System Management Services (SMS) 1.4.1 Release Notes

Sun Microsystems, Inc.
www.sun.com

Part No. 817-5407-10
April 2004, Revision A

Submit comments about this document at: `http://www.sun.com/hwdocs/feedback`

Copyright 2004 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, California 95054, U.S.A. All rights reserved.

Sun Microsystems, Inc. has intellectual property rights relating to technology embodied in the product that is described in this document. In particular, and without limitation, these intellectual property rights may include one or more of the U.S. patents listed at http://www.sun.com/patents, and one or more additional patents or pending patent applications in the U.S. and in other countries.

This document and the product to which it pertains are distributed under licenses restricting their use, copying, distribution, and decompilation. No part of the product or of this document may be reproduced in any form by any means without prior written authorization of Sun and its licensors, if any.

Third-party software, including font technology, is copyrighted and licensed from Sun suppliers.

Parts of the product may be derived from Berkeley BSD systems, licensed from the University of California. UNIX is a registered trademark in the U.S. and other countries, exclusively licensed through X/Open Company, Ltd.

Sun, Sun Microsystems, the Sun logo, docs.sun.com, Sun Fire, OpenBoot PROM, Java, and Solaris are trademarks, registered trademarks, or service marks of Sun Microsystems, Inc. in the U.S. and other countries.

All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. in the U.S. and other countries. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc.

The OPEN LOOK and Sun™ Graphical User Interface was developed by Sun Microsystems, Inc. for its users and licensees. Sun acknowledges the pioneering efforts of Xerox in researching and developing the concept of visual or graphical user interfaces for the computer industry. Sun holds a non-exclusive license from Xerox to the Xerox Graphical User Interface, which license also covers Sun's licensees who implement OPEN LOOK GUIs and otherwise comply with Sun's written license agreements.

Use, duplication, or disclosure by the U.S. Government is subject to restrictions set forth in the Sun Microsystems, Inc. license agreements and as provided in DFARS 227.7202-1(a) and 227.7202-3(a) (1995), DFARS 252.227-7013(c)(1)(ii) (Oct. 1998), FAR 12.212(a) (1995), FAR 52.227-19, or FAR 52.227-14 (ALT III), as applicable.

DOCUMENTATION IS PROVIDED "AS IS" AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID.

Copyright 2004 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, California 95054, Etats-Unis. Tous droits réservés.

Sun Microsystems, Inc. a les droits de propriété intellectuels relatants à la technologie incorporée dans le produit qui est décrit dans ce document. En particulier, et sans la limitation, ces droits de propriété intellectuels peuvent inclure un ou plus des brevets américains énumérés à http://www.sun.com/patents et un ou les brevets plus supplémentaires ou les applications de brevet en attente dans les Etats-Unis et dans les autres pays.

Ce produit ou document est protégé par un copyright et distribué avec des licences qui en restreignent l'utilisation, la copie, la distribution, et la décompilation. Aucune partie de ce produit ou document ne peut être reproduite sous aucune forme, parquelque moyen que ce soit, sans l'autorisation préalable et écrite de Sun et de ses bailleurs de licence, s'il y ena.

Le logiciel détenu par des tiers, et qui comprend la technologie relative aux polices de caractères, est protégé par un copyright et licencié par des fournisseurs de Sun.

Des parties de ce produit pourront être dérivées des systèmes Berkeley BSD licenciés par l'Université de Californie. UNIX est une marque déposée aux Etats-Unis et dans d'autres pays et licenciée exclusivement par X/Open Company, Ltd.

Sun, Sun Microsystems, le logo Sun, docs.sun.com, Sun Fire, OpenBoot PROM, Java, et Solaris sont des marques de fabrique ou des marques déposées de Sun Microsystems, Inc. aux Etats-Unis et dans d'autres pays.

Toutes les marques SPARC sont utilisées sous licence et sont des marques de fabrique ou des marques déposées de SPARC International, Inc. aux Etats-Unis et dans d'autres pays. Les produits protant les marques SPARC sont basés sur une architecture développée par Sun Microsystems, Inc.

L'interface d'utilisation graphique OPEN LOOK et Sun™ a été développée par Sun Microsystems, Inc. pour ses utilisateurs et licenciés. Sun reconnaît les efforts de pionniers de Xerox pour la recherche et le développment du concept des interfaces d'utilisation visuelle ou graphique pour l'industrie de l'informatique. Sun détient une license non exclusive do Xerox sur l'interface d'utilisation graphique Xerox, cette licence couvrant également les licenciées de Sun qui mettent en place l'interface d 'utilisation graphique OPEN LOOK et qui en outre se conforment aux licences écrites de Sun.

LA DOCUMENTATION EST FOURNIE "EN L'ÉTAT" ET TOUTES AUTRES CONDITIONS, DECLARATIONS ET GARANTIES EXPRESSES OU TACITES SONT FORMELLEMENT EXCLUES, DANS LA MESURE AUTORISEE PAR LA LOI APPLICABLE, Y COMPRIS NOTAMMENT TOUTE GARANTIE IMPLICITE RELATIVE A LA QUALITE MARCHANDE, A L'APTITUDE A UNE UTILISATION PARTICULIERE OU A L'ABSENCE DE CONTREFAÇON.

LA DOCUMENTATION EST FOURNIE "EN L'ÉTAT" ET TOUTES AUTRES CONDITIONS, DECLARATIONS ET GARANTIES EXPRESSES OU TACITES SONT FORMELLEMENT EXCLUES, DANS LA MESURE AUTORISEE PAR LA LOI APPLICABLE, Y COMPRIS NOTAMMENT TOUTE GARANTIE IMPLICITE RELATIVE A LA QUALITE MARCHANDE, A L'APTITUDE A UNE UTILISATION PARTICULIERE OU A L'ABSENCE DE CONTREFAÇON.

