

FUJITSU Software PRIMECLUSTER GD 4.5A00

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

Linux

J2UL-2263-01ENZ0(02)
October 2018

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 appendices. 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 Troubleshooting	Explains how to address problems that occur.
Appendix B Upgrading from old versions	Explains how to upgrade from old versions.
Appendix C Necessary OS packages to be installed.	Explains about the necessary OS packages to be installed.

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 Server(R) 2012 is abbreviated as Windows Server(R) 2012.
- Microsoft(R) Windows Server(R) 2012 R2 is abbreviated as Windows Server(R) 2012 R2.
- Microsoft(R) Windows Server(R) 2016 is abbreviated as Windows Server(R) 2016.
- Global Disk Services is abbreviated as GDS.
- PRIMEQUEST 3000/2000 Series is abbreviated as PRIMEQUEST.

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Note

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Revision History

Changes	Section	Manual code
Description of "VMware" and "Red Hat OpenStack Platform" have been added.	2.1	J2UL-2263-01ENZ0(01) J2UL-2263-01ENZ2(01)
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Contents

Chapter 1 Program components.....	1
1.1 Red Hat Enterprise Linux 6 (for Intel64)/ Red Hat Enterprise Linux 7 (for Intel64) for PRIMEQUEST.....	1
Chapter 2 Operation Environment.....	2
2.1 Software environment.....	2
2.2 Hardware environment.....	4
2.3 Static disk resources.....	4
2.3.1 Required disk space.....	4
2.3.2 Required work area.....	4
2.4 Dynamic disk resources.....	4
2.4.1 Required disk space.....	4
2.5 Required memory.....	5
Chapter 3 Installation.....	6
3.1 Preparations.....	6
3.2 Installation.....	7
3.3 Environment configuration.....	9
Chapter 4 Uninstallation.....	10
4.1 Preparations.....	10
4.2 Uninstallation.....	10
Appendix A Troubleshooting.....	13
A.1 CLI installer.....	13
A.1.1 Log file.....	13
A.1.2 Information messages.....	13
A.1.3 Error messages.....	13
A.1.4 When segmentation violation causes an installation failure.....	16
A.2 CLI uninstaller.....	16
A.2.1 Log file.....	16
A.2.2 Information messages.....	16
A.2.3 Error messages.....	17
A.2.4 When "there exists GDS object(s)" appears and uninstallation fails.....	19
Appendix B Upgrading from old versions.....	20
Appendix C Necessary OS packages to be installed.....	24
C.1 For Red Hat Enterprise Linux 6 (for Intel64).....	24
C.2 For Red Hat Enterprise Linux 7 (for Intel64).....	27

Chapter 1 Program components

The unit of the program that composes the system is called a package.
This chapter explains about the packages of which this software is composed.

PRIMEQUEST

- Red Hat Enterprise Linux 6 (for Intel64)
- Red Hat Enterprise Linux 7 (for Intel64)

1.1 Red Hat Enterprise Linux 6 (for Intel64)/ Red Hat Enterprise Linux 7 (for Intel64) for PRIMEQUEST

No.	Component	Package	Version	Function
1	PCLsnap	FJSVpclsnap	4.5.0	Tool for collecting troubleshooting information
2	Web-Based Admin View	SMAWcj2re	1.7.0	GUI common framework
		FJSVwvbs	4.5.0	
		FJSVwvmpe	4.5.0	
3	Global Disk Services(GDS)	kmod-FJSVsdx-drvcore	4.5.0	High-availability volume manager
		FJSVsdx-cmd	4.5.0	
		FJSVsdx-drv	4.5.0	
		FJSVsdx-bas	4.5.0	
		FJSVsdxma-ja	4.5.0	
		FJSVsdxma-en	4.5.0	
		FJSVsdxwv	4.5.0	
		devlabel	0.48.03	
FJSVsdx-nm	4.5.0			

Chapter 2 Operation Environment

This chapter explains the operation environment of this software.

2.1 Software environment

1. Basic software prerequisites

Install the following software product:

No.	Basic Software	Kernel	Errata
1	Red Hat Enterprise Linux 6.4 (for Intel64)	Supports kernel-2.6.32-358.6.1.el6 or later	RHSA-2013:0744-1 or later (*1)
2	Red Hat Enterprise Linux 6.5 (for Intel64)	Supports kernel-2.6.32-431.el6 or later	
3	Red Hat Enterprise Linux 6.6 (for Intel64)	Supports kernel-2.6.32-504.el6 or later	
4	Red Hat Enterprise Linux 6.7 (for Intel64)	Supports kernel-2.6.32-573.el6 or later	
5	Red Hat Enterprise Linux 6.8 (for Intel64)	Supports kernel-2.6.32-642.el6 or later	
6	Red Hat Enterprise Linux 6.9 (for Intel64)	Supports kernel-2.6.32-696.el6 or later	
7	Red Hat Enterprise Linux 7.2 (for Intel64)	Supports kernel-3.10.0-327.el7 or later	
8	Red Hat Enterprise Linux 7.3 (for Intel64)	Supports kernel-3.10.0-514.el7 or later	
9	Red Hat Enterprise Linux 7.4 (for Intel64)	Supports kernel-3.10.0-693.el7 or later	

(*1) Please apply to all the OS's where this software is installed.

