Rev.0 / Jul.2012

SVP00-00

SVP SECTION

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SVP00-10

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1. How to Operate the SVP (PC)

1.1 How to use Windows

(1) Notation

In this manual, "select" has the following three meanings, and (CL), (DC), or (DR) is added to the word for each meaning.

(CL) Click: Quickly press and release the left side button of mouse.

(DC) Double-click: Click the left side button of mouse twice in rapid succession.

(DR) Drag: To hold down the left side button of mouse while you trace the mouse to

move the pointer to a desired position. Then release the button.

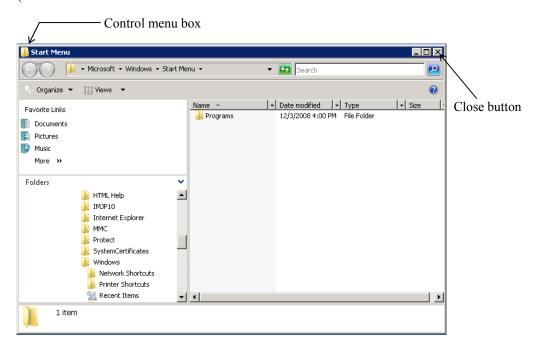
example: Select (DC) the [Install] icon in the 'SVP' window.

Move the pointer to [Install] with the mouse. Then click the button the Move the pointer to [Install] with the left side button of mouse twice in rapid succession.

(2) Close

"Close" means to close the application window.

(Double-click the control menu box of the window or click the close button for window.)



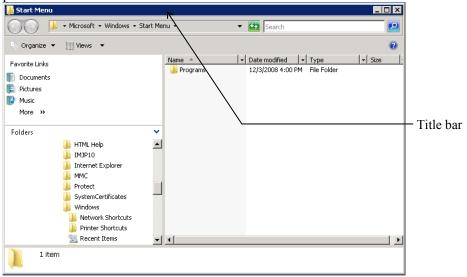
DW700

SVP01-20

(3) Moving the Window

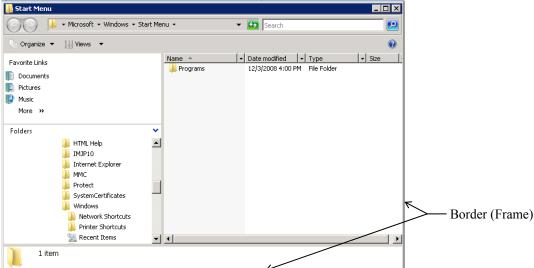
Move the pointer to the title bar with the trackball.

While pressing the button, move the window with the trackball or touchpad (DR) to a desired position and release the button.



(4) Changing the window size

Move the pointer to the window border (frame) (the pointer changes to the double-headed arrow). While pressing the button, move the border (the border changes to the broken line) until the window becomes a desired size, and release the button.



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(5) Switching the screen (when two or more screens are opened)
While pressing the [ALT] key, press [TAB] key (or [ESC] key) until your desired window title is displayed, and release the [ALT] key.

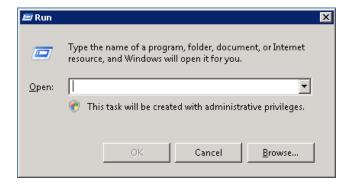
SVP01-40

1.2 Running the SVP by Specifying a File Name

(1) <Select [Run]> Select (CL) [Run...] from the [Start] menu.



(2) <Entering a file name>
Enter a file name in the "Open:" box and select (CL) the [OK] button.



SVP01-50

1.3 Executing SVP Connect Utility

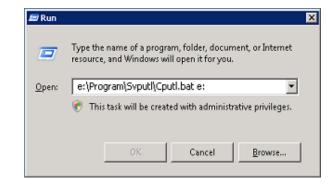
Execute SVP Connect Utility through a Console PC. Execute the following procedure through the Console PC.

About installation / removal of the console PC, the connection procedure.

- 3.1.5.2 Installation Location of CE Laptop PC (INST03-01-140)
- 3.1.5.3 Attachment/Removal Procedure of LAN Cable for CE Laptop PC (INST03-01-150)
- (1) Installing SVP Connect Utility
 Insert the Host PP medium to the CD-R drive
 in the Console PC, and select (CL) [Run...]
 from the [Start] menu.

Enter "e:\Program\Svputl\Cputl.bat e:" in the "Open" box. Select (CL) the [OK] button.

NOTE: In the step above, the CD-R drive in the Console PC is assigned a drive letter E.



If the CD-R drive is assigned a drive letter D, enter "d:\Program\Svputl\Cputl.bat d:".

(2) Executing SVP Connect Utility
Double-click "RDPEXE.exe" in the desktop to execute the SVP Connect Utility.

NOTE: The following alert might be displayed by environment of the OS. When it was displayed, please select (CL) [Unblock].

1.4 Connecting the PC to the SVP

Connect the PC for connection to the SVP using SVP Connect Utility. When connect the same SVP again, carry out "1.4.2 Restoring the previous connection".

1.4.1 Connection to the SVP

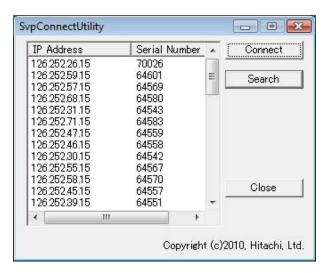
Using two user type to connect with the SVP. If you don't know the password, please contact with the technical support division. When there is no description, using "Installed User". After you input a user name and the password, input "Maintenance Password". If you don't know the "Maintenance Password", please contact with the technical support division.

(1) Searching the SVPSelect (CL) [Search] in the 'SVP Connect Utility' window.IP addresses and product serial numbers of the connectable SVPs are displayed in the list.

(2) Performing the connection Select an SVP to be connected from the SVPs in the list and select (CL) [Connect]. A connection to the selected SVP is done.

NOTE: Please check that automatic connection of a local disk drive is set up in the case of connection.

(At the time of SvpConnectUtility use, it is set up automatically.)



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(3) Login to SVP

Select (CL) a SVP icon displayed by the login screen center to SVP.

A user name, a password input screen are displayed. Please input a user name and a password.

When other users are logging in, it is displayed with "Other users logon".





NOTE: When you fail in login during other user login more, please retry the operation after the log in user logoffs.



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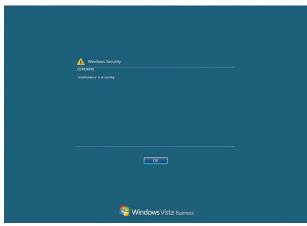
(4) Input Maintenance password A Maintenance password input screen is displayed. Please input a Maintenance password.

> When other users are logging in, it is displayed with "Other users logon".

Refer to "1.14 Update Maintenance Password" for the change in the maintenance password.

NOTE: When you fail in login during other user login more, please retry the operation after the log in user logoffs.

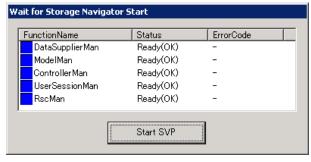




- (5) The start of the SVP screen
 - (a) When 'Web Console' screen is not running. Select (CL) the [Start SVP] button from 'Wait for Storage Navigator Start'. The 'SVP' screen starts.

Go to "1.4.3 Checking the connected storage systems".

(b) When 'Web Console' screen is running. Select (DR) [Maintenance]-[Maintenance Components (General)] from the menu. The 'SVP' screen starts.





Go to "1.4.3 Checking the connected storage systems".

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1.4.2 Restoring the previous connection

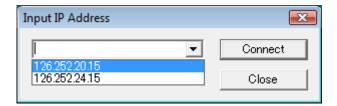
After the certain SVP is disconnected, connect the same SVP again.

Using two user type to connect with the SVP. If you don't know the password, please contact with the technical support division. When there is no description, using "Installed User".

After you input a user name and the password, input "Maintenance Password". If you don't know the "Maintenance Password", please contact with the technical support division.

- (1) Displaying the dialog box for entering an IP address
 Select (CL) [Connect] in a state in which the SVP is not selected from the list. The "Input IP Address" dialog box is displayed.
- (2) Restoring the previous connection Select (CL) the pull down button of the entry box. Select the top one of the displayed IP addresses.

Select (CL) the [Connect] button.



NOTE: When you reconnect it after a SVP reboot, please leave time more than five minutes.

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(3) Login to SVP

Select (CL) a SVP icon displayed by the login screen center to SVP.

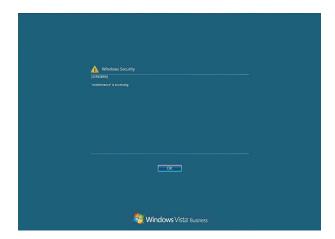
A user name, a password input screen are displayed. Please input a user name and a password.



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NOTE: When you fail in login during other user login more, please retry the operation after the log in user logoffs.



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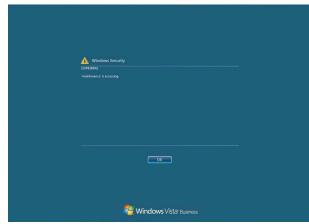
SVP01-110

(4) Input Maintenance password
A Maintenance password input screen is displayed. Please input a Maintenance password.

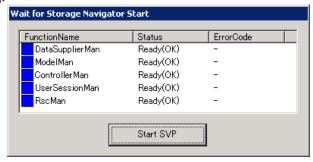


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NOTE: When you fail in login during other user login more, please retry the operation after the log in user logoffs.



- (5) The start of the SVP screen
 - (a) When 'Web Console' screen is not running. Select (CL) the [Start SVP] button from 'Wait for Storage Navigator Start'. The 'SVP' screen starts.
 - Go to "1.4.3 Checking the connected storage systems".
 - (b) When 'Web Console' screen is running. Select (DR) [Maintenance]-[Maintenance Components (General)] from the menu. The 'SVP' screen starts.





Go to "1.4.3 Checking the connected storage systems".

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1.4.3 Checking the connected storage systems

After the SVP screen starts, the serial number of storage system is displayed on the left of the mode button in the SVP screen. Please check whether the connected storage system is correct.



NOTE: If it connects with a wrong storage system, maintenance operation is performed, a serious obstacle may occur.

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1.5 Disconnecting the SVP

Disconnect the Console PC from the SVP.

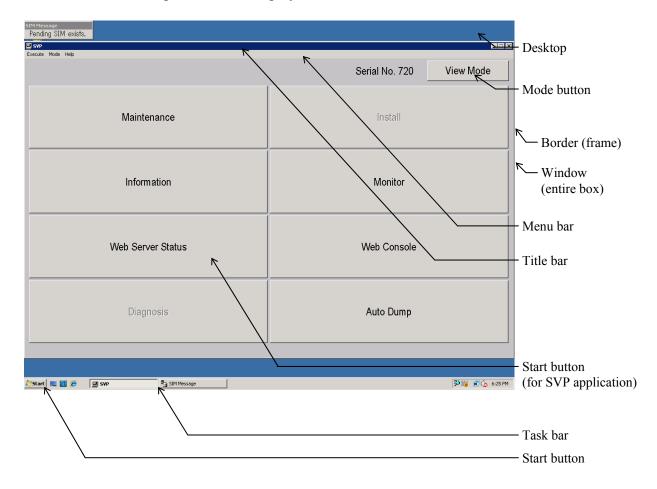
(1) Log off SVP Select (CL) [Log Off] from the [Start] menu.



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1.6 Windows Screen Component Nomenclature

Either of the following windows is displayed.



NOTE: Each SVP screen on this maintenance manual is a sample, and it may not be the same as the actual screen.

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SVP01-150

1.7 Power On

Usually, SVP starts automatically at the breakers-ON.

If some problems occurred (and you must start SVP), follow the procedures below (to start SVP).

(1) Power On SVP

- a. Press the SVP PS ON Switch on the front side of the SVP main body.
- b. Make sure that the SVP POWER LED on the front side of the SVP main body comes on. If not, re-execute Step a in (1).If the LED does not come on though the Step a in (1) is re-executed twice, replace the
 - If the LED does not come on though the Step a in (1) is re-executed twice, replace the SVP.

(2) Windows Start (SVP Start)

- a. Wait for a few minutes until the Windows system starts up.
- b. Select (CL) [Search] of the SVP Connect Utility through the Console PC. Make sure that the SVP concerned is displayed in the list. If it is not displayed, re-execute Step a in (1). If the Windows system does not start up though the Step a in (1) is re-executed twice, replace the SVP.

NOTE: If Windows doesn't start, check the following items.

- (1) Is the DKC "CE mode"?
- (2) Are the two LEDs at the LAN cable socket always on? If above two conditions are satisfied, pull out the LAN cable until Windows starts.

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1.8 Power Off

NOTICE: Performing this operation disables connecting to Storage Navigator. Make sure to confirm with a system administrator of your system before turning OFF

the power.

(1) Power Off SVP

a. Press SVP PS OFF Switch. (See LOC03-110.)
 Make sure that the SVP POWER LED off the front side of the SVP main body comes on.

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1.9 SVP reboot

(1) Turn the power off in accordance with the procedure of SVP SECTION "1.8 Power Off" (SVP01-160).

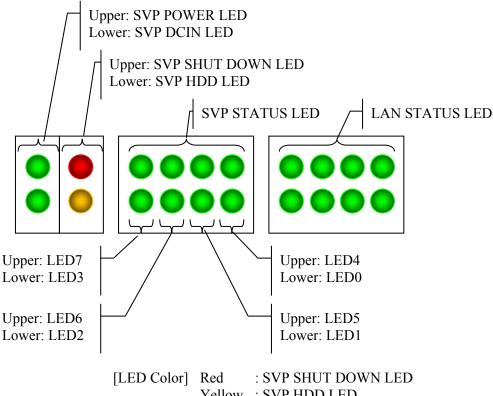
(2) Turn the power on in accordance with the procedure of SVP SECTION "1.7 Power On" (SVP01-150).

NOTICE: Make sure to perform the procedure (2) within 15 minutes after turning OFF the power of SVP. If the condition that SVP is OFF and breaker is ON continues for more than 15 minutes, SVP power is forcibly turned ON.

SVP01-170

1.10 SVP LED display specification

(1) LED arrangement



Yellow: SVP HDD LED

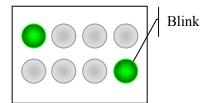
Green : Others

(2) The meaning of SVP STATUS LED

LED7 : Lighting at the time of SVP action.

LED0 : It blinks at intervals of 1 second at the time of SVP action.

(3) Lighting at the time of SVP action (SVP STATUS LED)



SVP01-180

(4) The action at the time of SVP RAS Switch#3 operation

When operate SVP RAS Switch#3 in order of "off→on→off" from an off state within 10 seconds, switches on SVP STATUS LED by the following sequences.

(If this switch is already on before the operation or the operation failed, then operate the switch to an off state and wait 1 minute or over, and after that execute the operation above.)

- ① All SVP STATUS LED putting out lights (for 1 second)
- ② All SVP STATUS LED lighting (for 1 second)
- 3 All SVP STATUS LED putting out lights (for 1 second)
- All SVP STATUS LED lighting (for 1 second)
- ⑤ The first octet display of an IP address (for 3 seconds)
- © The second octet display of an IP address (for 3 seconds)
- ① The third octet display of an IP address (for 3 seconds)
- ® The fourth octet display of an IP address (for 3 seconds)
- All SVP STATUS LED putting out lights (for 10 seconds)

(5) The action at the time of SVP RAS Switch#4 operation

When operate SVP RAS Switch#4 in order of "off—on—off—on—off" from an off state within 30 seconds, switches on SVP STATUS LED by the following sequences.

(Duration for each on state should be within 10 seconds. If this switch is already on before the operation or the operation failed, then operate the switch to an off state and wait 1 minute or over, and after that execute the operation above.)

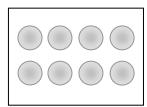
- ① All SVP STATUS LED putting out lights (for 1 second)
- ② All SVP STATUS LED lighting (for 1 second)
- ③ All SVP STATUS LED putting out lights (for 1 second)
- All SVP STATUS LED lighting (for 1 second)
- © The first octet display of an IP address (for 3 seconds)
- © The second octet display of an IP address (for 3 seconds)
- ① The third octet display of an IP address (for 3 seconds)
- ® The fourth octet display of an IP address (for 3 seconds)
- All SVP STATUS LED putting out lights (for 10 seconds)
- Initialize Password
- ① Initialize IP Address
- ② All SVP STATUS LED blinks (at interval of 1 second for 10 times, and 20 seconds)
- **3** SVP Reboot

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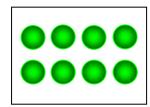
(6) IP address display

The data for 1Byte is displayed using SVP STATUS LED. (LED0 - LED7 corresponds to Bit0 - Bit7)

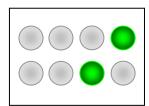
When it is 0x00



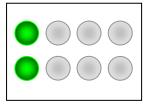
When it is 0xFF



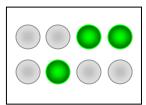
When it is 0x12



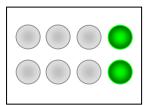
When it is 0x88



When it is 0x34



When it is 0x11



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1.11 (Blank)

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Blank Sheet

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1.12 (Blank)

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SVP01-230

Blank Sheet

SVP01-240

1.13 Handling of USB memory

1.13.1 How to remove USB memory

When you remove a USB flash memory, perform it as follows. Data may be damaged if you remove it suddenly.

(1) Double-click the icon of the round mark of the following figure in the lower right of the window.



A window as shown in the following figure is displayed. Select "USB Mass Storage Device" and press the [Stop] button.



(3)
A window as shown in the following figure is displayed. Select "USB Mass Storage Device" and press the [OK] button.

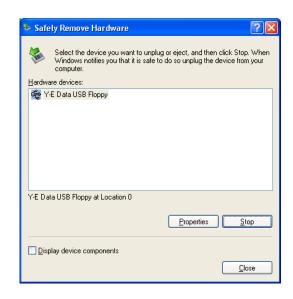


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(4)

A window as shown in the following figure is displayed. Press the [Close] button. Removal became possible with this. Pull out the USB flash memory from the USB port.



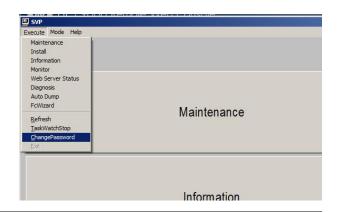
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1.14 Update Maintenance Password

(1)

The mode is changed to Modify Mode, and [Execute]-[ChangePassword] is selected (DR).



(2)

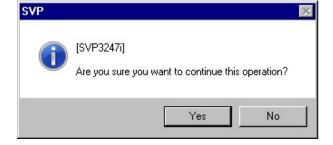
The window as shown in the following figure is displayed. Input "Current password", "New password", and "Confirm new password", and select (CL) the [Change password] button.

The alphanumeric characters of $8 \sim 32$ (ASCII character) and the signs (! " # \$ % & ' () * + , - . / : ; <=>? @ [\]^_`{|} ~) can be used for the password.



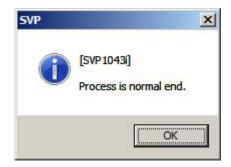
(3)

Select (CL) the [Yes] button in response to the confirmation message "Are you sure you want to continue this operation?".



(4)

The message "Process is normal end." is displayed when the change is completed, and select (CL) the [OK] button. Log in is possible in SVP from next time by the new maintenance password.



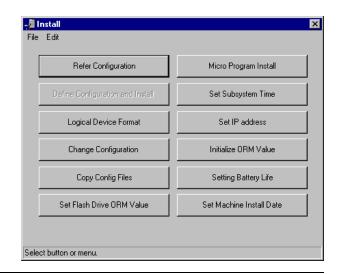
SVP02-10

2. Function of the SVP

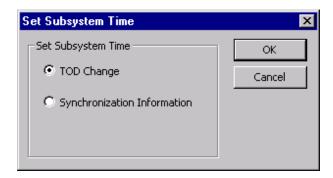
2.1 TOD (Time Of Day) setting

NOTE: • Please do not execute the TOD setting during the P/S ON procedure.

- Please do not execute the TOD setting during collecting the Port Dump.
- Please do not execute the TOD setting during the monitor switch of the Performance Monitor function is effective. If you change the monitor may not display or retrieve data for monitoring data incorrect monitor data stored improperly.
- (1) Change the mode to [Modify Mode] from [View Mode] (CL).
- (2) Select (CL) [Install].
- (3)
 Select (CL) [Set Subsystem Time] in the 'Install' window.



(4)
Select (CL) [TOD Change] in the 'Set
Subsystem Time' window, and then select
(CL) [OK].

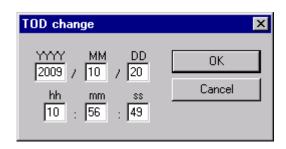


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(5)

Specify the date (year, month, and day) and time (hour, minute, and second) and select (CL) [OK].



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(6)

Close the 'Install' window.

NOTE: If you execute the performance measurement by Performance Monitor, don't push back the TOD.

(7)

Reboot the SVP.

(See SVP SECTION "1.9 SVP reboot" (SVP01-161))

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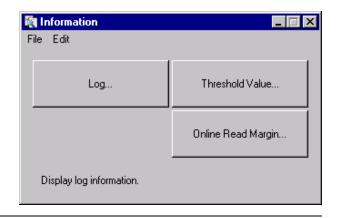
2.2 Log indication

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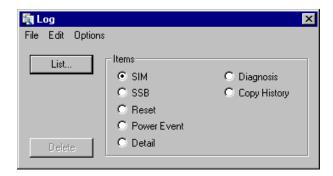
| [1] SSB Log | SVP02-40 |
|---|-----------|
| [2] SIM Log | SVP02-60 |
| [3] Detail Log | SVP02-90 |
| [4] Reset Log | SVP02-110 |
| [5] Power Event Log | SVP02-130 |
| [6] Diagnosis Log | SVP02-140 |
| [7] Copy History Log | SVP02-160 |
| [8] MP# - Location correspondence table | SVP02-170 |
| [9] Port# - Location correspondence table | SVP02-171 |
| | |

Prerequisite Operation:

- (1) Select (CL) [Information].
- (2) Select (CL) [Log...].



(3) 'Log' dialog box is displayed.



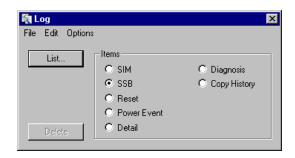
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[1] SSB Log

(1)

Select (CL) [SSB] in the 'Log'. Select (CL) [List...].



(2)

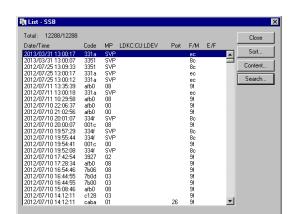
Select (CL) data to be indicated in the 'List-SSB' dialog box and select (CL) [Content...].

NOTE: To sort and list items, select (CL) [Sort...] first.

Then select (CL) the desired item in the [Items] and [Order] options in the 'Sort' dialog box, and select (CL) [OK].

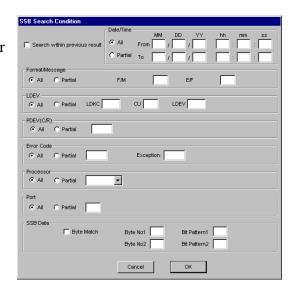
NOTE: To search for the desired log, select (CL) [Search...]. Then set the log for which you want to search individual List in the 'SSB Search Condition' dialog box and select (CL) [OK].

NOTE: Please do not change an application's window until search function finish.





(2)-1 <SSB Search Condition dialog>
Select (CL) [Partial] button of "Date/Time",
"Format/Message", "LDEV", "PDEV(C/R)", "Error
Code", "Processor" and "Port" to search, and enter
a value. When you search "SSB Data", select (CL)
[Byte Match] and enter a value.



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① Common

Search within previous result: To search in previously searched logs.

All: Condition for search in the same flame becomes invalid.

Partial: Condition for search in the same flame becomes effective.

② Date/Time

From : Enter the oldest date and time of data to search.

To : Enter the latest date and time of data to search.

NOTE: When the [Partial] in the [Date/Time] group is selected (CL), enter "00" in [hh],

[mm] and [ss] of [From], and enter the current time in those of [To].

3 Format/Message

F/M : Enter Format/Message of data to search.E/F : Enter Exception/Format of data to search.

4 LDEV

LDKC : Enter LDKC # of data to search.
CU : Enter CU # of data to search.
LDEV : Enter LDEV # of data to search.

⑤ PDEV(C/R)

Enter PDEV# of data to search.

© Error Code

Enter Error Code of data to search.

Exception : Enter Error Code of data to except from a search.

7 Processor

Select a location name of data to search from combo box.

NOTE: When the [Partial] in the [Processor] group is selected, the list of location names is displayed in a combo box.

® Port

Enter Port# of data to search.

NOTE: Refer to a [9] Port# - Location correspondence table.

SSB Data

Byte Match : To enable a search of [SSB Data].

Byte No1 : Enter a position of the byte to search.

Byte Pattern1: Enter a value to search in a position of the byte specified in [Byte No1].

Byte No2 : Enter a position of the byte to search.

Byte Pattern2: Enter a value to search in a position of the byte specified in [Byte No2].

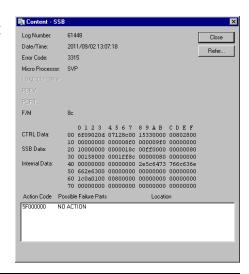
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(3)

The detailed data is displayed in the 'Content-SSB' dialog box.

Select (CL) [Refer...] in the 'Content-SSB' dialog box to display the relative log.



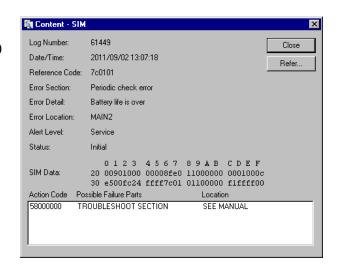
(4)

Select (CL) the log to be displayed in the 'Refer' dialog box. ([SIM] is selected in this example.)



(5)

Display the log to be selected. ('Content-SIM' is displayed in this example.)



(6)

Close the relative log when it is referred to.

Select (CL) [Close] in the 'Content-SSB' dialog box.

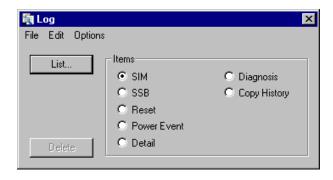
Select (CL) [Close] in the 'List-SSB' dialog box.

Close the 'Log' dialog box and close the 'Information' window.

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[2] SIM Log

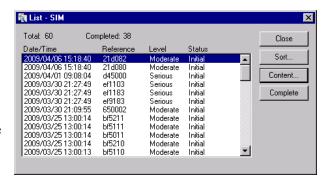
- NOTE 1: When SIM log exists after SVP is started up, the 'SIM Message' window is displayed.
- NOTE 2: Uncomplete SIM logs are recorded up to 256. When the SIM log is made when the number of uncomplete SIM logs is the maximum, the oldest uncomplete SIM log is automatically done complete.
- (1) Select (CL) [SIM] in the 'Log' dialog box. Select (CL) [List...].

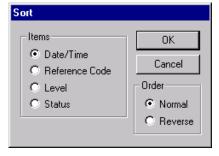


(2) Select (CL) data to be indicated in the 'List-SIM' dialog box and select (CL) [Content...].

NOTE: To sort and list items, select (CL) [Sort...] first.

Then select (CL) the desired item in the [Items] and [Order] options in the 'Sort' dialog box, and select (CL) [OK].





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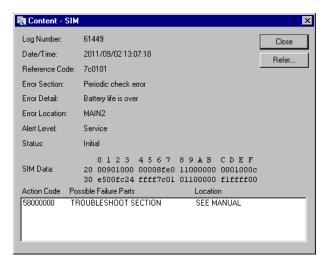
(3)

The 'Content-SIM' dialog box is displayed. Select (CL) [Refer...] in the 'Content-SIM' dialog box, when the relative log is displayed.

NOTE: In WCHK1 dump and ABEND dump received SIM (RC = 3080X0, 3081X0), the system error code is indicated in the format [YYYY] as in Reference Code 3080X0[YYYY].

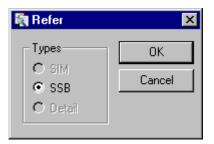
NOTE: If Reference Code is 73XXYY or 1400X0, perform the recovery procedure for DKC processor failure/SVP failure.

(See TRBL04-40)



(4)

Select (CL) the log to be displayed in the 'Refer' dialog box. ([SSB] is selected in this example.)



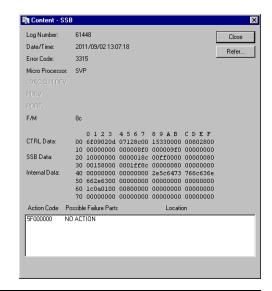
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(5)

The selected log is displayed. ('Content-SSB' is displayed in this example.)



(6)

Close the relative log when it is referred to.

Select (CL) [Close] in the 'Content-SIM' dialog box.

Select (CL) [Close] in the 'List-SIM' dialog box.

Close the 'Log' dialog box and close the 'Information' window.

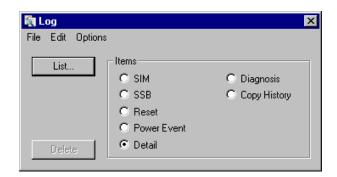
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[3] Detail Log

(1)

Select (CL) [Detail] in the 'Log' dialog box. Select (CL) [List...].

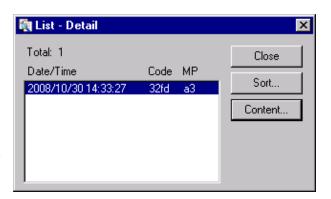


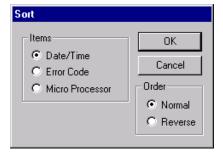
(2)

Select (CL) data to be indicated in the 'List-Detail' dialog box and select (CL) [Content...].

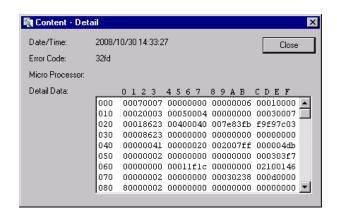
NOTE: To sort and list items, select (CL) [Sort...] first.

> Then select (CL) the desired item in the [Items] and [Order] options in the 'Sort' dialog box, and select (CL) [OK].





(3) The 'Content-Detail' dialog box is displayed.



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(4)

Select (CL) [Close] in the 'Content-Detail' dialog box. Select (CL) [Close] in the 'List-Detail' dialog box.

Close the 'Log' dialog box and close the 'Information' window.

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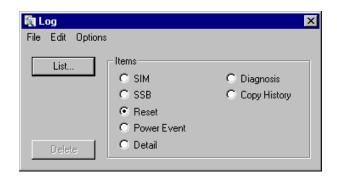
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[4] Reset Log

(1)

Select (CL) [Reset] in the 'Log' dialog box. Select (CL) [List...].

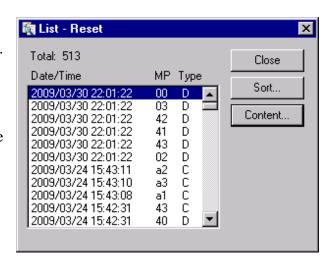


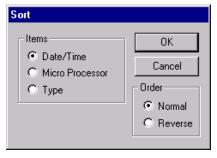
(2)

Select (CL) data to be indicated in the 'List-Reset' dialog box and select (CL) [Content...].

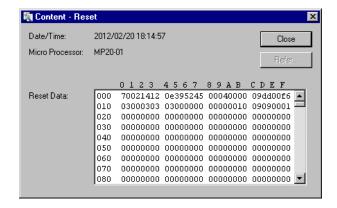
NOTE: To sort and list items, select (CL) [Sort...] first.

Then select (CL) the desired item in the [Items] and [Order] options in the 'Reset Log Sort' dialog box, and select (CL) [OK].





(3) The 'Content-Reset' dialog box is displayed.



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(4)

Select (CL) [Close] in the 'Content-Reset' dialog box. Select (CL) [Close] in the 'List-Reset' dialog box. Close the 'Log' dialog box and close the 'Information' window.

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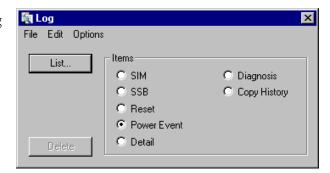
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- [5] Power Event Log
- (1)

Select (CL) [Power Event] in the 'Log' dialog box.

Select (CL) [List...].

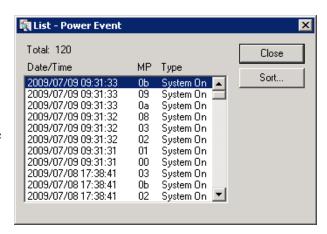


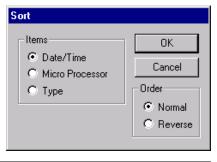
(2)

The 'List-Power Event' dialog box is displayed.

NOTE: To sort and list items, select (CL) [Sort...] first.

Then select (CL) the desired item in the [Items] and [Order] options in the 'Sort' dialog box, and select (CL) [OK].





(3)

Select (CL) [Close] in the 'List-Power Event' dialog box. Close the 'Log' dialog box and close the 'Information' window.

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[6] Diagnosis Log

(1)

Select (CL) [Diagnosis] in the 'Log' dialog box.

Select (CL) [List...].



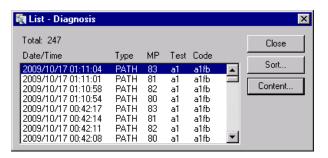
Copyright © 2012, Hitachi, Ltd.

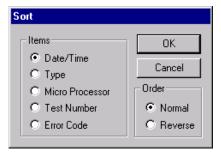
(2)

Select (CL) data to be indicated in the 'List-Diagnosis' dialog box and select (CL) [Content...].

NOTE: To sort and list items, select (CL) [Sort...] first.

Then select (CL) the desired item in the [Items] and [Order] options in the 'Sort' dialog box, and select (CL) [OK].





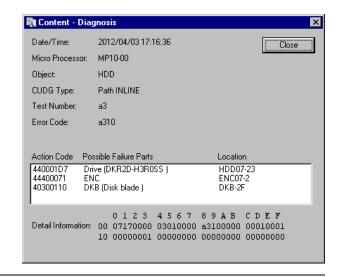
DW700 Hitachi Proprietary

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(3)

The 'Content-Diagnosis' dialog box is displayed.



(4)

Select (CL) [Close] in the 'Content-Diagnosis' dialog box.

Select (CL) [Close] in the 'List-Diagnosis' dialog box.

Close the 'Log' dialog box and close the 'Information' window.

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[7] Copy History Log

(1)

Select (CL) [Copy History] in the 'Log' dialog box.

Select (CL) [List...].

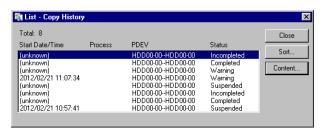


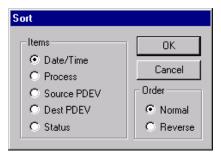
(2)

Select (CL) data to be indicated in the 'List-Copy History' dialog box and select (CL) [Content...].

NOTE: To sort and list items, select (CL) [Sort...] first.

Then select (CL) the desired item in the [Items] and [Order] options in the 'Sort' dialog box, and select (CL) [OK].





(3) The 'Content-Copy History' dialog box is displayed.



(4)

Select (CL) [Close] in the 'Content-Copy History' dialog box.

Select (CL) [Close] in the 'List-Copy History' dialog box.

Close the 'Log' dialog box and close the 'Information' window.

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[8] MP# - Location correspondence table

| Location | | | MP# | Location | | | MP# | | |
|----------|----------|--------|---------|----------|-----|----------|--------|---------|----|
| | | MPU-10 | MP10-00 | 00 | | | MPU-20 | MP20-00 | 08 |
| | | | MP10-01 | 01 | | | | MP20-01 | 09 |
| | | | MP10-02 | 02 | | | | MP20-02 | 0A |
| MPB | Cluster1 | | MP10-03 | 03 | MPB | Cluster2 | | MP20-03 | 0B |
| | | MPU-11 | MP11-00 | 04 | | | MPU-21 | MP21-00 | 0C |
| | | | MP11-01 | 05 | | | | MP21-01 | 0D |
| | | | MP11-02 | 06 | | | | MP21-02 | 0E |
| | | | MP11-03 | 07 | | | | MP21-03 | 0F |

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[9] Port# - Location correspondence table

Module#0

| | Location | | Port# | | Location | | Port# |
|----------|---------------|---------|-------|----------|---------------|---------|-------|
| Cluster1 | CHB-1A | 1A | 00 | Cluster2 | CHB-2A | 2A | 10 |
| | | 3A | 01 | | | 4A | 11 |
| | | 5A | 02 | | | 6A | 12 |
| | | 7A | 03 | | | 8A | 13 |
| | CHB-1B | 1B | 04 | | CHB-2B | 2B | 14 |
| | | 3B | 05 | | | 4B | 15 |
| | | 5B | 06 | | | 6B | 16 |
| | | 7B | 07 | | | 8B | 17 |
| | CHB-1C | 1C | 08 | | CHB-2C | 2C | 18 |
| | | 3C | 09 | | | 4C | 19 |
| | | 5C | 0A | | | 6C | 1A |
| | | 7C | 0B | | | 8C | 1B |
| | CHB-1D | 1D | 0C | | CHB-2D | 2D | 1C |
| | | 3D | 0D | | | 4D | 1D |
| | | 5D | 0E | | | 6D | 1E |
| | | 7D | 0F | | | 8D | 1F |
| | CHB-1E/DKB-1E | 1E/1E-0 | 20 | | CHB-2E/DKB-2E | 2E/2E-0 | 28 |
| | | 3E/1E-1 | 21 | | | 4E/2E-1 | 29 |
| | | 5E | 22 | | | 6E | 2A |
| | | 7E | 23 | | | 8E | 2B |
| | CHB-1F/DKB-1F | 1F/1F-0 | 24 | | CHB-2F/DKB-2F | 2F/2F-0 | 2C |
| | | 3F/1F-1 | 25 | | | 4F/2F-1 | 2D |
| | | 5F | 26 | | | 6F | 2E |
| | | 7F | 27 | | | 8F | 2F |

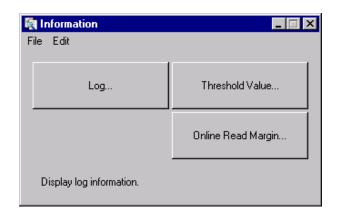
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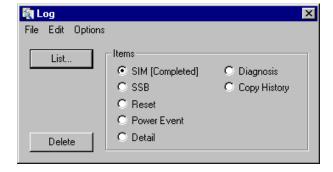
2.3 Log delete

- [1] SSB Log
- [2] SIM Log
- [3] Detail Log
- [4] Reset Log
- [5] Power Event Log
- [6] Diagnosis Log
- [7] Copy History Log
- (1)
 Change the mode from [View Mode] to [Modify Mode].
 Select (CL) [Information] in 'SVP' window.
- (2) Select (CL) [Log...] in the 'Information' dialog box.



(3)
In the 'Log' dialog box, select (CL) a log to be deleted and select (CL) [Delete].
(For example, select [SIM (Completed)].)

If the SIM log is deleted, SIM Log Complete (SVP02-590) should be executed beforehand.



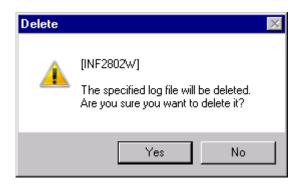
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(4)

Select (CL) [Yes] in the 'Delete' dialog box.



(5)

Close the 'Log' dialog box and close the 'Information' window. Change the mode from [Modify Mode] to [View Mode].

