

**Oracle® Hardware Management Pack for
Oracle Solaris 11.2 Release Notes**

ORACLE®

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Using This Documentation

This section describes how to get the latest documentation and support for Oracle Hardware Management Pack (HMP) for Oracle Solaris. It also provides feedback links and a document change history.

- [“About Oracle Hardware Management Pack for Oracle Solaris” on page 9](#)
- [“Documentation and Feedback” on page 9](#)
- [“About This Documentation” on page 10](#)
- [“Support and Training” on page 10](#)
- [“Contributing Authors” on page 10](#)
- [“Change History” on page 10](#)

About Oracle Hardware Management Pack for Oracle Solaris

Oracle Hardware Management Pack for Oracle Solaris is a set of commands and agents that help you manage your Oracle servers and is part of the Oracle Solaris operating system starting with Oracle Solaris 11.2.

If you have an earlier version of Oracle Solaris, you can obtain the standalone version of Oracle Hardware Management Pack through the Oracle Support site.

Documentation and Feedback

The following documentation is available related to the Oracle Hardware Management Pack for Oracle Solaris.

Documentation	Link
All Oracle products	http://docs.oracle.com
Oracle Hardware Management Pack for Oracle Solaris	http://www.oracle.com/goto/ohmp/solarisdocs

Documentation	Link
Oracle ILOM	http://www.oracle.com/goto/ilom/docs

Provide feedback on this documentation at:

<http://www.oracle.com/goto/docfeedback>.

About This Documentation

This documentation is available in both PDF and HTML. The information is presented in topic-based format (similar to online help) and therefore does not include chapters, appendixes, or section numbering.

Support and Training

These web sites provide additional resources:

- Support: <https://support.oracle.com>
- Training: <http://education.oracle.com>

Contributing Authors

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Change History

The following changes have been made to the document.

- July 2014. Initial publication.
- December 2014. Updated *Release Notes* to document bug 19462769.
- January 2015. Updated the *Management Agent User's Guide* to correct the name of the hardware management agent service for Solaris 11.2 and later.
- March 2015. Updated *CLI User's Guide* and *Installation Guide* to add the `nvmeadm` command. Updated *CLI User's Guide* to add error codes for the `ubiosconfig` command. Made general editorial improvements and other minor technical updates.

- May 2015. Updated the *Release Notes* to document bug 20364298. Updated *CLI User's Guide* to add warnings about creating RAID volumes on available disks using the `raidconfig` command.
- June 2015. Updated the *Release Notes* to document bug 21098717. Updated *CLI User's Guide* to describe new `raidconfig` read/write cache options. Updated *Management Agent User's Guide* to add section on enhanced disk diagnostic events. Made general editorial improvements and other minor technical updates.
- September 2015. Updated the *Release Notes* to document bugs 18048467, 21563538, 21622963 and 21787319. Updated *CLI User's Guide* to describe manual power cycle requirement for remote service processor firmware updates.
- November 2015. Updated the *Release Notes* to add information about feature releases and bug fixes per release. Updated the *CLI User's Guide* to add `nvmeadm` error codes.

Software Release Information

This section contains the following information:

- [“Oracle Hardware Management Pack for Oracle Solaris” on page 13](#)
- [“Updates in Oracle Hardware Management Pack for Oracle Solaris 11.2” on page 13](#)
- [“Oracle Hardware Management Pack for Oracle Solaris Documentation” on page 18](#)

Oracle Hardware Management Pack for Oracle Solaris

This document applies to servers running Oracle Solaris 11.2 and later versions.

Beginning with Oracle Solaris 11.2, Oracle Hardware Management Pack has become an integrated component of the operating system. Do not download and use other versions of Oracle Hardware Management Pack that are not specifically qualified for the Oracle Solaris 11.2 (and later) operating system.

If you have Oracle Solaris 11.1 or earlier or other operating systems, continue to use the standalone version of Oracle Hardware Management Pack, available as a separate download from <https://support.oracle.com>.



Oracle Hardware Management Pack for Oracle Solaris is a set of commands and agents to help you manage Oracle servers and is part of the Oracle Solaris operating system beginning with Oracle Solaris 11.2.

Updates in Oracle Hardware Management Pack for Oracle Solaris 11.2

This section describes changes in Oracle Hardware Management Pack (HMP) for Oracle Solaris 11.2 releases.

- [“New Features” on page 14](#)

- [“Platform and Component Support” on page 15](#)
- [“Issues Fixed” on page 16](#)

New Features

The following new features are part of the Oracle Solaris 11.2 SRU releases.

Release SRU 14 Features (HMP version 2.3.3.0)

- The `ilomconfig create local host credential cache` feature is no longer supported. You can still use `ilomconfig` to delete a previously saved local host credential cache. For additional details see [“`ilomconfig Host Credential Cache Feature Has Been Disabled \(21563538\)`” on page 29](#).

Release SRU 9 Features (HMP version 2.3.2.1)

- Enhanced diagnostic features were added to collect more data from the Sun Storage 6 Gb SAS PCIe HBA, Internal (SGX-SAS6-INT-Z) (20364298). This includes various disk errors and SMART events generated for disks in a RAID in the Solaris and Linux environments. These events help better identify suspect disks in a RAID. For more information, see *Oracle Server Management Agents User’s Guide*.

Release SRU 8 Features (HMP version 2.3.2.0)

- Support added for new X5 series platforms and components. See the Support Matrix for details.
- The `nvmeadm` tool has been added to configure NVMe controllers. For more information, see *Oracle Server CLI Tools User’s Guide*.
- New targets have been added to the `fwupdate update` command for updating NVMe and NIC controllers. For more information, see *Oracle Server CLI Tools User’s Guide*.
- For a system with an Oracle Storage 12 Gb/s SAS PCIe RAID HBA, you can enable JBOD mode so that the underlying operating system can access a disk directly without creating a RAID volume first. For more information, see *Oracle Server CLI Tools User’s Guide*.
- The `fast_updates_enabled` feature is available for `hwmgmt.d.conf`. This enables you to increase the frequency of drive temperature sensor polling for more accurate disk monitoring.
- The Hardware Management Agent on a SPARC server running Oracle VM can be installed to logical domains. This enables you to monitor storage devices found in the logical domain using the Hardware Management Agent in a primary domain.

