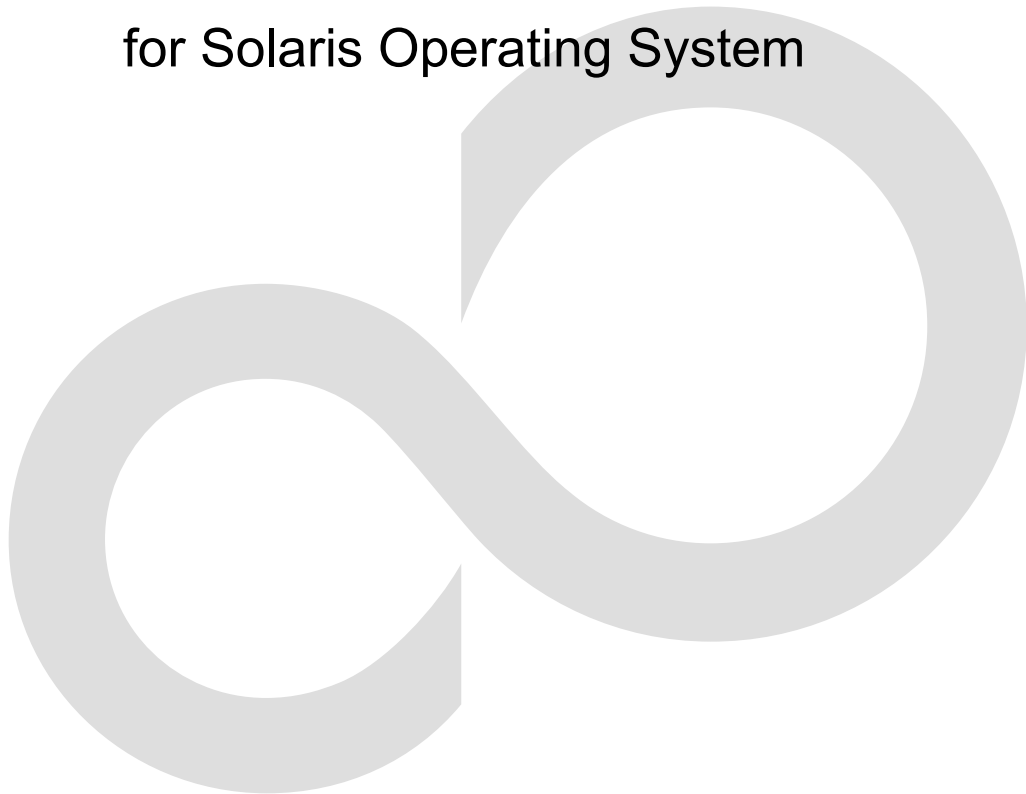




SPARC-Version
Enhanced Support Facility

Security System Building Guide

for Solaris Operating System



FUJITSU



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1. Before reading this guide

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

It does not verify it for all the environments and the settings of the combination. The change in the setting is beyond the limits of the operation guarantee by our company. Change only when you can originally do completely well informed of knowledge concerning the security of the Solaris™ Operating System whole and troubleshooting

Information described here is based on that confirmed facts at the time of writing this document. Unless revision is expressly noticed, from the Basic Software Extension 1.0 through the Enhanced Support Facility 2.4.1 are covered here.

Information written in this document is subject to change due to an enhancement of the Enhanced Support Facility or release of patches in the future.

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

Model name	uname -m	Abbreviation	
GP7000F Models 200/200R/400/400A/400R/600/600R	sun4us	PW-T	
PRIMEPOWER200/400/600		PW-K	
GP7000F Models 1000/2000			
PRIMEPOWER800/1000/2000			
PRIMEPOWER650(Model equipped with SPARC64™ GP)/ 850(Model equipped with SPARC64™ GP) *1			PW-CM
PRIMEPOWER650(Model equipped with SPARC64™ V)/ 850(Model equipped with SPARC64™ V) *1			PW-CMZ
PRIMEPOWER250/450 *2			PW-P
PRIMEPOWER1500(Model equipped with SPARC64™ GP) *2			PW-CL
PRIMEPOWER900/1500(Model equipped with SPARC64™ V)/ 2500/HPC2500 *2			PW-CLZ
PRIMEPOWER1			sun4u

*1. PRIMEPOWER650(Model equipped with SPARC64™ GP)/850(Model equipped with SPARC64™ GP) are supported from Enhanced Support Facility 2.0

*2. PRIMEPOWER250/450/650(Model equipped with SPARC64™ V)/850(Model equipped with SPARC64™ V)/900/1500/2500/HCP2500 are supported from Enhanced Support Facility 2.3

The name of Enhanced Support Facility has been used since version 1.3. It was called the Basic Software Extension before the version 1.3. The version number of the Enhanced Support Facility installed in your system can be confirmed by getting that of FJSVbse package with the pkgparam(1M) command.

```
# pkgparam FJSVbse VERSION
```

2. Countermeasures against Enhanced Support Facility security problems

2.1. For Basic Software Extension 1.0 to Enhanced Support Facility 1.4

- A patch, “R00081”, have been released for Enhanced Support Facility 1.4 or earlier versions in order to offer strong security corresponding to that of Enhanced Support Facility 1.5.

2.2. For Enhanced Support Facility 1.6 / Enhanced Support Facility 1.7

- A patch (911131-03, R01081) was issued to the security problem of the access privilege of the semaphore which was made by FJSVsirms for Enhanced Support Facility 1.7/ Enhanced Support Facility 1.7.1.

2.3. For Enhanced Support Facility 1.8 / Enhanced Support Facility 2.0

- The security problem of the access privilege of the semaphore which is made by FJSVsrms is treated with the program correction.

2.4. For Enhanced Support Facility 2.1 / Enhanced Support Facility 2.2

- The security problem, where a process made from FJSVrrda remains as zombie process, is fixed by the patch(911993-01,R02081) correction.
- About the Enhanced Support Facility 2.2, the security problem is already fixed.

3. Packages included in Enhanced Support Facility

Components and packages contained in the Enhanced Support Facility are shown in the table below. Packages which are actually installed vary depending upon the hardware platforms or the revision of Solaris™ Operation System (hereafter Solaris OS). Please refer to “INSTALLATION GUIDE Enhanced Support Facility” of each version for more details.

No	Components		Package name	Features
1	Enhanced Support Facility information management	Common to all types	FJSVbse	Enhanced Support Facility Information Management
2	DR Command	PW-K PW-CLZ	FJSVdrcmd	Dynamic Reconfiguration (Solaris™ 8 Operating System only) Effective from Enhanced Support Facility 1.7
3	NGDR Command	PW-K	FJSVdrcmd	Dynamic Reconfiguration (Solaris™ 9 Operating System only) Effective from Enhanced Support Facility 2.2
4	System Control Facility Driver (It is abbreviated at the following as SCF.)	PW-T	FJSVscdx.us FJSVscd.us FJSVscr.us FJSVscu.us FJSVscuja	SCF Driver (64bit) SCF Driver (32bit) System Control (root) System Control (user) System Control Japanese locale
		PW-K	FJSVscd1 FJSVscr1 FJSVscu1 FJSVscuj1	SCF Driver (Solaris™ 2.6 Operating System) System Control (root) System Control (user) System Control Japanese locale Effective from Enhanced Support Facility 1.4
			FJSVscd2 FJSVscr2 FJSVscu2 FJSVscuj2 FJSViomp	SCF Driver (Solaris™ 7 Operating System / Solaris 8 OS) System Control (root) System Control (user) System Control Japanese locale IOMP Common Framework Level 2 Effective from Enhanced Support Facility 1.4

No	Components	Package name	Features
4	System Control Facility Driver	PW-CM PW-CMZ PW-CL PW-CLZ	FJSVscd3 FJSVscr3 FJSVscu3 FJSVscuj3 FJSViomp SCF Driver (Solaris 8 OS) System Control (root) System Control (user) System Control Japanese locale IOMP Common Framework Level 2 Effective from Enhanced Support Facility 2.0
		PW-U	FJSVlscdx FJSVlscd FJSVlscr FJSVlscu FJSVlscuj SCF Driver (64bit) SCF Driver (32bit) System Control (root) System Control (user) System Control Japanese locale Effective from Enhanced Support Facility 1.7
		PW-P	FJSVpscd FJSVpser FJSVpscuj FJSVpscuj FJSViomp SCF Driver (Solaris 8 OS) System Control (root) System Control (user) System Control Japanese locale IOMP Common Framework Level 2 Effective from Enhanced Support Facility 2.3
5	SunVTS, FJVTS	PW-T PW-K PW-U	SUNWvts SUNWvtsmn FJSVvts SunVTS SunVTS Man Pages FJVTS
		PW-CM PW-CMZ PW-CL PW-CLZ PW-P	SUNWvtsx SunVTS (64bit) Effective from Basic Software Extension 1.2
6	Web-Based Admin View/ WWW Server for Admin View	Common to all types	FJSVwvcnf FJSVwvbs WWW Server for Admin View Web-Based Admin View
7	Machine Administration	Common to all types	FJSVmasv Machine Admin (server)
			FJSVmaom Machine Admin Online Manual Effective from Enhanced Support Facility 1.5
			FJSVmadm Machine Administration common Effective from Enhanced Support Facility 2.2
		PW-T PW-U	FJSVmand Machine Admin (node)
		PW-K	FJSVkmsv FJSVkmnd FJSVkmom Machine Admin (server) Machine Admin (node) Machine Admin Online Manual Even Enhanced Support Facility 1.8 is effective to FJSVkmom. It was integrated to the FJSVmasv and FJSVmaom from Enhanced Support Facility 2.0
			PW-CM PW-CMZ PW-CL PW-CLZ
		PW-P	FJSVpmnd Machine Administration (node) Effective from Enhanced Support Facility 2.3

No	Components	Package name	Features		
8	Remote Support	PW-T PW-U PW-CM PW-CMZ PW-P	FJSVrlib FJSVragt FJSVrmaos Effective from Enhanced Support Facility 1.4		
		PW-T PW-U	FJSVmarm Machine Admin REMCS I/F Effective from Enhanced Support Facility 1.5		
		PW-CM PW-CMZ	FJSVcmrm Machine Admin REMCS I/F Effective from Enhanced Support Facility 2.0		
		PW-CL PW-CLZ	FJSVcmrm2 Machine Admin REMCS I/F Effective from Enhanced Support Facility 2.3		
		PW-K	FJSVkmrm Machine Admin REMCS I/F Effective from Enhanced Support Facility 1.5		
		PW-P	FJSVpmrm Machine Administration REMCS I/F Effective from Enhanced Support Facility 2.3		
		Common to all types	FJSVrrda	REMCS Resource Delivery Agent Effective from Enhanced Support Facility 1.4	
			FJSVracm	REMCS Advanced Agent Installer Effective from Enhanced Support Facility 2.1	
			FJSVsirms	Software REMCS Effective from Enhanced Support Facility 1.5	
		9	Automatic Power Control	PW-T PW-K PW-CM PW-CMZ PW-CL PW-CLZ PW-P	FJSVapcs Auto Power Control System
				Common to all types	FJSVapcww APCS Admin View Effective from Enhanced Support Facility 1.3
		10	Server Default Configuration	Common to all types	FJSVdef Server Default Configuration Effective from Basic Software Extension 1.1
PW-T PW-K PW-U PW-CM PW-CMZ PW-CL PW-CLZ PW-P	FJSVssf Server Support Feature Effective from Enhanced Support Facility 1.3				
PW-T PW-K PW-CM PW-CMZ PW-CL PW-CLZ PW-P	FJSVwarn.us System Warning Daemon Effective from Enhanced Support Facility 1.4				
PW-K PW-CM PW-CMZ PW-CL PW-CLZ PW-P	FJSVpnlx.us FJSVpnl.us Panel Driver (64bit) Panel Driver (32bit) Effective from Enhanced Support Facility 1.4				
11	System Data Output Tool	Common to all types	FJSVsnap System Data Output Tool		
12	License Manager	Common to all types	FSUNlic FLEXIm License Manager		

No	Components		Package name	Features
13	Crash Dump Assistant	Common to all types	FJSVdmp	Crash Dump Assistant
				Effective from Enhanced Support Facility 1.3
14	Auto Dump Analyze Tool	Common to all types	FJSVana	Auto Dump Analyze Tool
				Effective from Enhanced Support Facility 2.2
15	Drivers for high-reliability	PW-K	FJSVse (Solaris 7 OS or later)	Serial(se) Driver(Solaris 7 OS or later)
			Effective from Enhanced Support Facility 1.4	
		PW-CL PW-CLZ	FJSVsef (Solaris 2.6 OS)	Serial(se) Driver(Solaris 2.6 OS)
			Effective from Enhanced Support Facility 1.5	
FJSVsec (Solaris 8 OS or later)	Serial Driver(Solaris 8 OS or later)			
	Effective from Enhanced Support Facility 2.3			
16	CPU Performance Counter	PW-T PW-K PW-CM PW-CMZ	FJSVcpc	CPU Performance Counter for SPARC64 GP
				Effective from Enhanced Support Facility 1.7
17	CPU Patrol Diagnosis	PW-T PW-K PW-CL PW-CM	FJSVcpud	CPU Patrol Diagnosis
				Effective from Enhanced Support Facility 1.8 Supports only the SPARC64™ GP processor.
18	G-LAN error notification	PW-T PW-K PW-CM PW-CMZ PW-CL PW-CLZ PW-P	FJSVgidad	GigabitEthernet interface error notification
				Effective from Enhanced Support Facility 2.4
19	G-LAN MTU setting	PW-T PW-K PW-CM PW-CMZ PW-CL PW-CLZ PW-P	FJSVgidr	GigabitEthernet interface error notification
				Effective from Enhanced Support Facility 2.4
20	HPC information management	PW-P	FJSVhpc	Hardware Control Program
				Effective from Enhanced Support Facility 2.3
21	System Parameter Diagnosis	PW-T PW-U PW-K PW-CM PW-CMZ PW-CL PW-CLZ PW-P	FJSVparam	System parameters of the Solaris OS are diagnosed.
				Effective from Enhanced Support Facility 2.4

FJSVtserv, FJSVobase and FJSVsimo have been deleted from Enhanced Support Facility 1.4.

FSUNnet, FJSVhme and FJSVglm have been deleted from Enhanced Support Facility 1.7.

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

Name of service : SupportDesK (name of product)

Tool that provides service : REMCS (name of tool)

4. rc scripts and daemons used in Enhanced Support Facility

The rc scripts registered and the daemon processes started in the Enhanced Support Facility are explained here. A start-up script alone is described in terms of the rc scripts.

In the following tables, “Suppressible” means you can stop the function by any way, such as eliminating the start-script or things like that “Effect of suppression” explains about an effect that is caused by halt of function.

4.1. /etc/rcSd

S60fjsv,se_devlinks

Component	Drivers for high-reliability
Package name	FJSVse(PW-K)/FJSVsef(PW-K)/FJSVsec(PW-CL,PW-CLZ)
Support Solaris OS	FJSVse : Solaris 7 OS or later FJSVsef : Solaris 2.6 OS FJSVsec : Solaris 8 OS or later
Support models	PW-K, PW-CL,PW-CLZ
Support Enhanced Support Facility	FJSVse : Enhanced Support Facility 1.4 or later FJSVsef : Enhanced Support Facility 1.5 or later FJSVsec : Enhanced Support Facility 2.3 or later
Function	Create a special file for a serial port except that for the console-connection.
Daemon started	None
Port used	None
Suppressible	Yes(Solaris 9 OS or later)
Effect of suppression	Serial ports other than a console serial port may not be able to be used.
Miscellaneous	

S90FJSVscfdaemon

Component	SCF driver
Package name	FJSVscr.us(PW-T)/FJSVscr1(PW-K)/FJSVscr2(PW-K)/FJSVlscr(PW-U) /FJSVscr3(PW-CM,PW-CMZ, PW-CL,PW-CLZ)/FJSVpscr(PW-P)
Support Solaris OS	Solaris 2.6 OS or later
Support models	Common to all types
Support Enhanced Support Facility	Basic Software Extension 1.0 or later
Function	Starts a daemon to manage the RAS-control-device(SCF)
Daemon started	pwrctrl (Refer to the “Enhanced Support Facility User’s Guide”)
Port used	None
Suppressible	No
Effect of suppression	It causes a serious effect for hardware maintenance. Hardware failures caused by an electric power supply, an abnormal temperature or a fan, which are observed by the RAS-control device(SCF), are not monitored at all.
Miscellaneous	

4.2. /etc/rc2d

S19FJSVdmpsnap

Component	Crash dump assistant
Package name	FJSVdmp
Support Solaris OS	Solaris 2.6 OS or later
Support models	Common to all types
Support Enhanced Support Facility	In terms of Solaris 2.6 OS, it has been released since the Enhanced Support Facility 1.5. In terms of Solaris 7 OS and Solaris 8 OS, it has been released since the Enhanced Support Facility 1.4. In terms of Solaris 9 OS, it has been released since the Enhanced Support Facility 2.2.
Function	In saving “crash dump” information after a system panic, the system information, which is output with the fjsnap command, is stored into “/var/crash”.
Daemon started	None
Port used	None
Suppressible	Yes
Effect of suppression	You may have a difficulty in software maintenance. Immediately after a system panic, the system information in such a file as “/var/adm/message”, which is required to analyze a panic cause, is not automatically output.
Miscellaneous	Since this file has much to do with “/etc/rc3.d/S76FJSVdmpadm”, you must delete both files to suppress the function.

