SVP SECTION

Contents

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.
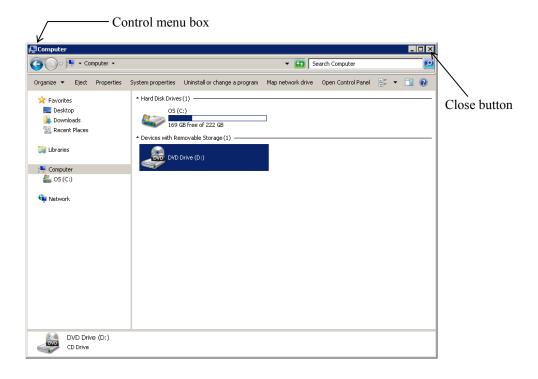
example: Select (DC) the [Install] icon in the 'SVP' window.
Move the pointer to [Install] with the mouse. Then click the button the Move the pointer to [Install] with the left side button of mouse twice in rapid succession.

(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.)

Control menu box

Close button
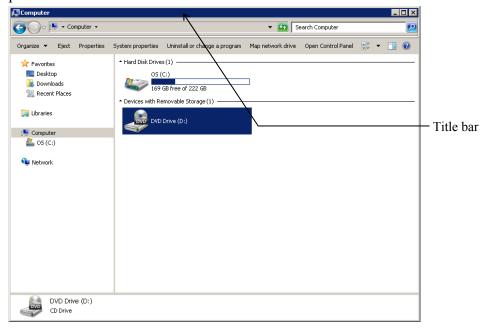
(3) Moving the Window
Move the pointer to the title bar with the mouse.
While pressing the button, move the window with the mouse or touchpad (DR) to a desired position and release the button.
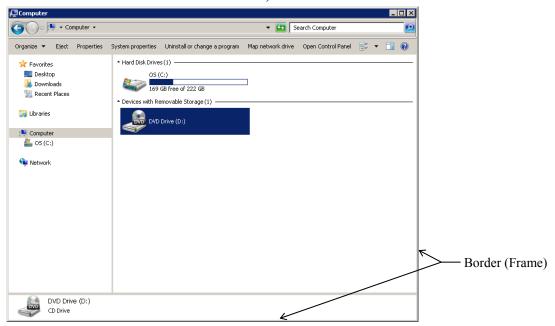
Title bar

(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.

Border (Frame)

(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.
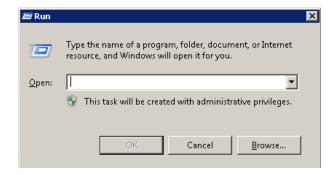
1.2 Running the SVP by Specifying a File Name

(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.
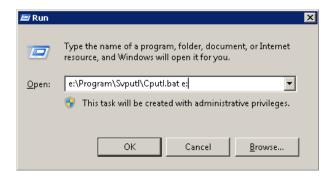
1.3 Executing SVP Connect Utility

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

About installation / removal of the Maintenance PC, the connection procedure.
• 3.1.5.2 Storage and Installation Location of CE Maintenance PC Tray [INST03-01-120]
• 3.1.5.3 Attachment/Removal Procedure of CE Maintenance PC [INST03-01-130]

(1) Installing SVP Connect Utility
Insert the Host P.P. medium to the CD-R drive in the Maintenance PC, and select (DR) [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 Maintenance 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 SVP
Select (CL) [Search] in the 'SvpConnectUtility' window.
When an IP addresses and product serial numbers of the connectable SVPs are displayed in the list, go to (2)-(a).
When be not displayed, go to (2)-(b).
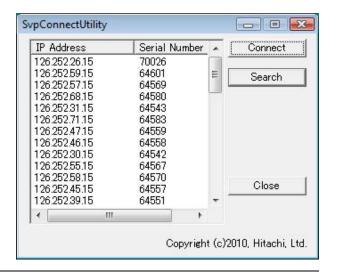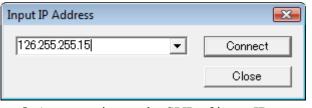
(2) Performing the connection
(a) Choose it among a list
Select an SVP to be connected from the SVPs in the list and select (CL) [Connect]. A connection to the selected SVP is done.

(b) Input an IP address
Select (CL) [Connect] in a state in which the SVP is not selected from the 'SvpConnectUtility' window list. Input an IP address of SVP connected to the input box of displayed 'Input IP Address' dialogue, and perform choice (CL) of [Connect]. A connection to the SVP of input IP address is done.

NOTE: Please check that automatic connection of a local disk drive is setup in the case of connection (At the time of SvpConnectUtility use, it is setup automatically).
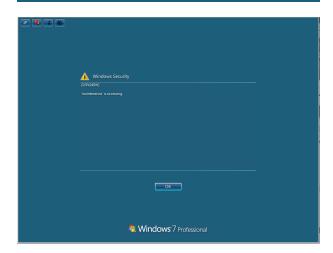
(3) Login to SVP
Select (CL) a SVP icon displayed by the login screen center to SVP.
A user name, a password input screen are displayed. Please input a user name and a password.

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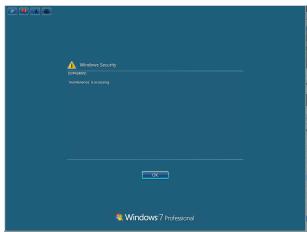
(4) Input Maintenance password
A Maintenance password input screen is displayed. Please input a Maintenance password.

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

Refer to "1.13 Update Maintenance Password" for the change in the maintenance password.
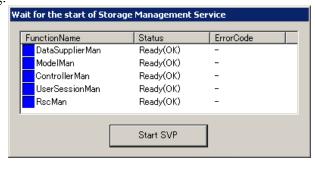
NOTE: When you fail in login during other user login more, please retry the operation after the log in user logoffs.

(5) The start of the SVP screen

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

Go to "1.4.3 Checking the connected storage systems".

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

Go to "1.4.3 Checking the connected storage systems".

1.4.2 Restoring the previous connection
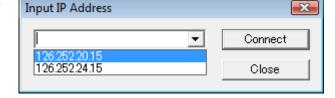
After the certain SVP is disconnected, connect the same SVP again.

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.

(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.

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

(4) Input Maintenance password
A Maintenance password input screen is displayed. Please input a 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 the start of Storage Management Service'. A SVP screen starts.

        Go to "1.4.3 Checking the connected storage systems".

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

        Go to "1.4.3 Checking the connected storage systems".

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.

NOTICE: If it connects with a wrong storage system, maintenance operation is performed, a serious obstacle may occur.
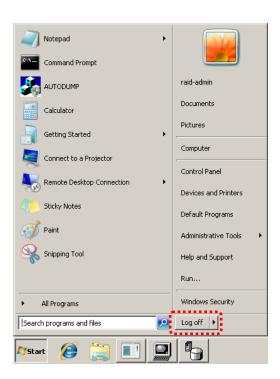
1.5 Disconnecting the SVP

Disconnect the Maintenance PC from the SVP.

NOTE: Before disconnecting the SVP, close all the windows after all the functions performed from the SVP are completed, change the SVP mode to [View Mode], and then perform "Log off the SVP".

* : If "Log off the SVP" is performed while an operation is performed from the SVP, the operation could end abnormally.
Only when the SVP is to be connected again immediately after it is disconnected, such as when switching SVPs of multiple DKCs, perform "Disconnect the SVP".
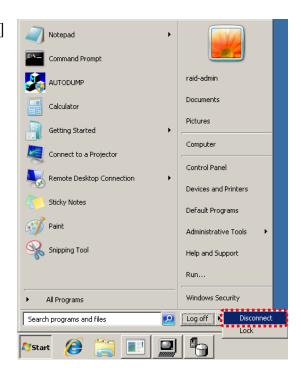
* : If you perform "Disconnect the SVP" and connect the same SVP again, you can resume the SVP operation that was in progress before the disconnection.
See "1.4.2 Restoring the previous connection" (SVP01-90).

(a) Log off the SVP
Select (CL) [Log off] from the [Start] menu. The SVP window in the Maintenance PC is closed.

(b) Disconnect the SVP
Select (CL) [Log off]-[Disconnect] from the [Start]
menu. The SVP window in the Maintenance PC is
closed.
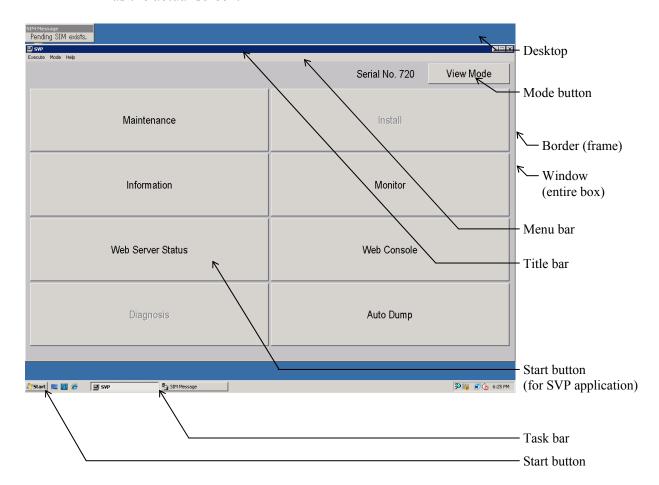
1.6 Windows Screen Component Nomenclature

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.

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
      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 Maintenance 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.

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 LOC03-130.)
      Make sure that the SVP POWER LED off the front side of the SVP main body comes on.

1.9 SVP reboot

    (1)   Turn ON the SVP RAS Switch #1 (Refer to LOC03-120) if it is OFF.

    (2)   Turn the power OFF in accordance with the procedure of SVP SECTION "1.8 Power Off" (SVP01-170).

    (3)   Turn the power ON in accordance with the procedure of SVP SECTION "1.7 Power On" (SVP01-160).

    (4)   Turn OFF the SVP RAS Switch #1 if you turned it ON in Step (1).
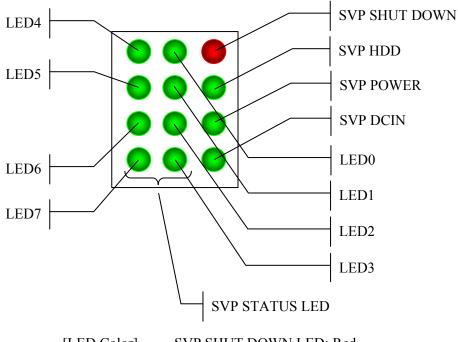
1.10 SVP LED display specification

(1) LED arrangement

[LED Color]   SVP SHUT DOWN LED: Red
                  Others: Green

(2) The meaning of LED

LED0	: Lighting at the time of Master SVP.
LED1	: Lighting at the time of Standby SVP.
LED7	: It blinks at intervals of 1 second at the time of SVP action.
SVP SHUT DOWN	: Indicates that the removal of the SVP is possible when the storage system is powered on.
SVP HDD	: This LED lights up when accessing to HDD in SVP.
SVP POWER	: Indicates that the power of the SVP has been turned on.
SVP DCIN	: Indicates that the DC power is supplied to the SVP.
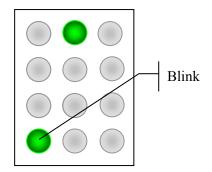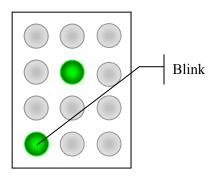
(3) Lighting at the time of Master SVP

(4) The LED Diode state at the time of Standby SVP

Blink

(5) 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)
④ All SVP STATUS LED lighting (for 1 second)
⑤ The first octet display of an IP address (for 3 seconds)
⑥ The second octet display of an IP address (for 3 seconds)
⑦ The third octet display of an IP address (for 3 seconds)
⑧ The fourth octet display of an IP address (for 3 seconds)
⑨ All SVP STATUS LED putting out lights (for 10 seconds)

(6) 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)
④ All SVP STATUS LED lighting (for 1 second)
⑤ The first octet display of an IP address (for 3 seconds)
⑥ The second octet display of an IP address (for 3 seconds)
⑦ The third octet display of an IP address (for 3 seconds)
⑧ The fourth octet display of an IP address (for 3 seconds)
⑨ All SVP STATUS LED putting out lights (for 10 seconds)
⑩ Initialize Password
⑪ Initialize IP Address
⑫ All SVP STATUS LED blinks (at interval of 1 second for 10 times, and 20 seconds)
⑬ SVP Reboot
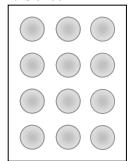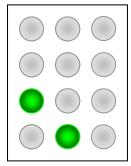
(6) IP address display
The data for 1Byte is displayed using eight LED.
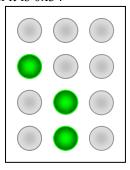
When it is 0x00

When it is 0xFF
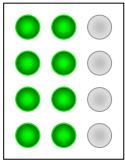
When it is 0x12

When it is 0x88
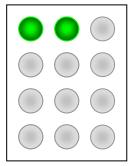
When it is 0x34

When it is 0x11

1.11 Mode

(1) <View Mode>
In view mode, only referring the storage system status is allowed.

NOTE: In view mode, pending SIMs (if exist) are reported to host.

(2) <Modify Mode>
In modify mode, referring and changing the storage system status are allowed.
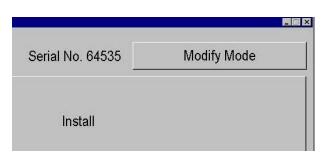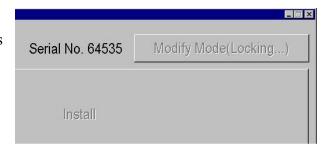
For example, log/pin data indication and status display on MAINTENANCE are available in any mode, but hardware replacement is available in only modify mode.

All the operations become impossible to execute until the lock processing to DKC ends when changing from View Mode into Modify Mode. (At this time, the display becomes Modify Mode(Locking...))
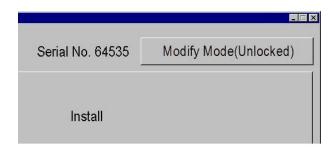
Moreover, all the operations become impossible to execute until the unlock processing to DKC ends when changing from Modify Mode into View Mode. (At this time, the display becomes Modify Mode(Unlocking...))

NOTE: When the communication between SVP-DKC has blockaded or an internal error occurs, the SVP mode becomes Modify Mode(Unlocked) by failing in the lock processing. Under such a condition, the maintenance operation that can be executed is limited. (Modes other than View and Modify are also similar)

Table 1.11-1 The maintenance operation that can be executed when SVP mode is "(Unlocked)"

#	Operation	Pages
1	The maintenance operation that can be executed when SVP is View Mode.	-
2	MP Install	MICRO05-10
3	Configuration Update	MICRO07-10
4	Create Configuration Backup	MICRO07-40
5	All Configuration Files	MICRO07-60
6	Restore Configuration	MICRO07-80
7	TOD (Time Of Day) setting	SVP02-01-10 INST05-02-30
8	Set IP address	SVP02-25-10 INST05-02-40
9	Define Configuration and Install	INST05-02-80
10	Refer Configuration	INST05-02-540
11	Delete Log File	SVP02-03-10
12	SIM Complete	SVP02-08-10
13	Switch SVP	SVP02-17-10
14	Diagnosis (LAN Check etc.)	DIAG00-00
15	SSVPMN Replace	REP03-17-10
16	SVP Replace	REP03-21-10

(3) <Change Mode>
If you push (CL) [View Mode] button, the mode changes from [View Mode] to [Modify Mode], and SVP changes to Modify Mode.
If you push (CL) [Modify Mode] button, the mode changes from [Modify Mode] to [View Mode], and SVP changes to View Mode.

NOTICE: Observe the following cautionary notices after using the SVP.
• Exit the window opened.
• Change the operation mode to "View."
If the above operation is not performed, a failure may not be notified because the SVP is judged to be under maintenance.

1.12 Handling of USB memory
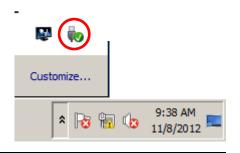
1.12.1 How to remove USB memory

When you remove a USB flash memory, perform it as follows. Data may be damaged if you remove it suddenly.
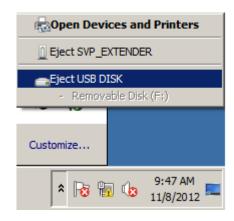
(1)

Click (CL) the icon at the lower right of the window indicated by the circle in the right figure to show hidden icons.

(2)

Click (CL) the icon shown at the lower right of the window indicated by the circle in the right figure.

(3)

Click (CL) "Eject USB DISK".

(4)

When the "Safe To Remove Hardware" message appears, you can safely remove the USB flash memory. Pull it out from the USB port.
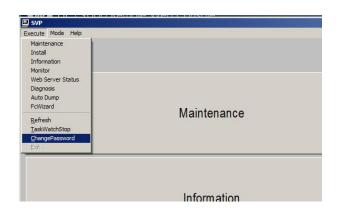
1.13 Update Maintenance Password

> **NOTICE:** If the SVP High Reliability Kit has been set, the password change setting is automatically reflected to the Standby SVP.
> The availability of the setting takes approximately one hour after changing the SVP to View Mode. (If any other maintenance or configuration information changes are performed before the availability of the setting, the availability of the setting may take longer time.)
>
> If you cannot log into the Standby SVP, use the previous password to log in because the password change setting has not been completed.
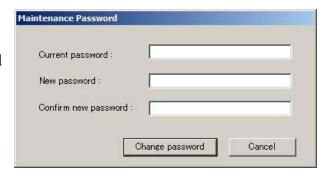
(1)

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

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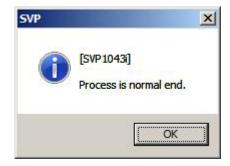
The alphanumeric characters of 8 ~ 32 (ASCII character) and the signs (! " # $ % & ' ( ) * + , - . / : ; < = > ? @ [\ ] ^ _ ` { | } ~) can be used for the password.

(3)

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.

2. Function of the SVP
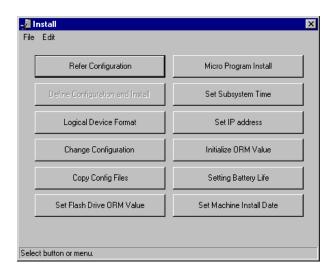
2.1 TOD (Time Of Day) setting

NOTE: • Please do not execute the TOD setting during the PS ON procedure.

• Please do not execute the TOD setting during collecting the Port Dump.

• Please do not execute the TOD setting during the port error recovery operation using the restart switch function.

• Please do not execute the TOD setting during the monitor switch of the Performance Monitor function is effective. If the setting is changed, improperly accumulated data may show inaccurate monitoring data or monitor data may not be retrieved.

NOTE: In the case that there is PVOL of XRC in this DKC and the amount of Sidefiles reach to the threshold, XRC pair may be suspended.

(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.

Install	
File Edit	
Refer Configuration	Micro Program Install
Define Configuration and Install	Set Subsystem Time
Logical Device Format	Set IP address
Change Configuration	Initialize ORM Value
Copy Config Files	Setting Battery Life
Set Flash Drive ORM Value	Set Machine Install Date
Select button or menu.	
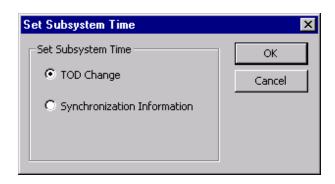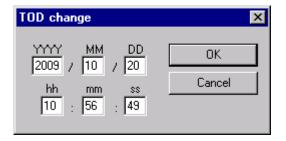
(4)

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

(5)

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

(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" (SVP01-180))
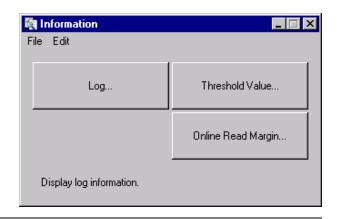
2.2 Log indication

Prerequisite Operation:
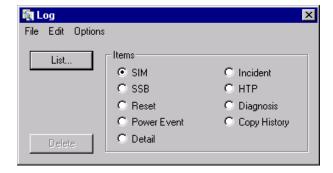
(1)

　　Select (CL) [Information].

(2)

　　Select (CL) [Log...].

(3)

　　'Log' dialog box is displayed.
　　The item with no log cannot be selected.

[1] SSB Log

(1)

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

(2)
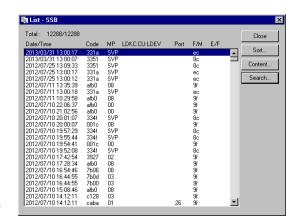
Select (CL) data to be indicated in the 'List-SSB'
dialog box and select (CL) [Content...].
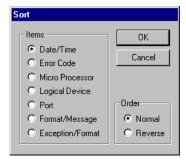
NOTE: To sort and list items, select (CL) [Sort...]
       first.
       Then select (CL) the desired item in the
       [Items] and [Order] options in the 'Sort'
       dialog box, and select (CL) [OK].
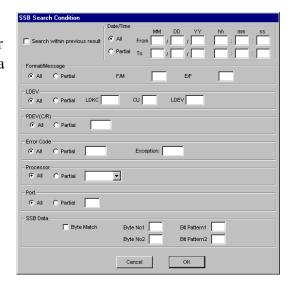
NOTE: To search for the desired log, select (CL)
       [Search...]. Then set the log for which you
       want to search individual List in the 'SSB
       Search Condition' dialog box and select
       (CL) [OK].

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.

(a) 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.

(b) 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].

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

(d) LDEV
LDKC : Enter LDKC# of data to search.
CU : Enter CU# of data to search.
LDEV : Enter LDEV# of data to search.

(e) PDEV(C/R)
Enter PDEV# of data to search.

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

(g) Processor
Select an MP location name of data to be searched from the combo box.

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

(h) Port
Enter Number of Port of data to search.

NOTE: Refer to a [12] Port - Location correspondence table.

(i) SSB Data
Byte Match : To enable a search of [SSB Data].
Byte No1 : Enter a position of the byte to search.
Bit 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.
Bit Pattern2 : Enter a value to search in a position of the byte specified in [Byte No2].
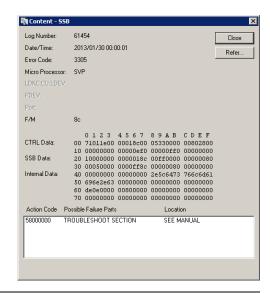
(3)

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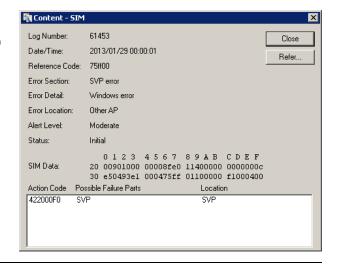
    Select (CL) the log to be displayed in the 'Refer' dialog box.
    ([SIM] is selected in this example.)

(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.
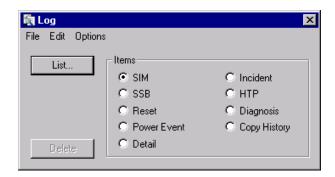
[2] SIM Log

NOTE1: When SIM log exists after SVP is started up, the 'SIM Message' window is displayed.

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.

(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].

(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: In case of Reference Code 73XX00
or 1400X0 was detected, perform the
recovery procedure to deal with a
LAN error due to an occurrence of
LAN error. (See TRBL03-15-10)


```
Content - SIM                                    [×]
Log Number:      61453                      [ Close ]
Date/Time:       2013/01/29 00:00:01        [ Refer... ]
Reference Code:  75ff00
Error Section:   SVP error
Error Detail:    Windows error
Error Location:  Other AP
Alert Level:     Moderate
Status:          Initial
                 0 1 2 3  4 5 6 7  8 9 A B  C D E F
SIM Data:        20 00901000 00008fe0 11400000 0000000c
                 30 e50493e1 000475ff 01100000 f1000400
Action Code   Possible Failure Parts          Location
422000F0      SVP                             SVP
```

(4)

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


```
Refer                     [×]
 Types          [  OK  ]
  ○ SIM
  ◉ SSB         [ Cancel ]
  ○ Detail
  ○ HTP
```
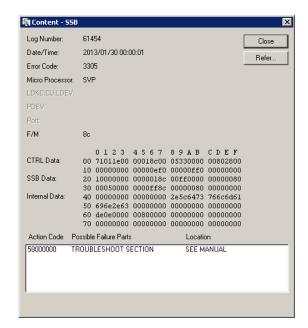
(5)

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

Content - SSB		⊠
Log Number:	61454	Close
Date/Time:	2013/01/30 00:00:01	Refer...
Error Code:	3305	
Micro Processor:	SVP	
LDKC:CU:LDEV:		
PDEV:		
Port:		
F/M	8c	

```
           0 1 2 3  4 5 6 7  8 9 A B  C D E F
CTRL Data:  00 71011e00 00018c00 05330000 00802800
            10 00000000 00000ef0 00000ff0 00000000
SSB Data:   20 10000000 0000018c 00ff0000 00000080
            30 00050000 0000ff8c 00000080 00000000
Internal Data: 40 00000000 00000000 2e5c6473 766c6d61
            50 696e2e63 00000000 00000000 00000000
            60 de0e0000 00800000 00000000 00000000
            70 00000000 00000000 00000000 00000000
```

Action Code	Possible Failure Parts	Location
58000000	TROUBLESHOOT SECTION	SEE MANUAL

(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.

[3] Detail Log

(1)

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

(2)
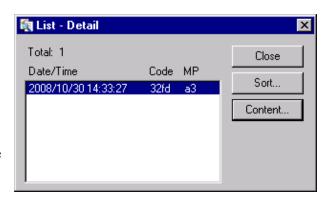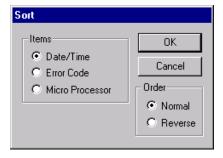
Select (CL) data to be indicated in the 'List-
Detail' dialog box and select (CL)
[Content...].
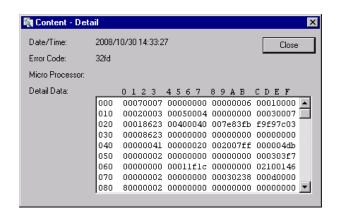
NOTE: To sort and list items, select (CL)
[Sort...] first.
Then select (CL) the desired item in
the [Items] and [Order] options in the
'Sort' dialog box, and select (CL)
[OK].

(3)

The 'Content-Detail' dialog box is displayed.

(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.
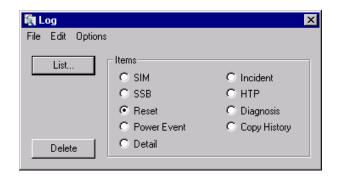
[4] Reset Log

(1)

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

(2)
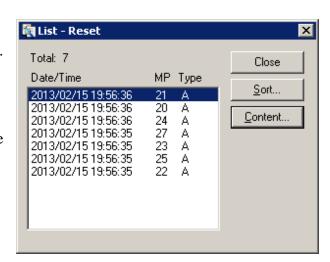
Select (CL) data to be indicated in the 'List-Reset' dialog box and select (CL) [Content...].
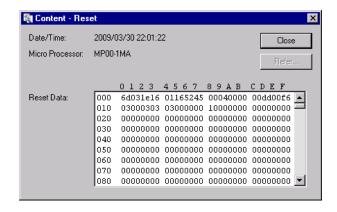
NOTE: To sort and list items, select (CL) [Sort...] first.
Then select (CL) the desired item in the [Items] and [Order] options in the 'Reset Log Sort' dialog box, and select (CL) [OK].