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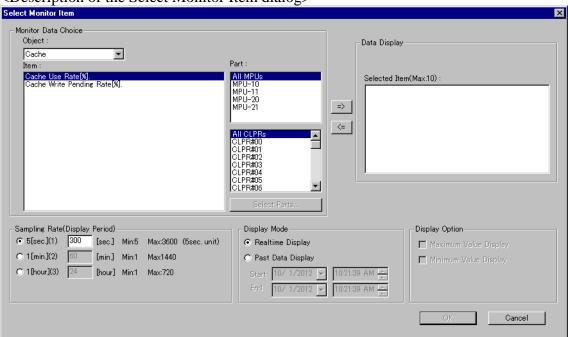
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2.4 Monitoring

2.4.1 Monitoring

<Description of the Select Monitor Item dialog>



■ Monitor Data Choice

Object.....Select the desirable object. You can select "Cache", "Processor", "Port", or "LDEV" (Logical Device).

ItemItems corresponding to the selected object are displayed. You can select multiple items.

PartParts corresponding to the selected object are displayed.

■ Data Display

Selected Item.....The selected items are displayed. You can select up to 10 items in one panel.

[=>] button......This button adds the displayed items. The selected data is added as data that is already selected as the displayed data.

[<=] button......The selected items are removed from the list of displayed data.

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■ Sampling Rate(Display Period)

Specify the time interval of updating data and the period that data is displayed. You can specify the display period depending on the selected time interval.

| | Display period |
|---------|--|
| 5[sec.] | 5 seconds to 3,600 seconds (1 hour) (units of 5 seconds) |
| 1[min.] | 1 minute to 1,440 minutes (24 hours) |
| 1[hour] | 1 hour to 720 hours (30 days) |

^{*1:} If you specify 1,440 minutes, the data may not be displayed depending on the window size.

■ Display Mode

Select the display mode. There are two modes. [Realtime Display] displays the current status. [Past Data Display] displays the data in the past.

- Realtime Display...... The data will be updated in the specified time interval.
- Past Data Display You can specify the range of the displayed data.

Specify the start time of the display in "Start", and specify the end time of the display in "End".

The period you have specified in "Sampling Rate(Display Period)" is ignored.

■ Display Option

You can select either to display or not to display the maximum/minimum values when you specify 1[min.] or 1[hour] in the "Sampling Rate(Display Period)". When you select this option, the maximum/minimum values are indicated by the dotted lines in the graph.

If you place a check mark in "Maximum Value Display", the maximum value will be displayed. If you place a check mark in "Minimum Value Display", the minimum value will be displayed.

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SVP02-220

■ Display data item list

| | | Display data item list | | | | | |
|----|-------|---|----------------------------|--|---------|--|--|
| # | Part | Item | | Description | Remarks | | |
| 1 | Cache | Cache Use Rate | | Cache Use Rate | | | |
| 2 | | Cache Write Pendi | • | Cache Write Pending Rate | | | |
| 3 | MP | MP processing Rat | | MP processing Rate | | | |
| 4 | | MP Processing Rate Open-Target | | MP Processing Rate Open-Target | | | |
| 5 | | MP Processing Rate Open-Initiator | | MP Processing Rate Open-Initiator | | | |
| 6 | | MP Processing Ra | te Open-External | MP Processing Rate Open-External | | | |
| 7 | | MP Processing Ra | te BackEnd | MP Processing Rate BackEnd | | | |
| 8 | | MP Processing Ra | te Others | MP Processing Rate Others | | | |
| 9 | Port | Loss of Signal Cou | ınt (Fibre) | Loss of Signal Count | | | |
| 10 | | Bad Received Cha | racter Count (Fibre) | Bad Received Character Count | | | |
| 11 | | Loss of Synchronia | zation Count (Fibre) | Loss of Synchronization Count | | | |
| 12 | | Link Failure Coun | t (Fibre) | Link Failure Count | | | |
| 13 | | Received EOFa Co | ount (Fibre) | Received EOFa Count | | | |
| 14 | | Discarded Frame (| Count (Fibre) | Discarded Frame Count | | | |
| 15 | | Bad CRC Count (I | | Bad CRC Count | | | |
| 16 | | Protocol Error Cou | | Protocol Error Count | | | |
| 17 | | Expired Frame Co | | Expired Frame Count | | | |
| 18 | | Port Total IOPS | - \/ | IOPS (Read/Write Command Transfer) | | | |
| 19 | | Port Total Transfer | r Rate | Transfer Rate | | | |
| 17 | | Fort Total Transfer Rate | | (Read/Write Command Transfer) | | | |
| 20 | | Port Total Response Time | | Response Time (Read/Write Command Transfer) | | | |
| 21 | | Port Input IOPS | Initiator/External Port | IOPS (Read Command Transfer) | | | |
| | | | Target/RCU Target Port | IOPS (Write Command Transfer) | | | |
| 22 | | Port Input Transfer Rate | Initiator/External Port | Transfer Rate (Read Command Transfer) | | | |
| | | | Target/RCU Target Port | Transfer Rate (Write Command Transfer) | | | |
| 23 | | Port Input Response Time | Initiator/External Port | Response Time (Read Command Transfer) | | | |
| | | | Target/RCU Target Port | Response Time (Write Command Transfer) | | | |
| 24 | | Port Output IOPS | Initiator/External Port | IOPS (Write Command Transfer) | | | |
| | | | Target/RCU Target Port | IOPS (Read Command Transfer) | | | |
| 25 | | Port Output Transfer Rate | Initiator/External Port | Transfer Rate (Write Command Transfer) | | | |
| | | Target/RCU Target Port | | Transfer Rate (Read Command Transfer) | | | |
| 26 | | Port Output Initiator/External Response Time Port | | Response Time (Write Command Transfer) | | | |
| | | | Target/RCU Target Port | Response Time (Read Command Transfer) | | | |
| 27 | LDEV | IOPS | - | IOPS | | | |
| 28 | | Transfer Rate | | Transfer Rate | | | |
| 29 | | Read Hit Rate | | Read Hit Rate | | | |
| | | | | (A hit rate only for random read.) | | | |

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- (1) Display the Monitor panel Press the "Monitor" button in the SVP main panel to start the monitoring feature.
- (2) Display the Select Monitor Item panel Select (DR) [Monitor]-[Open...] from the menu in the Monitor panel.



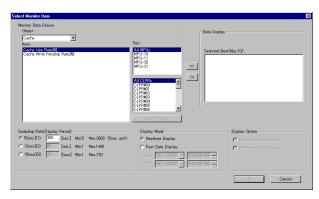
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(3) Select data to be displayed

Select the data you want to display Select the category whose data you want to display in [Object] in "Monitor Data Choice". Available data will appear in [Item]. Select the data you want to display (You can select multiple items). The parts relevant to the selected item will be displayed in [Part]. Choose the desirable part. After selecting [Object], [Item], and [Part], select [=>] button to add the selected items to [Selected Item].



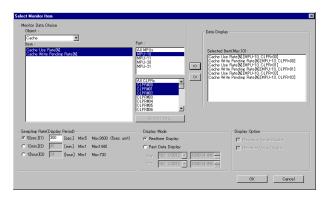
You can display data on up to 10 items. If there is no data in [Selected Item], the [OK] button will not be activated.

If the same item is multiply displayed in the list box of 'Select Monitor Item' dialog, open the dialog again and operate while the items are correctly displayed.

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SVP02-250

② Select the display interval and period In "Sampling Rate(Display Period)", specify the time interval of updating data and the period that data is displayed. Select 5[sec.], 1[min.], or 1[hour] for the time interval of updating data. The interval depends on the data you have selected. You can change the period that the data is displayed.



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- ③ Specify the display mode
 In "Display Mode", select either [Realtime Display] or [Past Data Display]. When you select [Past Data Display], specify Start and End of the display. If you select [Past Data Display], the period you have specified in ② will be ignored.
- Specify the display option
 When you select 1[min.] or 1[hour] in "Display Period", you can choose either to display or not to display the maximum/minimum value within the time interval.

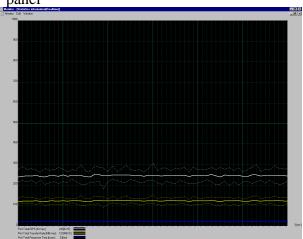
After selecting all the necessary items, select (CL) [OK] to display the Statistics information panel.

SVP02-260

(4) Description of 'Statistics information(Realtime)' panel

The specified data obtained during the specified display period is displayed in the panel, and it is updated in the specified time interval. The data on the left is older data, and that on the right is newer data.

The legends are displayed under the graph (Selected data and colors of lines in the graph). The solid lines indicate the data. The thin dotted lines of the same color as the solid lines indicate the maximum/minimum values of the data. The dot-dot-dash lines of the same color as the solid lines show the threshold (if set).



NOTE: If the storage system is undergoing the following maintenance operations or CHK1A, CHK1B and CHK3 occurs, the monitoring data might contain extremely large values.

- Adding on, replacing, or removing cache memories.
- Adding on, replacing, or removing disk drives.
- Adding on, replacing, or removing MPB.
- Changing the system configuration.
- Replacing the micro-program.
- Formatting LDEVs (including Quick Format).
- PS OFF/ON

DW700

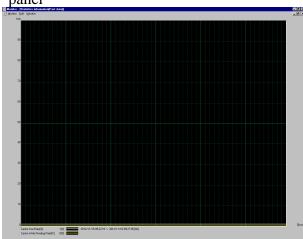
Rev.0 / Sep.2013

SVP02-261

(5) Description of 'Statistics information(Past data)' panel

The specified data obtained during the specified period is displayed in the panel. The data is displayed in the same way as 'Realtime', but the data is not updated. The dates and times of the oldest/latest available data in the specified period and the number of effective data are shown on the right of the legends.

NOTE: When there are not data in the range that you appointed, it is displayed with "No effective data." on the right of the legends.



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NOTE: When the number of the effective data chooses different items, "*" mark is displayed in the right side of the number of the effective data.

NOTE: The accumulation period of the past data.

| Time interval | Accumulation period |
|---------------|---|
| 5[sec.] | 3,600 seconds (1 hour) (units of 5 seconds) |
| 1[min.] | 1,440 minutes (24 hours) (*1) |
| 1[hour] | 744 hours (31 days) |

*1: If you specify 1,440 minutes, the data may not be displayed depending on the window size.

NOTE: See the NOTE of "(4) Description of 'Statistics information(Realtime)' panel".

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SVP02-270

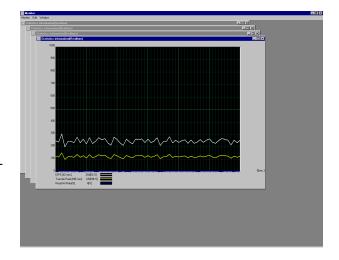
(6) Align the displayed windows
You can align the windows from the
[Window] menu.

To cascade the windows, select (DR) [Window]-[Cascade].

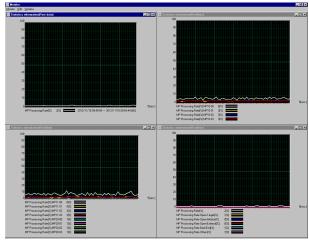
To tile them, select (DR) [Window]-[Tile].

To arrange the minimized windows, select (DR) [Window]-[Icon].

To close all windows, select (DR) [Window]-[All Close].



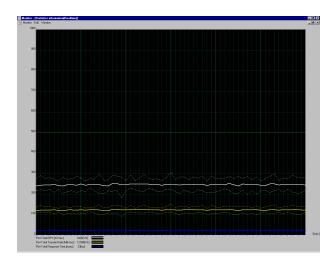
A list of available windows is displayed under the menu. You can select one window to display it in the foreground.



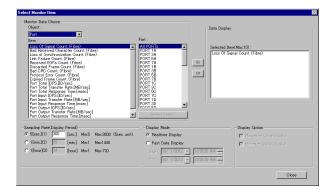
(7) Exit the Monitor window Select (DR) [Monitor]-[Exit] from the menu.

SVP02-280

- (8) Change the contents displayed in the Statistics information window
 - ① Display the 'Select Monitor Item' panel From the menu in the 'Monitor' window, select (DR) [Edit]-[Item Add/Delete...].



② Change display items
To add display items, select the category
of data you want to display in [Object] in
"Monitor Data Choice". Available data
will appear in [Item]. Select the data you
want to display. The parts relevant to the
selected items will be displayed in [Part].
Choose the desirable part. After selecting
[Object], [Item], and [Part], select [=>]
button to add the selected items to
[Selected Item].



To delete display items, select the items you want to delete from [Selected Item]. After selecting the items you want to delete, click [<=] button to delete the selected items from [Selected Item].

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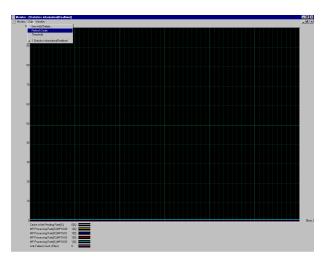
SVP02-290

- ③ Change the display interval and period In "Sampling Rate(Display Period)", specify the time interval of updating data and the period that data is displayed.
- Change the display mode In "Display Mode", select either [Realtime Display] or [Past Data Display].
- © Change the display option
 When you select "1[min.]" or "1[hour]" in "Display Period", you can choose either to
 display or not to display the maximum/minimum value within the time interval.

After selecting all the necessary items, select (CL) [Close] to close the 'Select Monitor Item' panel.

- (9) Scale refresh method of the data display screen
 - Scale refreshSelect (CL) [Monitor]-[Edit]-[RefreshScale] from the menu.

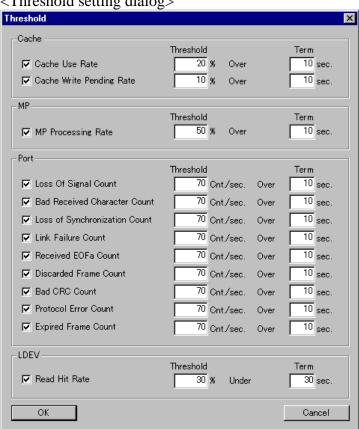
NOTE: You cannot appoint the scale size. It is changed to the most suitable scale by performing scale refresh.



SVP02-300

2.4.2 Processing Information Monitoring Function

<Threshold setting dialog>



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SVP02-310

■ List of items to be able to set the threshold

| # | Part | Item | Description | Remarks |
|----|-------|-------------------------------|---|---------|
| 1 | Cache | Cache Use Rate | Cache Use Rate | |
| 2 | | Cache Write Pending Rate | Cache Write Pending Rate | |
| 3 | MP | MP Processing Rate | MP Processing Rate | |
| 4 | Port | Loss of Signal Count | Loss of Signal Count | |
| 5 | | Bad Received Character Count | Bad Received Character Count | |
| 6 | | Loss of Synchronization Count | ation Count Loss of Synchronization Count | |
| 7 | | Link Failure Count | Link Failure Count | |
| 8 | | Received EOFa Count | Received EOFa Count | |
| 9 | | Discarded Frame Count | Discarded Frame Count | |
| 10 | | Bad CRC Count | Bad CRC Count | |
| 11 | | Protocol Error Count | Protocol Error Count | |
| 12 | | Expired Frame Count | Expired Frame Count | |
| 13 | LDEV | Read Hit Rate | Read Hit Rate | (*1) |

^{*1: •} The threshold is bottom judgment.

[•] In the case of LDEV number with a little cache Reading count, SIM is restrained.

Rev.2 / Feb.2013, Sep.2013

SVP02-320

- (1) Start of monitor window Select (CL) the [Monitor] button on the SVP main window, and start the monitoring function.
- (2) Starting threshold setting window Select (DR) [Edit]-[Threshold] from the menu on the 'Monitor' window.

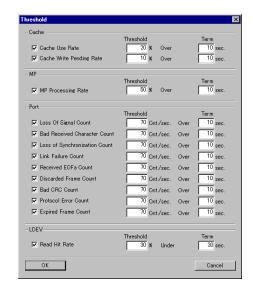


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- (3) Setting threshold
 - ① Monitoring items Select (CL) items that you want to perform the threshold monitoring in the 'Threshold' window.
 - ② Threshold and term Enter the threshold and the consecutive exceeding term of each selected item.

When the selection and the input of all items are completed, select (CL) [OK] and close the window.

If the threshold is exceeded continuously in the set term, SIM is reported remotely.



(4) Exiting the monitor window Select (DR) [Monitor]-[Exit] from the menu.

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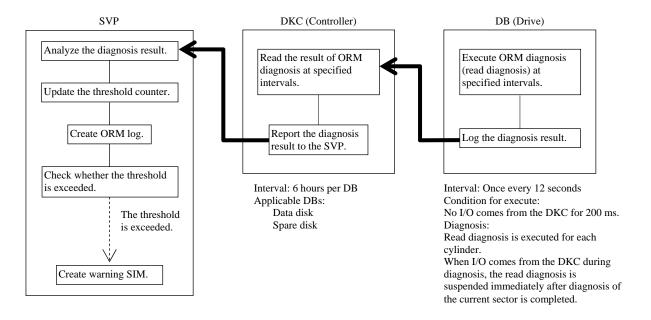
SVP02-330

2.5 Online read margin (ORM)

[Overview]

The on-line read margin test (ORM) function is a read diagnostic function provided for preventive maintenance of disk drives. The diagnostic is automatically executed in each drive. The DKC reads the diagnostic result at specified intervals and reports it to the SVP.

The SVP calculates the error ratio to the threshold value which is set in advance, and indicates it in the OVER RATE Display (see [1], (2)). When the Rate in the display exceeds 100%, it means the error count is exceeding the threshold, the SVP creates the warning SIM. It is, however, not reported to the Host. The disk drive reporting the SIM should be exchanged with higher priority than other normal drives.



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SVP02-340

The following table shows SIM reported by SVP.

Case of the error of SAS Drive : See Table 2.5-1
Case of the error of Flash Drive : See Table 2.5-2
Case of the error of Flash Module Drive : See Table 2.5-3

They are Unrecovered Read Error, Recovered Read Error, Unrecovered Seek error, Recovered Seek Error, Not Ready and Other Errors. Each has three types of counters indicated as Today, 7 days and Total. Refer to [1], (4) for the Over Rate Counter Display. In the Over Rate Counter Display, the error ratio which has the largest number among those classified types is displayed for each drive to represent each error.

The warning SIMs to be reported in the ORM are shown below.

Table 2.5-1 ORM SIM and Reference Code (SAS Drive)

| No. | Error Type | Reference Code | Meaning |
|-----|------------------------|------------------|-------------------|
| 1 | Unrecovered Read Error | 501X | Drive Unit Error |
| 2 | Recovered Read Error | $(X = 0 \sim F)$ | |
| 3 | Unrecovered Seek Error | 502X | Drive Media Error |
| 4 | Recovered Seek Error | $(X = 0 \sim F)$ | |
| 5 | Not Ready | | |
| 6 | Other Errors | | |

Table 2.5-2 ORM SIM and Reference Code (Flash Drive)

| No. | Error Type | Reference Code | Meaning |
|-----|---------------------------------------|-----------------------|-------------------------|
| 1 | Total Defect Count | $501X (X = 0 \sim F)$ | Drive Unit Error |
| 2 | Total Uncorrected Errors | _ | Informed Only |
| 3 | Errors Corrected With Possible Delays | | |
| 4 | Highest Erase Count For All Channels | | |
| 5 | Lowest Erase Count For All Channels | | |
| 6 | Used Endurance Indicator | $50BX (X = 0 \sim F)$ | Flash Drive End of life |

Table 2.5-3 ORM SIM and Reference Code (Flash Module Drive)

| No. | Error Type | Reference Code | Meaning |
|-----|----------------------------|-----------------------|---------------------------------------|
| 1 | Total Defect Count | $501X (X = 0 \sim F)$ | Drive Unit Error |
| 2 | Reboot Error | | |
| 3 | DMA Error | | |
| 4 | Memory Error | | |
| 5 | Uncorrected Error | $502X (X = 0 \sim F)$ | Drive Media Error |
| 6 | Used Endurance Indicator | $50CX (X = 0 \sim F)$ | Flash Module Drive End of life |
| 7 | Battery Error | $501X (X = 0 \sim F)$ | Drive Unit Error |
| 8 | FMD Battery Life Indicator | $50DX (X = 0 \sim F)$ | Flash Module Drive Battery Warning |

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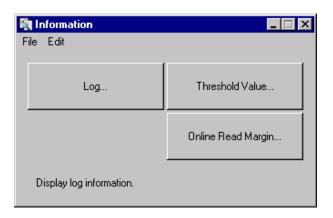
| [1] Displaying an error count, thresholds, and log | SVP02-360 |
|--|-----------|
| [2] Resetting an error count | SVP02-410 |
| [3] Displaying thresholds | SVP02-430 |
| [4] Altering a threshold | SVP02-450 |
| [5] Displaying the ORM running status | SVP02-470 |
| [6] Resetting thresholds | SVP02-480 |
| [7] Set of the threshold of all Flash Drive | SVP02-491 |

(1)

Check SVP Mode.

The Following operation needs SVP Mode to be 'Modify'. (See SVP01-200)

- [2] Resetting an error count
- [4] Altering a threshold
- [6] Resetting thresholds
- [7] Set of the threshold of all Flash Drive
- (2) Select (CL) the [Information] in the 'SVP' window.
- (3) Select (CL) [Online Read Margin...] in the 'Information' window.

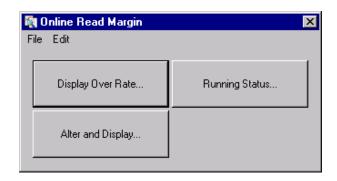


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[1] Displaying an error count, thresholds, and log

(1) Select (CL) [Display Over Rate...] in the 'Online Read margin' window.



(2)

Enter a number from 0 to 100 at "Rate" in the 'ORM Over Rate HDD# Display' dialog box. Select (CL) [Display].

Then only the HDDs which have the rate of equal to or greater than the input number at "Rate" will appear in the display.

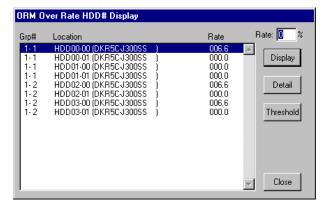
Rate: ratio of the number of errors for the threshold value.

Grp#: the parity group.

SPARE: spare HDD

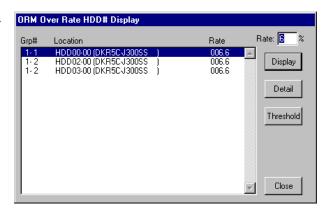
RSRVD: reserved HDD with sparing

* : spare HDD in use.



(3)

When more detailed information is needed for the particular drive, select (CL) the HDD from the HDD Location list box. Select (CL) [Detail].



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(4)

In the 'Over Rate Counter Display' dialog box, select (CL) the error for which detailed log is to be displayed from the "ID" list box. Select (CL) [ORM Log].

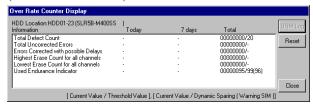
NOTE: In the case of Flash Drive or Flash Module Drive, I cannot choose [ORM Log].

(SAS Drive Selected)



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(Flash Drive Selected)



(Flash Module Drive Selected)



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• In case of SAS Drive

| Item | | Description | | |
|-----------------------------|---|--|--|--|
| ID (Information) (*1) | Read Error (Unrecovered) | : A disk media error was detected. After ten times retries, the error was judged that it might become a serious media error which could not be recovered with ECC or retries. | | |
| | Read Error (Recovered) | : A disk media error was detected. After ten times retries, the error was judged that it was an intermittent read error and recoverable, and included in the error rate management for the preventive maintenance. | | |
| | Seek Error (Recovered) | : A seek error was detected. After ten times retries, the error was judged to be recoverable. | | |
| | Seek Error (Unrecovered) | : A seek error was detected. After ten times retries, the error was judged to be unrecoverable. | | |
| | Not Ready | : Not Ready status of the drive was detected. | | |
| | Other Errors | : Any error which does not belong to the above classification was detected. | | |
| Today | One day count and cleared at AM 0:00 every day. | | | |
| 7 days | For the cumulative value in the latest 7 days. | | | |
| Total | Shows the total cumulative count. | | | |

*1:

Except for "Read Error (Recovered)":

Each error category indicates the Error Count and the Threshold value.

The "-" for the Threshold value means no threshold is set.

For "Read Error (Recovered)":

Only the Read Error (Recovered) has an error rate expression. It is not managed with error count per day, per 7 days or Total.

The error rate of the Read Error [Recovered] is calculated in the following formula:

Error rate = Number of error sectors/Number of ORM scan bits

NOTE: Only the result from approximately the latest one volume scan in ORM is used for the calculation.

SVP02-381

• In case of Flash Drive

| Item | | Description | |
|-------------|---|---|--|
| Information | Total Defect Count | : Defect Count | |
| | Total Uncorrected Errors | : The total of the uncorrectable error (*1) | |
| | Errors Corrected With Possible Delays | : The total of the delay error (*1) | |
| | Highest Erase Count For All Channels | : Highest Erase Count For All Channels (*1) | |
| | Lowest Erase Count For All Channels | : Lowest Erase Count For All Channels (*1) | |
| | Used Endurance Indicator | : Flash Drive End of lifetime (%) (*2) | |
| Today | One day count and cleared at AM 0:00 every day. | | |
| 7 days | For the cumulative value in the latest 7 days. | | |
| Total | Shows the total cumulative count. | | |

- *1: When the drive model is SLRxx-MxxxSS, the value of each item is displayed by 0 fixation.
- *2: Used Endurance Indicator is displayed in the order of "Current Value / Dynamic Sparing (Warning SIM)".

• In case of Flash Module Drive

| Item | | Description | |
|-------------|---|---|--|
| Information | Total Defect Count | : Defect Count | |
| | Reboot Error | : Reboot Error Count | |
| | DMA Error | : DMA Error Count | |
| | Memory Error | : Memory Error Count | |
| | Uncorrected Error | : Uncorrected Error Count | |
| | Used Endurance Indicator | : Flash Module Drive End of lifetime (%) (*1) | |
| | Battery Error | : Battery Error Count | |
| | FMD Battery Life Indicator | : Warning for lifetime of Flash Module Drive Battery (%) | |
| Today | One day count and cleared at AM 0:00 every day. | | |
| 7 days | For the cumulative value in the latest 7 days. | | |
| Total | Shows the total cumulative count. | | |

^{*1:} Used Endurance Indicator is displayed in the order of "Current Value / Dynamic Sparing (Warning SIM)".

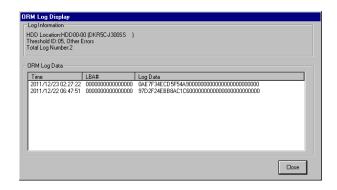
Because these information is multiplication values since HDD operation time, SVP display only total indication in case of Flash Drive. SVP display total indication of "Total Defect Count", "Used Endurance Indicator" and "FMD Battery Life Indicator" and display today indication of the others in case of Flash Module Drive.

The "-" for the Threshold value means no threshold is set.

SVP02-390

(5)

The nature of the error selected in step (4) is displayed.



| Byte | Bit | Name | Explanation |
|------|-----|--------------------------|--|
| 0-3 | | UCT | Time when the diagnostic result was reported from the DKC to the SVP. |
| 4 | 0 | Log Valid | When this bit is 1, it indicates that this log is valid. |
| | 1 | Address Valid | When this bit is 1, it indicates that the address information in bytes 8 to 15 is valid. |
| | 2-3 | (Reserved) | Reserved |
| | 4-7 | Sense Key | Error sense key in the SCSI drive report. (*1) |
| 5 | | Additional Sense Code | Additional sense code in the SCSI drive report .(*1) |
| 6 | | Sense Code Qualifier | Additional sense code qualifier in the SCSI drive report. (*1) |
| 7 | | Seek Error Count | Number of seek errors within 10 seek error retries. |
| 8-A | | CC | Address of the cylinder where the error occurred. |
| В | | Н | Address of the head where the error occurred. |
| C-D | | S | Address of the sector where the error occurred. |
| E-15 | | LBA | LBA where the error occurred. |

^{*1:} Definition and contents of the error codes are same as those of the SSB for ordinary DB errors.

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(6) Select (CL) [Close] in the 'ORM Log Display' dialog box.

(7) Select (CL) [Close] in the 'Over Rate Counter Display' dialog box.

(8) Select (CL) [Close] in the 'ORM Over Rate HDD# Display' dialog box.

(9) Close the 'Information' window.

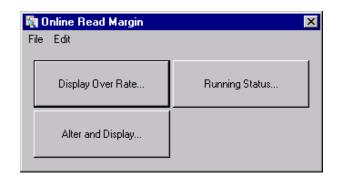
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SVP02-410

[2] Resetting an error count

(1)

Select (CL) [Display Over Rate...] in the 'Online Read Margin' window.



(2)

Enter a number from 0 to 100 at 'Rate' in the 'ORM Over Rate HDD# Display' dialog box. Select (CL) [Display].

Then only the HDDs which have the rate of equal to or greater than the input number at "Rate" will appear in the display.

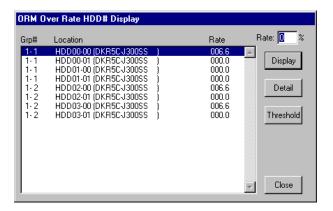
Rate: ratio of the number of errors for the threshold value.

Grp#: the parity group.

SPARE: spare HDD

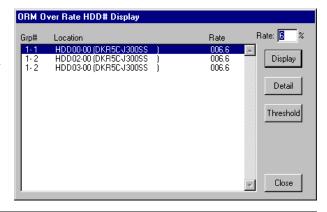
RSRVD: reserved HDD with sparing

* : spare HDD in use.



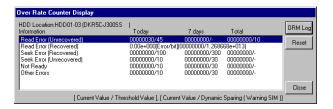
(3)

In the 'ORM Over Rate HDD# Display' dialog box, select (CL) the HDD for which an error count and thresholds are to be reset from the HDD Location list box. Select (CL) [Detail].



(4)

In the 'Over Rate Counter Display' dialog box, select (CL) [Reset] button.



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(5)
Select (CL) [OK] in the 'Threshold Counter Reset' dialog box.



- (6) Select (CL) [Close] in the 'Over Rate Counter Display' dialog box.
- (7) Select (CL) [Close] in the 'ORM Over Rate HDD# Display' dialog box.
- (8) Close the 'Information' window.

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[3] Displaying thresholds

(1)

Select (CL) [Alter and Display...] in the 'Online Read Margin' window.



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(2)

In the 'ORM Threshold Alter/Display' dialog box, select (CL) an HDD from the "HDD#" list box and select (CL) [Display]. In order to display threshold of another interval, select (CL) the interval from the "Type" radio button.

NOTE: Multiple HDDs can be selected (CL) from the "HDD#" list box while the control key is being held down.

When "Flash Drive" is selected in the "HDD#" list box, HDD other than "Flash Drive" cannot be selected at the same time.

In this case, each "Threshold" field in the "Threshold Value" list box shows the threshold for the HDD that is highlighted in the "HDD#" list box.

Grp#: the parity group.

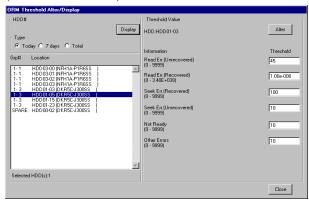
SPARE: spare HDD

RSRVD: reserved HDD with sparing

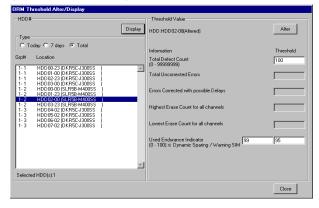
* : spare HDD in use.

NOTE: When selected (CL) HDD from the "HDD#" list box is "Flash Drive", "Information" field in the "Threshold Value" shows the item of "Flash Drive". In order to display threshold of "Total Defect Count", select (CL) "Total" from the "Type" radio button.

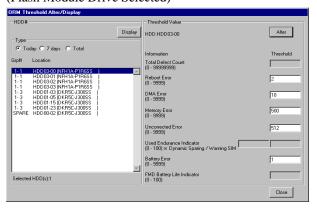
(SAS Drive Selected)



(Flash Drive Selected)



(Flash Module Drive Selected)



NOTE: When selected (CL) HDD from the

"HDD#" list box is "Flash Module Drive", "Information" field in the "Threshold Value" shows the item of "Flash Module Drive".

In order to display threshold of "Total Defect Count", "Used Endurance Indicator" and "FMD Battery Life Indicator", select (CL) "Total" from the "Type" radio button. In order to display threshold of the other, select (CL) "Today" from the "Type" radio button.

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(3)

Select (CL) [Close] in the 'ORM Threshold Alter/Display' dialog box and close the 'Information' window.

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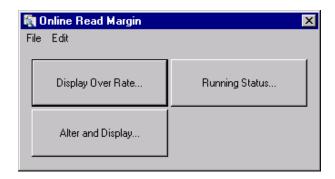
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[4] Altering a threshold

(1)

Select (CL) [Alter and Display...] in the 'Online Read Margin' window.



(2)

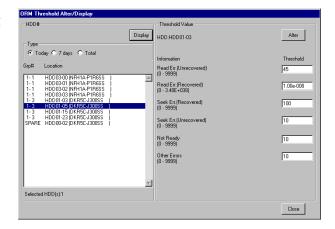
In the 'ORM Threshold Alter/Display' dialog box, select (CL) an HDD from the "HDD#" list box and select (CL) [Display]. In order to display threshold of another interval, select (CL) the interval from the "Type" radio button.

Grp#: the parity group.

SPARE: spare HDD

RSRVD: reserved HDD with sparing

* : spare HDD in use.



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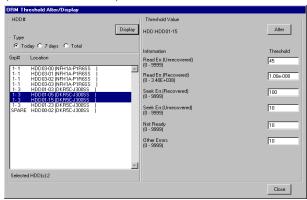
(3)

In the 'ORM Threshold Alter/Display' dialog box, alter the threshold in the "Threshold" field in the "Threshold Value" list box. Then select (CL) [Alter].

NOTE: When multiple HDDs are selected in the "HDD#" list box, the thresholds of all HDDs are altered to the same value.

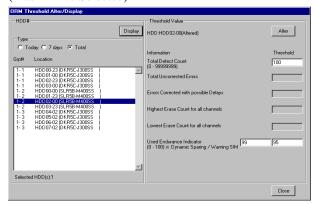
> Different drive types of the threshold management cannot be selected at the same time.

(SAS Drive Selected)

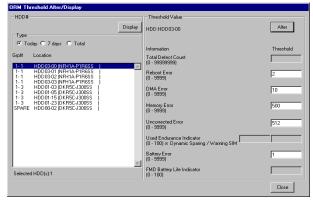


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(Flash Drive Selected)



(Flash Module Drive Selected)

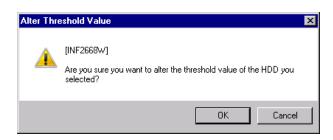


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(4)

Select (CL) [OK] in the 'Alter Threshold Value' dialog box.



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(5) Select (CL) [Close] in the 'ORM Threshold Alter/Display' dialog box and close the 'Information' window.

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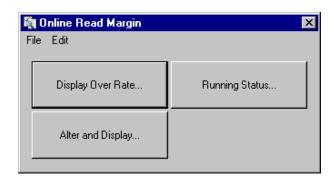
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[5] Displaying the ORM running status

(1)

Select (CL) [Running Status...].



(2)

In the 'ORM Running Status Display' dialog box, the ORM running status is displayed as the number of sectors.

NOTE: The "HDD#" list box shows the location numbers of HDDs. "Scan" shows the number of scanned sectors.

"Total" shows the total number of sectors in the drive. "Times" shows the number of times the entire drive was scanned. Result of calculating "Scan" / "Total".

Grp#: shows the parity group.

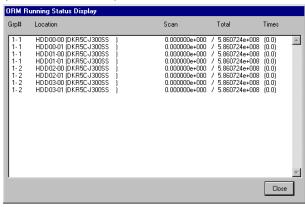
SPARE: spare HDD

RSRVD: reserved HDD with sparing

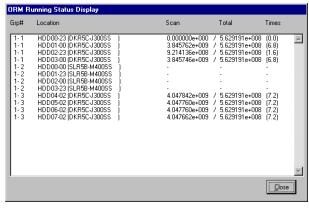
* : spare HDD in use.

NOTE: When "Flash Drive" or "Flash Module Drive" is displayed, "Scan", "Total", "Times" is"-".

(SAS Drive Selected)



(Flash Drive or Flash Module Drive Selected)

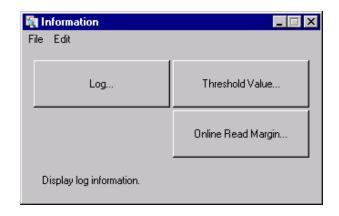


(3)

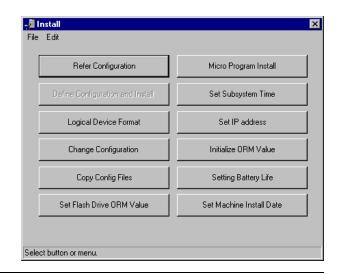
Select (CL) [Close] in the 'ORM Running Status Display' dialog box and close the 'Information' window.

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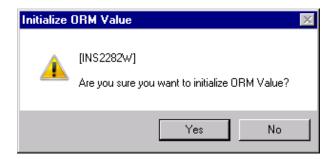
- [6] Resetting thresholds
- (1) Select (CL) [File]-[Exit] in the 'Information' window.



- (2) Select (CL) [Install] in the 'SVP'.
- (3) Select (CL) [Initialize ORM Value] in the 'Install' window.



(4)
Select (CL) [Yes] in the 'Initialize ORM Value' dialog box.



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(5)

Select (CL) [OK] in the 'Initialize ORM Value' dialog box.



(6)

Execute an operation for backing up the configuration information.

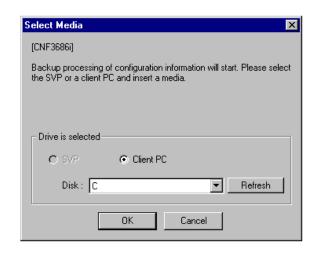
Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

Select (CL) the drive and the PC in which the media was inserted.

Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



(7)

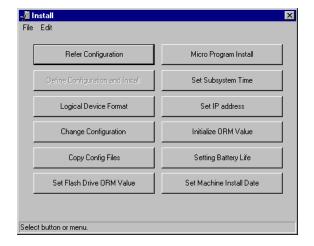
When this procedure is completed, the message "Please remove the configuration information media." is displayed. Remove the configuration information media, select (CL) [OK].



(8)

After the procedure is completed, return to 'Install'.

Select (CL) [File]-[Exit].

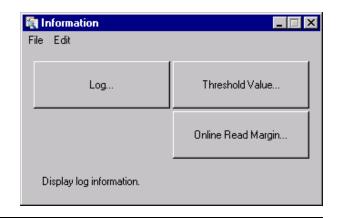


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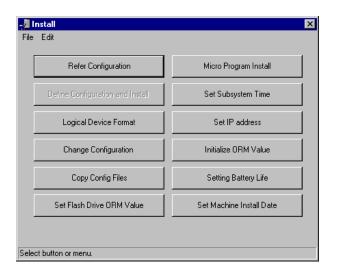
[7] Set of the threshold of all Flash Drive

(1) Select (CL) [File]-[Exit] in the 'Information' window.



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- (2) Select (CL) [Install] in the 'SVP'.
- (3)
 Select (CL) [Set Flash Drive ORM Value] in the 'Install' window.



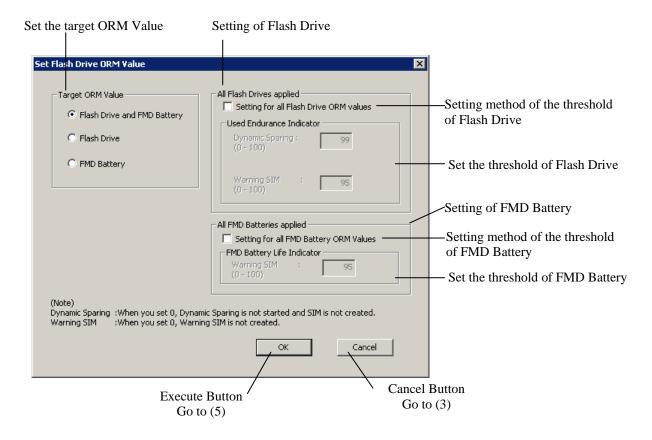
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(4)

Set a setting method of the threshold and the threshold, and then select (CL) the [OK] button.