S39FJSVevsnd

Component	Machine Administration
Package name	FJSVkmrm
Support Solaris OS	Solaris 2.6 OS or later
Support models	PW-K
Support Enhanced Support Facility	Enhanced Support Facility 2.2 or later
Function	Inform hardware failure to System Management Console.
Daemon started	evsndd: Reports hardware errors.
Port used	A port assigned by the operating system.
Suppressible	No
Effect of suppression	You may be unable to recognize hardware failures.
Miscellaneous	-

S39FJSVmarm

Component	Machine Administration(REMCS)
Package name	FJSVmarm, FJSVkmrm(Effective before Enhanced Support Facility 2.0)
Support Solaris OS	Solaris 2.6 OS or later
Support models	PW-U,PW-T,PW-K
Support Enhanced Support Facility	Enhanced Support Facility 1.4 or later
Function	Notification and connection services are given for the SupportDesk service
Daemon started	Remotereportd : REMCS report is performed rsched : REMCS-regular-connection is managed pipeopener : supports the remotereportd
Port used	None
Suppressible	Yes(only when no SupportDesk service agreement is executed)
Effect of suppression	You are unable to make use of the SupportDesk service
Miscellaneous	remotereportd, rsched, and pipeopener are not started by PW-K, PW-CM or PW-CMZ. PW-K does not use this rc script since Enhanced Support Facility 2.1 or later.

S40FJSVcmrm

Component	Machine Administration(REMCS)
Package name	FJSVcmrm
Support Solaris OS	Solaris 8 OS or later
Support models	PW-CM,PW-CMZ.
Support Enhanced Support Facility	Enhanced Support Facility 2.0 or later
Function	Initialization are given for the SupportDesk service
Daemon started	None
Port used	None
Suppressible	Yes(only when no SupportDesk service agreement is executed)
Effect of suppression	You are unable to make use of the SupportDesk service
Miscellaneous	-

S40FJSVevhand

Component	Machine Administration
Package name	FJSVmand, FSVkmnd ,FJSVcmd
Support Solaris OS	Solaris 2.6 OS or later
Support models	Common to all types
Support Enhanced Support Facility	Basic Software Extension 1.2 or later
Function	Alerts hardware errors through monitoring syslog Messages
Daemon started	evhandsd : extracts messages to be monitored in syslog messages. evmond : alerts an abnormality based on the messages extracted. (Enhanced Support Facility 2.2 or later) scfdrvrcvd : extracts messages to be monitored in SCF events (only for PW-CM, PW-CMZ, PW-CL or PW-CLZ).
Port used	None
Suppressible	No
Effect of suppression	You may be unable to recognize hardware failures.
Miscellaneous	-

S40FJSVpmm

Component	Machine Administration(REMCS)
Package name	FJSVpmm
Support Solaris OS	Solaris 8 OS or later
Support models	PW-P
Support Enhanced Support Facility	Enhanced Support Facility 2.3 or later
Function	Initialization are given for the SupportDesk service
Daemon started	None
Port used	None
Suppressible	Yes(only when no SupportDesk service agreement is executed)
Effect of suppression	You are unable to make use of the SupportDesk service
Miscellaneous	-

S70FJSVinet

Component	Server Default Configuration
Package name	FJSVssf
Support Solaris OS	Solaris 7 OS or later
Support models	Common to all types
Support Enhanced Support Facility	Basic Software Extension 1.0 or later
Function	Records errors occurred on TCP/IP
Daemon started	Limstrerr
Port used	None
Suppressible	Yes
Effect of suppression	You may have a difficulty in software maintenance. There is a possibility of affecting the troubleshooting concerning a problem occurred on a LAN due to the reason that a part of error information on TCP/IP is not automatically recorded.
Miscellaneous	This component has been released from Solaris 7 OS. This component has not been released for Solaris 2.6 OS.

S72SystemWalkerSSInit

Component	Machine Administration (REMCS)
Package name	FJSVrmaos,FJSVragt
Support Solaris OS	Solaris 2.6 OS or later
Support models	PW-T,PW-U, PW-CM,PW-CMZ, PW-P
Support Enhanced Support Facility	Enhanced Support Facility 2.1 or later
Function	REMCS agent (reports a failure occurrence to Fujitsu-Support-Center)
Daemon started	None
Port used	None
Suppressible	Yes
Effect of suppression	You are unable to make use of the SupportDesk service.
Miscellaneous	This script runs only when a registration for the SupportDesk service is made. Nothing is done without a registration.

S73rmagt.syslog

Component	Remote Support(REMCS)
Package name	FJSVragt
Support Solaris OS	Solaris 2.6 OS or later
Support models	PW-T,PW-U, PW-CM,PW-CMZ, PW-P
Support Enhanced Support Facility	Enhanced Support Facility 1.4 or later
Function	REMCS agent (software-monitoring)
Daemon started	f3crsyslog
Port used	None
Suppressible	Yes
Effect of suppression	You are unable to take advantage of the SupportDesk service
Miscellaneous	This script works only when a registration for the SupportDesk is made and nothing is performed without a registration. Daemons are effective before Enhanced Support Facility 2.0.

S75FJSVsavecore

Component	Server Default Configuration
Package name	FJSVdef
Support Solaris OS	Solaris 2.6 OS
Support models	Common to all types
Support Enhanced Support Facility	Basic Software Extension 1.0 later
Function	Since the “/etc/rc2.d/S20syssetup” in Solaris 2.6 OS has been released with it made invalid, it is made valid by this component.
Daemon started	None
Port used	None
Suppressible	Yes
Effect of suppression	You may have a difficulty in software maintenance because in the Solaris 2.6 OS, “crash dump” information is not automatically saved after a system panic. You should make it valid by modifying “/etc/rc2.d/S20syssetup” in the Solaris 2.6 OS.
Miscellaneous	Applicable only for Solaris 2.6 OS. It has been made valid since Solaris 7 OS or later release.

S80FJSVparam

Component	System Parameter Diagnosis
Package name	FJSVparam
Support Solaris OS	Solaris 8 OS or later
Support models	PW-T, PW-U, PW-K, PW-CM, PW-CMZ, PW-CL, PW-CLZ, PW-P
Support Enhanced Support Facility	Enhanced Support Facility : Enhanced Support Facility 2.4 or later
Function	System parameters of the Solaris OS are diagnosed.
Daemon started	None
Port used	None
Suppressible	Yes
Effect of suppression	System parameters are not diagnosed.
Miscellaneous	

S80FJSVwvbs

Component	Web-based Admin View
Package name	FJSVwvbs
Support Solaris OS	Solaris2.6 OS or later
Support models	Common to all types
Support Enhanced Support Facility	Basic Software Extension 1.0 or later
Function	A communication infrastructure for Web applications
Daemon started	<p>Java (java -mx32m com.fujitsu.webview.base*) A communication feature between a server and a client used when the Machine Administration and the like run in GUI mode using the Web-based Admin View.</p> <p>wwrespawn: It restarts the java daemon automatically when it terminates abnormally.</p> <p>wwCIEventd: It is a daemon for notifying the cluster event for SynfinityCluster. It starts up only when using cluster operation management of SynfinityCluster 1.0.4 or earlier.</p> <p>wwMaEventd: It reports machine administration events for the SynfinityCluster and is started only when the Web- based Admin View for SynfinityCluster are being used.</p> <p>wwCmdInvoker: Deamon for command execution. It executes the command instead of Web-Based Admin View.</p>
Port used	<pre>fjwv_g 9396/udp # FJSVwvbs group RMI fjwv_n 9397/tcp # FJSVwvbs node RMI fjwv_s 9398/tcp # FJSVwvbs server RMI fjwv_c 9399/tcp # FJSVwvbs client RMI</pre>
Suppressible	Yes
Effect of suppression	The way of suppressing the function and an effect by that are described in the "INSTALLATION GUIDE Enhanced Support Facility". Please refer to 7. System Files Changed by Enhanced Support Facility in this document in addition to the Guide.
Miscellaneous	-

S88FSUNlicense

Component	License Manager
Package name	FSUNlic
Support Solaris OS	Solaris 2.6 OS or later
Support models	Common to all types
Support Enhanced Support Facility	Enhanced Support Facility 1.2 or later
Function	FLEXlm License Manager (Refer to “ Enhanced Support Facility User’s Guide”)
Daemon started	The following daemons are started when license-file contains license information. 1)lmgrd 2) J-FUJITSU
Port used	27000 (default). You may designate a port number to use when registering a license-server using the setup_license command attached to the FSUNlic package. A recommendable value for it is from 27000 through 27009.
Suppressible	Yes ,if software which requires the License Manager is not used. Neither the Enhanced Support Facility nor the Solaris OS operating system use it.
Effect of suppression	You are unable to use the License Manager. The software which needs the License Manager is impossible to run.
Miscellaneous	-

S90FJSVconspath

Component	Machine Administration
Package name	FJSVkmnd
Support Solaris OS	Solaris 8 OS or later
Support models	PW-K , PW-CL , PW-CLZ
Support Enhanced Support Facility	Enhanced Support Facility 2.3 or later
Function	Controls redundant console path.
Daemon started	conspathd (for PW-K, PW-CL and PW-CLZ) Sends the control code used for console multi-path.
Port used	None
Suppressible	Yes, if the console path is not redundant configuration.
Effect of suppression	Redundant console path configuration can not be used.
Miscellaneous	When the FJSVse(PW-K) or FJSVsec(PW-CL,PW-CLZ) is removed on Solaris 9 OS or later, suppress this script.

S90FJSVscf

Component	SCF driver
Package name	FJSVscr.us(PW-T)/FJSVscr1(PW-K)/FJSVscr2(PW-K)/FJUSV1scr(PW-U)/FJUSV1scr3/FJSVpscr(PW-P)
Support Solaris OS	Solaris 2.6 OS or later
Support models	Common to all types
Support Enhanced Support Facility	Basic Software Extension 1.0 or later
Function	Collects hardware error information logged by the RAS-control- device (SCF). In addition, the monitoring of the main processor is started to RAS control device(SCF).
Daemon started	None
Port used	None
Suppressible	No
Effect of suppression	You have a difficulty in hardware maintenance because you are unable to collect hardware error information logged by the RAS control device (SCF). In addition, the main processor is not monitored with RAS control device.
Miscellaneous	-

S91FJSVcmnd

Component	Machine Administration
Package name	FJSVcmnd
Support Solaris OS	Solaris 8 OS or later
Support models	PW-CM,PW-CMZ,PW-CL,PW-CLZ
Support Enhanced Support Facility	Enhanced Support Facility 2.0 or later
Function	The removable disk such as CD-ROM and DVD is judged.
Daemon started	None
Port used	None
Suppressible	No
Effect of suppression	Machine Administration cannot correctly make hardware configuration data.
Miscellaneous	for PW-CL This component has been released since Enhanced Support Facility 2.3 or later. for PW-CMZ and PW-CLZ This component has been released since Enhanced Support Facility 2.3 or later.

S91FJSVconspath

Component	Machine Administration
Package name	FJSVkmnd
Support Solaris OS	Solaris 8 OS or later
Support models	PW-K
Support Enhanced Support Facility	From Enhanced Support Facility 1.7 to Enhanced Support Facility 2.2
Function	Controls redundant console path.
Daemon started	conspatd (for PW-K) Sends the control code used for console multi-path.
Port used	None
Suppressible	Yes, if the console path is not redundant configuration.
Effect of suppression	Redundant console path configuration can not be used.
Miscellaneous	When the FJSVse (PW-K) is removed on Solaris 9 OS or later, suppress this script.

S91FJSVmand

Component	Machine Administration
Package name	FJSVmand
Support Solaris OS	Solaris 2.6 OS or later
Support models	PW-T,PW-U
Support Enhanced Support Facility	Enhanced Support Facility 2.0 or later
Function	The removable disk such as CD-ROM and DVD is judged.
Daemon started	None
Port used	None
Suppressible	No
Effect of suppression	Machine Administration cannot correctly make hardware configuration data.
Miscellaneous	

S98FJSVmadm

Component	Machine Administration
Package name	FJSVmand, FSVkmnd FJSVcmnd,FJSVpmnd
Support Solaris OS	Solaris 2.6 OS or later
Support models	Common to all types
Support Enhanced Support Facility	Basic Software Extension 1.0 or later
Function	Monitors hardware errors and reports them.
Daemon started	hardmond : Monitors hardware errors based on any other information than syslog messages. (ex. monitoring of cleaning tape devices) evsddd: Reports hardware errors. (only for PW-K, PW-CL and PW-CLZ. Effective before Enhanced Support Facility 2.1 for PW-K) del_filed : Remove temporary files created by machine administration. (only for PW-CM, PW-CMZ, PW-CL and PW-CLZ). mc_evlog_updatecfr : Create hardware configuration data (only for PW-CM, PW-CMZ, PW-CL and PW-CLZ). pmndinitd: manages the function of Machine Administration (only for PW-P). hcd: manages the hardware configuration information (only for PW-P). madm_logd: manages the log information (only for PW-P). sfeventd: receives the error events from SCF (only for PW-P).
Port used	A port assigned by the operating system (only for PW-K, PW-CL and PW-CLZ. Effective before Enhanced Support Facility 2.1 for PW-K).
Suppressible	No
Effect of suppression	You may be unable to recognize hardware failures.
Miscellaneous	-

S99apcs

Component	Automatic Power Control
Package name	FJSVapcs
Support Solaris OS	Solaris 2.6 OS or later
Support models	PW-T,PW-K, PW-CM,PW-CMZ, PW-CL,PW-CLZ, PW-P
Support Enhanced Support Facility	Basic Software Extension 1.0 or later
Function	Registers power-off jobs or schedule-updating jobs using the Automatic Power Control into the cron.
Daemon started	The following daemon is started when you select the way of not using the cron at the version of Enhanced Support Facility 1.6 or later. /opt/FJSVapcs/sbin/apcsat
Port used	None
Suppressible	Yes
Effect of suppression	Automatic-Power- Control is not used
Miscellaneous	In the Enhanced Support Facility 1.6 or later version, you may specify with the apcschmod command whether you use either the cron or the apcsat daemon. The cron is always used in the Enhanced Support Facility 1.5 or earlier version.

S99FJSVcmrm

Component	Machine Administration(REMCS)
Package name	FJSVcmrm
Support Solaris OS	Solaris 8 OS or later
Support models	PW-CM
Support Enhanced Support Facility	Enhanced Support Facility 2.0 or later
Function	Notification and connection services are given for the SupportDesk service
Daemon started	rc_get_fifo : REMCS report is performed rc_schedule : REMCS-regular-connection is managed pipeopener : supports the rc_get_fifo
Port used	None
Suppressible	Yes (only when no SupportDesk service agreement is executed)
Effect of suppression	You are unable to make use of the SupportDesk service
Miscellaneous	

S99FJSVcpupd

Component	CPU Patrol Diagnosis
Package name	FJSVcpupd
Support Solaris OS	Solaris 2.6 OS or later
Support models	PW-T, PW-K, PW-CM, PW-CL
Support Enhanced Support Facility	Enhanced Support Facility 1.8 or later
Function	Controls execution of CPU patrol diagnostic, and reports errors.
Daemon started	The following daemon is started when you enable the CPU patrol diagnostic. The CPU patrol diagnostic is disabled in the default setting. /opt/FJSVcpupd/lib/fjptld
Port used	None
Suppressible	Yes
Effect of suppression	The CPU diagnostic is not performed.
Miscellaneous	This component has been released since Enhanced Support Facility 1.8.

S99FJSVlogadm

Component	Server Default Configuration
Package name	FJSVdef
Support Solaris OS	Solaris 9 OS
Support models	Common to all types
Support Enhanced Support Facility	Enhanced Support Facility 2.2 or later
Function	Prevents a system volume from being overloaded by log file expansion.
Daemon started	None . However, similar processes are periodically invoked by the crontabs of "root". root: 30 3 * * 0 if [! -f /var/adm/pacct]; then /usr/sbin/logadm ...
Port used	None
Suppressible	Yes
Effect of suppression	No monitoring for logfile-expansion is made.
Miscellaneous	This has been released since Enhanced Support Facility 2.2 and supports Solaris 9 OS. The conditions to rotate the log files are described in Section 12 "Server Default Configuration" of "Enhanced Support Facility Users Guide". The system that needs to save log files for a long term for security reasons, you need to build the similar feature instead.

S99FJSVlogclear

Component	Server Default Configuration
Package name	FJSVdef
Support Solaris OS	Solaris 2.6 OS, Solaris 7 OS, Solaris 8 OS
Support models	Common to all types
Support Enhanced Support Facility	Basic Software Extension 1.1 or later
Function	Prevents a system volume from being overloaded by log file expansion.
Daemon started	None . However, similar processes are periodically invoked by the crontabs of “root” or “adm”. root: 33 3 * * 0 /opt/FJSVdef/sbin/chkslog VOLDLOG SULOG ... adm: 30 3 * * 0 /opt/FJSVdef/sbin/chkslog WTMP
Port used	None
Suppressible	Yes
Effect of suppression	No monitoring for logfile-expansion is made.
Miscellaneous	This component has been released since Basic Software Extension 1.1 and support Solaris 2.6 OS, Solaris 7 OS, and Solaris 8 OS. The conditions to rotate the log files are described in Section 12 “Server Default Configuration” of “Enhanced Support Facility Users Guide”. The system that needs to save log files for a long term for security reasons, you need to build the similar feature instead.

S99FJSVpmrm

Component	Machine Administration(REMCS)
Package name	FJSVpmrm
Support Solaris OS	Solaris 8 OS or later
Support models	PW-P
Support Enhanced Support Facility	Enhanced Support Facility 2.3 or later
Function	Notification and connection services are given for the SupportDesk service
Daemon started	rc_get_fifo : REMCS report is performed rc_schedule : REMCS-regular-connection is managed pipeopener : supports the rc_get_fifo
Port used	None
Suppressible	Yes (only when no SupportDesk service agreement is executed)
Effect of suppression	You are unable to make use of the SupportDesk service
Miscellaneous	

S99FJSVwarn

Component	Server Default Configuration
Package name	FJSVwarn
Support Solaris OS	Solaris 2.6 OS later
Support models	PW-T,PW-K, PW-CM,PW-CMZ, PW-CL,PW-CLZ, PW-P
Support Enhanced Support Facility	Enhanced Support Facility 1.4 or later
Function	It monitors intermittent single-bit errors of cpu-caches or memories and outputs messages into the syslog in the case of detecting a failure.
Daemon started	Syswarnd
Port used	None
Suppressible	Yes
Effect of suppression	You have a difficulty in hardware maintenance. Because no message is output even if intermittent single bit errors of cpu-caches or memories frequently occur.
Miscellaneous	This component has been released since Enhanced Support Facility 1.4.

