Enhanced Support Facility Technical Guide

FUJITSU

Preface

Purpose

This paper describes the security issues of Enhanced Support Facility, provided for the combination of SPARC Enterprise Server and Oracle Solaris.

Intended Readers

This manual is intended for the following readers:

- System administrators who introduce and operate the Enhanced Support Facility.
- Technicians who maintain system hardware.

Organization

This manual is organized as follows:

Chapter1: Before reading this guide

The outline of this manual is explained.

Chapter2: About packages

The structure of packages included in Enhanced Support Facility is explained.

Chapter3: System

System used in Enhanced Support Facility is explained.

Chapter4: Network

Network used in Enhanced Support Facility is explained.

Chapter5: Virtualization technology

Virtualization technology used in Enhanced Support Facility is explained.

Notation

- Oracle Solaris might be described as Solaris, Solaris Operating System, or Solaris OS.
- Oracle VM Server for SPARC might be described as Logical Domains, or LDoms.

The following names, abbreviated expressions, and symbols are used in this manual:

Manual names

- This manual itself is referred to as "this manual."
- Any manual for this product is sometimes referred to by omitting "Enhanced Support Facility" at beginning of the formal name and supported server models at the end of the formal name. "User's Guide for Machine Administration," or "User's Guide for REMCS" is one of such examples.
  Example: Enhanced Support Facility User's Guide for Machine Administration
   -> User's Guide for Machine Administration

Abbreviation

In this manual, abbreviated names are used for each model name supported by Enhanced Support Facility. Regarding the relation table between model name and uname(1), please refer to "Chapter 1: Before reading this guide".

Marks

In this manual, the marks below are used for cautionary messages and reference information.

Mark	Description
Note	Contains a warning or cautionary message. Make sure you read it carefully.
Point	Contains reference information that you will find useful.
See	Provides reference information. Refer to the information when necessary.

TRADEMARK ACKNOWLEDGEMENTS

- UNIX is a registered trademark of The Open Group in the United States and other countries.
- Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.
- Microsoft is a registered trademark of Microsoft Corporation in the United States and/or other countries.
- Adobe and Acrobat are trademarks or registered trademarks of Adobe System Incorporated in the United States and /or other countries.
- Netscape, Netscape Navigator, Netscape Communications and Netscape Communications logo are trademarks of Netscape Communications Corporation in the United States and in other countries.
- All SPARC trademarks are used under license from SPARC International, Inc. and are trademarks or registered trademarks of that company in the United States and other countries.
- SPARC64 is a trademark of SPARC International, Inc. in the United States and other countries and used under license.
- Other names may be trademarks of their respective owners.

COPYRIGHT

Revision History

Edition	Date	Details
1.0	September 04, 2012	First Edition.

Contents

Chapter 1 Before reading this guide

Enhanced Support Facility provides the enough safety in respect to security at a usual installation. However, among those who are responsible for system security, there is a request that they want to have information about daemons started or INET ports used. They want to facilitate the management on security in the case of building a system environment like the ISP (Internet Service Providers) in which computers are directly connected to the Internet. With the same reason, they want to restrict the number of daemons or INET ports and also limit software packages to be installed as little as possible. This document describes the information about the Enhanced Support Facility required to establish a sophisticated security system to meet the above requests.

The verification is not done for the settings in all environments and combinations. We can not guarantee that you can change any setting. You can change the setting only when you have full knowledge on the security of the Oracle Solaris and enough skill in troubleshooting by yourself.

In this book, the following abbreviations are used for each model name supported by Enhanced Support Facility. The relation between the abbreviation name and uname(1) is as follows.

Model name		Abbreviation
SPARC M10-1/M10-4/M10-4S	*6	PA
SPARC T4-1/T4-2/T4-4	*5	LE
SPARC T3-1/T3-2/T3-4	*4	
SPARC Enterprise T1000/T2000/T5120/T5220	*1	
SPARC Enterprise T5140/T5240	*2	
SPARC Enterprise T5440	*3	
SPARC Enterprise M3000	*3	CW
SPARC Enterprise M4000/M5000/M8000/M9000	*1	

*1. SPARC Enterprise T1000/T2000/T5120/T5220/M4000/M5000/M8000/M9000 are
   supported from Enhanced Support Facility 3.0.
*2. SPARC Enterprise T5140/T5240 are supported from Enhanced Support Facility 3.0.1.
*3. SPARC Enterprise T5440/M3000 are supported from Enhanced Support Facility 3.1.
*4. SPARC T3-1/T3-2/T3-4 are supported from Enhanced Support Facility 3.2.
*5. SPARC T4-1/T4-2/T4-4 are supported from Enhanced Support Facility 3.2.1/4.0.
*6. SPARC M10-1/M10-4/M10-4S are supported from Enhanced Support Facility 5.0.

- Enhanced Support Facility 3.0 or newer supports SPARC Enterprise Server.
- The version number of the Enhanced Support Facility installed in your system can be confirmed by getting that of FJSVbse package with the pkgparam(1M) command.
  # pkgparam FJSVbse VERSION

Chapter 2 About packages

2.1 About packages

Components and packages contained in the Enhanced Support Facility are shown in the table below. Packages which are actually installed vary depending upon the hardware platforms or the revision of Oracle Solaris. Please refer to Enhanced Support Facility 5.0 Installation Guide for more details.

Enhanced Support Facility Package list.

