Sun Fire™ 6800/4810/4800/3800 Systems Firmware 5.14.0 Release Notes

Sun Microsystems, Inc.
4150 Network Circle
Santa Clara, CA 95054 U.S.A.
650-960-1300

Part No. 816-4853-10
October 2002

Send comments about this document to: docfeedback@sun.com

Contents

Sun Fire™ 6800/4810/4800/3800 Systems Firmware 5.14.0 Release Notes

This document provides information on new and revised features, as well as late-breaking news, for firmware release 5.14.0 on Sun Fire™ 6800/4810/4800/3800 systems.

These release notes contain the following information:

- New Features
- General Information
- Known Sun Fire 6800/4810/4800/3800 Systems Limitations
- Requests for Enhancement (RFEs)

New Features

Capacity on Demand

The Capacity on Demand (COD) option provides additional processing resources that you pay for when you use them. Through the COD option, you receive and install unlicensed CPU/Memory boards. These boards, which are identified as COD CPU/Memory boards, contain four CPUs. However, you do not have the right to use the CPUs on COD CPU/Memory boards until you also purchase the COD right-to-use (RTU) licenses for them. The purchase of a COD RTU license entitles you to receive a license key, which enables the appropriate number of COD processors.

Your Sun Fire midframe system can have any combination of active CPU/Memory boards and COD CPU/Memory boards, up to the maximum capacity allowed for the system. You must have at least one active CPU for each domain in your system.

For details on getting started with COD, review the Capacity on Demand chapter in the *Sun Fire 6800/4810/4800/3800 Systems Platform Administration Manual* (part number 816-4851-10). Contact your Sun sales representative or authorized Sun reseller to purchase COD CPU/Memory boards and the appropriate number of COD RTU licenses. After the COD CPU/Memory boards are installed, refer to the Capacity on Demand chapter and also the *Sun Fire 6800/4810/4800/3800 System Controller Command Reference Manual* (part number 816-4852-10) for information on using certain system controller commands to allocate COD RTU licenses, activate COD CPUs, and monitor the COD CPUs used.

New Commands

The following commands were added in this release:

- `addcodlicense` - Adds a Capacity on Demand (COD) right-to-use (RTU) license key to the COD license database.
- `deletecodlicense` - Removes a COD RTU license key from theCOD license database.
- `showcodlicense` - Displays the current COD RTU licenses stored in the COD license database.
- `showcodusage` - Displays the current usage statistics for COD resources.
- `showerrorbuffer` - Shows the content of the error buffer.

Modified Commands

The following SC commands were changed in this release:

- `setupplatform` - New COD parameters:
  - Quantity of instant access CPUs (headroom) to be activated.
  - Quantity of COD RTU licenses to be reserved for each domain.
- `showboards` - Component type includes COD CPU boards.
- `showdomain` - Displays the COD RTU licenses reserved for the domain.
- `showfailover -v` - New SC failover state: degraded. If the main SC has a higher firmware version than the spare, and one or more boards in the system can be controlled by the main SC but not the spare, the SC failover configuration is considered as degraded. For details, see “Degraded SC Failover Configurations” on page 5.

- `showplatform` - Displays the parameter values set through the setupplatform command, including the following new or modified parameters:
  - Instant Access CPUs (headroom) activated
  - COD RTU licenses reserved for domains

General Information

Sun Management Center 3.0, Platform Update 4

If you are using Sun Management Center 3.0, Platform Update 4, be sure to apply SunSolve patch 112499 (minimum revision -05), which ensures that Sun Management Center correctly handles unknown board types.

Firmware Compatibility

System boards with 5.12.x firmware are compatible with those running 5.13.0 through 5.14.0 firmware; system boards running 5.11.x are not. You can check the firmware compatibility of your boards by running the `showboards -p version -v` command. COD boards must be running 5.14.0.

The information displayed indicates whether the firmware for each board is compatible with the ScApp version running on the SC. For details on verifying firmware compatibility, refer to the `Install.info` file included with this firmware release and the `showboards` command description in the *Sun Fire 6800/4810/4800/3800 System Controller Command Reference Manual.*

To simplify system administration, 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, see the release-specific `Install.info` file included with each release of the firmware.

Firmware Upgrade and Downgrade

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

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.

Upgrading a Domain CPU/Memory Board to a 900/1050MHz CPU/Memory Board

You can use a new UltraSPARC III(TM) (Cu) 900/1050 MHz CPU/Memory board to replace a CPU/Memory board in a domain. If the domain is configured with dynamic reconfiguration (DR) software, you can do so without bringing down the domain. For more information, see "Upgrading to a 900/1050MHz CPU/Memory Board" in the `Install.info` file.

Restoring Configuration Files

If you use the `dumpconfig` command to save a system configuration but later upgrade the firmware, be aware that the configuration files are associated with the previous firmware version. If you use the `restoreconfig` command to restore those configuration files, the `restoreconfig` operation will fail because the firmware version of the configuration files is not compatible with the upgraded firmware.

