

# **ExpressCluster for Linux Ver3.1**

## File Server Agent

2005.12.28  
2<sup>st</sup> Revision



Revision History

Revision	Revision Date		Description
1	2005/05/30		The 1 <sup>st</sup> Revision was created.
2	2005/12/28	<p>6</p> <p>7</p> <p>8</p> <p>12</p> <p>20</p> <p>31</p> <p>42 -</p> <p>48 -</p>	<p>Description is added and corrected to below by the agent correspondence for IA64 servers.</p> <p>The hardware requirement table of the File Server Agent is corrected.</p> <p>The installation procedure of the File Server Agent for IA64 servers is added.</p> <p>The description about the latest version of a script templates is added.</p> <p>The folder name uninstalled by the Windows version and trekking tool is corrected.(It united with the information on the newest trekking tool currently opened to Web.)</p> <p>Description is added to [Important].</p> <p>Description of Note 2 is changed.</p> <p>Bitmap is corrected.</p> <p>The description about [Start Monitor Wait Time] and [Re-active Threshold] is added.</p>

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Please obtain the latest version before configuring the system.

Usage on the NEC Internet:

<http://soreike.wsd.mt.nec.co.jp/>

Usage out of the NEC Internet:

<http://www.ace.comp.nec.co.jp/CLUSTERPRO/>

<b>Part I The Basics .....</b>	<b>6</b>
<b>1 Setting Up the File Server Agent.....</b>	<b>6</b>
1.1 Setting Up the Monitoring Module .....	6
1.1.1 Before Installation .....	6
1.1.2 Installing the File Server Agent on Linux System.....	7
1.2 Setting Up Script Templates .....	8
1.2.1 Installing Script Templates on Windows .....	8
1.2.2 Installing Script Templates on Linux System .....	10
<b>2 Uninstalling the File Server Agent .....</b>	<b>11</b>
2.1 Uninstalling the Monitoring Module.....	11
2.2 Uninstalling Script Templates .....	12
2.2.1 Uninstalling the Script Templates for Windows .....	12
2.2.2 Uninstalling the Script Templates for Linux .....	13
<b>3 License Registration .....</b>	<b>14</b>
3.1 Interactive License Registration.....	14
3.2 License Registration By Specifying A License File.....	15
<b>4 Using File Server Agent .....</b>	<b>16</b>
4.1 Setting Monitoring Commands .....	16
4.2 Setting PID Monitoring .....	18
<b>Part II Details .....</b>	<b>19</b>
<b>5 File Server Monitoring.....</b>	<b>19</b>
5.1 Monitoring Application.....	19
5.2 Overview of Monitoring .....	20
5.3 Writing Scripts to an EXEC Resource .....	22
5.4 Operation Check .....	23
5.4.1 Checking Behavior of Target Application to Be Monitored.....	23
5.4.1.1 Start up a Group .....	23
5.4.1.2 Stop a Group.....	23
5.4.1.3 Move a Group .....	23
5.4.1.4 Failover a Group .....	23
5.4.2 Checking Monitoring Command Operation .....	24
5.4.2.1 Start Up a Group.....	24
5.4.2.2 Stop a Group.....	24
5.4.2.3 Move a Group .....	24
5.4.2.4 Failover a Group .....	24
<b>6 Information Provided by Monitoring Commands .....</b>	<b>26</b>
6.1 Alert Messages .....	26
6.2 Log Collection in Case of an Error.....	26
<b>7 File Server Monitoring Commands .....</b>	<b>27</b>
7.1 List of File Server Monitoring Commands.....	27
7.2 Monitoring Chart .....	27

7.3	Interrupting and Resuming Monitoring.....	28
7.4	Command Syntax .....	28
<b>8</b>	<b>Alert Messages .....</b>	<b>36</b>
8.1	Messages produced by clp_sambamon .....	36
8.1.1	Messages Indicating Normal Operation.....	36
8.1.2	Messages Due to Setting Error.....	36
8.1.3	Messages Produced when an Error is Detected in File Server Monitoring.....	37
8.1.4	Messages Due to a System Error.....	38
8.2	Messages produced by clp_nfsmon .....	39
8.2.1	Messages Indicating Normal Operation.....	39
8.2.2	Messages Due to Setting Error.....	39
8.2.3	Messages Produced when an Error is Detected in File Server Monitoring.....	40
8.2.4	Messages Due to a System Error.....	40
<b>9</b>	<b>Environment Construction using a Trekking Tool .....</b>	<b>41</b>
9.1	Adding an EXEC Resource for the Application to be Monitored .....	42
9.2	Adding an EXEC Resource for a Monitoring Command.....	45
9.3	Setting a Monitor Resource .....	48
<b>10</b>	<b>Script Templates.....</b>	<b>52</b>
10.1	Script Templates for Starting Samba Services .....	53
10.1.1	start.sh .....	53
10.1.2	stop.sh.....	55
10.2	Script Templates for Monitoring Samba .....	56
10.2.1	start.sh .....	56
10.2.2	stop.sh.....	58
10.3	Script Templates for Starting NFS Services .....	59
10.3.1	start.sh .....	59
10.3.2	stop.sh.....	61
10.4	Script Templates for Monitoring NFS.....	62
10.4.1	start.sh .....	62
10.4.2	stop.sh.....	64

# Part I The Basics

## 1 Setting Up the File Server Agent

### 1.1 Setting Up the Monitoring Module

**Note:**

This document assumes that users use the ExpressCluster CD as the installation media. If you use a different kind of media or trial version, refer to the document that came with your media, and replace paths and others according to your environment settings.

#### 1.1.1 Before Installation

Check the followings before installing the File Server Agent on a server.

The File Server Agent requirements are as follows. Check each item on all servers on which the File Server Agent will be installed.

Requirements to use the File Server Agent (monitoring module)	
Hardware	IA32 server, x86_64 server, IA64 server
OS	The same as the ExpressCluster server and allowing operation of the file server to be monitored.
ExpressCluster	ExpressCluster SE for Linux Ver3.1-3 or later ExpressCluster LE for Linux Ver3.1-3 or later ExpressCluster SX for Linux Ver3.1-3 or later ExpressCluster LX for Linux Ver3.1-3 or later
Memory size	5 M byte (per command)
Disk size	1 M byte

Obtain the latest update for the File Server Agent. Refer to the Update Manual for how to apply updates.

## 1.1.2 Installing the File Server Agent on Linux System

Set up the File Server Agent after installing the ExpressCluster. Apply the latest update for the ExpressCluster.

Log in as a root user and follow the steps below when installing the File Server Agent on Linux system.

- (1) **Insert the CD (ExpressCluster CD) into a CD drive.**
- (2) **Mount the CD.**

```
# mount /dev/cdrom
```

- (3) **Move to the following directory:**

```
# cd /mnt/cdrom/Linux/3.0/en/option
```

- (4) **Install the File Server Agent by using the rpm command.**

For Linux IA32

```
# rpm -i --nodeps expresscls-fsmon-3.0-2.i386.rpm
```

For Linux x86\_64

```
# rpm -i --nodeps expresscls-fsmon-3.0-2.x86_64.rpm
```

For Linux IA64

```
# rpm -i --nodeps expresscls-fsmon-3.0-2.ia64.rpm
```

\*You need to check the rpm file name since it may vary depending on the version of the Agent, etc.

After installing the Agent, register the license for the File Server Agent. Register the license by following the procedure in 3 “License Registration”.

Supplement) The command description may vary depending on the types of Linux.

Note) If you set up File Server Agent while monitoring an application using the File Server Agent on the ExpressCluster, processes may fail to finish successfully. When setting up the File Server Agent, either stop the failover group which is monitoring file server, or move to the server in which set up is not performed.

## 1.2 Setting Up Script Templates

Script templates are available for Windows version trekking tool and a Linux version trekking tool. Choose and setup scrip templates according to your requirements.

The latest version of a script templates should come to hand. Please apply with reference to the update procedure document for script templates.

### 1.2.1 Installing Script Templates on Windows

Set up script templates after Windows version trekking tool has been set up. This is because the script templates are installed in a folder having the trekking tool scripts. You cannot install script templates on a terminal where trekking tool is not installed.

When installing the script templates on Windows, log in as a user with administrator's authority.

**(1) Insert the CD (ExpressCluster CD) into a CD drive.**

The Setup Menu window appears automatically. If the window does not automatically start up, execute the menu.exe on the CD drive directly.

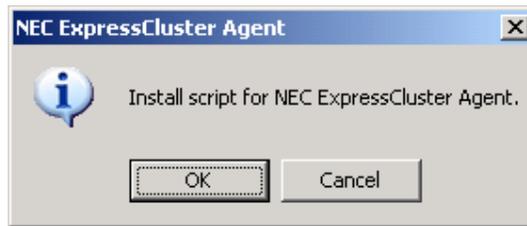


**(2) Click [NEC ExpressCluster for Linux].**



**(3) Click [NEC ExpressCluster Template Scripts for Agent].**

The setup message appears. Click [OK] to install.



Supplement) SETUP.EXE for script installation automatically searches the folder of trekking tool and then performs installation. Specify the folder name directly if the search cannot be executed correctly or if it takes time. Specify the following folder name when you specify a folder name.

Example: When the trekking tool is installed in C:\Program Files\NEC\clptrek (clptrek.htmlb is in the C:\Program Files\NEC\clptrek folder)

A:\SETUP.EXE "C:\Program Files"

When specifying the folder name where the script templates are to be installed

```
>CD Q:  
>CD \Linux\3.0\en\script\win  
>\SETUP.EXE [installation_folder_of_the_trekking_tool]
```

\*Check the underlined CD drive name by using Windows Explorer, etc. since the name may vary depending on the environment of terminals.

## 1.2.2 Installing Script Templates on Linux System

Set up script templates after Linux version trekking tool has been set up. The script templates will be installed in the directory where the trekking tool scripts exist.

When installing the script templates on Linux, log in as a root user and follow the steps below.

- (1) Insert the CD (ExpressCluster CD) into a CD drive.
- (2) Mount the CD.

```
# mount /dev/cdrom
```

- (3) Move to the following directory:

```
# cd /mnt/cdrom/Linux/3.0/en/script/Linux
```

- (4) Install the script templates using the rpm command.

For Linux IA32

```
# rpm -i expresscls-monscript-3.0-1.i386.rpm
```

For Linux x86\_64

```
# rpm -i expresscls-monscript-3.0-1.x86_64.rpm
```

(\*) The rpm file name may vary depending on the version of the Agent.

