Configuration Remotely Using `psradm`"	See "Verifying Configuration Remotely Using IPMItool"
	ALOM	See "Verifying Configuration Remotely Using ALOM"	Not supported

The following sections describe how to perform each of these procedures.

Verifying Configuration Manually

If you are located physically near one or more of your Sun servers, you can always verify configuration by generating a physical event. The most reliable way to accomplish this is to remove and re-insert a non-critical component.

To test your configuration manually, do the following:

1. **Locate the Sun server or blade module in your data center.**

2. **Identify a component on that system that is non-critical and hot-pluggable (for example, a redundant power supply or fan tray).**

   Note: Be certain that removal and re-insertion of this component will not affect the normal and routine operation of the server. Verify that the redundant component is, in fact, not critical to the current state of the system.

3. **Remove that non-critical component.**

   Note: Be certain to follow all required software and firmware procedures required for the safe removal of any hot-pluggable component. Consult the Sun manual or online information system that ships with your Sun server for specific procedures related to removing that hot-pluggable component.

4. **After an appropriate amount of time, re-insert the non-critical component.**

5. **In the message or event console of your management package, verify that removing/re-inserting the non-critical component has generated one or more traps with the appropriate event summary and severity.**

If you do not see these traps in the console, review this manual for required configuration steps or consult the Troubleshooting section of this manual.

Verifying Configuration Remotely Using ALOM

To verify that a remote ALOM-based SPARC Solaris system is configured correctly, do the following:

1. **Identify the name and/or IP address of the ALOM-based SPARC Solaris server that you want to test.**

2. **Log in to the ALOM CMT command shell on that remote system via an Ethernet or serial connection.**

3. **Enter the following command to determine the current state of the system locator LED.**

   ```
   sc> showlocator
   ```

ALOM returns one of the following messages:

- `Locator led is ON`

- `Locator led is OFF`

The following example assumes that the locator LED is currently OFF.

4. **Enter the following command to turn the locator LED on.**

   `sc> `**`setlocator on`**

5. **In the message or event console of your management package, verify that it has received an event from ALOM indicating that the locator LED is on.**

6. **Enter the following command to restore the locator LED to off.**

   `sc> `**`setlocator off`**

7. **(Optional) In the message or event console of your management package, verify that it has received an event from ALOM indicating that the locator LED is off.**

If you do not see these messages in the console, review this manual for required configuration steps or consult the Troubleshooting section of this manual.

Verifying Configuration Remotely Using IPMItool

Recent Sun servers support either an Integrated Lights Out Manager (ILOM) service processor or an Embedded LOM service processor. You can communicate with these ILOM and Embedded LOM service processors via their IPMI interfaces to have them generate non-critical, simulated events. If CA Unicenter NSM receives these non-critical, simulated events from ILOM or from Embedded LOM, it is configured properly for actual events.

IPMItool is an open-source utility for managing and configuring devices that support the Intelligent Platform Management Interface (IPMI) version 1.5 and version 2.0 specifications. Versions of IPMItool are available for the Solaris, Linux, and Windows operating systems.

Operating System	IPMItool Distribution(s)
Solaris	http://ipmitool.sourceforge.net/ Many software resource CDs distributed with Sun servers.
Linux	http://ipmitool.sourceforge.net/ Many software resource CDs distributed with Sun servers.
Windows	http://www.sun.com/system-management/tools.jsp Many software resource CDs distributed with Sun servers.

To verify that CA Unicenter NSM is configured to receive traps from an x64/ILOM, SPARC/ILOM, or x64/Embedded LOM service processor, do the following:

1. **Collect the following information about the remote service processor that you want to test.**

Field	Description
`<SPname>`	The name or IP address of the service processor Example: `192.268.1.1`
`<SPadminname>`	The administrator login name for the service processor Example: `root`
`<SPadminpassword>`	The administrator password for the service processor Example: `changeme`

2. **Open a command shell on the system that has IPMItool installed.**

3. **Enter the following IPMItool command to generate a list of all available sensors on that remote Sun server.**

   ```
   # ipmitool -U <SPadminname> -P <SPadminpassword> \
   -H <SPname> -v sdr list
   ```

   For example, to get the list of available sensors on a Sun SPARC Enterprise T5120 server at IP address `192.268.1.1` with ILOM SP login/password `root/changeme`, you would enter the following command:

   ```
   # ipmitool -U root -P changeme -H 192.268.1.1 -v sdr list
   ```

4. **In the output from IPMItool, identify the Sensor ID name of a sensor that has at least one entry in the Assertions Enabled or Deassertions Enabled fields.**

   In the following example, IPMItool returns the following information about the sensor named `/MB/T_AMB`.

   ```
   Sensor ID            : /MB/T_AMB (0x9)
   Entity ID            : 7.0 (System Board)
   Sensor Type (Analog) : Temperature
   . . .
   Upper critical       : 55.000
   . . .
   Assertions Enabled   : lnc- lcr- lnr- unc+ ucr+ unr+
   Deassertions Enabled : lnc- lcr- lnr- unc+ ucr+ unr+
   ```

   This sensor monitors ambient temperature on the motherboard of servers.

   Note: Exercise caution in choosing a sensor to use for a simulated event. Simulating unrecoverably high or low temperature for some sensors may cause the server to shut down.

5. **Enter the following IPMI command to generate a simulated event**

   ```
   # ipmitool -U <SPadminname> -P <SPadminpassword> \
   -H <SPname> event <sensorname> <option>
   ```

For example, to generate a simulated event for exceeding the upper critical (ucr) ambient temperature on a Sun SPARC Enterprise T5120 server at IP address 192.268.1.1 with ILOM SP login/password root/changeme, you would enter the following command:

```
# ipmitool -U root -P changeme -H 192.268.1.1 \
event /MB/T_AMB ucr assert
```

In the command shell, IPMItool returns information like the following:

```
Finding sensor /MB/T_AMB … ok
0 | Pre-Init Time-stamp | Temperature /MB/T_AMB | \
Upper Critical going high | Reading 56 > Threshold \
55 degrees C
```

6. **In the message or event console of your management package, verify that it has received an event from ILOM or from Embedded LOM relevant to the sensor that you specified in your IPMItool command.**

   If you do not see these messages in the console, review this manual for required configuration steps or consult the Troubleshooting section of this manual.

7. **(Recommended) Clear the simulated event with the following syntax:**

```
# ipmitool -U <SPadminname> -P <SPadminpassword> \
-H <SPname> event <sensorname> <option>
```

   To clear (deassert) the simulated event in the previous example, enter the following command:

```
# ipmitool -U root -P changeme -H 192.268.1.1 \
event /MB/T_AMB ucr deassert
```

If you do not see these messages in the console, review this manual for required configuration steps or consult the Troubleshooting section of this manual.

Verifying Configuration Remotely Using `psradm`

The Solaris utility psradm(1M) performs configuration on multiprocessor CPUs. When you use psradm to disable or to re-enable a CPU core, it generates a trap that should appear in the CA Unicenter NSM event console. This procedure is appropriate if you are verifying configuration for a Sun SPARC Enterprise server supporting the ILOM service processor such as the SPARC Enterprise T5120 or T5220 server.

To use psradm to generate a trap for one of these supported systems, do the following:

1. **Identify the name and/or IP address of the server that you want to test.**

2. **Log in to that server as root or with administrator privileges.**

3. **Enter the following command to disable a specific CPU core on that remote server.**

```
# psradm -f <CPU_Core_ID>
```

   where **<CPU_Core_ID>** is the ID for one CPUcore. For example, to disable core 0 on a Sun SPARC Enterprise T5120, you would enter the following command:

```
# psradm -f 0
```

   The trap generated by the T5120 should appear in the CA Unicenter NSM event console in a format like the following:

```
CH/MB/CMP0/P0/CPU Device has been removed
```

4. **(Recommended) Enter the following command to re-enable that same CPU core on that remote server.**

```
# psradm -n <CPU_Core_ID>
```

If you do not see these messages in the console, review this manual for required configuration steps or consult the Troubleshooting section of this manual.

Discovering Sun Devices in CA Unicenter NSM

This chapter explains how CA Unicenter NSM discovers and classifies Sun devices after the CA Unicenter NSM Integration Pack has been installed and configured on the host server. There are two methods used by CA Unicenter NSM to discover networked devices:

- Automatic discovery
- Manual discovery

Discovering Sun Fire Devices Automatically

By default, CA Unicenter NSM server software is not configured to discover devices automatically. Consult the CA Unicenter NSM administration documentation for specific procedures for enabling automatic discovery.

Discovering Sun Fire Devices Manually

To discover a particular Sun device manually, do the following:

1. **Launch CA Unicenter NSM and log in as Administrator.**

2. **Open a command window on the CA Unicenter NSM host server.**

3. **Enter the following command to discover a particular device and to add information about it to a particular CA Unicenter NSM repository:**

   `dscvrbe -7 device -R repository`

   where

   `device` is the IP address or name of the Sun device to discover

   `repository` is the name of the target CA Unicenter NSM repository

Classifying Sun Devices

As CA Unicenter NSM discovers Sun devices, it classifies them into one of the following categories.

Device	Object Classification (or Agent)
Supported Sun SPARC Enterprise Servers (Solaris OS)	 SunALOMSensors
ILOM Service Processors	SunSPSensors Agent SunSPSensors
Embedded LOM Service Processors	SunELOMSensors Agent SunELOMSensors
Sun Hardware Management Agent	Sun Hardware Agent SunHWAgent

Monitoring Supported Sun SPARC Enterprise Servers in CA Unicenter NSM

Once CA Unicenter NSM discovers your supported Sun SPARC Enterprise servers, a significant number of Sun-specific integration features become available to you in the CA Unicenter NSM components.

Component	Integration Feature
WorldView	Sun Server Sensor Views: - Right-click the SunALOMSensor object to access Node View.
	Mibbrowser (loaded with the SUN-PLATFORM-MIB: - Right-click an object in Node View to access Mibbrowser.
Management Command Center	Tree-style organization of categories such as fans and temperature sensors.
Enterprise Management	Sun-specific server sensor message records and actions.