- SUN-HW-MONITORING-MIB, part of the Oracle Hardware Management Pack SNMP plugins, has been extended to include new sensor types found on recent Oracle servers.
- The `itpconfig` tool has been updated to forward event traps based on the ILOM-SYSTEM-MIB. You can use Oracle ILOM web interface to download MIBs (under ILOM Administration > Management Access > SNMP) to confirm that your server supports this MIB.
- System event log (SEL) monitoring is disabled in the hardware agent (`hwmgmt`). Use one of the following tools to access the SEL and fault-based traps:
 - Use the `ipmievd` utility to log IPMI SEL events from Oracle ILOM to `syslog`.
`ipmievd` is a binary that is part of the `ipmitool` package in Oracle Hardware Management Pack. See the `ipmievd.8` man page for more information.
 - Use `itpconfig` (the Oracle ILOM trap proxy) to forward the SNMP traps directly to the host from Oracle ILOM using the Host-to-ILOM interconnect feature. For more information on configuring Oracle ILOM to send SNMP traps, refer to the Oracle ILOM documentation. For more information on using `itpconfig`, refer to the *Oracle Server Management Agents User's Guide*.

Note - FRU (Field Replaceable Unit) add/remove traps and storage device traps are still handled by the management agent (`hwmgmt`). The management agent must be installed and running to receive these traps.

Release SRU 2 Features (HMP version 2.2.8.3)

- Support added for X5 series platforms and components. See the Support Matrix for details.

Oracle Solaris 11.2 initial release (HMP version 2.2.8.1)

Oracle Hardware Management Pack integrated into Oracle Solaris 11.2.

Platform and Component Support

For information on support for new platforms and components per Oracle Hardware Management Pack for Oracle Solaris release, refer to the system management support matrix web page. New platforms and components are added periodically. As they are added, a release-specific support matrix link is added to the main page which includes a superset of all products and components supported in the release.

A link to the support matrices for all versions is available at:

<http://www.oracle.com/goto/ohmp>

Issues Fixed

The following are issues for Oracle Hardware Management Pack that were fixed in Oracle Solaris 11.2 SRU releases. Oracle recommends that you always use the latest SRU.

Issues Fixed in Release SRU 14 (HMP version 2.3.3.0)

- Duplicated disk events should be integrated to one in event log (21495102)
- Network bonding configuration of multiple Ethernet cards can cause management agent to hang ILOM (21439951)
- fwupdate tries to get local ILOM credentials when running with -H option (21086520)
- Remote ILOM update: the host, where command is launched, is rebooted (18048467)
- Remove stored credential feature from HMP (21563538)
- Unexpected "%s" characters in component names in sunStorageMIB query output (21657443)

Issues Fixed in Release SRU 13 (HMP version 2.3.2.5)

- hwmgmt on guest domain hangs sometimes (21259322)
- hwmgmt increasing memory usage over time (20764702)
- /etc/ssm/hwmgmt.conf is a non-editable file in IPS package hwmgmt (21264661)
- fwupdate terminates with alarm clock message (21330923)

Issues Fixed in Release SRU 12 (HMP version 2.3.2.4)

- ilomconfig reset hostprofile does not remove all previous host profile updates (21207930)
- Change nvmeadm to improve error messages and controller error case behavior (21093595)

Issues Fixed in Release SRU 11 (HMP version 2.3.2.3)

- User warning: raidconfig shows the system boot disk as available (20992189)
- SPARC: fwupdate list disk in LDG1 yields "Message Get Device ID command failed Unknown (0x7E)" (21049992)
- Oracle Solaris 11.2 SRU 8 nvmeadm doesn't work on M10 (20829055)
- When creating a RAID volume, cachemode NRWTC is configured by default (20988172)

- `raidconfig` reports cache status incorrectly for MegaRAID model 9261-8i (20845581)
- Errors upgrading Solaris 11.1 to 11.2 SRU 8 when MOS version of HMP installed (21136438)
- SPARC: HMP libs should cache platform name to reduce service start times (21136843)
- At system startup, `svcs` dependencies require `ilomconfig` to run before `sp/management` (21108476)
- Raid cache setting changes in `raidconfig` manpage (21098717)
- Cleanup `host_profile` messages to remove misleading "failed" messages (21181271)
- Message "hwmgmt reset is set to on" should not appear on console (only in log file) (21180841)
- `ubiosconfig` reports inaccurate error messages for BIOS upgrade failures (21155720)
- Memory leak in HMP agent (21151019)
- Oracle Solaris 11.2 SRU 4.6 (SPARC) `/sbin/ipmitool` core dumps with switch "-I lanplus" (20457919)

Issues Fixed in Release SRU 10 (HMP version 2.3.2.2)

- Fix incorrect `hwmgmt` log message when child process is killed (20905150)
- Some `nvmeadm` message output on some commands are not clear (20898666)
- `nvmeadm getlog` does not report correct value for available error logs (20884169)
- Boot time improvement for processes that use Host-to-ILOM Interconnect on Solaris 11 (20868703)
- When using `raidconfig` to import the configuration of RAIDs with subdisks, if multiple RAIDs on a controller have been modified, only the modified properties on first RAID will be imported (16494064)
- Need to add auto powercycle support to `fwupdate` for SPARC systems (15775719)
- Have `hwmgmt` use Oracle Solaris `fcinfo` to gather information on fibre channel adapters instead of vendor tools `quacli` and `hbacmd` (20984781)
- Use of vendor tool `quacli` by `hwmgmt` causing FC storage links to go offline/online (20950982)
- Need to update timestamp in host profile (20967978)
- SPARC: `nvmeadm` shows unclear values in `getlog -h` output (20925705)
- `nvmeadm` message when attempting to offline a busy device is not clear (20924121)
- `nvmeadm` format and import online device error message should include device name (20923927)
- `nvmeadm import/export` subcommand functionality is not properly documented (20884222)
- "ERROR: Internal error" displays when modifying Host-to-ILOM interconnect netmask (20815962)
- `ilomconfig` reports benign "Unable to get mutex" log message (20761474)

Issues Fixed in Release SRU 9 (HMP version 2.3.2.1)

- nvmeadm not supported on Netra X5-2 (20572107)
- ilomconfig reports misleading error (20549914)
- fwupdate returns errors when using the "list all" option on X5-4 (20433480)
- fwupdate fails to update Intel LAN-on-Motherboard on X4-8 (19790933)
- ubiosconfig "BIOS configuration not accessible" error not parsed correctly (20673119)
- Remove unnecessary polling by HMP of drives on SPARC systems (20664342)
- hwmgmt on Oracle Solaris 11.2 SRU 8 dumps core (20636323)
- Core.hwmgmtd.xxxx files getting created often under root (20609628)
- Removed Guest Domains continue to be reported (20586180)
- Storage components appear and disappear (20686854)
- X5-8: ipmitool called from Windows shows wrong DIMM FRUID data (20638554)
- IPMITool sunoem cli does not correctly close connection to SP for KCS interface (19773825)

