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Sun Fire™ V1280/Netra™ 1280 Product Notes

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Sun Fire V1280/Netra 1280 Product Notes

This release note describes special considerations, late-breaking news and documentation differences for the Sun Fire V1280/Netra 1280 system.

It contains the following:

Available Online Documentation

Online documentation is available at the following URL:

`http://www.sun.com/documentation`

Check this site periodically for the latest versions of the product documentation.

Documentation CD

The README.TXT and README.PDF files on the Sun Fire V1280/Netra 1280 Documentation CD contain updated information about accessing the online documentation.

System Software Requirements

The Sun Fire V1280/Netra 1280 server requires the Solaris™ 8 2/02 operating environment or a later Solaris release that supports the server. To verify that the proper version of the operating environment is installed on your Sun Fire V1280/Netra 1280 server, examine the file `/etc/release`. This file should contain the text 'Solaris 8 2/02' or identify a subsequent compatible Solaris release.

Required and Recommended Patches

Note – Certain patches are available to contract customers only. If you are unable to access a patch from the SunSolve Online web site, you can obtain the patch from your local Solution Center. North American customers can call 1-800-USA-4SUN.

Required/Recommended Patches for All Solaris Operating Environment Levels

The minimum firmware level for the Sun Fire V1280/Netra 1280 is 5.13.0009. There may be updates to this firmware level in the future. These will be delivered via a patch that can be downloaded from SunSolve. It is expected that the patch ID for such firmware updates will be 113751. Please install the latest available version of patch 113751.

TABLE 1   Recommended Patch for All Solaris Operating Environment Levels

Patch ID	Description
110208-17	Netra Lights Out Management 2.0 patch*

* Not required for Solaris 9 Update 2

Required/Recommended Patches for the Solaris 8 Update 7 2/02 Operating Environment

TABLE 2   Required Patches for Solaris 8 2/02 Operating Environment

Patch ID	Description
*112396-02 or later	SunOS 5.8: /usr/bin/fgrep command patch
*108987-09 or later	SunOS 5.8: patchadd and patchrm command patch
111883-14 or later	Solaris Ethernet driver patch

* You must install Patch 112396 and Patch 108987 before you install any other patch.

TABLE 3   Recommended Patches for Solaris 8 2/02 Operating Environment

Patch ID	Description
110460-23 or later	SunOS 5.8: fruid/PICL plug-ins patch
112336-02 or later	SunVTS™ 4.6 patch
109962-07 or later	FC-AL disk drive firmware patch
*111412-09 or later	SunOS 5.8: Sun StorEdge™ Traffic Manager (MPxIO) patch
*111413-08 or later	SunOS 5.8: luxadm, liba5k and libg_fc patch

Patch ID	Description
*111095-10 or later	SunOS 5.8: `fctl/fp/fcp/usoc` driver patch
*111096-04 or later	SunOS 5.8: `fcip` driver patch
*111097-10 or later	SunOS 5.8: `qlc` driver patch

* Patches 111412, 111413, 111095, 111096, and 111097 require the package SUNWsan (SAN Foundation Kit). The SUNWsan package is available via the Sun Download Center at the following URL: `http://www.sun.com/storage/san/`. From that site, download the latest SAN release Software/Firmware upgrade. Install the SUNWsan package first, followed by Patches 111412, 111413, 111095, 111096, and 111097 in the order listed. Do not reboot the system until all packages are installed.

Note – These patches, apart from 110460-23 and 112336-02, are only relevant if you are using plug-in PCI cards.

Update the ce Ethernet Driver on an Installation Server

The ce Ethernet driver for the Solaris 8 2/02 operating environment has been updated. If you are performing a network installation, you need to apply Patch 111883-14 or later to the net install image on the installation server before you install the client systems.

1. **Download Patch 111883-14 or later.**

   See "Required and Recommended Patches" on page 2 for information about where to obtain the patch.