WorldView (WV) Integration Features

The following Sun-specific integration features are available in WorldView contexts

▪ Sun Server Sensor (SunALOMSensors) Context Menus

When CA Unicenter NSM discovers a supported Sun SPARC Enterprise servers running the Solaris 10 operating system, it creates for it an agent named SunALOMSensors under the parent host icon.
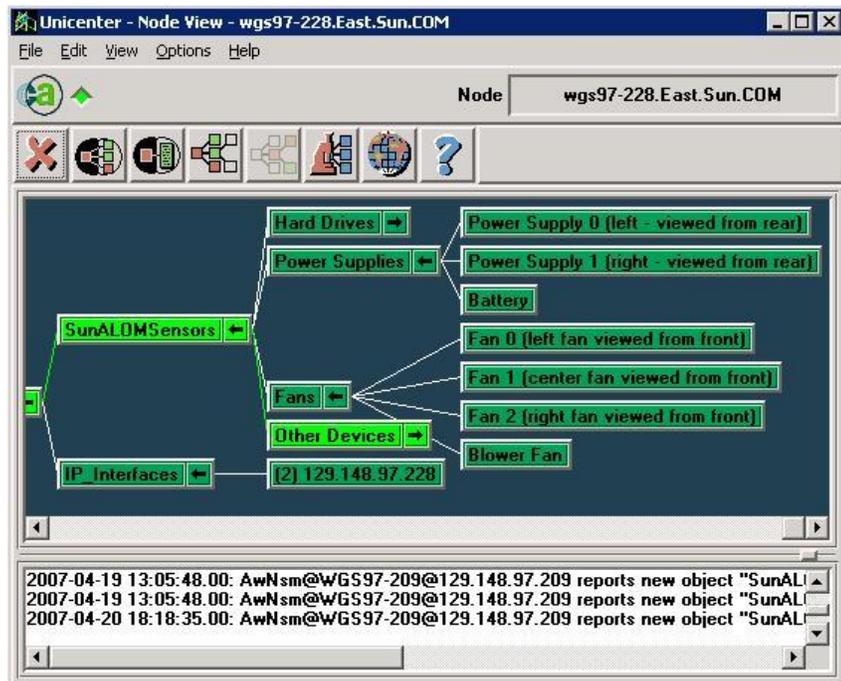

SunALOMSensors

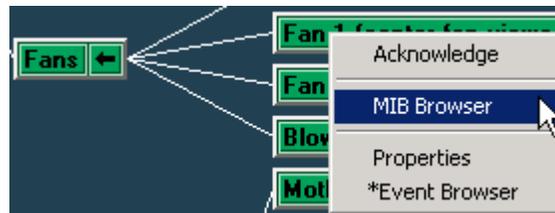Right-click the icon to display a menu of available views and actions.
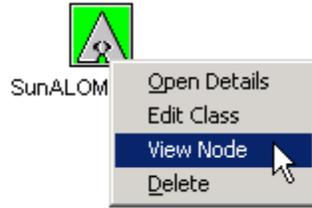
The third menu option provides Sun-specific information about your supported Sun SPARC Enterprise servers and its service processor.

▪ **View Node:** Click this option to display Node View for the SunALOMSensors collection and its members. Node View allows you to view hardware sensors and their status as monitored by CA Unicenter NSM by polling the SUN-PLATFORM-MIB on that particular node at regular intervals.
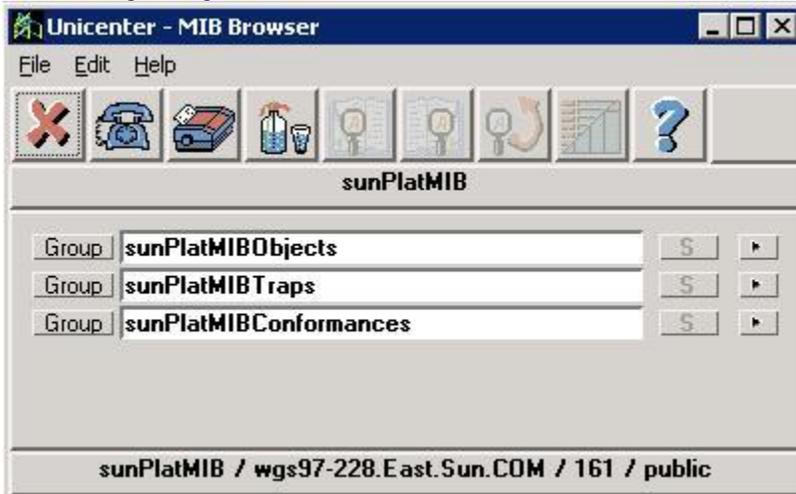

To view a deeper level of context-sensitive menus in Node View, right-click any of the sensor icons.

▪ **MIB Browser:** Click this option to launch the CA Unicenter NSM MIB Browser and load into it the SUN-PLATFORM-MIB. This is a useful tool

for browsing through available sensors and their status.

▪ **Properties:** Click this option to display a DSM view of a particular sensor.

▪ **Event Browser:** Click this option to display the CA Unicenter NSM Event Browser.
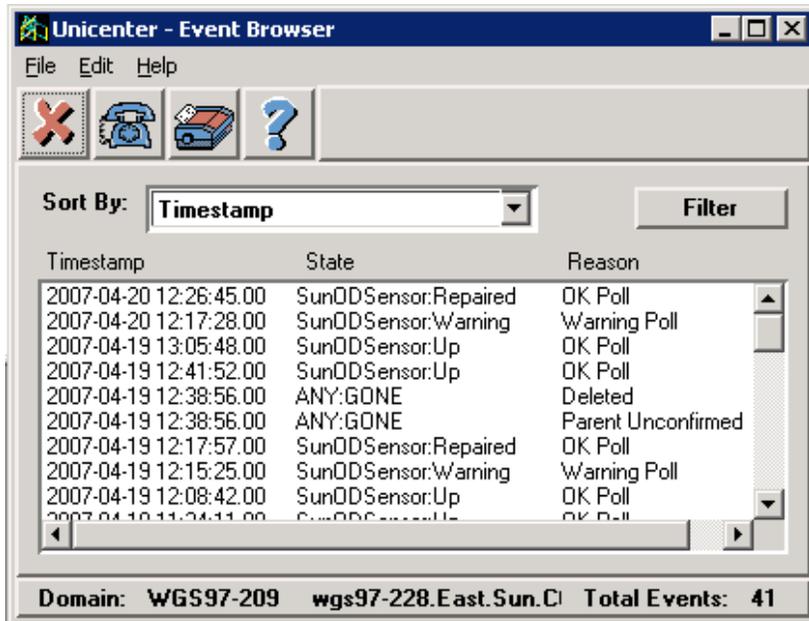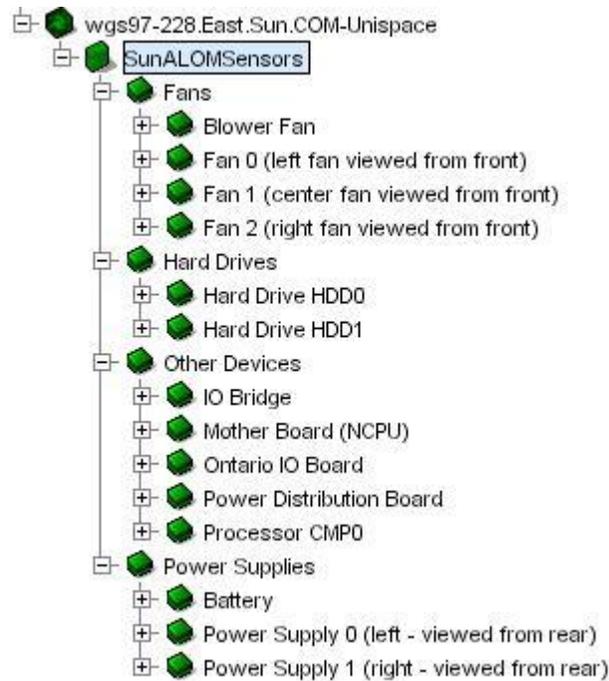

The Event Browser displays all status change events of the various components of the selected device.

Management Command Center Integration Features

The following Sun-specific integration features is available in the Management Command Center (MCC).

- Tree-style categorization of all sensors into various categories, such as fans or temperature sensors.

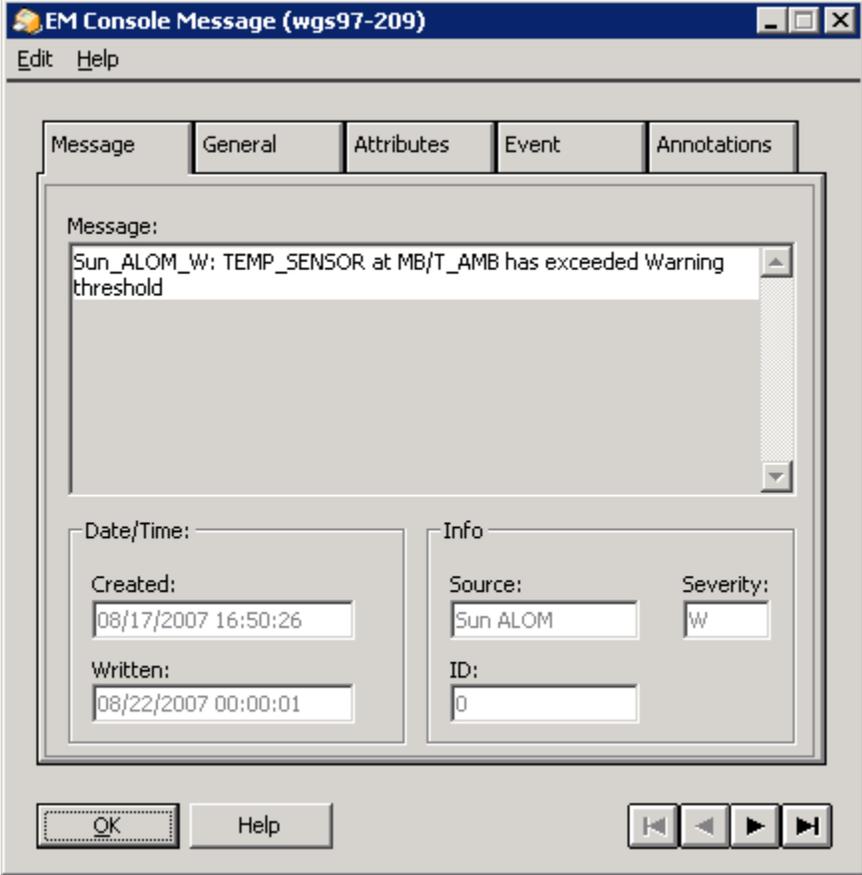# Enterprise Management (EM) Integration Features

The CA Unicenter NSM Enterprise Management (EM) component provides a variety of views into messages, logs, and event descriptions forwarded to it by respective SNMP agents running on managed hosts or managed service processors.