Contents

Preface vii

1. System Management Services (SMS) 1.4.1 Release Notes 1

SMS 1.4.1 Known Limitations 1

General Notes and Issues 2

Automatic Diagnosis and Recovery 2

Capacity On Demand (COD) 4

System Controller External Network Configuration 5

System BREAK Sequence 6

IPSec Configuration 6

`smsconnectsc` Command 6

Reinstallation and Upgrade 7

SMS Documentation Part Numbers 7

2. SMS 1.4.1 Bugs 9

Bugs in SMS 1.4.1 Software 9

I2C Timeouts Occassionally Reported When Trying to Record an Event in SEEPROM During Hot Swap (BugId 4785961) 9

`hwad` Failure Can Cause Domain Panic Stop (BugID 4924523) 10

Domain Boot Time Has Increased (BugId 4957596) 10

Two-Processor System Boards Display Uknown Status After Domain Reboot (BugId 4970240) 10

Do Not Insert a System Board Into an Expander Board That Is Powered Down (BugId 4970670) 10

Domain Does Not Recover If You Poweroff Expander In a Running Domain (BugId 4970726) 11

`CHS` Error Intermittently Reported During `post` In Systems Running Parallel `setkeyswitch` Operations (BugId 4971816) 11

Cannot Use `smsversion` to Switch Between SMS 1.4.1 and SMS 1.3 Without Patch (BugId 4974601) 11

Parallel `setkeyswitch` Operations on Split Expanders Can Encounter `SEEPROM/CHS` Errors (BugId 4974846) 12

Multiple Indictments Used In `testemail` Can Result In Unsent Emails (BugId 4976195) 12

Bad Hardware Can Cause Unnecessary `dstop` Error Messages (BugId 4983517) 13

`dsmd` Can Create Unnecessary `xir` and Hardware Configuration Dumps During Valid DR Operations (BugID 4984234) 13

System Can Hang During Parallel `setkeyswitch` Operations in a Split-Expander Configuration (BugID 4984879) 13

`setkeyswitch` Operation in a Split-Expander Domain Configuration Can Generate Invalid `rstop` (BugID 4986412) 14

I2C Timeout Message Unnecessarily Displayed After an MCPU or IO Board Is Inserted Into Domain's IO Slot (BugID 4986413) 14

Error Messages Produced When IO Boards Are Removed (BugId 4986477) 15

System Board In Use By Another Domain Fails Configuration in New Domain (BugId 4990295) 15

Hardware Failure Can Eventually Hang `efhd` Daemon (BugId 4991633) 16

Unexpected Addition Of New Users Can Cause Upgrade To Fail (BugId 4994106) 16

CHS Read / Write Errors Can Occur When System Is Busy (BugId 4999940) 17

`poweron` Hangs Intermittently With Global I2C Locking Errors (BugId 5009599) 17

`flashupdate` Cannot Determine the SC Number on CP2140 Boards (BugID 5012993) 18

Bugs That Affect SMS 1.4 Software 18

After Changing the MAN I1 Network IP Address of an Installed Domain, You Must Reconfigure the MAN Network by Hand (BugId 4484851) 18

Sun Fire 15K/E25K Platform-Specific Begin/Finish Scripts Can Hang on HPCI+-Only Domains (BugId 4797577) 19

Intermittent I^2C Timeouts (1124) for Hpc3130 Cassette Status (BugId 4785961) 19

Unmapped Response to Non-cacheable Request Corrupts State in AXQ Lock Module (BugId 4761277) 19

Sun Fire 15K/E25K Servers Can Fail to Detect Domain Stop Interrupts (BugId 4924523) 20

At Startup, SunMC Can Display Incorrect System State When Failover Did Not Work (Bug ID 5010351) 20

SMS 1.4.1 Documentation Errors 20

`poweron` Manpage Needs To Be Updated (BugId 5007971) 20

3. Dynamic Reconfiguration Release Notes 21

Slot 1 DR 21

Known Limitations 22

DR Documentation Notes 22

Known Bugs 23

DCA Doesn't Detect Failed Network Connection (BugId 4628314) 23

Known Hardware Bugs 23

GigaSwift Ethernet MMF Link Goes Down With CISCO 4003 Switch After DR Attach (BugId 4709629) 23

Preface

This guide contains release notes for the System Management Services (SMS) 1.4.1 software.

Before You Read This Book

This guide is intended for the Sun Fire system administrator, who has a working knowledge of UNIX® systems, particularly those based on the Solaris™ operating environment. If you do not have such knowledge, read the Solaris User and System Administrator documentation provided with this system, and consider UNIX system administration training.

All members of the next-generation Sun Fire server family can be configured as loosely-coupled clusters. However, it is currently outside of the scope of this document to address system management for Sun Fire cluster configurations.

How This Book Is Organized

This guide contains the following information:

- Chapter 1 contains the SMS 1.4.1 and Availability-related Release Notes.
- Chapter 2 contains SMS 1.4.1 bugs, bugs that affect SMS 1.4.1 software, and errors in SMS 1.4.1 documentation.
- Chapter 3 contains the Dynamic Reconfiguration release notes and bugs.

Using UNIX Commands

This document may not contain information on basic UNIX commands and procedures such as shutting down the system, booting the system, and configuring devices.