2.1.1 Oracle Solaris 11

No.	Components	Abbreviation	Package name	Features
1	Enhanced Support Facility information management	PA,LE,CW	FJSVbse	Enhanced Support Facility Information Management
				Effective from Enhanced Support Facility 4.0 or later
2	SCF/SCSI fault LED support option	CW	FJSVscfsc	SCF/SCSI fault LED support option
				Effective from Enhanced Support Facility 4.0 or later
3	Machine Administration	PA	FJSVpmadm	Machine Administration
				Enhanced Support Facility 5.0 or later
		LE	FJSVmadm FJSVamle	Machine Administration
				Enhanced Support Facility 4.0 or later
		CW	FJSVamadm FJSVamcl	Machine Administration
				Enhanced Support Facility 4.0 or later
4	Remote Support (Note1)	LE	FJSVrlib FJSVragt FJSVrmaos	REMCS Common Library REMCS Auto Application Support REMCS System Monitor Agent
				Enhanced Support Facility 4.0 or later
			FJSVrrda	REMCS Resource Delivery Agent
				Enhanced Support Facility 4.0 or later
			FJSVracm	REMCS Advanced Agent Installer
				Enhanced Support Facility 4.0 or later
			FJSVlmrm	REMCS
				Enhanced Support Facility 4.0 or later
		LE,CW	FJSVsirms	Software REMCS
				Enhanced Support Facility 4.0 or later
		CW	FJSVamrm	REMCS
				Enhanced Support Facility 4.0 or later

No.	Components	Abbreviation	Package name	Features
5	Automatic Power Control	CW	FJSVapcs	Auto Power Control System
				Enhanced Support Facility 4.0 or later
6	Server Default Configuration	PA,LE,CW	FJSVssf	Server Support Feature
				Enhanced Support Facility 4.0 or later
7	System Data Output Tool	PA,LE,CW	FJSVsnap	System Data Output Tool
				Enhanced Support Facility 4.0 or later
8	Crash Dump Assistant	PA,LE,CW	FJSVdmp	Crash Dump Assistant
				Enhanced Support Facility 4.0 or later
9	Auto Dump Analyze Tool	PA,LE,CW	FJSVana	Auto Dump Analyze Tool
				Enhanced Support Facility 4.0 or later
10	Tape Driver Configuration Tool	PA,LE,CW	FJSVdcnf	Set the driver definition of the tape device automatically.
				Enhanced Support Facility 4.0 or later

Note1: The following are the names used for remote maintenance function.

Name of service:　　　　　SupportDesk　　(name of product)

Tool that provides service:　REMCS　　　　(name of tool)

2.1.2 Oracle Solaris 10

No.	Components	Abbreviation	Package name	Features
1	Enhanced Support Facility information management	PA,LE,CW	FJSVbse	Enhanced Support Facility Information Management
				Enhanced Support Facility 3.0 or later
2	IKPDR Command	CW	FJSVdropl	Dynamic Reconfiguration
				Enhanced Support Facility 3.0 or later (Note2)
3	SCF/SCSI fault LED support option	CW	FJSVscfsc	SCF/SCSI fault LED support option
				Enhanced Support Facility 3.0 or later
4	Machine Administration	PA	FJSVpmadm	Machine Administration
				Enhanced Support Facility 5.0 or later
		LE	FJSVmadm FJSVamle	Machine Administration
				Enhanced Support Facility 3.0 or later
		CW	FJSVamadm	Machine Administration
			FJSVamcl	Enhanced Support Facility 3.0 or later
5	Remote Support (Note1)	LE	FJSVrlib FJSVragt FJSVrmaos	REMCS Common Library REMCS Auto Application Support REMCS System Monitor Agent
				Enhanced Support Facility 3.0 or later
			FJSVrrda	REMCS Resource Delivery Agent
				Enhanced Support Facility 3.0 or later
			FJSVracm	REMCS Advanced Agent Installer
				Enhanced Support Facility 3.0 or later
			FJSVlmrm	REMCS
				Enhanced Support Facility 3.0 or later
		LE,CW	FJSVsirms	Software REMCS
				Enhanced Support Facility 3.0 or later
		CW	FJSVamrm	REMCS
				Enhanced Support Facility 3.0 or later

No.	Components	Abbreviation	Package name	Features
6	Automatic Power Control	CW	FJSVapcs	Auto Power Control System
				Enhanced Support Facility 3.0 or later
7	Server Default Configuration	PA,LE,CW	FJSVdef	Server Default Configuration
				Enhanced Support Facility 3.0 or later
			FJSVssf	Server Support Feature
				Enhanced Support Facility 3.0 or later
8	System Data Output Tool	PA,LE,CW	FJSVsnap	System Data Output Tool
				Enhanced Support Facility 3.0 or later
9	Crash Dump Assistant	PA,LE,CW	FJSVdmp	Crash Dump Assistant
				Enhanced Support Facility 3.0 or later
10	Auto Dump Analyze Tool	PA,LE,CW	FJSVana	Auto Dump Analyze Tool
				Enhanced Support Facility 3.0 or later
11	System Parameter Diagnosis	PA,LE,CW	FJSVparam	System parameters of the Oracle Solaris are diagnosed.
				Enhanced Support Facility 3.0 or later (Note2)
12	Tape Driver Configuration Tool	PA,LE,CW	FJSVdcnf	Set the driver definition of the tape device automatically.
				Enhanced Support Facility 3.0 or later
13	Patch Information collect command	PA,LE,CW	FJSVpmgc	The tool allows users to review installed patches, browse and download applicable patches not installed, as well as create a collection of patches to be installed at the same time.
				Enhanced Support Facility 3.0 or later (Note2)
14	Console flow control canceller	LE,CW	FJSVcflw	Monitors whether a console device has come under flow control.
				Enhanced Support Facility 3.1 or later (Note2)

Note1: The following are the names used for remote maintenance function.
Name of service:　　　　　　SupportDesk　　(name of product)
Tool that provides service:　REMCS　　　　　(name of tool)
Note2: Only Enhanced Support Facility 4.0 is non-support.