The following screen shot depicts some event messages from a Sun SPARC Enterprise T2000 server as they appear in the EM Console Log.
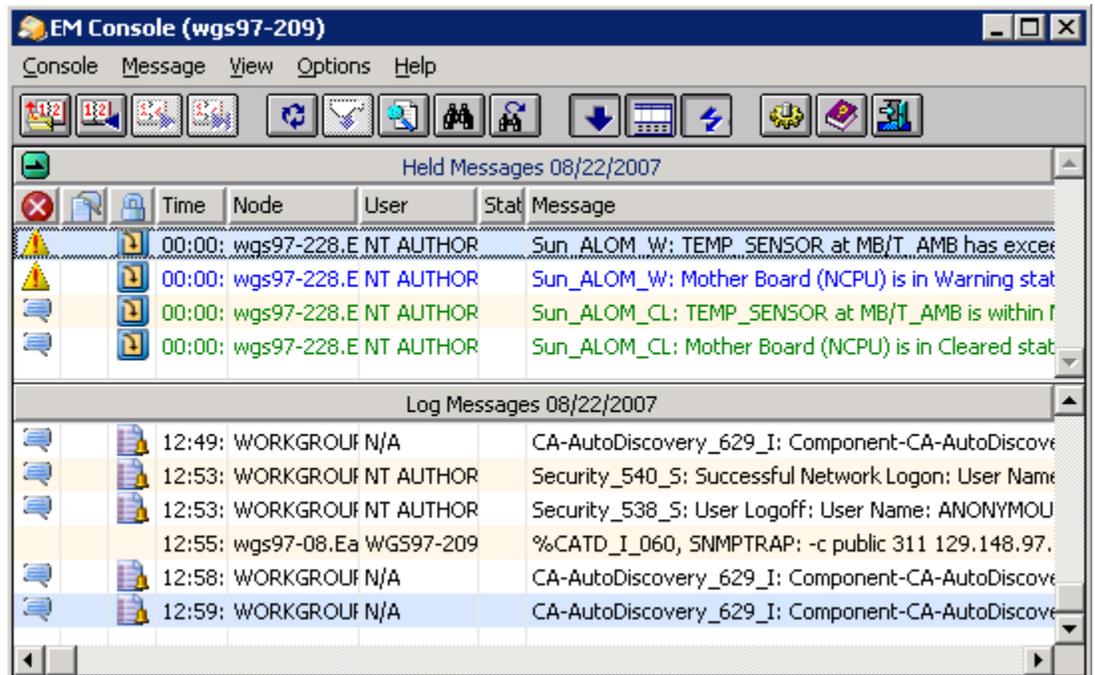
The Sun Servers Integration 2.2 for CA Unicenter NSM provides Message Records and Actions (MRA) to interpret events generated by supported Sun SPARC Enterprise servers and to present those messages in the EM Console with the correct severity and proper readable summary.

Double-click one of the messages from a server to display additional detail.

Monitoring ILOM Processors in CA Unicenter NSM

Once CA Unicenter NSM discovers your Sun devices (servers or service processors), a significant number of Sun-specific integration features become available to you in the CA Unicenter NSM components.

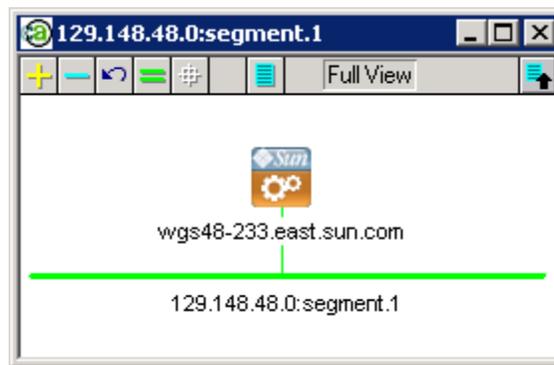| Component	Integration Feature
WorldView	Sun Service Processor (Sun_SP) Context Menus - Launch ILOM WebGUI - Mibbrowse - Link SP with Host - Launch SSH to SP
	Sun Server Sensor (SunSPSensor) Views
	Sun Server Sensor (SunSPSensor) Context Menus - MIB Browser - Properties - View Agent - Event Browser - Launch ILOM
Management Command Center	Sun Service Processor (Sun_SP) Context Menus - Launch ILOM WebGUI - Mibbrowse - Link SP with Host - Launch SSH to SP
	Sun Server Sensor (SunSPSensor) Icons
Enterprise Management	Sun-specific Message Records and Actions

WorldView (WV) Integration Features

Three Sun-specific integration features are available in WorldView contexts
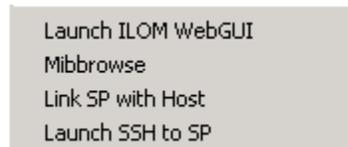
- Sun Service Processor (Sun_SP) Context Menus

- Sun Server Sensor (SunSPSensor) Views

- Sun Server Sensor (SunSPSensor) Context Menus

Sun Service Processor (Sun_SP) Context Menus

Discovered Sun service processors in WorldView have Sun-specific icons.
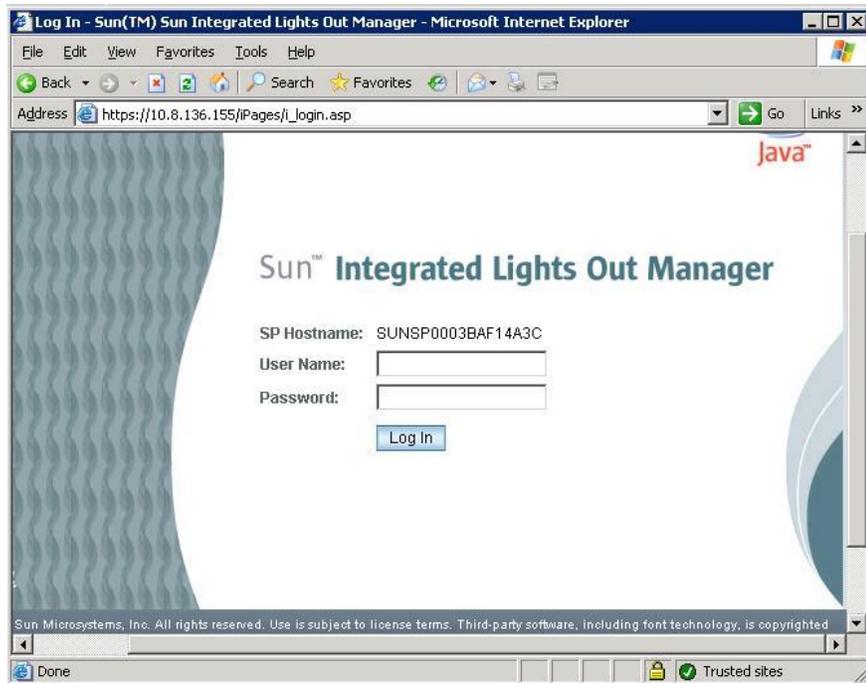

When you right-click the Sun service processor icon, it displays a context menu with several options.


The bottom four options are Sun-specific integration features.

- **Launch ILOM WebGUI:** Click this option to a browser connection to the ILOM WebGUI interface running on the service processor of your Sun Fire x64 server.

Note: This integration feature requires that the ILOM web server be listening on port 80. Use the Class Editor to modify that setting if the ILOM web server is listening on some other port.

▪ **Mibbrowse:** Click this option to open the CA Unicenter NSM MIB Browser tool to view the SUN-PLATFORM-MIB.
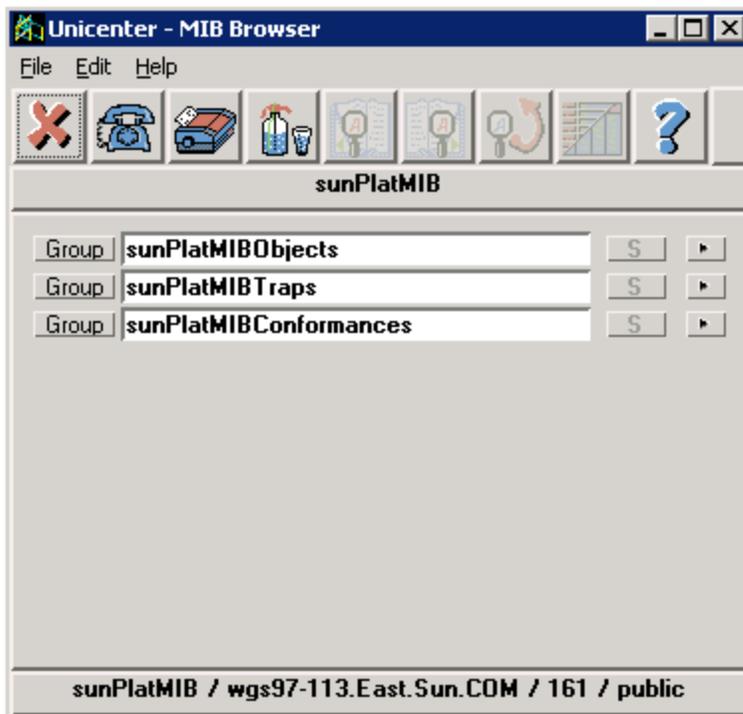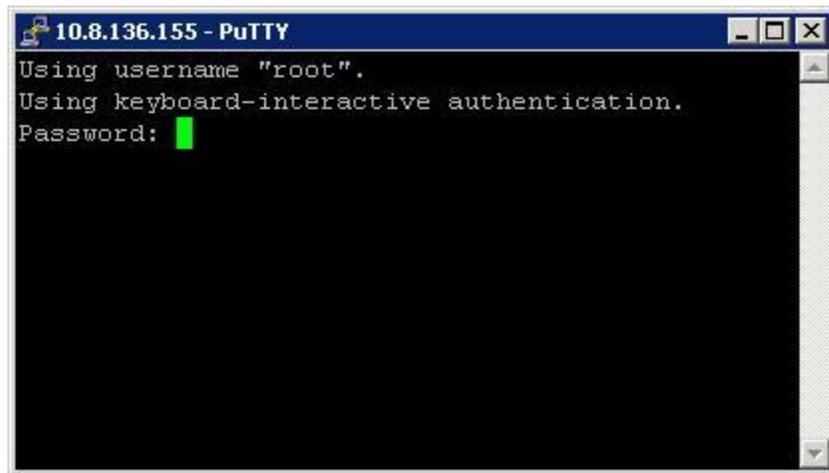

Note: This integration feature requires that the service processor be listening on port 161 and that a community string "public" have its permissions set to at least read only.

▪ **Link SP with Host:** Click this option to subordinate the currently selected service processor object to a parent server object. By linking the service processor object with its correct server object, the status of sensor information generated by the service processor can be relayed to the server icon in the 2D Map. When the service processor reports a problem, the icon color (status) of the parent server changes.

The process by which service processors are linked with servers can be configured in a Sun-specific file `%CA_TND_HOME%\bin\LinkSPHost.conf`. For detailed information about configuring this file, see Appendix B "Configuring Link SP With Host."

▪ **Launch SSH to SP:** Click this option to open a secure shell connection to the command shell running on the service processor of your Sun Fire x64 server.


Note: This integration feature assumes that the PuTTY SSH client is installed on the server and its installation directory is included in the server `%PATH%` variable. Use the Class Editor to specify a different SSH client.