The script templates are for all Agents.

Supplement) The command description may vary depending on the type of Linux.

## 2 Uninstalling the File Server Agent

### 2.1 Uninstalling the Monitoring Module

When uninstalling a monitoring module, run the following command as a root user.

```
# rpm -e expresscls-fsmon
```

Note) If you uninstall the File Server Agent while monitoring an application using the File Server Agent on the ExpressCluster, processes may fail to finish successfully. When uninstalling the File Server Agent, either stop the failover group that is performing file server monitoring, or move to the server in which uninstallation is not performed.

When uninstalling the ExpressCluster, the File Server Agent will be uninstalled as well but the rpm module information will be left as is. Therefore, it is necessary to forcefully delete the package using the rpm command.

Example: rpm -e --force expresscls-fsmon

## 2.2 Uninstalling Script Templates

### 2.2.1 Uninstalling the Script Templates for Windows

To uninstall script templates, run the following command as a user with administrator's authority.

```
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\db2v8"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\db2v8-mon"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\http"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\http-mon"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\mysql"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\mysql3.23-mon"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\mysql4.0-mon"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\mysql4.1-mon"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\ nfs"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\ nfs-mon"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\oracle9i"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\oracle9i-mon"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\oracle10g"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\oracle10g-mon"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\postgresql"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\postgresql7.2-mon"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\postgresql7.3-mon"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\postgresql8.0-mon"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\powergres1.1"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\powergres1.1-mon"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\samba"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\samba-mon"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\smtp"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\smtp-mon"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\sybase"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\sybase-mon"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\tuxedo8.1"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\tuxedo8.1-mon"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\weblogic8.1"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\weblogic8.1-mon"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\websphere6.0"
>RMDIR /S "C:\Program Files\NEC\clptrek\scripts\linux\websphere6.0-mon"
```

(\*) Check the folder name, etc. since the underlined file name may vary depending on the terminal environment.

## 2.2.2 Uninstalling the Script Templates for Linux

To uninstall script templates, run the following command as a root user.

```
# rpm -e expresscls-monscript
```

Uninstalling the Linux Trekking Tool also uninstalls the script templates (for Linux TrekkingTool), however, rpm module information is not removed. Therefore, you have to remove the package forcibly with rpm command before reinstalling it.

i.e. rpm -e --force expresscls-monscript

## 3 License Registration

To use this product, register the license after installing the monitoring module.  
To register the license, log in as a root user from the server which has the monitoring module installed. You have to register a unique license for each server.  
Register the license by the following steps below.  
License registration is not required for script templates.

**Note 1:**

Depending on your ExpressCluster version, you may not be able to register the license properly. In such a case, you have to update your ExpressCluster.

**Note 2:**

You have to register a unique File Server Agent license key for each server in a cluster. Otherwise, license keys collide in a cluster, consequently, a license error occurs at the File Server Agent startup. See "8 Alert Messages" for details of logged messages.

### 3.1 Interactive License Registration

(1) Run the following command on a server.

```
# cplcncs -i -p FSMON30
```

(2) Enter 1 for the product division.

```
Selection of product division
 1. Product
 2. Trial
Select product division [1 or 2]...1
```

(3) Enter the product serial number.

```
Enter serial number [Ex. XX000000]... xxnnnnnn
```

Specify the number indicated on the license sheet as the serial number.

(4) Enter the product license key.

```
Enter license key
[Ex. XXXXXXXX-XXXXXXXX-XXXXXXXX-XXXXXXXX]...
XXXXXXXX-XXXXXXXX-XXXXXXXX-XXXXXXXX
```

Specify the number indicated on the license sheet as the license key. Enter the license sheet information exactly as indicated because the license key is case sensitive. Note that no "l"s and "O"s in upper case are used in the license key.

After running the command, check that the message “command was success” is indicated and the command is successfully completed. For the other ending messages, refer to a separate ExpressCluster configuration and installation guide, “*Commands.*”

## 3.2 License Registration By Specifying A License File

(1) Run the following command on a server.

```
# clplcncs -i filepath -p FSMON30
```

Specify the path to the distributed license file in the file path of `-i` option.

You can see on the console a message, "command was success." when the command is completed if the registration is successful. See ExpressCluster Construction Guide, "Commands" for details of other completion messages.

A license file may come with the trial version only.

## 4 Using File Server Agent

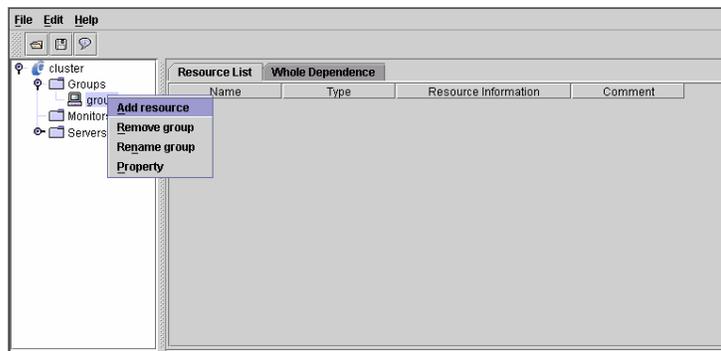
This section briefly explains how to use the File Server Agent. For the details, refer to “Part II Details” as necessary.

### 4.1 Setting Monitoring Commands

The description here assumes a file server is already constructed.

To monitor a file server, add an EXEC resource for monitoring to a failover group which starts up and stops the file server. Use trekking tool to add a resource.

Adding an EXEC Resource



Write scripts to start and stop the monitoring command in an EXEC resource. The following is an example of Samba monitoring commands.

start.sh

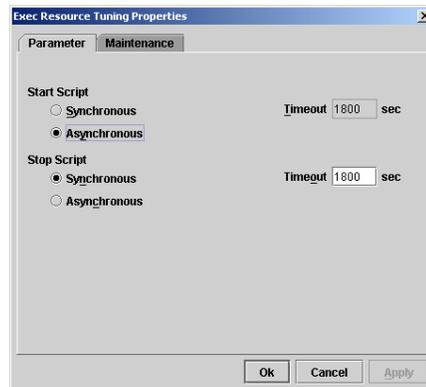
```
clp_sambamon sambawatch -s xxxx
```

stop.sh

```
clp_sambamon sambawatch --stop
```

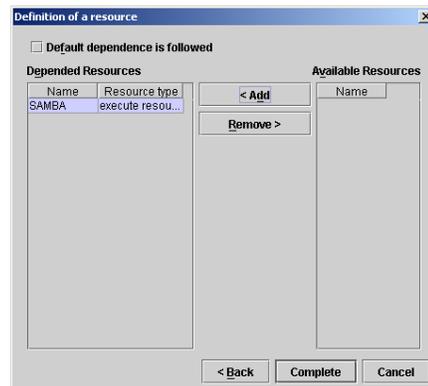
Configure the EXEC resource by choosing "Asynchronous" for start up script and leaving the stop script as "Synchronous."

### EXEC Resource Setting



Establish dependency with the EXEC resource of start-up and deactivation of the file server system.

### Dependency Set Up

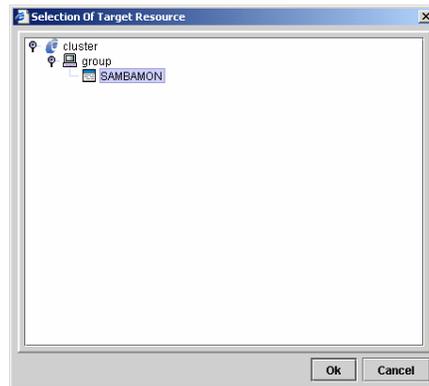


Due to the settings you made, the monitoring command starts up after the file server system starts up, and starts monitoring.

## 4.2 Setting PID Monitoring

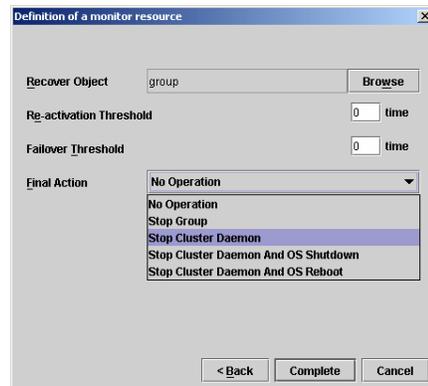
Set up the monitor resource for the EXEC resource which starts up monitoring commands. A monitoring command terminates its process when an error is detected in the file server. Therefore, it is possible to detect an error in the file server by looking at the termination of the monitoring command process through PID monitoring of a monitor resource.

Setting an EXEC Resource for monitoring command in monitoring PID



Configure how ExpressCluster behaves when an error is detected in the file server by the PID monitoring resource. Generally set "0" for "Failover Threshold" and "Stop Cluster Daemon" for "Final Action."

Setting action to be taken when an error is detected



With the settings above, you can start monitoring a file server by using monitoring commands.

# Part II Details

## 5 File Server Monitoring

### 5.1 Monitoring Application

The ExpressCluster File Server Agent monitors file server working under the ExpressCluster environment. The following chart shows the version of the ExpressCluster File Server Agent and file server application that can be monitored.

File Server	R3.0-2
Samba	+
NFS	+

+:Supported -:Not supported

To monitor file servers, monitoring commands for each file server are provided. Refer to "7 File Server Monitoring Commands" for the detailed information of commands.

## 5.2 Overview of Monitoring

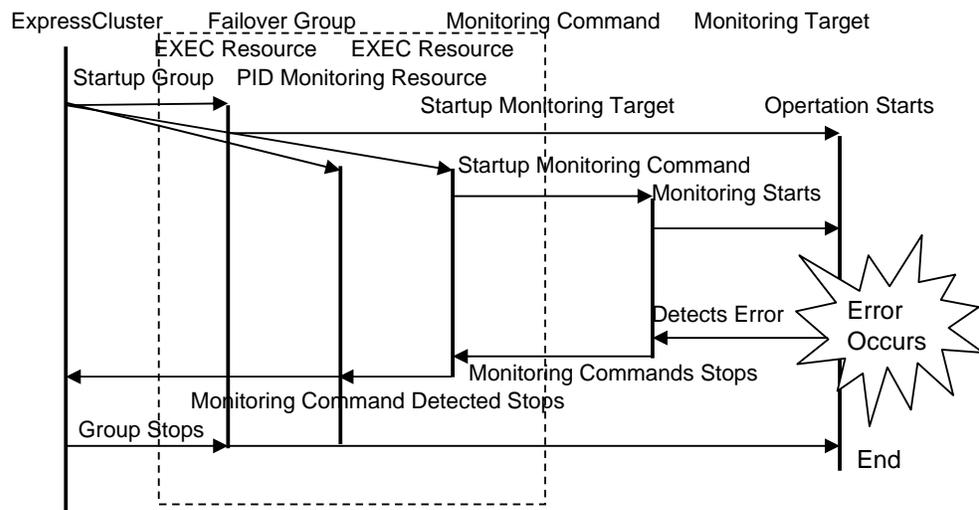
The ExpressCluster File Server Agent offers commands described in a script to monitor the operation of the file server.

