

# **Enhanced Support Facility 5.1 INSTALLATION GUIDE**

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# Preface

## Purpose

This document describes the procedure for installing this product and performing the environment settings. This product supports the combination of the following machine models.

- Models
  - SPARC M10
  - SPARC Enterprise T series
  - SPARC Enterprise M series

Enhanced Support Facility is supported on the Fujitsu-branded SPARC Enterprise M series and T series outside Japan. Fujitsu M10 sold outside Japan does not support Enhanced Support Facility.

- Fujitsu-branded products: The Fujitsu company logo is shown on the front side of the black-colored chassis.
- Fujitsu M10 is sold as SPARC M10 by Fujitsu in Japan. Fujitsu M10 and SPARC M10 are identical products.

Refer to "3.2 Hardware Environment" to check the models that are supported by this product.

## Intended Readers

This document is intended for system administrators who use the Enhanced Support Facility. Readers of this document should understand computer network concepts and terminology and have basic knowledge of the system management of the Oracle Solaris.

## Organization

This document is organized as follows:

### **Chapter 1 Program Components**

Programs composing the system are described.

### **Chapter 2 Online Manuals**

Online manuals related to this product are described.

### **Chapter 3 Operating Environment**

Operational environment of this product is described.

### **Chapter 4 Restrictions and Notes**

Restrictions and notes are described.

### **Chapter 5 Installation**

Installation of this product is described.

### **Chapter 6 Extended Installation**

Extended installation of this product is described.

### **Appendix**

The Appendix explains supplementary items.

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## Notations Used

Oracle Solaris might be described as Solaris, Solaris Operating System, or Solaris OS.

In this document, the following names, abbreviated names are used.

### 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 REMCS

--> User's Guide for REMCS

### Abbreviation

In this document, the formal names of the products below are abbreviated as follows:

Formal name	Abbreviation
SPARC M10-1/M10-4/M10-4S	SPARC M10
SPARC T3-1/T3-2/T3-4 /T4-1/T4-2/T4-4 SPARC Enterprise T1000/T2000/T5120/T5140/T5220/T5240/T5440	SPARC Enterprise T series
SPARC Enterprise M3000/M4000/M5000/M8000/M9000	SPARC Enterprise M series

In this document, abbreviated names are used for supported machine models.

The following shows the relation between the abbreviated names and platforms.

Model name	Abbreviation	Platform
SPARC M10-1/M10-4/M10-4S	PA	ORCL,SPARC64-X
SPARC T3-1/T3-2/T3-4/T4-1/T4-2/T4-4	LE	ORCL,SPARC-T3-1 ORCL,SPARC-T3-2 ORCL,SPARC-T3-4 ORCL,SPARC-T4-1 ORCL,SPARC-T4-2 ORCL,SPARC-T4-4
SPARC Enterprise T1000/T2000/T5120/T5140/T5220/T5240/T5440		SUNW,SPARC-Enterprise-T1000 SUNW,SPARC-Enterprise-T2000 SUNW,SPARC-Enterprise-T5120 SUNW,T5140 SUNW,SPARC-Enterprise-T5220 SUNW,T5240 SUNW,T5440
SPARC Enterprise M3000/M4000/M5000/M8000/ M9000	CW	SUNW,SPARC-Enterprise

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## Revision History

Edition	Date	Details
1	September 04, 2012	First Edition.
2	January 18, 2013	Enhanced Support Facility 5.0.1 - Supported Oracle Solaris 10 1/13.
3	July 17, 2013	Enhanced Support Facility 5.1 - Supported Multipath diagnostic program.
3(01)	September 01, 2013	Enhanced Support Facility 5.1 - Support for standardization of the "Oracle VM Server for SPARC" nominal
3(02)	February 12, 2014	Enhanced Support Facility 5.1 - The description of "Fujitsu M10 and SPARC M10 are identical products" is added. - The article on "About the supported outside Japan" is added.

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# Chapter 1 Program Components

The programs that are components forming a system are called a package.

This software product consists of the components and packages listed in the following table.

For the program configuration of each model, see Appendix C, "Component Programs by Model".

Table 1-1 Component Programs List

## 1.1 Oracle Solaris 11

No.	Component	Package	VL	Function
1	Enhanced Support Facility Information Management	FJSVbse	5.1	Installation management of Enhanced Support Facility.
2	SCF/SCSI Fault LED support option	FJSVscfsc	2.0	The SCF/SCSI Fault LED support option is optional software that supports the command for accessing the RCI interface included in high-end and mid-range SPARC Enterprise models.
3	Machine Administration	FJSVamle	2.0.1	Machine Administration is software that supports repair work for any failure that occurs, by monitoring the status of main unit hardware.
		FJSVmadm	2.0.1	
		FJSVamadm	2.0.1	
		FJSVamcl	1.0.0	
		FJSVpmadm	2.0.0	
4	Remote Support	FJSVlrm	2.0	The REMote Customer Support system (REMCS) is a system that provides operational support to customers 24 hours a day and 365 days a year through connections between the customers' equipment and the REMCS Center via networks.
		FJSVamrm	2.0	
		FJSVrlib	8.3.0	
		FJSVragt	2.9	
		FJSVrmaos	3.1	
		FJSVracm	2.9	
		FJSVrrda	2.9	
		FJSVsirms	4.1.1	
5	Auto Power Control System	FJSVapcs	1.5.0	Automatic powering on or off of main cabinet power to a specified schedule.
6	Server Default Configuration	FJSVssf	4.0	Server Default Configuration sets up parameters for gathering trace information in order to improve server maintainability.
7	System Data Output Tool	FJSVsnap	2.8	Collects data regarding command execution results, files about hardware and software configurations, environment settings, logs, and operational status, then outputs the system information for system fault analysis to a tape unit, etc.
8	Crash Dump Assistant	FJSVdmp	1.7	During the creation of a crash dump file at system reboot, Crash Dump Assistant invokes the "System Data Output Tool" to save necessary system data for problem investigation.

No.	Component	Package	VL	Function
9	Auto Dump Analyze Tool	FJSVana	3.0	Provides the tool (cocore) to gather core dump related files.
10	HRM-S	FJSVhrmse	7.3.0	HardwareResourceMonitor (referred to as HRM, in this document) is a maintenance work support tool.
		FJSVhrmcp	7.3.0	
11	Tape Driver Configuration Tool	FJSVdcnf	1.2	Tape Driver Definition Setting Tool is a tool that automatically sets a tape driver definition for use of a tape device that requires the tape driver definition to be set.
12	Solaris System Safety Compliance Assessment Tool	FJSVs3cat	1.0.1	Solaris System Safety Compliance Assessment Tool uses the target system's setup files and output of commands as diagnosis ingredients to find out any contradiction in the system which may impede proper functioning of it, or the presence of any non-recommended setup.
13	HDD configurator tool	FJSVhdcfg	1.0	The HDD configurator tool adds settings regarding to Solaris MPxIO. After install the package, the access pathname to the HDD is changed to scsi_vhci pathname.
14	Multipath diagnostic program	FJSVpdiag	1.1.0	A Multipath Diagnostic Program is a program which strengthens the switchover feature of the Oracle Solaris Multipath Driver(MPxIO) path.

## 1.2 Oracle Solaris 10

No.	Component	Package	VL	Function
1	Enhanced Support Facility Information Management	FJSVbse	5.1	Installation management of Enhanced Support Facility.
2	IKPDR command	FJSVdropl	1.0	Dynamic Reconfiguration command (64 bit).
3	SCF/SCSI Fault LED support option	FJSVscfsc	1.0	The SCF/SCSI Fault LED support option is optional software that supports the command for accessing the RCI interface included in high-end and mid-range SPARC Enterprise models and the DISK hot swapping of SCSI DISK provided by Machine Administration.
4	Machine Administration	FJSVamle	1.0.0	Machine Administration is software that supports repair work for any failure that occurs, by monitoring the status of main unit hardware.
		FJSVmadm	1.2.3	
		FJSVamadm	1.0.0	
		FJSVamcl	1.0.0	
		FJSVpmadm	1.0.0	

No.	Component	Package	VL	Function
5	Remote Support	FJSVlrm	1.0	The REMote Customer Support system (REMCS) is a system that provides operational support to customers 24 hours a day and 365 days a year through connections between the customers' equipment and the REMCS Center via networks.
		FJSVamrm	1.0	
		FJSVrlib	8.2.2	
		FJSVragt	2.9	
		FJSVrmaos	2.9	
		FJSVracm	2.9	
		FJSVrrda	2.9	
		FJSVsirms	4.0	
6	Auto Power Control System	FJSVapcs	1.4.2	Automatic powering on or off of main cabinet power to a specified schedule.
7	Server Default Configuration	FJSVdef	1.4	Server Default Configuration provides a function for improving server maintainability.
		FJSVssf	3.0.1	
8	System Data Output Tool	FJSVsnap	2.8	Collects data regarding command execution results, files about hardware and software configurations, environment settings, logs, and operational status, then outputs the system information for system fault analysis to a tape unit, etc.
9	Crash Dump Assistant	FJSVdmp	1.6	During the creation of a crash dump file at system reboot, Crash Dump Assistant invokes the "System Data Output Tool" to save necessary system data for problem investigation.
10	Auto Dump Analyze Tool	FJSVana	2.1	Provides a tool (cocore) for automatic collection of the group of files necessary for the analysis of core files produced by system processes.
11	System Parameter Diagnosis	FJSVparam	1.1	System Parameter Diagnosis detects and reports system settings that may interfere with normal operation of the Oracle Solaris, which may therefore change the settings.
12	HRM-S	FJSVhrmse	7.3.0	HardwareResourceMonitor (referred to as HRM, in this document) is a maintenance work support tool.
		FJSVhrmcp	7.3.0	
13	Tape Driver Configuration Tool	FJSVdcnf	1.2	Tape Driver Definition Setting Tool is a tool that automatically sets a tape driver definition for use of a tape device that requires the tape driver definition to be set.
14	Patch Information Collect Command	FJSVpmgc	1.1	Patch Version Information Collection Command is a tool that increases efficiency in a series of tasks including investigating whether patches have been applied, downloading patches, and applying patches.
15	Console flow control canceller	FJSVcflw	1.0	Console flow control canceller

No.	Component	Package	VL	Function
16	UpdateAdvisor(Solaris OS)	FJSVupdta	1.7	UpdateAdvisor(Solaris OS) is a system tool designed to improve the patch management process.
17	Solaris System Safety Compliance Assessment Tool	FJSVs3cat	1.0.1	Solaris System Safety Compliance Assessment Tool uses the target system's setup files and output of commands as diagnosis ingredients to find out any contradiction in the system which may impede proper functioning of it, or the presence of any non-recommended setup.
18	Multipath diagnostic program	FJSVpdiag	1.1.0	A Multipath Diagnostic Program is a program which strengthens the switchover feature of the Oracle Solaris Multipath Driver(MPxIO) path.

## Chapter 2 Online Manuals

### 2.1 Manuals Related to Enhanced Support Facility

Product manuals are stored in the DVD/CD in PDF file format. For a list of the manuals, please refer to "Chapter 1 Overview of the Enhanced Support Facility" of "Enhanced Support Facility User's Guide".

### 2.2 Referencing Methods

The product manuals are formatted in PDF. The latest version of Adobe(R) Reader(R) or Acrobat Reader from Adobe Systems Incorporated is required for viewing a PDF file.

Download the latest version of Adobe(R) Reader(R) or Acrobat Reader appropriate to your environment from the Adobe Systems Incorporated's Web site.

#### 2.2.1 Using a PC

1) Insert the DVD/CD disk into the DVD/CD drive.

2) Use Acrobat Reader to open the file to be referenced.

Example: Referencing the Installation Guide (English)

```
DVD/CDdrive:\MANUAL\ENGLISH\INSTALL_GUIDE_OME.PDF
```

#### 2.2.2 Using a Oracle Solaris

1) Insert the DVD/CD disk into the DVD/CD drive.

2) Use Acrobat Reader to open the file to be referenced.

Example: Referencing the Installation Guide (English)

```
 /media/manual/english/install_guide_ome.pdf
```

In case of Oracle Solaris 10, read '**media**' as '**cdrom**'.

### 2.3 Printed Manual (Supplied with the Product)

None

## Chapter 3 Operating Environment

To use this software, the following software and hardware prerequisites must be satisfied.

### 3.1 Software Environment

#### 3.1.1 Basic Software prerequisites

When using this software, the following basic software is necessary.

- Oracle Solaris 11
- Oracle Solaris 10

#### 3.1.2 Software requirements

In case of Oracle Solaris 11, use the `pkg(1)` command to install the following packages.

- `pkg:/text/locale`
- `pkg:/system/locale/extra`

The following package is necessary if a locale other than `ja_JP.UTF-8` is used.

#### 3.1.3 Excluded software

None

#### 3.1.4 Patch requirements

- Correction patches for the product

Correction patches may be necessary depending on the time when the product was procured.

- Customers who intend to use this product on Oracle Solaris 11 systems

In order to apply the correction files for this product on an Oracle Solaris 11 system, UpdateAdvisor (Middleware) and setup file for the update application management ledger are necessary.

### 3.1.5 Bundled Patches

The following patches will be automatically applied when this product is applied to Oracle Solaris 10. Machine model names in the following table are abbreviated names. For more information, please refer to "Notations Used" in "Preface".

Table 3.1.5-1 Table of this product patches

Patch-ID	Package Name	Abbreviation		
		LE	CW	PA
914587-02	FJSVdropl	-	O	-
914590-03	FJSVscfsc	-	O	-
915118-01	FJSVrmaos	O	-	-
914701-03	FJSVrlib	O	-	-
914603-08	FJSVlrm	O	-	-
915009-02	FJSVmadm	O	-	-
914601-04	FJSVmadm	O	-	-
914604-17	FJSVamle FJSVmadm	O	-	-
914527-18	FJSVamadm	-	O	-
915167-01	FJSVpmadm	-	-	O
914588-01	FJSVamrm	-	O	-
914585-03	FJSVsirms	O	O	-
914429-01	FJSVdef	O	O	O
914192-03	FJSVparam	O	O	O

O: Supported, -: Not supported



## 3.2 Hardware Environment

This product supports the combination of the following model.

- Models
- SPARC M10
- SPARC Enterprise T series
- SPARC Enterprise M series

This product does not support the combination of the following machine models. For the following machines, please use Enhanced Support Facility attached to the device.

- Models
- PRIMEPOWER1/100/200/250/400/450/600/650/800/850/900/1000/1500/2000/2500
- GP7000F Model 200/200R/400/400R/400A/600/600R/1000/2000

Enhanced Support Facility is supported on the Fujitsu-branded SPARC Enterprise M series and T series outside Japan. Fujitsu M10 sold outside Japan does not support Enhanced Support Facility.

## 3.3 Static Disk Requirements

The disk space requirements for this software are shown below.

### 3.3.1 Disk requirements

The following tables list the disk space requirements for installing this software. If disk space is insufficient, expand the size of the appropriate file systems.

Table 3.3.1-1 Disk Capacity List

No.	Directory	Disk space requirement (in Mbytes)	
		Oracle Solaris 10	Oracle Solaris 11
1	/	6.5	13.0
2	/usr	1.5	3.0
3	/var	68.5	70.0
4	/export/home	0	0
5	/opt *	250.0	200.0

\*) Do not attempt to install this software in a directory other than "/opt".

### 3.3.2 Work area requirements

When you install this software with the following installation procedures, additional disk workspace as shown below might be required.

Table 3.3.2-1 Working Area List

No.	Via spool directory	Directory	Disk space requirement (in Mbytes)	Remarks
1	No	/tmp	0.5	

## 3.4 Dynamic Disk Resources

The dynamic disk space requirements for this software are shown below.

### 3.4.1 Disk space requirements

When you use this software for the following operations, additional disk space might be required in the directories listed in Section 3.3, "Static Disk Requirements". If disk space is insufficient, expand the size of the appropriate file systems as shown.

Abbreviated names of machine models are used in the table below. For more information, please refer to "Notations Used" in "Preface".

Table 3.4.1-1 Disk Capacity List

No.	Component	Directory	Additional disk space requirement (in M bytes)	Operation
1	IKPDR Command	/var/opt/FJSVdr	1.0	
		/opt	0.15	
		/etc/opt	0.07	
2	Machine Administration	/var	4.3	Operation log, temporary file
3	System Parameter Diagnosis	/var	2.0	Log, backup
4	Tape Driver Configuration Tool	/var	0.3	Log information
5	System Data Output Tool	Location that a user specified or /var/tmp	10.0	When System Data Output Command is executed
6	Auto Dump Analyze Tool	Location that a user specified or /var/tmp	10.0 (*)	When executing the command used to gather core dump related files. *)The size of the archive file depends on the size of the gathered files.
7	Multipath diagnostic program	/var	3.0	Log

## 3.5 Memory Requirements

The following table shows the memory required when you use this software for the following operations

Table 3.5-1 Memory Capacity List

No.	Component	Memory required (unit: MB)	Operation
1	Tape Driver Configuration Tool	1.1	During command execution
2	System Data Output Tool	40.0	When System Data Output Command is executed
3	Multipath diagnostic program	1.3	During command execution

## 3.6 Swap Space

The following shows the swap space requirement of this software in normal operation.

The swap space requirement depends on the system situation.

The total swap space can be calculated as the sum of each individual swap space requirement.

If the swap space provided by the system is insufficient, it must be expanded.

Table 3.6-1 Swap Capacity List

No.	Component	Swap capacity (unit: Mbytes)	Description
1	IKPDR Command	0.1	Executing Dynamic Reconfiguration.
2	Machine Administration	46.7	Standard use (daemon, GUI menu)
3	Remote Support	4.2	Standard use (daemon)
4	Tape Driver Configuration Tool	1.1	During command execution
5	Multipath diagnostic program	1.3	During command execution

## **Chapter 4 Restrictions and Notes**

### **4.1 Restrictions**

None

### **4.2 Cautions when Upgrading**

The cautions when upgrading from the previous level to this software level are described below.

#### **4.2.1 User data compatibility**

There are no user data incompatibilities between this version and the previous version of this software.

#### **4.2.2 Environment definition file compatibility**

There are no environment definition file incompatibilities between this version and the previous version of this software.

## 4.3 Notes

The following notes apply to the installation of this software.  
Refer also to Appendix E, "Notes".

Table 4.3-1 Notes List

No.	Component	Description
1	Enhanced Support Facility Information Management	Refer to "3.2 Hardware Environment" to check the models that are supported by this product.
		Install this product in the global zone. This product cannot be installed in the non-global zone. If esfadd is executed in the non-global zone, it terminates with the following message:  esfadd: Error: This product cannot be installed in the non-global zone.  If esfadd -c is executed in the non-global zone, it terminates with the following message: grep: /var/sadm/system/admin/INST_RELEASE cannot be opened.  esfadd: Error: The operating system does not support this product.
		Notes when using Oracle VM Server for SPARC are available. Please refer to "5.1 Oracle VM Server for SPARC" in "Enhanced Support Facility Technical Guide".
		Update installation of Enhanced Support Facility cannot be done on Oracle Solaris 11.1 environment.  Remove the old version on Enhanced Support Facility which initiates update on Oracle Solaris 11.1 environment and install the latest version of Enhanced Support Facility.
2	SCF/SCSI Fault LED support option	The SCF/SCSI Fault LED support option is a dedicated function for SPARC Enterprise. This component cannot be installed on any unit other than the above.
		The following message may be displayed on SPARC Enterprise M3000/M4000/M5000/M8000/M9000 when an Oracle Solaris 10 system is rebooted after installing Enhanced Support Facility. In case this message is displayed, apply 124599-01 or newer and reboot the system.  scfetlbrk: ioctl() failed : No such device or address /dev/FJSVhwr/pwrctl2: No such device or address scfwatchdog: No such device or address /dev/FJSVhwr/pwrctl: No such device or address scftimezone: ioctl() failed FJSVapcs: Access SCF error (ioctl:6).
		The following message may be displayed on SPARC Enterprise M3000/M4000/M5000/M8000/M9000 when a system is rebooted after installing Enhanced Support Facility, but there is no problem with the system.  FJSVscfsc: /etc/rc0.d/K00FJSVscfsc: scfreport shutdown was executed.
3	Remote Support	Under the following machine models, There is a note when using DHCP service. 1) In case of SPARC Enterprise T series. Please refer to "Appendix E.1 Oracle Solaris network installation using DHCP service".

No.	Component	Description
4	Tape Driver Configuration Tool	<p>When one of the following tape drives is connected during installation, this product automatically adds the tape driver definition to /kernel/drv/st.conf if that, applicable definition has not been included before:</p> <p>DDS4 : PW023DT3, PW023DT4, PW0G3DT1</p> <p>DAT72: PW023DT5, PW023DT6, PW0R3DT3, PW0G3DT2</p>
5	Auto Power Control System	<p>Under the following conditions, messages are output to the console, but you can ignore the messages.</p> <ol style="list-style-type: none"> <li>1) In case of SPARC Enterprise M3000/M4000/M5000/M8000/M9000.</li> <li>2) In case of rebooting in single user mode.</li> </ol> <p>FJSVapcs: cron may not be running - call your system administrator  FJSVapcs: Cannot register a cron job.</p>

## Chapter 5 Installation

This product supports the combination of the following model.

- Models
- SPARC M10
- SPARC Enterprise T series
- SPARC Enterprise M series

Refer to "3.2 Hardware Environment" to check the models that are supported by this product.

This software can be installed in one of two modes: basic installation and extended installation.

### **Customers who are using Oracle Solaris 10 environment on SPARC M10**

Customers who are using Oracle Solaris 10 environment(\*1) on SPARC M10, need to setup the internal SAS disk. Install the FJSVhdcfg package in Enhanced Support Facility using the pkgadd command.

Moreover, the setup of the internal SAS disk may be changed after the installation of FJSVhdcfg.

For details, refer to "README of HDD configurator tool 1.0", which is included in Enhanced Support Facility.

Regarding the process of consulting manuals, refer to "2 Online Manual".

\*1 The environments where installation is necessary are: internal SAS disks, domains that use external file units, control domains and I/O domains (except guest domains).

## Installation

Installation in this mode requires no option commands.

This chapter explains the following procedures:

New installation (5.2, "Installation Procedure")

Update installation (5.3, "Update Installation")

Deletion (5.4, "Removing Enhanced Support Facility ")

Installation in Oracle VM Server for SPARC (5.5, "Oracle VM Server for SPARC")

## Extended installation

Installation in this mode requires option commands.

Chapter 6 explains the following procedures:

Table 5-1 Advanced Installation List

No.	Installation method	Oracle Solaris		Description	Remarks
		10	11		
1	OS Upgrade	O	O	Save the Enhanced Support Facility environment before OS upgrade, Enhanced Support Facility after OS upgrade, and then restore the Enhanced Support Facility environment.	See Section 6.1, "OS Upgrade ".
2	Component Group Specified Installation	O	O	By specifying component groups during installation, packages to be installed can be restricted according to system requirements.	See Section 6.2, "Specifying a Component Group for Installation".
3	Oracle Solaris zone	O	O	Installation procedure of Enhanced Support Facility on a migrated Oracle Solaris zone, as well as that on a newly created Oracle Solaris zone is explained.	See Section 6.3, " Oracle Solaris zone".
4	Boot Environments(BE)	-	O	It is possible to update Enhanced Support Facility using Boot Environments (BE).	See Section 6.4, "Boot Environments(BE)".
5	AI Install	-	O	After Oracle Solaris installation, install Enhanced Support Facility using a finish script.	See Section 6.5, "AI Install".
6	Custom Jump Start	O	-	After Oracle Solaris installation, install Enhanced Support Facility using a finish script.	See Section 6.6, "Custom Jump Start".
7	Flash Archive	O	-	Create a flash archive to which "Solaris OS + (PTF) + Enhanced Support Facility" is applied, and install this software in each set of platform and Oracle Solaris.	See Section 6.7, "Flash Archive ".



No.	Installation method	Oracle Solaris		Description	Remarks
		10	11		
8	Solaris LiveUpgrade	O	-	Save the Enhanced Support Facility environment before Solaris Live Upgrade, install Enhanced Support Facility after Solaris Live Upgrade, and then restore the Enhanced Support Facility environment.	See Section 6.8, "Solaris Live Upgrade".
9	Unified Installer	O	-	Use the unified installer of Systemwalker Resource Coordinator to automatically install the Oracle Solaris and Enhanced Support Facility.	See Section 6.9, "Unified Installer".

O: Supported, -: Not supported

## 5.1 Models to be Installed

Install Enhanced Support Facility using DVD/CD drive.

SPARC M10-1/M10-4/M10-4S, SPARC T3-4, SPARC Enterprise T1000 do not have a built-in DVD/CD drive. On these models, use either the DVD/CD drive of the relevant install server, or an external DVD/CD drive to install Enhanced Support Facility.

- For initial installation, see Section 5.2, "Installation Procedure".
- Oracle VM Server for SPARC can be used on SPARC M10-1/M10-4/M10-4S, SPARC T3-1/T3-2/T3-4/T4-1/T4-2/T4-4, SPARC Enterprise T5120/T5140/T5220/T5240/T5440. To install Enhanced Support Facility in the guest domain you need to network mount the DVD/CD drive of the installation server.

To use the DVD/CD drive of the installation server, please refer to "Appendix F Mounting the DVD/CD".

## 5.2 Installation Procedure

### 5.2.1 Important Notes Before the Installation

Table 5.2.1-1 Important Notes List

Single user mode	You need to install this product in single user mode.
Mounting the file system	This product is installed into "/opt". If "/opt" is another file system, "/opt" is not mounted in single user mode. Due to this, execute the "zfs mount -a" command on a ZFS environment and the "mountall -l" command on an UFS environment without failing, before installing this product.
User authority	<p>To install this software, cron must be set up for execution with root and adm user authority. At installation, "/etc/cron.d/cron.allow" must be set so that users with root or admin authority can use cron. By default, these users are permitted to use cron and, therefore, the setting need not be changed unless the corresponding permissions were changed.</p> <p>Also, for the login shell of root users and adm users written in the "etc/passwd" file, set a shell program that can be used as a command interpreter (for example, /sbin/sh). If you set a shell program that cannot be used as a command interpreter (for example, /bin/false), Enhanced Support Facility installation will fail.</p>

### 5.2.2 Installation time

It takes about 15 minutes to install this software. Note that this installation time excludes any time for rebooting, as that depends on the system configuration.

## 5.2.3 Instructions

- 1) Insert this product DVD/CD into the DVD/CD drive.

- 2) Type "su" at the shell prompt.

```
% /usr/sbin/su <Return>
```

- 3) Enter the root (superuser) password.

```
Password: password <Return>
#
```

- 4) Enter the OpenBoot environment.

```
# /usr/sbin/shutdown -y -g0 -i0 <Return>
```

If you are prompted like below, please select "o".

```
r) reboot, o) k prompt, h) alt? o
```

- 5) Boot the system in single-user mode.

```
{?} ok boot -s <Return>
```

When Oracle Solaris 11

Enter the user name and password.

```
Requesting System Maintenance Mode
SINGLE USER MODE

Enter user name for system maintenance (control-d to bypass): root <Return>
Enter root password (control-d to bypass): password <Return>
```

When Oracle Solaris 10

When the following message is displayed, enter the password.

```
Requesting System Maintenance Mode
SINGLE USER MODE

Root password for system maintenance (control-d to bypass): password <Return>
```

- 6) Mount the required file system.

```
# /usr/sbin/zfs mount -a <Return>
```

When installing in a directory on a UFS file system, execute the following commands.

```
# /usr/sbin/mountall -l <Return>
```

Note) If there are some file systems (/opt) which are not mounted by the 'mountall -l' command while you are making preparations for the patch application, please mount them by the mount(1M) command one by one.

- 7) Mount the DVD/CD.

The mounting procedure depends on the model.

For details of mounting the DVD/CD, see Appendix F, "Mounting the DVD/CD".

- 8) Install Enhanced Support Facility with the `esfadd` command.

```
# bin/esfadd <Return>
```

A confirmation message like the one shown below appears. Enter "yes" to continue installation.

Example

```
Enhanced Support Facility 5.1 will be installed.

Platform: SUNW,SPARC-Enterprise-T5120
OS Release: Solaris 11

Do you want to continue with this installation? [yes or no ?]: yes
<Return>
```

- 9) Unmount the DVD/CD drive.

```
# cd / <Return>
# /usr/sbin/umount /media <Return>
```

In case of Oracle Solaris 10, read `/media` as `/cdrom`.

- 10) Eject this product DVD/CD.
- 11) In case of Oracle Solaris 10, confirm whether the 'Enhanced Support Facility Manuals and Patches' CD has been attached. If it is not attached, move to procedure 15) and perform the remaining steps. If it is attached, apply the patches from the CD. If the contents of the CD cannot be seen, please refer to 'Appendix F Mounting the DVD/CD' for instructions on how to mount the CD.

- 12) Go to the root directory of the DVD/CD and execute the `esfpatchadd` command with following procedure.

```
# cd /cdrom/PATCHES <Return>
# bin/esfpatchadd <Return>
```

or

```
# cd /cdrom/cdrom0/PATCHES <Return>
# bin/esfpatchadd <Return>
```

Either of the following confirmation messages is displayed. Enter "yes" to continue the installation.

Example

```
Enhanced Support Facility 5.1 correction patches will be applied.

Platform: SUNW,SPARC-Enterprise-T5120
OS Release: Solaris 10

Do you want to continue with this installation? [yes or no ?]: yes
```

- 13) Unmount the DVD/CD drive.

```
# cd / <Return>
# /usr/sbin/umount /cdrom <Return>
```

or

```
# cd / <Return>
# /usr/sbin/umount /cdrom/cdrom0 <Return>
```

- 14) Eject Enhanced Support Facility Manuals & Patches DVD/CD.

- 15) Reboot the system.

```
# /usr/sbin/shutdown -y -g0 -i6 <Return>
```

In case of Oracle Solaris 11, update device information inside ZFS storage pool.

```
# /usr/sbin/zpool status <Return>
```

- 16) Check the version of the individual packages included in the installed Enhanced Support Facility using the `esfver` command.

```
# /opt/FJSVbse/bin/esfver -l <Return>
```

Example

```
esfver: INFO: Individual Packages Version of already installed Enhanced Support
Facility.
PKGNAME          VERSION          REVISION
-----
FJSVbse          5.1              2013.07.2600
                  :
                  :
FJSVdmp          1.7              2011.08.0300
-----
```

Note) The individual package versions displayed by this command may be later than the version listed in the program components table. But the installation will be OK.