2.2 About an installation specifying the component group and an individual installation

Basically, Enhanced Support Facility is designed to be installed as a whole. Enhanced Support Facility ensures the minimum security level. To increase security level, there has been a demand to install only the necessary packages. To meet this demand, Enhanced Support Facility provides a way to install packages by component groups. By installing the right component group for a system, installation of unnecessary packages can be avoided.

This section explains about how to install Enhanced Support Facility by specifying the component group and how to install each package of it individually. Also some notes on the latter installation is given here.
Accordingly, there are neither restrictions nor notices in particular when packages of Enhanced Support Facility are individually installed.

Notes:

- When the installation which specifies the component group is done, a part of component offered as a function of this software is not installed. Therefore, a part of user command and an online manual cannot be used.

- The perfect verification of individual installation is not done. Some combinations in arbitrary environments and combinations are not tested. Due to applied packages or specific operating environments, you may face trivial problems even if it's not fatal problems such as a system failure or damage to user files.
  If you face problem, please install appropriate packages.

- Fujitsu cannot assure that you can install partial package of Enhanced Support Facility. Fujitsu strongly recommends that only an engineer, who has a full range of knowledge on security matters with regard to Oracle Solaris and is able to troubleshoot on his/her own, must do this installation.

2.2.1 Oracle Solaris 11

No.	Components	Abbreviation	Package name	• Installation • Effects without an installation
1	Enhanced Support Facility information management	PA,LE,CW	FJSVbse	• Mandatory • Fail to install or delete the Enhanced Support Facility
2	SCF/SCSI Fault LED support option	CW	FJSVscfsc	• Mandatory • Cannot access the eXtended System Control Facility (XCF) and RCI (Remote Cabinet Interface) which are provided in high-end models and midrange models of SPARC Enterprise Server. In addition, SCSI disk drive hot swapping function of Machine Administration doesn't work.
3	Machine Administration	PA	FJSVpmadm	• Mandatory • You are unable to perform hardware maintenance.
		LE	FJSVmadm FJSVamle	
		CW	FJSVamadm FJSVamcl	
4	Remote Support	LE	FJSVrlib FJSVragt FJSVrmaos FJSVrrda FJSVracm FJSVlmrm	• Recommended • You are unable to make use of Support Desk services, such as a remote report and firmware downloading.
		LE,CW	FJSVsirms	
		CW	FJSVamrm	
5	Automatic Power Control	CW	FJSVapcs	• Not required • You are unable to use the Automatic Power Control features.
6	Server Default Configuration	PA,LE,CW	FJSVssf	• Recommended • You may find a difficulty in software troubleshooting due to because the function of acquiring the information necessary for toubleshooting does not work.

No.	Components	Abbreviation	Package name	• Installation • Effects without an installation
7	System Data Output Tool	PA,LE,CW	FJSVsnap	• Recommended • You may find a difficulty in software troubleshooting because you are unable to collect the system information required for troubleshooting at a time.
8	Crash Dump Assistant	PA,LE,CW	FJSVdmp	• Recommended • You may find a difficulty in software troubleshooting since the system information is not automatically collected with the fjsnap command after a system panic.
9	Auto Dump Analyze Tool	PA,LE,CW	FJSVana	• Recommended • You are unable to use the feature of gathering core dump related files.
10	Tape Driver Configuration Tool	PA,LE,CW	FJSVdcnf	• Recommended • The driver's definition of a tape device is not given automatically, so you need to give it manually.

2.2.2 Oracle Solaris 10

No.	Components	Abbreviation	Package name	• Installation • Effects without an installation
1	Enhanced Support Facility information management	PA,LE,CW	FJSVbse	• Mandatory • Fail to install or delete the Enhanced Support Facility
2	IKPDR Command	CW	FJSVdropl	• Not required • You are unable to use Dynamic Reconfiguration
3	SCF/SCSI Fault LED support option	CW	FJSVscfsc	• Mandatory • Cannot access the eXtended System Control Facility (XCF) and RCI (Remote Cabinet Interface) which are provided in high-end models and midrange models of SPARC Enterprise Server. In addition, SCSI disk drive hot swapping function of Machine Administration doesn't work.
4	Machine Administration	PA	FJSVpmadm	• Mandatory • You are unable to perform hardware maintenance.
		LE	FJSVmadm FJSVamle	
		CW	FJSVamadm FJSVamcl	
5	Remote Support	LE	FJSVrlib FJSVragt FJSVrmaos FJSVrrda FJSVracm FJSVlmrm	• Recommended • You are unable to make use of Support Desk services, such as a remote report and firmware downloading.
		LE,CW	FJSVsirms	
		CW	FJSVamrm	