If you run these monitoring commands, monitoring is performed with the intervals specified by the parameter until a file server error is detected. These commands stop when a file server error is detected.

You use these commands by writing them in a script of an EXEC resource for an ExpressCluster failover group.

Since these commands stop when a file server error is detected, you can achieve failover or server shutdown by configuring the EXEC resource.

### Overview of Monitoring Operation



A failover group will stop by failover and server shutdown, etc., by PID monitoring resource which detected an error of the EXEC resource which starts the monitoring command.

### [Important]

- (1) These commands can detect an error which does not cause the monitoring target to end abnormally (mainly stalling). Although it cannot detect an abnormal ending of a target application to be monitored, through monitoring operation against the monitoring target (such as connection process), errors can be detected indirectly.
- (2) The purpose of using these commands is to monitor the operation of a target application to be monitored, but not to investigate or diagnose the cause when an error occurs on the application. When an error occurs, you need to use other means, such as application logs, to see details of its cause.

- (3) Whenever it performs monitor processing depending on the application for monitoring, an access log may be outputted to syslog etc., or a log may be outputted to the local directory of the application for monitoring. About these setup, since it is uncontrollable by this monitoring command, please set up suitably with the application for monitoring. However, when not outputting the log of the application for monitoring, the log at the time of obstacle generating is not outputted, either, but cause investigation may become difficult.
- (4) Use a stop command to stop these monitoring commands. If a process was stopped by using the kill command of Linux, the monitoring command may not be restarted since the monitoring command management information will not be initialized.
- (5) Since these monitoring commands run as a client application of an file server, configuration to run client application on a server is necessary. Refer to the manuals for each file server for the details.

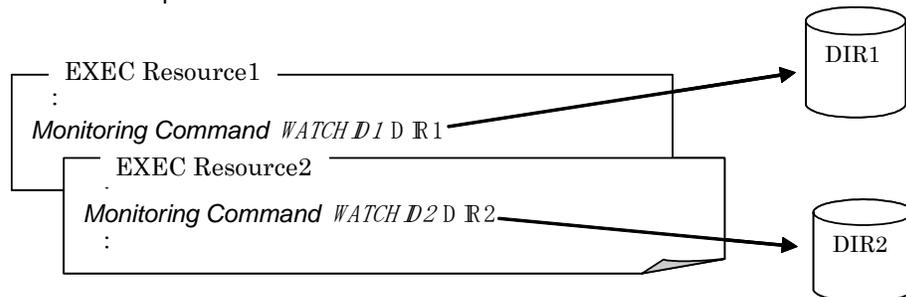
## 5.3 Writing Scripts to an EXEC Resource

When you write a script on an EXEC resource, the following must be noted.

- Before creating an EXEC resource in which you will write start/end of the Agent, complete the EXEC resource in which start/end of a monitoring target application is written. Then, check if a failover group successfully starts, stops, moves, and fails over. If you create an EXEC resource where the start and end of the Agent are written without checking these issues, it would be difficult to determine the cause when an error was detected in the startup of a failover group by the Agent; If the error really occurred, the environment of the monitoring target application was not correctly set up, or a parameter value of the Agent is not appropriate.
- Configure the dependency relationship of resources so that the EXEC resource for start/stop of the Agent starts up after the EXEC resource in which start/end of an application to be monitored is written starts up. If you make incorrect settings, the Agent may consider the monitoring target application as an error.

These monitoring commands can also be written to monitor multiple file servers in one failover group.

Example:  
Failover Group A



See "10 Script Templates" for scripting examples.

## 5.4 Operation Check

Check on the Web Manager screen to see the failover group is correctly operating by following the steps below.

### 5.4.1 Checking Behavior of Target Application to Be Monitored

Before adding an EXEC resource for monitoring commands, check that a target application to be monitored is operating normally by following the steps below.

#### 5.4.1.1 Start up a Group

Start up a selected failover group.  
After selecting the failover group which you wish to start on the tree view on the main screen, display a menu by right clicking, and then select [Start].

#### 5.4.1.2 Stop a Group

Stop the selected failover group.  
After selecting the failover group which you wish to stop on the tree view on the main screen, display a menu by right clicking, and then select [Stop].

Check the group starts up and stops on all servers that start up a failover group.

#### 5.4.1.3 Move a Group

Move a failover group among servers.  
Start a group and move it to other servers consecutively.  
After selecting the failover group which you wish to move on the tree view on the main screen, display a menu by right clicking, and then select [Move].

**Depending on the script, it may take a few minutes to complete moving. See the tree view on the main screen to check completion of moving.**

#### 5.4.1.4 Failover a Group

Perform failover.  
Start up a group and shut down its server. Check that the failover group has failed over to its failover destination server.  
After selecting a server which you wish to shut down on the tree view on the main screen, display a menu by right clicking, and then select [reboot].

## 5.4.2 Checking Monitoring Command Operation

After making sure that the target application to be monitored operates normally, add an EXEC resource to start up the monitoring commands and a monitor resource which monitors the EXEC resource for starting up monitoring commands. After updating a failover group, check that monitoring commands are running normally by performing the following as the way you checked behavior of a target application to be monitored.

### 5.4.2.1 Start Up a Group

Start up a selected failover group.

After selecting a failover group, which you wish to start up, on the tree view on the main screen, display a menu by right clicking and then select [start].

If a monitoring command displays an error message in the ExpressCluster manager when the group is started, a parameter value of the monitoring command may not be appropriate. If the error message is displayed on a particular server, there may be an error in the environment settings of the target application to be monitored.

### 5.4.2.2 Stop a Group

Stop a selected failover group.

After selecting a failover group which you wish to deactivate on the tree view on the main screen, display a menu by right clicking and then select [Stop].

Check the group starts up and stops on all servers that start up a failover group.

### 5.4.2.3 Move a Group

Move a failover group among servers.

Start a group and move it to other servers consecutively.

After selecting a failover group which you wish to migrate on the tree view on the main screen, display a menu by right clicking and then select [Move].

### 5.4.2.4 Failover a Group

Perform failover.

Start up a group and shut down its server. Check that the failover group has failed over to its failover destination server.

After selecting a server, which you wish to shut down on the tree view on the main screen, display a menu by right clicking and select [Reboot].

**[CAUTION]**

Monitoring may not be performed normally depending on the system environment if you invoke the monitoring command with an extremely small value (e.g. 1) specified to the parameters of monitoring interval and response time. Run sufficient operational check before performing these operations.

## 6 Information Provided by Monitoring Commands

Monitoring commands display a monitoring status on the alert view of the ExpressCluster Web Manager.

### 6.1 Alert Messages

The screenshot displays the ExpressCluster Web Manager interface. On the left, a tree view shows the cluster structure: cluster > servers > server1 > lanhb1 > server2 > groups > samba > samba > samba-mon > flp > monitors > pidw. The main area shows the 'Group Name: Oracle' configuration for the 'samba' group. It includes a 'Property' table with 'Name: samba' and 'Status: Online'. Below this is a 'Group On Server Status' table showing 'server1' and 'server2' both as 'Online'. A 'Resource Status' table shows 'samba', 'samba-mon', and 'flp' all as 'Online'. At the bottom, an alert log table is visible with columns: Receive Time, Time, Server Name, Module Name, Event ID, and Message. An arrow points from the 'Message' column of the log to the 'samba' resource in the 'Resource Status' table above.

Receive Time	Time	Server Name	Module Name	Event ID	Message
2004/03/31 14:28:01	2004/03/31 14:28:00	server1	sambamon	2	The clp_sambamon is going to watch share resource [samba1].
2004/03/31 14:26:58	2004/03/31 14:26:58	server1	sambamon	1	The clp_sambamon has started watching Samba.
2004/03/31 14:26:36	2004/03/31 14:26:35	server1	rm	1	Monitor pidw start.
2004/03/31 14:26:36	2004/03/31 14:26:35	server1	rc	11	The start processing of a group samba ended.
2004/03/31 14:25:34	2004/03/31 14:25:33	server1	rc	10	The start processing of a group samba started.

Displayed on an alert view of the Manager.

A single line in a message is up to 400 bytes. If information to be shown in a message is longer than 400 bytes, the message will be displayed in two or more lines. Other message may interrupt a message shown in multiple lines depending on timing. The same information as shown in the alert message is output to the syslog.

See “8 Alert Messages” for the alert message details.

### 6.2 Log Collection in Case of an Error

Error logs of monitoring commands will be produced in the same folder where error logs of the ExpressCluster server are produced. Logs are collected in the same way as ExpressCluster logs are collected. For more information, see “ExpressCluster for Linux Ver3.0 Web Manager” and “ExpressCluster for Linux Ver3.0 Commands”.

# 7 File Server Monitoring Commands

## 7.1 List of File Server Monitoring Commands

The File Server Agent provides file server monitoring commands to be written in script.

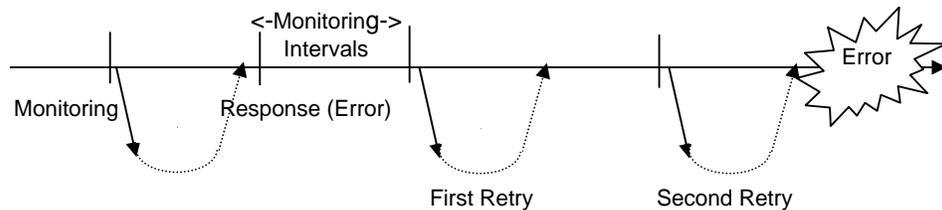
Command	Used to	See page
clp_sambamon	Monitors Samba	29
clp_nfsmon	Monitors NFS	33

[Important]

- (1) These commands should be run by a root user. If a file server monitoring command is run by a user other than a root user, acquiring license and other process may fail. Therefore, the command fails to be run.
- (2) When running these commands, /usr/sbin must be added to a path. Typically /usr/sbin is added to a path.