## 5.2.4 Messages appearing during installation

**Note 1: Cancel installation if the following occurs.**

### Note 1-1

When the following message is displayed during the installation, type "n" to exit the installation process.

This message will be displayed when the *<pkginst>* package installation fails.

For more information, please refer to "D.1.2 Resolution of problems occur when package is installed(II)".

When the following message is displayed during the installation, type "no" to exit the installation process.

This message will be displayed when the file system has not been mounted.

```
A version of the <pkginst> package is already installed on this machine. Current
administration ds not allow new instances of an existing package to be created,
nor existing instances to be overwritten.
```

```
No changes were made to the system.
```

```
There are n more packages to be installed.
```

```
Do you want to continue with installation [y,n,?]
```

### Note 1-2

When the following message is displayed during the installation, type "no" to exit the installation process.

This message will be displayed when the file system has not been mounted.

If you installed this product without mounting "/opt", please mount "/opt" after removing this product following the instructions in "5.4 Removing Enhanced Support Facility" and then re-install this product.

```
esfadd: ERROR: The directory (/opt) where the packages will be
installed does not exist.
```

```
Interrupt installation and mount the /opt.
```

```
Select (n) no stop install.
```

```
Select (y) yes continue to install. [yes or no ?]:
```

**Note 2: The message shown below may be displayed but the installation can be performed without any problems.**

### Note 2-1

The following message is output when the FJSVdef package is installed, but there is no problem.

```
cron may not be running - call your system administrator
```

### Note 2-2

If the language packages mentioned below are not installed on Oracle Solaris 11 or the 'ja' package is not installed on Oracle Solaris 10, messages like those in the following box may be output when installing any of the FJSVpmdm, FJSVamle, FJSVamadm packages, but there is no problem.

- pkg:/text/locale

- pkg:/system/locale/extra

```
Processing package instance <FJSVamadm> from </media/Platform/CW/11>
```

```
Machine administration common package(sparc) 2.0.0,REV=2011.10.2100
```

```
Using </> as the package base directory.
```

```
## Processing package information.
```

```
## Processing system information.
```

```
WARNING: setting mode of </etc/opt> to default mode (755)
```

```
WARNING: setting mode of </usr/lib/locale/ja_JP.UTF-8> to default mode (755)
WARNING: setting mode of </usr/lib/locale/ja_JP.UTF-8/LC_MESSAGES> to default mode
(755)
WARNING: setting mode of </usr/lib/locale/ja_JP.eucJP> to default mode (755)
WARNING: setting mode of </usr/lib/locale/ja_JP.eucJP/LC_MESSAGES> to default mode
(755)
  23 package pathnames are already properly installed.
## Verifying disk space requirements.
```

In case of Oracle Solaris 10, read '*media*' as '*cdrom*'.

### Note 2-3

In case of SPARC M10, when Enhanced Support Facility is installed again after removing it, the following message is output when the FJSVpmadm package is installed, but there is no problem.

```
Processing package instance <FJSVpmadm> from </esf_point /Platform/PA/11>

Machine administration common package(sparc) 2.0.0,REV=2012.10.0400
Using </> as the package base directory.
## Processing package information.
## Processing system information.
WARNING: setting mode of </etc/opt> to default mode (755)
  24 package pathnames are already properly installed.
## Verifying disk space requirements.
```

*esf\_point* refers to the mount point of this product.

### Note 2-4

Messages like the following will be displayed when installing Enhanced Support Facility, but there is no problem with the system.

The services stated in the messages will come online after rebooting the system.

```
svc.startd[11]: system/fjsvmadm-scfeventd:default failed repeatedly:
transitioned to maintenance (see 'svcs -xv' for details)
svc.startd[11]: failed to abandon contract 130: Permission denied
```

### Note 2-5

The following messages are output when Enhanced Support Facility is installed on a newly installed Oracle Solaris system whose *dir* is empty.

```
WARNING: setting mode of <dir> to default mode (755)
```

Please read '*dir*' as '*/opt*', or read '*dir*' as '*/etc/opt*'.



### Note 3: Messages output during patch application.

- **When patches are supplied with the product**

After package installation is finished, the message shown below is output and patches are automatically applied.

For information on the patches that are applied, refer to "3.1.5 Bundled Patches".

However, the applicable patches will depend on the status of the system.

```
Enhanced Support Facility 5.1 collection patches will be applied.

Checking installed patches...
Verifying sufficient filesystem capacity (dry run method)...
Installing patch packages...
:
:
:
---- esfpatchadd result. ----
Applied patches:
912542-01
```

#### Note 3-1

If the following message is displayed, check the system environment. See Appendix D.3, "When the patches fail to be applied" for details.

```
---- esfpatchadd result. ----
Patches not applied:
Patch
```

#### Note 3-2

There is no problem with patch application even though the following messages are displayed with Oracle Solaris10.

```
touch: /var/sadm/patch/.patchaddLock cannot create
chmod: WARNING: can't access /var/sadm/patch/.patchaddLock
/usr/lib/patch/patchadd[27]: /var/sadm/patch/.patchaddLock: cannot
create
```

### Note 4: Application messages of the correction files.

The following messages are displayed when installing.

In case of Oracle Solaris 11, use UpdateAdvisor (Middleware) to check if there are any latest correction files.

In case there are correction files, apply the correction files using UpdateAdvisor (Middleware).

```
esfadd: INFO: In case of Solaris 11, please check "Update Files" using
UpdateAdvisor (middleware).
esfadd: INFO: After installing Enhanced Support Facility, check
esfadd: INFO: UpdateAdvisor (middleware) for "Update Files" and if it
exists,
esfadd: INFO: apply it to update Enhanced Support Facility to the latest
state.
```

**Note 5: Messages when Enhanced Support Facility is installed on an unsupported model.**

When Enhanced Support Facility is attempted to be installed on models which are not supported by Enhanced Support Facility, the following messages are output.

```
# bin/esfadd <Return>
esfadd: ERROR: This Hardware Platform is not supported.
```

or

```
# bin/esfadd <Return>
esfadd: ERROR: The corresponding platform directory does not exist.
```

Refer to "3.2 Hardware Environment" to check the models that are supported by this product.

## 5.2.5 Environment setting after installation

The following table lists the environment settings required to use this software.  
For documentation information, refer to "2 Online Manuals".

Table 5.2.5-1 Environment Settings List

No.	Component	Description
1	SCF/SCSI Fault LED support option	To use the command provided by the SCF/SCSI Fault LED support option, the PATH environment variable must be changed. For details, see Section 3.3.1.2, "Setting for when the server is installed" in Section 3.3, "SCF/SCSI Fault LED Support Option [SPARC Enterprise]" of "Enhanced Support Facility User's Guide".
2	Remote Support	<p>The remote support function's investigation data collection function</p> <p>The remote support function's investigation data collection function uses three system semaphore identifiers for program resource management.</p> <p>However, system parameters need not be changed.</p> <p>(By default 128 semaphore identifiers can be used.)</p> <p>If more semaphore identifiers are required, use the <code>prctl(1)</code> command to increase the value of <code>project.max-sem-ids</code>. For details, refer to the manual page of the <code>prctl(1)</code> command. In the following example, the value of <code>project.max-sem-ids</code> for project name <code>user.root</code> is 138.</p> <pre>prctl -n project.max-sem-ids -t privileged -r -v 138 -i project user.root</pre>

## 5.2.6 Applying modifications

If a fix is available, apply the latest version.

Please refer to the attached manual for information on how to apply the fix.

## 5.3 Update Installation

### 5.3.1 Important Notes Before the Update

Table 5.3.1-1 Important Notes List

Single user mode	You need to install this product in single user mode.
Mounting the file system	This product is installed into "/opt". If "/opt" is another file system, "/opt" is not mounted in single user mode. Due to this, execute the "zfs mount -a" command on a ZFS environment and the "mountall -l" command on an UFS environment without failing, before installing this product.
User authority	<p>To install this software, cron must be set up to be used with root and adm user authority. At installation, "/etc/cron.d/cron.allow" must be set so that users with root or admin authority can use cron. By default, these users are permitted to use cron and, therefore, the setting need not be changed unless the corresponding permissions were changed.</p> <p>Also, for the login shell of root users and adm users written in the "etc/passwd" file, set a shell program that can be used as a command interpreter (for example, /sbin/sh). If you set a shell program that cannot be used as a command interpreter (for example, /bin/false), Enhanced Support Facility installation will fail.</p>
Saving the environment settings file	If an update installation is to be performed, the environment settings file may need to be saved in advance. See Section 5.3.3, "Checking the system environment" to check whether the environment settings file needs to be saved.
Regarding update installation on Oracle Solaris 11.1 environment	Remove the old version on Enhanced Support Facility which initiates update on Oracle Solaris 11.1 environment and install the latest version of Enhanced Support Facility.

### 5.3.2 Installation time

It takes about 15 minutes to install this software. Note that this installation time excludes any time for rebooting, as that depends on the system configuration.

### 5.3.3 Checking the system environment

- 1) Insert this product DVD/CD into the DVD/CD drive.
- 2) Type "su" at the shell prompt.

```
% /usr/sbin/su <Return>
```

- 3) Enter the root (superuser) password.

```
Password: password <Return>  
#
```

- 4) Enter the OpenBoot environment.

```
# /usr/sbin/shutdown -y -g0 -i0 <Return>
```

If you are prompted like below, please select "o".

```
r) reboot, o) ok prompt, h) halt? o
```

- 5) Boot the system in single-user mode.

```
{?} ok boot -s <Return>
```

When Oracle Solaris 11

Enter the user name and password.

```
Requesting System Maintenance Mode  
SINGLE USER MODE  
  
Enter user name for system maintenance (control-d to bypass): root <Return>  
Enter root password (control-d to bypass): password <Return>
```

When Oracle Solaris 10

When the following message is displayed, enter the password.

```
Requesting System Maintenance Mode  
SINGLE USER MODE  
  
Root password for system maintenance (control-d to bypass): password <Return>
```

- 6) Mount the required file system.

```
# /usr/sbin/zfs mount -a <Return>
```

When installing in a directory on a UFS file system, execute the following commands.

```
# /usr/sbin/mountall -l <Return>
```

Note) If there are some file systems (/opt) which are not mounted by the 'mountall -l' command while you are making preparations for the patch application, please mount them by the mount(1M) command one by one.

- 7) Mount the DVD/CD.

For details of mounting the DVD/CD, see Appendix F, "Mounting the DVD/CD".

- 8) Check the package to be updated to see whether there is an environment settings file that needs to be saved.

```
# bin/esfadd -c <Return>
```

The packages being updated will be displayed.

Example

```
Check the package that will be updated.

Platform: SUNW,SPARC-Enterprise
OS Release: Solaris 11

PKGNAME          CURRENT VERSION          FUTURE VERSION
-----
FJSVbse          4.0      REV=2011.10.2800    5.1      REV=2013.07.2600
FJSVamadm        2.0.0    REV=2011.10.2100    2.0.1    REV=2012.08.0700
FJSVsnap         2.7      REV=2011.10.2100    2.8      REV=2012.07.2400
FJSVhrmse        6.1.1    REV=2011.10.2100    7.3.0    REV=2012.07.0300
FJSVhrmcp        6.1.1    REV=2011.10.0400    7.3.0    REV=2012.07.0300
-----

Please save data according to the INSTALLATION GUIDE if the package(s) for which
the save of data is necessary exist in the above-mentioned package(s).
```

Refer to the table below to check whether there is an environment settings file that needs to be saved in advance for a package to be updated.

If the environment settings file needs to be saved, see Section 5.3.4, "Saving the environment setting file" and save the environment settings file. If it need not be saved, proceed to Section 5.3.5, "Installing Enhanced Support Facility". For information on the existence of environment setting files to be saved, refer to "Environment Setting Files List" of "5.3.4 Saving the Enhanced Support Facility environment setting file"

If the following message is displayed, initial installation is required. Proceed to Section 5.2.3, "Instructions".

```
esfadd: INFO: This software is not installed on the system.
```

## 5.3.4 Saving the Enhanced Support Facility environment setting file

Table 5.3.4-1 Environment Setting Files List

Component name	Package name	Oracle Solaris		Environment setting file
		10	11	
IKPDR Command	FJSVdropl	O	-	/etc/opt/FJSVdr/reply/C/dr_op
SCF/SCSI Fault LED support option	FJSVscfsc	O	-	/etc/opt/FJSVhwr/adrc.conf
Machine Administration Remote Support	FJSVrlib FJSVragt FJSVrmaos	O	O	Provides the savelogs command to save/restore the environment setting file.
Auto Power Control System	FJSVapcs	O	O	/var/opt/FJSVapcs/*

Save the reply file for Dynamic reconfiguration if you use Dynamic Reconfiguration and modified the reply file. Refer to "Dynamic Reconfiguration User's Guide 3.6.2 Reply file" for detail.

```
# cd / <Return>
# cp /etc/opt/FJSVdr/reply/C/dr_op save_file <Return>
```

Note: If there is any new Boot Environment, specify its mount point with the "cd" command.

If you are using SCF/SCSI Fault LED support option, save the SCF/SCSI Fault LED support option setting files.

```
# cd / <Return>
# ls /etc/opt/FJSVhwr/adrc.conf | cpio -o -O save_file <Return>
```

Note: If there is any new Boot Environment, specify its mount point with the "cd" command.

If you are using Machine Administration or Remote Support, save the environment setting files of the packages constituting Machine Administration and Remote Support with the savelogs command.

```
# cd / <Return>
# /usr/sbin/FJSVadm/savelogs -mo save_file_directory <Return>
```

Note: If there is any new Boot Environment, specify its mount point with the "cd" command.

If you are using the Auto Power Control System, save the older version of the environment setting file for the FJSVapcs package.

```
# cd / <Return>
# /usr/bin/find /var/opt/FJSVapcs/ -print -depth | /usr/bin/cpio -o -O save_file <Return>
```

Note: If there is any new Boot Environment, specify its mount point with the "cd" command.

## 5.3.5 Instructions

- 1) Install Enhanced Support Facility with the `esfadd` command.

```
# bin/esfadd <Return>
```

The message shown below is displayed. Enter "yes" to continue installation.

```
Enhanced Support Facility will be updated to Enhanced Support Facility 5.1

Platform: SUNW,SPARC-Enterprise-T5120
OS Release: Solaris 10

Do you want to continue with this update? [yes or no ?]: yes <Return>
```

- 2) Unmount the DVD/CD drive.

```
# cd / <Return>
# /usr/sbin/umount /media <Return>
```

In case of Oracle Solaris 10, read `'/media'` as `'/cdrom'`.

- 3) Eject this product DVD/CD.
- 4) In case of Oracle Solaris 10, confirm whether the 'Enhanced Support Facility Manuals and Patches' CD has been attached. If it is not attached, move to procedure 8) and perform the remaining steps. If it is attached, apply the patches from the CD. If the contents of the CD cannot be seen, please refer to 'Appendix F Mounting the DVD/CD' for instructions on how to mount the CD.
- 5) Go to the root directory of the DVD/CD to execute the `esfpatchadd` command with the following procedure.

```
# cd /cdrom/PATCHES <Return>
# bin/esfpatchadd <Return>
```

or

```
# cd /cdrom/cdrom0/PATCHES <Return>
# bin/esfpatchadd <Return>
```

Either of the following confirmation messages is displayed. Enter "yes" to continue the installation.

Example

```
Enhanced Support Facility 5.1 correction patches will be applied.

Platform: SUNW,SPARC-Enterprise-T5120
OS Release: Solaris 10

Do you want to continue with this installation? [yes or no ?]: yes
```



- 6) Unmount the DVD/CD drive.

```
# cd / <Return>
# /usr/sbin/umount /cdrom <Return>
```

or

```
# cd / <Return>
# /usr/sbin/umount /cdrom/cdrom0 <Return>
```

- 7) Eject Enhanced Support Facility Manuals & Patches DVD/CD.

- 8) Reboot the system.

```
# /usr/sbin/shutdown -y -g0 -i6 <Return>
```

- 9) In case of Oracle Solaris 10, start the volume manager as the super user.

```
# /etc/init.d/volmgt start <Return>
```

In case of Oracle Solaris 11, update device information inside ZFS storage pool.

```
# /usr/sbin/zpool status <Return>
```

- 10) Please use the `esfver` command to find out the versions of the installed packages of this product.

```
# /opt/FJSVbse/bin/esfver -l <Return>
```

Example

```
esfver: INFO: Individual Packages Version of already installed Enhanced Support
Facility.
PKGNAME          VERSION          REVISION
-----
FJSVbse          5.1              2013.07.2600
FJSVdrop1        1.0              2006.08.0800
                  :
                  :
FJSVparam        1.1              2005.01.1100
-----
ESF_PATCH_VERSION = 5.1A00_20130726
```

Note) The individual package versions displayed by this command may be later than the version listed in the program components table. But the installation will be OK.

## 5.3.6 Messages appearing during installation

**Note 1: Cancel installation if the following occurs.**

### Note 1-1

When the following message is displayed during the installation, type "n" to exit the installation process.

This message will be displayed when the `<pkginst>` package installation fails.

For more information, please refer to "D.1.2 Resolution of problems occur when package is installed(II)".

```
A version of the <pkginst> package is already installed on this machine.
Current administration ds not allow new instances of an existing package
to be created, nor existing instances to be overwritten.
```

```
No changes were made to the system.
```

```
There are n more packages to be installed.
```

```
Do you want to continue with installation [y,n,?]
```

### Note 1-2

When the following message is displayed during the installation, type "no" to exit the installation process.

This message will be displayed when the file system has not been mounted.

If you installed this product without mounting "/opt", please mount "/opt" after removing this product following the instructions in "5.4 Removing Enhanced Support Facility" and then re-install this product.

```
esfadd: ERROR: The directory (/opt) where the packages will be installed
does not exist.
```

```
Do you want to continue with this installation? [yes or no ?]:
```

**Note 2: The message shown below may be displayed but the installation can be performed without any problems.**

### Note 2-1

The following message is output when the FJSVdef package is installed, but there is no problem.

```
cron may not be running - call your system administrator
```

### Note 2-2

Messages like the following will be displayed when installing Enhanced Support Facility, but there is no problem with the system.

The services stated in the messages will come online after rebooting the system.

```
svc.startd[11]: system/fjsvmadm-scfeventd:default failed repeatedly:
transitioned to maintenance (see 'svcs -xv' for details)
svc.startd[11]: failed to abandon contract 130: Permission denied
```

### Note 2-3

The following messages are output when Enhanced Support Facility is installed on a newly installed Oracle Solaris system whose *dir* is empty.

```
WARNING: setting mode of <dir> to default mode (755)
```

Please read '*dir*' as '/opt', or read '*dir*' as '/etc/opt'.

### Note 3: Messages output during patch application.

- **When patches are supplied with the product**

After package installation is finished, the message shown below is output and patches are automatically applied.

For information on the patches that are applied, refer to "3.1.5 Bundled Patches".

However, the applicable patches will depend on the status of the system.

```
Enhanced Support Facility 5.1 collection patches will be applied.

Checking installed patches...
Verifying sufficient filesystem capacity (dry run method)...
Installing patch packages...
:
:
:
---- esfpatchadd result. ----
Applied patches:
  912542-01
```

#### Note 3-1

If the following message is displayed, check the system environment. See Appendix D.3, "When the patches fail to be applied" for details.

```
---- esfpatchadd result. ----
Patches not applied:
  Patch
```

#### Note 3-2

There is no problem with patch application even though the following messages are displayed with Oracle Solaris10.

```
touch: /var/sadm/patch/.patchaddLock cannot create
chmod: WARNING: can't access /var/sadm/patch/.patchaddLock
/usr/lib/patch/patchadd[27]: /var/sadm/patch/.patchaddLock: cannot
create
```

### Note 4: Application messages of the correction files.

The following messages are displayed when installing.

In case of Oracle Solaris 11, use UpdateAdvisor (Middleware) to check if there are any latest correction files.

In case there are correction files, apply the correction files using UpdateAdvisor (Middleware).

```
esfadd: INFO: In case of Solaris 11, please check "Update Files" using
UpdateAdvisor (middleware).
esfadd: INFO: After installing Enhanced Support Facility, check
esfadd: INFO: UpdateAdvisor (middleware) for "Update Files" and if it
exists,
esfadd: INFO: apply it to update Enhanced Support Facility to the latest
state.
```

**Note 5: Messages when Enhanced Support Facility is installed on an unsupported model.**

When Enhanced Support Facility is attempted to be installed on models which are not supported by Enhanced Support Facility, the following messages are output.

```
# bin/esfadd <Return>
esfadd: ERROR: This Hardware Platform is not supported.
```

or

```
# bin/esfadd <Return>
esfadd: ERROR: The corresponding platform directory does not exist.
```

Refer to "3.2 Hardware Environment" to check the models that are supported by this product.

**Note 6: Messages when Enhanced Support Facility is not installed on the system.**

This is a new installation if the following message is displayed.

Refer to "5.2.3 Instructions" for details on new installations.

```
Enhanced Support Facility 5.1 will be installed.

Platform: SUNW,SPARC-Enterprise-T5120
OS Release: Solaris 10

Do you want to continue with this installation? [yes or no ?]: yes <Return>
```

## 5.3.7 Restoring the Enhanced Support Facility environment settings file

Where a previous version of the environment setting file has been saved using the instructions provided in Section 5.3.4, "Saving the Enhanced Support Facility environment setting file" it can be restored as follows:

Restore the Dynamic Reconfiguration setting files.

Modify the new reply file that is located at `/etc/opt/FJSVdr/reply/C/dr_op`. (Please use the saved version of previous reply file for reference). There may be new reply messages added as a result of the Enhanced Support Facility upgrade. See Section 6.1.3.3, "Inquiring Messages" or 7.1.3.3, "Inquiring Messages" in the "Dynamic Reconfiguration User's Guide" before modifying the reply file.

Restore the SCF/SCSI Fault LED support option setting files.

```
# cd / <Return>
# cpio -iu -I save_file <Return>
# chown root /etc/opt/FJSVhwr/adrc.conf <Return>
# chgrp root /etc/opt/FJSVhwr/adrc.conf <Return>
```

Note: If there is any new Boot Environment, specify its mount point with the "cd" command.

Restore the environment setting file of the Machine Administration and Remote Support with the `savelogs` command.

```
# cd / <Return>
# /usr/sbin/FJSVadm/savelogs -r save_file_directory <Return>
```

Note: If there is any new Boot Environment, specify its mount point with the "cd" command.

Restore the environment setting file of the Auto Power Control System.

```
# cd / <Return>
# /usr/bin/cpio -iu -I save_file <Return>
```

Note: If there is any new Boot Environment, specify its mount point with the "cd" command.

### 5.3.8 Environment setting after installation

The following table lists the environment settings required to use this software. For documentation information, refer to "2 Online Manuals."

Table 5.3.8-1 Environment Settings List

No.	Component	Description
1	SCF/SCSI Fault LED support option	To use the command provided by the SCF/SCSI Fault LED support option, the PATH environment variable must be changed. For details, see Section 3.3.1.2, "Setting for when the server is installed" in Section 3.3, " SCF/SCSI Fault LED Support Option [SPARC Enterprise]" of "Enhanced Support Facility User's Guide".
2	Remote Support	<p>The remote support function's investigation data collection function</p> <p>The remote support function's investigation data collection function uses three system semaphore identifiers for program resource management.</p> <p>However, system parameters need not be changed.</p> <p>(By default 128 semaphore identifiers can be used.)</p> <p>If more semaphore identifiers are required, use the <code>prctl(1)</code> command to increase the value of <code>project.max-sem-ids</code>. For details, refer to the manual page of the <code>prctl(1)</code> command. In the following example, the value of <code>project.max-sem-ids</code> for project name <code>user.root</code> is 138.</p> <pre>prctl -n project.max-sem-ids -t privileged -r -v 138 -i project user.root</pre>

### 5.3.9 Applying modifications

If the latest version of PTF (Program Temporary Fix), patches, etc. are available, please apply them. Refer to the manual supplied with the PTF or patches for information on how to do this.

## 5.4 Removing Enhanced Support Facility

The following procedures describe how to remove all of the packages provided in this software.

Remove Enhanced Support Facility using DVD/CD drive.

SPARC M10-1/M10-4/M10-4S, SPARC T3-4, SPARC Enterprise T1000 do not have a built-in DVD/CD drive.

On these models, use either the DVD/CD drive of the relevant install server, or an external DVD/CD drive to remove Enhanced Support Facility.

To use the DVD/CD drive of the installation server, please refer to "Appendix F Mounting the DVD/CD".

Moreover, in case of Oracle Solaris 11, Enhanced Support Facility correction files should be removed before removing Enhanced Support Facility. Otherwise, Enhanced Support Facility may not be removed properly.

For details, refer to the "help" of UpdateAdvisor (Middleware) or the patch information file in the correction files.

### 5.4.1 Important Notes Before the Removal

Table 5.4.1-1 Important Notes List

Single user mode	You need to remove this product in single user mode.
Mounting the file system	This product is installed into "/opt". If "/opt" is another file system, "/opt" is not mounted in single user mode. Due to this, execute the "zfs mount -a" command on a ZFS environment and the "mountall -l" command on an UFS environment without failing, before installing this product.
User authority	To removing this software, cron must be set up for execution with root and adm user authority. At removing, "/etc/cron.d/cron.allow" must be set so that users with root or admin authority can use cron. By default, these users are permitted to use cron and, therefore, the setting need not be changed unless the corresponding permissions were changed.  Also, for the login shell of root users and adm users written in the "etc/passwd" file, set a shell program that can be used as a command interpreter (for example, /sbin/sh). If you set a shell program that cannot be used as a command interpreter (for example, /bin/false), Enhanced Support Facility installation will fail.

## 5.4.2 Removal of Software

- 1) Insert this product DVD/CD into the DVD/CD drive.
- 2) Type "su" at the shell prompt.

```
% /usr/sbin/su <Return>
```

- 3) Enter the root(superuser) password.

```
Password: password <Return>  
#
```

- 4) Enter the OpenBoot environment.

```
# /usr/sbin/shutdown -y -g0 -i0 <Return>
```

If you are prompted like below, please select "o".

```
r) reboot, o) k prompt, h) alt? o
```

- 5) Boot the system in single-user mode.

```
{?} ok boot -s <Return>
```

When Oracle Solaris 11

Enter the user name and password.

```
Requesting System Maintenance Mode  
SINGLE USER MODE  
  
Enter user name for system maintenance (control-d to bypass): root <Return>  
Enter root password (control-d to bypass): password <Return>
```

When Oracle Solaris 10

When the following message is displayed, enter the password.

```
Requesting System Maintenance Mode  
SINGLE USER MODE  
  
Root password for system maintenance (control-d to bypass): password <Return>
```

- 6) Mount the required file system.

```
# /usr/sbin/zfs mount -a <Return>
```

When installing in a directory on a UFS file system, execute the following commands.

```
# /usr/sbin/mountall -l <Return>
```

Note) If there are some file systems (/opt) which are not mounted by the 'mountall -l' command while you are making preparations for the patch application, please mount them by the mount(1M) command one by one.

- 7) Mount the DVD/CD.  
For details of mounting the DVD/CD, see Appendix F, "Mounting the DVD/CD".



- 8) Remove Enhanced Support Facility with the `esfrm` command.  
For detailed information on the `esfrm` command, please refer to "A.2 `esfrm` (1M) command".

```
# bin/esfrm <Return>
```

When the following message is displayed, type "all","no"or "part".  
If the display stops, press the space key to restart the display.

```
Enhanced Support Facility 5.1 will be removed.

FJSVbse      Enhanced Support Facility Information Management
              (sparc) 5.1,REV=2013.07.2600
              :
              :
FJSVsnap     System Information Output Tool
              (all) 2.8,REV=2012.07.2400

There is a possibility to cause problem(s) in the system when the
packages where "*" adheres to the head of the package name is deleted.

Please input "all" when you want to remove all packages,input "no"
when you want to interrupt the uninstallation, or input "part" when
you want to remove only packages where "*" does not adhere.

Please select. [no, all or part]:
```

Confirmation messages will be displayed when removing the packages. Type "y" to continue the removal.

Do not remove packages that are depended on by other packages. If you attempt to remove the package, the following message will be displayed. Type "n".

```
WARNING:
  The <pkg> package depends on the package currently
  being removed.
Dependency checking failed.

Do you want to continue with the removal of this package [y,n,?,q] n <Return>
```

If the following message is displayed, type "y" to continue the removal.

```
Do you want to continue with package removal [y,n,?,q] y <Return>
```

- 9) Unmount the DVD/CD.

```
# cd / <Return>
# /usr/sbin/umount /media <Return>
```

In case of Oracle Solaris 10, read '/*media*' as '/*cdrom*'.

- 10) Eject this product DVD/CD.

- 11) Reboot the system.

```
# /usr/sbin/shutdown -y -g0 -i6 <Return>
```

## 5.4.3 Messages Displayed when Removing Software

**Note 1: In the following case, make sure to choose “part”.**

If a package has an asterisk mark (“\*”), be sure to select "part".

Please select "part" not to remove packages having an asterisk (“\*”).

A package with an asterisk (“\*”) at the head of its name has been installed with a product other than Enhanced Support Facility.

If you select "all", packages having an asterisk (“\*”) are removed and the behavior of products other than Enhanced Support Facility is affected by this.