No.	Components	Abbreviation	Package name	• Installation • Effects without an installation
6	Automatic Power Control	CW	FJSVapcs	• Not required • You are unable to use the Automatic Power Control features.
7	Server Default Configuration	PA,LE,CW	FJSVdef	• Not required • The log-clear, etc. does not function.
			FJSVssf	• Recommended • You may find a difficulty in software troubleshooting due to because the function of acquiring the information necessary for toubleshooting does not work.
8	System Data Output Tool	PA,LE,CW	FJSVsnap	• Recommended • You may find a difficulty in software troubleshooting because you are unable to collect the system information required for troubleshooting at a time.
9	Crash Dump Assistant	PA,LE,CW	FJSVdmp	• Recommended • You may find a difficulty in software troubleshooting since the system information is not automatically collected with the fjsnap command after a system panic.
10	Auto Dump Analyze Tool	PA,LE,CW	FJSVana	• Recommended • You cannot automatically analyze crash dump file at system reboot after a system crash.
11	System Parameter Diagnosis	PA,LE,CW	FJSVparam	• Recommended • You cannot diagnose system parameters
12	Tape Driver Configuration Tool	PA,LE,CW	FJSVdcnf	• Recommended • The driver's definition of a tape device is not given automatically, so you need to give it manually.
13	Patch Information Collect Command	PA,LE,CW	FJSVpmgc	• Recommended • You cannot collect the Patch Information needed for patch analysis by the Patch Management Tool.
14	Console flow control canceller	LE,CW	FJSVcflw	• Recommended • Monitoring whether a console device has come under flow cotrol becomes disabled.

2.2.3 Installation by Component group

2.2.3.1 component group

The installed component is decided by specifying the component group. The following two conponent groups are offered in this software.

    BASIC ： Indispensable package and recommended package of the above-mentioned list

    CORE ： Only an indispensable package of the above-mentioned list.
             Only a at least necessary for work the main body device component is installed.

Refer to Section 6.4, "Specifying a Component Group for Installation" in the Enhanced Support Facility 5.0 Installation Guide for the package applied in each main body device and Oracle Solaris, the installation method, and notes.

2.2.4 About an individual installation

2.2.4.1 Packages required

The following component packages are indispensable to install for hardware maintenance.
    - Machine Administration

2.2.4.2 How to install specific packages

(a) Install the software by following the procedure given in Refer to Chapter 5, "Installation" in the Enhanced Support Facility 5.0 Installation Guide.

(b) Out of the packages mentioned in Chapter 1, "Program Components" in the Enhanced Support Facility 5.0 Installation Guide, select the packages to be deleted.

(c) Move to a directory which contains packages of Enhanced Support Facility arranged for your platform and Oracle Solaris release. The directory exists within Enhanced Support Facility CD-ROM.
    The directory name is different depending on the revision of Enhanced Support Facility, type of platform and revision of Oracle Solaris. Refer to the table in Appendix A, "Command Reference," in the Enhanced Support Facility 5.0 Installation Guide to find an appropriate directory name.

    Example) For Enhanced Support Facility 5.0, CW and Oracle Solaris 11
        # cd <mount_point>/Platform/CW/11

(d) Refer to the ".eorder" file in the current directory defined in step (c). Delete the packages selected in step (b) in reverse order of the sequence defined in the ".eorder" file.

    Example) For Enhanced Support Facility 5.0, CW and Oracle Solaris 11

If you delete the FJSVapcs, FJSVssf, and FJSVdcnf packages, delete them in the following sequence:

    1st. FJSVdcnf

    2nd. FJSVssf

    3rd. FJSVapcs

Specify them as follows:

    # pkgrm FJSVdcnf

    # pkgrm FJSVssf

    # pkgrm FJSVapcs

Notes:

- Do not delete the FJSVbse package.

- The ".eorder" file exists in the directory stipulated for Enhanced Support Facility packages for each platform and Oracle Solaris release.

- Do not create any program that expects ".eorder" as a file name or some specific its contents because they are subject to change in the future releases of the Enhanced Support Facility.

2.2.4.3 Notices after an installation

- At the time of deleting the Enhanced Support Facility
  You can use the esfrm command to delete the Enhanced Support Facility even when part of Enhanced Support Facility packages are installed in above-mentioned way.

Chapter 3 System

3.1 Daemon Program

3.1.1 SMF (Service Management Facility)

This chapter explains the services in Service Management Facility registered by Enhanced Support Facility.

[Suppressible] explained here means whether or not the service can be disabled by deleting it.

Besides [Effect of suppression] explains about the influence caused by disabling the service by deleting it.

Regarding information on packages, refer to "2.1 About packages".

- ### svc:/system/fjsvmadm-main:default

Package name	FJSVamadm, FJSVpmadm
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Function	Information of the Machine Administration is initialized.
Daemon started	None
Port used	None
Suppressible	No
Effect of suppression	The Machine Administration is not started.
Remarks	

- ### svc:/system/fjsvmadm-evhandsd:default

Package name	FJSVamadm, FJSVmadm, FJSVpmadm
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Function	Alerts hardware errors through monitoring syslog messages
Daemon started	evhandsd: Extracts messages to be monitored in syslog messages. evmond: Alerts an abnormality based on the messages extracted.
Port used	None
Suppressible	No
Effect of suppression	You may be unable to recognize hardware failures.
Remarks	

- ## svc:/system/fjsvmadm-hardmond:default

Package name	FJSVamadm, FJSVpmadm
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Function	The daemon which monitors hardware error is started.
Daemon started	hardmond : Monitors hardware errors based on any other information than syslog messages. (ex. monitoring of disk devices)
Port used	None
Suppressible	No
Effect of suppression	Monitoring the failure of disk or extension file unit is not done. Also an alarm message may not be sent normally.
Remarks	