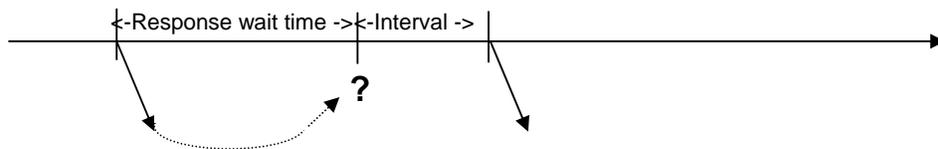
## 7.2 Monitoring Chart

File Server Agent detects an error by the following timing.



\*In this case, the retry count is 2 times.

If no response is returned within a time you defined, it will be regarded as an error and retry will be made.



## 7.3 Interrupting and Resuming Monitoring

You can interrupt/resume monitoring by the File Server Agent using the following method. While monitoring is suspended, you can perform file server maintenance.

- (1) Start up the monitoring command to start monitoring.
- (2) To suspend monitoring, run the following command from a server console whenever you wish to suspend.  
"Monitoring Command **watchid** --pause"
- (3) The following message is displayed on ExpressCluster Web Manager to indicate that monitoring has been suspended.  
"The xxxx is going to stop monitoring. [ID:**watchid**]"
- (4) To resume monitoring, run the following command from the server console whenever you wish to resume.  
"Monitoring Command **watchid** --continue"
- (5) The following message is displayed on ExpressCluster Manager to indicate that monitoring was resumed.  
"The xxxx is going to monitor. [ID:**watchid**]"

## 7.4 Command Syntax

This section provides information on command functions. Note the following to understand functions of commands.

- Command line
  - \* Gives an idea what the user actually enters.
  - + [ ] indicates that the enclosed parameter may be skipped.
  - + | indicates one of parameters separated by this symbol should be chosen.
- Description
  - \* Gives information what is performed.
- Parameter
  - \* Explanation about parameters shown in the command line.
- Supplementary information
  - Gives supplementary information such as details on parameter settings
- Monitoring method
  - \* An explanation on how to monitor
- Note
  - Gives information on what should be noted when using the command.
- Command usage example
  - An example of scripting when using the command

<b>clp_sambamon</b>	Monitors Samba.
---------------------	-----------------

Command line

Start Monitoring

clp\_sambamon *Identifier* -s *Shared Name* [-a *IP Address*]  
 [-u *User Name*] [-p *Password*]  
 [-i *Monitoring Interval*] [-c *Retry count*] [-r *Response Wait Time*]

Stop Monitoring

clp\_sambamon *Identifier* --stop [*Stop Wait Time*]

Interrupt

Monitoring *Identifier* --pause

clp\_sambamon

Resume

Monitoring *Identifier* --continue

clp\_sambamon

Display

Information *Identifier* --disp

clp\_sambamon

Delete

Information *Identifier* --del

clp\_sambamon

Description

Monitors Samaba per shared name by specifying a shared name. When a Samba error is detected, this command terminates.  
 The command also stops, interrupts and resumes monitoring. Use a root privileged console to specify --pause/--continue/--disp/--del.

Option

- Identifier* Specifies an identifier to uniquely identify the monitoring command. You must set an identifier.
- s *Shared name* Specifies the shared name of the Samba server to be monitored. You must configure this option.
- a *IP address* Specifies the IP address of a Samba server. Default value: 127.0.0.1
- u *User name* Specifies a user name to log in the Samba services. No default value.
- p *Password* Specifies a password to log in the Samba services. No default value.
- i *Monitoring Interval* Specifies a Samba monitoring interval time in seconds between 1 and 10000.

Default value: 30

*-c Retry count* Specifies a count of retries after an error is detected in Samba monitoring between 1 and 10000.  
Default value: 5

*-r Response Wait Time* Specifies a response wait time in Samba monitoring in seconds between 1 and 10000.  
Default value: 60

*--stop* Stops the monitoring command

*Stop Wait Time* Specifies time to wait for the monitoring command to stop normally (between 1 and 10000) .  
Default value: 60

*--pause* Temporary interrupts monitoring.  
*--continue* Resumes monitoring.

*--disp* Displays a process ID (pid) of the monitoring command identifier managed by the monitoring command.  
Do not use this in ordinary use. (See note 5).

*--del* Deletes information about the monitoring command identifier managed by the monitoring command.  
Do not use this in ordinary use. (See note 5).

#### Remarks

##### About identifier

You need to specify an identifier that is unique on the system to control the monitoring command. You cannot use an identifier that is already used by a monitoring command for another monitoring command. Specify an identifier using alphanumeric characters. An identifier should be up to 255 bytes. An identifier is case sensitive.

An identifier must be written as the first parameter of a monitoring command.

##### -s parameter

For the *-s* parameter, specify the shared name you have configured in the smb.conf file.

##### -a parameter

If you are using a floating IP to use Samba, you can use the *-a* parameter to specify the IP address explicitly.

##### -u and -p parameters

Make sure to specify these parameters if Samba is configured to disable guest connections.

-s,-a,-u, and -p parameters

The maximum length of the character string for these parameters is 255 bytes. Actual significant length varies according to each parameter and this monitoring command is not responsible for checking significant length. Significant length is determined by the Samba specifications.

Monitoring method

This monitoring command monitors the following:

By connecting to the Samba server and checking establishment of tree connection for the Samba server resources, the command determines the following results as an error.

(1) No response to the Samba service request within a response wait time

(2) Abnormal response to the Samba service request

When abnormal state continues for the number of defined retry counts, Samba is regarded to be in error.

Note 1

If you do not see the message “The clp\_sambamon is going to watch share resource [xxx]. [ID:**watchid**]” after the message “The clp\_sambamon has started watching Samba [ID:**watchid**]” has appeared in the ExpressCluster Web Manger’s alert view when starting up the failover group to operate this monitoring command, a value in the parameter and the Samba environment may not be matched. Check the environment.

Note 2

Configure smb.conf for a share name for monitoring so that the local server can make access. Enable guest connection when the security parameter of the smb.conf file is share or when you are using Samba3.0.

In confirming guest connection, please do not specify -u parameter and -u parameter to be clp\_sambamon.

Note 3

No monitoring is performed for Samba functions except for file sharing and printer sharing.

Note 4

If you run smbmount on the monitoring server, mounting may be performed by the user name specified by the -u parameter in ,clp\_sambamon when Samba authentication mode is either Domain or Server.

Note 5

Management information is not initialized properly when the monitoring command process is stopped by the kill command during monitoring. Because of this, a monitoring command with the same identifier may fail to start. If this happens, run the “clp\_sambamon identifier --disp” command and you will see the process ID corresponding to the specified identifier. Use the ps command to check the executable file of the process ID and if the process is other than monitoring command, remove management information by using the “clp\_sambamon identifier --del” command.

Never run the “clp\_sambamon identifier --del” command by specifying a command that is running normally; otherwise a monitoring command malfunctions.

Example of  
Command  
Usage

```
[start.sh]  
clp_sambamon sambawatch -s share name  
[stop.sh]  
clp_sambamon sambawatch --stop
```

This monitoring command is started up from an EXEC resource. Typically you only need the `-s` parameter for a command to start monitoring `start.sh` unless user authentication is required.

<b>clp_nfsmon</b>	Monitors NFS.
-------------------	---------------

Command line

Start Monitoring

clp\_nfsmon *Identifier* -d *Directory* [-a *IP Address*] [-n *Port Number*]  
[-i *Monitoring Interval*] [-c *Retry Count*] [-r *Response Wait Time*]

Stop Monitoring

clp\_nfsmon *Identifier* --stop [*Stop Wait Time*]

Interrupt

Monitoring *Identifier* --pause

clp\_nfsmon

Resume

Monitoring *Identifier* --continue

clp\_nfsmon

Display

Information *Identifier* --disp

clp\_nfsmon

Delete

Information *Identifier* --del

clp\_nfsmon

Description

Monitors NFS per directory by specifying a directory. When an NFS error is detected, this command stops.

Option

- Identifier* Specifies an identifier to uniquely identify the monitoring command. You must set an identifier.
- d *directory* Specifies a directory for file sharing. You must configure this option.
- a *IP address* Specifies the IP address of a server for NFS monitoring. Default value: one of addresses configured in the server.
- n *port number* Specifies the port number of the NFS server. No default value (automatically acquired from portmapper)
- i *Monitoring Interval* Specifies a NFS monitoring time interval in seconds between 1 and 10000. Default value: 30
- c *Retry count* Specifies a count of retries after an error is detected in NFS monitoring between 1 and 10000. Default value: 5
- r *Response Wait Time* Specifies a response wait time in NFS monitoring in seconds between 1 and 10000.

	Default value: 60
--stop	Stops the monitoring command
<i>Stop Wait Time</i>	Specifies time to wait for the monitoring command to stop normally (between 1 and 10000) . Default value: 60
--pause	Temporary interrupts monitoring.
--continue	Resumes monitoring.
--disp	Displays a process ID (pid) of the monitoring command identifier managed by the monitoring command. Do not use this in ordinary use. (See note 3).
--del	Deletes information about the monitoring command identifier managed by the monitoring command. Do not use this in ordinary use. (See note 3).

#### Remarks

##### About identifier

You need to specify an identifier that is unique on the system to control the monitoring command. You cannot use an identifier that is already used by a monitoring command for another monitoring command. Specify an identifier using alphanumeric characters. An identifier should be up to 255 bytes. An identifier is case sensitive.

An identifier must be written as the first parameter of a monitoring command.

##### -d parameter

For the `-d` parameter, specify the directory configured by the exports file. Note that if there is any double-byte character included, it will be garbled when shown in a directory name appearing on the ExpressCluster Web Manager's alert view.

##### -a parameter

If you are using a floating IP to use NFS, you can use the `-a` parameter to specify the IP address explicitly.

##### -n parameter

Specify this parameter if you want to use any port number other than 2049, which is fixed for NFS use.

##### -d,-a, and -k parameters

The maximum length of the character string for these parameters is 255 bytes. Actual significant length varies according to each parameter and this monitoring command is not responsible for checking significant length. Significant length is determined by the NFS specifications.