Sun Server Sensor (SunSPSensor) Views

When monitoring a Sun server at the service processor level, WorldView creates a SunSPSensor object under Sun_SP Object – Unispace Object. If you right-click that icon, WorldView displays a context menu with four options.
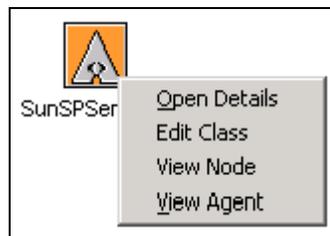
▪ **View Node:** Click this option to display Node View for the SunSPSensor collection and its members. Node View allows you to view specific hardware sensors and their status as monitored by CA Unicenter NSM by polling the SUN-PLATFORM-MIB on that particular node at regular intervals.
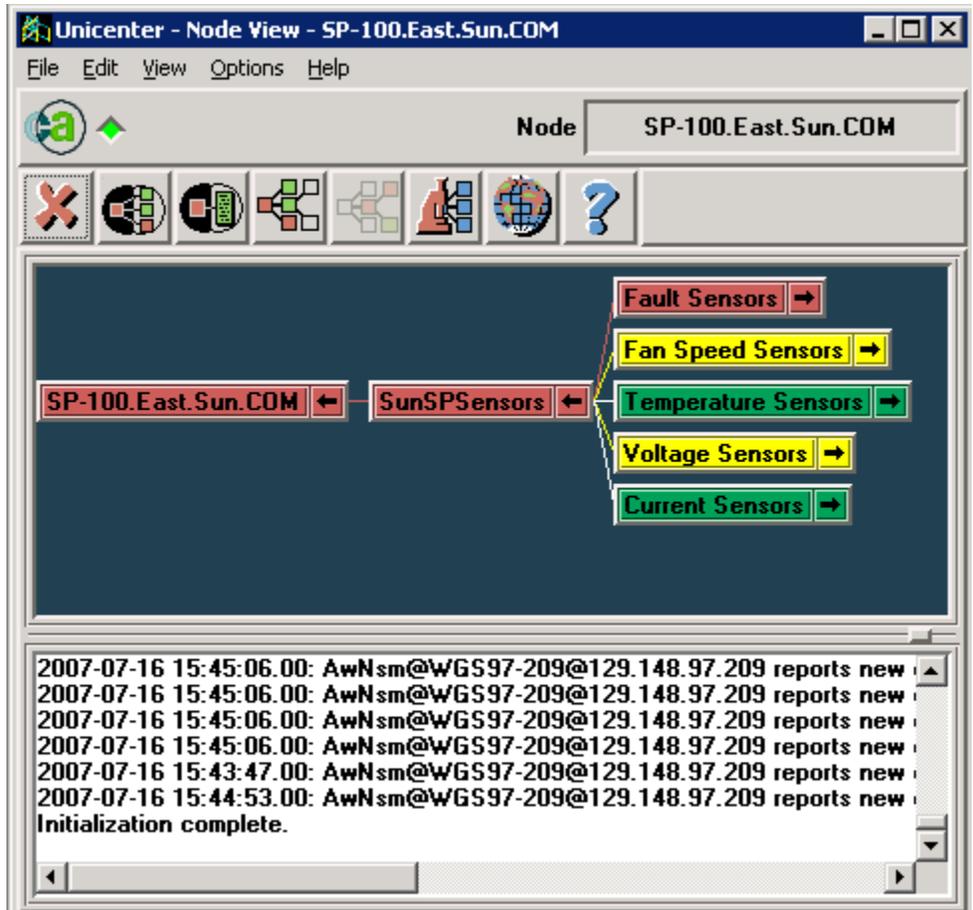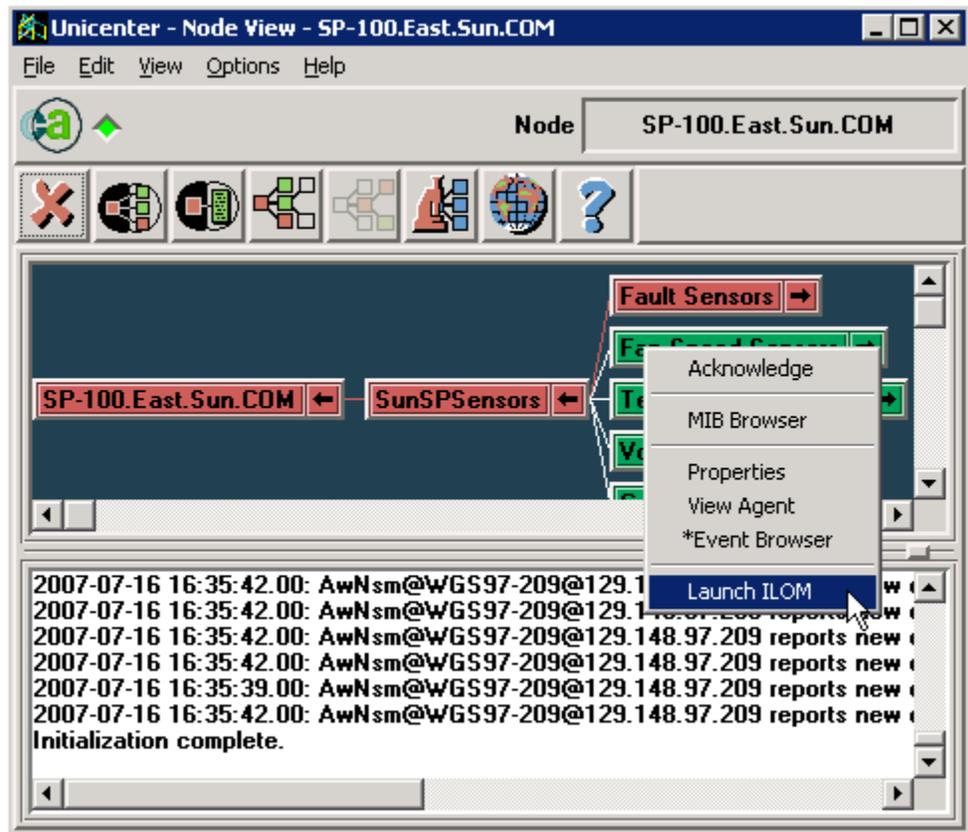
- **Agent View:** Click this option to display Sun SP Agent View of the corresponding ILOM service processor. Sun SP Agent View (also known as the ABrowser) provides a summary of the ILOM configuration provided by the ILOM Control MIB.

  Note: If a discovered Sun Fire x64 service processor is running a version of ILOM firmware earlier than 1.1, not all MIB values get posted to the ABrowser correctly. Expect to see a significant number of errors in Agent View.

The Sun SP Agent View tabs provide the following:

- Summary provides an overview of the information about the ILOM service processor returned from the monitored node

- Server Settings contains information about the ILOM service processor, such as whether HTTP access is enabled, port numbers, NTP servers and so on

- Control Settings provides information about LDAP, syslog, and so on

Sun HW Agent View

When monitoring a Sun server at the operating system level using the Sun Server Hardware Management Agent, WorldView creates a SunHWAgent object under Host Object – Unispace Object. If you right-click that icon, WorldView displays a context menu with four options

The View Node option provides the same functionality as View Node for the SunSPView. See Sun Server Sensor (SunSPSensor) Views for more information.

Agent View: Click this option to display Sun HW Agent View for the corresponding server. The Sun HW Agent View tabs provide the following:

- Hardware Agent settings displays information about the Sun Server Hardware Management Agent running on this node

- The Voltage Monitoring, Temperature Monitoring, Fan speed, and Power Supply tabs show the current sensor readings from the monitored node

- ILOM settings displays the ILOM service processor related information returned by the monitored node. You can also use the Launch ILOM button to open the service processor's ILOM Web Interface

Sun Server Sensor (SunSPSensor) Context Menus
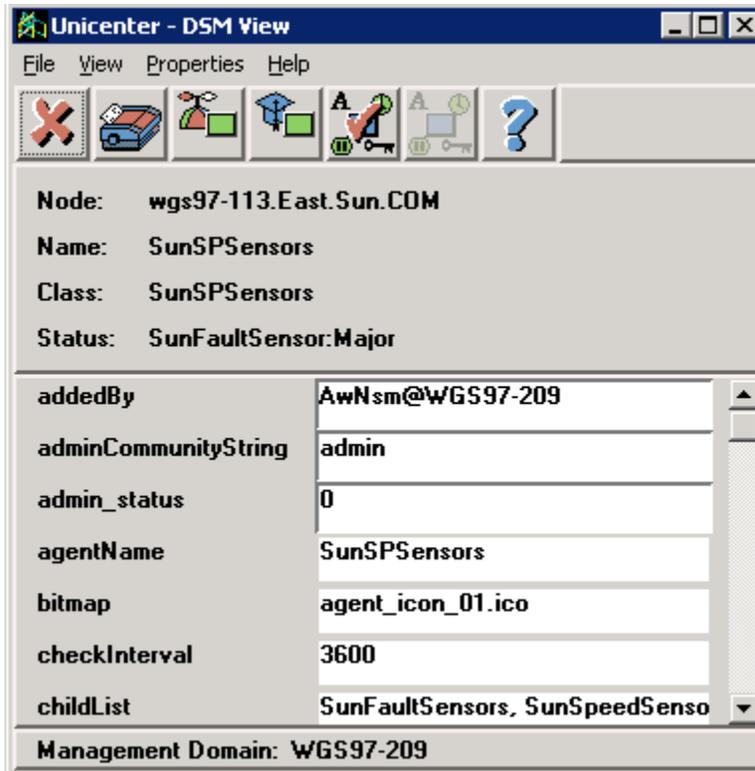
A variant set of integration features is available when you right-click a Sun server sensor object.
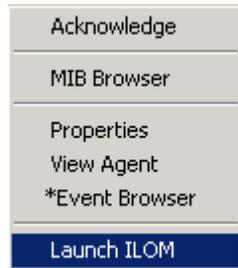
- ▪ **MIB Browser:** Click this option to launch the CA Unicenter NSM MIB Browser and load into it the SUN-PLATFORM-MIB. This is a useful tool for browsing through available sensors and their status.
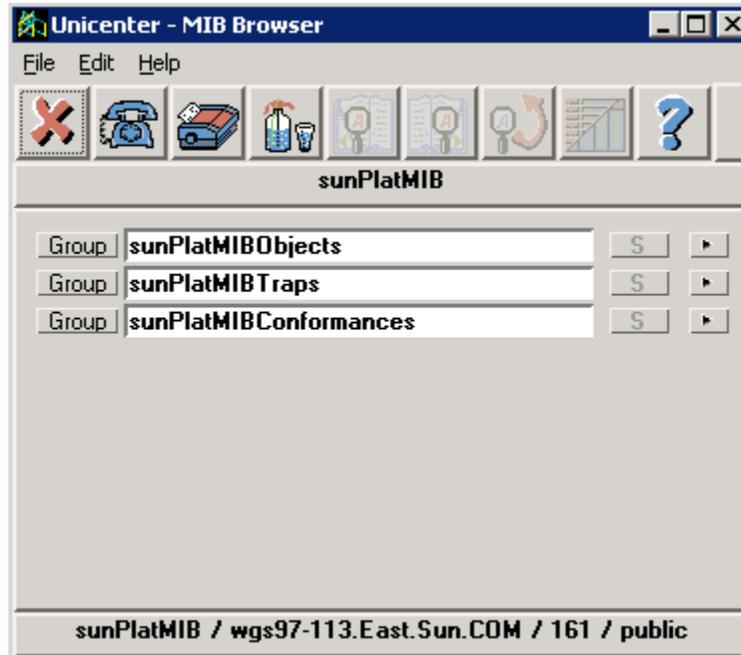
- ▪ **Properties:** Click this option to display a DSM view of a particular sensor.