Issues Fixed in Release SRU 8 (HMP version 2.3.2.0)

- Large amount of SAS storage can cause ILOM to reset, need to eliminate non-essential SAS info (20366031)
- /System/Firmware/Other_Firmware displays wrong disk id numbers (20173839)
- fwupdate fails with "ERROR: Platform not supported" message (19207713)
- Unable to update Emulex Fiber Channel Adapter in Solaris (20403230)
- Unable to update Emulex Fiber Channel FCoE Adapter in Solaris (20403226)
- fwupdate displays no information for Emulex Fiber Channel Adapter (20507113)
- Display controller serial number if available (20515989)
- fwupdate command line help should list short option for help (-?) in general options (20395086)
- If HMP launches third party tool that hangs, it can also hang other HMP processes--need launcher timeout control to terminate hung tool (19589977)

Oracle Hardware Management Pack for Oracle Solaris Documentation

Complete documentation can be found at:

<http://www.oracle.com/goto/ohmp/solarisdocs>

Installation Notes and Issues

Issue	Workaround
“Updating from Oracle Solaris 11/11.1 to Oracle Solaris 11.2 Requires Setting Repository” on page 19	Yes
“Installing in Oracle Solaris Zones” on page 19	No
“NVM Express Administration Tool (nvmeadm)” on page 20	N/A

Updating from Oracle Solaris 11/11.1 to Oracle Solaris 11.2 Requires Setting Repository

If you have Oracle Solaris 11 or Oracle Solaris 11.1 with Oracle Hardware Management Pack installed and you want to update to Oracle Solaris 11.2, set the Oracle Hardware Management Pack repository *before* updating to Oracle Solaris 11.2. This is because the Oracle Hardware Management Pack packages were formerly in a repository called `mp-re` and are now in a repository called SSM (Single Server Management consolidation).

Workaround

Before updating to Oracle Solaris 11.2, type the following command:

```
#pkg set-publisher --non-sticky mp-re
```

Installing in Oracle Solaris Zones

Oracle Hardware Management Pack packages will install in all Oracle Solaris zones.

The Oracle Hardware Management Pack utilities in both Oracle Solaris 10 and Solaris 11 have limited or no functionality in non-global zones.

The following Oracle Hardware Management Pack utilities do not work in a non-global zone:

- `biosconfig`
- `fwupdate`

- ilomconfig
- itpconfig
- raidconfig
- ubiosconfig
- hwmgmtcli
- hwmgmtd (Management Agent)

This utility works only if the LAN interface is used in the non-global zone:

- ipmitool

NVM Express Administration Tool (nvmeadm)

As of Oracle Solaris 11.2 SRU 8, Oracle Hardware Management Pack for Oracle Solaris includes the NVM express administration tool (nvmeadm).

This tool allows you to manage NVMe storage devices in an Oracle server. For a list of servers that support this tool, see the Oracle Hardware Management Pack for Oracle Solaris support matrix at: <http://www.oracle.com/goto/ohmp>

Known Issues and Notes

- [“Common Oracle Hardware Management Pack Known Issues” on page 21](#)
- [“fwupdate Known Issues ” on page 24](#)
- [“hwmgmtcli Known Issues” on page 27](#)
- [“ilomconfig Known Issues” on page 28](#)
- [“ipmitool Known Issues ” on page 30](#)
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Common Oracle Hardware Management Pack Known Issues

The issues shown in the following table are related to all Oracle Hardware Management Pack tools.

Issue	Workaround
“Oracle Hardware Management Pack Diagnostics for SGX-SAS6-INT-Z HBA Need to Be Extended (20364298)” on page 21	NA
“Segmentation Fault in System With More Than 16 of the Same Type of LSI Storage Controllers (16618057)” on page 23	No
“Some Utilities Run Slowly on SPARC T3 Systems (15720486, 15705545)” on page 23	No

Oracle Hardware Management Pack Diagnostics for SGX-SAS6-INT-Z HBA Need to Be Extended (20364298)

In Oracle Solaris 11.2 SRU 10, enhanced diagnostic features were added to collect more data from disks connected to the Sun Storage 6 Gb SAS PCIe HBA, Internal (SGX-SAS6-INT-

Z). This includes various disk errors and SMART events. In addition, these events identify suspect physical disks among logical disks in a RAID volume. These events are captured and logged in `/var/log/ssm/event.log` when the hardware management agent (`svc:/system/sp/management:default`) is running.

The following table lists enhanced diagnostic events being logged.

Event Name in Log	Description
PD_RECOVERED_ERROR	A disk recovered error was detected.
PD_BAD_DEVICE_FAULT	A non-recoverable drive failure was detected by the device while performing a command.
PD_MEDIA_ERROR	A medium error was detected by the device that was non-recoverable.
PD_DEVICE_ERROR	A non-recoverable hardware failure was detected by the device. The device may be offlined or degraded.
PD_TRANSPORT_ERROR	A path to the device has been unconfigured due to transport instability.
PD_OVER_TEMPERATURE	Disk SMART process reports a critical temperature.
PD_SELF_TEST_FAILURE	One or more disk SMART self tests failed.
PD_PREDICTIVE_FAILURE	SMART health-monitoring firmware reported that a disk failure is imminent.

The controller polls each physical disk in the volume at regular intervals. If a disk has encountered an error, an event is generated by the controller. The hardware management agent captures that event and enters it in the hardware management event log.