Monitoring method	<p>This monitoring command monitors the following:  Executes the NFS test command by connecting to the NFS server.</p> <p>The following results are regarded as an error.</p> <p>(1) No response to the NFS service request within a response wait time</p> <p>(2) Abnormal response to the NFS service request</p> <p>When abnormal state continues for the number of defined retry counts, NFS is regarded to be in abnormal status.</p>
Note 1	<p>If you do not see the message “The clp_nfsmon is going to watch shared directory 'xxx'. [ID:<b>watchid</b>]” after the message “The clp_nfsmon has started watching NFS. [ID:<b>watchid</b>]” has appeared in the ExpressCluster Web Manger’s alert view when starting up the failover group to operate this monitoring command, a value in the parameter and the NFS environment may not be matched. Check to see the environment.</p>
Note 2	<p>Configure the exports file for a shared directory to be monitored so that local server can make access.</p>
Note 3	<p>Management information is not initialized properly when the monitoring command process is stopped by the kill command during monitoring. Because of this, a monitoring command with the same identifier may fail to start. If this happens, run the “clp_nfsmon identifier --disp” command and you will see the process ID corresponding to the specified identifier. Use the ps command to check the executable file of the process ID and if the process is other than monitoring command, remove management information by using the “clp_nfsmon identifier --del”command.</p> <p>Never run the “clp_nfsmon identifier --del” command by specifying a command that is running normally; otherwise a monitoring command malfcuntions.</p>
Example of Command Usage	<pre>[start.sh] clp_nfsmon nfswatch -d <i>directory</i> [stop.sh] clp_nfsmon nfswatch --stop</pre> <p>This monitoring command is started up from an EXEC resource. Typically you only need the -d parameter for a command to start monitoring start.sh.</p>

## 8 Alert Messages

### 8.1 Messages produced by clp\_sambamon

#### 8.1.1 Messages Indicating Normal Operation

ID	Message	Explanation	Supplement
1	The clp_sambamon has started watching Samba. [ID:xx]	clp_sambamon has been started.	-
2	The clp_sambamon is going to watch share resource [xxx]. [ID:xx]	clp_sambamon has started to monitor the directory xxx.	If you do not see this message right after the message in the previous column, there may be a trouble. If so, an error message may be displayed after a while. Take actions according to the error message.
3	The clp_sambamon will stop watching Samba [xxx]. [ID:xx]	clp_sambamon will be stopped.	-
7	The clp_sambamon is going to stop monitoring. [ID:xx]	clp_sambamon monitoring is suspended.	When monitoring is suspended by <code>-pause</code> , this message appears.
8	The clp_sambamon is going to monitor. [ID:xx]	clp_sambamon monitoring has been resumed.	When monitoring is resumed by <code>-continue</code> , this message appears.
52	Trial Period of clp_sambamon is till nn/nn/nn (mm/dd/yyyy).	Trial version license is running.	-

#### 8.1.2 Messages Due to Setting Error

ID	Message	Explanation	Supplement
11	Invalid parameter in the clp_sambamon. [ID:xx]	A parameter value in clp_sambamon is invalid format.	Check to see the parameter value of the monitoring command.
12	'-s' parameter is not specified at the clp_sambamon command. [ID:xx]	The -s parameter is not specified in clp_sambamon.	Check the parameter of the monitoring command.
13	The monitor id is not specified at the clp_sambamon command.	No identifier is specified in clp_sambamon.	Check the parameter of the monitoring command.
14	The specified monitor id is already under use in other processes. [ID:xx]	Because the same identifier has been already executed, clp_sambamon cannot be started.	Check the parameter of the monitoring command.
15	The clp_sambamon has not performed end processing. [ID:xx]	Stopping by the <code>-stop</code> parameter has failed.	Check the parameter of the monitoring command.

ID	Message	Explanation	Supplement
51	The license of clp_sambamon is not registered.	The license is not registered.	Register the license.
53	The license of trial expired by nn/nn/nn (mm/dd/yyyy).	The license of the trial version has expired.	-
55	The license of trial is valid from nn/nn/nn (mm/dd/yyyy).	The start day of the trial license is yet to come.	-
56	The registration license overlaps.	The license key you have registered overlaps with other key.	Use a different key in each server.
62	The clp_sambamon has detected an error in Samba [xxx] (tree connect error[nn]). [ID:xx]	Connecting to Samba shared resource has failed. The error code is an error code for CIFS's SMB_COM_NEGOTIATE. Typically it is 67.	The share name or user name may be incorrect. Check the parameter and Samba environment.
64	The clp_sambamon has detected an error in Samba [xxx] (connect error[nn]). [ID:xx]	Connecting to Samba has failed.	Check to see the Samba environment as there may be no permission to access Samba.
72	The clp_sambamon has detected network error(connect error[nn]). [ID:xx]	Connecting to the Samba server has failed. The error code is an error number of socket system call.	Check the parameter and Samba environment because the IP address may be invalid or Samba service may have stopped.

### 8.1.3 Messages Produced when an Error is Detected in File Server Monitoring

ID	Message	Explanation	Supplement
6	The clp_sambamon will terminate. [ID:xx]	The command has found an error and will stop.	Take actions according to the message shown right before this message.
62	The clp_sambamon has detected an error in Samba [xxx] (tree connect error[nn]). [ID:xx]	Connecting to Samba shared resource has failed. The error code is an error code for CIFS's SMB_COM_SESSION_SETUP_ANDX.	Take actions according to the error code.
63	The clp_sambamon has detected an error in Samba [xxx] (share type error). [ID:xx]	There is an error in Samba shared resource type.	Check the share name specified in the parameter and the Samba environment, and then restart Samba.
64	The clp_sambamon has detected an error in Samba [xxx] (connect error[nn]). [ID:xx]	Connecting to Samba has failed.	Take actions according to the error code.
65	The clp_sambamon has detected an error in Samba [xxx] (negotiate error[nn]). [ID:xx]	Negotiation of the SMB protocol has failed. The error code is an error code for CIFS's SMB_COM_NEGOTIATE.	Take actions according to the error code.

ID	Message	Explanation	Supplement
72	The clp_sambamon has detected network error(connect error[nn]). [ID:xx]	An error was detected in connecting to the Samba server. The error code is an error number of socket system call.	Take actions according to the error code.
73	The clp_sambamon has detected network error(send error[nn]). [ID:xx]	An error was detected in sending data to the Samba server. The error code is an error number of socket system call.	Take actions according to the error code.
74	The clp_sambamon has detected network error(select error[nn]). [ID:xx]	An error was detected while waiting for response from the Samba server. The error code is an error number of socket system call.	Take actions according to the error code.
75	The clp_sambamon has detected network error(recv error[nn]). [ID:xx]	An error was detected in receiving data from the Samba server. The error code is an error number of socket system call.	Take actions according to the error code.

### 8.1.4 Messages Due to a System Error

ID	Message	Explanation	Supplement
42	The clp_sambamon has detected system error (xxx nn). [ID:xx]	A Linux system error has occurred. xxx is a function name, and nn is an error code.	Check the system status according to the error code.
54	Failed to check license of the clp_sambamon.	Acquiring license information has failed.	The license management module of ExpressCluster may be old. Check if there has been any module update.
61	The clp_sambamon could not get environment of server(error[nn]). The clp_sambamon will terminate. [ID:xx]	Acquiring a server name has failed. The error code is an error number of socket system call.	Take actions according to the error code.
71	The clp_sambamon has detected network error(socket error[nn]). [ID:xx]	Creating a socket has failed. The error code is an error number of socket system call.	Take actions according to the error code.

## 8.2 Messages produced by clp\_nfsmon

### 8.2.1 Messages Indicating Normal Operation

ID	Message	Explanation	Supplement
1	The clp_nfsmon has started watching NFS. [ID:xx]	clp_nfsmon has been started.	-
2	The clp_nfsmon is going to watch shared directory 'xxx'. [ID:xx]	clp_nfsmon has started to monitor the directory xxx.	If you do not see this message right after the message in the previous column, there may be a trouble. If so, an error message may be displayed after a while. Take actions according to the error message.
3	The clp_nfsmon will stop watching NFS shared directory 'xxx'. [ID:xx]	clp_nfsmon will be stopped.	-
7	The clp_nfsmon is going to stop monitoring. [ID:xx]	clp_nfsmon monitoring is suspended.	When monitoring is suspended by <code>--pause</code> , this message appears.
8	The clp_nfsmon is going to monitor. [ID:xx]	clp_nfsmon monitoring has been resumed.	When monitoring is resumed by <code>--continue</code> , this message appears.
52	Trial Period of clp_nfsmon is till nn/nn/nn (mm/dd/yyyy).	Trial version license is running.	-

### 8.2.2 Messages Due to Setting Error

ID	Message	Explanation	Supplement
11	Invalid parameter in the clp_nfsmon. [ID:xx]	A parameter value in clp_nfsmon is in invalid format.	Check the parameter of the monitoring command.
12	'-d' parameter is not specified at the clp_nfsmon command. [ID:xx]	The <code>--d</code> parameter is not specified in clp_nfsmon.	Check the parameter of the monitoring command.
13	The monitor id is not specified at the clp_nfsmon command.	No identifier is specified in clp_nfsmon	Check the parameter of the monitoring command.
14	The specified monitor id is already under use in other processes. [ID:xx]	Because the same identifier has been already executed, clp_nfsmon cannot be started.	Check the parameter of the monitoring command.
15	The clp_nfsmon has not performed end processing. [ID:xx]	Stopping by the <code>--stop</code> parameter has failed.	Check the parameter of the monitoring command.
51	The license of clp_nfsmon is not registered.	The license is not registered.	Register the license.
53	The license of trial expired by nn/nn/nn (mm/dd/yyyy).	The license of the trial version has expired.	-
55	The license of trial is valid from nn/nn/nn (mm/dd/yyyy).	The start day of the trial license is yet to come.	-

ID	Message	Explanation	Supplement
56	The registration license overlaps.	The license key you have registered overlaps with other key.	Use a different key in each server.
0	clp_nfsmon: mount error(xxxx)	Mounting the NFS shared directory has failed.	The shared directory name may not be valid. Check the parameter and NFS environment.
0	clp_nfsmon: RPC: Port mapper failure – xxxx	Connecting to NFS has failed.	Check the parameter and NFS environment because the IP address may be invalid or portmap service may have stopped.
0	clp_nfsmon: RPC: Program not registered.	Connecting to the NFS service has failed.	The NFS service may have stopped. Check the NFS environment.
0	clp_nfsmon: RPC: Unable to receive: errno = Connection refused.	The portmap service is not working properly.	The port number specification may be invalid. Check the parameter and NFS environment.