[Example: If a package has an asterisk mark (“\*”)]

```
Enhanced Support Facility 5.1 will be removed.

FJSVbse      Enhanced Support Facility Information Management
              (sparc) 5.1,REV=2013.07.2600
*FJSVsnap    System Information Output Tool
              (all) 2.8,REV=2012.07.2400
              :
              :
FJSVdmp      Crash Dump Assistant
              (sparc) 1.7,REV=2011.08.0300

There is a possibility to cause problem in the system when the
packages where "*" adheres to the head of the package name is deleted.

Please input "all" when you want to remove all packages,input "no"
when you want to interrupt the uninstallation, or input "part" when
you want to remove only packages where "*" does not adhere.

Please select. [no,all or part]:
```

**Note 2: The following messages may be displayed, but these messages do not affect the removal.**

### Note2-1

The following message may be displayed when removing FJSVdef package, but the removal will be complete normally.

```
cron may not be running - call your system administrator
```

### Note2-2

The following message may be displayed when removing FJSVrplib package, but the removal will be complete normally.

```
mkdir: Failed to make directory "/opt/FJSVrplib/etc/apply"; No such file or
directory
```

### Note2-3

The following message may be displayed when removing FJSVmadm package, but the removal will be complete normally.

```
rm: /var/opt/FJSVmadm/xxx/xxxxxxxx is a directory
```

### Note2-4

There is no problem in the deletion though the following messages might be displayed in the zone environment while deleting the package.

```
pkgrm: ERROR: unable to perform preremoval check of package <FJSVxxxx> in zone
< zonearea >
```

**Note2-5**

The following messages will be output after removing the FJSVssf and FJSVdmp packages with the "esfrm -R" command but there is no problem.

```
svc.startd[10]: svc:/system/fjsvssf-limstrerr:default: Method
"/lib/svc/method/fjsvssf-limstrerr" failed with exit status 1.
svc.startd[10]: svc:/system/fjsvdmpsnap:default: Method
"/lib/svc/method/fjsvdmpsnap" failed with exit status 1.
svc.startd[10]: svc:/system/fjsvssf-limstrerr:default: Method
"/lib/svc/method/fjsvssf-limstrerr" failed with exit status 1.
svc.startd[10]: svc:/system/fjsvdmpsnap:default: Method
"/lib/svc/method/fjsvdmpsnap" failed with exit status 1.
svc.startd[10]: svc:/system/fjsvssf-limstrerr:default: Method
"/lib/svc/method/fjsvssf-limstrerr" failed with exit status 1.
svc.startd[10]: system/fjsvssf-limstrerr:default failed: transitioned to
maintenance (see 'svcs -xv' for details)
svc.startd[10]: svc:/system/fjsvdmpsnap:default: Method
"/lib/svc/method/fjsvdmpsnap" failed with exit status 1.
svc.startd[10]: system/fjsvdmpsnap:default failed: transitioned to maintenance
(see 'svcs -xv' for details)
```

## 5.5 Oracle VM Server for SPARC

Oracle VM Server for SPARC is a virtualization feature which uses the hypervisor that is provided as a part of the system firmware. Using this technology, a single platform can be divided into several virtual hardware environments (domains), each of which can run different OS independently.

### Supported models

- Oracle VM Server for SPARC can be used on SPARC M10-1/M10-4/M10-4S, SPARC T3-1/T3-2/T3-4/T4-1/T4-2/T4-4, SPARC Enterprise T5120/T5140/T5220/T5240/T5440.

### Reference manuals according to models

- When constructing or reconstructing logical domains using Oracle VM Server for SPARC on SPARC M10-1/M10-4/M10-4S servers, refer to "Fujitsu M10/SPARC M10 Systems Domain Configuration Guide".
- When constructing or reconstructing logical domains that are to be used on SPARC T3-1/T3-2/T3-4/T4-1/T4-2/T4-4 and SPARC Enterprise T5120/T5140/T5220/T5240/T5440 servers, or looking for details on Oracle VM Server for SPARC, refer to "SPARC Enterprise Oracle VM Server for SPARC Guide".

### Notes

- Notes when using Oracle VM Server for SPARC are available.  
Please refer to "5.1 Oracle VM Server for SPARC" in "Enhanced Support Facility Technical Guide"

## 5.5.1 Flowchart of Building Oracle VM Server for SPARC Environment

To install the Enhanced Support Facility in Oracle VM Server for SPARC environment, two installation methods are available.

One is to install it into the control domain, and another is to install it into the guest domain.

This chapter explains the installation steps.

- 1) The installation procedure to install the Enhanced Support Facility into the control domain is explained in "5.5.2 Building Procedure for the Enhanced Support Facility in the Control Domain". Please see flowchart (1)-(5) below for the installation steps.
- 2) The installation procedure to install the Enhanced Support Facility into the guest domain is explained in "5.5.3 Building Procedure for the Enhanced Support Facility in the Guest Domain". Please see flowchart (6) below for the installation steps.

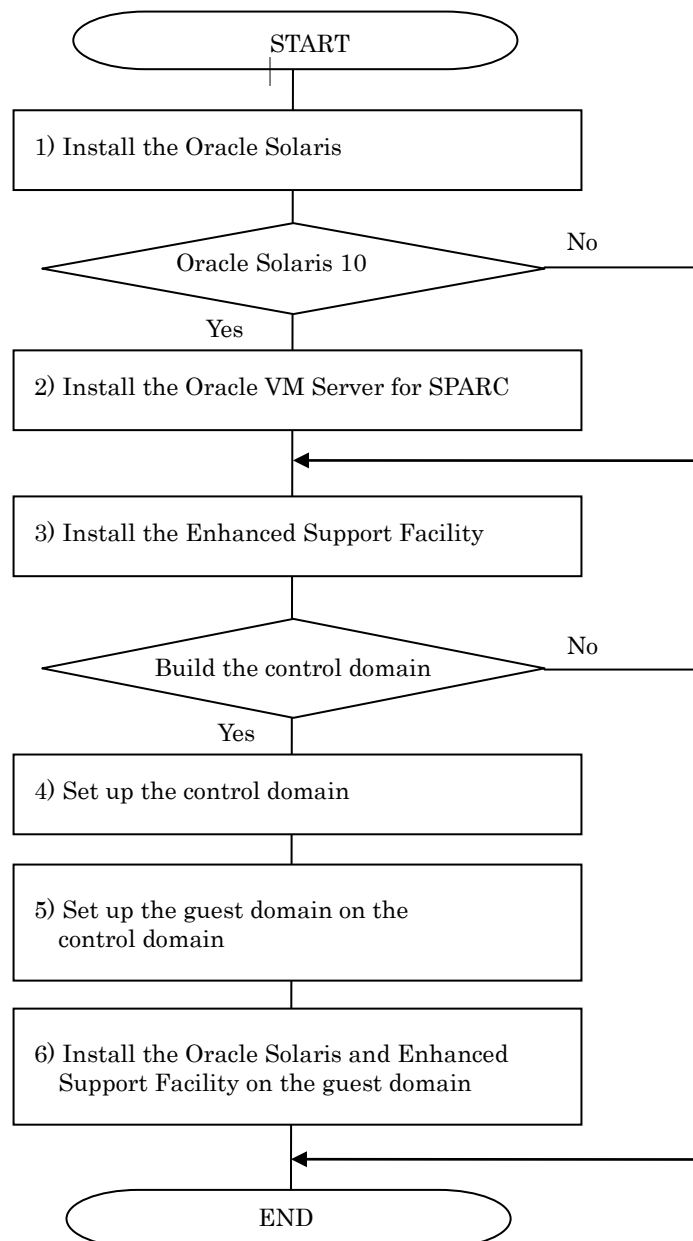


Figure 5.5.1-1 Flowchart of Building Oracle VM Server for SPARC Environment

## 5.5.2 Building Procedure for the Enhanced Support Facility in the Control Domain

This section explains how to set up the Enhanced Support Facility in the control domain.

- 1) Install the Oracle Solaris into the mainframe.  
For more information, please refer to "SPARC Enterprise Server Hardware Platform Guide".
- 2) Install the Oracle VM Server for SPARC.  
In case of Oracle Solaris 10, install the Oracle VM Server for SPARC.  
For more information, please refer to "SPARC Enterprise Oracle VM Server for SPARC Guide".  
In case of Oracle Solaris 11, Oracle VM Server for SPARC is included by default.
- 3) Install the Enhanced Support Facility.  
For more information, please refer to "5.2.3 Instructions".
- 4) Set up the control domain.  
For more information, please refer to "SPARC Enterprise Oracle VM Server for SPARC Guide".
- 5) Set up the guest domain by the control domain.  
For more information, please refer to "SPARC Enterprise Oracle VM Server for SPARC Guide".

Please refer to "5.5.3 Building Procedure for the Enhanced Support Facility in the Guest Domain" when you set up the guest domain and install the Enhanced Support Facility in it.

## 5.5.3 Building Procedure for the Enhanced Support Facility in the Guest Domain

This section explains how to set up the Enhanced Support Facility in the guest domain.

- 1) Install the OS into the guest domain.  
For more information, please refer to "SPARC Enterprise Server Hardware Platform Guide".
- 2) Install the Enhanced Support Facility into the guest domain.  
For more information, please refer to "5.2.3 Instructions".  
When installing the Enhanced Support Facility, use the DVD/CD of the installation server.  
Regarding the network mount, please refer to "Appendix F.2 Mounting a DVD/CD of an installation server".

## 5.5.4 Update Installation in Oracle VM Server for SPARC Environment

There are two kinds of update installation in Oracle VM Server for SPARC environment. One is performed into the control domain environment and another is performed into the guest domain environment.

### 5.5.4.1 Update Installation Procedure in the Control Domain Environment

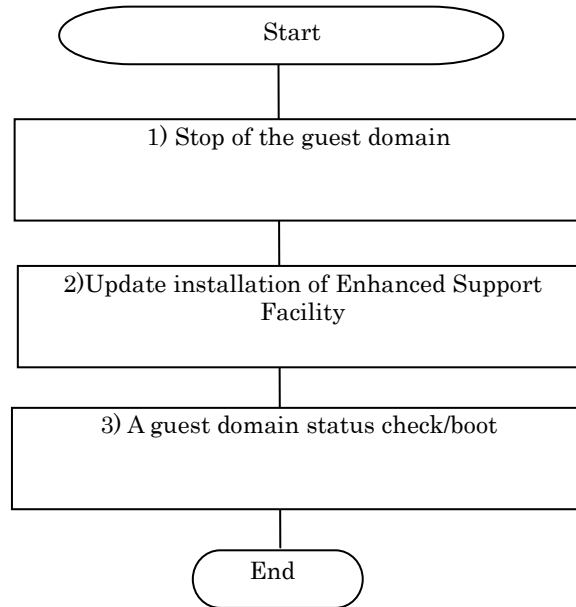


Figure 5.5.4.1-1 Flowchart of an update installation in the control domain environment

- 1) Stop the guest domain  
You need to take the steps below if you want to run the control domain in single-user mode.
  - Stop all guest domains.
  - Release the combination of resources of all guest domainsFor more information, please refer to "SPARC Enterprise Oracle VM Server for SPARC Guide".
- 2) Perform the update installation of Enhanced Support Facility.  
For more information, please refer to "5.3 Update Installation".
- 3) Check the status of the guest domain and start it.
  - Check the status of the domain
  - Start the domainFor more information, please refer to "SPARC Enterprise Oracle VM Server for SPARC Guide".  
Note) If you only start the domain, the system may be in OBP status.  
Therefore please connect to the domain by the console and start it in multi-use mode.

## 5.5.4.2 Update Installation Procedure in the Guest Domain Environment

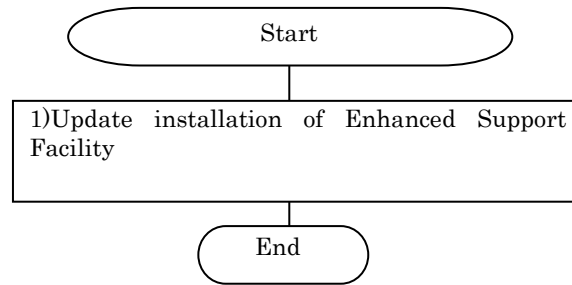


Figure 5.5.4.2-1 Flowchart of an update installation in the guest domain environment

- 1) Perform the update installation of Enhanced Support Facility.  
For more information, please refer to "5.3 Update Installation".  
When you install Enhanced Support Facility, please use a DVD/CD of the installation server.  
Regarding network mount, please refer to "Appendix F.2 Mounting a DVD/CD of an installation server".



# Chapter 6 Extended Installation

## 6.1 OS Upgrade

In this chapter, we will explain the case of using the Enhanced Support Facility environment setup file for Oracle Solaris 10 on Oracle Solaris 11. Before upgrading the Oracle Solaris, please save the Enhanced Support Facility environment setup file. After upgrading, install Enhanced Support Facility and restore the Enhanced Support Facility environment using the setup file previously saved.

### 6.1.1 OS Upgrade workflow

The OS upgrade workflow is shown in Figure 6.1.1-1.

For detailed procedures, refer to the respective sections indicated in individual frames.

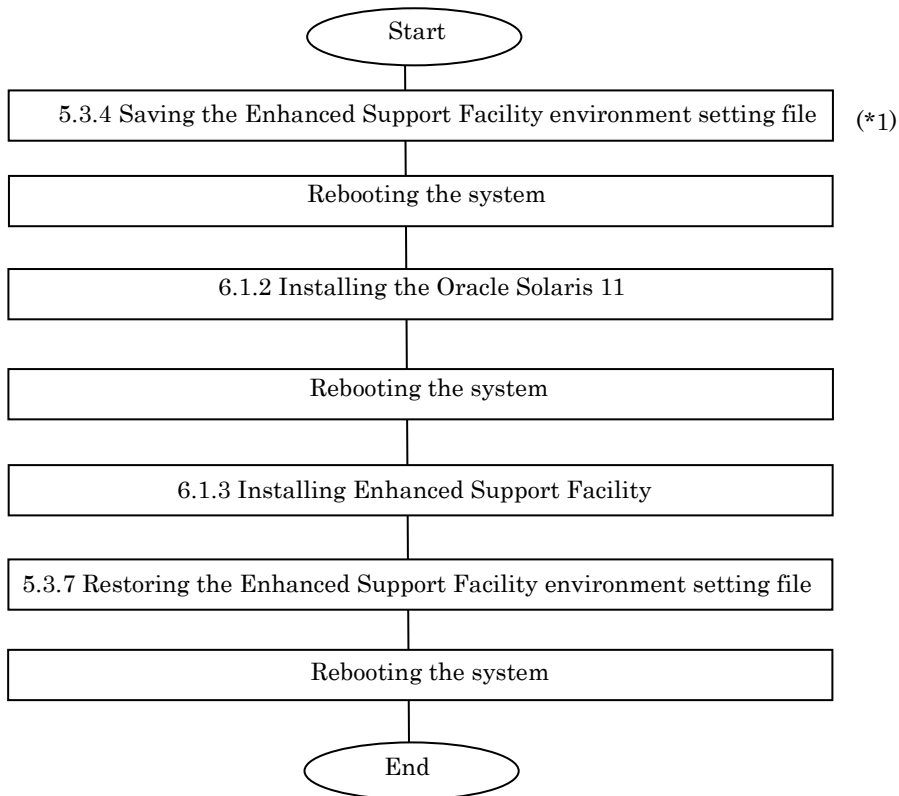


Figure 6.1.1-1 Workflow for OS upgrading

\*1 Before upgrading the OS, be sure to save the Enhanced Support Facility environment setting file and uninstall Enhanced Support Facility.

Please save the environment setting file on a different disk than the system volume disk. The environment setting file will be overwritten.

Regarding saving of environment setting files, refer to “5.3.4 Saving the Enhanced Support Facility environment setting file”

## 6.1.2 Installing the Oracle Solaris 11

Installing the Oracle Solaris 11.

For details, refer to "SPARC Enterprise Server Hardware Platform Guide".

## 6.1.3 Installing Enhanced Support Facility

After OS installation is finished, install Enhanced Support Facility.

For details, refer to Section 5.2.3, "Instructions".

## 6.2 Specifying a Component Group for Installation

For a normal installation, you would install all the packages provided for the target system. In some cases, however, you may wish to install only the required minimum number of packages for a certain requirement level. In such cases, this software provides for installation of packages defined in a component group. You can choose packages to install by specifying a component group based on system requirements.

This appendix explains how to specify an installation component group.

Note) If CORE or BASIC is specified for the component group, some components supplied as functions of this software are not installed.

### 6.2.1 Notes on using the component group specification option

- This option does not support Boot Environments.  
Use the normal installation procedure.

### 6.2.2 Component groups

The components to be installed are determined by specifying a component group.

The following two component groups are provided by this software.

If a component group is not specified, the FULL component group will be installed.

Table 6.2.2-1 Component Groups List

Component-group	Description
CORE	Component group of basic functions of Enhanced Support Facility. Mandatory components for operation of system such as Machine Administration, Server Default Configuration, System Data Output Tool, Crash Dump Assistant, and Auto Dump Analyze Tool will be installed. These components make hardware and software operation more reliable.
BASIC	CORE component group plus user utility components such as auto matic power control.
FULL	BASIC component group plus HRM-S system operation support function. All components including Machine Administration, HRM-S system operation support function will be installed.

See Chapter 2.2, "About an installation specifying the component group and an individual installation" in the "Enhanced Support Facility Technical Guide" for more detail information.

Refer to Appendix C, "Component Programs by Model," for information on the packages that are installed in each component group.

Note) The component groups are mutually exclusive; only one can be selected at a time.

## 6.2.3 Specifying a component group for installation

To specify a component group for installation, use the following component group specification option.

```
Format  esfadd [-O COMPONENT-GROUP]
```

For *COMPONENT-GROUP*, specify the component group to be installed.

Execution example (SPARC Enterprise T5120, Oracle Solaris 11, and BASIC component installation)

- 1) To perform installation, specify the option in the esfadd command.

```
# bin/esfadd -O BASIC <Return>
```

The following message is displayed.

```
Enhanced Support Facility 5.1 will be installed.

Platform: SUNW,SPARC-Enterprise-T5120
OS Release: Solaris 11
COMPONENT GROUP: BASIC

Do you want to continue with this installation? [yes or no ?]: yes <Return>
```

For notes on installation, see Section 5.2.3, "Instructions".

Note: The following message is displayed when a package component which is not included in the specified component group, is installed on the system.

```
Enhanced Support Facility 5.1 will be installed.

Platform: SUNW,SPARC-Enterprise-T5120
OS Release: Solaris 11
COMPONENT GROUP: BASIC

NOTE: The following package(s) not included in the specified component group
is installed.
PACKAGENAME1 PACKAGENAME2

Do you want to continue with this installation? [yes or no ?]:
```

Type "no" to exit the installation and check the system environment.

If the package has been installed by other software, there is no problem about this message. Please continue the installation.

In case of Oracle Solaris 11, update device information inside ZFS storage pool.

```
# /usr/sbin/zpool status <Return>
```

Moreover, for details of messages that are output during installation, refer to "5.2.4 Messages appearing during installation".

- 2) To check the version of each installed package, use the `esfver` command (as in a normal installation).

```
# /opt/FJSVbse/bin/esfver -l <Return>
```

The version of each package is displayed.

```
esfver: INFO: Individual Packages Version of already installed Enhanced
Support Facility.
COMPONENT-GROUP: BASIC
PKGNAME          VERSION      REVISION
-----
FJSVbse          5.1         2013.07.2600
                  :
                  :
FJSVdmp          1.7         2011.08.0300
-----
```

- 3) Use the “`esfrm`” command in single user mode to uninstall Enhanced Support Facility, as usual. The option need not be specified.

```
# bin/esfrm <Return>
```

The following message is displayed. Type "all", "part" or "no".

```
Enhanced Support Facility 5.1 will be removed.
COMPONENT-GROUP: BASIC

FJSVbse          Enhanced Support Facility Information Management
                  (sparc) 5.1,REV=2013.07.2600
                  :
                  :
FJSVdmp          Crash Dump Assistant
                  (sparc) 1.7,REV=2011.08.0300

There is a possibility to cause problem in the system when the
packages where "*" adheres to the head of the package name is deleted.

Please input "all" when you want to remove all packages, input "no"
when you want to interrupt the uninstallation, or input "part" when
you want to remove only packages where "*" does not adhere.

Please select. [no, all or part]:
```

Moreover, for details on messages that are output at the time of removal of ESF, refer to “5.4.3 Messages Displayed when Removing Software”.

### 6.2.3.1 Flowchart of Building Oracle VM Server for SPARC Environment

The following describes how to install the Enhanced Support Facility by specifying component groups to create Oracle VM Server for SPARC.

This chapter explains the installation steps.

- 1) The installation procedure to install the Enhanced Support Facility into the control domain is described in "6.2.3.2 Building Procedure for the Control Domain".
- 2) The installation procedure to install the Enhanced Support Facility into the guest domain is described in "6.2.3.3 Building Procedure for the Guest Domain".

### 6.2.3.2 Building Procedure for the Control Domain

Install the Enhanced Support Facility by specifying component groups.

- 1) Install the OS into the mainframe.  
For more information, please refer to "SPARC Enterprise Server Hardware Platform Guide".
- 2) Install the Enhanced Support Facility by specifying component groups to install the Logical Domains Manager.  
Please refer to "6.2 Specifying a Component Group for Installation".
- 3) Set up the control domain.  
For more information, please refer to "SPARC Enterprise Oracle VM Server for SPARC Guide".
- 4) Set up the guest domain by the control domain.  
For more information, please refer to "SPARC Enterprise Oracle VM Server for SPARC Guide".

### 6.2.3.3 Building Procedure for the Guest Domain

- 1) Install the OS into the guest domain.  
For more information, please refer to "SPARC Enterprise Oracle VM Server for SPARC Guide".
- 2) Install the OS and Enhanced Support Facility into the guest domain you set up.  
Please refer to "6.2 Specifying a Component Group for Installation".

## 6.3 Oracle Solaris zone

Enhanced Support Facility contains features, some of which support Oracle Solaris zone and some do not.

In order to use Oracle Solaris zone, it is necessary to install Enhanced Support Facility components which support Oracle Solaris zone and disable those which do not support Oracle Solaris zone.

In this chapter, the process of installing Enhanced Support Facility components that support Oracle Solaris zone and the process of disabling the components which do not support Oracle Solaris zone will be explained. However, note that the process may differ according to the construction patterns of Oracle Solaris zone.

The following are the supported features of Enhanced Support Facility on Oracle Solaris zone.

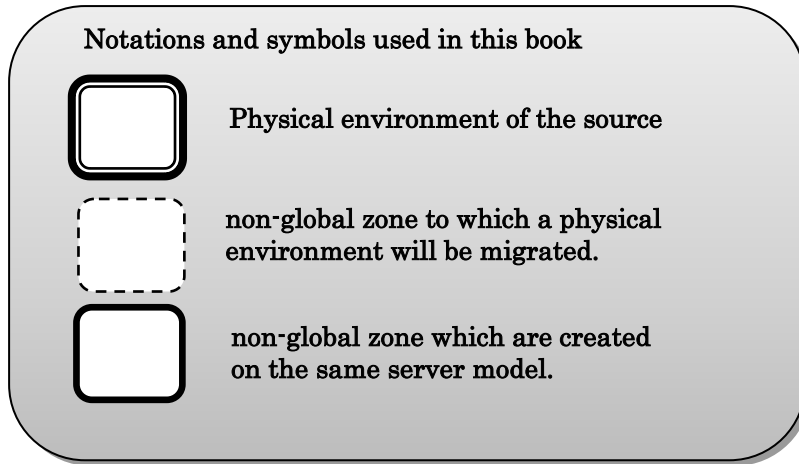
Table 6.3. List of packages which support Oracle Solaris zone

<b>Package</b>	<b>Component</b>	<b>Function</b>
FJSVdef Note)	Server Default Configuration	Provides a feature to enhance server maintenance capability.
FJSVsnap	System Data Output Tool	Collect necessary system information for fault investigation.
FJSVana	Auto Dump Analyze Tool	Provides a tool (cocore) to collect files relating to core dump.

Note: Supports only Oracle Solaris 10 zone.

Moreover, packages can be confirmed by executing the “pkginfo” command on Oracle Solaris zones or by referencing the content of the /opt directory, in which, packages other than the aforesaid ones are present. For information on the Enhanced Support Facility components that are valid in Oracle Solaris zones, refer to “Table 6.3. List of packages which support Oracle Solaris zone”.

The following notations are used to designate each environment.

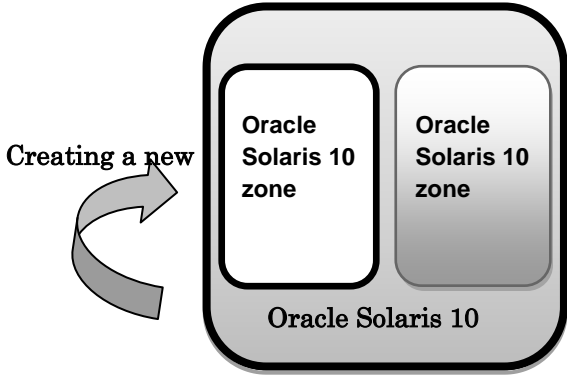


**Construction patterns of Oracle Solaris 10 zone.**

There are two types of construction patterns for Oracle Solaris 10 zone:

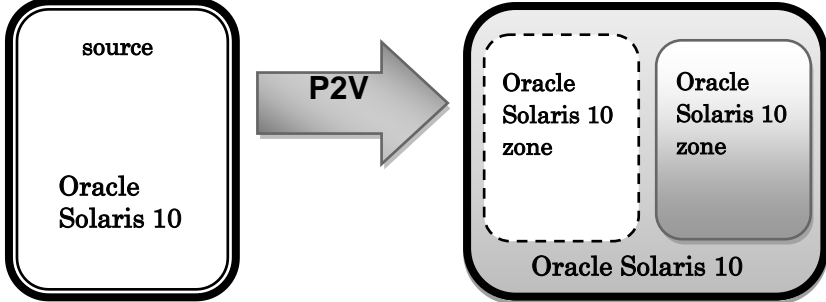
1. Creating a new Oracle Solaris 10 zone.
2. Creating an Oracle Solaris 10 zone from an existing Oracle Solaris 10 system through migration.  
However, if Enhanced Support Facility is installed on the existing Oracle Solaris 10 system, the migration process depends on whether the destination system OS is Oracle Solaris 10 or Oracle Solaris 11.

**Creating a new Oracle Solaris 10 zone**

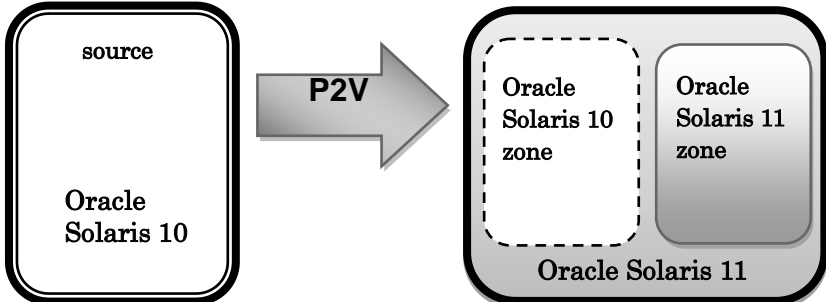
<b>Construction pattern</b>	
<b>Reference</b>	6.3.1.1. Creating a new Oracle Solaris 10 zone



Migrating a source to an Oracle Solaris 10 zone (on an Oracle Solaris 10 system)

<p><b>Construction pattern</b></p>	
<p><b>Reference</b></p>	<p>6.3.1.2 Migrating a source to an Oracle Solaris 10 zone (Oracle Solaris 10 zone on an Oracle Solaris 10 system)</p>

Migrating a source to an Oracle Solaris 10 zone (on an Oracle Solaris 11 system)

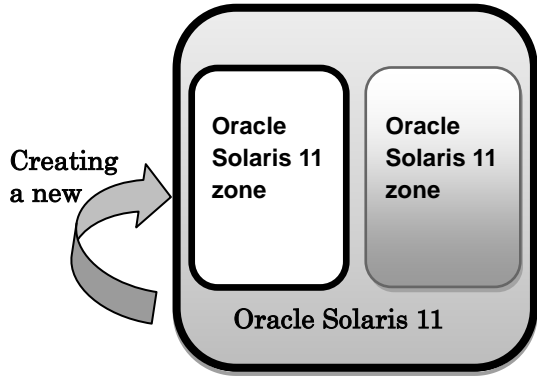
<p><b>Construction pattern</b></p>	
<p><b>Reference</b></p>	<p>6.3.1.3 Migrating a source to an Oracle Solaris 10 zone (Oracle Solaris 10 zone on an Oracle Solaris 11 system)</p>

### Construction pattern of Oracle Solaris 11 zone

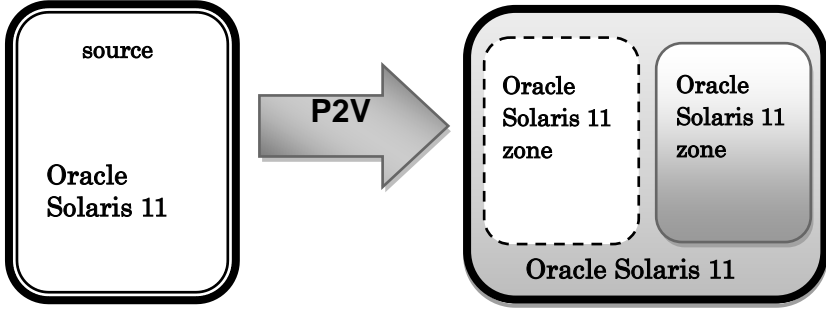
There are two types of construction patterns for Oracle Solaris 10 zone:

1. Creating a new Oracle Solaris 10 zone.
2. Creating an Oracle Solaris 10 zone from an existing Oracle Solaris 11 system through migration.

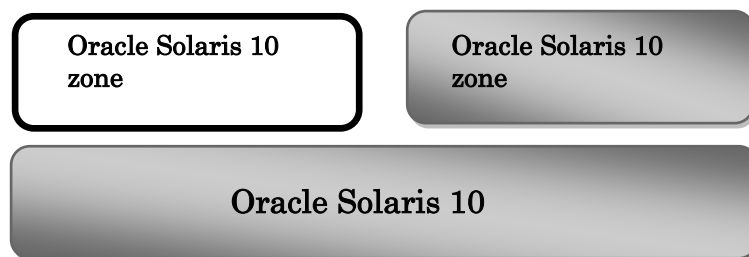
#### Creating a new Solaris 11 zone

<b>Construction pattern</b>	
<b>Reference</b>	6.3.2.1 Creating a new Oracle Solaris 11 zone

#### Migrating a source to an Oracle Solaris 11 zone

<b>Construction pattern</b>	
<b>Reference</b>	6.3.2.2. Migrating a source to an Oracle Solaris 11 zone

## 6.3.1 Oracle Solaris 10 zone



### 6.3.1.1 Creating a new Oracle Solaris 10 zone

If an Oracle Solaris 10 zone is newly created, verify the supported Enhanced Support Facility packages on it using the “pkginfo” command.

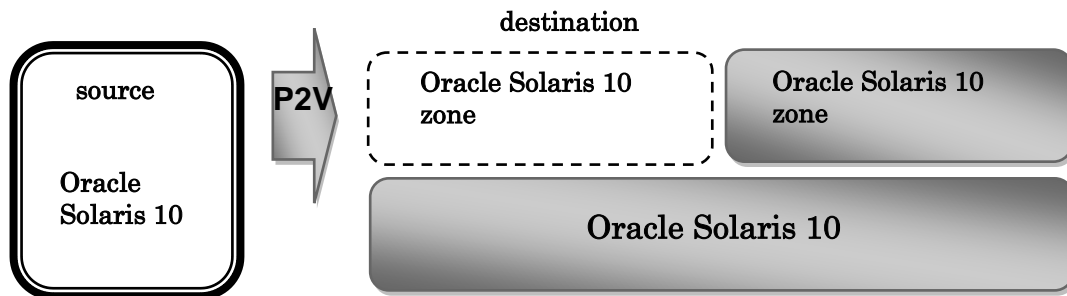
When Enhanced Support Facility is installed on an Oracle Solaris 10 system, the necessary packages are automatically installed on Oracle Solaris 10 zone. After the installation of Enhanced Support Facility is complete, verify that the necessary packages have been installed, after logging in to the system.