(3)

The 'Content-Reset' dialog box is displayed.

(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.
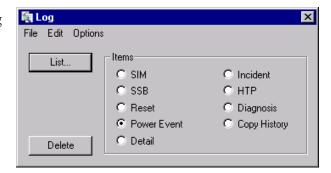
[5] Power Event Log

(1)

Select (CL) [Power Event] in the 'Log' dialog box.
Select (CL) [List...].
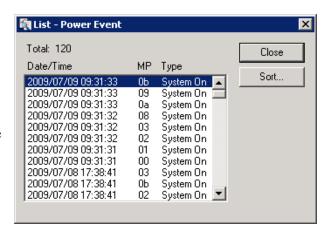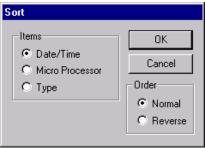
(2)

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.

[6] Incident Log

(1)

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

(2)
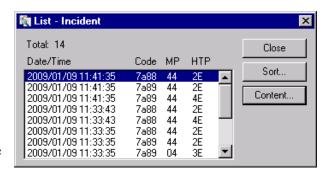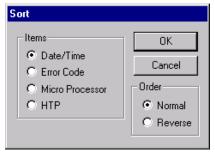
Select (CL) data to be indicated in the 'List-Incident' dialog box and select (CL) [Content...].
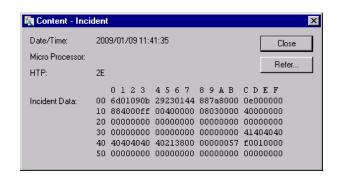
NOTE: To sort and list items, select (CL) [Sort...] first.
Then select (CL) the desired item in the [Items] and [Order] options in the 'Sort' dialog box, and select (CL) [OK].

(3)

The 'Content-Incident' dialog box is displayed.

(4)

To display the relative log, select (CL) [Refer...] in the
'Content-Incident' dialog box.
Select (CL) the log type to be displayed in the 'Refer' dialog
box and then select (CL) [OK].

(5)

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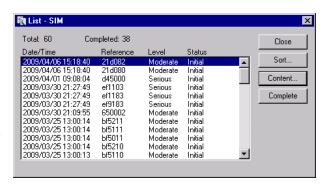Close the 'Log' dialog box and close the 'Information' window.

[7] HTP Log

(1)

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

(2)
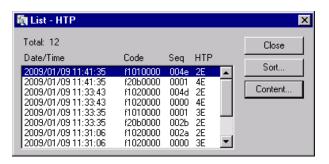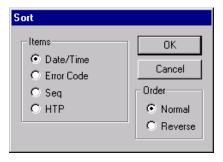
Select (CL) data to be indicated in the 'List-HTP' dialog box and select (CL) [Content...].
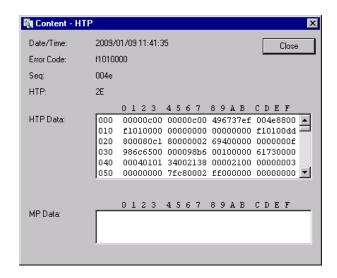
NOTE: To sort and list items, select (CL) [Sort...] first.
Then select (CL) the desired item in the [Items] and [Order] options in the 'Sort' dialog box, and select (CL) [OK].

NOTE: Refer to LOC04-10 for HTP port location.

(3)

The 'Content-HTP' dialog box is displayed.

(4)

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

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

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

[8] Diagnosis Log

(1)

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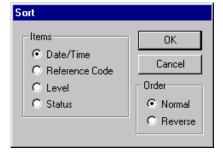box.
Select (CL) [List...].

(2)
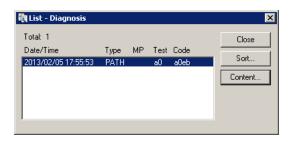
Select (CL) data to be indicated in the 'List-
Diagnosis' dialog box and select (CL) [Content...].
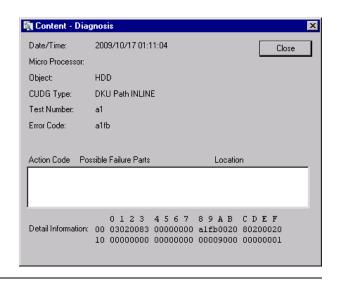
NOTE: To sort and list items, select (CL) [Sort...]
first.
Then select (CL) the desired item in the
[Items] and [Order] options in the 'Sort'
dialog box, and select (CL) [OK].

(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.
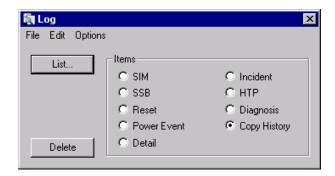
[9] Copy History Log

(1)

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

(2)
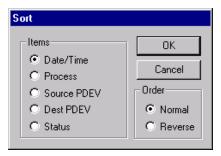
Select (CL) data to be indicated in the 'List-Copy History' dialog box and select (CL) [Content...].
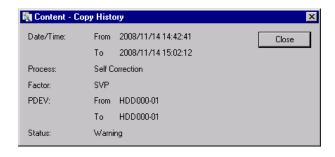
NOTE: To sort and list items, select (CL) [Sort...] first.
Then select (CL) the desired item in the [Items] and [Order] options in the 'Sort' dialog box, and select (CL) [OK].

(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.
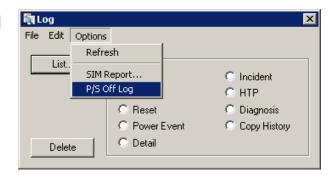
[10] P/S Off Log
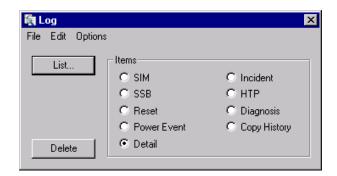
(1)

Select (DR) [P/S Off Log] from the [Options] menu in the 'Log' dialog box.
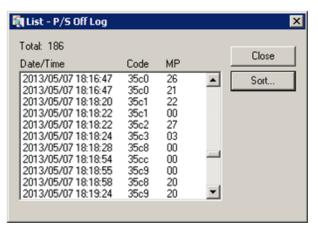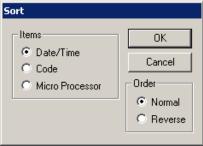
(2)

The 'List-P/S Off Log' 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-P/S Off Log' dialog box.
Close the 'Log' dialog box and close the 'Information' window.

[11] MP# - Location correspondence table

DKC-#0

| Location				MP#	Location				MP#
MP	Cluster1	MPB-1MA	MP00-1MA	00	MP	Cluster2	MPB-2MA	MP00-2MA	20
			MP01-1MA	01				MP01-2MA	21
			MP02-1MA	02				MP02-2MA	22
			MP03-1MA	03				MP03-2MA	23
			MP04-1MA	04				MP04-2MA	24
			MP05-1MA	05				MP05-2MA	25
			MP06-1MA	06				MP06-2MA	26
			MP07-1MA	07				MP07-2MA	27
		MPB-1MB	MP00-1MB	08			MPB-2MB	MP00-2MB	28
			MP01-1MB	09				MP01-2MB	29
			MP02-1MB	0A				MP02-2MB	2A
			MP03-1MB	0B				MP03-2MB	2B
			MP04-1MB	0C				MP04-2MB	2C
			MP05-1MB	0D				MP05-2MB	2D
			MP06-1MB	0E				MP06-2MB	2E
			MP07-1MB	0F				MP07-2MB	2F
		MPB-1PE	MP00-1PE	10			MPB-2PE	MP00-2PE	30
			MP01-1PE	11				MP01-2PE	31
			MP02-1PE	12				MP02-2PE	32
			MP03-1PE	13				MP03-2PE	33
			MP04-1PE	14				MP04-2PE	34
			MP05-1PE	15				MP05-2PE	35
			MP06-1PE	16				MP06-2PE	36
			MP07-1PE	17				MP07-2PE	37
		MPB-1PF	MP00-1PF	18			MPB-2PF	MP00-2PF	38
			MP01-1PF	19				MP01-2PF	39
			MP02-1PF	1A				MP02-2PF	3A
			MP03-1PF	1B				MP03-2PF	3B
			MP04-1PF	1C				MP04-2PF	3C
			MP05-1PF	1D				MP05-2PF	3D
			MP06-1PF	1E				MP06-2PF	3E
			MP07-1PF	1F				MP07-2PF	3F

DKC-#1

		Location		MP#			Location		MP#
MP	Cluster1	MPB-1MC	MP00-1MC	40	MP	Cluster2	MPB-2MC	MP00-2MC	60
			MP01-1MC	41				MP01-2MC	61
			MP02-1MC	42				MP02-2MC	62
			MP03-1MC	43				MP03-2MC	63
			MP04-1MC	44				MP04-2MC	64
			MP05-1MC	45				MP05-2MC	65
			MP06-1MC	46				MP06-2MC	66
			MP07-1MC	47				MP07-2MC	67
		MPB-1MD	MP00-1MD	48			MPB-2MD	MP00-2MD	68
			MP01-1MD	49				MP01-2MD	69
			MP02-1MD	4A				MP02-2MD	6A
			MP03-1MD	4B				MP03-2MD	6B
			MP04-1MD	4C				MP04-2MD	6C
			MP05-1MD	4D				MP05-2MD	6D
			MP06-1MD	4E				MP06-2MD	6E
			MP07-1MD	4F				MP07-2MD	6F
		MPB-1PM	MP00-1PM	50			MPB-2PM	MP00-2PM	70
			MP01-1PM	51				MP01-2PM	71
			MP02-1PM	52				MP02-2PM	72
			MP03-1PM	53				MP03-2PM	73
			MP04-1PM	54				MP04-2PM	74
			MP05-1PM	55				MP05-2PM	75
			MP06-1PM	56				MP06-2PM	76
			MP07-1PM	57				MP07-2PM	77
		MPB-1PL	MP00-1PL	58			MPB-2PL	MP00-2PL	78
			MP01-1PL	59				MP01-2PL	79
			MP02-1PL	5A				MP02-2PL	7A
			MP03-1PL	5B				MP03-2PL	7B
			MP04-1PL	5C				MP04-2PL	7C
			MP05-1PL	5D				MP05-2PL	7D
			MP06-1PL	5E				MP06-2PL	7E
			MP07-1PL	5F				MP07-2PL	7F

[12] Port - Location correspondence table

Module#0

Location			Port	Location			Port
Cluster1	CHA-1PC	1A	00	Cluster2	CHA-2PC	2A	20
		3A	01			4A	21
		5A	02			6A	22
		7A	03			8A	23
		1B	04			2B	24
		3B	05			4B	25
		5B	06			6B	26
		7B	07			8B	27
	CHA-1PD	1C	08		CHA-2PD	2C	28
		3C	09			4C	29
		5C	0A			6C	2A
		7C	0B			8C	2B
		1D	0C			2D	2C
		3D	0D			4D	2D
		5D	0E			6D	2E
		7D	0F			8D	2F
	CHA-1PE	1E	10		CHA-2PE	2E	30
		3E	11			4E	31
		5E	12			6E	32
		7E	13			8E	33
		1F	14			2F	34
		3F	15			4F	35
		5F	16			6F	36
		7F	17			8F	37
	CHA-1PF	1G	18		CHA-2PF	2G	38
		3G	19			4G	39
		5G	1A			6G	3A
		7G	1B			8G	3B
		1H	1C			2H	3C
		3H	1D			4H	3D
		5H	1E			6H	3E
		7H	1F			8H	3F
	CHA-1PA/DKA-1PA	9A/SAS-1PA-A1	80		CHA-2PA/DKA-2PA	AA/SAS-2PA-A1	90
		BA/SAS-1PA-A2	81			CA/SAS-2PA-A2	91
		DA	82			EA	92
		FA	83			GA	93
		9B/SAS-1PA-A3	84			AB/SAS-2PA-A3	94
		BB/SAS-1PA-A4	85			CB/SAS-2PA-A4	95
		DB	86			EB	96
		FB	87			GB	97
	CHA-1PB/DKA-1PB	9C/SAS-1PB-A1	88		CHA-2PB/DKA-2PB	AC/SAS-2PB-A1	98
		BC/SAS-1PB-A2	89			CC/SAS-2PB-A2	99
		DC	8A			EC	9A
		FC	8B			GC	9B
		9D/SAS-1PB-A3	8C			AD/SAS-2PB-A3	9C
		BD/SAS-1PB-A4	8D			CD/SAS-2PB-A4	9D
		DD	8E			ED	9E
		FD	8F			GD	9F

Module#1

Location			Port	Location			Port
Cluster1	CHA-1PJ	1J	40	Cluster2	CHA-2PJ	2J	60
		3J	41			4J	61
		5J	42			6J	62
		7J	43			8J	63
		1K	44			2K	64
		3K	45			4K	65
		5K	46			6K	66
		7K	47			8K	67
	CHA-1PK	1L	48		CHA-2PK	2L	68
		3L	49			4L	69
		5L	4A			6L	6A
		7L	4B			8L	6B
		1M	4C			2M	6C
		3M	4D			4M	6D
		5M	4E			6M	6E
		7M	4F			8M	6F
	CHA-1PL	1N	50		CHA-2PL	2N	70
		3N	51			4N	71
		5N	52			6N	72
		7N	53			8N	73
		1P	54			2P	74
		3P	55			4P	75
		5P	56			6P	76
		7P	57			8P	77
	CHA-1PM	1Q	58		CHA-2PM	2Q	78
		3Q	59			4Q	79
		5Q	5A			6Q	7A
		7Q	5B			8Q	7B
		1R	5C			2R	7C
		3R	5D			4R	7D
		5R	5E			6R	7E
		7R	5F			8R	7F
	CHA-1PG/DKA-1PG	9J/SAS-1PG-A1	A0		CHA-2PG/DKA-2PG	AJ/SAS-2PG-A1	B0
		BJ/SAS-1PG-A2	A1			CJ/SAS-2PG-A2	B1
		DJ	A2			EJ	B2
		FJ	A3			GJ	B3
		9K/SAS-1PG-A3	A4			AK/SAS-2PG-A3	B4
		BK/SAS-1PG-A4	A5			CK/SAS-2PG-A4	B5
		DK	A6			EK	B6
		FK	A7			GK	B7
	CHA-1PH/DKA-1PH	9L/SAS-1PH-A1	A8		CHA-2PH/DKA-2PH	AL/SAS-2PH-A1	B8
		BL/SAS-1PH-A2	A9			CL/SAS-2PH-A2	B9
		DL	AA			EL	BA
		FL	AB			GL	BB
		9M/SAS-1PH-A3	AC			AM/SAS-2PH-A3	BC
		BM/SAS-1PH-A4	AD			CM/SAS-2PH-A4	BD
		DM	AE			EM	BE
		FM	AF			GM	BF
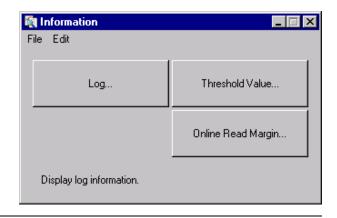
2.3 Log delete

[1] SSB Log
[2] SIM Log
[3] Detail Log
[4] Reset Log
[5] Power Event Log
[6] Incident Log
[7] HTP Log
[8] Diagnosis Log
[9] 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].)

If the SIM log is deleted, SIM Log Complete (SVP02-08-10) should be executed beforehand.
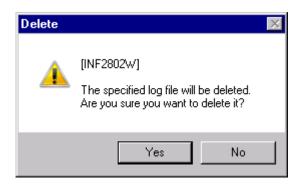
(4)

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].
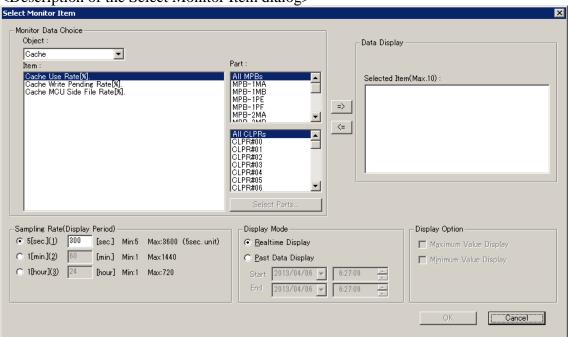
2.4 Monitoring

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).

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

Part ....Parts 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.

■ 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 3600 seconds (1 hour) (units of 5 seconds)
1[min.]	1 minute to 1440 minutes (24 hours) (*1)
1[hour]	1 hour to 720 hours (30 days)

*1: If you specify 1440 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.

■ Display data item list

#	Part	Item	Description	Remarks
1	Cache	Cache Use Rate	Cache Use Rate	
2		Cache Write Pending Rate	Cache Write Pending Rate	
3		Cache MCU Side File Rate	Cache MCU Side File Rate (Total Side File use rate of CC/XRC)	
4	MP	MP processing Rate	MP processing Rate	
5		MP Processing Rate Open-Target	MP Processing Rate Open-Target	
6		MP Processing Rate Open-Initiator	MP Processing Rate Open-Initiator	
7		MP Processing Rate Open-External	MP Processing Rate Open-External	
8		MP Processing Rate MF-Target	MP Processing Rate MF-Target	
9		MP Processing Rate MF-External	MP Processing Rate MF-External	
10		MP Processing Rate BackEnd	MP Processing Rate BackEnd	
11		MP Processing Rate Others	MP Processing Rate Others	
12	Port (Fibre)	Loss of Signal Count	Loss of Signal Count	Displaying only with Fibre PCB.
13		Bad Received Character Count	Bad Received Character Count	
14		Loss of Synchronization Count	Loss of Synchronization Count	
15		Link Failure Count	Link Failure Count	
16		Received EOFa Count	Received EOFa Count	
17		Discarded Frame Count	Discarded Frame Count	
18		Bad CRC Count	Bad CRC Count	
19		Protocol Error Count	Protocol Error Count	
20		Expired Frame Count	Expired Frame Count	
21	Port (HTP/ FNP)	HTP/FNP Ex Multiple	HTP/FNP Ex Multiple	Displaying only with FICON PCB.
22		HTP/FNP Read Data Transfer Rate	HTP/FNP Read Data Transfer Rate	
23		HTP/FNP Write Data Transfer Rate	HTP/FNP Write Data Transfer Rate	
24		HTP/FNP Processing Rate	HTP/FNP Processing Rate	

(To be continued)

(Continued from the preceding page)

#	Part	Item		Description	Remarks
25	Port	Port Total IOPS		IOPS (Read/Write Command Transfer)	Not Displaying with Main Frame PCB.
26		Port Total Transfer Rate		Transfer Rate (Read/Write Command Transfer)	
27		Port Total Response Time		Response Time (Read/Write Command Transfer)	
28		Port Input IOPS	Initiator/ External Port	IOPS (Read Command Transfer)	
			Target/ RCU Target Port	IOPS (Write Command Transfer)	
29		Port Input Transfer Rate	Initiator/ External Port	Transfer Rate (Read Command Transfer)	
			Target/ RCU Target Port	Transfer Rate (Write Command Transfer)	
30		Port Input Response Time	Initiator/ External Port	Response Time (Read Command Transfer)	
			Target/ RCU Target Port	Response Time (Write Command Transfer)	
31		Port Output IOPS	Initiator/ External Port	IOPS (Write Command Transfer)	
			Target/ RCU Target Port	IOPS (Read Command Transfer)	
32		Port Output Transfer Rate	Initiator/ External Port	Transfer Rate (Write Command Transfer)	
			Target/ RCU Target Port	Transfer Rate (Read Command Transfer)	
33		Port Output Response Time	Initiator/ External Port	Response Time (Write Command Transfer)	
			Target/ RCU Target Port	Response Time (Read Command Transfer)	
34	LDEV	IOPS		IOPS	It is necessary to select Gathering LDEV Processing Information. (Refer to 2.4.3)
35		Transfer Rate		Transfer Rate	
36		Read Hit Rate		Read Hit Rate (A hit rate only for random read.)	
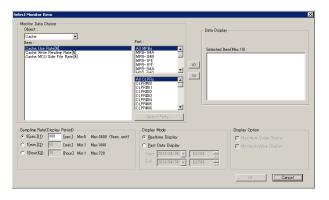
(1) Display the Monitor panel
Press the "Monitor" button in the SVP main panel to start the monitoring feature.

(2) Display the Select Monitor Item panel
Select (CL) [Monitor]-[Open...] from the
menu in the Monitor panel.

(3) Select data to be displayed
① 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].
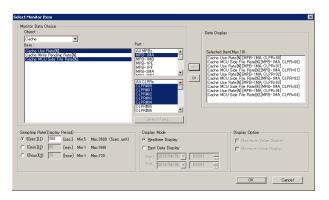
You can display data on up to 10 items. If there is no data in [Selected Item], the [OK]
button will not be activated.
If the object part (LDKC:CU:LDEV) is not gathering LDEV processing information, the
monitor is not normally displayed. (Refer to "2.4.3 Gathering LDEV Processing
Information Selection Function".)
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.

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.

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.

④ 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.
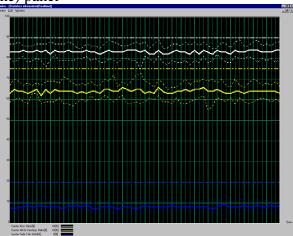
After selecting all the necessary items, select (CL) [OK] to display the Statistics information panel.

(4) Description of the Statistics information (Real Time) 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

(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 Real
Time, 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.

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.]	3600 seconds (1 hour) (units of 5 seconds)
1[min.]	1440 minutes (24 hours) (*1)
1[hour]	744 hours (31 days)

*1: If you specify 1440 minutes, the data may not be displayed depending on the window size.

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
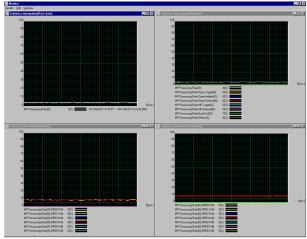
(6) Align the displayed windows
You can align the windows from the
[Window] menu. To cascade the windows,
select (CL) [Window]-[Cascade]. To tile
them, select (CL) [Window]-[Tile]. To
arrange the minimized windows, select (CL)
[Window]-[Icon]. To close all windows,
select (CL) [Window]-[All Close].
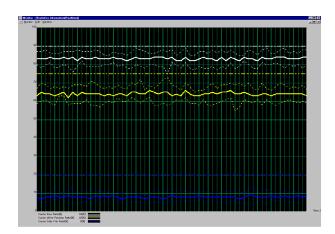
A list of available windows is displayed under
the menu. You can select one window to
display it in the foreground.
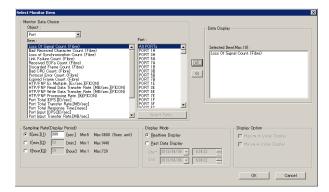
(7) Exit the Monitor window
Select (CL) [Monitor]-[Exit] from the menu.

(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 (CL) [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".

      You can display data on up to 10 items.
      If you add LDEV items to "Selected Item", the monitoring data is not displayed unless the
      object part (LDEV:CU:LDEV) is the target of gathering LDEV processing information
      normally. (See "2.4.3 Gathering LDEV Processing Information Selection Function".)
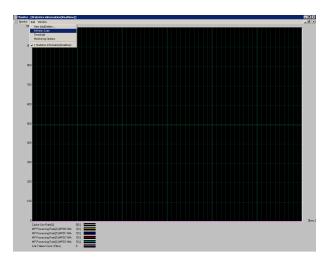
③ Change the display interval and period
In "Sampling Rate(Display Period)", specify the time interval of updating data and the period that data is displayed.

④ Change the display mode
In [Display Mode], select either "Realtime Display" or "Past Data Display".

⑤ 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 display the Statistics information window.

---

(9) Scale refresh method of the data display screen
　① Scale refresh
　　Select (CL) [Monitor]-[Edit]-[Refresh Scale] from the menu.

　NOTE: You cannot appoint the scale size. It is changed to the most suitable scale by performing scale refresh.
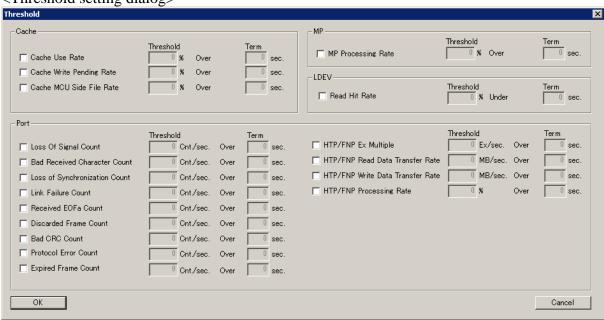
2.4.2 Processing Information Monitoring Function

The processing information monitoring function watches processing information to the threshold
(set value). If it exceeds the threshold, SIM is reported. For details of the reported SIM, see
SIMRC02-580.

<Threshold setting dialog>

■ 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		Cache MCU Side File Rate	Cache MCU Side File Rate	
4	MP	MP Processing Rate	MP Processing Rate	
5	Port	Loss of Signal Count	Loss of Signal Count	Monitoring
6	(Fibre)	Bad Received Character Count	Bad Received Character Count	only with
7		Loss of Synchronization Count	Loss of Synchronization Count	Fibre PCB
8		Link Failure Count	Link Failure Count	
9		Received EOFa Count	Received EOFa Count	
10		Discarded Frame Count	Discarded Frame Count	
11		Bad CRC Count	Bad CRC Count	
12		Protocol Error Count	Protocol Error Count	
13		Expired Frame Count	Expired Frame Count	
14	Port	HTP/FNP Ex Multiple	HTP/FNP Ex Multiple	Monitoring
15	(HTP/	HTP/FNP Read Date Transfer Rate	HTP/FNP Read Date Transfer Rate	only with
16	FNP)	HTP/FNP Write Date Transfer Rate	HTP/FNP Write Date Transfer Rate	FICON PCB
17		HTP/FNP Processing Rate	HTP/FNP Processing Rate	
18	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.
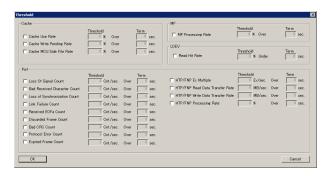
(1) Start of monitor window
     Select (CL) the [Monitor] button on the SVP main window, and start the monitoring function.

(2) Starting threshold setting window
     Select (CL) [Edit]-[Threshold] from the menu
     on the 'Monitor' window.

(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.
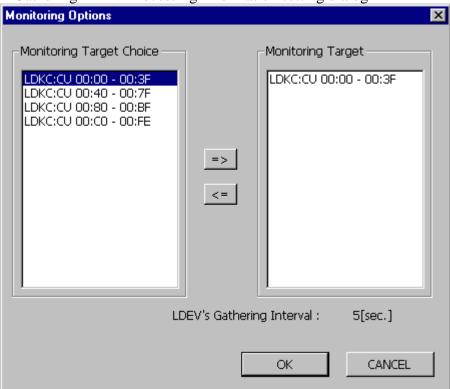
     NOTE: If you have performed SVP Replacement, perform it again.