### 8.2.3 Messages Produced when an Error is Detected in File Server Monitoring

ID	Message	Explanation	Supplement
6	The clp_nfsmon will terminate. [ID:xx]	The command has found an error and will stop.	Take actions according to the message shown before this message.
66	The clp_nfsmon has detected an error in NFS. [ID:xx]	The command has found an error and will stop.	Take actions according to the message shown right before this message.
0	clp_nfsmon: xxxxxxxx	This is a message that NFS outputs.	Take actions according to the message shown.

### 8.2.4 Messages Due to a System Error

ID	Message	Explanation	Supplement
42	The clp_nfsmon has detected system error (xxx nn). [ID:xx]	A Linux system error has occurred. xxx is a function name, and nn is an error code.	Take actions according to the error code.
54	Failed to check license of the clp_nfsmon.	Acquiring license information has failed.	The license management module of ExpressCluster may be old. Check if there has been any module update.
61	The clp_nfsmon could not get environment of server(error[nn]). The clp_nfsmon will terminate. [ID:xx]	Acquiring a server name has failed. The error code is an error number of socket system call.	Take actions according to the error code.

## 9 Environment Construction using a Trekking Tool

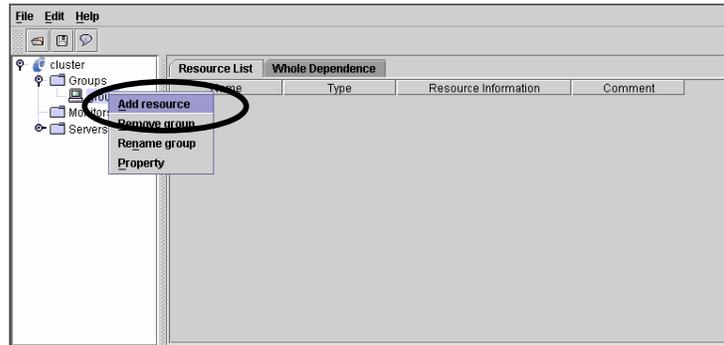
When you create a failover group of an file server by using trekking tool, follow the steps below.

- 1) Add a failover group for the application to be monitored.
- 2) Add a disk resource or an IP resource
- 3) Add an EXEC resource for starting the application to be monitored.
- 4) Make what you have done take effect in the ExpressCluster server and check that the application to be monitored operates successfully. (See “5.4.1 Checking Behavior of Target Application to Be Monitored”)
- 5) Add an EXEC resource for starting the monitoring command.
- 6) Add a monitor resource to monitor an EXEC resource of the monitoring command.
- 7) Make what you have done take effect in the ExpressCluster server and check that the application to be monitored and the monitoring command operate normally. (See “5.4.2 Checking Monitoring Command Operation”)

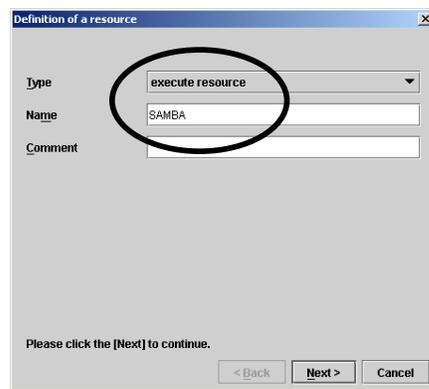
The following provides detailed information of Step 3), 5), and 6).

## 9.1 Adding an EXEC Resource for the Application to be Monitored

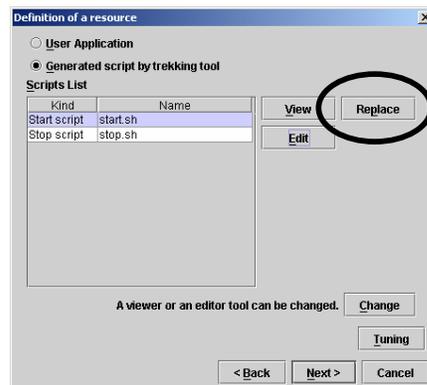
Run trekking tool and perform "Add resource" in the failover group of an application to be monitored.



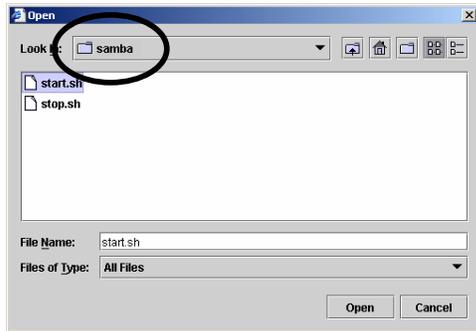
Add an EXEC resource for the monitored application. Select "execute resource" as a resource type.



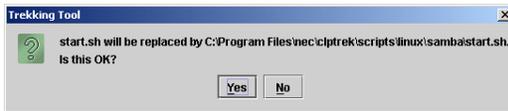
Click the [Replace] button and replace start.sh and stop.sh by script templates of the Agent.



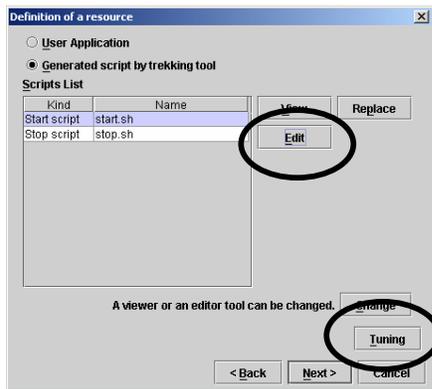
Specify and replace a script of the monitored application. Replace it by a template for monitoring application.



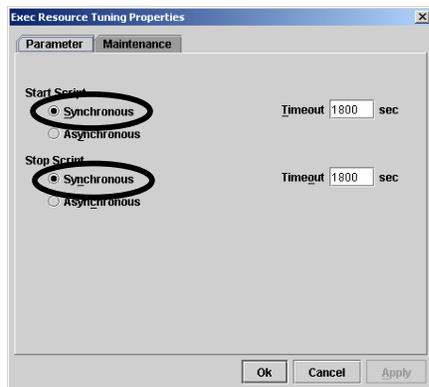
The following dialogue asking for confirmation appears. Check the original file to be replaced and then select "Yes."



If you click the "Edit" button, the editor will open and you can modify the script according to the environment. See "10 Script Templates" for what to be modified.



Click the "Tuning" button and check that both start script and stop script are "Synchronous" (The default value is Synchronous).



Configure items in the following window according to your environment. You do not have to change.

Definition of a resource

Restoration operation when detecting activity failure

Activity Retry Threshold: 0 time

Failover Threshold: 1 time

Final Action: No Operation (Next Resources Are Not Activated)

Restoration operation when detecting deactivity failure

Deactivity Retry Threshold: 0 time

Final Action: Stop Cluster Daemon And OS Shutdown

< Back Next > Cancel

No changes are made in the following window. Check that a disk resource and an IP resource are displayed in the [Depended Resources] box.

Definition of a resource

Default dependence is followed

Depended Resources

Name	Resource type
--	floating ip res...
--	disk resource
--	raw resource
--	VWM disk gro...
--	VWM volume r...
--	nas resource

Available Resources

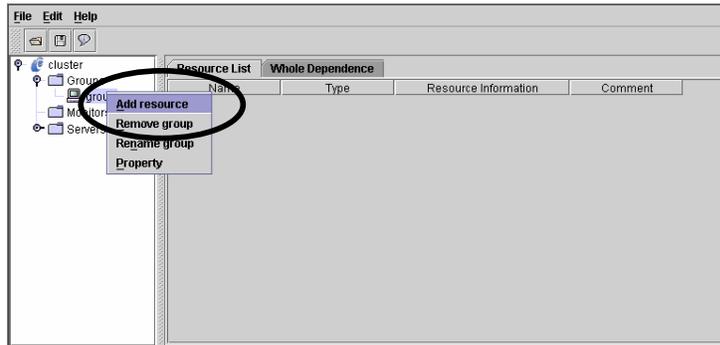
Name
------

< Back Complete Cancel

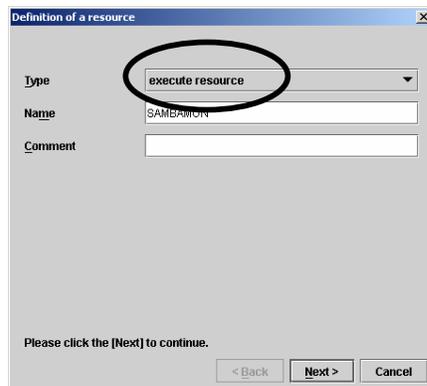
Click on the [Complete] button to create an EXEC resource for the monitored application. When the EXEC resource of the monitored application is added, make it take effect in the ExpressCluster server and check it works successfully.

## 9.2 Adding an EXEC Resource for a Monitoring Command

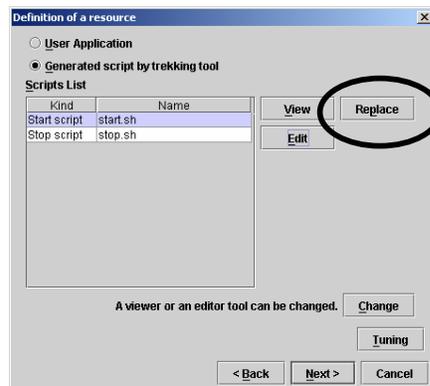
Add an EXEC resource for a monitoring command to a failover group of the monitored application.



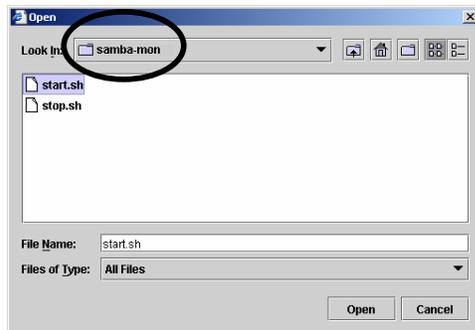
Select "execute resource" as a resource type. Specify a value that is different from the name selected previously for the [Name.]