- ## svc:/system/fjsvmadm-hrdconf:default

Package name	FJSVamadm, FJSVpmadm
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Function	Hardware configuration information is made.
Daemon started	None
Port used	None
Suppressible	No
Effect of suppression	Hardware configuration information is not correctly made.
Remarks	

- ## svc:/system/fjsvmadm-scfeventd:default

Package name	FJSVamadm
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Function	The daemon which extracts message in SCF event is started.
Daemon started	scfeventd : Extracts messages to be monitored in SCF events.
Port used	None
Suppressible	No
Effect of suppression	When DR/PHP is executed, configuration information is not automatically updated.
Remarks	

- ## svc:/system/fjsvssf-limstrerr:default

Package name	FJSVssf
Support Oracle Solaris	Oracle Solaris 10
Function	Records errors occurred on TCP/IP
Daemon started	limstrerr
Port used	None
Suppressible	Yes
Effect of suppression	You may have a difficulty in software maintenance.There is a possibility of affecting the troubleshooting concerning a problem occurred on a LAN due to the reason that a part of error information on TCP/IP is not automatically recorded.
Remarks	

- ## svc:/system/fjsvdmpsnap:default

Package name	FJSVdmp
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Function	In saving "crash dump" information after a system panic, the system information, which is output with the fjsnap command, is stored into "/var/crash".
Daemon started	None
Port used	None
Suppressible	Yes
Effect of suppression	You may have a difficulty in software maintenance. Immediately after a system panic, the system information in such a file as "/var/adm/message," which is required to analyze a panic cause, is not automatically output.
Remarks	If you suppress this service, you must also suppress "svc:/system/fjsvdmpadm:default".

- ## svc:/system/fjsvdmpadm:default

Package name	FJSVdmp
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Function	The system information, which is output with the fjsnap command, is saved into "/var/crash" at the time of storing the crash-dump information after a panic.
Daemon started	None
Port used	None
Suppressible	Yes
Effect of suppression	You may have a difficulty in software maintenance. Immediately after a system panic, the system information in such a file as "/var/adm/messages," which is required to analyze a panic cause, is not automatically output.
Remarks	If you suppress this service, you must also suppress "svc:/system/fjsvdmpsnap:default".

3.1.2 The rc scripts and daemons

The rc scripts registered and the daemon processes started in the Enhanced Support Facility are explained here. Only start-up scripts are described.
In the following tables, "Suppressible" indicates whether the script can be disabled (for example, by removing the file). "Effect of suppression" explains the impacts by the script being disabled.
Regarding information on packages, refer to "2.1 About packages".

3.1.2.1 /etc/rcS.d

- ## S50FJSVmadmclr

Package name	FJSVmadm
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Function	Delete temporary files that Machine Administration uses.
Daemon started	None
Port used	None
Suppressible	No
Effect of suppression	You may be unable to recognize hardware failures.
Remarks	The following are the same. One of them works depending on how to start. /etc/rcS.d/S50FJSVmadmclr /etc/rc1.d/S50FJSVmadmclr

3.1.2.2 /etc/rc1.d

- ## S50FJSVmadmclr

Package name	FJSVmadm
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Function	Delete temporary files that Machine Administration uses.
Daemon started	None
Port used	None
Suppressible	No
Effect of suppression	You may be unable to recognize hardware failures.
Remarks	The following are the same. One of them works depending on how to start. /etc/rcS.d/S50FJSVmadmclr /etc/rc1.d/S50FJSVmadmclr

3.1.2.3 /etc/rc2.d

- ### S30FJSVmadmclr2

Package name	FJSVmadm
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Function	Delete temporary files that Machine Administration uses.
Daemon started	None
Port used	None
Suppressible	Yes
Effect of suppression	You may be unable to recognize hardware failures.
Remarks	This script terminates without doing anything on Oracle Solaris 11.

- ### S39FJSVmarm

Package name	FJSVlmrm
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Function	Notification and connection services are given for the SupportDesk service
Daemon started	remotereportd : REMCS report is performed rsched : REMCS-regular-connection is managed pipeopener : supports the remotereportd
Port used	None
Suppressible	Yes (only when no SupportDesk service agreement is executed.)
Effect of suppression	You are unable to make use of the SupportDesk service
Remarks	

- ### S72SystemWalkerSSInit

Package name	FJSVrmaos, FJSVragt
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Function	REMCS agent (reports a failure occurrence to Fujitsu support center)
Daemon started	None
Port used	None
Suppressible	Yes
Effect of suppression	You are unable to make use of the SupportDesk service.
Remarks	This script runs only when a registration for the SupportDesk service is made. Nothing is done without a registration.
Remarks	

• S80FJSVparam

Package name	FJSVparam
Support Oracle Solaris	Oracle Solaris 10
Function	System parameters of the Oracle Solaris are diagnosed.
Daemon started	None
Port used	None
Suppressible	Yes
Effect of suppression	System parameters are not diagnosed.
Remarks	

• S90FJSVscfsc

Package name	FJSVscfsc
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Function	Notify the status of your system.
Daemon started	None
Port used	None
Suppressible	No
Effect of suppression	There is a possiblity that a problem occurs in monitoring the status of your system by XSCF. Also RCI may stop notifying the status of your system and a switchover of a cluster system may be delayed.
Remarks	

• S90FJSVmand

Package name	FJSVamle
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Function	The removable disk such as CD-ROM and DVD is judged.
Daemon started	None
Port used	None
Suppressible	No
Effect of suppression	Machine Administration cannot correctly make hardware configuration data.
Remarks	

- ## S98FJSVmadm

Package name	FJSVamle
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Function	Monitors hardware errors and reports them.
Daemon started	hardmond: Monitors hardware errors based on information other than syslog messages. (ex. monitoring of cleaning tape devices)
Port used	None
Suppressible	No
Effect of suppression	You may be unable to recognize hardware failures.
Remarks	The number of resident processes hardmond: The number of processes: 1 (When each daemon produces child process, the number of processes may increase by one momentarily.)