For the supported versions of the kernel, please contact your local Fujitsu sales representative.

This software, when operating on the above software, requires additional packages to be added besides the packages which are installed with a minimum OS option installation. Please refer to "Appendix B. Necessary OS packages to be installed" for the necessary additional packages.

Note

System disk mirroring using Global Disk Services (hereinafter GDS) requires installation of the operating system in UEFI mode. Please use ServerView Installation Manager (SVIM) for installing the operating system. In case of installing it in UEFI mode, please use the version of SVIM V10.11.07 or later and supported in the environment to be used.

2. Required software

To operate this software, the following software products are required:

No.	Software	Package	Version and/or level	Remarks
1	PRIMECLUSTER Clustering Base		4.5A00	Required to use the GDS mirroring function among servers.

No.	Software	Package	Version and/or level	Remarks
2	The SCSI target daemon and utility programs	scsi-target-utils		Required to use the GDS mirroring function among servers on Red Hat Enterprise Linux 6.
3	Utilities for devices that use SCSI command sets	sg3_utils		Required to use the GDS mirroring function among servers on Red Hat Enterprise Linux 6.
4	The administration shell for storage targets	targetcli		Required to use the GDS mirroring function among servers on Red Hat Enterprise Linux 7.

- VMware environment

No.	Software	Package	Version and/or level	Remarks
1	VMware vSphere		5.5 6.0 6.5	

- Red Hat OpenStack Platform environment

No.	Software	Package	Version and/or level	Remarks
1	Red Hat OpenStack Platform		10 or later	Apply the version 0.8.13-1 or later of the openstack-selinux package (included in RHBA-2018:0365 or later) to all compute nodes.

- PC

It is used as a client of Web-Based Admin View

For details, see "3. Related hardware" of the "[2.1 Software environment](#)".

No.	OS	Browser	Java Version	Remarks
1	Windows(R) 10	Internet Explorer 11 Microsoft Edge	Java(TM) SE Runtime Environment 8 Update 131 or later (the latest Update is recommended)	One of them is required.
2	Windows(R) 8.1	Internet Explorer 11		
3	Windows(R) 7			
4	Windows Server(R) 2016			
5	Windows Server(R) 2012 R2			
6	Windows Server(R) 2012	Internet Explorer 10		

3. Exclusive software

None.

2.2 Hardware environment

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

1. Memory

1024MB or more of memory is required.

2. Required hardware

None.

3. Related hardware

No.	Machine	Model	Remark
1	Personal Computer	FM-V, etc	Required to use as a client of Web-Based Admin View.

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.

No.	Directory	Disk space (in MB)	Remarks
1	/	24.0	
2	/usr	0.1	
3	/var	0.2	
4	/var/opt	0.1	
5	/etc/opt	13.8	
6	/opt	152.3	

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/opt	55.0	When a volume of a GDS local class has been created and GDS Management View has been started.

GDS: Global Disk Services

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	88.6	GDS shared class is configured.

GDS: Global Disk Services

Chapter 3 Installation

This chapter explains the installation of this software.

You can install this software on each node where basic and required software is installed. For details about error messages during installation, see "[Appendix A Troubleshooting](#)".

3.1 Preparations

1. Time required

It takes approximately 5 minutes to install this software.

2. Kernel header

Before installing this software, it is necessary to install the kernel header that supports OS of the system. Check if the kernel header is installed on the system by executing the following command:

```
# rpm -qi kernel-devel <Return>
```

If the command encounters an error, or the kernel source version different than the system OS, install the kernel source according to the OS document.

3. System environment check

1. Check if you have sufficient free space on your disk. For the size of the disk, see "[2.3 Static disk resources](#)". If there is not enough free disk space, set the disk partition configuration again.
2. To install Web-Based Admin View, it is necessary to modify the IP address of the admin LAN for Web-Based Admin View and its corresponding host name (node name output in `uname-n`), and the host name (node name output in `uname-n`) corresponding to "127.0.0.1" (for IPv4) and "::1" (for IPv6).

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

```
$ su <Return>
Password: password <Return>
```

2. Delete the host name allocated to "127.0.0.1" (for IPv4) and "::1" (for IPv6) using `vi(1)` and allocate it to the IP address of the admin LAN.

Before change)

```
# cat /etc/hosts <Return>
127.0.0.1    host-name localhost localhost.localdomain localhost4
localhost4.localhostdomain4
::1        host-name localhost localhost.localdomain localhost6 localhost6.localhostdomain6
```

After change)

```
# cat /etc/hosts <Return>
127.0.0.1    localhost localhost.localdomain localhost4 localhost4.localhostdomain4
::1        localhost localhost.localdomain localhost6 localhost6.localhostdomain6
IP-Address host-name
```

3. Check the auto startup of the NetworkManager service.

PRIMECLUSTER does not support the NetworkManager service.
Check the auto startup of the NetworkManager service setting.