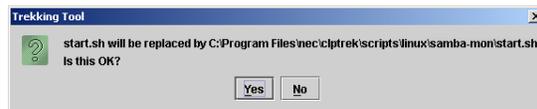
Click the [Replace] button and replace start.sh and stop.sh by script templates of the Agent.



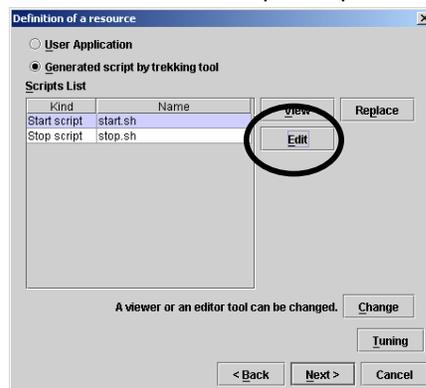
Specify and replace a script for the monitoring command. Replace it by a template for monitoring command.



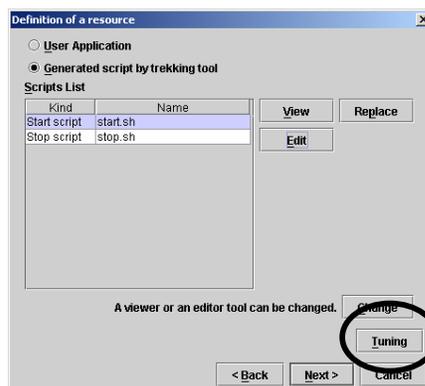
The following dialogue asking for confirmation appears. Check the original file to be replaced and then select "Yes."



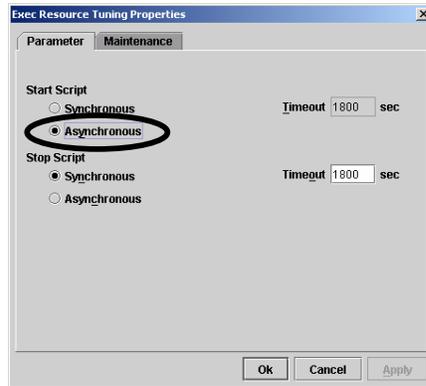
If you click the "Edit" button, the editor will open and you can modify the script according to the environment. See "10 Script Templates" for what to be modified.



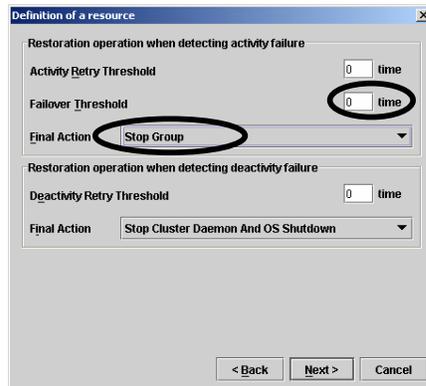
Click the "Tuning" button.



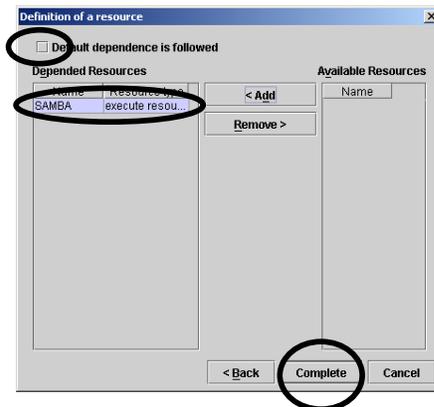
Select [Asynchronous] for the start script.



Set 0 for the [Failover Threshold] of [Restoration operation when detecting activity failure], and "Stop Group" for [Final Action.]



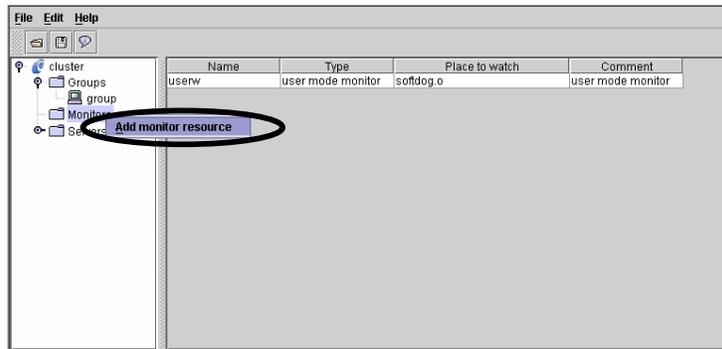
Clear the [Default dependence is followed] check box and add an EXEC resource of the monitored application to the depended resource.



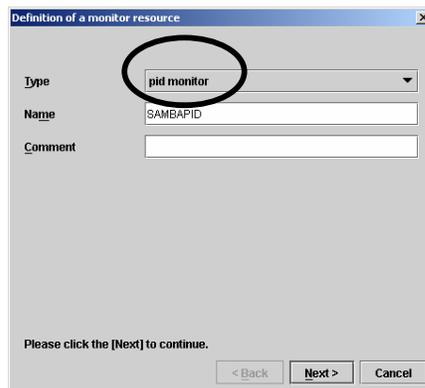
Click the [Complete] button and create an EXEC resource for the monitoring command.

## 9.3 Setting a Monitor Resource

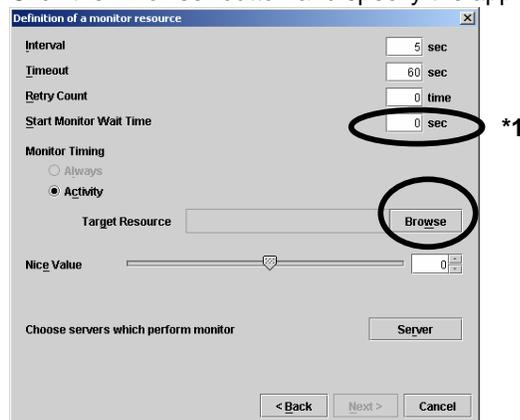
Add a monitor resource.



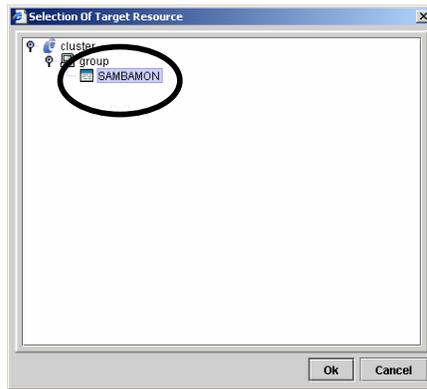
Select "pid monitor" as a monitoring type.



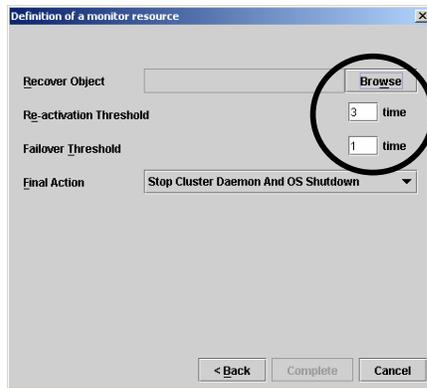
Click the "Browse" button and specify the application target for pid.



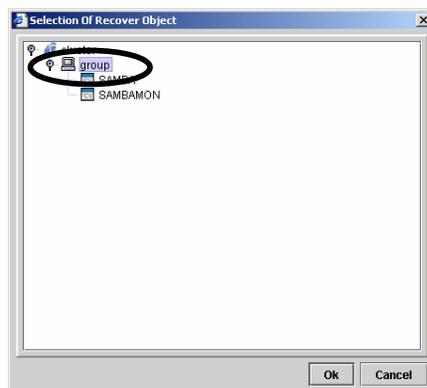
Select the EXEC resource of the monitoring command.



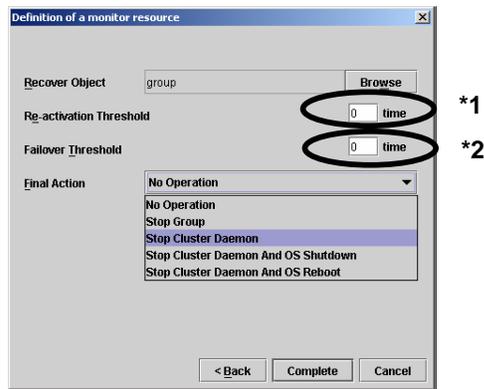
Click the [Browse] button and select a recovery target.



Select a failover group with a monitored application.



Select an action to be taken for [Final Action.] This selection determines the operation of ExpressCluster when the monitoring command detects an error in the monitored application.



\*1

When you detect an obstacle, please specify 0 as a [Re-active Threshold] to perform failover immediately. On the contrary, when you detect an obstacle, please specify values other than zero as a [Re-active Threshold] to revitalize a group.

When setting a [Re-active Threshold] as values other than zero, it is necessary to set up the value of [Start Monitor Wait Time] for a long time than the following time.

- Time after Agent starts until Agent is completed more unusually

Time until Agent is completed is influenced by the value of -i parameter (Monitoring Interval), -c parameter (Retry count), and -r parameter (Response Wait Time).

[Example] When a Agent is completed with the stole of a file server

- i (Monitoring Interval) : 30 (seconds)
- c (Retry count) : 5 (Number of times)
- r (Response Wait Time) : 60 (seconds)

Near time until Agent is completed

$$60(\text{seconds}) + (30(\text{seconds}) + 60(\text{seconds})) * 5(\text{Number of times}) = 510 (\text{seconds})$$

$$* \text{Response Wait Time} + (\text{Monitoring Interval} + \text{Response Wait Time}) * \text{Retry count}$$

With contents of the error, the time to the end of Agent changes a little.

Please refer to "7.2 Monitoring Chart" about operation of the Agent according to the kind of error.

\*2

If you want to perform failover without stopping a server as a cluster at the time of error detection, specify 1 in [Failover Threshold.] In this case, other failover groups continue operation in the server in which an error is detected. When an error is also detected in the failover destination server, failover occurs again and the failover group comes back.

If you want to perform failover by stopping a server as a cluster at the time of an error detection, specify 0 in [Failover Threshold.] In addition, specify "Stop Cluster Daemon", "Stop Cluster Daemon And OS Shutdown", or "Stop Cluster Daemon And OS Reboot" for [Final Action.] In this case, since the server which detected an error stops operating as a cluster,

other failover group terminates or failover occurs.