- **Event Browser:** Click this option to display the CA Unicenter NSM Event Browser.
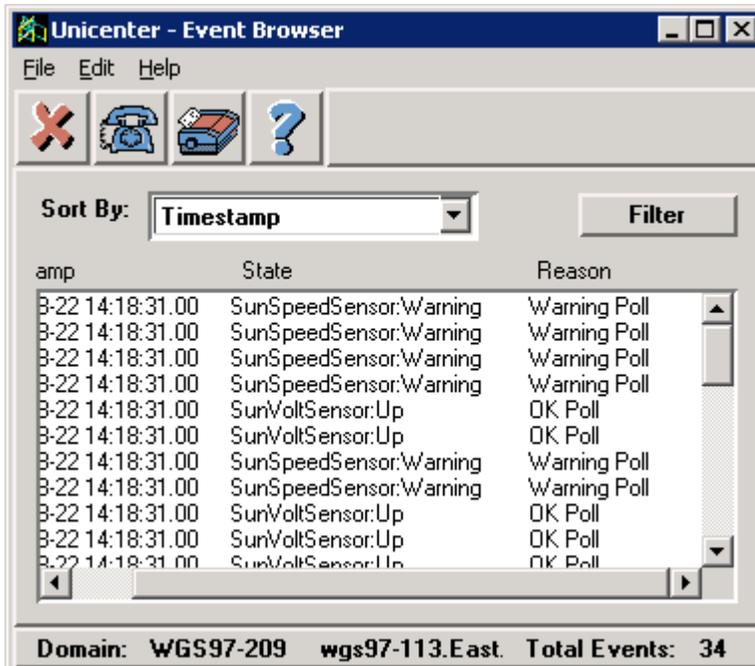
The Event Browser displays all status change events of the various components of the device.

- **Launch ILOM:** Click this option to launch the ILOM Web Interface.

Management Command Center Integration Features

Two Sun-specific integration features are available in the Management Command Center (MCC) component.

▪ Sun Service Processor (Sun_SP) Context Menus

▪ Sun Server Sensor (SunSPSensor) Icons

Sun Service Processor (Sun_SP) Context Menus

The four service processor context menus described in the previous section on WorldView are also available in the Management Command Center.

▪ Launch ILOM WebGUI

▪ Mibbrowse

▪ Link SP with Host

▪ Launch SSH to SP

To access these menu options, right-click a Sun service processor icon (Sun_SP) in the Management Command Center.
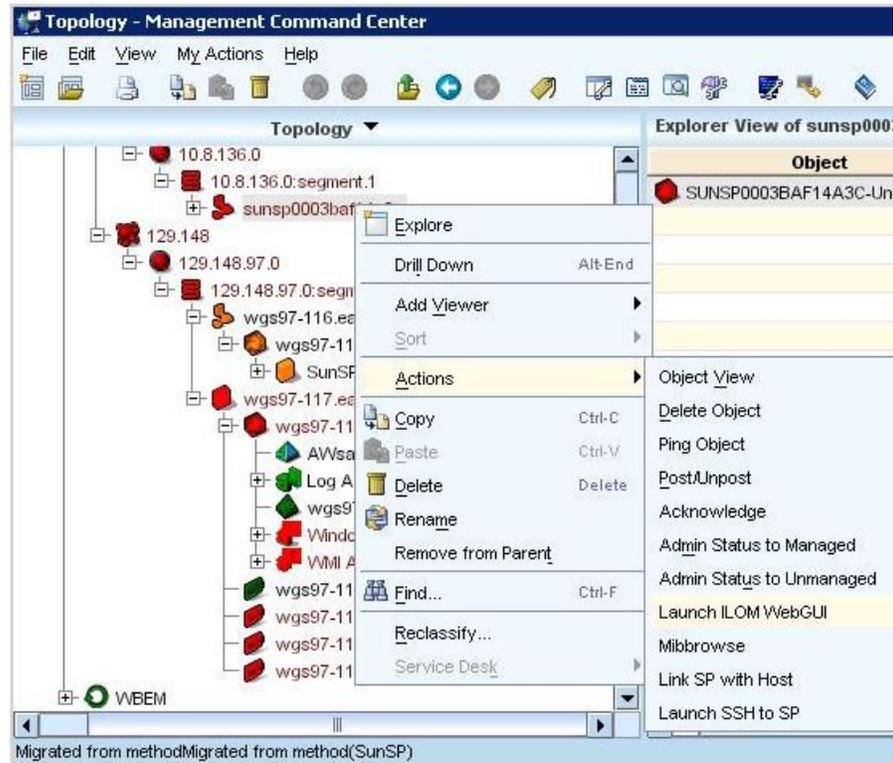
Sun Specific Icons

In the Management Command Center, the Sun-specific icons representing individual hardware sensors change color to indicate their current status.

Enterprise Management (EM) Integration Features

The CA Unicenter NSM Enterprise Management (EM) component provides a variety of views into messages, logs, and event descriptions forwarded to it by respective SNMP agents running on managed hosts or managed service processors.
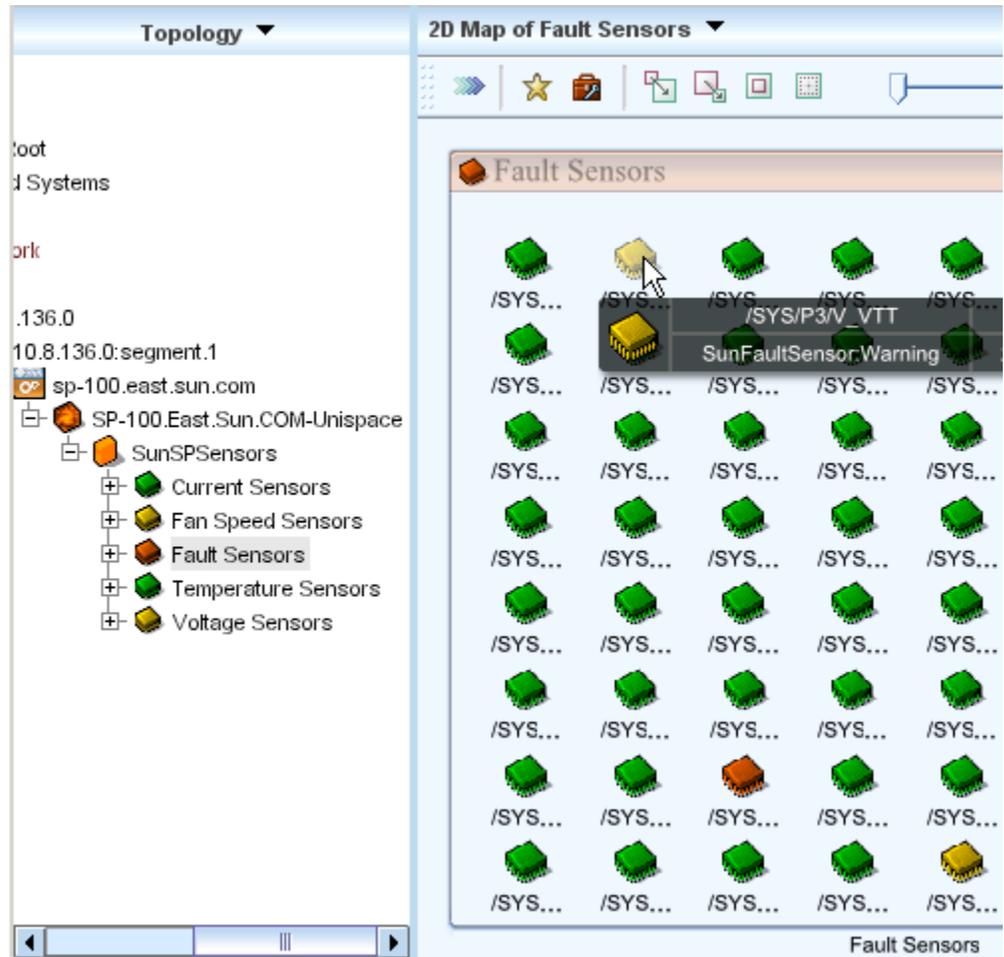
The following screen shot depicts some event messages from a Sun Fire X4200 server as they appear in the EM Console Log.
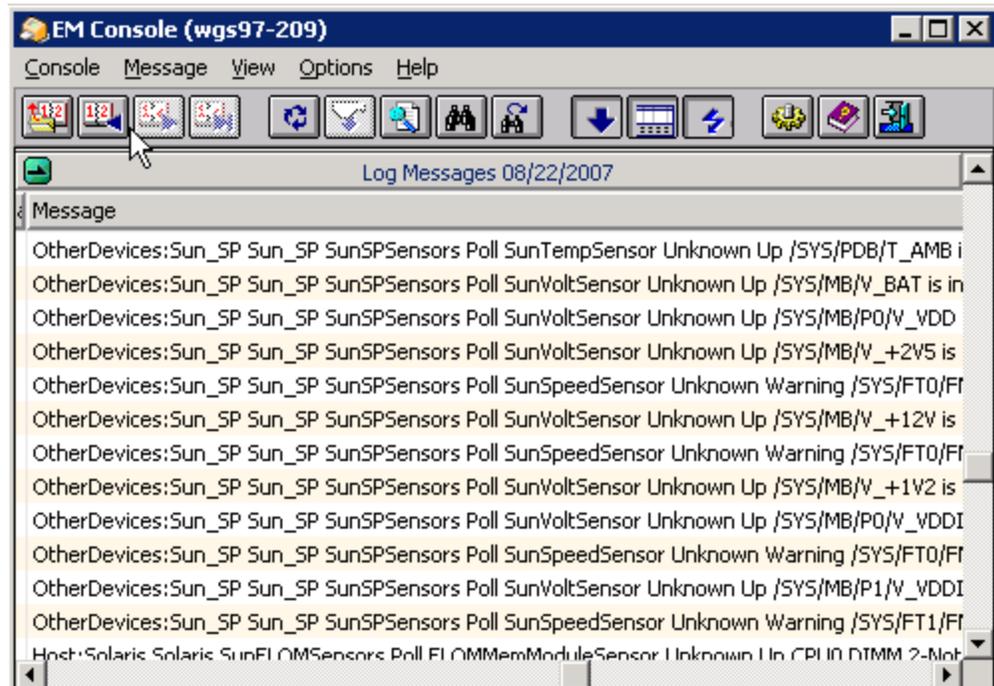
The Sun Servers Integration 2.2 for CA Unicenter NSM provides Message Records and Actions (MRA) to interpret events generated by Sun Fire x64 service processors and to present those messages in the EM Console with the correct severity and proper readable summary.