<<Set the target ORM Value>>

[Target ORM Value]

Flash Drive and FMD Battery: This setting changes the threshold of Flash Drive and FMD

Battery.

Flash Drive : This setting changes the threshold of Flash Drive.
FMD Battery : This setting changes the threshold of FMD Battery.

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<< Setting of Flash Drive>> [All Flash Drives applied]

<Setting method of the threshold of Flash Drive>

Setting for all Flash Drive ORM Values

When you want to set the threshold of Used Endurance Indicator of all Flash Drives, attach a check.

When it is checked, the Flash Drive installed after this operation becomes the same threshold automatically. When you want to cancel this setting, check off. When you want to return the threshold to initial value (Dynamic Sparing threshold: 99/Warning SIM threshold: 95), do reset operation of the threshold. (SVP02-480)

<Set the threshold of Flash Drive>

[Used Endurance Indicator]

Dynamic Sparing: When there is a spare drive, this is the threshold to start Dynamic Sparing.

When reach the threshold that you set, start Dynamic Sparing and create SIM. Valid number is 0 - 100. When you set 0, does not start Dynamic

Sparing and does not create SIM.

: This is the threshold to create Warning SIM. When reach the threshold Warning SIM

that you set create Warning SIM. Valid number is 0 - 100.

When you set 0, does not create Warning SIM.

<< Setting of FMD Battery>> [All FMD Batteries applied]

<Setting method of the threshold of FMD Battery>

Setting for all FMD Battery ORM Values

When you want to set the threshold of FMD Battery Life Indicator of all FMD Battery, attach a check.

When it is checked, the FMD Battery installed after this operation becomes the same threshold automatically. When you want to cancel this setting, check off. When you want to return the threshold to initial value (Warning SIM threshold: 95), do reset operation of the threshold. (SVP02-480)

<Set the threshold of FMD Battery>

[FMD Battery Life Indicator]

Warning SIM : This is the threshold to create Warning SIM. When reach the threshold

that you set create Warning SIM. Valid number is 0 - 100.

When you set 0, does not create Warning SIM.

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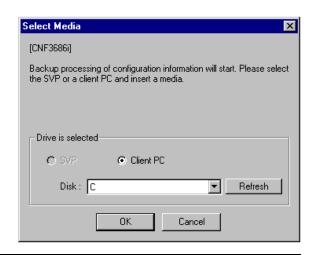
(5) Select (CL) [OK] in the "Process is normal end.".



(6)
Execute an operation for backing up the configuration information. Prepare the removable media for backup and insert the media. Please select (CL) the [Refresh] button, and update drive information. Select (CL) the drive and the PC in which the media was

inserted. Select (CL) the [OK] button.

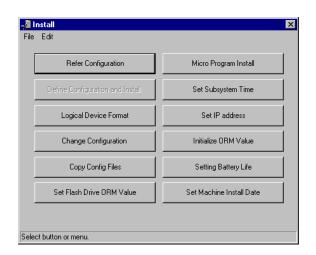
NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



When this procedure is completed, the message "Please remove the configuration information media." is displayed. Remove the configuration information media, select (CL) [OK].



(8) After the procedure is completed, return to 'Install'. Select (CL) [File]-[Exit].



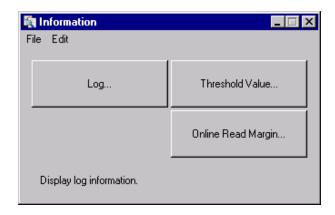
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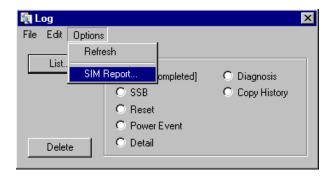
SVP02-500

2.6 SIM Reporting Specification

- [1] DKC SIM
- [2] Cache SIM
- [3] Media SIM
- [4] Device SIM
- (1) Change the mode from [View Mode] to [Modify Mode]. Select (CL) [Information].
- (2) Select (CL) [Log...] in the 'Information' window.



(3)
Select (DR) [SIM Report...] from the
[Options] menu in the 'Log' dialog box.



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(4)

Select (CL) SIM report type from the 'Type' list box.

Type: DKC SIM
Cache SIM
Media SIM
Device SIM

Select (CL) the level to be reported in the

'SIM Reporting Option' dialog box, and also select (CL) [OK].

SIM message report level are arranged as follows in order of the higher level.

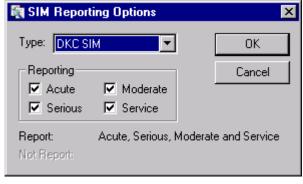
Acute > Serious > Moderate > Service

Selecting level, means all higher levels are to be reported.

(5)

Close the 'Log' dialog box and also close the 'Information' window.

Change the mode from [Modify Mode] to [View Mode].



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2.7 Management of drive threshold values

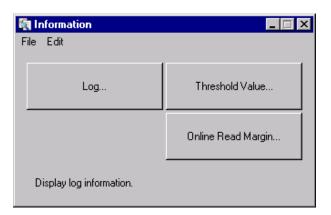
| [1] Displaying threshold values | SVP02-530 |
|---------------------------------|-----------|
| [2] Altering threshold value | SVP02-540 |
| [3] Displaying an error count | SVP02-560 |
| [4] Resetting an error count | SVP02-570 |

(1)

Check SVP Mode.

The Following operation needs SVP Mode to be 'Modify'. (See SVP01-200)

- [2] Altering threshold value
- [4] Resetting an error count
- (2) Select (CL) the [Information] window in the 'SVP' window.
- (3)
 Select (CL) [Threshold Value...] in the 'Information' window.



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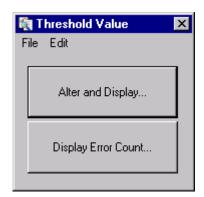
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[1] Displaying threshold values

(1)

Select (CL) [Alter and Display...] in the 'Threshold Value' window.



(2)

Select (CL) an HDD location from the "HDD#" list box in the 'Threshold Alter/Display' dialog box and select (CL) [Display].

In order to display threshold of another interval, select (CL) the interval from the "Type" list box.

NOTE: Multiple HDD locations can be selected (CL) from the "HDD#" list box while the control key being held down. The threshold value in the "Threshold Value" list box shows the threshold value for the HDD location that is highlighted in the "HDD#" list box.

Recovered: Threshold of errors

recoverable by retry. Threshold of errors not

recoverable by retry.

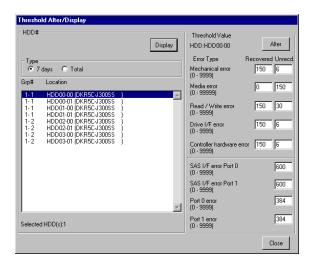
Grp#: the parity group.

Unrecd:

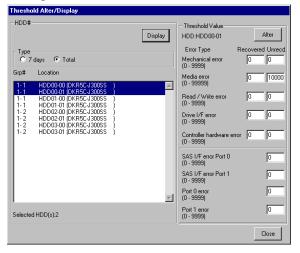
SPARE: spare HDD

RSRVD: reserved HDD with sparing

* : spare HDD in use.



(Multiple Selected)



(3)

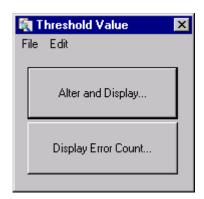
Select (CL) [Close] in the 'Threshold Alter/Display' dialog box and close the 'Information' window.

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[2] Altering threshold value

(1) Select (CL) [Alter and Display...] in the 'Threshold Value' window.



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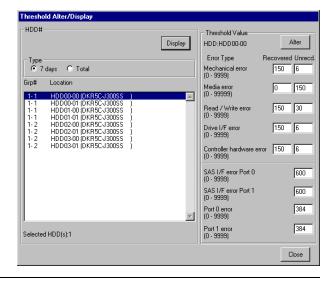
Select (CL) an HDD location from the "HDD#" list box in the 'Threshold Alter/Display' dialog box and select (CL) [Display]. In order to display threshold of another interval, select (CL) the interval from the "Type" list box.

Grp#: the parity group.

SPARE: spare HDD

RSRVD: reserved HDD with sparing

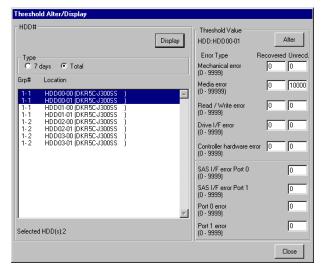
* : spare HDD in use.



(3)

Alter a threshold value in the "Threshold Value" list box in the 'Threshold Alter/Display' dialog box.
Then select (CL) [Alter].

NOTE: When multiple HDD locations are selected (CL) from the "HDD#" list box with the control key being hold down, the thresholds for all the selected HDDs are modified to the same value.



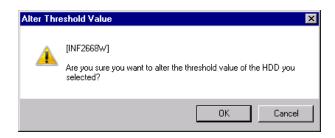
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(4)

Select (CL) [OK] in the 'Alter Threshold Value' dialog box.



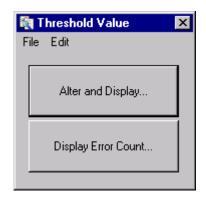
(5) Select (CL) [Close] in the 'Threshold Alter/Display' dialog box and close the 'Information' window.

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[3] Displaying an error count

(1) Select (CL) [Display Error Count...] in the 'Threshold Value' Window.



(2)

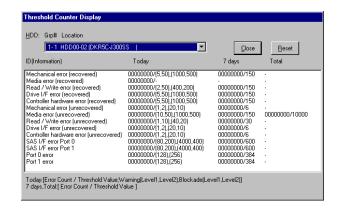
Select (CL) an HDD location from the HDD Location drop-down list in the 'Threshold Counter Display' dialog box to display the error count for the HDD.

Grp#: the parity group.

SPARE: spare HDD

RSRVD: reserved HDD with sparing

* : spare HDD in use.



NOTE: Please execute this operation with P/S ON.

When with P/S OFF or the communication error occurs, the display of part Today is displayed by "Unknown".

(3)Select (CL) [Close] in the 'Threshold Counter Display' dialog box and close the 'Information' window.

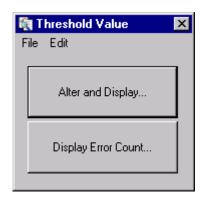
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[4] Resetting an error count

(1) Select (CL) [Display Error Count...] in the 'Threshold Value' window.



(2) Select (CL) the H

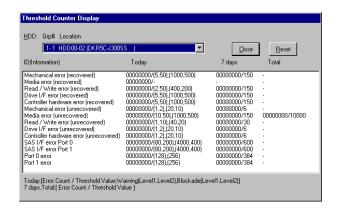
Select (CL) the HDD location, for which you want to reset the error count, from the "HDD Location" drop-down list in the 'Threshold Counter Display' dialog box and also select (CL) [Reset].

Grp#: the parity group.

SPARE: spare HDD

RSRVD: reserved HDD with sparing

* : spare HDD in use.



(3) Select (CL) [OK] in the 'Threshold Counter Reset' dialog box.

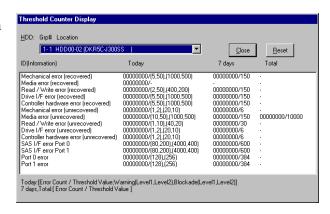


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(4)

After confirming that the error count has been reset in the 'Threshold Counter Display' dialog box select (CL) [Close] and close the 'Information' window.



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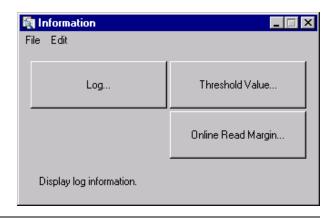
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2.8 SIM Log Complete

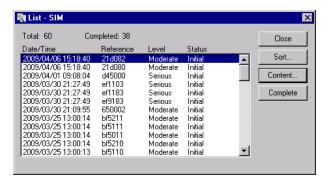
- (1) Change the mode from [View Mode] to [Modify Mode]. Select (CL) [Information].
- (2) Select (CL) [Log...] in the 'Information' dialog box.



(3) Select (CL) [SIM] and [List...] in the 'Log'.



(4)
Select (CL) data to be completed in the 'List-SIM' dialog box and select (CL) [Complete].

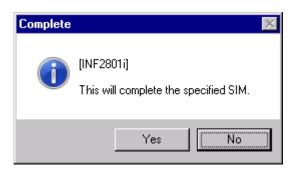


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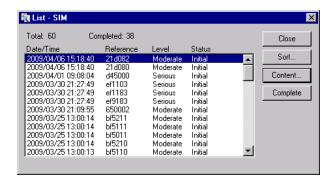
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(5) Select (CL) [Yes] in the 'Complete' dialog box.



(6) In the 'List-SIM' dialog box, make sure that "Completed" is displayed in the status.



(7)

Select (CL) [Close] in the 'List-SIM' dialog box.

Close the 'Log' dialog box and close the 'Information' window.

Change the mode from [Modify Mode] to [View Mode].

NOTE1: Even if SIM Complete was performed, the MESSAGE of the Operator Panel may be on. Display all the SIMs to make sure they are completed. If not, please wait for 5 minutes and operate SIM Log Complete again.

NOTE2: Uncomplete SIM logs are recorded up to 256. When the SIM log is made when the number of uncomplete SIM logs is the maximum, the oldest uncomplete SIM log is automatically done complete.

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2.9 Dump/AutoDump

Auto Dump is a useful function to provide the user with free selection of the dump data type and the output media so that the user can collect dump information.

- [1] Auto Dump
- (1) Connect the external USB memory.

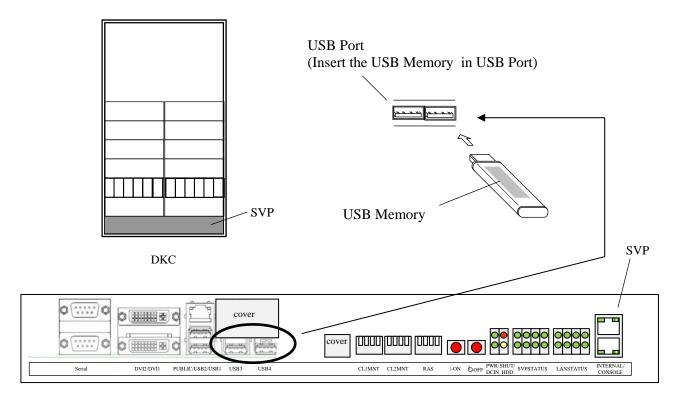
When information is collected to the external USB memory, connect the USB memory.

When information is not collected to the external USB memory, go to Step 2.

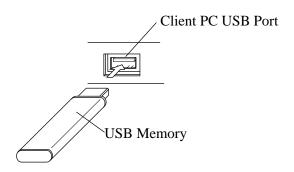
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- ① Insert the USB memory in USB port on the SVP.
 - (a) When connecting to the SVP



(b) When connecting to the Client PC

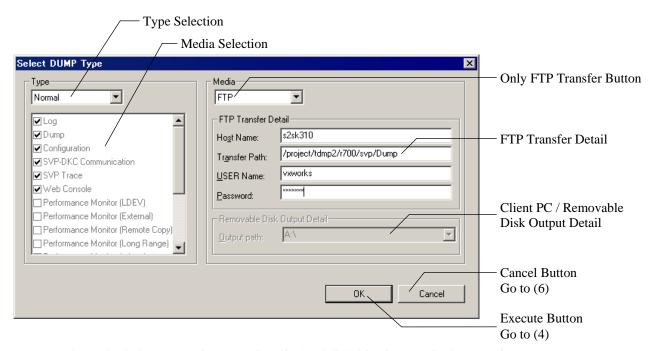


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- (2) Select (CL) [AutoDump] button.
- (3) Select a dump type and a medium for output and make settings of the FTP transfer detail and the Client PC output detail, etc., and then select (CL) the [OK] button.



NOTE1: Please check that automatic connection of a local disk drive is set up in the case of connection to SVP. (At the time of SVP Connect Utility use, it is set up automatically.)

NOTE2: If you execute the TOD setting during collecting the Port Dump, the collecting the Port Dump may fail. Then, please execute collecting the Port Dump again.

And if you execute collecting Port Dump at about the time set by Synchronization Information function, the collecting the Port Dump may fail. Then, please execute collecting the Port Dump again.

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<<Dump Type>>

Rapid:

This dump type is to get log information, SVP operation history, or configuration information. SVP will compress these files automatically. The compressed files will be stored in a few FDs.

This dump type will be used when the initial analysis of error is needed. In this case, you should gather the files used by this type and send it to the Center. After sending this files, you should gather dump data by selecting "Normal" type and send it to the Center to analyze more details.

Normal:

This dump type is to get dump data (you can get DUMP information of All PCB) adding to the log files used by "Rapid" type. SVP will compress these dump files automatically. You should get dump data by using this dump type after sending the "Rapid" type of data to Center.

Detail:

This type is to get monitor information adding to the dump files used by "Normal" type. (You can not get performance monitor information.) This data will be needed when the performance of the DKC wants to be checked. If there is no order to get these data, you do not need to use this type.

DUMP:

The dump of this type selects the processors and gets dumps from them individually.

Log:

The dump of this type collects log information only. The dump is used when it is required to send only the log information immediately to the Technical Support Division before making the initial analysis.

Monitor:

The dump of this type collects all monitor information and configuration information.

Config Backup:

The dump of this type collects the configuration information backup data stored in a hard disk of the SVP.

Obstacle Infor Dmp:

The dump of this type collects the obstacle PDEV Information and obstacle PCB Information data stored in a hard disk of the SVP.

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Custom:

The dump of this type selects source items from the detailed information items and collects information from them.

When none of the detailed information items is checked off, the function of the dump of this type becomes the same as that of the dump whose type is No Gather.

No Gather:

The dump of this type only outputs "c:\dkc200\tmp\hdcp.tgz", which has already been got, to a selected medium without compressing the data.

The dump of this type cannot collect information when the "c:\dkc200\tmp\hdcp.tgz" does not exist or an HDD is selected as a medium for the output.

<<Media>>

HDD:

SVP will store the compressed files to HDD. The file name is "c:\dkc200\tmp\hdcp.tgz". If you can transfer the files to your center directly, this type will be useful.

NOTE: When operating the maintenance, SVP will sometimes delete the files. Do not use the maintenance operation before sending the files to your center.

FTP:

SVP will store the compressed files to HDD. The file name is "c:\dkc200\tmp\hdcp.tgz". After the compression processing end, Transfer processing of compression data is performed to the transfer place directory of a specification server inputted into FTP Transfer Detail.

Client PC:

The compressed data is output to the directory which has been entered in the Client PC Output Detail box of the PC remotely connected to the SVP.

When information is collected to the external USB memory of the Client PC, please select "Client PC" as a medium and specify the drive of the USB memory into Client PC Output Detail.

Removable Disk:

The compressed data is output to the directory which has been entered in the Removable Disk of SVP PC.

When information is collected to the external USB memory of the SVP PC, please select "Removable Disk" as a medium and specify the drive of the USB memory into Removable Disk Output Detail.

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<<FTP Transfer Detail>>

Host Name: The host name of a FTP transfer place or an IP address is inputted. (*1)

Transfer Path: The directory of a FTP transfer place is inputted.

USER Name: The user name which login to a FTP server is inputted.

Password: The password which login to a FTP server is inputted.

<<Cli>ent PC Output Detail>>

Output path: Enter a directory, to which data of the PC remotely connected to the SVP is

output, into this box. (A list of drives of the PC concerned is displayed as an

initial display.)

<< Removable Disk>>

Output path: Enter a directory, to which data of the Removable Disk of the SVP PC is output,

into this box. (A list of Removable Disk drives of the SVP PC is displayed as an

initial display.)

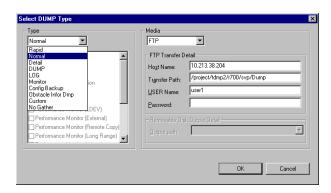
*1: It is in between "[" and "]" when you input the address of IPv6. (Eg.) [0000:0000:0000:0000:0000:0000:0000]

(4) Doing the dump and data compression

A dump is done when a dump type is selected out of "Normal", "Detail", "DUMP", and "Custom" (in the case where "Dump" has been selected from the detailed information items). Go to Step (4-1-1).

When "No Gather" is selected as a dump type, a message, "Do you want to output the already gathered dumps, logs, history of SVP operations, and usage data to the target media without refreshing them?" is displayed. A selection (CL) of the [OK] button in response to the message makes an output to the selected medium.

Go to Step (5).



When a dump type other than the above is selected, a data compression is done. Go to Step (4-2).

The following messages are displayed before doing the dump and data compression when a Media is select out of "Client PC", and "Removable Disk".

"Insert a removable media for the dump collection to get the dump information in it." is displayed.

When you output to a removable media, insert the removable media and select (CL) the [OK] button.



"Free space in the output destination drive is XXXMB. Do you want to continue?" is displayed.

Select (CL) the [Yes] button.

(XXX is free space in the output destination drive.)



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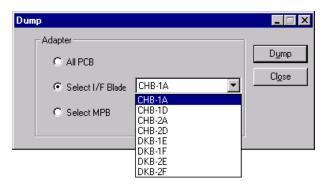
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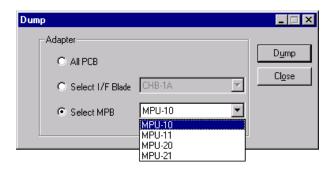
(4-1-1)

When "DUMP" is selected as a dump type, select (CL) [Select I/F Blade] or [Select MPB], and select (CL) "Location No." of the processor and select (CL) the [DUMP] button.

When [All PCB] is selected, dumps are got from all the processors.

When a dump type other than the above is selected, go to Step (4-1-2).

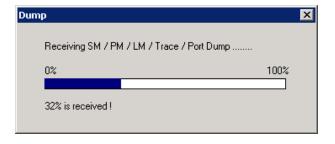




(4-1-2)

A box indicating progress of the dump is displayed.

When the dump terminates normally, go to step (4-1-4).



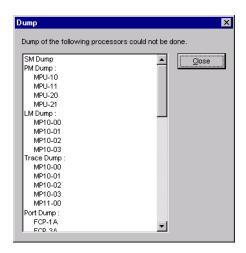
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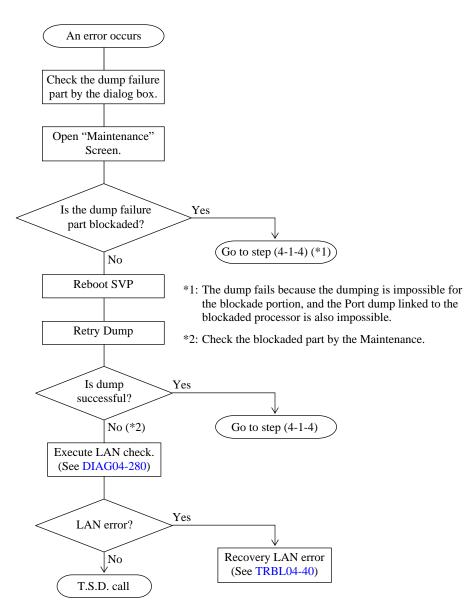
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(4-1-3)

When an error occurs, the following dialog box is displayed.

Perform the following procedure and retry the dump.





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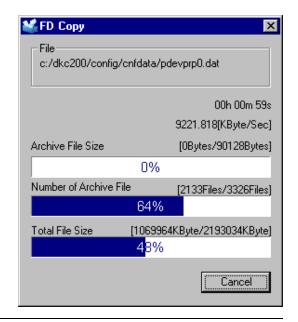
(4-1-4)

A data compression is done.

Go to Step (4-2).

(4-2) Data compression

The 'FD Copy' window is displayed and a data compression is done.



(5) Output to a selected medium.

An output is done to a selected medium

When an HDD was selected, go to Step (5-1-1).

When an FTP was selected, go to Step (5-2-1).

When a Client PC was selected, go to Step (5-3-1).

When a Removable Disk was selected, go to Step (5-4-1).

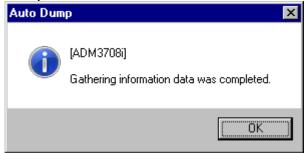
When Client PC or Removable Disk was selected and output to FDD, go to Step (5-5-1).

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(5-1-1) When the HDD is selected as a medium for the output

A message, "Gathering information data was completed." is displayed. Select (CL) the [OK] button.
Go to Step (6).



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(5-2-1) When the FTP is selected as a medium for the output

When the [FTP] was selected as the media for the output, a transfer of the compressed data is started.



(5-2-2)

After the data transfer is completed, a message, "FTP transfer has ended successfully." is displayed.

Select (CL) the [OK] button. Go to Step (6).



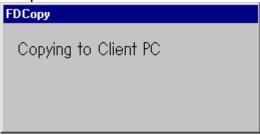
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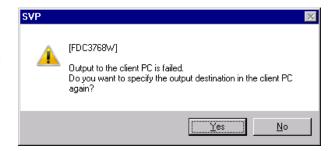
(5-3-1) When the Client PC is selected as an medium for the output

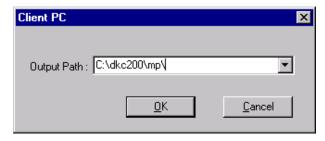
"Copying to Client PC." is displayed and a copying to the Client PC is done.



When the copying fails, a message, "Output to the client PC is failed. Do you want to specify the output destination in the client PC again?" is displayed.

Select (CL) the [Yes] button and reset the directory for the output in the 'Client PC' window.





(5-3-2)

A message, "Gathering information data was completed." is displayed. Select (CL) the [OK] button.

Go to Step (6).



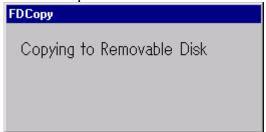
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(5-4-1) When the Removable Disk is selected as an medium for the output

"Copying to Removable Disk" is displayed and a copying to the Removable Disk is done.



(5-4-2)

A message, "Gathering information data was completed." is displayed. Select (CL) the [OK] button.

When information is collected to the USB memory of the SVP PC, go to Step (6).



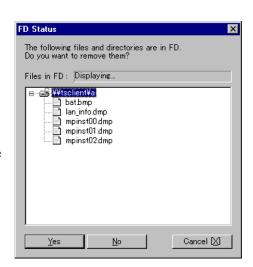
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(5-5-1)

If the file is not contained in the FD when the FD is checked through the 'FD Status' dialog box, go to Step (5-5-2). When the file is contained in the FD, a message, "The following files and directories are in FD. Do you want to remove them?" is displayed. When you want to delete the files, select (CL) the [Yes] button and go to Step (5-5-2). If you want to leave the files, select (CL) the

[No] button and go to Step (5-5-2).



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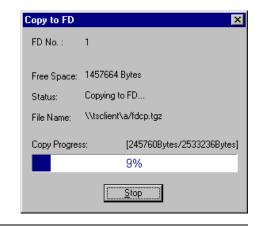
When an error occurs, a message, "Could not access FD. FD is not DOS formatted. FD is not inserted. FD is write protected." is displayed.

Check the matters displayed and then select (CL) the [Retry] button. Return to Step (5-5-1).



(5-5-2)

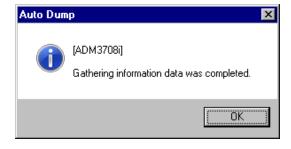
"Copying to FD..." is displayed and the copying is done. (If a capacity of the FD becomes insufficient, return to Step (5-5-1) and replace the FD with a new one.)



(5-5-3)

A message, "Gathering information data was completed." is displayed. Select (CL) the [OK] button.

Go to Step (6).



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(6)

Gathering Information Local Mode if it is enabled. A message, "Do you want to release Gathering Information Local mode?" is displayed.

When you want to release the Gathering Information Local mode, select (CL) the [Yes] button.



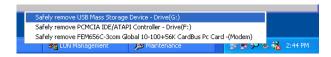
When the Client PC is selected as a medium for the output, and When information is collected to the USB memory of Client PC, go to Step (6-2).

When the Removable Disk is selected as a medium for the output, and When information is collected to the USB memory of the SVP PC, go to Step (6-1).

(6-1) Remove the USB memory from SVP PC Select (CL) the "Safely Remove Hardware" icon in the task tray.



Since the menu bar is displayed, select (CL) "Safely remove USB Mass Storage Device - Drive (X:)."



- *1: "X:" is a drive letter of the USB memory.
- *2: When a device other than the USB memory is selected, the other devices will stop. If a wrong selection is made, insert the device that has been selected by mistake again.

Remove the USB memory from the USB port of the SVP.

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from the Client PC.

be used.

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(6-2) Remove the USB memory from Client PC
When the collection of information using AutoDump is completed, remove the USB memory

NOTICE: How to remove the USB memory from Client PC changes with Client PCs to

Please perform removal processing suitable at each Client PC.

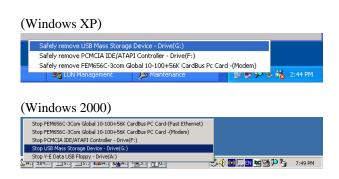
example: In the case of Client PC which sets Windows XP (the English version) or Windows 2000 (the English version) to OS

 When the collection of information using AutoDump is completed, select (CL) the (Windows XP)
"Safely Remove Hardware"
(Windows 2000)
"Unplug or Eject Hardware"
icon in the task tray.



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 Since the menu bar is displayed, select(CL) the (Windows XP)
 "Safely remove USB Mass Storage Device- Drive(X:)"
 (Windows 2000)
 "Stop USB Mass Storage Device-Drive(X:)".



- *1: "X:" is a drive letter of the USB memory.
- *2: When a device other than the USB memory is selected, the other devices will stop. If a wrong selection is made, insert the device, which has been selected by mistake again.
- 3. (In the case of Client PC which sets Windows 2000 to OS)

 Confirm that the following message appears, and then select(CL) [OK].

 Safe To Remove Hardware

 The 'USB Mass Storage Device' device can now be safely removed from the system.
- 4. Remove the USB memory from the USB port of the Client PC.

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[2] FMD Dump

(1) Connect the external USB memory.

When information is collected to the external USB memory, connect the USB memory. (Refer to SVP02-620)

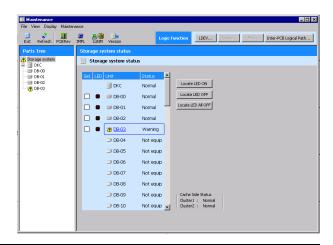
When information is not collected to the external USB memory, go to Step (2).

(2) <Initial screen>

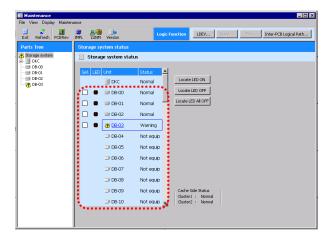
Display the SVP initial screen from SVP Section "1. How to Operate the SVP (PC)" (SVP01-10).

For CE Laptop PC, please refer to 3.1.5.3.

- "3.1.5.3 Attachment/Removal Procedure of LAN Cable for CE Laptop PC" (INST03-01-150)
- (3) <Maintenance Other Components>
 Select the [Maintenance Components]-[Maintenance Other Components] from Action Menu.
 And open the 'Maintenance Other Components' window.
- (4) <Maintenance window>
 The 'Maintenance' window is displayed.



(5) <Maintenance window>
Select (CL) the DB information [DB-nn] of
the DB which installs the HDD to be replaced
in the 'Maintenance' window.

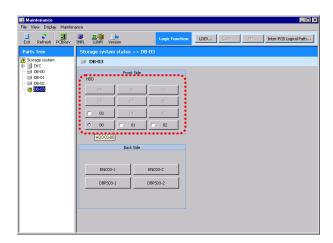


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(6) <Select HDD> Check and select (CL) [nn] to be replaced.

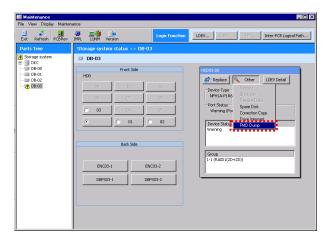


(7)

Make sure that the "Device Status" is [Normal].

NOTE: Please check that the selected HDD is not formatting (without Quick Format) in the 'Logical Device' window.

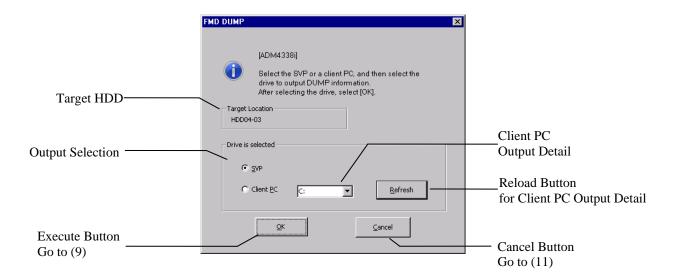
Select (CL) [Other]-[FMD Dump].



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(8)

A medium for output and the Client PC output detail, etc., and then select (CL) the [OK] button.



NOTE: Please check that automatic connection of a local disk drive is set up in the case of connection to SVP. (At the time of SVP Connect Utility use, it is set up automatically.)

<<Output Detail>>

SVP:

Dump data is output to "C:\dkc200\others" directory of SVP.

Client PC:

Dump data is output to the directory which has been entered in the Client PC Output Detail box of the PC remotely connected to the SVP.

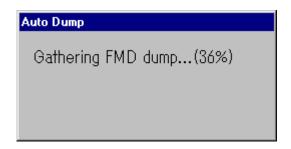
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(9) FMD Dump Start

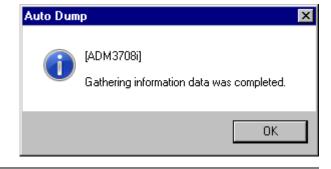
When select the OK button, FMD Dump start.



(10)

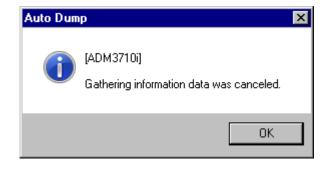
A message, "Gathering information data was completed." is displayed. Select (CL) the [OK] button.

Go to Step (12).



(11)

A message, "Gathering information data was canceled." is displayed. Select (CL) the [OK] button.



(12) < Maintenance window>

Close the 'Maintenance' window if there is no problem.

When the Client PC is selected as a medium for the output, and When information is collected to the USB memory of Client PC, Remove the USB memory. (Refer to SVP02-760)

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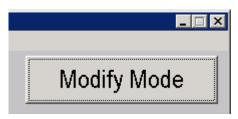
2.10 Logical Device Maintenance

2.10.1 Format of Logical Device

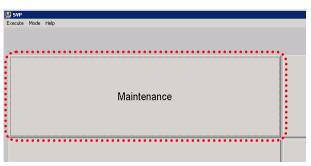
A CAUTION

Executing this operation may cause a serious error such as a system down or a data loss. Accordingly, confirmation of the appropriateness of the operation and input of a password on the succeeding password input screen is required.

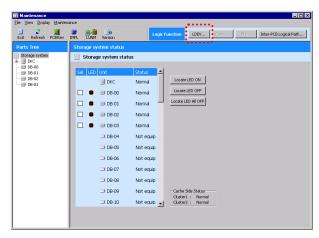
- (1) <Preparation>
 Close each menu of the starting SVP entirely.
- (2) <Start> Change the mode to [Modify Mode].



Select (CL) the [Maintenance] in the 'SVP' window.



Select (CL) [LDEV...] on the dialog bar in the 'Maintenance' window.



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(3) <Selection of Logical Device>

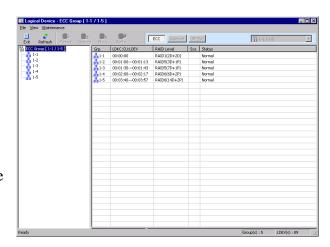
A CAUTION

Be careful enough not to make a mistake in selecting a device.

(3)-1 Case of selection Parity Group Select (CL) the target group from the list in the right of the 'Logical Device' window.

NOTE: In the case of following;
Select (CL) devices (LDEVs)
because the selection of parity group
are not able to execute format.
Select (CL) the target device (or
group) from the list in the right of the
'Logical Device' window.

 Normal devices (LDEV) are included in the specified parity group.



 All devices (LDEV) of the LUSE composition are not included in the specified parity group.

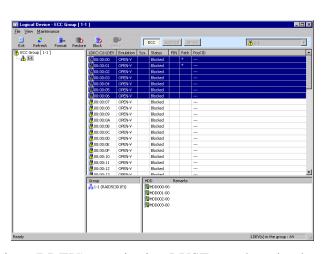
Please confirm devices (LDEV) of the LUSE composition by "3.9 LUN Management" (SVP03-530) of the SVP SECTION or "5.2.4 Refer Configuration" (INST05-490) of the INSTALLATION SECTION.

(3)-2 Case of selection Device (LDEV)

Select (CL) the parity group included the target devices from the list in the right of the 'Logical Device' window.

And select (CL) the target devices (LDEV) in the right list of the screen.

NOTE: For all devices that the devices (LDEV) which was selected constitutes LUSE in the case of a top device (LDEV) of LUSE (refer to "Table 3.6.2-1 List of Device information" (SVP03-390)), it is



formatted. In addition, the state of devices (LDEV) constituting LUSE may be mixed when selected devices (LDEV) are except the top of LUSE without including top device (LDEV) of LUSE. Please be careful not to use it while a state of LUSE is mixed to see it as an available device from a host when top device of LUSE is normal.

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(4) <Execution>

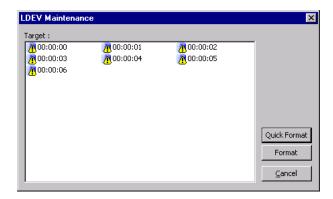
Select (CL) [Format] on the tool bar in the 'Logical Device' window.



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(5) <Check>

Check the device (or group) to be formatted in the 'LDEV Maintenance' window, and select (CL) [Format].



(6) <Password Input>

A CAUTION

This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

Corresponding to the following message, enter the password and select (CL) the [OK] button.

"Data in the specified logical device may be lost due to this operation. You need the password to continue."



(7) <Progress Check>

The progress in the format processing is displayed.



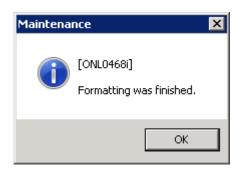
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(8) <Completion Check>

When the format is completed, the following message is displayed. Select (CL) [OK].

"Formatting was finished."



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(9) <Post-processing>

Close the 'Logical Device' window.

Close the 'Maintenance' window.

Change the mode to [View Mode].

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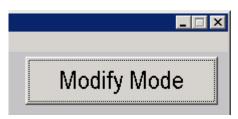
2.10.2 Block Logical Device

A CAUTION

Executing this operation may cause a serious error such as a system down or a data loss. Accordingly, confirmation of the appropriateness of the operation and input of a password on the succeeding password input screen is required.

(1) <Preparation>
Close each menu of the starting SVP entirely.

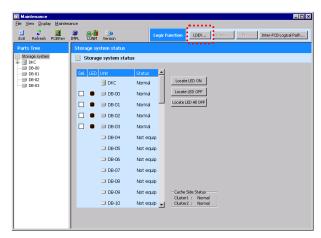
(2) <Start> Change the mode to [Modify Mode].



Select (CL) the [Maintenance] in the 'SVP' window.



Select (CL) [LDEV...] on the dialog bar in the 'Maintenance' window.



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(3) <Selection of Logical Device>

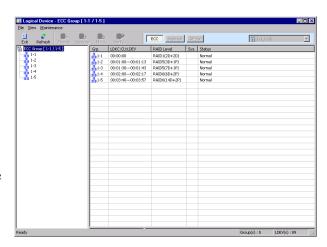
A CAUTION

Be careful enough not to make a mistake in selecting a device.