Refer to “6.3 Oracle Solaris zone” for packages which support Oracle Solaris 10 zone.

Refer to “6.3.1.4 Verification of packages which support Oracle Solaris zone” for the verification process.

### 6.3.1.2 Migrating a source to an Oracle Solaris 10 zone (Oracle Solaris 10 zone on an Oracle Solaris 10 system)

The process of migrating a physical system to an Oracle Solaris 10 zone on an Oracle Solaris 10 system, will be explained.



To create Oracle Solaris 10 zone on an Oracle Solaris 10 system, the following procedure can be executed:

- In case the source does not contain Enhanced Support Facility.
- In case the source contains Enhanced Support Facility.
  - Remove Enhanced Support Facility at the source (Recommended).
  - Remove Enhanced Support Facility at the destination.

**In case the source does not contain Enhanced Support Facility**

Install the Enhanced Support Facility packages which support Oracle Solaris 10 zone at the destination. Refer to “6.3 Oracle Solaris zone” for supported packages. Refer to “6.3.1.5 Installation of packages which support Oracle Solaris zone.” for installation procedure.

### **In case the source contain Enhanced Support Facility**

Remove Enhanced Support Facility from the source. It is not recommended to remove Enhanced Support Facility at the destination.

There are the following points of attention when removing Enhanced Support Facility from Oracle Solaris 10 zone at the destination.

- As the “esfrm” command is not supported, proper execution of this command is not guaranteed. Remove the necessary packages using the “pkgrm” command.
- The packages which cannot be removed from Oracle Solaris 10 zone, need special management.
- Before undertaking the migration process, confirm whether **124599-01** has been applied to the system.

If it is applied, special management is necessary at the destination.

### **Removing Enhanced Support Facility at the source (recommended)**

- 1) Confirm the version of Enhanced Support Facility, which is installed on the source.

```
# /opt/FJSVbse/bin/esfver -l <Return>
```

- 2) Use a DVD/CD which is of the same version as that obtained from the above command to remove in single user mode the Enhanced Support Facility at the source, with the “esfrm” command.

For details of mounting the DVD/CD, see Appendix F, "Mounting the DVD/CD".

```
# cd /media <Return>
# bin/esfrm <Return>
```

- 3) Verify whether Enhanced Support Facility was removed using the “esfver” command contained in the aforementioned DVD/CD.

```
# bin/esfver <Return>
```

- 4) Migrate to Oracle Solaris 10 zone through P2V.  
Regarding details, please refer to ‘System Administration Guide: Oracle Solaris zones, Oracle Solaris 10 Containers, and Resource Management’.

- 5) Install Oracle Solaris 10 zone supported Enhanced Support Facility packages on the destination. Refer to “6.3 Oracle Solaris zone” for supported packages. Refer to “6.3.1.5 Installation of packages which support Oracle Solaris zone” for details on installation process.

### **Removing Enhanced Support Facility at the destination**

If the source was migrated without first removing Enhanced Support Facility, the packages which does not support Oracle Solaris 10 zone, require special management.

Please refer to “G.1 List of management process of Oracle Solaris 10 zone on Oracle Solaris 10 systems” and use the “pkgrm” command to remove packages one by one after confirming if they were supposed to be removed.

There are the following points of attention when removing Enhanced Support Facility from Oracle Solaris 10 zone at the destination.

- As the “esfrm” command is not supported on Oracle Solaris 10 zone, proper execution of this command is not guaranteed. Moreover, some packages cannot be removed with the “pkgrm” command.
- Start the non-global zone in single user mode and remove the packages.

### **Verifications before migrating**

Confirm the model number, Enhanced Support Facility version number and the installed packages on the source. Moreover, also verify whether **124599-01** has been applied and if applied, special management is necessary at the destination.

The following package cannot be removed from Oracle Solaris 10 zone at the destination. It is necessary to update this package at the source.

**None**

**Regarding packages that need special management at the destination**

Refer to “Appendix G List of management processes from source to an Oracle Solaris zone”for supported packages.

Example: When the source environment is SPARC Enterprise M3000 with Enhanced Support Facility 3.1

**Regarding relevant packages**

The common parts of boxes A and B are relevant packages.

- BOX A: The column whose header is “3.1”among the supported versions of Enhanced Supported Facility at the source.
- BOX B: The column whose heading is “CW”among the supported models.

In case of Enhanced Support Facility 3.1 on SPARC Enterprise M3000 environment, the relevant packages will be “FJSVcflw”, “FJSVdcnf”etc.

**Regarding management**

Execute the procedure described in the “Management”column of the BOX C, as written in “Management of destination”.

No.	Component	Package	The supported versions of Enhanced Support Facility at the source					
			2.5	2.5.1	2.6	3.0	3.0.1	3.1
1	Multipath diagnostic program	FJSVpdia	-	-	-	-	-	-
2	HDD configurator tool	FJSVhdcfg	-	-	-	-	-	-
3	Console flow control canceller	FJSVcflw	-	-	-	-	-	1.0
4	Tape Driver Configuration Tool	FJSVdcnf	1.0	1.0	1.1	1.2	1.2	1.2
5	System Parameter Diagnosis	FJSVparam	1.1	1.1	1.1	1.1	1.1	1.1
6	HCP	FJSVhpc	1.0	1.0	1.0	1.0	1.0	1.0

BOX A

No.	Component	Package	The models that support Enhanced Supported Facility at the source		
			CW	LE	PA
1	Multipath diagnostic program	FJSVpdia	0	0	0
2	HDD configurator tool	FJSVhdcfg	-	-	0
3	Console flow control canceller	FJSVcflw	0	0	-
4	Tape Driver Configuration Tool	FJSVdcnf	0	0	0
5	System Parameter Diagnosis	FJSVparam	0	0	0
6	HCP	FJSVhpc	-	-	-

BOX B

No.	Component	Package	Handling of the destination	
			Package Irremovable/ Removable	Handling
1	Multipath diagnostic program	FJSVpdia	Removable	Remove
2	HDD configurator tool	FJSVhdcfg	Irremovable	Irremovable, not handled
3	Console flow control canceller	FJSVcflw	Irremovable	Irremovable, not handled
4	Tape Driver Configuration Tool	FJSVdcnf	Irremovable	Irremovable, not handled
5	System Parameter Diagnosis	FJSVparam	Irremovable	Management 1
6	HCP	FJSVhpc	Removable	Remove

BOX C

**Management coloumn: Irremovable, Not handled**

The packages which cannot be removed from Oracle Solaris 10 zone.

<b>Relevant packages</b>	FJSVhdcfg, FJSVcflw, FJSVdcnf, FJSVpnl.us, FJSVrlib, FJSVkmmr, FJSVkmsv, FJSVmaom, FJSVscfsc, FJSVpscuj, FJSVpscd, FJSVscuj3, FJSVscd3, FJSVscuj2, FJSVscu2, FJSVscd2, FJSVdropl, FJSVdr
<b>Management</b>	There are no ways to handle these packages.

**Management coloumn: NGZ Usable**

These packages cannot be used on Oracle Solaris 10 zone. Keep them as they are.

**Regarding FJSVsnap**

- **FJSVsnap** : For Enhanced Support Facility 2.5 - 3.2.1 : FJSVsnap VERSION 2.5 - 2.6, update at the destination, please keep it on Oracle Solaris 10 zone.

<b>Relevant packages</b>	FJSVana, FJSVsnap, FJSVdef
<b>Management</b>	There are no ways to handle these packages.

**• FJSVana**

<b>Management</b>	There are no ways to handle these packages.
<b>Remarks</b>	It is necessary to keep FJSVana on Oracle Solaris 10 zone, as it provides a dump file collection tool (cocore).

**• FJSVsnap**

<b>Management</b>	There are no ways to handle these packages.
<b>Remarks</b>	FJSVsnap is necessary for fault investigation. It is necessary to keep FJSVsnap on Oracle Solaris 10 zone.

**• FJSVdef**

<b>Management</b>	There are no ways to handle these packages.
<b>Remarks</b>	As FJSVdef is used to increase the maintainability of the server, it should be kept on Oracle Solaris 10 zone.

**Management coloumn: Remove**

The following packages are supposed to be removed from Oracle Solaris 10 zone. Please remove them.

<b>Relevant packages</b>	FJSVpdiag, FJSVhcp, FJSVgidad.us, FJSVcpupd, FJSVdmp, FSUNlic, FJSVapcwv, FJSVapcs, FJSVsirms, FJSVrrda, FJSVracm, FJSVrmaos, FJSVragt, FJSVpmmr, FJSVcmrm2, FJSVcmrm, FJSVsmrm, FJSVmarm, FJSVamrm, FJSVlrmr, FJSVpmadm, FJSVamcl, FJSVamadm, FJSVamle, FJSVpmnd, FJSVcmnd, FJSVsmnd, FJSVmand, FJSVmasv, FJSVmadm, FJSVvts, SUNWvtsx, SUNWvtsmn, SUNWvts, FJSVlscuj, FJSVlscu, FJSVlscr, FJSVlscd, FJSVlscdx, FJSVscuja, FJSVscu.us, FJSVscr.us, FJSVscd.us, FJSVscdx.us, FJSVbse
<b>Management</b>	Please remove these packages from Oracle Solaris 10 zone using the "pkgrm" command.
<b>Remarks</b>	If the name of the package includes ".us", remove it before executing the "pkgrm" command when using this package name as a parameter to the command Example: When "FJSVgidad.us". my-zone# <b>pkgrm FJSVgidad</b> <Return>

- 1) Remove packages with the "pkgrm" command.

```
my-zone# pkgrm FJSVxxx <Return>

my-zone#
```

my-zone: non-global zone name



**Management coloumn: Remove after checking**

Please check whether FJSVwvbs and FJSVwvcnf are not used by other middleware software.

Remove FJSViomp after checking whether FJSVmplb and FJSVmpnet are not used by other middleware software. Check whether the package is used by other middleware software. If there is no problem in removing the package, remove it.

<b>Relevant packages</b>	FJSVwvbs,FJSVwvcnf,FJSViomp
<b>Management</b>	Confirm the “points to be checked”of the target package and remove the package from Oracle Solaris 10 zone using the “pkgrm”command.

- 1) Remove packages with the “pkgrm”command.

```
my-zone# pkgrm FJSVxxx <Return>
my-zone#
```

*my-zone*: non-global zone name

**Points to be checked of the target package.****• FJSVwvbs, FJSVwvcnf**

<b>Management</b>	Before removing the target package, confirm the following and then, remove the target package from Oracle Solaris 10 zone.
<b>Confirmation</b>	Check whether FJSVwvbs and FJSVwvcn are used by other middleware software. <ul style="list-style-type: none"> <li>• Remove FJSVwvbs and FJSVwvcnf after confirming that they are not used by other products. <ul style="list-style-type: none"> <li>- PRIMECLUSTER</li> </ul> </li> </ul>

**• FJSViomp**

<b>Management</b>	Before removing the target package, confirm the following and then, remove the target package from Oracle Solaris 10 zone.
<b>Remarks</b>	Remove FJSViomp after confirming that FJSVmplb and FJSVmpne are not used by other middleware software. <ul style="list-style-type: none"> <li>• FJSViomp has dependence relationship with FJSVmplb. <ul style="list-style-type: none"> <li>FJSVmplb is installed in the following product. <ul style="list-style-type: none"> <li>- ETERNUS Multipath Driver</li> </ul> </li> </ul> </li> <li>• FJSViomp has dependence relationship with FJSVmpnet. <ul style="list-style-type: none"> <li>FJSVmpnet is installed in the following product. <ul style="list-style-type: none"> <li>- PRIMECLUSTER(Notes) <ul style="list-style-type: none"> <li>Notes: PRIMECLUSTER GDS,PRIMECLUSTER GFS are excluded.</li> </ul> </li> </ul> </li> </ul> </li> </ul>

**Management coloumn: Management 1 to 11.**

Handle every package separately without deleting them as a whole on Oracle Solaris 10 zone.

<b>Relevant packages</b>	FJSVparam,FJSVsec,FJSVse,FJSVwarn.us,FJSVssf,FJSVkmnd, FJSVpscui,FJSVpscr,FJSVscu3,FJSVscr3,FJSVscr2
<b>Management</b>	Manage Oracle Solaris 10 zone after referring to the following.

**•Management 1 FJSVparam**

<b>Management</b>	Confirm the following daemon startup script and remove it if it exists. (Execute on Oracle Solaris 10 zone)  Confirmation of the statup script: If the following startup scripts exist, remove them. - /etc/rcS.d/K35FJSVparam - /etc/rc0.d/K35FJSVparam - /etc/rc1.d/K35FJSVparam - /etc/rc2.d/S80FJSVparam  # rm /etc/rcS.d/K35FJSVparam # rm /etc/rc0.d/K35FJSVparam # rm /etc/rc1.d/K35FJSVparam # rm /etc/rc2.d/S80FJSVparam
-------------------	---

**•Management 2 FJSVsec**

<b>Management</b>	Confirm the following daemon startup script and remove it if it exists. (Execute on Oracle Solaris 10 zone)  Confirmation of the statup script: If the following startup scripts exist, remove them. - /etc/rcS.d/S60fjsv,se_devlinks  # rm /etc/rcS.d/S60fjsv,se_devlinks
-------------------	--

**•Management 3 FJSVse**

<b>Management</b>	Confirm the following daemon startup script and remove it if it exists. (Execute on Oracle Solaris 10 zone)  Confirmation of the statup script: If the following startup scripts exist, remove them. - /etc/rcS.d/S60fjsv,se_devlinks  # rm /etc/rcS.d/S60fjsv,se_devlinks
-------------------	--

•Management 4 FJSVwarn.us

<b>Management</b>	<p>Confirm the following SMF (Service Management Facility) service and stop it if it exists. (Execute on Oracle Solaris 10 zone)</p> <p>1. Confirmation of the service: Confirm the existence of the service with the following command. # svcs -a   grep fjsvwarn</p> <p>Confirm whether the following service exists. If it exists, it is to be stopped. svc:/system/fjsvwarn</p> <p>2. Stopping the service: Stop the SMF daemon using the following command. # svcadm disable svc:/system/fjsvwarn</p>
-------------------	--

•Management 5 FJSVssf

<b>Management</b>	<p>Confirm the following SMF (Service Management Facility) service and stop it if it exists. (Execute on Oracle Solaris 10 zone)</p> <p>1. Confirmation of the service: Confirm the existence of the service with the following command. # svcs -a   grep fjsvssf</p> <p>Confirm whether the following service exists. If it exists, it is to be stopped. svc:/system/fjsvssf-limstrerr:default</p> <p>2. Stopping the service: Stop the SMF daemon using the following command. # svcadm disable svc:/system/fjsvssf-limstrerr:default</p>
-------------------	---

•Management 6 FJSVkmnd

<p><b>Management</b></p>	<p>* Execute in single-user mode. Do not execute in multi-user mode.</p> <p>1. Confirm the following daemon startup script and remove it if it exists. (Execute on Oracle Solaris 10 zone)</p> <p>1). Confirmation of the statup script: If the following startup scripts exist, remove them.</p> <pre>- /etc/rc0.d/K00FJSVconspath - /etc/rc0.d/K00FJSVmadm - /etc/rc1.d/K00FJSVmadm - /etc/rc2.d/S39FJSVevsnd - /etc/rc2.d/S90FJSVconspath - /etc/rc2.d/S98FJSVmadm</pre> <pre># rm /etc/rc0.d/K00FJSVconspath # rm /etc/rc0.d/K00FJSVmadm # rm /etc/rc1.d/K00FJSVmadm # rm /etc/rc2.d/S39FJSVevsnd # rm /etc/rc2.d/S90FJSVconspath # rm /etc/rc2.d/S98FJSVmadm</pre> <p>2. Confirmation of the SMF: Remove the SMF (Service Management Facility) service it if it exists. (Execute on Oracle Solaris 10 zone)</p> <p>1). Confirmation of the service: Confirm the existence of the service with the following command.</p> <pre># svcs -a   grep fjsvmadm</pre> <p>Confirm whether the following service exists. If it exists, it is to be removed.</p> <pre>disabled      14:37:14 svc:/system/fjsvmadm-evhandsd:default</pre> <p>2). Removing the service: Removep the SMF daemon using the following command.</p> <pre># echo "/usr/sbin/svcadm disable svc:/system/fjsvmadm-evhandsd:default" &gt;&gt; /var/svc/profile/upgrade # echo "/usr/sbin/svccfg -s smf/manifest delpg var_svc_manifest_system_fjsvmadm-evhandsd_xml" &gt;&gt; /var/svc/profile/upgrade # echo "/usr/sbin/svccfg delete svc:/system/fjsvmadm-evhandsd" &gt;&gt; /var/svc/profile/upgrade # echo "/usr/sbin/svccfg delete svc:/system/fjsvmadm-evhandsd:default" &gt;&gt; /var/svc/profile/upgrade</pre>
--------------------------	--

•Management 7 FJSVpscu

<b>Management</b>	<p>Confirm and stop the following cron entry. (Execute on Oracle Solaris 10 zone)</p> <p>1. Confirmation of cron: Confirm whether /opt/FJSVhwr/procedure/scftzone is setup in cron.</p> <pre># crontab -l 1 * * * * /opt/FJSVhwr/procedure/scftzone    ##FJSVpscr</pre> <p>2. Stopping cron: If /opt/FJSVhwr/procedure/scftzone is setup, change the setup that it does not run.</p> <p>Setting up of editor. (in case of bsh/ksh) # EDITOR=vi ; export EDITOR (In case of csh) # setenv EDITOR vi</p> <p>Execute crontab. # crontab -e root</p> <p>Comment out scftzone setup.</p> <pre>1 * * * * /opt/FJSVhwr/procedure/scftzone    ##FJSVpscr ↓ #1 * * * * /opt/FJSVhwr/procedure/scftzone    ##FJSVpscr</pre>
-------------------	---

•Management 8 FJSVpscr

<b>Management</b>	<p>Confirm the following daemon startup script and remove it if it exists. (Execute on Oracle Solaris 10 zone)</p> <p>1. Confirmation of the statup script: If the following startup scripts exist, remove them.</p> <pre>- /etc/rc0.d/K00FJSVscf - /etc/rc0.d/K99scf - /etc/rc2.d/S90FJSVscf - /etc/rcS.d/S90FJSVscfdaemon  # rm /etc/rc0.d/K00FJSVscf # rm /etc/rc0.d/K99scf # rm /etc/rc2.d/S90FJSVscf # rm /etc/rcS.d/S90FJSVscfdaemon</pre> <p>2. Confirmation of daemons: Confirm whether the following daemons exist.</p> <pre>/sbin/FJSVhwr/daemon/pwrctrld</pre> <p>If the daemon exists, execute forced termination of the daemon using the “kill -9”command.</p>
-------------------	---

•Management 9 FJSVscu3

<p><b>Management</b></p>	<p>Confirm and stop the following cron entry. (Execute on Oracle Solaris 10 zone)</p> <p>1. Confirmation of cron: Confirm whether /opt/FJSVhwr/procedure/scfdaily is setup in cron.</p> <pre># crontab -l /opt/FJSVhwr/procedure/scfdaily</pre> <p>2. Stopping cron: If /opt/FJSVhwr/procedure/scfdaily is setup, change the setup that it does not run.</p> <p>Setting up of editor. (in case of bsh/ksh) # EDITOR=vi ; export EDITOR (In case of csh) # setenv EDITOR vi</p> <p>Execute crontab. # crontab -e root</p> <p>Comment out scfdaily setup.</p> <pre>0 1 * * * /opt/FJSVhwr/procedure/scfdaily ##FJSVscr3 ↓ #0 1 * * * /opt/FJSVhwr/procedure/scfdaily ##FJSVscr3</pre>
--------------------------	---

•Management 10 FJSVscr3

<p><b>Management</b></p>	<p>Confirm the following daemon startup script and remove it if it exists. (Execute on Oracle Solaris 10 zone)</p> <p>1. Confirmation of the statup script: If the following startup scripts exist, remove them.</p> <pre>- /etc/rc0.d/K00FJSVscf - /etc/rc0.d/K99scf - /etc/rc2.d/S90FJSVscf - /etc/rcS.d/S90FJSVscfdaemon</pre> <pre># rm /etc/rc0.d/K00FJSVscf # rm /etc/rc0.d/K99scf # rm /etc/rc2.d/S90FJSVscf # rm /etc/rcS.d/S90FJSVscfdaemon</pre> <p>2. Confirmation of daemons: Confirm whether the following daemons exist.</p> <pre>/sbin/FJSVhwr/daemon/pwrctrld</pre> <p>If the daemon exists, execute forced termination of the daemon using the “kill -9”command.</p>
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•Management 11 FJSVscr2

<b>Management</b>	<p>Confirm the following daemon startup script and remove it if it exists. (Execute on Oracle Solaris 10 zone)</p> <p>1. Confirmation of the statup script: If the following startup scripts exist, remove them.</p> <ul style="list-style-type: none"> <li>- /etc/rc0.d/K00FJSVscf</li> <li>- /etc/rc0.d/K99scf</li> <li>- /etc/rc2.d/S90FJSVscf</li> <li>- /etc/rcS.d/S90FJSVscfdaemon</li> </ul> <pre># rm /etc/rc0.d/K00FJSVscf # rm /etc/rc0.d/K99scf # rm /etc/rc2.d/S90FJSVscf # rm /etc/rcS.d/S90FJSVscfdaemon</pre> <p>2. Confirmation of daemons: Confirm whether the following daemons exist.</p> <pre>/sbin/FJSVhwr/daemon/pwrctrld</pre> <p>If the daemon exists, execute forced termination of the daemon using the “kill -9”command.</p>
-------------------	---

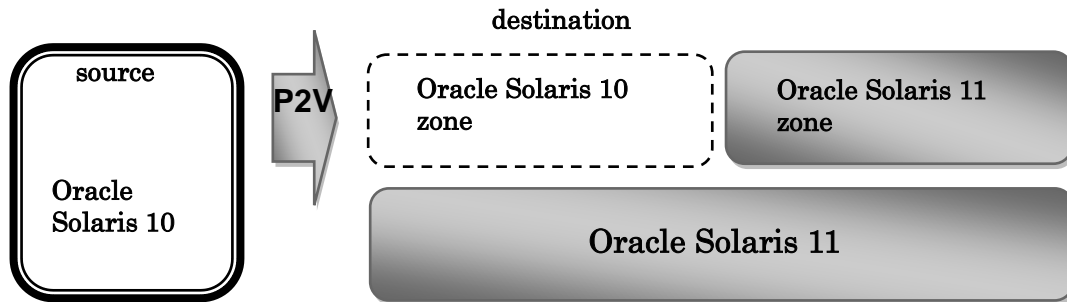
**Management procedure when 124599-01 is applied to the system before migration**

If 124599-01 is applied to the source, remove the related“fjsvdrvaliases” service, method and manifest files, as this service is unnecessary on Oracle Solaris 10 zone.

<b>Management</b>	<p>1. Execute the svccfg command.</p> <pre># svccfg</pre> <p>2. Remove the svc:/platform/sun4us/fjsvdrvaliases:default service.</p> <pre>svc:&gt; delete svc:/platform/sun4us/fjsvdrvaliases:default svc:&gt; end</pre> <p>3. Confirm that the service has been removed.</p> <pre># svcs svc:/platform/sun4us/fjsvdrvaliases:default svcs: Pattern 'svc:/platform/sun4us/fjsvdrvaliases:default' doesn't match any instances STATE          STIME          FMRI</pre> <p>4. Remove the method file and the manifest file.</p> <pre># rm /lib/svc/method/fjsvdrvaliases # rm /var/svc/manifest/platform/sun4us/fjsvdrvaliases.xml</pre> <p>5. Remove the log file.</p> <pre># rm /var/svc/log/platform-sun4us-fjsvdrvaliases:default.log # rm /etc/svc/volatile/platform-sun4us-fjsvdrvaliases:default.log</pre>
-------------------	---

### 6.3.1.3 Migrating a source to an Oracle Solaris 10 zone (Oracle Solaris 10 zone on an Oracle Solaris 11 system)

The procedure to migrate Oracle Solaris 10 zone on Oracle Solaris 11 will be discussed.



To create Oracle Solaris 10 zone on an Oracle Solaris 11 system, the following procedure can be executed:

- In case the source does not contain Enhanced Support Facility.
- In case the source contains Enhanced Support Facility.
  - Remove Enhanced Support Facility at the source.
  - Remove Enhanced Support Facility at the destination (Recommended).

#### **In case Enhanced Support Facility is not included in the source**

Install supported Enhanced Support Facility packages on the destination Oracle Solaris 10 zone. Regarding supported packages, refer to "6.3 Oracle Solaris zone". Regarding the installation procedure, refer to "6.3.1.5 Installation of packages which support Oracle Solaris zone".



### **In case Enhanced Support Facility is included in the source**

If packages that are supported by Oracle Solaris 10 zones have updates, install the updated packages to Oracle Solaris zones to render them to the latest version.

For information on packages that are supported by Oracle Solaris 10 zones, refer to "Table 6.3. List of packages which support Oracle Solaris zone" of "6.3 Oracle Solaris zone". For the method of package installation, refer to "6.3.1.5 Installation of packages which support Oracle Solaris zone".

### **Removing Enhanced Support Facility at the source**

- 1) Confirm the version of Enhanced Support Facility, which is installed on the source.

```
# /opt/FJSVbse/bin/esfver -l <Return>
```

- 2) Use a DVD/CD which is of the same version as that obtained from the above command to remove a single user mode to Enhanced Support Facility at the source, with the "esfrm" command.

For details of mounting the DVD/CD, see Appendix F, "Mounting the DVD/CD".

```
# cd /media <Return>
# bin/esfrm <Return>
```

- 3) Verify whether Enhanced Support Facility was removed using the "esfver" command contained in the aforementioned DVD/CD.

```
# bin/esfver <Return>
```

- 4) Migrate to Oracle Solaris 10 zone through P2V.  
Regarding details, please refer to 'System Administration Guide: Oracle Solaris zones, Oracle Solaris 10 Containers, and Resource Management'.
- 5) Install Oracle Solaris 10 zone supported Enhanced Support Facility packages on the destination. Refer to "6.3 Oracle Solaris zone" for supported packages. Refer to "6.3.1.5 Installation of packages which support Oracle Solaris zone" for details on installation process.

### Removing Enhanced Support Facility at the destination

As the “esfrm” command is not supported on Oracle Solaris 10 zone, proper execution of this command is not guaranteed. Regarding management, refer to “G.2 List of management process of Oracle Solaris 11 zone on Oracle Solaris 10 systems” and execute the “pkgrm” command to remove the packages one by one in the given order.

### Regarding packages that are to be handled

Please refer to “G.2 List of management process of Oracle Solaris 11 zone on Oracle Solaris 10 systems” and “Regarding packages that need special management at the destination” of “6.3.1.2 Migrating a source to an Oracle Solaris 10 zone (Oracle Solaris 10 zone on an Oracle Solaris 10 system)” regarding the target packages.

- 1) Start Oracle Solaris 10 zone in single user mode.

```
global# /usr/sbin/zoneadm -z my-zone shutdown <Return>
global# /usr/sbin/zoneadm -z my-zone boot -s <Return>
```

**my-zone**: Name of non-global zone (same hereinafter)

- 2) Log in to Oracle Solaris 10 zone.

```
global# /usr/sbin/zlogin -C my-zone <Return>
[Connected to zone 'my-zone' console]
my-zone console login: loginID <Return>
Password: ***** <Return>
Last login: LoginID on console
Oracle Corporation SunOS 5.10 Generic Patch January 2005
my-zone$ su <Return>
Password: ***** <Return>
my-zone#
```

- 3) Mount the required file system.

```
my-zone# /usr/sbin/zfs mount -a <Return>
```

- 4) Use the “pkgrm” command to remove packages. The “esfrm” command cannot be used on Oracle Solaris 10 zone.

```
my-zone# /usr/sbin/pkgrm FJSVxxxx <Return>
```

- 5) Log out from non-global zone. Input ‘~.’ (childer + dot).

```
my-zone# exit <Return>
my-zone$ exit <Return>
my-zone console login: ~. <Return>
[Connection to zone 'my-zone' console closed]
global#
```

- 6) Reboot the Oracle Solaris 10 zone.

```
global# /usr/sbin/zoneadm -z my-zone reboot <Return>
```

- 7) Install Oracle Solaris 10 zone supported Enhanced Support Facility packages on the destination. Refer to “6.3 Oracle Solaris zone” for supported packages. Refer to “6.3.1.5 Installation of packages which support Oracle Solaris zone” for details on installation process.

### 6.3.1.4 Verification of packages that are supported by Oracle Solaris zone.

The process of verification of Enhanced Support Facility packages that are supported by Oracle Solaris zone is explained.

- 1) Log in to Oracle Solaris zone.

```
global# /usr/sbin/zlogin -C my-zone <Return>
[Connected to zone 'my-zone' console]
my-zone console login : loginID <Return>
Password: ***** <Return>
Last login: LoginID on console
Oracle Corporation SunOS 5.11 11.0 November 2011
my-zone$ su <Return>
Password: ***** <Return>
my-zone#
```

**my-zone**: Name of non-global zone (same hereinafter)

- 2) Mount the required file system.

```
my-zone# /usr/sbin/zfs mount -a <Return>
```

When installing in a directory on a UFS file system, execute the following commands.

```
# /usr/sbin/mountall -l <Return>
```

Note) If there are some file systems (/opt) which are not mounted by the 'mountall -l' command while you are making preparations for the patch application, please mount them by the mount(1M) command one by one.

- 3) Confirm that the packages have been installed.

#### When Oracle Solaris 11

```
my-zone# /usr/bin/pkginfo FJSVsnap FJSVana <Return>
application FJSVana Auto Dump Analyze Tool
application FJSVsnap System Information Output Tool
```

#### When Oracle Solaris 10

```
my-zone# /usr/bin/pkginfo FJSVdef FJSVsnap FJSVana <Return>
application FJSVana Auto Dump Analyze Tool
application FJSVsnap System Information Output Tool
system FJSVdef Server Default Configuration package
```

- 4) Log out from Oracle Solaris zone. Input '~.' (childer + dot).

```
my-zone# exit <Return>
my-zone$ exit <Return>
my-zone console login: ~. <Return>
[Connection to zone 'my-zone' console closed]
global#
```

### 6.3.1.5 Installation of packages which support Oracle Solaris zone

The installation procedure of supported Enhanced Support Facility packages on Oracle Solaris zone is explained.