2. **Patch the boot image on the installation server. Type the following command:**

```
# patchadd -C <Install-Image-Path>/Solaris_8/Tools/Boot/ <patch-path>
```

3. **Type the** boot net **command at the** ok **prompt on the client system to start the installation.**

4. **After the installation is complete, apply Patch 111883-14 or later on the newly created system.**

Software Notes

The following software problems have been identified in this release. In most cases, no workaround is necessary; otherwise, workaround information follows the explanation of the problem. Figures in brackets refer to issue numbers.

Updated LOM Packages

LOM support for the Sun Fire V1280/Netra 1280 platform was introduced in the Lights Out Management 2.0 packages on the supplemental CD for Solaris 8 Update 7 (02/02). The latest patches to these packages are available on SunSolve as patch 110208. It is strongly advised that the latest version of patch 110208 is obtained from SunSolve and is installed on the Sun Fire V1280/Netra 1280 to make use of the latest LOM utility updates.

[4645225, 4737289, 4513410, 4513475, 4677021, 4716003]

System Controller Firmware Issues

The following issues are present in the System Controller Firmware version 5.13.0009. The version can be identified using the showsc command at the lom> prompt.

```
lom>showsc

SC: SSC1
Clock failover disabled.

SC date: Fri Sep 27 14:47:57 GMT+01:00 2002
SC uptime: 56 seconds

ScApp version: 5.13.0009 LW8_build0.9
RTOS version: 23

Solaris Host Status: Active - Solaris

lom>
```

The ScApp version number identifies which firmware revision is installed. The issues are identified by their number and description.

Use of `lom -G` Command to Update FW Images from Solaris

On the Sun Fire V1280/Netra 1280 there are two mechanisms available to update the system firmware as described in the Sun Fire V1280/Netra 1280 *System Administration Guide*:

- `flashupdate` from the `lom>` prompt
- `lom -G` from Solaris using the `lom(1m)` utility

It is currently recommended that you should use the `flashupdate` mechanism in preference to the `lom -G` mechanism.

This is because in certain circumstances when running `lom -G` with firmware version 5.13.0009 it is possible to cause a LOM out of memory panic that would prevent further use of the LOM functionality.

If it is necessary to use the `lom -G` mechanism rather than `flashupdate` it is possible to prevent the memory panic by carrying out the following *before* issuing the `lom -G` command:

1. **Reset the LOM with the** `resetsc` **command:**

```
lom>resetsc -y
```

2. **Wait until the** `resetsc` **has completed and then continue with the** `lom -G` **procedure from Solaris.**

This recovers the memory that had been retained by any prior Solaris boot operations and ensures that sufficient memory will be available for performing the `lom -G` command.

[4753702]

LOM/System Controller Hardware Reset Occasionally Causes Solaris Domain Failure

In the extremely rare event of a catastrophic software problem on the Lights Out Management/System Controller (LOM/SC) device there is a hardware watchdog that is designed to reset it.

It monitors console bus activity, thread scheduling, and I2C activity. Assuming that all three of these happen on a regular basis, the hardware watchdog is written to and a timer restarts. If these do not happen the watchdog is not written to and a hardware reset of the LOM/SC will occur. The likelihood of a watchdog timeout is expected to be very very small.

On most occasions that such a hardware reset of the LOM/SC device occurs, no interruption to the running Solaris processes will be experienced.

However, in a small minority of LOM/SC hardware resets, it is possible that currently in-progress system hardware operations may be interrupted in such a way as to cause a Solaris crash and subsequent system reboot and recovery.

The underlying cause has been investigated and is understood. It is currently believed that there is no way to prevent this possibility from occurring.

There is a software workaround available to completely disable the operation of the watchdog, which can be implemented by SunService. However, implementing this would potentially allow the LOM/SC to get into a state that could only be recovered by a full external power reset of the system.

[4804859]

LOM/System Controller Ethernet Port Should Only be Connected to a Secure Network

Since the management of the Sun Fire V1280/Netra 1280 can be conducted from the serial or 10/100 Ethernet port of the System Controller both ports should be securely managed.

