SVP SECTION

Contents

1. How to Operate the SVP (PC)

> **NOTICE:** Do not open the User Account Control Settings window of the control panel in SVP operation. If the window is opened, the SVP has to be replaced.

1.1 Running the SVP by Specifying a File Name

1. <Starting up of the Run window>
   Right-click [Start], and then click [Run].

2. <Entering a file name>
   Enter a file name in the "Open:" box and click [OK].

1.2 Executing SVP Connect Utility

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

For the procedures for attachment, removing and connect procedure the Maintenance PC, see the following:
- "Attachment/Removal Procedure of Maintenance PC" (INST(IN)13-02-10)
- "1.3.1 Connection to the SVP"

1. Installing the SVP Connect Utility
    (1)   Insert the Host P.P. medium in the drive on the Maintenance PC.
    (2)   Start the Command Prompt.
          Click [Start]-[Windows System], right-click [Command Prompt], and from the context menu, click [More]-[Run as administrator].
    (3)   Change the current directory to the directory of the Host P.P. medium in which the SVP Connect Utility is stored.
          cd /d e:\Program\Svputl

          NOTE: The above is an example where the Host P.P. medium is inserted in E drive.

    (4)   Execute the batch to install the SVP Connect Utility.
          cputl.bat e:

          NOTE: The above is an example where the Host P.P. medium is inserted in E drive.

    (5)   Check that "1 file(s) copied." are displayed in four lines in the Command Prompt.
    (6)   Close the Command Prompt.

2. Executing the 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 click [Unblock].

1.3 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 "1.3.2 Restoring the previous connection".

1.3.1 Connection to the SVP

NOTICE:	Restrictions when using multiple users
	• Concurrent logins for multiple users on the remote desktop are not available. When you log in as another user, the currently logged in user needs to be logged out. (A login for a different user is rejected.)
	• In the maintenance work where you reboot the SVP, such as micro-program exchange, you need to log in as the same user until the process after the reboot is completed.
	• If the RDP session is not properly closed (for example, Windows is not logged off), the operation is locked by the last logged in user.

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
    Click [Search] in the SvpConnectUtility window.
    When an IP addresses and product serial numbers of the connectable SVPs are displayed in the list, go to
    Step 2. (1).
    When be not displayed, go to Step 2. (2).

2. Performing the connection
    (1) Choose it among a list
         Select the IP address and serial number of the SVP to connect to, and click [Connect].
         A connection to the selected SVP is done.

    (2) Input an IP address
         Click [Connect] in a state in which the IP address and serial number are not selected from the
         list in the SvpConnectUtility window. Input an IP address of SVP connected to the input box of
         displayed 'Input IP Address' dialogue, and perform click 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).

              NOTE: Connect to the SVP by using the SVP Connect Utility.
                     If you cannot use the SVP Connect Utility and you need to connect to the SVP from a
                     remote desktop, confirm that the local disk drive can be accessed (if you use the SVP
                     Connect Utility, the access to the local disk drive is automatically set to be available).
                     <How to check the accessibility>
                     In the remote desktop connection window, click [Show Options], and then select the
                     [Local Resources] tab. Click [More...] of [Local devices and resources]. In the Local
                     devices and Resources window, check that "Drives" is checked.

3. Login 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.

When other users are logging in, a message [SVP4249W] is displayed.

4. Input Maintenance password

A Maintenance password input screen is displayed. Please input a Maintenance password.

Refer to "1.11 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.

When other users are logging in, a message [SVP4249W] is displayed.

5. When the Maintenance PC is connected to the SVP, Web Console is automatically started. From the menu of Web Console, click [Maintenance]-[Maintenance Components (General)].

NOTE: If any of the following windows is displayed, click the [Open].
The window display might differ a little depending on the version of Internet Explorer and its settings.

NOTE: If you log in to the SVP when Web Console is not started, or if Storage Management Service does not start due to a failure, the following initial screen is displayed. When the Web Console window does not appear automatically, click [Start SVP] to start the SVP window.

Wait for the start of Storage Management Service

FunctionName	Status	ErrorCode	
DataSupplierMan	Ready(OK)	–	
ModelMan	Ready(OK)	–	
ControllerMan	Ready(OK)	–	
UserSessionMan	Ready(OK)	–	
RscMan	Ready(OK)	–	

Start SVP

NOTE: If "Unable to launch the application." is displayed when starting the SVP window, click the [Detail] button in the error window.
Contact the Technical Support Division and send a copy of the error message or a screenshot of the error window.

Blank Sheet

Blank Sheet

1.3.2 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
    Click [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
    Click the pull down of the entry box. Select the top one of the displayed IP addresses.
    Click [Connect].

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

3. Login 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.

When other users are logging in, a message [SVP4249W] is displayed.

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.
        When other users are logging in, a message [SVP4249W] is displayed.

5. When the Maintenance PC is connected to the SVP, Web Console is automatically started. From the menu of Web Console, click [Maintenance]-[Maintenance Components (General)].

NOTE: If any of the following windows is displayed, click the [Open] .
The window display might differ a little depending on the version of Internet Explorer and its settings.

NOTE: If you log in to the SVP when Web Console is not started, or if Storage Management Service does not start due to a failure, the following initial screen is displayed. When the Web Console window does not appear automatically, click [Start SVP] to start the SVP window.

Wait for the start of Storage Management Service

FunctionName	Status	ErrorCode
DataSupplierMan	Ready(OK)	–
ModelMan	Ready(OK)	–
ControllerMan	Ready(OK)	–
UserSessionMan	Ready(OK)	–
RscMan	Ready(OK)	–

Start SVP

NOTE: If "Unable to launch the application." is displayed when starting the SVP window, click the [Detail] button in the error window.
Contact the Technical Support Division and send a copy of the error message or a screenshot of the error window.

Blank Sheet

1.3.3 Checking the connected storage systems

After the SVP screen starts, the serial number of storage system is displayed on the upper left of the SVP window. 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.

1.4 Disconnecting the SVP Connection

You can disconnect the connection between the Maintenance PC and the SVP by logging off or disconnecting the SVP. Choose either method according to the situation.

Method	Description	Situation
Log off	The SVP is disconnected after applications in execution on the SVP are closed.	Choose the log off when you finish maintenance work. NOTE: If you log off the SVP while an SVP operation is performed, the operation might end abnormally.
Disconnection	The SVP is disconnected while applications in execution on the SVP remain in the same state. If you reconnect the SVP, you can continue to use the applications.	Choose the disconnection if you want to reconnect the SVP immediately after the disconnection, for example, when you switch SVPs of multiple storage systems. For the procedure for reconnecting the SVP immediately after the disconnection, see "1.3.2 Restoring the previous connection".

1. Log off the SVP
   (1) Change the SVP mode to View Mode.
   (2) Close all windows opened in maintenance work.
   (3) Right-click [Start], and then click [Shut down or sign out]-[Sign out].

The SVP window of the Maintenance PC is closed.

2. Disconnect the SVP

Right-click [Start], and then click [Shut down or sign out]-[Disconnect].

The SVP window of the Maintenance PC is closed.

1.5 Windows Screen Component Nomenclature

The following window is displayed.

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

1.6 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
    (1) Press the SVP PS ON switch on the front side of the SVP main body.
    (2) Make sure that the SVP POWER LED on the front side of the SVP main body comes on.
         If not, re-execute Step (1).
         If the SVP POWER LED does not come on though the Step (1) is re-executed twice, replace the SVP.
    For the locations of the switch and LED, see (LOC03-30).

2. Windows Start (SVP Start)
    (1) Wait for a few minutes until the Windows system starts up.
    (2) Click [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 (1) in Step 1.
         If the Windows system does not start up though the (1) in Step 1. is re-executed twice, replace the SVP.

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

                • Is the DKC "CE mode" ?
                • 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.

1.7 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.

SVP Power Off procedure

1. Press SVP PS OFF Switch.
2. Make sure that the SVP POWER LED on the front side of the SVP main body comes off.

For the locations of the switch and LED, see (LOC03-30).

To keep the power of the SVP off for 15 minutes or more, set the SVP RAS switch #1 (LOC03-40) on the SSVP to ON.

1.8 SVP reboot

1.8.1 When you can connect to the SVP from a remote desktop

1. When the SVP is not connected, connect the SVP in accordance with the procedure of "1.3 Connecting the PC to the SVP".

2. Launch the Command Prompt as administrator
   Select [Start]-[Windows System], right-click the displayed [Command Prompt], and then select [More]-[Run as administrator].

3. In Command Prompt, enter "shutdown /r /t 0" and press the [Enter] key.

1.8.2 When you cannot connect to the SVP from a remote desktop

1. Turn ON the SVP RAS Switch #1 (LOC03-40) if it is OFF.

   NOTE: Use an object with a sharp edge such as a pair of tweezers to manipulate the SVP RAS switch.

2. Turn the power OFF in accordance with the procedure of "1.7 Power Off".

3. Turn the power ON in accordance with the procedure of "1.6 Power On".

4. Turn OFF the SVP RAS Switch #1.

1.9 LEDs and Switches on SVP/SSVP

You can get the information of SVP/SSVP (operation state, SVP type (Master/Standby), and so on) by checking the LEDs on SVP/SSVP. And, you can perform the SSVP reset, the initialization of the password and IP address of SVP and so on by using the switches. For details, see (LOC03-30), (LOC03-40).

Blank Sheet

Blank Sheet

1.10 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.

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 1-1 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	Bucking up the configuration information (config)	SVP02-10-10
3	Restoring Configuration Information	SVP02-11-10
4	TOD (Time Of Day) setting	SVP02-01-10 (REP(RSVP)07-210)
5	Set IP address	SVP02-20-10 (WEBCON01-40)
6	Delete Log File	SVP02-03-10
7	SIM Complete	SVP02-08-10
8	Switch SVP	SVP02-14-10
9	Diagnosis (LAN Check etc.)	(DIAG00-00)
10	SSVP Replace	(REP(RSSV)00-00)
11	SVP Replace	(REP(RSVP)00-00)

Hitachi Proprietary DKC910I

Rev.0 Copyright © 2019, Hitachi, Ltd.

SVP01-270

3. <Change Mode>

If you click [View Mode], the mode changes from [View Mode] to [Modify Mode], and SVP changes to Modify Mode.

If you click [Modify Mode], 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 Mode.
  A failure may not be notified because on the Modify Mode of the SVP mode the storage system is judged to be under maintenance.
- On the Modify Mode you cannot change configurations using Storage Navigator and cannot perform copy operation and so on using Storage Navigator CLI.
  Also, the V-Vol-related operation by VMware vCenter Server fails due to a time-out and so on.
  When you make Modify Mode, please confirm influence on other customer use.

[SVP01-270]

Blank Sheet

1.11 Update Maintenance Password

A maintenance password is a password that you enter after you enter a user name and login password and log in to the SVP.

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 clicked.

2. The window as shown in the following figure is displayed. Input "Current password", "New password", and "Confirm new password", and click [Change password].

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

Maintenance Password

Current password :

New password :

Confirm new password :

[Change password]   [Cancel]

3. The message [SVP3247i] is displayed. Click [Yes].

SVP   ×

[SVP3247i]

Are you sure you want to continue this operation?

[Yes]   [No]

4. The message [SVP1043i] is displayed when the change is completed, and click [OK]
The new maintenance password can be used from the next connection to the SVP.

SVP   ×

[SVP1043i]

Process is normal end.

[OK]

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.
• To set (change) both the TOD and the time zone, set (change) the time zone before setting (changing) the TOD (see "2.23 Time Zone Setting").

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].

2. Click [Initial Setting].

3. Click [Set Subsystem Time] in the Initial Setting window.

4. Select [TOD Change] in the Set Subsystem Time window, and then click [OK].

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

NOTE: If you set TOD on the Standby SVP, the message [INF0469E] "Communication error has occurred." is displayed. This is not a problem. Click [OK], and then go to the next step.

6. Close the Initial Setting window.

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

7. Reboot the SVP. (See "1.8 SVP reboot".)

2.2 Log indication

Prerequisite Operation:

1. In the SVP window, click [Information].

2. Click [Log...].

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

See and perform the following:

2.2.1 SSB Log

1. Display the Log dialog box according to the Prerequisite Operation. (See SVP02-02-10.)

2. Select [SSB] in the Log dialog box.
   Click [List...].

   ```
   ┌─ Log ──────────────────────────── ▣ ✕
   │ File  Edit  Options
   │
   │  ┌─────────┐   ┌─ Items ─────────────────────┐
   │  │ List... │   │  ○ SIM        ○ Incident    │
   │  └─────────┘   │  ⦿ SSB        ○ HTP         │
   │                │  ○ Reset      ○ Diagnosis   │
   │                │  ○ Power Event ○ Copy History│
   │  ┌─────────┐   │  ○ Detail                   │
   │  │ Delete  │   └─────────────────────────────┘
   │  └─────────┘
   └──────────────────────────────────────────────
   ```

3. Select data to be indicated in the List-SSB dialog box and click [Content...].

   ```
   ┌─ List - SSB ─────────────────────────────────── ▣ ✕
   │ Total :  12288/12288                        ┌──────────┐
   │ Date/Time        Code  MP  LDKC:CU:LDEV  Port F/M E/F │ Close   │
   │ 2013/03/31 13:00:17  331a  SVP                ec      └──────────┘
   │ 2013/03/31 13:00:07  3351  SVP                8c      ┌──────────┐
   │ 2012/07/25 13:09:33  3351  SVP                8c      │ Sort...  │
   │ 2012/07/25 13:00:17  331a  SVP                ec      └──────────┘
   │ 2012/07/25 13:00:12  331a  SVP                ec      ┌──────────┐
   │ 2012/07/11 13:35:39  afb0  08                 9f      │ Content..│
   │ 2012/07/11 13:00:18  331a  SVP                ec      └──────────┘
   │ 2012/07/11 10:29:58  afb0  08                 9f      ┌──────────┐
   │ 2012/07/10 22:06:37  afb0  00                 9f      │ Search...│
   │ 2012/07/10 21:02:56  afb0  00                 9f      └──────────┘
   │ 2012/07/10 20:01:07  334f  SVP                8c
   │ 2012/07/10 20:00:07  001c  08                 9f
   │ 2012/07/10 19:57:29  334f  SVP                8c
   │ 2012/07/10 19:55:44  334f  SVP                8c
   │ 2012/07/10 19:54:41  001c  00                 9f
   │ 2012/07/10 19:52:08  334f  SVP                8c
   │ 2012/07/10 17:42:54  3927  02                 9f
   │ 2012/07/10 17:28:34  afb0  08                 9f
   │ 2012/07/10 16:54:46  7b06  08                 9f
   │ 2012/07/10 16:44:55  7b0d  03                 9f
   │ 2012/07/10 16:44:55  7b00  03                 9f
   │ 2012/07/10 15:08:46  afb0  08                 9f
   │ 2012/07/10 14:12:11  c128  03                 9f
   │ 2012/07/10 14:12:11  caba  01             26  9f
   └────────────────────────────────────────────────────
   ```

   NOTE: To sort and list items, click [Sort...] first.
   Then select the desired item in the [Items] and [Order] options in the Sort dialog box,
   and click [OK].

   ```
   ┌─ Sort ──────────────────────────────────┐
   │  ┌─ Items ─────────────┐  ┌──────────┐   │
   │  │  ⦿ Date/Time        │  │   OK     │   │
   │  │  ○ Error Code       │  └──────────┘   │
   │  │  ○ Micro Processor  │  ┌──────────┐   │
   │  │  ○ Logical Device   │  │  Cancel  │   │
   │  │  ○ Port             │  └──────────┘   │
   │  │  ○ Format/Message   │  ┌─ Order ───┐  │
   │  │  ○ Exception/Format │  │ ⦿ Normal  │  │
   │  │                     │  │ ○ Reverse │  │
   │  └─────────────────────┘  └───────────┘  │
   └──────────────────────────────────────────┘
   ```

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

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

(2) <SSB Search Condition dialog>
Select [Partial] 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 [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 frame becomes invalid.
Partial : Condition for search in the same frame 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, 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].

4. The detailed data is displayed in the Content-SSB dialog box.
   Click [Refer...] in the Content-SSB dialog box to display the relative log.

```
Content - SSB                                              [x]

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
```

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

```
Refer                      [x]

 Types
  (•) SIM         [ OK ]
  ( ) SSB         [ Cancel ]
  ( ) Detail
  ( ) HTP
```

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

```
Content - SIM                                       [X]
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
```

7. Close the relative log when it is referred to.
    Click [Close] in the Content-SSB dialog box.
    Click [Close] in the List-SSB dialog box.
    Close the Log dialog box and close the Information window.

2.2.2 SIM Log

NOTE: • When SIM log exists after SVP is started up, the SIM Message window is displayed.
  • 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.
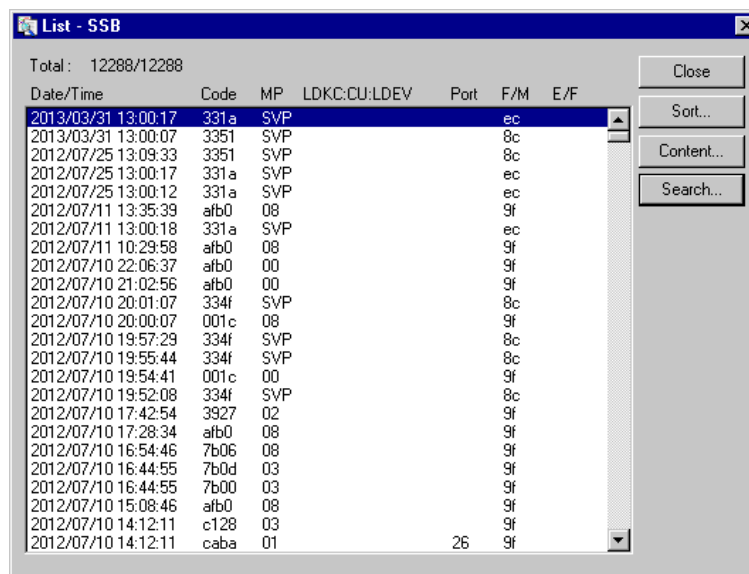
1. Display the Log dialog box according to the Prerequisite Operation. (See SVP02-02-10.)

2. Select [SIM] in the Log dialog box.
    Click [List...].

```
┌───────────────────────────────────────────────┐
│ 🗔 Log                                     ☒ │
│ File  Edit  Options                             │
│                                                 │
│   ┌───────────┐  ┌─Items──────────────────────┐ │
│   │   List... │  │  ⊙ SIM       ○ Incident    │ │
│   └───────────┘  │  ○ SSB       ○ HTP         │ │
│                  │  ○ Reset     ○ Diagnosis   │ │
│                  │  ○ Power Event ○ Copy History│ │
│   ┌───────────┐  │  ○ Detail                  │ │
│   │   Delete  │  │                            │ │
│   └───────────┘  └────────────────────────────┘ │
└───────────────────────────────────────────────┘
```

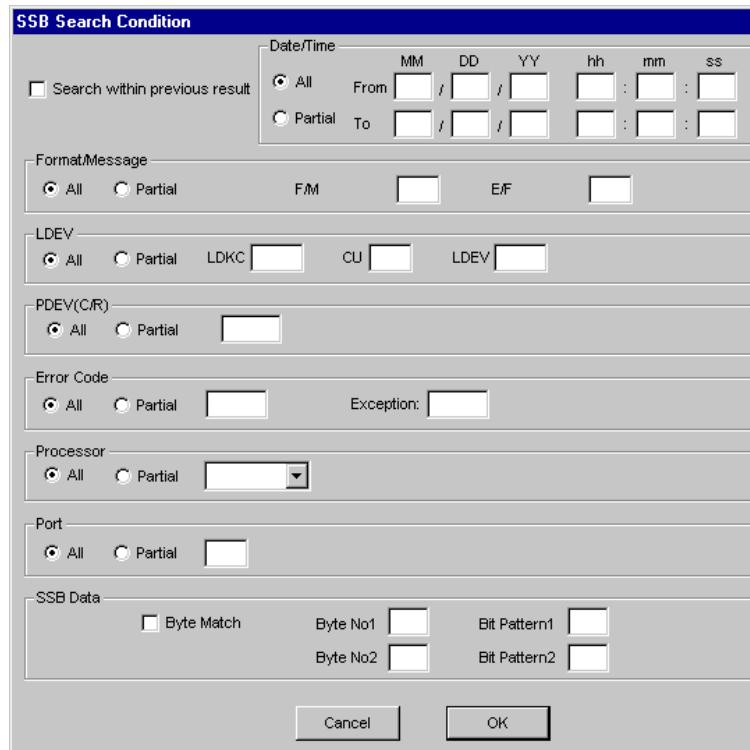3. Select data to be indicated in the List-SIM dialog box and click [Content...].

NOTE: To sort and list items, click [Sort...] first.

Then select the desired item in the [Items] and [Order] options in the Sort dialog box, and click [OK].

■ Items displayed in the 'List-SIM' dialog box

Item	Detail	
Date/Time	Occurrence time of the phenomenon	
Reference	Reference code	
Level	Error level	
	Acute	All operations of the storage system are stopped.
	Serious	Operations of the part that has a failure are stopped.
	Moderate	Partial failure
	Service	Minor failure
Status	Status of SIM	
	Initial	Not completed (Not reported to the host yet, or SIM other than those to be reported to the host)
	Pending	Not completed (Already reported to the host)
	Completed	Completed

4. The Content-SIM dialog box is displayed.

   Click [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. (TRBL03-14-10)

---

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

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

7. Close the relative log when it is referred to.

Click [Close] in the Content-SSB dialog box.

Click [Close] in the Content-SIM dialog box.

Click [Close] in the List-SIM dialog box.

Close the Log dialog box and close the Information window.

2.2.3 Detail Log

1. Display the Log dialog box according to the Prerequisite Operation. (See SVP02-02-10.)

2. Select [Detail] in the Log dialog box.
   Click [List...].

3. Select data to be indicated in the List-Detail dialog box and click [Content...].

   NOTE: To sort and list items, click [Sort...] first.
   Then select the desired item in the [Items] and [Order] options in the Sort dialog box,
   and click [OK].

4. The Content-Detail dialog box is displayed.

Content - Detail	☒
Date/Time:	2008/10/30 14:33:27	Close
Error Code:	32fd
Micro Processor:
Detail Data:	0 1 2 3 4 5 6 7 8 9 A B C D E F

```
000   00070007 00000000 00000006 00010000 ▲
010   00020003 00050004 00000000 00030007 ▯
020   00018623 00400040 007e83fb f9f97c03
030   00008623 00000000 00000000 00000000
040   00000041 00000020 002007ff 000004db
050   00000002 00000000 00000000 000303f7
060   00000000 00011f1c 00000000 02100146
070   00000002 00000000 00030238 000d0000
080   80000002 00000000 00000000 00000000 ▼
```

5. Click [Close] in the Content-Detail dialog box.
    Click [Close] in the List-Detail dialog box.
    Close the Log dialog box and close the Information window.

2.2.4 Reset Log

1. Display the Log dialog box according to the Prerequisite Operation. (See SVP02-02-10.)

2. Select [Reset] in the Log dialog box.
   Click [List...].

3. Select data to be indicated in the List-Reset dialog box and click [Content...].

   NOTE: To sort and list items, click [Sort...] first.
   Then select the desired item in the [Items] and [Order] options in the Reset Log Sort dialog box, and click [OK].

4. The Content-Reset dialog box is displayed.

5. Click [Close] in the Content-Reset dialog box.

    Click [Close] in the List-Reset dialog box.

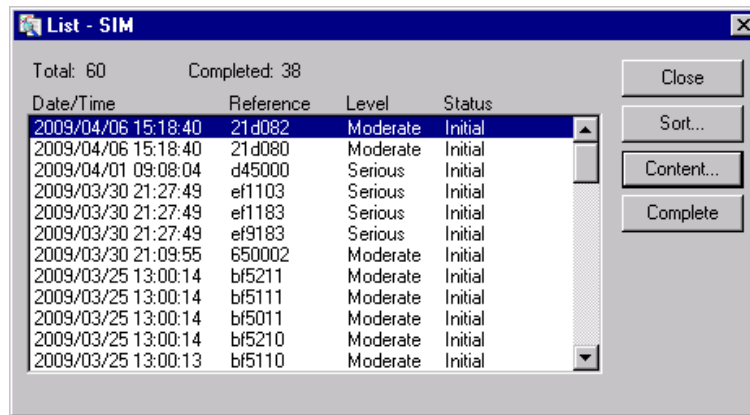   Close the Log dialog box and close the Information window.

2.2.5 Power Event Log

1. Display the Log dialog box according to the Prerequisite Operation. (See SVP02-02-10.)

2. Select [Power Event] in the Log dialog box.
   Click [List...].

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

NOTE: To sort and list items, click [Sort...] first.
Then select the desired item in the [Items] and [Order] options in the Sort dialog box, and click [OK].

4. Click [Close] in the List-Power Event dialog box.
   Close the Log dialog box and close the Information window.

2.2.6 Incident Log

1. Display the Log dialog box according to the Prerequisite Operation. (See SVP02-02-10.)

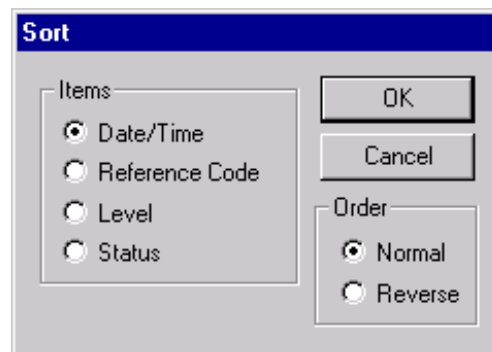2. Select [Incident] in the Log dialog box.
   Click [List...].

3. Select data to be indicated in the List-Incident dialog box and click [Content...].

NOTE: To sort and list items, click [Sort...] first.
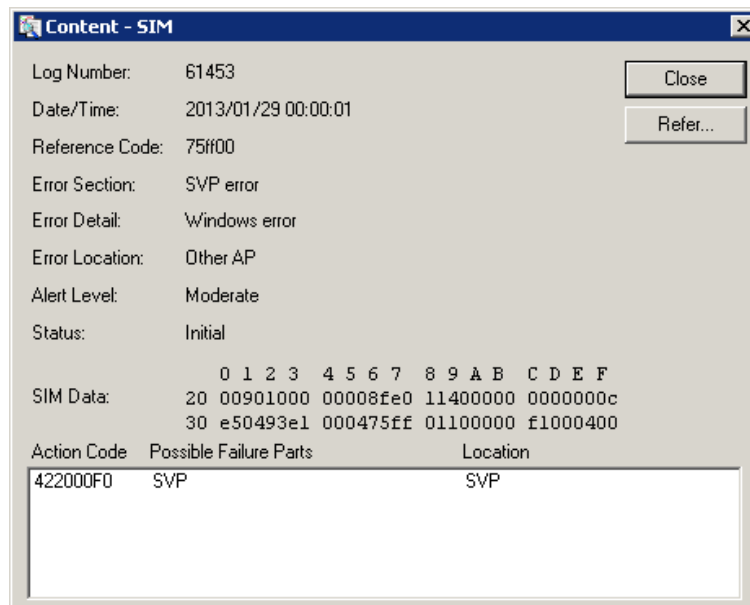Then select the desired item in the [Items] and [Order] options in the Sort dialog box, and click [OK].

4. The Content-Incident dialog box is displayed.
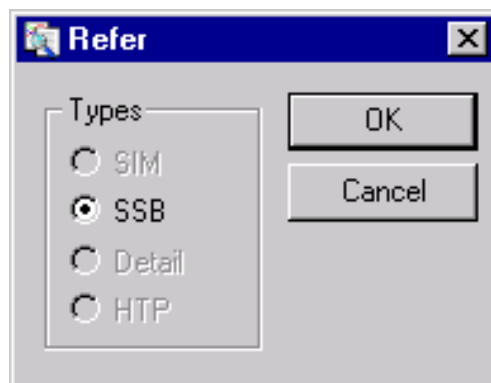   Click [Refer...] in the Content-Incident dialog box, when the relative log is displayed.

```
Content - Incident                                    ☒
Date/Time:       2009/01/09 11:41:35          ┌──────────┐
                                              │  Close   │
Micro Processor:                              └──────────┘
                                              ┌──────────┐
HTP:             2E                           │  Refer...  │
                                              └──────────┘
                 0 1 2 3  4 5 6 7  8 9 A B  C D E F
Incident Data:  00 6d01090b 29230144 887a8000 0e000000
                10 884000ff 00400000 08030000 40000000
                20 00000000 00000000 00000000 00000000
                30 00000000 00000000 00000000 41404040
                40 40404040 40213800 00000057 f0010000
                50 00000000 00000000 00000000 00000000
```

5. Select the log to be displayed in the Refer dialog box. ([HTP] is selected in this example.)

```
Refer                          ☒
┌─Types────────┐   ┌──────────┐
│  ○ SIM       │   │    OK    │
│  ○ SSB       │   └──────────┘
│  ○ Detail    │   ┌──────────┐
│  ⦿ HTP       │   │  Cancel  │
└──────────────┘   └──────────┘
```

6. Close the relative log when it is referred to.
   Click [Close] in the Content-Incident dialog box.
   Click [Close] in the List-Incident dialog box.
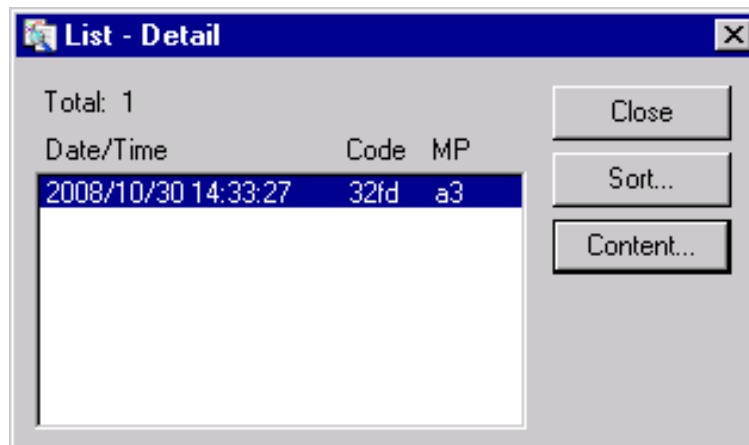   Close the Log dialog box and close the Information window.

2.2.7 HTP Log

1. Display the Log dialog box according to the Prerequisite Operation. (See SVP02-02-10.)

2. Select [HTP] in the Log dialog box.
   Click [List...].

3. Select data to be indicated in the List-HTP dialog box and click [Content...].

NOTE: To sort and list items, click [Sort...] first.
Then select the desired item in the [Items] and [Order] options in the Sort dialog box, and click [OK].

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

4. The Content-HTP dialog box is displayed.

```
Content - HTP                                    [X]

Date/Time:      2009/01/09 11:41:35       [ Close ]
Error Code:     f1010000
Seq:            004e
HTP:            2E

                0 1 2 3  4 5 6 7  8 9 A B  C D E F
HTP Data:   000   00000c00 00000c00 496737ef 004e8800  ▲
            010   f1010000 00000000 00000000 f10100dd
            020   800080c1 80000002 69400000 0000000f
            030   986c6500 000098b6 00100000 61730000
            040   00040101 34002138 00002100 00000003
            050   00000000 7fc80002 ff000000 00000000  ▼

                0 1 2 3  4 5 6 7  8 9 A B  C D E F
MP Data:
```

5. Click [Close] in the Content-HTP dialog box.

Click [Close] in the List-HTP dialog box.