It is necessary to install this product packages on Oracle Solaris zone, by logging in to them. Package installation procedure is explained below. Refer to “6.3 Oracle Solaris zone” for information on supported packages.

As a premise, use the `pkg(1)` command to install the `gettxt` command and the Japanese language locale on the Oracle Solaris zone beforehand. These are used to run FJSVsnap and FJSVana.

- `pkg:/text/locale`
- `pkg:/system/locale/extra`

- 1) Insert this product DVD/CD into the DVD/CD drive.
- 2) It becomes root (super user).

```
% /usr/bin/su - <Return>
Password: password <Return>
global#
```

- 3) The DVD/CD that belongs to the global zone is set up to be mounted on the Oracle Solaris zone. The following is an example of the set up. Regarding details, please refer to ‘System Administration Guide: Oracle Solaris zones, Oracle Solaris 10 Containers, and Resource Management’. If the setup has already been done, please move to step 5).

```
global# /usr/sbin/zonecfg -z my-zone <Return>
zonecfg:my-zone> add fs <Return>
zonecfg:my-zone:fs> set dir=/media <Return>
zonecfg:my-zone:fs> set special=/media <Return>
zonecfg:my-zone:fs> set type=lofs <Return>
zonecfg:my-zone:fs> end <Return>
zonecfg:my-zone> verify <Return>
zonecfg:my-zone> commit <Return>
zonecfg:my-zone> exit <Return>
```

**my-zone**: Name of non-global zone (same hereinafter)

**media**: Directory name of the global zone DVD/CD drive (same hereinafter)

- 4) Start Oracle Solaris zone in single user mode.

```
global# /usr/sbin/zonecfg -z my-zone <Return>
global# /usr/sbin/zoneadm -z my-zone boot -s <Return>
```

- 5) Log in to Oracle Solaris zone.

```
global# /usr/sbin/zlogin -C my-zone <Return>
[Connected to zone 'my-zone' console]
my-zone console login: LoginID <Return>
Password: ***** <Return>
Last login: LoginID on console
Oracle Corporation SunOS 5.11 11.0 November 2011
my-zone$ su <Return>
Password: ***** <Return>
my-zone#
```

- 6) Mount the required file system.

```
my-zone# /usr/sbin/zfs mount -a <Return>
```

When installing in a directory on a UFS file system, execute the following commands.

```
# /usr/sbin/mountall -l <Return>
```

Note) If there are some file systems (/opt) which are not mounted by the 'mountall -l' command while you are making preparations for the patch application, please mount them by the mount(1M) command one by one.

- 7) Confirm that the following packages can be referenced from the DVD/CD of the global zone.

**When Oracle Solaris 11**

**FJVSsnap, FJSVana**

```
my-zone# cd /media/Platform/CW/11 <Return>
my-zone# ls <Return>
```

**When Oracle Solaris 10**

**FJSVdef, FJVSsnap, FJSVana**

```
my-zone# cd /media/Platform/CW/10 <Return>
my-zone# ls <Return>
```

- 8) Install packages with the pkgadd(1M) command. Use the "pkgrm" command to remove packages. The "esfrm" command cannot be used on Oracle Solaris zone.

**When Oracle Solaris 11**

```
my-zone# /usr/sbin/pkgadd -d /media/Platform/CW/11 FJVSsnap FJSVana
<Return>
```

**When Oracle Solaris 10**

```
my-zone# /usr/sbin/pkgadd -d /media/Platform/CW/10 FJSVdef FJVSsnap
FJSVana <Return>
```

- 9) Confirm that the packages have been installed.

**When Oracle Solaris 11**

```
my-zone# /usr/bin/pkginfo FJVSsnap FJSVana <Return>
application FJSVana Auto Dump Analyze Tool
application FJVSsnap System Information Output Tool
```

**When Oracle Solaris 10**

```
my-zone# /usr/bin/pkginfo FJSVdef FJVSsnap FJSVana <Return>
application FJSVana Auto Dump Analyze Tool
application FJVSsnap System Information Output Tool
system      FJSVdef Server Default Configuration package
```

- 10) Log out from Oracle Solaris zone. Input '~.' (childer + dot).

```
my-zone# exit <Return>
my-zone$ exit <Return>
my-zone console login: ~. <Return>
[Connection to zone 'my-zone' console closed]
global#
```

- 11) Release the DVD/CD drive of the global zone. The following is an example.

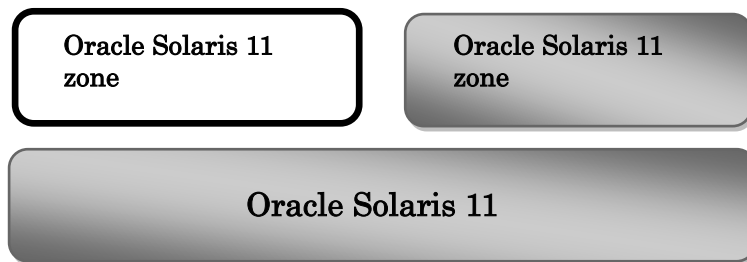
```
global# /usr/sbin/zoncfg -z my-zone <Return>
zoncfg:my-zone> remove fs dir=/media <Return>
zoncfg:my-zone> verify <Return>
zoncfg:my-zone> commit <Return>
zoncfg:my-zone> exit <Return>
```

- 12) Reboot the Oracle Solaris zone.

```
global# /usr/sbin/zoneadm -z my-zone reboot <Return>
```

- 13) Eject this product DVD/CD.

## 6.3.2 Oracle Solaris 11 zone



### 6.3.2.1 Creating a new Oracle Solaris 11 zone

If a new Oracle Solaris 11 zone is created, supported Enhanced Support Facility packages are to be installed on the Oracle Solaris 11 zone, using the “pkgadd” command.

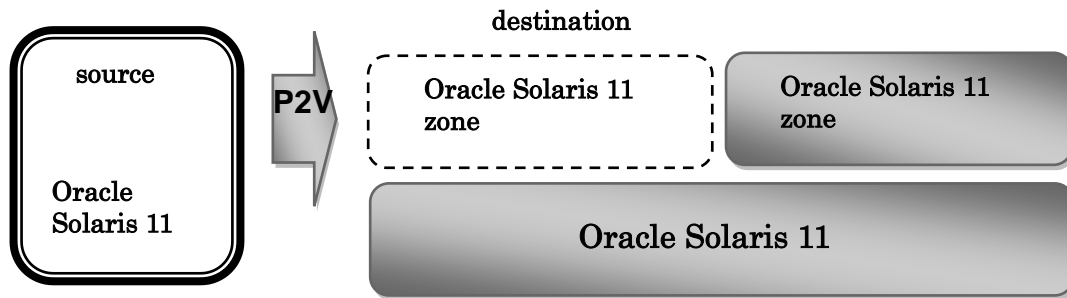
As a premise, use the pkg(1) command to install the gettext command and the Japanese language locale on the Oracle Solaris 11 zone beforehand. These are used to run FJSVsnap and FJSVana.

- pkg:/text/locale
- pkg:/system/locale/extra

Regarding the installation procedure, refer to “6.3.1.5 Installation of packages which support Oracle Solaris zone”.

### 6.3.2.2 Migrating a source to an Oracle Solaris 11 zone

The process of migrating a physical system to an Oracle Solaris 11 zone on an Oracle Solaris 11 system, will be explained.



To create Oracle Solaris 11 zone on an Oracle Solaris 11 system, the following procedure can be executed:

- In case the source does not contain Enhanced Support Facility.
- In case the source contains Enhanced Support Facility.
  - Remove Enhanced Support Facility at the source.
  - Remove Enhanced Support Facility at the destination (Recommended).

#### **In case the source does not contain Enhanced Support Facility**

Install the Enhanced Support Facility packages which support Oracle Solaris 11 zone at the destination. Refer to “6.3 Oracle Solaris zone” for supported packages. Refer to “6.3.1.5 Installation of packages which support Oracle Solaris zone.” for installation procedure.



### **In case of Enhanced Support Facility is included in the source**

If packages that are supported by Oracle Solaris 11 zones have updates, install the updated packages to Oracle Solaris zones to render them to the latest version.

For information on packages that are supported by Oracle Solaris 11 zones, refer to "Table 6.3. List of packages which support Oracle Solaris zone" of "6.3 Oracle Solaris zone". For the method of package installation, refer to "6.3.1.5 Installation of packages which support Oracle Solaris zone".

### **Removing Enhanced Support Facility at the source**

- 1) Confirm the version of Enhanced Support Facility, which is installed on the source.

```
# /opt/FJ5Vbse/bin/esfver -l <Return>
```

- 2) Use a DVD/CD which is of the same version as that obtained from the above command to remove a single user mode to Enhanced Support Facility at the source, with the "esfrm" command.

For details of mounting the DVD/CD, see Appendix F, "Mounting the DVD/CD".

```
# cd /media <Return>
# bin/esfrm <Return>
```

- 3) Verify whether Enhanced Support Facility was removed using the "esfver" command contained in the aforementioned DVD/CD.

```
# bin/esfver <Return>
```

- 4) Migrate to Oracle Solaris 11 zone through P2V.

Regarding details, please refer to 'System Administration Guide: Oracle Solaris zones, Oracle Solaris 10 Containers, and Resource Management'.

- 5) Install Oracle Solaris 11 zone supported Enhanced Support Facility packages on the destination. Refer to "6.3 Oracle Solaris zone" for supported packages. Refer to "6.3.1.5 Installation of packages which support Oracle Solaris zone" for details on installation process.

### Removing Enhanced Support Facility at the destination

As the “esfrm” command is not supported on Oracle Solaris 11 zone, proper execution of this command is not guaranteed. Refer to “G.3 List of management process of Oracle Solaris 11 zone on Oracle Solaris 11 systems” and install packages on Oracle Solaris 11 zone with the “pkgrm” command in the given order.

### Regarding packages that are to be handled

Please refer to “G.3 List of management process of Oracle Solaris 11 zone on Oracle Solaris 11 systems” and “6.3.1.5 Installation of packages which support Oracle Solaris zone” regarding the target packages.

- 1) Start Oracle Solaris 11 zone in single user mode.

```
global# /usr/sbin/zoneadm -z my-zone shutdown <Return>
global# /usr/sbin/zoneadm -z my-zone boot -s <Return>
```

**my-zone**: Name of non-global zone (same hereinafter)

- 2) Log in to Oracle Solaris 11 zone.

```
global# /usr/sbin/zlogin -C my-zone <Return>
[Connected to zone 'my-zone' console]
my-zone console login: LoginID <Return>
Password: ***** <Return>
Last login: LoginID on console
Oracle Corporation SunOS 5.11 11.0 November 2011
my-zone$ su <Return>
Password: ***** <Return>
my-zone#
```

- 3) Mount the required file system.

```
my-zone# /usr/sbin/zfs mount -a <Return>
```

- 4) Use the “pkgrm” command to remove packages.  
The “esfrm” command cannot be used on Oracle Solaris 11 zone.

```
my-zone# /usr/sbin/pkgrm FJSVxxxx <Return>
```

- 5) Log out from non-global zone. Input ‘~.’ (childer + dot).

```
my-zone# exit <Return>
my-zone$ exit <Return>
my-zone console login: ~. <Return>
[Connection to zone 'my-zone' console closed]
global#
```

- 6) Reboot the Oracle Solaris 11 zone.

```
global# /usr/sbin/zoneadm -z my-zone reboot <Return>
```

- 7) Install Oracle Solaris 11 zone supported Enhanced Support Facility packages on the destination. Refer to “6.3 Oracle Solaris zone” for supported packages. Refer to “6.3.1.5 Installation of packages which support Oracle Solaris zone” for details on installation process.

### 6.3.2.3 Application of corrections to Oracle Solaris 11 zone.

UpdateAdvisor (Middleware) is necessary to apply Enhanced Support Facility correction files by UpdateAdvisor (Middleware) on Oracle Solaris systems.

Moreover, when correction files are applied to Oracle Solaris 11 or to Oracle Solaris 11 zones, product names that are displayed by UpdateAdvisor (Middleware) are as follows.

Table 6.3.2.3-1 Display format on Oracle Solaris 11 and on Oracle Solaris 11 zones

Display format on Oracle Solaris 11	Display format on Oracle Solaris 11 zones
Enhanced Support Facility 5.1	Enhanced Support Facility (for Oracle Solaris zone) 5.0

## 6.4 Boot Environments(BE)

- Boot Environments (BE) is a functionality which manages several boot environments and simplifies online upgrade.
- With this product, It is possible to update Enhanced Support Facility using Boot Environments (BE).
- Please refer to Oracle published documents on updating procedure, before executing the operation.
- Please refer to '4.3 Notes'for notes on installation and operation of Enhanced Support Facility.

### 6.4.1 Procedure of using Boot Environments (BE)

The following is the procedure to update Enhanced Support Facility using Boot Environments (BE). Please refer to the section / paragraph inside box for the details of each procedure.

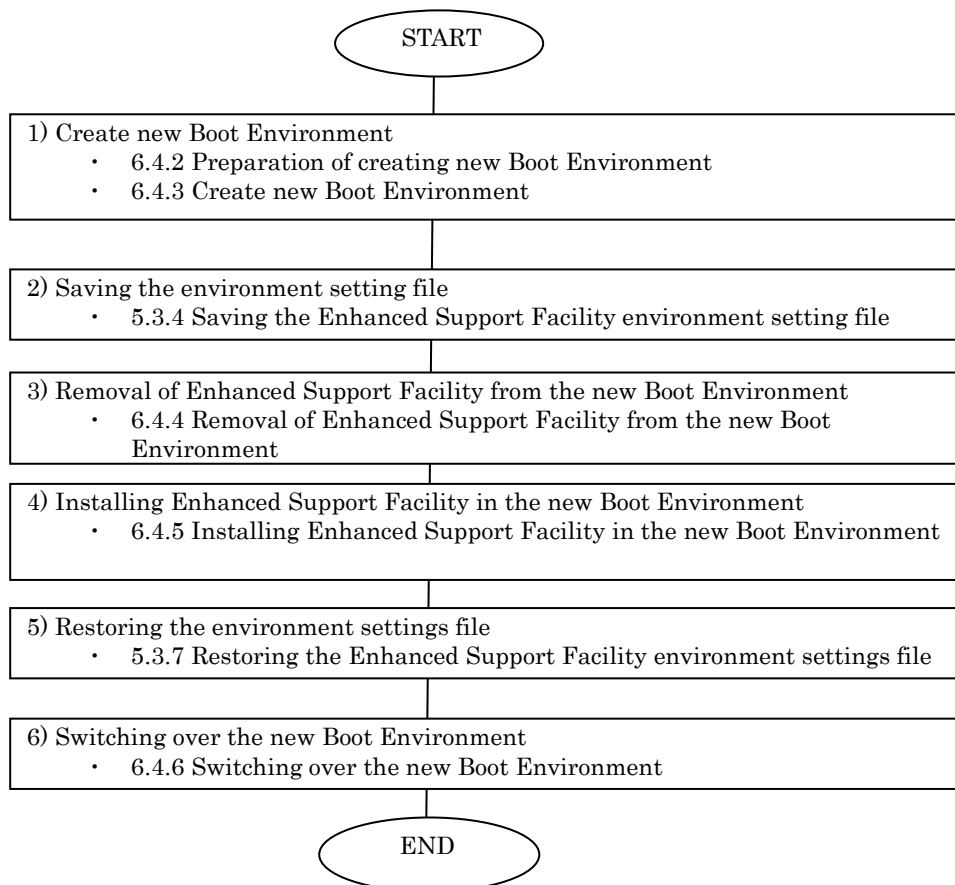


Diagram 6.4.1-1 Flow of Boot Environments (BE)

## 6.4.2 Preparation of creating new Boot Environment

Confirm the version of Enhanced Support Facility, which is installed in the running system, before creating a new boot environment.

### 6.4.2.1 Checking the system environment

- 1) Confirm the version of Enhanced Support Facility.

```
# /opt/FJSVbse/bin/esfver <Return>
```

In case Enhanced Support Facility 4.0 has been installed.

```
esfver: INFO: Integrated Version of already installed Enhanced Support
Facility.
VERSION=4.0 REVISION=2011.10.2800,
```

## 6.4.3 Create new Boot Environment

Create a new Boot Environment using the 'beadm' command. Please refer to Oracle-published documents regarding creation of new Boot Environments and the details of the 'beadm' command.

### 6.4.3.1 Create new Boot Environment

- 1) Create a new Boot Environment using the 'beadm' command.

```
# beadm create beName <Return>
```

'*beName*' indicates new Boot Environment name

- 2) Mount the newly created Boot Environment.

```
# mkdir /be_point <Return>
# beadm mount beName /be_point <Return>
```

'*be\_point*' indicates the mount point of the new Boot Environment

- 3) Confirm the new Boot Environment.

```
# beadm list -a <Return>
```

## 6.4.4 Removal of Enhanced Support Facility from the new Boot Environment

When removing Enhanced Support Facility from the new Boot Environment, use the same version of Enhanced Support Facility DVD/CD as the one that has been installed in the system.

- 1) Mount the DVD/CD.  
The mounting procedure depends on the model.  
For details of mounting the DVD/CD, see Appendix F, "Mounting the DVD/CD".
- 2) Confirm the Enhanced Support Facility that has been installed in the new Boot Environment.

```
# bin/esfver -l -R /be_point <Return>
```

'*be\_point*' indicates the mount point of the new Boot Environment

- 3) Remove Enhanced Support Facility from the new Boot Environment.  
Use the 'esfrm' command in the Enhanced Support Facility DVD/CD which is of the same version as the Enhanced Support Facility installed in the system.

```
# bin/esfrm -R /be_point <Return>
```

'*be\_point*' indicates the mount point of the new Boot Environment

Moreover, for other messages at the time of removal, refer to "5.4.3 Messages Displayed when Removing Software"

- 4) Move to the root directory.

```
# cd / <Return>
```

- 5) Eject Enhanced Support Facility DVD/CD.

## 6.4.5 Installing Enhanced Support Facility in the new Boot Environment

Install this product in the new Boot Environment.

- 1) Mount the DVD/CD.  
The mounting procedure depends on the model.  
For details of mounting the DVD/CD, see Appendix F, "Mounting the DVD/CD".

- 2) Confirm that Enhanced Support Facility has not been installed in the new 'Boot Environment.

```
# bin/esfver -l -R /be_point <Return>
```

'*be\_point*' indicates the mount point of the new Boot Environment

- 3) Install this product from the new Boot Environment.

```
# bin/esfadd -R /be_point <Return>
```

'*be\_point*' indicates the mount point of the new Boot Environment

Moreover, for other messages at the time of installation, refer to "5.3.6 Messages appearing during installation".

- 4) Move to the root directory.

```
# cd / <Return>
```

- 5) Eject this product DVD/CD.

## 6.4.6 Switching over the new Boot Environment

- 1) Switch over the new Boot Environment.

```
# beadm activate beName <Return>
```

'*beName*' indicates new Boot Environment name

- 2) Verify the new Boot Environment.

```
# beadm list -a <Return>
```

- 3) Reboot the system.

```
# /usr/sbin/shutdown -y -g0 -i6 <Return>
```

In case of Oracle Solaris 11, update device information inside ZFS storage pool.

```
# /usr/sbin/zpool status <Return>
```



## 6.5 AI Install

Please refer to Oracle documents regarding AI install.

### 6.5.1 Environment

- The target Oracle Solaris is as follows:
  - Oracle Solaris 11
- Supported models are as follows:
  - SPARC M10
  - SPARC Enterprise T series
  - SPARC Enterprise M series

Refer to "3.2 Hardware Environment" to check the models that are supported by this product.

### 6.5.2 AI install procedure

#### 6.5.2.1. Copy DVD/CD image to install server directory

- 1) Copy the DVD/CD image of this product to the install server.
- 2) Execute 'share' beforehand so that AI clients recognize the DVD/CD image of this product.  
Ex: Execution example of 'zfs set sharenfs'

```
# zfs set share=name=public,path=/rpool/esf,prot=nfs,anon=0,sec=sys,ro=*,root=*,  
public \rpool/esf <Return>  
# zfs set sharenfs=on rpool/esf <Return>  
# share <Return>  
public /rpool/esf  nfs      anon=0,public,sec=sys,ro,root
```

**/rpool/esf** is the path to this product DVD/CD image.

**rpool/esf** is the part of the file system where this product DVD/CD image is copied.

#### 6.5.2.2. Installation script of Enhanced Support Facility

Enhanced Support Facility can be installed by executing an installation script at the time of the first bootup.

The following is an example of executing this script.

```
#!/bin/sh  
. /lib/svc/share/smf_include.sh  
pkg uninstall --be-name beName pkg:/first-boot-script  
mkdir /be_point  
beadm mount beName /be_point  
mkdir /esf_point  
mount -F nfs -o ro <IP of install server>:<path to DVD/CD image> /esf_point  
/esf_point/bin/esfadd -n -R /be_point  
umount /esf_point  
svcadm disable svc:/site/first-boot-script-svc:default  
pkg uninstall pkg:/first-boot-script  
sleep 5  
shutdown -y -g0 -i6 &  
exit $SMF_EXIT_OK
```

*beName* refers to the new boot environment.

*first-boot-script* refers to the IPS package that executes the script at the first bootup.

*first-boot-script-svc* refers to the SMF service which executes the script at the first bootup.

*be\_point* refers to the mount point of the new boot environment.

*esf\_point* refers to the mount point of this product.

Note: The following options are used with the 'esfadd' command.

-R <Installation destination>

In this example, the mount point of new boot environment, */be\_point* is designated.

-n

Stop enquiring by 'esfadd' command.

Use this option only with AI install.

### 6.5.2.3. Create an IPS package to install Enhanced Support Facility

- 1) Create an IPS package with the following contents:
  - A service manifest file that executes scripts at the first bootup. Please refer to the procedure of creating a SMF manifest file, as described in this Oracle published document: 'Chapter 13 Running a Custom Script During First Boot' of 'Installing Oracle Solaris 11 Systems'
  - A script file that is executed at the first bootup as shown in '6.5.2.2 Installation script of Enhanced Support Facility'.
- 2) Publish the package  
Publish the package created by 1).
- 3) Install the package on the client.  
An IPS package which installs Enhanced Support Facility is installed by booting the client after adding the package to the AI manifest.  
When the system is rebooted after that, the script which installs Enhanced Support Facility is executed.

Moreover, use the following command to update device information inside ZFS storage pool, immediately after AI installation.

```
# /usr/sbin/zpool status <Return>
```

### 6.5.2.4. Procedure of constructing Oracle VM Server for SPARC Environment

The process of constructing Oracle VM Server for SPARC environment through AI install is described below.

The following procedure will be discussed in this book.

- 1) The procedure to install Enhanced Support Facility on the control domain is explained in '6.5.2.5. Installing on the control domain'.
- 2) The procedure to install Enhanced Support Facility on guest domains is explained in '6.5.2.6. Installing on guest domains'.

### 6.5.2.5. Installing on the control domain

Install Logical Domains Manager after installing Enhanced Support Facility using AI install.

- 1) Install OS and Enhanced Support Facility using AI install. Refer to '6.5. AI install' for details.
- 2) Install Logical Domains Manager. Refer to 'SPARC Enterprise Oracle VM Server for SPARC Guide' for details.
- 3) Reboot the system.
- 4) Set up the control domain. Refer to 'SPARC Enterprise Oracle VM Server for SPARC Guide' for details.
- 5) Set up the guest domains from the control domain. Refer to 'SPARC Enterprise Oracle VM Server for SPARC Guide' for details.

### 6.5.2.6. Installing on guest domains

Use AI install to install OS and Enhanced Support Facility on the created guest domains. Refer to '6.5. AI install' of this book for details.

## 6.6 Custom JumpStart

Please see documents provided by Oracle about Custom JumpStart.

### 6.6.1 Support environment

- Oracle Solaris:  
Oracle Solaris 10
  
- Models:
  - SPARC M10
  - SPARC Enterprise T series
  - SPARC Enterprise M series

Refer to "3.2 Hardware Environment" to check the models that are supported by this product.

### 6.6.2 Procedure

This section explains the procedure for network installation using the DVD/CD drive on the installation server.

#### 6.6.2.1 Copying the DVD/CD images to directories on the installation server

- 1) Please copy DVD/CD images of this product into each directory having a common parent directory.
  
- 2) Please share the parent directory where DVD/CD images of this product are placed so that the target server can recognize it.

Example: Execution of the share command

```
# share <Return>
- /export/home/ESF ro,anon=0 ""
```

## 6.6.2.2 Installation script for Enhanced Support Facility

Install Enhanced Support Facility using a finish script after installing the operating environment. This section explains what should be stated and executed in the finish script.

- 1) State a command for mounting the DVD/CD of Enhanced Support Facility.  
Specify the following parameter for the mount command.  
-F nfs <install\_server\_IP>:  
    <common parent directory to which the DVD/CD image is copied><mount\_point>  
Specify /a/mnt for <mount\_point> when using JumpStart.
- 2) State a command for installing this product.  
Specify the following options for the esfadd command:  
-R <installation directory >  
    Specify /a for JumpStart.  
-n  
    With the esfadd command, restrains inquiries.  
    Use only when Custom JumpStart.
- 3) Enter the patch application command when Enhanced Support Facility Manuals & Patches is attached.  
Specify the following options for the esfpachadd command:  
-R <installation directory >  
    Specify /a for JumpStart.  
-A  
    With the esfpachadd command, restrains inquiries.  
    Use only when Custom JumpStart.
- 4) Finish script

```
mount -F nfs <install_server_IP>:/export/home/ESF /a/mnt  
/a/mnt/esf_dir/bin/esfadd -R /a -n  
/a/mnt/patch_dir/PATCHES/bin/esfpachadd -R /a -A
```

/export/home/ESF: The parent directory common to directories having the copies of the DVD/CD images  
**esf\_dir**: Name of directory to which the DVD/CD image of this product is copied  
**patch\_dir**: Name of the directory to which the CD image of the Enhanced Support Facility  
Manuals & Patches has been copied

Note) The following message may be displayed when rem\_drv(1M) is executed, but it can be ignored.

```
# /usr/sbin/rem_drv -b / oplpanel  
Driver (oplpanel) not installed.
```

### 6.6.2.3 Flowchart of Building Oracle VM Server for SPARC Environment

The following describes how to install the Enhanced Support Facility by using Custom JumpStart to create Oracle VM Server for SPARC.

This chapter explains the installation steps.

- 1) The installation procedure to install the Enhanced Support Facility into the control domain is described in "6.6.2.4 Building Procedure for the Control Domain".
- 2) The installation procedure to install the Enhanced Support Facility into the guest domain is described in "6.6.2.5 Building Procedure for the Guest Domain".

### 6.6.2.4 Building Procedure for the Control Domain

Install the Enhanced Support Facility by using the Custom JumpStart and install the Logical Domains Manager.

- 1) Install the OS and Enhanced Support Facility by using the Custom JumpStart.  
Please refer to "6.6 Custom JumpStart".
- 2) Install the Logical Domains Manager.  
For more information, please refer to "SPARC Enterprise Oracle VM Server for SPARC Guide".
- 3) Reboot the system.
- 4) Set up the control domain.  
For more information, please refer to "SPARC Enterprise Oracle VM Server for SPARC Guide".
- 5) Set up the guest domain by the control domain.  
For more information, please refer to "SPARC Enterprise Oracle VM Server for SPARC Guide".

### 6.6.2.5 Building Procedure for the Guest Domain

Install the OS and Enhanced Support Facility into the guest domain you set up.  
Please refer to "6.6 Custom JumpStart".

## 6.6.3 Notes

For initial install only.

Please specify `initial_install` or `flash_install` for the JumpStart `Install_type` profile keyword.

If the installation of Enhanced Support Facility fails, you need to reinstall the operating system.

Messages when Custom JumpStart is used for SPARC Enterprise.

When you install Enhanced Support Facility using Custom JumpStart for SPARC Enterprise, the following messages may be output. However this is not a problem.

[Example of messages on SPARC Enterprise T5220]

```
df: cannot statvfs /platform/sun4v/lib/libc_psr.so.1: Operation not
applicable
df: cannot statvfs /platform/sun4v/lib/sparcv9/libc_psr.so.1: Operation
not applicable
```

[Example of messages on SPARC Enterprise M3000]

```
df: cannot statvfs /platform/sun4u-us3/lib/libc_psr.so.1: Operation not
applicable
df: cannot statvfs /platform/sun4u-us3/lib/sparcv9/libc_psr.so.1:
Operation not applicable
```

## 6.7 Flash Archive

You can use the following procedure for the installation using flash archive.

Method 1 is an installation procedure for creating flash archive where Oracle Solaris + (PTF) is installed and then installing Enhanced Support Facility.

Method 2 is an installation procedure for creating flash archive where Oracle Solaris + (PTF) + Enhanced Support Facility and installing it into each machine model + Oracle Solaris.

When you use Method 2, the installer cannot recognize each machine model automatically.

Please use flash archive for the same machine model group and the same Oracle Solaris when you perform the flash archive installation. When you use Method 1, this problem will not occur.

In chapter 6.7, the procedure of Method 2 and notes are explained.

The table of machine model groups supported by this product is shown below.

Table 6.7-1 Machine Group Table

Model name	Machine Group Name
SPARC M10-1/M10-4/M10-4S	PA
SPARC T3-1/T3-2/T3-4/T4-1/T4-2/T4-4 SPARC Enterprise T1000/T2000/T5120/T5140/T5220/T5240/T5440	LE
SPARC Enterprise M3000/M4000/M5000/M8000/M9000	CW

Refer to "3.2 Hardware Environment" to check the models that are supported by this product.



## 6.7.1 Procedure for creating a flash archive

The workflow for creating a flash archive is shown in Figure 6.7.1-1.

For detailed procedures, refer to the respective sections indicated in individual frames.