To view the event information in the hardware management event log, type:

```
# view /var/log/ssm/event.log
```

For disk events, you will see information similar to:

```
Thu Apr 30 12:32:31 2015:(CLI) Event Name : PD_MEDIA_ERROR
Thu Apr 30 12:32:31 2015:(CLI) Event Description : A medium error was
detected by the device that was non-recoverable.
Thu Apr 30 12:32:31 2015:(CLI) ASC : 0x10
Thu Apr 30 12:32:31 2015:(CLI) ASCQ : 0x3
Thu Apr 30 12:32:31 2015:(CLI) Sense Key : 0x3
Thu Apr 30 12:32:31 2015:(CLI) Source : LSI
Thu Apr 30 12:32:31 2015:(CLI) SAS Address : 0x5000cca01200fadd
Thu Apr 30 12:32:31 2015:(CLI) LSI Description : Unexpected sense: PD
0c(e0xfc/s1) Path 5000cca01200fadd, CDB: 2f 00 00 fc 4d 42 00 10 00 00,
Sense: 3/10/03
Thu Apr 30 12:32:31 2015:(CLI) Event TimeStamp : 04/30/2015 ; 19:30:25
Thu Apr 30 12:32:31 2015:(CLI) Node ID : 00000000:12
Thu Apr 30 12:32:31 2015:(CLI) Nac Name : /SYS/HDD1
Thu Apr 30 12:32:31 2015:(CLI) Serial Number : 001015N0JPXA PMG0JPXA
```

```
Thu Apr 30 12:32:31 2015:(CLI) WWN No : PDS:5000cca01200fadd
Thu Apr 30 12:32:31 2015:(CLI) Disk Model : H106030SDSUN300G
```

You can then use the information in the event listing to determine which physical disk in the system has the issue. Information such as the Oracle ILOM Nac Name (which matches the label on the front panel of the system) and drive Serial Number help you identify the disk and its drive slot in the system.

Note - For PD_OVER_TEMPERATURE, PD_SELF_TEST_FAILURE and PD_PREDICTIVE_FAILURE events, use Oracle ILOM to configure proactive alerts.

For the other disk diagnostic events described in this document, it is up to the administrator to check the hardware management event log for these disk events when a disk problem is suspected. There is currently no alert mechanism to proactively announce these events.

Segmentation Fault in System With More Than 16 of the Same Type of LSI Storage Controllers (16618057)

This issue is fixed in Oracle Solaris 11.2 SRU 8.

If you are running `fwupdate`, `raidconfig`, `hwmgmtcli`, or `hwmgmtd` on a system with more than 16 of the same type of storage controller, a segmentation fault will occur.

Some Utilities Run Slowly on SPARC T3 Systems (15720486, 15705545)

The `hwmgmtd` utility might not provide accurate results when run on a SPARC T3 system.

Some other Oracle Hardware Management Pack utilities (such as `raidconfig` and `hwmgmtcli`) can also run very slowly on a SPARC T3 system.

These problems are due to a Oracle Solaris issue documented in issue 6937169.

Workaround

1. Disable the affected utility.
2. Read the `mdb` documentation and then enter the following commands:

```
# mdb -kw
> ddi_aliases_present/W 0
```

3. Re-enable the utility.

fwupdate Known Issues

Issue	Workaround
“Error Message When Updating Oracle Storage 12 Gb SAS PCIe HBA, Internal (19517770)” on page 24	Yes
“Firmware Versions Do Not Display With 16Gb Fibre Channel or Dual 10 GbE Card (Emulex) (17037795)” on page 24	No
“Power Cycle Required to Update Oracle ILOM Version on Sun Fire X4170 M2 Server (16562687)” on page 25	No
“Error Messages Can Be Disregarded When Updating Firmware for an Emulex Fiber Channel Card (15762571)” on page 25	No
“fwupdate Cannot Downgrade Firmware (15663490)” on page 25	Yes
“Remote SP Update Does Not Power Cycle the System (18048467)” on page 25	Yes
“fwupdate Cannot Be Used to Update Firmware on Some SPARC Onboard Intel-Based Ethernet Controllers (21622963)” on page 26	No
“fwupdate Might Fail When Updating Firmware on the Oracle Quad 10Gb Ethernet Adapter (21446307)” on page 26	Yes

Error Message When Updating Oracle Storage 12 Gb SAS PCIe HBA, Internal (19517770)

This issue is fixed in Oracle Solaris 11.2 SRU 5.

When updating the Sun Storage 12 Gb SAS PCIe HBA, Internal firmware using fwupdate, you might get an error similar to the following:

```
Error: Firmware download failed for component
Extended Error: Firmware upgrade attempt failed
ERROR: Firmware download failed for component
```

Workaround

Reboot the system and the firmware update will be applied.

Firmware Versions Do Not Display With 16Gb Fibre Channel or Dual 10 GbE Card (Emulex) (17037795)

When 16Gb Fibre Channel or Dual 10 GbE Card (Emulex) cards are in NIC or CNA mode, the fwupdate list command does not display the EFI, FCODE and BIOS versions.

This occurs regardless of the operating system on the server.

Power Cycle Required to Update Oracle ILOM Version on Sun Fire X4170 M2 Server (16562687)

When upgrading Oracle ILOM from a lower version than 3.1.2.20 to a version 3.1.2.20 or later on the Sun Fire X4170 M2 server, the server must be power-cycled. If the server is not set up to power cycle automatically after the firmware update, power off the host and power it back on again after a few minutes.

Error Messages Can Be Disregarded When Updating Firmware for an Emulex Fiber Channel Card (15762571)

When doing a firmware upgrade for a Emulex Fibre Channel Card, you might see the following error messages. These messages can be disregarded:

```
Updating c3: lpfc 0000:b0:00.0: 0:1306 Link Up Event in loop back
>>>> mode x1 received Data: x1 x1 x20 x1
>>>> lpfc 0000:b0:00.0: 0:1309 Link Up Event npiv not supported in loop
>>>> topology
>>>> lpfc 0000:b0:00.0: 0:(0):2858 FLOGI failure Status:x3/x18 TMO:x0
>>>> lpfc 0000:b0:00.0: 0:(0):2858 FLOGI failure Status:x3/x18 TMO:x0
>>>> lpfc 0000:b0:00.0: 0:(0):2858 FLOGI failure Status:x3/x18 TMO:x0
>>>> lpfc 0000:b0:00.0: 0:(0):2858 FLOGI failure Status:x3/x18 TMO:x0
>>>> Success
```

fwupdate Cannot Downgrade Firmware (15663490)

If you attempt to downgrade firmware for a Hitachi H101414SC 146 GB disk driver using fwupdate, you might receive a message stating that the update was successful; however, fwupdate does not support firmware downgrades on this device.

Workaround

Compare the current firmware version with the version to which you want to update. If the current version is newer, do not update the firmware.

Remote SP Update Does Not Power Cycle the System (18048467)

This issue is fixed in Oracle Solaris 11.2 SRU 14.

