

Sun Fire™ Midrange Systems Firmware 5.19.0 Release Notes

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Sun FireTM Midrange Systems Firmware 5.19.0 Release Notes

This document provides general information and system limitations for firmware release 5.19.0 on Sun Fire E6900/E4900/6800/4810/4800/3800 systems.

This document contains the following topics:

- Firmware Documentation for Sun Fire Midrange and Entry-Level Midrange Systems
- Features Introduced in 5.19.0
- General Information
- Known Limitations for Sun Fire Midrange Systems

Firmware Documentation for Sun Fire Midrange and Entry-Level Midrange Systems

The following documentation sets are included with the 5.19.0 firmware:

- Sun Fire midrange (E6900/E4900/6800/4810/4800/3800) systems
 - Sun Fire Midrange Systems Platform Administration Manual (part number 819-1271-10)
 - Sun Fire Midrange System Controller Command Reference Manual (part number 819-1272-10)
 - Sun Fire Midrange Systems Firmware 5.19.0 Release Notes (part number 819-1270-10)
 - Install.info A text file included with the firmware that describes the firmware upgrade and downgrade procedures for Sun Fire midrange systems.

For firmware upgrade and downgrade information on entry-level midrange (E2900/V1280/Netra 1280) systems, refer to the *Sun Fire Entry-Level Midrange System Administration Guide*.

- Sun Fire entry-level midrange (E2900/V1280/Netra 1280) systems
 - Sun Fire Entry-Level Midrange System Administration Guide (part number 819-1269-10)
 - Sun Fire Entry-Level Midrange System Controller Command Reference Manual (part number 819-1268-10)
 - Sun Fire Entry-Level Midrange System Firmware 5.19.0 Release Notes (part number 819-1267-10)

Features Introduced in 5.19.0

This section provides a brief description of the new features in 5.19.0 for Sun Fire midrange systems.

Supported Board Types

The 5.19.0 release supports the following:

- PCI-X I/O Boards These boards are identified as PCI-X I/O Board in the showboards command output. For details on installing or replacing I/O boards, refer to the Sun Fire Midrange Systems Platform Administration Manual (819-1271) and the Sun Fire E6900/E4900 Systems Service Manual (817-4120).
- UltraSPARC IV+ CPU/Memory boards For information on upgrading systems with UltraSPARC IV+ CPU/Memory boards, refer to the *Sun Fire Midrange Systems UltraSPARC IV+ CPU/Memory Board Upgrade Requirements* (819-1841-10) and the *Sun Fire High-End and Midrange Systems CPU/Memory Board Installation Guide* (806-2946).

POST Performance Improvements

5.19.0 firmware reduces the time required to perform a power-on self-test (POST) operation. Code optimizations as well as the use of parallel testing algorithms have enabled a significant decrease in test time while maintaining the same fault diagnosis coverage as that provided with earlier versions of the firmware.

When comparing the 5.19.0 release to the 5.18.0 release, Sun has measured reductions in POST elapsed time of between 20 and 70 percent. Your experience may differ, depending on your system's configuration and the settings of firmware configuration parameters such as diag-level and verbosity-level. The largest improvements can be seen on systems with UltraSPARC IV or UltraSPARC IV+ processors, containing substantial amounts of memory, and running with diag-level values of mem1 or mem2.

Availability Features Enhanced

The 5.19.0 firmware release, when used on systems with domains running the Solaris 10 Operating System, provides information on Solaris-detected hardware fault events. This information is captured by Solaris software and then communicated to the system controller. The system controller reports this information through automatic diagnosis (AD) and domain (DOM) event messages.

Control Over Domain Panic Loops Added

- A new setting has been added to the setupdomain command and the showdomain command, defining the maximum level of POST that runs automatically during repeated domain panics. POST level is escalated upon repeated panics until it runs the level specified in max-panic-diag-limit. If the domain panics again, it is placed in standby.
 - The values of max-panic-diag-limit are the same as diag-level. The default value of max-panic-diag-limit is mem2.
- System controller firmware (starting with firmware version 5.18.0) starts a timer and reboots the domain if the domain remains in the Active Panicking state for 30 minutes.

Commands Added or Modified for 5.19.0

The following SC command was added in 5.19.0:

- forcepci Sets the default PCI mode on PCI-X boards.
- setupplatform Added usiv+ option to enable support for UltraSPARC IV+ system boards.
- showplatform Added usiv+ option to display the status of UltraSPARC IV+ support.

For details on these commands, refer to their descriptions in the *Sun Fire Midrange System Controller Command Reference Manual*.

