

FUJITSU Software PRIMECLUSTER GD 4.5A10

A decorative horizontal band with a red-to-dark-red gradient, featuring abstract, glowing white and red lines that swirl and intersect, creating a sense of motion and technology.

Installation Guide

Oracle Solaris

J2S2-1671-02ENZ0(00)
February 2019

Preface

Purpose

This manual explains how to install PRIMECLUSTER GD.

Target Readers

This manual is written for people who will install this product.

It is strongly recommended that you read the Software Release Guide from the product media before using this manual.

When setting up systems, it is assumed that readers have the basic knowledge required to configure the servers, storage and network devices to be installed.

Organization

This manual consists of four chapters, and appendix. The contents of these chapters, the appendices are listed below.

Title	Description
Chapter 1 Program components	Explains the packages of which this product is composed.
Chapter 2 Operation environment	Explains the operational environment of this product.
Chapter 3 Installation	Explains how to install this product.
Chapter 4 Uninstallation	Explains how to uninstall this product.
Appendix A Messages	Explains the messages displayed by installer.

Notational Conventions

The notation in this manual conforms to the following conventions.

- References and character strings or values requiring emphasis are indicated using double quotes (").
- Text to be entered by the user is indicated using bold text.
- Variables are indicated using italic text.

The following abbreviations are used in this manual:

- Microsoft(R) Windows(R) 7 operating system is abbreviated as Windows(R) 7.
- Microsoft(R) Windows(R) 8.1 operating system is abbreviated as Windows(R) 8.1.
- Microsoft(R) Windows(R) 10 operating system is abbreviated as Windows(R) 10.
- Microsoft(R) Windows Server(R) 2012 operating system is abbreviated as Windows Server(R) 2012.
- Microsoft(R) Windows Server(R) 2012 R2 operating system is abbreviated as Windows Server(R) 2012 R2.
- Microsoft(R) Windows Server(R) 2016 operating system is abbreviated as Windows Server(R) 2016.
- Microsoft(R) Windows Server(R) 2019 operating system is abbreviated as Windows Server(R) 2019.
- Windows(R) 7, Windows(R) 8.1, Windows(R) 10, Windows Server(R) 2012, Windows Server(R) 2012 R2, Windows Server(R) 2016 and Windows Server(R) 2019 are abbreviated as Microsoft(R) Windows.
- Global Disk Services is abbreviated as GDS.
- Oracle Solaris might be described as Solaris, Solaris Operating System, or Solaris OS.

Export Administration Regulation Declaration

Exportation/release of this document may require necessary procedures in accordance with the regulations of your resident country and/or US export control laws.

Trademark Information

- Microsoft is a registered trademark of Microsoft Corporation in the United States and other countries.
- Other trademarks and registered trademarks appearing in this manual are the trademarks or registered trademarks of their owners.

Information in this manual is subject to change without notice.

Date of publication and edition

February 2019 First Edition

Copyright notice

All Rights Reserved, Copyright (C) FUJITSU LIMITED 2019

Revision History

First Edition

Contents

Chapter 1 Program components.....	1
1.1 Oracle Solaris 10.....	1
1.2 Oracle Solaris 11.....	1
1.3 Tool.....	1
Chapter 2 Operation environment.....	2
2.1 Software environment.....	2
2.2 Hardware environment.....	3
2.3 Static disk resources.....	3
2.3.1 Required disk space.....	3
2.3.2 Required work area.....	4
2.4 Dynamic disk resources.....	4
2.4.1 Required disk space.....	4
2.5 Required memory.....	4
Chapter 3 Installation.....	5
3.1 Preparations.....	5
3.2 Installation.....	6
3.3 Environment configurations.....	7
Chapter 4 Uninstallation.....	8
4.1 Preparations.....	8
4.2 Uninstallation.....	8
Appendix A Messages.....	10
A.1 Error Messages.....	10

Chapter 1 Program components

A system consists of programs, and each program is referred to as a package. This chapter explains about the packages of which this software is composed.