After using `fwupdate` to update the Oracle ILOM service processor of a remote system over the network, the system that has been updated does not automatically reboot.

Workaround

After performing a remote update of an Oracle ILOM SP, manually power cycle the remote system to enable the update. A power cycle is required to reset a service processor after a firmware update.

fwupdate Cannot Be Used to Update Firmware on Some SPARC Onboard Intel-Based Ethernet Controllers (21622963)

On some SPARC systems with an onboard Ethernet controller (also called "LAN-On-Motherboard", or "LOM"), `fwupdate` is unable to obtain details about the controller. Without this information, `fwupdate` cannot be used to update the firmware of the controller.

Before attempting to update firmware on a SPARC system, display information using `fwupdate list`. If the output does not show device information (such as the current firmware version) for the system's onboard network controller, you cannot use `fwupdate` to update the controller firmware.

This issue is seen with network interface controllers on some SPARC systems. The `fwupdate` command can still be run successfully on other devices. For a list of systems and controllers supported for use with `fwupdate`, refer to the Support Matrices at: <http://www.oracle.com/goto/ohmp>.

If the onboard network controller firmware for these systems needs to be updated, contact Oracle Support.

fwupdate Might Fail When Updating Firmware on the Oracle Quad 10Gb Ethernet Adapter (21446307)

In rare instances, updating firmware on an Oracle Quad 10Gb Ethernet Adapter using the `fwupdate` command might fail. This problem might also occur when attempting to update the adapter's firmware using the Oracle System Assistant.

Workaround

If you encounter this problem, retry updating the adapter's firmware using the `fwupdate` command. If the failure persists, contact Oracle Support.

hwmgmtcli Known Issues

Issue	Workaround
“Running hwmgmtcli on a Sun Blade X6270 M2 Server Might Return Error Messages for Chassis Information (15762248)” on page 27	Yes
“Sun Blade X6270 M2 Shows Incorrect Chassis Data (15732926,15737206,15737199)” on page 27	Yes
“Running hwmgmtcli list open_problems Might Show Incomplete Open Problems Report (21787319)” on page 27	No

Running hwmgmtcli on a Sun Blade X6270 M2 Server Might Return Error Messages for Chassis Information (15762248)

When running hwmgmtcli commands, errors are returned for chassis information as follows:

```
Chassis Model: ERROR
Chassis Address: ERROR
```

Workaround

To avoid this error, upgrade to Oracle ILOM 3.1.

Sun Blade X6270 M2 Shows Incorrect Chassis Data (15732926,15737206,15737199)

When using the hwmgmtcli command to view chassis information on a Sun Blade X6270 M2 server module, some information about the chassis is missing.

Workaround

Use Oracle ILOM CMM to view the chassis information.

Running hwmgmtcli list open_problems Might Show Incomplete Open Problems Report (21787319)

When running Oracle Solaris 11.2 with SRU 14, under certain rare conditions the hwmgmtcli list open_problems command might not show open problems the host has detected for

storage devices. Or the host-detected storage problems shown might be incomplete and might even over-write other existing non-storage open problems. For this issue to be seen, the following conditions must exist:

1. Oracle ILOM reports that /System/Storage/health is OK.
2. The host has diagnosed storage issues which Oracle ILOM is not capable of diagnosing.

Under these conditions, the `hwmgmtcli list open_problems` output might be corrupted in the following ways:

- If Oracle ILOM has no open problems, then no open problems of any kind will be listed.
- If host-detected storage problems are found, only those that can replace existing Oracle ILOM problems in the `hwmgmtcli` output will be listed. For example, if two Oracle ILOM problems exist and the host detects three storage problems, `hwmgmtcli` will only list two of the storage problems (replacing the two Oracle ILOM problems).

There is no workaround for this issue. When assessing possible storage problems, use Oracle ILOM first to gather as much information as possible on storage issues it can diagnose. Then use `hwmgmtcli` to see if you can obtain any additional information on storage issues Oracle ILOM cannot diagnose. You can also use host logs and available OS and vendor storage controller tools to further investigate the issue.

ilomconfig Known Issues

Issue	Workaround
“ilomconfig Commands Might Fail When Using Oracle ILOM 3.0.9 (15650623)” on page 28	Yes
“ilomconfig Host Credential Cache Feature Has Been Disabled (21563538)” on page 29	Yes

ilomconfig Commands Might Fail When Using Oracle ILOM 3.0.9 (15650623)

Oracle ILOM versions 3.0.9 and earlier have limitations that might cause the `ilomconfig` command to fail with the error `Cannot connect to BMC`. These errors can occur when multiple programs attempt to access the IPMI interface of Oracle ILOM.

If such errors do occur, Oracle ILOM must recover from this error. This recovery could mean a one or two minute disruption in the services provided by Oracle ILOM.

Workaround

To help avoid this error, disable the Hardware Management Agent and Storage Monitoring Agent before using `ilomconfig`. Also, avoid any other IPMI access to Oracle ILOM, such as using `ipmitool`, when running `ilomconfig`.

ilomconfig Host Credential Cache Feature Has Been Disabled (21563538)

As of Oracle Solaris 11.2 SRU 14, the host credential cache feature used to facilitate access to the Oracle ILOM service processor (SP) through the Host-to-ILOM Interconnect has been disabled. The `ilomconfig create credential` command will no longer create a credential cache file on the host to store Oracle ILOM username and password information. Nor will an existing credential cache be used for Oracle Hardware Management Pack commands accessing the Oracle ILOM SP.

This change affects the way some Oracle Hardware Management Pack commands are issued that access the system's local SP (like `fwupdate`, `ilomconfig` and `ubiosconfig`) and only on systems with an Oracle ILOM version earlier than 3.2.4. For these systems, if you want to use a LAN interface (either the Host-to-ILOM interconnect or an Ethernet network connection) you must manually include credentials using the `-H` and `-U` options for commands that access an SP. If credentials are not provided, these commands will default to the slower local KCS interface to access the local Oracle ILOM SP.

For systems with Oracle ILOM version 3.2.4 or later, credentials do not need to be included when running commands that access the local SP through the Host-to-ILOM interconnect. You still need to manually include credentials (using the `-H` and `-U` options) when running commands that access an SP using a network connection.

The capability to delete a previously saved host credential cache is still supported using the `ilomconfig delete credential` command.

Workaround

To use the faster LAN interface for Oracle Hardware Management Pack commands that access the local Oracle ILOM SP (versions earlier than 3.2.4), you must manually enter the required user credentials from the command line. The required password can also be piped in on stdin for scripting use.