Degraded SC Failover Configurations

If the main system controller (SC) is running a higher firmware version than the spare system controller, certain boards in the system can be controlled by the main SC but not the spare. For example, if the main SC is running 5.14.0, but the spare SC is running 5.13.2, and you force a failover to the spare, you will not be able to use any COD CPU/Memory boards because they are not supported by firmware releases before 5.14.0.

This type of SC configuration is considered as a *degraded* failover configuration, because certain boards cannot be supported by the firmware version on the spare SC.

Run the `showfailover -v` command to obtain status on the SC failover configuration. If the failover status is degraded, the `showfailover` output will identify the boards not supported on the spare SC. You must upgrade the spare SC to the same firmware version used by the main SC. Refer to the `Install.info` file for details on upgrading firmware. BugID 4741244 is related to this issue.

Synchronizing the Date and Time on Redundant SCs

The date and time settings on both the main and spare SC must always be synchronized for failover purposes.

Although you can use the setdate command to set the date and time on both SCs, Sun strongly suggests that you configure both SCs to synchronize their date and time settings against a Simple Network Time Protocol (SNTP) server.

By configuring SNTP on the SCs, the SCs will periodically check the SNTP server to ensure that their date and time are accurate -- and in sync. You can use the setupplatform command to assign an SNTP server.

Note that if the main SC and spare SC do not have the same date and time and an SC failover occurs, a time jump may occur in running domains.

Checking Clock Signals After an SC Failover

If an SC failover has occurred and you need to hotplug an SC (remove an SC that has been powered off, then insert a replacement SC), be sure to verify that the clock signals to the system boards are coming from the new main SC before you perform the hot-plug operation. Run the `showboard -p clock` command to verify the clock signal source.

Power Supply Failures

In some cases, after you upgrade to firmware version 5.14.0, powering off or powering on a power supply can cause the power supply to fail (BugIDs 4727383, 4725716, and 4756529). The power supply failure might exhibit the following characteristics:

- Only the amber *ready* 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 *power on* LED is not the only LED illuminated, repeat the procedure until it is. Several attempts may be necessary.
- Workaround 3 – Reboot the SC, then use the `power on` command to turn on the power supply.

Known Sun Fire 6800 / 4810 / 4800 / 3800 Systems Limitations

`.version` Fails to Show OBP Version and Gets Fatal PROM Panic (BugID 4628193)

OBP cannot determine the version of OBP on a failed processor and, on its second failed attempt to do so, causes a fatal panic, with a message similar to the following:

```
CPU/Memory 1, port  4
FATAL: PROM_PANIC[0x7]: assertion failed: cpu->msg_pend == 0,
file:
../../../common/src/mp.c, line: 218
ERROR: Fast Data Access MMU Miss
```

Workaround: If the CPU port fails, use the `showb` command to get the prom version.

SC Reboots Infinite Times, When RIO Ethernet Test Fails in SC POST (Bug ID 4644974)

Workaround: When SC POST is running, press the spacebar to display the POST menu, then select option 0, `Return to SC RTOS`. Selecting this option causes POST to be skipped.

Log Messages Hard to Read (BugID 4660866)

Newline (\n) and tab (\t) sequences in some log messages, typically those generated from hardware errors, are not properly interpreted by the `syslog` protocol, resulting in single-line messages that are difficult to read.

Workaround: None.

`SIGBUS 10* bus error` While Rebooting Main SC With Max scpost (BugID 4662294)

On rare occasions the main SC may hang while rebooting and issue the bus error cited above.

Workaround: Execute the following procedure:

1. **Bring down all domains**
2. **Allow or force Failover to the spare SC.**

   If you have only one SC, skip this step.
3. **Stop all DR operations, or allow them to complete.**
4. **XIR the SC, or use Failover power down, then power up.**

DR Doesn’t Wait Long Enough After PCI #RST For `read config space` Response (BugID 4691709)

When DR attempts to read the configuration space for a PCI card to be added, it does not wait long enough for the card to respond. As a result, the message `failure to recognize the io card` is displayed, and the card is not shown in the configuration. This problem does not affect an unconfigure operation.

Workaround: None.

`power on/off` of Power Supply Causes Fatal Error (BugID 4725716)

See “Power Supply Failures” on page 6 in the “General Information” section.

`power off/on` of Boards Causes Power Supply Failure (BugID 4727383)

See “Power Supply Failures” on page 6 in the “General Information” section.

`probe-scsi-all` Command Fails (BugID 4727426)

When a probe-scsi-all command is issued at the OBP level of a domain, it does not display the entire path to the devices connected to that domain. Issuing a boot command then immediately fails. This problem has been seen only on Sun Fire servers with the Cauldron (X2222A) PCI card connected to a D240.

Workaround: If the problem occurs, run the `reset` or `reset-all` command. Or, use `devaliases`.

SC Prompt is Changed and Not Sync After Replacing SC With Old FW From Other Machine (BugID 4740301)

After the spare SC is replaced and SC failover is enabled, the prompt shown on the spare SC is that of the machine from which it was removed.

Workaround: Execute **setupplatform -p network** to change IP address and SC hostname, reboot SC, then do SC failover.