1.1 Oracle Solaris 10

No.	Component	Package	Version	Function
1	Web-Based Admin View	FJSVwvcnf	4.5.1	GUI common framework, cluster management GUI
		FJSVwvbs	4.5.1	
		FJSVwvmpc	4.5.1	
		SMAWcj2re	1.7.0	
2	Global Disk Services	FJSVsdx	4.5.1	High-availability volume manager
		FJSVsdxl	4.5.1	
		FJSVsdxwv	4.5.0	
		FJSVsdxga	4.5.1	

1.2 Oracle Solaris 11

No.	Component	Package	Version	Function
1	Web-Based Admin View	FJSVwvcnf	4.5.1	GUI common framework, cluster management GUI
		FJSVwvbs	4.5.1	
		FJSVwvmpc	4.5.1	
		SMAWcj2re	1.7.0	
2	Global Disk Services	FJSVsdx	4.5.1	High-availability volume manager
		FJSVsdxl	4.5.1	
		FJSVsdxwv	4.5.0	
		FJSVsdxga	4.5.1	

1.3 Tool

No.	Component	Package	Version	Function
1	System Information Output Tool	FJSVsnap	2.8	Tool for collecting troubleshooting information

Chapter 2 Operation environment

This chapter explains the operation environment of this software.

2.1 Software environment

1. Required basic software

To use this software, install either of the following basic softwares.

No.	Basic Software	Remark
1	Oracle Solaris 10 (8/11 or later)	
2	Oracle Solaris 11	

Note

If you use Global Disk Services (hereinafter GDS) for system disk mirroring in a ZFS boot environment, refer to "System Disk Mirroring in a ZFS Boot Environment" of "A.2 Important Points" in "PRIMECLUSTER Global Disk Services Configuration and Administration Guide" for notes on OS installation.

2. Required software

To use this software, the following software product is required.

No.	Software	Package	Version and/or level	Remark
1	PRIMECLUSTER Clustering Base		4.5A10	Cluster foundation software. Required for managing a storage device shared between cluster nodes as a shared disk device through GDS.

GDS: Global Disk Services

- PC

As a client of Web-Based Admin View, one of the following is required.

For details, see "3. Related hardware" of the "[2.2 Hardware environment](#)".

No.	OS	Browser	Remarks
1	Windows(R) 10	Internet Explorer 11	
2	Windows Server(R) 2019	Microsoft Edge	
3	Windows(R) 8.1	Internet Explorer 11	
4	Windows(R) 7		
5	Windows Server(R) 2016		
6	Windows Server(R) 2012 R2		
7	Windows Server(R) 2012	Internet Explorer 10	

3. Exclusive software

None.

4. Required patches

To use this software, the following patch is required.

No.	Software	ID/PTF	Remark
1	Enhanced Support Facility	915163-01 or later	For Oracle Solaris10, the necessary patch for the FJSVsnap package.
2		T007654SP-04 or later	For Oracle Solaris11.2, the necessary patch for the FJSVsnap package.
3		T007654SP-06 or later	For Oracle Solaris11.4, the necessary patch for the FJSVsnap package.
4	Oracle Solaris 11.2	SRU14111 or later	
5	Oracle Solaris 11.2 Oracle Solaris 11.3	SRU16091 or later	When GDS is used in Oracle Solaris Kernel Zones built on a guest domain in Oracle VM Servers for SPARC environment, this SRU is required on the guest domain.

GDS: Global Disk Services



Please check the support status from PRIMECLUSTER product information before applying the basic software patch(es).

2.2 Hardware environment

The following hardware requirements must be satisfied to operate this software.

1. Memory

128MB or more of memory is required.

2. Required hardware

None.

3. Related hardware

It is hardware that relates to this software.

No.	Machine	Model	Remark
1	Personal Computer	FM-V, etc	

2.3 Static disk resources

This section explains static disk space requirements for this software.

2.3.1 Required disk space

The following table lists the disk space requirements for installing this software. If necessary, expand the size of the relevant file systems.