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

2.4.3 Gathering LDEV Processing Information Selection Function

< Gathering LDEV Processing Information setting dialog >

■ Monitoring Target Choice
Select the Gathering processing information item (LDKC:CU).
You can select multiple items.

■ Target Choice
The selected items are displayed.

[=>] button .....The selected item is added as item that is already selected as the gathering
processing information item (LDKC:CU).
[<=] button .....The selected items are removed from the gathering processing information
item (LDKC:CU).

■ LDEV's Gathering Interval
The selected gathering processing information item (LDKC:CU) of Gathering Interval is
displayed.
LDEV's Gathering Interval corresponding to the number of selected gathering processing
information items (LDKC:CU) is displayed.

Selected Target Choice Item	LDEV's Gathering Interval
0	0[sec.] (No collecting)
1 (64CU)	5[sec.]
2 or more (65CU or more)	60[sec.]
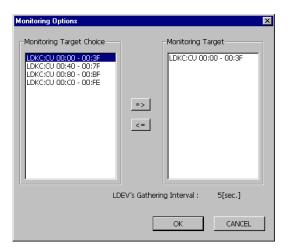
(1) Start of monitor window
Select (CL) the [Monitor] button on the SVP main window, and start the monitoring function.

(2) Starting gathering LDEV processing information setting window
Select [Edit]-[Monitoring Options] from the menu on the 'Monitor' window.

(3) Setting gathering LDEV processing information
Select the gathering processing information whose items (LDKC:CU) you want to gather in Monitoring Target Choice (You can select multiple items). After selecting the gathering processing information items, select [=>] button to add the selected items to [Target Choice].

When the selection items are complete, select (CL) [OK] and close the window.

(4) Exiting the monitor window
Select (CL) [Monitor]-[Exit] from the menu.
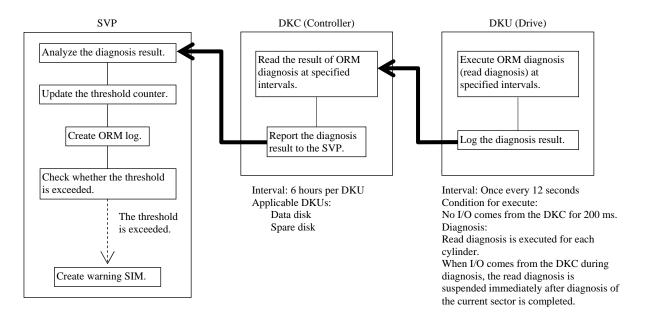
2.5 Online read margin (ORM)

[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.

SVP

- Analyze the diagnosis result.
- Update the threshold counter.
- Create ORM log.
- Check whether the threshold is exceeded.
  - The threshold is exceeded.
- Create warning SIM.

DKC (Controller)

- Read the result of ORM diagnosis at specified intervals.
- Report the diagnosis result to the SVP.

Interval: 6 hours per DKU
Applicable DKUs:
    Data disk
    Spare disk

DKU (Drive)

- Execute ORM diagnosis (read diagnosis) at specified intervals.
- Log the diagnosis result.

Interval: Once every 12 seconds
Condition for execute:
No I/O comes from the DKC for 200 ms.
Diagnosis:
Read diagnosis is executed for each cylinder.
When I/O comes from the DKC during diagnosis, the read diagnosis is suspended immediately after diagnosis of the current sector is completed.

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

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 ~ F)	
3	Unrecovered Seek Error	502X	Drive Media Error
4	Recovered Seek Error	(X = 0 ~ 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 ~ 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 (*1)	50BX (X = 0 ~ 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 ~ F)	Drive Unit Error
2	Reboot Error		
3	DMA Error		
4	Memory Error		
5	Uncorrected Error	502X (X = 0 ~ F)	Drive Media Error
6	Used Endurance Indicator	50CX (X = 0 ~ F)	Flash Module Drive End of life
7	Battery Error	501X (X = 0 ~ F)	Drive Unit Error
8	FMD Battery Life Indicator	50DX (X = 0 ~ F)	Flash Module Drive Battery Warning

(1)

Check SVP Mode.

The Following operation needs SVP Mode to be 'Modify'. (See SVP01-220)

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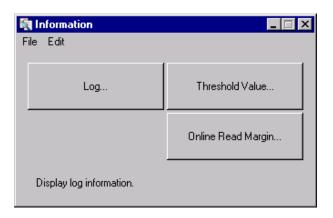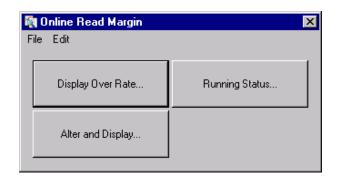
[1] Displaying an error count, thresholds, and log

(1)

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

(2)
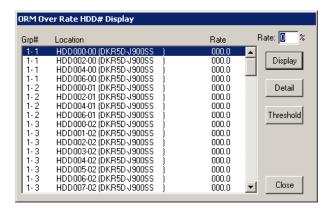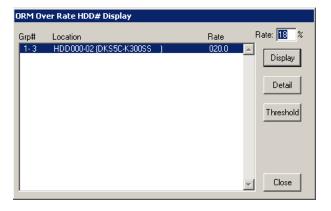
Enter a number from 0 to 100 at "Rate" in the
'ORM Over Rate HDD# Display' dialog box.
Select (CL) [Display].
Then only the HDDs which have the rate of
equal to or greater than the input number at
"Rate" will appear in the display.
Rate : ratio of the number of errors for the
　　　 threshold value.
Grp# : 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].

(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, [ORM Log] cannot be selected.

(SAS Drive Selected)

(Flash Drive Selected)

(Flash Module Drive Selected)

• In case of SAS Drive

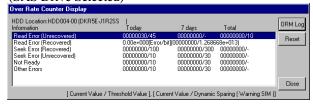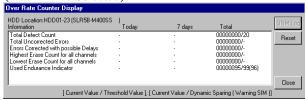| Item		Description
ID (Information) (*1)	Read Error (Unrecovered)	: A disk media error was detected. After ten times retries, the error was judged that it might become a serious media error which could not be recovered with ECC or retries.
	Read Error (Recovered)	: A disk media error was detected. After 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.

• 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 SLxxx-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)".
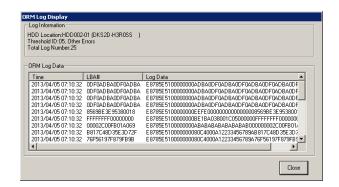
Because these information is multiplication values since HDD operation time, SVP display only total indication in case of Flash Drive. SVP display total indication of "Total Defect Count", "Used Endurance Indicator" and "FMD Battery Life Indicator" and display today indication of the others in case of Flash Module Drive.
The "-" for the Threshold value means no threshold is set.

(5)

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

Byte	Bit	Name	Explanation
0-7		UCT	Time when the diagnostic result was reported from the DKC to the SVP.
8	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 F is valid.
	2-3	(Reserved)	Reserved
	4-7	Sense Key	Error sense key in the SCSI drive report. (*1)
9		Additional Sense Code	Additional sense code in the SCSI drive report. (*1)
10		Sense Code Qualifier	Additional sense code qualifier in the SCSI drive report. (*1)
11		Seek Error Count	Number of seek errors within 10 seek error retries.
C-E		CC	Address of the cylinder where the error occurred.
F		H	Address of the head where the error occurred.
10-11		S	Address of the sector where the error occurred.
12-1A		LBA	LBA where the error occurred.

*1: Definition and contents of the error codes are same as those of the SSB for ordinary DKU errors.

(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.
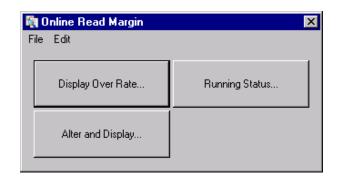
[2] Resetting an error count

(1)

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

(2)
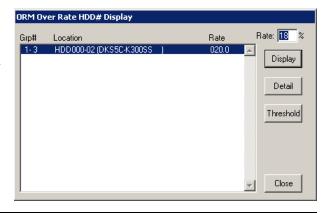
Enter a number from 0 to 100 at 'Rate' in the 'ORM Over Rate HDD# Display' dialog box. Select (CL) [Display].
Then only the HDDs which have the rate of equal to or greater than the input number at "Rate" will appear in the display.
Rate : ratio of the number of errors for the threshold value.
Grp# : the parity group.
　　　SPARE : spare HDD
　　　RSRVD : reserved HDD with sparing
　　　　　* : spare HDD in use.
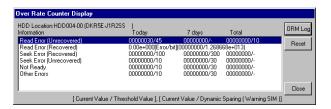
(3)

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.

(5)

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

Threshold Counter Reset	⊠

[INF2667W]

⚠ Are you sure you want to reset Threshold Counter of all ID?

OK   Cancel

(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.
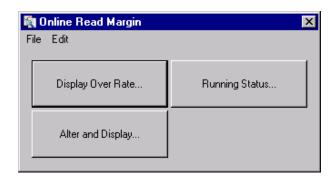
[3] Displaying thresholds

(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.

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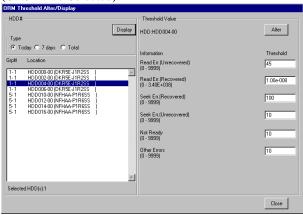
NOTE: When selected (CL) HDD from the "HDD#" list box is "Flash Drive", "Information" field in the "Threshold Value" shows the item of "Flash Drive".
In order to display threshold of "Total Defect Count", select (CL) "Total" from the "Type" radio button.

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.
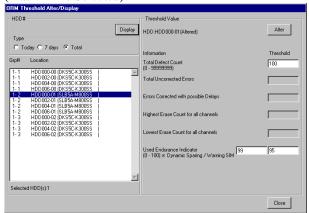
(SAS Drive Selected)
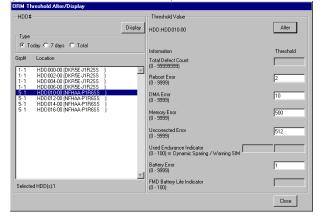
(Flash Drive Selected)

(Flash Module Drive Selected)

(3)

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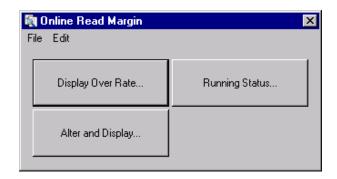
[4] Altering a threshold

(1)

Select (CL) [Alter and Display...] in the
'Online Read Margin' window.
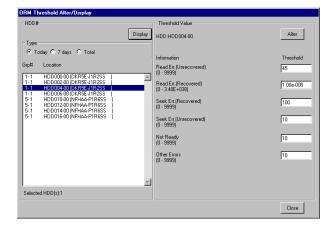
(2)

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.
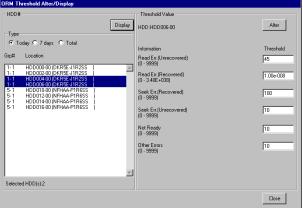
(3)

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].
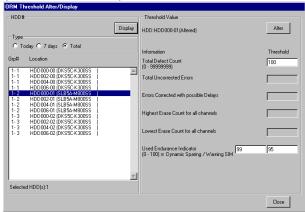
NOTE: When multiple HDDs are selected in
the "HDD#" list box, the thresholds
of all HDDs are altered to the same
value.
Different drive types of the threshold
management cannot be selected at
the same time.

(SAS Drive Selected)
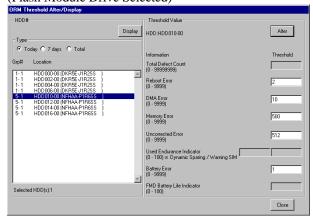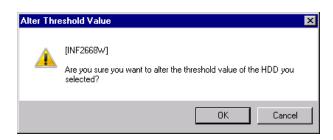
(Flash Drive Selected)

(Flash Module Drive Selected)

(4)

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

(5)

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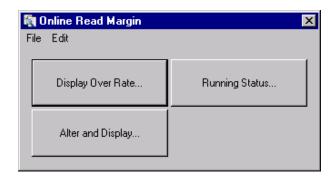
[5] Displaying the ORM running status

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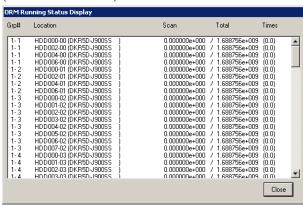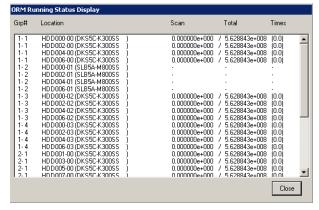
NOTE: When "Flash Drive" or "Flash Module Drive" is displayed, "Scan", "Total", "Times" is "-".

(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.

[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.

(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 .

(7)

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

(8)

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

[7] Set of the threshold of all Flash Drive

(1)

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

(2)

Select (CL) [Install] in the 'SVP'.

(3)

Select (CL) [Set Flash Drive ORM Value] in the 'Install' window.
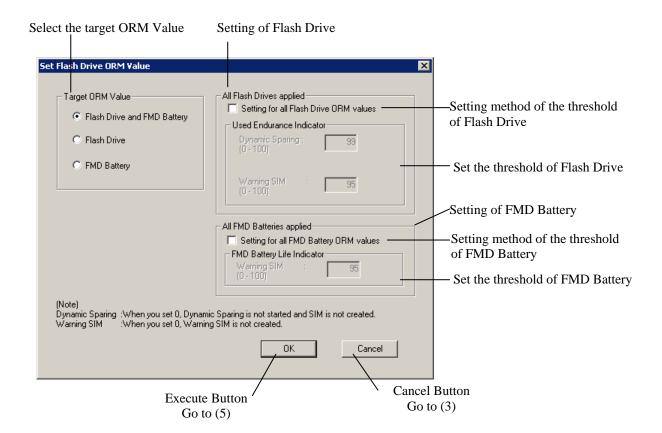
(4)
Select the target to be changed in 'Set Flash Drive ORM Value' window. Set a setting method
of the threshold and the threshold, and then select (CL) the [OK] button.

Select the target ORM Value   Setting of Flash Drive

Setting method of the threshold
of Flash Drive

Set the threshold of Flash Drive

Setting of FMD Battery

Setting method of the threshold
of FMD Battery

Set the threshold of FMD Battery

Execute Button
Go to (5)

Cancel Button
Go to (3)

<<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.

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

　　　　　<Setting method of the threshold of Flash Drive>
　　　　　[Setting for all Flash Drive ORM values]
　　　　　　　When setting thresholds of Used Endurance Indicator of all mounted Flash Drives
　　　　　　　collectively, check the checkbox.
　　　　　　　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 selecting
　　　　　　　(CL) [OK] button without checking the checkbox, the Dynamic Sparing threshold and the
　　　　　　　Warning SIM threshold are not changed.
　　　　　　　When you want to return the threshold to initial value (Dynamic Sparing threshold:
　　　　　　　99/Warning SIM threshold: 95), do reset operation of the threshold. (SVP02-05-190)

　　　　　<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.
　　　　　　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.

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

　　　　　<Setting method of the threshold of FMD Battery>
　　　　　[Setting for all FMD Battery ORM values]
　　　　　　　When setting thresholds of FMD Battery Life Indicator of all mounted Flash Drives
　　　　　　　collectively, check the checkbox.
　　　　　　　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 selecting
　　　　　　　(CL) [OK] button without checking the checkbox, the Warning SIM threshold is not
　　　　　　　changed.
　　　　　　　When you want to return the threshold to initial value (Warning SIM threshold: 95), do
　　　　　　　reset operation of the threshold. (SVP02-05-190)

　　　　　<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.

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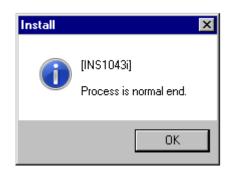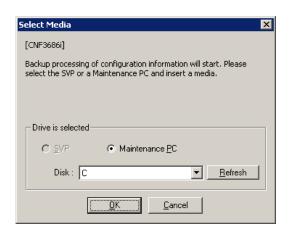
Select (CL) [OK] in the "Process is normal end.".

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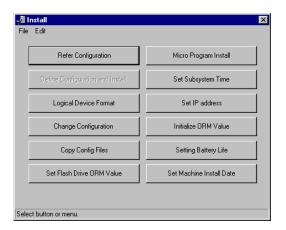
NOTE: For the procedure of backing up the configuration information to a CD-R, see page .

(7)

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

(8)

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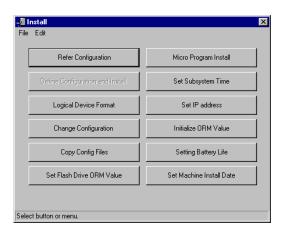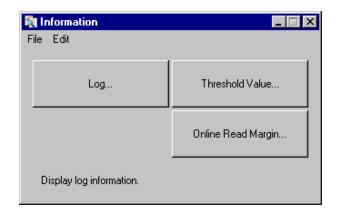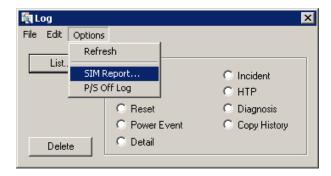
2.6 SIM Reporting Specification

[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.

(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].
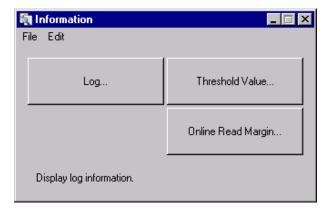
2.7 Management of drive threshold values

(1)

Check SVP Mode.
The Following operation needs SVP Mode to be 'Modify'. (See SVP01-220)
[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.
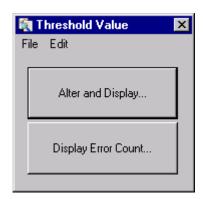
[1] Displaying threshold values

(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.

Unrecd: Threshold of errors not recoverable by retry.
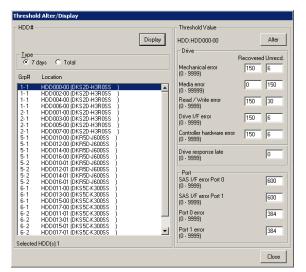
Grp# : the parity group.
SPARE : spare HDD
RSRVD : reserved HDD with sparing
    *   : spare HDD in use.
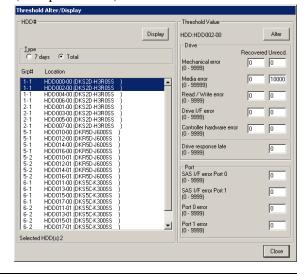
(Multiple Selected)

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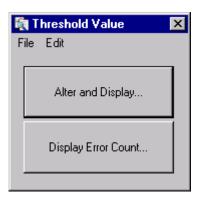
Select (CL) [Close] in the 'Threshold Alter/Display' dialog box and close the 'Information' window.

[2] Altering threshold value

(1)

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

(2)
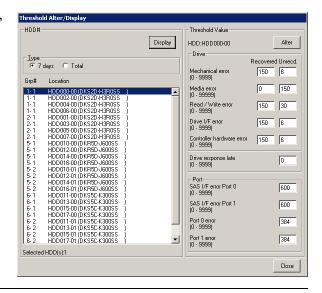
Select (CL) an HDD location from the "HDD#" list box in the 'Threshold Alter/Display' dialog box and select (CL) [Display]. In order to display threshold of another interval, select (CL) the interval from the "Type" list box.

Grp# : the parity group.
      SPARE : spare HDD
      RSRVD : reserved HDD with sparing
         * : spare HDD in use.
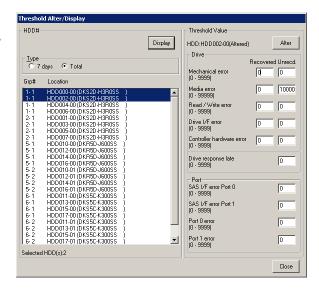
(3)

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.

(4)

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

Alter Threshold Value

[INF2668W]

⚠ Are you sure you want to alter the threshold value of the HDD you
selected?

[OK] [Cancel]

(5)

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

[3] Displaying an error count

(1)

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

(2)
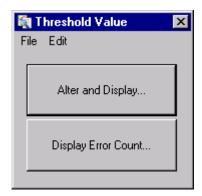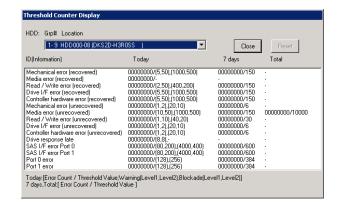
Select (CL) an HDD location from the HDD
Location drop-down list in the 'Threshold
Counter Display' dialog box to display the
error count for the HDD.

Grp# : the parity group.
    SPARE : spare HDD
    RSRVD : reserved HDD with sparing
       * : spare HDD in use.

NOTE: Please execute this operation with PS ON.
         When with PS OFF or the communication error occurs, the display of part Today is
         displayed by "Unknown".
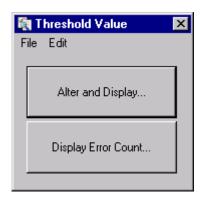
(3)

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

[4] Resetting an error count

(1)

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

(2)

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].
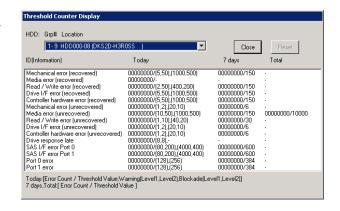
Grp# : the parity group.
        SPARE : spare HDD
        RSRVD : reserved HDD with sparing
           *   : spare HDD in use.

(3)

Select (CL) [OK] in the 'Threshold Counter Reset' dialog box.
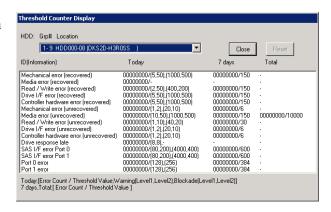
(4)

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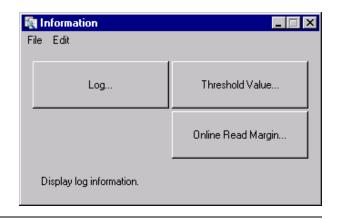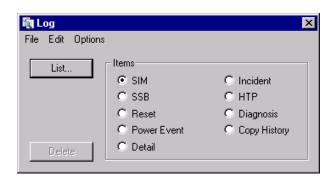
2.8 SIM Log Complete

(1)

Change the mode from [View Mode] to [Modify Mode].
Select (CL) [Information].

---

(2)
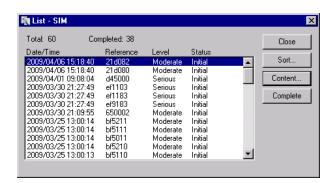
Select (CL) [Log...] in the 'Information'
dialog box.

---

(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].
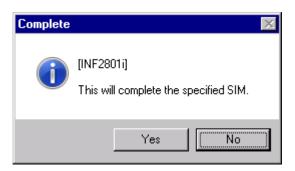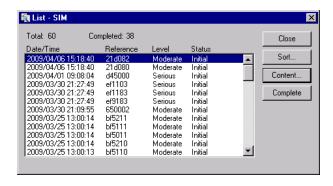
(5)

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.

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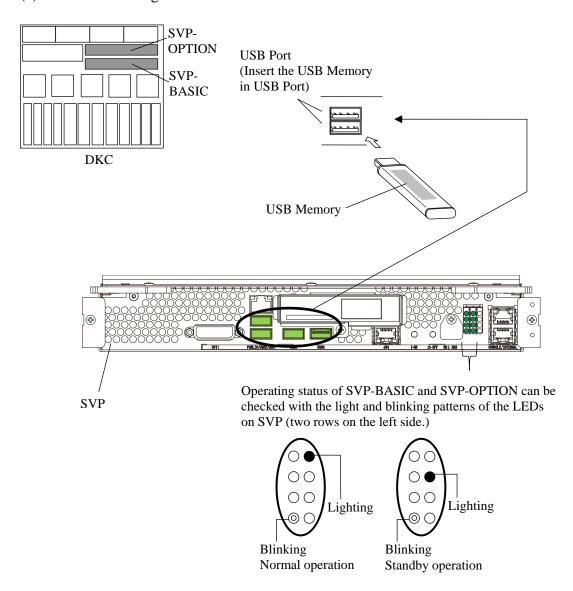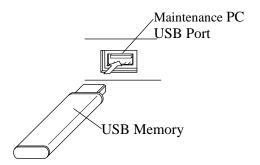
① Insert the USB memory in USB port on the SVP.
  (a) When connecting to the SVP

SVP-OPTION

SVP-BASIC

DKC

USB Port
(Insert the USB Memory
in USB Port)

USB Memory

SVP

Operating status of SVP-BASIC and SVP-OPTION can be
checked with the light and blinking patterns of the LEDs
on SVP (two rows on the left side.)

Lighting

Lighting

Blinking
Normal operation

Blinking
Standby operation
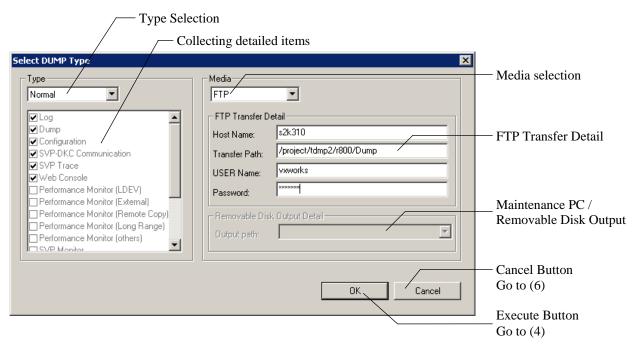
(b) When connecting to the Maintenance PC

Maintenance PC
USB Port

USB Memory

(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 Maintenance PC / Removable Disk output detail, etc., and then select (CL) the [OK] button.

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

<<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 adapters)
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 cannot 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.

SVP Memory dump:

A Windows memory dump is collected when a blue screen error occurs in SVP.

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.

Maintenance PC:

The compressed data is output to the directory which has been entered in the Maintenance PC Output Detail box of the PC remotely connected to the SVP. When "c:\" is specified for the dump directory, it becomes an error by the protecting function of OS. Please input the dump directory following "c:\".

Example:
c:\dkc200\tmp

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

<<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.

<<Maintenance 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 Detail>>
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.) [0000:0000:0000:0000:0000:0000:0000:0000]
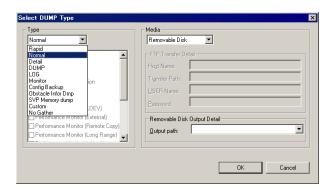
(4)   Doing the dump and data compression
A dump is done when a dump type is selected out of "Normal", "Detail", "DUMP", and
"Custom" (in the case where "Dump" has been selected from the detailed information items).
Go to Step (4-1).

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,
if "Maintenance PC" or "Removable Disk" is selected as the output medium.
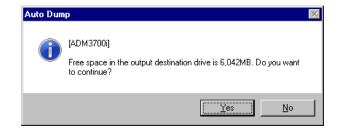
"Insert a removable media for the dump
collection to get the dump information in it."
is displayed.
When you output to a removable media, insert
the removable media and select (CL) the
[OK] button.