(3)-1 Case of selection Parity Group Select (CL) the target group from the list in the right of the 'Logical Device' window.

NOTE: In the case of following;
Select (CL) devices (LDEVs)
because the selection of parity group
are not able to execute block.
Select (CL) the target device (or
group) from the list in the right of the
'Logical Device' window.

 Blocked devices (LDEV) are included in the specified parity group.



 All devices (LDEV) of the LUSE composition are not included in the specified parity group.

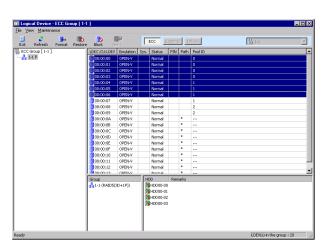
Please confirm devices (LDEV) of the LUSE composition by "3.9 LUN Management" (SVP03-530) of the SVP SECTION or "5.2.4 Refer Configuration" (INST05-490) of the INSTALLATION SECTION.

(3)-2 Case of selection Device (LDEV)

Select (CL) the parity group included the target devices from the list in the right of the 'Logical Device' window.

And select (CL) the target devices (LDEV) in the right list of the screen.

NOTE: For all devices that the devices (LDEV) which was selected constitutes LUSE in the case of a top device (LDEV) of LUSE (refer to "Table 3.6.2-1 List of Device information" (SVP03-390)), it is



blocked. In addition, the state of devices (LDEV) constituting LUSE may be mixed when selected devices (LDEV) are except the top of LUSE without including top device (LDEV) of LUSE. Please be careful not to use it while a state of LUSE is mixed to see it as an available device from a host when top device of LUSE is normal.

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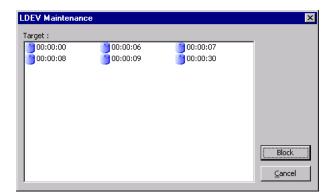
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(4) <Execution>
Select (CL) [Block] on the tool bar in the 'Logical Device' window.



(5) <Check>

Check the device (or group) to be blocked in the 'LDEV Maintenance' window, and select (CL) [Block].



(6) <Password Input>

A CAUTION

This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

Enter the password and select (CL) the [OK] button.



(7) <Processing Wait>

The following message is displayed.

"Blocking the logical device..."

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(8) < Completion Check>

When the blockade is completed, the following message is displayed. Select (CL) [OK]. "Blocking the logical device is completed."



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(9) <Post-processing>

Close the 'Logical Device' window.

Close the 'Maintenance' window.

Change the mode to [View Mode].

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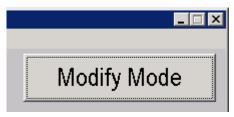
2.10.3 Restore the Logical Device

A CAUTION

Executing this operation may cause a serious error such as a system down or a data loss. Accordingly, confirmation of the appropriateness of the operation and input of a password on the succeeding password input screen is required.

(1) <Preparation>
Close each menu of the starting SVP entirely.

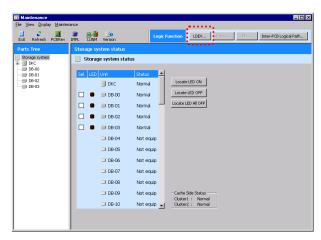
(2) <Start> Change the mode to [Modify Mode].



Select (CL) the [Maintenance] in the 'SVP' window.



Select (CL) [LDEV...] on the dialog bar in the 'Maintenance' window.



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(3) <Selection of Logical Device>

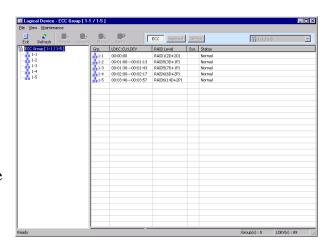
A CAUTION

Be careful enough not to make a mistake in selecting a device.

(3)-1 Case of selection Parity Group Select (CL) the target group from the list in the right of the 'Logical Device' window.

NOTE: In the case of following;
Select (CL) devices (LDEVs)
because the selection of parity group
are not able to execute restore.
Select (CL) the target device (or
group) from the list in the right of the
'Logical Device' window.

 Normal devices (LDEV) are included in the specified parity group.



• All devices (LDEV) of the LUSE composition are not included in the specified parity group.

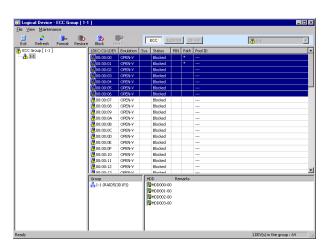
Please confirm devices (LDEV) of the LUSE composition by "3.9 LUN Management" (SVP03-530) of the SVP SECTION or "5.2.4 Refer Configuration" (INST05-490) of the INSTALLATION SECTION.

(3)-2 Case of selection Device (LDEV)

Select (CL) the parity group included the target devices from the list in the right of the 'Logical Device' window.

And select (CL) the target devices (LDEV) in the right list of the screen.

NOTE: For all devices that the devices (LDEV) which was selected constitutes LUSE in the case of a top device (LDEV) of LUSE (refer to "Table 3.6.2-1 List of Device information" (SVP03-390)), it is



recovered. In addition, the state of devices (LDEV) constituting LUSE may be mixed when selected devices (LDEV) are except the top of LUSE without including top device (LDEV) of LUSE. Please be careful not to use it while a state of LUSE is mixed to see it as an available device from a host when top device of LUSE is normal.

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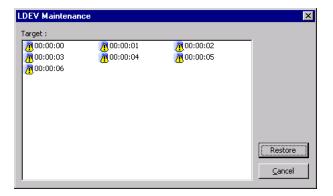
(4) <Execution>

Select (CL) [Restore] on the tool bar in the 'Logical Device' window.



(5) <Check>

Check the device (or group) to be restored in the 'LDEV Maintenance' window, and select (CL) [Restore].



(6) <Selection of Recovery Processing>
Select (CL) [Restore Type] in the 'Restore Logical Devices' window, and select (CL) [OK].

"Normal Restoration"

"Forcible Restoration"



■Normal Restoration

Explanation:

In case LDEV(s) is (are) blocked due to multiple PDEV failures in one parity group, this option spins up the PDEV which was blocked last to restore the LDEV(s).

When to choose this option?

Use this option when you would like to restore the LDEV(s) that is (are) blocked due to multiple PDEV failures in one parity group.



The purpose of this action is to restore the PDEV blocked last and restore the parity group status to "correction access". Therefore do not replace or self-replace any failed HDD in the parity group before performing this action.

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■ Forcible Restoration

Explanation:

This option restores only the LDEV status forcibly without considering data consistency etc.

When all PDEV status in the parity group is "normal", the LDEV status is changed from "blocked" to "normal".

When to choose this option?

In case "Normal Restoration" cannot restore LDEV, use this option by following the instructions of the technical support division.

After PDEV is manually restored, the LDEV status is changed to "normal" forcibly.

A CAUTION

The data consistency may not be guaranteed. Contact the technical support division to ask for instructions.

(7) < Password Input>

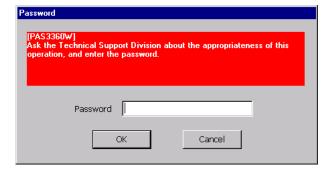
This operation is required only when "Forcible Restoration" is selected in Step (6).

A CAUTION

This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

Corresponding to the following message, enter the password and select (CL) the [OK] button.

"Ask the Technical Support Division about the appropriateness of this operation, and enter the password."



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(8) <Processing Wait>

The following message is displayed.

"Restoring the logical device..."

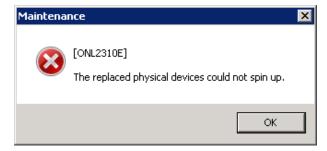
In case that, "Normal Restoration" is selected in Step (6).

If multiple PDEV failures, the restoration processing of the recoverable PDEV is performed here.

This processing cannot recover it when the following message is displayed.

"The replaced physical devices could not spin up."

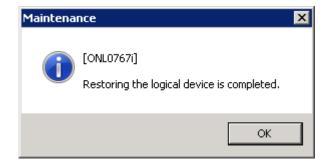
Perform the procedure RDK4 refer to REP01-250.



(9) <Completion Check>

When the restoration is completed, the following message is displayed. Select (CL) [OK].

"Restoring the logical device is completed."



(10) < Check of Device Status>

Check the target device status in the 'Logical Device' window.

(11) <Post-processing>

Close the 'Logical Device' window.

Close the 'Maintenance' window.

Change the mode to [View Mode].

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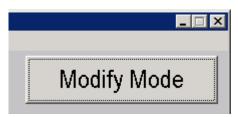
2.10.4 Verify Logical Device

A CAUTION

Executing this operation may cause a serious error such as a system down or a data loss. Accordingly, confirmation of the appropriateness of the operation and input of a password on the succeeding password input screen is required.

(1) <Preparation>
Close each menu of the starting SVP entirely.

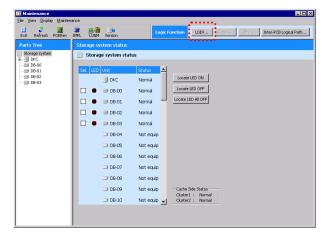
(2) <Start> Change the mode to [Modify Mode].



Select (CL) the [Maintenance] in the 'SVP' window.



Select (CL) [LDEV...] on the dialog bar in the 'Maintenance' window.



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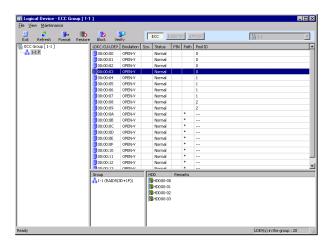
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(3) <Selection of Logical Device>

A CAUTION

Be careful enough not to make a mistake in selecting a device.

Select (CL) the target device (or group) from the list in the right of the 'Logical Device' window.



(4) <Execution>
Select (CL) [Verify] on the tool bar in the 'Logical Device' window.

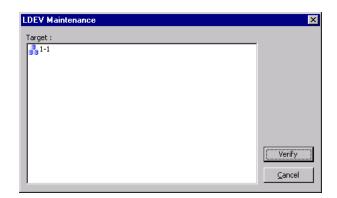


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(5) <Check>

Check the device (or group) which executes the parity synchronization check in the 'LDEV Maintenance' window, and select (CL) [Verify].



(6) <Password Input>

A CAUTION

This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

Corresponding to the following message, enter the password and select (CL) the [OK] button.

"Ask the Technical Support Division about the appropriateness of this operation, and enter the password."



(7) <Selection of Check Content> Input the corresponding items in the 'Verify Logical Devices' window, and select (CL) [OK].



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(8) <Progress Check>

The progress in the processing of the parity synchronization check is displayed.

[Stop]: Stops the parity synchronization check.

When the check is started on condition that a parity group or on HDEV is specified.



When the check is started on condition that two or more parity groups are specified.

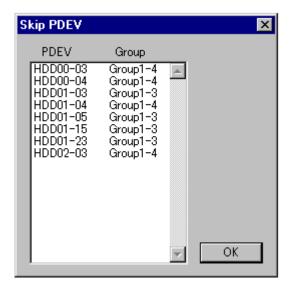


(9) <The check of PDEV which has not checked>
This operation is required only when the PDEV that was not able to execute the parity synchronization check exists.

The PDEV that was not able to execute the check is displayed.

It is possible that the check was not performed because the target PDEV has been blocked or the processing was stopped by pressing [Stop]. Check the status of the target PDEV after completing the synchronization check.

Check the content, and select (CL) [OK].



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(10) < Output of Check Result File>

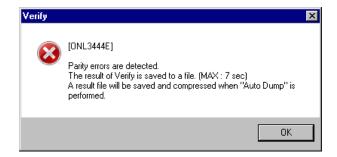
This operation is required only when the device with the parity error exists resulting from the check.

Select (CL) [OK] for the following message. "Parity errors are detected. The result of Verify is saved to a file. (MAX: ***)
A result file will be saved and compressed when "Auto Dump" is performed."

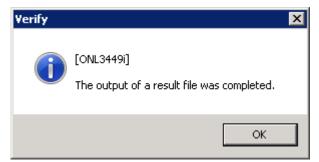
***: The time required for the processing

The following message is displayed after the file output.

"The output of a result file was completed."



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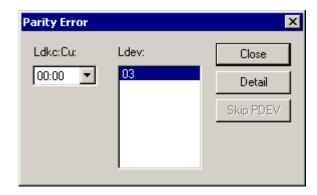
(11) < Check of Check Result>

This operation is required only when the device with the parity error exists resulting from the check.

The information of the device with the parity error is displayed. Check the details, and select (CL) [Close].

The content of the check window of the check result is shown below.

• Check window of the device with the parity error

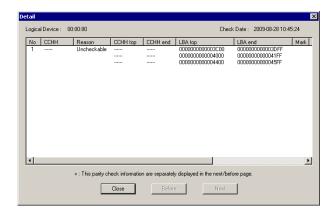


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Table 2.10.4-1 List of Parity Error Windows

| Item | Description |
|-------------|---|
| [Detail] | Displays the detailed information window of the device selected in [CU] – [LDEV]. |
| [Skip PDEV] | Displays the 'Skip PDEV' window again (refer to Step (9)). |

Detailed Information Window
 The details of the parity errors are displayed.



- *1: Only LBA is displayed. However, "----" is displayed in [CCHH/LBA] in case of the parity slot that the LBA display is impossible.
- *2: In the device which configures the extension LU, LDEV#:XXX of the target slot and the head LDEV#:YYY of the extension LU are displayed as "Logical Device: XXX (YYY)." However, if the LDEV# selected in the 'Parity Error' window is the head device, "(YYY)" is not displayed.

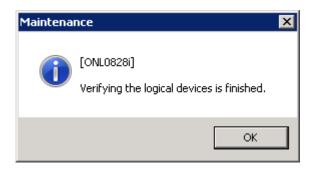
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(12) < Completion Check>

When the parity synchronization check is completed, the following message is displayed. Select (CL) [OK].

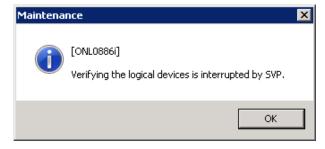
"Verifying the logical devices is finished."



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When it is stopped, the following message is displayed.

"Verifying the logical devices is interrupted by SVP."



(13) < Post-processing >

Close the 'Logical Device' window.

Close the 'Maintenance' window.

Change the mode to [View Mode].

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2.10.5 LDEV recovery for multiple PDEV failures

Refer to SVP02-870.

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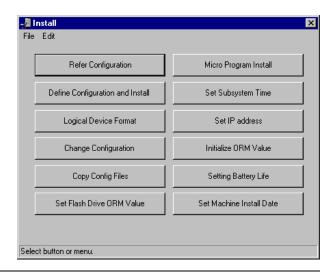
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2.10.6 Format all blocked Logical Devices together

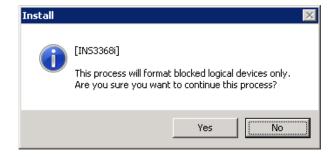
A CAUTION

Executing this operation may cause a serious error such as a system down or a data loss. Accordingly, confirmation of the appropriateness of the operation and input of a password on the succeeding password input screen is required.

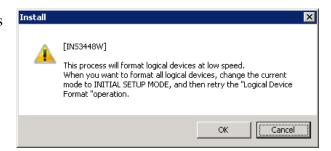
(1) Select (CL) [Logical Device Format].



Select (CL) [Yes] in response to "This process will format blocked logical devices only. Are you sure you want to continue this process?".



(3)
Select (CL) [OK] in response to "This process will format logical devices at low speed.
When you want to format all logical devices, change the current mode to INTIAL SETUP MODE, and then retry the "Logical Device Format" operation.".

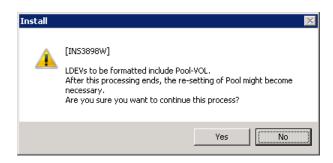


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(4)

When LDEVs to be formatted include Pool-VOL, Select (CL) [Yes] in response to "LDEVs to be formatted include Pool-VOL. After this processing ends, the re-setting of Pool might become necessary. Are you sure you want to continue this process?".



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(5)

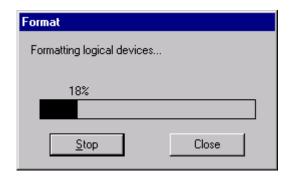
A CAUTION

This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

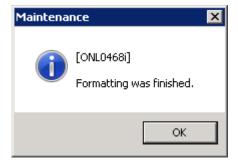
Enter the password and select (CL) [OK].



(6) "Formatting logical devices..." is displayed.



(7)
Select (CL) [OK] in response to "Formatting was finished.".



(8) Close the 'Install' window.

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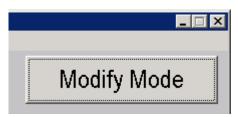
2.10.7 Quick Format of Logical Devices

A CAUTION

Executing this operation may cause a serious error such as a system down or a data loss. Accordingly, confirmation of the appropriateness of the operation and input of a password on the succeeding password input screen is required.

(1) <Preparation>
Close each menu of the starting SVP entirely.

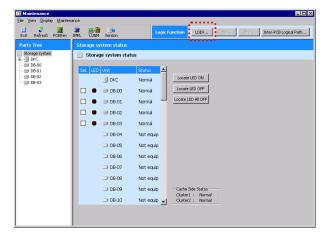
(2) <Start> Change the mode to [Modify Mode].



Select (CL) the [Maintenance] in the 'SVP' window.



Select (CL) [LDEV...] on the dialog bar in the 'Maintenance' window.



(3) <Selection of Logical Device>

A CAUTION

Be careful enough not to make a mistake in selecting a device.

(3)-1 Case of selection Parity Group Select (CL) the target group from the list in the right of the 'Logical Device' window.

NOTE: In the case of following;
Select (CL) devices (LDEVs)
because the selection of parity group
are not able to execute Quick
Format.

Select (CL) the target device (or group) from the list in the right of the 'Logical Device' window.

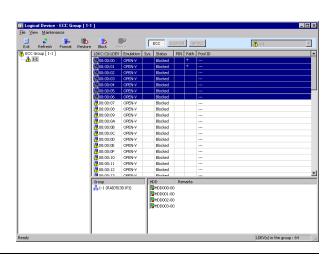
- Normal devices (LDEV) are included in the specified parity group.
- All devices (LDEV) of the LUSE composition are not included in the specified parity group.

Please confirm devices (LDEV) of the LUSE composition by "3.9 LUN Management" (SVP03-530) of the SVP SECTION or "5.2.4 Refer Configuration" (INST05-490) of the INSTALLATION SECTION.

(3)-2 Case of selection Device (LDEV)

Select (CL) the parity group included the target devices from the list in the right of the 'Logical Device' window.

And select (CL) the target devices (LDEV) in the right list of the screen.



(4) <Execution>

Select (CL) [Format] on the tool bar in the 'Logical Device' window.



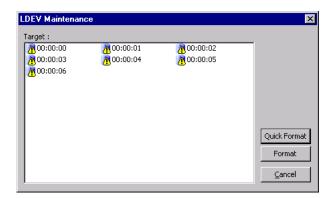
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(5) <Check>

Check the device (or group) to be restored in the 'LDEV Maintenance' window, and select (CL) [Quick Format].



Select (CL) [Yes] in response to "Quick Format is executed. Do you continue to this operation?"



(6) <Password Input>

A CAUTION

This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

Corresponding to the following message, enter the password and select (CL) the [OK] button.

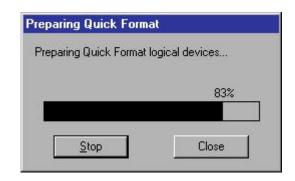
"Data in the specified logical device may be lost due to this operation. You need the password to continue."



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(7) <Progress confirmation> The processing progress preparing Quick Format is displayed.

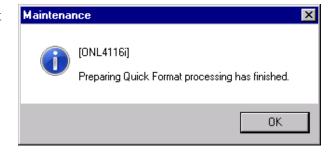


(8) <End confirmation>

When the processing preparing Quick Format is completed, the following message is displayed.

Select (CL) [OK].

"Preparing Quick Format processing has finished."



NOTE: After Quick Format is finished, SIM

= 0x410100 is output when executing Quick Format from SVP.

When all Quick Format is finished, the above SIM is output if Quick Format is executed from Storage Navigator while executing Quick Format from SVP. When Quick Format is executed only from Storage Navigator, SIM is not output.

(9) <Post-processing>

Close the 'Logical Device' window.

Close the 'Maintenance' window.

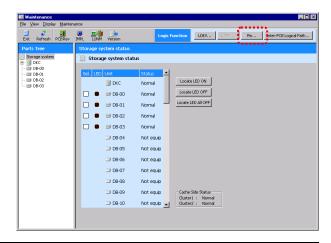
Change the mode to [View Mode].

2.11 Pin Data indication

Prerequisite operation

(1) Select (CL) [Maintenance].

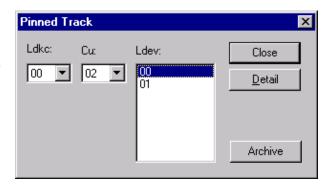
(2) Select (CL) [PIN...] in the 'Maintenance' dialog box.



(3)
Display an LDEV with a pinned slot. Select (CL) the LDEV, details of which you want to display, in "Ldkc:", "Cu:", "Ldev:" and select (CL) [Detail].

----- Go to Step (4).

NOTE: When the pinned slot is gone, the LDEV, an occurrence of the pinned slot in which was reported by a SIM, is not displayed.



When you want to output pinned data to a file, select (CL) the [Archive] button.

----- Go to Step (5).

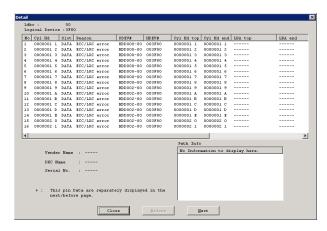
When you close the "Pinned Track" window, select (CL) the [Close] button.

----- Go to Step (7).

(4)

Display the detail of a Pin Slot. (If there are more than 17 Pin Slots, the [Next] button will display other Pin Slots.)

NOTE 1: If a Pin Slot has some recoverable trouble, the detail of the Pin Slot will not be displayed. Only LBA's Pin Slots are displayed. But, if the Pin Slot of LBA's can't be displayed, "----" is displayed in both CCHH and LBA columns.



NOTE 2: In case of same slot, The same value is displayed for No. (The thing that is the same slot is shown.)

NOTE 3: LDEV might not be displayed according to the timing of the information acquisition. In that case, try to select the Refresh button of the maintenance screen (CL), and to acquire information.

When you want to close the 'Detail' window, select (CL) [Close] button.

------Return to Step (3).

(5)

"Do you want to output pinned data to a file? You can get the pinned data file by executing the FD Copy or Auto Dump," is displayed.

When you want to output the result to a file, select (CL) [Yes].

----- Go to Step (6).

When you do not want to output the result to a file, select (CL) [No].

----- Return to Step (3).

(6)

"Output of the pinned data file was completed", is displayed.

------Return to Step (3).

(7)

Select (CL) [Close] in the 'Detail' dialog box.

Select (CL) [Close] in the 'Pin Volume' dialog box.

Close the 'Maintenance' window.

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2.12 Multi PCB Replace

(1) <Set path offline> Set the path offline from HOST when replacing CHB. Copyright © 2012, Hitachi, Ltd.

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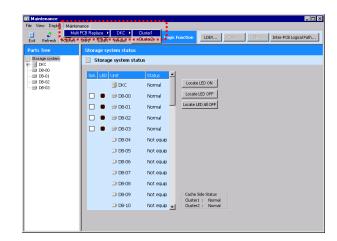
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(2) <Mode Change>
Change the mode from [View Mode] to [Modify Mode].
Select (CL) [Maintenance].

(3) <Maintenance>

The 'Maintenance' window is displayed.

Select (CL) the [Maintenance]-[Multi PCB Replace]-[DKC]-[Cluster n] on the menu.

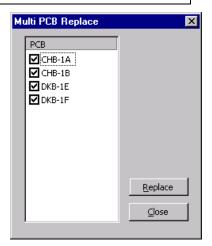


(4) <Select CHB/DKB>

A CAUTION

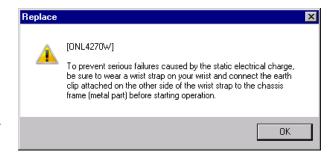
- When the storage system is placed online, ask the customer to place it offline.
- When the screen prompting an operator to input a password in order to prevent multiple maintenance, contact the technical support division to ask for instructions.

Select (CL) CHB/DKB. Select (CL) [Replace].



(5) <Wear a wrist strap>

Select (CL) [OK] in response to "To prevent serious failures caused by the static electrical charge, be sure to wear a wrist strap on your wrist and connect the earth clip attached on the other side of the wrist strap to the chassis frame (metal part) before starting operation.".



(5)-1 < Confirm wearing wrist strap>

In response to a message, "Did you put on a wrist strap on your wrist?".

Select [Yes] when wrist strap is on your wrist. Select [No] when there is no wrist strap on your wrist.

When [No] is selected (CL), go to Step (5)-2.



(5)-2

In response to a message, "This operation cannot be excuted, because the wrist strap has not been worn. Do you want to stop this process?

[Yes]: This processing will be stopped.

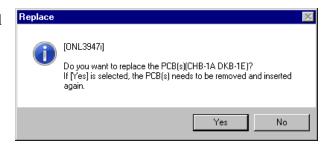
[No]: This confirming message will appear."

When [Yes] is selected (CL), returned to Step (4).

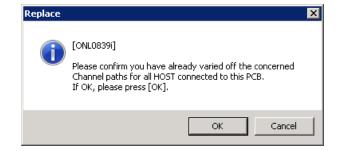
When [No] is selected (CL), returned to Step (5).



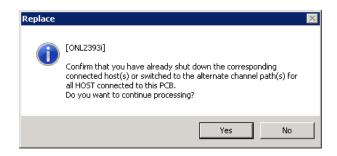
(6) <Confirm the PCB replace>
After you confirm that the PCB to be replaced is correct, select (CL) the [Yes] button in response to "Do you want to replace the PCB(s)(CHB-nn DKB-nn)? If [Yes] is selected, the PCB(s) needs to be removed and inserted again.".



(7) <Confirm Channel Path offline>
Select (CL) [OK] in response to "Please confirm you have already varied off the concerned Channel paths for all HOST connected to this PCB. If OK, please press [OK].".



If a Fibre channel blade is installed: After you confirm that you have stopped concerned Channel paths, select (CL) [Yes].



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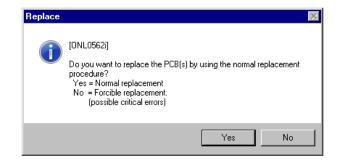
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(8) <Caution message for system down>
In response to a message, "Do you want to replace the PCB(s) by using the normal replacement procedure?

Yes = Normal replacement

No = Forcible replacement

(Possible critical errors)" select (CL) [Yes].



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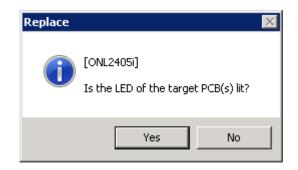
(9) <CHB/DKB blocking>

- * For CHB
- "The CHB-nn is being blocked... Usually, several minutes (maximum 15 minutes)"
- * For DKB
- "The DKB-nn is being blocked..."
- (10) < Check to see if shut down LED is lit> Select (CL)
 - * [Yes] if LED is on
 - * [No] if LED is off

in response to "Is the LED of the target PCB(s) lit?".

If [No] is selected:

Select in response to "Is the LED of the target PCB(s) lit?" again.

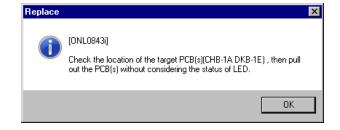


<Forcing shut down LED on>

If [No] is selected:

Select (CL) [OK] in response to "Check the location of the target PCB(s)(CHB-nn DKB-nn), then pull out the PCB(s) without considering the status of LED.".

Go to step (11).

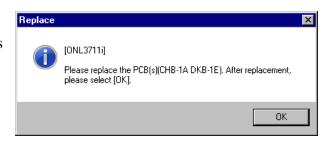


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(11) <Beginning of CHB / DKB Replacement>
"Please replace the PCB(s)(CHB-nn DKBnn). After replacement, please select [OK]." is displayed.

Select (CL) [OK] after replacing the PCBs.



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For CHB (Fiber)-------HARDWARE RCH1 (REP03-12-10) For DKB------HARDWARE RDA1 (REP03-13-10)

(12) < Check the recovery processing >

^{*} For DKB

[&]quot;Restoring (DKB-nn). Usually, several minutes (maximum xx minutes)."

[&]quot;DKB-nn is being path recovered..."

^{*} For CHB

[&]quot;Restoring (CHB-nn). Usually, several minutes (maximum xx minutes)."

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(13) < Check the end of CHB/DKB recovery> Select p(CL) [OK] in response to "Replace finished.".



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(14) < Path on-line when CHB is replaced>

When a CHB is replaced, set the path (from the host) on the replaced CHB to ONLINE by your customer.

(15) <SIM Complete>
Go to SVP02-590.

(16)

Close the 'Maintenance' window.

Change the mode from [Modify Mode] to [View Mode].

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2.13 System Option

[Overview]

Change the following system option when the system operates.

① Spare Disk Recovering ----- Select the performance density when data is copied to a spare disk. (correction copy and drive copy)

• Interleave : Everytime 4-slot copy is completed, copy job sleeps for the time dependent on load of HOST I/O.

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• Full Speed: No sleep. (No considering HOST job)

A CAUTION

Please do not use if no channel paths is varied offline.

② Disk Copy Pace ------ Specification of copy pace is supported with the "Interleave" mode at Spare Disk Recovering. Three modes are supported.

• Medium : Optimization mode. The copy time depends on load of HOST I/O.

Faster : Copy job is prior to HOST job.Slower : HOST job is prior to copy job.

③ Copy Operation----- • Dynamic Sparing : Copy automatically to a spare disk if disk

failure exceeded the threshold value.

• Correction Copy : Execute correction copy to a spare disk

automatically when one drive has blocked.

① Link Fail Threshold ----- Define the threshold value to report the link failure.

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⑤ WR Through ----- This option sets the write through operation of each LDEV to be performed when a failure occurs in the MAIN Blade of one of the duplicated systems.

• Destage: ON: The write through operation is performed.

(default)

OFF: The write through operation is not performed.

The write through operation is determined by a combination of the set value of this option and the set value (default value: ON) of System Option Mode 164 which restrains write through operation. About relations of the combination of set value and the expectation operation, it is shown as follows.

Refer to SVP02-1900 for the setting procedure of the System Option Mode.

Table 2.13-1 Combination of WR Through and System Option Mode

| No | System Option Mode 164 | | W/D Through | |
|----|------------------------|-----------------------------------|---------------------|----------------------------------|
| | the whole system | CLPR where target LDEV belongs to | WR Through -Destage | Expectation operation |
| 1 | ON | ON | ON | The write after operation (*2) |
| 2 | ON | ON | OFF | The write after operation (*2) |
| 3 | ON | OFF | ON | The write after operation (*2) |
| 4 | ON | OFF | OFF | The write after operation (*2) |
| 5 | OFF | OFF | ON | The write through operation (*1) |
| 6 | OFF | OFF | OFF | The write after operation (*2) |
| 7 | OFF | ON | ON | The write after operation (*2) |
| 8 | OFF | ON | OFF | The write after operation (*2) |

*1: The write through operation:

When a failure occurs in the MAIN Blade of one of the duplicated systems during a writing of data sent from a host, what is called the write through operation is performed in which completion of a writing is reported to the host after waiting for completion of a writing to a disk drive. For that reason, when the MAIN Blade of the other one of the duplicated systems is failed while the storage system is operating with one of the duplicated systems, write pending data that exists in the operation mode above will not be lost. However, writing performance decreases by the MAIN Blade failure.

*2: The write after operation:

When a failure occurs in the MAIN Blade of one of the duplicated systems during a writing of data sent from a host, what is called the write after operation is performed in which completion of a writing is reported to a host when the data has been written to the cache memory. For that reason, it is made possible to reduce lowering of writing performance caused by the MAIN Blade failure. However, when the MAIN Blade of the other one of the duplicated systems is failed while the storage system is operating with one of the duplicated systems, write pending data that exists in the operation mode above will be lost.

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© Copy Back... ----- This option sets the copy back mode of each parity group.

Copy Back Mode:

• Copy Back : When a failed HDD recovered, the copy back

will be performed. (default)

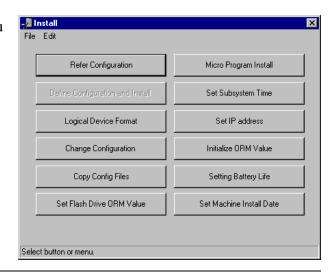
• No Copy Back: When a failed HDD recovered, the copy back

will be not performed.

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- (1) Change the Mode from [View Mode] to [Modify Mode]. Select (CL) [Install].
- (2) Select (CL) the [Change Configuration] menu in the 'Install' window and select (CL) [OK].



(3)
Select (CL) the [System Option] menu in the 'Menu Dialog' window and select (CL) [OK].



(4)
Select (CL) the desired item in the 'System Option' dialog box, and select (CL) [OK]. Go to step (5).

When [WR.Through] is selected (CL), the 'Synchronous Destage Mode Define' window is displayed. Go to step (4-1).

When [Copy Back...] is selected (CL), the 'Copy Back Mode Define' window is displayed. Go to step (4-2).



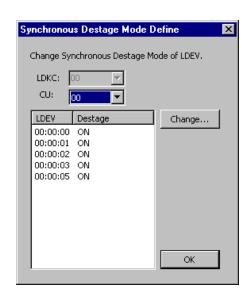
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(4-1) <Set the Destage Mode >
Set the configuration information in 'Synchronous Destage Mode Define'.

After setting all the items, select (CL) [OK]. Return to Step (4).

If you do not want to reflect the setting, select (CL) [Cancel]. Return to Step (4).



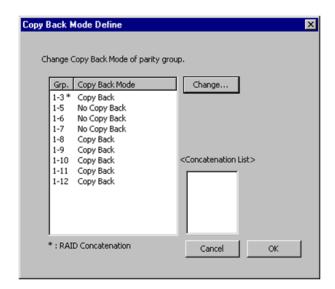
(4-2)

Select parity group changing the copy back mode, and press (CL) the [Change...] button.

- Copy Back: When a failed HDD recovered, the copy back will be performed. (default)
- No Copy Back: When a failed HDD recovered, the copy back will be not performed.

[OK]: Invalidates the setting, and returns to Step (4).

[Cancel]: Confirms the setting, and returns to Step (4).



Grp*: The top parity group where RAID Concatenation is installed.

Selecting the concatenated parity groups the concatenated parity groups in the Concatenation List.

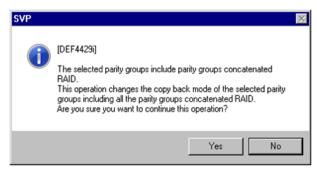
If you selected the parity group where RAID Concatenation is installed, and press (CL) the [Change...] button, go to Step (4-3).

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(4-3)

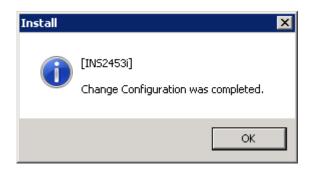
In response to a message, "The selected parity groups include parity groups concatenated RAID. This operation changes the copy back mode of the selected parity groups including all the parity groups concatenated RAID. Are you sure you want to continue this operation?".



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When [Yes] is selected (CL), the copy back mode changes, and returns to Step (4-2). When [No] is selected (CL), returns to Step (4-2).

- "Loading configuration..." is displayed.
- (6)
 "Change Configuration was completed." is displayed.Select (CL) [OK].



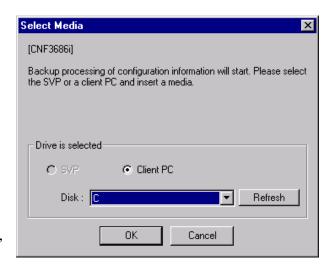
(7) Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

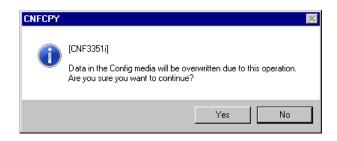
NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



(8)

If the configuration information is not saved in the selected media, go to step (9).

If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select (CL) the [Yes] button. When the backup to the Config

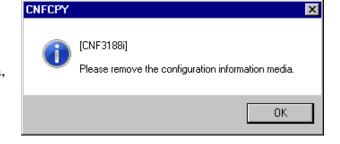


media is not necessary, select (CL) the [No] button and go to step (10).

(9)

When this procedure is completed, the message "Please remove the configuration information media." is displayed.

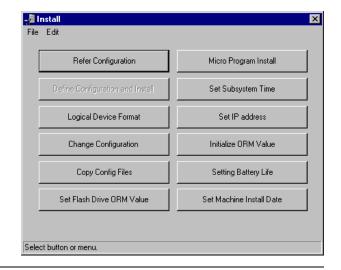
Remove the configuration information media,



(10)

Close the 'Install' window. Select (CL) [File]-[Exit].

select (CL) [OK].

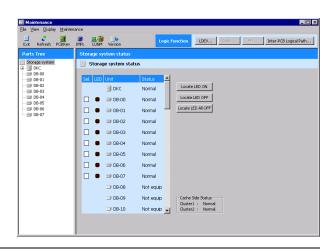


(11)

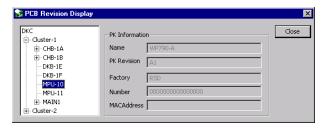
Change the Mode from [Modify Mode] to [View Mode].

2.14 PCB/SFP Revision Display

- (1) Select (CL) [Maintenance] in the 'SVP' window.
- (2) Select (CL) [PCBRev] in the 'Maintenance' window.



- (3) 'Reading or Writing PCB revision informations...' is displayed.
- (4)
 Select a PCB/PORT whose revision you want to display in the 'PCB Revision Display' window.



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(5) Select (CL) [Close] in the 'PCB Revision Display' dialog box.

(6) Close the 'Maintenance' window.

2.15 Setting Battery Life

Set the Battery Life warning SIM to prompt to prepare the periodical exchange maintenance of a battery before the lifetime of the battery (3 years) equipped in the storage system.

Set the number of days remained until you generate [Battery Life Warning SIM] based on your maintenance plan.

1.

Change the mode from [View Mode] to [Modify Mode].

Select (CL) [Install].

Select (CL) the [Setting Battery Life] menu in the 'Install' window.

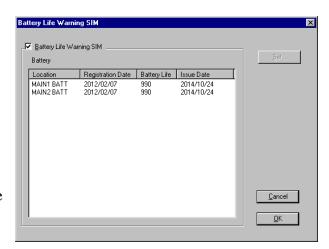
2.

Select (CL) [Set...] applying the check to [Battery Life Warning SIM] and select (CL) the target Battery.

Go to step 3.

Select (CL) [OK] and go to step 4.

NOTE: If the date is displayed as "****/**", follow step 3 to set the date.

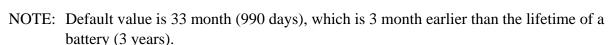


3.

Select (CL) [OK] after inputting the remainder days until Warning SIM is reported.

Return to step 2.

NOTE: After executing the periodical exchange of a battery, set 33 month (990 days).



Determine the number of days remained based on your maintenance plan.

NOTE: The input ranges of "Remained Battery life" are from 1 to 3650. Please set [Battery Life Warning SIM] of step 2 to check off when not reporting on Warning SIM.



4.

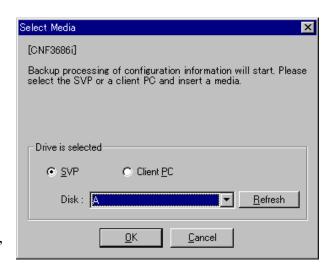
Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



5.

If the configuration information is not saved in the selected media, go to step 6. If the configuration information is already saved in the selected media, "Data in the Config media will be overwritten due to this



operation. Are you sure you want to continue?" is displayed. Select (CL) [Yes].