See one or more of the following for this information:

- *Solaris Handbook for Sun Peripherals*
- Online documentation for the Solaris software environment
- Other software documentation that you received with your system

Typographic Conventions

Typeface or Symbol	Meaning	Examples
AaBbCc123	The names of commands, files, and directories; on-screen computer output	Edit your `.login` file. Use `ls -a` to list all files. `% You have mail.`
AaBbCc123	What you type, when contrasted with on-screen computer output	% **su** Password:
AaBbCc123	Book titles, new words or terms, words to be emphasized. Replace command-line variables with real names or values.	Read Chapter 6 in the *User's Guide*. These are called *class* options. To delete a file, type **rm** *filename*.

Shell Prompts

Shell	Prompt
C shell	*sc_name*:*sms-user*:> or *domain_id*:*sms-user*:>
C shell superuser	*sc_name*:# or *domain_id*:#
Bourne shell and Korn shell	>
Bourne shell and Korn shell superuser	#

Related Documentation

Application	Title	Part Number
Overview Guide	*Sun Fire High-End Systems Software Overview Guide*	817-3075-10
Installation	*System Management Services (SMS) 1.4.1 Installation Guide*	817-5409-10
Administrator Guide	*System Management Services (SMS) 1.4.1 Administrator Guide*	817-5410-10
Reference (man pages)	*System Management Services (SMS) 1.4.1 Reference Manual*	817-5408-10
Options	*System Management Services (SMS) 1.4.1 Dynamic Reconfiguration User Guide*	817-4459-10
	Sun Fire High-End Systems Dynamic Reconfiguration User Guide	817-4586-10
	System Administration Guide: IP Services	806-4075-11
	OpenBoot™ 4.x Command Reference Manual	816-1177-10
	Sun Fire 15K/12K System Site Planning Guide	806-3510-12

Application	Title	Part Number
	Sun Fire Link™ Fabric Administrator's Guide	806-1405-11
	Securing the Sun Fire 12K and 15K System Controllers: Updated for SMS 1.4	817-1358-10
	Securing the Sun Fire 12K and 15K Domains: Updated for SMS 1.4	817-1357-10

Accessing Sun Documentation

You can view, print, or purchase a broad selection of Sun documentation, including localized versions, at:

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

Contacting Sun Technical Support

If you have technical questions about this product that are not answered in this document, go to:

`http://www.sun.com/service/contacting`

Sun Welcomes Your Comments

Sun is interested in improving its documentation and welcomes your comments and suggestions. You can submit your comments by going to:

`http://www.sun.com/hwdocs/feedback`

Please include the title and part number of your document with your feedback:

System Management Services (SMS) 1.4.1 Release Notes, part number 817-5407-10

CHAPTER 1

System Management Services (SMS) 1.4.1 Release Notes

This chapter contains the release notes for System Management Services (SMS) 1.4.1 on Sun Fire high-end systems and covers the following topics:

- SMS 1.4.1 Known Limitations
- General Notes and Issues
- SMS Documentation Part Numbers

SMS 1.4.1 Known Limitations

This section contains known limitations for SMS 1.4.1 on a Sun Fire high-end system:

- At the time of this release, `setbus -c` *csb* is the only form of `setbus` that should be used. Using the `-b` option or the *location* operand could result in system instability and should *not* be used.
- If you upgrade from SMS 1.4 to SMS 1.4.1, you cannot return to SMS 1.4. This one-way upgrade limitation does not apply to SMS 1.3, however. In other words, you can upgrade from SMS 1.3 to SMS 1.4.1 and still return to SMS 1.3.
- If you return to SMS 1.3 from SMS 1.4.1 on a Sun Fire high-end system, `smsversion` does not automatically restore domain configuration settings. You must restore settings manually. Keep in mind that features provided by SMS 1.4.1, such as automatic diagnosis and domain recovery, will not be available if you return to SMS 1.3. Refer to the the *System Management Services (SMS) 1.4.1 Installation Guide*.
- Due to the possibility of `dstop` for both domains, do not share expanders between a production domain and a domain containing new or untested privileged mode software such as device drivers. See BugId 4761277.

- By default using a MAXCPU board in a split slot configuration is not allowed. If you need this configuration because you are upgrading from SMS 1.3 where the configuration was allowed, contact your Sun Service Representitve and refer to RFE number #4863496.
- Running multiple, concurrent `setkeyswitch standby` or `setkeyswitch off` commands can cause `dstops` for domains sharing expanders. See BugId 4799169.
- hsPCI boards contain one 66 Mhz slot. Do not use a 33Mhz card in that slot unless you are willing to reboot the domain. Refer to BugId 4785070.
- UltraSPARC IV functionality requires the presence of UltraSPARC IV boards.
- hsPCI+ functionality requires the presence of hsPCI+ boards.
- Sun Fire Link clustering functionality, including the Sun Fire Link fabric manager server, requires the presence of wPCI boards.

General Notes and Issues

This section contains general notes and issues that involve SMS on Sun Fire high-end systems.

Automatic Diagnosis and Recovery

The following automatic diagnosis and domain recovery features are enabled by default in SMS 1.4.1:

- Automatic *diagnosis engines*

  SMS 1.4.1 includes three diagnosis engines (DEs) that analyze certain hardware errors and identify the components associated with errors that affect the availability of the system and its domains:

  - SMS diagnosis engine

    The SMS DE diagnoses hardware errors associated with domain stops (dstops).

  - Solaris operating environment

    The Solaris operating environment (also referred to as the Solaris DE) identifies non-fatal domain hardware errors and reports them to the system controller.