"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.)
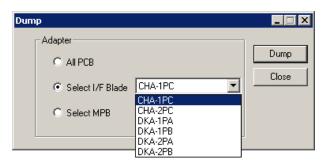
(4-1)
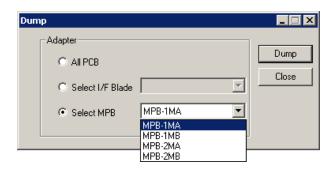
When "DUMP" is selected as a dump type, select (CL) [Select I/F Blade] or [Select MPB], and select (CL) "Location No." of the processor and select (CL) the [DUMP] button.

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 (4-1-1).
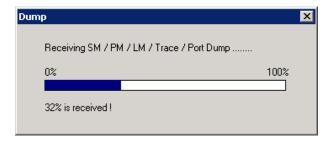
(4-1-1)

A box indicating progress of the dump is displayed.
When the dump terminates normally, go to Step (4-1-3).
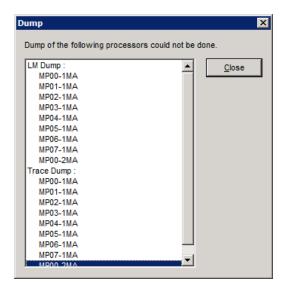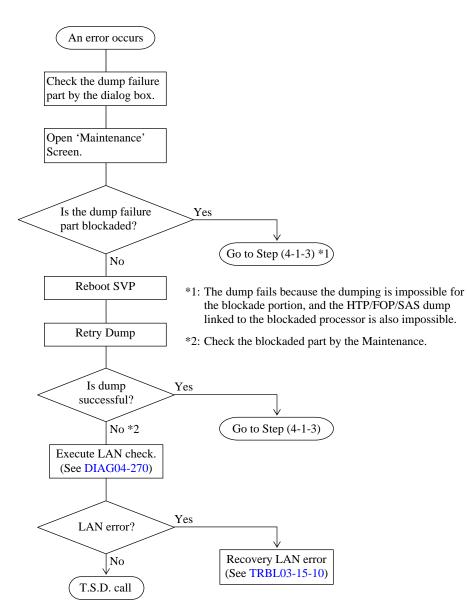
(4-1-2)

When an error occurs, the following dialog box is
displayed.
Perform the following procedure and retry the dump.

```
Dump                                                        ×
Dump of the following processors could not be done.

LM Dump :                              ▲        Close
    MP00-1MA
    MP01-1MA
    MP02-1MA
    MP03-1MA
    MP04-1MA
    MP05-1MA
    MP06-1MA
    MP07-1MA
    MP00-2MA
Trace Dump :
    MP00-1MA
    MP01-1MA
    MP02-1MA
    MP03-1MA
    MP04-1MA
    MP05-1MA
    MP06-1MA
    MP07-1MA
    MP00-2MA                            ▼
```

```
        ( An error occurs )
                │
    ┌───────────────────────┐
    │ Check the dump failure │
    │ part by the dialog box.│
    └───────────────────────┘
                │
    ┌───────────────────────┐
    │ Open 'Maintenance'     │
    │ Screen.                │
    └───────────────────────┘
                │
          ◇ Is the dump failure ◇ ──Yes──┐
          ◇ part blockaded?     ◇        │
                │                        ▼
                No            ( Go to Step (4-1-3) *1 )
    ┌───────────────────────┐
    │      Reboot SVP        │
    └───────────────────────┘
                │
    ┌───────────────────────┐
    │      Retry Dump        │
    └───────────────────────┘
                │
          ◇ Is dump       ◇ ──Yes──┐
          ◇ successful?   ◇        │
                │                  ▼
             No *2        ( Go to Step (4-1-3) )
    ┌───────────────────────┐
    │  Execute LAN check.    │
    │  (See DIAG04-270)      │
    └───────────────────────┘
                │
          ◇ LAN error? ◇ ──Yes──┐
                │                ▼
                No      ┌──────────────────────┐
        ( T.S.D. call ) │ Recovery LAN error    │
                        │ (See TRBL03-15-10)    │
                        └──────────────────────┘
```

*1: The dump fails because the dumping is impossible for
the blockade portion, and the HTP/FOP/SAS dump
linked to the blockaded processor is also impossible.

*2: Check the blockaded part by the Maintenance.

(4-1-3)
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).
When an FTP was selected, go to Step (5-2).
When a Maintenance PC was selected, go to Step (5-3).
When a Removable Disk was selected, go to Step (5-4).
When Maintenance PC or Removable Disk was selected and information is output to FDD,
go to Step (5-5).
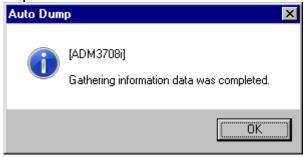
(5-1) When the HDD is selected as a medium for the output

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

(5-2) 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.

(5-2-1)

After the data transfer is completed, a message, "FTP transfer has ended successfully." is displayed.
Select (CL) the [OK] button.
Go to Step (6).
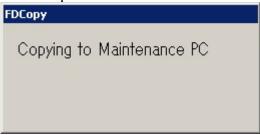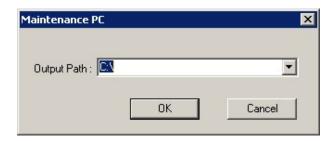
(5-3) When the Maintenance PC is selected as an medium for the output
"Copying to Maintenance PC" is displayed and a
copying to the Maintenance PC is done.

When the copying fails, a message, "Output
to the Maintenance PC is failed. Do you want
to specify the output destination in the
Maintenance PC again?" is displayed.
Select (CL) the [OK] button and reset the
directory for the output in the 'Maintenance
PC' window.

(5-3-1)
A message, "Gathering information data was
completed." is displayed. Select (CL) the
[OK] button.
Go to Step (6).
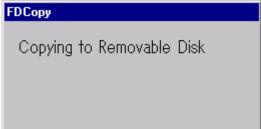
(5-4) When the Removable Disk is selected as an medium for the output
"Copying to Removable Disk" is displayed and a
copying to the Removable Disk is done.

FDCopy

Copying to Removable Disk

(5-4-1)

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).

Auto Dump

[ADM3708i]

Gathering information data was completed.

OK
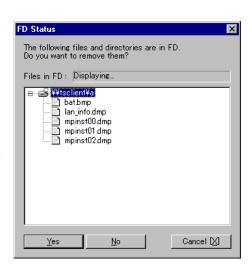
(5-5)

If the file is not contained in the FD when the FD is
checked through the 'FD Status' dialog box, go to Step
(5-5-1). 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 (5-5-1). If you want to leave the files, select (CL) the
[No] button and go to Step (5-5-1).
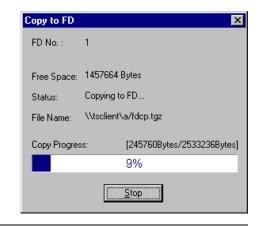
Also, when an error occurs, a message "Could not access FD.
FD is not DOS formatted. FD is not inserted. FD is write
protected." is displayed.
Check the matters displayed and then select (CL) the [Retry]
button. Return to Step (5-5).

(5-5-1)

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

(5-5-2)

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

(6)

When Gathering Information Local Mode is
enabled, "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 Maintenance PC is selected as a medium for the output, and When information is
collected to the USB memory of Maintenance 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).
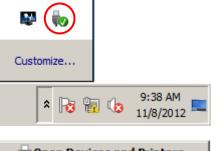
(6-1) Remove the USB memory from SVP PC
Click (CL) the icon indicated by the circle in the right
figure to show hidden files.

Select (CL) the icon of the circle in the lower right corner of
the screen.

Select (CL) the "Eject USB DISK".

The "Safe To Remove Hardware" message appears.

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

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

NOTICE: How to remove the USB memory from Maintenance PC changes with Maintenance PCs to be used.
Please perform removal processing suitable at each Maintenance PC.
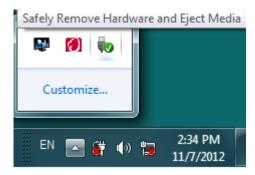
---

example: In the case of Maintenance PC which sets Windows 7 (the English version) to OS.

1. When the collection of information is completed, select (CL) the icon indicated in the figure with the circle which is hidden in the task tray.
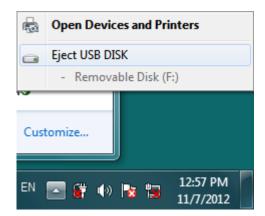
2. When the collection of information using AutoDump is completed, select (CL) the "Safely Remove Hardware and Eject Media" icon in the task tray.

3. Since the menu bar is displayed, select(CL) the "Eject USB DISK"

    NOTE: 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.

4. The "Safe To Remove Hardware" message appears.

5. Remove the USB memory from the USB port of the Maintenance PC.

[2] SSVP DUMP

(1)

Please set the maintenance jumper in JP4 of DKCPANEL, and remove the jumper.
(Refer to LOC06-20)
The "SSVP DUMP" Starts.

When the SVP High Reliability Kit has been installed and an SVP fail over (SIM=7FF3XX) is detected, at first, take actions to resolve the failure (SIM=7FF3XX).

(2)
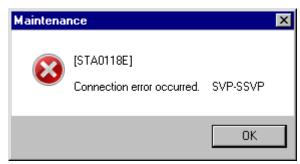
Open the Maintenance window (see SVP SECTION).
Check that the message "SSVP Dump is being performed (XXXX). Environment status can't be read." is displayed and select (CL) [OK].

If the message "Connection error occurred. SVP-SSVP" is displayed, check the wiring connection and select (CL) [OK] to start from Step (1) again.
If Step (1) is performed three times and the same message "Connection error occurred. SVP-SSVP" is displayed, replace SSVP (See REP01-320).

(3)

The SSVP ALARM lamp blinks after completion of dump. (Refer to LOC03-110)
(For about 10 minutes after performing Step (1))

(4)

Collect AUTO DUMP (Rapid/Normal).
(Refer to SVP02-09-10 [1] Auto Dump)

(5)

Please set the maintenance jumper in JP3 of DKCPANEL, and remove the jumper.
(Refer to LOC06-20)
SSVP is reset.

(6)
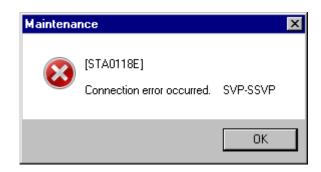
Open the Maintenance window.
If the message "Connection error occurred.
SVP-SSVP" is displayed, select (CL) [OK] to
perform Step (5) again.
If Step (5) is performed three times and the
same message "Connection error occurred.
SVP-SSVP" is displayed, replace SSVP (See
REP01-380).

(7)

If the message shown at Step (6) is not displayed, the SSVP IMPL is completed.

[3] FMD Dump

(1) Connect the external USB memory
     When information is collected to the external USB memory, connect the USB memory.
     (Refer to SVP02-09-20)
     When information is not collected to the external USB memory, go to Step (2).
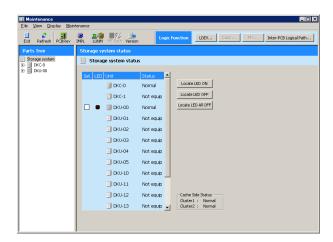
(2) <Initial screen>
     Display the SVP initial screen from SVP SECTION "1. How to Operate the SVP (PC)"
     (SVP01-10).
     For CE Laptop PC, please refer to 3.1.5.3.
     • "3.1.5.3 Attachment / Removal Procedure of Maintenance PC" (INST03-01-130)
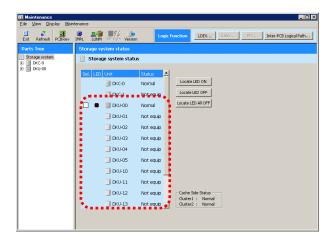
(3) <Maintenance Other Components>
     Select the [Maintenance Components]-[Maintenance Other Components] from Action Menu.
     And open the 'Maintenance Other Components' window.

(4) <Maintenance window>
     The 'Maintenance' window is displayed.

(5) <Maintenance window>
     Select (CL) the DKU information [DKU-nn]
     of the DKU which installs the HDD to be
     replaced in the 'Maintenance' window.
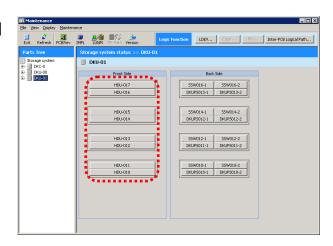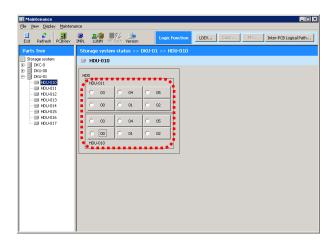
(6) <Select HDU>
Select (CL) the HDU information [HDU-nnn] of the HDU which installs the HDD to be replaced.
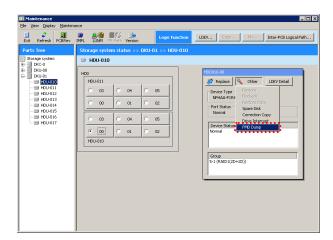
(7) <Select HDU>
Check and select (CL) [nn] to be replaced.

(8)

Make sure that the "Device Status" is [Normal].
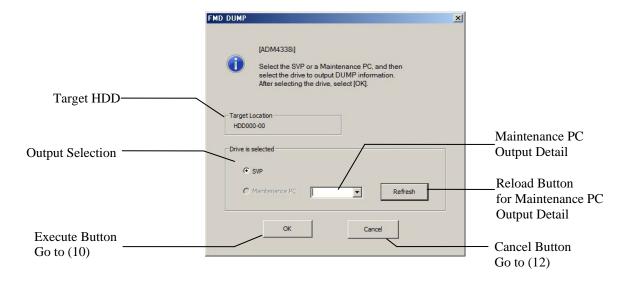
Select (CL) [Other]-[FMD Dump].

(9)

Select a medium for output, set the Maintenance PC output detail and so on in the 'FMD DUMP' window, and then select (CL) the [OK] button.

Target HDD

Output Selection

Maintenance PC
Output Detail

Reload Button
for Maintenance PC
Output Detail

Execute Button
Go to (10)

Cancel Button
Go to (12)

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

<<Output Detail>>

SVP

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

Maintenance PC

Dump data is output to the directory which has been entered in the Maintenance PC Output Detail box of the PC remotely connected to the SVP. When "c:\" is specified for the dump directory, it becomes an error by the protecting function of OS. Please input the dump directory following "c:\".

Example:
c:\dkc200\tmp
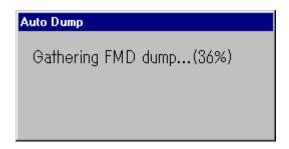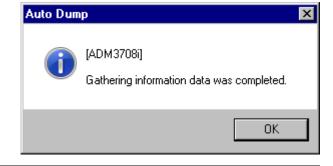
(10) FMD Dump Start
When select (CL) the [OK] button, FMD Dump start.
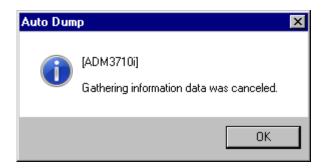
Auto Dump

Gathering FMD dump...(36%)

(11)
A message, "Gathering information data was completed." is displayed. Select (CL) the [OK] button.
Go to Step (13).

Auto Dump ✕

ⓘ [ADM3708i]

Gathering information data was completed.

OK

(12)
A message, "Gathering information data was canceled." is displayed. Select (CL) the [OK] button.

Auto Dump ✕

ⓘ [ADM3710i]

Gathering information data was canceled.

OK

(13) <Maintenance window>
Close the 'Maintenance' window if there is no problem.

When the Maintenance PC is selected as a medium for the output, and When information is collected to the USB memory of Maintenance PC, remove the USB memory.
(Refer to SVP02-09-160)
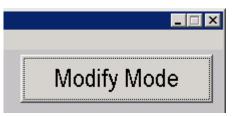
2.10 Logical Device Maintenance

2.10.1 Format of Logical Device

<table>
<tr><td>

⚠ **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.

</td></tr>
</table>

(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>

NOTICE: 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.

(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.

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

(6) <Password Input>
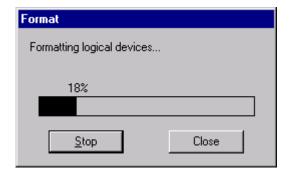
⚠ CAUTION

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.
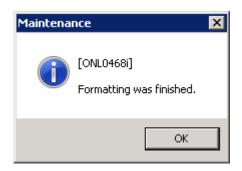
(8) <Completion Check>
When the format is completed, the following message is
displayed. Select (CL) [OK].
"Formatting was finished."

(9) <Post-processing>
Close the 'Logical Device' window.
Close the 'Maintenance' window.
Change the mode to [View Mode].
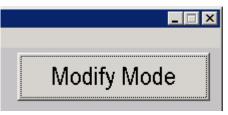
2.10.2 Block Logical Device

<div style="border:1px solid black; padding:10px;">

⚠ 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.

</div>

(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>

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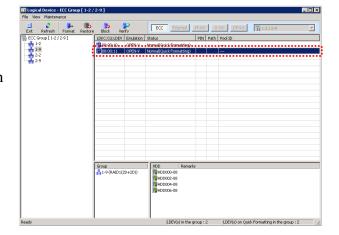
- Blocked devices (LDEV) are
included in the specified parity
group.

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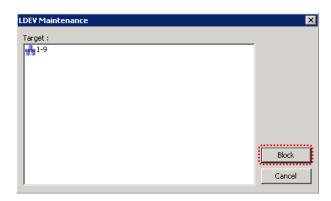
(4) <Execution>
Select (CL) [Block] on the tool bar in the 'Logical Device' window.

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

(6) <Password Input>

⚠ 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) <Processing Wait>
The following message is displayed.
"Blocking the logical device..."
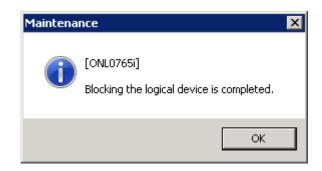
(8) \<Completion Check\>
When the blockade is completed, the following
message is displayed. Select (CL) [OK].
"Blocking the logical device is completed."

(9) \<Post-processing\>
Close the 'Logical Device' window.
Close the 'Maintenance' window.
Change the mode to [View Mode].
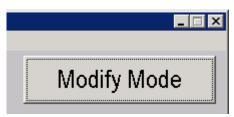
2.10.3 Restore the Logical Device

> ⚠ **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].

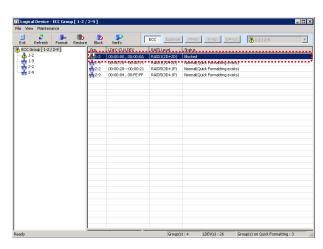Select (CL) the [Maintenance] in the 'SVP' window.

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

(3) <Selection of Logical Device>

NOTICE: 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
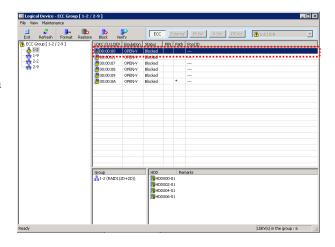group) from the list in the right of
the 'Logical Device' window.

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

(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.
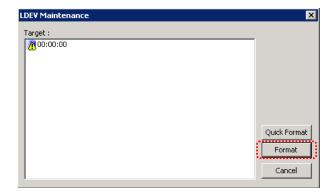And select (CL) the target devices (LDEV) in
the right list of the screen.
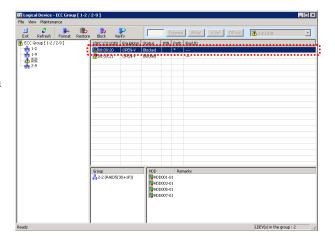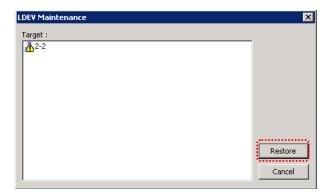
(4) <Execution>
Select (CL) [Restore] on the tool bar in the
'Logical Device' window.

(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.

⚠ CAUTION

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.

■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.

⚠ 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).

⚠ 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."

(8) <Processing Wait>
The following message is displayed.
"Restoring the logical device..."
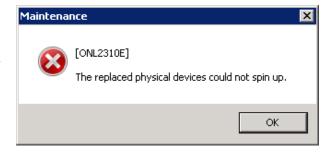
In case that, "Normal Restoration" is selected in Step (6).
If multiple PDEV failures, the restoration processing of the recoverable PDEV is performed here.

This processing cannot recover it when the following message is displayed.
"The replaced physical devices could not spin up."

Perform the procedure RDK7 refer to
REP01-320.

Maintenance	✕
❌ [ONL2310E]
The replaced physical devices could not spin up.
OK
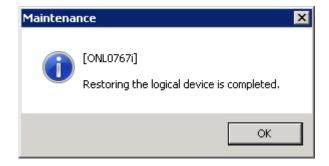
(9) <Completion Check>
When the restoration is completed, the following message is displayed. Select (CL) [OK].
"Restoring the logical device is completed."

Maintenance	✕
ℹ️ [ONL0767i]
Restoring the logical device is completed.
OK

(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].

2.10.4 Verify Logical Device

> **⚠ 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>
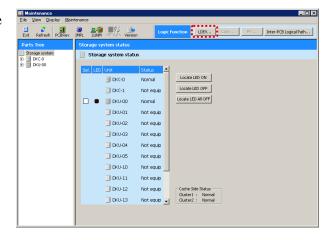
NOTICE: Be careful enough not to make a mistake in selecting a device.

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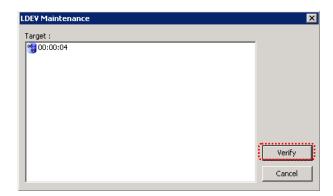
(5) <Check>
Check the device (or group) which executes
the parity synchronization check in the
'LDEV Maintenance' window, and select
(CL) [Verify].

(6) <Password Input>

⚠ 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.
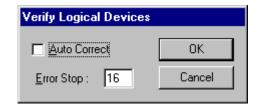
Corresponding to the following message,
enter the password and select (CL) the [OK]
button.
"Ask the Technical Support Division about
the appropriateness of this operation, and
enter the password."

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

```
┌─────────────────────────────────────────┐
│ Verify Logical Devices                   │
├─────────────────────────────────────────┤
│                                          │
│  ☐ Auto Correct        [    OK    ]      │
│                                          │
│  Error Stop :  [16]    [  Cancel  ]      │
│                                          │
└─────────────────────────────────────────┘
```

■ Auto Correct

Auto Correct function is a function to correct data when detecting parity inconsistency.

When the checkbox is checked, parity consistency check and data correction will be done.
When the checkbox is unchecked, only parity consistency will be checked.

The behaviors of data correction are as follows.

[RAID5]

Data and the parity data are read out from each drive of LDEVs in the RAID group to
check parity consistency. When the Auto Correct function is ON, and if parity
inconsistency is detected, the parity data is regenerated from data drives to overwrite the
parity data on drives.

Note: When data drives have any irregularity, the regenerated parity data may be wrong,
which may cause a data problem.

[RAID6]

Data, P parity data, and Q parity data are read out from each drive of LDEVs in the
RAID group to check parity consistency. When the Auto Correct function is ON, and if
data inconsistency is detected, two parities of P and Q generated from data drives are
regenerated to overwrite the P and Q parity data on drives.

Note: When data drives have any irregularity, the generated P and/or Q parities data may
be wrong, which may cause a data problem.

[RAID1]

Data of primary drives and secondary drives are read out from each drive of LDEVs in
the RAID group to check if they are matched. When data inconsistency is detected, the
primary drive data is overwritten to the secondary drives.

Note: When the primary drive has any irregularity, it may cause a data problem.

■ Error Stop

Set the upper limit of error detection number for "Error Stop".

When the error detection number is the set value (*1) or more, the parity consistency check
will be stopped.

*1: Set the value to from 1 to 99.

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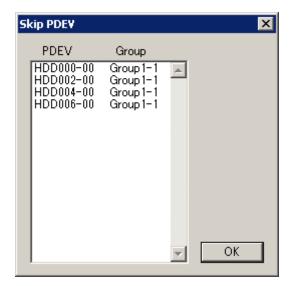
(9) <The check of PDEV which has not checked>
     This operation is required only when the PDEV that was not able to execute the parity
     synchronization check exists.

     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].
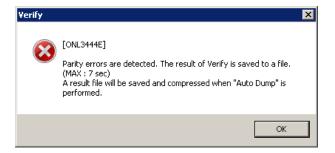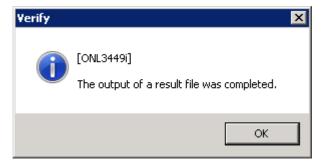
(10) <Output of Check Result File>
This operation is required only when the device with the parity error exists resulting from the check.

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."

(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
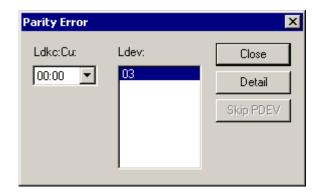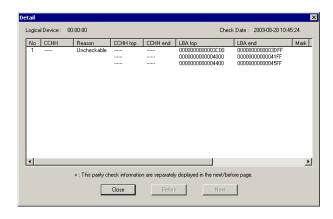
Table 2.10.4-1 List of Parity Error Windows

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: In case of the OPEN device, only LBA is displayed. However, "-----" is displayed in [CCHH/LBA] in case of the parity slot that the LBA display is impossible.
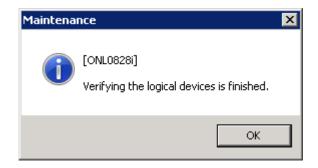
(12) <Completion Check>
When the parity synchronization check is
completed, the following message is displayed.
Select (CL) [OK].
"Verifying the logical devices is finished."
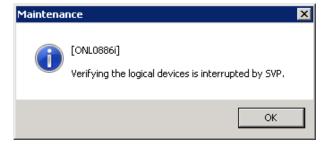
When it is stopped, the following message is
displayed.
"Verifying the logical devices is interrupted
by SVP."

(13) <Post-processing>
Close the 'Logical Device' window.
Close the 'Maintenance' window.
Change the mode to [View Mode].

2.10.5 LDEV recovery for multiple PDEV failures

Refer to SVP02-10-90.
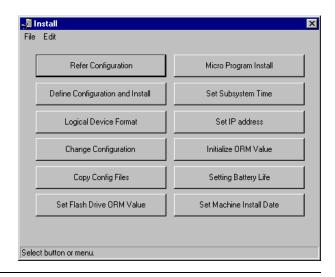
2.10.6 Format all blocked Logical Devices together
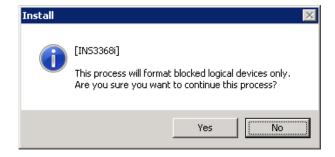
> ⚠ **CAUTION**
>
> Executing this operation may cause a serious error such as a system down or a data loss. Accordingly, confirmation of the appropriateness of the operation and input of a password on the succeeding password input screen is required.
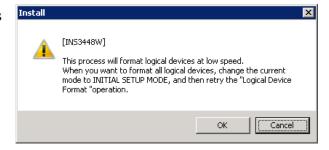
(1)

Select (CL) [Logical Device Format].