Access to the serial interface is more easily controlled due to the nature of serial communications.

However, in order to minimize potential security risks for the 10/100 System Controller Ethernet port it is recommended that this is connected to a secure subnet which is separate from the gigabit Ethernet ports available to the Solaris Operating Environment.

If access is not controlled in this way it is possible for a denial of service attack to be waged against the LOM/System Controller through the 10/100 Ethernet port connection.

[4722670]

Use of On/Standby Switch During Firmware Update

While a firmware update operation is in progress you should not attempt to power off a system board as this could result in an invalid firmware image being left on it. The firmware update instructions in the Sun Fire V1280/Netra 1280 *System Administration Guide* explicitly warn administrators not to do this and recommends that all commands are run on the console. This prevents the problem whereby a second administrator causes the powering down of a system board while a firmware update is in progress. However, it is possible that the On/Standby Switch might be operated during the firmware update procedure which would have the same effect of powering off a system board during the update process.

The operation of the On/Standby switch to power down the system is currently not inhibited during the firmware update process. This will be modified and made available in a future firmware release..

[RFE 4645195]

Escape Sequence Requires a Carriage Return After a Poweron

After the system has been powered on using the `poweron` command a further carriage return is required after the escape sequence has been entered (default escape sequence is `#.`) in order for the `lom>` prompt to be displayed.

[4645483]

First Character Ignored After Certain Poweron Sequences

After a system poweron initiated through the On/Standby switch and a boot to the OpenBoot PROM or Solaris, the first character typed (and no other character thereafter) will appear to be ignored (the character actually goes to the LOM shell). This can appear to make a console login fail to be accepted or a command at the OBP prompt to appear to have been mistyped. The problem can also be observed after a system reboot initiated by the System Controller in response to a processor reaching an overtemperature condition.

This issue can be avoided by first typing a carriage return at the OBP or console login prompt when the system first comes up.

[4731349]

`bootmode` `forth` Only Works On Poweron

The `forth` argument to the `bootmode` command only takes effect when the system is powered on from standby, and not during a reboot as documented in the Sun Fire V1280/Netra 1280 *System Controller Command Reference Manual.*

[4748606]

Disabling a CPU/Memory Board That Fails the Interconnect Test

A CPU/Memory board failing the interconnect test may prevent the `poweron` command from completely powering up the system.

As a provisional measure, before Service intervention is obtained, the faulty CPU/Memory board can be isolated from the system using the following sequence of commands at the System Controller `lom>` prompt:

```
lom>poweroff
.
.
lom>disablecomponent SBx
.
.
lom>resetsc -y
```

A subsequent `poweron` command should now be successful.

[4716913]

System Fails to Respond to Shutdown Request from `lom>` Prompt

This has only been observed on very rare occasions during stress testing of the LOM/System Controller involving multiple continuous LOM `poweron` and LOM `shutdown` cycles.

In the event of this happening the workaround to power down the system is:

```
lom>console
# init 5
```

[4755325]

Solaris Issues

Interrupt Level 4 Not Serviced Messages

On occasion the following message is observed in `/var/adm/messages` when running with Solaris 8 Update 7 (02/02):

```
WARNING: interrupt level 4 not serviced
```

No root cause has yet been identified. There are no known adverse side effects.

[4621080]

`picld` Daemon Race Condition

There is the possibility of a rare race condition occurring in the intialization sequence of the Solaris `picld` daemon which occurs at Solaris boot. Occurrence of this condition will result in the following message appearing in `/var/adm/messages`:

```
picld: ptree_create_and_add_prop _fru_parent failed
```

The picld daemon will not have started automatically if this condition occurs. A manual restart of the picld daemon is required. This can be achieved as follows:

As root type:

```
# /etc/rcS.d/S95picld stop
# /etc/rcS.d/S95picld start
```

It is believed that the race condition has been avoided due to changes in the firmware that is installed; however the underlying Solaris bug has not yet been fixed.