- ## S99apcs

Package name	FJSVapcs
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Function	Registers power-off jobs or schedule-updating jobs using the Automatic Power Control into the cron.
Daemon started	The following daemon is started when you select the way of not using the cron. /opt/FJSVapcs/sbin/apcsat
Port used	None
Suppressible	Yes
Effect of suppression	Automatic-Power-Control is not used.
Remarks	You may specify with the apcschmod command whether you use either the cron or the apcsat daemon.

- ## S99SystemWalkerSS

Package name	FJSVrmaos, FJSVragt
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Function	REMCS agent (reports a failure occurrence to Fujitsu support center)
Daemon started	None
Port used	None
Suppressible	Yes
Effect of suppression	You are unable to make use of the SupportDesk service.
Remarks	This script runs only when a registration for the SupportDesk service is made. Nothing is done without a registration.

3.1.2.4 /etc/rc3.d

- ## S99FJSVmarm2

Package name	FJSVlmrm
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Function	The power on/off event (PON/POFF event) is transmitted to REMCS Center when starting the system is stopped.
Daemon started	None
Port used	None
Suppressible	Yes (only when no SupportDesk service agreement is executed)
Effect of suppression	You are unable to make use of the SupportDesk service.
Remarks	

3.2 Files to be added or changed

This section explains the files that may be changed, and the rc scripts that are added, by Enhanced Support Facility.

For more information about the system files that are changed, refer to the respective installation guide.

Regarding information on packages, refer to "2.1 About packages".

3.2.1 Files that are changed or added by Enhanced Support Facility

- ## 1) Files that may be changed

  /etc/syslog.conf
  /etc/system
  /etc/inet/services*
  /etc/devlink.tab
  /etc/default/sys-suspend

- ## 2) Files (rc scripts*) that are added

  /etc/init.d/FJSVdmpadm
  /etc/init.d/FJSVdmpsnap
  /etc/init.d/FJSVinetinit
  /etc/init.d/FJSVmadm
  /etc/init.d/FJSVmadmclr
  /etc/init.d/FJSVmadmclr2
  /etc/init.d/FJSVmand
  /etc/init.d/FJSVmarm
  /etc/init.d/FJSVmarm2
  /etc/init.d/FJSVparam
  /etc/init.d/FJSVscfsc
  /etc/init.d/FJSVsirmsctl
  rc script: Initialization at reboot, and processing for starting daemons

3.2.2 Details of the Files Changed by Enhanced Support Facility

- ## Changes in /etc/syslog.conf setting file

Package name	FJSVamle,FJSVamadm,FJSVpmadm
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Reason for change	Settings are changed so that a message on the same level as the message output to /var/adm/messages is output to another file in order to enable monitoring of syslog messages.
Change	# FJSVmadm : This is setting of Machine Administration. # FJSVmadm : Don't delete the following lines. # FJSVmadm : Because the message cannot be observed. *.err;kern.debug;daemon.notice /var/opt/FJSVmadm/evh/evh_pipe
Remarks	The following line is added by esfadd and deleted by esfrm.

- ## Changes in the /etc/system setting file

Package name	FJSVssf
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Reason for change	To enable the trace information collection function to improve system maintainability
Change	* Begin FJSVssf (do not edit) set ftrace_atboot = 1 set kmem_flags = 0x100 set kmem_lite_maxalign = 8192 * End FJSVssf (do not edit)
Remarks	

Package name	FJSVparam
Support Oracle Solaris	Oracle Solaris 10
Reason for change	The system parameters are diagnosed and "/etc/system" is changed if an inappropriate description is detected.
Change	Parameter "RT:rt_maxpri" is changed to a comment.
Remarks	

- ## Changes in the /etc/devlink.tab definition file

Package name	FJSVscfsc	
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11	
Reason for change	To add SCF driver entries	
Change	type=ddi_pseudo;name=scfd;minor=pwrctl	FJSVhwr/\M0
	type=ddi_pseudo;name=scfd;minor=rcictl	FJSVhwr/\M0
	type=ddi_pseudo;name=scfd;minor=rasctl	FJSVhwr/\M0
	type=ddi_pseudo;name=FJSVsfled;minor=0	FJSVhwr/sfled\N0
Remarks		

- ## Changes in the /etc/default/sys-suspend setting file

Package name	FJSVdef
Support Oracle Solaris	Oracle Solaris 10
Reason for change	To disable the power-off function implemented by pressing the power key on the keyboard, in the GUI environment
Change	PERMS=- # Add by FJSVdef "PERMS" is changed from "console-owner" to "-."
Remarks	

3.3 About various log files

The log files generated by Enhanced Support Facility are listed below.

For more information such as information on disk space requirements, refer to the Enhanced Support Facility 5.0 Installation Guide.

Regarding information on packages, refer to "2.1 About packages".