- Solaris 10

No.	Directory	Disk space (in MB)	Remark
1	/	2.0	
2	/etc	48.0	
3	/usr	4.0	
4	/var	4.0	
5	/home	0	
6	/opt	175.0	

- Solaris 11

No.	Directory	Disk space (in MB)	Remark
1	/	6.0	
2	/etc	48.0	
3	/usr	4.0	
4	/var	3.0	
5	/home	0	
6	/opt	175.0	

2.3.2 Required work area

None.

2.4 Dynamic disk resources

This section explains dynamic disk space requirements for this software.

2.4.1 Required disk space

When this software is operated in the following environment, the additional disk space shown below is required for each directory as well as the disk space required for installing this software as described in "2.3 Static disk resources". If free space is insufficient, expand the size of the relevant file system.

No.	Directory	Disk space (in MB)	Operation
1	/var	50.0	While mirroring the system disk.

2.5 Required memory

The following table shows the memory required when this software is operated in the following environment.

No.	Memory (in MB)	Operation
1	190.0	While mirroring the system disk.

Chapter 3 Installation

This chapter explains the installation of this software.

3.1 Preparations

1. Time required

It takes approximately 3 minutes to install this software.

2. Checking the system environment

1. Check the available disk space for installing this software. For information on the disk space requirements, see "[2.3 Static disk resources](#)". If the disk space is not enough, reconfigure the disk partition.
2. If you want to use GDS with PRIMECLUSTER Clustering Base (Clustering Base), install Clustering Base first. If this software has already been installed and GDS is configured in the system environment, delete the configuration before installing Clustering Base.
For information about installing Clustering Base, see "PRIMECLUSTER Clustering Base Installation Guide".
3. If you use Clustering Base, update this Clustering Base to 4.5A10, and then install GDS 4.5A10.
For information on how to update Clustering Base, see "PRIMECLUSTER Clustering Base Installation Guide".
4. If you use Oracle Solaris 11 or later, to install this software, it is necessary to modify the IP address of the admin LAN for Web-Based Admin View and its corresponding host name, and the host name corresponding to "127.0.0.1, "::1".

1. Login to the system and become a root user.

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

2. Delete the host name allocated to "127.0.0.1" and "::1" using vi(1) and allocate it to the IP address of the admin LAN.

Before change)

```
#
# Copyright 2009 Sun Microsystems, Inc. All rights reserved.
# Use is subject to license terms.
#
# Internet host table
#
::1 host-name localhost
127.0.0.1 host-name localhost loghost
```

After change)

```
#
# Copyright 2009 Sun Microsystems, Inc. All rights reserved.
# Use is subject to license terms.
#
# Internet host table
#
::1 localhost
127.0.0.1 localhost loghost
IP-Address host-name
```

3. Installation of Oracle Solaris 11 packages

If you use Oracle Solaris 11, to install the following package from Oracle Solaris 11 Package Repository. For information about installing package from Oracle Solaris 11 Package Repository, see OS manual.

- text/locale

4. Saving the Configuration files

None.



If you use Oracle Solaris 11 or later and Oracle Solaris 11.3 or earlier, make sure that NWAM (Network Auto-Magic) is disabled. When NWAM is enabled, PRIMECLUSTER cannot work normally. For details of changing NWAM setting, see the Solaris documentation.

If you use Oracle Solaris 11 or later, the loopback address is assigned for host name of the host in the /etc/hosts file by default. In this case, PRIMECLUSTER cannot work properly. Before you install the PRIMECLUSTER, make sure to configure the /etc/hosts file described above.

3.2 Installation

1. Insert DVD of this software into the DVD drive.
2. Login to the system and become a root user.

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

3. The system is changed to the OpenBoot environment.

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

4. Start the system in single user mode.

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

5. Mount necessary file systems.

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

When installing in the UFS file system directory, please execute the following command.

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

6. Mount the DVD.

```
# mkdir -p /cdrom/cdrom0 <Return> (*1)
# /usr/sbin/mount -F hfsfs -o ro /dev/dsk/c0t4d0s2 /cdrom/cdrom0 <Return> (*2)
```

(*1) Checks if "/cdrom/cdrom0" exists and creates accordingly.