  - POST diagnosis engine

    The POST DE identifies any hardware test failures that occur when the power-on self-test is run in SMS.

  The DEs record the diagnosis information for the affected components and maintain this information as part of the *component health status* (CHS).

- Fault event and error reporting

  The diagnosis engines report diagnosis information through the following channels:

  - Event messages displayed in the domain and platform log files.

    These event messages contain the chassis serial number of the affected system and event codes that identify the fault or error event. These event messages are also recorded in the SMS event log, which can be viewed by running the `showlogs` command.

    Contact your service provider when you see these event messages. Your service provider uses the chassis serial number and event code to initiate the appropriate service action.

Note – In some cases the diagnosis engine cannot assign a reasonable event code based on the diversity of components associated with the fault. In such cases the event code will contain the word UNKNOWN, for example SF15000-UNKNOWN. Contact your service provider as usual to initiate the appropriate service action.

  - Email notification of fault and error events

    You can configure the email event notification features to receive immediate notice of critical fault events, without manually monitoring the platform or domain logs. As with the event messages, contact your service provider when you receive these emails, so that your service provider can initiate the appropriate service action.

  - Fault event notification through Sun Management Center or Sun^{SM} Remote Services Net Connect, if you have configured those products accordingly.

- Automatic restoration of stopped domains

  For hardware errors associated with dstops, POST reviews the CHS information of affected components and deconfigures any faulty components from the system.

For further information on these features, see the "Automatic Diagnosis and Recovery" chapter in the *System Management Services (SMS) 1.4.1 Administrator Guide*.

Commands Introduced in SMS 1.4

The following new daemons and commands are related to the automatic diagnosis and recovery features introduced in the previous release of SMS (SMS 1.4). For detailed information on these daemons and commands, refer to their descriptions in the *System Management Services (SMS) 1.4.1 Reference Manual*.

- `efhd`(1M) – Error and fault handling daemon.
- `elad`(1M) – Event log access daemon.
- `erd`(1M) – Event reporting daemon.
- `setcsn`(1M) – Set the chassis serial number for a Sun Fire high-end system.

- `testemail`(1M) – Test the event-reporting features, which include event message logging and email event notification. Note that the path to this command is:

  `/opt/SUNWSMS/SMS/lib/smsadmin/testemail`

Commands Revised in SMS 1.4.1

The following commands were updated in SMS 1.4.1 to reflect changes introduced by the automatic diagnosis and recovery features. For further information on these commands, refer to their descriptions in the *System Management Services (SMS) 1.4.1 Reference Manual*.

- `showlogs` (1M) – Provides new options for displaying event log information.
- `showplatform` (1M) – Now displays the chassis serial number assigned to a Sun Fire high-end system.

Chassis Serial Number

The chassis serial number is used to identify a Sun Fire high-end system. The serial number identifies the platform in system event messages and is used by service providers to correlate events and service actions to the correct system.

The chassis serial number is printed on a label in the front of the system chassis, near the bottom center. Starting with the SMS 1.4 release, the chassis serial number is automatically recorded by Sun manufacturing on systems that ship with SMS 1.4 or SMS 1.4.1 installed. To view the chassis serial number, run the `showplatform -p csn` command.

If you are upgrading to SMS 1.4.1 from an earlier SMS version, use the `setcsn`(1M) command to record the chassis serial number of your Sun Fire high-end system. For details on setting the chassis serial number, refer to the *System Management Services (SMS) 1.4.1 Installation Guide* and the `setcsn` command description in the *System Management Services (SMS) 1.4.1 Reference Manual*.

Capacity On Demand (COD)

You can now temporarily enable an available, instant access CPU (also referred to as headroom) to replace a failed non-COD CPU. In this case, the instant access CPU is considered as a *hotspare*, which is a spare CPU that can be used immediately to replace a failed non-COD CPU. However, once you replace the failed non-COD CPU, you must deactivate the instant access CPU as explained in the “Capacity on Demand” chapter of the *System Management Services (SMS) 1.4.1 Administrator Guide*). Contact your Sun sales representative or reseller to purchase a COD RTU license for the instant access CPU in use if you want to continue using it.

System Controller External Network Configuration

Each system controller (SC) must be configured for the TCP/IP network to which it is attached. Refer to the *System Administration Guide: Resource Management and Network Services* of the Solaris 9 System Administrator Collection for details on planning and configuring a TCP/IP-based network. SMS supports both IPv4 and IPv6 configurations.

In this release, the SC supports network connections through the RJ45 jacks on the faceplate of each SC. This corresponds to the network interface `hme0` and `eri1` under Solaris software for each SC. You will be required to configure `hme0` or `eri1` on each SC with appropriate information for your TCP/IP network. Using this configuration, each SC is known to external network applications by a separate IP hostname and address.

Caution – The IP addresses shown in the `smsconfig` examples in the Sun Fire high-end system documentation are *examples only.* Always refer to your *Sun Fire 15K/12K System Site Planning Guide* for valid IP addresses for your network. Using invalid network IP addresses could under certain circumstances render your system unbootable!

Each SC operates in one of two mutually exclusive modes: main or spare. The SC that is in main mode is the SC that controls the machine. The SC that is in spare mode acts as a spare that automatically takes over if the main SC fails. It is important to know which system controller is the main SC and which is the spare SC. To determine the SC role log in to the SC and use the following command:

```
sc0:sms-user:> showfailover -r
MAIN
```

If you do not configure the external community network, applications such as Sun Management Center, `telnet`, and others will need to be given the appropriate IP `hostname` of the main system controller. In the case of an SC failover, these applications need to be restarted with the IP address of the new main SC.