No Warning While Doing SC Failover Between 5.13.x and 5.14.0 SC's (BugID 4741244)

When an SC failover operation changes a spare SC running 5.13.x into the main SC and the previous main SC ran 5.14.0, the system should display a message instructing the administrator to upgrade the new main SC to 5.14.0. Without this upgrade COD CPU/Memory boards, which require that the main SC run 5.14.0, will fail.

Sometimes `scfailover on` Command Does Not Become Enabled and Active (BugID 4744930)

Sometimes the `setfailover on` command does not make the SC failover status enabled and active.

Workaround 1: Execute the following steps:

1. **Run** `setfailover off` **command on main SC, then spare SC to disable SC Failover status.**
2. **Run** `setfailover on` **command on main SC.**

   Both the main and spare SC should show the SC failover status as enabled and active. If not, execute Workaround 2.

Workaround 2: Execute the following steps only if the steps in Workaround 1 did not solve the problem. Do **not** execute these steps if any of the following operations are in progress: a `setkeyswitch on` command is running, a domain is being rebooted, a DR operation is in progress, or a flashupdate is in progress.

1. **Use the `reboot` command to reboot the main SC, then the spare SC.**
2. **Run the `setfailover on` command on the main SC.**

   SC failover becomes enabled and active.

Possible Deadlock in RMI Locking Scheme (BugID 4750736)

On rare occasions, running `showsc -v` after an SC failover operation causes a hang.

Workaround: If the SC that is hung is the main SC, shut down any active domains, then press the Reset button.

SC Reports Incorrect Service LED Status for Faulty Rack Fantrays (BugID 4755454)

If a fault occurs in a fantray, the appropriate Service LED is turned on but the SC display generated by the `showp` command shows it as off.

Workaround: None.

Power Supplies Fail While Doing power on/off Repeatedly (BugID 4756529)

See “Power Supply Failures” on page 6 in the “General Information” section.

Changing Network Settings and Rebooting the SC Causes the Spare SC to Become the Main SC (BugID 4756806)

Changing network settings from static without DNS configure to static with DNS configure -- or vice versa -- and rebooting both SCs simultaneously sometimes cause the main SC to become the spare SC and the spare SC to become the main SC.

Workaround: If this problem occurs, run the `setfailover -y on` and `setfailover -y force` commands to do a manual SC failover.

`SIGBUS 10* bus error` While Rebooting SC With Domain Running DR Operation (BugID 4765596)

If the SC is rebooted with SC POST off while a dynamic reconfiguration (DR) operation is running on a domain, the operation fails and the error noted above is generated.

Workaround: None.

`keyswitch` Operation Hangs When SCs are Rebooted in Parallel (BugID 4766276)

If you run `keyswitch on`, then reboot the SC before the command has finished executing, the operation hangs.

Workaround: Do **Control-x** to reboot the domain.

poweron / poweroff Commands Do Not Work Normally After Hotswap (BugID 4772250)

In some cases after a power supply is hot-plugged in, the SC loses its ability to monitor and control it and an error message similar to the following is generated:

```
Oct 31 13:58:57 gamd10-sc0 Platform.SC: ERROR:
PlatformManager caught exception
...
```

If this situation occurs, subsequently executing a `poweroff` command successfully turns off the power supply, but the SC reports that the `poweroff` command has failed and the `showboard` command incorrectly shows the power supply as on.

Workaround: As soon as you see the above message, or that a `poweron` or `poweroff` command is not working normally, reboot the SC.

Requests for Enhancement (RFEs)

SC Hangs After Automatic `setkeyswitch off` (RFE 4454599)

Manual reset of the SC has no effect.

Workaround: Do the following:

1. Connect to each active domain through a network connection, such as `telnet` or `rlogin`.
2. Shut down each domain, if possible.
3. Power down the Sun Fire system, then power it up again.

No LED Fault Indicator on System Board After the Board Fails POST (RFE 4454623)

Workaround: Run the `showlogs` or `showboards` command (from the platform shell) to show errors and the test status of a faulty system board.

Software Licensing Problems With Host ID and MAC (RFE 4492051)

The current scheme of assigning the host ID and MAC address based on which physical domain is in use (A, B, and so forth) can prevent host licensed software from running. In situations where a hardware failure would require changing domains, host licensed software refuses to start.

Workaround: It may be possible to reconfigure the system hardware to support the required domain. Contact your service provider for assistance.

Single I/O Assembly Failure Causes Boot Failure (RFE 4502247)

The I/O assemblies are not capable of being tested in isolation. For this reason the failures that become visible when I/O POST runs stop the entire boot process because the failures pause the domain hardware.

Workaround: Remove the failed I/O assembly from the domain by running the `deleteboard` command. Turn on the keyswitch by running the `setkeyswitch on` command to reboot without the failed board. Refer to the *Sun Fire 6800/4810/4800/3800 System Controller Command Reference Manual* for correct usage of the `deleteboard` command.

Enhancement is Needed for WDR to Recognize the COD CPU/Memory Board Supported by FW 5.14.0 (BugID 4751194)

WBEM-based dynamic reconfiguration operations do not recognize COD CPU/Memory boards, causing such operations to fail and an error message to be generated.

Workaround: None.