(2)

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.".
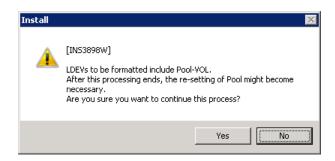
(4)

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?".

(5)

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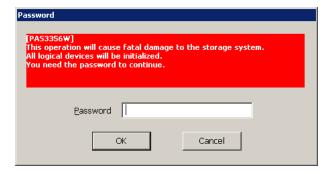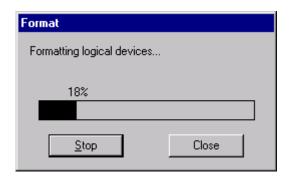
This is a special (exceptional) operation that can cause a serious failure such as a
system down or a data loss and requires an input of a password. Ask the technical
support division about the appropriateness of the operation, and input the password after
getting an approval of executing the operation.

"This operation will cause fatal damage to the
storage system. All logical devices will be
initialized. You need the password to
continue." is displayed.
Enter the password and select (CL) [OK].
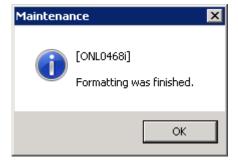
(6)

"Formatting logical devices..." is displayed.

(7)

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

(8)

Close the 'Install' window.
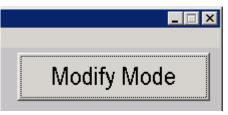
2.10.7 Quick Format of Logical Devices

⚠ 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>

> **NOTICE:** 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.

(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.
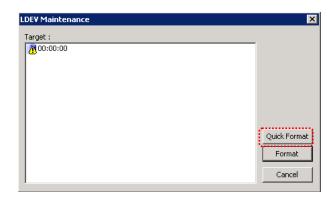
(5) <Check>
Check the device (or group) to be restored in the 'LDEV Maintenance' window, and select (CL) [Quick Format].
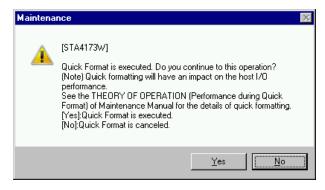
Select (CL) [Yes] in response to "Quick Format is executed. Do you continue to this operation?"
(Note) Quick formatting will have an impact on the host I/O performance.
See the THEORY OF OPERATION (Performance during Quick Format) of Maintenance Manual for the details of quick formatting.
[Yes]: Quick Format is executed.
[No]: Quick Format is canceled."

(6) <Password Input>

<div style="border:1px solid">

⚠ 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.

</div>

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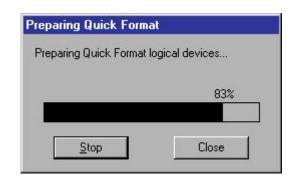
(7) <Progress confirmation>
The processing progress preparing Quick Format is
displayed.

Preparing Quick Format

Preparing Quick Format logical devices...

83%

[Stop]   [Close]
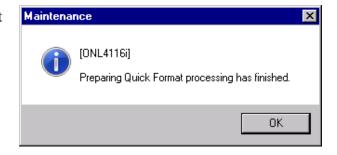
(8) <End confirmation>
When the processing preparing Quick Format
is completed, the following message is
displayed.
Select (CL) [OK].
"Preparing Quick Format processing has
finished."

Maintenance   ×

[ONL4116i]

Preparing Quick Format processing has finished.

[OK]

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].
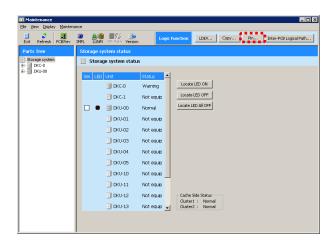
2.11 Pin Data indication

Prerequisite operation

(1)

Select (CL) [Maintenance].

---
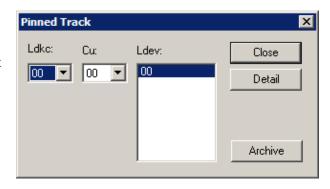
(2)

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).
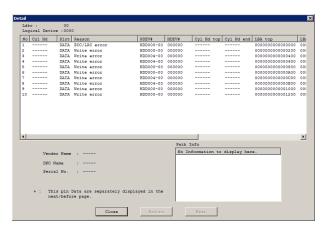
(4)

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

NOTE1: If a Pin Slot has some recoverable
trouble, the detail of the Pin Slot will
not be displayed. In case of OPEN-
LDEV, 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.

NOTE2: In case of same slot,The same value is displayed for No.
(The thing that is the same slot is shown.)

NOTE3: 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 save the Pin information to a file? You can save the Pin information by
performing the Auto Dump operation." 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.

2.12 Multi PCB Replace

(1) <Set path offline>
Set the path offline from HOST when replacing CHA.
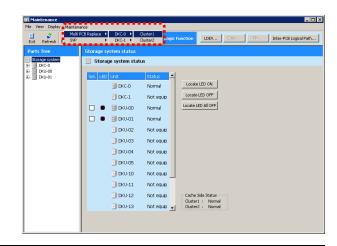
(2) <Mode Change>
Change the mode from [View Mode] to [Modify Mode].
Select (CL) [Maintenance].

NOTE: When a mode is set in [Dka Mode], this operation cannot be carried out.

(3) <Maintenance>
The 'Maintenance' window is displayed.

Select (CL) the [Maintenance]-[Multi PCB Replace]-[DKC-n]-[Cluster n] on the menu.
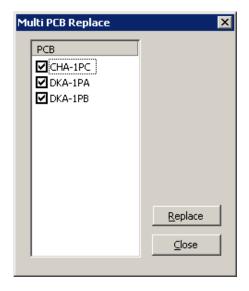
(4) <Select CHA/DKA>

NOTICE: • 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) CHA/DKA PCB.
Select (CL) [Replace].
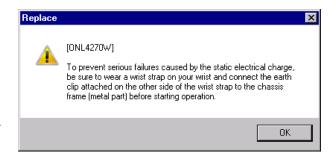
(5) <Wear a wrist strap>
    Select (CL) [OK] in response to "To prevent
    serious failures caused by the static electrical
    charge, be sure to wear a wrist strap on your
    wrist and connect the earth clip attached on
    the other side of the wrist strap to the chassis
    frame (metal part) 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).
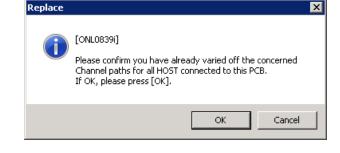
(6) <Confirm the PCB replace>
After you confirm that the PCB to be replaced
is correct, select (CL) the [Yes] button in
response to "Do you want to replace the
PCB(s)(CHA-nnn DKA-nnn)? If [Yes] is
selected, the PCB(s) needs to be removed and
inserted again.".

Replace

[ONL3947i]

Do you want to replace the PCB(s)(CHA-1PC, DKA-1PA)?
If [Yes] is selected, the PCB(s) needs to be removed and inserted
again.

Yes   No
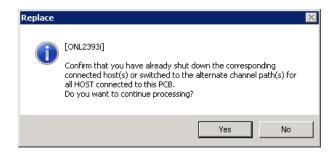
(7) <Confirm Channel Path offline>
Select (CL) [OK] in response to "Please
confirm you have already varied off the
concerned Channel paths for all HOST
connected to this PCB. If OK, please press
[OK].".

Replace

[ONL0839i]

Please confirm you have already varied off the concerned
Channel paths for all HOST connected to this PCB.
If OK, please press [OK].

OK   Cancel

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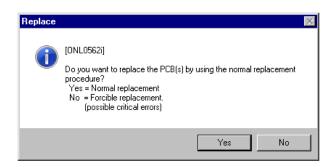
Replace

[ONL2393i]

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 PCB.
Do you want to continue processing?

Yes   No

(8) <Caution message for system down>

NOTICE:	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)"
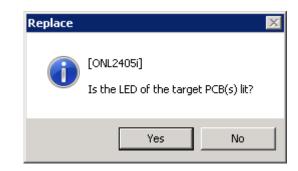
(9) <CHA/DKA blocking>
* For CHA
"The CHA-xxx is being blocked... Usually, several minutes (maximum 15 minutes)"
* For DKA
"The DKA-xxx is being blocked..."

---

(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.
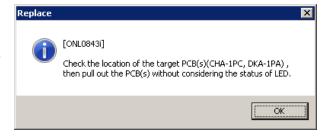
<Forcing shut down LED on>
If [No] is selected:
Select (CL) [OK] in response to "Check the location of the target PCB(s)(CHA-nnn DKA-nnn), then pull out the PCB(s) without considering the status of LED.".
Go to Step (11).
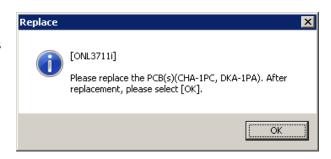
For CHA (Fibre) --------------- HARDWARE RCH1 (REP03-12-10)
For CHA (MF Fibre) ---------- HARDWARE RCH2 (REP03-13-10)
For DKA ----------------------- HARDWARE RDA1 (REP03-14-10)

(11) <Beginning of CHA / DKA Replacement>
"Please replace the PCB(s)(CHA-xxx DKA-xxx). After replacement, please select OK." is displayed.
Select (CL) [OK] after replacing the PCBs.

```
Replace                                    ☒

  ⓘ   [ONL3711i]

      Please replace the PCB(s)(CHA-1PC, DKA-1PA). After
      replacement, please select [OK].

                                    ┌──────────┐
                                    │    OK    │
                                    └──────────┘
```

For CHA (Fibre) --------------- HARDWARE RCH1 (REP03-12-10)
For CHA (MF Fibre) ---------- HARDWARE RCH2 (REP03-13-10)
For DKA ----------------------- HARDWARE RDA1 (REP03-14-10)

(12) <Check the recovery processing>
* For DKA
"Restoring (DKA-xxx). Usually, several minutes (maximum xx minutes)."
"DKA-xxx is being path recovered..."

* For CHA
"Restoring (CHA-xxx). Usually, several minutes (maximum xx minutes)."

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

(14) <Path on-line when CHA is replaced>
When a CHA is replaced, set the path (from the host) on the replaced CHA to ONLINE by your customer.

(15) <SIM Complete>
Go to SVP02-08-10.

(16)
Close the 'Maintenance' window.
Change the mode from [Modify Mode] to [View Mode].

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 : Every time 4-slot copy is completed, copy job sleeps for the time dependent on load of HOST I/O.
- Full Speed : No sleep. (No considering HOST job)

NOTICE: 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.

④ Link Failure Threshold ------ Define the threshold value to report the link failure.

⑤ WR Through ------------------ This option sets the write through operation of each LDEV to be performed when a failure occurs in the Cache Memory PCB 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: OFF) 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 SVP02-28-10 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		WR Through -Destage	Expectation operation
	the whole system	CLPR where target LDEV belongs to		
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 Cache Memory PCB 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 Cache Memory PCB 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 Cache Memory PCB failure.

*2: The write after operation :

When a failure occurs in the Cache Memory PCB 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 Cache Memory PCB failure. However, when the Cache Memory PCB 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.
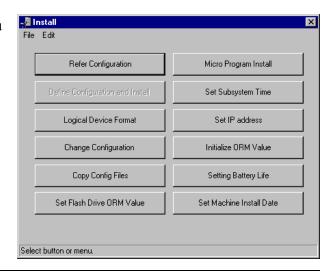
(1)
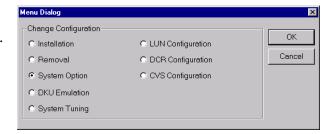
Change the Mode from [View Mode] to [Modify Mode].
Select (CL) [Install].

(2)

Select (CL) the [Change Configuration] menu
in the 'Install' window.
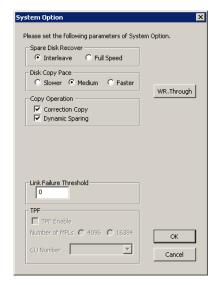
(3)

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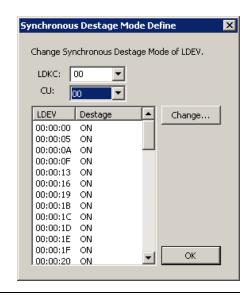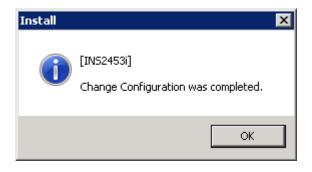
(4-1) <Set the Destage Mode >
Set the configuration information in 'Synchronous
Destage Mode Define'.

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

(5)
"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 MICRO07-190.

(8)

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

CNFCPY	☒
ⓘ [CNF3188i] Please remove the Config media.	
	OK

(9)

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

Install	☒
File Edit	

Refer Configuration	Micro Program Install
Define Configuration and Install	Set Subsystem Time
Logical Device Format	Set IP address
Change Configuration	Initialize ORM Value
Copy Config Files	Setting Battery Life
Set Flash Drive ORM Value	Set Machine Install Date

Select button or menu.

(10)

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.

(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.
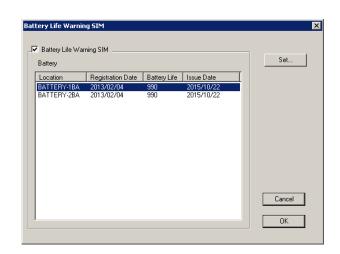
2.
Select (CL) [Set...] applying the check to [Battery Life Warning SIM] and select (CL) the target Battery.

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).

NOTE: Default value is 33 month (990 days), which is 3 month earlier than the lifetime of a battery (3 years).
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 MICRO07-190.
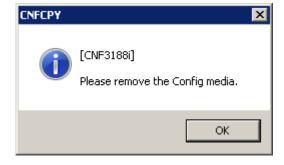
5.

"Data in the Config media will be overwritten
due to this operation. Are you sure you want
to continue?" is displayed. Select (CL) [Yes].
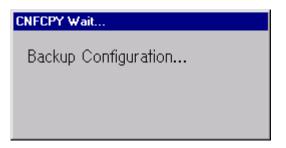
6.

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

7.

"Backup Configuration..." is displayed.

8.

Close the 'Install' window.
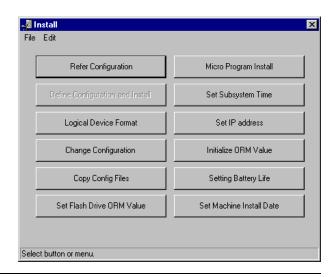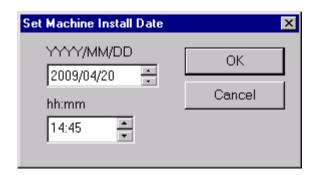
2.16 Setting Machine Install Date

(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.

(5)
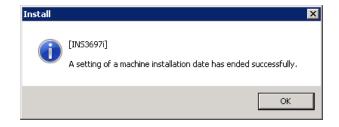
"Backup Configuration..." is displayed.

(6)

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

(7)
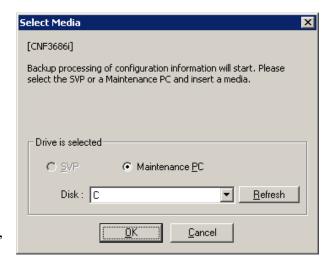
Execute an operation for backing up the
configuration information.
Prepare the removable media for backup and
insert the media.
Please select (CL) the [Refresh] button, and
update drive information.
Select (CL) the drive and the PC in which the
media was inserted. Select (CL) the [OK]
button.

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

(8)

"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.

(9)
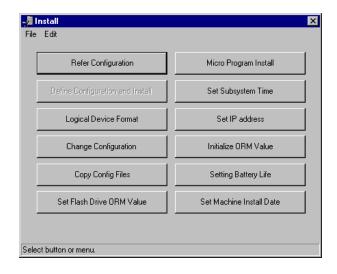
When this procedure is completed, message "Please remove the Config media." is displayed. Remove the configuration information media, select (CL) [OK] button.
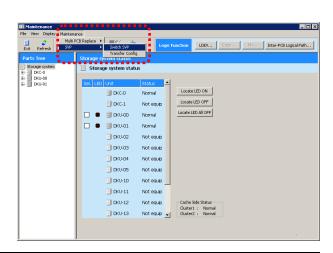
CNFCPY

[CNF3188i]

Please remove the Config media.

OK

---

(10)

Close the 'Install' window.

Install

File   Edit

Refer Configuration	Micro Program Install
Define Configuration and Install	Set Subsystem Time
Logical Device Format	Set IP address
Change Configuration	Initialize ORM Value
Copy Config Files	Setting Battery Life
Set Flash Drive ORM Value	Set Machine Install Date

Select button or menu.

2.17 SVP Switching

This function is valid when the SVP High Reliability Kit is installed.

NOTE: This operation needs that Standby SVP is a View mode.

NOTE: When screen saver operates (60 minutes pass without operation) with a Standby SVP having been connected to the remote desktop, this operation fails.

(1) <Operation Mode Change>
Change the mode to [Modify Mode].
Select (CL) the [Maintenance] button.
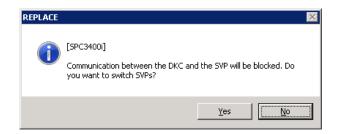
(2)
Select (CL) [Maintenance]-[SVP]-[Switch SVP] from the menu.

(3) <Execution>
Execute switching.
Select (CL) [Yes].

NOTE: Switching takes about 20 minutes.

(4) <Configuration Information Transfer>
The message "Transferring storage system configuration data..." is displayed.
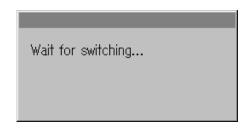
The SVP transfers the configuration information automatically to reflect the configuration information of the master SVP on the standby side SVP. Therefore, if the transfer processing of the configuration information overlaps, the actually transferred status display may be repeated.
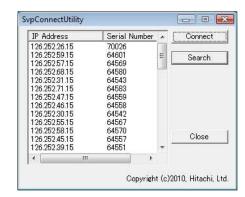
(5) <SVP Switching Start>
The message "Wait for switching..." is displayed.
The storage system is automatically restarted and in the
Standby status by SVP switching.
(SVP and Maintenance PC are disconnected.)

Wait for switching...
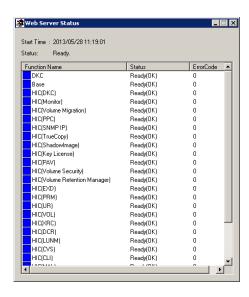
(6) <Connection to SVP after Switching Operation>
It waits for about 3 minutes until a change is completed.
After Standby SVP starts as Master SVP by the switching
indication, use the connection utility connect Maintenance
PC and the switched SVP.

For the Executing SVP Connect Utility procedure, refer to
"1.3 (2) Executing SVP Connect Utility" (SVP01-50).

(IP Address is the same with that of SVP at the time of the
SVP switching indication.)

(7) <Initial Window>
Press the "Web Server Status" button.

(8) <Web Server Status Window>
If all function's Status displays Ready, switching is
completed.

NOTE: The pop-up message to indicate duplicate computer names exist may be displayed
depending on network environment on task-tray after the change. Although the
message may be displayed, there is especially no problem.

2.18 Configuration Information Transfer
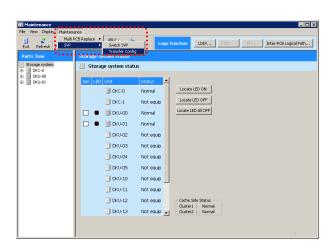
This function is valid when the SVP High Reliability Kit is installed.

NOTE: This operation needs that Standby SVP is a View mode.
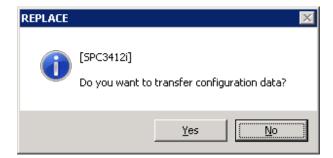
NOTE: When screen saver operates (60 minutes pass without operation) with a Standby SVP having been connected to the remote desktop, this operation fails.

Execute the following operation for Master SVP.

(1) <Operation Mode Change>
Change the mode to [Modify Mode].
Select (CL) the [Maintenance] button.

---

(2)

Select (CL) [Maintenance]-[SVP]-[Transfer Config] from the menu.

(3)

Select (CL) [Yes] for the message "Do you want to transfer configuration data?".

(4)

The message "Transferring storage system
configuration data..." is displayed.
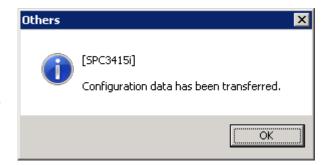
The SVP transfers the configuration information
automatically to reflect the configuration information
of the master SVP on the standby side SVP. Therefore, if the transfer processing of the
configuration information overlaps, the actually transferred status display may be repeated.

(5)

When configuration data has been transferred,
the message "Configuration data has been
transferred." is displayed.
Select (CL) [OK].
If errors occur on the way, check the problems
of connection and setting of the replaced SVP
(Standby).

(6)

Close the 'Maintenance' window.

(7)

Change the SVP mode to [View Mode].

2.19 SFP type change operation

2.19.1 Batch type change

(1)   \<Set path offline\>

NOTICE: The path to be placed offline is that connected with the SFP concerned.
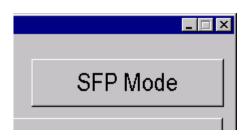
(2) <Preparation>
Close the all SVP menu.

(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 HARDWARE RTCA (REP03-25-10).

(6) <Set path online>

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

(7) <Change SVP mode>

Change the mode to "View Mode" in the 'SVP' window.

2.19.2 Changing type specification

(1) <Set path offline>

NOTICE: The path to be placed offline is that connected with the SFP concerned.
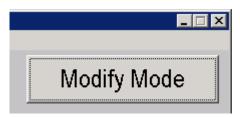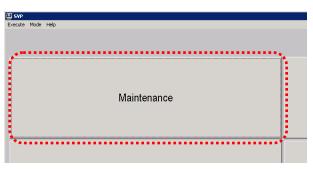
(2) <Preparation>
Close each menu of the starting SVP entirely.

---

(3) <Start>
Change the mode to [Modify Mode].
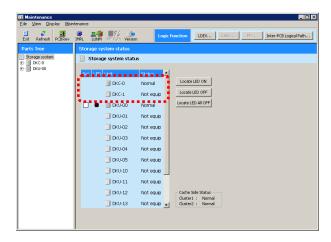
Select (CL) the [Maintenance] in the 'SVP'
window.

---

(4) <Instruction of DKC-n Information>
Select (CL) [DKC-n].
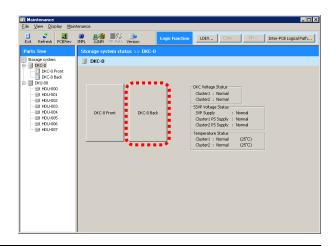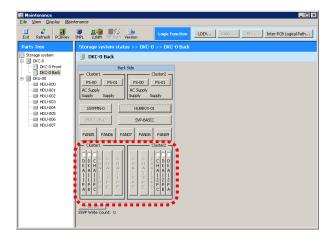
(5) <Display of DKC-n Back Information>
      Select (CL) [DKC-n Back].
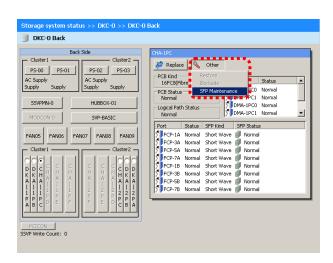
(6) <Display of CHA Information>
      Select (CL) [CHA-nXX] which installs SFP
      of the maintenance target.
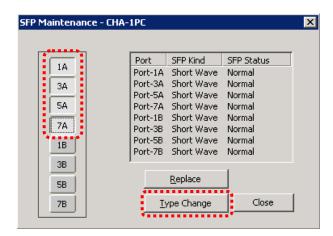
(7) <Start of SFP Maintenance Window>
     Select (CL) [Other]-[SFP Maintenance].

(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].
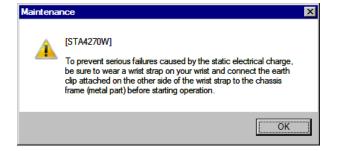
(9)   <Enter the password>

⚠ **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].

---

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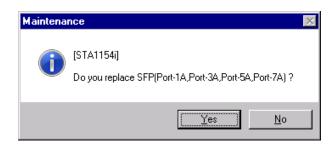
(11) <Confirming execution of the change>
After making sure that the port for which the type change is to be executed, select (CL) the [Yes] button in response to the message, "Do you replace SFP(Port-nn, ...) ?".

Maintenance

[STA1154i]

Do you replace SFP(Port-1A,Port-3A,Port-5A,Port-7A) ?

Yes   No

(12) <Replacing the SFP>
A message, "Please replace the "SFP(Port-nn)." After replacement, press OK." is displayed.

(Select (CL) [OK] after replacing the SFP.)
Refer to the hardware part replacement procedure RTCA (on page REP03-25-10).

Maintenance

[STA1198i]

Please replace the "SFP(Port-1A,Port-3A,Port-5A,Port-7A)." After replacement, press OK.

OK   Cancel

(13) <Set path online>

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

2.20 Setting Synchronization Information

2.20.1 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 PS ON procedure at the synchronization check time.

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

• Please do not execute the port error recovery operation using the restart switch function at the synchronization check time.
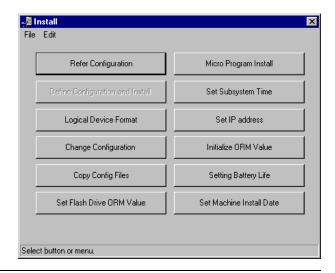
NOTE: In the case that there is PVOL of XRC in this DKC and the amount of Sidefiles reach to the threshold, XRC pair may be suspended.

(1)

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

(2)
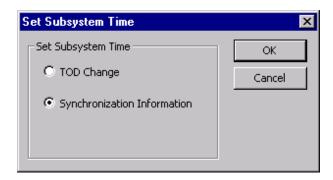
Select (CL) [Install] in the [Modify Mode] panel.

(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].
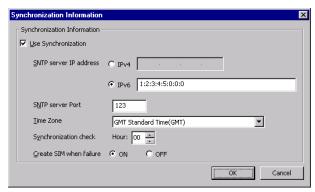
(5)

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)

Use Synchronization   : In case of checking it, this function is valid.
                           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.)
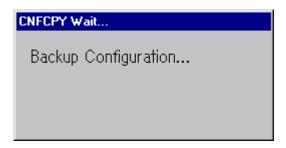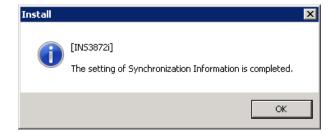
NOTE: The SVP TOD Setup need to be adjusted to local time until the SNTP time
         synchronization occurs at the hour setup in "Synchronization Check hour".

(6)

"Backup Configuration..." is displayed.

(7)

"The setting of Synchronization Information is completed." is displayed.
Select (CL) [OK].

(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 MICRO07-190.

(9)
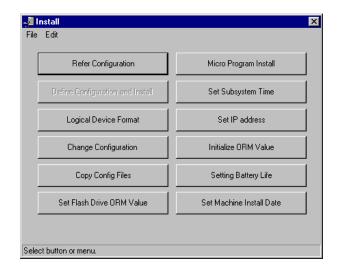
When this procedure is completed, the message "Please remove the Config media." is displayed. Remove the configuration information media, select (CL) [OK].