S99SystemWalkerSS

Component	Machine Administration (REMCS)
Package name	FJSVrmaos,FJSVragt
Support Solaris OS	Solaris 2.6 OS or later
Support models	PW-T,PW-U, PW-CM,PW-CMZ, PW-P
Support Enhanced Support Facility	Enhanced Support Facility 1.4 or later
Function	REMCS agent (reports a failure occurrence to Fujitsu- Support-Center)
Daemon started	f3crkrt, f3crkxsv
Port used	JMACT4 19369/tcp # FJSVrmaos REMCS SS-Agent JMACT5 19370/tcp # FJSVrmaos REMCS SS-Agent
Suppressible	Yes
Effect of suppression	You are unable to make use of the SupportDesk service
Miscellaneous	This script runs only when a registration for the SupportDesk service is made. Nothing is done without a registration. Daemons are effective before Enhanced Support Facility 2.0.

4.3. /etc/rc3.d

S76FJSVdmpadm

Component	Crash Dump assistant
Package name	FJSVdmp
Support Solaris OS	Solaris2.6 or later
Support models	Common to all types
Support Enhanced Support Facility	This file has been released since the Enhanced Support Facility 1.5 for Solaris 2.6 OS. In terms of Solaris 7 OS and Solaris 8 OS, it has been released since the Enhanced Support Facility 1.4. In terms of Solaris 9 OS, it has been released since the Enhanced Support Facility 2.1
Function	The system information, which is output with the fjsnap command, is saved into “/var/crash” at the time of storing the crash-dump information after a panic.
Daemon started	None
Port used	None
Suppressible	Yes
Effect of suppression	You may have a difficulty in software maintenance. Immediately after a system panic, the system information in such a file as “/var/adm/messages”, which is required to analyze a panic cause, is not automatically output.
Miscellaneous	If you suppress this file, you must also suppress /etc/rc2.d/S19FJSVdmpsnap.

S99FJSVwvcnf

Component	WWW Server for Admin View
Package name	FJSVwvcnf
Support Solaris OS	Solaris2.6 OS or later
Support models	Common to all types
Support Enhanced Support Facility	Basic Software Extension 1.0 or later
Function	The WWW server for the Web-Based Admin View only
Daemon started	wvcnfd: An http daemon by which the Machine Administration and the like run in GUI mode using the Web-based-Admin View.
Port used	fjwv-h 8081/tcp # FJSVwvcnf Web Port
Suppressible	Yes
Effect of suppression	The way of suppressing the function and an effect by that are described in the “Enhanced Support Facility Installation Guide”. Please refer to “7. System Files Changed by Enhanced Support Facility” in this document in addition to the Guide.
Miscellaneous	-

5. TCP/IP ports used in Enhanced Support Facility

5.1. Web-Based Admin View

It uses the following ports for communication with a client, administration server, and monitoring node and for display on a client.

fjwv-h	8081/tcp	# FJSVwvcnf Web Port
fjwv_s	9398/tcp	# FJSVwvbs server RMI
fjwv_n	9397/tcp	# FJSVwvbs node RMI
fjwv_c	9399/tcp	# FJSVwvbs client RMI

As well as the ports listed above, the following TCP/UDP ports are used when SynfinityCluster and PRIMECLUSTER are used or when Web-Based Admin View and operation administration GUI are used in a redundant operation.

fjwv_g	9396/udp	# FJSVwvbs RMI registry
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Three TCP ports allocated dynamically by the operating system are used for inter-node communication.

Besides the ports shown above, JavaVM used by the Web-Based Admin View temporarily takes advantage of a port allotted dynamically by the operating system.

The way of suppressing the function and an effect by that are described in the “INSTALLATION GUIDE Enhanced Support Facility”. Please also refer to “7. System Files Changed by Enhanced Support Facility” in this document in addition to the Guide.

5.2. Machine Administration (only for PW-K)

It uses a port which is dynamically assigned by the operating system to communicate the system console.

5.3. Remote Support (REMCS)

These are used to display the status of mails sent to Fujitsu-Support-Center.

JMACT4	19369/tcp	# FJSVrmaos REMCS SS-Agent
JMACT5	19370/tcp	# FJSVrmaos REMCS SS-Agent

The ports are used only when a registration for the SupportDesk service is made.

You can change the port number to be used by adding them to “/etc/inet /services”.

The ports are not used since Enhanced Support Facility 2.1.

5.4. *FLEXlm*

You may specify a port to use when registering a license server with the setup license command attached to the FSUNlic package.

The recommendable value is from 27000 through 27009 and the default is 27000.

5.5. *Crash Dump Assistant (FJSVdmp)*

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

6. Log Files Used by Enhanced Support Facility

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

For more information such as information on disk space requirements, refer to the “Installation Guide Enhanced Support Facility” for the corresponding version of Enhanced Support Facility.

- No.1 Enhanced Support Facility information management

Component	Enhanced Support Facility information management
Package name	FJSVbse
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	All models
Supported Enhanced Support Facility	Basic Software Extension 1.0 or later
Log file name	/opt/FJSVbse/etc/ esfinfo.data (Up to 2 KB) install.log (Up to 2 MB)
File capacity	0 byte to about 2M bytes (esfinfo.data 2K bytes/ install.log 2M bytes)
Allocation timing	During ESF installation
Need for periodic deletion	No
Remarks	

- No.2 No log file is generated for the DR Command (component).
- No.3 No log file is generated for the NGDR Command (component).

- No.4 SCF Driver

Component	SCF Driver
Package name	FJSVscdx.us,FJSVscd.us,FJSVscr.us,FJSVscu.us,FJSVscuja
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	PW-T
Supported Enhanced Support Facility	Basic Software Extension 1.0 or later
Log file name	/var/opt/FJSVhwr/scferrlog
File capacity	A multiple of 0 to 64 bytes. The file needs to be deleted periodically.
Allocation timing	Occurrence of an SCF error
Need for periodic deletion	Yes
Remarks	
Log file name	/var/opt/FJSVhwr/scfpwrlog
File capacity	A multiple of 0 to 8 bytes. The file needs to be deleted periodically.
Allocation timing	Start of the system
Need for periodic deletion	Yes
Remarks	Information on power-on and power-off recorded by SCF A record is added to "/var/opt/FJSVhwr/scfpwrlog" every time the power is turned on or off.
Log file name	/var/opt/FJSVhwr/scf.dump
File capacity	0 byte to 384 KB
Allocation timing	Detection of an error by SCF hardware
Need for periodic deletion	No
Remarks	When SCF hardware detects a local error and enters the halt or offline state, the SCF driver dumps the SCF memory data without modification.
Log file name	/var/opt/FJSVhwr/wdlog/wdlog.* 16 KB × number of CPUs A number from 0 to 2 is assigned to * in order. Example: /var/opt/FJSVhwr/wdlog/wdlog.0 16 KB × number of CPUs /var/opt/FJSVhwr/wdlog/wdlog.1 16 KB × number of CPUs
File capacity	16 KB × number of CPUs for each file
Allocation timing	Entry of the CPU into the Watchdog Reset or RED mode state
Need for periodic deletion	No
Remarks	(Up to 500 KB each)
Log file name	/var/opt/FJSVhwr/hltlog/hltlog.* (Up to 2 MB) A number from 0 to 2 is assigned to * in order. Example: /var/opt/FJSVhwr/hltlog/hltlog.0 (Up to 2 MB) /var/opt/FJSVhwr/hltlog/hltlog.1 (Up to 2 MB)
File capacity	0 byte to 6 MB (up to 2 MB each)
Allocation timing	Start of the OS after a halt log event occurred
Need for periodic deletion	No
Remarks	

- No.5 SunVTS, FJVTS

SunVTS, FJVTS (SunVTS4.5 or later)

Component	SunVTS, FJVTS
Package name	SUNWvts, SUNWvtsmn, SUNWvtsx, FJSVvts
Supported Solaris OS	Solaris 9 OS or later
Supported models	PW-T,PW-K,PW-U,PW-CM,PW-CMZ,PW-CL,PW-CLZ,PW-P
Supported Enhanced Support Facility	Enhanced Support Facility 2.2 or later
Log file name	Default setting /var/opt/SUNWvts/logs/ sunvts.info (Up to 1 MB) sunvts.info.backup (Up to 1 MB) sunvts.error (Up to 1 MB) sunvts.error.backup (Up to 1 MB) vtsk.err (Up to 1 MB) vtsk.err.backup (Up to 1 MB)
File capacity	0 byte to 6 MB (up to 1 MB each)
Log file name	Option setting /var/opt/SUNWvts/logs/ sunvts.info (Up to 5 MB) sunvts.info.backup (Up to 5 MB) sunvts.error (Up to 5 MB) sunvts.error.backup (Up to 5 MB) vtsk.err (Up to 5 MB) vtsk.err.backup (Up to 5 MB)
File capacity	0 byte to 30 MB (up to 5 MB each)
Allocation timing	Detection of an error while FJVTS is running
Need for periodic deletion	No
Remarks	When the maximum log file capacity is exceeded, a backup file is allocated for cyclic operation.

SunVTS,FJVTS (SunVTS4.0 or earlier)

Component	SunVTS, FJVTS
Package name	SUNWvts, SUNWvtsmn, SUNWvtsx, FJSVvts
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	PW-T,PW-K,PW-U,PW-CM,PW-CMZ,PW-CL,PW-CLZ,PW-P
Supported Enhanced Support Facility	Basic Software Extension 1.0 or later
Log file name	/var/opt/SUNWvts/logs/ sunvts.info (Up to 2 MB) sunvts.err (Up to 2 MB)
File capacity	0 byte to 4 MB (up to 2 MB each)
Allocation timing	sunvts.info is allocated when SunVTS/FJVTS starts or ends. sunvts.err is allocated when an error is detected while SunVTS/FJVTS is running.
Need for periodic deletion	No
Remarks	

- No.6 Web-Based Admin View/WWW Server for Admin View

Component	Web-Based Admin View / WWW Server for Admin View	
Package name	FJSVwvbs	
Supported Solaris OS	Solaris2.6 OS or later	
Supported models	Common	
Supported Enhanced Support Facility	Basic Software Extension 1.0 or later	
Log file name	File name (under /var/opt/FJSVwvbs/logs)	Default setting
	/node/ Vmlog	(Size 200 KB)
	/node/ vmlog.old	(Size 200 KB)
	/node/ wvConnection*.log	(Size 200 KB) × 5 File
	/node/ wvTrace*.log	(Size 200 KB) × 5 File
	/server/ vmlog	(Size 200 KB)
	/server/ vmlog.old	(Size 200 KB)
	/server/ wvConnection*.log	(Size 200 KB) × 5 File
	/server/ wvLogin*.log	(Size 100 KB) × 2 File
	/server/ wvOperation*.log	(Size 100 KB) × 2 File
	/server/ wvTrace*.log	(Size 200 KB) × 5 File
	(The following files are allocated if SafeCLUSTER is installed.)	
	/node/ wvClEventd.log	(Size 100 KB)
	/node/ wvClEventd.log.old	(Size 100 KB)
	/node/ wvCladmin*.log	(Size 100 KB) × 2 File
	/server/ wvCladminCl*.log	(Size 200 KB) × 5 File
	/server/ wvCladminMsg*.log	(Size 100 KB) × 2 File
	/server/ wvCladminNodeBind*.log	(Size 200 KB) × 5 File
	/server/ wvMaadmin*.log	(Size 100 KB) × 2 File
	A number from 0 to n is assigned to * in order. Example: /server/wvTrace0.log (Size 200 KB) /server/wvTrace1.log (Size 200 KB)	
File capacity	8000 KB in total (fixed)	
Allocation timing	After system start (/etc/rc2.d/K80FJSVwvbs) update at start time	
Need for periodic deletion	No	
Remarks	Changing the maximum number of data items to be logged: Select [Common] → [Set Operating Environment] → [System Environment] tab from the Web-Based Admin View window, and change the size and the number of data items to be logged.	

Log file name	File name (under /var/opt/FJSVwvbs/logs)	Maximum setting
	/node/ Vmlog	(Size 200 KB)
	/node/ vmlog.old	(Size 200 KB)
	/node/ wvConnection*.log	(Size 200 KB) × 5 File
	/node/ wvTrace*.log	(Size 1000 KB) × 10 File
	/server/ vmlog	(Size 200 KB)
	/server/ vmlog.old	(Size 200 KB)
	/server/ wvConnection*.log	(Size 200 KB) × 5 File
	/server/ wvLogin*.log	(Size 500 KB) × 10 File
	/server/ wvOperation*.log	(Size 500 KB) × 10 File
	/server/ wvTrace*.log	(Size 1000 KB) × 10 File
	(The following files are allocated if SafeCLUSTER is installed.)	
	/node/ wvCIEventd.log	(Size 100 KB)
	/node/ wvCIEventd.log.old	(Size 100 KB)
	/node/ wvCladmin*.log	(Size 500 KB) × 10 File
	/server/ wvCladminCl*.log	(Size 1000 KB) × 10 File
	/server/ wvCladminMsg*.log	(Size 500 KB) × 10 File
	/server/ wvCladminNodeBind*.log	(Size 1000 KB) × 10 File
	/server/ wvMaadmin*.log	(Size 500 KB) × 10 File
	A number from 0 to n is assigned to * in order. Example: /server/wvTrace0.log (Size 200 KB) /server/wvTrace1.log (Size 200 KB)	
File capacity	68000 KB in total (fixed)	
Allocation timing	After system start (/etc/rc2.d/K80FJSVwvbs) update at start time	
Need for periodic deletion	No	
Remarks	Changing the maximum number of data items to be logged: Select [Common] → [Set Operating Environment] → [System Environment] tab from the Web-Based Admin View window, and change the size and the number of data items to be logged.	

- No.7 Machine Administration

Component	Machine Administration
Package name	FJSVmadm
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	PW-T, PW-U, GP-S, PW-K, PW-P, PW-CM, PW-CL
Supported Enhanced Support Facility	Basic Software Extension 1.0
Log file name	/var/opt/FJSVmadm/evh/evh_log
File capacity	0 byte to 500 KB x 2 Files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	/var/opt/FJSVmadm/log/madmtrcbase
File capacity	0 byte to 512 KB x 2 Files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	

Component	Machine Administration
Package name	FJSVmasv
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	PW-T, PW-U, GP-S, PW-K, PW-P, PW-CM, PW-CL
Supported Enhanced Support Facility	Basic Software Extension 1.0
Log file name	/var/opt/FJSVmadm/log/“hostname“
File capacity	0 byte to 48 KB x 2 Files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	

Component	Machine Administration
Package name	FJSVmand
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	PW-T, PW-U, GP-S
Supported Enhanced Support Facility	Basic Software Extension 1.0
Log file name	/var/opt/FJSVmadm/log/evmonlog
File capacity	0 byte to 512 KB x 2 Files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	/var/opt/FJSVmadm/log/madmtrc
File capacity	0 byte to 64 KB x 3 Files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	/var/opt/FJSVmadm/log/madmlog
File capacity	0 byte to 64 KB x 3 Files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	

Component	Machine Administration
Package name	FJSVkmnd
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	PW-K
Supported Enhanced Support Facility	Enhanced Support Facility 1.4
Log file name	/var/opt/FJSVmadm/log/evmonlog
File capacity	0 byte to 512 KB x 2 Files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	/var/opt/FJSVmadm/log/madmtrc
File capacity	0 byte to 64 KB x 3 Files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	/var/opt/FJSVmadm/log/madmlog
File capacity	0 byte to 64 KB x 3 Files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	/var/opt/FJSVmadm/log/cmndeslog
File capacity	0 byte to 512 KB x 2 Files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	/var/opt/FJSVmadm/log/evsndlog
File capacity	0 byte to 512 KB x 2 Files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	

Component	Machine Administration
Package name	FJSVcmd
Supported Solaris OS	Solaris 8 OS or later
Supported models	PW-CM, PW-CL
Supported Enhanced Support Facility	Enhanced Support Facility 2.0
Log file name	/var/opt/FJSVmadm/log/evmonlog
File capacity	0 byte to 512 KB x 2 Files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	/var/opt/FJSVmadm/log/madmtrc
File capacity	0 byte to 64 KB x 3 Files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	/var/opt/FJSVmadm/log/madmlog
File capacity	0 byte to 64 KB x 3 Files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	/var/opt/FJSVmadm/log/trace/infotrace
File capacity	0 byte to 512 KB x 5 Files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	/var/opt/FJSVmadm/log/PN00/*
File capacity	200MByte or less
Allocation timing	Occurrence of an error
Need for periodic deletion	No
Remarks	
Log file name	/var/opt/FJSVmadm/log/cmdeslog
File capacity	0 byte to 512 KB x 2 Files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	/var/opt/FJSVmadm/log/evsndlog
File capacity	0 byte to 512 KB x 2 Files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	

Component	Machine Administration
Package name	FJSVpmnd
Supported Solaris OS	Solaris 8 OS or later
Supported models	PW-P
Supported Enhanced Support Facility	Enhanced Support Facility 2.3
Log file name	/var/opt/FJSVmadm/log/evmonlog
File capacity	0 byte to 512 KB x 2 Files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	/var/opt/FJSVmadm/log/madmtrc
File capacity	0 byte to 64 KB x 3 Files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	/var/opt/FJSVmadm/log/madmlog
File capacity	0 byte to 64 KB x 3 Files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	/var/opt/FJSVmadm/log/trace/cmdtrace
File capacity	0 byte to 512 KB x 3 Files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	/var/opt/FJSVmadm/log/trace/matrace
File capacity	0 byte to 512 KB x 3 Files
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	
Log file name	/var/opt/FJSVmadm/log/PN00/*
File capacity	200MByte or less
Allocation timing	Occurrence of an error
Need for periodic deletion	No
Remarks	

- No.8 Remote Support

Component	Remote Support (REMCS)
Package name	FJSVrmaos
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	PW-T, PW-U, GP-S, PW-CM, PW-CMZ, PW-P
Supported Enhanced Support Facility	Enhanced Support Facility 1.4 or later
Log file name	<p>/var/opt/FJSVrmaos/tmp2/*.trc</p> <p>*.trc takes two forms:</p> <p>xxxxnnn-mm.trc</p> <p>xxxx: Character string consisting of 3 to 10 characters</p> <p>nnn: Numeral (0 to 4294967295)</p> <p>mm: Numeral (0 to 4294967295)</p> <p>xxxx.trc</p> <p>xxxx: Character string consisting of 3 to 19 alphanumeric characters</p>
File capacity	<p>0 byte to 90 KB (Remote maintenance is not used.)</p> <p>0 byte to 900 KB (Remote maintenance is used.)</p>
Allocation timing	Start of the system or communication for remote maintenance
Need for periodic deletion	No
Remarks	<p>If remote maintenance is not used;</p> <p>Data is logged in 0 KB to 90 KB.</p> <p>If remote maintenance is used;</p> <p>Data is logged in 0 KB to 900 KB.</p>

Component	Remote Support (REMCS)
Package name	FJSVsirms
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	Common
Supported Enhanced Support Facility	Enhanced Support Facility 1.5 or later
Log file name	<p>/var/opt/FJSVsirms/log / route.log (Up to 500 KB)</p> <p>route.bak (Up to 500 KB)</p> <p>sirms.log (Up to 500 KB)</p> <p>sirms.bak (Up to 500 KB)</p> <p>Err.log (Up to 500 KB)</p> <p>Err.bak (Up to 500 KB)</p>
File capacity	0 byte to 3000 KB (up to 500 KB each)
Allocation timing	<p>Installation of ESF</p> <p>Logging starts immediately after the system starts after ESF (FJSVsirms package) is installed.</p>
Need for periodic deletion	No
Remarks	When either log file exceeds 500 KB, a .BAK file is created for cyclic operation.