General Information

Requirements for Certain Midrange Systems

E6900/E4900 systems and midrange systems with UltraSPARC IV+ CPU/Memory boards or PCI-X I/O boards (or both) require 5.19.0 firmware and compatible releases of the Solaris 10 or Solaris 9 operating system (when available) as the minimum Solaris releases.

Firmware Compatibility

System boards running firmware versions 5.12.x through 5.19.x firmware are compatible with each other, but system boards running 5.11.x are not compatible with system boards running firmware versions 5.12.x through 5.19.x. You can check the firmware compatibility of your boards by running the showboards -p version -v command. The information displayed indicates whether the firmware for each board is compatible with the ScApp version running on the SC.

Update all your system boards to the same firmware version and activate the new firmware version on your domains as soon as possible. Activate the domain firmware by running the setkeyswitch off and setkeyswitch on commands. For details on updating your system firmware and verifying firmware compatibility, refer to the Install.info file included with this firmware release.

Certain hardware components require minimum firmware revisions, as follows:

- UltraSPARC IV CPU/Memory boards require 5.16.0 firmware or greater. The UltraSPARC IV CPU/Memory boards will not run on firmware releases earlier than 5.16.0.
- UltraSPARC IV+ CPU/Memory boards require 5.19.0 firmware or greater. The UltraSPARC IV+ CPU/Memory boards will not run on firmware releases earlier than 5.19.0.
- COD boards must be running a firmware version that supports COD, which was introduced in firmware release 5.14.0.

Using UltraSPARC IV+ System Boards in Domains

You can mix system boards in your Sun Fire E6900 or 6800 system configurations. The combinations of system boards affect the domain configurations that you can create. However, if a partition includes any UltraSPARC IV+ system boards, only one domain can be active within that partition.

Domain configuration options are illustrated in TABLE 0-1:

TABLE 0-1 Sun Fire E6900 or 6800 System Domain System Board Combinations

Configuration	Domain A	Domain B	Domain C	Domain D	setupplatform usiv+ Variable
US IV+ in two domains	US III+	Off	US III+	Off	a, c = true
	US IV		US IV		
	US IV+		US IV+		
US IV+ in	US III+	Off	US III+	US III+	a = true
one domain	US IV		US IV	US IV	
	US IV+				
US IV+ in one domain	US III+	US III+	US III+	Off	c = true
	US IV	US IV	US IV		
			US IV+		
					6.3
US IV+ in no domains	US III+	US III+	US III+	US III+	a,c=false
	US IV	US IV	US IV	US IV	

Similar considerations apply when configuring domains in Sun Fire E4900 or 4800 systems. See TABLE 0-2:

 TABLE 0-2
 Sun Fire E4900 or 4800 System Domain System Board Combinations

Configuration	Domain A	Domain C	setupplatform usiv+ Variable
US IV+ in two domains	US III+ US IV	US III+ US IV	a, c = true
	US IV+	US IV+	
US IV+ in one domain	US III+ US IV US IV+	US III+ US IV	a = true
US IV+ in one domain	US III+ US IV	US III+ US IV US IV+	c = true
US IV+ in no domains	US III+ US IV	US III+ US IV	a,c=false

▼ To Enable UltraSPARC IV+ Domain Support

Use the setupplatform command to change usiv+ support for Domains A or C
 For example,

For further information about the setupplatform command, see the *Sun Fire Midrange System Controller Command Reference Manual*.

Note – The usiv+ option can be changed *only* while all domains in the affected partitions are off. For information about using the setkeyswitch command to power domains on and off, see the *Sun Fire Midrange System Controller Command Reference Manual*.

▼ To Display the Status of UltraSPARC IV+ Domain Support

Use the showplatform -p usiv+ command
 For example,

```
schostname: A> showplatform -p usiv+

UltraSPARC IV+ is supported in domain A
UltraSPARC IV+ is not supported in domain C
```

UltraSPARC IV+ I/O Board DR Restriction

If your Sun Fire E6900 or E4900 server is configured as:

 A single domain within a single partition, including one or more UltraSPARC IV+ system boards

or

■ A two domain (A & C) configuration in dual partition mode, each domain including one or more UltraSPARC IV+ system boards

Then you cannot add an I/O board to the domain using the DR connect and configure commands. However, you can use the DR unconfigure and disconnect commands on an I/O board in the described system.

This restriction arises because DR requires a second domain in which the I/O board can be tested. Please refer to the platform administration manual for further information on removing and replacing boards.