Note – Any changes made to the network configuration on one SC using `smsconfig -m` must be made to the other SC as well. Network configuration is not automatically propagated.

System BREAK Sequence

To facilitate failover, the BREAK sequence to stop the system has been changed from STOP-A to the alternate [RETURN] [TILDE] [CONTROL B].

Note – There must be an interval of more than 0.5 seconds between characters, and the entire string must be entered in less than 5 seconds.

Solaris 8 introduced this new feature which gives the system the ability to force a hanging system to halt when required, without allowing random or spurious breaks to cause an unintentional stop. This is true only with serial devices acting as consoles and not for systems with keyboards of their own.

The following line is uncommented by default in the `/etc/default/kbd` file:

KEYBOARD_ABORT=alternate

Note – Do not return the use of STOP-A to the system. Your system will lose failover functionality.

IPSec Configuration

Disks intended to be used on a Product Name must be installed using a Sun Fire high-end system. Policy placed in `/etc/inet/inetd.conf` must be added manually to `/etc/inet/ipsecinit.conf` as well.

Whenever policy is taken out of `/etc/inet/inetd.conf` it must be removed manually from `/etc/inet/ipsecinit.conf` also.

Refer to Bug Id 4449848.

`smsconnectsc` Command

`smsconnectsc` is intended to be used in the event a remote SC hangs and cannot be accessed normally through `login`. Using `smsconnectsc` to create a remote console session from the local SC can result in the local SC losing monitoring capability and functionality. Do *not* use `smsconnectsc` except for the express purpose of system recovery.

Reinstallation and Upgrade

Previous versions of SMS documented the use of the Java™ WebStart GUI and the `pkgadd` command to install the SMS packages on the Sun Fire high-end system. SMS 1.3 introduced the `smsinstall` and `smsupgrade` scripts which simplify and streamline the installation and upgrade process to the extent that WebStart and `pkgadd` are no longer recommended or documented. Because of the complexity of configuration for SMS, do *not* use any method other than the ones documented in the *System Management Services (SMS) 1.4.1 Installation Guide* to install or upgrade to SMS 1.4.1. Doing so could result in misconfiguration and loss of functionality.

SMS Documentation Part Numbers

Software documentation for this release is provided at:

`http://www.sun.com/products-n-solutions/hardware/docs/Servers/High-End_Servers/Sun_Fire_15K/SW_FW_Documentation/SMS/index.html`

Files are named by part number, which correspond to these document titles:

817-5407-10.pdf - *System Management Services (SMS) 1.4.1 Release Notes* (replaces 817-3058-10 (SMS 1.4) and 816-5321-10)

817-5409-10.pdf - *System Management Services (SMS) 1.4.1 Installation Guide* (replaces 817-3055-10 (SMS 1.4) and 816-5320-10)

817-5410-10.pdf - *System Management Services (SMS) 1.4.1 Administrator Guide* (replaces 817-3056-10 (SMS 1.4) and 816-5318-10)

817-5408-10.pdf - *System Management Services (SMS) 1.4.1 Reference Manual* (replaces 817-3057-10 (SMS 1.4) and 816-5319-10)

817-3075-10.pdf - *Sun Fire High-End Systems Software Overview Guide* (replaces 816-5322-10)

CHAPTER 2

SMS 1.4.1 Bugs

This chapter provides information about known SMS 1.4.1 bugs. It includes:

- Bugs in SMS 1.4.1 Software
- Bugs That Affect SMS 1.4.1 Software
- SMS 1.4.1 Documentation Errors

Bugs in SMS 1.4.1 Software

This section summarizes the most important bugs and RFEs that affect SMS 1.4.1.

I2C Timeouts Occassionally Reported When Trying to Record an Event in SEEPROM During Hot Swap (BugId 4785961)

Sun Fire high-end systems record events of interest in the SEEPROMS of their IO cards across an i2c bus. Hot-pluggable cards have CBT switches that allow the card to be electrically isolated. During a card-swapping operation, the CBT switches are not 'open', so the SEEPROMS are not accessible.

When hpost runs immediately after a hot-swapping operation it resets the IO cards cards, but it does not re-enable the CBT switches until it has finished testing the cards. If the system attempts to record an event in the SEEPROM during this testing period, it will be unable to connect and will report an i2c timeout error. The system continues to perform normally, but the event is not recorded in the IO card’s SEEPROM.

Workaround: Ignore the error message.

hwad Failure Can Cause Domain Panic Stop (BugID 4924523)

On rare occassions hwad fails to detect that a domain has successfully recovered, so it fails to clear the domain's dstop flag. As a result, dstop runs again. hwad incorrectly assumes that dsmd is already aware of the (prior) dstop, so it does not inform dsmd about it. As a result, the domain remains hung. It eventually fails a secondary status test, and dsmd attempts a recovery through a forced panic.

Workaround: None.

Domain Boot Time Has Increased (BugId 4957596)

There has been an increase of approximately 15% in the time it takes a Sun Fire high-end system to turn on and have its domains display a Solaris prompt.

Workaround: None.

Two-Processor System Boards Display Uknown Status After Domain Reboot (BugId 4970240)

When both processors of a two-processor system board are indicted due to Solaris ECC correctable errors and the domain is rebooted, the "Power State" of the system board changes to UNKNOWN instead of remaining as ON. This will cause showchs to FAIL.

This problem does not occur with four-processor system boards.

Workaround: Power cycle the system board.

Do Not Insert a System Board Into an Expander Board That Is Powered Down (BugId 4970670)

If a system board is inserted into a powered down expander board, no installation record is written.