[Red Hat Enterprise Linux 6]

Check that the setting of auto startup of the NetworkManager service is "off" using the following command.

```
# /sbin/chkconfig --list NetworkManager
NetworkManager 0:off 1:off 2:off 3:off 4:off 5:off 6:off
```

If there is runlevel that is in "on", disable the NetworkManager service using the following command.

```
# /sbin/service NetworkManager stop
# /sbin/chkconfig NetworkManager off
```

[Red Hat Enterprise Linux 7]

Check that the setting of auto startup of the NetworkManager service is "disabled" using the following command.

```
# /usr/bin/systemctl is-enabled NetworkManager.service
disabled
```

If the setting is "enabled", disable the NetworkManager service using the following command.

```
# /usr/bin/systemctl stop NetworkManager.service
# /usr/bin/systemctl disable NetworkManager.service
```

4. Package check

1. Check if the packages are installed on the system by executing the following command:

In case of Red Hat Enterprise Linux 6 (for Intel64) or later, also check if the following package is installed on the system by executing below command:

```
# rpm -qi ruby <Return>
```

In case of Red Hat Enterprise Linux 7.4 (for Intel64) or later, check if the following package is installed on the system by executing below command:

```
# rpm -qi grub2-efi-x64-modules <Return>
```

If the command encounters an error, install the packages from CD-ROM(DVD) of the OS.

3.2 Installation

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

```
$ su <Return>
Password:password <Return>
```

2. The system is changed to the single user mode.

[Red Hat Enterprise Linux 6]

Edit the contents of the id entry of the /etc/inittab file using vi(1) etc. as shown below to start the system in single-user mode.



- The default runlevel varies depending on the system (3 in the example below).
- Put down the default target before upgrading as you can restore the system to the state prior to upgrading later.

[Before Modification]

```
# 3 - Full multiuser mode
# 4 - unused
```

```
# 5 - X11
# 6 - reboot (Do NOT set initdefault to this)
#
id:3:initdefault:
```

[After Modification]

```
# 3 - Full multiuser mode
# 4 - unused
# 5 - X11
# 6 - reboot (Do NOT set initdefault to this)
#
id:1:initdefault:
```

Start the system again in single-user mode.

```
# shutdown -r now <Return>
```

[Red Hat Enterprise Linux 7]

Check the default target.



- The default target before upgrading ([multi-user.target] in the following example) varies depending on the system.
- Put down the default target before upgrading as you can restore the system to the state prior to upgrading later.

```
# systemctl get-default <Return>
multi-user.target
```

The default target changes in single-user mode.

```
# systemctl set-default rescue.target <Return>
```

Start the system again in single-user mode.

```
# shutdown -r now <Return>
```

3. Insert the DVD in the DVD drive.

```
# mount -t iso9660 -r /dev/<device file name> <DVD-ROM mount point> <Return>
```

<DVDROM_DIR> will be used as the mount point.

4. Execute the CLI installer. When the package is already installed, it is a same procedure.

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

Installation of PRIMECLUSTER started.

.
.

The installation finished successfully.

5. Eject the DVD.

```
# cd / <Return>
# umount <DVDROM_DIR> <Return>
# eject <Return>
```

6. Reboot the system by executing the shutdown(8) command.

[Red Hat Enterprise Linux 6]

Edit the contents of the id entry of the /etc/inittab file, which has been changed in Step 2, to the original contents to start the system in multi-user mode.

[Before Modification]

```
# 3 - Full multiuser mode
# 4 - unused
# 5 - X11
# 6 - reboot (Do NOT set initdefault to this)
#
id:1:initdefault:
```

[After Modification]

```
# 3 - Full multiuser mode
# 4 - unused
# 5 - X11
# 6 - reboot (Do NOT set initdefault to this)
#
id:3:initdefault:
```

Start the system again.

```
# shutdown -r now <Return>
```

[Red Hat Enterprise Linux 7]

The default target changes in multi-user mode.

```
# systemctl set-default multi-user.target <Return>
```

Start the system again.

```
# shutdown -r now <Return>
```

7. Download patch(es)

Download the latest PRIMECLUSTER patch(es) and update information file from Updatesite.

8. Apply the patch(es) for this software.

For installation instructions and points of concern, etc., refer to the update information file of each patch.

3.3 Environment configuration

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

Chapter 4 Uninstallation

This chapter explains the uninstallation of this software.

4.1 Preparations

1. Uninstall GDS Snapshot and GDS I/O Monitor Option if one or all of them are installed on the system.
For information on how to uninstall these products, refer to the installation guide of each product.
2. 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

1. Login to the system as the root user.

```
$ su <Return>
Password:password <Return>
```

2. If you are using GDS, cancel the GDS settings. For details see the "PRIMECLUSTER Global Disk Services Configuration and Administration Guide".
3. Boot the system in single user mode.