Component	Remote Support (REMCS)
Package name	FJSVmarm
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	PW-T, PW-U, GP-S
Supported Enhanced Support Facility	Enhanced Support Facility 1.5 or later
Log file name	/var/opt/FJSVmadm/log/madmtrc
File capacity	0 byte to 64 KB
Allocation timing	Start of the system
Need for periodic deletion	No
Remarks	

Component	Remote Support (REMCS)
Package name	FJSVrlib
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	PW-T, PW-U, GP-S, PW-CM, PW-CMZ, PW-P
Supported Enhanced Support Facility	Enhanced Support facility 1.5 or later
Log file name	/var/opt/FJSVrlib/log/ rmslog.dft (Up to 1 MB) rmslog.bak (Up to 1 MB)
File capacity	0 byte to 2 MB (up to 1 MB each)
Allocation timing	Use of REMCS Agent
Need for periodic deletion	No
Remarks	REMCS library trace data is collected for logging. When the file capacity is exceeded, a .back file is created for cyclic operation.
Log file name	/var/opt/FJSVrlib/log/remescom.log
File capacity	0 byte to 100 KB
Allocation timing	Communication of REMCS Agent
Need for periodic deletion	No
Remarks	REMCS Agent communication records are collected for logging.

Component	Remote Support (REMCS)
Package name	FJSVrrda
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	PW-T, PW-U, GP-S, PW-CM, PW-CMZ, PW-P
Supported Enhanced Support Facility	Enhanced Support Facility 1.4 or later
Log file name	/opt/FJSVrrda/lib/trace.log
File capacity	0 byte to 5 MB
Allocation timing	Operation for firmware distribution
Need for periodic deletion	No
Remarks	

- No.9 Automatic Power Control

Component	Automatic Power Control
Package name	FJSVapcs
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	PW-T,PW-K,PW-CM,PW-CMZ,PW-CL,PW-CLZ,PW-P
Supported Enhanced Support Facility	Basic Software Extension 1.0 or later
Log file name	/var/opt/FJSVapcs/ apcstrc apcstrc.old apcstrc.err apcstrc.errold apcslog apcslog.old
File capacity	0 byte to 840 KB
Allocation timing	Node activation, node power-off, operation of automatic power control, or power-on or power-off according to the automatic power control schedule
Need for periodic deletion	No
Remarks	

- No.10 Server Default Configuration

Component	Server Default Configuration
Package name	FJSVssf
Supported Solaris OS	Solaris 7 OS or later
Supported models	PW-U,PW-T,PW-K,PW-CM, PW-CMZ, PW-CL,PW-CLZ, PW-P
Supported Enhanced Support Facility	Basic Software Extension 1.0 or later
Log file name	/var/opt/FJSVssf/tcptrace/ lim-err (Up to 500 KB) lim-err.old (Up to 500 KB)
File capacity	0 byte to 1000 KB (up to 500 KB each)
Allocation timing	Detection of abnormal disconnection of TCP
Need for periodic deletion	No
Remarks	When the maximum file capacity is exceeded, an .old file is created for cyclic operation.

Component	Server Default Configuration
Package name	FJSVwarn.us
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	PW-T,PW-K,PW-CM, PW-CMZ, PW-CL,PW-CLZ, PW-P
Supported Enhanced Support Facility	Enhanced Support Facility 1.4 or later
Log file name	The FJSVwarn.us package creates no specific log file.
File capacity	No
Allocation timing	Detection of CPU error
Need for periodic deletion	No
Remarks	When a CPU error is detected, error information is output to the console message log file "/var/adm/messages."

- No.11 No log file is generated for System Data Output Tool (component).

- No.12 License Manager

Component	License Manager
Package name	FSUNlic
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	Common
Supported Enhanced Support Facility	Basic Software Extension 1.0 or later
Log file name	/var/opt/FSUNlicense/ log (Up to 512 KB) log.old (Up to 512 KB)
File capacity	0 byte to 512 KB (up to 512 KB each)
Allocation timing	Start of license manager
Need for periodic deletion	No
Remarks	When the maximum file capacity is exceeded, an .old file is created for cyclic operation.

- No.13 No log file is generated for Crash Dump Assistant (component).
- No.14 No log file is generated for Auto Dump Analyze Tool (component).
- No.15 No log file is generated for Drivers for High Reliability (component).
- No.16 No log file is generated for CPU Performance Counter (component).

- No.17 CPU Patrol Diagnosis

Component	CPU Patrol Diagnosis
Package name	FJSVcpupd
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	PW-T, PW-K, PW-CM, PW-CL
Supported Enhanced Support Facility	Enhanced Support Facility 1.8 or later
Log file name	/var/opt/FJSVcpupd/log/ fjptlerr.log (Up to 64 KB) fjptlerr.log.old (Up to 64 KB) CPU* (* is a CPU number) (Up to 22 KB) * The maximum number of CPUs is 128, and up to 128 files are created. 128 files: 22 KB in total
File capacity	0 byte to 150 KB
Allocation timing	Start or stop of CPU patrol diagnosis (FJSVcpupd) or detection of a CPU error
Need for periodic deletion	No
Remarks	When the maximum file capacity is exceeded, an .odl file is created for cyclic operation.

- No.18 No log file is generated for G-LAN Error Notification (component).

- No.19 No log file is generated for G-LAN MTU Setting (component).

- No.20 No log file is generated for HCP Information Management (component).

- No.21 System Parameter Diagnosis

Component	System Parameter Diagnosis
Package name	FJSVparam
Supported Solaris OS	Solaris 8 OS or later
Supported models	PW-T,PW-U,PW-K,PW-CM,PW-CMZ,PW-CL,PW-CLZ,PW-P
Supported Enhanced Support Facility	Enhanced Support Facility 2.4 or later
Log file name	/var/opt/FJSVparam/log/ fjsvparam.0 (Up to about 512 KB) fjsvparam.1 (Up to about 512 KB)
File capacity	0 byte to about 1024 KB (up to about 512 KB each)
Allocation timing	Start or stop of system operation, or execution of the fjprmchk or fjprmset command
Need for periodic deletion	No
Remarks	If 512 KB are exceeded when the command starts, a fjsvparam.1 file is created for cyclic operation.
Log file name	/var/opt/FJSVparam/log/boot_ok.[0-9] (Up to about 50 KB each)
File capacity	0 byte to about 500 KB
Allocation timing	Start or stop of system operation
Need for periodic deletion	No
Remarks	If the backup data in the /etc/system file differs from the previous backup, the data is backed up.
Log file name	/var/opt/FJSVparam/log/per_mod.[0-9] (Up to about 50 KB each)
File capacity	0 byte to about 500 KB
Allocation timing	Start or stop of system operation
Need for periodic deletion	No
Remarks	When the /etc/system file is modified with a backup requested, the file prior to modification is backed up.

- No.22 HRM (System Operation Support Function)

Component	HRM (System Operation Support Function)		
Package name	FJSVhrm		
Supported Solaris OS	Solaris 8 OS or later		
Supported models	PW-T,PW-P,PW-CM,PW-CMZ,PW-CL,PW-CLZ		
Supported Enhanced Support Facility	Enhanced Support Facility 2.4.1 or later		
Log file name	/var/opt/FJSVhrm/	logs/ details/ ana_comm.trc* ana_io.trc* ana_mb.trc* devconf_syscheck.log devconf_trace.log devconf_update_status.log devmerge.log diaglog* listfile memop000.txt* memot000.txt* mempt000.txt* parts_log* pat_log0.log pat_sys.log pat_trc0.log sched_log* sched_logerr* data/ diag/ THERMO_PN_statistics_data THERMO_PN_statistics_head etc	(Up to 35 MB) (Up to 10 MB) (Up to 1.3 MB) (Up to 1.3 MB) (Up to 1.3 MB) (Up to 1.3 MB) (Up to 1.3 MB) (Up to 1.3 MB) (Up to 100 KB) (Up to 1.3 MB) (Up to 10 MB) (Up to 300 KB) (Up to 300 KB) (Up to 300 KB) (Up to 1.3 MB) (Up to 256 KB) (Up to 256 KB) (Up to 256 KB) (Up to 1.3 MB) (Up to 1.3 MB) (Up to 100 MB) (Up to 10 MB) (Up to 10 MB) (Up to 10 MB) × 8 files
File capacity	0 byte to 200 MB		
Allocation timing	Start of HRM (System Operation Support Function)		
Need for periodic deletion	No		
Remarks	When the maximum file capacity is exceeded, a file with a different extension is created for cyclic operation (logs/). Proportional to the numbers of I/Os and PNs. The maximum configuration is presumed (data/).		

7. System Files Changed by Enhanced Support Facility

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

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

7.1. Files that are changed or added by Enhanced Support Facility

1) Files that may be changed

- /etc/syslog.conf
- /etc/services
- /etc/system
- /etc/default/sys-suspend
- /etc/default/solregis
- /etc/inet/inetd.conf
- /etc/inet/services*
- /etc/devlink.tab
- /etc/group
- /var/spool/cron/crontabs/adm
- /var/spool/cron/crontabs/root
- /etc/saf/zsmon/_pmtab(PRIMEPOWER800/1000/1500/2000/2500)
- /etc/iu.ap(PRIMEPOWER800/1000/1500/2000/2500)

2) Files (rc scripts*) that are added

- /etc/init.d/FJSVlogadm
- /etc/init.d/FJSVdmpadm
- /etc/init.d/FJSVdmpsnap
- /etc/init.d/FJSVevhand
- /etc/init.d/FJSVinetinit
- /etc/init.d/FJSVlogclear
- /etc/init.d/FJSVmadm
- /etc/init.d/FJSVmand
- /etc/init.d/FJSVmarm
- /etc/init.d/FJSVparam
- /etc/init.d/FJSVscf
- /etc/init.d/FJSVscfdaemon.rcS
- /etc/init.d/FJSVsirmsctl
- /etc/init.d/FJSVwarn
- /etc/init.d/FSUNlicense

rc script: Initialization at reboot, and processing for starting daemons

7.2. Details of the Files Changed by Enhanced Support Facility

- Changes in /etc/syslog.conf setting file

Component	Machine Administration
Package name	FJSVmand(PW-T, PW-U GP-S) FJSVkmnd(PW-K) FJSVpmnd(PW-P)
Supported Solaris OS	FJSVkmnd :Solaris 2.6 OS or later
Supported models	PW-T, PW-U, GP-S, PW-K, PW-P
Supported Enhanced Support Facility	Basic Software Extension 1.0 or later
Reason for change	Settings are changed so that a message on the same level as the message output to /var/adm/messages is output to another file in order to enable monitoring of syslog messages.
Change	# FJSVmadm : This is a setting of Machine Administration. # FJSVmadm : Don't delete the following lines. # FJSVmadm : Because the message cannot be observed. *.err;kern.debug;daemon.notice /var/opt/FJSVmadm/evh/evh_pipe
Remarks	The following line is added by esfadd and deleted by esfrm.

Component	Machine Administration
Package name	FJSVcmnd
Supported Solaris OS	Solaris 8 OS or later
Supported models	PW-CM, PW-CMZ, PW-CL, PW-CLZ
Supported Enhanced Support Facility	Enhanced Support Facility 2.0 or later
Reason for change	Settings are changed so that a message on the same level as the message output to /var/adm/messages is output to another file in order to enable monitoring of syslog messages.
Change	*.err;kern.debug;daemon.notice /var/opt/FJSVmadm/evh/evh_pipe user.err /var/opt/FJSVmadm/log/trace/messages
Remarks	

Component	Remote Support (REMCS)
Package name	FJSVragt
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	PW-T,PW-U,GP-S,PW-CM,PW-CMZ,PW-P
Supported Enhanced Support Facility	Enhanced Support Facility 2.1 or later
Reason for change	To monitor syslog messages when the management server is connected
Change	##*.err;kern.debug;auth.notice /var/opt/FJSVragt/fifo/slg (The added definition is handled as a comment.)
Remarks	The definition is added during FJSVragt package installation.

Component	HRM (System Operation Support Function)
Package name	FJSVhrm
Supported Solaris OS	Solaris 8 OS or later
Supported models	PW-T,PW-P,PW-CM,PW-CMZ,PW-CL,PW-CLZ
Supported Enhanced Support Facility	Enhanced Support Facility 2.4.1 or later
Reason for change	A pipe with a name is added during installation of FJSVhrm so that HRM can read syslog messages.
Change	*.err;kern.debug;daemon.notice /var/opt/FJSVhrm/hrm_pipe
Remarks	

- Changes in /the etc/services setting file

Component	Remote support (REMCS)
Package name	FJSVragt
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	PW-T,PW-U,GP-S,PW-CM,PW-CMZ,PW-P
Supported Enhanced Support Facility	Enhanced Support Facility 1.4 or later
Reason for change	To define the number of the port to be used when the management server is connected
Change	rmopagt 2924/tcp rmopagt 2924/udp
Remarks	The relevant port number is used only when the management server is connected.

- Changes in the /etc/system setting file

Component	SCF Driver
Package name	FJSVscd
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	PW-T
Supported Enhanced Support Facility	Basic Software Extension 1.0 or later
Reason for change	To enable the SCF driver before opening
Change	forceload: drv/FJSVscf
Remarks	

Component	Server Default Configuration
Package name	FJSVssf
Supported Solaris OS	Solaris 7 OS or later
Supported models	PW-T,PW-K,PW-U,PW-CM,PW-CMZ,PW-CL,PW-CLZ,PW-P
Supported Enhanced Support Facility	Enhanced Support Facility 1.3 or later
Reason for change	To enable the trace information collection function to improve system maintainability
Change	* Begin FJSVssf (do not edit) set ftrace_atboot = 1 set kmem_flags = 0x100 set kmem_lite_maxalign = 8192 * End FJSVssf (do not edit)
Remarks	

Component	Server Default Configuration
Package name	FJSVpnl.us
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	PW-K,PW-CM,PW-CMZ,PW-CL,PW-CLZ,PW-P
Supported Enhanced Support Facility	Enhanced Support Facility 1.4 or later
Reason for change	To enable the partition dump collection function
Change	* Begin _PKGINST_ (do not edit) forceload: drv/FJSVpanel * End _PKGINST_ (do not edit)
Remarks	

Component	Drivers for High Reliability
Package name	FJSVsef, FJSVse 1.x
Supported Solaris OS	FJSVsef : Solaris 2.6 OS FJSVse 1.x: Solaris 7 OS
Supported models	PW-K
Supported Enhanced Support Facility	FJSVsef : Enhanced Support Facility 1.5 or later FJSVse 1.x : Enhanced Support Facility 1.4 or later
Reason for change	To load the driver of the serial port used for a console quickly after the system starts
Change	The following line is added during installation: Forceload: drv/se
Remarks	Processing at package deletion The above line is deleted during uninstallation.