Workaround: Remove the system board, power-on the expander board, and re-insert the system board.

Domain Does Not Recover If You Poweroff Expander In a Running Domain (BugId 4970726)

If you poweroff an expander board in a running domain, `dsmd` will not recover the domain.

Workaround: Do not poweroff an expander when components in slot 0 or 1 are in use by a running domain.

`CHS` Error Intermittently Reported During `post` In Systems Running Parallel `setkeyswitch` Operations (BugId 4971816)

Systems running parallel `setkeyswitch` operations may occassionally encounter a CHS error 4 (CHS: not a container) during `post`. If the resource being queried was faulty, the CHS error 4 will cause that resource to be configured into the domain instead of being excluded.

Workaround:

1. Avoid posting domains in parallel.
2. Poweron the boards (or `setkeyswitch standby` the domain) before running `setkeyswitch on`.
3. Retry `setkeyswitch on` if it does fail.

Cannot Use `smsversion` to Switch Between SMS 1.4.1 and SMS 1.3 Without Patch (BugId 4974601)

If after installing SMS 1.4.1 on your system, you try to use `smsversion` to switch between SMS 1.3 and SMS 1.4.1, you won't be offered SMS 1.4.1 as a choice in the menu:

```
# /opt/SUNWSMS/bin/smsversion
smsversion: SMS version 1.3 installed
smsversion: SMS version 1.4.1 installed
Please select from one of the following installed SMS versions:
1) 1.3
3) Exit
```

If you tried to switch by specifying the 1.4.1 release directly, the upgrade would fail with this message:

```
/opt/SUNWSMS/bin/smsversion 1.4.1
smsversion: Active SMS version < 1.3 >
You have requested SMS Version 1.4.1

Is this correct? [y,n] y
smsversion: Upgrading SMS from <1.3> to <1.4.1>.
ERROR: smsversion: SMS1.4.1 is not a consecutive release of SMS
Log file is /var/sadm/system/logs/smsversion.  Exiting.
```

Workaround: Install patchid 115955-03 on SMS 1.3.

Parallel `setkeyswitch` Operations on Split Expanders Can Encounter `SEEPROM/CHS` Errors (BugId 4974846)

If multiple domains are configured with split expanders and `setkeyswitch` is run in parallel on them, a `SEEPROM` never went ready error could be produced, excluding a good component from the domain. A `CHS` error 4 could also occur, allowing a component with a faulty CHS result to be configured into the domain.

Workaround:

1. Avoid posting domains in parallel.
2. Poweron the boards (or `setkeyswitch standby` the domain) before running `setkeyswitch on`.
3. Retry `setkeyswitch on` if it does fail.

Multiple Indictments Used In `testemail` Can Result In Unsent Emails (BugId 4976195)

The `testemail` command requires that the number of fault classes (the -c parameter list) must be at least as great as the number of indicted components (the -i parameter list). For certain messages that means that at most 1 indicted component can be entered, but the user is not informed that the extra components will be ignored.

Workaround: none

Bad Hardware Can Cause Unnecessary `dstop` Error Messages (BugId 4983517)

In rare cases, bad hardware can cause a `dstop` to attempt an `xir` dump after the `dstop` dump. Since the domain has already d-stopped, `dsmd` is unable to obtain a list of active processors, and an error is reported.

Workaround: Ignore the error messages.

`dsmd` Can Create Unnecessary `xir` and Hardware Configuration Dumps During Valid DR Operations (BugID 4984234)

`dsmd` can occassionally create XIR and hardware dumps unnecessarily during DR operations. The DR operation succeeds, but NOTICE messages are displayed.

Workaround: Ignore the NOTICE messages.

System Can Hang During Parallel `setkeyswitch` Operations in a Split-Expander Configuration (BugID 4984879)

On rare occassions, running parallel `setkeyswitch` operations on a domain with a split-expander configuration will cause the system to hang during `post`. The `setkeyswitch` operations cannot complete, and they cannot be interrupted by Control-C. To prevent this problem:

1. Avoid parallel `setkeyswitch` operations one multiple domains.
2. Avoid parallel `setkeyswitch` operations on split-expander domains.
3. Power on the boards in the domain with the SMS `poweron` command or `setkeyswitch standby` command before running `setkeyswitch on`.

Workaround: Stop and restart SMS. See the *System Management Services (SMS) 1.4.1 System Administrator Guide*.

`setkeyswitch` Operation in a Split-Expander Domain Configuration Can Generate Invalid `rstop` (BugID 4986412)

If you run `setkeyswitch off` in a domain configured with a split expander card, the other domain can receive an `rstop` message, even though no error has occurred.

Workaround: Ignore the `rstop` message.

I2C Timeout Message Unnecessarily Displayed After an MCPU or IO Board Is Inserted Into Domain's IO Slot (BugID 4986413)

After a new board is inserted into a Sun Fire high-end system domain, it takes several seconds for its power to stabilize. The `esmd` daemon polls for new boards every 30 seconds. If the board is power-stabilizing while the poll is sent out, `hwad` will detect a timeout error and display an error message. In addition, the amber fault light (wrench light) will be lit for up to a minute.

By the time `esmd` polls for new boards again in another 30 seconds, the new board will be stabilized and `esmd` will detect no timeout errors.

Workaround: Ignore the error message.