It is recommended to specify 0 for "Failover Threshold" and "Stop Cluster Daemon" for "Final Action" given recovery work will be done when an error occurs.

See the construction guide of the ExpressCluster server about the details of the final operation.

If a setup is completed, click the [Complete] button to complete creation of monitor resource.

## 10 Script Templates

This product is shipped with script templates for trekking tool. Since the templates may be improved and modified from time to time, make sure to check if there is a newer version of the templates on the ExpressCluster home page. Use the newer one if there is any.

Two templates, `start.sh` and `stop.sh`, are provided for the scripts.

Modify and use them according to the operational environment and other requirements. Where modification is made are indicated in underlined boldface italics in the scripts in the following section.

## 10.1 Script Templates for Starting Samba Services

### 10.1.1 start.sh

```
#!/bin/sh
#*****
#*          start.sh          *
#*****

if [ "$CLP_EVENT" = "START" ]
then
  if [ "$CLP_DISK" = "SUCCESS" ]
  then
    echo "NORMAL1"
    if [ "$CLP_SERVER" = "HOME" ]
    then
      echo "NORMAL2"
    else
      echo "ON_OTHER1"
    fi
    echo "SAMBA start"
  #
  # Start up SAMBA
  #
  /sbin/service smb start

  else
    echo "ERROR_DISK from START"
  fi
elif [ "$CLP_EVENT" = "FAILOVER" ]
then
  if [ "$CLP_DISK" = "SUCCESS" ]
  then
    echo "FAILOVER1"
    if [ "$CLP_SERVER" = "HOME" ]
    then
      echo "FAILOVER2"
    else
      echo "ON_OTHER2"
    fi
    echo "SAMBA start"
  #
  # Start up SAMBA
  #
  /sbin/service smb start

  else
```

```
    echo "ERROR_DISK from FAILOVER"  
fi  
else  
    echo "NO_GLP"  
fi  
echo "EXIT"  
exit 0
```

## 10.1.2 stop.sh

```
#!/bin/sh
#*****
#*                stop.sh                *
#*****

if [ "$CLP_EVENT" = "START" ]
then
  if [ "$CLP_DISK" = "SUCCESS" ]
  then
    echo "NORMAL1"
    if [ "$CLP_SERVER" = "HOME" ]
    then
      echo "NORMAL2"
    else
      echo "ON_OTHER1"
    fi
    echo "SAMBA stop"
  #
  # Stop SAMBA
  #
  /sbin/service smb stop

  else
    echo "ERROR_DISK from START"
  fi
elif [ "$CLP_EVENT" = "FAILOVER" ]
then
  if [ "$CLP_DISK" = "SUCCESS" ]
  then
    echo "FAILOVER1"
    if [ "$CLP_SERVER" = "HOME" ]
    then
      echo "FAILOVER2"
    else
      echo "ON_OTHER2"
    fi
    echo "SAMBA stop"
  #
  # Stop SAMBA
  #
  /sbin/service smb stop

  else
    echo "ERROR_DISK from FAILOVER"
  fi
else
  echo "NO_CLP"
fi
echo "EXIT"
exit 0
```

## 10.2 Script Templates for Monitoring Samba

### 10.2.1 start.sh

```
#!/bin/sh
#*****
#*          start.sh          *
#*****

if [ "$CLP_EVENT" = "START" ]
then
  if [ "$CLP_DISK" = "SUCCESS" ]
  then
    echo "NORMAL1"
    if [ "$CLP_SERVER" = "HOME" ]
    then
      echo "NORMAL2"
    else
      echo "ON_OTHER1"
    fi
    echo "clp_sambamon start"
  #
  # Set an appropriate value for shared file and shared printer.
  #
  clp_sambamon sambawatch -s XXXX

  else
    echo "ERROR_DISK from START"
  fi
elif [ "$CLP_EVENT" = "FAILOVER" ]
then
  if [ "$CLP_DISK" = "SUCCESS" ]
  then
    echo "FAILOVER1"
    if [ "$CLP_SERVER" = "HOME" ]
    then
      echo "FAILOVER2"
    else
      echo "ON_OTHER2"
    fi
    echo "clp_sambamon start"
  #
  # Set an appropriate value for shared file and shared printer.
  #
  clp_sambamon sambawatch -s XXXX

  else
    echo "ERROR_DISK from FAILOVER"
  fi
else
  echo "NO_CLP"
```

```
fi  
echo "EXIT"  
exit 0
```

## 10.2.2 stop.sh

```
#!/bin/sh
#*****
#*                stop.sh                *
#*****

if [ "$CLP_EVENT" = "START" ]
then
  if [ "$CLP_DISK" = "SUCCESS" ]
  then
    echo "NORMAL1"
    if [ "$CLP_SERVER" = "HOME" ]
    then
      echo "NORMAL2"
    else
      echo "ON_OTHER1"
    fi
    echo "clp_sambamon stop"
  #
  # stop clp_sambamon
  #
  clp_sambamon sambawatch -stop

  else
    echo "ERROR_DISK from START"
  fi
elif [ "$CLP_EVENT" = "FAILOVER" ]
then
  if [ "$CLP_DISK" = "SUCCESS" ]
  then
    echo "FAILOVER1"
    if [ "$CLP_SERVER" = "HOME" ]
    then
      echo "FAILOVER2"
    else
      echo "ON_OTHER2"
    fi
    echo "clp_sambamon stop"
  #
  # stop clp_sambamon
  #
  clp_sambamon sambawatch -stop

  else
    echo "ERROR_DISK from FAILOVER"
  fi
else
  echo "NO_CLP"
fi
echo "EXIT"
exit 0
```

## 10.3 Script Templates for Starting NFS Services

### 10.3.1 start.sh

```
#!/bin/sh
#*****
#*          start.sh          *
#*****

if [ "$CLP_EVENT" = "START" ]
then
  if [ "$CLP_DISK" = "SUCCESS" ]
  then
    echo "NORMAL1"
    if [ "$CLP_SERVER" = "HOME" ]
    then
      echo "NORMAL2"
    else
      echo "ON_OTHER1"
    fi
    echo "NFS start"
  #
  # Start up NFS
  #
  /sbin/service nfs start

  else
    echo "ERROR_DISK from START"
  fi
elif [ "$CLP_EVENT" = "FAILOVER" ]
then
  if [ "$CLP_DISK" = "SUCCESS" ]
  then
    echo "FAILOVER1"
    if [ "$CLP_SERVER" = "HOME" ]
    then
      echo "FAILOVER2"
    else
      echo "ON_OTHER2"
    fi
    echo "NFS start"
  #
  # Start up NFS
  #
  /sbin/service nfs start

  else
    echo "ERROR_DISK from FAILOVER"
  fi
else
  echo "NO_CLP"
```

```
fi  
echo "EXIT"  
exit 0
```

## 10.3.2 stop.sh

```
#!/bin/sh
#*****
#*                stop.sh                *
#*****

if [ "$CLP_EVENT" = "START" ]
then
  if [ "$CLP_DISK" = "SUCCESS" ]
  then
    echo "NORMAL1"
    if [ "$CLP_SERVER" = "HOME" ]
    then
      echo "NORMAL2"
    else
      echo "ON_OTHER1"
    fi
    echo "NFS stop"
  #
  # Stop NFS
  #
  /sbin/service nfs stop

  else
    echo "ERROR_DISK from START"
  fi
elif [ "$CLP_EVENT" = "FAILOVER" ]
then
  if [ "$CLP_DISK" = "SUCCESS" ]
  then
    echo "FAILOVER1"
    if [ "$CLP_SERVER" = "HOME" ]
    then
      echo "FAILOVER2"
    else
      echo "ON_OTHER2"
    fi
    echo "NFS stop"
  #
  # Stop NFS
  #
  /sbin/service nfs stop

  else
    echo "ERROR_DISK from FAILOVER"
  fi
else
  echo "NO_CLP"
fi
echo "EXIT"
exit 0
```

## 10.4 Script Templates for Monitoring NFS

### 10.4.1 start.sh

```
#!/bin/sh
#*****
#*          start.sh          *
#*****

if [ "$CLP_EVENT" = "START" ]
then
  if [ "$CLP_DISK" = "SUCCESS" ]
  then
    echo "NORMAL1"
    if [ "$CLP_SERVER" = "HOME" ]
    then
      echo "NORMAL2"
    else
      echo "ON_OTHER1"
    fi
    echo "clp_nfsmon start"
  #
  # Change a shared directory name to an appropriate value.
  #
  clp_nfsmon nfswatch -d XXXX

  else
    echo "ERROR_DISK from START"
  fi
elif [ "$CLP_EVENT" = "FAILOVER" ]
then
  if [ "$CLP_DISK" = "SUCCESS" ]
  then
    echo "FAILOVER1"
    if [ "$CLP_SERVER" = "HOME" ]
    then
      echo "FAILOVER2"
    else
      echo "ON_OTHER2"
    fi
    echo "clp_nfsmon start"
  #
  # Change a shared directory name to an appropriate value.
  #
  clp_nfsmon nfswatch -d XXXX

  else
    echo "ERROR_DISK from FAILOVER"
  fi
else
  echo "NO_CLP"
```

```
fi  
echo "EXIT"  
exit 0
```

## 10.4.2 stop.sh

```
#!/bin/sh
#*****
#*                stop.sh                *
#*****

if [ "$CLP_EVENT" = "START" ]
then
  if [ "$CLP_DISK" = "SUCCESS" ]
  then
    echo "NORMAL1"
    if [ "$CLP_SERVER" = "HOME" ]
    then
      echo "NORMAL2"
    else
      echo "ON_OTHER1"
    fi
    echo "clp_nfsmon stop"
  #
  # stop clp_nfsmon
  #
  clp_nfsmon nfswatch -stop

  else
    echo "ERROR_DISK from START"
  fi
elif [ "$CLP_EVENT" = "FAILOVER" ]
then
  if [ "$CLP_DISK" = "SUCCESS" ]
  then
    echo "FAILOVER1"
    if [ "$CLP_SERVER" = "HOME" ]
    then
      echo "FAILOVER2"
    else
      echo "ON_OTHER2"
    fi
    echo "clp_nfsmon stop"
  #
  # stop clp_nfsmon
  #
  clp_nfsmon nfswatch -stop

  else
    echo "ERROR_DISK from FAILOVER"
  fi
else
  echo "NO_CLP"
fi
echo "EXIT"
exit 0
```