Component	Drivers for High Reliability
Package name	FJSVse 2.x (PW-K), FJSVse 3.x (PW-K), FJSVsec (PW-CL,PW-CLZ)
Supported Solaris OS	FJSVse 2.x: Solaris 8 OS FJSVse 3.x: Solaris 9 OS FJSVsec : Solaris 8 OS or later
Supported models	PW-K,PW-CL,PW-CLZ
Supported Enhanced Support Facility	FJSVse 2.x : Enhanced Support Facility 1.4 or later FJSVse 3.x : Enhanced Support Facility 1.4 or later FJSVsec : Enhanced Support Facility 2.3 or later
Reason for change	To load the driver quickly after the system starts, to duplicate the serial port used for a console
Change	The following two lines are added during installation: forceload: drv/se forceload: drv/fjmse
Remarks	The above two lines are deleted during uninstallation.

Component	System Parameter Diagnosis
Package name	FJSVparam
Supported Solaris OS	Solaris 8 OS or later
Supported models	PW-T,PW-U,PW-K,PW-CM,PW-CMZ,PW-CL,PW-CLZ,PW-P
Supported Enhanced Support Facility	Enhanced Support Facility 2.4 or later
Reason for change	The system parameters are diagnosed and “/etc/system” is changed if an inappropriate description is detected.
Change	- Parameter “RT:rt_maxpri” is changed to a comment. - If the value of “semsys:seminfo_semume” or “semsys:seminfo_semmnu” is not adequate, it is corrected.
Remarks	

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

Component	Server Default Configuration
Package name	FJSVdef
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	Common
Supported Enhanced Support Facility	Basic Software Extension 1.0 or later
Reason for change	To disable the power-off function implemented by pressing the power key on the keyboard, in the GUI environment
Change	PERMS=- # Add by FJSVdef “PERMS” is changed from “console-owner” to “-”.
Remarks	

- Changes in the /etc/default/solregis solregis setting file

Component	Server Default Configuration
Package name	FJSVdef
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	Common
Supported Enhanced Support Facility	Basic Software Extension 1.0 or later
Reason for change	To suppress the starting of the Solaris user registration program (solregs). (PRIMEPOWER, GP7000F only)
Change	DISABLE=1
Remarks	

- Changes in the /etc/inet/inetd.conf setting file

Component	SunVTS, FJVTS
Package name	SUNWvts
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	PW-T,PW-K,PW-U,PW-CM,PW-CMZ,PW-CL,PW-CLZ,PW-P
Supported Enhanced Support Facility	Basic Software Extension 1.0 or later
Reason for change	The setting for enabling the remote host to remotely execute SunVTS/FJVTS during installation of this package is added to the above file.
Change	<p>For Solaris 2.6 OS: 536870916/1 dgram rpc/udp wait root /opt/SUNWvts/bin/vtsk /opt/SUNWvts/bin/vtsk</p> <p>For Solaris 7 OS / Solaris 8 OS: # SunVTS Daemon 536870916/1 dgram rpc/udp wait root /opt/SUNWvts/bin/sunvts /opt/SUNWvts/bin/sunvts -g</p> <p>For Solaris 9 OS: # SunVTS Daemon 100153/1 dgram rpc/udp wait root /opt/SUNWvts/bin/sunvts /opt/SUNWvts/bin/sunvts -g</p>
Remarks	<ul style="list-style-type: none"> - Each of the above statements is used to enable the remote host to remotely execute SunVTS, FJVTS. - The corresponding statements can be deleted from inetd.conf if the remote execution function is not used. - Password certification is required for remote execution.

- Changes in the /etc/inet/services definition file

Component	HRM (System Operation Support Function)
Package name	FJSVhrm
Supported Solaris OS	Solaris 8 OS or later
Supported models	PW-T,PW-P,PW-CM,PW-CMZ,PW-CL,PW-CLZ
Supported Enhanced Support Facility	Enhanced Support Facility 2.4.1 or later
Reason for change	Definition of TCP port used by HRM for communication The port number used by HRM and the SAN tool is defined.
Change	hrmport 9977/tcp hrmsana 9978/tcp
Remarks	HRM (System Operation Support Function) is not automatically started by default after installation of Enhanced Support Facility. After a port number is changed, restart HRM Agent as follows: # /opt/FJSVhrm/bin/hrmstop # /opt/FJSVhrm/bin/hrmstart

Component	Web-Based Admin View / WWW Server for Admin View
Package name	FJSVwvcnf
Supported Solaris OS	Solaris2.6 OS or later
Supported models	Common
Supported Enhanced Support Facility	Basic Software Extension 1.0 or later
Reason for change	Definition of a TCP port: The number of the port used by Web-Based Admin View / WWW Server for Admin View for communication is defined.
Change	fjwv-h 8081/tcp # FJSVwvcnf Web Port
Remarks	The following command can be used to change the port number: /etc/opt/FJSVwvbs/etc/bin/wvSetport fjwv-h=<port number>

Component	Web-Based Admin View / WWW Server for Admin View
Package name	FJSVwvbs
Supported Solaris OS	Solaris2.6 OS or later
Supported models	Common
Supported Enhanced Support Facility	Basic Software Extension 1.0 or later
Reason for change	Definition of a TCP/UDP port: The number of the port used by Web-Based Admin View for communication is defined.
Change	fjwv_g 9396/udp # FJSVwvbs group RMI fjwv_n 9397/tcp # FJSVwvbs node RMI fjwv_s 9398/tcp # FJSVwvbs server RMI fjwv_c 9399/tcp # FJSVwvbs client RMI
Remarks	The following command can be used to change the port number(s): /etc/opt/FJSVwvbs/etc/bin/wvSetport { fjwv_c=<port number> fjwv_n=<port number> fjwv_s=<port number> fjwv_g=<port number> }

- Ports used by Web-Based Admin View / WWW Server for Admin View

If the use of the above ports needs to be suppressed for Enhanced Support Facility for security requirements, refer to the following action and notes provided in the “Installation Guide” for Enhanced Support Facility:

----- Extracted from the Installation Guide -----

WWW Server for Admin View and Web-Based Admin View automatically use network ports (8081, 9397, 9398, and 9399 by default) when the system boots. To suppress this operation for enhancing security, enter the following command and then reboot the system.

```
# /etc/opt/FJSVwvbs/etc/bin/wvrcscript uninstall
```

This action prevents WWW Server for Admin View and Web-Based Admin View from being started automatically. It also prevents the following functions and products from being operated from the Web. Use the GUI functions for such operations.

- Machine Administration
- Multipath Disk Control
- SafeDISK and SafeDISK/Global
- SafeCLUSTER
- SafeFILE/Global and SafeFILE/Global POWER Edition
- PRIMECLUSTER

To enable automatic restart, enter the following command and then reboot the system.

```
# /etc/opt/FJSVwvbs/etc/bin/wvrcscript install
```

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

Component	SCF Driver												
Package name	FJSVscd												
Supported Solaris OS	Solaris 2.6 OS or later												
Supported models	PW-T												
Supported Enhanced Support Facility	Basic Software Extension 1.0 or later												
Reason for change	To add SCF driver entries												
Change	<table> <tr> <td>type=ddi_pseudo;name=PFU,scf;minor=pwrctl</td> <td>FJSVhwr/pwrctl</td> </tr> <tr> <td>type=ddi_pseudo;name=PFU,scf;minor=rasctl</td> <td>FJSVhwr/rasctl</td> </tr> <tr> <td>type=ddi_pseudo;name=PFU,scf;minor=rcictl</td> <td>FJSVhwr/rcictl</td> </tr> <tr> <td>type=ddi_pseudo;name=PFU,faultled;minor=fled</td> <td>FJSVhwr/fled</td> </tr> <tr> <td>type=ddi_pseudo;name=PFU,watchdog-log;minor=PFU,watchdog-log</td> <td>FJSVhwr/watchdoglog</td> </tr> <tr> <td>type=ddi_pseudo;name=FJSVsflcd;minor=0</td> <td>FJSVhwr/sflcd\N0</td> </tr> </table>	type=ddi_pseudo;name=PFU,scf;minor=pwrctl	FJSVhwr/pwrctl	type=ddi_pseudo;name=PFU,scf;minor=rasctl	FJSVhwr/rasctl	type=ddi_pseudo;name=PFU,scf;minor=rcictl	FJSVhwr/rcictl	type=ddi_pseudo;name=PFU,faultled;minor=fled	FJSVhwr/fled	type=ddi_pseudo;name=PFU,watchdog-log;minor=PFU,watchdog-log	FJSVhwr/watchdoglog	type=ddi_pseudo;name=FJSVsflcd;minor=0	FJSVhwr/sflcd\N0
type=ddi_pseudo;name=PFU,scf;minor=pwrctl	FJSVhwr/pwrctl												
type=ddi_pseudo;name=PFU,scf;minor=rasctl	FJSVhwr/rasctl												
type=ddi_pseudo;name=PFU,scf;minor=rcictl	FJSVhwr/rcictl												
type=ddi_pseudo;name=PFU,faultled;minor=fled	FJSVhwr/fled												
type=ddi_pseudo;name=PFU,watchdog-log;minor=PFU,watchdog-log	FJSVhwr/watchdoglog												
type=ddi_pseudo;name=FJSVsflcd;minor=0	FJSVhwr/sflcd\N0												
Remarks													

Component	SCF Driver												
Package name	FJSVlscd												
Supported Solaris OS	Solaris 8 OS or later												
Supported models	PW-U												
Supported Enhanced Support Facility	Enhanced Support Facility 1.7 or later												
Reason for change	To add SCF driver entries												
	<table> <tr> <td>Type=ddi_pseudo;name=PFU,scf;minor=pwrctl</td> <td>FJSVhwr/pwrctl</td> </tr> <tr> <td>Type=ddi_pseudo;name=PFU,scf;minor=rasctl</td> <td>FJSVhwr/rasctl</td> </tr> <tr> <td>Type=ddi_pseudo;name=PFU,scf;minor=rcictl</td> <td>FJSVhwr/rcictl</td> </tr> <tr> <td>Type=ddi_pseudo;name=PFU,faultled;minor=fled</td> <td>FJSVhwr/fled</td> </tr> <tr> <td>Type=ddi_pseudo;name=PFU,watchdog-log;minor=PFU,watchdog-log</td> <td>FJSVhwr/watchdoglog</td> </tr> <tr> <td>Type=ddi_pseudo;name=FJSVsflcd;minor=0</td> <td>FJSVhwr/sflcd\N0</td> </tr> </table>	Type=ddi_pseudo;name=PFU,scf;minor=pwrctl	FJSVhwr/pwrctl	Type=ddi_pseudo;name=PFU,scf;minor=rasctl	FJSVhwr/rasctl	Type=ddi_pseudo;name=PFU,scf;minor=rcictl	FJSVhwr/rcictl	Type=ddi_pseudo;name=PFU,faultled;minor=fled	FJSVhwr/fled	Type=ddi_pseudo;name=PFU,watchdog-log;minor=PFU,watchdog-log	FJSVhwr/watchdoglog	Type=ddi_pseudo;name=FJSVsflcd;minor=0	FJSVhwr/sflcd\N0
Type=ddi_pseudo;name=PFU,scf;minor=pwrctl	FJSVhwr/pwrctl												
Type=ddi_pseudo;name=PFU,scf;minor=rasctl	FJSVhwr/rasctl												
Type=ddi_pseudo;name=PFU,scf;minor=rcictl	FJSVhwr/rcictl												
Type=ddi_pseudo;name=PFU,faultled;minor=fled	FJSVhwr/fled												
Type=ddi_pseudo;name=PFU,watchdog-log;minor=PFU,watchdog-log	FJSVhwr/watchdoglog												
Type=ddi_pseudo;name=FJSVsflcd;minor=0	FJSVhwr/sflcd\N0												
Remarks													

Component	SCF Driver	
Package name	FJSVscd1	
Supported Solaris OS	Solaris 2.6 OS	
Supported models	PW-K(Solaris 2.6)	
Supported Enhanced Support Facility	Enhanced Support Facility 1.4 or later	
Reason for change	To add SCF driver entries	
Change	type=ddi_pseudo;name=FJSV,scfc type=ddi_pseudo;name=FJSVscf2;minor=mscf type=ddi_pseudo;name=FJSVscf2;minor=mscf0 type=ddi_pseudo;name=FJSVscf2;minor=pwrctl type=ddi_pseudo;name=FJSVscf2;minor=pwrctl2 type=ddi_pseudo;name=FJSVscf2;minor=rasctl type=ddi_pseudo;name=FJSVscf2;minor=rasctl2 type=ddi_pseudo;name=FJSVscf2;minor=rcict1 type=ddi_pseudo;name=FJSVscf2;minor=rcict2 type=ddi_pseudo;name=FJSVsfled;minor=0	FJSVhwr^M0 FJSVhwr/fiomp^M0 FJSVhwr/fiomp^M0 FJSVhwr^M0 FJSVhwr^M0 FJSVhwr^M0 FJSVhwr^M0 FJSVhwr^M0 FJSVhwr^M0 FJSVhwr^M0 FJSVhwr/sfled^N0
Remarks		

Component	SCF Driver	
Package name	FJSVscd2	
Supported Solaris OS	Solaris 2.6 OS, 7 OS, 8 OS	
Supported models	PW-K(Solaris 7 OS, 8 OS, 9 OS)	
Supported Enhanced Support Facility	Enhanced Support Facility 1.4 or later	
Reason for change	To add SCF driver entries	
Change	type=ddi_pseudo;name=FJSV,scfc type=ddi_pseudo;name=FJSVscf2;minor=mscf type=ddi_pseudo;name=FJSVscf2;minor=mscf0 type=ddi_pseudo;name=FJSVscf2;minor=pwrctl type=ddi_pseudo;name=FJSVscf2;minor=pwrctl2 type=ddi_pseudo;name=FJSVscf2;minor=rasctl type=ddi_pseudo;name=FJSVscf2;minor=rasctl2 type=ddi_pseudo;name=FJSVscf2;minor=rcict1 type=ddi_pseudo;name=FJSVscf2;minor=rcict2 type=ddi_pseudo;name=FJSVsfled;minor=0	FJSVhwr^M0 FJSVhwr/fiomp^M0 FJSVhwr/fiomp^M0 FJSVhwr^M0 FJSVhwr^M0 FJSVhwr^M0 FJSVhwr^M0 FJSVhwr^M0 FJSVhwr^M0 FJSVhwr^M0 FJSVhwr/sfled^N0
Remarks		

Component	SCF Driver	
Package name	FJSVscd3	
Supported Solaris OS	Solaris 8 OS or later	
Supported models	PW-CM,PW-CMZ,PW-CL,PW-CLZ	
Supported Enhanced Support Facility	Enhanced Support Facility 2.0 or later	
Reason for change	To add SCF driver entries	
Change	type=ddi_pseudo;name=FJSV,scfc type=ddi_pseudo;name=FJSVscf3;minor=mscf type=ddi_pseudo;name=FJSVscf3;minor=mscf0 type=ddi_pseudo;name=FJSVscf3;minor=pwrctl type=ddi_pseudo;name=FJSVscf3;minor=pwrctl2 type=ddi_pseudo;name=FJSVscf3;minor=rasctl type=ddi_pseudo;name=FJSVscf3;minor=rasctl2 type=ddi_pseudo;name=FJSVscf3;minor=rcictl type=ddi_pseudo;name=FJSVscf3;minor=rcictl2 type=ddi_pseudo;name=FJSVscf3;minor=fled type=ddi_pseudo;name=FJSVsflcd;minor=0	FJSVhwr\M0 FJSVhwr\fiomp\M0 FJSVhwr\fiomp\M0 FJSVhwr\M0 FJSVhwr\M0 FJSVhwr\M0 FJSVhwr\M0 FJSVhwr\M0 FJSVhwr\M0 FJSVhwr\M0 FJSVhwr\M0 FJSVhwr\sflcd\N0
Remarks		

Component	SCF Driver	
Package name	FJSVpscd	
Supported Solaris OS	Solaris 8 OS or later	
Supported models	PW-P	
Supported Enhanced Support Facility	Enhanced Support Facility 2.3 or later	
Reason for change	To add SCF driver entries	
Change	type=ddi_pseudo;name=FJSV,scfc type=ddi_pseudo;name=FJSVscf3;minor=mscf type=ddi_pseudo;name=FJSVscf3;minor=mscf0 type=ddi_pseudo;name=FJSVscf3;minor=pwrctl type=ddi_pseudo;name=FJSVscf3;minor=pwrctl2 type=ddi_pseudo;name=FJSVscf3;minor=rasctl type=ddi_pseudo;name=FJSVscf3;minor=rasctl2 type=ddi_pseudo;name=FJSVscf3;minor=rcictl type=ddi_pseudo;name=FJSVscf3;minor=rcictl2 type=ddi_pseudo;name=FJSVscf3;minor=fled type=ddi_pseudo;name=FJSVsflcd;minor=0	FJSVhwr\M0 FJSVhwr\fiomp\M0 FJSVhwr\fiomp\M0 FJSVhwr\M0 FJSVhwr\M0 FJSVhwr\M0 FJSVhwr\M0 FJSVhwr\M0 FJSVhwr\M0 FJSVhwr\M0 FJSVhwr\M0 FJSVhwr\sflcd\N0
Remarks		

Component	Drivers for High Reliability
Package name	FJSVse 2.x (PW-K), FJSVse 3.x (PW-K), FJSVsec (PW-CL,PW-CLZ)
Supported Solaris OS	FJSVse 2.x: Solaris 8 OS FJSVse 3.x: Solaris 9 OS FJSVsec : Solaris 8 OS or later
Supported models	PW-K,PW-CL,PW-CLZ
Supported Enhanced Support Facility	FJSVse 2.x : Enhanced Support Facility 1.4 or later FJSVse 3.x : Enhanced Support Facility 1.4 or later FJSVsec : Enhanced Support Facility 2.3 or later
Change	The following lines are added during installation: type=ddi_pseudo;name=fjmse;minor=a FJSVhwr/mse^M0 type=ddi_pseudo;name=fjmse;minor=mse FJSVhwr/fiomp^M0 type=ddi_pseudo;name=clone;minor=mse0 FJSVhwr/fiomp^M0
Remarks	