[Red Hat Enterprise Linux 6]

Edit the contents of the id entry of the /etc/inittab file using vi(1) etc. as shown below to start the system in single-user mode.



- The default runlevel varies depending on the system (3 in the example below).
- Put down the default target before upgrading as you can restore the system to the state prior to upgrading later.

[Before Modification]

```
# 3 - Full multiuser mode
# 4 - unused
# 5 - X11
# 6 - reboot (Do NOT set initdefault to this)
#
id:3:initdefault:
```

[After Modification]

```
# 3 - Full multiuser mode
# 4 - unused
# 5 - X11
# 6 - reboot (Do NOT set initdefault to this)
#
id:1:initdefault:
```

Start the system again in single-user mode.

```
# shutdown -r now <Return>
```

[Red Hat Enterprise Linux 7]

Check the default target.

Note

- The default target before upgrading ([multi-user.target] in the following example) varies depending on the system.
- Put down the default target before upgrading as you can restore the system to the state prior to upgrading later.

```
# systemctl get-default <Return>
multi-user.target
```

The default target changes in single-user mode.

```
# systemctl set-default rescue.target <Return>
```

Start the system again in single-user mode.

```
# shutdown -r now <Return>
```

4. If you are using GDS, check the file in the /dev/sfdsk directory. If there are other files than _adm, _diag, _sysadm, and _sysdiag, delete them.
5. Insert DVD and mount the DVD device.

```
# mount -t iso9660 -r /dev/<device file name> <DVD-ROM mount point> <Return>
```

<DVDROM_DIR> will be used as the mount point.

6. Execute the CLI uninstaller.

```
# cd <DVDROM_DIR>/Tool <Return>
# ./cluster_uninstall -e PCL-GDS <Return>
Are you sure to remove PRIMECLUSTER from your system (y or n) ? y <Return>
.
.
The uninstallation finished successfully.
```

If the following message appears and uninstallation fails, take corrective action according to "[A.2.4 When "there exists GDS object\(s\)" appears and uninstallation fails](#)" then perform step 6 again.

```
ERROR: there exists GDS object(s)
Uninstallation failed.
```

7. Eject DVD, then reboot the system by executing the "shutdown(8)" command.

```
# cd / <Return>
# umount <DVDROM_DIR> <Return>
# eject <Return>
```

[Red Hat Enterprise Linux 6]

Edit the contents of the id entry of the /etc/inittab file, which has been changed in Step 2, to the original contents to start the system in multi-user mode.

[Before Modification]

```
# 3 - Full multiuser mode
# 4 - unused
# 5 - X11
# 6 - reboot (Do NOT set initdefault to this)
#
id:1:initdefault:
```

[After Modification]

```
# 3 - Full multiuser mode
# 4 - unused
# 5 - X11
# 6 - reboot (Do NOT set initdefault to this)
#
id:3:initdefault:
```

Start the system again.

```
# shutdown -r now <Return>
```

[Red Hat Enterprise Linux 7]

The default target changes in multi-user mode.

```
# systemctl set-default multi-user.target <Return>
```

Start the system again.

```
# shutdown -r now <Return>
```

8. If the blacklist of kdump or KDUMP_COMMANDLINE_APPEND is configured after this product has been installed according to the procedure described in "PRIMECLUSTER Global Disk Services Configuration and Administration Guide", restore the configuration.

Appendix A Troubleshooting

This chapter explains how to address problems that occur.

A.1 CLI installer

This section explains CLI installer.

A.1.1 Log file

The CLI installer log including the rpm(8) command output will be saved in the following log file:

- /var/log/install/cluster_install

A.1.2 Information messages

INFO: no package to update

Description

Since the package same as that in DVD or newer than that in DVD is installed, the package in DVD cannot be installed.

Workaround

According to the procedure of "4.2 Uninstallation", execute the command again after removing PRIMECLUSTER from the system.

INFO: The installation process stopped by user request

Description

Installation process was stopped according at user's request.

Workaround

Execute the command again.

A.1.3 Error messages

ERROR: /tmp needs *TMP_LEAST* KB at least

Description

There is not enough free space on the /tmp file system.

Workaround

Reserve at least *TMP_LEAST*KB on the /tmp file system then execute the command again.

ERROR: /tmp not writable

Description

Creation of a temporary file in /temp failed.

Workaround

After /temp is made writable, execute the command again.

Example: If the file system including /temp is mounted as a read-only file system, make /temp writable by executing "mount -o remount <mount point of the file system including /tmp>".

ERROR: /var needs *VAR_LEAST* KB at least

Description

There is not enough free space on the /var file system.

Workaround

Reserve at least `VAR_LEASTKB` on the /var file system then execute the command again.