Close the Log dialog box and close the Information window.

2.2.8 Diagnosis Log

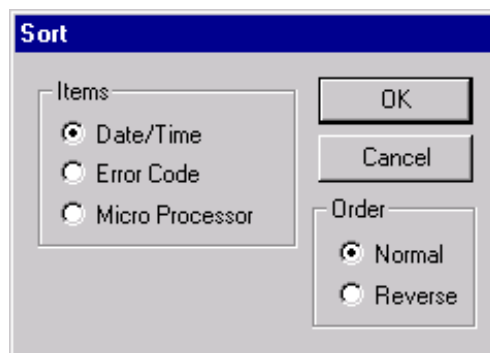1. Display the Log dialog box according to the Prerequisite Operation. (See SVP02-02-10.)

2. Select [Diagnosis] in the Log dialog box.
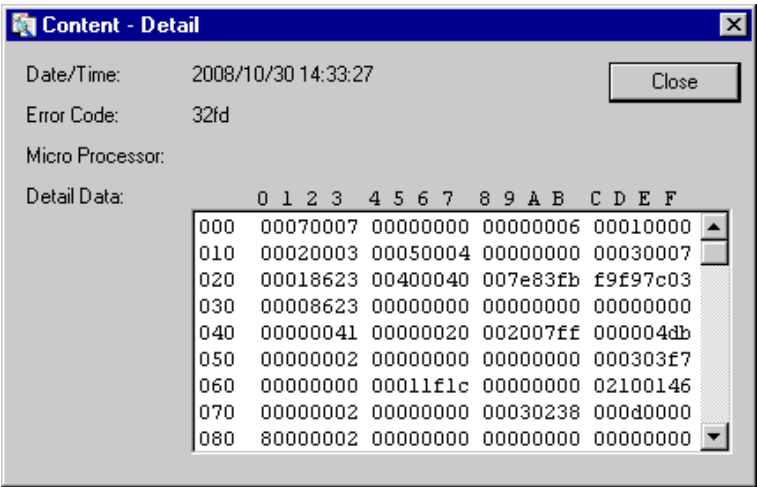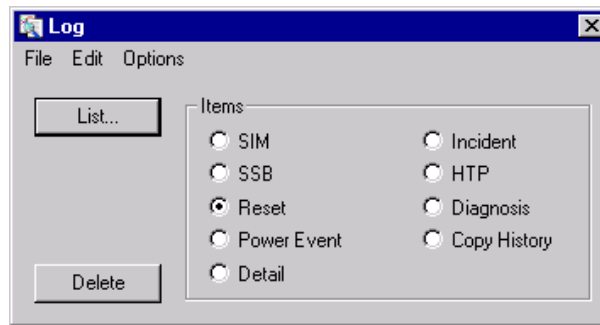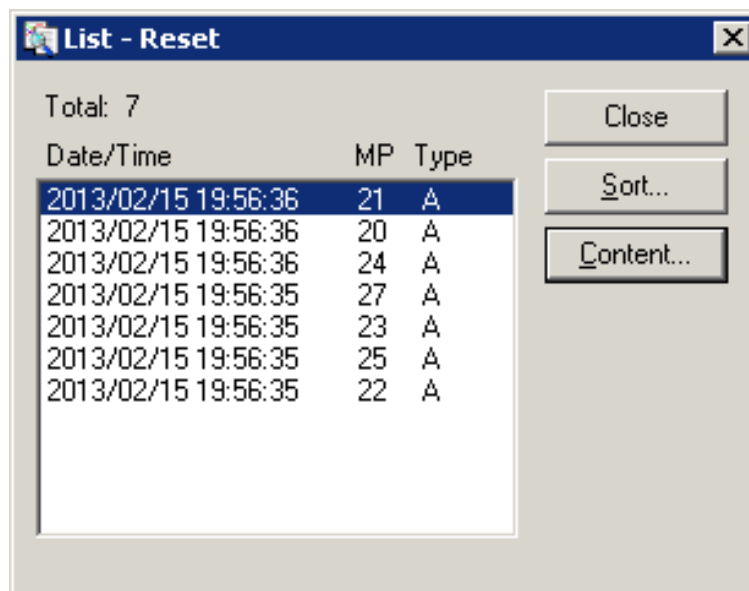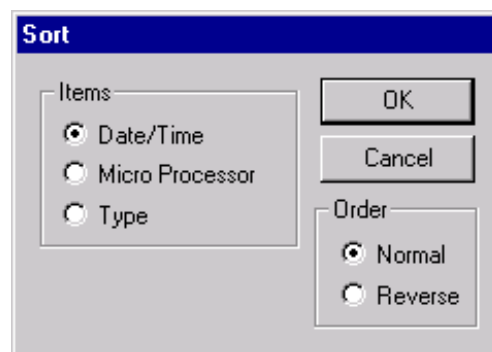   Click [List...].

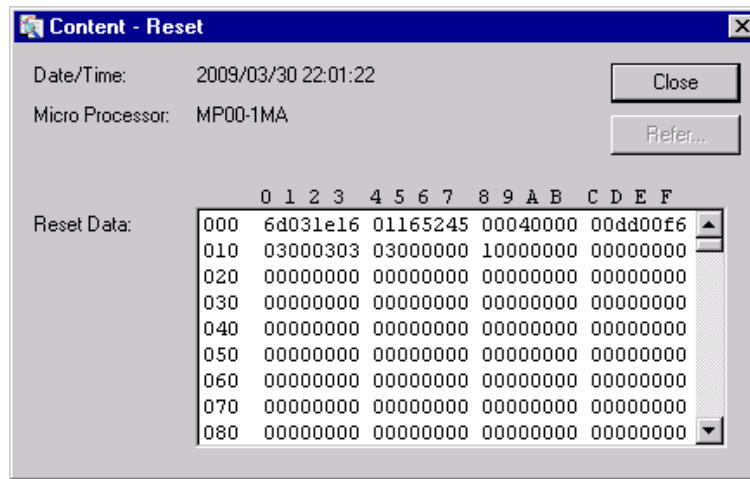3. Select data to be indicated in the List-Diagnosis dialog box and click [Content...].

NOTE: To sort and list items, click [Sort...] first.
       Then select the desired item in the [Items] and [Order] options in the Sort dialog box,
       and click [OK].

4. The Content-Diagnosis dialog box is displayed.

```
Content - Diagnosis                                    [x]
Date/Time:        2009/10/17 01:11:04          [  Close  ]
Micro Processor:
Object:           HDD
CUDG Type:        DKU Path INLINE
Test Number:      a1
Error Code:       a1fb


Action Code   Possible Failure Parts           Location
┌─────────────────────────────────────────────────────┐
│                                                       │
│                                                       │
│                                                       │
└─────────────────────────────────────────────────────┘
                  0 1 2 3  4 5 6 7  8 9 A B  C D E F
Detail Information:  00  03020083 00000000 a1fb0020 80200020
                     10  00000000 00000000 00009000 00000001
```

5. Click [Close] in the Content-Diagnosis dialog box.
    Click [Close]in the List-Diagnosis dialog box.
    Close the Log dialog box and close the Information window.

2.2.9 Copy History Log

1. Display the Log dialog box according to the Prerequisite Operation. (See SVP02-02-10.)

2. Select [Copy History] in the Log dialog box.
   Click [List...].

3. Select data to be indicated in the List-Copy History dialog box and click [Content...].

NOTE: To sort and list items, click [Sort...] first.
       Then select the desired item in the [Items] and [Order] options in the Sort dialog box,
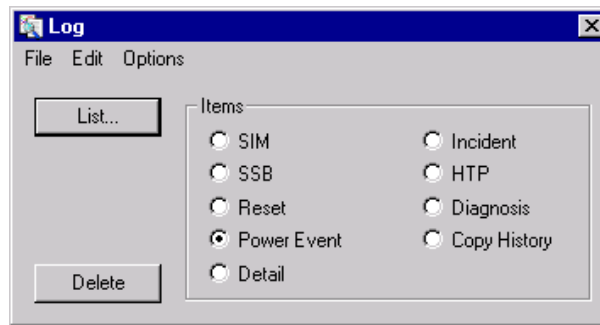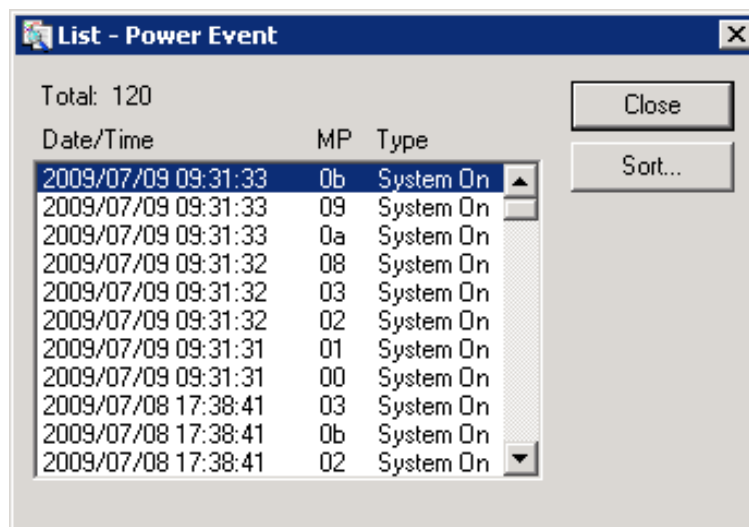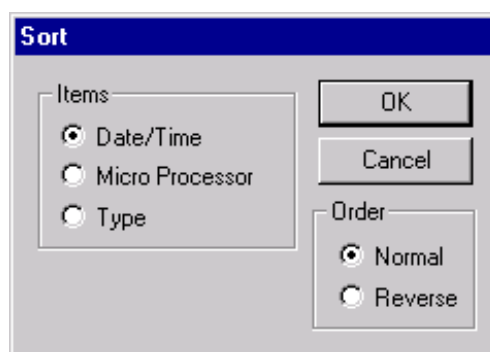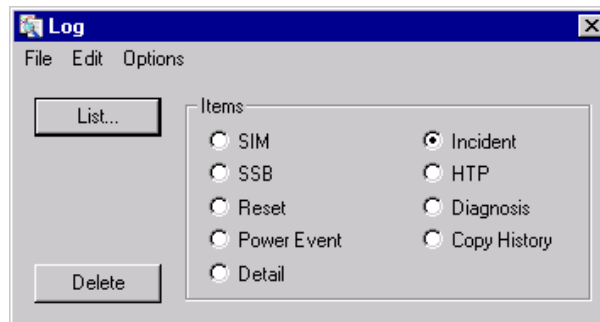   and click [OK].

4. The Content-Copy History dialog box is displayed.

```
Content - Copy History                                    [X]

Date/Time:      From    2008/11/14 14:42:41          [ Close ]
                To      2008/11/14 15:02:12

Process:        Self Correction

Factor:         SVP

PDEV:           From    HDD000-01

                To      HDD000-01

Status:         Warning
```

5. Click [Close] in the Content-Copy History dialog box.
    Click [Close] in the List-Copy History dialog box.
    Close the Log dialog box and close the Information window.

2.2.10 P/S Off Log

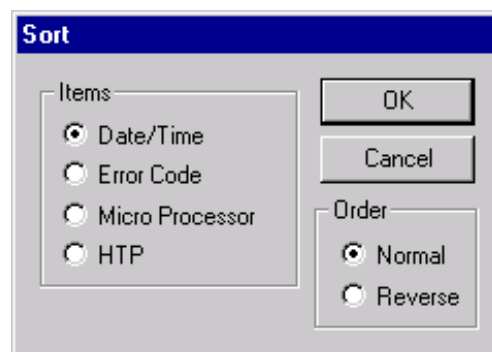1. Display the Log dialog box according to the Prerequisite Operation. (See SVP02-02-10.)

2. Click [Options]-[P/S Off Log] from the menu in the Log dialog box.

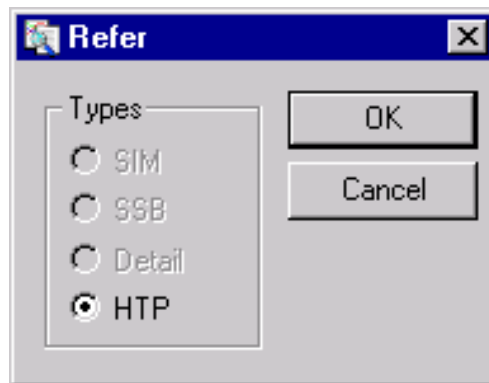3. The List-P/S Off Log dialog box is displayed.

NOTE: To sort and list items, click [Sort...] first.
Then select the desired item in the [Items] and [Order] options in the Sort dialog box, and click [OK].

4. Click [Close] in the List-P/S Off Log dialog box.
Close the Log dialog box and close the Information window.

2.2.11 Location correspondence table

• MP# - Location correspondence table

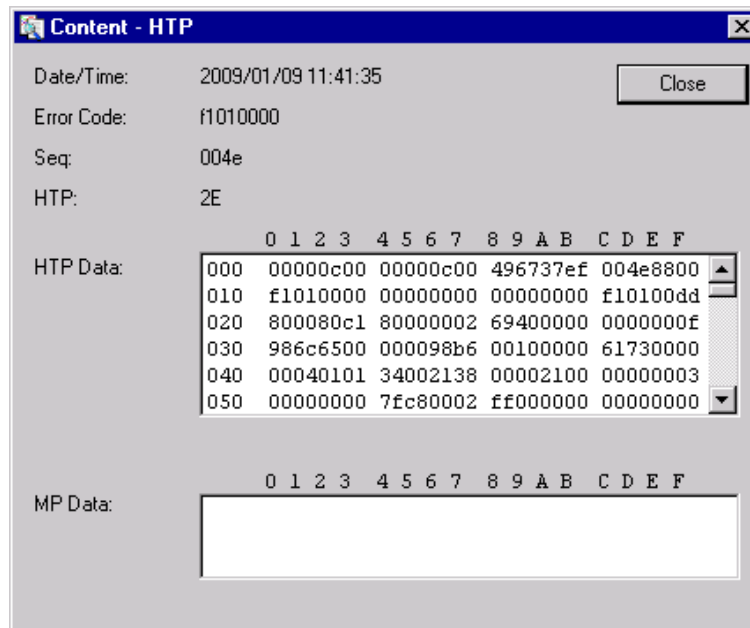| CBX Pair	DKC	CTL Location	MP Unit Location	MP Location	MP# (HEX)
CBX Pair 0	DKC-0	CTL01	MPU-010	MP010-00	x'00'
				MP010-01	x'01'
				MP010-02	x'02'
				MP010-03	x'03'
				MP010-04	x'04'
				MP010-05	x'05'
				MP010-06	x'06'
				MP010-07	x'07'
				MP010-08	x'08'
				MP010-09	x'09'
				MP010-0A	x'0a'
				MP010-0B	x'0b'
				MP010-0C	x'0c'
				MP010-0D	x'0d'
				MP010-0E	x'0e'
				MP010-0F	x'0f'
				MP010-10	x'10'
				MP010-11	x'11'
				MP010-12	x'12'
				MP010-13	x'13'
		CTL02	MPU-020	MP020-00	x'14'
				MP020-01	x'15'
				MP020-02	x'16'
				MP020-03	x'17'
				MP020-04	x'18'
				MP020-05	x'19'
				MP020-06	x'1a'
				MP020-07	x'1b'
				MP020-08	x'1c'
				MP020-09	x'1d'
				MP020-0A	x'1e'
				MP020-0B	x'1f'
				MP020-0C	x'20'
				MP020-0D	x'21'
				MP020-0E	x'22'
				MP020-0F	x'23'
				MP020-10	x'24'
				MP020-11	x'25'
				MP020-12	x'26'
				MP020-13	x'27'

(Continued to the next page)

(Continued from the previous page)

CBX Pair	DKC	CTL Location	MP Unit Location	MP Location	MP# (HEX)
CBX Pair 0	DKC-1	CTL11	MPU-110	MP110-00	x'28'
				MP110-01	x'29'
				MP110-02	x'2a'
				MP110-03	x'2b'
				MP110-04	x'2c'
				MP110-05	x'2d'
				MP110-06	x'2e'
				MP110-07	x'2f'
				MP110-08	x'30'
				MP110-09	x'31'
				MP110-0A	x'32'
				MP110-0B	x'33'
				MP110-0C	x'34'
				MP110-0D	x'35'
				MP110-0E	x'36'
				MP110-0F	x'37'
				MP110-10	x'38'
				MP110-11	x'39'
				MP110-12	x'3a'
				MP110-13	x'3b'
		CTL12	MPU-120	MP120-00	x'3c'
				MP120-01	x'3d'
				MP120-02	x'3e'
				MP120-03	x'3f'
				MP120-04	x'40'
				MP120-05	x'41'
				MP120-06	x'42'
				MP120-07	x'43'
				MP120-08	x'44'
				MP120-09	x'45'
				MP120-0A	x'46'
				MP120-0B	x'47'
				MP120-0C	x'48'
				MP120-0D	x'49'
				MP120-0E	x'4a'
				MP120-0F	x'4b'
				MP120-10	x'4c'
				MP120-11	x'4d'
				MP120-12	x'4e'
				MP120-13	x'4f'

(Continued to the next page)

(Continued from the previous page)

CBX Pair	DKC	CTL Location	MP Unit Location	MP Location	MP# (HEX)
CBX Pair 1	DKC-2	CTL21	MPU-210	MP210-00	x'50'
				MP210-01	x'51'
				MP210-02	x'52'
				MP210-03	x'53'
				MP210-04	x'54'
				MP210-05	x'55'
				MP210-06	x'56'
				MP210-07	x'57'
				MP210-08	x'58'
				MP210-09	x'59'
				MP210-0A	x'5a'
				MP210-0B	x'5b'
				MP210-0C	x'5c'
				MP210-0D	x'5d'
				MP210-0E	x'5e'
				MP210-0F	x'5f'
				MP210-10	x'60'
				MP210-11	x'61'
				MP210-12	x'62'
				MP210-13	x'63'
		CTL22	MPU-220	MP220-00	x'64'
				MP220-01	x'65'
				MP220-02	x'66'
				MP220-03	x'67'
				MP220-04	x'68'
				MP220-05	x'69'
				MP220-06	x'6a'
				MP220-07	x'6b'
				MP220-08	x'6c'
				MP220-09	x'6d'
				MP220-0A	x'6e'
				MP220-0B	x'6f'
				MP220-0C	x'70'
				MP220-0D	x'71'
				MP220-0E	x'72'
				MP220-0F	x'73'
				MP220-10	x'74'
				MP220-11	x'75'
				MP220-12	x'76'
				MP220-13	x'77'

(Continued from the previous page)

CBX Pair	DKC	CTL Location	MP Unit Location	MP Location	MP# (HEX)
CBX Pair 1	DKC-3	CTL31	MPU-310	MP310-00	x'78'
				MP310-01	x'79'
				MP310-02	x'7a'
				MP310-03	x'7b'
				MP310-04	x'7c'
				MP310-05	x'7d'
				MP310-06	x'7e'
				MP310-07	x'7f'
				MP310-08	x'80'
				MP310-09	x'81'
				MP310-0A	x'82'
				MP310-0B	x'83'
				MP310-0C	x'84'
				MP310-0D	x'85'
				MP310-0E	x'86'
				MP310-0F	x'87'
				MP310-10	x'88'
				MP310-11	x'89'
				MP310-12	x'8a'
				MP310-13	x'8b'
		CTL32	MPU-320	MP320-00	x'8c'
				MP320-01	x'8d'
				MP320-02	x'8e'
				MP320-03	x'8f'
				MP320-04	x'90'
				MP320-05	x'91'
				MP320-06	x'92'
				MP320-07	x'93'
				MP320-08	x'94'
				MP320-09	x'95'
				MP320-0A	x'96'
				MP320-0B	x'97'
				MP320-0C	x'98'
				MP320-0D	x'99'
				MP320-0E	x'9a'
				MP320-0F	x'9b'
				MP320-10	x'9c'
				MP320-11	x'9d'
				MP320-12	x'9e'
				MP320-13	x'9f'

(Continued from the previous page)

CBX Pair	DKC	CTL Location	MP Unit Location	MP Location	MP# (HEX)
CBX Pair 2	DKC-4	CTL41	MPU-410	MP410-00	x'a0'
				MP410-01	x'a1'
				MP410-02	x'a2'
				MP410-03	x'a3'
				MP410-04	x'a4'
				MP410-05	x'a5'
				MP410-06	x'a6'
				MP410-07	x'a7'
				MP410-08	x'a8'
				MP410-09	x'a9'
				MP410-0A	x'aa'
				MP410-0B	x'ab'
				MP410-0C	x'ac'
				MP410-0D	x'ad'
				MP410-0E	x'ae'
				MP410-0F	x'af'
				MP410-10	x'b0'
				MP410-11	x'b1'
				MP410-12	x'b2'
				MP410-13	x'b3'
		CTL42	MPU-420	MP420-00	x'b4'
				MP420-01	x'b5'
				MP420-02	x'b6'
				MP420-03	x'b7'
				MP420-04	x'b8'
				MP420-05	x'b9'
				MP420-06	x'ba'
				MP420-07	x'bb'
				MP420-08	x'bc'
				MP420-09	x'bd'
				MP420-0A	x'be'
				MP420-0B	x'bf'
				MP420-0C	x'c0'
				MP420-0D	x'c1'
				MP420-0E	x'c2'
				MP420-0F	x'c3'
				MP420-10	x'c4'
				MP420-11	x'c5'
				MP420-12	x'c6'
				MP420-13	x'c7'

(Continued from the previous page)

CBX Pair	DKC	CTL Location	MP Unit Location	MP Location	MP# (HEX)
CBX Pair 2	DKC-5	CTL51	MPU-510	MP510-00	x'c8'
				MP510-01	x'c9'
				MP510-02	x'ca'
				MP510-03	x'cb'
				MP510-04	x'cc'
				MP510-05	x'cd'
				MP510-06	x'ce'
				MP510-07	x'cf'
				MP510-08	x'd0'
				MP510-09	x'd1'
				MP510-0A	x'd2'
				MP510-0B	x'd3'
				MP510-0C	x'd4'
				MP510-0D	x'd5'
				MP510-0E	x'd6'
				MP510-0F	x'd7'
				MP510-10	x'd8'
				MP510-11	x'd9'
				MP510-12	x'da'
				MP510-13	x'db'
		CTL52	MPU-520	MP520-00	x'dc'
				MP520-01	x'dd'
				MP520-02	x'de'
				MP520-03	x'df'
				MP520-04	x'e0'
				MP520-05	x'e1'
				MP520-06	x'e2'
				MP520-07	x'e3'
				MP520-08	x'e4'
				MP520-09	x'e5'
				MP520-0A	x'e6'
				MP520-0B	x'e7'
				MP520-0C	x'e8'
				MP520-0D	x'e9'
				MP520-0E	x'ea'
				MP520-0F	x'eb'
				MP520-10	x'ec'
				MP520-11	x'ed'
				MP520-12	x'ee'
				MP520-13	x'ef'

• Port - Location correspondence table

Channel port consecutive numbers in the device. Port of 8 at the maximum is implemented in each CHB PCB. See the table below show relations with the PCB Location.

CBX Pair	DKC	CHB Location	Port#(HEX)
CBX Pair 0	DKC-0	CHB-01A	x'00' ～ x'03'
		CHB-01B	x'04' ～ x'07'
		CHB-01E	x'08' ～ x'0b'
		CHB-01F	x'0c' ～ x'0f'
		CHB-02A	x'10' ～ x'13'
		CHB-02B	x'14' ～ x'17'
		CHB-02E	x'18' ～ x'1b'
		CHB-02F	x'1c' ～ x'1f'
	DKC-1	CHB-11A	x'20' ～ x'23'
		CHB-11B	x'24' ～ x'27'
		CHB-11E	x'28' ～ x'2b'
		CHB-11F	x'2c' ～ x'2f'
		CHB-12A	x'30' ～ x'33'
		CHB-12B	x'34' ～ x'37'
		CHB-12E	x'38' ～ x'3b'
		CHB-12F	x'3c' ～ x'3f'
CBX Pair 1	DKC-2	CHB-21A	x'40' ～ x'43'
		CHB-21B	x'44' ～ x'47'
		CHB-21E	x'48' ～ x'4b'
		CHB-21F	x'4c' ～ x'4f'
		CHB-22A	x'50' ～ x'53'
		CHB-22B	x'54' ～ x'57'
		CHB-22E	x'58' ～ x'5b'
		CHB-22F	x'5c' ～ x'5f'
	DKC-3	CHB-31A	x'60' ～ x'63'
		CHB-31B	x'64' ～ x'67'
		CHB-31E	x'68' ～ x'6b'
		CHB-31F	x'6c' ～ x'6f'
		CHB-32A	x'70' ～ x'73'
		CHB-32B	x'74' ～ x'77'
		CHB-32E	x'78' ～ x'7b'
		CHB-32F	x'7c' ～ x'7f'

(Continued to the next page)

(Continued from the previous page)

CBX Pair	DKC	CHB Location	Port#(HEX)
CBX Pair 2	DKC-4	CHB-41A	x'80' ～ x'83'
		CHB-41B	x'84' ～ x'87'
		CHB-41E	x'88' ～ x'8b'
		CHB-41F	x'8c' ～ x'8f'
		CHB-42A	x'90' ～ x'93'
		CHB-42B	x'94' ～ x'97'
		CHB-42E	x'98' ～ x'9b'
		CHB-42F	x'9c' ～ x'9f'
	DKC-5	CHB-51A	x'a0' ～ x'a3'
		CHB-51B	x'a4' ～ x'a7'
		CHB-51E	x'a8' ～ x'ab'
		CHB-51F	x'ac' ～ x'af'
		CHB-52A	x'b0' ～ x'b3'
		CHB-52B	x'b4' ～ x'b7'
		CHB-52E	x'b8' ～ x'bb'
		CHB-52F	x'bc' ～ x'bf'

2.3 Log delete

You can delete the following logs:
- SSB Log
- SIM Log
- Detail Log
- Reset Log
- Power Event Log
- Incident Log
- HTP Log
- Diagnosis Log
- Copy History Log

1. Change the mode from [View Mode] to [Modify Mode].
   Click [Information] in SVP window.

2. Click [Log...] in the Information dialog box.

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

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

4. A message [INF2802W] is displayed. Click [Yes].

Delete ☒

⚠ [INF2802W]

The specified log file will be deleted.
Are you sure you want to delete it?

Yes   No

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.

Item	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

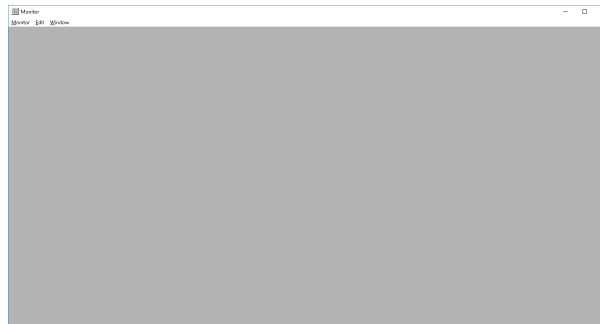| #	Part	Item	Description	Remarks
1	Cache	Cache Use Rate	Cache Use Rate	
2		Cache Write Pending Rate	Cache Write Pending Rate	
3		Cache MCU Side File Rate	Cache MCU Side File Rate (Total Side File use rate of CC/XRC)	
4	MP	MP Processing Rate	MP processing Rate	
5		MP Processing Rate Open-Target	MP Processing 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		FEC Un-correctable Count	FEC Un-correctable Count	
22	Port (iSCSI)	MAC CRC Error Count	MAC CRC Error Count	Displaying only with iSCSI PCB.
23		IP Error Packet Count	IP Error Packet Count	
24		IPv6 Error Packet Count	IPv6 Error Packet Count	
25		TCP Retransmit Timer Expired Count	TCP Retransmit Timer Expired Count	
26		iSCSI Header Digest Error Count	iSCSI Header Digest Error Count	
27		iSCSI Data Digest Error Count	iSCSI Data Digest Error Count	
28	Port (HTP/ FNP)	HTP/FNP Ex Multiple	HTP/FNP Ex Multiple	Displaying only with FICON PCB.
29		HTP/FNP Read Data Transfer Rate	HTP/FNP Read Data Transfer Rate	
30		HTP/FNP Write Data Transfer Rate	HTP/FNP Write Data Transfer Rate	
31		HTP/FNP Processing Rate	HTP/FNP Processing Rate	

(Continued to the next page)
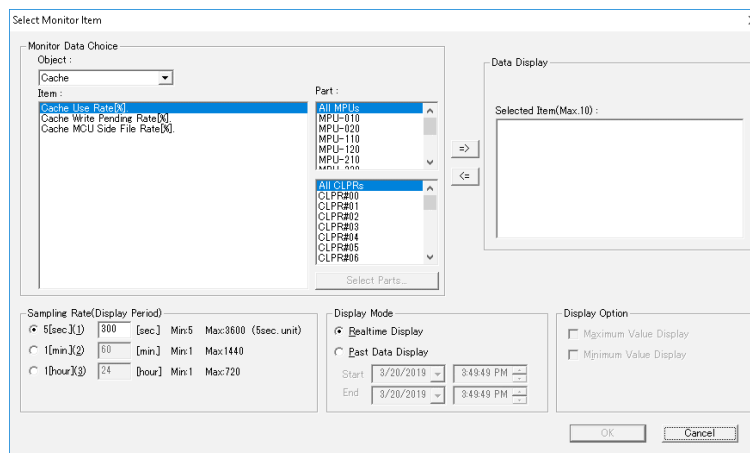
(Continued from the previous page)

#	Part	Item		Description	Remarks
32	Port	Port Total IOPS		IOPS (Read/Write Command Transfer)	Not Displaying with Main Frame PCB.
33		Port Total Transfer Rate		Transfer Rate (Read/Write Command Transfer)	
34		Port Total Response Time		Response Time (Read/Write Command Transfer)	
35		Port Input IOPS	Initiator/ External Port	IOPS (Read Command Transfer)	
			Target/ RCU Target Port	IOPS (Write Command Transfer)	
36		Port Input Transfer Rate	Initiator/ External Port	Transfer Rate (Read Command Transfer)	
			Target/ RCU Target Port	Transfer Rate (Write Command Transfer)	
37		Port Input Response Time	Initiator/ External Port	Response Time (Read Command Transfer)	
			Target/ RCU Target Port	Response Time (Write Command Transfer)	
38		Port Output IOPS	Initiator/ External Port	IOPS (Write Command Transfer)	
			Target/ RCU Target Port	IOPS (Read Command Transfer)	
39		Port Output Transfer Rate	Initiator/ External Port	Transfer Rate (Write Command Transfer)	
			Target/ RCU Target Port	Transfer Rate (Read Command Transfer)	
40		Port Output Response Time	Initiator/ External Port	Response Time (Write Command Transfer)	
			Target/ RCU Target Port	Response Time (Read Command Transfer)	
41	LDEV	IOPS		IOPS	It is necessary to select Gathering LDEV Processing Information. (Refer to 2.4.3.)
42		Transfer Rate		Transfer Rate	
43		Read Hit Rate		Read Hit Rate (A hit rate only for random read.)	