When the backup to the Config media is not necessary, select (CL) the [No] button and go to step 8.

6.

When this procedure is completed, the message "Please remove the configuration information media." is displayed. Remove the configuration information media, select (CL) [OK].

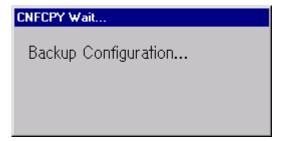


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7.

"Backup Configuration..." is displayed.



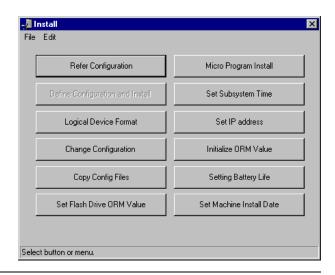
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8.

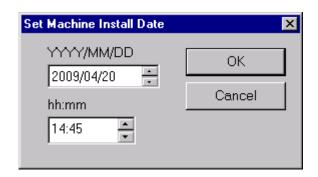
Close the 'Install' window.

2.16 Setting Machine Install Data

- (1) Change Mode from [View Mode] to [Modify Mode].
- (2) Select (CL) the [Install] in the [Modify Mode].
- (3)
 Select (CL) the [Set Machine Install Date]
 menu in the 'Install' window.



(4)
Input the Date and Time.
Select (CL) the [OK] button.

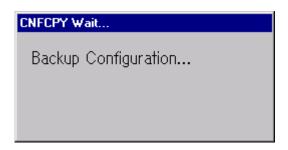


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(5)

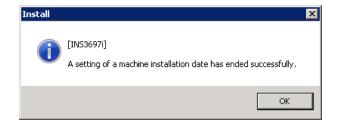
"Backup Configuration..." is displayed.



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(6)

"A setting of a machine installation data has ended successfully." is displayed. Select (CL) the [OK] button.



(7)

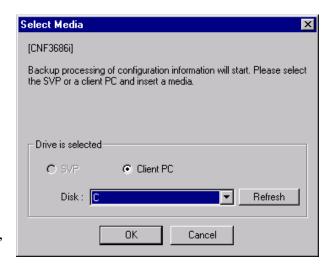
Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

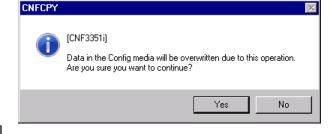
Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



(8)

If the configuration information is not saved in the selected media, go to step (9). If the configuration information is already saved in the selected media, "Data in the Config media will be overwritten due to this operation. Are you sure you want to continue?" is displayed. Select (CL) the [Yes] button.



When the backup to the Config media is not necessary, select the [No] button and go to step (10).

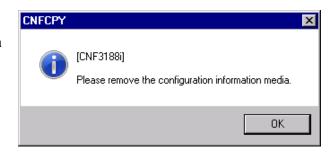
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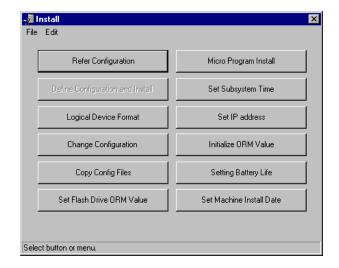
(9)

When this procedure is completed, message "Please remove the configuration information media." is displayed. Remove the configuration information media, select (CL) [OK] button.



(10)

Close the 'Install' window.



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2.17 SFP type change operation

2.17.1 Batch type change

(1) <Set path offline>



The path to be placed offline is that connected with the SFP concerned.

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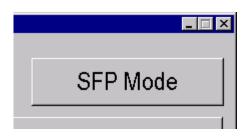
SVP02-1300

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- (2) <Preparation> Close the all SVP menu.
- (3) <Input password>
 Select "Shift" + "Ctrl" + "F" on the SVP window.
 Enter the password "RAID-SFP" and select (CL) [OK].



(4) <Check the mode> The 'SFP Mode' is Displayed.



(5) <Replace SFP> Refer to the hardware part replacement procedure RTC9 (REP03-19-50).

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(6) <Set path online>



The path to be placed online is that connected with the SFP concerned.

(7) <Changing the SVP operation mode>
In the 'SVP' window, change the mode to [View Mode].

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2.17.2 Changing type specification

(1) <Set path offline>



The path to be placed offline is that connected with the SFP concerned.

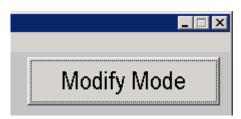
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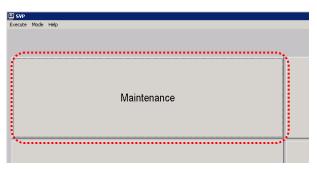
Copyright © 2012, Hitachi, Ltd.

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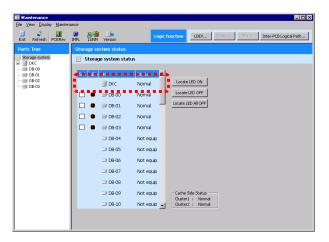
- (2) <Preparation>
 Close each menu of the starting SVP entirely.
- (3) <Start> Change the mode to [Modify Mode].



Select (CL) the [Maintenance] in the 'SVP' window.



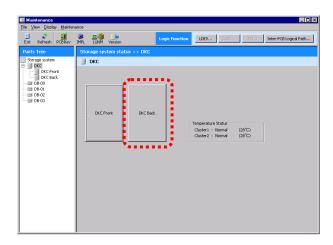
(4) <Instruction of DKC Information> Select (CL) [DKC].



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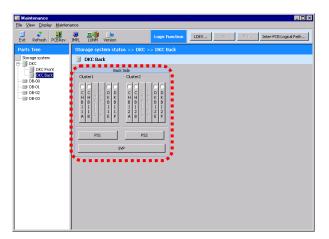
SVP02-1340

(5) <Display of DKC Back Information> Select (CL) [DKC Back].



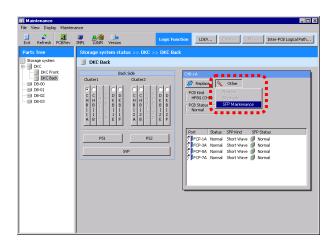
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(6) <Display of CHB Information>
Select (CL) [CHB-nX] which installs SFP of the maintenance target.

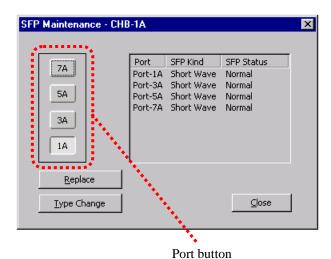


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(7) <Start of SFP Maintenance Window> Select (CL) [Other]-[SFP Maintenance].



(8) <Instruction of SFP Type Change>
Select (CL) the ports to change the type (it is possible to select two or more), and select (CL) [Type Change].



SVP02-1360

(9) <Enter the password>

A CAUTION

Maintenance

[STA4270W1

This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

Enter the password and select (CL) [OK].



To prevent serious failures caused by the static electrical charge, be sure to wear a wrist strap on your wrist and connect the earth

clip attached on the other side of the wrist strap to the chassis

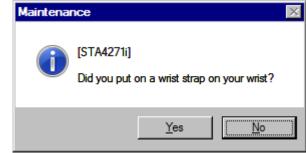
frame (metal part) before starting operation.

(10) <Wear a wrist strap>

Select (CL) [OK] in response to "To prevent serious failures caused by the static electrical charge, be sure to wear a wrist strap on your wrist and connect the earth clip attached on the other side of the wrist strap to the chassis frame (metal part) before starting operation.".

"Did you put on a wrist strap on your wrist?" is displayed.

select (CL) [Yes] and go to Step (11).



"This operation cannot be executed, because the wrist strap has not been worn.

Do you want to stop this process?

[Yes]: This processing will be stopped.

[No]: The confirming message will appear." is displayed.

When the processing will be stopped, select (CL) [Yes].

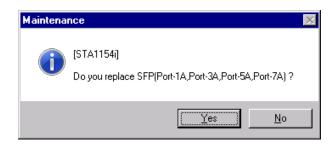


OK

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(11) <Confirming execution of the change>
After making sure that the port for which the type change is to be executed, select (CL) the [Yes] button in response to the message, "Do you replace SFP(Port-nn, ...)?".



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(12) < Replacing the SFP>

A message, "Please replace the "SFP(Portnn, ...)." After replacement, press OK." is displayed.

(Select (CL) [OK] after replacing the SFP.) Refer to the hardware part replacement procedure RTC9 (on page REP03-19-50).



(13) <Set path online>



The path to be placed online is that connected with the SFP concerned.

(14) < Changing the SVP operation mode>
In the 'SVP' window, change the mode to [View Mode].

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2.18 Setting Synchronization Information

2.18.1 Setting Synchronization Information

[Outline]

This function sets the SVP's time automatically using the SNTP protocol. To use this function, it is required that an SNTP server exists in the same LAN in which the SVP exists. After the setting is made, the SVP resets the time by referring to the specified IP address for the current time once a day at the specified time. When the setting is not made, the SVP does not make the reference.

NOTE: To use this function, it is required that an SNTP server exists in the same LAN in which the SVP exists.

The SVP's Time Zone is the G.M.T. (Greenwich mean time). If the other Time Zone is used, the SVP's time may not be set correctly.

This function does not work when the SVP is being maintained or the setting is being made through Storage Navigator. In such a case, the setting is postponed until the next day.

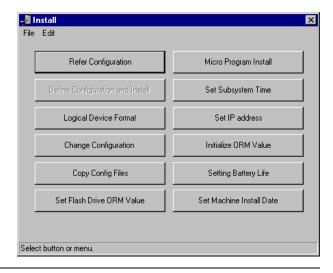
In case time set goes wrong, check a setup of a SNTP server's IP address, and a use port, and give the mode as View mode after a setup again. Moreover, the cause by the side of a SNTP server can be considered as other factors.

NOTE: • Please do not execute the P/S ON procedure at the synchronization check time.

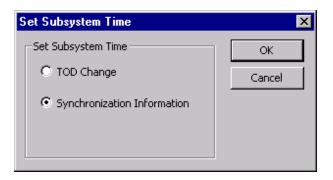
• Please do not execute collecting the Port Dump at the synchronization check time.

SVP02-1390

- (1) Change the mode from [View Mode] to [Modify Mode].
- (2) Select (CL) [Install] in the [Modify Mode] panel.
- (3)
 Select (CL) [Set Subsystem Time] in the 'Install' window.



(4)
Select (CL) [Synchronization Information] in the 'Set Subsystem Time' window, and then select (CL) [OK].



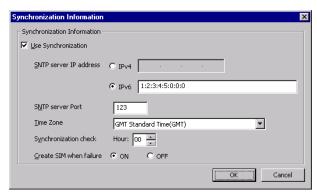
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(5)

A window for specifying information for compensating the SVP's time is displayed. Set the necessary information and select (CL) [OK].



(Example: In the case of GMT standard time)

: In case of checking it, this function is valid. Use Synchronization

In case of no checking it, this function is invalid.

SNTP server IP address: IP address of the SNTP server

SNTP server Port : Port (0 to 65535) used by the SNTP server

Time Zone : Time zone of local time

Synchronization check: Time to reset the SVP's time (0 to 23, time of 24-hour clock) Create SIM when failure: Create SIM when synchronization information setting failure.

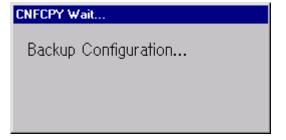
(ON is create. OFF is not create.)

NOTE: The SVP TOD Set up need to be adjusted to local time until the SNTP time synchronization occurs at the hour set up in "Synchronization Check hour".

NOTE: Localities with Daylight savings changes will have an offset of one hour when the day time savings starts. Please not that Windows Automatic Daylight savings is not to be set on the SVP PC.

NOTE: Since the OS of SVP cannot set IPv6 in the Windows XP environment, do not enter it.

(6)"Backup Configuration..." is displayed.

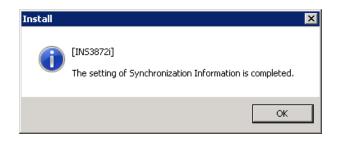


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(7)

"The setting of Synchronization Information is completed." is displayed.
Select (CL) [OK].



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(8)

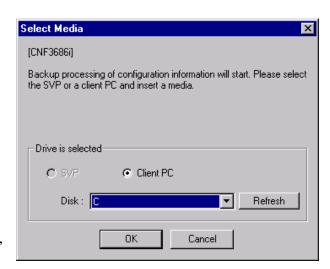
Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

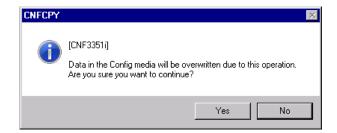
Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



(9)

If the configuration information is not saved in the selected media, go to step (10). If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select (CL) the [Yes] button. When the backup to the Config



media is not necessary, select (CL) the [No] button and go to step (11).

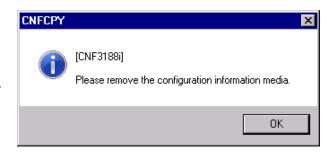
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(10)

When this procedure is completed, the message "Please remove the configuration information media." is displayed.

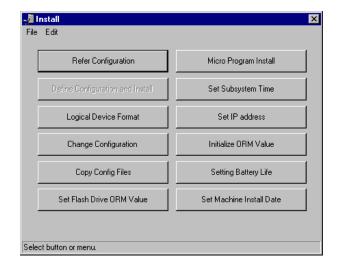
Remove the configuration information media, select (CL) [OK].



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(11)

Close the 'Install' window.



2.18.2 Confirm Setting Synchronization Information

(1) Select (CL) [Programs]-[Accessories]-[Command Prompt] from the [Start] menu.

Execute command "Ping X.X.X.X" (X.X.X.X is SNTP server IP address).

Confirm it is displayed with "Reply from X.X.X.X: bytes=32 time<Xms TTL=XXX".

When it was displayed with "Request timed out.", stop confirmation work.

Confirm network connection with SNTP server, and please set Synchronization Information again.

(3)
For confirmation, set temporary Synchronization check in now time of SVP, following the procedure "2.18.1 Setting Synchronization Information".

(An example: If the existing time of SVP is 13:XX, set 13 to Synchronization check.)

(4)
Change the mode to [View Mode] from [Modify Mode] (CL).
(SVP carry out synchronization at the time by changing in View Mode.)

Wait for one minute, confirm that there are not the following SSB LOG. If there is not it, SVP can communicate normally.

Code=3348: Setting failure of the SNTP time.(Connection failure to a server)

Code=3349: Setting failure of the SNTP time.(Server does not reply)

Code=334A : Setting failure of the SNTP time.(Practice error)

When SSB LOG is created, please confirm it about setting of a use port, the Synchronization check time. If there setting are right, please confirm to a manager of an SNTP server. Please set Synchronization Information again.

Following the procedure "2.18.1 Setting Synchronization Information", set the setting. Set Synchronization check.

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2.19 Fixed time SVP reboot setting

2.19.1 Fixed time SVP reboot the setting method

[OverView]

Reboot of SVP is automatically performed at the time specified once per day by confirming this setup. Moreover, reboot is not performed when SVP is in the following states. In that case, reboot is postponed till the next day.

- When SVP is in Modify mode
- When Storage Navigator is used
- When Web Console is used
- When the HDD Easy Replace is being operated
- When RAID Manager locks a resource
- When the storage system is locked by the storage management software of the third party
- When FD is inserted
- (1) Select (CL) [Run...] from the [Start] menu. Enter "c:\dkc200\mp\pc\RbtSet.exe" in the "Open" box. Select (CL) the [OK] button.
- Since the screen which sets up reboot time is displayed, reboot time is inputted and a check is attached to [Reboot]. Select (CL) the [OK] button.



(3)

Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

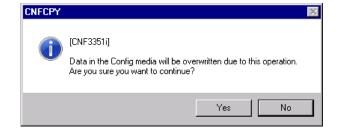
NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



(4)

If the configuration information is not saved in the selected media, go to step (5).

If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select (CL) the [Yes] button. When the backup to the Config



media is not necessary, select (CL) the [No] button and process of backup configuration information is end.

(5)

When this procedure is completed, the message "Please remove the configuration information media." is displayed.

Remove the configuration information media, select (CL) [OK].



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2.19.2 Fixed time SVP reboot the setting release method

- (1) Select (CL) [Run...] from the [Start] menu. Enter "c:\dkc200\mp\pc\RbtSet.exe" in the "Open" box. Select (CL) the [OK] button.
- (2) Since the screen which sets up reboot time is displayed, The check of [Reboot] is removed. Select (CL) the [OK] button.



(3)

Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.

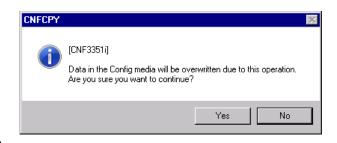


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(4)

If the configuration information is not saved in the selected media, go to step (5). If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select the [Yes] button. When the backup to the Config media

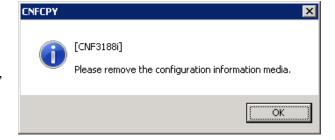


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is not necessary, select the [No] button and process of backup configuration information is end.

(5)

When this procedure is completed, the message "Please remove the configuration information media." is displayed. Remove the configuration information media, select (CL) [OK].



2.20 Restoring Failed MP

A CAUTION

This is a special procedure to recover a MP blockade operation without the need to self-replace the card under certain conditions specified below.

To use this procedure, please open a case with your technical support center and proceed under their guidance.

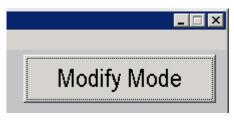
<Usage Conditions>

- To recover a MP in which WCHK1 occurred due to a microprogram problem. Eg.) Cause of WCHK1 is EC = 1644.
- To recover a MP in which WCHK1 occurred due to an issue outside the DKC (Host/SAN). Eg.) Cause of WCHK1 is EC = B405, and it is evident that it is caused by external factor. (Switch etc.)
- Requested as a recovery procedure for an issue notified by an Early Notice/Alert.
- Requested by following the procedure described in Maintenance Manual.

<Usage Restrictions>

- Not to be used to recover hardware failures.
- Not to be used to recover a MP of MPU which all MP in MPU blocked.
- (1) <Preparation>Close each menu of the starting SVP entirely.
- (2) *<*Start*>*

Change the mode to [Modify Mode].



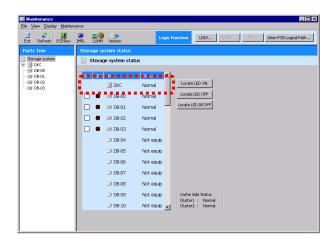
Select (CL) the [Maintenance] in the 'SVP' window.



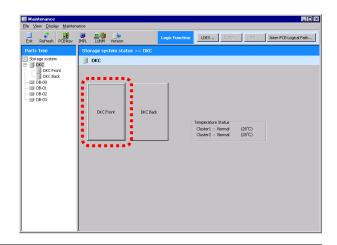
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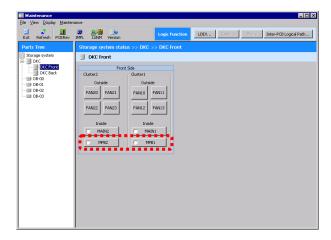
(3) <Display of DKC Information> Select (CL) [DKC].



(4) <Display of DKC Front Information>
 Select (CL) [DKC Front].
 (n: DKC number which installs MP of the maintenance target)



(5) <Display of MP PCB Information> Select (CL) [MPBn] which installs MP of the maintenance target.

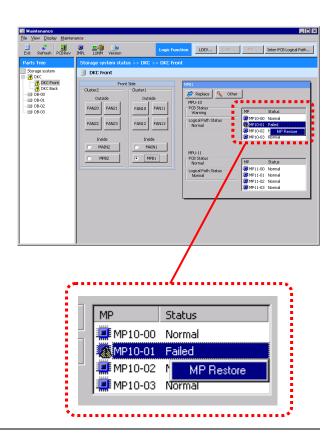


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(6) <Execution>

Select (CL) the right button of the mouse in the status that MP of the maintenance target on the MP information list is selected (CL).

Select (CL) [MP Restore] in the displayed popup menu.



(7) <Password Input>

A CAUTION

When the blockade of MP attributes to a hardware failure, it is possible that storage system down or data lost occurs. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

Corresponding to the following message, enter the password and select (CL) the [OK] button.

"Ask the Technical Support Division about the appropriateness of this operation, and enter the password."

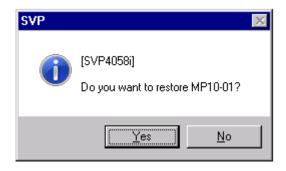


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(8) <Execution Check> Select (CL) the [Yes] button for the following message.

"Do you want to restore X?" X: Target MP

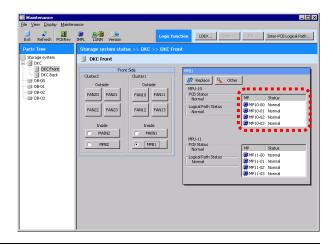


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- (9) <Waiting for the completion of processing>The following message is displayed."Please wait... Restoring the MP..."
- (10) <Check of the recovery completion of failed MP> Select (CL) [OK] for the following message. "Restore finished."



(11) <Check of processing result >
Check the status of the target MP with 'DKC
Front' in the 'Maintenance' window.



(12) <Post-processing>
Close the 'Maintenance' window.
Change the mode to [View Mode].

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2.21 System Tuning SVP Procedure

2.21.1 System Tuning



Powering off/on is required owing to the performance of this operation.

Overview

This function modifies the part of established storage system configuration data.

The data to be modified is control data closely related to a host device, so the data can not be modified on on-line.

After modification of the data, power DKC off and on.

The data to be modified is listed below.

'DKC Configuration'------DKC Serial Number

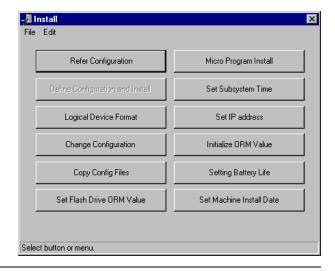
'IP Address Configuration' ----- IP address

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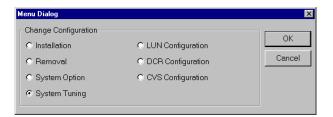
<Start [Install]>
 Change the Mode from [View Mode] to [Modify Mode].
 Select [Install] from 'SVP' (CL).

2. Select [Change Configuration] (CL) from 'Install'.



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3. <Select System Tuning>
Select [System Tuning] from 'Menu Dialog'
(CL), and select [OK] (CL).



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4.

A CAUTION

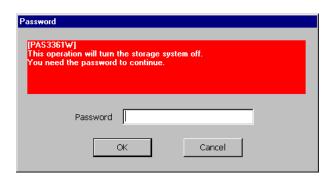
Powering off/on is required owing to the performance of this operation.

Ask the technical support division about the appropriateness of the operation, and input a password after getting an approval of executing the operation.

(1)
Enter the password and select [OK] (CL).
Password is needed for this operation.
Please call Technical Support Division to obtain a password and authorization.

If [Cancel] is selected (CL), terminate the installation procedure.

'DKC Configuration' is automatically displayed next.

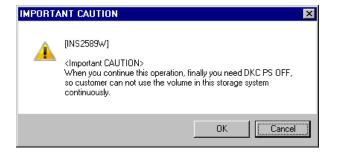


(2)

Select (CL) [OK] in response to the confirmation message

"<Important CAUTION>

When you continue this operation, finally you need DKC PS OFF, so customer can not use the volume in this storage system continuously.".

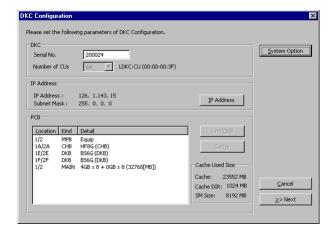


<DKC Configuration window>
 Define the configuration information
 following the storage system configuration
 worksheet.

[IP Address]: Makes a setting of the IP address. Go to Step 6.

[>>Next]: Makes the other settings. Go to Step 7.

In the case of selecting (CL) [Cancel], this operation procedure terminates.



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6. <IP Address Configuration window>
Define the configuration information
following the storage system configuration
worksheet.

Set the IP address and the subnet mask, and then select (CL) the [OK] button. Return to Step 5.



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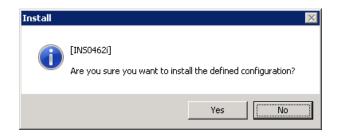
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7. <Include configuration information>

(1)

Select (CL) [Yes] in response to the confirmation message "Are you sure you want to install the defined configuration?".

Selecting (CL) [No] suppresses the configuration inclusion processing and terminates the installation procedure.



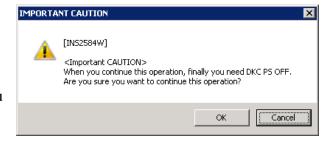
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(2)

Select (CL) [OK] in response to the confirmation message

"<Important CAUTION>

When you continue this operation, finally you need DKC PS OFF. Are you sure you want to continue this operation?".



(3)

Select (CL) [OK] in response to the confirmation message

"<Important CAUTION>

When you select [OK] button, you can't cancel this operation. Are you sure you want to continue this operation?

If you terminate this operation by some forcible method, the storage system be in

UNRECOVERABLE SERIOUSLY DAMAGE.".

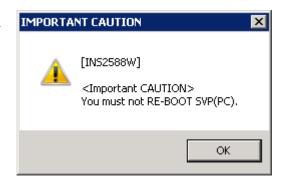


(4)

Select (CL) [OK] in response to the confirmation message

"<Important CAUTION>

You must not RE-BOOT SVP(PC).".



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8.

Make sure that "Turn off DKC, and wait." is displayed and perform the power-off procedure from the Panel Unit.

Turn off DKC, and wait.

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9.

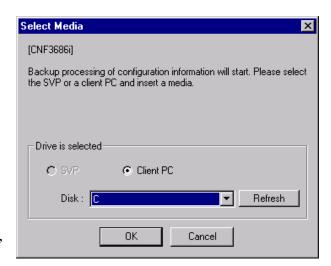
Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

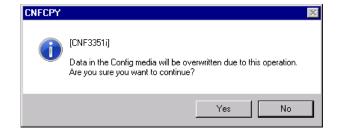
NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



10.

If the configuration information is not saved in the selected media, go to step 11.

If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select (CL) the [Yes] button. When the backup to the Config



media is not necessary, select (CL) the [No] button and go to step 12.

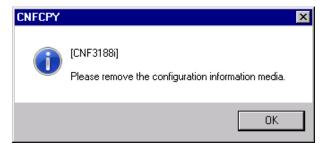
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11.

When this procedure is completed, the message "Please remove the configuration information media." is displayed.

Remove the configuration information media, select (CL) [OK].

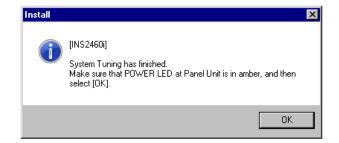


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12.

After making sure that the DKC power is turned off, select (CL) [OK] in response to "System Tuning has finished. Make sure that POWER LED at Panel Unit is in amber, and then select [OK].".

NOTE: The SVP power will not turn off even when DKC is powered off.



13.

"This will reboot SVP." is displayed. Select (CL) [OK].



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2.22 Failed Cache recovery

A CAUTION

This is a special procedure to recover a Cache blockade operation without the need to self-replace the card under certain conditions specified below.

To use this procedure, please open a case with your technical support center and proceed under their guidance.

[Failed Cache recovery]

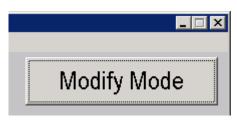
- <Usage Conditions>
- Requested as a recovery procedure for an issue notified by an Early Notice/Alert.
- Requested by following the procedure described in Maintenance Manual.
- <Usage Restrictions>
- Not to be used to recover hardware failures.

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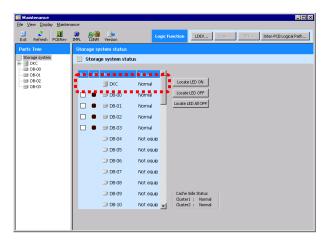
- (1) <Preparation>
 Close each menu of the starting SVP entirely.
- (2) <Start> Change the mode to [Modify Mode].



Select (CL) the [Maintenance] in the 'SVP' window.



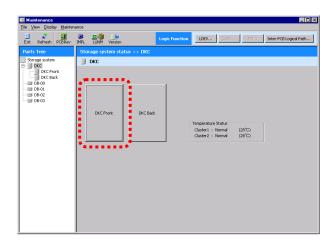
(3) <Display of DKC Information> Select (CL) [DKC].



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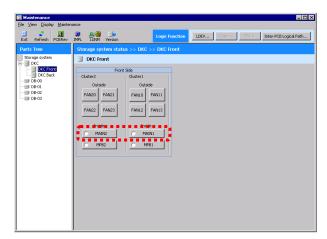
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(4) <Display of DKC Front Information> Select (CL) [DKC Front].



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(5) <Display of MAIN Blade Information> Select (CL) [MAINn] of the maintenance target.

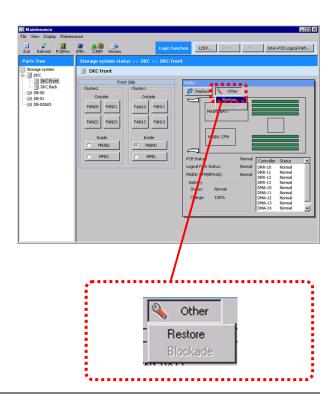


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(6) <Execution> Select (DR) [Other]-[Restore].



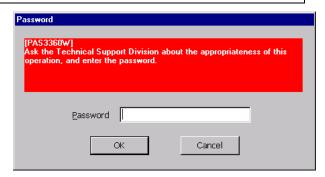
(7) < Password Input>

A CAUTION

When the blockade of MAIN Blade attributes to a hardware failure, it is possible that storage system down or data lost occurs. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

Corresponding to the following message, enter the password and select (CL) the [OK] button.

"Ask the Technical Support Division about the appropriateness of this operation, and enter the password."



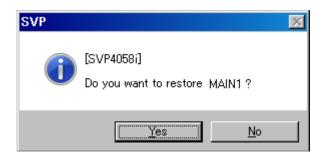
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(8) <Execution Check> Select (CL) the [Yes] button for the following message.

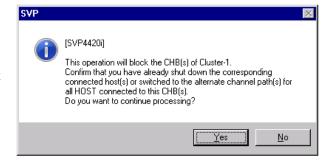
"Do you want to restore MAINn?"

n: Cluster number of target MAIN Blade

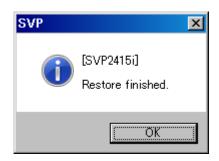


(9) <Confirm Channel Path offline> Select (CL) [Yes] in response to following message.

"This operation will block the CHB(s) of Cluster-n. Confirm that you have already shut down the corresponding connected host(s) or switched to the alternate channel path(s) for all HOST connected to this CHB(s). Do you want to continue processing?"



- (10) <Waiting for the completion of processing>
 The following message is displayed.
 - "Please wait... Restoring the MAINn..."
 - n: Cluster number of target MAIN Blade
- (11) <Check of the recovery completion>
 Select (CL) [OK] for the following message.
 "Restore finished."

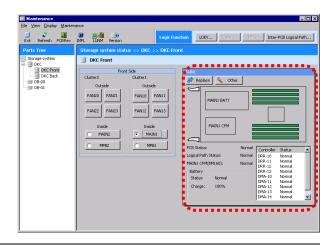


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(12) < Check of processing result > Check the status of the target MAIN Blade with 'DKC Front' in the 'Maintenance' window.

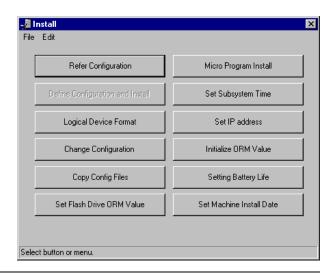


(13) <Post-processing> Close the 'Maintenance' window. Change the mode to [View Mode].

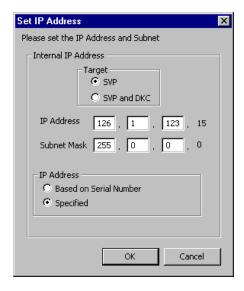
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2.23 Setting IP address

- [1] In case of SVP and DKC ------ SVP02-1620
- [2] In case of SVP ------ SVP02-1650
- [1] In case of SVP and DKC
- (1) Change the mode from [View Mode] to [Modify Mode].
- (2) Select (CL) [Install] from the 'SVP' window.
- (3)
 Select (CL) [Set IP address] from the 'Install' window.



- (4) <Changing IP address> Select (CL) "SVP and DKC" in the "Target" of the "Internal IP Address", and select (CL) [OK] after setting the IP Address and Subnet Mask of "Internal IP Address".
 - NOTE: When the Subnet Mask of Internal IP Address is set with a value different from the DKC, the previous value of the Subnet Mask might be displayed after setting. When the value that has been set is not displayed, set the value that corresponds with the DKC again.



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(5) <Rebooting SVP> Select (CL) [OK] to the message "This will reboot SVP.".

When the message "Failed to change IP address." is displayed, changing the IP address ended as an abnormal end. Identify the cause of the error according to the procedure (TRBL04-530) described in the troubleshooting section.



A CAUTION

When remote connection of the Client PC is disconnected during this operation, reconnect with the changed IP address and continue this operation. Perform the reconnection by waiting for 5 minutes or more after clicking the [OK] of the [INS1105i] message. (Refer to SVP01-60 regarding the operation for connecting to the SVP)

(6) <IP address setting completed> Select (CL) [OK] for "The IP address setting has completed".



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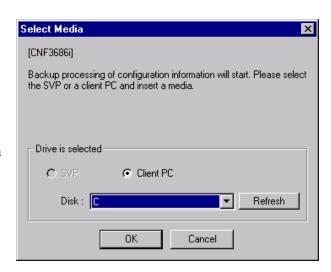
- (7) <Backup for configuration information>
 - ① Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



② If the configuration information is not saved in the selected media, go to step ③. If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select (CL) the [Yes] button. When the backup



to the Config media is not necessary, select (CL) the [No] button and process of backup configuration information is end.

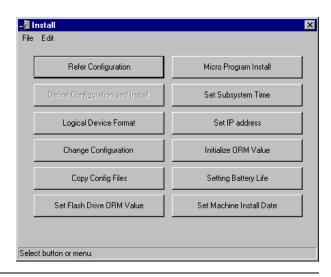
When backup of configuration information is completed, the message "Please remove the configuration information media." is displayed. Remove the configuration information media and select (CL) [OK].



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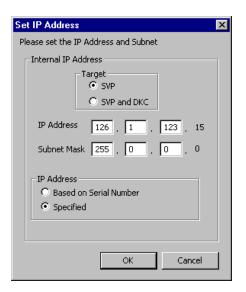
- [2] In case of SVP
- (1) Change the mode from [View Mode] to [Modify Mode].
- (2) Select (CL) [Install] from the 'SVP' window.
- (3) Select (CL) [Set IP address] from the 'Install' window.



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(4) <Changing IP address> Select (CL) "SVP" in the "Target" of the "Internal IP Address", and select (CL) [OK] after setting the IP Address and Subnet Mask of "Internal IP Address".

NOTE: When the Subnet Mask of Internal IP Address is set with a value different from the DKC, the previous value of the Subnet Mask might be displayed after setting. When the value that has been set is not displayed, set the value that corresponds with the DKC again.



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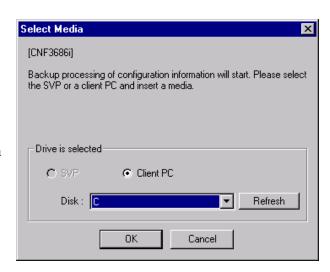
- (5) <Backup for configuration information>
 - ① Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

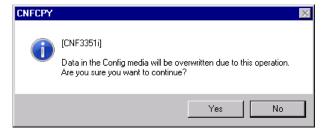
Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



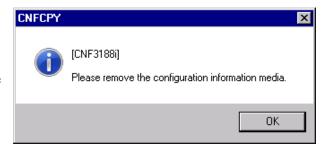
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② If the configuration information is not saved in the selected media, go to step ③. If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select (CL) the [Yes] button. When the backup



to the Config media is not necessary, select (CL) the [No] button and go to step @.

3 When backup of configuration information is completed, the message "Please remove the configuration information media." is displayed. Remove the configuration information media and select (CL) [OK].



 «Rebooting SVP» Select (CL) [OK] to the message "This will reboot SVP.".

When the message "Failed to change IP address." is displayed, changing the IP address ended as an abnormal end. Identify the cause of the error according to the procedure (TRBL04-530) described in the TROUBLE SHOOTING SECTION.



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2.24 Use of OnlineDumpTool

NOTICE: OnlineDumpTool is a tool to be installed in the CE Laptop PC, not to operate

on the SVP.

[Conditions to run the tool]

OS : Windows® XP(32bit), Windows Vista®(32bit), Windows® 7(32bit)

Browser : Microsoft® Internet Explorer® Version6 or later

2.24.1 Installation

[1] Pre-check

Please check if a PC to be installed can access to Internet using a browser, Internet Explorer®.

[2] Installation of tool

Please create a folder where you wish in your PC to be installed, and copy the following file: OnlineDumpUpload-a.exe

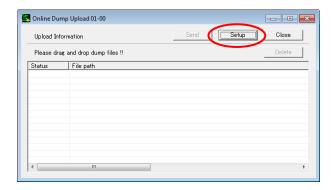
"-a" stands for a version of the tool (a to z)

- [3] Settings
- (1)

Select (DC) "OnlineDumpUpload-a.exe".



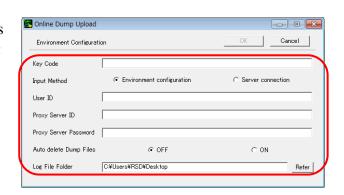
(2) The 'Upload Information' window is displayed, and then select (CL) [Setup].



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(3)

The 'Environment Configuration' window is displayed, and then set the following values: "Key Code", "Input Method", "User ID", "Proxy Server ID", "Proxy Server Password", "Auto Delete Dump Files", and "Log File Folder".



(a) Key Code

Input a "Key Code" informed by an administrator.

(b) Input Method

Select whether the "User ID", "Proxy Server ID" and "Proxy Server Password" are set on the tool in advance, or input the values at each uploading of dump file(s).

You can select from the following methods to set "User ID", "Proxy Server ID" and "Proxy Server Password": pre-setting in the tool or

Environment configuration...... Set the values on the tool in advance.

"User ID", "Proxy Server ID" and "Proxy Server Password" are pre-set in the tool. Upon upload operation, you do not need to input these values. Please select this input method normally.

Server connection Input the values at each uploading of dump file(s).

Upon every upload operation, you need to input "User ID", "Proxy Server ID" and "Proxy Server Password". If you wish to share a CE Laptop PC with someone else and keep these values secret, please select this input method.

(c) User ID

Input a User ID informed by an administrator.

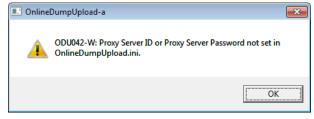
Do not input User ID when the Server connection is selected in the step (b).

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(d) Proxy Server ID/Proxy Server Password
If there is a Proxy Server in your network environment for which the CE Laptop PC
uploads a dump, input an ID and password of Proxy Server.

| | | Network | environment | Setting | | | |
|--------|---|---|---|------------------------------|---------------------------------------|--------------------|-----------------------------|
| Case# | Proxy Server Exist/ None Exist | Proxy Server password Exist/ None Exist | How to check | Input Method setting | | | |
| | | | | Environment configuration | | Server connection | |
| | | | | Proxy Server ID | Proxy Server Password | Proxy Server ID | Proxy Server Password |
| Case 1 | Exist | Exist | If you input ID and password when accessing to Internet using a browser (Internet Explorer©), then your network environment is Case 1. | Input Proxy Server ID. | Input Proxy Server password. | | |
| Case 2 | Exist | None Exist | If: - your network environment is not Case 1; and - window "a" is displayed, when setting Proxy Server ID & Password as blank and selecting [OK] in the step (4). | No setting necessary | No setting necessary | No setting | necessary |
| Case 3 | None Exist | None Exist | If: - your network environment is not Case 1; and - window "a" is not displayed, when setting Proxy Server ID & Password as blank and selecting [OK] in the step (4). | No setting necessary | No setting necessary | | |

Window a



(e) Auto Delete Dump Files

If "Auto Delete Dump Files" is ON, after upload completes, an original file uploaded will be automatically erased.