- ## No.1 Enhanced Support Facility information management

Package name	FJSVbse
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Log file name	**/opt/FJSVbse/etc/** **esfinfo.data** **(Up to 2KB)** **install.log** **(Up to 2MB)**
File capacity	0byte to about 2MB (esfinfo.data 2KB/ install.log 2MB)
Allocation timing	During Enhanced Support Facility installation
Need for periodic deletion	No
Remarks	

- ## No.2 IKPDR Command

No log file is generated for the IKPDR Command (component).

- ## No.3 SCF/SCSI fault LED support option

No log file is generated for the SCF/SCSI fault LED support option (component).

- ## No.4 Machine Administration

Package name	FJSVmadm
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Log file name	**/var/opt/FJSVmadm/evh/evh_log**
File capacity	0byte to 500KB x 2 files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	**/var/opt/FJSVmadm/log/madmtrcbase**
File capacity	0byte to 512KB x 2 files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	

Package name	FJSVamle
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Log file name	**/var/opt/FJSVmadm/log/evmonlog**
File capacity	0byte to 512KB x 2 files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	**/var/opt/FJSVmadm/log/madmtrc**
File capacity	0byte to 64KB x 3 files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	**/var/opt/FJSVmadm/log/madmlog**
File capacity	0byte to 64KB x 3 files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	

Package name	FJSVamadm
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Log file name	**/var/opt/FJSVmadm/evh/evh_log**
File capacity	0byte to 500KB x 2 files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	**/var/opt/FJSVmadm/log/evmonlog**
File capacity	0byte to 512KB x 2 files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	**/var/opt/FJSVmadm/log/trace/cmdtrace**
File capacity	0byte to 512KB x 3 files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	**/var/opt/FJSVmadm/log/trace/matrace**
File capacity	0byte to 512KB x 3 files
Allocation timing	Start of the maintenance
Need for periodic deletion	No
Remarks	

Package name	FJSVpmadm
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Log file name	**/var/opt/FJSVmadm/evh/evh_log**
File capacity	0byte to 500KB x 2 files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	**/var/opt/FJSVmadm/log/evmonlog**
File capacity	0byte to 512KB x 2 files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	**/var/opt/FJSVmadm/log/trace/cmdtrace**
File capacity	0byte to 512KB x 3 files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	**/var/opt/FJSVmadm/log/trace/matrace**
File capacity	0byte to 512KB x 3 files
Allocation timing	Start of the maintenance
Need for periodic deletion	No
Remarks	
Log file name	**/var/opt/FJSVmadm/log/madmlog**
File capacity	0byte to 64KB x 3 files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	

- ## No.5 Remote Support

Package name	FJSVrmaos
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11

Log file name	**/var/opt/FJSVrmaos/tmp2/*.trc**
	*.trc takes two forms:
	xxxxnnn-mm.trc
	    xxxx: Character string consisting of 3 to 10 characters
	    nnn: Numeral (0 to 4294967295)
	    mm: Numeral (0 to 4294967295)
	xxxx.trc
	    xxxx: Character string consisting of 3 to 19 alphanumeric
	    characters

File capacity	0byte to 90KB (Remote maintenance is not used.) 0byte to 900KB (Remote maintenance is used.)
Allocation timing	Start of the system or communication for remote maintenance
Need for periodic deletion	No
Remarks	If remote maintenance is not used, data is logged in 0KB to 90KB. If remote maintenance is used, data is logged in 0KB to 900KB.

Package name	FJSVsirms
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11

Log file name	**/var/opt/FJSVsirms/log / route.log (Up to 500KB)**
	                route.bak (Up to 500KB)
	                sirms.log (Up to 500KB)
	                sirms.bak (Up to 500KB)
	                Err.log (Up to 500KB)
	                Err.bak (Up to 500KB)

File capacity	0byte to 3000KB (up to 500KB each)
Allocation timing	Installation of Enhanced Support Facility Logging starts immediately after the system starts after Enhanced Support Facility (FJSVsirms package) is installed.
Need for periodic deletion	No
Remarks	When either log file exceeds 500KB, a .BAK file is created for cyclic operation.

Package name	FJSVrlib
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Log file name	**/var/opt/FJSVrlib/log/ rmslog.dft (Up to 1MB)** **rmslog.bak (Up to 1MB)**
File capacity	0byte to 2MB (up to 1MB each)
Allocation timing	Use of REMCS Agent
Need for periodic deletion	No
Remarks	REMCS library trace data is collected for logging. When the file capacity is exceeded, a .back file is created for cyclic operation.
Log file name	**/var/opt/FJSVrlib/log/remcscom.log**
File capacity	0byte to 100KB
Allocation timing	Communication of REMCS Agent
Need for periodic deletion	No
Remarks	REMCS Agent communication records are collected for logging.

Package name	FJSVrrda
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Log file name	**/opt/FJSVrrda/lib/trace.log**
File capacity	0byte to 5MB
Allocation timing	Operation for firmware distribution
Need for periodic deletion	No
Remarks	

- ## No.6 Automatic Power Control

Package name	FJSVapcs
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11

Log file name	**/var/opt/FJSVapcs/** **apcstrc**
	                          apcstrc.old
	                          apcstrc.err
	                          apcstrc.errold
	                          apcslog
	                          apcslog.old

File capacity	0byte to 840KB
Allocation timing	Node activation, node power-off, operation of automatic power control, power-on, or power-off according to the automatic power control schedule
Need for periodic deletion	No
Remarks	

- ## No.7 Server Default Configuration

  No log file is generated for Oracle Solaris 11.