1. Display the Monitor panel
    Press [Monitor] in the SVP main panel to start the monitoring feature.

2. Display the Select Monitor Item panel
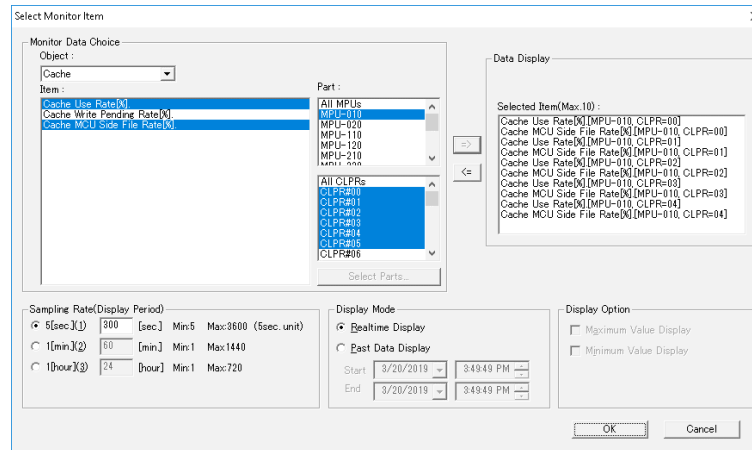   Click [Monitor]-[Open...] from the menu in the Monitor panel.

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], [OK] will not be activated.
         If the object part (LDKC:CU:LDEV) is not gathering LDEV processing information, the monitor is not
         normally displayed. (See "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 Step (2) will be ignored.
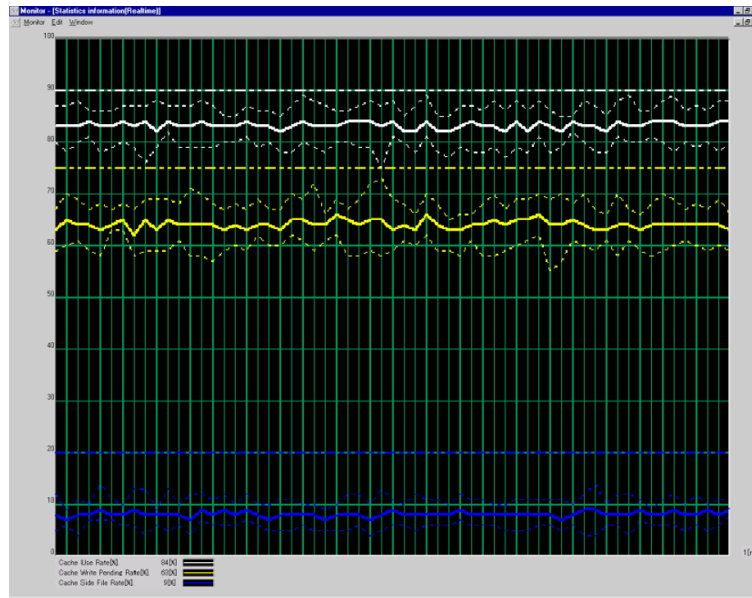
(4) Specify the display option
When you select 1[min.] or 1[hour] in Display period, you can choose either to display or not to display the maximum/minimum value within the time interval.

After selecting all the necessary items, click [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).
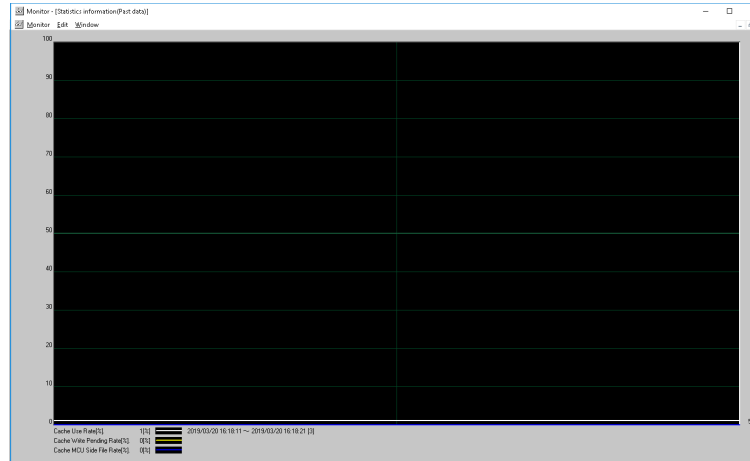

NOTE: If the storage system is undergoing the following maintenance operations or CHK1A, CHK1B and CHK3 occurs, the monitoring data might contain extremely large values.

- Adding on, replacing, or removing cache memories.
- Adding on, replacing, or removing disk drives.
- Replacing the CTL.
- 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.

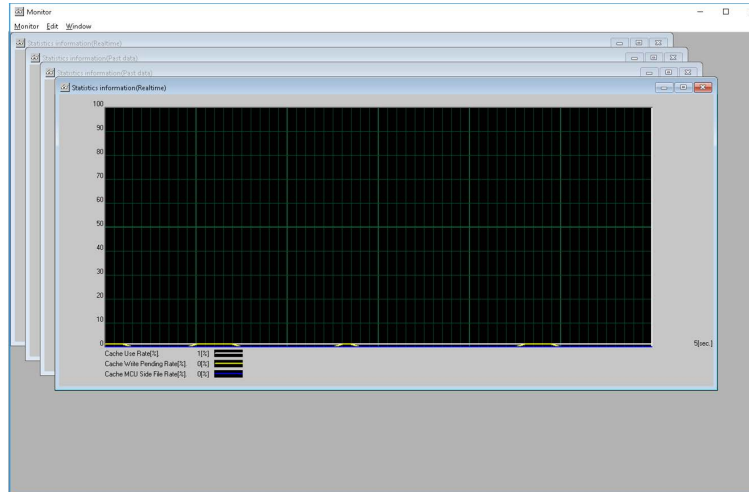| Time interval	Accumulation period
5[sec.]	3600 seconds (1 hour) (units of 5 seconds)
1[min.]	1440 minutes (24 hours) (*1)
1[hour]	744 hours (31 days)

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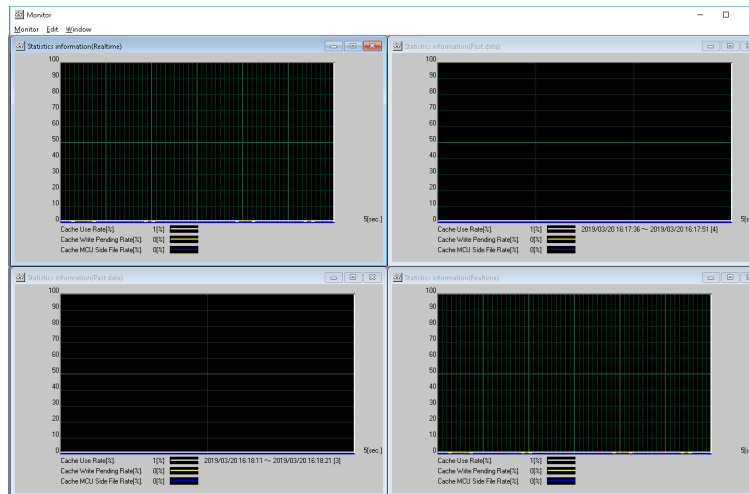
- Adding on, replacing, or removing cache memories.
- Adding on, replacing, or removing disk drives.
- Replacing the CTL.
- Changing the system configuration.
- Replacing the micro-program.
- Formatting LDEVs (including Quick Format).
- PS OFF/ON

6. Align the displayed windows
You can align the windows from the [Window] menu. To cascade the windows, click [Window]-[Cascade]. To tile them, click [Window]-[Tile]. To arrange the minimized windows, click [Window]-[Icon]. To close all windows, click [Window]-[All Close].

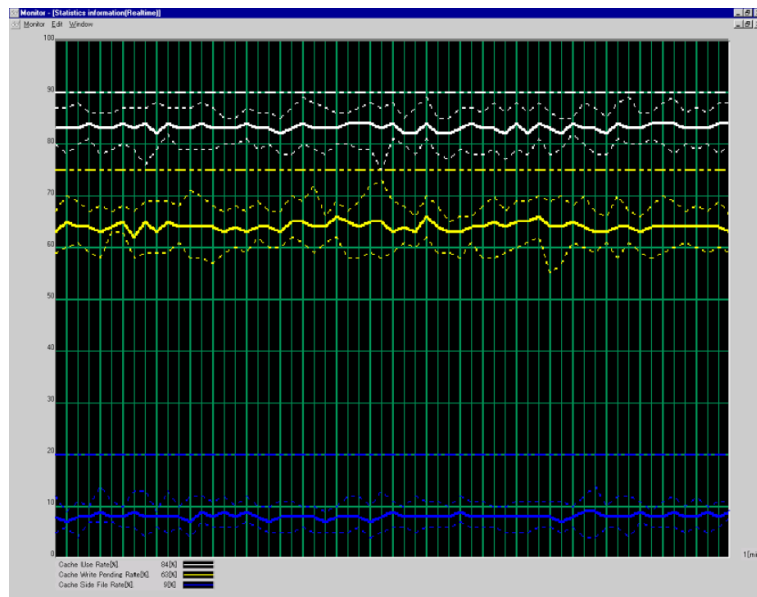A list of available windows is displayed under the menu. You can select one window to display it in the foreground.

7. Exit the Monitor window
Click [Monitor]-[Exit] from the menu.

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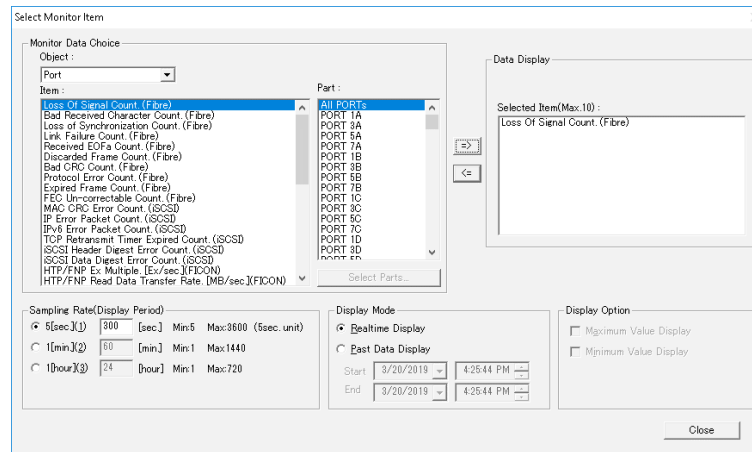   (1) Display the Select Monitor Item panel
         From the menu in the Monitor window, click [Edit]-[Item Add/Delete...].

(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".

NOTE: You can display data on up to 10 items.

NOTE: 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

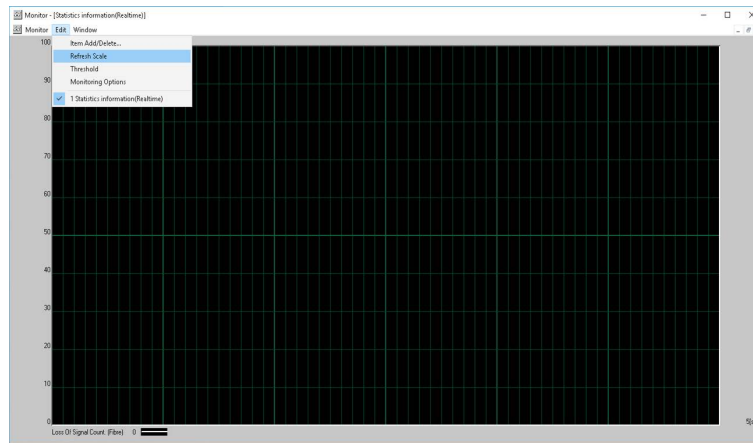In [Display Mode], select either "Realtime Display" or "Past Data Display".

(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, click [Close] to display the Statistics information window.

9. Scale refresh method of the data display screen
   Click [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 monitors processing information according to set values for thresholds and terms.

If a value of the target processing information continuously exceeds a set threshold for a set term, a SIM is reported.

For details of SIMs to be reported, see (SIMRC02-290).

<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 only
6	(Fibre)	Bad Received Character Count	Bad Received Character Count	with Fibre PCB.
7		Loss of Synchronization Count	Loss of Synchronization Count	
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		FEC Un-correctable Count	FEC Un-correctable Count	
15	Port	MAC CRC Error Count	MAC CRC Error Count	Monitoring only
16	(iSCSI)	IP Error Packet Count	IP Error Packet Count	with iSCSI PCB.
17		IPv6 Error Packet Count	IPv6 Error Packet Count	
18		TCP Retransmit Timer Expired Count	TCP Retransmit Timer Expired Count	
19		iSCSI Header Digest Error Count	iSCSI Header Digest Error Count	
20		iSCSI Data Digest Error Count	iSCSI Data Digest Error Count	
21	Port	HTP/FNP Ex Multiple	HTP/FNP Ex Multiple	Monitoring only
22	(HTP/	HTP/FNP Read Date Transfer Rate	HTP/FNP Read Date Transfer Rate	with FICON PCB.
23	FNP)	HTP/FNP Write Date Transfer Rate	HTP/FNP Write Date Transfer Rate	
24		HTP/FNP Processing Rate	HTP/FNP Processing Rate	
25	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
   Click [Monitor] on the SVP main window, and start the monitoring function.

2. Starting threshold setting window
   Click [Edit]-[Threshold] from the menu on the Monitor window.

3. Setting threshold
   • Monitoring items
     Click items that you want to perform the threshold monitoring in the Threshold window.
   • 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, click [OK] and close the window.

   NOTE: When the SVP High Reliability Kit is installed, the above settings are automatically applied to the Standby SVP.

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

4. Exiting the monitor window
   Click [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
   Click [Monitor] on the SVP main window, and start the monitoring function.

2. Starting gathering LDEV processing information setting window
   Click [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, click the [=>] button to add the selected items to [Target Choice].

   When the selection items are complete, click [OK] and close the window.

4. Exiting the monitor window
    Click [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 "2.5.1 Displaying an error count, thresholds, and log" - Step 3.). 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

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

They are Unrecovered Read Error, Recovered Read Error, Unrecovered Seek error, Recovered Seek Error, Not Ready and Other Errors. Each has three types of counters indicated as Today, 7 days and Total. Refer to "2.5.1 Displaying an error count, thresholds, and log" - Step 5. 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 2-1 ORM SIM and Reference Code (SAS Drive)

No.	Error Type	Reference Code	Meaning
1	Unrecovered Read Error	500x, 501x	Drive Media Error
2	Recovered Read Error	(x = 0 ~ f)	
3	Unrecovered Seek Error	502x, 503x	Drive Unit Error
4	Recovered Seek Error	(x = 0 ~ f)	
5	Not Ready		
6	Other Errors		

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

No.	Error Type	Reference Code	Meaning
1	Total Defect Count	500x, 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	50ax, 50bx (x = 0 ~ f)	Flash Drive End of life

Table 2-3 ORM SIM and Reference Code (Flash Module Drive)

No.	Error Type	Reference Code	Meaning
1	Total Defect Count	500x, 501x (x = 0 ~ f)	Drive Unit Error
2	Reboot Error		
3	DMA Error		
4	Memory Error		
5	Uncorrected Error	502x, 503x (x = 0 ~ f)	Drive Media Error
6	Used Endurance Indicator	50cx, 50dx (x = 0 ~ f)	Flash Module Drive End of life
7	Capacitor Error	500x, 501x (x = 0 ~ f)	Drive Unit Error

Prerequisite Operation:

1. Check SVP Mode.
   The Following operation needs SVP Mode to be 'Modify'. (See "1.10 Mode".)
   • Resetting an error count
   • Altering a threshold
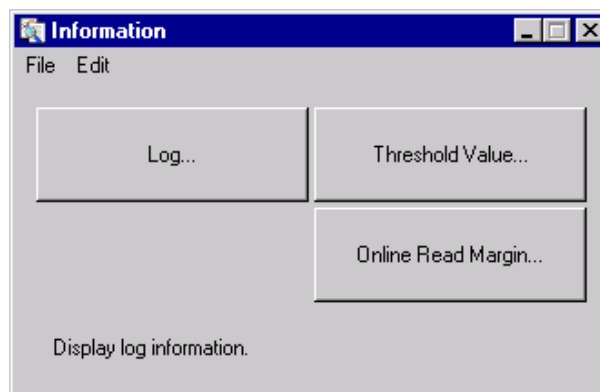   • Resetting thresholds
   • Set of the threshold of all Flash Drive

   To perform the other operations, skip this step and go to Step 2.

2. Click [Information] in the SVP window.

3. Click [Online Read Margin...] in the Information window.

Please refer to the following.
   • Displaying an error count, thresholds, and log SVP02-05-40
   • Resetting an error count SVP02-05-90
   • Displaying thresholds SVP02-05-110
   • Altering a threshold SVP02-05-130
   • Displaying the ORM running status SVP02-05-160
   • Resetting thresholds SVP02-05-180
   • Set of the threshold of all Flash Drive SVP02-05-210

2.5.1 Displaying an error count, thresholds, and log

1. Display 'Online Read Margin' by prerequisite operation. (See SVP02-05-30.)

2. Click [Display Over Rate...] in the Online Read margin window.

3. Enter a number from 0 to 100 at "Rate" in the ORM Over Rate HDD# Display dialog box. Click [Display].
   Then only the HDDs which have the rate of equal to or greater than the input number at "Rate" will
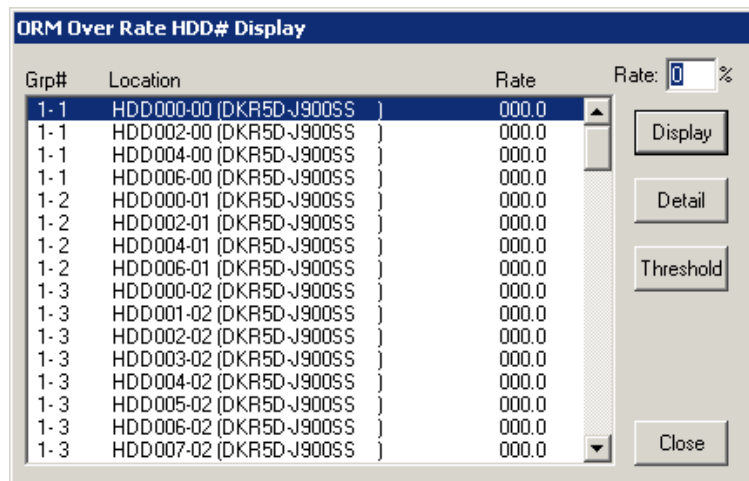   appear in the display.

   Rate   : ratio of the number of errors for the threshold value.
   Grp#   : the parity group.
         SPARE   : spare HDD
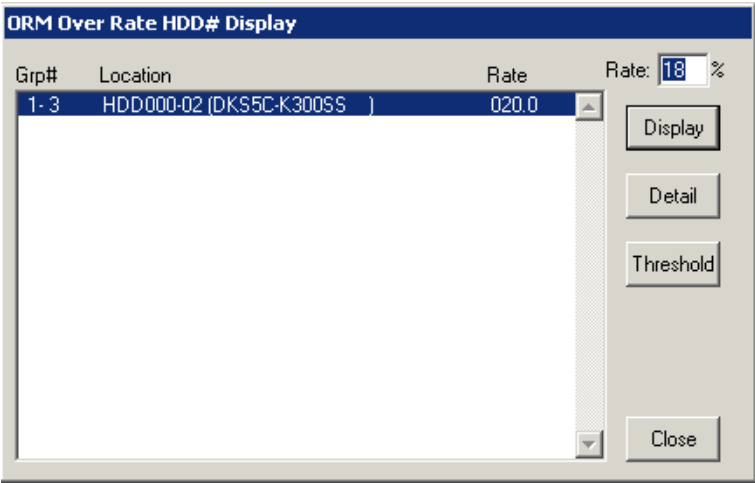   RSRVD   : reserved HDD with sparing
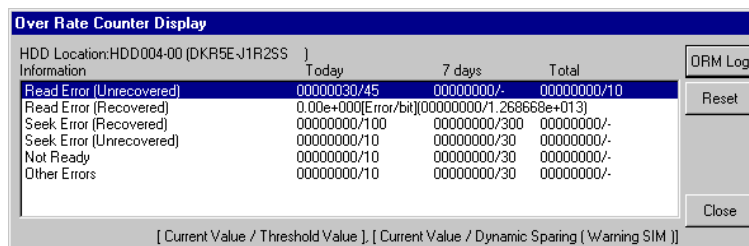   *   : spare HDD in use.

4. When more detailed information is needed for the particular drive, select the HDD from the HDD Location list box. Click [Detail].

ORM Over Rate HDD# Display

Grp#	Location	Rate
1- 3	HDD000-02 (DKS5C-K300SS)	020.0

Rate: 18 %

[Display]

[Detail]

[Threshold]

[Close]

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

> NOTE: In the case of Flash Drive, [ORM Log] cannot be clicked.

- When Selecting 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.

• When Selecting 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/SNxxx-xxxxNx, 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)".
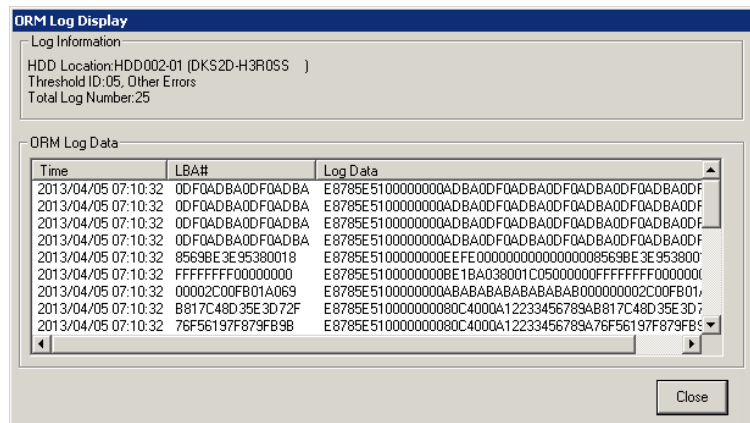
• When Selecting Flash Module Drive

```
Over Rate Counter Display
HDD Location:HDD027-01 (NFHAE-Q1R6SS  )
Information              Today          7 days         Total          [ORM Log]
Total Defect Count       -              -              00000000/100
Reboot Error             00000000/2     -              -             [Reset]
DMA Error                00000000/10    -              -
Memory Error             00000000/500   -              -
Uncorrected Error        00000000/5000  -              -
Used Endurance Indicator -              -              00000000/99(95)
Capacitor Error          00000000/1     -              -             [Close]

[ Current Value / Threshold Value ], [ Current Value / Dynamic Sparing ( Warning SIM )]
```

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)
	Capacitor Error	: Capacitor Error Count
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" and "Used Endurance Indicator" and display today indication of the others in case of Flash Module Drive. The "-" for the Threshold value means no threshold is set.

6. The nature of the error selected in Step 5. is displayed.

Contents of ORM Log Data

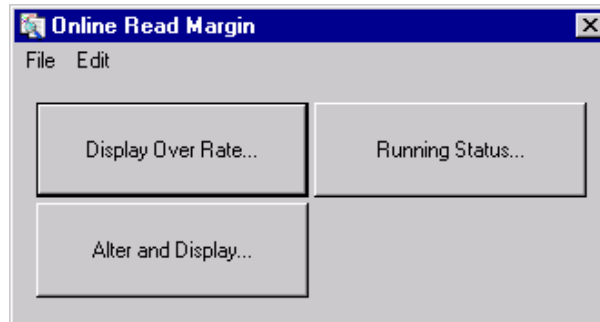| Byte	Bit	Name	Explanation
0-7		UCT	Time when the diagnostic result was reported from the DKC to the SVP.
8	0	Log Valid	When this bit is 1, it indicates that this log is valid.
	1	Address Valid	When this bit is 1, it indicates that the address information in bytes 8 to F is valid.
	2-3	(Reserved)	Reserved
	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.

7. Click [Close] in the ORM Log Display dialog box.
    Click [Close] in the Over Rate Counter Display dialog box.
    Click [Close] in the ORM Over Rate HDD# Display dialog box.
    Close the Online Read Margin window.
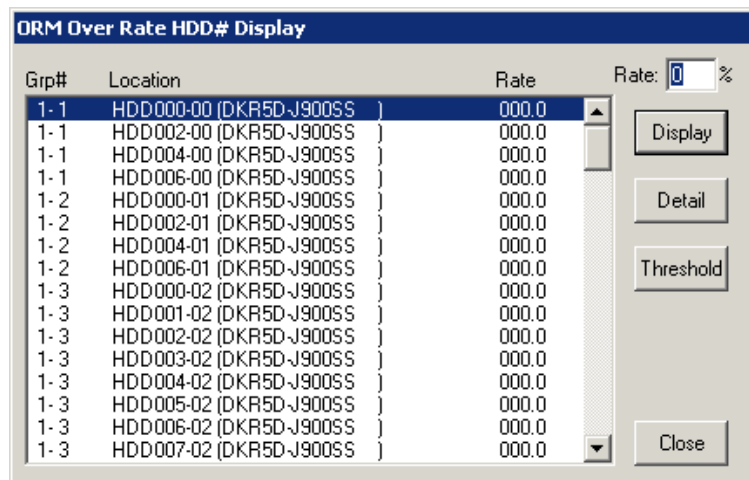   Close the Information window.

2.5.2 Resetting an error count

1. Display 'Online Read Margin' by prerequisite operation. (See SVP02-05-30.)

2. Click [Display Over Rate...] in the Online Read Margin window.

3. Enter a number from 0 to 100 at 'Rate' in the ORM Over Rate HDD# Display dialog box. Click [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.

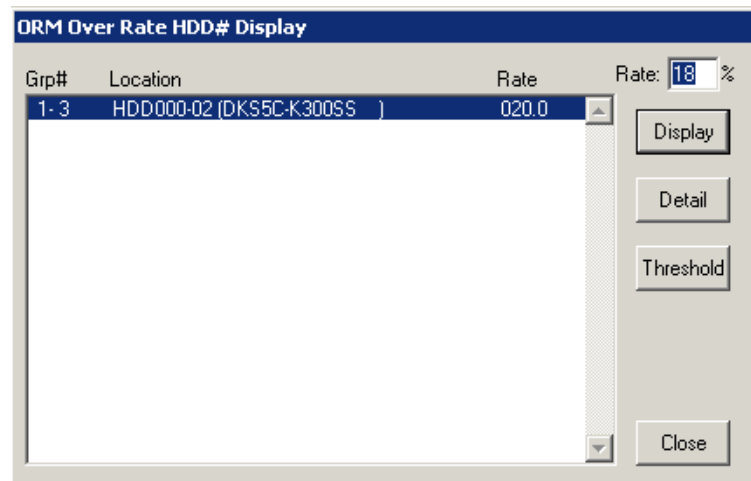Rate   : ratio of the number of errors for the threshold value.
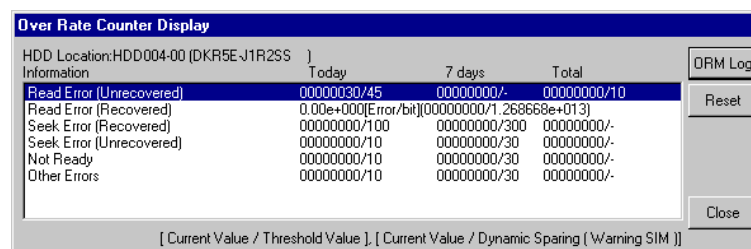
Grp# : the parity group.

SPARE   : spare HDD

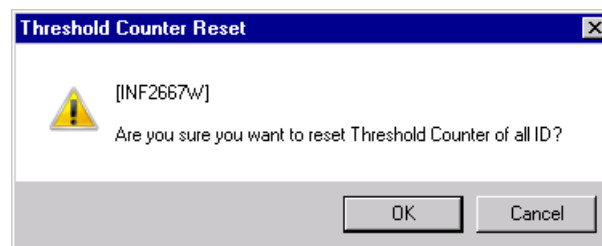RSRVD   : reserved HDD with sparing

*   : spare HDD in use.

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

5. In the Over Rate Counter Display dialog box, click [Reset].
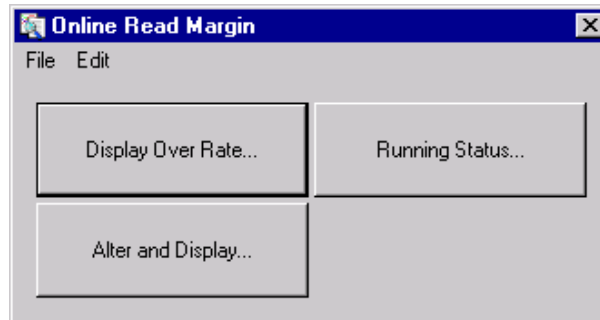

6. Click [OK] in the message [INF2667W].

7. Click [Close] in the Over Rate Counter Display dialog box.
    Click [Close] in the ORM Over Rate HDD# Display dialog box.
    Close the Online Read Margin window.
    Close the Information window.
    In the SVP window, change the operation mode from [Modify Mode]to [View Mode].

2.5.3 Displaying thresholds

1. Display 'Online Read Margin' by prerequisite operation. (See SVP02-05-30.)

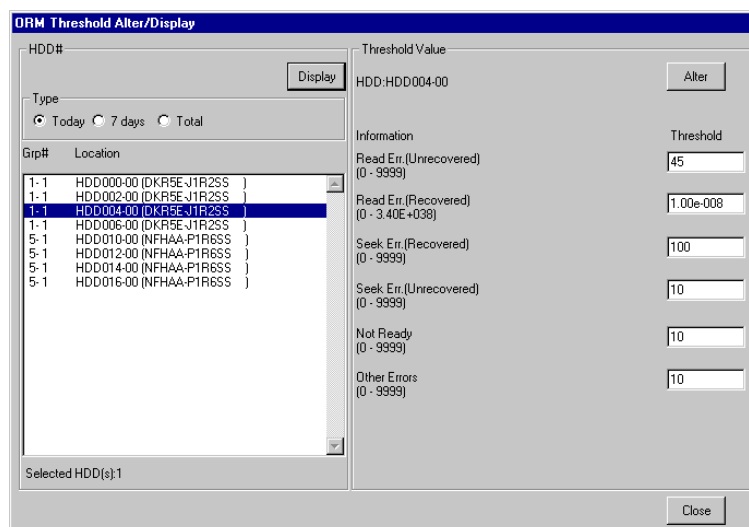2. Click [Alter and Display...] in the Online Read Margin window.

3. In the ORM Threshold Alter/Display dialog box, select an HDD from the "HDD#" list box and click [Display]. In order to display threshold of another interval, select the interval from the "Type" radio buttons.

> NOTE: Multiple HDDs can be click from the "HDD#" list box while the [Ctrl] 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.

• When Selecting SAS Drive

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

• When Selecting Flash Drive

NOTE: When selected 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 "Total" from the "Type" radio button.