ERROR: </usr/sbin/dmidecode> command not found

Description

The command </usr/sbin/dmidecode> not installed on the system.

Workaround

Check if the OS is installed with a right procedure.

ERROR: CF driver is loaded

Description

The CF driver is loaded.

Workaround

Unload the CF driver then execute the command again. For details, see "PRIMECLUSTER Cluster Foundation Configuration and Administration Guide".

ERROR: Failed to install FJQSS<Information Collection Tool>

Description

Installation of FJQSS failed.

Workaround

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

ERROR: failed: rpm *

Description

The rpm command failed. ("*" indicates the error details.)

Workaround

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

ERROR: internal error: *

Description

An internal error occurred. ("*" indicates the error details.)

Workaround

Put down the message then contact your Fujitsu system engineers.

ERROR: platform <PLAT> not supported

Description

This software is not supported.

Workaround

Check if the environment meets operating conditions as prescribed in "Chapter 2 Operation Environment". If there is nothing wrong with the environment, put down the message then contact your Fujitsu system engineers.

ERROR: product <PROD> on platform <PLAT> not supported**Description**

Installation of the product set <PROD> is not supported for this software.

Workaround

Check if the command option is correct. If it is, then check if the environment meets operating conditions as prescribed in "[Chapter 2 Operation Environment](#)". If there is nothing wrong with the environment, put down the message then contact your Fujitsu system engineers.

ERROR: product <PROD1> and <PROD2> contains the same package <PKG>**Description**

The products <PROD1> and <PROD2> are included in the same package <PKG>, so they cannot be installed at the same time.

Workaround

An option cannot be specified for the products <PROD1> and <PROD2>.

ERROR: syntax error**Description**

An incorrect option was specified.

Workaround

Correct the option then execute the command again.

ERROR: syntax error (<PSET> <PLAT>)**Description**

An incorrect option was specified.
Installation of the product set <PSET> is not supported for this software.

Workaround

Check if the command option is correct. If it is, check whether the environment meets operating conditions as prescribed in "[Chapter 2 Operation Environment](#)".

**ERROR: The installation of following package(s) failed.
<PackageName>****Description**

The installation of <PackageName> failed. You may have tried to install in the kernel version of OS not supported.

Workaround

Please confirm whether there is required patch of PRIMECLUSTER corresponding to the kernel version of OS. If the patch is existing, please apply the patch and execute "rpm -V --nodigest --nofiles --noscripts --nosignature <PackageName >" afterwards. When nothing is output, it means the execution of the CLI installer succeeded. Please perform the subsequent procedure.
If the above action fails to solve the problem, put down the message then contact your Fujitsu system engineers.

ERROR: the installation process is running now**Description**

The other installation process is running.

Workaround

Wait until the other installation process is completed then execute the command again.

Note

If this message appears although the other installation process is not being executed, delete the "/tmp/cluster_install" and "/tmp/cluster_uninstall" flag files then execute the command again.

ERROR: to use this installer you will need to be the root user.

Description

The command was executed by a non-root user.

Workaround

Execute the command using root user access privileges.

Installation failed

Description

Installation failed.

Workaround

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

Please see the following log file. /var/log/install/cluster_install

Description

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

Workaround

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

A.1.4 When segmentation violation causes an installation failure

If segmentation violation is due to the rpm(8) command, take the following corrective steps. If the problem still remains unresolved, contact Fujitsu customer support engineers.

1. Reboot the system by executing the shutdown(8) command.

```
# shutdown -r now <Return>
```

2. Delete PRIMECLUSTER from the system according to "[4.2 Uninstallation](#)".
3. Execute the following command.

```
# rpm --rebuilddb <Return>
```

4. Install PRIMECLUSTER again.

A.2 CLI uninstaller

This section explains CLI uninstaller.

A.2.1 Log file

Logs of the CLI uninstaller including the output of the rpm(8) command will be saved into the log file below:

- /var/log/install/cluster_uninstall

A.2.2 Information messages

INFO: no package to uninstall

Description

Currently, no packages that need to be uninstalled are installed on the system.

Workaround

None.

INFO: The uninstallation process stopped by user request

Description

The uninstallation process has been stopped at user's request.

Workaround

If you want to continue the uninstallation process, execute the command again.

A.2.3 Error messages

ERROR: /tmp needs *TMP_LEASTKB* at least

Description

There is not enough free space on the /tmp file system.

Workaround

Reserve at least *TMP_LEASTKB* on the /tmp file system then execute the command again.

ERROR: /tmp not writable

Description

Creation of a temporary file in /temp failed.

Workaround

After /temp is made writable, execute the command again.

Example: If the file system including /temp is mounted as a read-only file system, make /temp writable by executing "mount -o remount <mount point of the file system including /tmp>".

ERROR: /var needs *VAR_LEASTKB* at least

Description

There is not enough free space on the /var file system.

Workaround

Reserve at least *VAR_LEASTKB* on the /var file system then execute the command again.

ERROR: CF driver is loaded

Description

The CF driver is loaded.