Examples:

- `ilomconfig list system-summary --remote-hostname=sp_ip --remote-username=username`
- `cat passwd.file | fwupdate list all --remote-hostname=sp_ip --remote-username=username`

Where *sp_ip* is the IP address of the Oracle ILOM SP, *username* is the Oracle ILOM user account with root privileges, and *passwd.file* is a file you create that contains the Oracle ILOM user account password.

Note - In the example above, to use the local Host-to-ILOM interconnect instead of a network port to access the SP, obtain its IP address using the `ilomconfig list interconnect` command.

ipmitool Known Issues

Issue	Workaround
“ipmitool Error Might Occur When SP Is Booted and SPARC T3-4 Host Is On (15719015, 15691003)” on page 30	Yes

ipmitool Error Might Occur When SP Is Booted and SPARC T3-4 Host Is On (15719015, 15691003)

When the SPARC T3-4 host is powered on and the SP is booted, you might receive the following error:

```
SP communication failure....Please start IPMI
```

```
ipmitool will not function in this state.
```

Workaround

If you encounter this error, reboot the host to clear the error.

raidconfig Known Issues

Issue	Workaround
“User Warning: raidconfig Shows the System Boot Disk as Available (20992189)” on page 31	NA
“raidconfig Hangs When Disk Removed From SPARC Server (15826569)” on page 31	Yes
“RAID Volume Might Not Be Visible in Oracle ILOM on SPARC Systems (15782246)” on page 32	Yes

Issue	Workaround
“RAID 1 Volume With More Than Two Disks Is Not Handled Correctly (15747500)” on page 32	No
“When Running <code>init</code> Task on RAID Volume <code>clear</code> Tasks on Disks Always Show 0% Complete (15742034)” on page 32	No
“Mounted Property for RAID Volumes Is Not Visible When Using <code>SGX-SAS6-R-REM-Z</code> or <code>SGX-SAS6-R-INT-Z</code> (15666684)” on page 32	Yes
“After Creating a RAID Volume With <code>--name</code> Option With <code>LSI REM</code>, Volume's Name Is Still Null (15675209)” on page 33	No
“Additional <code>raidconfig</code> Options Available for RAID Read/Write Cache for MegaRAID HBAs (21098717)” on page 33	NA
“RAID 10 Listed as Not Supported When Creating RAID Volume With <code>raidconfig</code> (22129034)” on page 34	Yes

User Warning: `raidconfig` Shows the System Boot Disk as Available (20992189)

`raidconfig` can scan your controllers and connected disks and list disks that are either already in a RAID volume, or available to be included in a RAID volume. However, `raidconfig` cannot tell if an available disk has data on it, or if a disk is otherwise used as either a boot disk or logical disk for an application.

Before using `raidconfig` to create volumes (which will overwrite any existing data), use operating system tools to take an inventory of attached disks, their enumeration, and whether they contain data that you want to preserve.

`raidconfig` Hangs When Disk Removed From SPARC Server (15826569)

This issue is fixed in Oracle Solaris 11.2 SRU 8.

If a disk that is part of a RAID volume is physically removed from a SPARC server, the `raidconfig` command hangs.

Workaround

- Do one of the following:
 - Reboot the OS (recommended).
 - Wait for about 10 minutes.
- Run the `raidconfig` command.

RAID Volume Might Not Be Visible in Oracle ILOM on SPARC Systems (15782246)

A RAID volume created using `raidconfig` might not be visible under the `/STORAGE` target in Oracle ILOM.

Workaround

Use the `raidconfig list all` command to view the newly created volume.

RAID 1 Volume With More Than Two Disks Is Not Handled Correctly (15747500)

For the SGX-SAS6-R-INT-Z HBA, no more than two disks can be used for creating a RAID 1 volume.

When Running `init` Task on RAID Volume `clear` Tasks on Disks Always Show 0% Complete (15742034)

When an `init` task is running on a RAID volume, the disks in that RAID volume have a `clear` task started on them. The percentage complete for the `clear` task always shows zero until the `init` task has finished.

A workaround is not required.

Mounted Property for RAID Volumes Is Not Visible When Using SGX-SAS6-R-REM-Z or SGX-SAS6-R-INT-Z (15666684)

The `Mounted` property is missing from RAID volumes created when using the SGX-SAS6-R-INT-Z HBA or SGX-SAS6-R-REM-Z. `raidconfig` will not prevent you from deleting a mounted volume.

Workaround

1. Using the `raidconfig` command, retrieve the Device Name for the RAID volume.

2. Check the output of the mount command for an instance of the Device Name retrieved in Step 1.
3. If the Device Name is present in the output of the mount command, the RAID volume is currently mounted and should not be deleted using `raidconfig`.
4. Unmount the RAID volume first, then use `raidconfig` to delete the volume.

After Creating a RAID Volume With `--name` Option With LSI REM, Volume's Name Is Still Null (15675209)

After you create a RAID volume on the RAID 0/1 Expansion Module (X4607A) using `raidconfig` with the `--name` option, the RAID volume name is still null, though the RAID volume is successfully created.

Additional `raidconfig` Options Available for RAID Read/Write Cache for MegaRAID HBAs (21098717)

This issue is fixed in Oracle Solaris 11.2 SRU 11.

The `raidconfig` command supports updated and additional read/write options for RAID with the following LSI MegaRAID-based HBAs:

- Sun Storage 6 Gb SAS RAID PCIe HBA, Internal (SGX-SAS6-R-INT-Z, SG-SAS6-R-INT-Z)
- Oracle Storage 12 Gb SAS RAID PCIe HBA, Internal (7110116, 7110117)

The updated/additional options listed in the table below apply to the following `raid` subcommands:

```
raidconfig create raid
```

and

```
raidconfig modify raid
```

Updated Options	Description
<code>--read-cache=disabled enabled enabled_adaptive</code>	<ul style="list-style-type: none"> ■ Disabled – disables RAID read caching. ■ Enabled – enables RAID read ahead caching. ■ Enabled_adaptive – enables read adaptive caching.
<code>--write-cache=disabled enabled enabled_protect</code>	<ul style="list-style-type: none"> ■ Disabled – disables RAID write caching.

Updated Options	Description
	<ul style="list-style-type: none"> ■ Enabled – enables RAID write caching. ■ Enabled_protect – enables caching only if the battery is available.