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

• When Selecting Flash Module Drive

NOTE: When selected 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" and "Used Endurance Indicator", select "Total" from the "Type" radio button. In order to display threshold of the other, select "Today" from the "Type" radio button.

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

4. Click [Close] in the ORM Threshold Alter/Display dialog box.
  Close the Online Read Margin window.
  Close the Information window.

2.5.4 Altering a threshold

1. Display 'Online Read Margin' by prerequisite operation. (See SVP02-05-30.)

2. Click [Alter and Display...] in the Online Read Margin window.

3. In the ORM Threshold Alter/Display dialog box, select an HDD from the "HDD#" list box and click [Display]. In order to display threshold of another interval, select the interval from the "Type" radio buttons.

Grp# : the parity group.

SPARE　: spare HDD

RSRVD　: reserved HDD with sparing

*　　: spare HDD in use.

4.   In the ORM Threshold Alter/Display dialog box, alter the threshold in the "Threshold" field in the "Threshold Value" list box. Then click [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.

• When Selecting SAS Drive

• When Selecting Flash Drive

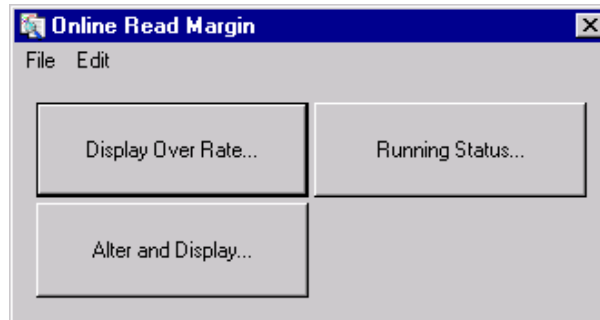• When Selecting Flash Module Drive

5. A message [INF2668W] is displayed. Click [OK].

6. Click [Close] in the ORM Threshold Alter/Display dialog box.

Close the Online Read Margin window.

Close the Information window.

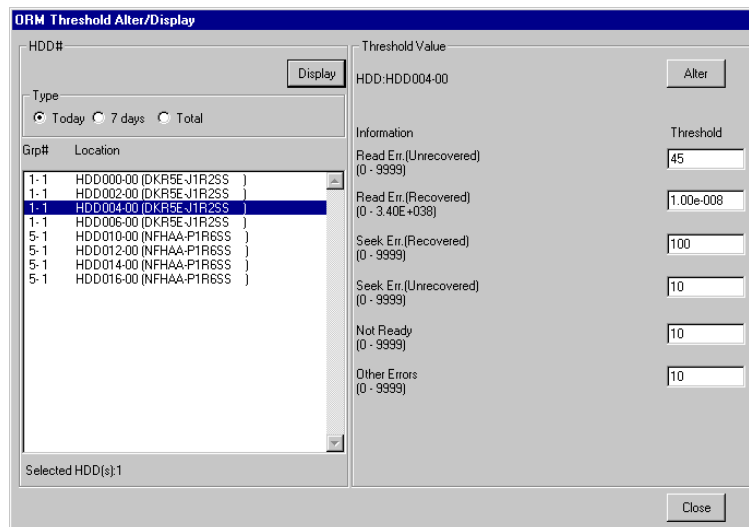In the SVP window, change the operation mode from [Modify Mode]to [View Mode].

2.5.5 Displaying the ORM running status

1. Display 'Online Read Margin' by prerequisite operation. (See SVP02-05-30.)

2. Click [Running Status...] in the Online Read Margin window.

```
Online Read Margin                                   ×
File   Edit

    ┌───────────────────┐      ┌───────────────────┐
    │                   │      │                   │
    │  Display Over Rate...  │      │  Running Status...  │
    │                   │      │                   │
    └───────────────────┘      └───────────────────┘

    ┌───────────────────┐
    │                   │
    │  Alter and Display...  │
    │                   │
    └───────────────────┘
```

3. 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".

- When Selecting SAS Drive

```
ORM Running Status Display

Grp#   Location                          Scan              Total           Times

1-1    HDD000-00 (DKR5D-J900SS    )     0.000000e+000  /  1.688756e+009   (0.0)
1-1    HDD002-00 (DKR5D-J900SS    )     0.000000e+000  /  1.688756e+009   (0.0)
1-1    HDD004-00 (DKR5D-J900SS    )     0.000000e+000  /  1.688756e+009   (0.0)
1-1    HDD006-00 (DKR5D-J900SS    )     0.000000e+000  /  1.688756e+009   (0.0)
1-2    HDD000-01 (DKR5D-J900SS    )     0.000000e+000  /  1.688756e+009   (0.0)
1-2    HDD002-01 (DKR5D-J900SS    )     0.000000e+000  /  1.688756e+009   (0.0)
1-2    HDD004-01 (DKR5D-J900SS    )     0.000000e+000  /  1.688756e+009   (0.0)
1-2    HDD006-01 (DKR5D-J900SS    )     0.000000e+000  /  1.688756e+009   (0.0)
1-3    HDD000-02 (DKR5D-J900SS    )     0.000000e+000  /  1.688756e+009   (0.0)
1-3    HDD001-02 (DKR5D-J900SS    )     0.000000e+000  /  1.688756e+009   (0.0)
1-3    HDD002-02 (DKR5D-J900SS    )     0.000000e+000  /  1.688756e+009   (0.0)
1-3    HDD003-02 (DKR5D-J900SS    )     0.000000e+000  /  1.688756e+009   (0.0)
1-3    HDD004-02 (DKR5D-J900SS    )     0.000000e+000  /  1.688756e+009   (0.0)
1-3    HDD005-02 (DKR5D-J900SS    )     0.000000e+000  /  1.688756e+009   (0.0)
1-3    HDD006-02 (DKR5D-J900SS    )     0.000000e+000  /  1.688756e+009   (0.0)
1-3    HDD007-02 (DKR5D-J900SS    )     0.000000e+000  /  1.688756e+009   (0.0)
1-4    HDD000-03 (DKR5D-J900SS    )     0.000000e+000  /  1.688756e+009   (0.0)
1-4    HDD001-03 (DKR5D-J900SS    )     0.000000e+000  /  1.688756e+009   (0.0)
1-4    HDD002-03 (DKR5D-J900SS    )     0.000000e+000  /  1.688756e+009   (0.0)
1-4    HDD003-03 (DKR5D-J900SS    )     0.000000e+000  /  1.688756e+009   (0.0)

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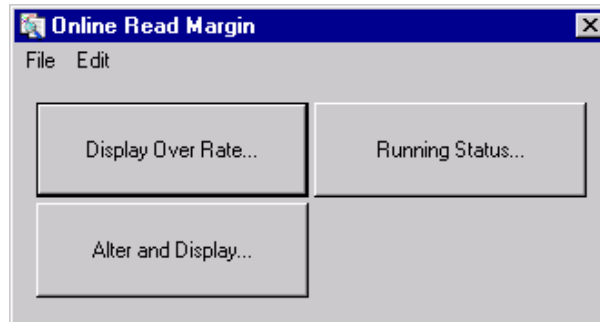
Grp# : the parity group.
      SPARE   : spare HDD
      RSRVD   : reserved HDD with sparing
      *   : spare HDD in use.

• When Selecting Flash Drive and Flash Module Drive

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

NOTE: When reading information fails, "Unknown" may be displayed in "Total".

```
ORM Running Status Display

Grp#    Location                          Scan              Total          Times

1-1    HDD000-00 (DKS5C-K300SS    )      0.000000e+000  /  5.628843e+008  (0.0)
1-1    HDD002-00 (DKS5C-K300SS    )      0.000000e+000  /  5.628843e+008  (0.0)
1-1    HDD004-00 (DKS5C-K300SS    )      0.000000e+000  /  5.628843e+008  (0.0)
1-1    HDD006-00 (DKS5C-K300SS    )      0.000000e+000  /  5.628843e+008  (0.0)
1-2    HDD000-01 (SLB5A-M800SS    )      -                 -              -
1-2    HDD002-01 (SLB5A-M800SS    )      -                 -              -
1-2    HDD004-01 (SLB5A-M800SS    )      -                 -              -
1-2    HDD006-01 (SLB5A-M800SS    )      -                 -              -
1-3    HDD000-02 (DKS5C-K300SS    )      0.000000e+000  /  5.628843e+008  (0.0)
1-3    HDD002-02 (DKS5C-K300SS    )      0.000000e+000  /  5.628843e+008  (0.0)
1-3    HDD004-02 (DKS5C-K300SS    )      0.000000e+000  /  5.628843e+008  (0.0)
1-3    HDD006-02 (DKS5C-K300SS    )      0.000000e+000  /  5.628843e+008  (0.0)
1-4    HDD000-03 (DKS5C-K300SS    )      0.000000e+000  /  5.628843e+008  (0.0)
1-4    HDD002-03 (DKS5C-K300SS    )      0.000000e+000  /  5.628843e+008  (0.0)
1-4    HDD004-03 (DKS5C-K300SS    )      0.000000e+000  /  5.628843e+008  (0.0)
1-4    HDD006-03 (DKS5C-K300SS    )      0.000000e+000  /  5.628843e+008  (0.0)
2-1    HDD001-00 (DKS5C-K300SS    )      0.000000e+000  /  5.628843e+008  (0.0)
2-1    HDD003-00 (DKS5C-K300SS    )      0.000000e+000  /  5.628843e+008  (0.0)
2-1    HDD005-00 (DKS5C-K300SS    )      0.000000e+000  /  5.628843e+008  (0.0)
2-1    HDD007-00 (DKS5C-K300SS    )      0.000000e+000  /  5.628843e+008  (0.0)

                                                                    [Close]
```

Grp# : the parity group.

SPARE   : spare HDD
RSRVD   : reserved HDD with sparing
*   : spare HDD in use.

4. Click [Close] in the ORM Threshold Alter/Display dialog box.
Close the Online Read Margin window.
Close the Information window.

2.5.6 Resetting thresholds

1. Display 'Online Read Margin' by prerequisite operation. (See SVP02-05-30.)

2. Click [File]-[Exit] in the Information window.

3. Click [Initial Setting] in the SVP window.

4. Click [Initialize ORM Value] in the Initial Setting window.

5. A message [INS2282W] is displayed. Click [Yes].

Initialize ORM Value   ☒

  ⚠   [INS2282W]

           Are you sure you want to initialize ORM Value?

                [Yes]   [No]

6. A message [INS2281i] is displayed. Click [OK].

Initialize ORM Value   ☒

  ⓘ   [INS2281i]

           ORM Value is initialized.

                [OK]

7. After the procedure is completed, return to Initial Setting window.
   Click [File]-[Exit].

Initial Setting	
File Edit	
NEW Installation	Set System Option/Tuning
Set Subsystem Time	Set IP address
Initialize ORM Value	Copy Config Files
Setting Battery Life	Set Flash Drive ORM Value
Set Machine Install Date	Set SVP Duplication
Change Emulation Type	Set PCI

Select button or menu.

2.5.7 Set of the threshold of all Flash Drive

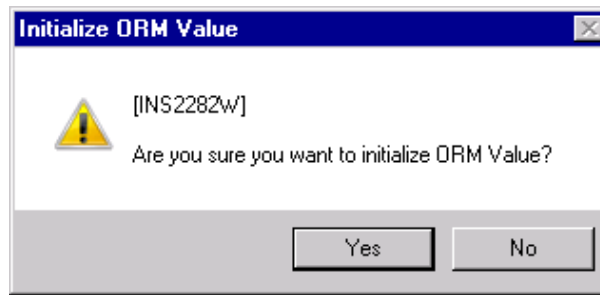1. Display 'Online Read Margin' by prerequisite operation. (See SVP02-05-30.)

2. Click [File]-[Exit] in the Information window.

3. Click [Initial Setting] in the SVP window.

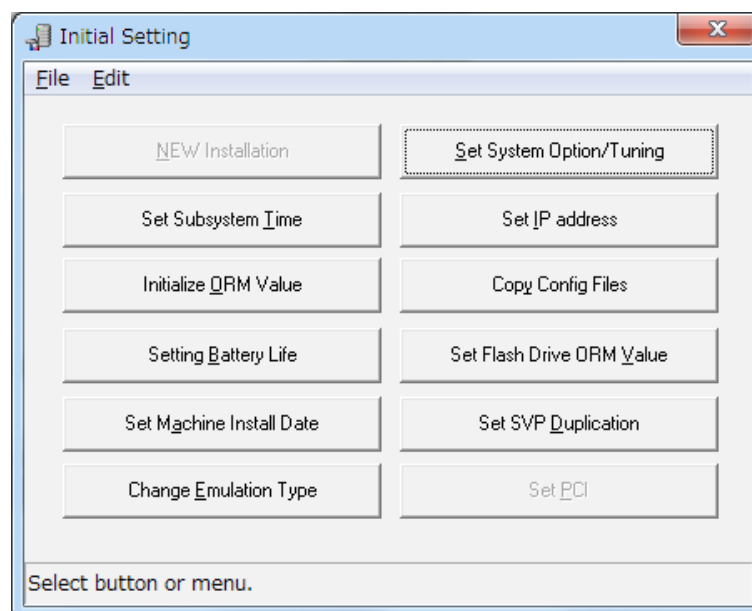4. Click [Set Flash Drive ORM Value] in the Initial Setting window.

5. In the Set Flash Drive ORM Value window, decide the setting method of the threshold, set the threshold, and then click [OK]. To stop the setting operation, click [Cancel], and then go back to Step 4.

Setting of Flash Drive

Setting method of the threshold of Flash Drive

Set the threshold of Flash Drive

<<Set the target ORM Value>>
 [Target ORM Value]
      Flash Drive : This setting changes the threshold of Flash Drive.

<<Setting of Flash Drive>>
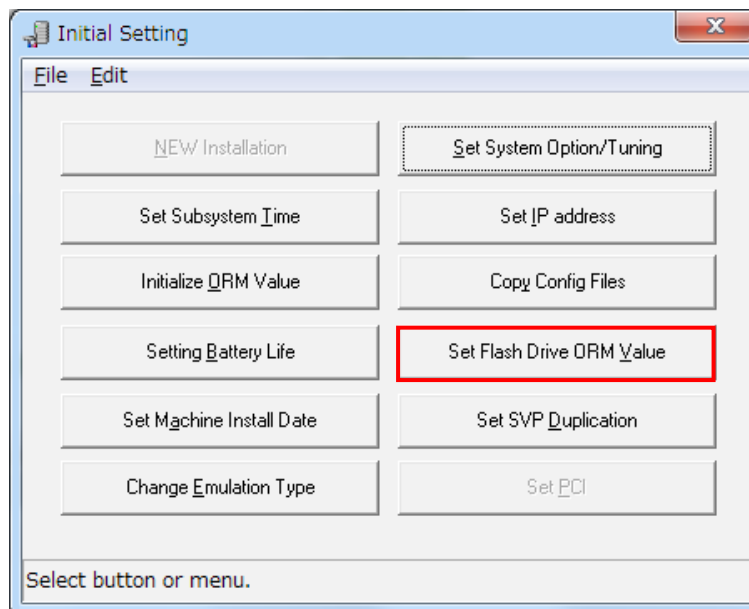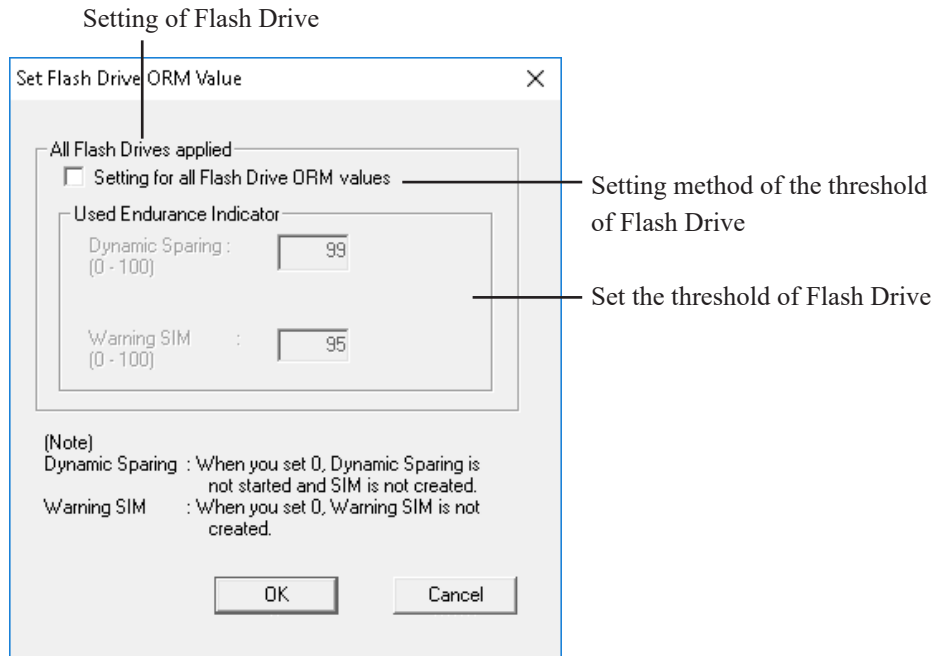 [All Flash Drives applied]
   <Setting method of the threshold of Flash Drive>
     [Setting for all Flash Drive ORM values]
       When setting thresholds of Used Endurance Indicator of all mounted Flash Drives collectively, check the checkbox.
       When it is checked, the Flash Drive installed after this operation becomes the same threshold automatically. When you want to cancel this setting, check off. When clicking [OK] 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. (See "2.5.6 Resetting thresholds".)

<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.

6. A message [INS1043i] is displayed. [OK].

7. After the procedure is completed, return to Initial Setting window.
   Click [File]-[Exit].

Initial Setting	✕

File Edit

NEW Installation	Set System Option/Tuning
Set Subsystem Time	Set IP address
Initialize ORM Value	Copy Config Files
Setting Battery Life	Set Flash Drive ORM Value
Set Machine Install Date	Set SVP Duplication
Change Emulation Type	Set PCI

Select button or menu.

2.6 SIM Reporting Specification

- DKC SIM
- Cache SIM
- Media SIM
- Device SIM

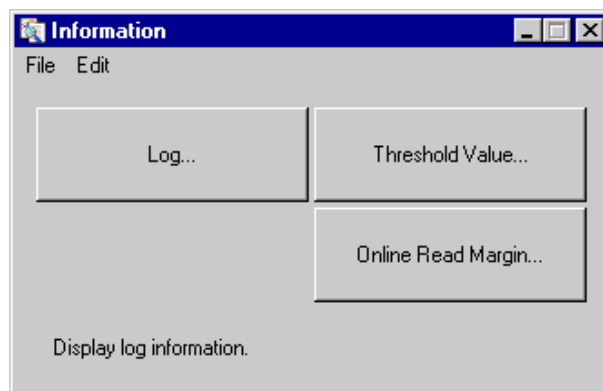1. Change the mode from [View Mode] to [Modify Mode].
   Click [Information].

2. Click [Log...] in the Information window.

3. Click [Options]-[SIM Report...] in the Log dialog box.

4. Select SIM report type from the 'Type' list box.
   Select the level to be reported in the SIM Reporting Option dialog box, and also click [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.

Type : DKC SIM
       Cache SIM
       Media SIM
       Device SIM

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

Prerequisite Operation:

1. Check SVP Mode.
   The Following operation needs SVP Mode to be 'Modify'. (See "1.10 Mode")
   • Altering threshold value
   • Resetting an error count

2. Click [Information] in the SVP window.

3. Click [Threshold Value...] in the Information window.

Please refer to the following.

2.7.1 Displaying threshold values

1. Display 'Threshold Value' by prerequisite operation. (See SVP02-07-10.)

2. Click [Alter and Display...] in the Threshold Value window.

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

Grp# : the parity group.

SPARE : spare HDD

RSRVD : reserved HDD with sparing

* : spare HDD in use.

• Multiple Selected

> NOTE: Multiple HDD locations can be click from the "HDD#" list box while the [Ctyl] 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.

---

4. Click [Close] in the Threshold Alter/Display dialog box and close the Information window.

2.7.2 Altering threshold value

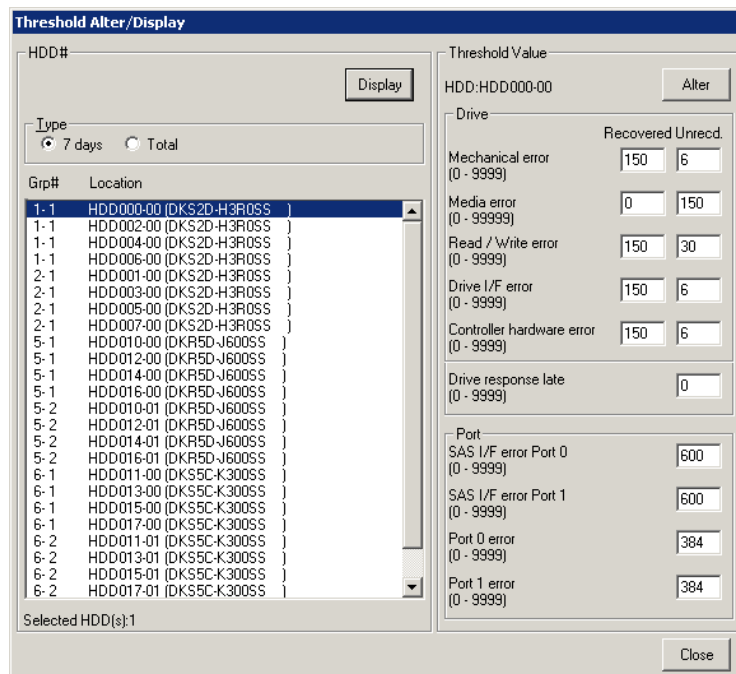1. Display 'Threshold Value' by prerequisite operation. (See SVP02-07-10.)

2. Click [Alter and Display...] in the Threshold Value window.

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

Grp# : the parity group.

SPARE   : spare HDD

RSRVD   : reserved HDD with sparing

*   : spare HDD in use.

4. Alter a threshold value in the "Threshold Value" list box in the Threshold Alter/Display dialog box. Then click [Alter].

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

5. A message [INF2668W] is displayed. Click [OK].

6. Click [Close] in the Threshold Alter/Display dialog box and close the Information window.

2.7.3 Displaying an error count

1. Display 'Threshold Value' by prerequisite operation. (See SVP02-07-10.)

2. Click [Display Error Count...] in the Threshold Value window.

3. Select 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.

>   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".

Grp# : the parity group.

   SPARE   : spare HDD
   RSRVD   : reserved HDD with sparing
   *   : spare HDD in use.

4. Click [Close] in the Threshold Counter Display dialog box and close the Information window.

2.7.4 Resetting an error count

1. Display 'Threshold Value' by prerequisite operation. (See SVP02-07-10.)

2. Click [Display Error Count...] in the Threshold Value window.

3. Select 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 click [Reset].

    Grp# : the parity group.

          SPARE   : spare HDD

          RSRVD : reserved HDD with sparing

          *   : spare HDD in use.

4. A message [INF2667W] is displayed. Click [OK].

5. After confirming that the error count has been reset in the Threshold Counter Display dialog box click [Close] and close the Information window.

Threshold Counter Display

HDD: Grp# Location

`1- 9 HDD000-08 (DKS2D-H3R0SS   )` ▼ [Close] [Reset]

ID(Information)	Today	7 days	Total
Mechanical error (recovered)	00000000/(5,50),(1000,500)	00000000/150	-
Media error (recovered)	00000000/-	-	-
Read / Write error (recovered)	00000000/(2,50),(400,200)	00000000/150	-
Drive I/F error (recovered)	00000000/(5,50),(1000,500)	00000000/150	-
Controller hardware error (recovered)	00000000/(5,50),(1000,500)	00000000/150	-
Mechanical error (unrecovered)	00000000/(1,2),(20,10)	00000000/6	-
Media error (unrecovered)	00000000/(10,50),(1000,500)	00000000/150	00000000/10000
Read / Write error (unrecovered)	00000000/(1,10),(40,20)	00000000/30	-
Drive I/F error (unrecovered)	00000000/(1,2),(20,10)	00000000/6	-
Controller hardware error (unrecovered)	00000000/(1,2),(20,10)	00000000/6	-
Drive response late	00000000/(8,8),-	-	-
SAS I/F error Port 0	00000000/(80,200),(4000,400)	00000000/600	-
SAS I/F error Port 1	00000000/(80,200),(4000,400)	00000000/600	-
Port 0 error	00000000/(128),(256)	00000000/384	-
Port 1 error	00000000/(128),(256)	00000000/384	-

Today:[Error Count / Threshold Value;Warning(Level1,Level2),Blockade(Level1,Level2)]
7 days,Total:[Error Count / Threshold Value]

2.8 SIM Log Complete

1. Change the mode from [View Mode] to [Modify Mode].
    Click [Information].

2. Click [Log...] in the Information dialog box.

3. Select [SIM] and click [List...] in the Log dialog box.

4. Select data to be completed in the List-SIM dialog box and click [Complete].

5. A message [INF2801i] is displayed. Click [Yes].

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

7. Click [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].

    NOTE: Even if SIM Complete was performed, the MESSAGE LED of the HSNPANEL 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.

    NOTE: 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/Auto Dump

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.

> NOTE: To collect dump information on a Standby SVP, collect dumps from the Standby SVP. The dump information can be collected only by specifying "Rapid" for the dump type because a Standby SVP cannot communicate with DKCMAIN.

2.9.1 Auto Dump

> NOTE: When the dump collection by the automatic log dump collection function is being processed, you cannot perform Auto Dump function. To stop the dump collection processing by the automatic log dump collection function, perform the procedure in "2.26.6 Aborting Dump Collection during Automatic Dump Collection".

1. Click [Auto Dump].

2. Select a dump type and a medium for output and make settings of the FTP transfer detail and the Client PC output detail, etc., and then click [OK].

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.)

NOTE: 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.

NOTE: The dump file name settings are possible only when "Rapid" is selected for the dump
type.

NOTE: A window of the Auto Dump function might be displayed behind another window. To
display the window or message box in front, switch the task to [Dump], [Auto Dump],
and so on, by pressing [Alt] + [Tab].

Table 2-4 Dump type

Type	Description	Standard dump collection time (m) (maximum configuration)	Remarks
Rapid	This dump is to get log information, SVP operation history, or configuration information. SVP will compress these files automatically. This dump type will be used when the initial analysis of error is needed. For further detailed analysis, the information collected with Normal specified is necessary. In this case, send the information collected with Rapid selected to Technical Support, and then collect information with Normal specified.	30 to 35	Types of information of Main Dump are fewer than those collected with Normal specified. (only "dumprapid.tgz" collected) (See Note)
Normal	This dump is to get dump data (you can get DUMP information of all adapters) in addition to the log information collected with Rapid specified. SVP will compress these dump files automatically. You should get dump data by using this dump type after sending the data collected with Rapid to Technical Support.	40 to 45	The time is of when all controllers are in normal condition. (See Note)
Detail	This dump is to get monitor information in addition to the dump data collected with "Normal" specified. (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 specific instruction to get the data, you do not need to use this type.	45 to 50	Monitor information is included compared to those collected with Normal. (See Note)
DUMP	The dump is to get dump for processors individually by selecting MPs.	35	SVP information is not included compared to those collected with Normal. (See Note)
GUM	This dump is to get GUM trace. The GUM trace is collected from controllers of storage system.	5	(See Note)
LOG	The dump is to collect 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.	25	SVP information is not included compared to those collected with Rapid. (See Note)
Monitor	The dump is to collect all monitor information and configuration information.	Uncertain	The information that varies, such as the number of LDEVs of which information is collected like LDEXxxx is included.

(Continued from the previous page)

Type	Description	Standard dump collection time (m) (maximum configuration)	Remarks
Config Backup	The dump is to collect the configuration information backup data stored in a hard disk of the SVP.	Uncertain	The configuration information varies depending on the number of generations that are backed up.(up to 100 generations)
SVP Memory dump	The dump is to collect Windows memory dump when a blue screen error occurs in SVP.	10	
Custom	The dump is to collect the information by selecting target items from the detailed information items. When no detailed information items is selected, it is the same as that when No Gather is specified.	Uncertain	The collected information varies depending on the selected items.
No Gather	The dump is only to output the already collected "c:\dkc200\tmp\hdcp.tgz" to a selected medium without compressing the data. The dump cannot collect information when the "c:\dkc200\tmp\hdcp.tgz" does not exist or an HDD is selected as a medium for the output.	-	It is for transfer of collected dump file.

NOTE: Factors that affect the collection time
- The above times show the time to collect dumps when all controllers are in the normal status.
  If there are any controllers to which communication is disabled, switching controller for dump transfer and a delay due to time-out caused by disable communication occur, so that the collection times become longer than the above listed.
- When dump collection is performed under the condition that a failure occurs and enormous number of SSBs and SIMs are reported, the CPU load of SVP might increase. In this case, the collection time might get longer.
- When many WCHK1 dumps are kept in SVP, the collection time might get longer. (WCHK1 DUMP kept in SVP can be confirmed by checking the number of files under "c:\dkc200\dump\abend")

Table 2-5 Output File Name for Replacement in the Select Dump Type Window

NOTE: To collect dumps continuously, change the dump file name not to be overwritten.

Menu	Description
Default	Outputs dumps by the file name "hdcp.tgz".
PDEV	Outputs dumps by the file name for replacing PDEV parts. The details of the file name to be output are as shown below. • "PDVRD-yyyyy_YYMMDDhhmmss.tgz" • yyyyy: Serial number • YYMMDDhhmmss: Creation time (YY: last two digits of Western calendar, MM: month, DD: day, hh: hour, mm: minute, ss: second)
PCB	Outputs dumps by the file name for replacing the parts other than PDEV. The details of the file name to be output are as shown below. • "xxxxxxxxxxxx_xxxxxxx_RD-yyyyy_YYMMDDhhmmss.tgz" • xxxxxxxxxxxx_xxxxxxx: Fixed value • yyyyy: Serial number • YYMMDDhhmmss: Creation time (YY: last two digits of Western calendar, MM: month, DD: day, hh: hour, mm: minute, ss: second)
Free name	Outputs dump files by the character string entered in the edit box.

<<Media>>

HDD:

> SVP will store the compressed files to HDD. The file name is "c:\dkc200\tmp\hdcp.tgz". If you can transfer the files to your center directly, this type will be useful.
>
> NOTE: When operating the maintenance, SVP will sometimes delete the files. Do not use the maintenance operation before sending the files to your center.)

FTP:

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

Client PC:

> The compressed data is output to the directory which has been entered in the Client PC Output Detail box of the PC remotely connected to the SVP. When "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 Client PC, please select "Client PC" as a medium and specify the drive of the USB memory into Client PC Output Detail.

<<FTP Transfer Detail>>

Host Name:

The host name of an FTP transfer place or an IP address is input. (*1)

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

Transfer Path:

he directory of an FTP transfer place is input.

USER Name:

The user name which login to an FTP server is input.

Password:

The password which login to an FTP server is input.

<<Client 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.)

3. Gather Dump and compressing data
    When selecting "Normal", "Detail", "GUM", or "Custom" (in the case of selecting "GUM" in the detailed
    gather items) for a dump type, GUM is gathered.
    Go to Step (1).

    When selecting "Rapid", "DUMP", or "Log" for a dump type, DUMP collection is performed after the
    refreshment operations for the DKC configuration information.
    Go to Step (2).

    When selecting "Custom" (in case of selecting any of "Log", "DKC Memory dump", and "DKCMAIN_
    WCHK1" in the detailed gather items) for a dump type, DUMP is gathered.
    Go to Step (3).

    When selecting "No Gather", a message, "Do you want to output the already gathered dump information,
    log information, Maintenance PC operation history and operation information without gather them
    again?" is displayed. Clicking [OK] outputs the gathered ones to the selected media. It is not possible to
    output to HDD.
    Go to Step 4.

    When selecting "Custom" (in the case of not selecting any of "Log", "DKC Memory dump", "DKCMAIN_
    WCHK 1", or "GUM" but selecting any other dump types in the detailed gather items) for a dump type,
    the data compression is performed.
    Go to Step (4).

    When selecting other dump types, data is compressed is performed after the refreshment operations for
    the DKC configuration information.
    Go to Step (2).

(1)   GUM Gather
       The GUM gather GUM progress window is displayed.
       • When selecting "Custom" (in the case of selecting any of "Log", "DKC Memory dump", or
         "DKCMAIN_ WCHK1" in the detailed gather items), DUMP collection is performed.
         Go to Step (3).
       • When selecting "Custom" (in the case of not selecting any of "Log", "DKC Memory dump", or
         "DKCMAIN_WCHK1" in the detailed gather items), DUMP collection is not performed.
         Go to Step (4).
       • When selecting other than the above mentioned.
         Go to Step (2).

(2)   Refreshment operations for DKC configuration information
       When selecting other than "Custom", the refreshment operations are performed to capture the latest
       DKC configuration information during Dump collection. The dialog box with message indicating
       that the refreshment process is in progress is displayed on the upper left of the SVP screen.
       • When selecting "Rapid", "Normal", "Detail", or "Custom" (in the case of selecting any of "Log",
         "DUMP", or "DKCMAIN_WCHK 1" in the detailed gather items) for a dump type, DUMP
         collection is performed.
         Go to Step (3).
       • When selecting other than the above mentioned, DUMP collection is not performed.
         Go to Step (4).