OFF: not automatically erased ON: automatically erased

(f) Log File Folder

A location of a folder in which history files are stored is specified here.

The default value is the same folder as the tool is stored.

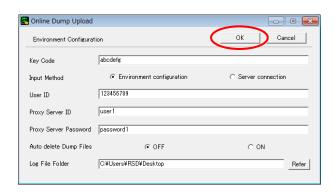
A folder can be selected by selecting (CL) [Refer].

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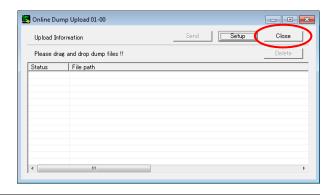
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(4) Select (CL) [OK] in the 'Environment Configuration' window.



(5)
Select (CL) [Close] in the 'Upload Information' window.



(6)
The following files are created in the same folder as OnlineDumpUpload-a.exe is stored: OnlineDumpUpload.ini
OnlineDumpUpload-a.log (property: hidden file)



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2.24.2 Uninstallation

When you uninstall the tool, please delete the following files:

OnlineDumpUpload-a.exe

OnlineDumpTool.ini

OnlineDumpUpload-a.log (property: hidden file)

Up-loadingResult.log (property: hidden file)

Up-loadingResult_YYMMDD-nn.txt

(YY: year, MM: month, DD: date, -nn: automatically-assigned sequential number)

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2.24.3 Upload procedure

There are two different procedures for uploading.

Both of the uploading procedures are the same except for the way of starting the tool.

Choose either of uploading procedure depending on their features.

| Upload a dump file by dragging and dropping it onto the OnlineDumpTool. | | |
|---|--|--|
| Feature | Easy operation that uploads dump file(s) by one click operation. | |
| Procedure | From (1-1) to (1-3). | |

| Execute uploading by running OnlineDumpTool. | | |
|--|---|--|
| Feature | Uploading all dump files at once after confirming the file names. | |
| Procedure | From (2-1) to (2-6). | |

(1) The procedure for uploading dump files onto the OnlineDumpTool by dragging and dropping.

(1-1)

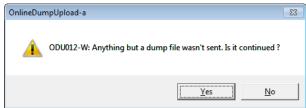
Drag and drop a dump file you wish to upload onto the OnlineDumpUpload-a.exe icon.



NOTE:

- Multiple files can be uploaded at a time.
- Any files except for a dump file cannot be uploaded.

If you select other files, then the following window is displayed.



[Yes]: Execute uploading except for the file which was not sent, if multiple files are selected.

[No]: Stop uploading.

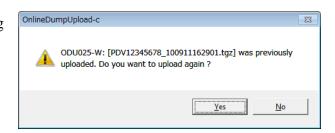
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• If the same file is re-sent, then the following confirmation message is displayed.

[Yes]: Uploading is executed. [No]: Uploading is canceled.

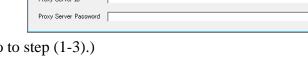


(1-2)

When selecting the "Server connection" in the field of "Input Method" in the setting of 2.24.1 (3)-(b), the following 'Login' window is displayed.

(The window is not displayed when the

"Environment configuration" is selected. Go to step (1-3).)



Input "User ID", "Proxy Server ID", "Proxy Server Password", and select (CL) [OK]. Refer to the paragraph 2.24.1 (3)-(d) for the input value of "Proxy Server ID" and "Proxy Server Password".

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(1-3)

Start uploading

During uploading, the following window is displayed.

When all selected files are uploaded, the following window is displayed. Select (CL) [OK].

If there is/are file(s) failed to upload in selected files, the following window is displayed.

If you wish to retry uploading, select (CL) [Send].

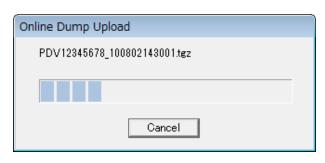
If you wish to exit without retry, select (CL) [Close].

If you set "Auto Delete Dump Files" to ON, in the setting of 2.24.1 (3)-(e), the following window is displayed.

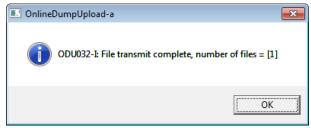
If you wish to delete the original dump file uploaded, select (CL) [Yes]. (*1)

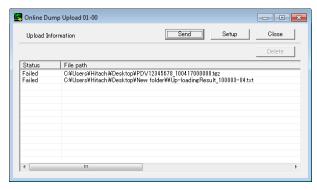
If you do not wish to delete the original dump file uploaded, select (CL) [No].

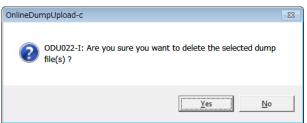
*1: The deleted file is sent to the recycle bin.



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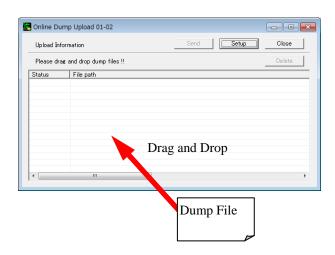
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- (2) The procedure for uploading dump files by running the OnlineDumpTool.
- (2-1)
 Select (DC) the OnlinedumpUpload-a.exe icon.



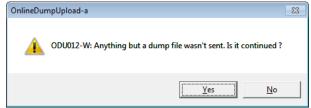
(2-2)
Drag and drop the dump file onto the 'Online Dump Upload' window to upload.



NOTE:

- Multiple files can be uploaded at a time.
- Uploading files can be added.
- Any files except for a dump file cannot be uploaded.

If you select other files, then the following window is displayed.



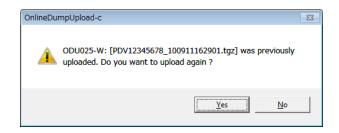
[Yes]: Execute uploading except for the file which was not sent, if multiple files are selected.

[No]: Stop uploading.

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• When the uploading has completed, the reconfirmation message is displayed.

[Yes]: Uploading is executed. [No]: Uploading is canceled.



(2-3)

When selecting the "Server connection" in the field of "Input Method" in the setting of 2.24.1 (3)-(b), the following 'Login' window is displayed.

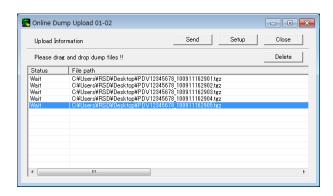
(The window is not displayed when the

"Environment configuration" is selected. Go to step (2-4).)

Input "User ID", "Proxy Server ID", "Proxy Server Password", and select (CL) [OK]. Refer to the paragraph 2.24.1 (3)-(d) for the input value of "Proxy Server ID" and "Proxy Server Password".

Online Dump Upload

(2-4) Select (CL) [Send] to start uploading.



NOTE:

- Select (CL) a file and [Delete] to delete the selected file from the list.
- Select (CL) [Close] to close the window without uploading.

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(2-5)

The uploading window is displayed.

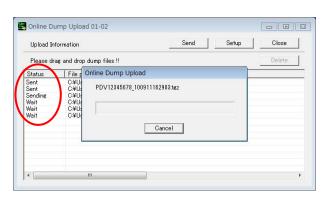
The uploading status is displayed in the Status field during uploading.

Connecting: In the connecting process to the

server.

Sending: Uploading.

Sent: Uploaded. (completed)
Wait: Waiting to start uploading.
Failed: The uploading has failed.
Cancel: The uploading has canceled.



(2-6)

When all selected files are uploaded, the following window is displayed. Select (CL) [OK].

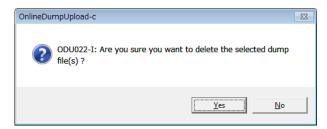
If there is/are file(s) failed to upload in selected files, the following window is displayed.

If you wish to retry uploading, select (CL) [Send].

If you wish to exit without retry, select (CL) [Close].

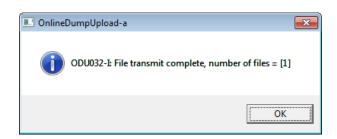
If you set "Auto Delete Dump Files" to ON, before a window showing upload completed is displayed, the following window is displayed.

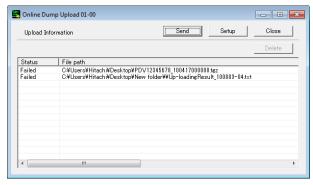
If you wish to delete the original dump file uploaded, select (CL) [Yes]. (*1)



If you do not wish to delete the original dump file uploaded, select (CL) [No].

*1: The deleted file is sent to the recycle bin.





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2.24.4 Reference of uploaded results

History information of an uploaded file is stored in a txt file.

A folder location is the same folder as specified in 2.24.1 [3] Settings.

A history file is created every transmission.



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2.24.5 Message Table

The messages that are displayed on OnlineDumpTool are described below Table 2.24.5-1.

Table 2.24.5-1 Displayed Messages on OnlineDumpTool

| Code No. | Items | Contents |
|----------|---------|---|
| ODU004-E | Message | ODU004-E: Login error, URL = [Address1 ~ 4] detail = *1 *1: detail = Check Your ID or Password = Proxy Authentication Required = Multi login = The server name or address could not be resolved = Not expectation HTML = The operation timed out |
| | Action | detail = Check the key cord when the "Check Your ID or Password" massage is displayed. detail = Check the user ID and password of the Proxy server when the "Proxy Authentication Required" message is displayed. detail = Login again after a while when the "Multi login" or "The operation timed out" (There is no response from the Web server.) message is displayed. For other than the above, setup the OnlineDumpTool again. |
| ODU010-E | Message | ODU010-E: Cannot read OnlineDumpUpload.ini, path = [file path name]. |
| | Cause | The OnlineDumpUpload.ini cannot be read. |
| | Action | (1) Check whether the OnlineDumpUpload.ini file can be read.(2) Setup the OnlineDumpTool again. |
| ODU011-W | Message | ODU011-W: Key code or user id not set in OnlineDumpUpload.ini. |
| | Cause | The key code and user ID are not specified to the OnlineDumpUpload.ini. |
| | Action | Specify the key code and user ID on Environment configuration screen. |
| ODU012-W | Message | ODU012-W: Anything but a dump file wasn't sent. Is it continued? |
| | Cause | The file that cannot be transmitted is included. |
| | Action | Select [OK] to continue and [Cancel] to discontinue. When [OK] is selected, only the transmittable file is transmitted. |
| ODU015-E | Message | ODU015-E: Internet API exception happened, detail = [error detail]. |
| | Cause | An unexpected error is detected at HTTP Communication API. |
| | Action | Setup the OnlineDumpTool again. |
| ODU022-I | Message | ODU022-I: Are you sure you want to delete the selected dump file(s)? |
| | Cause | "Auto delete Dump Files" setting is set to [On]. |
| | Action | Select [Yes] to delete the files and [No] to cancel it. |

(To be continued)

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(Continued from the preceding page)

| Code No. | Items | Contents |
|----------|---------|---|
| ODU023-E | Message | ODU023-E: A value was specified incorrectly, detail = [cause of error]. |
| | Cause | The error is detected in the specified value. |
| | Action | (1) When the detail is "The smallest number of characters"; • Specify the string of five characters or more for the account and the key code. • Specify the string of one character or more for the user ID. No spaces allowed. (2) When the detail is "Prohibited character"; Use the alphanumeric characters. (3) When the detail is "Prohibited character string"; Use the string other then below. script, meta, table, body, frame, form, style, background, xmp applet, plaintext, cookie |
| ODU025-W | Message | ODU025-W: [dump-filenametgz] was previously uploaded. Do you want to upload again? |
| | Cause | The file is an uploaded dump file. |
| | Action | Select [OK] to upload the files and [Cancel] to cancel it. |
| ODU026-E | Message | ODU026-E: Cannot write OnlineDumpUpload.ini, section = [section name] key = [key code] value = [value] path = [file path]. |
| | Cause | The OnlineDumpUpload.ini is not able to write. |
| | Action | (1) Check if the OnlineDumpUpload.ini file exists.(2) Setup the OnlineDumpTool again. |
| ODU028-W | Message | ODU028-W: Web server was busy. Please execute after wait a moment. |
| | Cause | The Web server was busy. |
| | Action | Execute it again after a while. |
| ODU032-I | Message | ODU032-I: File transmit complete, number of files = [Number of transmitted files] |
| | Cause | The file transfer is completed. |
| | Action | None |
| ODU037-W | Message | ODU037-W: This tool cannot be executed concurrently. |
| | Cause | This tool has already been running. |
| | Action | Finish this tool, and operate it with the running tool. |
| ODU038-W | Message | ODU038-W: Please set Address or Account, detail = [%s]. |
| | Cause | The address or account is not set. |
| | Action | Setup the OnlineDumpTool again. |

(To be continued)

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(Continued from the preceding page)

| Code No. | Items | Contents | |
|----------|---------|--|--|
| ODU042-W | Message | ODU042-W: Proxy Server ID or Proxy Server Password not set in OnlineDumpUpload.ini. | |
| | Cause | Although the setting of the Proxy Server is "On" in the IE, the Proxy Server ID and the Proxy Server Password are not specified to OnlineDumpUpload.ini. | |
| | Action | Specify the Proxy Server ID and the Proxy Server Password on the Environment configuration screen. | |
| ODU044-W | Message | ODU044-W: Log file folder was not exist, folder = [folder name]. | |
| | Cause | The folder that does not exist in the Log file folder was specified. | |
| | Action | Check the folder that is specified for Log file folder. If it does not exist, specify Log file folder again on the Environment configuration screen. | |
| ODU045-W | Message | ODU045-W: The file was drag & drop already, file = [file name] | |
| | Cause | The file has already been dragged and dropped. | |
| | Action | None | |
| ODU046-W | Message | ODU046-W: Exclusion of a file, file = [file name]. | |
| | Cause | The file has excluded from the upload screen. | |
| | Action | None | |
| ODU047-W | Message | ODU047-W: The cancel button was pressed. | |
| | Cause | The process has canceled because the cancel button has pressed. | |
| | Action | None | |
| ODU048-W | Message | ODU048-W: A folder can't be sent. Is it continued? | |
| | Cause | A folder can't be sent. | |
| | Action | Select [OK] to continue the process, and [Cancel] to cancel it. | |

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2.25 Restoring DRR

A CAUTION

This is a special procedure to recover a DRR operation without the need to self-replace the card under certain conditions specified below.

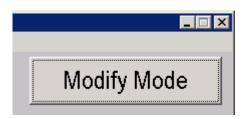
To use this procedure, please open a case with your technical support center and proceed under their guidance.

<Usage Conditions>

- Requested as a recovery procedure for an issue notified by an Early Notice/Alert.
- Requested by following the procedure described in Maintenance Manual.

<Usage Restrictions>

- Not to be used to recover hardware failures.
- (1) <Preparation>
 Close each menu of the starting SVP entirely.
- (2) <Start> Change the mode to [Modify Mode].



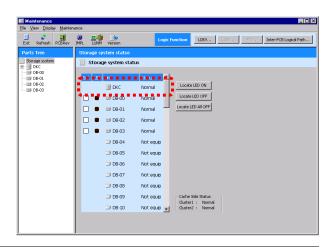
Select (CL) the [Maintenance] in the 'SVP' window.



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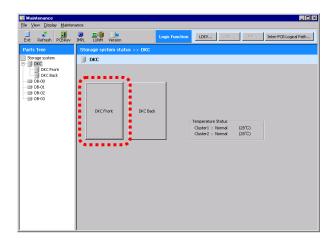
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(3) <Display of DKC Information> Select (CL) [DKC].

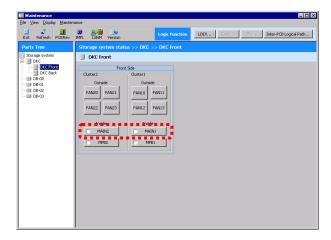


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(4) <Display of DKC Front Information> Select (CL) [DKC Front].



(5) <Display of MAIN Blade Information>Select (CL) [MAIN n] which installs DRR of the maintenance target.(n: Cluster number which installs DRR of the maintenance target)



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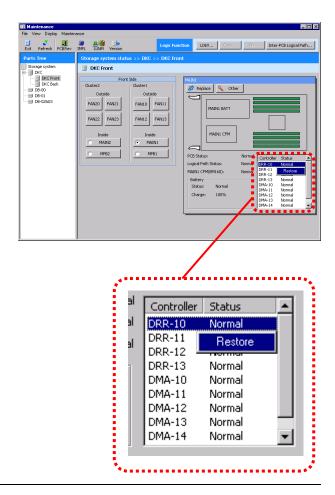
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(6) <Execution>

Select (CL) the right button of the mouse in the status that DRR of the maintenance target on the Controller list is selected (CL).

Select (CL) [Restore] in the displayed popup menu.



(7) <Password Input>

A CAUTION

When the blockade of DRR attributes to a hardware failure, it is possible that storage system down or data lost occurs. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

Corresponding to the following message, enter the password and select (CL) the [OK] button.

"Ask the Technical Support Division about the appropriateness of this operation, and enter the password."



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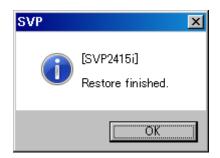
(8) <Execution Check> Select (CL) the [Yes] button for the following message.

"Do you want to restore X?"

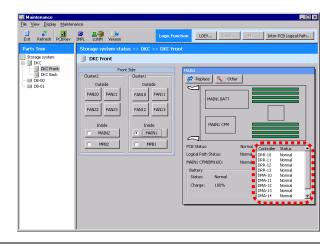
X: Target DRR



- (9) <Waiting for the completion of processing> The following message is displayed. "Please wait... Restoring the DRR..."
- (10) < Check of the recovery completion of failed DRR> Select (CL) [OK] for the following message. "Restore finished."



(11) < Check of processing result> Check the status of the target DRR with 'DKC Front' in the 'Maintenance' window.



(12) <Post-processing>

Close the 'Maintenance' window.

Change the mode to [View Mode].

2.26 Restoring DMA

A CAUTION

This is a special procedure to recover a DMA operation without the need to self-replace the card under certain conditions specified below.

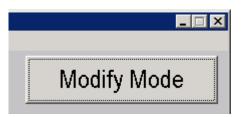
To use this procedure, please open a case with your technical support center and proceed under their guidance.

<Usage Conditions>

- Requested as a recovery procedure for an issue notified by an Early Notice/Alert.
- Requested by following the procedure described in Maintenance Manual.

<Usage Restrictions>

- Not to be used to recover hardware failures.
- (1) <Preparation>
 Close each menu of the starting SVP entirely.
- (2) <Start> Change the mode to [Modify Mode].



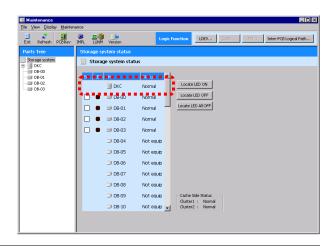
Select (CL) the [Maintenance] in the 'SVP' window.



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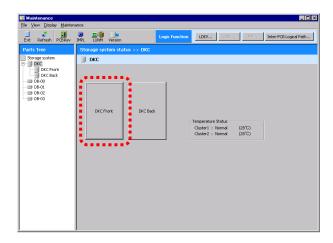
SVP02-1870

(3) <Display of DKC Information> Select (CL) [DKC].



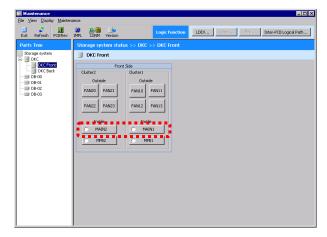
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(4) <Display of DKC Front Information> Select (CL) [DKC Front].



(5) <Display of MAIN Blade Information> Select (CL) [MAIN n] which installs DMA of the maintenance target.

(n: Cluster number which installs DMA of the maintenance target)



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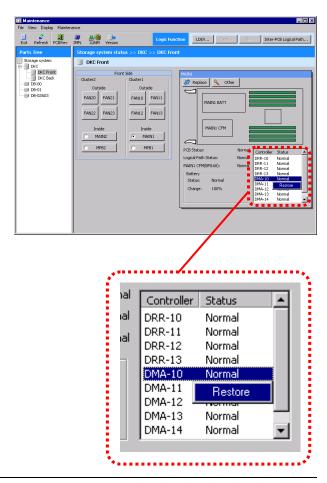
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(6) <Execution>

Select (CL) the right button of the mouse in the status that DMA of the maintenance target on the Controller list is selected (CL).

Select (CL) [Restore] in the displayed popup menu.



(7) < Password Input>

A CAUTION

When the blockade of DMA attributes to a hardware failure, it is possible that storage system down or data lost occurs. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

Corresponding to the following message, enter the password and select (CL) the [OK] button

"Ask the Technical Support Division about the appropriateness of this operation, and enter the password."



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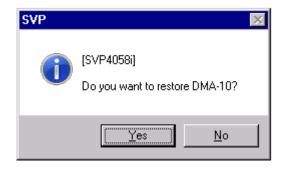
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(8) <Execution Check> Select (CL) the [Yes] button for the following message.

"Do you want to restore X?"

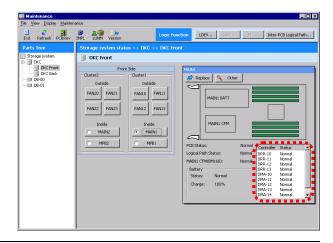
X: Target DMA



- (9) <Waiting for the completion of processing> The following message is displayed. "Please wait... Restoring the DMA..."
- (10) < Check of the recovery completion of failed DMA> Select (CL) [OK] for the following message. "Restore finished."



(11) < Check of processing result> Check the status of the target DMA with 'DKC Front' in the 'Maintenance' window.



(12) <Post-processing> Close the 'Maintenance' window.

Change the mode to [View Mode].

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2.27 Setting System Option Mode

(1)

Close the all SVP menu.

(2) <Enter the password>

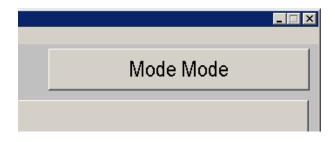
A CAUTION

This is a special (exceptional) operation that requires an input of a password. Ask the technical support division and input the password.

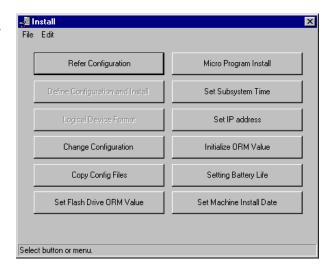
Press [Shift] + [Ctrl] + [m] in the 'SVP' window. Enter the password, and select (CL) [OK]. (Please call Technical Support Division for asking it.)



(3) <Mode Mode>
 'Mode Mode' is displayed.
 Select (CL) [Install].



(4) <Install Window>
Select (CL) the [Change Configuration] menu in the 'Install' window.



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(5) <Menu Dialog Window>
Select (CL) the [System Option] menu in the
'Menu Dialog' window and select (CL) [OK].



(6) <System Option Dialog>Select (CL) [Mode...] in the 'System Option'.Go to Step (7).

When the setting of all the entry items is completed, select (CL) the [OK] button. Go to Step (8).

A selection (CL) of the [Cancel] button completes this operation procedure.



(7) <Mode Window>

Select (CL) [LPR] and [Mode Configuration] in the 'Mode' window and select (CL) [OK]. Return to Step (6).

[LPR] : Select the following item.

System : Apply to the whole

system.

LPR0 - LPR31 : Apply to the CLPR0 -

CLPR31.

The following is definition of each Mode Class.

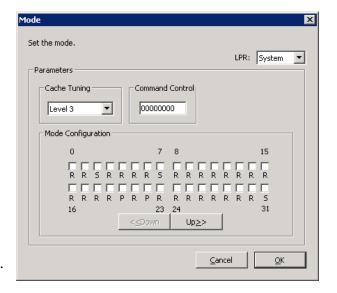
P (Public): Any permission is unnecessary.

S (TS) : The permission of the

Technical Support Division is necessary. When you select (CL) the check box for "S",

go to the Step (7-1).

R (RSD): The permission of RSD is necessary. When you select (CL) the check box for "R", go to the Step (7-2).



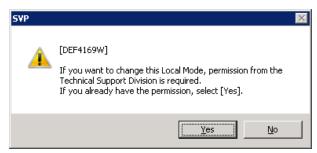
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(7-1)

"If you want to change this Local Mode, permission from the Technical Support Division is required. If you already have the permission, select [Yes]." is displayed.

When you select (CL) [Yes], the settings are included. Go back to the Step (7).



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When you select (CL) [No], the settings are not included. Go back to the Step (7).

(7-2)

"A password is required to set this Local Mode. Do you want to continue?" is displayed.

When you select (CL) [Yes], go to the Step (7-2-1).

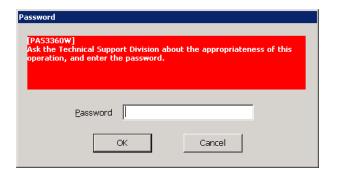
When you select (CL) [No], go back to the Step (7).



(7-2-1)

Enter the password and select (CL) [OK]. Go back to the Step (7).

Entering the password is required in this operation. Please call Technical Support Division for asking it.



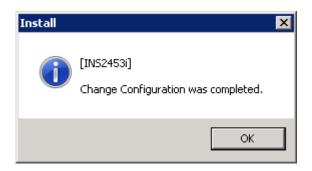
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(8)

"Change Configuration was completed." is displayed.

Select (CL) [OK].



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(9)

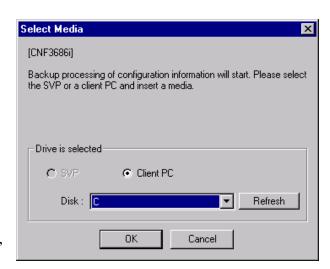
Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

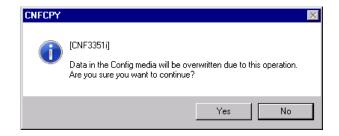
Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



(10)

If the configuration information is not saved in the selected media, go to step (11). If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select (CL) the [Yes] button. When the backup to the Config



media is not necessary, select (CL) the [No] button and go to step (12).

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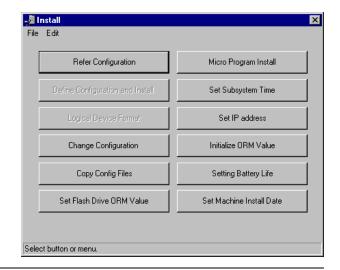
(11)

When this procedure is completed, the message "Please remove the configuration information media." is displayed. Remove the configuration information media, select (CL) [OK].



(12)

Close the 'Install' window. Select (CL) [File]-[Exit].



(13)

Change the Mode from [Mode Mode] to [View Mode].

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2.28 DKB type change operation

This operation can change the type from BS6G to BS6GE, and from BS6GE to BS6G.

- (1) <Pre-processing>
 Close the all SVP menu.
- (2) <Input password>

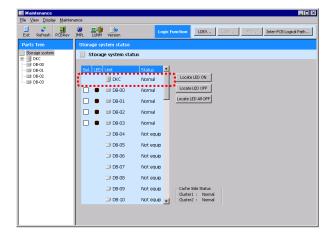
A CAUTION

This is a special (exceptional) operation that requires an input of a password. Ask the technical support division and input the password.

Select [Shift] + [Ctrl] + [A] on the 'SVP' window. Enter the password, and select (CL) [OK].



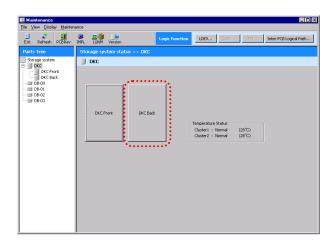
- (3) <DKA Mode> The 'Dka Mode' is displayed.
- (4) <Maintenance Window>
 Select (CL) [DKC] in the 'Maintenance' window.



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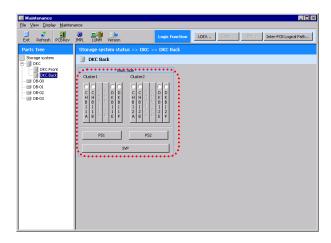
SVP02-1960

(5) <DKC Window>
Select (CL) [DKC Back] in the 'DKC' window.



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(6) <Select DKB> Select (CL) [DKB-nX].

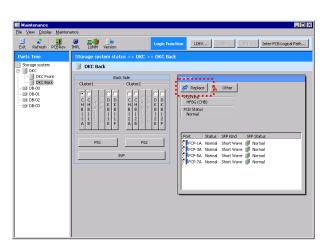


(7) <Specify Replacement of DKB>

A CAUTION

When the screen requests an operator to input a password in order to prevent multiple maintenance, contact the technical support division to ask for instructions.

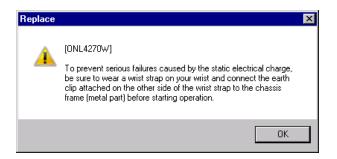
Make sure that the status is WARNING. Select (CL) [Replace].



SVP02-1970

(8) <Wear a wrist strap>

Select (CL) [OK] in response to "To prevent serious failures caused by the static electrical charge, be sure to wear a wrist strap on your wrist and connect the earth clip attached on the other side of the wrist strap to the chassis frame (metal part) before starting operation.".



(8-1) < Confirm wearing wrist strap>

In response to a message, "Did you put on a wrist strap on your wrist?".

Select (CL) [Yes] when wrist strap is on your wrist.

Select (CL) [No] when there is no wrist strap on your wrist.

When [No] is selected (CL), go to Step (8-2).



(8-2)

In response to a message, "This operation cannot be executed, because the wrist strap has not been worn. Do you want to stop this process?

[Yes]: This processing will be stopped.

[No]: The confirming message will appear.".

When [Yes] is selected (CL), returned to Step (7).

When [No] is selected (CL), returned to Step (8).



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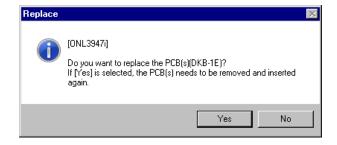
SVP02-1980

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(9) <DKB replace>

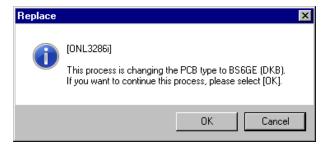
If any other message than the list is displayed, see the SVP MESSAGE SECTION (SVPMSG00-00).

Select (CL) [Yes] in response to "Do you want to replace the PCB(s)(DKB-nn)? If [Yes] is selected, the PCB(s) needs to be removed and inserted again.".



(10) <The check of DKB type change>
Select (CL) [OK] in response to "This process is changing the PCB type to xx (DKB). If you want to continue this process, please select [OK].".

(xx is the DKB type after change.)



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(11) < Caution message for system down>

A CAUTION

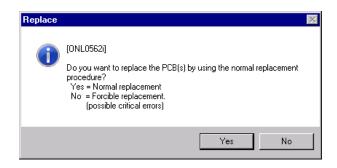
Select (CL) [Yes] in response to the message below.

"Do you want to replace the PCB(s) by using the normal replacement procedure?

Yes = Normal replacement

No = Forcible replacement.

(Possible critical errors)"



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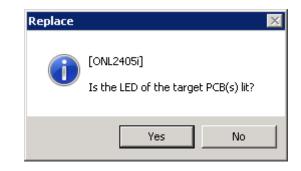
(12) <DKB blocking>

"DKB is being blocked..."

(13) < Check shut down LED> Select (CL)

- * [Yes] if LED is on
- * [No] if LED is off

in response to "Is the LED of the target PCB(s) lit?".

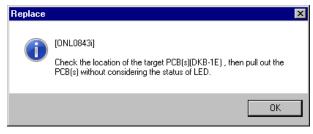


If [No] is selected:

Select (CL) [OK] in response to "Check the location of the target PCB(s)(DKB-nn), then pull out the PCB(s) without considering the status of LED.". (Refer to "2. HARDWARE REPLACEMENT PROCESSING")

NOTE: Select (CL) [OK] after pulling out the PCB.

Go to Step (14).



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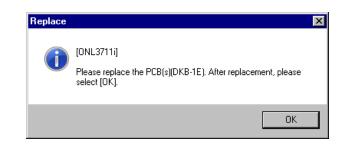
SVP02-2000

(14) <Beginning of DKB replacement>
"Please replace the PCB(s)(DKB-nn). After

replacement, please select [OK]." is displayed.

Select (CL) [OK] after replacing the PCBs.

See HARDWARE REPLACEMENT PROCESSING (REP03-13-110).



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(15) < Check the recovery processing>

The following message is displayed:

"Restoring the DKB-nn...".

(16) <PATH INLINE>

"PATH INLINE is now running..." is displayed.

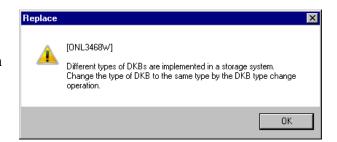
(17) < Check DKB recovery processing>

When the operation is in a transition period, the following message is displayed.

"Different types of DKBs are implemented in a storage system.

Change the type of DKB to the same type by the DKB type change operation.".

Select (CL) [OK] to this message.



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(18) < Check the end of DKB recovery> Select (CL) [OK] in response to "Replace finished.".



(19) < Post-procedure>

Close the 'Maintenance' window.

Change the mode to [View Mode].

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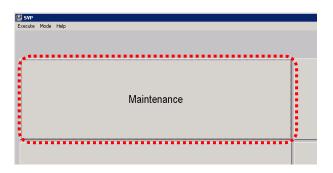
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3. Maintenance screen

3.1 Start

(1) *<*Start*>* Select (CL) the [Maintenance] in the 'SVP' window.



(2) <Start Condition Check>



Do not change the application window until completing the communication of SVP-DKC.

The following message is displayed.

"Please Wait..."



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(3) <Start Error>

When an error occurred while starting the status, the message to indicate the error factor is output.

• Cluster failure

"Cluster-n is failed!" n: 1 or 2



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Restore the power supply (Refer to TROUBLE SHOOTING SECTION "3.2.6 A failure has occurred when turning the power on" (TRBL03-250)) if the power supply are fault (Refer to the status of the power supply parts). (Refer to "3.4.2 DKC information view" (SVP03-150)).

Execute the procedure from Step (1) again after checking that the target processing is completed.

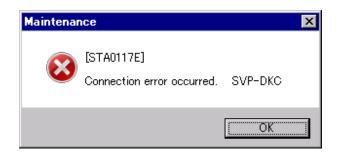
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• Communication failure

"Connection error occurred. SVP-DKC"



Refer to "4.2 Recovery Procedure for LAN Error (TRBL04-40)".

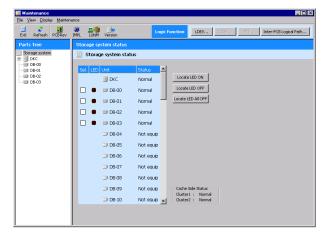
(4) <Status Display>

The storage system information is displayed in the 'Maintenance' window, and the status starts.

("----", or "Unknown" is displayed in the point where the information acquisition is impossible due to a communication failure or an environment monitor failure.)

NOTE: Displayed information is the storage system information on point that starts the screen.

To refer to latest information, select [Refresh]. (Refer to "3.3 Update (SVP03-50)")

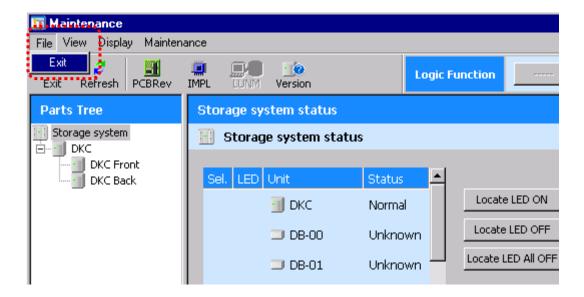


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3.2 Terminate

Select (CL) [File]-[Exit] on the menu bar in the 'Maintenance' window.

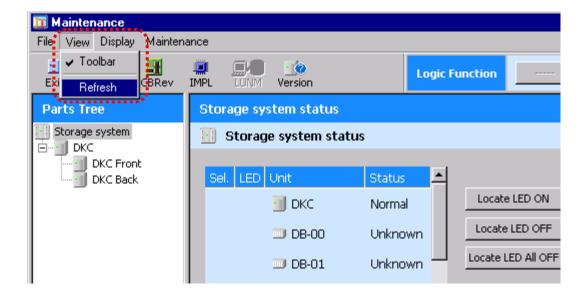


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3.3 Update

Select (CL) [View]-[Refresh] on the menu bar in the 'Maintenance' window.



3.4 Main screen

The main window of the 'Maintenance' window is configured as shown below.

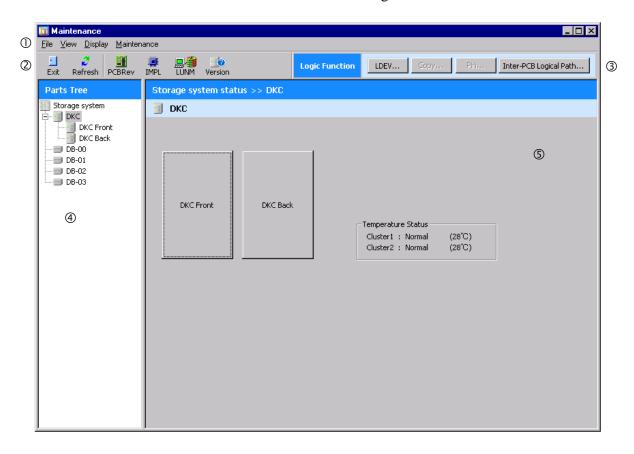


Table 3.4-1 Overview of Each Part in the Main Window

| # | Item | Description | | |
|-----|------------------|---|--|--|
| 1 | Menu | Menu items that can be operated using this function | | |
| 2 | Tool bar | Consists of buttons for operating some of the functions in the menu. | | |
| 3 | Dialog bar | Displays logical statuses. You can check the detailed information by pressing a button. | | |
| 4 | Tree | Displays statuses of parts in hierarchical order conscious of hardware configuration. | | |
| (5) | Information view | Displays a status of each part. | | |

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① Menu

② Tool bar

Table 3.4-2 Menu / Tool bar

| Menu | Sub menu | | | Description | Toolbar |
|-------------|-----------------------------------|--------------------------------|-----------------------------|--|---------------------|
| File | Exit | | | Terminates the application. | E xit |
| View | Toolbar | | | Displays/does not display the tool bar. | None |
| | Refresh | | | Updates information being displayed. | ₽ Refresh |
| Display | | | | Displays the 'PCB Revision Display'. | PCBRev |
| | | | Displays the 'IMPL Status'. | IMPL | |
| | | Displays the 'LUN Management'. | LUNM | | |
| | | Displays the 'Version'. | Version | | |
| Maintenance | Multi PCB DKC Cluster1 Replace | | Cluster1 | Replaces all PCBs of the DKC Cluster 1 together. | None |
| | | | Cluster2 | Replaces all PCBs of the DKC Cluster 2 together. | None |

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Table 3.4-3 List of Dialog Bars

| Button | Detailed information displayed | Processing when pressed |
|---------------------------|--|--|
| LDEV | Status of the logical device Steady lighting of the button: Normal Blinking of the button: Failed or under maintenance | Displays 'Logical Device'. |
| Copy | Status of copying Blinking of the button : Copying is in progress. Extinction of the button : No copying is done. | Displays 'Copy Status'. |
| Pin | Pin information Blinking of the button Extinction of the button : Pin information is present. : No Pin information is present. | Displays 'Pinned Track'. |
| Inter-PCB Logical Path | Status of Inter-PCB Logical Path Steady lighting of the button: Normal Blinking of the button: Failed | Displays 'Inter-PCB Logical Path Status'. |

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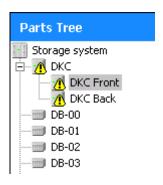
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Tree

The maintenance target parts on the storage system are displayed in the hierarchical order based on the hardware configuration.