(*2) Since the underlined device name is different according to the machine environment, please confirm it.

7. Check if the FJSVsnap 2.8 version or later is installed.

```
# pkginfo -l FJSVsnap.* <Return>
```

If the command indicates that the FJSVsnap version is old, uninstall all the FJSVsnap packages from the system.

```
# pkgrm FJSVsnap <Return>
```

If the older FJSVsnap versions are removed, or no FJSVsnap versions are installed, install the FJSVsnap package by executing the pkgadd(1M) command.

```
# pkgadd -d /cdrom/cdrom0/Tool/Pkgs FJSVsnap <Return>
```

- Execute the installation script.

```
# cd /cdrom/cdrom0/Tool <Return>
# ./cluster_install -e PCL-GDS <Return>

:
:

The installation was finished successfully.
#
```

Check if "The installation was finished successfully" is displayed.

Note

The following messages may be output to the console or the log file of syslogd during installation.

- SDX:sdxservd: HALT: cannot open driver administrative file, errno=2
- SDX:sdxservd: HALT: main: internal error, child process terminated. exit code=0x200

If only the message (1) is output, or the message (2) is output after the message (1) has been output, the system is not affected by these error messages. No workarounds are necessary. In other cases, contact field engineers.

- Setting the I/O fencing function of GDS

When using the I/O fencing function in Oracle VM Server for SPARC environment, set up the I/O fencing function of GDS. Add the following line into the /etc/opt/FJSVsd/sdx/cf file of the guest domains in which PRIMECLUSTER was installed.

```
SDX_VM_IO_FENCE=on
```

Note

When not using the I/O fencing function, do not set this parameter.

- Unmount the DVD, and eject DVD.

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

- Execute the shutdown(1M) command to reboot the system.

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

3.3 Environment configurations

Configure the system environment according to the "PRIMECLUSTER Global Disk Services Configuration and Administration Guide".

Note

If you upgraded from 4.3A40 or earlier version and before upgrading you have changed the parameter of the hot spare function of GDS from default value, see the manual below, and then set and check the parameter of the hot spare function.

"PRIMECLUSTER Global Disk Services Configuration and Administration Guide"
Appendix "General Notes" - "Hot Spare" - "Note when upgraded from 4.3A40 or earlier version"

Chapter 4 Uninstallation

This chapter explains the uninstallation of this software.

4.1 Preparations

Before uninstalling, if you are applying patch for PRIMECLUSTER by UpdateSite format, remove them by UpdateAdvisor (middleware). For details, see help information on UpdateAdvisor(middleware) and the update information file of the patch.

4.2 Uninstallation

If GDS is used, it is necessary to delete the GDS configuration settings and then delete this software. For more information, refer to the "PRIMECLUSTER Global Disk Services Configuration and Administration Guide".

1. Insert DVD of this software into the DVD drive.
2. Login to the system and become a root user.

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

3. The system is changed to the OpenBoot environment.

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

4. Start the system in single user mode.

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

5. Mount necessary file systems.

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

When uninstalling in the UFS file system directory, please execute the following command.

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

6. Uninstall PRIMECLUSTER GD Snapshot if it has been installed. For information on how to uninstall, refer to the "PRIMECLUSTER GD Snapshot Installation Guide".
7. Mount the DVD.

```
# mkdir -p /cdrom/cdrom0 <Return> (*1)
# /usr/sbin/mount -F hsfs -o ro /dev/dsk/c0t4d0s2 /cdrom/cdrom0 <Return> (*2)
```

(*1) Checks if "/cdrom/cdrom0" exists and creates accordingly.

(*2) Since the underlined device name is different according to the machine environment, please confirm it.

8. Execute the uninstallation script.

```
# cd /cdrom/cdrom0/Tool <Return>
# ./cluster_uninstall -e PCL-GDS <Return>
Are you sure to remove PRIMECLUSTER software packages from the global zone?(y,n) y <Return>

Removal of <FJSVsdxga> was successful.
Removal of <FJSVsdxwv> was successful.
:
:
```

```
Uninstallation was successful.  
#
```

Check if "Uninstallation was successful" is displayed.