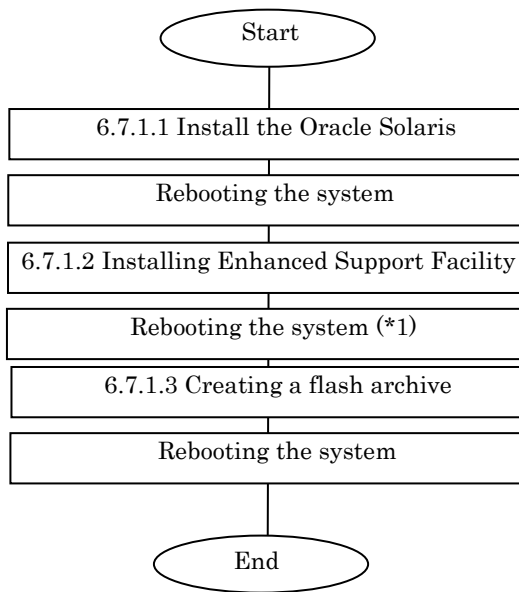


Figure 6.7.1-1 Workflow for creating a flash archive

\*1 Reboot the system and then start in single user mode.

### 6.7.1.1 Installing the Oracle Solaris

Installing the Oracle Solaris.

For details, refer to "SPARC Enterprise Server Hardware Platform Guide".

### 6.7.1.2 Installing Enhanced Support Facility

After Oracle Solaris installation is finished, install Enhanced Support Facility.

For details, refer to Section 5.2.3, "Instructions".

### 6.7.1.3 Creating a flash archive

To create a flash archive, use the `flarcreate` command in the master system running in single user mode.

```
# /usr/sbin/flarcreate -n name options path/filename <Return>
```

name: a name to be specified for the flash archive.

options: flarcreate command line options

\* Some of the available options are listed in the table below:

(For the details of the options, please refer to the flarcreate command.)

Table 6.7.1.3-1 flarcreate command option List

Option	Description
Required option	
<b>-n archive_name</b>	This option specifies a name to be assigned to the flash archive to be created.
Compression option	
<b>-c</b>	The flash archive is compressed using "compress".
Directory and size options	
<b>-R root</b>	An archive is created from the root file system tree. If this option is omitted, flarcreate creates an archive from the /file system.
<b>-S</b>	Size information is not included in the archive.
<b>-H</b>	No hash identifier is generated.
<b>-t</b>	An archive is created on a tape device. Argument "filename" is the name of a tape device.

path: The path of the directory in which the archive file is to be saved.

If no path is specified, flarcreate saves the archive file to the current directory.

filename: Name to be specified for the archive file.

- When archive creation is completed successfully, the flarcreate command returns end code 0.
- If archive creation is unsuccessful, the flarcreate command returns an end code other than 0.
- Attributes such as permission of the created archive file need not be changed.

### 6.7.1.4 Notes on creating a flash archive

When creating a flash archive, note the following:

You can ignore these notes when creating a flash archive according to the procedure in 1) in Section 6.7.

- If an operating system is installed using a flash archive that has been created on a different type of machine, the operating system does not work.
- Be sure to create a flash archive in single user mode.
- Create a flash archive without setting the Enhanced Support Facility environment.

## 6.7.2 Installation procedure using a flash archive

This section explains the installation procedure using a flash archive.

### 6.7.2.1 Custom jump installation using a flash archive

Install a flash archive to the installation server and perform custom jump start installation using a flash archive.

\* The following explanation assumes that an archive is stored on the network file system (NFS) server.

\* Flash archive creation and flash installation are performed for initial installation.

First, create separately from the prof file used for custom jump start, a flash\_prof file to be used to define that a flash archive be used.

Example of flash\_prof file

```
[flash_prof]
install_type      flash_install
archive_location  nfs 10.18.91.55:/export/home/flash/T5120-sol10
partitioning      explicit
filesystems       c0t0d0s0 4000 /
filesystems       c0t0d0s1 8000 /var
filesystems       c0t0d0s3 1000 swap
filesystems       c0t0d0s4 8000 /opt
filesystems       c0t0d0s5 8000 /usr
filesystems       c0t0d0s6 free /export/home
```

- 1) Define the install type as flash\_install.
- 2) As shown above, set archive\_location as in "archive\_location nfs server\_name:/path/archive-filename". Define the flash\_prof file in the rules file.
  - \* Execute "share" in advance so that the target can recognize the directory to which the archive is installed on the installation server.
  - \* Define the IP address for server\_name.
- 3) Define "flash\_prof" in the rules file.

The subsequent procedure is the same as that for custom jump start.

### 6.7.2.2 Installing a flash archive in the clone system

Oracle Solaris can be installed in a clone system using a flash archive from the Oracle Solaris DVD/CD. For details, refer to the "Solaris Installation Guide".

### 6.7.2.3 Flowchart of Building Oracle VM Server for SPARC Environment

The following describes how to install the Enhanced Support Facility by using Flash Archive to create Oracle VM Server for SPARC.

This chapter explains the installation steps.

- 1) The installation procedure to install the Enhanced Support Facility into the control domain is described in "6.7.2.4 Building Procedure for the Control Domain".
- 2) The installation procedure to install the Enhanced Support Facility into the guest domain is described in "6.7.2.5 Building Procedure for the Guest Domain".

### 6.7.2.4 Building Procedure for the Control Domain

Install the Enhanced Support Facility by using the flash archive and install the Logical Domains Manager.

- 1) Install the OS and Enhanced Support Facility by using the flash archive.  
Please refer to "6.7 Flash Archive".
- 2) Install the Logical Domains Manager.  
For more information, please refer to "SPARC Enterprise Oracle VM Server for SPARC Guide".
- 3) Reboot the system.
- 4) Set up the control domain.  
For more information, please refer to "SPARC Enterprise Oracle VM Server for SPARC Guide".
- 5) Set up the guest domain by the control domain.  
For more information, please refer to "SPARC Enterprise Oracle VM Server for SPARC Guide".

### 6.7.2.5 Building Procedure for the Guest Domain

Install the OS and Enhanced Support Facility into the guest domain you set up.  
Please refer to "6.7 Flash Archive".

### 6.7.3 Setting the Enhanced Support Facility environment after flash archive installation

After flash archive installation is finished, the Enhanced Support Facility environment needs to be set as shown below:

Table 6.7.3-1 Environment Settings List

No.	Component	Description
1	Tape Driver Definition Tool	If the tape device is not recognized after installation, take the following setting steps: <pre># /var/opt/FJSVdcnf/bin/fjcnfset st&lt;Return&gt;</pre> You do not have to do the above if you installed this software according to the procedure in 1) in Section 6.7.

## 6.7.4 Notes on flash archiving

When applying flash-archived Enhanced Support Facility, note the following:

Table 6.7.4-1 Notes List

No.	Item	Description
1	Symptom	<b>The log of the master system is not deleted but is taken over. Note this when checking the log.</b>
	Applicable model	All models
	Applicable package	All packages
	Displayed message	None
	Cause	None
	Preventive measures	None
2	Symptom	<b>A tape device may not be recognized automatically.</b>
	Applicable model	All models
	Applicable package	FJSVdcnf
	Displayed message	None
	Cause	When a flash archive is used, the environment of the master system is taken over. If a unit supported by the tape definition tool is not connected to the master system or different types of units are connected to the master system and applied machine, the setting command needs to be reexecuted.
	Preventive measures	If the tape device is not recognized after installation, take the following setting steps: <code># /var/opt/FJSVdcnf/bin/fjcnfset st&lt;Return&gt;</code> You do not have to do the above if you installed this software according to the procedure in 1) in Section 6.3.
3	Symptom	<b>Executing "pkgchk -n" displays ERROR.</b>
	Applicable model	None
	Applicable package	FJSVdef
	Displayed message	ERROR: /var/spool/cron/crontabs/root group name <sys> expected <other> actual
	Cause	The above file is a clone setting file. After ESF application is finished, new clone settings are made in the /var/spool/cron/crontabs/root file. This changes the group name from <sys> to <other>. This is why ERROR is output.
	Preventive measures	None
4	Symptom	<b>When the system starts for the first time after application, a model may be mistakenly recognized and displayed.</b>
	Applicable model	All models
	Applicable package	Packages related to machine administration
	Displayed message	<code>/etc/rc2.d/S30SMAWubft: disable FJSVmadm SES/SAF-TE monitoring ...done. /etc/rc2.d/S30SMAWubft: cleanup SES/SAF-TE processor device links...done. /etc/rc2.d/S30SMAWubft: updating HW_CONFIG data base...done. /etc/rc2.d/S30SMAWubft: start UPS BBU Fan Temperature Daemon...done. Configuring network interface addresses: igb0 hme0.</code>

No.	Item	Description
	Cause	When the system starts for the first time after installation using a flash archive, WSA executes the model check command of the machine administration before machine administration operation begins, and mistakenly recognizes the model.
	Preventive measures	Reboot the system to clear the problem.

## 6.8 Solaris Live Upgrade

- This product can be upgraded using by Solaris Live Upgrade. Using an unsupported version or incorrectly following the procedure may damage the system. Proceed carefully.
- Please refer to Oracle published documents on updating procedure, before executing the operation.
- For notes on the Enhanced Support Facility installation operation, see Section 4.3 "Notes".

### 6.8.1 Solaris Live Upgrade Procedure

The following is the procedure to update Enhanced Support Facility using Solaris Live Upgrade. Regarding the details of each procedure, please refer to the sections/clauses within each frame below.

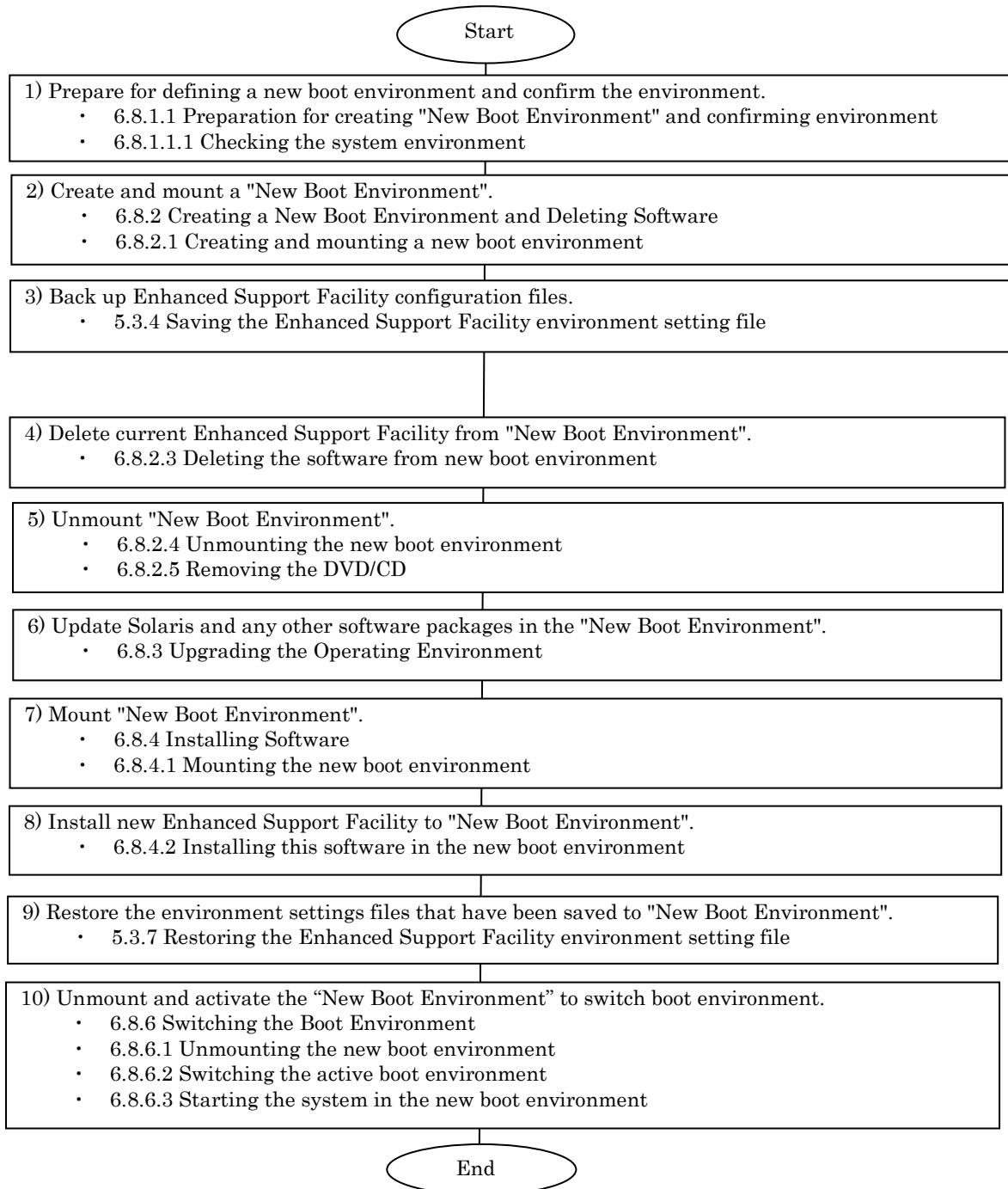


Figure 6.8.1-1 Solaris Live Upgrade Flowchart



## 6.8.1.1 Preparation for creating "New Boot Environment" and confirming environment

### 6.8.1.1.1 Checking the system environment

- 1) Confirm the version of Enhanced Support Facility.

```
# /opt/FJSVbse/bin/esfver <Return>
```

Example: When Enhanced Support Facility 3.0 is installed:

```
esfver: INFO: Integrated Version of already installed Enhanced Support
Facility.
VERSION=3.0 REVISION=2006.12.1200,
```

## 6.8.2 Creating a New Boot Environment and Deleting Software

Use the new boot environment to temporarily delete all Enhanced Support Facility components before upgrading the operating system. Be sure to first save the environment settings file of each component before deleting the components.

### 6.8.2.1 Creating and mounting a new boot environment

- 1) Use the Solaris Live Upgrade to create a new boot environment.

Note) For information about installing Solaris Live Upgrade and creating a new boot environment, refer to the documents provided by Oracle.

- 2) Mount the new boot environment.

```
# /usr/sbin/lumount ALTERNATIVE <Return>
```

**ALTERNATIVE**: Indicates the new boot environment name.

- 3) The mount point is reported.

```
/.alt.ALTERNATIVE
```

### 6.8.2.2 Deleting the software from new boot environment

To delete Enhanced Support Facility from the new boot environment, delete it using the DVD/CD containing the same version of Enhanced Support Facility that is currently installed.

- 1) Mount the DVD/CD.

The mounting procedure depends on the model.

For details of mounting the DVD/CD, see Appendix F, "Mounting the DVD/CD".

- 2) Delete Patch 914562-02.

You need to delete Patch 914562-01 before executing 'esfrm'.

Please follow the steps below.

To know what to do if you executed 'esfrm' without deleting Patch 914562-01, please refer to "Appendix D.2.2".

```
# showrev -p | grep 914562-01 <Return>
Patch: 914562-01 Obsoletes: Requires: Incompatibles: Packages: FJSDvmp
# patchrm -R /.alt.ALTERNATIVE 914562-01 <Return>
```

- 3) Delete the Enhanced Support Facility from the new boot environment.

Use the esfrm command from the DVD/CD containing the same version of Enhanced Support Facility that is currently installed on the new boot environment.

```
# bin/esfrm -R /.alt.ALTERNATIVE <Return>
```

**/.alt.ALTERNATIVE:** Indicates the boot environment mount point.

**Note :** The mount point must not be followed by a slash (/).

**Error:** # bin/esfrm -R /.alt.ALTERNATIVE/ <Return>

The message below appears. Type "all", "part" or "no".

```
Enhanced Support Facility 3.0 will be removed.

FJSVbse      Enhanced Support Facility Information Management
              (sparc) 3.0,REV=2006.12.1200
              :
              :
FJSVparam    System Parameter Diagnosis
              (sparc) 1.1,REV=2005.01.1100

There is a possibility to cause problem in the system when the
packages where "*" adheres to the head of the package name is deleted.

Please input "all" when you want to remove all packages,input "no"
when you want to interrupt the uninstallation, or input "part" when
you want to remove only packages where "*" does not adhere.

Please select. [no,all or part]:
```

The following message will be displayed. Type "yes" to proceed

```
Solaris Live Upgrade can not be used to upgrade from Enhanced Support
Facility 2.3 or earlier. Certain Enhanced Support Facility 2.3 or
earlier packages may not support remote un-installation (esfrm -R),
and may cause damage to the system during un-installation.
Do not proceed with removal of Enhanced Support Facility if revision 2.3 or earlier
is installed.

Do you want to continue with the removal of Enhanced Support Facility from the
alternate boot environment? [yes or no?]:
```

Moreover, for details on messages that are output at the time of removal of ESF, refer to "5.4.3 Messages Displayed when Removing Software".

### 6.8.2.3 Unmounting the new boot environment

- 1) Move to the root directory.

```
# cd / <Return>
```

- 2) Unmount the new boot environment.

```
# /usr/sbin/luumount ALTERNATIVE <Return>
```

**ALTERNATIVE:** Indicates the new boot environment name.

### 6.8.2.4 Removing the DVD/CD

- 1) Eject the Enhanced Support Facility DVD/CD.

## 6.8.3 Upgrading the Operating Environment

Use Solaris Live Upgrade to update the system operating environment.

Note) For information about updating Oracle Solaris, refer to the documents provided by Oracle.

## 6.8.4 Installing Software

Install this product in the new boot environment after upgrading the operating system.

### 6.8.4.1 Mounting the new boot environment

- 1) Mount the newly created boot environment.

```
# /usr/sbin/lumount ALTERNATIVE <Return>
```

**ALTERNATIVE:** Indicates the new boot environment name.

- 2) The mount point is reported.

```
/.alt.ALTERNATIVE
```

### 6.8.4.2 Installing this software in the new boot environment

Use the this product DVD/CD to install Enhanced Support Facility on the new boot environment.

- 1) Mount the DVD/CD.

The mounting procedure depends on the model.

For details of mounting the DVD/CD, see Appendix F, "Mounting the DVD/CD".

- 2) Install this product in the new boot environment.

```
# bin/esfadd -R /.alt.ALTERNATIVE <Return>
```

**/.alt.ALTERNATIVE:** Indicates the new boot environment mount point.

**Note:** The mount point must not be followed by a slash (/).

Error: # bin/esfadd -R /.alt.ALTERNATIVE/ <Return>

Messages similar to the following appears. Confirm the displayed information. If the information is correct, type "yes".

Example: For this product on SPARC Enterprise T5120:

```
Enhanced Support Facility 5.1 will be installed.
```

```
INSTALL-ROOT: /.alt.ALTERNATIVE
```

```
Platform: SUNW,SPARC-Enterprise-T5120
```

```
OS Release: Solaris 10
```

```
Do you want to continue with this installation? [yes or no ?]:
```

Next, the system confirms that the -R option has been specified. Type "yes".

```
NOTE: -R option
```

```
Do you want to continue with this installation? [yes or no ?]:
```

Moreover, for details of messages that are output during installation, refer to "5.3.6 Messages appearing during installation".

- 3) Unmount the DVD/CD.

```
# cd / <Return>
# /usr/sbin/umount /cdrom <Return>
```

or

```
# cd / <Return>
# /usr/sbin/umount /cdrom/cdrom0 <Return>
```

- 4) Eject this product DVD/CD.
- 5) When Enhanced Support Facility Manuals & Patches is attached, insert Enhanced Support Facility Manuals & Patches into the DVD/CD drive to apply patches.  
If you cannot see the contents of the DVD/CD, please refer to "Appendix F Mounting the DVD/CD" to mount the DVD/CD again.  
When Enhanced Support Facility Manuals & Patches is not accompanied, you do not have to take step 6) and the remaining steps.
- 6) Go to the directory where DVD/CD has been mounted and then execute the `esfpachadd` command with the following procedure.

```
# cd /cdrom/PATCHES <Return>
# bin/esfpachadd -R /.alt.ALTERNATIVE <Return>
```

or

```
# cd /cdrom/cdrom0/PATCHES <Return>
# bin/esfpachadd -R /.alt.ALTERNATIVE <Return>
```

**/.alt.ALTERNATIVE:** Indicates the new boot environment mount point.

**Note :** The mount point must not be followed by a slash (/).

Error: # bin/esfpachadd -R /.alt.ALTERNATIVE/ <Return>

Either of the following confirmation messages will be displayed. Enter "yes" to continue the installation.

```
Enhanced Support Facility 5.1 correction patches will be applied.

Platform: SUNW,SPARC-Enterprise-T5120
OS Release: Solaris 10

Do you want to continue with this installation? [yes or no ?]: yes
```

- 7) Eject Enhanced Support Facility Manuals & Patches DVD/CD.

## 6.8.5 Switching the Boot Environment

### 6.8.5.1 Unmounting the new boot environment

- 1) Move to the root directory.

```
# cd / <Return>
```

- 2) Use the luumount command to unmount the new boot environment.

```
# /usr/sbin/luumount ALTERNATIVE <Return>
```

***ALTERNATIVE***: Indicates the new boot environment name.

### 6.8.5.2 Switching the active boot environment

- 1) Use the luactivate command to switch from the active boot environment to the new one.

```
# /usr/sbin/luactivate ALTERNATIVE <Return>
```

### 6.8.5.3 Starting the system in the new boot environment

After switching the active boot environment, the system restarts with the new boot environment. Before this processing, confirm that all jobs in the running system have terminated.

- 1) Reboot the system.

```
# /usr/sbin/shutdown -y -g0 -i6 <Return>
```

Note) If the system is restarted with the reboot command, the boot environment will not be switched correctly. For query messages displayed after the boot environment has been switched, refer to the documents provided by Oracle.

## 6.9 Unified Installer

The unified installer is a function of Systemwalker Resource Coordinator. It can use a customized version of Solaris JumpStart via a network to automatically install the Oracle Solaris, middleware such as Enhanced Support Facility, and drivers.

The unified installer can be used not only for initial installation but also for installation of additional nodes and products.

The unified installer thus simplifies installation in a multiple-node system.

If you install Enhanced Support Facility by using the unified installer, please be sure to install this product. For the features of the unified installer and details on how to use it, refer to the "Systemwalker Resource Coordinator User's Guide for Unified Installer".

# Appendix A Command Reference

## A.1 esfadd (1M)

### NAME

esfadd - Install Enhanced Support Facility onto the system

### SYNOPSIS

esfadd [-c] [-R *mountpoint*] [-O *component-group*]

### DESCRIPTION

esfadd determines the system platform automatically and installs Enhanced Support Facility onto the system using the Enhanced Support Facility media(DVD/CD).If an older versions of Enhanced Support Facility is already installed on the system, this command will upgrade them.

### OPTIONS

The following options are available:

-c

Display the current version and the new version of the packages to be updated.

-R *mountpoint*

Enhanced Support Facility will be installed in the Boot Environment specified by *mountpoint*.

-O *component-group*

Specifying a Component Group for Installation. If the -O option isn't specified, Full component group will be installed.See Section 6.2, "Specifying a Component Group for Installation" for more details.

Moreover, this parameter is non-compliant with 'Boot Environments' and thus, cannot be used in conjunction with the '-R' parameter.

### EXIT STATUS

The following exit values are returned:

- 0 Successful execution.
- 1 Fatal error.
- 2 Usage or Warning.
- 3 Interruption.
- 4 Administration.
- 10 Reboot after installation of all packages.
- 20 Reboot after installation of this package.

### SEE ALSO

esfrm(1M), pkgrm(1M), pkgadd(1M)

### NOTES

- When the -c option is specified, Enhanced Support Facility will not be installed.This option is used to check for previous revisions of Enhanced Support Facility installed on the system.
- When two or more packages are installed, the following messages are displayed, and the installation is ended. Please reinstall Enhanced Support Facility after restoring the system. (Refer to appendix D.1.1.)

```
esfadd: ERROR: Two or more instances of the following package(s) are existing on
the system.
PACKAGE PACKAGE.2

Exit installation.
```

## A.2 esfrm (1M)

### NAME

esfrm - Remove Enhanced Support Facility from the system

### SYNOPSIS

esfrm [-n] [-R *mountpoint*]

### DESCRIPTION

esfrm removes a previously installed Enhanced Support Facility from the system.

The default state for the command is in interactive mode, meaning that prompt messages are given during processing to allow the administrator to confirm the actions being taken for the removal of the Enhanced Support Facility. Non-interactive mode can be requested with the `-n` option.

When this command is invoked, the package list to be removed is displayed, and then the prompt with the input "all" displayed. The esfrm command operates as follows after the prompt.

1. For the package(s) with the "\*" (warning) mark is displayed in the package list, exist.
  - "all" : The esfrm command removes all packages in the list.
  - "no" : The esfrm command terminates, and does not remove any Enhanced Support Facility packages.
  - "part" : The esfrm command removes all package(s) without the "\*" (warning) displayed in the list.
2. For the package(s) with the "\*" (warning) mark is displayed in the package list, do not exist.
  - "all" : The esfrm command removes all packages in the list.
  - "no" : The esfrm command terminates, and does not remove any Enhanced Support Facility packages.
  - "part" : Same result as "all".

### OPTIONS

The following option is available:

`-n`

If this option is specified, Enhanced Support Facility is removed from the system in non-interactive mode.

Packages are removed compulsorily even if those packages require interaction.

`-R mountpoint`

Enhanced Support Facility will be removed from the Boot Environment specified by the *mountpoint*.

### EXIT STATUS

The following exit values are returned:

- 0 Successful execution.
- 1 Fatal error.
- 2 Usage or Warning
- 3 Interruption.
- 4 Administration.
- 10 Reboot after removal of all packages.
- 20 Reboot after removal of this package.

### SEE ALSO

esfadd(1M), pkgrm(1M)

### NOTES

- If the display stops when executing the esfrm(1M) command, press the space key to restart the display.
- Be aware that other optional products may have dependencies on the packages in Enhanced Support Facility. In this case, esfrm will display WARNING messages as the result of dependency checking and ask you to verify the removal of the package. Do not remove any package on which other software products depend, and type "y" to continue execution. Note that if the `-n` option is specified, such important dependencies will not be checked.
- A "\*" (warning) mark will be displayed when a package installed on the system is newer than the package on the DVD/CD. Be careful when removing the package because the package cannot be reinstalled with the DVD/CD. There may be other products on the system that require the package and removing the package may cause serious problems.



## A.3 esfver (1M)

### NAME

esfver - Display the version of the installed Enhanced Support Facility

### SYNOPSIS

esfver [-l] [-R *mountpoint*]

### DESCRIPTION

The esfver command displays the version number of the Enhanced Support Facility installed on the system. With the -l option, it displays the version number of each package. Regarding the packages of the Enhanced Support Facility to be installed on the system, please refer to "Appendix C Component Programs by Model".

### OPTIONS

The following option is available:

-l

The version of each package included in the Enhanced Support Facility is displayed.

-R *mountpoint*

The version of Enhanced Support Facility installed in Boot Environment specified by *mountpoint* will be displayed.

### EXIT STATUS

The following exit values are returned:

- 0 Successful execution.
- 1 Fatal error.
- 2 Usage.

### SEE ALSO

esfadd(1M), esfrm(1M), pkgparam(1M)

### NOTES

- If the display stops when executing the esfver(1M) command, press the space key to restart the display.
- If two or more packages are installed on the system, the following messages appear.

After recovering the system, re-install the Enhanced Support Facility. (Refer to the Appendix D.1.1)

```
# /opt/FJsvbse/bin/esfver

esfver: INFO: Integrated Version of already installed Enhanced Support Facility.
VERSION=5.1 REVISION=2013.07.2600,

-- WARNING --
Two or more instances of the following packages have been installed on the system.
PACKAGE PACKAGE.2
#
```

- If no installed packages exist, the following messages appear.  
After a list of existing packages is displayed, a list of non-existing packages is displayed.  
In addition, regarding the packages of the Enhanced Support Facility to be installed on the system, please refer to "Appendix C Component Programs by Model".

```
# /opt/FJSVbse/bin/esfver -l

esfver: INFO: Individual Packages Version of already installed Enhanced Support Facility.
PKGNAME      VERSION      REVISION
-----
FJSVbse      5.1          2013.07.2600
:
:
FJSVdmp      1.7          2010.08.0300
Fail to get information of FJSVana.
-----

#
```

Note) Refer to Appendix D.1.2 if you want to restore any packages.

## EXAMPLES

### EXAMPLE1

```
# /opt/FJSVbse/bin/esfver

esfver: INFO: Integrated Version of already installed Enhanced Support Facility.
VERSION=5.1 REVISION=2013.07.2600,

#
```

### EXAMPLE2 Example of displaying each package.

```
# /opt/FJSVbse/bin/esfver -l

esfver: INFO: Individual Packages Version of already installed Enhanced Support Facility.

PKGNAME      VERSION      REVISION
-----
FJSVbse      5.1          2013.07.2600
:
:
FJSVdmp      1.7          2011.08.0300
FJSVana      3.0          2011.08.0300
-----

#
```

## A.4 esfpatchadd (1M)

### NAME

esfpatchadd - Applies patches to installed Enhanced Support Facility

### SYNOPSIS

esfpatchadd [ -R *mount\_point* ] [-d *directory*]

### DESCRIPTION

esfpatchadd is a command that installs patches for the Enhanced Support Facility collectively. This command is used when you install patches from the Manuals & Patches media (DVD/CD).

### OPTIONS

The following options are available:

-R *mountpoint*

Enhanced Support Facility will be installed into the Boot Environment specified by *mountpoint*.

-d *directory*

Specify the *directory* where the patches of Enhanced Support Facility are stored.

A full pathname should be given to the directory.

The directories containing the patches are as follows.

Abbreviated names of machine models are used in the table below. For more information, please refer to "Notations Used" in "Preface".

Table A.4-1 Patch Storage Directories List

Abbreviation	Oracle Solaris	Patch directory
LE	10	<i>/mnt</i> /PATCHES/Platform/LE/10
CW	10	<i>/mnt</i> /PATCHES/Platform/CW/10

*/mnt*: Mount Point

Note) The command terminates with the following message when the right directory for the model is not specified.

```
esfpatchadd: ERROR: The specified source directory is incorrect.
```

### EXIT STATUS

The following exit values are returned:

- 0 Successful execution.
- 1 Fatal error.
- 2 Usage or Warning.
- 3 Interruption.

### SEE ALSO

esfadd(1M), esfrm(1M), pkgrm(1M), pkgadd(1M), patchadd(1M)

## Appendix B Messages

In this chapter, the meaning of messages displayed when the `esfadd(1M)` command, `esfrm(1M)` command, `esfver(1M)` command, `esfpatchadd(1M)` command are executed, and what action you can take when the messages are displayed are explained.

### B.1 esfadd(1M)

In this chapter, the meaning of messages displayed when the `esfadd(1M)` command is executed, and what action you can take when the messages are displayed are explained. Please refer to "A.1 esfadd(1M) " about the details of the `esfadd(1M)` command.

#### B.1.1 Notice Messages

In this chapter, notice messages of the `esfadd(1M)` command are explained.