Table 3.4-4 Contents of Tree

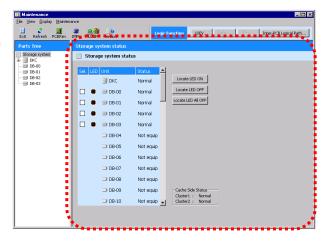
| Displays the warning icon 1 when the status of the parts s not normal. | |
|---|--|
| Displays the target information on the information view. | |



S Information view

Displays the location of the part and its status. Also executes the maintenance function of the target part.

Refer to 3.4.1 to 3.4.6 for the details.



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3.4.1 Storage system information view

This view is displayed at the time of the initial start of the 'Maintenance' window.

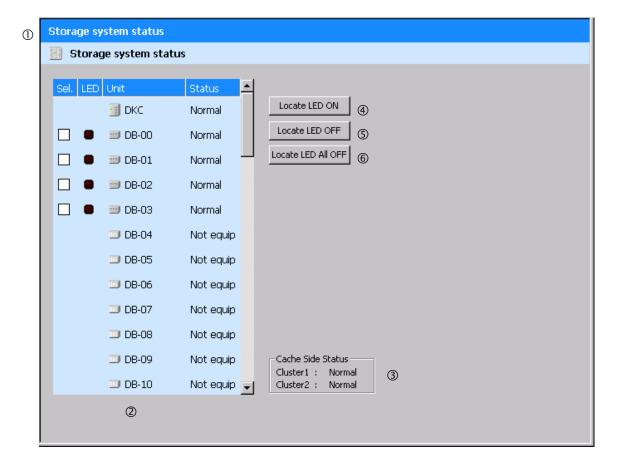


Table 3.4.1-1 Storage system information view

| # | Ite | em | | Description | |
|-----|----------------|-----------|-----------------------|---------------------------------------|------------------------------------|
| 1 | Title | | Information displayed | Displays the title of the | is view. |
| 2 | List Sel. (*1) | | Information displayed | Displays the check box Locate LED. | x for to turn on (or off) the |
| | | | | (not checked) | : Item is not being selected |
| | | | | (checked) | : Item is being selected |
| | | | Item selection | Turns over the status o | of check box. |
| | | LED (*1) | Information displayed | Displays the icon that LED. | show the status of the Locate |
| | | | | (dark colored icon) | : Locate LED turns off. |
| | | | | (bright colored icor | 1) : Locate LED turns on. |
| | | Unit | Information displayed | Displays the location r | name of the unit. |
| | | | Item selection | Displays the detailed in | nformation of the target unit. |
| | | Status | Information displayed | Displays the status of e | each unit in the list form. |
| | | | | "Normal" : N | ormal |
| | | | | "Warning" : A | bnormal |
| | | | | "Not equip" : U | ninstalled |
| | | | Item selection | Displays the detailed in | nformation of the target unit. |
| 3 | Informatio | | Information displayed | Displays the Cache Me | emory side status of each cluster. |
| | Cache Mei | mory side | | "Normal" : N | ormal |
| | status | | | "Blocked" : B | locked by the maintenance |
| | | | | "Failed" : B | locked by the failure |
| | | | | "Error" : Fa | ailed to get the status |
| 4 | Locate LED ON | | Item selection | Turns on the Locate Ll (cf. ②). | ED that selected in the list form |
| (5) | Locate LE | D OFF | Item selection | Turns off the Locate L (cf. ②). | ED that selected in the list form |
| 6 | Locate LE | D All OFF | Item selection | Turns off the all of Loc | cate LED. |

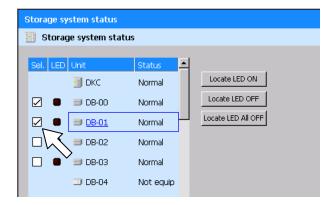
^{*1:} Displays check box or icon only the case that time is DB (Drive Box).

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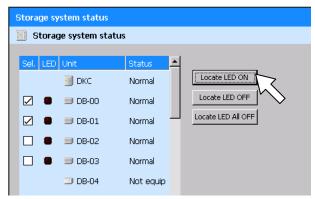
3.4.1.1 Operation for Locate LED

In this Subsection, describe for Operation for Locate LED.

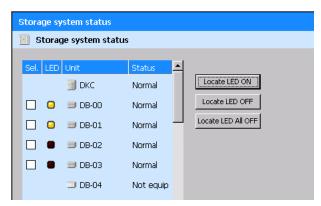
- (1) Turn on the Locate LED
 - ① Select the target DB on unit list. Able to select the multiple DBs.



② Select (CL) [Locate LED ON] button.



③ LED icon is changed to lighting on, and check box is cleared.

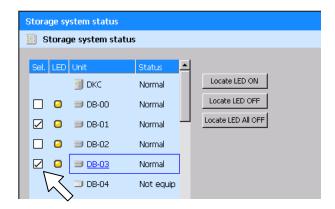


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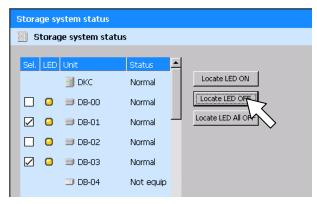
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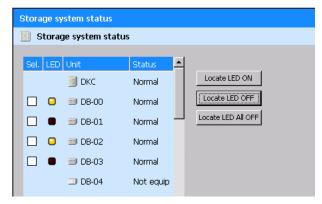
- (2) Turn off the Locate LED
 - Select the target DB on unit list. Able to select the multiple DBs.



② Select (CL) [Locate LED OFF] button.



③ LED icon is changed to lighting off, and check box is cleared.Not selected DB's LED icon keep to turn on.

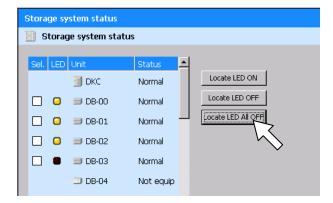


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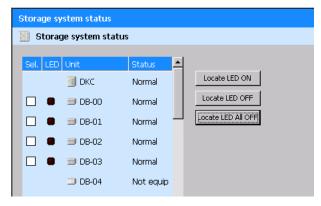
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- (3) Turn off the all of Locate LED
 - ① Select (CL) [Locate LED All OFF] button. Not need to select target DBs.



② All of LED icon is changed to lighting off.



3.4.2 DKC information view

This view is displayed by selecting (CL) [DKC] on the storage system information view.

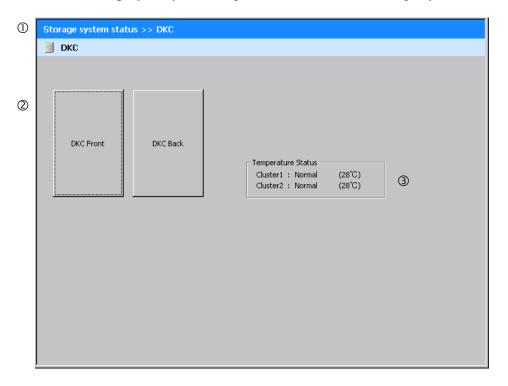


Table 3.4.2-1 DKC information view

| # | Item | Description | | | |
|---|----------------------------|-----------------------|---|---|--|
| 1 | Title | Information displayed | Displays the title of this | view. | |
| | | Title selection | "Storage system status" | Displays the storage system information view. | |
| 2 | Button | Information displayed | Displays the status of each part in the installation image. | | |
| | | | Lighting | : Normal | |
| | | | Blinking | : Abnormal | |
| | | Button selection | Displays the detailed information of each part. | | |
| 3 | Information of temperature | Information displayed | Displays the temperature cluster. | status and temperature of each | |
| | status | | "Normal" : Normal | | |
| | | | "Warning" : Abnorma | al | |
| | | | "Unknown" : Status is | unknown | |

3.4.3 DKC Front information view

This view is displayed by selecting (CL) [DKC Front] on the DKC information view.

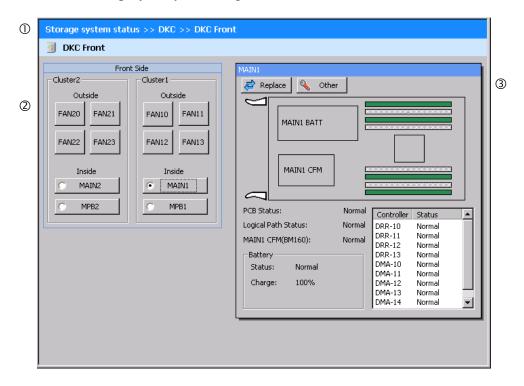


Table 3.4.3-1 DKC Front information view

| # | Item | Description | | |
|---|--------------|---|---|---|
| 1 | Title | Information displayed Displays the title of this view. | | view. |
| | | Title selection | "Storage system status" | Displays the storage system information view. |
| | | | "DKC" | Displays the DKC information view. |
| 2 | Button | Information displayed | on displayed Displays the status of each part in the installation image. | |
| | | | Lighting | : Normal |
| | | | Blinking | : Abnormal |
| | | | Extinction | : Uninstalled or unknown |
| | | Button selection | Displays the detailed information of each part or executhe replacement processing of each part. | |
| 3 | PCB Detailed | Displays the detailed information of each PCB or executes the maintenance | | |
| | Information | processing of each PCB. | . (Refer to SVP03-170 ~ 2 | 10.) |

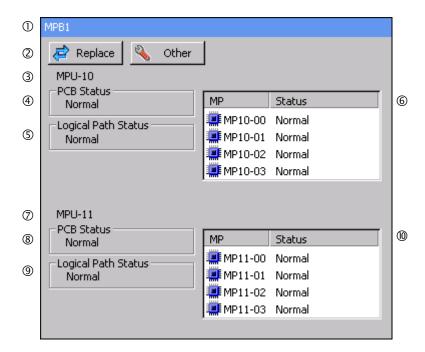
DW700

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<PCB Detailed Information>

(1) MP Blade detailed information



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Table 3.4.3-2 MP Blade detailed information

| # | Item | | | Description |
|-----|----------------------|------------------------------------|-------------------------|--|
| 1 | Title | Displays the location of MP Blade. | | |
| 2 | Maintenance | Executes the maintenance processin | | ıg. |
| | button | [Replace] | 1 | Executes the replacement processing. |
| | | [Other] – [Res | torel | Executes the forcible recovery processing. |
| | | [Other] – [Blo | _ | Executes the forcible blockade processing. |
| 3 | MPU1 PCB | | ocation of MPU1 in the | 1 0 |
| | Location | ar ayaa | | |
| 4 | MPU1 PCB | Displays the st | atus of PCB. | |
| | status | | "Normal" | : Normal |
| | information | | "Blocked" | : Blocked by the maintenance |
| | | | "Failed" | : Blocked by the failure |
| | | | "Warning" | : There is an abnormal point |
| (5) | MPU1 Logical | Displays the lo | ogical path status of P | CB. |
| | path | | "Normal" | : Normal |
| | information | | "Blocked" | : Blocked by the maintenance |
| | | | "Failed" | : Blocked by the failure |
| | | | "Warning" | : There is an abnormal point |
| 6 | MPU1 MP list | [MP] | Displays the location | on of MP. |
| | | [Status] | Displays the status | of MP. |
| | | | "Normal" | : Normal |
| | | | "Blocked" | : Blocked by the maintenance |
| | | | "Failed" | : Blocked by the failure |
| 7 | MPU2 PCB Location | Displays the lo | ocation of MPU2 in the | ne MP Blade. |
| 8 | MPU2 PCB | Displays the st | atus of PCB. | |
| | status | | "Normal" | : Normal |
| | information | | "Blocked" | : Blocked by the maintenance |
| | | | "Failed" | : Blocked by the failure |
| | | | "Warning" | : There is an abnormal point |
| 9 | MPU2 Logical | Displays the lo | ogical path status of P | CB. |
| | path | | "Normal" | : Normal |
| | information | | "Blocked" | : Blocked by the maintenance |
| | | | "Failed" | : Blocked by the failure |
| | | | "Warning" | : There is an abnormal point |
| 10 | MPU2 MP list | [MP] | Displays the location | on of MP. |
| | | [Status] | Displays the status | of MP. |
| | | | "Normal" | : Normal |
| | | | "Blocked" | : Blocked by the maintenance |
| | | | "Failed" | : Blocked by the failure |

(2) MAIN Blade detailed information

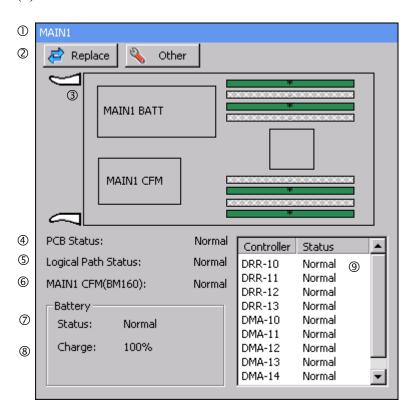


Table 3.4.3-3 MAIN Blade detailed information

| # | Item | | De | escription |
|-----|--------------------|------------------------|-------------------------------|---|
| 1 | Title | Displays the locatio | n of MAIN Blade | |
| 2 | Maintenance | Executes the mainte | nance processing. | |
| | button | [Replace] | | Executes the replacement processing. |
| | | [Other] – [Restore] | | Executes the forcible recovery processing. |
| | | [Other] – [Blockade | e] | Executes the forcible blockade processing. |
| 3 | Button | Cache memory module | Displays the status of image. | of the Cache memory module in the installation |
| | | | Lighting | : Normal |
| | | | Blinking('*') | : Abnormal |
| | | | Extinction('-') | : Uninstalled |
| | | CFM | Displays the status of | of the CFN in the installation image. |
| | | | Lighting | : Normal |
| | | | Extinction | : Uninstalled |
| | | BATTERY | Displays the status of | of the BATTERY in the installation image. |
| | | | Lighting | : Normal |
| | | | Extinction | : Uninstalled |
| 4 | MAIN Blade | Displays the status of | of MAIN Blade. | |
| | status information | "No | rmal" | : Normal |
| | | "Blocked" | | : Blocked by the maintenance |
| | | "Failed" | | : Blocked by the failure |
| | | | rning" | : There is an abnormal point |
| | | "Cao | che Access Error" | : Access error (PCB is normal, CMG is abnormal) |
| (5) | Logical path | Displays the logical | path status of MAIN | Blade. |
| | information | "No: | rmal" | : Normal |
| | | "Blo | ocked" | : Blocked by the maintenance |
| | | "Fai | led" | : Blocked by the failure |
| | | | rning" | : There is an abnormal point |
| 6 | CFM status | Displays the status of | | |
| | information | | rmal" | : Normal |
| | | "Fai | | : Abnormal |
| | | | known" | : Unknown |
| | | | t Equip" | : Uninstalled |
| 7 | Cache battery | Displays the status of | • | |
| | status | | rmal" | : Normal |
| | information | | rning" | : Abnormal |
| | | | known" | : Unknown |
| | | "No | t Equip" | : Uninstalled |

(To be continued)

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(Continued from preceding page)

| # | Item | Description | | | |
|---|-----------------|----------------|---------------------------------------|------------------------------|--|
| 8 | Cache battery | Displays the C | Displays the Charge of Cache battery. | | |
| | Charge | | "Display the 0 ~ 100%" | : Normal | |
| | information | | "Checking" | : Checking | |
| | | | "Unknown" | : There is an abnormal point | |
| 9 | Controller list | [Controller] | Displays the location of Controller. | | |
| | | [Status] | Displays the status of Controller. | | |
| | | | "Normal" | : Normal | |
| | | | "Failed" | : Blocked by the failure | |
| | | | "Warning" | : partially Blocked | |

3.4.4 DKC Back information view

This view is displayed by selecting (CL) [DKC Back] on the DKC information view.

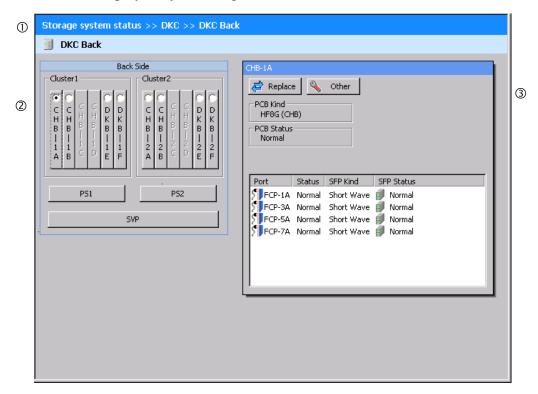


Table 3.4.4-1 DKC Back information view

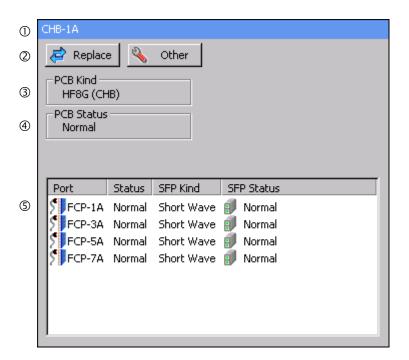
| # | Item | Description | | |
|---|-----------------------------|---|-------------------------|---|
| 1 | Title | Information displayed Displays the title of this view. | | view. |
| | | Title selection | "Storage system status" | Displays the storage system information view. |
| | | | "DKC" | Displays the DKC information view. |
| 2 | Button | Information displayed Displays the status of each part in the installation image. | | |
| | | | Lighting | : Normal |
| | | | Blinking | : Abnormal |
| | | | Extinction/No display | : Uninstalled or unknown. |
| | | Button selection Displays the detailed information of each part or extended the replacement processing of each part. | | • |
| 3 | PCB Detailed Information | Displays the detailed information of each PCB or executes the maintenance processing of each PCB. (Refer to SVP03-230 ~ 260.) | | |

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<PCB Detailed Information>

(1) CHB detailed information



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Table 3.4.4-2 CHB detailed information

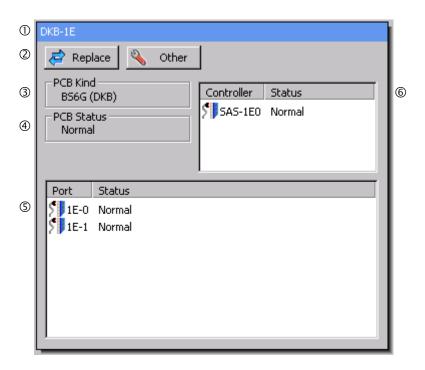
| # | Item | Description | | |
|-----|----------------------|-------------------------------------|-----------------------|--|
| 1 | Title | Displays the location of CHB. | | |
| 2 | Maintenance | Executes the maintenance processing | | g. |
| | button | [Replace] | | Executes the replacement processing. |
| | | [Other] – [Rest | core] | Executes the forcible recovery processing. |
| | | [Other] – [Bloc | ckade] | Executes the forcible blockade processing. |
| | | [Other] – [SFP | Maintenance] | Starts the SFP maintenance window. |
| 3 | PCB type information | Displays the ty | pe of PCB. | |
| 4 | PCB status | Displays the sta | atus of PCB. | |
| | information | | "Normal" | : Normal |
| | | | "Blocked" | : Blocked by the maintenance |
| | | | "Failed" | : Blocked by the failure |
| | | | "Warning" | : There is an abnormal point |
| (5) | Port list | [Port] | Displays the location | on of the port. |
| | | | "FCP-xx" | : Port location of Fibre PCB |
| | | [Status] | Displays the status | of the port. |
| | | | "Normal" | : Normal |
| | | | "Blocked" | : Blocked by the maintenance |
| | | | "Failed" | : Blocked by the failure |
| | | | "Warning" | : There is an abnormal point |
| | | [SFP Kind] | Displays the type of | f SFP. |
| | | | "Short Wave" | : Short Wave |
| | | | "Long Wave" | : Long Wave |
| | | | "" | : Type is unknown. |
| | | [SFP Status] | Displays the status | of SFP. |
| | | | "Normal" | : Normal |
| | | | "Failed" | : Blocked |
| | | | "Not fix" | : Status is uncertain. |

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(2) DKB detailed information



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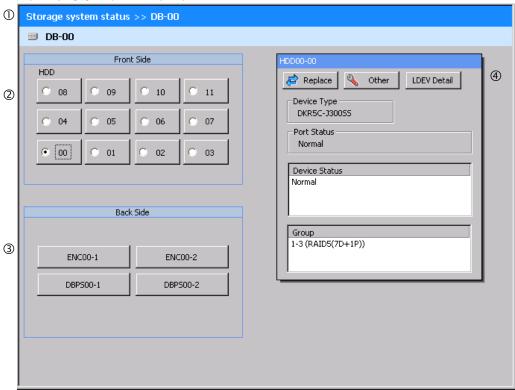
Table 3.4.4-3 DKB detailed information

| # | Item | Description | | Description |
|-----|----------------------|-------------------------------|--------------------------------------|--|
| ① | Title | Displays the location of DKB. | | |
| 2 | Maintenance | Executes the m | naintenance processin | g. |
| | button | [Replace] | | Executes the replacement processing. |
| | | [Other] – [Res | tore] | Executes the forcible recovery processing. |
| | | [Other] – [Bloo | ckade] | Executes the forcible blockade processing. |
| 3 | PCB type information | Displays the ty | pe of PCB. | |
| 4 | PCB status | Displays the st | atus of PCB. | |
| | information | | "Normal" | : Normal |
| | | | "Blocked" | : Blocked by the maintenance |
| | | | "Failed" | : Blocked by the failure |
| | | | "Warning" | : There is an abnormal point |
| (5) | Port list | [Port] | Displays the location | on of the port. |
| | | [Status] | Displays the status | of the port. |
| | | | "Normal" | : Normal |
| | | | "Blocked" | : Blocked by the maintenance |
| | | | "Failed" | : Blocked by the failure |
| | | | "Warning" | : There is an abnormal point |
| 6 | Controller list | [Controller] | Displays the location of Controller. | |
| | | [Status] | Displays the status | of Controller. |
| | | | "Normal" | : Normal |
| | | | "Failed" | : Blocked by the failure |

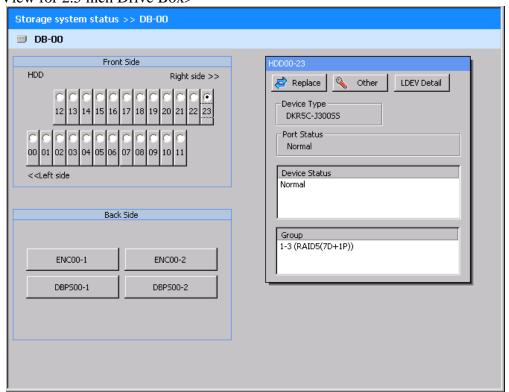
3.4.5 DB information view

This view is displayed by selecting (CL) [DB-XX] on the storage system information view or Tree View.

<View for 3.5 inch Drive Box>



<View for 2.5 inch Drive Box>



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< View for FMU (Flash Module Unit) Drive Box>

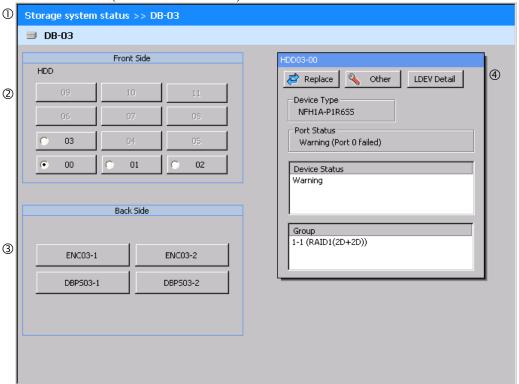


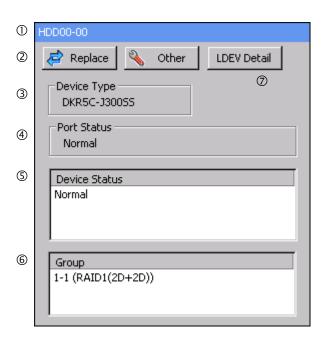
Table 3.4.5-1 DB information view

| # | Item | Description | | |
|---|-----------------------------|--|---|--|
| 1 | Title | Information displayed | Displays the title of this view. | |
| | | Title selection | "Storage system status" Displays the storage system information view. | |
| 2 | HDD Button | Information displayed | Displays the status of each part in the installation image. | |
| | | | Lighting : Normal | |
| | | | Blinking : Abnormal | |
| | | | Extinction : Uninstalled | |
| | | Button selection | HDD Detailed Information (4) is displayed. | |
| 3 | Special Package | Information displayed | Displays the status of each part in the installation image. | |
| | Button | | Lighting : Normal | |
| | | | Blinking : Abnormal | |
| | | | Extinction : Uninstalled | |
| | | Button selection | Executes the replacement processing of each part. | |
| 4 | HDD Detailed Information | Displays the detailed information of each HDD. (Refer to SVP03-290 ~ 300.) | | |

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<HDD detailed information>



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Table 3.4.5-2 HDD detailed information

| # | Item | De | escription | |
|-----|------------------------|--------------------------------------|--|--|
| 1) | Title | Displays the location of HDD | | |
| 2 | Maintenance | Executes the maintenance processing. | | |
| | button | [Replace] – [Replace] | Executes the replacement processing. | |
| | | [Replace] – [Replace(INLINE)] | Executes the replacement processing (INLINE processing skip). | |
| | | [Other] – [Restore] | Executes the forcible recovery processing. | |
| | | [Other] – [Blockade] | Executes the forcible blockade processing. | |
| | | [Other] – [Restore Data] | Executes the data recovery processing. | |
| | | [Other] – [Spare Disk] | Executes the spare save processing. | |
| | | [Other] – [Correction Copy] | Executes the correction copy processing. | |
| | | [Other] – [Drive Interrupt] | Instructs the copy processing stop. | |
| | | [Other] – [FMD Dump] | Executes gathering FMD Dump. Enable only HDDs mounted in FMUs. | |
| 3 | Model name information | Displays the model name of HDD. | | |
| 4 | Port status | Displays the port status of HDD. | | |
| | information | "Normal" | : Normal | |
| | | "Warning(Port 0 failed)" | : Port 0 blocked | |
| | | "Warning(Port 1 failed) | : Port 1 blocked | |
| | | "Failed" | : Both port blocked | |
| (5) | HDD status | Displays the status of HDD | | |
| | information | "Normal" | : Normal | |
| | | "Correction Copy(x%)" | : Executing the correction copy (rate of progress) | |
| | | "Copy Back(x%)" | : Restoring the data from the spare disk (rate of progress) | |
| | | "Drive Copy(x%)" | : Copying the data to the spare disk (rate of progress) | |
| | | "Dynamic Sparing(x%)" | : Executing the Dynamic sparing (rate of progress) | |
| | | "Blocked" | : Blocked owing to the maintenance. | |
| | | "Failed" | : Blocked owing to a failure. | |
| | | "Warning" | : Either of ports is blocked. | |
| | | "Free" | : Spare disk is usable. | |
| | | "Reserved" | : Spare disk is not usable. It is already reserved. | |
| | | "to HDD-XX" | : Data is copied to HDD-XX. | |
| | | "from HDD-XX" | : Data is copied from HDD-XX. | |
| | | "Copy incomplete" | : The copy process was finished in an incomplete state. | |

(To be continued)

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(Continued from preceding sheet)

| # | Item | Description | | |
|---|-------------|---|--|--|
| 6 | Group | Displays the group name to which HDD belongs and its RAID level. | | |
| | information | x-y(RAIDn(XXXX)) : Group name (RAID level) | | |
| | | Spare : Spare drive. | | |
| | | Spare (Copy back will be : Spare drive. (After replacement, copy performed.) back will be performed.) | | |
| 7 | LDEV Detail | Displays the LDEV information of group. | | |
| | button | | | |

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3.5 Copy Status view

This window is displayed by selecting (CL) [Copy...] on the dialog bar in the main window.

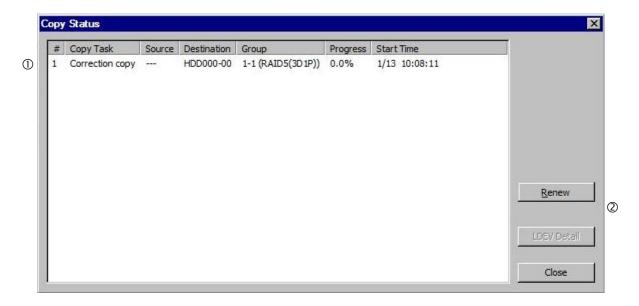


Table 3.5-1 Copy Status view

| # | Item | Description | | |
|---|--------|---|--|---------------------|
| 1 | List | Displays the information on the copy operation executing right now. | | |
| | | [Copy Task] | Displays the type of t | the copy operation. |
| | | | "Correction Copy" : Correction copy "*" display: Waiting for the aut copy back. | |
| | | | "Dynamic Sparing" | : Dynamic sparing |
| | | | "Copy Back" | : Copy back |
| | | | "Drive Copy" | : Drive copy |
| | | [Source] | Displays the location of the copy source HDD. | |
| | | [Destination] | Displays the location of the copy destination HDD. | |
| | | [Group] | Displays the group name to which the copy destination HDI belongs and its RAID level. | |
| | | [Progress] | Displays the rate of progress of the copy operation. | |
| | | [Start Time] | Displays the time when the copy operation started. | |
| 2 | Button | [Renew] | Updates the information displayed. | |
| | | [LDEV Detail] | Displays the information of the LDEV belonging to the group in the selected list item. | |

3.6 Logical device window

This window is displayed by selecting (CL) [LDEV...] on the dialog bar in the main window. The logical device window is configured as shown below.

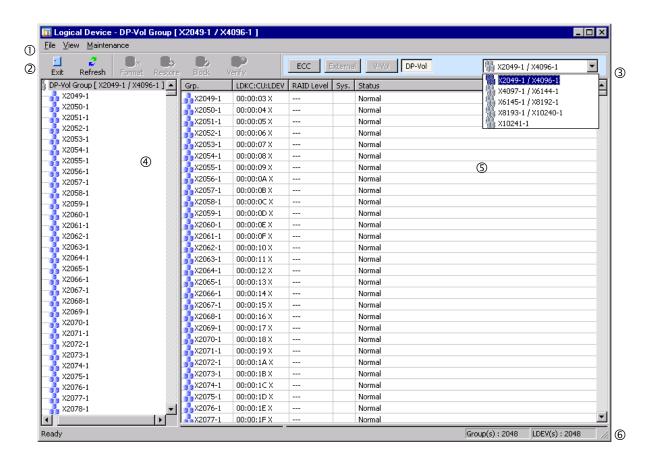


Table 3.6-1 Overview of Each Part in Logical Device Window

| # | Item | Description | |
|-----|------------|--|--|
| 1 | Menu | Menu items that can be operated using this function. | |
| 2 | Tool bar | Consists of buttons for operating some of the functions in the menu. | |
| 3 | Dialog bar | Selects the device type and the range to display. | |
| 4 | Tree | Displays the device in hierarchical order. | |
| (5) | List | Displays the information of the logical device. | |
| 6 | Status bar | Displays the information of the device number. | |

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① Menu

2 Tool bar

Table 3.6-2 Menu / Tool bar

| Menu | Sub menu | | Description | Toolbar |
|-------------|-----------------------------|--------------|---|------------------------|
| File | Exit | | Terminates the application. | = Exit |
| View | Status Bar | • | Displays/does not display the status bar. | None |
| | Go To | Up One Level | Moves it to one upper hierarchy. | None |
| | Refresh | | esh Updates information being displayed. | |
| Maintenance | Maintenance Format Restore | | Executes the format processing. | ii o₀ Format |
| | | | Executes the maintenance recovery processing. | Restore |
| | | | Executes the maintenance blockade processing. | Block |
| | | | Executes the parity synchronization check. | Verify |

3 Dialog bar

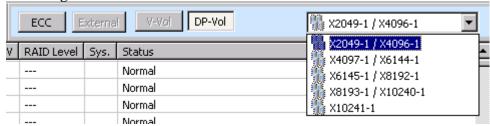


Table 3.6-3 Dialog bar

| Item | Description | | | |
|--------------------|-----------------------|--|--|--|
| Button | Information displayed | Displays the status of the device in each type. | | |
| | | Lighting : Normal | | |
| | | Blinking : Abnormal | | |
| | | Extinction : Uninstalled | | |
| Button selection | | Displays the information of the device in each type on the tree/list. | | |
| Comb box | Information displayed | Displays the defined group information by dividing it into 2048 at the maximum in the type selected with the button. | | |
| ₩ 🚅 🕌 : Nor | | 🎳 🚅 👫 💮 : Normal | | |
| | | 🔥 🎪 🥻 : Abnormal | | |
| | Item selection | Displays the information of the target device on the tree/list. | | |

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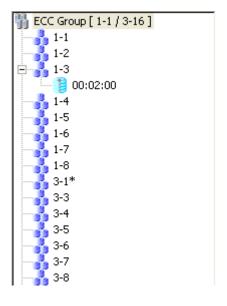
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Tree

The logical device information is displayed in units of the group information and the LUSE information.

Table 3.6-4 Contents of Tree

| | Displays the warning icon 1 wh the status of the parts is not normal. |
|----------------|--|
| Item sele tion | Displays the target information on the list. |



S List

The logical device information is displayed. Refer to 3.6.1 to 3.6.3 for the details.

| Grp. | LDKC:CU:LDEV | RAID Level | Sys. | Status |
|-----------|--------------|------------|------|--------|
| 3 X2049-1 | 00:00:03 X | | | Normal |
| 3 X2050-1 | 00:00:04 X | | | Normal |
| X2051-1 | 00:00:05 X | | | Normal |
| X2052-1 | 00:00:06 X | | | Normal |
| X2053-1 | 00:00:07 X | | | Normal |
| 3 X2054-1 | 00:00:08 X | | | Normal |
| 3 X2055-1 | 00:00:09 X | | | Normal |
| 3 X2056-1 | 00:00:0A X | | | Normal |
| 3 X2057-1 | 00:00:0B X | | | Normal |
| 💑 X2058-1 | 00:00:0C X | | | Normal |
| 💑 X2059-1 | 00:00:0D X | | | Normal |
| 💑 X2060-1 | 00:00:0E X | | | Normal |
| 💑 X2061-1 | 00:00:0F X | | | Normal |
| 💑 X2062-1 | 00:00:10 X | | | Normal |
| 💑 X2063-1 | 00:00:11 X | | | Normal |
| 💑 X2064-1 | 00:00:12 X | | | Normal |
| 💑 X2065-1 | 00:00:13 X | | | Normal |
| 💑 X2066-1 | 00:00:14 X | | | Normal |
| 💑 X2067-1 | 00:00:15 X | | | Normal |
| 💑 X2068-1 | 00:00:16 X | | | Normal |
| 💑 X2069-1 | 00:00:17 X | | | Normal |
| 💑 X2070-1 | 00:00:18 X | | | Normal |
| 💑 X2071-1 | 00:00:19 X | | | Normal |
| 💑 X2072-1 | 00:00:1A X | | | Normal |
| 💑 X2073-1 | 00:00:1B X | | | Normal |
| 💑 X2074-1 | 00:00:1∈X | | | Normal |
| 💑 X2075-1 | 00:00:1D X | | | Normal |
| 3 X2076-1 | 00:00:1E X | | | Normal |

6 Status Bar

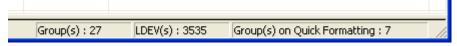
The number of devices of the information displayed on the tree/list right now is displayed.

• In case of the group unit display

There is no device executing Quick Format.

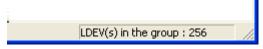


There is the device executing Quick Format.



• In case of the device unit display

There is no device executing Quick Format.



There is the device executing Quick Format.