Note

When PRIMECLUSTER GDS 4.X is updated to PRIMECLUSTER GD 4.5A10. After uninstalling PRIMECLUSTER GD 4.5A10, delete the PRIMECLUSTER GDS 4.X packages. See PRIMECLUSTER GDS 4.X Installation Guide. You can check the package instance of the FJSVsdX packages by using the following command.

```
# pkginfo -x FJSVsdX.* <Return>  
  
FJSVsdX          SDX/G Basic Software  
                (sparc) 4.5.1  
FJSVsdX.2       SDX/G Basic Software  
                (sparc) 4.5.1
```

9. Uninstall FJSVsnap package. This package is also shared with the other product. If the following product is installed, you cannot uninstall this package.

- Enhanced Support Facility (ESF)

Execute the pkgrm(1M) command to remove it.

```
# pkgrm FJSVsnap <Return>
```

10. Execute the uninstallation script to delete the Web-Based Admin View components. Note that Web-Based Admin View components are shared with the other product. If the following product has been installed, skip this step.

- PRIMECLUSTER Clustering Base

```
# ./cluster_uninstall -p WebView <Return>  
Are you sure to remove PRIMECLUSTER software packages from the global zone?(y,n) y <Return>  
  
Removal of <FJSVwvmpc> was successful.  
Removal of <FJSVwvbs> was successful.  
:  
:  
  
Uninstallation was successful.  
#
```

Check if "Uninstallation was successful" is displayed.

11. Unmount the DVD, and eject DVD.

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

12. Execute the shutdown(1M) command to reboot the system.

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

Appendix A Messages

This chapter explains the messages displayed by installer.

A.1 Error Messages

ERROR: <pathname>: no such file

Description

The file <pathname> doesn't exist in the current working directory.

Workaround

Set the correct working directory then execute cluster_install again.

ERROR: cluster_install can only be run from global zone.

Description

cluster_install can only be run from global zone.

Workaround

Execute cluster_install on global zone.

ERROR: Failed to copy XX to YY.

Description

Failed to copy XX to YY.

Workaround

Remove the cause of the problem then execute cluster_install again.

ERROR: Failed to create file /etc/PCL-release/XX.

Description

Creation of a file in /etc/PCL-release/XX failed. XX shows the abbreviation of the product name.

Workaround

Remove the cause of the problem then execute cluster_install again.

ERROR: Failed to create XX.

Description

Creation of XX failed. XX shows file name or directory name.

Workaround

Remove the cause of the problem then execute cluster_install again.

ERROR: Failed to execute "command".

Description

Failed to execute "command".

Workaround

Remove the cause of the problem then execute cluster_install again.

ERROR: Failed to install FJQSS<Information Collection Tool>

Description

Installation of FJQSS failed.

Workaround

Collect the following information then contact your Fujitsu system engineers.
•/var/tmp/fjqssinstaller.log

ERROR: Failed to remove directory /etc/PCL-release

Description

Removal of a directory /etc/PCL-release failed.

Workaround

Remove the cause of the problem then execute cluster_uninstall again.

ERROR: Failed to remove file /etc/PCL-release/XX

Description

Removal of a file /etc/PCL-release/XX failed. XX shows the abbreviation of the product name.

Workaround

Remove the cause of the problem then execute cluster_uninstall again.

ERROR: Failed to remove XX.

Description

Removal of XX failed. XX shows file name or directory name.

Workaround

Remove the cause of the problem then execute cluster_install again.

ERROR: Installation was failed.

Description

The product installation failed.

Workaround

Refer to the following log files to investigate the cause of the installation failure:
/var/sadm/install/logs/cluster_install
After that, remove all the packages referring to "[Chapter 4 Uninstallation](#)", and execute the "cluster_install" command again.

ERROR: network service is disabled.

Description

Network service is disabled.
This message is output only in Oracle Solaris 11 or later operating environment.

Workaround

Enable network service then execute cluster_install again.