```
┌─────────────────────────────────────────────┐
│ AutoDump                                 ✕   │
├─────────────────────────────────────────────┤
│                                              │
│ Updating Information                         │
│ Reading DKC Information...                   │
│                                              │
│   ┌──────────────┐                           │
│   │    Skip      │                           │
│   └──────────────┘                           │
│                                              │
└─────────────────────────────────────────────┘
```

       NOTE: Do not click [Skip] in the dialog box unless any instruction is provided by the
               Technical Support Division. The collection time might be extended in cases like a
               large amount of PIN is generated in the system, and therefore if the PIN information
               is not required, the collection can be skipped. Even if the collection of the PIN
               information is skipped, other DKC configuration information is updated to the latest.

(3) DUMP Gather
   (a) The progress of DUMP gather
        A box indicating progress of the dump is displayed.

        When the dump terminates normally, go to Step (4).

   (b) When an error occurs, the following dialog box is displayed.
        Resolve the error and retry the dump collection according to the procedure on SVP02-09-100.

An error occurs

Check the dump failure part by the
dialog box.

Open the window appropriate for checking the dump
failure part.
・In the case of MP: Maintenance Utility(Sub Panel)
・In the case of port or CTL: Maintenance Utility

Is the dump failure part
blockaded?

Yes → Go to Step (4). (*1)

No

Reboot SVP

Retry Dump

Is dump
successful?

Yes → Go to Step (4).

No (*2)

Execute LAN check. (DIAG03-10)

LAN error?

Yes → Recovery LAN error.
(TRBL03-14-10)

No

T.S.D. call

*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 Utility (Sub Panel) window and the Maintenance
      Utility window.

Blank Sheet

Hitachi Proprietary · DKC910I

Rev.0.1 · Copyright © 2019, Hitachi, Ltd.

SVP02-09-120

(4) Data compression

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

Go to Step 4.

```
FD Copy                                            ✕

Compression in progress

...............

                                        Cancel
```

4. Output to a selected medium

An output is done to a selected medium.

- When an HDD was selected, go to Step (1).
- When an FTP was selected, go to Step (2).
- When a Client PC was selected, go to Step (3).

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

A message [ADM3708i] is displayed. Click [OK].

Go to Step 5.

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

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

(b)   After the data transfer is completed, a message [ADM3353i] is displayed. Click [OK].

Go to Step 5.

(3) When the Client PC is selected as an medium for the output
　　(a) "Copying to Client PC" is displayed and a copying to the Client PC is done.

```
FDCopy

    Copying to Client PC
```

　　(b) When the copying fails, a message [FDC3768W] is displayed.
　　　　Click [OK] and reset the directory for the output in the Client PC window.

```
SVP                                                    ✕

   ⚠   [FDC3768W]

        Output to the client PC is failed.
        Do you want to specify the output destination in the client PC again?

                              Yes              No
```

```
Client PC                                              ✕


   Output Path : C:\                          ▼

                    OK              Cancel
```

　　(c) A message [ADM3708i] is displayed. Click [OK].
　　　　Go to Step 5.

```
Auto Dump                                              ✕

   ⓘ   [ADM3708i]

        Gathering information data was completed.

                                              OK
```

5. When Gathering Information Local Mode is enabled, message [SVP4150i] is displayed.
    When you want to release the Gathering Information Local mode, click [Yes].

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

(1) Remove the USB memory from Client PC
When the collection of information using Auto Dump is completed, remove the USB memory from the Maintenance PC.

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

---

example: In the case of Client PC which sets Windows 10 (the English version) to OS.

(a) When the collection of information using Auto Dump is completed, click the USB device icon on the task tray (circled part in the figure).

(b) Since the menu bar is displayed, click 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.

(c) The "Safe To Remove Hardware" message appears.

(d) Remove the USB memory from the USB port of the Client PC.

2.9.2 FMD Dump

The FMD Dump is the dump to collect the operational information of FMD and includes the following:
- Information on hardware operation within FMD
- Information on errors within FMD
- Information on endurance of flash memory chip
- Information on performance of FMD
- Trace of firmware operation of FMD

Collect the FMD Dump when instructed by the Technical Support Division, when specifically instructed in this Maintenance Manual, or when an error or performance problem occurs in the FMD.

<<Prerequisite>>
- The status of the target drive for the FMD Dump collection is "Normal".
  Check the status using Maintenance Utility.
- The LDEV containing the target drive for the FMD Dump collection is not being formatted.
  From the [Storage Systems] tree in the Web Console window, open the Logical Devices window. In the Logical Devices window, check that the status of the LDEV in the parity group containing the target drive is not "Formatting". When the status of the LDEV is "Quick Formatting", the FMD Dump collection can be performed.

1. In the SVP window, change the operation mode to [Modify Mode], and then click [Maintenance Utility (Sub Panel)].

2. Select the Drive Box in which the target drive for the FMD Dump collection is installed.

3. Select the target drive for the FMD Dump collection.

4. Click [FMD Dump].

    NOTE: For drives other than FMD, the [FMD Dump] button is disabled.

5. Select a medium for output, set the Client PC output detail and so on in the FMD DUMP window, and then click [OK].

> 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.)

Target HDD

Output Selection

Execute Button
Go to Step 6.

Client PC
Output Detail

Reload Button for
Client PC Output
Detail

Cancel Button
Go to Step 8.

```
┌─ FMD DUMP ─────────────────────────────────── × ┐
│                                                  │
│        [ADM4338i]                                │
│   (i)  Select the SVP or a Client PC, and then   │
│        select the drive to output DUMP           │
│        information.                              │
│        After selecting the drive, select [OK].   │
│                                                  │
│      ┌─ Target Location ─────────────┐           │
│      │  HDD000-00                    │           │
│      └───────────────────────────────┘           │
│                                                  │
│      ┌─ Drive is selected ───────────────────┐   │
│      │                                        │   │
│      │    (•) SVP                             │   │
│      │                                        │   │
│      │    ( ) Client PC   [C:  ▼]  [Refresh]  │   │
│      └────────────────────────────────────────┘   │
│                                                  │
│           [  OK  ]          [ Cancel ]           │
└──────────────────────────────────────────────────┘
```

<<Output Detail>>

SVP

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

Client PC

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

6. FMD Dump Start
   When click [OK], FMD Dump start.

   Auto Dump

   Gathering FMD dump...(39%)

7. A message [ADM3708i] is displayed. Click [OK].
   Go to Step 9.

   Auto Dump ×

   [ADM3708i]

   Gathering information data was completed.

   OK

8. A message [ADM3710i] is displayed. Click [OK].

   Auto Dump ×

   [ADM3710i]

   Gathering information data was canceled.

   OK

9. Close the Maintenance Utility (Sub Panel) window if there is no problem.

2.10 Backing up the configuration information (config)

> **NOTICE:** In the SVP window, click [Maintenance Utility (Sub Panel)] to open the Maintenance Utility (Sub Panel) window to read the latest configuration information into the SVP, and then back up the configuration information.

1. In the SVP window, change the mode from [View] mode to [Modify] mode.

2. In the SVP window, click [Initial Setting], and then click [Copy Config Files] in the Initial Setting window.

3. Click [Create Configuration Backup] in the Copy Config Files window.

4. Choose any one of media and Click [OK].
   - SVP : The case using a USB memory connected to SVP (normally not used)
   - Maintenance PC : The case using a drive or a USB memory on Maintenance PC
   - SSVP : Only the case when there are instructions

Select Media ✕

[CNF3686i]

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

Drive is selected
   ○ SVP   ○ Maintenance PC   ● SSVP

   Disk : [▼]   Refresh

          [OK]   [Cancel]

---

5. When no old configuration information is saved on the selected media, no window is appeared.
   Go to Step 6.
   When other configuration information has been saved on it, the message shown on the right is displayed.
   Click [Yes] to continue the process.
   Click [No] when the backup to the Config media is not necessary. Return to Step 3.

CNFCPY ✕

ⓘ   [CNF3351i]

Data in the Config media will be overwritten due to this operation.
Are you sure you want to continue?

          [Yes]   [No]

6. The backup of the configuration information to the Config media is performed.
   While this operation is being done, the CNFCPY Wait... window is displayed.

CNFCPY Wait...

c:¥dkc200¥config/cnfdata¥

7. After removing the Config media as needed, click [OK].

CNFCPY ✕

[CNF3188i]

The processing is complete. Remove the media of the
configuration information if necessary.

OK

8. Select [Exit] in the Copy Config Files window to finish this operation.

9. In the SVP window, change the mode from [Modify] mode to [View] mode.

2.11 Restoring Configuration Information

This page show the work flow.

1. Restoration Procedure of Configuration Information

1-1. See "2.11.1 Perform the restoration of Configuration Information"
- Enable the jumper used for initial installation (CEMD)
- Restore Configuration
- Disable the jumper used for initial installation (CEMD)

2. Postprocessing

2-1. Postprocess restoring Configuration Information
See "2.11.2 Postprocessing".
- Check the status of the storage device

2-2. Checking the result status of restoring Configuration Information
See "2.11.3 Checking Procedure".
- Checking micro-versions for all MPs
- Checking DP-VOL implementation state
- Recovery of DP-VOL and Pool VOL
- LDEV recovery other than DP-VOL or Pool VOL
- Checking the status of Logical Devices

END

> ⚠ **CAUTION**
>
> This operation is a procedure of the configuration restoration for the storage system based on the backed up configuration information.
>
> This operation also allows the configuration restoration by using the configuration information of another storage system of the same hardware configuration. If the configuration information of another storage system is used, the IP address of the target storage system for this operation is maintained. Therefore, the IP address does not need to be set again after the operation for restoring the configuration information.
>
> If you perform the operation for restoring the configuration information wrongly, a system down or a data loss will be caused.

This procedures boot the storage system using the Backed up configuration information.

To use the configuration information of the 100-generation backup, create a backup medium by using the configuration information file of the 100-generation backup according to the following steps:

(1) Obtain the configuration information file of the 100-generation backup (svp_conf.tgz) that is stored in the directory shown below.

`C:\DKC200\others\backup\YYYYMMDDHHmmSS`

The naming rule of YYYYMMDDHHmmSS in the directory is shown below.

[YYYY][MM][DD][HH][mm][SS] (year, month, day, hour, minute, and second)

The above folder is named when creation of the backup data of the configuration information of each generation is completed.

The 100-generation backup starts backing up the configuration information when 30 minutes have passed since the operation for backing up the configuration information. Therefore, the time of backup completion in the folder name is often inconsistent with the creation time of the configuration information backup file.

*1: Check the configuration information backup file in each folder of each generation. If the size of the configuration information backup file in the folder is extremely small, do not use it. The configuration information backup file might lack the information that should be included due to cancellation of backup in progress.

(2) Extract the obtained configuration information file of the 100-generation backup (svp_conf.tgz), and get the config4 file that is stored in the directory shown below.

`\svp_conf.tgz\svp_conf.tar\config`

(3) Create a backup medium by making the folders and storing the files obtained in Steps (1) and (2) as shown in the example below.

Name the folder under `DKC200\CONFIG\` by using the serial number of the storage system that you use.

    Example where the serial number of the storage system is 1

```
DKC200
    └──CONFIG
            ├──config4
            └──00001
                    ├──config4
                    └──svp_conf.tgz
```

*2: Use the same config4 file.

NOTE: This operation cause initializing a part of settings of the storage system, so it needs setting again the setting information after this operation. Ask your customer to set them again according to the procedures of user guide. For the detail of the information to be set again, refer to "2.11.4 Influence on each setting information by performing Restore Configuration".

2.11.1 Perform the restoration of Configuration Information

1. Enable the jumper used for initial installation (CEMD)
   See "Enabling the jumper used for initial installation (CEMD)" (MU02-200) to enable the jumper used for initial installation.

2. Restore Configuration
   (1) Operation Mode Change
      (a) In the SVP window, change the mode into [Initial Setting] .
         Press the [Shift] + [Ctrl] + [I] keys and click [OK] after entering a password.

         NOTE: For the password, contact the technical support division.

      (b) The mode is shown as [Initial Setting (Unlocked)].

         NOTE: If the Storage System was started with the state that the jumper used for the initial installation is enabled, the confirmation message [4283W] is displayed. Then, click [OK].

      (c) Click [OK] in response to the confirmation message, [SVP2590W].

   (2) Click [Initial Setting] in the SVP window.
      Click [Copy Config Files] in the Initial Setting window.
      Click [Restore Configuration] in the Copy Config Files window.

(3)　In response to the message [CNF3683i].
　　　• SVP : The case using a USB memory connected to SVP
　　　• Maintenance PC : The case using a drive or a USB memory on Maintenance PC
　　　• SSVP : Only the case when there are instructions
　　　When you use some media, select [Refresh] after you insert the media, and select the PC and the
　　　drive that you inserted the media.
　　　Then, Click [OK].

```
┌─────────────────────────────────────────────────┐
│ Select Media                                  ✕  │
│                                                  │
│  [CNF3683i]                                      │
│                                                  │
│  Please select the Maintenance PC and insert a media. │
│                                                  │
│                                                  │
│  ┌─ Drive is selected ──────────────────────┐    │
│  │                                          │    │
│  │  ○ SVP      ● Maintenance PC   ○ SSVP     │    │
│  │                                          │    │
│  │  Disk : [ C              ▼ ]  Refresh     │    │
│  └──────────────────────────────────────────┘    │
│                                                  │
│            [   OK   ]    [ Cancel ]              │
└─────────────────────────────────────────────────┘
```
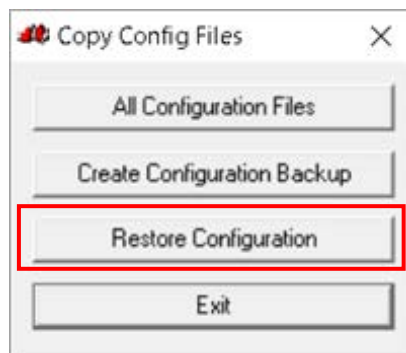
(4)   The copy of the configuration information is performed. While this operation is being done, the
      "CNFCPY Wait..." window is displayed.

NOTE: If any of the following is met, the Confirm Configuration Information window is
        displayed before the copy processing of the configuration information. Confirm that
        the specified file is not a wrong one again, check the [Confirmed] checkbox, and then
        continue the operation.

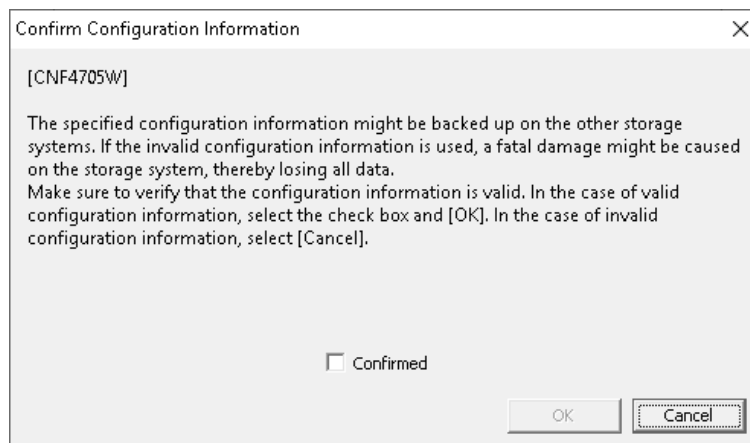- The specified restoration data file cannot be confirmed as the configuration
  information backed up from the storage system to be restored.
- You are performing the operation for restoring the configuration information by
  using the configuration information of another storage system.

The Confirm Configuration Information window might be displayed also in the cases
other than those above, for example, the case where you are performing the operation
for restoring the configuration information without making the storage system be in
the Ready status after replacing the Controller Board in the off state of the storage
system.

(5) After removing the Config media as needed, click [OK].

```
CNFCPY                                                          ×

        i     [CNF3188i]

              The processing is complete. Remove the media of the
              configuration information if necessary.


                                              ┌─────────────┐
                                              │     OK      │
                                              └─────────────┘
```
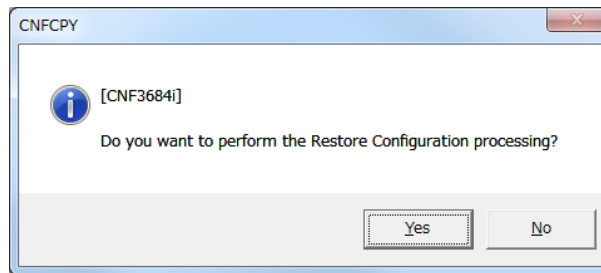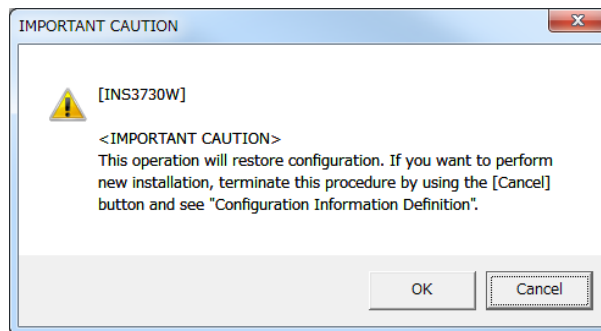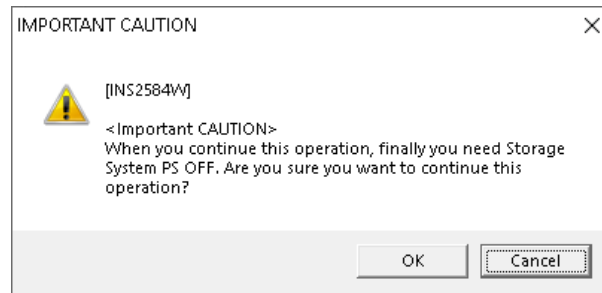
(6) To continue restoring the configuration information, click [Yes].
     To abort the restoration, click [No].
     When you have selected [Yes], go to Step (7).

```
CNFCPY                                                          x

        i     [CNF3684i]

              Do you want to perform the Restore Configuration processing?


                                    ┌─────────┐      ┌─────────┐
                                    │   Yes   │      │   No    │
                                    └─────────┘      └─────────┘
```

(7) Click [OK] in response to the cautionary message, [INS3730W].

```
IMPORTANT CAUTION                                              x

        ⚠     [INS3730W]

              <IMPORTANT CAUTION>
              This operation will restore configuration. If you want to perform
              new installation, terminate this procedure by using the [Cancel]
              button and see "Configuration Information Definition".


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

(8)   Click [OK] in response to the confirmatory message, [INS2584W].

IMPORTANT CAUTION   ×

⚠   [INS2584W]

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

OK   Cancel

(9)   Click [OK] in response to the confirmatory message, [INS2585W].

IMPORTANT CAUTION   ×

⚠   [INS2585W]

<Important CAUTION>
When you continue this operation, customer's DATA is LOST.
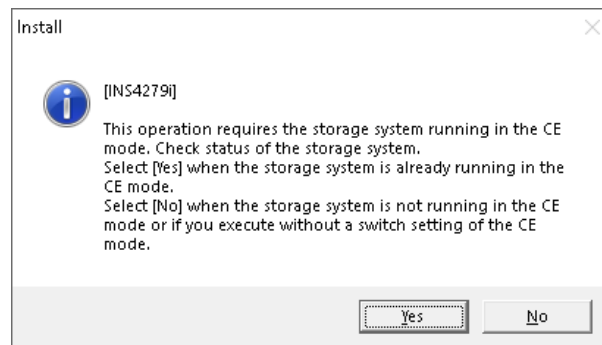Are you sure you want to continue this operation?

OK   Cancel

(10) [PAS3357W] window is displayed.

Enter a password and click [OK].

To perform this operation, an entry of a password is required. For the password, contact to the
Technical Support Division.

Password

[PAS3357W]
This operation will cause fatal damage to the storage system.
All data and configuration information will be initialized.
You need the password to continue.

Password   [   ]

OK   Cancel

(11) Click [Yes] in response to the message, [INS4279i].

```
Install                                          ×

   (i)   [INS4279i]

         This operation requires the storage system running in the CE
         mode. Check status of the storage system.
         Select [Yes] when the storage system is already running in the
         CE mode.
         Select [No] when the storage system is not running in the CE
         mode or if you execute without a switch setting of the CE
         mode.


                             [   Yes   ]      [   No   ]
```

(12) Respond to the message [INS4466i], click [Yes] or [No].
- When all CTLs are displayed in the message, click [Yes] to go to Step (13).
- When a part of CTLs or all CTLs are not displayed in the message, click [No] to terminate this processing. And, after waiting for 20 minutes, retry again from the Step (2).
  When a part of CTLs or all CTLs are not displayed in the message even after you retry, click [No] to abort the processing. Then back to Step 1 and check the status of the jumper used for initial installation (CEMD).
  When they are disabled, go to Step 2 after setting CEMD as enabled.
  When they are enabled, replace the CTL(s) that are not displayed, and then retry the Step 1.

```
Install                                          ×

   (i)   [INS4466i]

         The displayed CTLs are the ones in the CE mode.
         Confirm that all the CTLs are displayed.
         [CTLs in the CE mode]
         ALL CTL

         When all the CTLs are displayed, select [Yes] to continue the
         processing.
         When all the CTLs are not displayed, select [No] to terminate
         the processing, and execute either of the following
         operations after waiting for 20 minutes:
         -If you have executed NEW Installation, retry NEW Installation.
         -If you have executed Restore Configuration, retry Restore
         Configuration.
         (It takes up to 20 minutes after power-on until the mode
         changes to the CE mode.)
         When all the CTLs are not displayed after the retry, see the
         TROUBLESHOOTING SECTION of Maintenance Manual to take
         necessary actions.


                             [   Yes   ]      [   No   ]
```
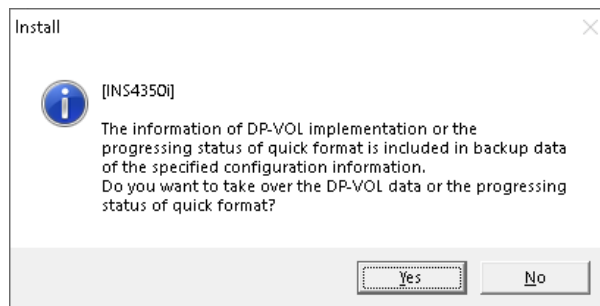
(13) Response to the message [INS4350i].

When you take over the data, click [Yes].

When you do not take over the data, click [No].

NOTICE: • When you click [No], the data stored in DP-VOL is lost.
 • When you click [Yes], follow the instruction by the Technical Support Division.
  The current storage system configuration information and the configuration
  information selected in Step (3) need to be identical.
 • If there are DP-VOLs with Capacity Saving enabled, consistency of metadata for
  Capacity Saving is not ensured. After completing the restore of the configuration
  information, perform "2.11.3 Checking Procedure" to solve the problem.

Install   ✕

ℹ   [INS4350i]

   The information of DP-VOL implementation or the
   progressing status of quick format is included in backup data
   of the specified configuration information.
   Do you want to take over the DP-VOL data or the progressing
   status of quick format?

                                                      Yes   No

NOTE: In the case that the information of DP-VOL implementation or the progressing status
of quick format is not included, this screen is not displayed.

(14) When the backup data of the specified configuration information includes blocked parts on the
controller board, the message [INS4556W] is displayed.

When you continue the processing, click [Yes] to go to Step (15).

When you terminate the processing, click [No] to terminate the processing.

NOTE: In the case that there are no blocked parts on the controller board, this screen is not
displayed.

Install   ✕

⚠   [INS4556W]

   The backup data of the specified configuration information
   includes blocked parts on the controller board. (CTL11)
   CFMs on the controller board must be removed before
   starting up the storage system.
   Do you want to continue this operation?

   (Caution) Do not remove the CFMs for now.

                                                      Yes   No

(15) When the backup data of the specified configuration information includes blocked HDDs, the
message [INS4558W] is displayed.
When you continue the processing, click [Yes] to go to Step (16).
When you terminate the processing, click [No] to terminate the processing.

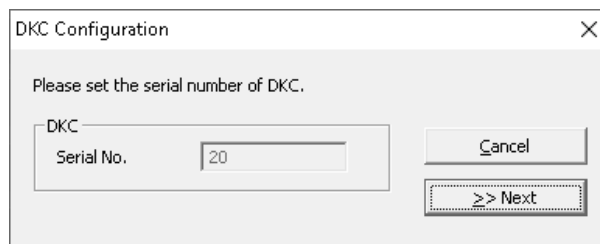> NOTE: In the case that there are no blocked HDDs, this screen is not displayed.

```
Install                                                          ×

    ⚠    [INS4558W]

         The backup data of the specified configuration information
         includes blocked HDDs.
         The blocked HDDs must be removed before starting up the
         storage system.
         Do you want to continue this operation?

         (Caution) Do not remove the HDDs for now.


                                 [   Yes   ]      [   No   ]
```

(16) The DKC Configuration window is displayed. Check the serial number of the storage system.
When you are performing the operation for restoring the configuration information by using the
configuration information obtained from another storage system, the Serial No. entry field is active.
Enter the serial number of the storage system.
Click [>>Next] to go to Step (17). This step will be terminated if you click [Cancel].

> NOTE: The Serial No. entry field is active when the operation for restoring the configuration
> information is being performed by using the configuration information obtained from
> another storage system.

```
DKC Configuration                                   ×

  Please set the serial number of DKC.

  ┌─DKC──────────────────────┐      ┌──────────┐
  │                          │      │  Cancel  │
  │  Serial No.    [  20  ]  │      └──────────┘
  │                          │      ┌──────────┐
  └──────────────────────────┘      │ >> Next  │
                                     └──────────┘
```

(17) Response to the message [INS0462i], Click [Yes].
When [No] is clicked, the restoration of the configuration information is aborted and the procedure
for the restoration is terminated.

```
Install                                                          ×

    ⓘ    [INS0462i]

         Are you sure you want to install the defined configuration?


                                 [   Yes   ]      [   No   ]
```

(18) Click [OK] in response to the confirmatory message, [INS2584W].

IMPORTANT CAUTION   ×

⚠   [INS2584W]

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

                                              OK   Cancel

(19) Click [OK] in response to the confirmatory message, [INS2587W].

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
     storage system be in UNRECOVERABLE SERIOUSLY DAMAGE.

                                              OK   Cancel

(20) Click [OK] in response to the cautionary message, [INS2588W].

IMPORTANT CAUTION   ×

⚠   [INS2588W]

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

                                      OK

(21) The configuration information is compressed. The dialog of Config Compressing... is displayed. After the compressing is completed, go to Step (22).

```
Config Compressing...

          Compressing...     75   /   1024
  0%                                            100%

  [■         ]
```

(22) Click [OK] after confirming you select [Configuration].

NOTE: Please do not select [All Microprograms].

```
Download Objects                      ×

   Please select download objects.

        □ All Microprograms

        ☑ Configuration

     [      OK      ]    [   Cancel   ]
```

(23) The configuration information is transferred. After the transfer is completed, go to Step (24). To confirm the detail of transfer status, click [Detail]. Go to Step (a).

```
Download Microprograms and Config

   Now DownLoading(Max 4[minutes])...
   ┌ Target CTLs ─────────────────
   │  [ CTL01  0/0 ]   [ CTL02  0/0 ]

   │  [          ]     [          ]

   │  [          ]     [          ]

   │  [          ]     [          ]

   │  [          ]     [          ]

   │  [          ]     [          ]
   └──────────────────────────────

       [  Detail  ]     [  Cancel  ]
```

(a) In Detail Status window, you can check the detail of transfer status.
To close Detail Status window, click [Close].

NOTE: You have to close Detail Status window after you complete checking the status. If you leave window opened, the transfer is not completed.

(24) The message "Reconstructing device information..." is displayed.

(25) The on/off procedure of the storage device power varies according to having blocked part or not.
In the case that both of [INS4556W] message in Step (14) and [INS4558W] message in Step (15) are not displayed, the backup data of the specified configuration information does not include the blocked parts . Go to Step (a).
In the case that [INS4556W] message in Step (14) or [INS4558W] message in Step (15) is displayed, the backup data of the specified configuration information includes the blocked parts . Go to Step (b).

(a) In the case there are no blocked parts
The message [INS4278i] is displayed.

Install

[INS4278i]

Power off the storage system by PS ON/PS OFF switch on HSNPANEL.
Confirm that PS ON LED on HSNPANEL is turned off, and then power off all DKCs by POWER ON/OFF switch of the DKCs.
Confirm that POWER LED turns amber in all DKCs and disable the CE mode.
After changing the CE mode, power on all DKCs by POWER ON/OFF switch of the DKCs.
Confirm that POWER LED of all DKCs turns green and power on the storage system by PS ON/PS OFF switch on HSNPANEL.
Confirm that PS ON LED turns green on HSNPANEL, and then select [OK].

OK

Perform the procedures according to the message. At that time, refer "Disabling the jumper used for initial installation (CEMD)" (MU02-210) for the procedures to disable the CE mode. Then, go to Step (c).

(b) In the case there are some blocked parts
(i) The message [INS4560i] is displayed.
Verify that the power LED on the front of the CBX, and then click [OK]. Go to Step (ii).

Install

[INS4560i]

Turn off the storage system by PS ON/PS OFF switch on HSNPANEL.
Confirm that PS ON LED on HSNPANEL is turned off, and then power off all DKCs by POWER ON/OFF switch of the DKCs.
Confirm that POWER LED turns amber in all DKCs, and then click [OK].