Message Records (wgs97-209)

File Message View Options Help

Message ID	Description
Sun_SP_Event_814852:*	Memory Device Disabled.
Sun_SP_Event_814854:*	Memory Presence detected.
Sun_SP_Event_814982:*	Memory Presence not detected. Device absent.
Sun_SP_Event_852992:*	Hard Disk Drive Fault LED is OFF.
Sun_SP_Event_852993:*	Hard Disk Drive Fault LED is ON.
Sun_SP_Event_880384:*	Hard Disk Drive is present or has been inserted.
Sun_SP_Event_880385:*	HDD Fault has been detected. HDD Fault LED is ON.
Sun_SP_Event_880387:*	A drive has been unmounted and is ready to be removed.
Sun_SP_Event_880391:*	RAID rebuild is in progress.
Sun_SP_Event_880512:*	Hard Disk Drive is absent or has been removed.
Sun_SP_Event_880513:*	HDD Fault has been cleared. HDD Fault LED is OFF.
Sun_SP_Event_880515:*	A drive is no longer ready to be removed.
Sun_SP_Event_880519:*	RAID rebuild has been finished.

1596 record(s); 1 selected   4:03:20 PM

Message Action Summary (wgs97-209)

File Selected View Options Help

Sequ	Token	Active	Sin	Action	Text
20	4123	ACTIVE	N	ANNOTATE	A processor is absent or has been removed.
20	4124	ACTIVE	N	ANNOTATE	A processor is present or has been inserted.
20	4125	ACTIVE	N	ANNOTATE	A front/back panel Alert LED is ON. Since the alert LED is eith
20	4126	ACTIVE	N	ANNOTATE	This state indicates that the front/back panel Alert LED is OFI
20	4127	ACTIVE	N	ANNOTATE	This state indicates that the front/back panel Locate LED is C
20	4128	ACTIVE	N	ANNOTATE	Front/back panel Locate Button is pushed or front/back LED i
20	4129	ACTIVE	N	ANNOTATE	This state indicates that the front panel USB ports are over-c
20	4130	ACTIVE	N	ANNOTATE	This state indicates that the front panel USB current is norma
20	4131	ACTIVE	N	ANNOTATE	Temperature has decreased below lower non-recoverable thi
20	4132	ACTIVE	N	ANNOTATE	Temperature has decreased below lower critical threshold.
20	4133	ACTIVE	N	ANNOTATE	Temperature has decreased below lower non-critical threshol
20	4134	ACTIVE	N	ANNOTATE	Temperature has increased above lower non-recoverable thr

2556 record(s); 1 selected   4:05:54 PM

Monitoring Embedded LOM Service Processors in CA Unicenter NSM

Once CA Unicenter NSM discovers your Sun devices (servers or service processors), a significant number of Sun-specific integration features become available to you in the CA Unicenter NSM components.

Note: The Sun Servers Integration 2.2 for CA Unicenter NSM currently supports only x64/Embedded LOM service processors with firmware Version 2.91.

Component	Integration Feature
WorldView	Sun Server Sensor (SunELOMSensor) Views
	Sun Server Sensor (SunELOMSensor) Context Menus - Launch Server Management Homepage - Link Embedded LOM with Host
Management Command Center	Sun Service Processor (SunELOMSensor) Context Menus - View Node - Launch Server Management Homepage
	Sun Server Sensor (SunELOMSensor) Icons
Enterprise Management	Sun-specific Message Records and Actions

WorldView (WV) Integration Features

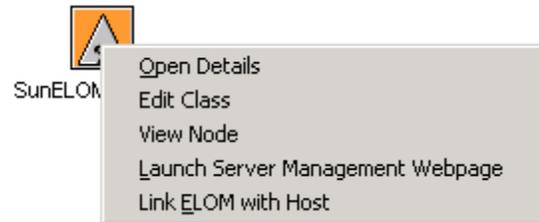Two Sun-specific integration features are available in WorldView contexts

- Sun Embedded LOM Service Processor Context Menus

- Sun Server Sensor Views

Sun Embedded LOM Service Processor Context Menus

Discovered Sun service processors in WorldView have Sun-specific icons.

Managed Object	Icon
Sun Fire X2110 M2 or X2200 M2 Server	wgs97-216.east.sun.com
SunELOMSensors object	SunELOMSensors

When you right-click the SunELOMSensors icon, it displays a context menu with several options.

The bottom three options are Sun-specific integration features:

▪ **View Node:** Click this option to display Node View for the SunELOMSensor collection and its members. Node View allows you to view specific hardware sensors and their status as monitored by CA Unicenter NSM by polling SP-MIB on that particular node at regular intervals.
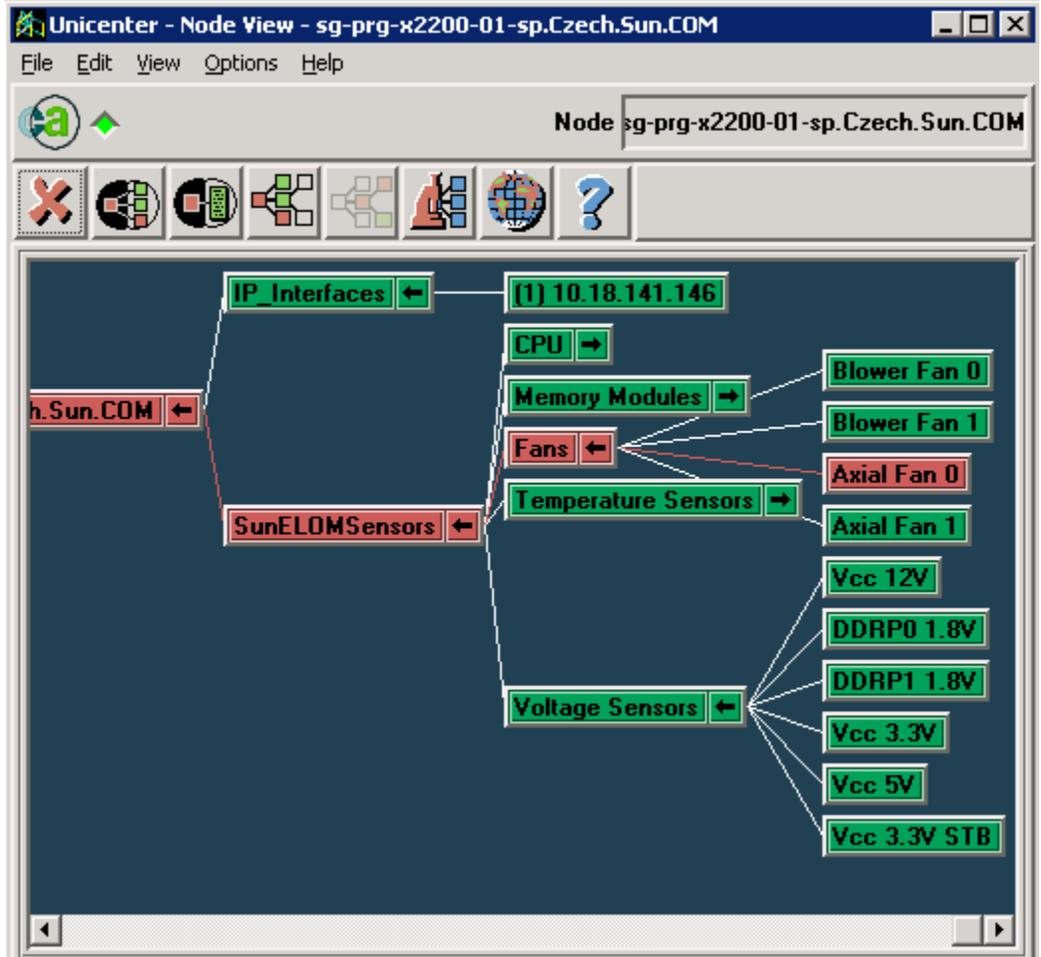
To view a deeper level of context-sensitive menus in Node View, right-click any of the sensor icons.

- **MIB Browser:** Click this option to launch the CA Unicenter NSM MIB Browser and load into it the SP-MIB. This is a useful tool for browsing through available sensors and their status.

- ▪ **Properties:** Click this option to display a DSM view of a particular sensor.

- ▪ **Event Browser:** Click this option to display the CA Unicenter NSM Event Browser.
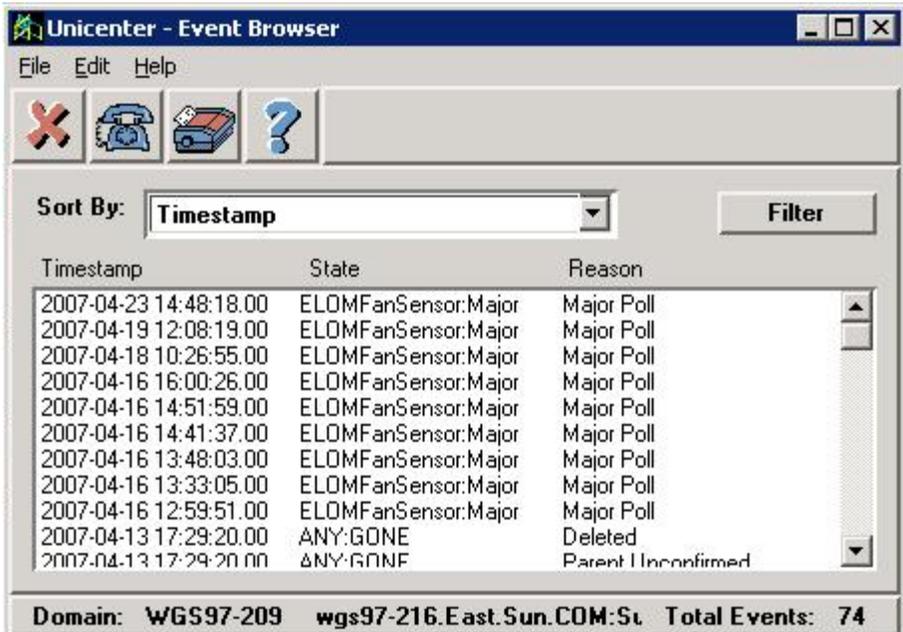
The Event Browser displays all status change events from the selected service processor.

- ▪ **Launch Server Management Webpage:** Click this option to a browser connection to the Embedded LOM Server Management home page running on the service processor of your Sun Fire x64 server.

Note: This integration feature requires that the Embedded LOM web server be listening on port 80. Use the Class Editor to modify that setting if the Embedded LOM web server is listening on some other port.

▪   **Link ELOM with Host:** Click this option to subordinate the currently selected service processor object to a parent server object. By linking the service processor object with its correct server object, the status of sensor information generated by the service processor can be relayed to the server icon in the 2D Map. When the service processor reports a problem, the icon color (status) of the parent server changes.

The process by which service processors are linked with servers can be configured in a Sun-specific file `%CA_TND_HOME%\bin\LinkSPHost.conf`. For detailed information about configuring this file, see Appendix B "Configuring Link SP With Host."