ERROR: NWAM(Network Auto-Magic) is enabled.

Description

NWAM is enabled.
This message is output only in Oracle Solaris 11 or later and Oracle Solaris 11.3 or earlier.

Workaround

Disable NWAM then execute cluster_install again.

ERROR: *option* is not supported on non-global zone.

Description

option is not supported on non-global zone.

Workaround

Correct the option then execute cluster_install again.

ERROR: Result of `"/usr/bin/svcs -l svc:/network/physical:XX"` does not include "enabled" field.

Description

Result of `"/usr/bin/svcs -l svc:/network/physical:XX"` does not include "enabled" field. *XX* shows "default" or "nwam".

Workaround

Put down the message then contact your field engineers.

ERROR: Run-level must be the single-user-state.

Description

Run-level is not the single-user-state.

Workaround

Change the run level to the single-user state then execute cluster_uninstall again.

ERROR: system/xopen/xcu4 is not installed.

Description

system/xopen/xcu4 is not installed.

This message is output only in Oracle Solaris 11 or later operating environment.

Workaround

Install system/xopen/xcu4 then execute cluster_install again.

Refer to OS manual.

ERROR: The PRIMECLUSTER software packages cannot be removed because GDS class(es) exist. Please remove the GDS class(es) and execute cluster_uninstall again.

Description

GDS class(es) exist.

Workaround

1. Check whether there are GDS classes using the sdxinfo command. If any, delete the classes. For the class deletion method, see the "PRIMECLUSTER Global Disk Services Configuration and Administration Guide".
 2. Check the file in the `/etc/opt/FJSVsdx/sysdb.d` directory using the `ls(1)` command. If there are other files than `class.db`, delete the files by executing the `rm(1)` command.
 3. Check the file in the `/dev/sfdsk` directory using the `ls(1)` command. If there are other files or directories than `_adm`, `_diag`, `_sysadm`, and `_sysdiag`, delete the files and the directories.
 4. Execute cluster_uninstall again.
-

ERROR: This installation is running now.

Description

The "cluster_install" command is running for another process.

Workaround

Wait until the command is done, and execute it again.

ERROR: This software does not support the current Oracle Solaris OS version.

Description

The Oracle Solaris OS version of the machine isn't supported.

Workaround

The "cluster_install" command can only be used on machines with Oracle Solaris 10 or later.

ERROR: This software needs <sparc> architecture.

Description

The CPU type of the machine is not sparc.

Workaround

The "cluster_install" command can only be used on sparc machines.

ERROR: This software needs Oracle Solaris 10 or later.

Description

The OS version of the machine is earlier than Oracle Solaris 10.

Workaround

The "cluster_install" command can only be used on machines with Oracle Solaris 10 or higher.

ERROR: To use this installer you must be the root user.

Description

The user authority is not root.

Workaround

Execute the "cluster_install" command using a root user access privilege.

Please see the following log file. [/var/sadm/install/logs/cluster_install](#)

Description

See the /var/sadm/install/logs/cluster_install log file.

Workaround

Remove the cause of the error referring to the log file then execute the command again.

Please see the following log file. [/var/sadm/install/logs/cluster_uninstall](#)

Description

See the /var/sadm/install/logs/cluster_uninstall log file.

Workaround

Remove the cause of the error referring to the log file then execute cluster_uninstall again.

PRIMECLUSTER software packages were not installed in this system.**Description**

PRIMECLUSTER software packages were not installed in this system.

Workaround

None.

Uninstallation was failed.**Description**

Uninstallation was failed.

Workaround

Remove the cause of the error referring to the log file or error message then execute cluster_uninstall again.

Warning: The package <FJSViomp> has not been installed.**Description**

The FJSViomp package has not been installed.

Workaround

After the installation with the "cluster_install" command is complete, install the FJSViomp package using the pkgadd(1M) command.

Warning: The package <FJSVsnap> has not been installed.**Description**

The FJSVsnap package has not been installed.

Workaround

After the installation with the "cluster_install" command is complete, install the FJSVsnap package using the pkgadd(1M) command.