(10)

Close the 'Install' window.

2.20.2 Confirm Setting Synchronization Information

(1)

Select (CL) [Programs]-[Accessories]-[Command Prompt] from the [Start] menu.

(2)

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 "2.20.1 Setting Synchronization Information" (SVP02-20-10).
(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 carries out synchronization at the time by changing in View Mode.)

(5)

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 "2.20.1 Setting Synchronization Information" (SVP02-20-10),
set the setting.
Set Synchronization check.

2.21 Fixed time SVP reboot setting

2.21.1 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 (except for the HP type)
- When Web Console is used
- When the removable media is inserted

NOTE: When the SVP High Reliability Kit is installed, information transmission to Standby SVP is performed once per day. The time of fixed time reboot should setup by placing from transmission time for 1 hour. If it sets up within 1 hour from transmission time, information transmission to Standby SVP may not be performed correctly. For example, please setup by avoiding 14:00 from 13:00 with the equipment which transmits at 13:00.

NOTE: When the SVP High Reliability Kit is installed, information transmission to Standby SVP is performed once per a day. The Standby SVP reboots for the application after the information transfer. Even if a Standby SVP does not have setting of periodical reboot, Standby SVP reboots. For example, Standby SVP reboots at around 13:30 with the equipment which transmits at 13:00. The time of a reboot changes by transfer information quantity.

(1)

Select (CL) [Run...] from the [Start] menu. Enter "c:\dkc200\mp\pc\zSv_RbtSet.exe" in the "Open" box. Select (CL) the [OK] button.

(2)

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 MICRO07-190.

(4)

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

2.21.2 Fixed time SVP reboot the setting release method

(1)

Select (CL) [Run...] from the [Start] menu. Enter "c:\dkc200\mp\pc\zSv_RbtSet.exe" in the "Open" box. Select (CL) the [OK] button.

(2)

Since the window in which set up reboot time is displayed, uncheck the [Reboot] checkbox. Select (CL) the [OK] button.
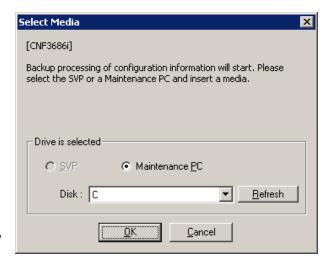
(3)

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 MICRO07-190.

(4)
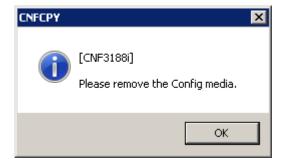
When this procedure is completed, the message "Please remove the Config media." is displayed. Remove the configuration information media, select (CL) [OK].

2.22 Restoring Failed MP

⚠ 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.
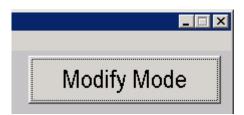
To use this procedure, please open a case with your technical support center and proceed under their guidance.
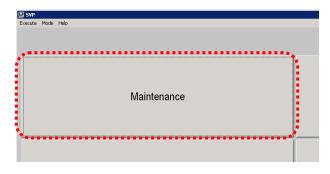
<Usage Conditions>
- To recover a MP in which WCHK1 occurred due to a microprogram problem.
  Eg.) Cause of WCHK1 is EC = 1644.
- To recover a MP in which WCHK1 occurred due to an issue outside the DKC (Host/SAN).
  Eg.) Cause of WCHK1 is EC = B405, and it is evident that it is caused by external factor.
      (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 MPB which all MP in MPB 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.

(3) <Display of DKC Information>
     Select (CL) [DKC-n].
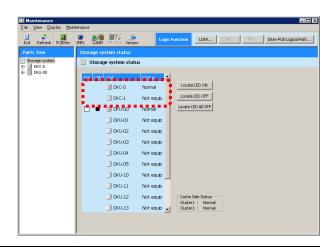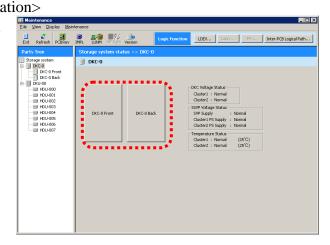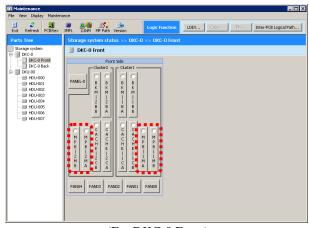
(4) <Display of DKC Front or DKC Back Information>
     Select (CL) [DKC-n Front] or [DKC-n Back].
     (n: DKC number which installs MP of the
     maintenance target)

(5) <Display of MPB Information>
     Select (CL) [MPB-nXX] which installs MP of
     the maintenance target.

(Eg. DKC-0 Front)
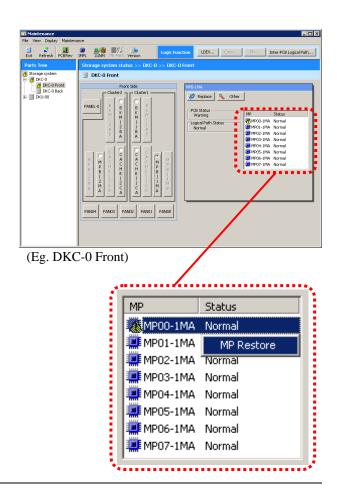
(6) <Execution>
Select (CL) the right button of the mouse in the status that MP of the maintenance target on the MP information list is selected (CL).

Select (CL) [MP Restore] in the displayed popup menu.

(Eg. DKC-0 Front)

(7) <Password Input>

⚠ 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."
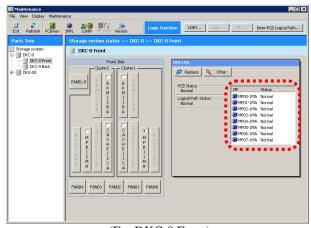
(8) <Execution Check>
     Select (CL) the [Yes] button for the following
     message.
     "Do you want to restore X?"
       X: Target MP

(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-n Front' or 'DKC-n Back' in the
     'Maintenance' window.

(Eg. DKC-0 Front)

(12) <Post-processing>
     Close the 'Maintenance' window.
     Change the mode to [View Mode].

2.23 System Tuning SVP Procedure

2.23.1 System Tuning

> **NOTICE:** Powering off/on is required owing to the performance of this operation.

> **NOTICE:** • The Case where IP Address is changed from System Tuning, when SVP
> High Reliability kit is installed.
> When SVP High Reliability kit is installed, Both Master SVP and Standby
> SVP need to be set IP Address.
> Firstly set IP Address of Standby SVP. (Refer to INST05-02-40)
> After completing it, please set the IP Address of Master SVP.
> Although "RC=7ff200" may occur, there is no problem. Please complete
> SIM before 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 cannot 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
'System Option'----------------------------- Number of MPLs/CU Number for TPF
'IP Address Configuration'---------------- IP address
'DKC Emulation Configuration' --------- DKC Emulation Type
'CU Number'-------------------------------- CU number of each channel port
'Set SSID Boundary'----------------------- SSID Boundary
'SSID Configuration' ---------------------- SSID
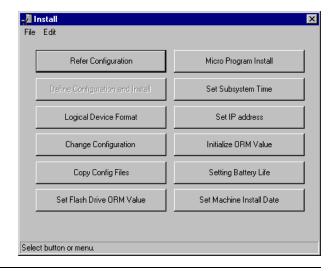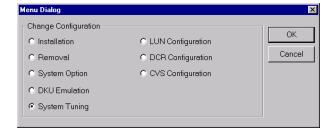
1.   <Start [Install]>
   Change the Mode from [View Mode] to [Modify Mode].
   Select [Install] from 'SVP' (CL).

2.

   Select [Change Configuration] (CL) from
   'Install'.

3.   <Select System Tuning>
   Select [System Tuning] from 'Menu Dialog'
   (CL), and select [OK] (CL).

4.

| NOTICE: | 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.
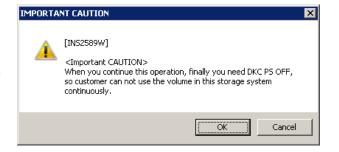
(2)

Select (CL) [OK] in response to the
confirmation message
"<Important CAUTION>
When you continue this operation, finally
you need DKC PS OFF, so customer
cannot use the volume in this storage
system continuously.".

5. <DKC Configuration window>
Define the configuration information
following the storage system configuration
worksheet.

[System Option]: Makes a setting of the
number of MPLs/CU Number for TPF.
Go to Step 6.
[IP Address]: Makes a setting of the IP
address.
Go to Step 7.
[>>Next]: Makes the other settings.
Go to Step 8.
In the case of selecting (CL) [Cancel],
this operation procedure terminates.
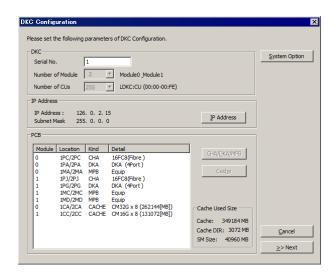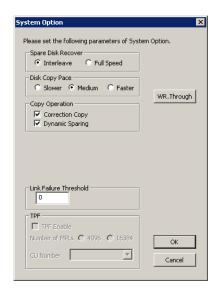
6.   <System Option window>
   Define the configuration information following the storage
   system configuration worksheet.

   After setting all the items, select (CL) the [OK] button. Return
   to Step 5.
   When the [Cancel] button is selected (CL), the 'System
   Option' window is closed and the 'DKC Configuration'
   window is displayed again. Return to Step 5.

7. <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.
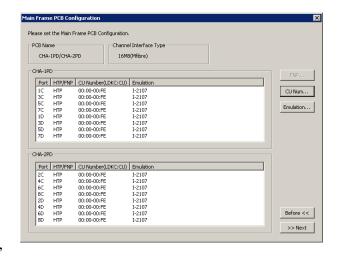
8. <Mainframe PCB Configuration window>
    Define the configuration information
    following the storage system configuration
    worksheet.

    [CU Num...]: Sets the CU number of each
    port. Go to Step 8-1.
    [Emulation...]: Sets the DKC emulation. Go
    to Step 8-2.

    Select (CL) the [>>Next] button. Go to Step
    8-3.
    When the [Before<<] button is selected (CL),
    return to Step 5.

    NOTE: This is displayed only when the Mfibre (8M) channel is installed.

8-1 <CU Number Define window>
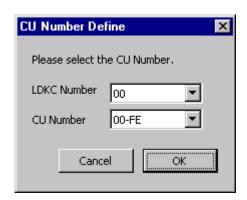
A window for setting the CU number of the specified port is displayed.

After the setting is completed, select (CL) the [OK] button.
When the [Cancel] button is selected (CL), the window is returned to that of Step 8.
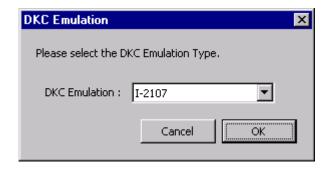
8-2 <DKC Emulation window>
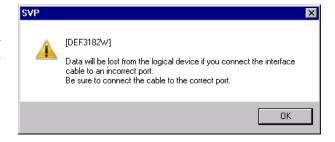
Set the 'DKC Emulation' and select (CL) the [OK] button. Return to Step 8.
Select (CL) the [Cancel] button.
Return to Step 8.

8-3 <SVP message>

Select (CL) [OK] in response to the confirmation message "Data will be lost from the logical device if you connect the interface cable to an incorrect port. Be sure to connect the cable to the correct port.".
Go to Step 9.

NOTE: This windows is displayed when Mfibre (8M) Channel is installed.

9. <SSID Configuration window>
   Define the configuration information following the
   storage system configuration worksheet.

   [SSID...]:   Makes definition of the SSID.
                  Go to Step 9-1.
   [Boundary]:   Makes definition of the SSID boundary.
                  Go to Step 9-2.
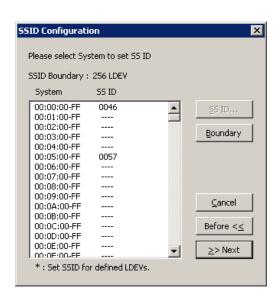
   After the setting is completed, select (CL) the
   [>>Next] button. Go to Step 10.
   This operation procedure is completed when the
   [Cancel] button is selected (CL).
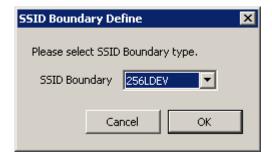
9-1 <SSID Define window>
    Define the SSID and select (CL) the [OK] button.
    Return to Step 9.

9-2 <SSID Boundary Define window>
    Define the SSID boundary and select (CL) the [OK]
    button. Return to Step 9.
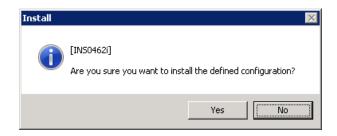
10. <Include configuration information>
    (1)

    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.
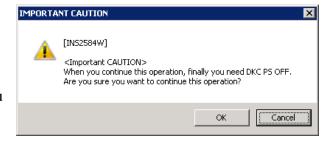
Install

[INS0462i]

Are you sure you want to install the defined configuration?

Yes   No

---

    (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?".

IMPORTANT CAUTION

[INS2584W]

<Important CAUTION>
When you continue this operation, finally you need DKC PS OFF.
Are you sure you want to continue this operation?

OK   Cancel

---

    (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.".

IMPORTANT CAUTION

[INS2587W]

<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
subsystem be in UNRECOVERABLE SERIOUSLY DAMAGE.

OK   Cancel

---
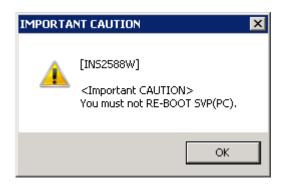
    (4)

    Select (CL) [OK] in response to the confirmation
    message
    "<Important CAUTION>
    You must not RE-BOOT SVP(PC).".

IMPORTANT CAUTION

[INS2588W]

<Important CAUTION>
You must not RE-BOOT SVP(PC).

OK

11.

Make sure that "Turn off DKC, and wait." is
displayed and perform the power-off procedure from
the DKC maintenance panel.

Turn off DKC, and wait.

12.

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 MICRO07-190.

Select Media [×]

[CNF3686i]

Backup processing of configuration information will start. Please
select the SVP or a Maintenance PC and insert a media.

┌─ Drive is selected ─────────────────────┐
│   │
│   ○ SVP   ⦿ Maintenance PC   │
│   │
│   Disk : [C   ▼] [Refresh]   │
└───┘

[OK]   [Cancel]

13.

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

CNFCPY [×]

ⓘ [CNF3188i]

Please remove the Config media.

[OK]
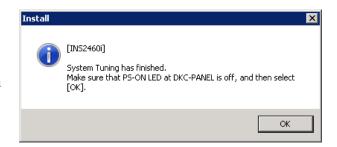
14.

After making sure that the DKC power is
turned off, select [OK] (CL) in response to
"System Tuning has finished. Make sure that
PS-ON LED at DKC-PANEL is off, and then
select [OK].".

NOTE: The SVP power will not turn off
even when DKC is powered off.

15.

"This will reboot SVP." is displayed.
Select [OK] (CL).

16.

Perform the power-on procedure from the DKC maintenance panel.

17.

Please select (CL) [File]-[Refresh All] from
the menu and update the information on the
Web Console window when the Web Console
window is displayed after reboot of SVP.

2.24 Failed Cache recovery

⚠ 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.
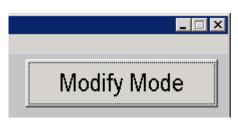
<Usage Restrictions>
• Not to be used to recover hardware failures.

(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-n].
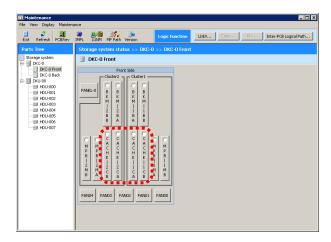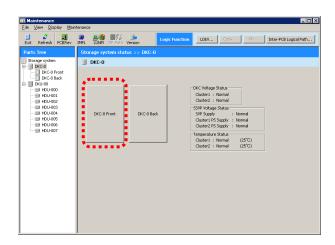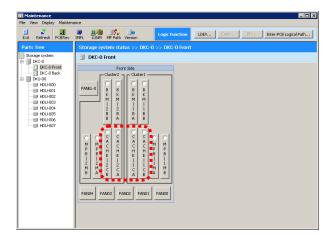
(4) <Display of DKC Front Information>
     Select (CL) [DKC-n Front].
     (n: DKC number which installs Cache of the
     maintenance target)

(5) <Display of Cache Information>
     Select (CL) [CACHE-nXX] of the
     maintenance target.
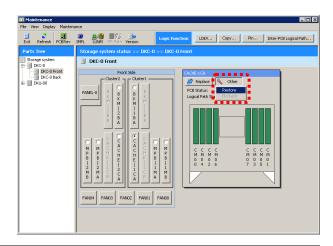
(6) <Execution>
Select (CL) [Other]-[Restore].

(7) <Password Input>

> ⚠ **CAUTION**
>
> When the blockade of PCB 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."

(8) <Execution Check>
Select (CL) the [Yes] button for the following message.
"Do you want to restore X?"
X: Target PCB
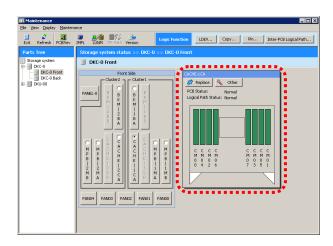
(9) <Waiting for the completion of processing>
The following message is displayed.
"Please wait... Restoring the X..."
X: Target PCB

(10) <Check of the recovery completion>
Select (CL) [OK] for the following message.
"Restore finished."

(11) <Check of processing result >
Check the status of the target PCB with
'DKC-n Front' in the 'Maintenance window'.
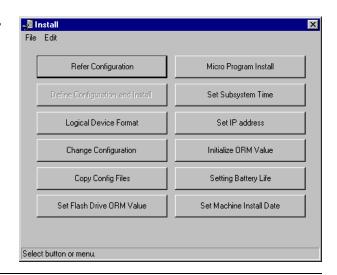
(12) <Post-processing>
Close the 'Maintenance' window.
Change the mode to [View Mode].
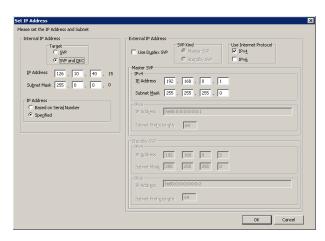
2.25 Setting IP address

[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" and the "External 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.

(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 (TRBL02-440) described in the TROUBLE SHOOTING SECTION.

Set IP Address	☒
ⓘ [INS1105i] This will reboot SVP.	
	OK

NOTICE: When remote connection of the Maintenance 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".

Install	☒
ⓘ [INS3030i] The IP address setting has completed.	
	OK

(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-
              190.

   ② When backup of configuration information is
       completed, the message "Please remove the
       Config media." is displayed. Remove the
       configuration information media and select (CL)
       [OK].

[2] In case of SVP

(1)

Change the mode from [View Mode] to [Modify Mode].
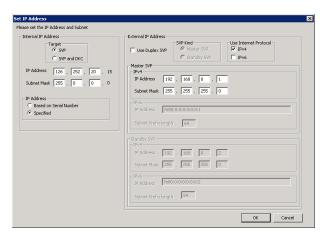
(2)

Select (CL) [Install] from the 'SVP' window.

(3)

Select (CL) [Set IP address] from the 'Install' window.

(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" and the "External 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.
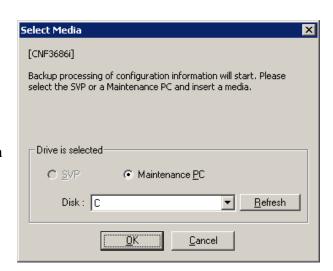
(5) <Backup for configuration information>

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 MICRO07-190.

② When backup of configuration information is completed, the message "Please remove the Config media." is displayed. Remove the configuration information media and select (CL) [OK].

③ <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 (TRBL02-440) described in the TROUBLE SHOOTING SECTION.

2.26 Use of OnlineDumpTool

> **NOTICE:** OnlineDumpTool is a tool to be installed in the CE Laptop PC, not to operate on the SVP.

OnlineDumpTool revision : Rev. 01-04 or later

[Conditions to run the tool]
    OS   : Windows XP (32bit), Windows Vista (32bit/64bit), Windows 7 (32bit/64bit),
                Windows 8 (32bit/64bit)
    Browser : Microsoft Internet Explorer Version6 or later

2.26.1 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)
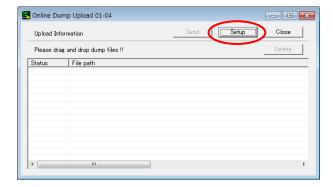
[3] Settings

(1)
    Select (DC) "OnlineDumpUpload-a.exe".

(2)
    Make sure that the OnlineDumpTool revision on the display is 01-04.
    The 'Upload Information' window is displayed, and then select (CL) [Setup].
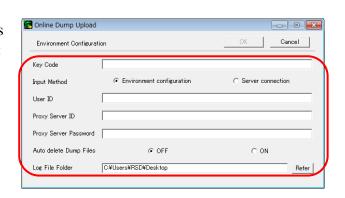
(3)

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.
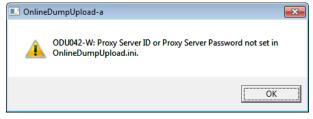
Do not input User ID when the Server connection is selected in the Step (b).

(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.	No setting necessary	
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		
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].
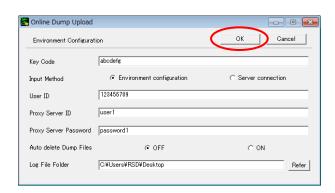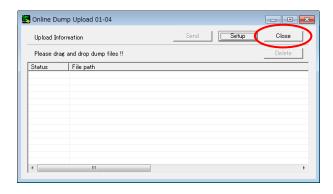
(4)

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)

2.26.2 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)

2.26.3 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)
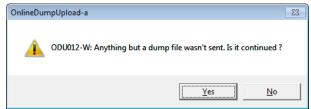
Drag and drop a dump file you wish to upload onto the OnlineDumpUpload-a.exe icon.

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.
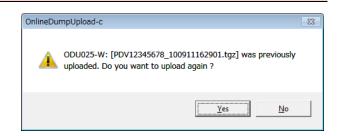
• If the same file is re-sent, then the
  following confirmation message is
  displayed.

[Yes]: Uploading is executed.
[No]: Uploading is canceled.
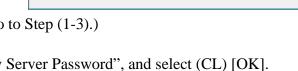
(1-2)

When selecting the "Server connection" in the
field of "Input Method" in the setting of
2.26.1 (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 2.26.1 (3)-(d) for the input value of "Proxy Server ID" and "Proxy
Server Password".

(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].
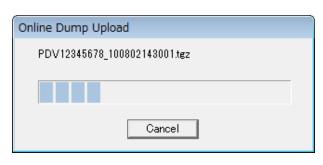
If you set "Auto Delete Dump Files" to ON, in the setting of 2.26.1 (3)-(e), the following window is displayed.
If you wish to delete the original dump file uploaded, select (CL) [Yes]. (*1)
If you do not wish to delete the original dump file uploaded, select (CL) [No].
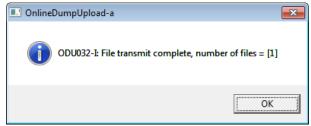
*1: The deleted file is sent to the recycle bin.
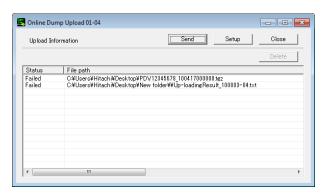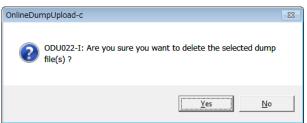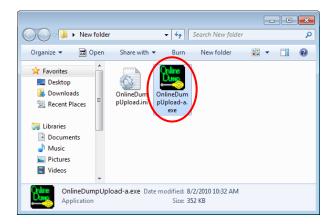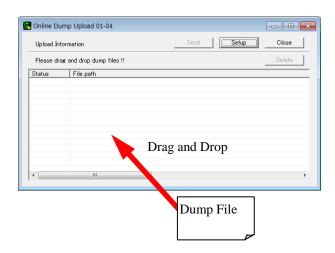
(2)   The procedure for uploading dump files by running the OnlineDumpTool.

(2-1)
Select (DC) the OnlinedumpUpload-a.exe
icon.
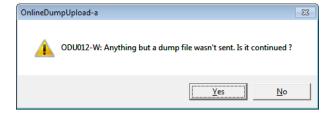
(2-2)
Drag and drop the dump file onto the 'Online
Dump Upload' window to upload.

Drag and Drop

Dump File

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.
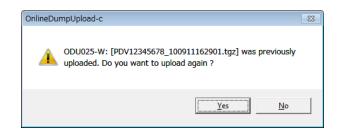
• When the uploading has completed, the
  reconfirmation message is displayed.

[Yes]: Uploading is executed.
[No]: Uploading is canceled.

OnlineDumpUpload-c

ODU025-W: [PDV12345678_100911162901.tgz] was previously uploaded. Do you want to upload again ?

Yes   No

(2-3)
When selecting the "Server connection" in the
field of "Input Method" in the setting of
2.26.1 (3)-(b), the following 'Login' window
is displayed.
(The window is not displayed when the
"Environment configuration" is selected. Go to Step (2-4).)

Online Dump Upload

Login   OK   Cancel

User ID
Proxy Server ID
Proxy Server Password
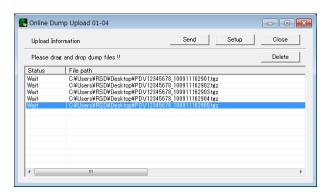
Input "User ID", "Proxy Server ID", "Proxy Server Password", and select (CL) [OK].
Refer to the paragraph 2.26.1 (3)-(d) for the input value of "Proxy Server ID" and "Proxy
Server Password".

(2-4)
Select (CL) [Send] to start uploading.

Online Dump Upload 01-04

Upload Information   Send   Setup   Close

Please drag and drop dump files !!   Delete

Status	File path
Wait	C:¥Users¥RSD¥Desktop¥PDV12345678_100911162901.tgz
Wait	C:¥Users¥RSD¥Desktop¥PDV12345678_100911162902.tgz
Wait	C:¥Users¥RSD¥Desktop¥PDV12345678_100911162903.tgz
Wait	C:¥Users¥RSD¥Desktop¥PDV12345678_100911162904.tgz
Wait	C:¥Users¥RSD¥Desktop¥PDV12345678_100911162905.tgz

NOTE:
• Select (CL) a file and [Delete] to delete the selected file from the list.
• Select (CL) [Close] to close the window without uploading.

(2-5)

The uploading window is displayed.
The uploading status is displayed in the Status field during uploading.
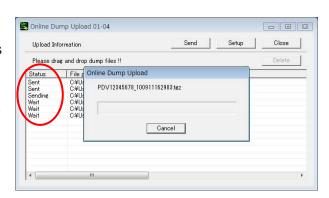
Connecting : In the connecting process to the server.
Sending : Uploading.
Sent : Uploaded. (completed)
Wait : Waiting to start uploading.
Failed : The uploading has failed.
Cancel : The uploading has canceled.