OK

(ii)   When the backup data of the specified configuration information includes the blocked parts in the controller board, the message [INS4557i] is displayed. Remove the CFMs from the controller board indicated in the message. Then click [OK]. Go to Step (iii).

Install   ×

ⓘ [INS4557i]

Remove CFMs from the controller board displayed on the window. (CTL11)
Click [OK] after the removal is complete.

OK

(iii) When the backup data of the specified configuration information includes the blocked HDD, the message [INS4559i] is displayed.
Remove HDD(s) indicated in the message.
You have to remove HDD(s) after you control the [DB] list in the case that multiple DBs are targeted.
Click [OK]. Go to Step (iv).

Install   ×

ⓘ [INS4559i]

Remove all of the HDDs displayed on the window.
Click [OK] after the removal is complete.

Num. of Blockade HDDs :   1

DB   Target HDD

DB-000&001 ▾   HDD000-03

OK

   (iv) The message [INS4561i] is displayed.

    Perform the procedures according to the message.
    At that time, refer "Disabling the jumper used for initial installation (CEMD)" (MU02-210)
    for the procedures to disable the CE mode.
    Then, go to Step (c).

  (c) Close Initial Setting window.

  (d) Change the mode from [Initial Setting (Unlocked)] to [View Mode].

(26) Perform the following steps to reboot the SVP.
  (a) Select [Start]-[Windows System], right-click the displayed [Command Prompt], and then select
    [More]-[Run as administrator].
  (b) In Command Prompt, enter "shutdown /r /t 0" and press the [Enter] key.

(27) After the SVP reboot, reconnect the Maintenance PC to the SVP, because they are disconnected.
  Check that the correct serial number of the storage system is displayed on the upper left of the SVP
  window.

2.11.2 Postprocessing

1. Log in to Maintenance Utility window
    In the SVP window, click [Maintenance Utility].

2. Checking status
    In Maintenance Utility window, confirm the status of the storage system is "Ready" and SIM is not output.

Status	Operation
Ready	In "SVP"window, check SIM.(*1)
Warning	There are some failed parts. Check the "MAIN" windows and SIM, then take a necessary action. (*1) (*2) When an HDD blockade is detected, install the HDD removed in Step (25) (b) (iii) of "Restore Configuration" in the Drive Box to recover the storage system. If the storage system is not recovered, replace the HDD with the maintenance part. When a CTL blockade is detected, perform the dummy replacement of the blocked CTL to recover the storage system. If recovery of the storage system by the dummy replacement fails, replace the CTL with the maintenance part.
Power-on in Progress	The storage system power-on is in progress. Log out once and log in to the "Maintenance Utility" window again after waiting for a while.

*1: Refer to "2.2.2 SIM Log" for how to check SIMs.
*2: For the contents of SIMs , refer to "SIM REFERENCE CODE SECTION" (SIMRC00-00).

NOTICE: SIM = 47ec00 may be notified, but no operation is necessary for the SIM.

2.11.3 Checking Procedure

1. Checking micro-versions for all MPs
   Open [MP Ver.(Curt./Running)] Tab and [MP Ver.(Curt./FM)] Tab in the Version window and then confirm there are no Icon indicating the error (⚠).
   (See "3.5.2 MP Ver. (Curt./Running) Tab", "3.5.3 MP Ver. (Curt./FM) Tab".)
   To display the Version window, click [Version] in Maintenance Utility (Sub Panel) window.

2. Checking status
   Start the Web Console.

3. Checking DP-VOL implementation state
   After restoration of Configuration Information, all LDEVs are in the blocked status.
   In the case you click [No] in "2.11.1 Perform the restoration of Configuration Information" Step 2 - Step (13), recover according the instructions of Technical Support Division.
   Then go to Step 5.

   In the case you click [Yes] in "2.11.1 Perform the restoration of Configuration Information" Step 2 - Step (13), check the SSB Log. (See "2.2.1 SSB Log".)
   • In the case that "SSB = 2c90 (Restoration of Configuration Information complete normally.)" have not been reported : Abort the processing, and contact to Technical Support Division.
   • In the case that "SSB = 2c90 (Restoration of Configuration Information complete normally.)" have been reported : Go to Step 4.

4. Recovery of DP-VOL and Pool VOL

Refer to "Force Restore LDEVs" (WEBCON03-950) to restore the Pool VOL forcibly. Then, check the applied status (*) of Capacity Saving for each DP-VOL, and restore DP-VOL forcibly.

(1) For DP-VOL with Capacity Saving disabled

Refer to "Force Restore LDEVs" (WEBCON03-950) to restore the DP-VOL with Capacity Saving disabled forcibly.

(2) For DP-VOL with Capacity Saving enabled

If there are DP-VOLs with Capacity Saving enabled, consistency of metadata for Capacity Saving is not ensured. Operate according to the instructions as follows.

(a) Backup the data on the DP-VOL with Capacity Saving enabled into the DP-VOL with Capacity Saving disabled.

(b) Perform the recovery starting from the Step [B] (TRBL21-20) of "Recovery procedure for dedupe and compression operation error (SIM = 680001)" (TRBL21-10).

*1: How to check the applied status of Capacity Saving for each DP-VOL

Check [Capacity Saving] on the "Logical Device" window of Web Console.

[Capacity Saving] is shown as "Compression" or "Deduplication and Compression" : Capacity Saving is enabled.

[Capacity Saving] is shown as "disabled" : Capacity Saving is disabled.

• [Capacity Saving] column is not displayed as default.

Click [column setting] to change the display setting. (See "Storage Navigator User Guide".)

• To display only the DP-VOLs with Capacity Saving disabled or enabled, use filter setting the column value.

For the filter handling, refer to "Filtering for Main window of Storage Navigator user guide".

5. Recovery of LDEVs other than DP-VOL or Pool VOL

In the case that the Data will not be successed, format the blocked LDEVs.

About the Data succession, obey the instructions of Technical Support Division.

6. Checking the status of Logical Devices

See the "Logical Devices" on Web Console, and confirm each logical device is in the normal state.

2.11.4 Influence on each setting information by performing Restore Configuration

By performing "2.11 Restoring Configuration Information", some setting information are initialized as shown below. Ask the customer to set again according to the user guide.

No	P.P. Name	Effect on the information due to configuration restoration			User guide to refer to
			Information to remain the same	Information to be initialized	
1	Performance Monitor		—	All monitor setting information	Performance Manager (Performance Monitor, Server Priority Manager) User Guide
2	Server Priority Manager		—	All	Performance Manager (Performance Monitor, Server Priority Manager) User Guide
3	Data Retention Utility		—	DRU attribute	System Administrator Guide
4	Volume Shredder		—	LDEV status of Shredding	Volume Shredder User Guide
5	Dynamic Provisioning	*1	Pool information DP-VOL information Data stored in DP-VOL	—	—
		*2	Pool information DP-VOL information	Data stored in DP-VOL (*3)	—
6	TrueCopy		—	Pair information Remote path information Differential bitmap data CT group information Option information (remote replication option)	TrueCopy User Guide
7	Universal Replicator		—	Pair information Remote path information Differential bitmap data Option information (journal option, mirror option) JNL information	Universal Replicator User Guide
8	ShadowImage		—	Pair information Differential bitmap data CT group information Option information (ShadowImage option)	ShadowImage User Guide

(To be continued)

(Continued from the preceding page)

No	P.P. Name		Effect on the information due to configuration restoration		User guide to refer to
			Information to remain the same	Information to be initialized	
9	Thin Image		TI pool configuration information (The all pages are unallocated.)	Pair information CT group information Snapshot group information Secondary volume data	Thin Image User Guide
10	Dynamic Tiering	*1	DP information HDT information of Pool HDT information of DP-VOL Data stored in DP-VOL	Monitoring information (The number of I/Os received per page) (*3)	—
		*2	DP information HDT information of Pool HDT information of DP-VOL	Monitoring information (The number of I/Os received per page) (*3) Data stored in DP-VOL (*3)	—
11	Volume Migration V2		—	Pair information Option information (ShadowImage option)	Universal Volume Manager User Guide
12	active flash	*1	HDT information Setting (enable or disable) of active flash of pool) Data stored in DP-VOL	Monitoring information (The number of I/Os received per page)	—
		*2	HDT information Setting (enable or disable) of active flash of pool)	Monitoring information (The number of I/Os received per page) (*3) Data stored in DP-VOL (*3)	—
13	Encryption License Key		Encryption License Key information is not changed and remains the same after DCI/configuration restoration because it is not uploaded to the configuration.	Only the information of the PDEV that existed but does not exist now is initialized. The information of the PDEV that exists remains the same after DCI/configuration restoration.	Encryption License Key User Guide
14	Remote Replication Extended		—	Pair information Remote path information Differential bitmap data CT group information Option information JNL information Quorum information	TrueCopy User Guide Universal Replicator User Guide Global-Active Device User Guide
15	global-active device		Virtual ID information (virtual storage machine, virtual LDEV# and so on)	Pair information Remote path information Differential bitmap data CT group information Option information Quorum information	Global-Active Device User Guide

*1: For the case that "[YES]:Take over the DP-VOL data" is selected in the Step (13) of "2.11.1 Perform the restoration of Configuration Information".

*2: For the case that "[NO]: Do not take over the DP-VOL data DP-VOL" is selected in the Step (13) of "2.11.1 Perform the restoration of Configuration Information".

*3: The information is not the parameter to be set, so customer re-setting is unnecessary.

2.12 System Option

[Overview]

Change the following system option when the system operates.

[1] Spare Disk Recover ----------- 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 CM area blockade occurs.
- Destage :
    ON : The write through operation is performed. (default)
    OFF : The write through operation is not performed.

The write through operation is determined by the following conditions.
- In case of the Mainframe device:
  It is determined by this item of the set value.
- In case of the OPEN device:
  It 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 "2.22 Setting System Option Mode" for the setting procedure of the System Option Mode.

Table 2-5 Combination of WR Through and System Option Mode (In case of the OPEN
device)

| 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: Write through operation :

    If a CM area blockade occurs, completion of data writing from a host is reported to the host when the processing of data writing to disk drives is completed. Even if the remaining CM area is also blocked while operations are performed by using the remaining CM area, write pending data will not be lost. However, write performance degrades when a CM area blockade occurs.

*2: Write after operation :

    If a CM area blockade occurs, completion of data writing from a host is reported to the host when the data is written to the cache memory. Therefore, the write after operation can reduce write performance degradation caused by a CM area blockade. However, if the remaining CM area is also blocked while operations are performed by using the remaining CM area, write pending data will be lost.

1. Change the Mode from [View Mode] to [Modify Mode].
   Click [Initial Setting].

2. Click [Set System Option/Tuning] menu in the Initial Setting window.

3. Select the [System Option] menu in the System Option/Tuning window and click [OK].

4. Select the desired item in the System Option dialog box, and click [OK].
   Go to Step 5.
   When [WR.Through] is click, the Synchronous Destage Mode Define window is displayed.
   Go to Step (1).

(1) <Set the Destage Mode >
    Set the configuration information in Synchronous Destage Mode Define window.
    After setting all the items, click [OK]. Return to Step 4.

5. "Loading configuration..." is displayed.

6. A message [INS2453i] is displayed. Click [OK].

7. Return to Initial Setting window.

Click [File]-[Exit]. Close the Initial Setting window.

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

2.13 Setting Machine Install Date

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

2. Click [Initial Setting].

3. Click [Set Machine Install Date] menu in the Initial Setting window.

4. Input the Date and Time.
   Click [OK].

5. "Backup Configuration..." is displayed.

6. A message [INS3697i] is displayed. Click [OK].

```
Install                                              ☒

    ⓘ      [INS3697i]

           A setting of a machine installation date has ended successfully.


                                          OK
```

7. Close the Initial Setting window.

```
🗗 Initial Setting                                    ✕

 File   Edit

        NEW Installation              Set System Option/Tuning

       Set Subsystem Time                 Set IP address

       Initialize ORM Value              Copy Config Files

       Setting Battery Life          Set Flash Drive ORM Value

      Set Machine Install Date          Set SVP Duplication

      Change Emulation Type                  Set PCI

 Select button or menu.
```

2.14 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.
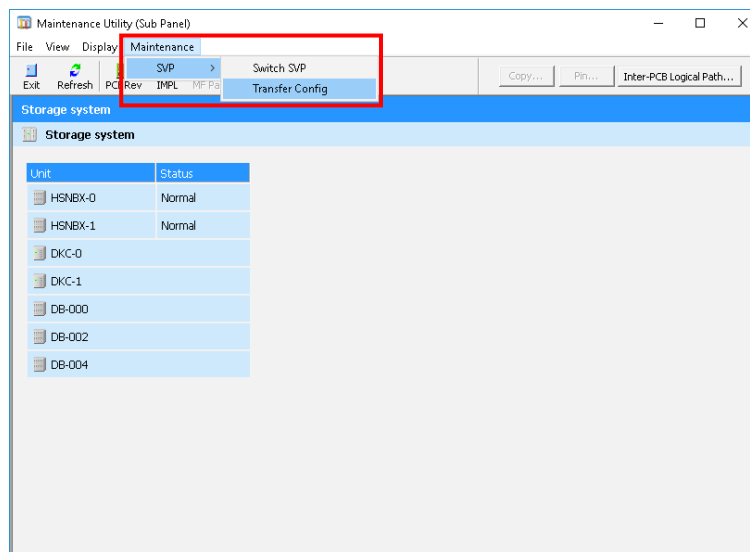
NOTE: When the SVP switching is performed, the monitoring data of the Performance Monitor in the short range is removed. To perform the SVP switching, run the export tool in advance and retrieve the monitoring data for the short range as necessity.
For how to use the export tool, see "Performance Guide".

1. <Operation Mode Change>
Change the mode to [Modify Mode].
Click [Maintenance Utility (Sub Panel)].

2. Click [Maintenance]-[SVP]-[Switch SVP] from the menu.

3. \<Execution\>
Execute switching.
Click [Yes].

NOTE: Switching might take up to 50 minutes.

```
REPLACE                                                    ☒

  ⓘ    [SPC3400i]

        Communication between the DKC and the SVP will be blocked. Do
        you want to switch SVPs?

                                          [  Yes  ]    [  No  ]
```

4. \<Checking the mode of standby SVP\>
Check the mode of the Standby SVP.
If the mode is View mode, click the [OK].

```
REPLACE                                                    ✕

  ⓘ    [SPC4780i]

        This processing can be executed only in the View mode.
        Check the mode of the Standby SVP.
        If the mode is the View mode, click [OK].

                                               [    OK    ]
```

5. \<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 SVP. Therefore, if the transfer processing of the configuration
information overlaps, the actually transferred status display may be repeated.
In such a case, it might take about 40 minutes for the transfer to be completed.

```
Transferring storage system configuration data...

                 Phase 1/3
```

6. <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.)

7. <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 "1.2 Executing SVP Connect Utility".
    (IP Address is the same with that of SVP at the time of the SVP switching indication.)

8. <Initial window>
    Click [Web Server Status].

9. <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.

10. <Checking on the Master SVP after the SVP switching>
    (1) Connect to the Master SVP (IP address: xxx.xxx.xxx.15).
    (2) In the SVP window, click [Maintenance Utility (Sub Panel)].
         Check that the Maintenance Utility (Sub Panel) window is normally opened, and then close the window.

2.15 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].
    Click [Maintenance Utility (Sub Panel)].

2. Click [Maintenance]-[SVP]-[Transfer Config] from the menu.

3. A message [SPC3412i] is displayed. Click [Yes].

4. A message [SPC4780i] is displayed.
    Check the mode of the Standby SVP.
    If the mode is View mode, click the [OK].

REPLACE   ×

  (i)   [SPC4780i]

        This processing can be executed only in the View mode.
        Check the mode of the Standby SVP.
        If the mode is the View mode, click [OK].

                                              OK

5. 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 SVP. Therefore, if the transfer processing of the configuration
    information overlaps, the actually transferred status display may be repeated.
    In such a case, it might take about 40 minutes for the transfer to be completed.

Transferring storage system configuration data...

              Phase 1/3

6. When configuration data has been transferred, the message [SPC3415i] is displayed.
    Click [OK].
    If errors occur on the way, check the problems of connection and setting of the replaced Standby SVP.

```
┌─────────────────────────────────────────┐
│ Others                              [×]  │
├─────────────────────────────────────────┤
│                                          │
│    ⓘ    [SPC3415i]                       │
│                                          │
│         Configuration data has been      │
│         transferred.                     │
│                                          │
│                        ┌─────────┐       │
│                        │   OK    │       │
│                        └─────────┘       │
└─────────────────────────────────────────┘
```

7. Close the Maintenance Utility (Sub Panel) window.

8. Change the SVP mode to [View Mode].

2.16 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.

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 an 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 an 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.

[Workflow]

1. Check that the time synchronization by SNTP servers functions properly according to "2.16.1 Checking Procedure before Setting Synchronization Information".

NOTE: Check whether SNTP servers respond to ping, and whether the time synchronization is possible by the temporal settings in the Synchronization Information window.
When there are SNTP sub-servers, perform the checking procedure for each server.

2. Perform the procedure in "2.16.2 Setting Synchronization Information" so that the time synchronization by SNTP servers is executed periodically.

2.16.1 Checking Procedure before Setting Synchronization Information

1. Launch the Command Prompt as administrator
   Select [Start]-[Windows System], right-click the displayed [Command Prompt], and then select [More]-[Run as administrator].

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".

   If "Request timed out." is displayed, check the network connection with SNTP servers.

   > NOTE: You can set up to five SNTP servers (including sub-servers). Check ping responses from all SNTP servers.

   Close the Command Prompt window.

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

4. Click [Initial Setting].

5. Click [Set Subsystem Time] in the Initial Setting window.

6. Select [Synchronization Information] in the Set Subsystem Time window, and then click [OK].

7. A window for specifying information for compensating the SVP's time is displayed. Set the necessary information and click [OK].

(Eg. GMT Standard Time)

Use Synchronization	:	Check the checkbox.
SNTP server priority	:	Select "Priority one". If there are SNTP sub-servers, to check whether the time synchronization functions on each server, first, set one server among them to "Priority one" temporarily and check whether the time synchronization functions on the server by performing the following steps. Then, set the other SNTP servers to "Priority one" temporarily in order.
SNTP server IP address	:	IP address of the SNTP server or host name.
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) To quickly check whether the time synchronization by an SNTP server functions, temporarily set the current time of the SVP. (Example: if the current time of the SVP is between 13 o'clock and 14 o'clock, set Synchronization check to "13".)
Create SIM when failure	:	To create the SIM when the time synchronization settings fail, select "ON".

8. "Backup Configuration..." is displayed.

```
CNFCPY Wait...

Backup Configuration...
```

9. A message [INS3872i] is displayed. Click [OK].

```
Install                              [×]

    (i)   [INS3872i]

          The setting of Synchronization Information is completed.

                                    [  OK  ]
```

10. The window for selecting a location to back up the configuration information is displayed.
    Click [Cancel].

```
Select Media                              ×

  [CNF3686i]

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

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

            [  OK  ]        [ Cancel ]
```

11. Close the Initial Setting window.

```
┌─────────────────────────────────────────────────┐
│ ⬛ Initial Setting                          ✕    │
├─────────────────────────────────────────────────┤
│  File   Edit                                     │
│                                                  │
│   ┌──────────────────┐   ┌──────────────────┐   │
│   │ NEW Installation │   │ Set System Option/Tuning │
│   └──────────────────┘   └──────────────────┘   │
│   ┌──────────────────┐   ┌──────────────────┐   │
│   │ Set Subsystem Time │  │  Set IP address  │   │
│   └──────────────────┘   └──────────────────┘   │
│   ┌──────────────────┐   ┌──────────────────┐   │
│   │ Initialize ORM Value │ │ Copy Config Files │ │
│   └──────────────────┘   └──────────────────┘   │
│   ┌──────────────────┐   ┌──────────────────┐   │
│   │ Setting Battery Life │ │ Set Flash Drive ORM Value │
│   └──────────────────┘   └──────────────────┘   │
│   ┌──────────────────┐   ┌──────────────────┐   │
│   │ Set Machine Install Date │ │ Set SVP Duplication │
│   └──────────────────┘   └──────────────────┘   │
│   ┌──────────────────┐   ┌──────────────────┐   │
│   │ Change Emulation Type │ │    Set PCI     │   │
│   └──────────────────┘   └──────────────────┘   │
│                                                  │
├─────────────────────────────────────────────────┤
│ Select button or menu.                           │
└─────────────────────────────────────────────────┘
```

12. Change the mode from [Modify Mode] to [View Mode].
    (The time synchronization is enabled by changing the mode to [View Mode].)

13. Wait for one minute, and then check that SIM = 7ffa00 is not reported. If it is not reported, the time synchronization by the SNTP server is functioning properly.

> NOTE: If there are SNTP sub-servers, return to Step 3 to check whether the time synchronization by the other servers functions.

> NOTE: If SIM = 7ffa00 is reported, perform the procedure in "Action When Time Synchronization Failed (SIM = 7ffa0x)" (TRBL03-08-10) in TROUBLE SHOOTING SECTION.

14. After confirming that the time synchronization by SNTP servers functions properly, perform the procedure in "2.16.2 Setting Synchronization Information" according to the storage system configuration worksheet.

2.16.2 Setting Synchronization Information

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

2. Click [Initial Setting].

3. Click [Set Subsystem Time] in the Initial Setting window.

4. Select [Synchronization Information] in the Set Subsystem Time window, and then click [OK].

5. A window for specifying information for compensating the SVP's time is displayed. Set the necessary
    information and click [OK].

> NOTE: When configuring multiple SNTP servers, set the priority in the SNTP server priority
> list, and then specify other settings.
> When all settings are specified, click [OK].

(Eg. 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 priority	:	Setting priority of the SNTP servers. (settable up to 5 servers)
SNTP server IP address	:	IP address of the SNTP server or host name.
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)
		Change the temporal time setting to the time shown in the storage system configuration worksheet.
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.

CNFCPY Wait...

Backup Configuration...

7. A message [INS3872i] is displayed. Click [OK].

Install   ✕

ⓘ   [INS3872i]

The setting of Synchronization Information is completed.

OK

8. Execute an operation for backing up the configuration information.
    Prepare the removable media for backup and insert the media.
    Please click [Refresh], and update drive information.
    Select the drive and the PC in which the media was inserted. Click [OK].

Select Media   ✕

[CNF3686i]

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

Drive is selected
    ○ SVP   ⦿ Maintenance PC   ○ SSVP

    Disk : C   ▼   Refresh

            OK   Cancel

9. When this procedure is completed, the message [CNF3188i] is displayed.
    Remove the configuration information media, click [OK].

```
CNFCPY                                                    ×

     (i)   [CNF3188i]

           The processing is complete. Remove the media of the
           configuration information if necessary.


                                                   OK
```

10. Close the Initial Setting window.

```
Initial Setting                                           x

 File   Edit

        NEW Installation              Set System Option/Tuning

        Set Subsystem Time                  Set IP address

        Initialize ORM Value                Copy Config Files

        Setting Battery Life            Set Flash Drive ORM Value

        Set Machine Install Date           Set SVP Duplication

        Change Emulation Type                  Set PCI

 Select button or menu.
```

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

2.17 Fixed time SVP reboot setting

2.17.1 Fixed time SVP reboot 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 (only when using Wizard screen)
- When Web Console is used (only when using Wizard screen)
- When User Maintenance dedicated Account Login
- DKC maintenance in progress

> 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 SVP High Reliability Kit is installed, Fixed time SVP reboot setting information of Master SVP is transferred to Standby SVP once a day, and Fixed time SVP reboot setting is reflected automatically by Standby SVP. After this reflection process, Standby SVP reboots at fixed time at the setting time same as Master SVP. Therefore, even if Fixed time SVP reboot setting is set in Standby SVP separately, Fixed time SVP reboot setting of Standby SVP is overwritten to the setting same as Master SVP automatically.

1. Starting up of the Run window
   (1) Open the Run window.
       Right-click [Start], and then click [Run].

   (2) Enter "c:\dkc200\mp\pc\zSv_RbtSet.exe" in the "Open" box. click [OK].

2. When the window in which the reboot conditions are set is displayed, enter each item and click [OK].

- Reboot: If this box is checked, the periodical reboot function is enabled. If this box is unchecked, the reboot function is disabled.
- Every day / Monthly: Select either of them.
  Every day : Reboot at the daily specified time.
  Monthly : Reboot on the day of the specified week in the month.
      Specify which week: (1st, 2nd, 3rd, 4th)
      Specify the day of the week: (Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday)
       Setting example
          First Monday : In the case of 1st Monday in the month : [1st] [Monday]
          Forth Friday : In the case of 4th Friday in the month   : [4th] [Friday]
- Time: Select the time when the reboot is performed.
  Time: (between 0 and 23 24-hour display) Minutes (between 00 and 59)

      NOTE: In the regions where the daylight savings (summer) time exists, one hour deviation occurs when the daylight savings (summer) time starts. Uncheck the automatic adjustment function of the daylight savings (summer) time on the SVP.

      NOTE: Time display method varies either 12 hours or 24 hours depending on the SVP setting.

3. Execute an operation for backing up the configuration information.
   Prepare the removable media for backup and insert the media.
   Please click [Refresh], and update drive information.
   Select the drive and the PC in which the media was inserted. Click [OK].

```
┌─────────────────────────────────────────────────┐
│ Select Media                                  ✕ │
├─────────────────────────────────────────────────┤
│  [CNF3686i]                                      │
│                                                  │
│  Backup processing of configuration information will start. │
│  Please select the Maintenance PC and insert a media. │
│                                                  │
│                                                  │
│   ┌─ Drive is selected ──────────────────────┐   │
│   │                                           │   │
│   │   ○ SVP      ● Maintenance PC   ○ SSVP    │   │
│   │                                           │   │
│   │   Disk :  │C            ▼│    Refresh     │   │
│   └───────────────────────────────────────────┘   │
│                                                  │
│            │   OK   │      │ Cancel │            │
└─────────────────────────────────────────────────┘
```

4. When this procedure is completed, the message [CNF3188i] is displayed.
   Remove the configuration information media, click [OK].

```
┌─────────────────────────────────────────────────┐
│ CNFCPY                                        ✕ │
├─────────────────────────────────────────────────┤
│          [CNF3188i]                              │
│    (i)                                           │
│          The processing is complete. Remove the media of the │
│          configuration information if necessary. │
│                                                  │
│                                    │    OK    │  │
└─────────────────────────────────────────────────┘
```

2.17.2 Fixed time SVP reboot setting release method

NOTE: When the SVP High Reliability Kit is installed, when Fixed time SVP reboot setting is released in Master SVP, setting information is transferred to Standby SVP once a day, and the Fixed time SVP reboot, setting of Standby SVP is released automatically.

1. Open the Run window.
   (1) Right-click [Start], and then click [Run].

   (2) Enter "c:\dkc200\mp\pc\zSv_RbtSet.exe" in the "Open" box. Click [OK].

2. Since the window in which set up reboot time is displayed, uncheck the [Reboot] checkbox. Click [OK].

3. Execute an operation for backing up the configuration information.
   Prepare the removable media for backup and insert the media.
   Please click [Refresh], and update drive information.
   Select the drive and the PC in which the media was inserted. Click [OK].

4. When this procedure is completed, the message [CNF3188i] is displayed.
    Remove the configuration information media, click [OK].

2.18 System Tuning SVP Procedure

2.18.1 System Tuning

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

[Overview]

This function modifies the part of established storage system configuration data.

The data to be modified is control data closely related to a host device, so the data 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
'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].
   Click [Initial Setting].

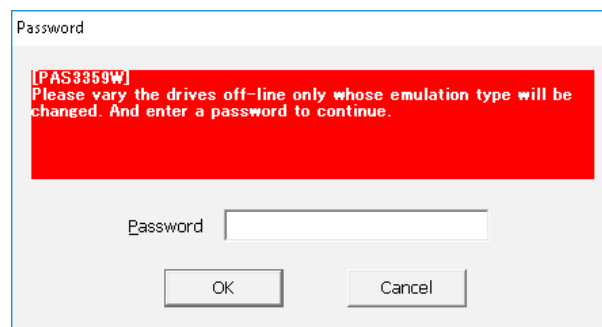2. Click [Set System Option/Tuning] from Initial Setting window.

3. <Select System Tuning>
   Select [System Tuning] from System Option/Tuning window, and click [OK].

4. <Password Input>

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 click [OK].
Password is needed for this operation.
Please call Technical Support Division to obtain a password and authorization.

If [Cancel] is clicked, return to Step 2.

(2) Click [OK] in response to the confirmation message [INS2589W].

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.
   [>>Next]   : Makes the other settings.
                      Go to Step 7.
   If [Cancel] is click, this operation procedure terminates.

6.
   Define the configuration information following the storage system configuration worksheet.

   After setting all the items, click [OK]. Return to Step 5.
   When [Cancel] is clicked, the System Option window is closed and the DKC Configuration window is displayed again. Return to Step 5.

7. <Mainframe PCB Configuration window>

The window is not displayed if Mfibre is not installed. Go to Step 8.

Define the configuration information following the storage system configuration worksheet.

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

Click [>>Next]. Go to Step (3).
When [Before<<] is clicked, return to Step 5.

- For VSP 5500 and VSP 5500H

Main Frame PCB Configuration

Please set the Main Frame PCB Configuration.

PCB Name	Channel Interface Type
CHB-01B/CHB-02B	16FC4(Fibre)

CHB-01B

Port	HTP/FNP	CU Number(LDKC:CU)	Emulation
1A	HTP	00:00-00:3F	H-6591-C3
3A	HTP	00:00-00:3F	H-6591-C3
5A	HTP	00:00-00:3F	H-6591-C3
7A	HTP	00:00-00:3F	H-6591-C3

CU Num...
Emulation...

CHB-02B

Port	HTP/FNP	CU Number(LDKC:CU)	Emulation
1E	HTP	00:00-00:3F	H-6591-C3
3E	HTP	00:00-00:3F	H-6591-C3
5E	HTP	00:00-00:3F	H-6591-C3
7E	HTP	00:00-00:3F	H-6591-C3

Before <<
>> Next

- For VSP 5100 and VSP 5100H

Main Frame PCB Configuration

Please set the Main Frame PCB Configuration.

PCB Name	Channel Interface Type
CHB-01F	4Mx16(Mfibre)

CHB-01F

Port	HTP/FNP	CU Number(LDKC:CU)	Emulation
1G	HTP	00:00-00:3F	I-2107-TPF
3G	HTP	00:00-00:3F	I-2107-TPF
5G	HTP	00:00-00:3F	I-2107-TPF
7G	HTP	00:00-00:3F	I-2107-TPF

CU Num...
Emulation...

Before <<
>> Next

(1) <CU Number Define window>

A window for setting the CU number of the specified port is displayed.

After the setting is completed, click [OK].

When [Cancel] is clicked, the window is returned to that of Step 7.

(2) <DKC Emulation window>

Set the DKC Emulation window and click [OK]. Return to Step 7.

Click [Cancel]. Return to Step 7.

(3) <SVP message>

Click [OK] in response to the confirmation message [DEF3182W].

Go to Step 8.