Workaround

Unload the CF driver then execute the command again. For details see the "PRIMECLUSTER Cluster Foundation Configuration and Administration Guide".

ERROR: failed: rpm *

Description

The rpm command failed. ("*" indicates the error details.)

Workaround

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

ERROR: internal error: *

Description

An internal error occurred. ("*" indicates the error details.)

Workaround

Put down the message then contact your Fujitsu system engineers.

ERROR: product <PROD> on platform <PLAT> not supported

Description

The product set <PROD> package is invalid.

Workaround

Specify a correct command option then execute the command again.

ERROR: syntax error

Description

The incorrect option was specified.

Workaround

Correct the option and execute the command again.

ERROR: syntax error (<PSET> <PLAT>)

Description

An incorrect option was specified.
The product set <PSET> package is invalid.

Workaround

Run the command with the right option.

ERROR: the installation process is running now

Description

The other installation process is being executed.

Workaround

Wait until the other installation process is completed then execute the command again.

Note

If this message appears although the other installation process is not being executed, delete the "/tmp/cluster_install" and "/tmp/cluster_uninstall" flag files then execute the command again.

ERROR: there exists GDS object(s)

Description

Some GDS objects are not deleted.

Workaround

Delete all the GDS objects then execute the command again.

ERROR: to use this uninstaller you will need to be the root user

Description

The command was executed by a non-root user.

Workaround

Execute the command with root user access privileges.

Please see the following log file. /var/log/install/cluster_uninstall

Description

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

Workaround

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

Uninstallation failed.

Description

Uninstallation failed.

Workaround

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

A.2.4 When "there exists GDS object(s)" appears and uninstallation fails

If the following message appears and uninstallation fails, take the corrective steps described as the resolution below.

Message

```
ERROR: there exists GDS object(s)
Uninstallation failed.
```

Resolution

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/FJVSdx/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. Perform the procedure of "[4.2 Uninstallation](#)" from step 5 again.

Appendix B Upgrading from old versions

This section explains how to upgrade PRIMECLUSTER GDS which has been installed on a single server. In case of a cluster system, see the installation guide of the cluster product.

Before upgrading, back up the entire system using the `dd(1)` command. Proceed this steps on the console.

1. Boot the system in single user mode.

[Red Hat Enterprise Linux 6]

Edit the contents of the `id` entry of the `/etc/inittab` file using `vi(1)` etc. as shown below to start the system in single-user mode.

Note

- The default runlevel varies depending on the system (3 in the example below).
- Put down the default target before upgrading as you can restore the system to the state prior to upgrading later.

[Before Modification]

```
# 3 - Full multiuser mode
# 4 - unused
# 5 - X11
# 6 - reboot (Do NOT set initdefault to this)
#
id:3:initdefault:
```

[After Modification]

```
# 3 - Full multiuser mode
# 4 - unused
# 5 - X11
# 6 - reboot (Do NOT set initdefault to this)
#
id:1:initdefault:
```

Start the system again in single-user mode.

```
# shutdown -r now <Return>
```

[Red Hat Enterprise Linux 7]

Check the default target.

Note

- The default target before upgrading (`[multi-user.target]` in the following example) varies depending on the system.
- Put down the default target before upgrading as you can restore the system to the state prior to upgrading later.

```
# systemctl get-default <Return>
multi-user.target
```

The default target changes in single-user mode.

```
# systemctl set-default rescue.target <Return>
```

Start the system again in single-user mode.

```
# shutdown -r now <Return>
```


2. When update the basic software from existing environment, updating basic software, see the following document Operating Update manual.
3. Proceed the following steps.

1. Create a backup directory.

```
# mkdir /<mydir> <Return>
```

2. In case of Red Hat Enterprise Linux 6 (for Intel64), back up the PRIMECLUSTER Web-Based Admin View operating environment.

```
# cp -p /opt/FJSVwvbs/etc/webview.cnf /<mydir> <Return>
# cp -p /opt/FJSVwvbs/etc/.policy /<mydir> <Return>
# cp -p /opt/FJSVwvbs/etc/wvlocal.cnf /<mydir> <Return>
```

Check if the Plugin.html file has not been changed.

Open the /opt/FJSVwvbs/etc/Plugin.html file using vi(1) etc. then check the default value(60) is set for the following entry:Back up the GLS operating environment.

```
<PARAM NAME = Initial_wait VALUE = "60">
```

If it is different from the default value, take a note of the value.

This value will be used to restore it later.

3. If you are using GLS, back up the GLS operating environment.

```
# /opt/FJSVhanet/usr/sbin/hanetbackup -d /<mydir> <Return>
```

The backup file name is "hanetYYYYMMDD.bk". YYYYYMMDD shows information of the command execution date. (YYYY: year, MM: month, DD: day)

4. Back up the GDS operating environment.

```
# cp -p /etc/sysconfig/devlabel /<mydir> <Return>
# cp -p /etc/sysconfig/devlabel.d/devname_conf /<mydir> <Return>
```

5. Insert DVD and mount the DVD device.

```
# mount -t iso9660 -r /dev/<device file name> <DVD-ROM mount point> <Return>
```

<DVDROM_DIR> will be used as the mount point.