Firmware Upgrade and Downgrade

Instructions for upgrading firmware are provided in the Install.info file included with this firmware release for Sun Fire midrange systems. The Install.info file also contains instructions for downgrading to an earlier version of the firmware.

E6900/E4900 systems and systems that contain UltraSPARC IV CPU/Memory boards must run firmware version 5.16.0 or greater. Earlier firmware versions do not support the UltraSPARC IV CPU/Memory boards.

E6900/E4900 systems and systems that contain UltraSPARC IV+ CPU/Memory boards must run firmware version 5.19.0 or greater. Earlier firmware versions do not support the UltraSPARC IV+ CPU/Memory boards.

Midrange systems with SC V2s can be downgraded from 5.19.0 to earlier firmware releases, but note that those earlier releases will not support features and bug fixes made in 5.19.0.



Caution – If you have a redundant system controller (SC) configuration, you must first upgrade the firmware on the spare SC, then on the main SC, as explained in the Install.info file.

Power Supply Failures

In some cases powering off or powering on a power supply after you upgrade to firmware version 5.14.x or greater can cause a power supply fault on Sun Fire 6800/4810/4800/3800 systems.

Note – The faults described here do *not* apply to the A184 and A185 power supplies.

The power supply failure might exhibit the following characteristics:

- Only the amber *fault* LED of the power supply is illuminated.
- The showboards command output identifies the Status for the power supply as Failed or the Component Type as No Grid Power.

Use the following workarounds to resolve the power supply failure. Start with Workaround 1. If this workaround is unsuccessful, perform Workaround 2. If the second workaround is unsuccessful, perform Workaround 3.

- Workaround 1 Turn the power supply switch off and then on. However, if you have a Sun Fire 6800 system, perform Workaround 2 instead, as the power supplies do not have a switch.
- Workaround 2 Remove the failed power supply from the system, wait 20 seconds, then put it back in. If its green *activated* LED is not the only LED illuminated, repeat the procedure until only the green *activated* LED is illuminated. Several attempts may be necessary.
- Workaround 3 Reboot the SC, then use the power on command to turn on the power supply.

Known Limitations for Sun Fire Midrange Systems

This section describes only those bugs with potentially significant impact. The README file lists all bugs that have been fixed, including those seen only internally at Sun.

SNMP: FrameManager Does Not Have an Entry in the MIB and Frame State Traps (RFE 4987286)

SNMP is a private interface for the midrange system controllers. This means that Sun Management Center will not receive FrameManager information through SNMP. If you have a loghost, note that FrameManager and RTU statuses can be monitored from the loghost.

Workaround: None.

sgcn_output_line(): OBP console blocked; message data lost (BugID 4939206)

A message indicating that there are dropped console messages is displayed when data is being provided by the Solaris Operating System or OpenBoot PROM faster than the system controller can write it to the console.

Workaround: None.

Upgrade of Firmware Changes Connection Type (BugID 5060748, 6255332)

If you change the connection type after downgrading firmware on midrange systems from 5.17.x or 5.18.x to a lower firmware version, the new connection type selected in the lower firmware version is not guaranteed once you update the firmware back

to 5.17.x or 5.18.x. If you subsequently update the firmware to 5.17.x or 5.18.x from the lower firmware version, the original connection type that you had in 5.17.x or 5.18.x before the change to a lower firmware version will be restored.

Workaround: To ensure system security, use the setupplatform command to set the connection type explicitly.

Board State Becomes Incorrect After setkeyswitch or testboard Operations (BugID 5066326)

After a domain panic occurs or when a domain encounters errors, output from a subsequent setkeyswitch or testboard operation will show that the board processors have an Unknown status. For example:

```
schostname:A> testb sb4
Sep 24 11:01:53 schostname-sc0 Domain-A.POST: Domain A: diag-level = init
Sep 24 11:01:53 schostname-sc0 Domain-A.POST: Domain A: verbosity-level = min
Sep 24 11:01:53 schostname-sc0 Domain-A.POST: Domain A: error-level = max
{/N0/SB4/P0} Unknown
{/N0/SB4/P1} Unknown
{/N0/SB4/P2} Unknown
{/N0/SB4/P3} Unknown
schostname:A>
```

Workaround: Reboot the system controller.