Management Command Center Integration Features

Two Sun-specific integration features are available in the Management Command Center (MCC) component.

▪   Sun Service Processor Context Menus

▪   Sun Server Sensor Icons

Sun Service Processor Context Menus

The four service processor context menus described in the previous section on WorldView are also available in the Management Command Center.
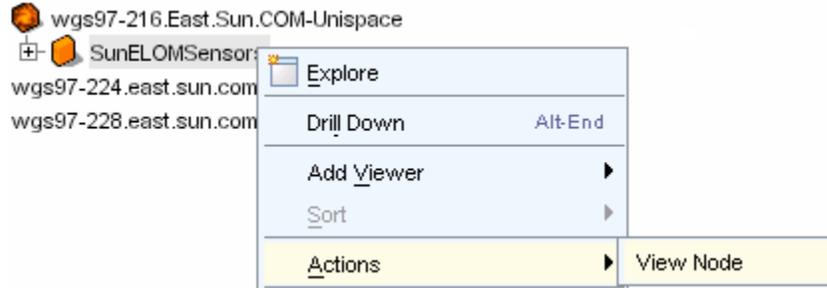
View Node displays the CA Unicenter NSM Node View browser.
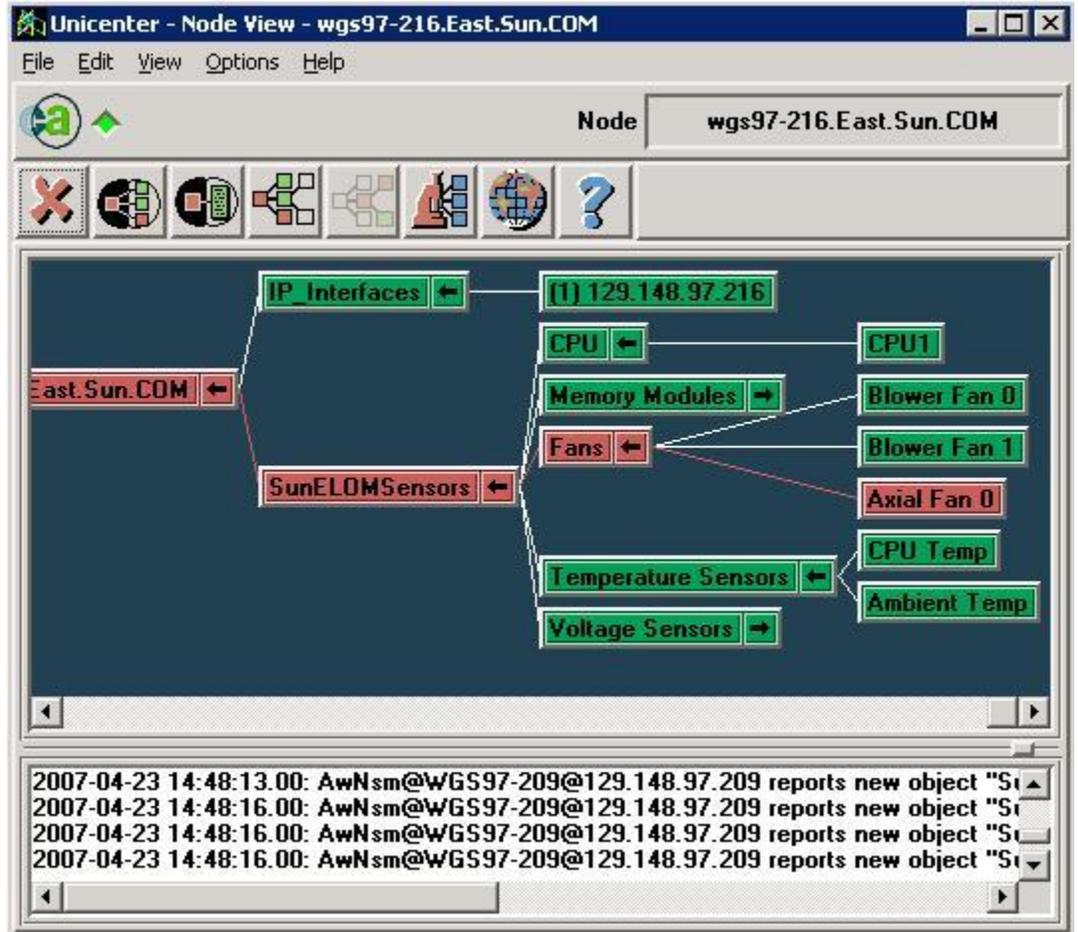
Sun Server Sensor (SunSPSensor) Icons

In the Management Command Center, the icons representing individual hardware sensors change color to indicate their current status.

# Enterprise Management (EM) Integration Features

The CA Unicenter NSM Enterprise Management (EM) component provides a variety of views into messages, logs, and event descriptions forwarded to it by SNMP agents running on managed hosts or managed service processors.

The following screen shot depicts some event messages from a Sun Fire X2100 M2 server as they appear in the EM Console Log.
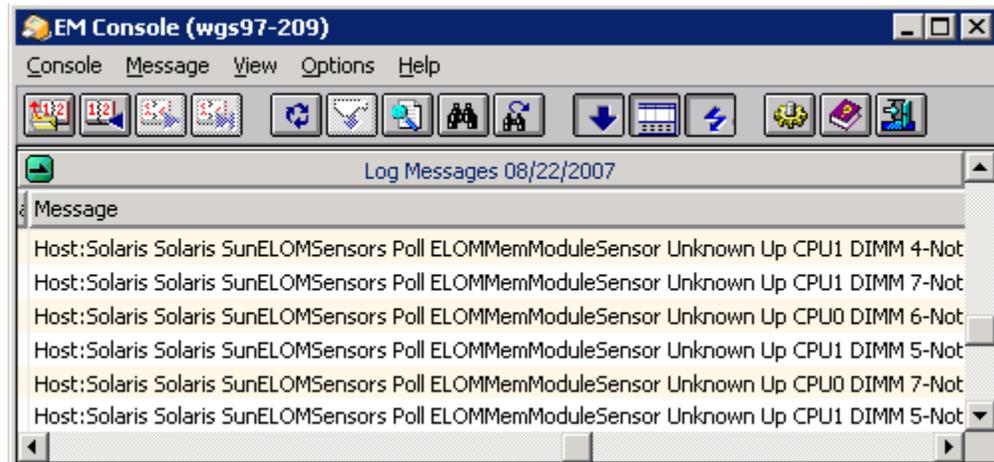
The Sun Servers Integration 2.2 for CA Unicenter NSM provides Message Records and Actions (MRA) to interpret events generated by Sun Fire x64 servers and to present those messages in the EM Console with the correct severity and proper readable summary.
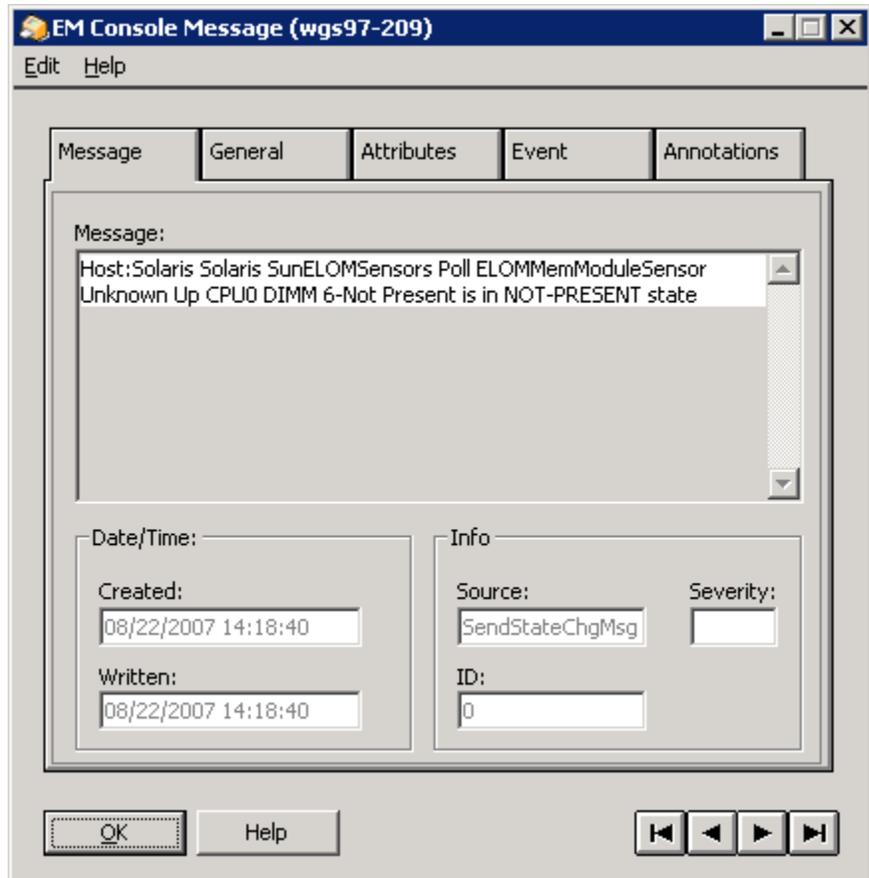
Configuring Links Between Service Processors and Hosts in CA Unicenter NSM

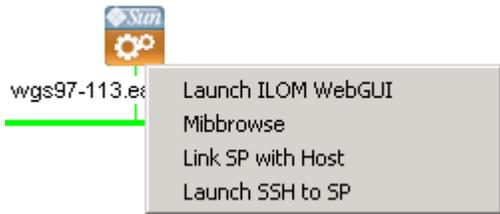When CA Unicenter NSM initially discovers a Sun ILOM or Sun Embedded LOM service processor on the network, it does not associate that service processor device with its server. You can link these service processors to their respective hosts in WorldView by right-clicking the service processor icon.

Sun Service Processor	Context Menu in WorldView
ILOM	
Embedded LOM	
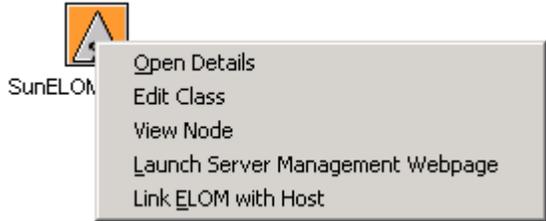
When you choose the menu option Link SP with Host (for ILOM) or Link ELOM with Host (for Embedded LOM), the Sun Servers Integration 2.2 for CA Unicenter NSM performs a lookup on a configuration file. To customize this configuration file, you can (optionally) edit the file named LinkSPHost.conf that is installed in %CA_TND_HOME%\bin. You can also provide the same configuration information interactively when prompted by the Sun Servers Integration 2.2 for CA Unicenter NSM.