Package name	FJSVssf
Support Oracle Solaris	Oracle Solaris 10
Log file name	**/var/opt/FJSVssf/tcptrace/ lim-err** **(Up to 500KB)** **lim-err.old** **(Up to 500KB)**
File capacity	0byte to 1000KB (up to 500KB each)
Allocation timing	Detection of abnormal disconnection of TCP
Need for periodic deletion	No
Remarks	When the maximum file capacity is exceeded, an .old file is created for cyclic operation.

- ## No.8 System Data Output Tool

  No log file is generated for the System Data Output Tool (component).

- ## No.9 Crash Dump Assistant

  No log file is generated for the Crash Dump Assistant (component).

- ## No.10 Auto Dump Analyze Tool

  No log file is generated for the Auto Dump Analyze Tool (component).

- ## No.11 System Parameter Diagnosis

Package name	FJSVparam
Support Oracle Solaris	Oracle Solaris 10
Log file name	**/var/opt/FJSVparam/log/fjsvparam.0 (Up to about 512KB)** **fjsvparam.1 (Up to about 512KB)**
File capacity	0byte to about 1024KB**(Up to about 512KB)**
Allocation timing	Start or stop of system operation, or execution of the fjprmchk or fjprmset command
Need for periodic deletion	No
Remarks	If 512KB are exceeded when the command starts, a fjsvparam.1 file is created for cyclic operation.
Log file name	**/var/opt/FJSVparam/log/boot_ok.[0-9] (Up to about 50KB each)**
File capacity	0byte to about 500KB
Allocation timing	Start or stop of system operation
Need for periodic deletion	No
Remarks	If the backup data in the /etc/system file differs from the previous backup, the data is backed up.
Log file name	**/var/opt/FJSVparam/log/per_mod.[0-9] (Up to about 50KB each)**
File capacity	0byte to about 500KB
Allocation timing	Start or stop of system operation
Need for periodic deletion	No
Remarks	When the /etc/system file is modified with a backup requested, the file prior to modification is backed up.

- ## No.12 Tape Driver Configuration Tool

Package name	FJSVdcnf
Support Oracle Solaris	Oracle Solaris 10,Oracle Solaris 11
Log file name	**/var/opt/FJSVdcnf/log/st.log1** **(Up to about 64KB)** **st.log2** **(Up to about 64KB)** **pfca_conf_set.log1 (Up to about 64KB)** **pfca_conf_set.log2 (Up to about 64KB)**
File capacity	0byte to about 256KB
Allocation timing	When the Enhanced Support Facility is installed, when the fjcnfset(1M) is executed.
Need for periodic deletion	No
Remarks	

- ## No.13 Patch Information collect command

  No log file is generated for the Patch Information collect command (component).

- ## No.14 Console flow control canceller

  No log file is generated for the Console flow control canceller (component).

3.4 About the setting of the kernel parameter "noexec_user_stack"

There are no packages in Enhanced Support Facility that are affected by the setting of the kernel parameter "noexec_user_stack."

Chapter 4 Network

4.1 About TCP/IP ports

4.1.1 Crash Dump Assistant (FJSVdmp)

The package does not use the TCP/UDP port directly, however, it uses the port indirectly because of its use of NFS.

4.2 Firewall/Gateway

The Enhanced Support Facility is designed on the premise that it is used in such environments as an intranet, the Internet, or a DMZ. There are, however, some notes and restrictions for the following components.

4.2.1 Attentions

• Remote Support (REMCS) (LE)

To communicate with the Fujitsu support center, both the http and the SMTP protocols must be used for transmissions via the Internet from a server on which Enhanced Support Facility is installed.

Protocol	SMTP
Function	Reports trouble messages to Fujitsu support center
Transmission direction	From a server in which the Enhanced Support Facility is installed to Fujitsu support center
Encryption	Used
IP address translation	No problems (because of the SMTP protocol)
Gateway server	An existing SMTP server is allowed to use
Firewall policy	Conforms to a policy of E-Mail (SMTP)
Remarks	

Protocol	http
Function	Downloads firmware from Fujitsu support center.
Transmission direction	From a server in which the Enhanced Support Facility is installed to Fujitsu support center
Encryption	None
IP address translation	No problems (because of the http protocol)
Gateway server	An existing http server is allowed to use
Firewall policy	Conforms to a policy of WWW.
Remarks	

4.3 Configuration examples for the Internet or a DMZ environment

Here describes the example of an ordinary setting needed to install the Enhanced Support Facility in a system which is either connected to the Internet or placed in a DMZ.

a) In order to use the Enhanced Support Facility, you should install the Oracle Solaris, with at least, SUNWbtool in addition to selecting "End User System Support."

b) You should remove packages as few as possible after installation of Enhanced Support Facility with using esfadd.

Chapter 5 Virtualization technology

5.1 Oracle VM Server for SPARC/Logical Domains(LD oms)

● Overview of Oracle VM Server for SPARC/Logical Domains(LDoms)

Virtual technology provided by Oracle: The function enables you to run two or more different operating systems on one computer. For more information, please refer to "SPARC Enterprise Oracle VM Server for SPARC Guide".

Environment of Oracle VM Server for SPARC/Logical Domains(LDoms)
Affected by Oracle VM Server for SPARC/Logical Domains(LDoms). About the support for Enhanced Support Facility, please refer to "4.2 Notes on Oracle VM Server for SPARC/Logical Domains(LDoms)" in "Enhanced Support Facility User's Guide".