RAID 10 Listed as Not Supported When Creating RAID Volume With raidconfig (22129034)

On a system with the Sun Storage 6 Gb/s SAS PCIe HBA (internal or external), attempting to create a RAID 10 volume using `raidconfig` with the `--level=10` option will yield the following message: "ERROR: RAID level not supported by controller."

Workaround

The FCODE version 1.00.65 on the Sun Storage 6 Gb/s SAS PCIe HBA (internal or external) does not support RAID 10. It does support an even (four or more) or odd (3 or more) number of disks used in a RAID level 1e. Use RAID level 1e in place of RAID level 10.

For example, to create a RAID 1e volume on four disks in the system, type:

```
raidconfig create raid --level=1e -d c0d0,c0d1,c0d2,c0d3
```

This RAID volume will be seen as RAID 1e by `raidconfig`, but seen as RAID 10 by the HBA's configuration utility (`sas2ircu`).

This is expected behavior with the Sun Storage 6 Gb/s SAS PCIe HBA using FCODE version 1.00.65.

Hardware Management Agent and SNMP Known Issues

Issue	Workaround
“Some SNMP Traps Available in Oracle ILOM Are Not Generated (15686011)” on page 35	Yes
“snmpwalk of the Storage MIB Results in a Timeout or Error Message (15694465)” on page 35	No
“SNMP Trap Issues” on page 35	Yes
“Sun Blade X6250 Server Module Reports Wrong Service Processor Version Number” on page 36	Yes
“Parent FRU Name for Sensors on Shared Components in a Blade Chassis Is Incorrect (15728111, 15688172)” on page 36	Yes
“Discrete Current Sensors Are Miscategorized on SPARC T3-Series Servers (15687547)” on page 36	Yes

Issue	Workaround
“sunHwMonFruStatus Does Not Reflect the Fault State of A Component (15687574)” on page 37	Yes
“SunHwMonInventoryTable Shows Incorrect Number of DIMMs (15566455)” on page 37	Yes
“SunHwMonDiscreteHardDriveSensorTable Incorrect Sensors” on page 37	No
“Host Agent Might Generate Incorrect Notification (15675490)” on page 37	Yes
“sunStorageVolumeOSMountPoint Not Showing Mount Point (15666684)” on page 38	No
“Incorrect DiskOSDeviceName on SPARC T3-2 System (15668518)” on page 38	Yes
“Storage MIB Does Not Expose Dual Path Disks (15673745)” on page 38	Yes

Some SNMP Traps Available in Oracle ILOM Are Not Generated (15686011)

The following types of SNMP traps in Oracle ILOM are not generated:

- Events that get reported for host state changes
- Events related to fault handling
- Events related to presence state changes of components on the platform

Workaround

You can access this information through Oracle ILOM or SNMP interfaces.

snmpwalk of the Storage MIB Results in a Timeout or Error Message (15694465)

When you use the `snmpwalk` command with a Storage MIB on a SPARC system, the storage information appears, but you might receive an error message or timeout at the end of the output.

This error message can safely be ignored.

SNMP Trap Issues

- `sunHwTrapProductName` can be empty on some platforms.
- `sunHwTrapSystemIdentifier` is empty when the service processor is running Oracle ILOM 2.0.
- `sunHwTrapAssocObjectId` is always set to `SNMPv2-SMI::zeroDotZero`.

- `sunHwTrapComponentName` is set to the IPMI name of the component rather than the name used by Oracle ILOM.
- On Sun Fire X4200 M2 servers, Hardware Management Agent sends `sunHwTrapComponentOK` or `sunHwTrapComponentError` instead of `sunHwTrapSlotOrConnectorOk` or `sunHwTrapSlotOrConnectorError`, which are sent by Oracle ILOM.

Workaround

You can access this information through Oracle ILOM or SNMP interfaces.

Sun Blade X6250 Server Module Reports Wrong Service Processor Version Number

When you run the Hardware Management Agent on Sun Blade X6250 server modules with older service processor firmware, the wrong version of service processor is reported.

Workaround

Oracle recommends that you upgrade to the latest firmware.

Parent FRU Name for Sensors on Shared Components in a Blade Chassis Is Incorrect (15728111, 15688172)

`sunHwMon...SensorParentFruName` is incorrectly set to `/SYS` for sensors on shared field replaceable units (FRUs) in a blade chassis.

Workaround

Use Oracle ILOM to determine the correct parent name for these sensors.

Discrete Current Sensors Are Miscategorized on SPARC T3-Series Servers (15687547)

On SPARC T3-Series servers, discrete current sensors are miscategorized and listed in `sunHwMonDiscreateOtherSensorTable` instead of in `sunHwMonDiscreteCurrentSensorTable`.

Workaround

Use the `sunHwMonDiscreateOtherSensorTable` to view discrete current sensors.

sunHwMonFruStatus Does Not Reflect the Fault State of A Component (15687574)

A component's status, as represented by `sunHwMonFruStatus`, is a cumulative status of sensors on that component. This status can differ from the component status in Oracle ILOM.

Workaround

Check Oracle ILOM to determine whether or not a components is faulted.

SunHwMonInventoryTable Shows Incorrect Number of DIMMs (15566455)

On some platforms, DIMMs which are not present in the system are shown in `sunHwMonInventoryTable`.

Workaround

View the `FruDescr`, `FruPartNumber`, `FruSerialNumber` and `FruManufacturer` objects. If these values are filled in, the DIMMs are present in the system. If the values are not filled in, it indicates DIMMs that are not present and can be safely ignored.

SunHwMonDiscreteHardDriveSensorTable Incorrect Sensors

Due to platform limitations, `sunHwMonDiscreteHardDriveSensorTable` can contain sensors for disks not physically present on the host. These sensors have a `ParentFruIndex` of -1 and end with `STATE-HIDDEN`. These sensors can be safely ignored.

Host Agent Might Generate Incorrect Notification (15675490)

Not all device types defined in recent releases of Oracle ILOM are recognized by the host agent, resulting in cases where the host agent generates a generic

`sunHwTrapComponent` notification rather than a device specific notification (for example, `sunHwTrapSlotOrConnector`). This is due to a component error rather than a slot or connector.

Workaround

Use the NAC name from the MIB to determine the specific device for the notification.

sunStorageVolumeOSMountPoint Not Showing Mount Point (15666684)

`sunStorageVolumeOSMountPoint` reports a device name instead of a mount point.