LDEV(s) in the group: 945 LDEV(s) on Quick Formatting in the group: 1

Table 3.6-5 Contents of Status Bar

| Item | Description | |
|-----------------------------------|-----------------------------------|--|
| In case of the group unit display | "Group(s)" | Displays the total number of the groups displayed on the list. |
| | "LDEV(s)" | Displays the total number of the devices set in the groups displayed on the list. |
| | "Group(s) on Quick Formatting" | The number of groups including devices executing Quick Format is displayed in the listed and displayed groups. |
| In case of the LDEV unit display | "LDEV(s) in the group" | Displays the total number of the devices displayed on the list. |
| | "Formatting in the group" | The total device number executing Quick Format is displayed in the listed and displayed devices. |

3.6.1 List of Group Information

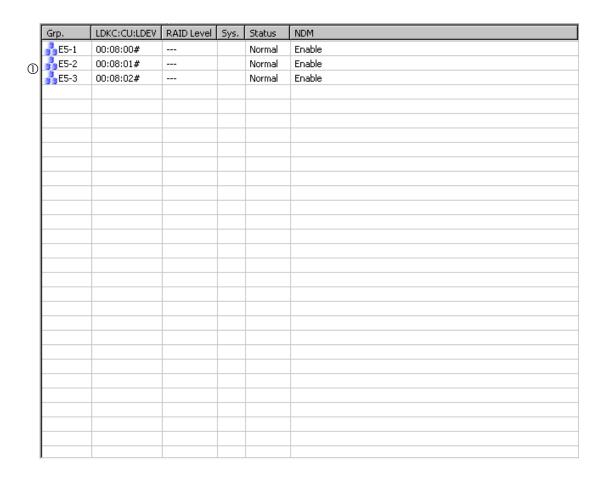


Table 3.6.1-1 List of Group Information

| # | Item | | Description | | |
|---|-------------|--|--|--|--|
| ① | Detailed | Displays detailed information such as a status of a group. | | | |
| | information | [Grp.] | Name of a group | | |
| | | | "E" | : External Volume Group | |
| | | | "V" | : Virtual Volume Group for Thin Image | |
| | | | "X" | : DP Volume Group | |
| | | | "P" | : Pool Volume exists in group | |
| | | | ··*· | : RAID Concatenation | |
| | | [LDKC:CU:LDEV] | Device information b | elonging to a group | |
| | | | " # " | : External Volume | |
| | | | "V" | : Virtual Volume for Thin Image | |
| | | | "X" | : DP Volume | |
| | | [RAID Level] | RAID level of a grou | p | |
| | | [Sys.] | Existence of System I (System Disk exists i | | |
| | | Status of a group | | | |
| | | | "Normal" | : Normal | |
| | | | "Normal (Quick Formatting exists)" | : Normal (Quick Formatting exists) | |
| | | | "Blocked" | : Blocked | |
| | | | "Copying" | : Copying | |
| | | | "Correction Access" | : Correction access (without redundancy) | |
| | | | "Correction Access with redundancy" | : Correction access (with redundancy) | |
| | | | "Warning" | : Warning (mixed status in the group, etc.) | |
| | | | "" | : No information available because the device in the group is uninstalled. | |
| | | | "Formatting" | : Formatting | |
| [NDM] Attribute of Nondist | | Attribute of Nondisru | ptive Migration function | | |
| | | | "Enable" | : Function is Enable | |
| | | | "Disable" | : Function is Disable | |
| Displays the [NDM] column only whe summary of [Grp.]) is External Volum | | | | | |

3.6.2 List of Device information

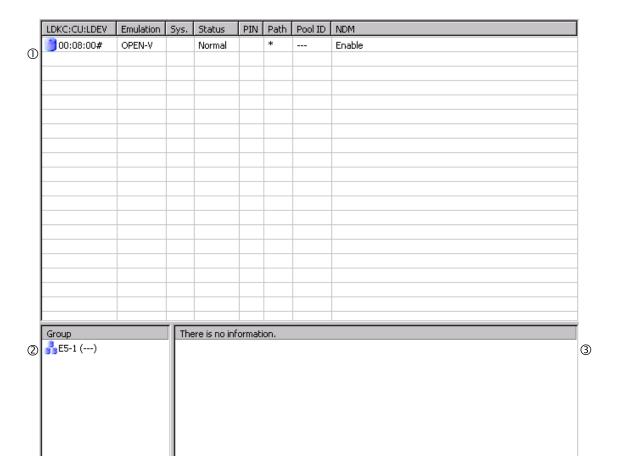


Table 3.6.2-1 List of Device information

| # | Item | | Description | on |
|---|----------------------|------------------------|--|--|
| 1 | Detailed information | Displays detailed info | rmation such as a status | of a device. |
| | | [LDKC:CU:LDEV] | Image | |
| | | | : Volume of | normal status |
| | | | : Volume of | quick formatting |
| | | | : Volume is | blocked or warning |
| | | | : Volume of | LUSE |
| | | | : Volume of | quick formatting LUSE |
| | | | : Volume of | LUSE is blocked or warning |
| | | | Name of a device | |
| | | | " # " | : External Volume |
| | | | "V" | : Virtual Volume for Thin Image |
| | | | "X" | : DP Volume |
| | | [Emulation] | | ber of connected LDEV for LUSE if volume (e.g. OPEN-V * 3).) |
| | | [Sys.] | Existence of System I (System Disk exists | |
| | | [Status] | Status of a device | |
| | | | "Normal" | : Normal |
| | | | "Normal (Quick Formatting)" | : Normal (Quick Formatting) |
| | | | "Normal (Quick Formatting exists)" | : Normal (Quick Formatting exists) (Only the head device of LUSE) |
| | | | "Blocked" | : Blocked |
| | | | "Copying" | : Copying |
| | | | "Correction Access" | : Correction access (without redundancy) |
| | | | "Correction Access with redundancy" | : Correction access (with redundancy) |
| | | | "Warning" | : Warning (mixed status in the LUSE, etc.) |
| | | | "Formatting" | : Formatting |

(To be continued)

(Continued from preceding sheet)

| # | Item | Description | | |
|---|----------------------|---|-------------------------|---|
| ① | Detailed information | Displays detailed information such as a status of a device. | | of a device. |
| | | [Pin] Existence of Pin (Pin exists: "*" display) | | |
| | | [Path] | Existence of Path (Pa | nth exists: "*" display) |
| | | [Pool ID] | ID number of Pool V | olume |
| | | | "" | : Not Pool Volume |
| | | [NDM] | Attribute of Nondisru | uptive Migration function |
| | | | "Enable" | : Function is Enable |
| | | | "Disable" | : Function is Disable |
| | | | * • | column only when the group that External Volume Group (cf. summary /]). |
| 2 | Group information | Displays the group info | rmation to which the o | device belongs and its RAID level. |
| 3 | HDD information | Displays HDD to install | I the group information | n to which the device belongs. |
| | | [HDD] | Location of HDD | |
| | | | 🕦 : Normal | |
| | | | :Blocked | |
| | | [Remarks] | Displays the addition | al information for HDD. |

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3.6.3 List of LUSE information

| | LDKC:CU:LDEV | Emulation | Status | Grp. |
|---|--------------|-----------|--------|------|
| ① | 300:02:00 | OPEN-V | Normal | 1-3 |
| | 300:02:01 | OPEN-V | Normal | 1-3 |
| | 300:02:02 | OPEN-V | Normal | 1-3 |
| | 300:02:03 | OPEN-V | Normal | 1-3 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Table 3.6.3-1 List of LUSE information

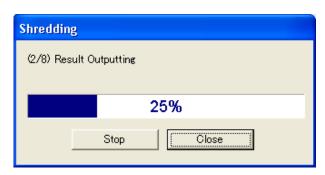
| # | Item | | Description | on |
|---|-------------|--|-------------------------------------|---|
| 1 | Detailed | Displays detailed information such as a status of LUSE device. | | |
| | information | [LDKC:CU:LDEV] | Name of a device | |
| | | | " # " | : External Volume |
| | | | "V" | : Virtual Volume for Thin Image |
| | | | "X" | : DP Volume |
| | | [Emulation] | Emulation type | |
| | | [Status] | Status of a device | |
| | | | "Normal" | : Normal |
| | | | "Normal (Quick Formatting)" | : Normal (Quick Formatting) |
| | | | "Blocked" | : Blocked |
| | | | "Copying" | : Copying |
| | | | "Correction Access" | : Correction access (without redundancy) |
| | | | "Correction Access with redundancy" | : Correction access (with redundancy) |
| | | | "Warning" | : Warning (mixed status in the LUSE, etc.) |
| | | | "Formatting" | : Formatting |
| | | [Grp.] | Displays the group in | formation to which the device belongs |

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3.6.4 Shredding operation information

When Shredding is executed from the user operation (Storage Navigator) to the logical device at the time of starting the logical device window, the operation progress window is displayed.



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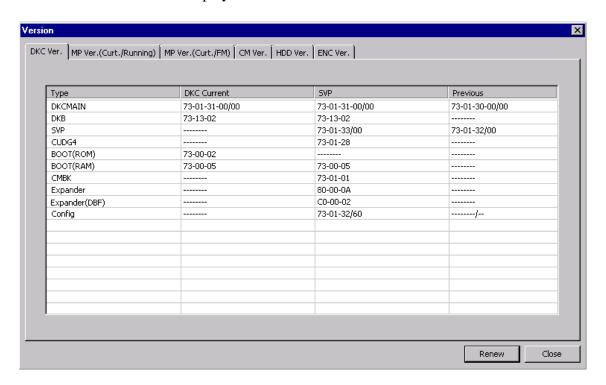
Table 3.6.4-1 Contents of Shredding Operation Progress Window

| Item | Description | |
|---------|---|--|
| [Close] | Closes the progress window. | |
| [Stop] | Stops Shredding. NOTE: Be sure to check with the user in advance. | |

3.7 Version of Microprogram

Select (CL) [Version] in this order in the 'Maintenance' window.

The 'Version' window is displayed.



When the each tab is selected (CL), information on the corresponding version is displayed.

①[DKC Ver.] : A representative version is displayed. (Initial display)

②[MP Ver.(Curt./Running)]: The DKC Current Version is displayed. The version in Port and MP

are displayed in Running.

③[MP Ver.(Curt./FM)] : The DKC Current Version is displayed. The version in FM of PCB is

displayed in FM.

(a) [CM Ver.]
(b) [HDD Ver.]
(c) A version of a CMBK is displayed.
(d) ENC Ver.]
(e) A version of a Drive is displayed.
(e) ENC Ver.]
(f) A version of a ENC is displayed.

<About the display>

When a version of the microprogram concerned cannot be displayed for some reason, the following is displayed.

"-" (Hyphen) : The microprogram is not installed.

"?" (Question mark): Getting of the version information failed.

"x" : The data that has been got is outside the range of application.

<Update of the information>

To update the information, which is displayed through the selection of 'Version', to the latest one, select (CL) the [Renew] button.

① The representative version

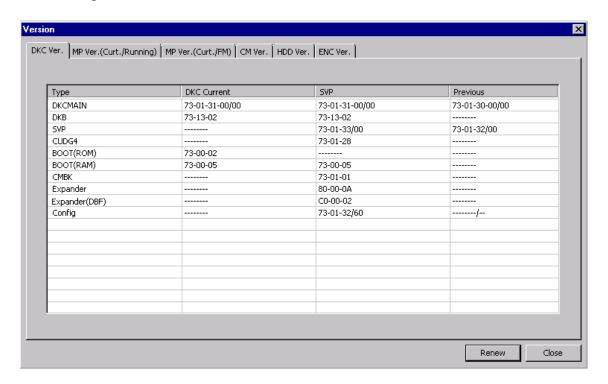


Table 3.7-1 Information to Be Displayed

| Item | Description | |
|-------------|---|--|
| Туре | Name of the micro-program. A SMI-S version, which is displayed in red-white-reversal, is inconsistent with the currently running version. | |
| DKC Current | Major version of the micro-program currently running. | |
| SVP | Latest version of the micro-program stored in the SVP. | |
| Previous | Former version of the micro-program stored in the SVP. | |

Concerning this item, when even a single piece of information is inconsistent, an icon "L", which shows an error, is displayed in the tab portion.

② Current Version of each processor and Version in port

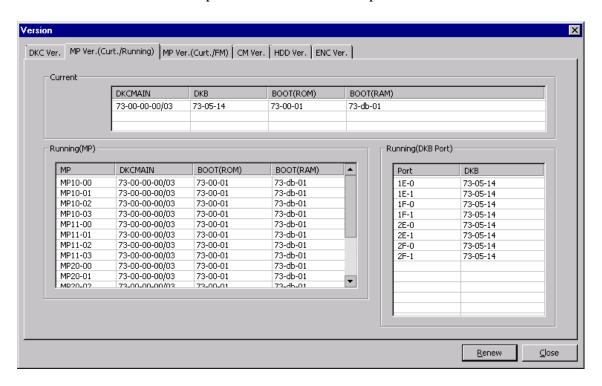


Table 3.7-2 Information to Be Displayed

| Item | Description |
|---|--|
| DKC Current Version area Major version of the microprogram currently running. In regard to a version inconsistent with a corresponding version Version area or a binary version (Internal administrative information concerned is displayed in red-white-reversal with an asterisk ("3 | |
| MP Version area | Version of the microprogram of each processor currently running. A version, which is displayed in red-white-reversal, is inconsistent with the DKC Current Version. A version displayed with an asterisk ("*") at the end of it is the inconsistent one. |
| DKB PORT area | The SAS-CON Running version is displayed. The Location name is displayed. |

Concerning this item, when even a single piece of information is inconsistent, an icon "\(\begin{align*}\ldots\)", which shows an error, is displayed in the tab portion.

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③ The DKC Current Version is displayed. The version in FM of PCB is displayed in FM.

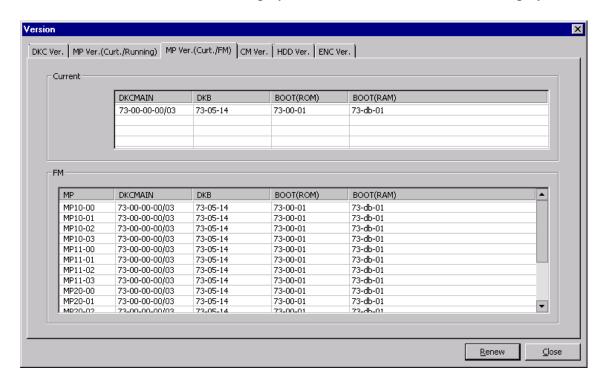


Table 3.7-3 Information to Be Displayed

| Item | Description |
|--------------------------|---|
| DKC Current Version area | Major version of the microprogram currently running. In regard to a version inconsistent with a corresponding version in the MP Version area or a binary version (Internal administrative information), the area concerned is displayed in red-white-reversal with an asterisk ("*"). |
| FM Version area | Version of FM microprogram of each processor. A version, which is displayed in red-white-reversal, is inconsistent with the DKC Current Version. A version displayed with an asterisk ("*") at the end of it is the inconsistent one. |

Concerning this item, when even a single piece of information is inconsistent, an icon "1,", which shows an error, is displayed in the tab portion.

Version of the CMBK

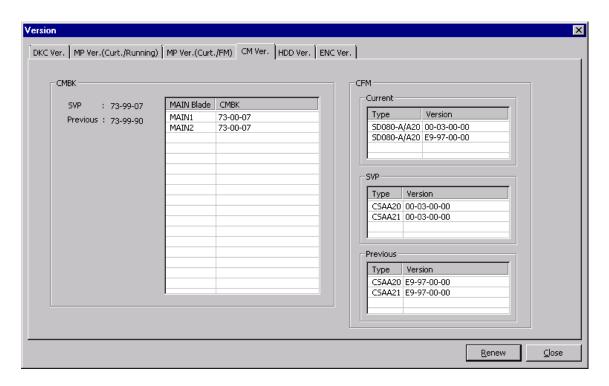


Table 3.7-4 Information to Be Displayed

| Item | Description | |
|-----------------------|--|--|
| • Display of "CMBK" | | |
| Display of "Current" | "SVP" : Latest version of the drive micro-program stored in the SVP. "Previous" : Previous version of the drive micro-program stored in the SVP. | |
| | "MAIN Blade": MAIN name | |
| | "CMBK" : CMBK micro version information (It is stored in FM) that each MAIN Blade has is displayed. | |
| • Display of "CFM" | | |
| Display of "Current" | Current Version. "Type": CFM type model "Version": Version of CFM micro-program | |
| Display of "SVP" | Latest version of the CFM micro-program stored in the SVP. "Type": CFM type "Version": Version of CFM micro-program | |
| Display of "Previous" | Former version of the CFM micro-program stored in the SVP. "Type": CFM type "Version": Version of CFM micro-program | |

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A version of a Drive is displayed.

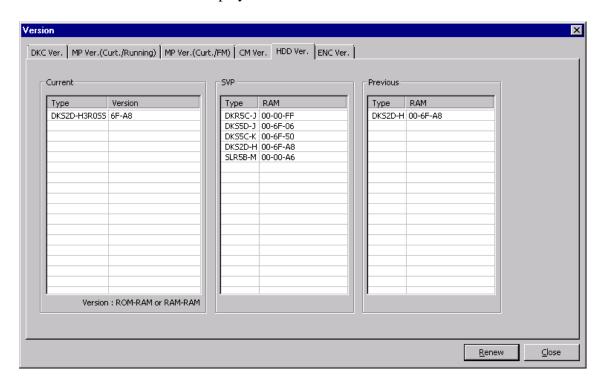


Table 3.7-5 Information to Be Displayed

| Item | Description | |
|-----------------------|--|--|
| • Display of "HDD" | | |
| Display of "Current" | Current Version "Type": Drive type "Version": Version of drive microprogram OEM drive: RAM version - RAM version Other than above: ROM version - RAM version | |
| Display of "SVP" | Latest version of the drive microprogram stored in the SVP. List : Version of drive microprogram | |
| Display of "Previous" | Former version of the drive microprogram stored in the SVP. List : Version of drive microprogram | |

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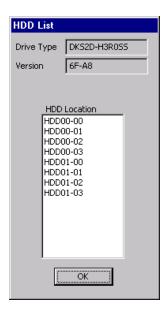
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<Display of the drive name>

Select (DC) a line from the [HDD]-[Current] list.

The 'HDD List' window is displayed and a list of drives that are consistent with the information is shown.



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Table 3.7-6 Information to Be Displayed

| Item | Description |
|--|-------------|
| Drive Type Selected drive type. | |
| Version Selected drive microprogram version. | |
| HDD Location List of the drive consistent with the selected information. | |

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© A version of a ENC is displayed.

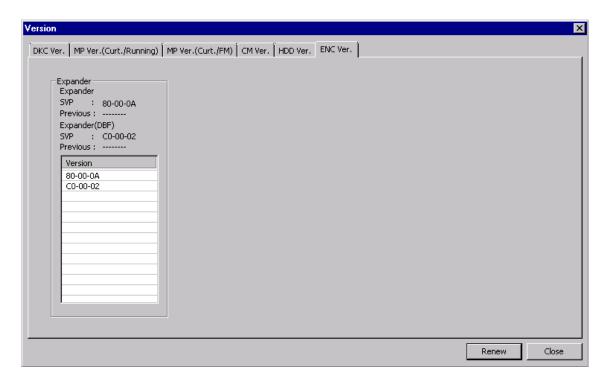


Table 3.7-7 Information to Be Displayed

| Item | Description | |
|----------------------------|------------------------------|--|
| Display of "Expander" | "SVP" "Previous" "Version" | : Latest version of the Expander microprogram stored in the SVP. : Former version of the microprogram stored in the SVP. : Current version of microprogram of each Expander (include each version of below "Expander(DBF)"). |
| Display of "Expander(DBF)" | "SVP" "Previous" | : Latest version of the Expander microprogram stored in the SVP.: Former version of the microprogram stored in the SVP. |

When versions that are more individual than versions of SVP in Expander are low, the icon "1" that shows abnormality in the tab part is displayed.

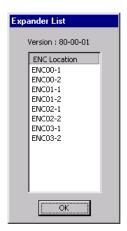
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<Display of the Expander name>

Select (DC) a line from the [Expander]-[Version] list.

The 'Expander List' window is displayed and a list of ENC that is consistent with the information is shown.



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Table 3.7-8 Information to Be Displayed

| Item | Description |
|--------------|---|
| Version | Selected Expander micro-code version. |
| ENC Location | List of the ENC consistent with the selected version. |

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3.8 Pin

When [Pin...] is selected (CL) in the 'Maintenance' window, the 'Pinned Track' window is displayed.

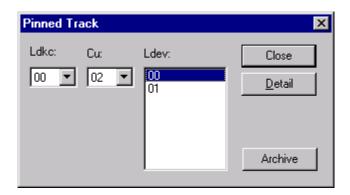


Table 3.8-1 List of Items

| Item | Description | |
|------|--|--|
| Ldkc | Logical DKC number | |
| Cu | ID number of a Cu | |
| Ldev | Number of a logical device in which pinned data exists | |

When a logical device is selected (CL) from the list in the 'Pinned Track' window and the [Detail] button is selected (CL), the 'Detail' window is displayed.

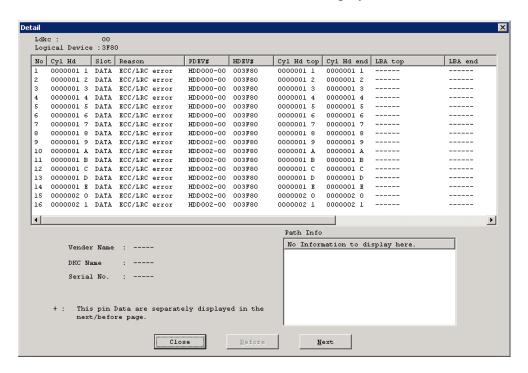


Table 3.8-2 List of Items

| Item | Description |
|------------------|---|
| Cyl Hd | Number of an assembly of a cylinder and head in which pinned data exists |
| Slot | Type of a track on which pinned data exists DATA: Data track PRTY: Parity track |
| Reason | Cause of pinned data. See the "6.2 Pinned track recovery" (TRBL06-130) for the recovery procedure at the following reason. ECC/LRC error WRITE error External VOL Read Error External VOL Write Error |
| PDEV# | Number of an HDD of a logical device in which pinned data exists |
| HDEV# | HDEV number |
| Cyl Hd top/end | Cyl Hd at the top and end of a parity stripe |
| LBA top/end | LBA at the top and end of a parity stripe |
| HDEV# (DP) | HDEV number in Dynamic Provisioning |
| LBA (DP) top/end | LBA at the top and end of a parity stripe in Dynamic Provisioning |
| Vender Name | Name of a vender of a external Device |
| DKC Name | Name of a DKC of a external Device |
| Serial No. | Serial number of a external Device |
| Path Info | Path information of a external Device |

3.9 LUN Management

(1) Outline

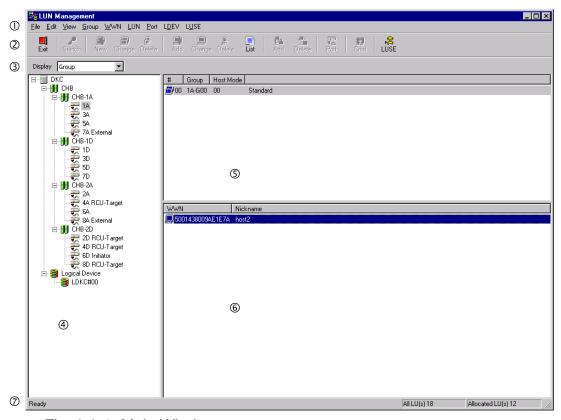


Fig. 3.9-1 Main Window

The Main window consists of the following elements.

Table 3.9-1 Outline of Main Window Elements

| # | Item | Description |
|-----|------------|--|
| 1 | Menu | Menu of items operable by this function. |
| 2 | Tool bar | Part of the menu enabled to be operable by buttons. |
| 3 | Switch | When "Switch" displayed in the tree view is selected (Port), the status of the switch is selectable. The setting of the groups or LUN is selectable. |
| 4 | Tree | The structure that it is conscious of the hardware construction.(A port type is attached to a port.) |
| (5) | Upper list | Displays the details of an item selected from the tree. |
| 6 | Lower list | Displays the details of an item selected from the upper list, if any. |
| 7 | Status bar | Displays outlined function of each item on the menu and tool bar when the mouse is positioned on it. Also it displays the all of the LU figures and the LU figures with the pass definition. |

Menu items and their details are shown below.

Table 3.9-2 List of Menu Items

| Menu | Submenu | Description | Tool bar |
|-------|-------------------|--|-----------|
| File | Exit | Closes the window. | (Exit) |
| Edit | Сору | Not selectable. | None |
| | Paste | Not selectable. | None |
| View | Toolbar | Makes the tool bar displayed or not. | None |
| | Status Bar | Makes the status bar displayed or not. | None |
| | LDEV Size | • Changes the unit of LDEV size to be displayed to MB or GB. | None |
| | LUN Status | Displays/does not display the LUN status (including the Host reserve status) in the LUN list. | None |
| Group | New | • Not selectable. | (New) |
| | Change | Not selectable. | (Change) |
| | Delete | • Not selectable. | (Delete) |
| | Host Mode | • Refers to the Host Mode and the Host Mode Option. | None |
| WWN | Add | • Not selectable. | (Add) |
| | Change | Not selectable. | (Change) |
| | Delete | Not selectable. | (Delete) |
| | Login List | • The hosts identified by the following WWN login to the DKC. (Only WWN has the deletion function.) | "List" |
| LUN | Add | Not selectable. | (Add) |
| | Delete | Not selectable. | (Delete) |
| | Command Device | Not selectable. | (Cmd) |
| | Force Reset | • Cannot be selected. (When the [View]–[LUN Status] menu cannot be selected, this menu does not exist.) | None |
| Port | Parameter | Not selectable. | (Port) |
| | Security Switch | Not selectable | (Switch) |
| LDEV | Command Device | Not selectable. | (Cmd) |
| | Alternate | Refers to LUN information from LDEV. | None |
| LUSE | LU Size Expansion | Activates the LU Size Expansion window. | te (LUSE) |

(2) CHB Window

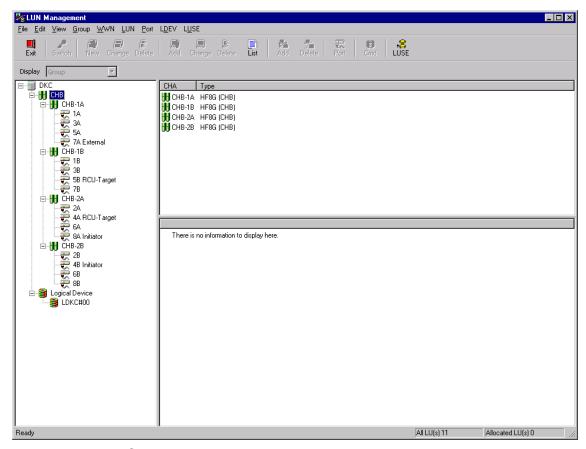


Fig. 3.9-2 CHB Window

When "CHB" in the tree view is selected (CL), installed CHB PCB's supported by this function are displayed in the upper right list.

Table 3.9-3 Details of CHB Window

| Item | Description | |
|------------|---|--|
| | Displays installed CHB PCB's supported by this function. Displayed items: PCB name, Host Interface Type | |
| | Provided with a sorting function. | |
| Lower list | Displays nothing. | |

(3) Port Window

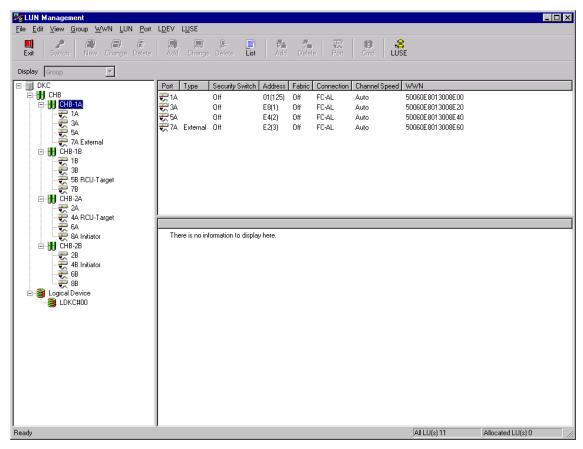


Fig. 3.9-3 Port Window

When "CHB locations" in the tree view is selected (CL), installed ports information supported by this function are displayed in the upper right list.

Table 3.9-4 Details of Port Window

| Item | Description |
|------------|--|
| Upper list | Displays installed ports supported by this function. Displayed items: Port name, type (Initiator, RCU target, External, or none:Target), AL-PA, Security Switch, fabric, connection type, and channel speed, WWN |
| | Provided with a sorting function. |
| Lower list | Displays no item. |

(4) Group Window

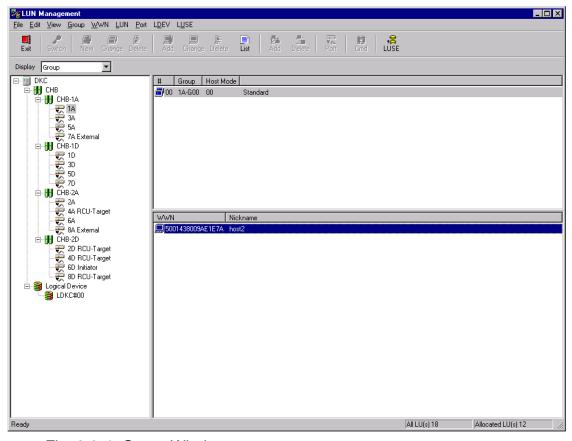


Fig. 3.9-4 Group Window

When "Port" in the tree view is selected, "Group" is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Table 3.9-5 Details of Group Window

| Item | Description | |
|------------|---|--|
| Upper list | Displays groups connected with the port that has been selected from the tree. Displayed items: Group number, group name, and host mode (setting) | |
| | Provided with a sorting function. | |
| Lower list | Displays details of a group that has been selected from the upper list. Displayed items: WWN (16 hexadecimal digits) and nickname (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.) | |
| | Provided with a sorting function. | |

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(5) LUN Window

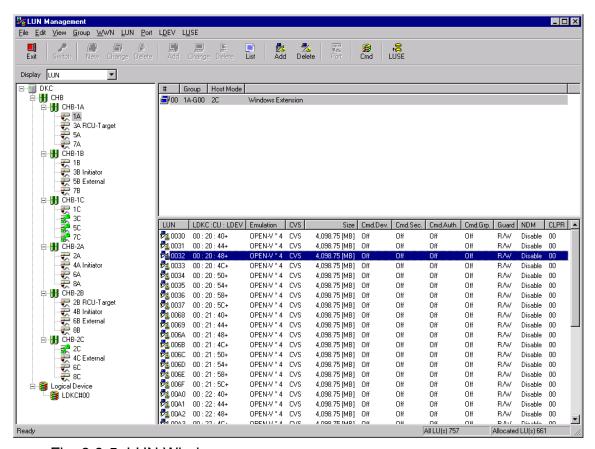


Fig. 3.9-5 LUN Window

When "Port" in the tree view is selected, "LUN" is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed

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Table 3.9-6 Details of LUN Window

| Item | Description |
|------------|--|
| Upper list | Displays groups connected with the port that has been selected from the tree. Displayed items: Group number, group name, and host mode (setting) |
| | Provided with a sorting function. |
| Lower list | Displays LUN's defined as being contained in the group that has been selected from the upper list. Displayed items: LUN (four hexadecimal digits), LDKC:CU:LDEV number, Emulation type (number of connectable in decimal), CVS, Size (in M bytes/G bytes), Cmd.Dev. ('On*' shows the remote command device), Cmd.Sec., Cmd.Auth., Cmd.Grp., Guard attribute, NDM attribute, and CLPR number. (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.) |
| | NOTE: The following symbols may be added to LDKC:CU:LDEV #. Each meaning is shown. '+': One LUN is set in other host groups. '++': Two or more LUNs are set in other host groups. '#': An external volume is shown. 'V': A virtual volume for Thin Image is shown. 'X': A Dynamic Provisioning volume is shown. |
| | Provided with a sorting function. |

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(5-1) LUN Status Window

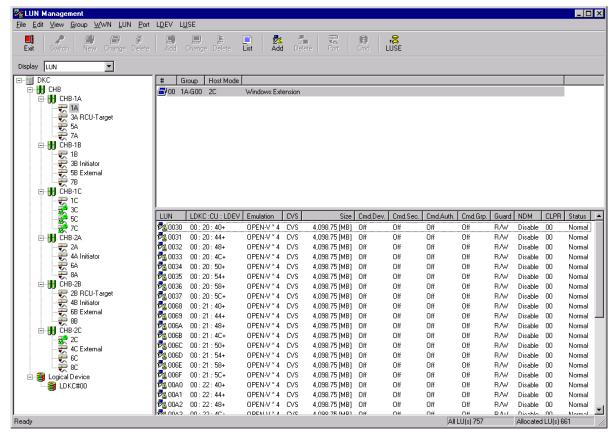


Fig. 3.9-5-1 LUN Status Window

If you select LUN Status from View in the 'LUN Management' panel, the LUN status will be displayed in the LUN list in the panel.

The following statuses are displayed in the list (Multiple statuses may be displayed).

By selecting LUN Status from View again, you can obtain the information again.

Table 3.9-6-1 LUN Status List

| Status | Explanation | |
|--------|---|--|
| Normal | Normal device. | |
| BLK | It is not ready due to blockade. | |
| OPR | It is reserved by the normal Open Reserve command. | |
| KEY | Persistent Group Reserve key is set. | |
| PGR | It is reserved by the Persistent Group Reserve command. | |
| H35R | It is reserved from the H3500 server. | |
| ACA | It is in the ACA ACTIVE status. | |

(6) Logical Device Window

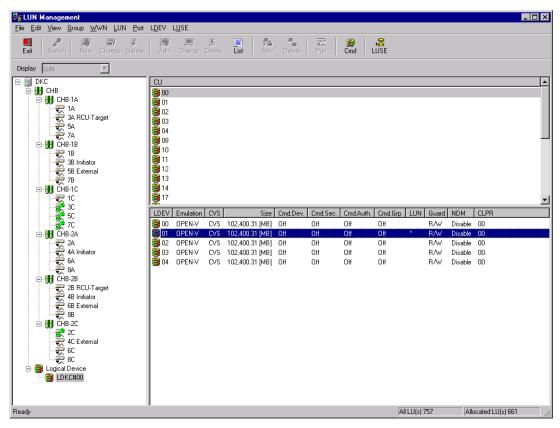


Fig. 3.9-6 Logical Device Window

When "Logical Device-LDKC#00" in the tree view is selected (CL), CU numbers of installed LDEV's supported by this function are displayed in the upper right list. In the lower right list, details of a CU selected from the upper right list are displayed.

Table 3.9-7 Details of Logical Device Window

| Item | Description | |
|------------|--|--|
| Upper list | Displays CU numbers of installed LDEV's supported by this function. Displayed items: CU number (two hexadecimal digits) | |
| | Provided with a sorting function. | |
| Lower list | Displays details of a CU selected from the upper list. Displayed items: LDEV number (two hexadecimal digits), Emulation type (number of connectable in decimal), CVS, Size(in M bytes/G bytes), Cmd.Dev. ('On*' shows the remote command device), Cmd.Sec., Cmd.Auth., Cmd.Grp., definition of LUN (Defined: "*", Not defined: No indication), Guard attribute, NDM attribute, and CLPR number. (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected. | |
| | NOTE: The following symbols may be added to LDEV #. Each meaning is shown. '#': An external volume is shown. 'V': A virtual volume for Thin Image is shown. 'X': A Dynamic Provisioning volume is shown. | |
| | Provide with a sorting function. | |

(7) The host's WWN list windows linked to DKC

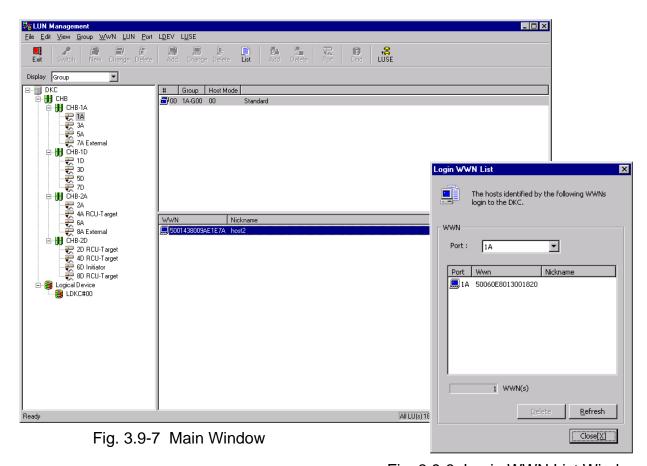


Fig. 3.9-8 Login WWN List Window

Select (DR) [Login List] form the [WWN] menu in the Main Window (Fig. 3.9-7), 'Login WWN List' Window (Fig. 3.9-8) is displayed.

Table 3.9-8 Details Login WWN List window

| Item | Description |
|----------------|---|
| Port | Specifies a port concerning the WWN to be displayed in the list. When "All Port" is selected, all WWNs in the list are displayed. |
| List | Displays a WWN list. |
| Delete button | Not selectable. |
| Refresh button | Displays the list again. |
| Close button | Returns you the Main window. |

(8) LUSE Window

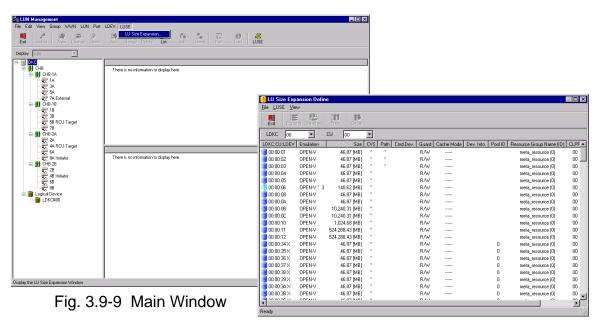


Fig. 3.9-10 LU Size Expansion Define Window

A reference of an LUSE is to be done in the following procedure. Select (DR) [LU Size Expansion...] from the [LUSE] menu in the main window (Fig. 3.9-9). Detail of the 'LU Size Expansion Define' window (Fig. 3.9-10) is shown below.

Table 3.9-9 Detail and Operation of LU Size Expansion Define Window

| Item | Description |
|-----------------|--|
| LDKC list | A list of LDKCs having LUs to be used for an LUSE. |
| CU list | A list of CUs having LUs to be used for an LUSE. |
| LU list | A list showing statuses of LUSEs made under the CU selected from the CU list Menu items and their functions are shown below. Displayed items: LUN, LDKC:CU:LDEV number, emulation type (number of connectable in decimal), size (in M bytes/G bytes), CVS, Path (Exists:*/Exists paths defined Host Mode OC.), Cmd.Dev., Guard attribute, Cache Mode, Dev. Info, Pool ID, Resource Group Name (Resource Group ID), CLPR number and RAID Level. NOTE: The following symbols may be added to LDKC:CU:LDEV #. Each meaning is shown. '#': An external volume is shown. 'V': A virtual volume for Thin Image is shown. 'X': A Dynamic Provisioning volume is shown. |
| Exit button | Closes the window. |
| Expand button | Not selectable. |
| Disperse button | Not selectable. |
| Free button | Not selectable. |
| Detail button | Refers to status of connection of LUSEs. |

(9) Refers to status of connection of LUSEs

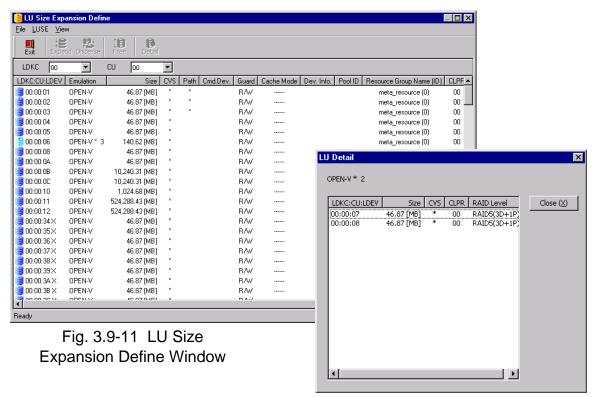


Fig. 3.9-12 LU Detail Window

Reference to a connection status of an LUSE is done in the following procedure.

Select an LUSE, whose connection status is to be referred to, in the 'LU Size Expansion Define' window and select (DR) [Detail...] from the [LUSE] menu.

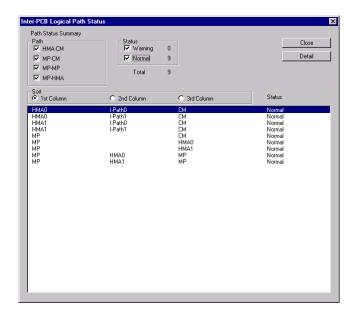
Since the 'LU Detail' window (Fig. 3.9-12) is displayed, refer to a status of the LU connection. Detail of the 'LU Detail' window (Fig. 3.9-12) is shown below.

Table 3.9-10 Detail and Operation of LU Detail Window

| Item | Description |
|--------------|---|
| LU list | Displays a status of the LU connection. Displayed items: LDKC:CU:LDEV number, size (in M bytes/G bytes), CVS, CLPR number and RAID Level. |
| Close button | Close the window. |

3.10 Inter-PCB Logical Path

(1) The window for displaying status for each summary path.



Path (Check box)----

HMA-CM : Specifies display of summary path between HMA and CM
 MP-CM : Specifies display of summary path between MP and CM
 MP-MP : Specifies display of summary path between MP and MP
 MP-HMA : Specifies display of summary path between MP and HMA

Status (Check box)--

Warning : Specifies display of failed paths and displays number of the

failed paths.

Normal : Specifies display of normal paths and displays number of

normal paths.

Total ----- Total number of paths that can be displayed

Sort (Radio button) -

1st Column: Summary path group names are displayed in the row.

When this row is selected, the path statuses in the list are sorted using the letter strings in the 1st row as a key word.

2nd Column: HMA location names are displayed in this row. When this

row is selected, the path statuses in the list are sorted using

the HMA location names as a key word.

3rd Column: Summary path group names are displayed in this row.

When this row is selected, the path statuses in the list are sorted using the letter strings in the 3rd row as a key word.

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Status ----- A status of each path is displayed.

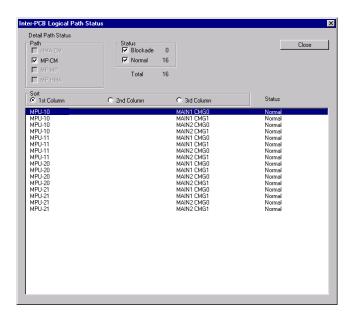
Normal : A status in which a path concerned is normal

Warning: A status in which a failure occurred in a path concerned

Detail (Button)----- Displays detailed path status.

Close (Button) ----- Terminates the display.

(2) Detailed path status display window



Path (Check box)---- Among four types of logic paths, the type of logic path which is displayed is checked. Other check boxes are not checked. Check box is not selectable.

Status (Check box)--

Blockade: Specifies display of blocked paths and displays number of the

blocked paths.

Normal : Specifies display of normal paths and displays number of the

normal paths.

Total ----- Total number of paths that can be displayed

Sort (Radio button) -

1st Column : Location names are displayed in the row. When this row is

selected, the path statuses in the list are sorted using the

letter strings in the 1st row as a key word.

2nd Column: HMA location names are displayed in this row. When this

row is selected, the path statuses in the list are sorted using

the HMA location names as a key word.

3rd Column: Location names are displayed in this row. When this row

is selected, the path statuses in the list are sorted using the

letter strings in the 3rd row as a key word.

Status ----- Status of each path is displayed.

Normal : Status in which a path concerned is normal

Blockade: Status in which a path concerned is blocked

Close (Button) ----- Terminates the display.

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3.11 Error or Failure Status Action

When an error status of, Warning, Failure, or other is displayed on the screen and any action is required, locate the part in error and follow the instructions according to the action code (ACC). The ACC can be obtained by executing the SSB log or the SIM log displayed function of the SVP.