[4679229]

Fan Speed Fault Threshold Data is Missing From PICL

The current speed of each fan is indicated in the PICL tree, at the node representing the fan. Currently only a speed is given, with no indication of the fan's health.

On other platforms the approach taken to fan health is that, along with the current speed, the system indicates a speed below which the fan is to be considered faulty. This could be represented in PICL by a "LowWarningThreshold" property and would allow clients such as prtdiag to be more generic.

[4701099]

System Names

In common with many other Sun Servers, the prtconf -v and uname -a commands return the internal system name SUNW,Netra-T12, whereas the Solaris /usr/platform/sun4u/sbin/prtdiag and OBP banner commands return the intended product name, Sun Fire V1280.

Do Not Operate the On-board Ethernet Ports in Gigabit Half-Duplex Mode

The on-board Ethernet interfaces do not support Gigabit half-duplex (1000HDX) mode. Gigabit full-duplex mode is fully supported.

Short Power Application Can Cause SC POST Fail

For both the Sun Fire V1280 and the Netra 1280 a short application of power to the System Controller which is then removed can cause the System Controller to enter a debug mode. This will only happen within a small time window of approximately 200ms.

The failure report is that an address bit error has occurred, for instance:

```
Address Line A14 is Stuck at One
```

or:

```
Address Line A0 is Stuck at Zero
```

Following this either a menu is displayed or a software reset cycle loop is invoked. This mode of operation will persist until the power is removed for a period greater than 10 seconds or the Continue option is selected on the debug menu.

[4811341]

Sun Fire V1280 Onboard Ethernet Interfaces Do Not Operate Correctly In Forced Full Duplex Mode

If you attempt to force full duplex operation of the onboard Ethernet ports by disabling autonegotiation, the link will show 'link partner down' and no Ethernet communication will be possible. The link LEDs will also reflect this behaviour, that is, the 'link up' LED will not be lit.

The workaround is to not force the onboard ports to a given mode and instead to rely on autonegotiation as the autonegotiation activity operates correctly.

If forced operation is essential, an alternative workaround is to use crossover cables for connection to a hub and straight-through cables for connecting back-to-back to another system.

A permanent software workaround is being developed.

[4797403]

Hardware Notes

Sun Fire V1280 Power Cord Ratings

TABLE 3-1 on page 16 of the *Sun Fire V1280/Netra 1280 Site Preparation and Installation Guide* should read as follows:

TABLE 4   Sun Fire V1280 AC Power Cord Ratings

Rating	Value
Voltage	200 to 240 VAC
Maximum input current per cord	200 VAC @ 9A
Line cord	10A nominal
Circuit breakers – USA and Canada	15A or 20A
Circuit breakers – International	16A

Note – A total of four circuit breakers are required for the electrical supply installation, two on source A and two on source B.

IB_SSC Fire Fuse

As part of the flame spread protection system, the IB_SSC in the Sun Fire V1280/Netra 1280 includes a one-time-operating high temperature sensor to immediately take steps to minimize the spread of fire. If this sensor is triggered and opens, both the main 48V power and all forced air cooling power within the system apart from that in the power supplies will be turned off.

When the 48V main power is turned off due to the operation of this sensor it is likely that many error messages will be generated, including some for the power supplies, the main fans and the IB fans. Should the sensor or cabling be damaged or removed the system will respond in the same way as if it had the major overtemperature consistent with a fire event.

The current release of the System Controller firmware does not detect the state of the sensor and hence there is no message sent to the logs. There is an outstanding request for enhancement to add a message covering operation of or failure or removal of the sensor. While this will not remove the error messages relating to the loss of power and cooling, it will identify the reason for them appearing in the log.

[4754375]

Main Fan Tray

Note – The fan tray at the front of the system is not a hot-plug item and the system must only be operated with the connector to the fan tray locked home into the baseplane with the sliding latch. Attempting to hot-plug the connector while the system is powered may result in damage.