Error Messages Produced When IO Boards Are Removed (BugId 4986477)

If you remove a board from the IO3 and IO4 slot of a Sun Fire high-end system domain, multiple error messages can be unnecessarily displayed. For example:

```
sc% showlogs -F -p m
ERR I2cComm.cc 410] I2c read time out -  bus: 51, address: 21
ERR SelectPll.cc 292] Reading bus failed in address 0, ecode=1123
...
ERR DetectorS.cc 912] Failed to read state point v1r5, located on HPCI at
IO3: ecode=1123
ERR DetectorS.cc 912] Failed to read state point am80a_3v0, located on
HPCI at IO3: ecode=1123
...
ERR DetectorS.cc 912] Failed to read state point am80a_5v1, located on
HPCI at IO3: ecode=1123
ERR DetectorS.cc 912] Failed to read state point aa30c, located on HPCI at
IO3: ecode=1123
WARNING DetectorS.cc 216] A BAD clock status has been detected on input 0
on HPCI at IO3
WARNING DetectorS.cc 246] A BAD clock status has been detected on input 1
on HPCI at IO3
NOTICE Boards.cc 2262] HPCI at IO3 removed
```

The only messages that should be displayed are “IO3 removed" and "IO4 removed.”

This behavior can occur if `esmd` runs its voltage check after the board has been removed but before the configuration check has completed.

Workaround: Ignore the error messages.

System Board In Use By Another Domain Fails Configuration in New Domain (BugId 4990295)

If you attempt to configure into one domain a system board in use by another domain, the configuration will fail unless you power down the board first.

Workaround: Poweroff the board before attempting to configure it into the domain.

Hardware Failure Can Eventually Hang efhd Daemon (BugId 4991633)

In the event that picld fails and is restarted, efhd will not be able to set the component status of failed FRUs due to a stale handle. You can spot this problem by examining the platform message log:

```
Feb  1 00:42:00 2004 xc10p13-sc1 frad[14699]: [9912 713967991973909 ERR
SeepromInfoPro.cc 483] Bad section header on CDCDIMM at EX12/CDCDIMM0, bad
element: tag, expected value: 8, actual value: 0
```

If you see a message similar to this one, use the ps command to find out whether picld has been restarted:

```
> ps ef | grep picld
root 8495 26846 0 11:53:36 pts/25 0:00 grep picld
root 27535    1 0 11:57:20 ?      3:06 /usr/lib/picl/picld
```

If the timestamp indicates that picld restarted after the last time efhd was started, you should restart the efhd daemon.

Workaround: Restart the efhd daemon.

Unexpected Addition Of New Users Can Cause Upgrade To Fail (BugId 4994106)

If you attempt to add new uses to a system during an SMS upgrade before restoring the system configuration, as might happen if you run the upgrade from a jumpstart server, the installation may fail due to password problems introduced by the new users.

Workaround: Do not configure new users until instructed to in the SMS 1.4.1 Installation Guide.

CHS Read/Write Errors Can Occur When System Is Busy (BugId 4999940)

An FRU I/O error 2 can be returned when component health status (CHS) is either read or written if the SC is busy handling other domain recoveries. This problem may cause faulty components to be reconfigured back into a domain (if the CHS is not written when a component is indicted).

Workaround: Run `setchs` manually on the failed component to set it to a failed state, or place it on the ASR blacklist.

`poweron` Hangs Intermittently With Global I2C Locking Errors (BugId 5009599)

On occassion a `poweron` operation hangs and displays error messages like these:

```
esmd[17438]: [6175 3316412316413 ERR Boards.cc 713] Error (code = 1215),
attempting to lock Global I2C on HPCI at IO2

hwad[17152]: [0 3324411478033 ERR LockManager.cc 970]  WARNING!! Resource
113 is not locked, application 17169.11 in EXPLICIT lock mode.

Feb 25 23:03:35 2004 ht92bsc0 poweron[26197]: [6173 3349414612490 ERR
EXBPowerControl.cc 147]  Failed(1215) to get system lock EXB at EX10

Feb 25 23:03:35 2004 ht92bsc0 poweron[26197]: [6214 3349417208771 ERR
poweronApp.cc 1342] Attempt to poweron EXB at EX10 failed
```

They are caused by a lock between the poweron command and the failover mechanism.

Workaround: Turn `failover` off while running `poweron`.

`flashupdate` Cannot Determine the SC Number on CP2140 Boards (BugID 5012993)

The `flashupdate` command will occasionally be unable to determine the SC number on a CP2140 board, and will display this error message:

```
flashupdate -f /opt/SUNWSMS/firmware/oSSCPOST.di SC1/FP1
Unable to determine local SC number.
Only the local System Control Fproms can be updated.
Do you wish to continue? (yes/no)? y
```

Workaround: Answer “y” for yes, to continue with the normal update process.

Bugs That Affect SMS 1.4.1 Software

This section summarizes the most important bugs that can affect the SMS 1.4.1 system. It is not an exhaustive list of every bug that could affect the SMS 1.4.1 system.

After Changing the MAN I1 Network IP Address of an Installed Domain, You Must Reconfigure the MAN Network by Hand (BugId 4484851)

If there are already installed domains and you have changed the MAN I1 network configuration using `smsconfig -m`, you must configure the MAN network information on the already installed domains by hand.

Workaround: Refer to the information about unconfigured domains in the *System Management Services (SMS) 1.4.1 Installation Guide.*

Sun Fire 15K/E25K Platform-Specific Begin/Finish Scripts Can Hang on HPCI+-Only Domains (BugId 4797577)

The Solaris 8 update 7 operating environment does not include support for hsPCI+ boards. In domains consisting of only hsPCI+ boards, the installation can hang after the start of the Begin/Finish scripts.