6. Execute the following script then delete a part of the PRIMECLUSTER package.

```
# cd <DVDROM_DIR>/Tool <Return>
# ./upgrade_uninstall <Return>
Are you sure to remove a part of PRIMECLUSTER from your system (y or n) ? y <Return>
:
:
The uninstallation finished successfully.
```

7. Execute the following cluster_install script, and install the package or overwrite it.

```
# cd <DVDROM_DIR>/Tool <Return>
# ./cluster_install -e PCL-GDS <Return>
:
:
The installation finished successfully.
```



Note

- The following message might be output:

```
# ./cluster_install -x xx <Return>
INFO: no package to update
```

This message indicates that the newer version of all the packages is installed, so it is not necessary to upgrade.

- While executing the cluster_install script, the following message might be output

```
# ./cluster_install -x xx <Return>
Installing package <XXXXXXXXXXXX> ... skipped.
```

This message indicates that the same version of all the packages is installed, so it is not necessary to upgrade.

8. If you are using GLS, execute the following cluster_install script, and install the package or overwrite it.

```
# cd <DVDROM_DIR>/Tool <Return>
# ./cluster_install -e PCL-GLS <Return>
:
:
The installation finished successfully.
```

9. Eject DVD.

```
# cd / <Return>
# umount <DVDROM_DIR> <Return>
# eject cdrom <Return>
```

10. In case of Red Hat Enterprise Linux 6 (for Intel64), restore the PRIMECLUSTER Web-Based Admin View operating environment that was backed up at step 2.

```
# cp -p /<mydir>/webview.cnf /opt/FJSVwvbs/etc/webview.cnf <Return>
# cp -p /<mydir>/policy /opt/FJSVwvbs/etc/policy <Return>
# cp -p /<mydir>/wvlocal.cnf /opt/FJSVwvbs/etc/wvlocal.cnf <Return>
```

If you find the Plugin.html file has been changed at step 2, restore the value.

There is no need to do this step if it has *not* been changed.

Edit the /opt/FJSVwvbs/etc/Plugin.html file using vi(1) etc. then write the value noted at step 2 back to the file (in the example "xx"):

```
(Example)
[Before Modification]
  <PARAM NAME = Initial_wait VALUE = "60">
[After Modification]
  <PARAM NAME = Initial_wait VALUE = "xx">
```

11. If you are using GLS, restore the GLS operating environment that was backed up at step 3.

```
# /opt/FJSVhanet/usr/sbin/hanetrestore -f /<mydir>/hanetYYYYMMDD.bk <Return>
```

12. Restore the GDS operating environment that was backed up at step 4.

```
# cp -p /<mydir>/devlabel /etc/sysconfig/devlabel <Return>
# cp -p /<mydir>/devname_conf /etc/sysconfig/devlabel.d/devname_conf <Return>
```

4. Reboot the system.

[Red Hat Enterprise Linux 6]

Edit the contents of the id entry of the /etc/inittab file, which has been changed in Step 3, to the original contents to start the system in multi-user mode.

[Before Modification]

```
# 3 - Full multiuser mode
# 4 - unused
# 5 - X11
# 6 - reboot (Do NOT set initdefault to this)
#
id:1:initdefault:
```

[After Modification]

```
# 3 - Full multiuser mode
# 4 - unused
# 5 - X11
# 6 - reboot (Do NOT set initdefault to this)
#
id:3:initdefault:
```

Start the system again.

```
# shutdown -r now <Return>
```

[Red Hat Enterprise Linux 7]

The default target changes in multi-user mode.

```
# systemctl set-default multi-user.target <Return>
```

Start the system again.

```
# shutdown -r now <Return>
```

5. Download patch(es)

Download the latest PRIMECLUSTER GD patch(es) and update information file from Updatesite.

6. Apply the patch(es) for this software.

For installation instructions and pints of concern, etc., refer to the update information file of each patch.

Appendix C Necessary OS packages to be installed

When operating this software on Red Hat Enterprise Linux, in addition to the packages that are installed with a minimum OS option installation, the following packages are used.