If damage does occur it is possible that the firmware will interpret control signals as indicating a request to poweron from the On/Standby switch. This may result in a situation where insufficient cooling is available, which will result in subsequent shutdown of the system when an overtemperature is detected. This sequence may repeat depending on the nature of the control signal damage.

[4746124]

Using a DB-25 or DB-9 Adapter For a Serial Connection

Ensure that the adapter you use performs the correct crossovers as listed in the Sun Fire V1280/Netra 1280 *Site Preparation and Installation Guide*.

Caution on the Use of PCI Cards Not Specifically Qualified by Sun on the Sun Fire V1280 Platform

In order to ensure robust system operation, it is extremely important to ensure that any PCI cards and associated drivers installed in a Sun Fire V1280/Netra 1280 system are qualified by Sun for use on the platform. It is possible for interactions to occur between cards and drivers on a specific bus that can lead to potential system panics or other negative outcomes if the card/driver solution is not qualified by Sun.

For an updated listing of qualified PCI cards and configurations for the Sun Fire V1280/Netra 1280 system, contact your Sun authorized sales representative or service provider. For additional information, refer to the web site at the following URL:

```
http://www.sun.com/io
```

Netra 1280 Only: DC Power Supply

If the Netra 1280 is powered only from power supply slots PS2 and PS3, incorrect error status messages may be issued.

The most likely cause for the Netra 1280 to be running only from supplies in slots PS2 and PS3 is the failure of the A side power feeds. If this occurs then an occasional incorrect error status message or SEPROM message relating to the power supply or the power distribution board may be seen.

These do not impact the operation of the system and do not occur once the power has been restored to slots PS0 and PS1.

The format of the incorrect error messages is typically one of the following.

1. The message:

```
PS2, hotplug status, PS2, module removed (9,16)
```

followed by:

```
/N0/PS2: Status is OK
/N0/PS2, hotplug status, PS2, module inserted (9,17)
```

a few seconds later.

Note – Both PS2 and PS3 messages may be intermingled, and SEPROM errors may be seen at the same time.

---

2. The message:

```
/N0/PS2: Status is Failed
```

followed by

```
/N0/PS2: Status is OK
```

approximately 10 seconds later.

3. The message:

```
/N0/PS2: Status is Degraded
```

followed by

```
/N0/PS2: Status is OK
```

approximately 10 seconds later.

4. The message:

```
Device voltage problem: /N0/PS3 abnormal state for device: 48 VDC 0
Volt. 0 Value: 0.0 Volts DC
/N0/PS3, sensor status, over limit (7,1,0x608030b000a0000)
```

followed by

```
Device voltage stabilized: /N0/PS3 normal operating state: 48 VDC 0
Volt. 0 Value: 48.0 Volts DC
/N0/PS3, sensor status, under limit (7,2,0x608030b000a0000)
```

approximately 10 seconds later.

5. SEPROM messages similar to:

```
SepromContainer.writeOut: verify error: offset=05b0
expected=00
observed=ff
/N0/PS2: SepromContainer.writeOut:
sun.serengeti.I2cException: verify
error: offset=05b0 expected=00 observed=ff
```

 or:

```
SepromManufacturing.getIntBcd: malformed Manufacturing data:
java.lang.NumberFormatException: S2 body=<S2>  blen=2
/N0/PS2: SepromSection(constructor): Invalid CRC observed=80
expected=79
```

Nomenclature Notes

ce0 and ce1 Nomenclature

The Sun Fire V1280/Netra 1280 server provides two on-board Ethernet interfaces, which reside on the IB_SSC and operate at 10 Mbps, 100 Mbps, and 1000 Mbps. Two back panel ports with RJ-45 connectors provide access to these interfaces.

In certain software output, these Ethernet interfaces are referred to as ce0 and ce1:

- ce is the name of the Ethernet driver.
- 0 and 1 are instance numbers.