Message	<code>esfadd: INFO: This software does not need to be updated.</code> <code>esfadd: INFO: Enhanced Support Facility &lt; VERSION &gt; is already installed.</code>
Meaning	The same version as Enhanced Support Facility you try to install or newer version of Enhanced Support Facility is already installed. The version of installed Enhanced Support Facility is displayed in < VERSION >.
Workaround	None.

Message	<pre>!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! !!! IMPORTANT NOTICE !!! !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!  The Remote service which uses the REMCS function appended to PRIMEPOWER is required for the quick recovery from the failure of your system.  Please execute the following command after the reboot, by the root(superuser). /usr/sbin/FJSVmadm/remcsmain</pre>
Meaning	The services related to REMCS are explained.
Workaround	Execute the command ( <code>/usr/sbin/FJSVmadm/remcsmain</code> ) when the REMCS service is used. No action is required when the REMCS service is not used.

Message	<pre>Enhanced Support Facility &lt; VERSION &gt; will be installed.  Platform: &lt; PLATFORM &gt; OS Release: &lt; Oracle Solaris &gt; COMPONENT GROUP: &lt; COMPONENT GROUP &gt;  Do you want to continue with this installation? [yes or no ?]:</pre>
Meaning	Displayed when the <code>-O</code> option of the <code>esfadd</code> command is entered correctly and the installation is started.
Workaround	Please enter either "yes" or "no".

Message	Enhanced Support Facility < VERSION > will be installed.  Platform: < PLATFORM > OS Release: < Oracle Solaris >  Do you want to continue with this installation? [yes or no ?]:
Meaning	Displayed when the esfadd command is entered and the installation is started.
Workaround	Please enter either "yes" or "no".

Message	Enhanced Support Facility < VERSION > will be installed.  INSTALL-ROOT: < MOUNTPOINT > Platform: < PLATFORM > OS Release: < Oracle Solaris >  Do you want to continue with this installation? [yes or no ?]:
Meaning	Displayed when the -R option of the esfadd command is entered correctly and the installation is started.
Workaround	Please enter either "yes" or "no".

Message	Check the package that will be updated.  Platform: < PLATFORM > OS Release: < Oracle Solaris >  esfadd: INFO: This software is not installed on the system.
Meaning	Displayed when the -c option of the esfadd command is entered and Enhanced Support Facility is not installed.
Workaround	None.

Message	Enhanced Support Facility will be updated to Enhanced Support Facility < VERSION >  Platform: < PLATFORM > OS Release: < Oracle Solaris >  Do you want to continue with this update? [yes or no ?]:
Meaning	Displayed when the esfadd command is entered on the system where Enhanced Support Facility is installed and the update installation is started.
Workaround	Please enter either "yes" or "no".

Message	Update of Enhanced Support Facility was successful.
Meaning	Indicates that updateinstall finished normally.
Workaround	None.

Message	Installation of Enhanced Support Facility was successful.
Meaning	Indicates that installation finished normally.
Workaround	None.

Message	<p>Check the package that will be updated.</p> <p>Platform: &lt; PLATFORM &gt; OS Release: &lt; Oracle Solaris &gt;</p> <pre> PKGNAME      CURRENT      VERSION          FUTURE      VERSION ----- FJSVbse      &lt;CURRENT&gt;  REV=&lt;VERSION&gt;   &lt;FUTURE&gt;   REV=&lt;VERSION&gt; :            :           :             :           : &lt;PKGNAME&gt;   &lt;CURRENT&gt;  REV=&lt;VERSION&gt;   &lt;FUTURE&gt;   REV=&lt;VERSION&gt; ----- </pre> <p>Please save data according to the INSTALLATION GUIDE if the package(s) for which the save of data is necessary exist in the above-mentioned package(s).</p>
Meaning	The -c option of the esfadd command is entered and each package version number of Enhanced Support Facility is displayed.
Workaround	For the packages which require the saving of setting files, refer to "5.3.4 Saving the Enhanced Support Facility environment setting file" and save the required setting files.

Message	<p>Enhanced Support Facility &lt; VERSION &gt; will be installed after the following packages are removed.</p> <p>Packages: &lt; PKGNAME &gt; &lt; PKGNAME.2 &gt;</p> <p>Platform: &lt; PLATFORM &gt; OS Release: &lt; Oracle Solaris &gt;</p> <p>Do you want to continue with this installation? [yes or no ?]:</p>
Meaning	<p>Packages included in Enhanced Support Facility existed when the esfadd command is entered.</p> <p>Enhanced Support Facility (FJSVbse package) does not exist, therefore, install Enhanced Support Facility after removing the displayed packages.</p>
Workaround	Please enter "no" to exit, and after executing "esfadd -c" to confirm the package version number you are going to update, install Enhanced Support Facility.

Message	<p>Enhanced Support Facility &lt; VERSION &gt; will be installed after the following packages are removed.</p> <p style="text-align: center;">Packages: &lt; PKGNAME &gt; &lt; PKGNAME.2 &gt;</p> <p style="text-align: center;">Platform: &lt; PLATFORM &gt;</p> <p style="text-align: center;">OS Release: &lt; Oracle Solaris &gt;</p> <p style="text-align: center;">COMPONENT GROUP: &lt; COMPONENT GROUP &gt;</p> <p>Do you want to continue with this installation? [yes or no ?]:</p>
Meaning	<p>Packages included in Enhanced Support Facility existed when the -O option of the esfadd command is entered.</p> <p>Enhanced Support Facility (FJSVbse package) does not exist, therefore, install Enhanced Support Facility after removing the displayed packages.</p>
Workaround	<p>Please enter "no" to exit, and after executing "esfadd -c" to confirm the package version number you are going to update, install Enhanced Support Facility.</p>

Message	<p>esfadd: INFO: In case of Solaris 11, please check "Update Files" using UpdateAdvisor (middleware).</p> <p>esfadd: INFO: After installing Enhanced Support Facility, check</p> <p>esfadd: INFO: UpdateAdvisor (middleware) for "Update Files" and if it exists,</p> <p>esfadd: INFO: apply it to update Enhanced Support Facility to the latest state.</p>
Meaning	<p>It will be output in case of normal termination.</p> <p>In case of Oracle Solaris 11, confirm the correction file using Update Advisor (Middleware).</p> <p>After installing Enhanced Support Facility, confirm the correction file using Update Advisor (Middleware) and update Enhanced Support Facility to the latest state.</p>
Workaround	<p>None.</p>

Message	<p>To delete Enhanced Support Facility from the new boot environment, delete it using the DVD/CD containing the same version of Enhanced Support Facility that is currently installed.</p> <p>Do you want to continue with the removal of Enhanced Support Facility from the alternate boot environment? [yes or no?]:</p>
Meaning	<p>Enhanced Support Facility (FJSVbse package) exists at the mount point.</p>
Workaround	<p>Remove the Enhanced Support Facility at the mount point and retry.</p>

## B.1.2 Warning Messages

In this chapter, warning messages of the `esfadd(1M)` command are explained.

Message	<pre>Enhanced Support Facility &lt; VERSION &gt; will be installed.  Platform: &lt; PLATFORM &gt; OS Release: &lt; Oracle Solaris &gt; COMPONENT GROUP: &lt; COMPONENT GROUP &gt;  NOTE: The following package(s) not included in the specified component group is installed. &lt; PACKAGENAME1 &gt; &lt; PACKAGENAME2 &gt;  Do you want to continue with this installation? [yes or no ?]:</pre>
Meaning	If "CORE" or "BASIC" is specified as the -O option of the <code>esfadd</code> command, a caution message is output when some packages are already installed.
Workaround	Please enter "no" to terminate the installation and confirm the system environment. For more information, please see "6.2.3 Specifying a component group for installation".

Message	<pre>NOTE: -R option  Do you want to continue with this installation? [yes or no ?]:</pre>
Meaning	When you install Enhanced Support Facility newly by using the -R option e.g. Boot Environments or remote application, the above message is displayed.
Workaround	Please enter either "yes" or "no".



## B.1.3 Error Messages

In this chapter, error messages of the `esfadd(1M)` command are explained.

Message	<code>esfadd: INFO: Enhanced Support Facility is already installed.</code> <code>esfadd: ERROR: Update installation with -O option is not supported.</code>
Meaning	The <code>-O</code> option (component group) is specified when Enhanced Support Facility is already installed. Changing a component group for update installation and current Enhanced Support Facility installation is not allowed.
Workaround	Please do not specify the <code>-O</code> option (component group), or specify it after removing the installed Enhanced Support Facility.

Message	<code>ERROR: Please enter yes or no.</code>
Meaning	Displayed when you enter any value other than "yes" or "no" in the dialog when you install Enhanced Support Facility.
Workaround	Please enter either "yes" or "no".

Message	<code>esfadd: ERROR: Removal of packages failed.</code>
Meaning	Removal of packages you are going to update failed at the time of update installation.
Workaround	Please check the error code of the package you failed to remove.

Message	<code>esfadd: ERROR: Installation of packages failed.</code>
Meaning	Installation of packages failed at the time of installation.
Workaround	Please confirm the error code of the package you failed to remove.

Message	<code>esfadd: ERROR: This Hardware Platform is not supported.</code>
Meaning	The hardware platform is not supported.
Workaround	For supported hardware platform, please see "Appendix C Component Programs by Model".

Message	<code>esfadd: ERROR: The OS release of this system is not supported.</code>
Meaning	The OS of this system is not supported.
Workaround	For OS of the supported system, please see "Appendix C Component Programs by Model".

Message	<code>esfadd: ERROR: Mountpoint does not exist.</code>
Meaning	A mount point specified by " <code>esfadd -R</code> " does not exist.
Workaround	Specify the correct mount point with absolute path.

Message	esfadd: ERROR: Mountpoint must be specified with a absolute path.
Meaning	A mount point specified by "esfadd -R" is not specified with absolute path (whose head is '/').
Workaround	Specify the correct mount point with absolute path.

Message	esfadd: ERROR: Failed to install. The following old ESF packages already exists in < MOUNTPOINT >.
Meaning	Packages included in Enhanced Support Facility exist in the directory specified as a mount point.
Workaround	After removing the Enhanced Support Facility packages in the mount point, please re-execute the command.

Message	esfadd: ERROR: Failed to install. The ESF product already exists in < MOUNTPOINT >.
Meaning	Enhanced Support Facility (FJSVbse package) exist in the directory specified as a mount point.
Workaround	After removing Enhanced Support Facility in the mount point, please re-execute the command.

Message	esfadd: ERROR: Can not obtain COMPONENT GROUP < COMPONENT GROUP >.
Meaning	Displayed when a component group other than "FULL","BASIC","CORE" was entered.
Workaround	Please specify FULL, BASIC, or CORE as a component group, and execute the command. For supported component group, please see "6.2.2 Component groups".

Message	esfadd: ERROR: Two or more instances of the following package(s) are existing on the system. < PKGNAME > < PKGNAME.2 >  Exit installation.
Meaning	Displayed when two or more instances of the displayed packages exist on the system.
Workaround	Remove the packages having the problem. Please remove the packages by seeing "D.1.1 Resolution of problems which occur when package is installed (I)".

Message	esfadd: ERROR: The directory (/opt) where the packages will be installed does not exist. Do you want to continue with this installation? [yes or no ?]:
Meaning	The /opt directory dose not exist.(is not mounted.) This message is output when the command is executed without mounting /opt when the system is started in single user mode.
Workaround	In single user mode, /opt is not mounted. Therefore, please see "5.2.3 Instructions" to mount /opt.

Message	<p>esfadd: ERROR: The directory (/opt) where the packages will be installed does not exist.</p> <p>Interrupt installation and mount the /opt.</p> <p>Select (n) no to stop installation.</p> <p>Select (y) yes to continue to install. [yes or no ?]:</p>
Meaning	<p>The /opt directory dose not exist.(is not mounted.)</p> <p>This message is output when the command is executed without mounting /opt when the system is started in single user mode.</p>
Workaround	In single user mode, /opt is not mounted. Therefore, please see "5.2.3 Instructions" to mount /opt.

Message	esfadd:ERROR: Partially installed package(s) was found. See the Installation Guide and remove the following package(s).
Meaning	Partially installed packages was found.
Workaround	Please remove the packages displayed following the message.

Message	esfadd: ERROR: use permission of cron was not set up.(root,adm) was not set up.
Meaning	Displayed when the root and adm users are set not to be able to use cron. This message is displayed when Oracle VM Server for SPARC is installed prior to Enhanced Support Facility.
Workaround	For cron, please see "D.1.4 Resolution of problems which occur when package is installed (IV)" to do necessary procedure.

Message	esfadd: ERROR: The vfstab file is not found.
Meaning	The vfstab file does not exist.
Workaround	After making /etc/vfstab, please reinstall Enhanced Support Facility.

Message	esfadd: ERROR: Stop of DMPSV service failed.
Meaning	When Dump Assistant Package is removed (for update), stop of SMF service provided by Dump Assistant failed.
Workaround	Please check the state of DMPSV.

## B.2 esfrm(1M)

In this chapter, the meaning of messages displayed when the esfrm (1M) command is executed, and what action you can take when the messages are displayed are explained. Please refer to "A.2 esfrm (1M) " about the details of the esfrm (1M) command.

### B.2.1 Notice Messages

In this chapter, notice messages of the esfrm (1M) command are explained.

Message	<pre>Enhanced Support Facility &lt;VERSION&gt; will be removed.  FJSVbse  Enhanced Support Facility Information Management         (sparc) &lt; VERSION &gt;,REV=&lt; REVISION &gt;                 :                 : &lt; PKGNAME &gt;         &lt; VERSION &gt;,REV=&lt; REVISION &gt;  There is a possibility to cause problem in the system when the packages where "*" adheres to the head of the package name is deleted.  Please input "all" when you want to remove all packages,input "no" when you want to interrupt the uninstallation, or input "part" when you want to remove only packages where "*" does not adhere.  Please select. [no,all or part]:</pre>
Meaning	Displayed when the esfrm command is entered and Enhanced Support Facility is removed.
Workaround	<p>If there is a package having "*" at the head of its name, enter "part". Such a package is installed from a product other than Enhanced Support Facility.</p> <p>For more information, please see "5.4.3 Messages Displayed when Removing Software".</p>

Message	<p>Enhanced Support Facility &lt;VERSION&gt; will be removed.</p> <p>COMPONENT-GROUP:&lt;COMPONENT-GROUP&gt;</p> <p>FJSVbse Enhanced Support Facility Information Management</p> <p>(sparc) &lt; VERSION &gt;,REV=&lt; REVISION &gt;</p> <p>          :</p> <p>          :</p> <p>&lt; PKGNAME &gt;</p> <p>          &lt; VERSION &gt;,REV=&lt; REVISION &gt;</p> <p>There is a possibility to cause problem in the system when the packages where "*" adheres to the head of the package name is deleted.</p> <p>Please input "all" when you want to remove all packages,input "no" when you want to interrupt the uninstallation, or input "part" when you want to remove only packages where "*" does not adhere.</p> <p>Please select. [no,all or part]:</p>
Meaning	<p>Displayed when the esfrm command is entered and Enhanced Support Facility is removed.</p> <p>Displayed when the -O component group was specified when Enhanced Support Facility was installed.</p>
Workaround	<p>If there is a package having "*" at the head of its name, enter "part". Such a package is installed from a product other than Enhanced Support Facility.</p> <p>For more information, please see "5.4.3 Messages Displayed when Removing Software".</p>

Message	<p>Do you want to continue with uninstallation?[yes of no ?]:</p> <p>Uninstallation of Enhanced Support Facility was terminated.</p>
Meaning	<p>Displayed when the removal of packages failed and you do not continue the removal. Uninstallation of Enhanced Support Facility is not completed.</p>
Workaround	<p>None.</p>

Message	<p><b>*Important confirmation*</b></p> <p>When some ESF packages which can not support to Remote Install exist in &lt; MOUNTPOINT &gt; there is a possibility that not only the installation target system but also the system operating now may be destroyed.</p> <p>You should delete those packages from &lt; MOUNTPOINT &gt; according to the INSTALLATION GUIDE.</p> <p>Have you referred to the INSTALLATION GUIDE and confirmed the package versions [yes or no ?]:</p>
Meaning	Displayed when packages are removed with the esfrm -R mount point.
Workaround	<p>Please check the version of Enhanced Support Facility.</p> <p>Please remove the packages by using the same version DVD/CD as the installed Enhanced Support Facility.</p>

Message	<p>To delete Enhanced Support Facility from the new boot environment, delete it using the DVD/CD containing the same version of Enhanced Support Facility that is currently installed.</p> <p>Do you want to continue with the removal of Enhanced Support Facility from the alternate boot environment? [yes or no?]:</p>
Meaning	Displayed when you remove Enhanced Support Facility with the esfrm -R mount point
Workaround	<p>Please check the version of Enhanced Support Facility.</p> <p>If you are not using the same version DVD/CD as the installed Enhanced Support Facility, please enter "no" to exit.</p>

## B.2.2 Warning Messages

No messages are displayed when the `esfrm(1M)` command is executed.

## B.2.3 Error Messages

In this chapter, error messages of the `esfrm (1M)` command are explained.

Message	<code>ERROR: Please enter no,all or part.</code>
Meaning	Displayed when any value other than "no", "all","part" is entered in a dialog when Enhanced Support Facility is removed.
Workaround	Please enter "no","all",or "part".

Message	<code>Do you want to continue with uninstallation?[yes of no ?]:</code>
Meaning	Displayed during a dialog when Enhanced Support Facility is removed, and you are required to select continuing or cancelling the installation after failing the removal of packages.
Workaround	Please enter either "yes" or "no".

Message	<code>ERROR: Please enter yes or no.</code>
Meaning	Displayed when any value other than "yes", "no" is entered in a dialog when you remove Enhanced Support Facility.
Workaround	Please enter either "yes" or "no".

Message	<code>esfrm: ERROR: Mountpoint does not exist.</code>
Meaning	A mount point specified by "esfrm -R" does not exist.
Workaround	Specify the correct mount point with absolute path.

Message	<code>esfrm: ERROR: Mountpoint must be specified with a absolute path.</code>
Meaning	A mount point specified by "esfrm -R" is not specified with absolute path(whose head is '/').
Workaround	Specify the correct mount point with absolute path.

Message	<code>esfrm: ERROR: The OS release of this system is not supported.</code>
Meaning	The OS of this system is not supported.
Workaround	For OS the supported system, please see "Appendix C Component Programs by Model". Please remove Enhanced Support Facility by using the same version DVD/CD as the installed Enhanced Support Facility.

Message	<code>esfrm: ERROR: Fail for deleting.</code>
Meaning	Displayed then Enhanced Support Facility is not installed.
Workaround	The command was executed for a machine where Enhanced Support Facility is not installed. This command is a command to remove Enhanced Support Facility.



Message	<p>esfrm: ERROR: Two or more instances of the following package(s) are existing on the system.</p> <p>&lt; PKGNAME &gt; &lt; PKGNAME.2 &gt;</p> <p>Exit installation.</p>
Meaning	Displayed when two or more instances of the displayed packages exist on the system.
Workaround	<p>Remove the packages having the problem.</p> <p>Please see "D.2.1 Resolution of problems, which occurred when package was removed (I)".</p>

Message	<p>Removal of &lt; PACKAGENAME &gt; failed.</p> <p>esfrm: ERROR: Failed to remove a &lt; PACKAGENAME &gt; package.</p>
Meaning	Removal of a package failed when Enhanced Support Facility is uninstalled.
Workaround	Please check the error code of the package you failed to remove.

## B.3 esfver(1M)

In this chapter, the meaning of messages displayed when the `esfver (1M)` command is executed, and what action you can take when the messages are displayed are explained. Please refer to "A.3 `esfver (1M)`" about the details of the `esfver (1M)` command.

### B.3.1 Notice Messages

In this chapter, notice messages of the `esfver (1M)` command are explained.

Message	<code>esfver: INFO: Integrated Version of already installed Enhanced Support Facility. VERSION=&lt;VERSION&gt; REVISION=&lt;REVISION&gt;</code>
Meaning	The <code>esfver</code> command is entered and integrated version of Enhanced Support Facility is displayed.
Workaround	None.

Message	<code>esfver: INFO: Individual Packages Version of already installed Enhanced Support Facility. PKGNAME      VERSION    REVISION ----- FJSVbse      &lt;VERSION&gt; &lt;REVISION&gt;               :                : -----</code>
Meaning	The <code>-l</code> option of the <code>esfver</code> command is entered and each package version of Enhanced Support Facility is displayed.
Workaround	None.

Message	<code>esfver: INFO: Integrated Version of already installed Enhanced Support Facility. COMPONENT-GROUP:&lt; COMPONENT GROUP &gt; VERSION=&lt;VERSION&gt; REVISION=&lt;REVISION&gt;</code>
Meaning	The <code>esfver</code> command is entered and integrated version of Enhanced Support Facility is displayed. <code>COMPONENT-GROUP</code> is displayed when you install Enhanced Support Facility by specifying <code>-O</code> component group.
Workaround	None.

<p>Message</p>	<pre> esfver: INFO: Individual Packages Version of already installed Enhanced Support Facility.  COMPONENT-GROUP:&lt; COMPONENT GROUP &gt;  PKGNAME      VERSION      REVISION ----- FJSVbse      &lt;VERSION&gt;  &lt;REVISION&gt; : : ----- </pre>
<p>Meaning</p>	<p>The -l option of the esfver command is entered and each package version of Enhanced Support Facility is displayed.</p> <p>COMPONENT-GROUP is displayed when you install Enhanced Support Facility by specifying -O component group.</p>
<p>Workaround</p>	<p>None.</p>

## B.3.2 Warning Messages

In this chapter, warning messages of the `esfver (1M)` command are explained.

Message	<code>esfver: INFO: This software is not installed on the system.</code>
Meaning	Enhanced Support Facility (FJSVbse package) is not installed. The command was executed for the machine where Enhanced Support Facility is not installed. This is a command to check the version of Enhanced Support Facility and included packages and their versions.
Workaround	None.

Message	<code>-- WARNING --</code> Two or more instances of the following packages have been installed on the system.
Meaning	Displayed when two or more instances exist in the system. One possible reason for this is that a package provided another middle ware exists.
Workaround	None.

Message	Fail to get information of <Package>. -----
Meaning	Packages which have not been installed from Enhanced Support Facility are displayed. A list of non-existing packages following a list of existing packages is displayed.
Workaround	None.

### B.3.3 Error Messages

In this chapter, error messages of the `esfver (1M)` command are explained.

Message	<code>esfver: ERROR: mountpoint does not exist.</code>
Meaning	A mount point specified by " <code>esfver -R</code> " does not exist.
Workaround	Specify the correct mount point with absolute path.

Message	<code>esfver: ERROR: mountpoint must be specified with a absolute path.</code>
Meaning	A mount point specified by " <code>esfver -R</code> " is not specified with absolute path "whose head is '/").
Workaround	Specify the correct mount point with absolute path.

Message	<code>esfver: ERROR: Partially installed package(s) was found. See the Installation Guide and remove the following package(s).</code>
Meaning	Partially installed packages was found.
Workaround	Remove packages displayed following the message.

## B.4 esfpachadd(1M)

In this chapter, the meaning of messages displayed when the esfpachadd (1M) command is executed, and what action you can take when the messages are displayed are explained. Please refer to "A.4 esfpachadd (1M) " about the details of the esfpachadd (1M) command.

### B.4.1 Notice Messages

In this chapter, notice messages of the esfpachadd (1M) command are explained.

Message	Enhanced Support Facility <VERSION> correction patches will be applied.  Platform: < PLATFORM > OS Release: < Oracle Solaris >  Do you want to continue with this installation? [yes or no ?]:
Meaning	Displayed when the esfpachadd command is entered and the application of a patch is started.
Workaround	Please enter either "yes" or "no".

Message	Enhanced Support Facility < VERSION > correction patches will be applied.  Source Directory: < MOUNTPOINT >/Platform/< PLATFORM >/< Oracle Solaris > Platform: <PLATFORM > OS Release: < Oracle Solaris >  Do you want to continue with this installation? [yes or no ?]:
Meaning	Displayed when the -d option of the esfpachadd command is entered correctly and the application of a patch is started.
Workaround	Please enter either "yes" or "no".

Message	Enhanced Support Facility < VERSION > correction patches will be applied.  INSTALL-ROOT: < MOUNTPOINT > Platform: < PLATFORM > OS Release: < Oracle Solaris >  Do you want to continue with this installation? [yes or no ?]:
Meaning	Displayed when the -R option of the esfpachadd command is entered correctly and the application of a patch is started.
Workaround	Please enter either "yes" or "no".

Message	esfpachadd: INFO: There is no patch for this system.
Meaning	This message is output when there is no patch for Enhanced Support Facility.
Workaround	None.

Message	<pre> ---- esfpatchadd result. ---- Applied patches:   &lt; PATCH-ID &gt; &lt; PATCH-ID &gt; &lt; PATCH-ID &gt; esfpatchadd: INFO: None of the patch was applied on this system. Patches not applied:   &lt; PATCH-ID &gt; &lt; PATCH-ID &gt; &lt; PATCH-ID &gt; Patches actually applied are different according to the Model and the installed component. </pre>
Meaning	<p>The status of application for patch is displayed.</p> <p>Some patches are not applied by a combination of the installed component group and the type of the device. (The displayed message includes patches you could not apply because the patches have already been applied.)</p>
Workaround	None.

Message	Patches actually applied are different according to the Model and the installed component.
Meaning	This message means some patches failed to be applied because they have already been applied.
Workaround	None.

Message	Applying < PATCH-ID >
Meaning	Displayed when the patch application is in process.
Workaround	None.

Message	< PATCH-ID > was successfully applied.
Meaning	Displayed when a patch was applied while the patch application was in process.
Workaround	None.

Message	< PATCH-ID > was not applied.
Meaning	Displayed when a patch failed to be applied because the patch has already been applied.
Workaround	None.

## B.4.2 Warning Messages

No messages are displayed when the `esfpatchadd(1M)` command is executed.



## B.4.3 Error Messages

In this chapter, error messages of the `esfpatchadd (1M)` command are explained.

Message	Enhanced Support Facility < VERSION > is not installed.
Meaning	Displayed when the version of Enhanced Support Facility is wrong.
Workaround	Please apply a patch by using the same version DVD/CD as the installed Enhanced Support Facility.

Message	<code>esfpatchadd: ERROR: The source directory does not exist.</code>
Meaning	Patch storage directory specified by " <code>esfpatchadd -d</code> " does not exist.
Workaround	Specify the correct patch storage directory.

Message	<code>esfpatchadd: ERROR: Mountpoint does not exist.</code>
Meaning	The mount point specified by " <code>esfpatchadd -R</code> " does not exist.
Workaround	Specify the correct mount point with absolute path.

Message	<code>esfpatchadd: ERROR: Mountpoint must be specified with a absolute path.</code>
Meaning	The mount point specified by " <code>esfpatchadd -R</code> " is not specified with absolute path (whose head character is '/').
Workaround	Specify the correct mount point with absolute path.

Message	<code>esfpatchadd: ERROR: This software cannot be installed in non-global zone.</code>
Meaning	Displayed when <code>esfpatchadd</code> is executed in the non-global zone.
Workaround	Please execute <code>esfpatchadd</code> in the global zone.

Message	<code>esfpatchadd: ERROR: The directory (/opt) where the patches will be installed does not exist.</code> <code>The /opt mount by interrupting installation.</code>  <code>Select (n) no stop install.</code> <code>Select (y) yes continue to install. [yes or no ?]:</code>
Meaning	The <code>/opt</code> directory does not exist (is not mounted). This message is output when the command is executed without mounting <code>/opt</code> when the system is started in single user mode.
Workaround	In single user mode, <code>/opt</code> is not mounted, therefore please see "5.2.3 Instructions" to mount <code>/opt</code> .

Message	<code>esfpatchadd: ERROR: The vfstab file is not found.</code>
Meaning	The <code>vfstab</code> file does not exist.
Workaround	After making " <code>/etc/vfstab</code> ", please reinstall Enhanced Support Facility.

Message	<code>esfpatchadd: ERROR: This Hardware Platform is not supported.</code>
Meaning	The hardware platform is not supported.
Workaround	For supported hardware platform, please see "Appendix C Component Programs by Model".

Message	esfpatchadd: ERROR: The OS release of this system is not supported.
Meaning	The OS of this system is not supported.
Workaround	For OS of the supported system, please see "Appendix C Component Programs by Model".

Message	esfpatchadd: ERROR: The specified source directory is incorrect.
Meaning	The directory for storage of patches specified by "esfpatchadd -d " does not exist.
Workaround	Specify the correct patch storage directory.

Message	ERROR: Please enter yes or no.
Meaning	Displayed when any value other than "yes" and "no" is entered in a dialog when Enhanced Support Facility patches are applied.
Workaround	Please enter either "yes" or "no".

## Appendix C Component Programs by Model

Abbreviated names of machine models are used in the table below. For more information, please refer to "Notations Used" in "Preface".

Component group

C: CORE

B: BASIC

F: FULL

O: Supported, -: Not supported

### C.1 Oracle Solaris 11

Table C.1 -1 Component Programs List

No.	Component	Package name	VL	Abbreviation			Component group		
				CW	LE	PA	C	B	F
1	Enhanced Support Facility Information Management	FJSVbse	5.1	O	O	O	O	O	O
2	SCF/SCSI Fault LED support option	FJSVscfsc	2.0	O	-	-	O	O	O
3	Machine Administration	FJSVamle	2.0.1	-	O	-	O	O	O
		FJSVmadm	2.0.1	-	O	-	O	O	O
		FJSVamadm	2.0.1	O	-	-	O	O	O
		FJSVamcl	1.0.0	O	-	-	O	O	O
		FJSVpmadm	2.0.0	-	-	O	O	O	O
4	Remote Support	FJSVlrm	2.0	-	O	-	O	O	O
		FJSVamrm	2.0	O	-	-	O	O	O
		FJSVrlib	8.3.0	-	O	-	O	O	O
		FJSVragt	2.9	-	O	-	O	O	O
		FJSVrmaos	3.1	-	O	-	O	O	O
		FJSVracm	2.9	-	O	-	O	O	O
		FJSVrrda	2.9	-	O	-	O	O	O
		FJSVsirms	4.1.1	O	O	-	O	O	O
5	Auto Power Control System	FJSVapcs	1.5.0	O	-	-	-	O	O
6	Server Default Configuration	FJSVssf	4.0	O	O	O	O	O	O
7	System Data Output Tool	FJSVsnap	2.8	O	O	O	O	O	O
8	Crash Dump Assistant	FJSVdmp	1.7	O	O	O	O	O	O
9	Auto Dump Analyze Tool	FJSVana	3.0	O	O	O	O	O	O
10	HRM-S	FJSVhrmse	7.3.0	O *1	O *1	O *1	-	-	O *1
		FJSVhrmcp	7.3.0	O *1	O *1	O *1	-	-	O *1
11	Tape Driver Configuration Tool	FJSVdcnf	1.2	O	O	O	O	O	O
12	Solaris System Safety Compliance Assessment Tool	FJSVs3cat	1.0.1	O *1	O *1	O *1	O *1	O *1	O *1
13	HDD configurator tool	FJSVhdcfg	1.0	-	-	O	O	O	O
14	Multipath diagnostic program	FJSVpdiag	1.1.0	O	O	O	O	O	O

\*1:Package is installed, but not supported.