- Changes in the /etc/group definition file

Component	Web-Based Admin View / WWW Server for Admin View
Package name	FJSVwvbs
Supported Solaris OS	Solaris2.6 OS or later
Supported models	Common
Supported Enhanced Support Facility	Basic Software Extension 1.0 or later
Reason for change	Definition of user group: A user group that can operate every operation management product running on Web-Based Admin View is defined.
Change	wvroot::100:
Remarks	

- Changes in the /var/spool/cron/crontabs/adm definition file

Component	Server Default Configuration
Package name	FJSVdef
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	Common
Supported Enhanced Support Facility	Basic Software Extension 1.0 or later
Reason for change	To check for excessive log file length and periodically perform log rotation
Change	# Copyright (c) FUJITSU LIMITED 1999 # @(#)adm 1.1 99/02/10 30 3 * * 0 /opt/FJSVdef/sbin/chkslog WTMP
Remarks	

- Changes in the /var/spool/cron/crontabs/root definition file

Component	SCF Driver
Package name	FJSVscr
Supported Solaris OS	Solaris 2.6 OS or later
Supported models	PW-T
Supported Enhanced Support Facility	Basic Software Extension 1.0 or later
Reason for change	To check for increase in log file size and periodically perform log rotation. To make RAS control device (SCF) settings or acquire the corresponding information.
Change	# Copyright Fujitsu/PFU Limited 1997 # @(#)root 1.1 97/06/25 21:09:11 # 0 1 * * * /opt/FJSVhwr/procedure/scfdaily #
Remarks	

Component	SCF Driver
Package name	FJSVscr3
Supported Solaris OS	Solaris 8 OS or later
Supported models	PW-CM,PW-CMZ,PW-CL,PW-CLZ
Supported Enhanced Support Facility	Enhanced Support Facility 2.0 or later
Reason for change	To make RAS control device (SCF) settings or acquire the corresponding information.
Change	# Copyright Fujitsu/PFU Limited 1997 # @(#)root 1.1 97/06/25 21:09:11 # 0 1 * * * /opt/FJSVhwr/procedure/scfdaily #
Remarks	

Component	SCF Driver
Package name	FJSVpscr
Supported Solaris OS	Solaris 8 OS or later
Supported models	PW-P
Supported Enhanced Support Facility	Enhanced Support Facility 2.3 or later
Reason for change	To set the time zone in the RAS control device (SCF)
Change	# Copyright Fujitsu Limited 2002 # @(#)root 1.0 02/09/06 19:25:00 # 1 * * * * /opt/FJSVhwr/procedure/scftzone #
Remarks	

Component	Machine Administration
Package name	FJSVcmd
Supported Solaris OS	Solaris 8 OS or later
Supported models	PW-CM,PW-CMZ,PW-CL,PW-CLZ
Supported Enhanced Support Facility	Enhanced Support Facility 2.0 or later
Reason for change	To prevent increases in the size of the log file from exhausting the free space on the system volume
Change	13 2 * * 0 /opt/FJSVmadm/lib/csl.weekly #FJSVcmd 17 2 * * * /opt/FJSVmadm/lib/csl.daily #FJSVcmd
Remarks	

Component	Server Default Configuration
Package name	FJSVdef
Supported Solaris OS	Solaris 2.6 OS, 7 OS, 8 OS
Supported models	Common (Solaris 2.6 - 8 OS)
Supported Enhanced Support Facility	Basic Software Extension 1.0 or later
Reason for change	To check for excessive increases in the size of the log file and periodically perform log rotation.
Change	# Copyright (c) FUJITSU LIMITED 1999 # @(#)root 1.1 99/02/10 33 3 * * 0 /opt/FJSVdef/sbin/chkslog VOLDLOG SULOG SAFLOG ZSMONLOG SPELLHIST
Remarks	

Component	Server Default Configuration
Package name	FJSVdef
Supported Solaris OS	Solaris 9 OS
Supported models	Common (Solaris 9 OS only)
Supported Enhanced Support Facility	Enhanced Support Facility 2.2 or later
Reason for change	To check for excessive increase in the size of the log file and periodically perform log rotation
Change	# Copyright (c) FUJITSU LIMITED 2002 # @(#)root 2.0 2002/03/16 30 3 * * 0 if [! -f /var/adm/pacct]; then /usr/sbin/logadm -p now /var/adm/wtmpx; fi
Remarks	

- Changes in the /etc/saf/zsmon/_pmtab definition file

Component	Machine Administration
Package name	FJSVcmnd
Supported Solaris OS	Solaris 8 OS or later
Supported models	PW-CM, PW-CMZ, PW-CL, PW-CLZ
Supported Enhanced Support Facility	Enhanced Support Facility 2.0 or later
Reason for change	To make the serial port usable for FST connections
Change	ttya:u:root:reserved:reserved:reserved:/dev/term/a:I::/usr/bin/login::9600:ldterm,ttcompat:ttya login\ ::tvi925:y:# ttyb:u:root:reserved:reserved:reserved:/dev/term/b:::/usr/bin/login::9600:ldterm,ttcompat:login\ :FST port::y:#
Remarks	

Component	Drivers for High Reliability
Package name	FJSVsef, FJSVse 1.x
Supported Solaris OS	FJSVsef : Solaris 2.6 OS FJSVse 1.x: Solaris 7 OS
Supported models	PW-K
Supported Enhanced Support Facility	FJSVsef : Enhanced Support Facility 1.5 or later FJSVse 1.x : Enhanced Support Facility 1.4 or later
Reason for change	The port monitor (tymon) need not be set because all standard serial ports are dedicated for consoles.
Change	The tymon settings of ttya and ttyb are changed to Disable during installation. Specifically, "x" is added to the second fields of ttya and ttyb as shown below: Before change: ttya:u:root:reserved:reserved:reserved:/dev/term/a:I: /usr/bin/login::9600:ldterm,ttcompat:login\ ::tvi925:y:# ttyb:u:root:reserved:reserved:reserved:/dev/term/a:I: /usr/bin/login::9600:ldterm,ttcompat:login\ ::tvi925:y:# After change: ttya:ux:root:reserved:reserved:reserved:/dev/term/a:I: /usr/bin/login::9600:ldterm,ttcompat:login\ ::tvi925:y:# ttyb:ux:root:reserved:reserved:reserved:/dev/term/a:I: /usr/bin/login::9600:ldterm,ttcompat:login\ ::tvi925:y:#
Remarks	The tymon settings are changed to Enable during uninstallation.

Component	Drivers for High Reliability
Package name	FJSVse 2.x (PW-K), FJSVse 3.x (PW-K), FJSVsec (PW-CL,PW-CLZ)
Supported Solaris OS	FJSVse 2.x: Solaris 8 OS FJSVse 3.x: Solaris 9 OS FJSVsec : Solaris 8 OS or later
Supported models	PW-K,PW-CL,PW-CLZ
Supported Enhanced Support Facility	FJSVse 2.x : Enhanced Support Facility 1.4 or later FJSVse 3.x : Enhanced Support Facility 1.4 or later FJSVsec : Enhanced Support Facility 2.3 or later
Reason for change	The port monitor (ttymon) need not be set because all standard serial ports are dedicated for consoles.
Change	The ttymon settings of ttya and ttyb are changed to Disable during installation. Specifically, "x" is added to the second fields of ttya and ttyb as shown below: Before change: ttya:u:root:reserved:reserved:reserved:/dev/term/a:I: /usr/bin/login::9600:ldterm,ttcompat:login\ : :tvi925:y:# ttyb:u:root:reserved:reserved:reserved:/dev/term/a:I: /usr/bin/login::9600:ldterm,ttcompat:login\ : :tvi925:y:# After change: ttya:ux:root:reserved:reserved:reserved:/dev/term/a:I: /usr/bin/login::9600:ldterm,ttcompat:login\ : :tvi925:y:# ttyb:ux:root:reserved:reserved:reserved:/dev/term/a:I: /usr/bin/login::9600:ldterm,ttcompat:login\ : :tvi925:y:#
Remarks	The ttymon settings are changed to Enable during uninstallation.

- Changes in the /etc/iu.ap definition file

Component	Drivers for High Reliability
Package name	FJSVse 2.x (PW-K), FJSVse 3.x (PW-K), FJSVsec (PW-CL,PW-CLZ)
Supported Solaris OS	FJSVse 2.x: Solaris 8 OS FJSVse 3.x: Solaris 9 OS FJSVsec : Solaris 8 OS or later
Supported models	PW-K,PW-CL,PW-CLZ
Supported Enhanced Support Facility	FJSVse 2.x : Enhanced Support Facility 1.4 or later FJSVse 3.x : Enhanced Support Facility 1.4 or later FJSVsec : Enhanced Support Facility 2.3 or later
Reason for change	To change the auto push settings of ldterm(7M) and ttcompat(7M) when configuring a duplicate console
Change	The following changes are made during installation: - For FJSVse 2.x, 3.x fjmse 0 0 ldterm ttcompat ← Add se 0 255 ldterm ttcompat → Delete se 131072 131327 ldterm ttcompat ↓ Changed to the following: se 131076 131327 ldterm ttcompat - For FJSVsec fjmse 0 0 ldterm ttcompat ← Add se 8192 8394 ldterm ttcompat ← Add se 139264 139464 ldterm ttcompat ← Add
Remarks	The above changes are canceled during uninstallation.

8. How to set the cron used in Enhanced Support Facility

This section explains how Enhanced Support Facility uses the crontab(1) and the at(1) in default configuration. In addition, impact by halt of function is also be explained.

8.1. crontab(1)

a) Additional setting to the crontab(1) for “ root”

- scfdaily

```
0 1 * * * /opt/FJSVhwr/procedure/scfdaily
```

Component	SCF driver
Package name	FJSVscu.us, FJSVscu3
Support Solaris OS	Solaris 2.6 OS or later
Support models	PW-T, PW-CM, PW-CMZ, PW-CL, PW-CLZ
Support Enhanced Support Facility	Basic Software Extension 1.0 or later
Function	Sets information to the RAS-control device(SCF) and gets information from it
Suppressible	No
Effect of suppression	It affects hardware maintenance due to the reason that you are unable to acquire error-log information included in the SCF-control device(SCF).

- scftzone

```
1 * * * * /opt/FJSVhwr/procedure/scftzone
```

Component	SCF driver
Package name	FJSVpscu
Support Solaris OS	Solaris 8 OS or later
Support models	PW-P
Support Enhanced Support Facility	Enhanced Support Facility 2.3 or later
Function	Sets timezone to the RAS-control device(SCF).
Suppressible	No
Effect of suppression	Hardware maintenance become difficult due to inconsistent logged time between OS and RAS control device, SCF.

- csl.weekly

13 2 * * /opt/FJSVmadm/lib/csl.weekly

Component	Machine administration
Package name	FJSVcmd
Support Solaris OS	Solaris 8 OS or later
Support models	PW-CM,PW-CMZ,PW-CL,PW-CLZ
Support Enhanced Support Facility	Enhanced Support Facility 2.0 or later
Function	Prevents a system volume from being overloaded by log file expansion.
Suppressible	Yes
Effect of suppression	No monitoring for logfiles-expression in made. In a system required a sophisticated security it is needed to build a similar feature uniquely without relying on this component.

- csl.daily

17 2 * * /opt/FJSVmadm/lib/csl.daily

Component	Machine administration
Package name	FJSVcmd
Support Solaris OS	Solaris 8 OS or later
Support models	PW-CM,PW-CMZ,PW-CL,PW-CLZ
Support Enhanced Support Facility	Enhanced Support Facility 2.0 or later
Function	Prevents a system volume from being overloaded by log file expansion.
Suppressible	Yes
Effect of suppression	No monitoring for logfiles-expression in made. In a system required a sophisticated security it is needed to build a similar feature uniquely without relying on this component.

- chkslog

33 3 * * 0 /opt/FJSVdef/sbin/chkslog VOLDLOG SLOG ...

Component	Server Default Configuration
Package name	FJSVdef
Support Solaris OS	Solaris 2.6 OS, Solaris 7 OS, Solaris 8 OS
Support models	Common to all types
Support Enhanced Support Facility	Basic Software Extension 1.1 or later
Function	Prevents a system volume from being overloaded by log file expansion.
Suppressible	Yes
Effect of suppression	No monitoring for logfiles-expansion is made. In a system required a sophisticated security, it is needed to build a similar feature uniquely without relying on this component
Miscellaneous	This has been released since Basic Software Extension 1.1 and support Solaris 2.6 OS, Solaris 7 OS, and Solaris 8 OS.

- logadm

```
30 3 * * 0 if [ ! -f /var/adm/pacct ]; then /usr/sbin/logadm ...
```

Component	Server Default Configuration
Package name	FJSVdef
Support Solaris OS	Solaris 9 OS
Support models	Common to all types
Support Enhanced Support Facility	Enhanced Support Facility 2.2 or later
Function	Prevents a system volume from being overloaded by log file expansion.
Suppressible	Yes
Effect of suppression	No monitoring for logfiles-expansion is made. In a system required a sophisticated security, it is needed to build a similar feature uniquely without relying on this component
Miscellaneous	This has been released since Enhanced Support Facility 2.2 and supports Solaris 9 OS.

b) Additional setting to the crontab(1) for “ adm ”

- chkslog

```
30 3 * * 0 /opt/FJSVdef/sbin/chkslog WTMP
```

The same as the chkslog for “ root” described above.

8.2. at(1)

a) Additional setting to the at(1) for “root”

- Automatic Power Control(APCS) (FJSVapcs)

```
cd /opt/FJSVapcs/sbin
umask 22
/opt/FJSVapcs/sbin/schedset .....
```

Component	Automatic Power Control(APCS)
Package name	FJSVapcs
Support Solaris OS	Solaris 2.6 OS or later
Support models	Common to all types
Support Enhanced Support Facility	Basic Software Extension 1.0 or later
Function	An electric power is turned on or off automatically. The scripts shown above is registered when a schedule for the Automatic Power Control starts.
Suppressible	No, if the APCS is used
Effect of suppression	You are unable to use the APCS.
Miscellaneous	The way of realizing the Automatic-Power-Control function without the cron has been released since Enhanced Support Facility 1.6. The daemon particular to the APCS is started at booting. It is set with the apcschmod command whether the cron is used or not.

9. /etc/dfs/dfstab used in Enhanced Support Facility

For PW-K, the following definition is added to “/etc/dfs/dfstab” during installation:

```
share -F nfs -o ro=<system-console-host-name>,root=<system-console-host-  
name> /var/opt/FJSVdmp/dashare
```

```
/usr/sbin/share -F nfs -o ro=< system-console-host-name >,anon=0 -d  
'FJSVmadm' /var/opt/FJSVmadm/export #FJSVmadm
```

To set the security mode to NFS according to security requirements, arrange the name service so that the domain name can be obtained from the operating system on the system console or the partition. Then, change the “/etc/dfs/dfstab” file as follows:

```
share -F nfs -o secure,ro=< system-console-host-name >,root=< system-  
console-host-name >,anon=0 /var/opt/FJSVdmp/dashare
```

```
/usr/sbin/share -F nfs -o secure,ro=< system-console-host-name >,anon=0 -d  
'FJSVmadm' /var/opt/FJSVmadm/export #FJSVmadm
```

Note that the above FJSVdmp-related definition must be changed again if fjdmpadm of the crash dump assistant (FJSVdmp) is executed or the system console name is changed.

10. Firewall/Gateway

The Enhanced Support Facility is designed on the premise that it is used in such environments as an intranet, the Internet or a DMZ. There are, however, some attentions you should pay and restrictions in the following components from the nature of them.

10.1. Restrictions

- Web-Based Admin view

- (a) The component is made on the premise that it has access to hosts in an intranet environment.
- (b) It is not able to access hosts going over a firewall when it is used within an intranet. Clients connected to the Internet are unable to access to servers placed in an intranet and vice versa.
- (c) When it is used in either the Internet or a DMZ, you should not start the Web-Based AdminView except the case that security is maintained by other means. The way of stopping it and an effect are described in the “INSTALLATION GUIDE Enhanced Support Facility2.0”. You should also refer to “7. System Files Changed by Enhanced Support Facility” in this document.

- FLEXlm

- (a) Having accesses to hosts crossing a firewall is not allowed.
- (b) You should use it within the range of each area when it is used in the Internet or a DMZ. You should operate the FLEXlm daemon in the same host in which a client application runs.

10.2. Attentions

- Machine Administration (only for PW-K, PW-CL and PW-CLZ)

In accordance with the specifications of PW-K, PW-CL and PW-CLZ a system console can be connected only by using the LAN in the same segment.

- Remote Support (REMCS)

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

(a) Protocol : SMTP

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

(b)Protocol : http

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

11. Solaris™ OS packages needed at Enhanced Support Facility installation

Solaris OS enables you to select the following software groups for installation. However, the Enhanced Support Facility should be installed on Solaris OS by Entire Distribution or Entire Distribution plus OEM Support in order to avoid problems during installation of the applications:

Various functions are limited when using it in the environments other than being recommended. Go only when knowledge concerning security in the Solaris whole is completely well informed and the troubleshooting can be done originally.

- Core System Support

This software group includes the minimum software required for starting and executing Solaris OS operations on the system.

- End User System Support

In addition to the software in Core System Support, this software group includes software recommended for the end user.

- Developer System Support

In addition to the software in End User System Support, this group includes the software development library, include file, manual page, and programming tool.

- Entire Distribution

This software group includes all released Solaris OS software.

- Entire Distribution plus OEM Support

In addition to the software in Entire Distribution, this software group includes software for supporting extended hardware.

The 64-bit support package is not included in Core System Support as standard software. It is included as standard software in End User System Support and the associated larger software groups.

To perform 64-bit operations with Core System Support, you must add the 64-bit package included in End User System Support from the customize screen during installation.