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

    [SSID...]:   : Makes definition of the SSID. Go to Step (1).
    [Boundary]   : Makes definition of the SSID boundary. Go to Step (2).

    After the setting is completed, click [>>Next]. Go to Step 9.
    This operation procedure is completed when [Cancel] is clicked.

```
SSID Configuration                                    ×

 Please select System to set SS ID

 SSID Boundary :  256 LDEV

  System            SS ID
  00:00:00-FF       0004      ^          SS ID...
  00:01:00-FF       0005
  00:02:00-FF       0006
  00:03:00-FF       0007                 Boundary
  00:04:00-FF       ----
  00:05:00-FF       ----
  00:06:00-FF       ----
  00:07:00-FF       ----
  00:08:00-FF       ----
  00:09:00-FF       ----                 Cancel
  00:0A:00-FF       ----
  00:0B:00-FF       ----
  00:0C:00-FF       ----                 Before <<
  00:0D:00-FF       ----
  00:0E:00-FF       ----      v
  00:0F:00-FF       ----                 >> Next
  * : Set SSID for defined LDEVs.
```

(1) <SSID Define window>
     Define the SSID and click [OK]. Return to Step 8.

```
SSID Define                          ×

  Please enter SSID.

    SSID           0009

            Cancel        OK
```

(2) <SSID Boundary Define window>
     Define the SSID boundary and click [OK]. Return to Step 8.

```
SSID Boundary Define                 ×

  Please select SSID Boundary type.

    SSID Boundary   256LDEV   ▼

            Cancel        OK
```

9. <Include configuration information>

(1) Click [Yes] in response to the confirmation message [INS0462i].
     Click [No] suppresses the configuration inclusion processing and terminates the installation
     procedure.

(2) Click [OK] in response to the confirmation message [INS2584W].

(3) Click [OK] in response to the confirmation message [INS2587W].

(4) Click [OK] in response to the confirmation message [INS2588W].

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

Turn off DKC, and wait.

11. After making sure that the DKC power is turned off, click [OK] in response to message [INS2460i].

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

Install

[INS2460i]

System Tuning has finished.
Make sure that PS-ON LED at DKC-PANEL is off, and then select [OK].

OK

12. Perform the power-on procedure from the HSNPANEL.

13. A message [INS1105i] is displayed. Click [OK].

Install

[INS1105i]

This will reboot SVP.

OK

14. After SVP is restarted, connect to SVP again.

---

15. Please click [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.
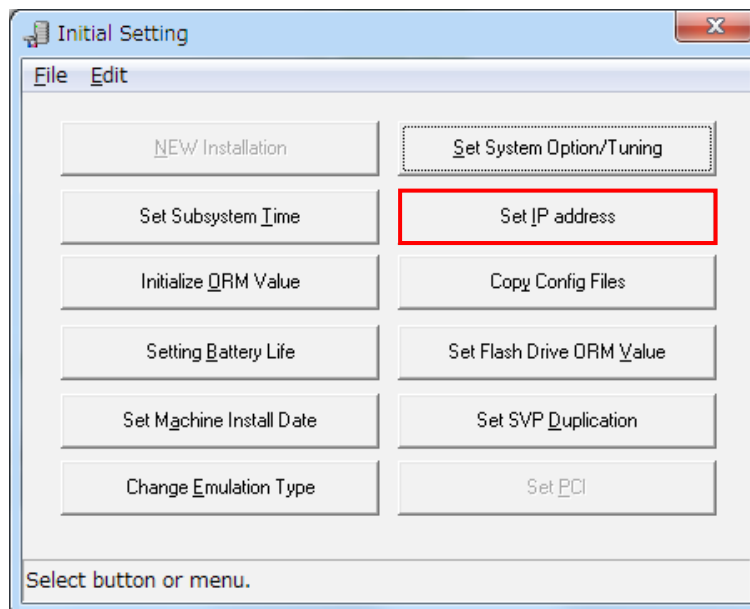
Web Console

Hitachi Device Manager Storage Navigator

← → **File** Maintenance   Actions   Reports   Settings

Refresh All

Explorer   **VSP 5000 series(S/N:66)**

Storage Systems   VSP 5000 series(S/N:66)

2.19 Emulation Type Change

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

2. Click [Initial Setting].

3. Click [Change Emulation Type] from Initial Setting window.

4. <Password Input>

⚠ **CAUTION**

This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong drive for which the emulation type is to be changed is selected, 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 click [OK].
Password is needed for this operation.
Please call Technical Support Division to obtain a password and authorization.

> NOTE: When operator tries to change from normal volume to Cross-OS File Exchange
> volume, operator must clear ALIAS definition if current volume has ALIAS provided
> by PAV function.

5. Emulation Type Change for Single Block
    (1) Select a block including an LDEV of which you want to change the emulation type in the LDEV
    Emulation (32 ID Block) list box.

    (2) Click [change] beneath the LDEV Emulation (32 ID Block) list box to open the dialog box for
    (choosing) the emulation type to be changed, and select the changed emulation type.
    When a block including an LDEV with the SCSI path (which is indicated with "+" in the list box)
    is selected, [change] is disabled.

(3) Click [OK] to set the changed emulation type.

Then, the LDEV (selected in Step (1)) having the emulation type to be changed varies to the one specified in Step (2) When selecting the same LDEV block after setting the change, you can check details of the changes in the LDEV Emulation (Detail) list box. Go to Step 9.

6. Emulation Type Change for Single LDEV
   (1) Select a block including an LDEV of which you want to change the emulation type in the LDEV
       Emulation (32 ID Block) list box.

   (2) In the LDEV Emulation (Detail) list box, select an LDEV whose emulation type to be changed.

   (3) Click [change] beneath the LDEV Emulation (Detail) list box to open the dialog box for (choosing)
       the emulation type to be changed, and select the changed emulation type.
       When a block including an LDEV with the SCSI path (which is indicated with "+" in the list box)
       is selected, [change] is disabled.

(4) Click [OK] to set the changed emulation type.

Then, the LDEV (selected in Step (2)) varies to the one specified in Step (3). Go to Step 9.

7. Emulation Type Change for Multiple Blocks
   (1) Select blocks including an LDEV of which you want to change the emulation type in the LDEV Emulation (32 ID Block) list box.

   (2) Click [change] beneath the LDEV Emulation (32 ID Block) list box to open the dialog box for (choosing) the emulation type to be changed, and select the changed emulation type.
   When a block including an LDEV with the SCSI path (which is indicated with "+" in the list box) is selected, [change] is disabled.

(3) Click [OK] to set the changed emulation type.
Then, the LDEV (selected in Step (1)) having the emulation type to be changed varies to the one specified in Step (2). When selecting the same LDEV block after setting the change, you can check details of the changes in the emulation LDEV Emulation (Detail) list box. Go to Step 9.

8. Individual Emulation Type Change for Multiple LDEVs
   (1) Select a block including LDEVs of which you want to change the emulation type in the LDEV Emulation (32 ID Block) list box.

   (2) In the LDEV Emulation (Detail) list box, select LDEVs whose emulation types are to be changed.

   (3) Click [change] beneath the LDEV Emulation (Detail) list box to open the dialog box for (choosing) the emulation type to be changed, and select the changed emulation type.
   When a block including an LDEV with the SCSI path (which is indicated with "+" in the list box) is selected, [change] is disabled.

(4) Click [OK] to set the changed emulation type.
     Then, the LDEV (selected in Step (2)) varies to the one specified in Step (3). Go to Step 9.

9. Click [OK] to fix the emulation type change.
Click [Cancel] to cancel the operation.

10. Before changing the emulation type, make sure that the drive has already been set to Vary Off-line and
that the host concerned has been shut down, and then click [OK].
When [Cancel] is clicked, the processing is aborted.

11. "Changing DKU Emulation" is displayed.

12. <Drive Vary On-line>
When the emulation type change processing terminates normally, the message [INS2462i] is displayed.
Vary the drive on-line and click [OK].

13. After the procedure is completed, return to Initial Setting.
    Click [File]-[Exit]. Close the Initial Setting window.

14. <Mode Change>
    Change the Mode from [Modify Mode] to [View Mode].

15. In SVP, select [Execute]-[Exit].
    Please select [File]-[Refresh All] from the menu and update the information on the Web Console window
    when the Web Console window is displayed.

2.20 Setting IP address

NOTICE:	• When the SVP High Reliability Kit is set, setting of the IP addresses for both Master SVP and Standby SVP is required. Set the IP address for Standby SVP first, and then set the IP address for Master SVP. SIM = 7ff200 or 7ff201 might occur during the setting of the IP addresses, but there is no problem. Complete the SIM after performing the procedure in this section. • Do not change the Internal LAN setting from [Auto Negotiation].

> NOTE: To set the IP address for Standby SVP on a system on which the SVP High Reliability Kit is added, refer to "2. In case of SVP (see SVP02-20-50)".

1. In case of SVP and DKC
    (1) Change the mode from [View Mode] to [Modify Mode].

    (2) Click [Initial Setting] from the SVP window.

    (3) Click [Set IP address] from the Initial Setting window.

    (4) <Changing IP address>

       (a) [Internal IP Address] setting:

Select "SVP and DKC" for [Target], and enter internal IP address (IP address of the internal LAN) in [IP Address] and [Subnet Mask].

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. If the displayed value is different from the set value, set the value that corresponds with the DKC.

NOTE: Set an even value in the third octet of the "IP Address" in the "Internal IP Address" setting.

NOTE: The value that can be set for Subnet Mask of internal IP Address varies depending on the value set for IP Address. The following table shows the valid values for Subnet Mask for each value range of IP address:

IP Address value	Valid value for Subnet Mask
1.xxx.xxx.15 to 126.xxx.xxx.15	255.yyy.zzz.0
128.xxx.xxx.15 to 191.xxx.xxx.15	255.255.zzz.0
192.xxx.xxx.15 to 223.xxx.xxx.15	255.255.254.0

xxx: Decimal number between 0 and 255

The maximum valid value of the third octet (zzz) for Subnet Mask is 254. 255 cannot be set. The range of the second octet (yyy) is not limited.

(b) [External IP Address] setting:
< In case where the SVP High Reliability Kit is NOT added >
Enter external IP address (IP address of the public LAN) in "IP Address" and "Subnet Mask"
(for IPv4) / "Subnet Prefix length" (for IPv6).

< In case where the SVP High Reliability Kit is added >
(i) Check the checkbox of [Use Duplex SVP].
(ii) Select "Master SVP" radio button in [SVP Kind].
(iii) Enter external IP address (IP address of the Public LAN) of Master SVP and Standby
SVP in "IP Address" and "Subnet Mask" (for IPv4) / "Subnet Prefix length" (for IPv6).

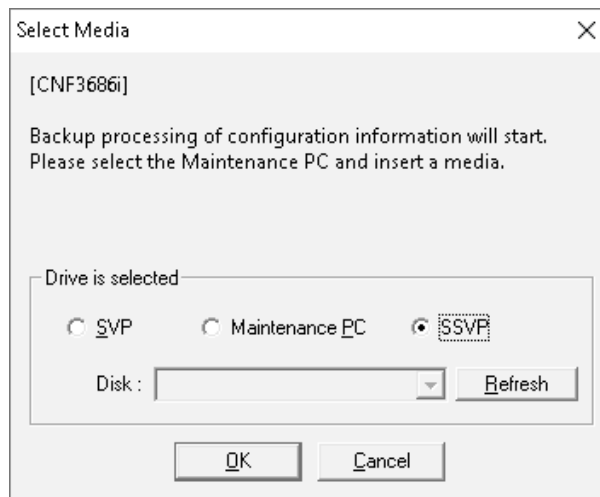(Example in case where the SVP High Reliability Kit is NOT added)

(c) Click [OK].

(5) <Rebooting SVP>
Click [OK] to the message [INS1105i]. The SVP is rebooted.

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 (TRBL02-04-170) described in the TROUBLESHOOTING SECTION.

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 [OK] of the message [INS1105i]. (Refer to SVP01-30 regarding the operation for connecting to the SVP)

---

(6) <IP address setting completed>
Reconnect to the SVP after rebooting the SVP.
A message [INS3030i] is displayed. Click [OK].

(7)   <Creating a backup of the configuration information>

    (a)   "Select Media" window to select the destination media to backup the configuration information is displayed.
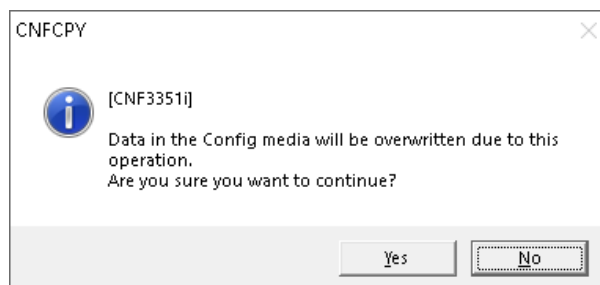
        Select "SSVP", and then click [OK].

```
Select Media                                    ✕

 [CNF3686i]

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


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

             [    OK    ]      [   Cancel   ]
```

    (b)   Message [CNF3351i] is displayed when configuration information exist in the destination media. Click [Yes].
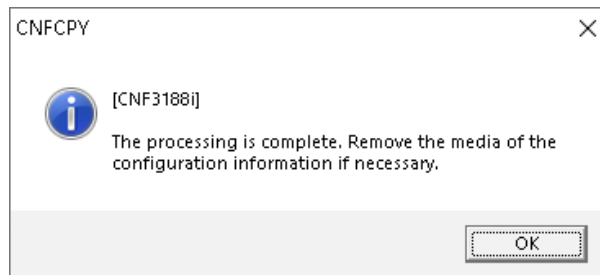
        NOTE: When no configuration information exists in the destination media, this message is not displayed. Go to next step.
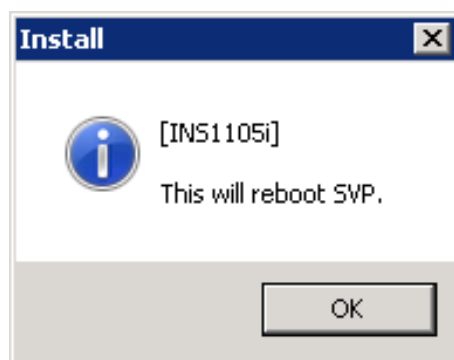
```
CNFCPY                                          ✕

   ⓘ    [CNF3351i]

         Data in the Config media will be overwritten due to this
         operation.
         Are you sure you want to continue?


                        [   Yes   ]    [   No   ]
```

(c) The backup of the configuration information is proceeded. The following window is displayed during the backup.

CNFCPY Wait...

c:¥dkc200¥config/cnfdata¥

(d) Message [CNF3188i] is displayed when the backup of the configuration information completes. Click [OK].

CNFCPY ✕

[CNF3188i]

The processing is complete. Remove the media of the configuration information if necessary.

OK

2. In case of SVP

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

    (2) Click [Initial Setting] from the SVP window.

    (3) Click [Set IP address] from the Initial Setting window.

(4)   <Changing IP address>
  (a) [Internal IP Address] setting:

Select "SVP" for [Target], and enter internal IP address (IP address of the internal LAN) in [IP Address] and [Subnet Mask].

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. If the displayed value is different from the set value, set the value that corresponds with the DKC.

NOTE: Set an even value in the third octet of the "IP Address" in the "Internal IP Address" setting.

NOTE: The value that can be set for Subnet Mask of internal IP Address varies depending on the value set for IP Address. The following table shows the valid values for Subnet Mask for each value range of IP address:

IP Address value	Valid value for Subnet Mask
1.xxx.xxx.15 to 126.xxx.xxx.15	255.yyy.zzz.0
128.xxx.xxx.15 to 191.xxx.xxx.15	255.255.zzz.0
192.xxx.xxx.15 to 223.xxx.xxx.15	255.255.254.0

xxx: Decimal number between 0 and 255

The maximum valid value of the third octet (zzz) for Subnet Mask is 254. 255 cannot be set.
The range of the second octet (yyy) is not limited.

(b) [External IP Address] setting:

< In case where the SVP High Reliability Kit is NOT added >

   Enter external IP address (IP address of the public LAN) in "IP Address" and "Subnet Mask"
   (for IPv4) / "Subnet Prefix length" (for IPv6).

< In case where the SVP High Reliability Kit is added >

   (i)   Check the checkbox of [Use Duplex SVP].
   (ii) Select an appropriate radio button in [SVP Kind] according to the following.
         • Select "Master SVP" radio button when the maintenance PC is connected to Master
           SVP.
         • Select "Standby SVP" radio button when the maintenance PC is connected to Standby
           SVP.
   (iii) Enter external IP address (IP address of the Public LAN) of Master SVP and Standby
         SVP in "IP Address" and "Subnet Mask" (for IPv4) / "Subnet Prefix length" (for IPv6).

(Example in case where the SVP High Reliability Kit is NOT added)

(c) Click [OK].

(5) <Creating a backup of the configuration information>

    (a) "Select Media" window to select the destination media to backup the configuration information is displayed.
Select "SSVP", and then click [OK].

       NOTE: When you change the IP address of Standby SVP, the backup of the configuration information is unnecessary. Click [Cancel]. The message ([INS1105i] This will reboot SVP.) in Step (e) is displayed.

       NOTE: <When an error message of the backup failed is displayed after clicking [OK]>
Click [OK] in response to the backup error message to return to the Select Media window. Click [Cancel]. The message (INS1105i] This will reboot SVP.) in Step (e) is displayed. Perform the backup of the configuration information after the SVP reboot according to Step (f).

    (b) Message [CNF3351i] is displayed when configuration information exist in the destination media. Click [Yes].

       NOTE: When no configuration information exists in the destination media, this message is not displayed. Go to next step.

(c) The backup of the configuration information is proceeded. The following window is displayed during the backup.

CNFCPY Wait...

c:¥dkc200¥config/cnfdata¥

(d) Message [CNF3188i] is displayed when the backup of the configuration information completes. Click [OK].

CNFCPY   ×

[CNF3188i]

The processing is complete. Remove the media of the configuration information if necessary.

OK

(e) Click [OK] to the message [INS1105i]. The SVP is rebooted.

Install   ✕

[INS1105i]

This will reboot SVP.

OK

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 (TRBL02-04-170) described in the TROUBLESHOOTING SECTION.

(f) Reconnect to SVP, and then back up the configuration information only when the backup of the configuration information in Step (a) failed. Select "SSVP" for the destination media of the backup. For detail about the backup the configuration information, see SVP02-10-10.

2.21 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	Support browser
Windows 7 (32bit/64bit)	Internet Explorer 11
Windows 8.1 (32bit/64bit)	Internet Explorer 11
Windows 10 (32bit/64bit)	Internet Explorer 11

The supported browser is the latest version of Internet Explorer because of Microsoft support policy.

2.21.1 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)   Double click "OnlineDumpUpload-a.exe".

   (2)   Make sure that the OnlineDumpTool revision on the display is 01-04.
         The Upload Information window is displayed, and then click [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 (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.

Case#	Network environment			Setting				
	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 clicking [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 clicking [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 clicking [Refer].

(4) Click [OK] in the Environment Configuration window.

(5) Click [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)

2.21.2 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)

2.21.3 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 SVP02-21-90

Execute uploading by running OnlineDumpTool.	
Feature	Feature Uploading all dump files at once after confirming the file names.
Procedure	From SVP02-21-120

1. The procedure for uploading dump files onto the OnlineDumpTool by dragging and dropping.
   (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.

(2) When selecting the "Server connection" in the field of "Input Method" (see SVP02-21-30), the following Login window is displayed. (The window is not displayed when the "Environment configuration" is selected. Go to Step (3).)

Input "User ID", "Proxy Server ID", "Proxy Server Password", and click [OK].
Refer to the paragraph SVP02-21-40 for the input value of "Proxy Server ID" and "Proxy Server Password".

(3) Start uploading
During uploading, the following window is displayed.

When all selected files are uploaded, the following window is displayed.
Click [OK].

If there is/are file(s) failed to upload in selected files, the following window is displayed.

If you wish to retry uploading, click [Send].
If you wish to exit without retry, click [Close].

If you set "Auto Delete Dump Files" to ON, in the setting of SVP02-21-50, the following window is displayed.

If you wish to delete the original dump file uploaded, click [Yes]. (*1)

If you do not wish to delete the original dump file uploaded, click [No].

*1: The deleted file is sent to the recycle bin.

2. The procedure for uploading dump files by running the OnlineDumpTool.
    (1) Double click the OnlinedumpUpload-a.exe icon.

    (2) Drag and drop the dump file onto the Online Dump Upload window to upload.

NOTE: • Multiple files can be uploaded at a time.
       • Uploading files can be added.
       • Any files except for a dump file cannot be uploaded.
         If you select other files, then the following window is displayed.
         [Yes] : Execute uploading except for the file which was not sent, if multiple files are
                 selected.
       [No] : Stop uploading.

• If the same file is re-sent, then the following confirmation message is displayed.
[Yes] : Uploading is executed.
[No] : Uploading is canceled.

(3) When selecting the "Server connection" in the field of "Input Method" (see SVP02-21-30), the following Login window is displayed. (The window is not displayed when the "Environment configuration" is selected. Go to Step (4).)

Input "User ID", "Proxy Server ID", "Proxy Server Password", and click [OK].
Refer to the paragraph SVP02-21-40 for the input value of "Proxy Server ID" and "Proxy Server Password".

(4) Click [Send] to start uploading.

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

(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.

(6) When all selected files are uploaded, the following window is displayed.
Click [OK].

If there is/are file(s) failed to upload in selected files, the following window is displayed.
If you wish to retry uploading, click [Send].
If you wish to exit without retry, click [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, click [Yes]. (*1)
If you do not wish to delete the original dump file uploaded, click [No].

*1:   The deleted file is sent to the recycle bin.

2.21.4 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 SVP02-21-20 Settings.

A history file is created every transmission.

2.21.5 Message Table

The messages that are displayed on OnlineDumpTool are described below Table 2-4.

Table 2-4 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
	Cause	Errors have occurred at login. detail　　= "Check Your ID or Password" (incorrect account ID or password) 　　　　= "Proxy Authentication Required" (Proxy server authentication is required.) 　　　　= "Multi login" 　　　　= "The server name or address could not be resolved" (Web server address could not be found.) 　　　　= "Not expectation HTML" (unexpected HTML page response) 　　　　= "The operation timed out" (no response from Web server)
	Action	detail　　= Check the key cord when the "Check Your ID or Password" message 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	Click [OK] to continue and [Cancel] to discontinue. When [OK] butto 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.

(Continued to the next page)

(Continued from the previous page)

Code No.	Items	Contents
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	Clickt [Yes] to delete the files and [No] to cancel it.
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 than 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	Click [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.

(Continued to the next page)

(Continued from the previous 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	Click [OK] to continue the process, and [Cancel] to cancel it.

2.22 Setting System Option Mode

   1. Close the all SVP menu.

   2. <Enter the password>

<table>
<tr><td>

⚠ **CAUTION**

This is a special (exceptional) operation that requires an input of a password. Ask the technical support division and input the password.

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

     Press [Shift] + [Ctrl] + [m] in the SVP window.
     Enter the password, and click [OK].
     (Please call Technical Support Division for asking it.)

   3. <Mode Mode>
     'Mode Mode' is displayed.
     Click [Initial Setting].

4. <Initial Setting window>
   Click [Set System Option/Tuning] menu in the Initial Setting window.

5. <System Option/Tuning window>
   Select [System Option] menu in the System Option/Tuning window and click [OK].

6.

Click [Mode...] in the System Option dialog box. Go to Step 7.

When the setting of all the entry items is completed, click [OK]. Go to Step 8.

7. <Mode window>

Select [LPR] and [Mode Configuration] in the Mode window and click [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 the
                       check box for "S", go to the Step (1).
  R (Hitachi, Ltd.) : The permission of Hitachi, Ltd is necessary. When you select the check box for "R",
                       go to the Step (2).

NOTE: You can change the display range shown in [Mode Configuration] in the "Range of
       Mode" combo box.

(1)   A message [DEF4169W] is displayed.

When you click [Yes], the settings are included. Go back to the Step 7.
When you click [No], the settings are not included. Go back to the Step 7.

(2)   A message [DEF4168i] is displayed.
When you click [Yes], go to the Step (a).
When you click [No], go back to the Step 7.

(a)   Enter the password and click [OK].
Go back to the Step 7.
Entering the password is required in this operation. Please call Technical Support Division for asking it.

8. A message [INS2453i] is displayed. Click [OK].

9. Return to Initial Setting window.
    Click [File]-[Exit]. Close the Initial Setting window.

Initial Setting	✕

File   Edit

Exit

NEW Installation	Set System Option/Tuning
Set Subsystem Time	Set IP address
Initialize ORM Value	Copy Config Files
Setting Battery Life	Set Flash Drive ORM Value
Set Machine Install Date	Set SVP Duplication
Change Emulation Type	Set PCI

Execute"Exit.".

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

2.23 Time Zone Setting

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

2. Click [Initial Setting] in [Modify Mode].

3. Click [Set Subsystem Time] in the Initial Setting window.

4. Click [Change time zone] from the [Edit] menu of the Set Subsystem Time window.

5. The Time Zone Settings window appears. Set the time zone and click [OK].

(Eg. Coordinated Universal Time)

[Adjust clock for Daylight Saving Time] ☑ Selected ： Daylight Saving Time adjusting function is
                                                                                    enabled.
                                                          Not selected ： Daylight Saving Time adjusting function is
                                                                                    disabled.

NOTE: Disable this function in a time zone where the Daylight Saving Time is not
            implemented.

6. The message [INS4601i] appears. Click [OK]

7. Close the Initial Setting window.

8. Reboot the SVP. (See "1.8 SVP reboot".)

2.24 Confirm the firmware version operated on DKB

2.24.1 Confirm the SAS firmware version

NOTICE:	SAS firmware version can be confirmed regardless of the FIPS140-2 Level operation mode.

1. <Initial screen>

2. <Operation mode change>
   Change the mode to [Modify mode].
   Click [Diagnosis].

3. <Activating Encryption chip status>
   Click [Encryption chip status].

4. <Confirmation of Encryption DKB>
   - Normal end
   If Checker makes the state check of the encryption DKB complete, the execution confirmation message is displayed. Please refer to SSBLOG of Code = F87E for encryption DKB.
   Click [OK] in the message window displayed.
   (Please refer to SSBLOG SECTION (SSBLOG00-00) for the check method of SSBLOG.)

   Go to Step 5.

   - Abnormal end
   If SAS-CON which failed in referring to a state exists in DKB, the error message is displayed. Please refer to SSBLOG of Code = F87F for failed SAS-CON, and refer to SSBLOG of Code = F87E for satisfactory SAS-CON.
   Click [OK] in the message window displayed.
   (Please refer to SSBLOG SECTION (SSBLOG00-00) for the check method of SSBLOG.)

5. <End of Diagnosis>
   Click [Exit].

6. <Encryption chip status displayed>
    Please refer to SSBLOG of Code = F87E for encryption DKB.

    (1) <Initial window>
         Click [Information].

    (2) Click [Log...].

    (3) Select [SSB] in the Log dialog box.
         Click [List...].

(4) Select data to be indicated in the List-SSB dialog box and click [Content...].

List - SSB

Total : 98/98

Date/Time	Code	MP	LDKC:CU:LDEV	Port	F/M	E/F
2016/01/06 10:24:53	f87e	20			9f	
2016/01/06 10:24:53	f87e	20			9f	
2016/01/06 10:24:53	f87e	00			9f	
2016/01/06 10:24:53	f87e	00			9f	
2016/01/05 13:56:33	afb0	20			9f	
2016/01/05 13:00:03	afb0	20			9f	
2016/01/05 11:06:39	afb0	20			9f	
2016/01/05 10:09:37	f774	20			9f	
2016/01/05 10:09:37	f774	00			9f	
2016/01/05 10:09:11	aa36	00			9f	
2016/01/05 10:09:11	aa36	00			9f	
2016/01/05 10:01:20	f774	20			9f	
2016/01/05 10:01:20	f774	00			9f	
2016/01/05 10:00:55	aa36	20			9f	
2016/01/05 10:00:55	aa36	20			9f	
2016/01/05 10:00:55	aa36	20			9f	
2016/01/05 10:00:55	aa36	20			9f	
2016/01/05 09:57:22	aa36	00			9f	
2016/01/05 09:57:22	aa36	00			9f	
2016/01/05 09:53:28	a7e3	27			9f	
2016/01/05 09:53:28	a7e3	21			9f	
2016/01/05 09:53:28	a7e3	21			9f	
2016/01/05 09:53:28	a7e3	20			9f	
2016/01/05 09:53:28	a7e3	05			9f	

Close   Sort...   Content...   Search...

(5) The detailed data is displayed in the Content-SSB dialog box.

Content - SSB

Log Number: 248

Date/Time: 2016/01/06 10:24:53

Error Code: f87e

Micro Processor: MP00-1MA

LDKC:CU:LDEV:

PDEV:

Port:

F/M   9f

```
              0 1 2 3  4 5 6 7  8 9 A B  C D E F
CTRL Data:   00 7401060a 18359f00 7ef80000 00aa2000
             10 00000000 0000f800 00000000 00000004
SSB Data:    20 00000000 0000009f f87ed35c e4800000
             30 00000000 0000ff9f 00000000 00000000
Internal Data: 40 d35ce480 80eeeeee eeeeeeee eeeeeeee
             50 61110550 01020000 00000000 00eeeeee
             60 00000003 00000000 00000001 00000002
             70 00000001 00000000 02093700 eeeeeeee
```

Action Code   Possible Failure Parts   Location

Close   Refer...

(6) Click [Close] in the Content-SSB dialog box.
     Click [Close] in the List-SSB dialog box.
     Close the Log dialog box and close the Information window.

2.25 Restoring Failed MP

> ⚠ **CAUTION**
>
> This is a special procedure to recover a MP blockade operation without the need to selfreplace the card under certain conditions specified below.
>
> To use this procedure, please open a case with your technical support center and proceed under their guidance.

<Usage Conditions>
- To recover a MP in which WCHK1 occurred due to a microprogram problem.
  Eg.) Cause of WCHK1 is EC = 1644.
- To recover a MP in which WCHK1 occurred due to an issue outside the DKC (Host/SAN).
  Eg.) Cause of WCHK1 is EC = B405, and it is evident that it is caused by external factor. (Switch etc.)
- Requested as a recovery procedure for an issue notified by an Early Notice/Alert.
- Requested by following the procedure described in Maintenance Manual.

<Usage Restrictions>
- Not to be used to recover hardware failures.
- Not to be used to recover a MP of MPU which all MP in MPU blocked.

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

2. <Start>
    Change the mode to [Modify Mode].
    Click [Maintenance Utility (Sub Panel)] in the SVP window.

3. Select the DKC in which the MP to be restored is installed.

4. Select the CTL in which the MP to be restored is installed.

5. Right-click the target MP in the MP list in the right part of the window, and then select [MP Restore].

6.   <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 [PAS3360W], enter the password and click [OK].

7.   <Execution Check>
Clcik [Yes] for the following message [SVP4058i].

8.   <Waiting for the completion of processing>
The following message is displayed.
"Please wait... Restoring the MP..."

9. <Check of the recovery completion of failed MP>
    Click [OK] for the following message [SVP2415i].

10. <Check of processing result>
    Check that the status of the restored MP is "Normal".