Configuration With `LinkSPHost.conf`

`LinkSPHost.conf` contains configuration parameters for the following variables:

- Name of the service processor to be linked with a host

- Class name of that service processor

- Class name of the host Sun Fire x64 server

- Name of the host Sun Fire x64 server to which the service processor should be linked (making it a child)

For example, if you want to link the service processors named `myILOMSP.foo.com` and `myELOMSP.foo.com` to their Sun Fire x64 host servers named `ILOMserver.foo.com` and `ELOMserver.foo.com` respectively (both in the server class named SunOS), then enter the following records in `LinkSPHost.conf`:

`myILOMSP.foo.com,Sun_SP,SunOS,ILOMServer.foo.com`

`myELOMSP.foo.com,Sun_SP,SunOS,ELOMServer.foo.com`

Whenever the Sun Integration Pack receives a request to link the selected service processor to a host, it searches `LinkSPHost.conf` for a record matching the name of the selected service processor.

If it finds a matching record in `LinkSPHost.conf`, it prompts you to provide additional information about your repository:

- Repository name

- Repository administrator name

- Repository administrator password
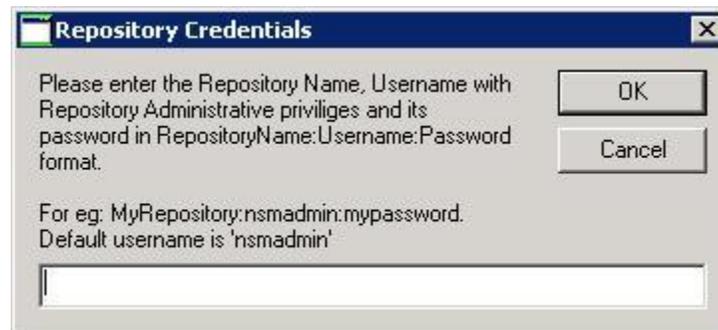
Once you have provided that information and clicked OK, the Sun Servers Integration 2.2 for CA Unicenter NSM updates the specified repository and links the specified service processor under the specified host Sun Fire x64 server.

Interactive Configuration

If the Sun Servers Integration 2.2 for CA Unicenter NSM cannot match the name of the selected service processor with any record in the `LinkSPHost.conf` file, it displays the following message:
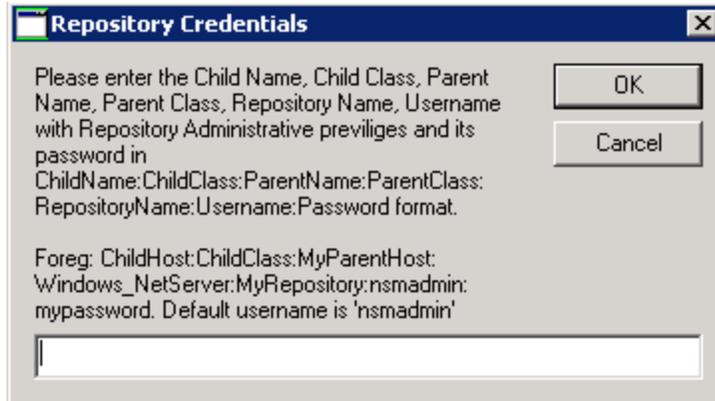

To enter the information manually, do the following:

1. Click OK to close the message box.

The Sun Servers Integration 2.2 for CA Unicenter NSM prompts you to enter a string specifying information about the devices that you want to link and the target repository in which you want them linked:

```
<ChildName>:<ChildClass>:<ParentName>:<ParentClass>:<RepositoryName
>:<Repository Username>:<Repository Password>
```

Parameter	Description
`<ChildName>`	The name of the service processor to be linked with a Sun Fire x64 host
`<ChildClass>`	The class name of the service processor to be linked with the Sun Fire x64 server
`<ParentName>`	The name of the host Sun Fire x64 server to which the service processor should be linked (making it a child)
`<ParentClass>`	The class name of the host Sun Fire x64 server
`<RepositoryName>`	The name of the target repository
`<Repository Username>`	The name of an administrative user for that repository **Note:** The default administrator user name is `nsmadmin`
`<Repository Password>`	The password for that administrative user

Repository Credentials

Please enter the Child Name, Child Class, Parent Name, Parent Class, Repository Name, Username with Repository Administrative previliges and its password in ChildName:ChildClass:ParentName:ParentClass:RepositoryName:Username:Password format.

Foreg: ChildHost:ChildClass:MyParentHost:Windows_NetServer:MyRepository:nsmadmin:mypassword. Default username is 'nsmadmin'

OK   Cancel

For example, if you wanted to link a service processor `MySP` of class `Sun_SP` to a host Sun Fire x64 server named `MyParentHost` of class `SunOS` in a repository named `MyRepository` with an administrator account name of `nsmadmin` and administrator account password of `mypassword`, you would enter the following string in the dialog box:

```
MySP:Sun_SP:MyParentHost:SunOS:MyRepository:nsmadmin:mypass
word
```
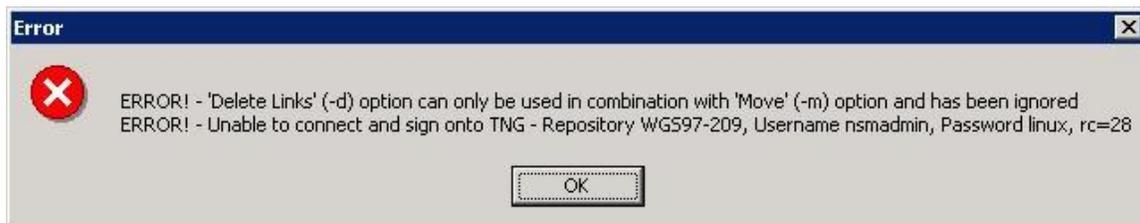
2.   Enter the required information and click OK.

If the Sun Integration Pack successfully links the specified service processor with the specified Sun Fire x64 server, it displays the following message:

Information

Successfully created 'wgs97-116.East.Sun.COM' Child Object under 'wgs97-117.East.Sun.COM'

OK

The Sun Integration Pack reports here that the service processor named `wgs97-116.East.Sun.COM` has been linked successfully as a child under the Sun Fire x64 host server named `wgs97-228.East.Sun.COM`.

If the Sun Servers Integration 2.2 for CA Unicenter NSM cannot link the specified service processor with the specified Sun Fire x64 server, it displays an error message specifying the problem. In the following screen shot, for example, the Sun Servers Integration 2.2 for CA Unicenter NSM reports an incorrect repository password:

Error

ERROR! - 'Delete Links' (-d) option can only be used in combination with 'Move' (-m) option and has been ignored
ERROR! - Unable to connect and sign onto TNG - Repository WGS97-209, Username nsmadmin, Password linux, rc=28

OK

3.   Click OK to close the message box.

Release Notes

Debug Messages in the Event Console

When you power on a Sun server, you may see in the Event Console several traps with severity level Success similar to the following:

```
Sun_SP_Event_UNK: Pre OS Error. Additional Info: 0.000000
```

These trap messages are of value to debug tools, but otherwise purely informational. Ignore them.

Empty Field in a Security Message

When CA Unicenter NSM detects a security intrusion from a Sun server, the following message appears in the Event Console:

```
Sun_SP_Event_UNK: Sensor detected Security Intrusion.
Additional Info:
```

The second field in that message, "`Additional Info:`" is empty. No additional information is available.

Sun SNMP MIBs

Many Sun system management integration packages depend on the SNMP protocol and use one or more of the following Sun SNMP MIBs:

- **ENTITY-MIB**: This MIB is used by all SNMP agents to monitor and to describe the physical and logical elements of a managed system. The operation of this MIB is described in the Sun publication *Sun SNMP Management Agent Administration Guide for Sun Blade, Sun Fire and Netra Servers* (819-7978).

  Filename: `ENTITY-MIB.mib`

  Note: The ENTITY-MIB is not used with integrations based exclusively on SNMP traps.

- **SUN-PLATFORM-MIB**: This MIB is used by Solaris-based servers to extend the ENTITY-MIB Physical Entity Table to represent new classes of component and the Logical Entity Table to represent high value platform and server objects. This MIB supplies the Sun SNMP Management Agent for Sun Fire and Netra Systems with traps. The operation of this MIB is described in the Sun publication *Sun SNMP Management Agent Administration Guide for Sun Blade, Sun Fire and Netra Servers* (819-7978).

  Filename: `SUN-PLATFORM-MIB.mib`

- **SUN-ILOM-PET-MIB**: This MIB enables management platforms that are not IPMI compliant to partly decode standard IPMI Platform Event Traps (PETS) generated by the ILOM v1.x and Embedded LOM service processors.

  Filename: `SUN-ILOM-PET-MIB.mib`

- **SUN-HW-TRAP-MIB**: This MIB replaces and enhances the SUN-ILOM-PET MIB for ILOM 2.x systems.

  Filename: `SUN-HW-TRAP-MIB.mib`

- **SUN-HW-MONITORING-MIB:** This MIB enables hardware inventory, status, version and power consumption information related to the Sun server or blade implementing this MIB. SNMP Traps associated with this server are defined in a separate SUN-HW-TRAP-MIB.

  Filename: `SUN-HW-MONITORING-MIB.mib`

To view a summary of the entries in these MIBs or to download them, consult the following Sun web site:

http://www.sun.com/system-management/tools.jsp

Glossary

This appendix provides terminology for both CA Unicenter NSM and Sun system management technologies.

CA Unicenter NSM Terminology

Acronym	Term	Definition
AEC	Advanced Event Correlation	AEC provides event management services.
BPV	Business Process View	BPV is a tool used to group managed objects, specifically discovered servers.
CORE	Common Object Repository	The WorldView component contains the COR which stores managed objects.
DSM	Distributed State Machine	The DSM component discovers and monitors agents and formats traps for agents. DSM feeds this information to the WorldView component.
EM	Enterprise Management	EM collects messages and events from monitored systems and displays those messages in the Event Console.
MCC	Management Command Center	MCC provides a graphical 2D and 3D interface into all NSM components.
NSM	Network and Systems Management	NSM coordinates all database, user interface, agent, event, and distributed management services.
WV	WorldView	WorldView is the CA Unicenter component that launches systems management applications and displays subsystem status. Worldview contains the Common Object Repository (COR) which stores managed objects.

Sun System Management Terminology

The following terminology references Sun-specific system management technologies.

Acronym	Term	Definition
ALOM	Advanced Lights Out Manager	Sun Advanced Lights Out Manager (ALOM) consists of service processor hardware and firmware that supports the remote monitoring of Sun SPARC servers.
Embedded LOM	Embedded Lights Out Manager	Sun Embedded Lights Out Manager consists of service processor hardware and firmware that supports the remote monitoring and management of Sun servers through IPMI and SNMP interfaces.
ILOM	Integrated Lights Out Manager	Sun ILOM consists of service processor hardware and firmware that supports the remote monitoring and management of Sun servers through IPMI and SNMP interfaces.
MASF	Sun SNMP Management Agent	The Sun MASF agent provides SNMP integration between Sun SPARC-based servers and management hosts.

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