For use of the Enhanced Support Facility, this chapter describes the Solaris OS packages that must also be selected for the 64-bit package included in Core System Support and End User System Support.

Notes:

- Enhanced Support Facility with Core System Support is not certified on all kinds of environment and all kind of combination of packages. Due to applied patches or specific operating environment you may face trivial problems even it's not fatal problems such as a system failure or damage to user files.

If you face problem, please install appropriate packages.

- If Core System Support is selected, the SUNWhmd package is not selected as the standard one, and no network can be used. To use a network, add SUNWhmd from the customize screen during installation, or install SUNWhmd later.

If SUNWhmd is installed during installation, it is included in the SunFastEthernet / FastWideSCSI-2 Adapter Drivers" cluster.(This is not a note for the Enhanced Support Facility.)

- The PW-K, PW-CL and PW-CLZ require xntpd for operation.

Therefore, the SUNWntpr and SUNWntpu packages must be installed.

These packages are selected as the standard packages not for Core System Support but for End User System Support and the associated larger software groups.(This is not a note for the Enhanced Support Facility.)

Additional Solaris OS packages required for the 64-bit package included in Core System Support and End User System Support.

No	Components		Package name	Additional Solaris OS packages required for the 64-bit package included in Core System Support and End User System Support, and results if the packages are not added
1	Enhanced Support Facility information management	Common to all types	FJSVbse	None
2	DR Command	PW-K PW-CLZ	FJSVdrcmd	- SUNWdrr - SUNWdrrx
3	NGDR Command	PW-K	FJSVdr	- SUNWdrr - SUNWdrrx

No	Components	Package name	Additional Solaris OS packages required for the 64-bit package included in Core System Support and End User System Support, and results if the packages are not added	
4	SCF driver	PW-T FJVSscdx.us FJVSscd.us FJVSscr.us FJVSscu.us FJVSscuja	<p>For all version of Solaris OS</p> <ul style="list-style-type: none"> - SUNWdtbas (End User) - SUNWtltk (End User) - SUNWxwice (End User) - SUNWxwfmt (End User) - SUNWxilrl (End User) - SUNWxildh (End User) - SUNWmfrun (End User) - SUNWxilow (End User) - SUNWxwplt (End User) - SUNWxwcf (End User) - SUNWxwopt (End User) - SUNWxi18n (End User) <p>For Solaris 2.6 OS, Solaris 7 OS, Solaris 8 OS</p> <ul style="list-style-type: none"> - SUNWjxplt (End User) - SUNWjxcft (End User) <p>For Solaris 7 OS, Solaris 8 OS, Solaris 9 OS</p> <ul style="list-style-type: none"> - SUNWctpls (End User) <p>For Solaris 8 OS only</p> <ul style="list-style-type: none"> - SUNWjexpl (End User) <p>For Solaris 9 OS only</p> <ul style="list-style-type: none"> - SUNWlccom (End User) - SUNWeurf (End User) - SUNWxwacx (End User) - SUNWi2rf (End User) - SUNWi4rf (End User) - SUNWi5rf (End User) - SUNWi7rf (End User) - SUNWi8rf (End User) - SUNWi9rf (End User) - SUNWi15rf (End User) - SUNWarrf (End User) - SUNWkxmft (End User) - SUNWexmft (End User) - SUNW5xmft (End User) - SUNWtxfht (End User) - SUNWeuodf (End User) - SUNWjxmft (End User) 	
		PW-K FJVSscd1 FJVSscr1 FJVSscu1 FJVSscuj1 FJVSscd2 FJVSscr2 FJVSscu2 FJVSscuj2 FJSViomp		
		PW-CM PW-CMZ PW-CL PW-CLZ	FJVSscd3 FJVSscr3 FJVSscu3 FJVSscuj3 FJSViomp	None
		PW-U	FJVSlsdx FJVSlsd FJVSlsr FJVSlsu FJVSlsuj	None
		PW-P	FJVSpsd FJVSpscr FJVSpscu FJVSpscuj FJSViomp	None

No	Components	Package name	Additional Solaris OS packages required for the 64-bit package included in Core System Support and End User System Support, and results if the packages are not added
5	SunVTS, FJVTS	PW-T PW-K PW-U PW-CM PW-CMZ PW-CL PW-CLZ PW-P	SUNWvts SUNWvtsmn SUNWvtsx FJSVvts For all version of Solaris OS <ul style="list-style-type: none"> - SUNWxwplt (End User) - SUNWxwfmt (End User) - SUNWxwice (End User) - SUNWipc (End User) - SUNWxwcf (End User) For Solaris 2.6 OS, Solaris 7 OS, Solaris 8 OS <ul style="list-style-type: none"> - SUNWbtool (Developer) - SUNWdoc (End User) - SUNWolrte (End User) - SUNWoldst (End User) - SUNWtlk (End User) - SUNWtoo (End User) - SUNWxilrl (End User) - SUNWxilow (End User) - SUNWxwopt (End User) - SUNWdtbas (End User) - SUNWmfrun (End User) - SUNWaudio (End User) - SUNWdtm (End User) - SUNWdtde (End User) For Solaris 7 OS, Solaris 8 OS <ul style="list-style-type: none"> - SUNWcpls (End User) - SUNWxildh (End User) For Solaris 7 OS, Solaris 8 OS, Solaris 9 OS <ul style="list-style-type: none"> - SUNWxildh (End User) - SUNWlibC (End User) For Solaris 8 OS, Solaris 9 OS <ul style="list-style-type: none"> - SUNWlibCx (End User) For Solaris 8 OS only <ul style="list-style-type: none"> - SUNWocf (End User) - SUNWj2rt (End User) - SUNWocfr (End User) - SUNWmp (End User) - SUNWlpmsg (End User) - SUNWpcr (End User) - SUNWpcu (End User) - SUNWppm (End User) - SUNWpsf (End User) - SUNWpsr (End User) - SUNWpsu (End User) - SUNWipcx (End User)

No	Components		Package name	Additional Solaris OS packages required for the 64-bit package included in Core System Support and End User System Support, and results if the packages are not added
5	SunVTS, FJVTS	PW-T PW-K PW-U PW-CM PW-CMZ PW-CL PW-CLZ PW-P	SUNWvts SUNWvtsmn SUNWvtsx FJSVvts	<p>For Solaris 9 OS only</p> <ul style="list-style-type: none"> - SUNWcepp (End User) - SUNWzlib (End User) - SUNWlxml (End User) - SUNWlxmlx (End User) - SUNWzlibx (End User) - SUNWgss (End User) - SUNWgssc (End User) - SUNWgssx (End User) - SUNWfns (End User) - SUNWfnsx (End User) - SUNWcpc (Developer) - SUNWcpcu (Developer) - FJSVcpc (Developer) - SUNWxwplx (End User) - SUNWxwicx (End User)
6	Web-Based Admin View/ WWW Server for Admin View	Common to all types	FJSVwvcnf FJSVwvbs	<p>For all version of Solaris OS</p> <ul style="list-style-type: none"> - SUNWdtbas (End User) - SUNWmfrun (End User) - SUNWtltk (End User) - SUNWxwice (End User) - SUNWxwplt (End User) - SUNWxwcf (End User) - SUNWxwopt (End User) - SUNWxwfnt (End User) - SUNWxilrl (End User) - SUNWxilow (End User) - SUNWxildh (End User) - SUNWxwrtl (End User) - SUNWscpu (End User) - SUNWlibC (End User) - SUNWtoo (End User) <p>If the version of OS is Solaris 7 OS, Solaris 8 OS and Solaris 9 OS, the following packages need to be installed.</p> <ul style="list-style-type: none"> - SUNWctpls (End User) <p>If the version of OS is before Solaris 8 OS, the following packages need to be installed.</p> <ul style="list-style-type: none"> - SUNWjvjit (End User) - SUNWjvrt (End User) <p>If the version of OS is Solaris 9 OS, the following packages need to be installed.</p> <ul style="list-style-type: none"> - SUNWscpr (End User) - SUNWcpc (End User) - SUNWzlib (End User) - SUNWj3irt (End User) - SUNWj3rt (End User) <p>If no Java operating environment is installed, you are unable to use Web-Based Admin View.</p>

No	Components		Package name	Additional Solaris OS packages required for the 64-bit package included in Core System Support and End User System Support, and results if the packages are not added	
7	Machine Administration	Common to all types	FJSVmasv FJSVmaom FJSVmadm	In FJSVmasv, FJSVmadm, FJSVmand, FJSVkmnd, and FJSVcmnd, it is common and the following are each Solaris OS necessary. SUNWadmc The error display is done by displaying version information (patch information).	
		PW-T PW-U	FJSVmand		
		PW-CM PW-CMZ PW-CL PW-CLZ	FJSVcmnd		
		PW-P	FJSVpmnd		
		PW-K	FJSVkmnd FJSVkmsv FJSVkmom		
8	Remote Support	PW-T PW-U PW-CM PW-CMZ PW-P	FJSVrlib FJSVragt FJSVrmaos	None	
		PW-T PW-U	FJSVmarm		
		PW-CM PW-CMZ	FJSVcmrm		
		PW-CL PW-CLZ	FJSVcmrm2		
		PW-K	FJSVkmrm		
		PW-P	FJSVpmrm		
		Common to all types	FJSVrrda FJSVracm FJSVsirms		None
9	Automatic Power Control	PW-T PW-K PW-CM PW-CMZ PW-CL PW-CLZ PW-P	FJSVapes	None	
		Common to all types	FJSVapcwv		

No	Components		Package name	Additional Solaris OS packages required for the 64-bit package included in Core System Support and End User System Support, and results if the packages are not added
10	Server Default Configuration	Common to all types	FJSVdef	<p>Since Enhanced Support Facility 2.0</p> <p>The following are necessary in Solaris 2.6 OS, Solaris 7 OS, and Solaris 8 OS.</p> <ul style="list-style-type: none"> - SUNWpmowr (Developer) <p>The following message is displayed when you reboot the system after executing the esfadd command. But you can safely ignore this message.</p> <p>Can't open /etc/default/sys-suspend</p> <p>The following are necessary since Enhanced Support Facility 2.2 in Solaris 9 OS.</p> <ul style="list-style-type: none"> - SUNWpmowr (Developer) <p>The following message is displayed when you reboot the system after executing the esfadd command. But you can safely ignore this message.</p> <p>Can't open /etc/default/sys-suspend</p> <ul style="list-style-type: none"> - SUNWvolu (End User) <p>Though the following message is displayed at system booting, it does not influence the system.</p> <p>logadm: Warning:/var/adm/vold.log: No such file or directory</p> <p>If you do not install the SUNWvolu package, you should comment out or delete the following line from the /etc/logadm.conf file.</p> <pre>/var/adm/vold.log -s 256k -t /var/adm/vold.log.old # FJSVdef</pre>
		PW-T PW-K PW-U PW-CM PW-CMZ PW-CL PW-CLZ PW-P	FJSVssf	None
		PW-T PW-K PW-CM PW-CMZ PW-CL PW-CLZ PW-P	FJSVwarn.us	
		PW-K PW-CM PW-CMZ PW-CL PW-CLZ PW-P	FJSVpnlx.us FJSVpnl.us	

No	Components		Package name	Additional Solaris OS packages required for the 64-bit package included in Core System Support and End User System Support, and results if the packages are not added
11	System Data Output Tool	Common to all types	FJSVsnap	For Enhanced Support Facility 1.6 and earlier versions <ul style="list-style-type: none"> - SUNWxcu4 - SUNWscpu Execution error messages are output, and you are unable to collect data. Enhanced Support Facility 1.7 and later versions. None
12	License Manager	Common to all types	FSUNlic	None
13	Crash Dump Assistant	Common to all types	FJSVdmp	None
14	Auto Dump Analyze Tool	Common to all types	FJSVana	SUNWtoo (End User) The cocore script does not operate normally. Solaris 9 OS is not supported.
15	Drivers for high-reliability	PW-K	FJSVse (Solaris 7 OS or later) FJSVsef (Solaris 2.6 OS)	None
		PW-CL PW-CLZ	FJSVsec (Solaris 8 OS or later)	
16	CPU Performance Counter	PW-T PW-K PW-CM PW-CMZ	FJSVcpc	None
17	CPU Patrol Diagnosis	PW-T PW-K PW-CL PW-CM	FJSVcpupd	None
18	G-LAN error notification	PW-T PW-K PW-CM PW-CMZ PW-CL PW-CLZ PW-P	FJSVgidad	None
19	G-LAN MTU setting	PW-T PW-K PW-CM PW-CMZ PW-CL PW-CLZ PW-P	FJSVgidr	None
20	HPC information management	PW-P	FJSVhpc	None
21	System Parameter Diagnosis	PW-T PW-U PW-K PW-CM PW-CMZ PW-CL PW-CLZ PW-P	FJSVparam	None

12. About an installation and an individual installation which specifies the component group of Enhanced Support Facility

The Enhanced Support Facility is designed on the premise that all of its packages prepared for an object system are installed.

A minimum level of security is secured in the Enhanced Support Facility 1.5. However, there are those who want to install only the minimum number of packages to establish a high-level security system. Two or more installation patterns of the package defined in the component group are offered from Enhanced Support Facility 2.3 to such a demand. The package installed by specifying the component group which matches it to the requirement for the system when installing it can be limited.

This section explains about how to install each package of Enhanced Support Facility and what attention to be paid in doing so. Each package is created conforming to the “Solaris OS package-rule”.

Accordingly, there are neither restrictions nor notices in particular when packages of Enhanced Support Facility are individually installed.

Notes:

- When the installation which specifies the component group is done, a part of component offered as a function of this software is not installed. Therefore, a part of user command and an online manual cannot be used.
- Not all the combination of package selection is certified under all kinds of environment. . Due to applied patches or specific operating environment, you may face trivial problems even it's not fatal problems such as a system failure or damage to user files.
If you face problem, please install appropriate packages.
- Fujitsu cannot assure operation when partial packages of Enhanced Support Facility are installed Fujitsu strongly recommend that only an engineer, who has a full range of knowledge on security matters with regard to Solaris OS and is you are able to troubleshoot by its own, must do this installation.

No	Components		Package name	- Installation - Effects without an installation
1	Enhanced Support Facility information management	Common to all types	FJSVbse	- Mandatory - Fail to install or delete the Enhanced Support Facility
2	DR Command	PW-K PW-CLZ	FJSVdremd	- Not required - You are unable to use Dynamic Reconfiguration

No	Components		Package name	- Installation - Effects without an installation
3	NGDR Command	PW-K	FJSVdr	- Not required - You are unable to use Dynamic Reconfiguration
4	SCF driver	PW-T	FJSVscdx.us FJSVscd.us FJSVscr.us FJSVscu.us FJSVscuja	- Mandatory - You have a serious effect so that you are unable to use the features which are offered by RAS-Control-Device(SCF).
		PW-K	FJSVscd1 FJSVscr1 FJSVscu1 FJSVscuj1	
			FJSVscd2 FJSVscr2 FJSVscu2 FJSVscuj2 FJSViomp	
		PW-CM PW-CMZ PW-CL PW-CLZ	FJSVscd3 FJSVscr3 FJSVscu3 FJSVscuj3 FJSViomp	
		PW-U	FJSV1scdx FJSV1scd FJSV1scr FJSV1scu FJSV1scuj	
		PW-P	FJSVpscd FJSVpscr FJSVpscu FJSVpscuj FJSViomp	
5	SunVTS, FJVTS	PW-T PW-K PW-U PW-CM PW-CMZ PL-CL PW-P	FJSVvts FJSVvtsmn FJSVvtsx FJSVvts	- Recommended. - You are unable to perform installation adjustments and periodic maintenance.
6	Web-Based Admin View / WWW Server for Admin View	Common to all types	FJSVwvcnf FJSVwvbs (GUI)	- Not required - You are unable to operate Machine Administration, SynfinityDISK, SynfinityCluster and so on in GUI-mode. (operable in CUI-mode) You are not allowed to install FJSVmasv (FJSVkmsv), FJSVapcwv unless you install the packages shown in the left column.