Power Failure May Corrupt SEEPROM Contents (BugID 5093450)

If a power failure and Sc reboot occur during an add segment operation, one or more SEEPROM segments may become corrupted upon a reboot. The following example log sequence shows illegal tag statements:

```
Aug 04 14:18:42 schostname-SC0 schostname-sc0 Platform.SC: [ID 470632 local0.error] /NO/SB2: SepromSegment(constructor): ID at 0x0042: Illegal Tag 0x00 at 0x002b Aug 04 14:18:42 schostname-sc0 schostname-sc0 Platform.SC: [ID 576073 local0.error] /NO/SB2: SepromSegment(constructor): PE at 0x00bf: Illegal Tag 0x00 at 0x0102 Aug 04 14:18:42 schostname-sc0 schostname-sc0 Platform.SC: [ID 982808 local0.error] /NO/SB2: SepromSegment(constructor): PS at 0x01c6: Illegal Tag 0x00 at 0x0000 Aug 04 14:18:42 schostname-sc0 schostname-sc0 Platform.SC: [ID 586548 local0.error] /NO/SB2: SepromSegment(constructor): FD at 0x01dd: Illegal Tag 0x00 at 0x0002 Aug 04 14:18:46 schostname-sc0 Platform.SC: [ID 139087 local0.notice] Clear /NO/SB2 invalid segment
```

•

Even though these error messages are displayed, the availability of the domains is not affected.

Workaround: None.

Message "(tSshConn): memPartAlloc: block too big" Shown on SC Console (BugID 6279689, 6229067)

If multiple users attempt to connect to the SC using SSH connections in parallel, the SC can panic, displaying the following message on the SC console:

```
schostname:A> 0x3c27b78 (tSshConn): memPartAlloc: block too big -
40947 in partition 0x3b8c7d0.
[0x3c27b78] xrealloc: out of memory (new_size 40947 bytes)
```

Workaround: None.

showcomponent States disabled While enablecomponent States enabled (BugID 6284667)

When used with an abbreviated form for the name of a component, the enablecomponent command sometimes reports component status incorrectly. For example:

```
schostname: SC> showcomp ib6
Component
                    Status Pending POST Description
_____
/N0/IB6/P0
                    enabled -
                                      untest IO Controller 0
/N0/IB6/P1
                    disabled -
                                      untest IO Controller 1
/N0/IB6/P0/B0
                  enabled -
                                     untest 100/66/33MHz. PCIX/EPCI/PCI Bus
/N0/IB6/P0/B1
                    enabled -
                                     untest 33MHz. PCI Bus
                                  untest 100/66/33MHz. PCIX/EPCI/PCI Bus untest 100/66/33MHz. PCIX/EPCI/PCI Bus
/N0/IB6/P1/B0
                    disabled -
/N0/IB6/P1/B1
                    disabled -
/N0/IB6/P0/B1/C0
                    enabled -
                                     untest 33MHz. 3.3V Short PCI card
                    enabled - untest 33MHz. 3.3V Short PCI card enabled - untest 100/66/33MHz. 3.3V Long/Short
/N0/IB6/P0/B1/C1
/N0/IB6/P0/B0/C2
PCIX/EPCI/PCI card
/N0/IB6/P0/B0/C3
                    enabled - untest 100/66/33MHz. 3.3V Long/Short
PCIX/EPCI/PCI card
/N0/IB6/P1/B1/C4
                    disabled - untest 100/66/33MHz. 3.3V Long/Short
PCIX/EPCI/PCI card
                    disabled -
                                     untest 100/66/33MHz. 3.3V Long/Short
/N0/IB6/P1/B1/C5
PCIX/EPCI/PCI card
/N0/IB6/P1/B0/C6
                    disabled - untest 100/66/33MHz. 3.3V Long/Short
PCIX/EPCI/PCI card
/N0/IB6/P1/B0/C7
                    disabled - untest 100/66/33MHz. 3.3V Long/Short
PCIX/EPCI/PCI card
schostname: SC> enablecomp ib6/c4 ib6/c5 ib6/c6 ib6/c7
ib6/c4: is already enabled.
ib6/c5: is already enabled.
ib6/c6: is already enabled.
ib6/c7: is already enabled.
```

Workaround: Use a fully specified component name, such as /N0/IB6/P1/B1/C4.

Incorrect Message Output, When poweron Returns Failure (BugID 6287631)

Use of some unsupported components can generate misleading messages, such as *component*: does not have grid power. For example:

```
schostname:SC> poweroff all
...
/N0/IB6: does not have grid power
/N0/IB7: does not have grid power
/N0/IB8: does not have grid power
/N0/IB9: does not have grid power
...
```

Workaround: Verify that all components in the specified IB are supported.

RTOS: SC Does not Respond to ping but tNetTask Appears To Be Running (BugID 6287893)

Under some circumstances Ethernet connections to the system controller can hang. However, the serial connection continues to supply access.

Workaround: Reboot the system controller.