## C.2 Oracle Solaris 10

Table C.2 -1 Component Programs List

No.	Component	Package name	VL	Abbreviation			Component group		
				CW	LE	PA	C	B	F
1	Enhanced Support Facility Information Management	FJSVbse	5.1	O	O	O	O	O	O
2	IKPDR Command	FJSVdropl	1.0	O	-	-	O	O	O
3	SCF/SCSI Fault LED support option	FJSVscfsc	1.0	O	-	-	O	O	O
4	Machine Administration	FJSVamle	1.0.0	-	O	-	O	O	O
		FJSVmadm	1.2.3	-	O	-	O	O	O
		FJSVamadm	1.0.0	O	-	-	O	O	O
		FJSVamcl	1.0.0	O	-	-	O	O	O
		FJSVpmadm	1.0.0	-	-	O	O	O	O
5	Remote Support	FJSVlrm	1.0	-	O	-	O	O	O
		FJSVamrm	1.0	O	-	-	O	O	O
		FJSVrlib	8.2.2	-	O	-	O	O	O
		FJSVragt	2.9	-	O	-	O	O	O
		FJSVrmaos	2.9	-	O	-	O	O	O
		FJSVracm	2.9	-	O	-	O	O	O
		FJSVrrda	2.9	-	O	-	O	O	O
		FJSVsirms	4.0	O	O	-	O	O	O
6	Auto Power Control System	FJSVapcs	1.4.2	O	-	-	-	O	O
7	Server Default Configuration	FJSVdef	1.4	O	O	O	O	O	O
		FJSVssf	3.0.1	O	O	O	O	O	O
8	System Data Output Tool	FJSVsnap	2.8	O	O	O	O	O	O
9	Crash Dump Assistant	FJSVdmp	1.6	O	O	O	O	O	O
10	Auto Dump Analyze Tool	FJSVana	2.1	O	O	O	O	O	O
11	System Parameter Diagnosis	FJSVparam	1.1	O	O	O	O	O	O
12	HRM-S	FJSVhrmse	7.3.0	O *1	O *1	O*1	-	-	O *1
		FJSVhrmcp	7.3.0	O *1	O *1	O*1	-	-	O *1
13	Tape Driver Configuration Tool	FJSVdenf	1.2	O	O	O	O	O	O
14	Patch Information Collect Command	FJSVpmgc	1.1	O	O	O	O	O	O
15	Console flow control canceller	FJSVcflw	1.0	O	O	-	O	O	O
16	UpdateAdvisor (Solaris OS)	FJSVupdta	1.7	O *1	O *1	O *1	O *1	O *1	O *1
17	Solaris System Safety Compliance Assessment Tool	FJSVs3cat	1.0.1	O *1	O *1	O *1	O *1	O *1	O *1
18	Multipath diagnostic program	FJSVpdiag	1.1.0	O	O	O	O	O	O

\*1:Package is installed, but not supported.

## Appendix D Troubleshooting

### D.1 Resolution of problems which occur when package is installed

#### Case1

Refer to Appendix D.1.1 when the following messages are displayed while installing.

```
esfadd: ERROR: Two or more instances of the following package(s) are existing on the
system.
package_name package_name.2

Exit installation.
```

#### Case2

Refer to Appendix D.1.2 when the following messages are displayed while installing.

```
A version of the <pkginst> package is already installed on this machine.
Current administration ds not allow new instances of an existing package to be created,
nor existing instances to be overwritten.

No changes were made to the system.
esfadd: ERROR: Installation of packages failed.
```

#### Case3

Refer to Appendix D.1.3 when the following messages are displayed while installing.

```
# esfadd
:
Installation of <pkginst> failed (error).
esfadd: ERROR:Installation of packages failed.
```

#### Case4

Refer to Appendix D.1.4 when the following messages are displayed while deleting the package.

```
# esfadd
:
Removed of <pkginst> failed.
esfadd:ERROR:Removal of packages failed.
```

## D.1.1 Resolution of problems which occur when package is installed (I).

If the following message is displayed during installation, and the installation terminates abnormally, use the following solution.

```
esfadd: ERROR: Two or more instances of the following package(s) are existing on the
system.
package_name package_name.2

Exit installation.
```

### Problem Cause

This message will be displayed when multiple instances of a particular package have already been installed on this system. Please execute the following procedures as the corrective action.

### Solution

- 1) If an environment setting file exists for the package where the problem occurred, save the environment setting file.  
(Refer to Section 5.3.4, "Saving the Enhanced Support Facility environment setting file" for details.)

- 2) Check the version of the package where the problem occurred.

```
# /usr/bin/pkginfo -x package_name.\* <Return>
```

- 3) Remove all packages where the problem has occurred.

```
# /usr/sbin/pkgrm package_name.\* <Return>
```

- 4) If the version of the problem package is later than that provided in the software, install the later version of the package.
- 5) Go on to the procedures in Section 5.2.3, "Instructions".
- 6) Restore the previously saved environment setting file, using the procedures in Section 5.3.7, "Restoring the Enhanced Support Facility environment setting file".

## D.1.2 Resolution of problems which occur when package is installed (II).

If the following message is displayed during installation, and the installation terminates abnormally, use the following solution.

```
A version of the <pkginst> package is already installed on this machine.  
Current administration ds not allow new instances of an existing package to be created,  
nor existing instances to be overwritten.  
  
No changes were made to the system.  
  
esfadd: ERROR: Installation of packages failed.
```

### Problem Cause

This message will be displayed when the <pkginst> package installation fails. In particular, this message will be displayed when multiple instances of the <pkginst> package have already been installed on the system.

Execute the following procedure as the correction action.

Attention: Depending on the state of the system, this message might be displayed in addition to other display causes.

Therefore, you need to confirm whether there are other abnormalities, before proceeding.

### Solution

- 1) If an environment setting file exists for the package where the problem occurred, save the environment setting file.  
(Refer to Section 5.3.4, "Saving the Enhanced Support Facility environment setting file" for details.)

- 2) Check the version of the package where the problem occurred.

```
# /usr/bin/pkginfo -x package_name.* <Return>
```

- 3) Remove all of the packages where problems occurred.

```
# /usr/sbin/pkgrm package_name.* <Return>
```

- 4) Remove the FJSVbse package.

```
# /usr/sbin/pkgrm FJSVbse <Return>
```

- 5) If the version of the problem package is later than the one provided in the software, install the later version of the package.
- 6) Go on to the procedures in Section 5.2.3, "Instructions".
- 7) Restore the previously saved environment setting file, using the procedures in Section 5.3.7, "Restoring the Enhanced Support Facility environment setting file".

### D.1.3 Resolution of problems which occur when package is installed (III).

If the following message is displayed during installation, and the installation terminates abnormally, use the following solution.

```
# esfadd<Return>
:
Installation of <pkginst> failed (error).
esfadd: ERROR:Installation of packages failed.
```

#### Problem Causes

This message will be displayed when the <pkginst> package installation fails. In particular, the message will be displayed if the software was installed under the following situations.

1. Lack of disk space (Refer to Section 3.3.1, "Disk requirements").
2. If using NFS to mount the DVD/CD drive on the system prior software installation, the options on the NFS mount are not appropriately specified.
3. The operator has executed procedures other than those described in the Installation Guide.

Attention: Depending on the state of the system, this message might be displayed for other reasons than those mentioned above. Therefore, you need to confirm whether there are other abnormalities before proceeding.

#### Solution

- 1) If an environment setting file exists for the package where the problem occurred, save the environment setting file.  
(Refer to Section 5.3.4, "Saving the Enhanced Support Facility environment setting file" for details.)

- 2) Remove package where problem occurred.

```
# /usr/sbin/pkgrm package_name <Return>
```

- 3) Remove the FJSVbse package.

```
# /usr/sbin/pkgrm FJSVbse <Return>
```

- 4) Go on to the procedures in Section 5.2.3, "Instructions".

- 5) Restore the previously saved environment setting file, using the procedures in Section 5.3.7, "Restoring the Enhanced Support Facility environment setting file".

Attention:

Even if the FJSVbse package is removed according to procedure3, the /opt/FJSVbse directory might not be deleted. However, this will not cause any operational problems. If unnecessary, delete everything beneath using the 'rm-r' command.



## D.1.4 Resolution of problems which occur when package is installed (IV).

If the following message is displayed during package removal, and the removal terminates abnormally, use the following solution.

```
# esfadd<Return>
:
Removed of <pkginst> failed.
esfadd:ERROR:Removal of packages failed.
```

### Problem Causes

This message will be displayed when the <pkginst> package removal fails. In particular, this message will be displayed if:

1. The <pkginst> package has dependence with other package(s).
2. The installed package instance has broken.
3. The operator executed procedures other than those described in the Installation Guide.

Attention: Depending on the state of the system, this message might be displayed in addition to others. Therefore, you need to confirm whether there are other abnormalities before proceeding.

### Solution

- 1) If an environment setting file exists for the package where the problem occurred, save the environment setting file.  
(Refer to Section 5.3.4, "Saving the Enhanced Support Facility environment setting file" for details.)

- 2) Remove package where problem occurred.

```
# /usr/sbin/pkgrm package_name <Return>
```

- 3) Remove the FJSVbse package.

```
# /usr/sbin/pkgrm FJSVbse <Return>
```

- 4) Go on to the procedures in Section 5.2.3, "Instructions".

- 5) Restore the previously saved environment setting file, using the procedures in Section 5.3.7, "Restoring the Enhanced Support Facility environment setting file".

Attention:

Even if the FJSVbse package is removed according to procedure3, the /opt/FJSVbse directory might not be deleted. However, this will not cause any operational problems. If unnecessary, delete everything beneath using the 'rm-r' command.

## D.2 Resolution of problems which occur when package was removed

### Case1

Refer to Appendix D.2.1 when the following messages are displayed while deleting the package.

```
esfrm: ERROR: Two or more instances of the following package(s) are existing on the system.  
package_name package_name.2  
  
Exit installation.
```

### Case2

Refer to Appendix D.2.2 when the following messages are displayed while deleting the package.

```
svc:/system/fjsvdmpsnap:default remains enabled; aborting  
pkgrm: ERROR: class action script did not complete successfully  
  
Removal of <FJSVdmp> failed.  
  
esfrm: ERROR: Failed to remove a FJSVdmp package.
```

## D.2.1 Resolution of problems, which occurred when package was removed (I).

If the following message is displayed during software removal, and the remove terminates abnormally, use the following solution.

```
esfrm: ERROR: Two or more instances of the following package(s) are existing on the system.  
package_name package_name.2  
  
Exit installation.
```

### Problem Cause

This message will be displayed if multiple instances of a particular package have been installed on the system. Please execute the following procedures as the corrective action.

### Solution

- 1) Remove package where problem occurred.

```
# /usr/sbin/pkgrm package_name.\* <Return>
```

- 2) Go on to step 8 provided in Section 5.4.2, "Removal of Software".

## D.2.2 Resolution of problems, which occurred when package was removed (II).

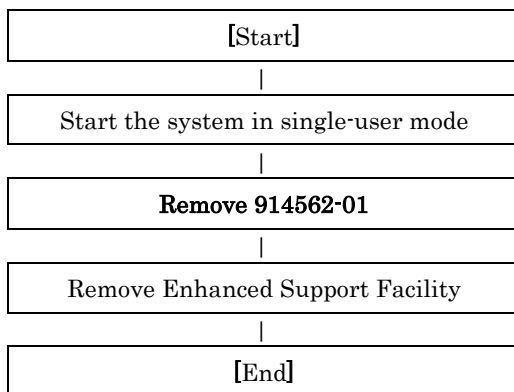
If you execute 'esfrm' on Oracle Solaris 10 with Patch 914562-01 installed, the removal of Enhanced Support Facility fails.

```
svc:/system/fjsvdmpsnap:default remains enabled; aborting
pkgrm: ERROR: class action script did not complete successfully

Removal of <FJSVdmp> failed.

esfrm: ERROR: Failed to remove a FJSVdmp package.
```

Please follow the steps below when you remove Enhanced Support Facility.



### Problem Causes

These messages are displayed when you try to remove this product while a service provided by the Crash Dump Assistant is running.

### Solution

If you performed the removal of Enhanced Support Facility without removing Patch 914562-01 and failed, please follow the steps below for recovery.

- 1) Stop services provided by the Crash Dump Assistant package.

```
# svcadm disable svc:/system/fjsvdmpsnap:default <Return>
# svcadm disable svc:/system/fjsvdmpadm:default <Return>
```

- 2) Confirm the services are not running.

[Example of execution]

```
# svcs -a | grep svc:/system/fjsvdmp <Return>
disabled          22:10:46 svc:/system/fjsvdmpsnap:default
disabled          22:10:47 svc:/system/fjsvdmpadm:default
```

- 3) Re-execute the removal command (esfrm) of Enhanced Support Facility.

```
# cd /cdrom <Return>
# bin/esfrm <Return>
```

## D.3 When the patches fail to be applied

For information on the patches that are applied, refer to "3.1.5 Bundled Patches".

However, applicable patches depend on the state of the system.

1) The following messages will be displayed when applying of the patch was failed.

a. when no applicable packages exist

(xxxxxx-xx is patch ID)

```
One or more patch packages included in
xxxxxx-xx are not installed on this system.
WARNING: Skipping patch xxxxxx-xx
```

or

```
None of the packages included in patch xxxxxx-xx
are installed on this system.
WARNING: Skipping patch xxxxxx-xx
```

If these messages are displayed, packages that would be corrected by the patch have not been installed on the system. Please check the environment of the system.

If you installed the software by specifying a component group that excluded the package being corrected, this message will be displayed. but in that case, there is no problem.

b. when the patch has already been applied

```
Patch xxxxxx-xx has already been applied.
See patchadd(1M) for instructions.
WARNING: Skipping patch xxxxxx-xx
```

If this message is displayed, the patch has already been applied to the system.

If you are doing an update installation of this software, this is not a problem

2) Execute the following procedures to apply the patch again

2-1) Remove the FJSVbse package.

```
# pkgrm FJSVbse <Return>
```

2-2) Go on to the procedures in Section 5.2.3, "Instructions".

## Appendix E Notes

### E.1 Oracle Solaris network installation using DHCP service

If network installation is performed using DHCP service, the system behaves as a DHCP client. In the case of SPARC Enterprise T series, Enhanced Support Facility should be installed after the system is configured to use a static IP address.

If Enhanced Support Facility is installed while the system is running as a DHCP client, the following symptoms may occur on the SPARC Enterprise T series.

- Remote Support

Influence: When using the following connection type, reporting can not be performed.

- 1) Point-to-Point (PtoP) Connection (ISDN)
- 2) Point-to-Point (PtoP) Connection (ISDN: Mail Only)

Recommended action: After configuring the system to use a static IP address, please request a service engineer to change the setting of the router for REMCS PtoP (ISDN) connection.

## Appendix F Mounting the DVD/CD

In this chapter, we will explain the procedure of using the built-in DVD/CD drive, the DVD/CD drive of an installation server and ISO images.

### F.1 Using a built-in DVD/CD drive

Machines other than SPARC M10-1/M10-4/M10-4S, SPARC T3-4, SPARC Enterprise T1000 are equipped with main unit internal DVD/CD.

If you use internal DVD/CD drive allocated to a domain of SPARC Enterprise T series (except SPARC T3-4/T4-4, SPARC Enterprise T1000), or SPARC Enterprise M series, you can mount a DVD/CD by the following procedure.

Regarding allocation of DVD/CD drive to a domain, please refer to "SPARC Enterprise Mxxxx series Server Administration Guide" by visiting the following URL.

<http://www.fujitsu.com/global/services/computing/server/sparcenterprise/downloads/manual/>

- 1) In case of Oracle Solaris 10, stop volume manager.

```
# etc/init.d/volmgt stop <Return>
```

- 2) Create the mount destination directory of a DVD/CD.

However, if the directory already exists, you don't have to create it.

```
# /usr/bin/mkdir -p /media <Return>
```

In case of Oracle Solaris 10, read '*media*' as '*cdrom*'.

- 3) Mount the DVD/CD. Specify a DVD/CD drive for <DEVICE>.

```
# /usr/sbin/mount -F hsfs /dev/dsk/<DEVICE> /media <Return>
```

In case of Oracle Solaris 10, read '*media*' as '*cdrom*'.

- 4) Move to the directory of the DVD/CD.

```
# cd /media <Return>
```

In case of Oracle Solaris 10, read '*media*' as '*cdrom*'.

The DVD/CD becomes visible after completing the above steps.

## F.2 Mounting a DVD/CD of an installation server

Please follow these steps to mount the DVD/CD inserted into a DVD/CD drive of the installation server.

1) Setting of an installation server

Add the following line to the `/etc/rmmount.conf` file in the install server.

```
share cdrom* -o ro,anon=0
```

2) Setting of a target machine of the installation

2-1) Activate the network.

```
# /usr/sbin/svcadm enable /network/initial <Return>
```

2-2) Mount a DVD/CD.

```
# /usr/bin/mkdir -p /cdrom <Return>
# /usr/sbin/mount -F nfs -o ro,vers=2 host:/cdrom/cdrom0 /cdrom <Return>
```

The "`host`" represents the host name of an installation server.

2-3) Move to the directory of the DVD/CD.

```
# cd /cdrom <Return>
```



## F.3 Using an ISO image

Refer to the following procedure when an ISO image is used after being mounted.

### F.3.1 Using Oracle Solaris 11

ISO images can be used by mounting with the following procedure.

- 1) Mount the ISO image.

Example: In case the ISO image *esf.iso*, kept in */var/tmp* is mounted on */mnt*.

```
# /usr/sbin/mount -F hsfs /var/tmp/esf.iso /mnt <Return>
```

- 2) Move to the directory to which the ISO image was mounted.

```
# cd /mnt <Return>
```

### F.3.2 Using Oracle Solaris 10

ISO images can be used by mounting with the following procedure.

- 1) Use the "lofiadm" command to render the ISO image to a block device.

Example: In case the ISO image *esf.iso* is in */var/tmp*

```
# /usr/sbin/lofiadm -a /var/tmp/esf.iso <Return>
```

The block device will be displayed like the following.

```
/dev/lofi/1
```

- 2) Mount the displayed block device.

Example: In case */dev/lofi/1* is mounted on */mnt*

```
# /usr/sbin/mount -F hsfs -o ro /dev/lofi/1 /mnt <Return>
```

- 3) Move to the mounted directory.

```
# cd /mnt <Return>
```

## Appendix G List of management processes from source to an Oracle Solaris zone

Model abbreviations and the process of handling Model name are described below.

Abbreviation	Model name
P	PRIMEPOWER250/450
C_L_Z	PRIMEPOWER 900/1500 (Model equipped with SPARC64TM V) /2500
C_M_Z	PRIMEPOWER 650 (Model equipped with SPARC64TM V) /850 (Model equipped with SPARC64TM V)
C_L	PRIMEPOWER 1500 (Model equipped with SPARC64TM GP)
C_M	PRIMEPOWER 650 (Model equipped with SPARC64TM GP) /850 (Model equipped with SPARC64TM GP)
K	PRIMEPOWER800/1000/2000
T	PRIMEPOWER200/400/600
U	PRIMEPOWER1/100
CW	SPARC Enterprise M3000/M4000/M5000/M8000/M9000
LE	SPARC Enterprise T1000/T2000/T5120/T5140/T5220/T5240/T5440 SPARC T3-1/T3-2/T3-4/T4-1/T4-2/T4-4
PA	SPARC M10-1/M10-4/M10-4S



No.	Component	Package	The supported versions of Enhanced Support Facility at the source													The models that support Enhanced Supported Facility at the source									Handling of the destination		
			2.5	2.5.1	2.6	3.0	3.0.1	3.1	3.1.1	3.2	3.2.1	4.0 *1	5.0	5.0.1	5.1	P	C_L C_L_Z	C_M C_M_Z	K	T	U	CW	LE	PA	Package Irremovable/ Removable	Handling	
61	Columbus SCF Driver	FJSVscr3	1.3	1.3	1.3.1	1.3.1	1.3.1	1.3.1	-	-	-	-	-	-	-	0	0	-	-	-	-	-	-	-	Irremovable	Management 10	
62	Columbus SCF Driver	FJSVscd3	1.3	1.3	1.3	1.3	1.3	1.3	-	-	-	-	-	-	-	0	0	-	-	-	-	-	-	-	Irremovable	Irremovable, not handled	
63	TaihoLow-End SCF Driver	FJSVlscuj	1.2	1.2	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	Removable	Remove	
64	TaihoLow-End SCF Driver	FJSVlscu	1.2	1.2	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	Removable	Remove	
65	TaihoLow-End SCF Driver	FJSVlscr	1.2	1.2	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	Removable	Remove	
66	TaihoLow-End SCF Driver	FJSVlscd	1.2	1.2	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	Removable	Remove	
67	TaihoLow-End SCF Driver	FJSVlscdx	1.2	1.2	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	Removable	Remove	
68	Kaiser SCF Driver	FJSVscuj2	1.3	1.3	1.3	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	Irremovable	Irremovable, not handled	
69	Kaiser SCF Driver	FJSVscu2	1.3	1.3	1.3	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	Irremovable	Irremovable, not handled	
70	Kaiser SCF Driver	FJSVscr2	1.3	1.3	1.3.1	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	Irremovable	Management 11	
71	Kaiser SCF Driver	FJSVscd2	1.3	1.3	1.3	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	Irremovable	Irremovable, not handled	
72	Kaiser SCF Driver	FJSViomp	2.3	2.3	2.3	2.3	2.3	2.3	-	-	-	-	-	-	0	0	0	0	-	-	-	-	-	-	Removable	Remove after checking	
73	Taiho SCF Driver	FJSVscuja	1.9.2	1.9.2	1.9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	Removable	Remove	
74	Taiho SCF Driver	FJSVscu.us	1.9.2	1.9.2	1.9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	Removable	Remove	
75	Taiho SCF Driver	FJSVscr.us	1.9.2	1.9.2	1.9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	Removable	Remove	
76	Taiho SCF Driver	FJSVscd.us	1.9.2	1.9.2	1.9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	Removable	Remove	
77	Taiho SCF Driver	FJSVscdx.us	1.9.2	1.9.2	1.9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	Removable	Remove	
78	IKPDR Command	FJSVdropl	-	-	-	1.0	1.0	1.0	1.0	1.0	1.0	-	1.0	1.0	1.0	-	-	-	-	-	0	-	-	-	-	Irremovable	Irremovable, not handled
79	NGDR Command	FJSVdr	1.3	1.3	1.3	1.3	1.3	1.3	-	-	-	-	-	-	-	0	-	0	-	-	-	-	-	-	-	Irremovable	Irremovable, not handled
80	Enhanced Support Facility Information Management	FJSVbse	2.5	2.5.1	2.6	3.0	3.0.1	3.1	3.1.1	3.2	3.2.1	-	5.0	5.0.1	5.1	0	0	0	0	0	0	0	0	0	0	Removable	Remove

NGZ usable (non-global zone is usable): Packages that can be used on Oracle Solaris zone

\*1:Enhanced Support Facility 4.0 supports Oracle Solaris 11 only.

\*2:Enhanced Support Facility 3.2.1, the values of the "Package Irremovable/Removable" column is denoted as "Irremovable", from Enhanced Support Facility 5.0 and above, the same value is denoted as "Removable".



No.	Component	Package	The supported versions of Enhanced Support Facility at the source													The models that support Enhanced Supported Facility at the source									Handling of the destination	
			2.5	2.5.1	2.6	3.0	3.0.1	3.1	3.1.1	3.2	3.2.1	4.0 *1	5.0	5.0.1	5.1	P	C_L C_L_Z	C_M C_M_Z	K	T	U	CW	LE	PA	Package Irremovable/ Removable	Handling
61	Columbus SCF Driver	FJSVscr3	1.3	1.3	1.3.1	1.3.1	1.3.1	1.3.1	-	-	-	-	-	-	-	-	0	0	-	-	-	-	-	-	Removable	Remove
62	Columbus SCF Driver	FJSVscd3	1.3	1.3	1.3	1.3	1.3	1.3	-	-	-	-	-	-	-	-	0	0	-	-	-	-	-	-	Removable	Remove
63	TaihoLow-End SCF Driver	FJSVlscuj	1.2	1.2	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	Removable	Remove
64	TaihoLow-End SCF Driver	FJSVlscu	1.2	1.2	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	Removable	Remove
65	TaihoLow-End SCF Driver	FJSVlscr	1.2	1.2	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	Removable	Remove
66	TaihoLow-End SCF Driver	FJSVlscd	1.2	1.2	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	Removable	Remove
67	TaihoLow-End SCF Driver	FJSVlscdx	1.2	1.2	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	Removable	Remove
68	Kaiser SCF Driver	FJSVscuj2	1.3	1.3	1.3	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	Removable	Remove
69	Kaiser SCF Driver	FJSVscu2	1.3	1.3	1.3	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	Removable	Remove
70	Kaiser SCF Driver	FJSVscr2	1.3	1.3	1.3.1	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	Removable	Remove
71	Kaiser SCF Driver	FJSVscd2	1.3	1.3	1.3	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	Removable	Remove
72	Kaiser SCF Driver	FJSVlomp	2.3	2.3	2.3	2.3	2.3	2.3	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	-	Removable	Remove
73	Taiho SCF Driver	FJSVscuja	1.9.2	1.9.2	1.9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	Removable	Remove
74	Taiho SCF Driver	FJSVscu.us	1.9.2	1.9.2	1.9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	Removable	Remove
75	Taiho SCF Driver	FJSVscr.us	1.9.2	1.9.2	1.9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	Removable	Remove
76	Taiho SCF Driver	FJSVscd.us	1.9.2	1.9.2	1.9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	Removable	Remove
77	Taiho SCF Driver	FJSVscdx.us	1.9.2	1.9.2	1.9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	Removable	Remove
78	IKPDR Command	FJSVdropl	-	-	-	1.0	1.0	1.0	1.0	1.0	1.0	-	1.0	1.0	1.0	-	-	-	-	-	-	0	-	-	Removable	Remove
79	NGDR Command	FJSVdr	1.3	1.3	1.3	1.3	1.3	1.3	-	-	-	-	-	-	-	-	0	-	0	-	-	-	-	-	Removable	Remove
80	Enhanced Support Facility Information Management	FJSVbse	2.5	2.5.1	2.6	3.0	3.0.1	3.1	3.1.1	3.2	3.2.1	-	5.0	5.0.1	5.1	0	0	0	0	0	0	0	0	0	Removable	Remove

\*1:Enhanced Support Facility 4.0 supports Oracle Solaris 11 only.

G.3 List of management process of Oracle Solaris 11 zone on Oracle Solaris 11 systems

Handling of Oracle Solaris 11 zone when migrating from one Oracle Solaris 11 system to another Oracle Solaris 11 system

No.	Component	Package	The supported versions of Enhanced Support Facility at the source				The models that support Enhanced Supported Facility at the source			Handling of the destination	
			4.0	5.0	5.0.1	5.1	CW	LE	PA	Package Irremovable/Removable	Handling
1	Multipath diagnostic program	FJSVpdiag	-	-	-	1.1.0	0	0	0	Removable	Remove
2	HDD configurator tool	FJSVhdcfg	-	1.0	1.0	1.0	-	-	0	Removable	Remove
3	Tape Driver Configuration Tool	FJSVdcnf	1.2	1.2	1.2	1.2	0	0	0	Removable	Remove
4	Auto Dump Analyze Tool	FJSVana	3.0	3.0	3.0	3.0	0	0	0	Removable	Remove
5	Crash Dump Assistant	FJSVdmp	1.7	1.7	1.7	1.7	0	0	0	Removable	Remove
6	System Data Output Tool	FJSVsnap	2.7	2.8	2.8	2.8	0	0	0	Removable	Remove
7	ServerDefaultConfiguration	FJSVssf	4.0	4.0	4.0	4.0	0	0	0	Removable	Remove
8	Auto Power Control System	FJSVapcs	1.5.0	1.5.0	1.5.0	1.5.0	0	-	-	Removable	Remove
9	Remote Support	FJSVirms	4.1	4.1.1	4.1.1	4.1.1	0	0	-	Removable	Remove
10	Remote Support	FJSVracm	2.9	2.9	2.9	2.9	-	0	-	Removable	Remove
11	Remote Support	FJSVrrda	2.9	2.9	2.9	2.9	-	0	-	Removable	Remove
12	Remote Support	FJSVrmaos	3.1	3.1	3.1	3.1	-	0	-	Removable	Remove
13	Remote Support	FJSVragt	2.9	2.9	2.9	2.9	-	0	-	Removable	Remove
14	Remote Support	FJSVrlib	8.3.0	8.3.0	8.3.0	8.3.0	-	0	-	Removable	Remove
15	Remote Support	FJSVlrm	2.0	2.0	2.0	2.0	-	0	-	Removable	Remove
16	Remote Support	FJSVarm	2.0	2.0	2.0	2.0	0	-	-	Removable	Remove
17	Machine Administration	FJSVamle	2.0.0	2.0.1	2.0.1	2.0.1	-	0	-	Removable	Remove
18	Machine Administration	FJSVpamadm	-	2.0.0	2.0.0	2.0.0	-	-	0	Removable	Remove
19	Machine Administration	FJSVamcl	1.0.0	1.0.0	1.0.0	1.0.0	0	-	-	Removable	Remove
20	Machine Administration	FJSVamadm	2.0.0	2.0.1	2.0.1	2.0.1	0	-	-	Removable	Remove
21	Machine Administration	FJSVmadm	2.0.0	2.0.1	2.0.1	2.0.1	-	0	-	Removable	Remove
22	SCF/SCSI Fault LED support option	FJSVscfsc	2.0	2.0	2.0	2.0	0	-	-	Removable	Remove
23	Enhanced Support Facility Information Management	FJSVbse	4.0	5.0	5.0.1	5.1	0	0	0	Removable	Remove