No	Components	Package name	- Installation - Effects without an installation	
7	Machine Administration	Common to all types	FJSVmasv (GUI)	- Not required - You are unable to operate a menu-operation in GUI-mode. (but operable in CUI-mode) FSVwvcnf, FJSVwvbs and FJSVapewv must not be installed when the packages shown in the left column is not installed.
			FJSVmaom	- Not required - You are unable to refer to the online manual through a GUI-based-menu. It is included in the Enhanced Support Facility – CD
			FJSVmadm	- Mandatory - You are unable to perform hardware maintenance
		PW-T PW-U	FJSVmand	- Mandatory - You are unable to perform hardware maintenance
		PW-K	FJSVkmnd	- Mandatory - You are unable to perform hardware maintenance
			FJSVkmsv (GUI)	- Not required - You are unable to operate a menu-operation in GUI-mode. (but operable in CUI-mode) FJSVwvcnf, FJSVwvbs must not be installed when the packages shown in the left column is not installed.
			FJSVkmom	- Not required - You are unable to refer to the online manual through a GUI-based-menu. It is included in the Enhanced Support Facility – CD
		PW-CM PW-CMZ PW-CL PW-CLZ	FJSVcmnd	- Mandatory - You are unable to perform hardware maintenance
		PW-P	FJSVpmnd	- Mandatory - You are unable to perform hardware maintenance
		8	Remote Support	PW-T PW-U PW-CM PW-CMZ PW-P
PW-T PW-U	FJSVmarm			
PW-CM PW-CMZ	FJSVcmrm			
PW-CL PW-CLZ	FJSVcmrm2			
PW-K	FJSVkmrm			
PW-P	FJSVpmrm			
Common to all types	FJSVrrda			
	FJSVracm FJSVsirms			

No	Components		Package name	- Installation - Effects without an installation
9	Automatic Power Control	PW-K PW-T PW-CM PW-CMZ	FJSVapcs	- Not required - You are unable to use the Automatic Power Control features.
		Common to all types	FJSVapcwv (GUI)	- Not required - You are unable to use the Automatic Power Control features through the Web-Based Admin View (GUI). (Operable with a command)
10	Server Default Configuration	Common to all types	FJSVdef	- Not required - The log-clear, etc. does not function.
		PW-T PW-K PW-U PW-CM PW-CMZ PW-CL PW-CLZ PW-P	FJSVssf	- Recommended - You may find a difficulty in software troubleshooting due to the reason that the feature of acquiring the information does not function at a trouble occurrence.
		PW-T PW-K PW-CM PW-CMZ PW-CL PW-CLZ PW-P	FJSVwarn.us	- Recommended - You may find a difficulty in hardware maintenance due to the reason that feature of monitoring the hardware failures such as an intermittent ECC-bit-error of memories or caches does not work.
		PW-K PW-CM PW-CMZ PW-CL PW-CLZ PW-P	FJSVpnlx.us FJSVpnl.us	- Mandatory (only for PW-K PW-CM,PW-CMZ, PW-CL,PW-CLZ, PW-P) - You may find a difficulty in software troubleshooting due to the reason that you are unable to get the “crash-dump” information when a system gets hung.
11	System Data Output Tool	Common to all types	FJSVsnap	- Recommended. - You may find a difficulty in software troubleshooting because you are unable to collect the system information required for troubleshooting at a time.
12	License Manager	Common to all types	FSUNlic	- Not required - You are unable to make use of license manager.
13	Crash Dump Assistant	PW-T PW-K PW-CM PW-CMZ PW-U	FJSVdmp	- Recommended. - You may find a difficulty in software troubleshooting since the system information is not automatically collected with the fjsnap command after a system panic.
14	Auto Dump Analyze Tool	Common to all types	FJSVana	- Recommended. - You cannot automatically analyze crash dump file at system reboot after a system crash.
15	Drivers for high-reliability	PW-K	FJSVsef (Solaris 2.6 OS)	- Mandatory (Solaris 8 OS or earlier) - Normal and accurate system operation is not assured.
			FJSVse (Solaris 7 OS or later)	- Not required(Solaris 9 OS or later) - Redundant console path configuration can not be used. And the DR of the SB connected to the console is disabled. When this package is removed, suppress the following script. - /etc/rc2.d/S91FJSVconspath (From Enhanced Support Facility 1.7 to 2.2) - /etc/rc2.d/S90FJSVconspath (Enhanced Support Facility 2.3 or later)
		PW-CL PW-CLZ	FJSVsec (Solaris 8 OS or later)	

No	Components		Package name	- Installation - Effects without an installation
16	CPU Performance Counter	PW-T PW-K PW-CM PW-CMZ	FJSVcpc	- Not required - You are unable to make use of CPU performance Counter (Solaris 8 OS 7/01 or earlier version)
17	CPU Patrol Diagnosis	PW-T PW-K PW-CL PW-CM	FJSVcpupd	- Recommended. - You are unable to make use of CPU patrol diagnosis function
18	G-LAN error notification	PW-T PW-K PW-CM PW-CMZ PW-CL PW-CLZ PW-P	FJSVgidad	- Mandatory. - You cannot enable the G-LAN error notification.
19	G-LAN MTU setting	PW-T PW-K PW-CM PW-CMZ PW-CL PW-CLZ PW-P	FJSVgidr	- Mandatory. - When using G-LAN on JumboFrame, you cannot change the MTU(Maximum Transmission Unit) value.
20	HPC information management	PW-P	FJSVhpc	- Mandatory. - You cannot the firmware update from Enhanced Support Facility. The latest version of the manual cannot be referred to.
21	System Parameter Diagnosis	PW-T PW-U PW-K PW-CM PW-CMZ PW-CL PW-CLZ PW-P	FJSVparam	- Mandatory. - You cannot diagnose system parameters.

12.1. Installation by Component group

12.2.1. component group

The installed component is decided by specifying the component group. The component group offered with this software is two of the following.

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

Neither GUI system command nor an online manual are installed.

All functions of Web-Based Admin View/WWW Servers for Admin View cannot be used.

CORE : Only an indispensable package of the above-mentioned list.

Only a at least necessary for work the main body device component is installed.

Refer to Installation which specifies “Appendix G component group” of “Installation instructions Enhanced Support Facility 2.3” for the package applied in each main body device and Solaris OS, the installation method, and notes.

12.2. About an individual installation

12.2.1. Packages required

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

- b. The following is a mandatory component package for software maintenance.
 - FJSVpnl/FJSVpnlx (for PW-K, PW-CM, PW-CMZ, PW-CL, PW-CLZ and PW-P)

- c. The Solaris OS and the Enhanced Support Facility do not necessarily require the following package. The following component package accompanies the products if it is required.
 - License Manager (FSUNlic)

- d. Both FJSVapcwv and FJSVmasv, which use the Web-Based Admin View (FJSVwvcnf, FJSVwvbs), have noticeable relations in the order of their installation.
 - You should install neither FJSVmasv nor FJSVapcwv when you use the Web-Based Admin view.
 - You should install the packages in the following order when you use the Machine Administration in GUI and the Automatic Power-Control in GUI.
 - (1) FJSVwvcnf first
 - (2) FJSVwvbs
 - (3) FJSVmasv(FJSVkmsv)
 - (4) FJSVapcwv last

- e. The following packages are for Enhanced Support Facility 1.6 and earlier versions, but they are not required:
 - FSUNnet, FJSVhme, FJSVglm

12.2.2. How to install specific packages

- (a) Install the software by following the procedure given in Chapter 5, “Installation Procedures,” in the “INSTALLATION GUIDE Enhanced Support Facility”.

(b) Out of the packages mentioned in Chapter 1, “Program Configuration” in the “INSTALLATION GUIDE Enhanced Support Facility”, select the packages to be deleted.

(c) Move to a directory, which contains packages for your platform and Solaris OS in Enhanced Support Facility CD-ROM. Of course, this CD-ROM must be mounted in advance.

The directory name is different depending on the revision of Enhanced Support Facility, type of platform and revision of Solaris OS. Refer to the table in Appendix A, “Command References,” in the “INSTALLATION GUIDE Enhanced Support Facility” to find an appropriate directory name.

Ex1) For Enhanced Support Facility 2.2, PW-CM and Solaris 8 OS

```
# cd <mount_point>/Platform/C_M/8
```

Ex2) For Enhanced Support Facility 2.0, PW-T and Solaris 2.6 OS

```
# cd <mount_point>/Platform/T/2.6
```

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

Ex3) For Enhanced Support Facility 2.2, PW-CM and Solaris 8 OS

If you delete the FJSVapcs, FJSVapcwv, FJSVdef, and FSUNlic packages, delete them in the following sequence:

1st. FSUNlic

2nd. FJSVdef

3rd. FJSVapcwv

4th. FJSVapcs

Specify them as follows:

```
# pkgrm FSUNlic
```

```
# pkgrm FJSVdef
```

```
# pkgrm FJSVapcwv
```

```
# pkgrm FJSVapcs
```

Notes:

- Parts of packages have a correlation to one another. Thus, you cannot always delete the packages that you want to delete. See table in (1) for information on the correlation.

- Do not delete the FJSVbse package.
- Refer to the “.border” file if you cannot find the “.eorder” file. Either the “.eorder” or the “.border” file always exists in the directory of the Enhanced Support Facility packages.
- Do not create any program that expects “.eorder” as a file name or some specific its contents because they are subject to change in the future releases of the Enhanced Support Facility.

12.2.3. Notices after an installation

(a) At the time of deleting the Enhanced Support Facility

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

(b) At the time of upgrading Enhanced Support Facility

Upgrading means the case such as upgrading the Enhanced Support Facility from a release number 1.7 to 1.8 with the esfadd command.

The Enhanced Support Facility can be updated with the esfadd command even after some packages are deleted. Deleted packages are installed during this update. Therefore, you may have to delete them again depending on your need.

(c) At the time of applying patches

You can apply patches in normal way. Nothing is different from way for standard installation.

13. Enhanced Support Facility packages using ActiveX

Following packages in Enhanced Support Facility are using ActiveX.

- Machine Administration
 - FJSVmasv , FJSVmaom , FJSVkmsv , FJSVkmom
- Web-Based Admin View / WWW Server for Admin View
 - FJSVwvbs , FJSVwvcnf
- Auto Power Control System
 - FJSVapcww

These packages don't contains any documents nor instructions which changes security level of browser.

14. Enhanced Support Facility packages using Java™.

In Enhanced Support Facility, Java™ is used in the following packages and. Refer to the following for the system requirements.

- Web-Based Admin View / WWW Server for Admin View
 - Java™ platform bundled in Solaris 2.6 OS
 - Java™ platform bundled in Solaris 7 OS
 - Java™ platform bundled in Solaris 8 OS
 - Java™ platform bundled in Solaris 9 OS
 - Following Java™ platform obtained from the Internet site of Sun Microsystems, Inc. and so on.

(Refer to attached README when applying the obtained product.)

- 1) Only the latest Java™ Development Kit 1.1.8 system is guaranteeing Enhanced Support Facility 2.1 operation.
- 2) Enhanced Support Facility 2.2 later, operation in the latest Java™ Development Kit 1.1.8 system, the latest Java™ 2 SDK, Standard Edition 1.2.2 system and the latest Java™ 2 Runtime Environment, Standard Edition, Version 1.2.2 system is guaranteed.

15. Diagnosis of the system setting file

Enhanced Support Facility detects system settings that has high possibility to be changed by system administrator and that disturb normal operation of the Solaris OS, and reports them.

When you boot or shut down the Solaris OS, Enhanced Support Facility checks the parameters automatically.

If the /etc/system file has been changed, Enhanced Support Facility backs up the /etc/system file.

If improper settings are detected, System Parameter Diagnosis outputs the messages, and the tunable parameters are modified.

- The parameter sometimes changes it by the diagnosis result
 - semsys:seminfo_semume
 - semsys:seminfo_semmnu
- This parameter will delete.
 - rt_maxpri

For more information about this function, see “System Parameter Diagnosis User's Guide”.

16. About the setting of the kernel parameter “noexec_user_stack”

The influence of each package of Enhanced Support Facility on operation by making kernel parameter noexec_user_stack effective was verified.

Enhanced Support Facility is not packaged in influencing.

17. Configuration examples for the Internet or a DMZ environment

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

- a) In order to use the Enhanced Support Facility, you should install the Solaris OS, with at least, SUNWbtool in addition to selecting “End User System Support”.
- b) You should remove packages as few as possible after installation of Enhanced Support Facility with using esfadd.

In addition, Enhanced Support Facility 1.5 or later release should be installed. If you cannot install it due to any reason, you should apply a patch “R00081” or later.
- c) The use of “Web-Based Admin View” is not recommended on this environment. For more detail, please refer to the “INSTALLATION GUIDE Enhanced Support Facility” and “7. System Files Changed by Enhanced Support Facility” in this document.
- d) Delete the definition for remote execution added into “/etc/inet/inetd.conf” for SunVTS and FJVTS. For more information, see Chapter 7, “System Files Changed by Enhanced Support Facility” in this document.
- e) You should suppress the log-clear feature included in the Server Default Configuration. You should delete the “/etc/rc2.d/S99FJSVlogclear” file and a definition for the chkslog added to the crontabs for “root” and “adm”. You should refer to both “4. rc scripts and daemon used in Enhanced Support Facility” and “8. How to set the cron used in Enhanced Support Facility” in this document.

18. Countermeasures against problems detected by the security check tool.

This appendix explains countermeasures against problems by using the System Scanner tool, the security check tool released from Security Systems, Inc..

18.1. For Basic Software Extension 1.0 to Enhanced Support Facility 1.4

A problem detected by the System Scanner tool indicates that the owner must not be “bin” but “root”. This issue assumes a case in which “bin” authority is taken away because of another hole in security. Solaris OS also has the same issues. Therefore, no patch is provided for this issue.

The system administrator should change the owner from “bin” to “root” by executing the chown command if necessary.

The target files are listed below. No malfunction occurs even if the owner is changed manually. The owner has been changed to “root” from “bin” for the Enhanced Support Facility 1.5 and later versions.

File name	Components
/opt/FJSVdef/sbin/chkslog	Server Default Configuration
/opt/FJSVhwr/procedure/scfdaily	SCF driver
/sbin/FJSVhwr/daemon/pwrctrld	SCF driver
/etc/init.d/FJSVscfdaemon.rcS	SCF driver
/etc/init.d/FJSVscf	SCF driver

(Change method: **chown root:sys** file-name)

A problem detected by the System Scanner tool indicates that the group write permissions of the directories /usr/bin, /usr/sbin and /sbin, which are described in PATH variables used in rc procedure, are set. However, this is an issue for Solaris OS, which is because owner of these directories is Solaris OS, not for the Enhanced Support Facility.

Therefore, no patches are provided for the Enhanced Support Facility.

The indicated files are listed below. Delete the group write permission of the directories /usr/bin, /usr/sbin, and /sbin by executing the chmod command if needed. But, as described above, owner of these directories is Solaris OS.

Impact for Solaris OS by changing directory permission is beyond the scope of this document.

Enhanced Support Facility 1.5 and later versions are improved so that the PATH variable is not used.

File name	Components
/etc/rc2.d/S88FSUNlicense	FLEXlm License Manager
/etc/rc1.d/K57FSUNlicense	FLEXlm License Manager
/etc/rc0.d/K57FSUNlicense	FLEXlm License Manager

18.2. For Enhanced Support Facility 1.5

The set user ID (SUID) attribute is assigned for the following commands because of requirements for command operations. These commands are designed so that no security problems occur.

You can remove the SUID manually by executing the `chmod -s` command.

If this is done, only the administrator (root) can use the provided functions.

Note that the permission setting may be returned to the original value by applying patches or upgrade installation of Enhanced Support Facility.

File name	Components
/opt/FJSVmadm/sbin/getmodelcode	Machine Administration
/opt/FJSVmadm/sbin/excmd	Machine Administration
/usr/platform/FJSV,GPUS/sbin/prtdiag	SCF driver
/usr/platform/FJSV,GPUSK/sbin/prtdiag	SCF driver
/opt/SUNWvts/bin/vtsk	SunVTS

(Change method: **chmod -s** file-name)

18.3. For Enhanced Support Facility 1.6 / Enhanced Support Facility 1.7

Enhanced Support Facility 1.6 and Enhanced Support Facility 1.7 has been tested with using a security check tool, System Scanner ver. 4.0 released from Internet Security Systems, Inc.

In addition to the items described on section 16.2, there are notes as follows:

- System Scanner 4.0 issues an alarm for a daemon whose owner is "bin". Owner of such daemon is SunVTS. No action is taken against this issue because 1) real problem may occur only after an intruder intercepts the "bin" privilege with using any other security hole, and 2) owners of daemons in Solaris OS are also "bin". If you want to change the owner, please refer to Chapter 6, "/etc/inet/inetd.conf used in Enhanced Support Facility".

- System Scanner 4.0 issues an alarm to all files with the write permission for group even if the group is "sys" group. No action is taken against this issue because 1) real problem may occur only after an intruder intercepts the sys privilege with using any other security hole, and 2) files owned by Solaris OS have same permission.

- For PW-K, NFS is used for communication with a system console. System Scanner 4.0 issues an alarm to the NFS system because the "secure" option is not specified. But, system requires the LAN between PW-K and a system console is a dedicated LAN. Therefore, there must be no security problems. If you want to add "secure" option, please refer to Chapter 9, "/etc/dfs/dfstab used in Enhanced Support Facility".

- System Scanner 4.0 issues an alarm for file name starting with \$. But, in the Java specifications, name of Java file starts with \$. Therefore, further countermeasures for this issue would be excessive. So no countermeasures are provided for the Enhanced Support Facility.

18.4. For Enhanced Support Facility 1.8/ Enhanced Support Facility 2.0

In Enhanced Support Facility 2.0, the set user ID (SUID) attribute is assigned for the following commands because of requirements for command operations. These commands are designed so that no security problems occur.

You can remove the SUID manually by executing the `chmod -s` command.

If this is done, only the administrator (root) can use the provided functions.

Note that the permission setting may be returned to the original value by applying patches or upgrade installation of Enhanced Support Facility.

File name	Components
/opt/FJSMadm/sbin/getmodelcode_col	Machine Administration
/usr/platform/FJSV,GPUSC-M/sbin/prtdiag	SCF driver

(Change method: `chmod -s` file-name)

18.5. For Enhanced Support Facility 2.2

In Enhanced Support Facility 2.2, The set user ID (SUID) attribute is assigned for the following commands because of requirements for command operations. These commands are designed so that no security problems occur.

You can remove the SUID manually by executing the `chmod -s` command.

If this is done, only the administrator (root) can use the provided functions.

Note that the permission setting may be returned to the original value by applying patches or upgrade installation of Enhanced Support Facility.

File name	Components
/opt/FJSVhwr/sbin/fjprtdiag	SCF driver

(Change method: `chmod -s` file-name)

Revision history

Number of versions	Content of revision	
First Edition	Translated(FJ)	2000/12/12
	Revised(FJ)	2000/12/15
	Revised(FSC)	2000/12/22
Second Edition	Revised(FJ)	2000/12/30
3rd Edition	Revised(FJ)	2002/01/30
4th Edition	Revised(FJ)	2002/08/06
5th Edition	Revised(FJ)	2002/12/03
6th Edition	Revised(FJ)	2003/08/19
7th Edition	Revised(FJ)	2004/01/16
8th Edition	Revised(FJ)	2004/04/28
9th Edition	Revised(FJ)	2005/01/31