(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.
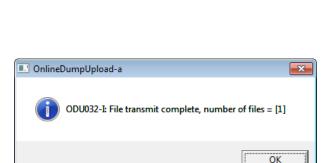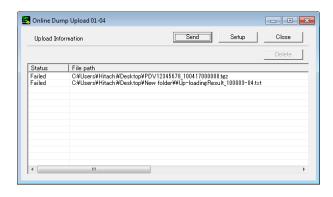
2.26.4 Reference of uploaded results

History information of an uploaded file is stored in a txt file.

A folder location is the same folder as specified in 2.26.1 [3] Settings.

A history file is created every transmission.

2.26.5 Message Table

The messages that are displayed on OnlineDumpTool are described below Table 2.26.5-1.

Table 2.26.5-1 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)

(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-filename-.tgz] 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)

(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.

2.27 Change CM Module group size

NOTICE: Perform the operation in the order from cluster 1 to cluster 2.

(1)
Close the all SVP menu.
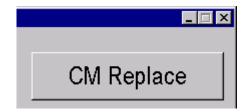
(2) <Enter the password>

⚠ **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] + [C] in the 'SVP' window.
Enter the password, and select (CL) [OK].
(Please call Technical Support Division for asking it.)

(3) <CM Replace Mode>
'CM Replace' is displayed.
Select (CL) [Maintenance].

(4) <Maintenance window>
Select (CL) [DKC-n] in the 'Maintenance' window.
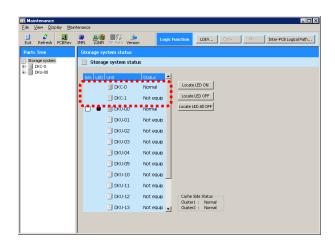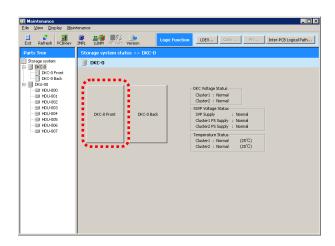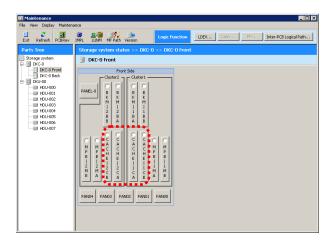
(5) <DKC window>
Select (CL) [DKC-n Front] in the 'DKC' window.

(6) <Select Cache>
Select (CL) part.
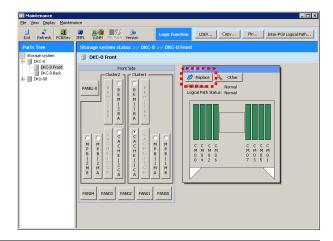
(7) \<Replace\>

NOTICE:	When the screen appears prompting the operator to input a password to prevent multiple maintenance or for executing a pin check, contact the technical support division to ask for instructions.

Check status display.
Select (CL) [Replace].
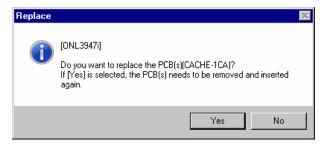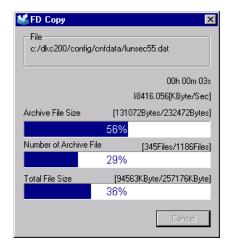
NOTICE:	If any other message than the list is displayed, see the SVP MESSAGE SECTION (SVPMSG00-00).

(8) \<Check beginning of cache replacement\>
Select (CL) [Yes] after making sure that the package to be replaced is correct in response to:

"Do you want to replace the PCB(s)(CACHE-nnn)? If [Yes] is selected, the PCB(s) needs to be removed and inserted again."

(9) \<Compression of the error information\>
The error information is compressed.
The dialog of FD Copy is displayed.
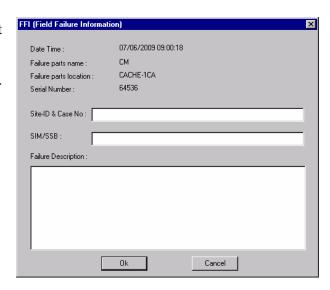
(10) <Get the error information>
Input the Field Failure Information, and select
(CL) [OK].

If the model is "DKC810I", enter the value of
Site ID & Case ID in the CSO# field.
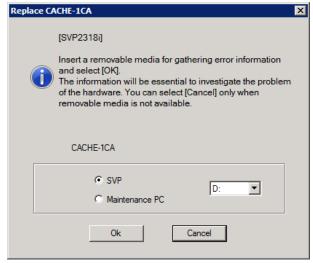
"Insert a removable media for gathering error
information and select [OK]. The information
will be essential to investigate the problem of
the hardware. You can select [Cancel] only
when removable media is not available." is
displayed.

A Primary copy is always placed on the SVP
HD in the "c:\dkc200\others\pcbinfo\"
directory with the following file name format
"YYMMDDhhmmss.tzg".
(YY denotes Year, MM denotes Month, DD
denotes Day, hh denotes Hour, mm denotes
Minute, and ss denotes Second).
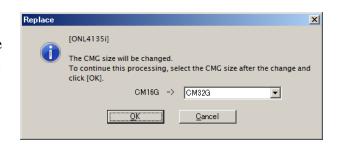
If Maintenance PC is selected, a second copy is placed into the root directory of the drive
selected on the Maintenance PC. Please burn this to CDROM from the Maintenance PC and
return it with the defective part.
It is suggested to move it from the root directory to another directory of the CE's choosing if
desired. Unfortunately it is not possible to select this directory initially. Therefore it must be a
manual process.
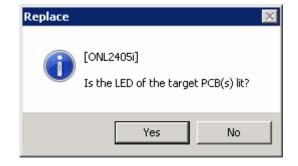
(11) <Change the Cache Memory Module Size>
Select (CL) [OK] in response to:
"The CMG size will be changed. To continue
this processing, select the CMG size after the
change and click [OK]."
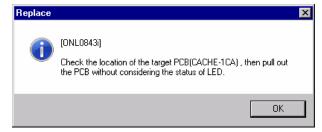
(12) <Cache blocking>
"The Cache Memory PCB(CACHE-nnn) is being blocked." is displayed.

(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(CACHE-nnn), then
pull out the PCB without considering the
status of the LED.". (Refer to REP03-10-10)
Go to Step (14).
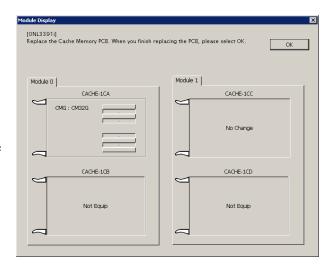
(14) <Cache Replacement>
At this point refrain from pressing the [OK] button.
"Replace the Cache Memory PCB. When you finish replacing the PCB, please select OK." is displayed.

Make sure of the installation location and size of the module to be added and insert the correct module in the correct location.

(Uninstalled module is displayed as looks depressed.)

(15) <Replace cache PCB>
Replace cache.
And select (CL) [OK].

See HARDWARE RCA1 (REP03-10-10)

(16) <Restoring the Cache Memory>
"Restoring the Cache Memory PCB(CACHE-nnn)..." is displayed.

(17) <Check the end of Cache recovery>
Select (CL) [OK] in response to "Replace finished.".

(18)
Close 'CACHE-nnn' window.
Close 'Cluster-n' window.
If finishing in the Cluster-2 side, go to (20).

(19) <Change the Cache Memory module size in Cluster-2 side>
Perform steps (6) to (18).
Select [CACHE-2CA] or [CACHE-2CB].

NOTE: There is no problem though SIM of reference code is 4821E5 (Refer to TRBL03-40-20) might be generated while changing the size of Cluster-2. Because it is SIM generated by this operation.

(20)
Close 'DKC' window.
Close 'Maintenance' window.
Change the mode to [View Mode].

2.28 Setting System Option Mode

(1)
Close the all SVP menu.
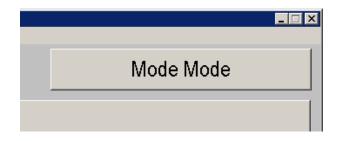
(2) <Enter the password>

⚠ CAUTION
This is a special (exceptional) operation that requires an input of a password. Ask the technical support division and input the password.
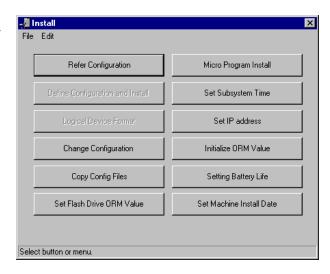
Press [Shift] + [Ctrl] + [m] in the 'SVP' window.
Enter the password, and select (CL) [OK].
(Please call Technical Support Division for asking it.)

(3) <Mode Mode>
'Mode Mode' is displayed.
Select (CL) [Install].

(4) <Install Window>
Select (CL) the [Change Configuration] menu in the 'Install' window.
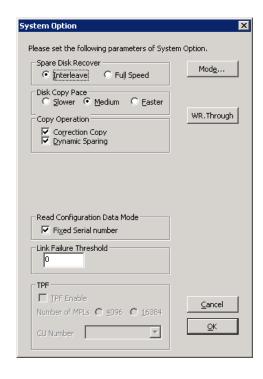
(5) <Menu Dialog Window>
Select (CL) the [System Option] menu in the
'Menu Dialog' window and select (CL) [OK].

---

(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 (ITPF) : The permission of ITPF is necessary. When you select (CL) the check box for
                     "R", go to the Step (7-2).
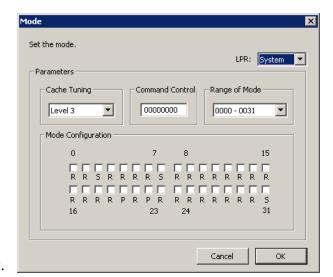
     NOTE: You can change the display range shown in [Mode Configuration] in the "Range of
            Mode" combo box.
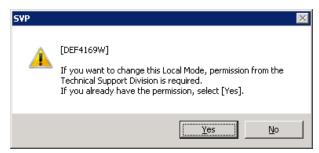
(7-1)

"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).
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).
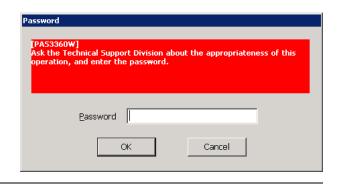
(7-2-1)

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.
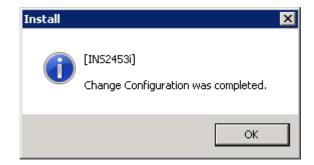
(8)

"Change Configuration was completed." is displayed.
Select (CL) [OK].
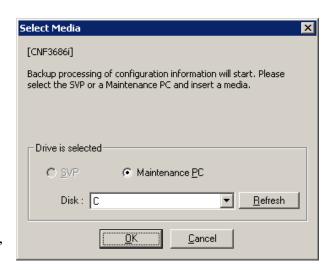
(9)

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 MICRO07-190.
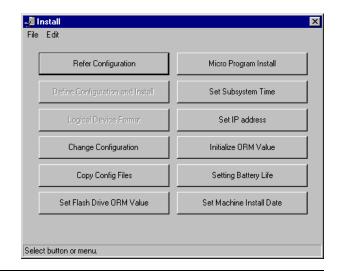
(10)

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

(11)

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

(12)

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

2.29 DKA type change operation

This operation can change the type from DKA to EDKA, and from EDKA to DKA.

NOTICE: Before changing DKA type from EDKA to DKA, you have to disable data encryption at all parity groups and then initialize Encryption Environmental Settings.

For more information about this, see "Disabling data encryption at the parity group level" and "Initialize the connection settings to the key management server" in Hitachi Encryption License Key User Guide.

Note that data which is associated to the encrypted parity group will be lost. Before executing this operation, contact customer to confirm the validity of the operation.

---
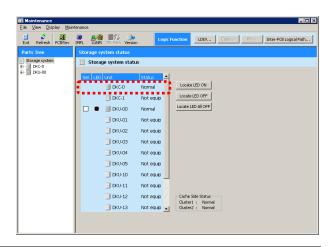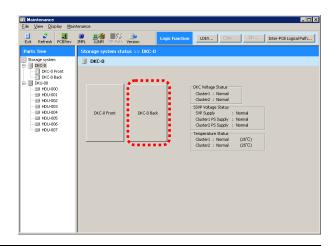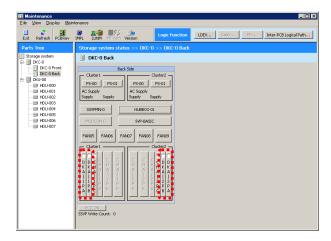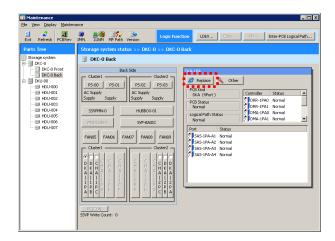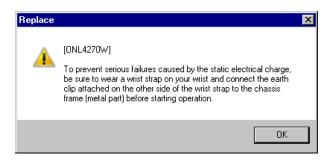
(1) <Pre-processing>
Close the all SVP menu.

---

(2) <Enter the password>

⚠ 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] + [A] on the 'SVP' window.
Enter the password, and select (CL) [OK].

---

(3) <DKA Mode>
'Dka Mode' is displayed.

---

(4) <Maintenance Window>
Select (CL) [DKC-n] in the 'Maintenance' window.

---

(5)　<DKC Window>
　　　Select (CL) [DKC-n Back] in the 'DKC'
　　　window.

(6)　<Select DKA>
　　　Select (CL) DKA.

(7) <Specify Replacement of DKA>

> ⚠ **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].

(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).

(9) <DKA replace>

> **NOTICE:** 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)(DKA-nnn)? If [Yes] is selected, the PCB(s) needs to be removed and inserted again."

Replace

[ONL3947i]

Do you want to replace the PCB(s)(DKA-1PA)?
If [Yes] is selected, the PCB(s) needs to be removed and inserted again.

Yes   No

(10) <The check of DKA type change>
Select (CL) [OK] in response to "This process is changing the PCB type to xx. If you want to continue this process, please select [OK].".
(xx is the DKA type after change.).

Replace

[ONL3286i]

This process is changing the PCB type to DKA (4Port).
If you want to continue this process, please select [OK].

OK   Cancel

(11) <Caution message for system down>

⚠ 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)"

(12) <DKA blocking>
"DKA 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)(DKA-nnn), 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).

(14) <Beginning of DKA replacement>
"Please replace the PCB(s)(DKA-nnn). After
replacement, please select [OK]." is
displayed.
Select (CL) [OK] after replacing the PCBs.

See HARDWARE REPLACEMENT
PROCESSING (REP03-14-10).

```
Replace                                    ✕

  ⓘ    [ONL3711i]

       Please replace the PCB(s)(DKA-1PA). After replacement, please
       select [OK].

                                    [   OK   ]
```

(15) <Check the recovery processing>
The following message is displayed:
"Restoring (DKA-nnn)
Usually, several minutes (maximum xx minutes)"

(16) <Check the recovery processing>
"Initializing the Expander..."
"DKU PATH INLINE is now running..." is displayed.

(17) <Check DKA recovery processing>
The following message is displayed:
"Restoring the Drive Path..."
"DKA-nnn is being path recovered..."

(18)

When the operation is in a transition period, the following message is displayed.
"Type of DKA is different in a storage system.
Change the type of DKA to the same type by the DKA type change operation."

Select (CL) [OK] to this message.

Replace	✕
⚠ [ONL3468W] Type of DKA is different in a storage system. Change the type of DKA to the same type by the DKA type change operation.	
	OK

(19) <Check the end of DKA recovery>
Select (CL) [OK] in response to "Replace finished.".

Replace	✕
ⓘ [ONL2411i] Replace finished.	
	OK

(20) <Post-procedure>
Close the 'Maintenance' window.
Change the mode to [View Mode].

3. Activating and Terminating STATUS

3.1 Activating STATUS

(1) <Start>
Select (CL) the [Maintenance] in the 'SVP'
window.

---

(2) <Start Condition Check>

NOTICE:	Do not change the application window until completing the communication of SVP-DKC and SVP-SSVP.

The following message is displayed.
"Please Wait..."

(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

Restore the power supply (Refer to TROUBLE SHOOTING SECTION "2.2.6 Failure When Turning On the Power" (TRBL02-180)) if the power supply are fault (Refer to the status of the power supply parts). (Refer to "3.4.2 DKC information view" (SVP03-04-100)).

- SSVP is operating
"Initializing SSVP (Phase n/16). Please wait."
n: 1 to 16

"SSVP Dump is being performed (Phase n/15). Environment status can't be read"
n: 1 to 15

Execute the procedure from Step (1) again after checking that the target processing is completed.

• Communication failure
  "Connection error occurred. SVP-XXX"
  XXX: DKC or SSVP

Refer to "3.15 Recovery Procedure for LAN Error/DKC Processor Failure/SVP Failure"
(TRBL03-15-10).

(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.)

     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 Updating the STATUS display" (SVP03-03-10))

3.2 Terminating STATUS

Select (CL) [File]-[Exit] on the menu bar in the 'Maintenance' window.

3.3 Updating the STATUS display

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.

① Menu

② Tool bar

Table 3.4-2 Menu / Tool bar

Menu	Sub menu			Description	Toolbar
File	Exit			Terminates the application.	Exit
View	Toolbar			Displays/does not display the tool bar.	None
	Refresh			Updates information being displayed.	Refresh
Display	PCB Revision...			Displays the 'PCB Revision Display'.	PCBRev
	IMPL Status...			Displays the 'IMPL Status'.	IMPL
	LUN Management...			Displays the 'LUN Management'.	LUNM
	Main Frame Path...			Displays the 'Main Frame Path'.	MF Path
	Version...			Displays the 'Version'.	Version
Maintenance	Multi PCB Replace	DKC-0	Cluster1	Replaces all PCBs of the DKC-0 Cluster 1 together.	None
			Cluster2	Replaces all PCBs of the DKC-0 Cluster 2 together.	None
		DKC-1	Cluster1	Replaces all PCBs of the DKC-1 Cluster 1 together.	None
			Cluster2	Replaces all PCBs of the DKC-1 Cluster 2 together.	None
	SVP	Switch SVP		Switches the SVP.	None
		Transfer Config		Transfers the configuration information to the Standby SVP.	None

③ Dialog bar

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 : Pin information is present. Extinction of the button : 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'.

④ 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

Display of the status	Displays the warning icon ⚠ when the status of the parts is not normal.
Item selection	Displays the target information on the information view.

⑤ 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.

3.4.1 Storage system information view

This view is displayed at the time of the initial start of the 'Maintenance' window.

① **Storage system status**

Sel.	LED	Unit	Status
		DKC-0	Warning
		DKC-1	Not equip
☐	●	DKU-00	Normal
		DKU-01	Not equip
		DKU-02	Not equip
		DKU-03	Not equip
		DKU-04	Not equip
		DKU-05	Not equip
		DKU-10	Not equip
		DKU-11	Not equip
		DKU-12	Not equip
		DKU-13	Not equip

Locate LED ON ④
Locate LED OFF ⑤
Locate LED All OFF ⑥

Cache Side Status ③
Cluster1 : Normal
Cluster2 : Normal

②

Table 3.4.1-1 Storage system information view

#	Item			Description
①	Title		Information displayed	Displays the title of this view.
②	List	Sel. (*1)	Information displayed	Displays the check box for to turn on (or off) the Locate LED. ☐ (not checked)　　: Item is not being selected ☑ (checked)　　: Item is being selected
			Item selection	Turns over the status of check box.
		LED (*1)	Information displayed	Displays the icon that show the status of the Locate LED. ■ (dark colored icon)　: Locate LED turns off. ▢ (bright colored icon) : Locate LED turns on.
		Unit	Information displayed	Displays the location name of the unit.
			Item selection	Displays the detailed information of the target unit.
		Status	Information displayed	Displays the status of each unit in the list form. "Normal"　　　: Normal "Warning"　　　: Abnormal "Not equip"　　: Uninstalled
			Item selection	Displays the detailed information of the target unit.
③	Information on the Cache Memory side status		Information displayed	Displays the Cache Memory side status of each cluster. "Normal"　　　: Normal "Blocked"　　　: Blocked by the maintenance "Failed"　　　: Blocked by the failure "Error"　　　: Failed to get the status
④	Locate LED ON		Item selection	Turns on the Locate LED that selected in the list form (cf. ②).
⑤	Locate LED OFF		Item selection	Turns off the Locate LED that selected in the list form (cf. ②).
⑥	Locate LED All OFF		Item selection	Turns off the all of Locate LED.

*1: Displays check box or icon only the case that time is DKU.

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 DKU on unit list. Able to
      select the multiple DKUs.

    ② Select (CL) [Locate LED ON] button.

    ③ LED icon is changed to lighting on, and
      check box is cleared.

(2) <Turn off the Locate LED>
   ① Select the target DKU on unit list. Able to
      select the multiple DKUs.

② Select (CL) [Locate LED OFF] button.

③ LED icon is changed to lighting off, and
   check box is cleared.
   Not selected DKUs LED icon keep to turn
   on.

(3) <Turn off the all of Locate LED>
① Select (CL) [Locate LED All OFF] button.
Not need to select target DKUs.

② All of LED icon is changed to lighting off.

3.4.2 DKC information view

This view is displayed by selecting (CL) [DKC-n] on the storage system information view.

① Storage system status >> DKC-0

DKC-0

②

DKC-0 Front DKC-0 Back

DKC Voltage Status
Cluster1 : Normal
Cluster2 : Normal

SSVP Voltage Status ③
SVP Supply : Normal
Cluster1 PS Supply : Normal
Cluster2 PS Supply : Normal

Temperature Status
Cluster1 : Normal (25℃) ④
Cluster2 : Normal (25℃)

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 voltage status	Information displayed	Displays the voltage status of each cluster and SSVP input voltage. "Normal"　　　: Normal "Warning"　　　: Abnormal "Unknown"　　: Status is unknown
④	Information of temperature status	Information displayed	Displays the temperature status and temperature of each cluster. "Normal"　　　: Normal "Warning"　　　: Abnormal "Unknown"　　: Status is unknown

3.4.3 DKC Front information view

This view is displayed by selecting (CL) [DKC-n 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.	
		Title selection	"Storage system status"	Displays the storage system information view.
			"DKC-n"	Displays the DKC information view.
②	Button	Information displayed	Displays the status of each part in the installation image.	
			Lighting : Normal	
			Blinking : Abnormal	
			Extinction : Uninstalled	
		Button selection	Displays the detailed information of each part or executes 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 SVP03-04-120 ~ 170.)		

<PCB Detailed Information>

(1)   MPB detailed information

① MPB-1MA

② Replace   Other

③ PCB Status
   Normal

④ Logical Path Status
   Normal

⑤

MP	Status
MP00-1MA	Normal
MP01-1MA	Normal
MP02-1MA	Normal
MP03-1MA	Normal
MP04-1MA	Normal
MP05-1MA	Normal
MP06-1MA	Normal
MP07-1MA	Normal

Table 3.4.3-2 MPB detailed information

#	Item	Description		
①	Title	Displays the location of MPB.		
②	Maintenance button	Executes the maintenance processing.		
		[Replace]	Executes the replacement processing.	
		[Other]-[Restore]	Executes the forcible recovery processing.	
		[Other]-[Blockade]	Executes the forcible blockade processing.	
③	PCB status information	Displays the status of PCB.		
		"Normal"	: Normal	
		"Blocked"	: Blocked by the maintenance	
		"Failed"	: Blocked by the failure	
		"Warning"	: There is an abnormal point	
④	Logical path information	Displays the logical path status of PCB.		
		"Normal"	: Normal	
		"Blocked"	: Blocked by the maintenance	
		"Failed"	: Blocked by the failure	
		"Warning"	: There is an abnormal point	
⑤	MP list	[MP]	Displays the location of MP.	
		[Status]	Displays the status of MP.	
			"Normal"	: Normal
			"Blocked"	: Blocked by the maintenance
			"Failed"	: Blocked by the failure

(2) Cache detailed information

① CACHE-1CA

② ⮂ Replace 🔧 Other

④ PCB Status: Normal
⑤ Logical Path Status: Normal

③

C	C	C	C		C	C	C	C
M	M	M	M		M	M	M	M
0	0	0	0		0	0	0	0
0	4	2	6		7	3	5	1

Table 3.4.3-3 Cache detailed information

#	Item	Description		
①	Title	Displays the location of Cache		
②	Maintenance button	Executes the maintenance processing.		
		[Replace]	Executes the replacement processing.	
		[Other]-[Restore]	Executes the forcible recovery processing.	
		[Other]-[Blockade]	Executes the forcible blockade processing.	
③	Button	Cache memory module	Displays the status of the Cache memory module in the installation image.	
			Lighting	: Normal
			Blinking('*')	: Abnormal
			Extinction('-')	: Uninstalled
④	PCB status information	Displays the status of PCB.		
			"Normal"	: Normal
			"Blocked"	: Blocked by the maintenance
			"Failed"	: Blocked by the failure
			"Warning"	: There is an abnormal point
			"Cache Access Error"	: Access error (PCB is normal, CMG is abnormal)
⑤	Logical path information	Displays the logical path status of PCB.		
			"Normal"	: Normal
			"Blocked"	: Blocked by the maintenance
			"Failed"	: Blocked by the failure
			"Warning"	: There is an abnormal point

(3) BKM detailed information

①	BKM-1BA
②	⮂ Replace
③	PCB Kind BKMS
	CFM	Battery
④	Status: Normal	Status: Normal	⑥
⑤	Type: BMM128	Charge: 100%	⑦

Top View

| ⑧ | CFM-1BA BATTERY-1BA | ⑨ |

There is the CFM under the battery.

< Front   Rear >

Table 3.4.3-4 BKM detailed information

#	Item	Description	
①	Title	Displays the location of BKM.	
②	Maintenance button	Executes the maintenance processing.	
		[Replace]	Executes the replacement processing.
③	BKM type information	Displays BKM type. ("BKMS" or "BKML")	
④	CFM status information	Displays the status of CFM.	
		"Normal"	: Normal
		"Blocked"	: Blocked by the maintenance
		"Failed"	: Blocked by the failure
		"Not Equip"	: Uninstalled
		"Error"	: Failed to retrieve status
⑤	CFM model information	Displays CFM model.	
		"BMM128"	: 200GB
		"BMM256"	: 400GB
⑥	BATTERY status information	Displays the status of BATTERY.	
		"Normal"	: Normal
		"Warning"	: There is an abnormal point
		"Not Equip"	: Uninstalled
⑦	BATTERY charge level information	Displays the BATTERY charge level.	
		0 ~ 100%	: Checking completed and normal state
		"Checking"	: Checking in progress (*1)
		"Unknown"	: Status is unknown
⑧	CFM button	Displays the location of CFM.	
⑨	BATTERY button	Displays the location of BATTERY.	