Incorrect DiskOSDeviceName on SPARC T3-2 System (15668518)

`DiskOSDeviceName` on a SPARC T3-2 server reports `02000000:0` and `02000000:2` as `OSDeviceName`. No such names can be found on the host OS.

Workaround

For multipath disks, `raidconfig` returns only the WWN for the device instead of the full path name. The `format` command returns the full path name of this device with the WWN embedded in it. You can correlate the device by using the WWN.

For example:

- This is the information that you get on a device using `raidconfig`: Device:
`5000CCA00A49BC1C`
- This is the information that you get on a device using the `format` command: Device:
`c0t5000CCA00A49BC1Cd0`

Storage MIB Does Not Expose Dual Path Disks (15673745)

`sunStorageDiskTable` shows only a single disk instance when a physical disk is dual-pathed to two controllers.

Workaround

Use Oracle ILOM to determine the correct information about the disk.

Storage Viewer Known Issues

Issue	Workaround
“Sun Flash Accelerator F20 PCIe Card FDOMs Not Visible in /STORAGE (15645766)” on page 39	No
“Global Hot Spare for RAID 1 Volume Displayed as a Dedicated Hot Spare on Oracle Solaris (15586295)” on page 39	No
“The <code>max_disks</code> Property Is Incorrect When Using Adaptec Disk Controller (SGXPCIESAS-R-INT-Z) (15584958)” on page 39	No
“The <code>write_cache_enabled</code> Property Not Available for Adaptec Controllers (SGXPCIESAS-R-INT-Z) (15583722)” on page 40	No

Sun Flash Accelerator F20 PCIe Card FDOMs Not Visible in /STORAGE (15645766)

This issue is fixed in Oracle Solaris 11.2 SRU 8.

When you are using a Sun Flash Accelerator F20 PCIe card, you do not see the FDOMs under /STORAGE in Oracle ILOM.

Global Hot Spare for RAID 1 Volume Displayed as a Dedicated Hot Spare on Oracle Solaris (15586295)

When you are using Storage Management Agent on a Oracle Solaris system configured with a global hot spare for a RAID 1 (Mirrored) RAID with a Sun Storagetek PCI-E SAS RAID HBA (SGXPCIESAS-R-INT-Z), the details of the disk are displayed as a dedicated hot spare.

The `max_disks` Property Is Incorrect When Using Adaptec Disk Controller (SGXPCIESAS-R-INT-Z) (15584958)

The `max_disks` property for a Sun Storagetek PCI-E SAS RAID HBA (SGXPCIESAS-R-INT-Z) is incorrectly displayed as 0 in Storage Viewer.

The write_cache_enabled Property Not Available for Adaptec Controllers (SGXPCIESAS-R-INT-Z) (15583722)

The write_cache_enabled property is not available for Adaptec controllers (SGXPCIESAS-R-INT-Z).

Using Oracle Hardware Management Pack With SPARC M5-32 and M6-32 Servers

The following sections cover specific information for using Oracle Hardware Management tools with the SPARC M5-32 and M6-32 servers:

- [“ilomconfig \(16369886\)” on page 40](#)
- [“hwmgmtcli \(16507559, \)” on page 42](#)
- [“itpconfig \(16508501, 16507898\)” on page 42](#)
- [“hwmgmtd \(15824059, 15824037\)” on page 42](#)

ilomconfig (16369886)

The SPARC M5-32 and M6-32 servers have a pair of dual-redundant SPs (SP0 and SP1) in the chassis. It also has 4 SP proxies (SPP0, SPP1, SPP2, SPP3).

The host OS does not have direct access to all Oracle ILOM properties from the SPs, so you need to use Oracle ILOM to access Oracle ILOM properties from the SP, rather than ilomconfig.

For SPARC M5-32 and M6-32 servers, the Oracle Solaris host OS runs on the SPPs. ilomconfig accesses the Oracle ILOM SPP from the Oracle Solaris host OS.

The following table describes the properties of the SPs and SPPs.

Service Processor Type	Description	Tool to access SP
SP0, SP1 (redundant service processors)	These are the main service processors with all the standard Oracle ILOM properties. The SPs manage the SPPs.	Oracle ILOM
SPP0, SPP1, SPP2, SPP3 (service processor proxies)	Each SPP monitors a domain configurable unit (DCU). The host OS runs on the SPPs.	ilomconfig

See also:

- [“Oracle ILOM Properties Not Available From the SPARC Server M5-32 and M6-32 SPPs” on page 41](#)
- [“i`lomconfig` Commands Supported on SPARC M5-32 and M6-32 Server Platforms” on page 41](#)

Oracle ILOM Properties Not Available From the SPARC Server M5-32 and M6-32 SPPs

The following table lists the Oracle ILOM properties that are not available from SPARC M5-32 and M6-32 server SPPs.

Oracle ILOM Properties	i <code>lomconfig</code> Features
/SP/config	export, import
/SP/users	user
/SP/services/snmp/communities	snmp-community
/SP/network/pending	network mgmt (read-only)

i`lomconfig` Commands Supported on SPARC M5-32 and M6-32 Server Platforms

For SPARC M5-32 and M6-32 servers, the following i`lomconfig` subcommands and targets are supported:

- `list` subcommand targets:
 - `system-summary`
 - `network`
 - `network-ipv6`
 - `interconnect`
 - `identification`
- `enable` subcommand target:
 - `interconnect`
- `disable` subcommand target:
 - `interconnect`
- `modify` subcommand targets:
 - `interconnect`
 - `identification`

- create subcommand target:
 - credential
- delete subcommand target:
 - credential

hwmgmtcli (16507559,)

A new subsystem has been added for multi-domained systems, such as SPARC M5-32 and M6-32 servers:

dcu - Show details of dcu subsystem.

For SPARC M5-32 and M6-32 systems, `open_problems` diagnosed by Oracle ILOM are not reported by `hwmgmtcli` on PDOM hosts. In addition, `health`, and `health_details` information might be missing or not reliable.

itpconfig (16508501, 16507898)

The fault proxy cannot be enabled on the SPARC M5-32 and M6-32 servers. These servers have no Oracle ILOM alert management on the SPP, and there is no Host-to-ILOM interconnect between the SP and an OS, so there is no way for this tool to function.

hwmgmtd (15824059, 15824037)

`hwmgmtd` can be used on SPARC M5-32 and M6-32 servers to provide storage information to Oracle ILOM, but the SNMP functionality of `hwmgmtd` should not be used as it will provide erroneous data.