Workaround: Press `Ctrl-C` to interrupt the Begin/Finish scripts. This will let the rest of the installation continue, resulting in successful installation.

Intermittent I^2C Timeouts (1124) for Hpc3130 Cassette Status (BugId 4785961)

Intermittent I2C timeouts are reported by `dxs` and `frad` while getting the status for an Hpc3130 hsPCI cassette. The impact is benign and limited to generating error messages in the platform, domain and domain console message logs.

Workaround: None.

Unmapped Response to Non-cacheable Request Corrupts State in AXQ Lock Module (BugId 4761277)

If two domains share an expander and a device driver (or OS extension) on one domain issues a bad address to programmed IO space, both domains could `dstop`. This only occurs with defective OS extensions which run in privileged mode such as device drivers.

Workaround: Do not share an expander between a production domain and a domain containing untested or problematic privileged mode software such as device drivers.

Sun Fire 15K/E25K Servers Can Fail to Detect Domain Stop Interrupts (BugId 4924523)

If a domain stop (`dstop`) interrupt is detected by `hwad` but not by `dsmd`, `dsmd` will report a heartbeat failure. Only hardware configuration information is dumped, and neither CPU register or domain data (`dsmd.dump`) is saved. Hardware configuration files report `dstop` condition.

Workaround: You can re-post the domain at an increased post level to reveal the source of the hardware problem.

At Startup, SunMC Can Display Incorrect System State When Failover Did Not Work (Bug ID 5010351)

When a SunFire system's failover process is in a FAILED state during startup, the PCR System View in the SunMC GUI can incorrectly display the system status as "activating."

Workaround: Use the `showfailover` CLI command to verify the system's status.

SMS 1.4.1 Documentation Errors

This section summarizes errors in the SMS 1.4.1 manpages and documentation.

`poweron` Manpage Needs To Be Updated (BugId 5007971)

As part of the fix for RFE 4974025, the behavior of the `poweron` command has changed. Previously, if SMS determined that there was not enough power for a board, the command would simply fail. Now the command displays a prompt asking the user whether to continue or not.

The `-y-q` options will automatically answer "no" to this prompt, effectively replicating the previous behavior. The `-y` option will not automatically answer this question.

Workaround: none.

CHAPTER 3

Dynamic Reconfiguration Release Notes

Some dynamic reconfiguration (DR) software on Sun Fire high-end systems runs on the domain, and some runs with SMS on the system controller (SC). This chapter describes SC-side DR as it runs with the SMS 1.4.1 release. For information about domain-side DR, refer to the appropriate version of the *Solaris Release Notes Supplement for Sun Hardware*.

Slot 1 DR

Sun Fire high-end systems support up to 18 expander boards, each of which includes two slots. Slot 0 is the upper assembly, which contains a CPU/Memory board, and Slot 1 is the lower assembly. Slot 1 can contain a MaxCPU board, hsPCI assembly, hsPCI+, or wPCI assembly.

Note – If a MaxCPU board is in Slot 1, the boards in that expander cannot be in different domains. See Known Limitations.

Solaris 9 4/03 was the first Solaris 9 release to support DR operations on a board in Slot 1, and Solaris 8 2/02 with certain patches was the first Solaris 8 release to support it. Domains running the base Solaris 9 release continue to support DR on CPU/Memory boards. For complete Slot 1 DR support, SMS 1.3, SMS 1.4, or SMS 1.4.1 is required on the SC, and you should run the latest version for the most complete set of features and the latest bug fixes.

Known Limitations

When Slot 1 of an expander board contains a MaxCPU board, the boards in that expander cannot be safely configured into different domains. If one board is configured in a domain, any attempt to configure the other into a different domain will fail. The board is marked `Failed` and an error message similar to the following is written to the POST log:

```
FAIL Slot SBx: MaxCPU in use in Slot IOx [...]
```

A subsequent attempt to DR the board causes an insufficient-condition error message.

Power-cycling the board to clear the failed state allows the board to be the target of an allowable DR operation; that is, one that would not result in a split-slot condition.

Note – If you need this configuration because you are upgrading from SMS 1.3, which did support MaxCPU spit-slot configurations, contact your Sun Service Representitve and refer to RFE number #4863496.

DR Documentation Notes

For release notes that pertain to DR on the domain side, see the *Solaris Release Notes Supplement for Sun Hardware* that corresponds to the Solaris version running on your domains. That document accompanies each Solaris release and update.

Known Bugs

This section contains important SMS-side bugs that involve DR on the Sun Fire high end system.

DCA Doesn’t Detect Failed Network Connection (BugId 4628314)

DCA doesn’t detect a failed network connection, which can cause a DR command to hang.

Workaround: Kill any remote DR commands that appear to be hung.

Known Hardware Bugs

GigaSwift Ethernet MMF Link Goes Down With CISCO 4003 Switch After DR Attach (BugId 4709629)

Attempting to execute a DR operation on a system with Sun GigaSwift Ethernet MMF Option X1151A, part number 595-5773, attached to certain CISCO switches causes the link to fail. The problem is caused by a known bug in the following CISCO hardware/firmware:

- CISCO WS-c4003 switch (f/w: WS-C4003 Software, Version NmpSW: 4.4(1))
- CISCO WS-c4003 switch (f/w: WS-C4003 Software, Version NmpSW: 7.1(2))
- CISCO WS-c5500 switch (f/w: WS-C5500 Software, Version McpSW: 4.2(1) and NmpSW: 4.2(1))

This problem is not seen on CISCO 6509 switch.

Workaround: Use another switch or consult Cisco for a patch.