*1: In case Batteries which were installed at Battery/BKM/CFM replacement were last charged within past six months, the BATTERY charge level may be displayed as "Checking" up to 2.25 hours after the replacement.

3.4.4 DKC Back information view

This view is displayed by selecting (CL) [DKC-n 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.	
		Title selection	"Storage system status"	Displays the storage system information view.
			"DKC-n"	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	
		Button selection	Displays the detailed information of each part or executes the replacement processing of each part.	
③	SSVP memory write information	Information displayed	Displays the SSVP memory write numbers in integer value.	
④	SVP Information	Displays the operating status (Master or Standby) of each SVPs, when the SVP High Reliability Kit has been added. Not displays this information, when the SVP High Reliability Kit has not been added.		
⑤	PCB Detailed Information	Displays the detailed information of each PCB or executes the maintenance processing of each PCB. (Refer to SVP03-04-120 ~ 130, SVP03-04-190 ~ 220.)		

<PCB Detailed Information>

(1) CHA detailed information

Table 3.4.4-2 CHA detailed information

#	Item	Description		
①	Title	Displays the location of CHA.		
②	Maintenance button	Executes the maintenance processing.		
		[Replace]		Executes the replacement processing.
		[Other]-[Restore]		Executes the forcible recovery processing.
		[Other]-[Blockade]		Executes the forcible blockade processing.
		[Other]-[SFP Maintenance]		Starts the SFP maintenance window.
③	PCB type information	Displays the type of PCB.		
④	PCB status information	Displays the status of PCB.		
		"Normal"	: Normal	
		"Blocked"	: Blocked by the maintenance	
		"Failed"	: Blocked by the failure	
		"Warning"	: There is an abnormal point	
⑤	Logical path information	Displays the logical path status of PCB.		
		"Normal"	: Normal	
		"Blocked"	: Blocked by the maintenance	
		"Failed"	: Blocked by the failure	
		"Warning"	: There is an abnormal point	
⑥	Port list	[Port]	Displays the location of the port.	
			"FCP-xx"	: Port location of Fibre PCB
			"HTP-xx"	: Port location of Mfibre 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 SFP.	
			"Shortwave"	: Shortwave
			"Longwave"	: Longwave
			"-----"	: Type is unknown.
		[SFP Status]	Displays the status of SFP.	
			"Normal"	: Normal
			"Failed"	: Blocked
			"Not fix"	: Status is uncertain.
⑦	Controller list	[Controller]	Displays the location of Controller.	
		[Status]	Displays the status of Controller.	
			"Normal"	: Normal
			"Failed"	: Blocked by the failure

(2) DKA detailed information

① DKA-1PB

② Replace   Other

③ PCB Kind
   DKA (4Port)

④ PCB Status
   Normal

⑤ Logical Path Status
   Normal

⑦ Controller | Status
   DRR-1PB0 Normal
   DRR-1PB1 Normal
   DMA-1PB0 Normal
   DMA-1PB1 Normal

⑥ Port | Status
   SAS-1PB-A1 Normal
   SAS-1PB-A2 Normal
   SAS-1PB-A3 Normal
   SAS-1PB-A4 Normal

Table 3.4.4-3 DKA detailed information

#	Item	Description		
①	Title	Displays the location of DKA.		
②	Maintenance button	Executes the maintenance processing.		
		[Replace]		Executes the replacement processing.
		[Other]-[Restore]		Executes the forcible recovery processing.
		[Other]-[Blockade]		Executes the forcible blockade processing.
③	PCB type information	Displays the type of PCB.		
④	PCB status information	Displays the status of PCB.		
		"Normal"	: Normal	
		"Blocked"	: Blocked by the maintenance	
		"Failed"	: Blocked by the failure	
		"Warning"	: There is an abnormal point	
⑤	Logical path information	Displays the logical path status of PCB.		
		"Normal"	: Normal	
		"Blocked"	: Blocked by the maintenance	
		"Failed"	: Blocked by the failure	
		"Warning"	: There is an abnormal point	
⑥	Port list	[Port]	Displays the location 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
⑦	Controller list	[Controller]	Displays the location of Controller.	
		[Status]	Displays the status of Controller.	
			"Normal"	: Normal
			"Failed"	: Blocked by the failure

3.4.5 Disk Unit information view

This view is displayed by selecting (CL) [DKU-nn] on the storage system information view.

① Storage system status >> DKU-00

DKU-00

Front Side	Back Side	
HDU-007	SSW007-1	SSW007-2
	DKUPS007-1	DKUPS007-2
HDU-006	SSW006-1	SSW006-2
	DKUPS006-1	DKUPS006-2
HDU-005	SSW005-1	SSW005-2
	DKUPS005-1	DKUPS005-2
HDU-004	SSW004-1	SSW004-2
	DKUPS004-1	DKUPS004-2
HDU-003	SSW003-1	SSW003-2
	DKUPS003-1	DKUPS003-2
HDU-002	SSW002-1	SSW002-2
	DKUPS002-1	DKUPS002-2
HDU-001	SSW001-1	SSW001-2
	DKUPS001-1	DKUPS001-2
HDU-000	SSW000-1	SSW000-2
	DKUPS000-1	DKUPS000-2

②

View of 2.5 inch DKU and 3.5 inch DKU

① Storage system status >> DKU-01

DKU-01

Front Side	Back Side	
HDU-017	SSW016-1	SSW016-2
HDU-016	DKUPS013-1	DKUPS013-2
HDU-015	SSW014-1	SSW014-2
HDU-014	DKUPS012-1	DKUPS012-2
HDU-013	SSW012-1	SSW012-2
HDU-012	DKUPS011-1	DKUPS011-2
HDU-011	SSW010-1	SSW010-2
HDU-010	DKUPS010-1	DKUPS010-2

②

View of FMU (Flash Module Unit) DKU

Table 3.4.5-1 Disk Unit 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 Extinction : Uninstalled
		Button selection	Displays the detailed information of each part or executes the replacement processing of each part.

3.4.6 HDU information view

This view is displayed by selecting (CL) [HDU-nnn] on the Disk Unit information view.

View of 2.5 inch HDU

View of 3.5 inch HDU

① **Storage system status >> DKU-01 >> HDU-010&011**

💾 **HDU-010&011**

② (HDD panel)

HDD

HDU-011

| ○ 03 | ○ 04 | ○ 05 |
| ○ 00 | ○ 01 | ○ 02 |

| ○ 03 | ○ 04 | ○ 05 |
| ⊙ 00 | ○ 01 | ○ 02 |

HDU-010

③ **HDD010-00**

🔁 Replace   🔧 Other   LDEV Detail

Device Type
NFHAA-P1R6SS

Port Status
Normal

Device Status
Normal

Group
5-1 (RAID1(2D+2D))

View of FMU HDU

Table 3.4.6-1 HDU 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.
			"DKU-nn"	Displays the DKU unit information view.
②	Button	Information displayed	Displays the status of each part in the installation image. Lighting : Normal Blinking : Abnormal Extinction : Uninstalled	
		Button selection	Executes the replacement processing of each part.	
③	HDD Detailed Information	Displays the detailed information of each HDD. (Refer to SVP03-04-270 ~ 280.)		

<HDD detailed information>

① HDD000-00
② Replace | Other | LDEV Detail
⑦
③ Device Type
DKR2G-K146SS
④ Port Status
Normal
⑤ Device Status
Normal
⑥ Group
1-1 (RAID1(2D2D))

Table 3.4.6-2 HDD detailed information

#	Item	Description	
①	Title	Displays the location of HDD	
②	Maintenance button	Executes the maintenance processing.	
		[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 information	Displays the port status of HDD.	
		"Normal"	: Normal
		"Warning(Port 0 failed)"	: Port 0 blocked
		"Warning(Port 1 failed)"	: Port 1 blocked
		"Failed"	: Both port blocked
⑤	HDD status information	Displays the status of HDD	
		"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.
⑥	Group information	Displays the group name to which HDD belongs and its RAID level.	
⑦	LDEV Detail button	Displays the LDEV information of group.	

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 the copy operation.	
			"Correction Copy"	: Correction copy "*" display: Waiting for the automatic 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 HDD 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.	
		[Close]	Exits the Copy Status View.	

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.

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		Updates information being displayed.	Refresh
Maintenance	Format		Executes the format processing.	Format
	Restore		Executes the maintenance recovery processing.	Restore
	Block		Executes the maintenance blockade processing.	Block
	Verify		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. : Normal : Abnormal
	Item selection	Displays the information of the target device on the tree/list.

④ Tree

The logical device information is displayed in units of the group information.

Table 3.6-4 Contents of Tree

Status display	Displays the warning icon ⚠ when the status of the parts is not normal.
Item sele tion	Displays the target information on the list.

⑤ List

The logical device information is displayed.
Refer to 3.6.1 to 3.6.2 for the details.

◎ 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.

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

Grp.	LDKC:CU:LDEV	RAID Level	Status
① 1-2	00:00:00 , 00:00:0A	RAID1(2D+2D)	Normal(Quick Formatting exists)
1-9	00:00:10---00:00:11	RAID1(2D+2D)	Normal(Quick Formatting exists)
2-2	00:00:20---00:00:21	RAID5(3D+1P)	Normal(Quick Formatting exists)
2-9	00:00:04 , 00:FE:FF	RAID5(3D+1P)	Normal(Quick Formatting exists)

Table 3.6.1-1 List of Group Information

#	Item	Description		
①	Detailed information	Displays detailed information such as a status of a group.		
		[Grp.]	Name of a group	
			"E"	: External Volume Group
			"X"	: DP Volume Group
			"M"	: Migration Volume Group
			"P"	: Pool Volume exists in group
			"*"	: RAID Concatenation
		[LDKC:CU:LDEV]	Device information belonging to a group	
			"#"	: External Volume
			"X"	: DP Volume
			"M"	: Migration Volume
		[RAID Level]	RAID level of a group	
		[Status]	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

3.6.2 List of Device information

LDKC:CU:LDEV	Emulation	Status	PIN	Path	Pool ID
① 00:00:00	OPEN-V	Normal(Quick Formatting)			---
00:00:01	OPEN-V	Normal(Quick Formatting)			---
00:00:07	OPEN-V	Normal(Quick Formatting)			---
00:00:08	OPEN-V	Normal(Quick Formatting)			---
00:00:09	OPEN-V	Normal(Quick Formatting)			---
00:00:0A	OPEN-V	Normal(Quick Formatting)		*	---

Group		HDD	Remarks	③
② 1-2 (RAID1(2D+2D))		HDD000-01		
		HDD002-01		
		HDD004-01		
		HDD006-01		

Table 3.6.2-1 List of Device information

#	Item	Description		
①	Detailed information	Displays detailed information such as a status of a device.		
		[LDKC:CU:LDEV]	Image	
				: Volume of normal status
				: Volume of quick formatting
				: Volume is blocked or warning
			Name of a device	
			"#"	: External Volume
			"X"	: DP Volume
			"M"	: Migration 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
			"Formatting"	: Formatting

(To be continued)

(Continued from the preceding page)

#	Item	Description
①	Detailed information	Displays detailed information such as a status of a device.
		[PIN] Existence of Pin (Pin exists: "*" display)
		[Path] Existence of Path (Path exists: "*" display)
		[Pool ID] ID number of Pool Volume "-----" : Not Pool Volume
②	Group information	Displays the group information to which the device belongs and its RAID level.
③	HDD information	Displays HDD to install the group information to which the device belongs.

		[HDD] Location of HDD
		             : Normal
		             : Blocked

		[Remarks] Displays the additional information for HDD.

3.6.3 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.

Table 3.6.3-1 Contents of Shredding Operation Progress Window

Item	Description
[Close]	Closes the progress window.
[Stop]	Stops Shredding. Caution: 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.
④[CM/BKM Ver.]   : The version of CMBK and the version of CFM are displayed.
⑤[HDD Ver.]   : A version of a Drive is displayed.
⑥[SSW Ver.]   : The version of SSW and the version of Expander are 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	Display	Description
Type	Type	Name of the microprogram. A SMI-S version, which is displayed in red-white-reversal, is inconsistent with the currently running version.
DKC Current	DKC Current	Major version of the microprogram currently running.
SVP	SVP	Latest version of the microprogram stored in the SVP.
Previous	Previous	Former version of the microprogram stored in the SVP.

Concerning this item, when even a single piece of information is inconsistent, an icon "⚠", 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	Display	Description
DKC Current Version area	Current	Major version of the microprogram currently running. The area of a version in the following situations is displayed in red-white-reversal with an asterisk ("*"): • A version is inconsistent with a corresponding version in the MP Version area or in the binary version (Internal administrative information). • Microprogram exchange is failed.
MP Version area	Running (MP)	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.
CHA PORT area	Running (CHA PORT)	The version is displayed. Running version of port program (HTP) of each Port is displayed. The target type name is displayed.
DKA PORT area	Running (DKA PORT)	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 "⚠", which shows an error, is displayed in the tab portion.

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	Display	Description
DKC Current Version area	Current	Major version of the microprogram currently running. The area of a version in the following situations is displayed in red-white-reversal with an asterisk ("*"): • A version is inconsistent with a corresponding version in the FM Version area or in the binary version (Internal administrative information). • Microprogram exchange is failed.
FM Version area	FM	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 "⚠", which shows an error, is displayed in the tab portion.

④　Version of the CMBK

Table 3.7-4 Information to Be Displayed

Item	Display	Description
• Display of "CMBK"		
Display of "Current"	CMBK	"SVP"　　　　 : Latest version of the drive microprogram stored in the SVP. "Previous"　　 : Previous version of the drive microprogram stored in the SVP. "CACHE"　　 : CHACHE name "CMBK"　　　 : CMBK micro version information (It is stored in FM) that each CM PCB has is displayed.
• Display of "BTCL"		
Display of "Current"	BTCL	"SVP"　　　　 : Latest version of the drive microprogram stored in the SVP. "Previous"　　 : Previous version of the drive microprogram stored in the SVP. "BKM PCB"　 : BKM name "BTCL"　　　 : BTCL micro version information that each BTCL PCB has is displayed.
• Display of "CFM"		
Display of "Current"	Current	Current Version. "Type"　　　　 : CFM type model "Version"　　 : Version of CFM microprogram
Display of "SVP"	SVP	Latest version of the SSD microprogram stored in the SVP. "Type"　　　　 : CFM type "Version"　　 : Version of CFM microprogram
Display of "Previous"	Previous	Former version of the SSD microprogram stored in the SVP. "Type"　　　　 : CFM type "Version"　　 : Version of CFM microprogram

<Display of the CFM name>
Select (DC) a line from the [CFM]-[Current] list.
The 'CFM List' window is displayed and a list of CFM that are consistent
with the information is shown.

Table 3.7-5 Information to Be Displayed

Item	Display	Description
CFM Type	CFM Type	Selected CFM type.
Version	Version	Selected CFM microprogram version.
CFM Location	CFM Location	List of the CFM consistent with the selected information. 　　　　"BKM"　　: BKM name that exists in CFM List 　　　　"CFM"　　　: CFM name that exists in BKM

⑤   A version of a Drive is displayed.

Table 3.7-6 Information to Be Displayed

Item	Display	Description
• Display of "HDD"		
Display of "Current"	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"	SVP	Latest version of the drive microprogram stored in the SVP. Top of list : Version of drive microprogram
Display of "Previous"	Previous	Former version of the drive microprogram stored in the SVP. Top of list : Version of drive microprogram

<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.

Table 3.7-7 Information to Be Displayed

Item	Display	Description
Drive Type	Drive Type	Selected drive type.
Version	Version	Selected drive microprogram version.
HDD Location	HDD Location	List of the drive consistent with the selected information.

⑥ A version of a SSW is displayed.

Table 3.7-8 Information to Be Displayed

Item	Display	Description
Display of "Expander"	Expander	"SVP" : Latest version of the Expander microprogram stored in the SVP. "Previous" : Former version of the microprogram stored in the SVP. "Version" : Current version of microprogram of each Expander (include each version of below "Expander(FMU)").
Display of "Expander(FMU)"	Expander (FMU)	"SVP" : Latest version of the Expander microprogram stored in the SVP. "Previous" : 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 "⚠"
that shows abnormality in the tab part is displayed.

<Display of the SSW name>
Select (DC) a line from the [Expander]-[Version] list.
The 'Expander List' window is displayed and a list of SSW that is consistent
with the information is shown.

Table 3.7-9 Information to Be Displayed

Item	Description
Version	Selected Expander microprogram version.
SSW Location	List of the SSW consistent with the selected version.

3.8 Path of HTP

When [Display]-[Main Frame Path...] is selected (CL) in the 'Maintenance' window, the 'Main Frame Path Information' window is displayed.

Table 3.8-1 Outline of Each Part

Item	Description
Menu	Menu items that can be operated by this function.
Tree	Installed ports are displayed hierarchically taking hardware configuration in consideration.
Upper list	Physical path information concerning the item selected from the tree is displayed.
Lower list	Logical path information concerning the item selected from the tree is displayed.

Table 3.8-2 List of Menus

Menu	Sub-menu	Description
File	Exit	Closes a window.
Renew	Renewal	Updates displayed information.

(1) Physical path

When a scope wanted to be referred to (storage system, each cluster, each CHA, or port concerned) is selected (CL) from the tree, the related physical path information is displayed in a list at the upper right part of the window. (In the example shown in the figure below, CHA has been selected (CL) and the physical path information on the port installed in the CHA is displayed.)

Physical path information

Table 3.8-3 Items Displayed in the Physical Path Information List

Item	Description
Node	Location where the HTP is installed.
Link(Self)	Link address of the HTP.
Link(Dest)	Link address of a host connected.
Status	Status in which a node ID is acquired.
Type/Model	Type/model name of a host connected.
SeqNumber	Product serial number of a host connected.
Tag	Tag of a host connected.
WWN(N_Port_Name)	N_port name of a host connected.
WWN(Node_Name)	Node name of a host connected.
Speed	Bandwidth of link transfer.

(2) Logical path

When a scope wanted to be referred to (storage system, each cluster, each CHA, or port concerned) is selected (CL) from the tree, the related logical path information is displayed in a list at the lower right part of the window. (In the example shown in the figure below, CHA has been selected (CL) and the logical path information on the port installed in the CHA is displayed.)

Table 3.8-4 Items Displayed in the Logical Path Information List

Item	Description
Node	Location where the HTP, in which the logical path exists, is installed.
Link	Link address of a host connected.
LGCL	Logical address of a host connected.

■ Seeing a CU# of the controller connected

To see a CU# (control unit address) of the controller connected, position the mouse pointer on the displayed LINK/LGCL information concerned and select (CL) the information after making sure that it is highlighted (underlined in blue).

\<Window displaying CU# of the controller connected>

The CU# (control unit address) of the controller connected is displayed. In the example shown in the figure below, CU#00, CU#01, and CU#3F are the CU#'s of the controllers connected.

When the mouse pointer is positioned at the place displayed as the CU# of the controller connected, the corresponding LPN (logical path number) is displayed.

LPN (logical path number)

3.9 Pin

When [Pin...] is selected (CL) in the 'Maintenance' window, the 'Pinned Track' window is displayed.

Table 3.9-1 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 3.9-2 List of Items

Item	Description
Cyl Hd	Number of an assembly of a cylinder and head in which pinned data exists (*1)
Slot	Type of a track on which pinned data exists DATA: Data track PRTY: Parity track

Reason	Cause of pinned data.
	See the "3.42 Recovery Procedure for Pinned Track" (TRBL03-42-10) for the recovery procedure at the following reason.
	    ECC/LRC error External VOL Read Error
	    WRITE 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 (*1)
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

*1: This value is invalid and is displayed with "0FFFFFF E" when this HDEV is the TSE-VOL. See the "6. Recovery from ShadowImage for Mainframe/ShadowImage/FlashCopy (R) V2/ FlashCopy (R) SE Failure" (TRBL06-10) for the PIN track recovery procedure of TSE-VOL.

3.10 LUN Management

(1) Outline

Fig. 3.10-1 Main Window

The Main window consists of the following elements.

Table 3.10-1 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.

NOTICE: When configuration setting is changed in the background while LUN Management window from Maintenance window has been opened, the display contents may be different from setting.
Open the LUN Management screen again to display the latest information.

Menu items and their details are shown below.

Table 3.10-2 List of Menu Items

Menu	Submenu	Description	Tool bar
File	Exit	• Closes the window.	(Exit)
Edit	Copy	• 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 or TB.	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

(2) CHA Window

Fig. 3.10-2 CHA Window

When "CHA" in the tree view is selected (CL), installed CHA PCB's supported by this function are displayed in the upper right list.

Table 3.10-3 Details of CHA Window

Item	Description
Upper list	Displays installed CHA 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. 3.10-3 Port Window

When "CHA locations" in the tree view is selected (CL), installed ports information supported by this function are displayed in the upper right list.

Table 3.10-4 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. 3.10-4 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 3.10-5 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, host mode number, host mode name and virtual model ID/virtual serial number.
	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.

(5) LUN Window

Fig. 3.10-5 LUN Window
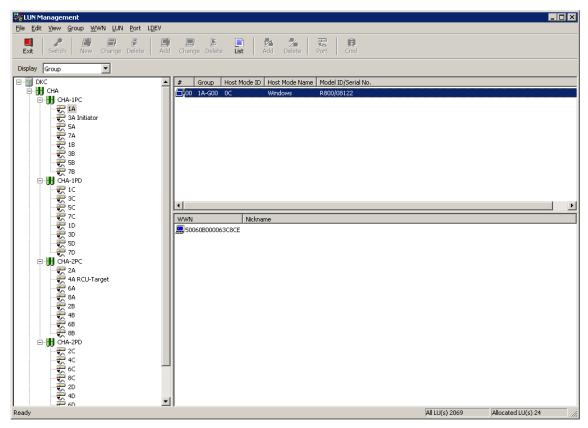
When "Port" in the tree view is selected, "LUN" is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed

Table 3.10-6 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, host mode number, host mode name and virtual model ID/virtual serial number.
	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), size (in Mbytes/Gbytes/Tbytes), Cmd.Dev. ('On*' shows the remote command device), Cmd.Sec., Cmd.Auth, Cmd.Grp, guard 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. 　　　'X' : A Dynamic Provisioning volume is shown.
	Provided with a sorting function.

(5-1) LUN Status Window

Fig. 3.10-6 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 3.10-7 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.
MFR	It is reserved by Mainframe.
H35R	It is reserved from the H3500 server.
ACA	It is in the ACA ACTIVE status.

(6) Logical Device Window

Fig. 3.10-7 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 3.10-8 Details of Logical Device Window

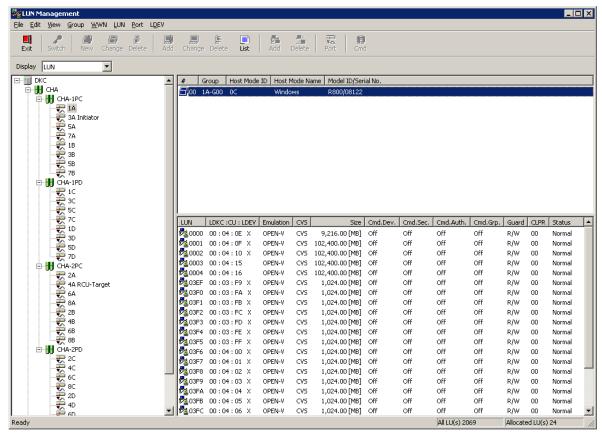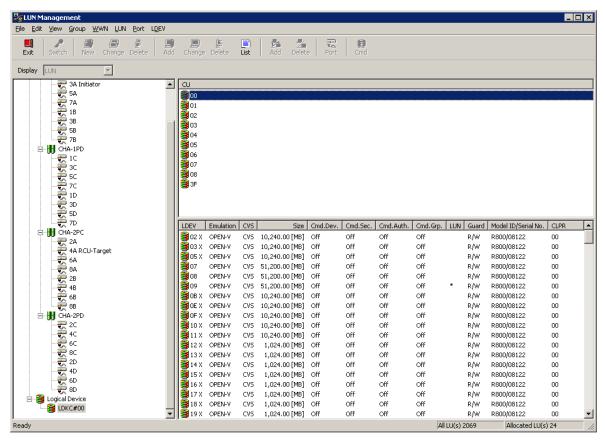| Item	Description
Upper list	Displays CU numbers of installed LDEV's supported by this function. Displayed items: CU number (two hexadecimal digits)
	Provided with a sorting function.
Lower list	Displays details of a CU selected from the upper list. Displayed items: LDEV number (two hexadecimal digits), emulation type (number of connectable in decimal), CVS, size (in Mbytes/Gbytes/Tbytes), Cmd.Dev. ('On*' shows the remote command device), Cmd.Sec., Cmd.Auth, Cmd.Grp, definition of LUN (Defined: "*", Not defined: No indication), guard attribute, virtual model ID/virtual serial number 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. 'X' : A Dynamic Provisioning volume is shown.
	Provide with a sorting function.

(7)   The host's WWN list windows linked to DKC

Fig. 3.10-8 Main Window

Fig. 3.10-9 Login WWN List Window

Select (DR) [Login List] from the [WWN] menu in the Main Window (Fig. 3.10-8), 'Login WWN List' Window (Fig. 3.10-9) is displayed.

Table 3.10-9 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.

3.11 Inter-PCB Logical Path

(1) The window for displaying status for each summary path.


```
Path (Check box)----
                    CH/DKA-CACHE      : Specifies display of summary path between
                                         CHA/DKA and CACHE
                    MPB-CACHE         : Specifies display of summary path between MPB
                                         and CACHE
                    MPB-MPB           : Specifies display of summary path between MPB
                                         and MPB
                    CHA/DKA-MPB       : Specifies display of summary path between
                                         CHA/DKA and MPB
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  : PASS location names are displayed in this row.
                                  When this row is selected, the path statuses in the list are
                                  sorted using the PASS 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.
```
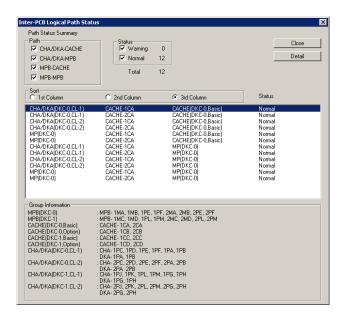
Status ---------------- A status of each path is displayed.

        Normal : A status in which a path concerned is normal

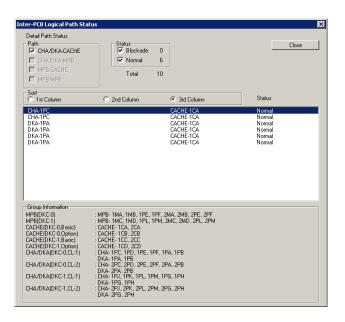   Warning : A status in which a failure occurred in a path concerned

Detail (Button)------- Displays detailed path status.

Close (Button) ------- Terminates the display.

Group Information -- Information of each group making up summary path.

(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：PASS location names are displayed in this row. When this row is selected, the path statuses in the list are sorted using the PASS 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.

Group Information -- Information of each group making up summary path.

3.12 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.