C.1 For Red Hat Enterprise Linux 6 (for Intel64)

Package	Architecture
OpenIPMI	x86_64
OpenIPMI-libs	x86_64
PyQt4	x86_64
PyQt4-devel	i686
PyQt4-devel	x86_64
alsa-lib	i686
alsa-lib	x86_64
at	x86_64
audit-libs	i686
autoconf	noarch
bc	x86_64
bind	x86_64
bind-utils	x86_64
compat-libstdc++-33	i686
compat-libstdc++-33	x86_64
cpp	x86_64
crash	x86_64
cvs	x86_64
device-mapper	x86_64
device-mapper-multipath	x86_64
dhcp	x86_64
docbook-utils	noarch
dump	x86_64
ebtables	x86_64
ed	x86_64
eject	x86_64
fontconfig	i686
fontconfig	x86_64
freetype	x86_64
gcc	x86_64
gdb	x86_64
ghostscript	x86_64
glibc	i686

Package	Architecture
hdparm	x86_64
httpd	x86_64
indent	x86_64
ipmitool	x86_64
iscsi-initiator-utils	x86_64
kernel-devel	x86_64
kernel-headers	x86_64
kexec-tools	x86_64
libICE	x86_64
libSM	x86_64
libX11	i686
libX11	x86_64
libXau	i686
libXau	x86_64
libXext	i686
libXext	x86_64
libXft	x86_64
libXi	i686
libXi	x86_64
libXmu	x86_64
libXp	x86_64
libXrender	x86_64
libXt	x86_64
libXtst	i686
libXtst	x86_64
libgcc	i686
libjpeg-turbo	x86_64
libpng	x86_64
libstdc++	i686
libvirt-client	x86_64
libxcb	x86_64
lsof	x86_64
lvm2	x86_64
make	x86_64
man	x86_64
mlocate	x86_64
mt-st	x86_64
mttools	x86_64
mtr	x86_64

Package	Architecture
nc	x86_64
net-snmp	x86_64
net-snmp-utils	x86_64
nfs-utils	x86_64
ntp	x86_64
openmotif	x86_64
openmotif22	x86_64
opensp	i686
openssh-clients	x86_64
openssl098e	x86_64
pam-devel	x86_64
parted	x86_64
patch	x86_64
pciutils	x86_64
perl	x86_64
perl-libwww-perl	noarch
pinfo	x86_64
prelink	x86_64
psacct	x86_64
quota	x86_64
rpcbind	x86_64
rsh	x86_64
ruby	x86_64
samba-common	x86_64
scsi-target-utils	x86_64
setuptools	x86_64
sg3_utils	x86_64
strace	x86_64
subversion	x86_64
sysstat	x86_64
tcpdump	x86_64
time	x86_64
tree	x86_64
vconfig	x86_64
xinetd	x86_64
xorg-x11-apps	x86_64
xorg-x11-server-utils	x86_64
xterm	x86_64
zip	x86_64

C.2 For Red Hat Enterprise Linux 7 (for Intel64)

Package	Architecture
ImageMagick	x86_64
OpenIPMI	x86_64
OpenIPMI-libs	x86_64
PyQt4-devel	x86_64
alsa-lib	i686
at	x86_64
audit-libs	i686
autoconf	noarch
bc	x86_64
bind	x86_64
bind-utils	x86_64
cpp	x86_64
crash	x86_64
device-mapper-multipath	x86_64
dialog	x86_64
docbook-utils	noarch
ed	x86_64
efibootmgr	x86_64
fontconfig	i686
fontconfig	x86_64
gcc	x86_64
gdb	x86_64
ghostscript	x86_64
glibc	i686
graphviz	x86_64
grub2-efi-x64-modules(*1)	x86_64
httpd	x86_64
httpd-tools	x86_64
indent	x86_64
ipmitool	x86_64
iscsi-initiator-utils	x86_64
iw	x86_64
kernel-devel	x86_64
kernel-headers	x86_64
libICE	x86_64
libSM	x86_64
libX11	i686
libX11	x86_64

Package	Architecture
libXau	i686
libXau	x86_64
libXext	i686
libXext	x86_64
libXft	x86_64
libXi	i686
libXi	x86_64
libXmu	x86_64
libXp	x86_64
libXrender	x86_64
libXt	x86_64
libXtst	i686
libXtst	x86_64
libgcc	i686
libjpeg-turbo	x86_64
libpng	x86_64
libreport	x86_64
libstdc++	i686
libvirt-client	x86_64
libxcb	x86_64
lsof	x86_64
m4	x86_64
mlocate	x86_64
motif	x86_64
motif-devel	x86_64
mt-st	x86_64
mtools	x86_64
mtr	x86_64
net-snmp	x86_64
net-snmp-utils	x86_64
nfs-utils	x86_64
ntp(*2)	x86_64
opensp	i686
pam-devel	x86_64
patch	x86_64
pciutils	x86_64
perl	x86_64
perl-libwww-perl	noarch
pinfo	x86_64

Package	Architecture
prelink	x86_64
psacct	x86_64
psmisc	x86_64
quota	x86_64
rpcbind	x86_64
ruby	x86_64
samba-common	noarch
setuptool	x86_64
strace	x86_64
subversion	x86_64
sysstat	x86_64
targetcli	noarch
tcpdump	x86_64
time	x86_64
xorg-x11-server-utils	x86_64
xterm	x86_64

(*1) It is necessary to install this package only in Red Hat Enterprise Linux 7.4 (for Intel64) or later.

(*2) If you use chrony this is not necessary.