11. <Post-processing>
    Close the Maintenance Utility (Sub Panel) window.
    Change the mode to [View Mode].

2.26 Setting Automatic Log Dump Collection

[Overview]

The automatic log dump collection is the function to collect dumps automatically when a SIM or SSB shown below is reported. To use this function, set System Option Mode 665 to OFF.

- Target SIM for automatic log dump collection:

    SIMs with an error level, Moderate, Serious, or Acute, and with a service report are targeted by default. (See SIM RC SECTION (SIMRC00-00).)

    Maintenance personnel can include or exclude specific SIMs in the targets for the automatic log dump collection.

    - For procedure for including specific SIMs in the targets for the automatic log dump collection, see "2.26.1 Adding Specific SSB/SIM Codes to Automatic Dump Collection Targets".

    - For procedure for excluding specific SIMs from the targets for the automatic log dump collection, see "2.26.3 Deleting Specific SIM Codes from Automatic Dump Collection Targets".

- Target SSB for automatic log dump collection:

    All SSBs are excluded from the targets for the automatic log dump collection by default.

    Maintenance personnel can change specific SSBs to the targets for the automatic log dump collection.

    For the procedure, see "2.26.1 Adding Specific SSB/SIM Codes to Automatic Dump Collection Targets".

[Conditions that disable automatic log dump collection]

If any of the following conditions is met, the automatic log dump collection is not performed.

- SVP is in the Modify mode.
- C drive free space is less than 65 GB.
- System Option Mode 665 is set to ON.
- Auto Dump is running on the SVP.
- SVP micro-program version is less than 90-01-41/00.
- DKCMAIN micro-program version is less than 90-01-41-xx/xx.
- A target SIM/SSB for the automatic dump collection is reported during execution of the automatic dump collection.

[Conditions that stops automatic log dump collection]

If any of the following occurs, the automatic log dump collection stops.

- SVP is rebooted.

    When the fixed time SVP reboot is executed, the dump collection processing restarts after the reboot.

    For the fixed time SVP reboot setting, see "2.17.1 Fixed time SVP reboot setting method".

- SVP switching is performed.

[Display during automatic log dump collection]

- The Log Dump Ex Tool window is displayed while the automatic log dump collection is being performed.
- The Log Dump Ex Tool window is automatically minimized when the automatic log dump collection is complete.

NOTE: • Dumps are collected in the order of types, Rapid, Normal, and then Detail, which takes about 80 minutes. It might take time longer than 80 minutes depending on a failed part.
  • The Detail dump collected by Auto Dump includes the dump of DKC, while the Detail dump collected by the automatic log dump collection function does not include the dump of DKC.
  • When maintenance operations are performed by the maintenance personnel, the dump collection by the automatic log dump collection function is not executed.
  • To perform maintenance operations after dump collection is complete, use the time elapsed from when SIM = 7c0800 (Dump collection has started.) is reported as a guide.
  To perform maintenance operations before dump collection is not complete, perform the following procedure.
      (1) Click [Dump Abort] in the Log Dump Ex Tool window to stop dump collection.
      (2) Send the collected dump files to the factory.
      (3) Set the SVP to Modify Mode, and then perform maintenance operations.
  For how to stop dump collection, see "2.26.6 Aborting Dump Collection during Automatic Dump Collection". For how to retrieve collected dump files, see "2.26.5 Retrieving Dump Files Automatically Collected".
  • When C drive free capacity is less than 65 GB, a message [LOG3977E] is displayed.
  • Give the following names to dump files collected by the automatic log dump collection, and store them in the directory.
      – hdcpyyyymmddhhmm-xxxx-<dump type>.tgz (Example: when dump files are collected by SIM = 7e00)
      – Rapid dump: hdcp201603280339-7e00-Rapid.tgz
      – Normal dump: hdcp201603280409-7e00-Normal.tgz
      – Detail dump: hdcp201603280418-7e00-Detail.tgz (*1)
  yyyymmddhhmm indicates the time when an hdcp.tgz file is stored. Thus, the file name depends on the dump type and the order of creation, Rapid, Normal, and then Detail.
  • SIMs generated during dump collection might not be retained in the dump file.

*1: The dump file name varies depending on the micro-program version.

DKCMAIN version	Dump file name
90-01-01-x0/xx or later and less than 90-01-51-x0/xx	201603280418-7e00-Detail.tgz
90-01-51-x0/xx or later and less than 90-01-61-x0/xx	201603280418-7e00-LightDetail.tgz
90-01-61-x0/xx or later and less than 90-02-01-x0/xx	201603280418-7e00-Detail.tgz
90-02-01-x0/xx or later	201603280418-7e00-LightDetail.tgz

2.26.1 Adding Specific SSB/SIM Codes to Automatic Dump Collection Targets

1. Click the Log Dump Ex Tool icon on the task bar to display the Log Dump Ex Tool window.

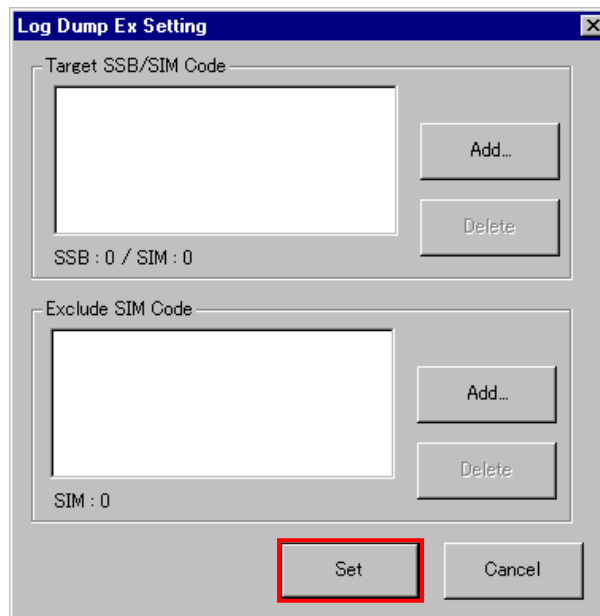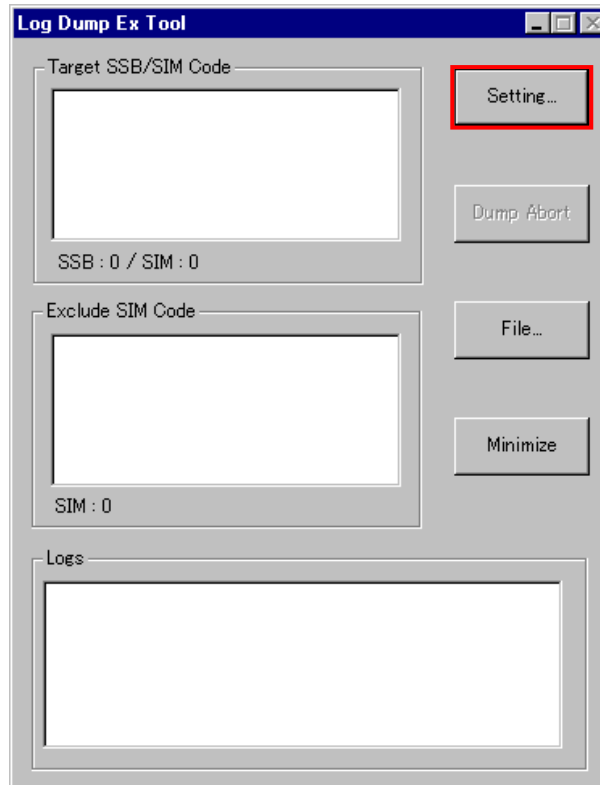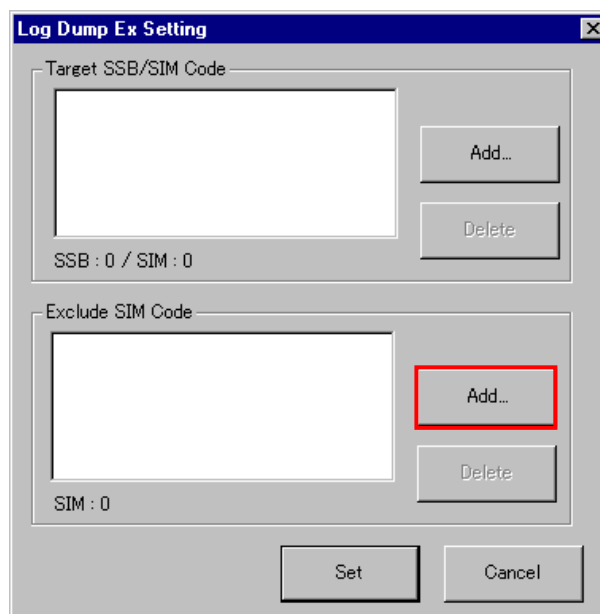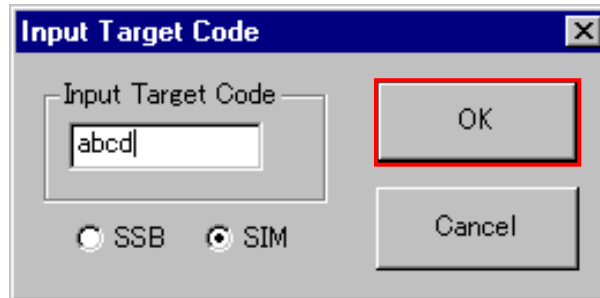2. Click [Setting...] in the Log Dump Ex Tool window.

3. When the Log Dump Ex Setting window is displayed, click [Add...] in the [Target SSB/SIM Code] area.
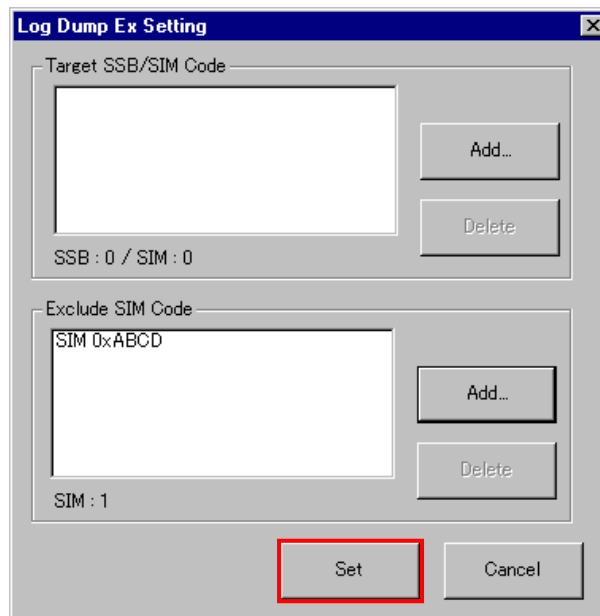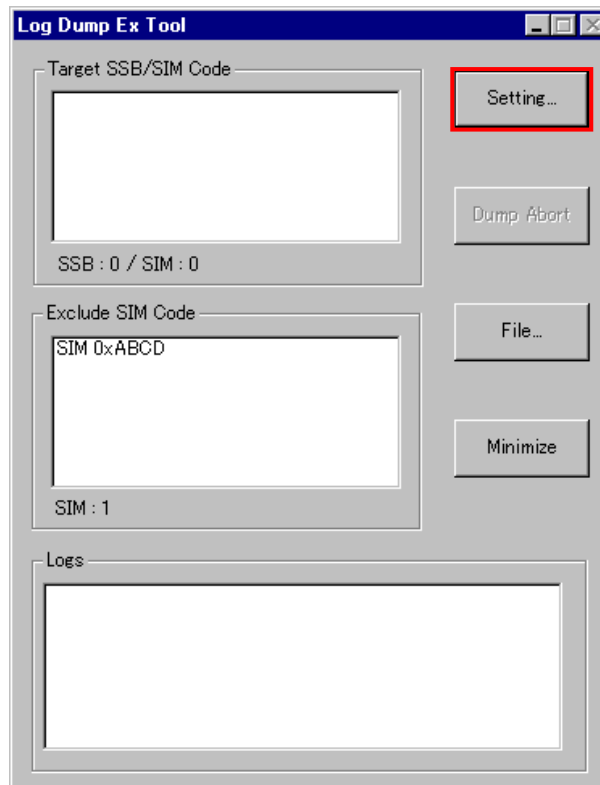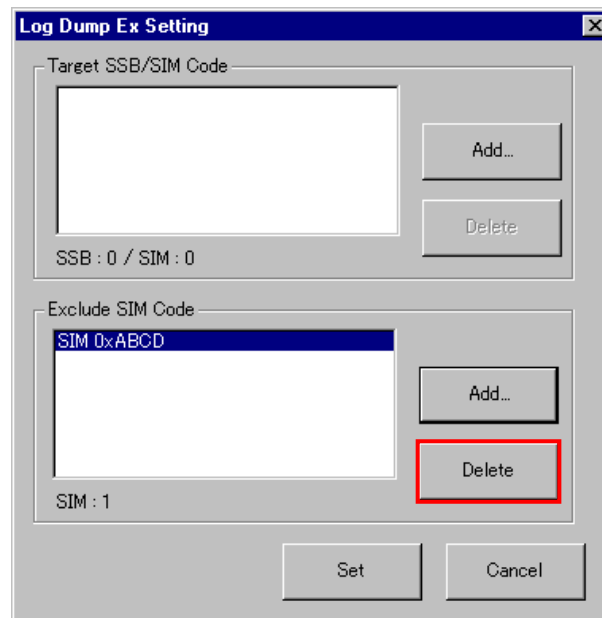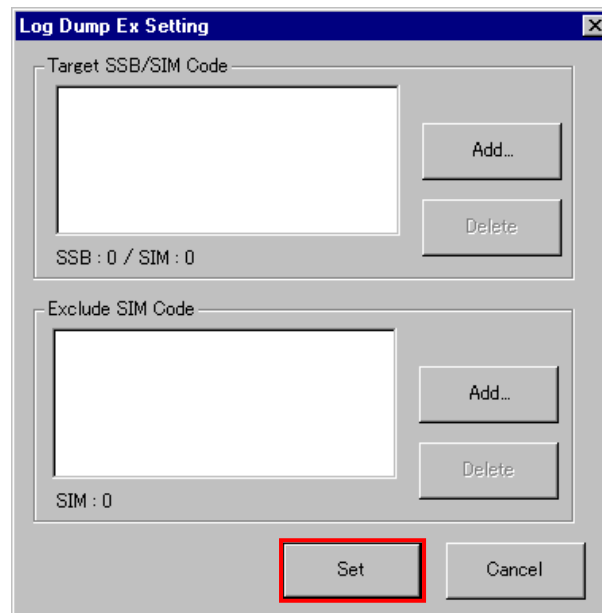
4. The Input Target Code window is displayed. Select SSB or SIM, enter SSB code or SIM code to be automatically collected in the [Input Target Code] entry field, and then click [OK].

NOTE: For multiple SSB/SIM codes to be automatically collected, repeat Step 3 and Step 4.

5. When SSB codes or SIM codes are entered completely, click [Set].

6. Click [Minimize] in the Log Dump Ex Tool window.

2.26.2 Deleting Some of SSB/SIM Codes Added to Automatic Dump Collection Targets

1. Click the Log Dump Ex Tool icon on the task bar to display the Log Dump Ex Tool window.

2. Click [Setting...] in the Log Dump Ex Tool window.

3. The Log Dump Ex Setting window is displayed. Select an SSB code or SIM code to delete from automatic collection targets from the [Target SSB/SIM Code] area, and then click [Delete] in the same area.

> NOTE: For multiple SSB/SIM codes to delete from automatic collection targets, repeat this procedure.

4. When SSB codes or SIM codes are deleted completely, click [Set].
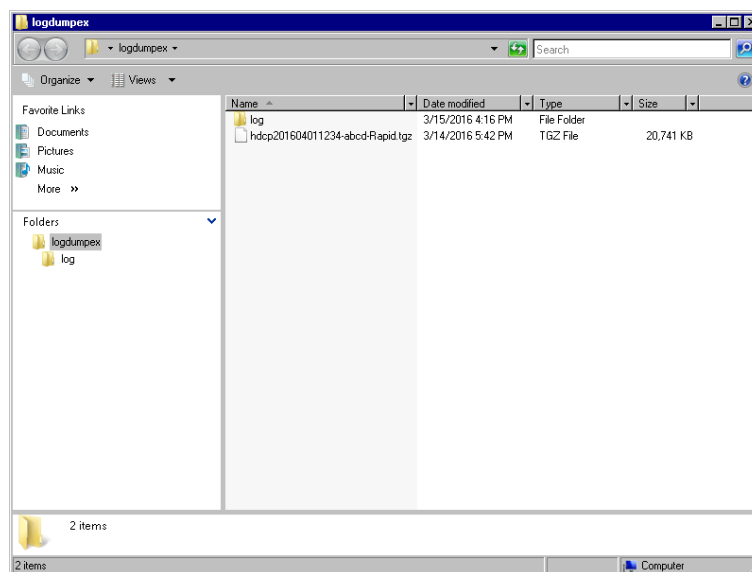
5. Click [Minimize] in the Log Dump Ex Tool window.

2.26.3 Deleting Specific SIM Codes from Automatic Dump Collection Targets

1. Click the Log Dump Ex Tool icon on the task bar to display the Log Dump Ex Tool window.

2. Click [Setting...] in the Log Dump Ex Tool window.

3. When the Log Dump Ex Setting window is displayed, click [Add...] in the [Exclude SIM Code] area.

4. The Input Target Code window is displayed. Enter SIM code to delete from automatic collection targets in the [Input Target Code] entry field, and the click [OK].

> NOTE: For multiple SIM codes to delete from automatic collection targets, repeat Step 3 and Step 4.

5. When the SIM code is entered completely, click [Set].

6. Click [Minimize] in the Log Dump Ex Tool window.

2.26.4 Releasing Specific SIM Codes in Those Deleted from Automatic Dump Collection Targets

1. Click the Log Dump Ex Tool icon on the task bar to display the Log Dump Ex Tool window.

2. Click [Setting...] in the Log Dump Ex Tool window.

3. When the Log Dump Ex Setting window is displayed, select a SIM code to be automatically collected again from the list in the [Exclude SIM Code] area, and click [Delete] in the same area.

> NOTE: For multiple SIM codes to be automatically collected again, repeat this procedure.

4. When SIM codes are completely deleted, click [Set].

5. Click [Minimize] in the Log Dump Ex Tool window.

2.26.5 Retrieving Dump Files Automatically Collected

1. Click the Log Dump Ex Tool icon on the task bar to display the Log Dump Ex Tool window.

2. Click [File...] in the Log Dump Ex Tool window.

3. Explorer starts up to display the folder storing the dump files.
   Copy all dump files in the folder.

4. Click [Minimize] in the Log Dump Ex Tool window.

2.26.6 Aborting Dump Collection during Automatic Dump Collection

1. Click [Dump Abort] in the Log Dump Ex Tool window.

2. Click [Minimize] in the Log Dump Ex Tool window.

3. Using Maintenance Utility (Sub Panel) to View Storage System Information

The following information can be viewed using Maintenance Utility (Sub Panel).

Information	Referenced page	Remark
Statuses of HSNPANEL and SSVP	SVP03-02-10	To view statuses of parts other than those shown to the left, use Maintenance Utility.
PCB/SFP revision	SVP03-03-10	
HTP path	SVP03-04-10	
Micro-program version	SVP03-05-10	
Drive copy execution status	SVP03-06-10	
Pin slot	SVP03-07-10	
Inter-PCB Logical Path	SVP03-08-10	

3.1 Starting Maintenance Utility (Sub Panel)

1. In the SVP window, click [Maintenance Utility (Sub Panel)].

2. The "Please wait..." message is displayed.

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

```
                    Maintenance

                    Please wait...

              Reading the all configurations...
```

When an error occurred while starting the window, the message to indicate the error factor is output. For the recovery action, see Message Section.

- Communication failure
  Message [STA0117E]
  "Connection error occurred. SVP Software-Storage System"

  Message [STA0118E]
  "An error occurred during communication with SSVP.
  Recover from the error according to the following steps:
  (1) Reset the SSVP.
  (2) Reboot the SVP.
  (3) Replace the SVP.
  (4) Replace the SSVP."

3. The "Maintenance Utility (Sub Panel)" window starts.

> NOTE: Displayed information is the storage system information on point that starts the
> screen. To refer to latest information, click [Refresh].

3.2 Main Window

3.2.1 Main Window Layout

The main window of the Maintenance Utility (Sub Panel) window is configured as shown below.

(1)　Menu/Toolbar

Menu	Sub menu	Toolbar	Description
File	Exit	Exit	Closes the window.
View	Toolbar	None	Displays/does not display the tool bar.
	Refresh	Refresh	Updates information being displayed.
Display	PCB Revision...	PCBRev	Starts the window for viewing the information of the PCB/ SFP revision and others (see SVP03-03-10).
	IMPL Status...	IMPL	Starts the window for viewing the Initial Micro Program Load status of each MP.
	Mainframe Path...	MF Path	Starts the window for viewing the path information between the storage system and Mainframe hosts (see SVP03-04-10).
	Version...	Version	Starts the window for viewing the micro-program version information (see SVP03-05-10).
Maintenance	SVP	Switch SVP	None	Switches Master and Standby SVPs in the storage system in which the SVP High Reliability Kit is installed (see SVP02-14-10).
		Transfer Config	None	Transfers the configuration information of the storage system in which the SVP Reliability Kit is installed from the Master SVP to the Standby SVP (see SVP02-15-10).

(2)　Dialogbar

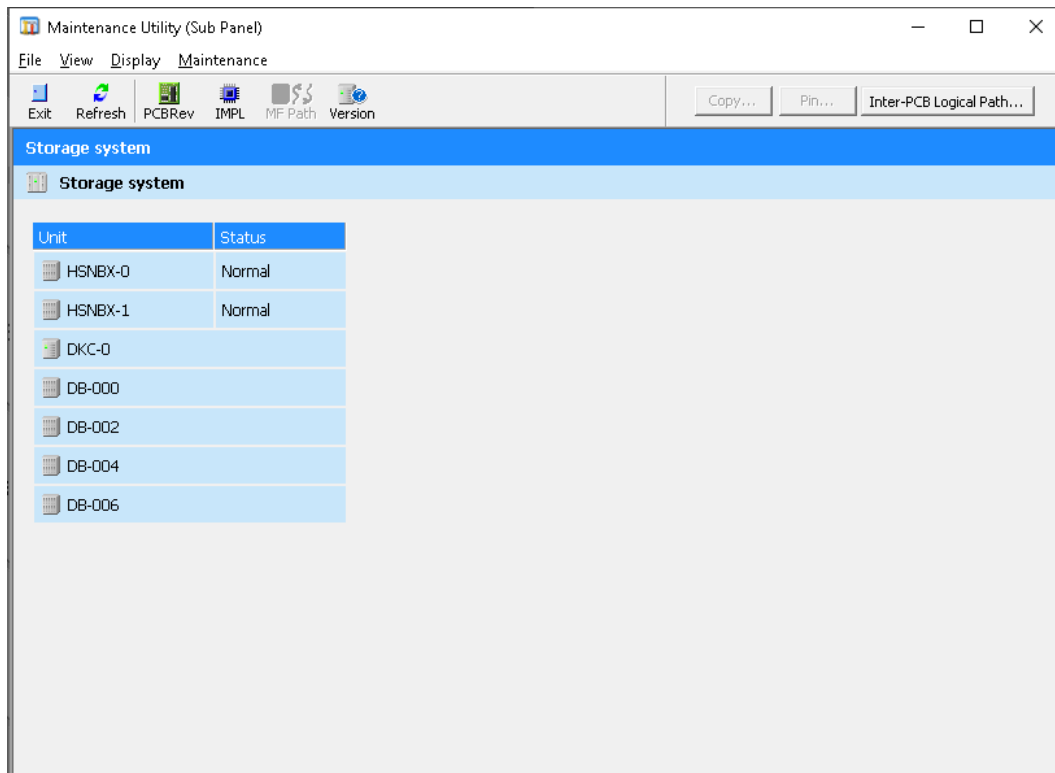| Button	Button status	Description
Copy...	Active (blinking)	Indicates that the drive copy is being processed. The details window is opened by clicking this button (see SVP03-06-10).
	Inactive	Indicates that the drive copy is not being processed.
Pin...	Active (blinking)	Indicates that there are Pin Slots. The details window is opened by clicking this button (see SVP03-07-10).
	Inactive	Indicates that there is no Pin Slot.
Inter-PCB Logical Path...	Active (blinking)	Indicates that there is an abnormality in logical paths between PCBs. The details window is opened by clicking this button (see SVP03-08-10).
	Active	Indicates that logical paths between PCBs are in the normal status. The details window is opened by clicking this button (see SVP03-08-10).

(3)   Information view
First, the storage system information view that lists the chassis installed in the storage system (see "3.2.2 Storage System Information View") is displayed. Selecting a target chassis from the list changes the view to one of the following information views:

- 3.2.3 HSNBX Information View
- 3.2.4 Drive Box Information View
- 3.2.5 DKC Information View
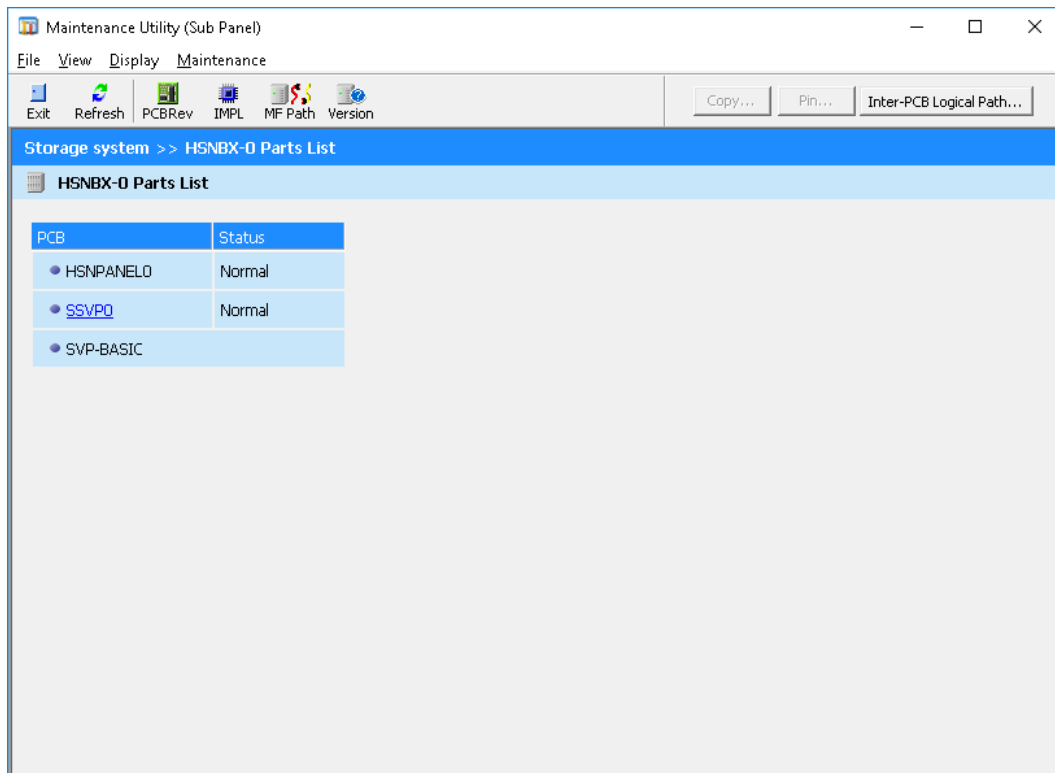
DKC910I

3.2.2 Storage System Information View

When Maintenance Utility (Sub Panel) is started, a list of the chassis installed in the storage system is displayed first.

- The Status of HSNBX represents the statuses of HSNPANEL and SSVP among components in HSNBX. If there is an abnormality in any of HSNPANEL and SSVP, the Status of HSNBX becomes "Warning".
- To view the statuses of DKC, Drive Box, and components in them, use Maintenance Utility.
- Clicking each chassis ([Unit]) displays a list of the components in the chassis.
    - 3.2.3 HSNBX Information View
    - 3.2.4 Drive Box Information View
    - 3.2.5 DKC Information View

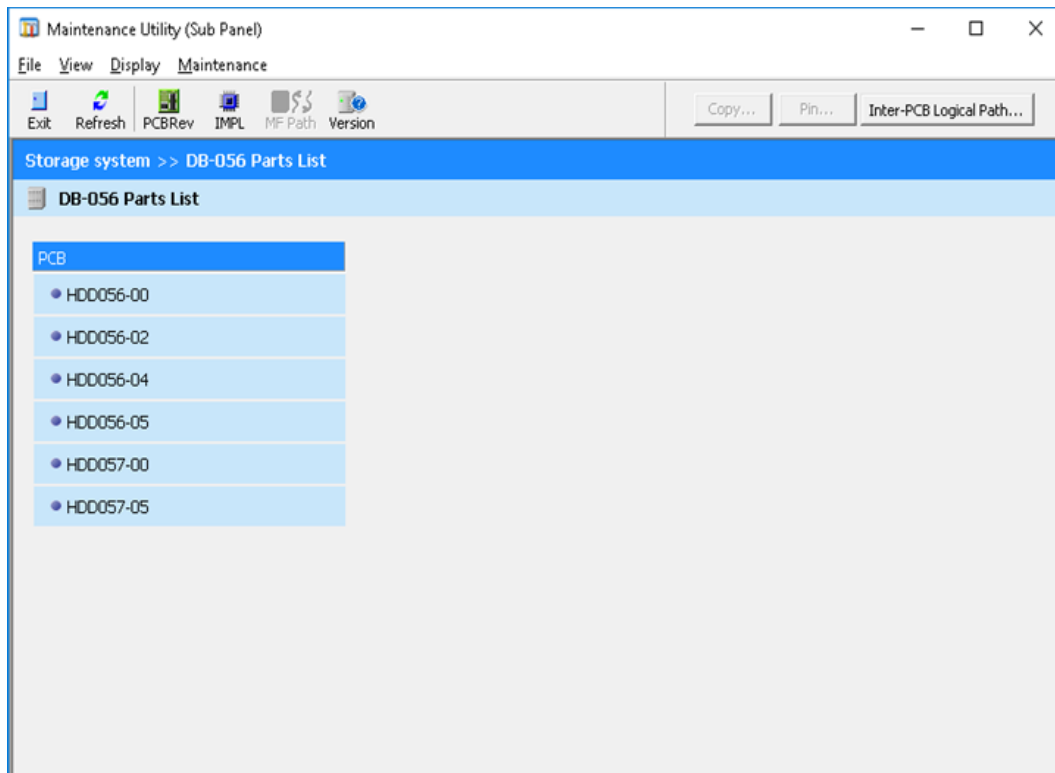SVP03-02-40

3.2.3 HSNBX Information View

When an HSNBX is selected in the storage system information view, a list of the components (HSNPANEL, SSVP, PCIADP, and SVP) in the HSNBX is displayed.

- If "Unknown" is displayed in the Status of HSNPANEL or SSVP, click [Refresh] on the toolbar to update the information display.
- To view the statuses of the components in the HSNBX, which are not displayed in the HSNBX information view, use Maintenance Utility.
- Replacement of components displayed in the list is performed by using the HSNBX information view. For the replacement procedure, follow the instructions for each component in REPLACEMENT SECTION.
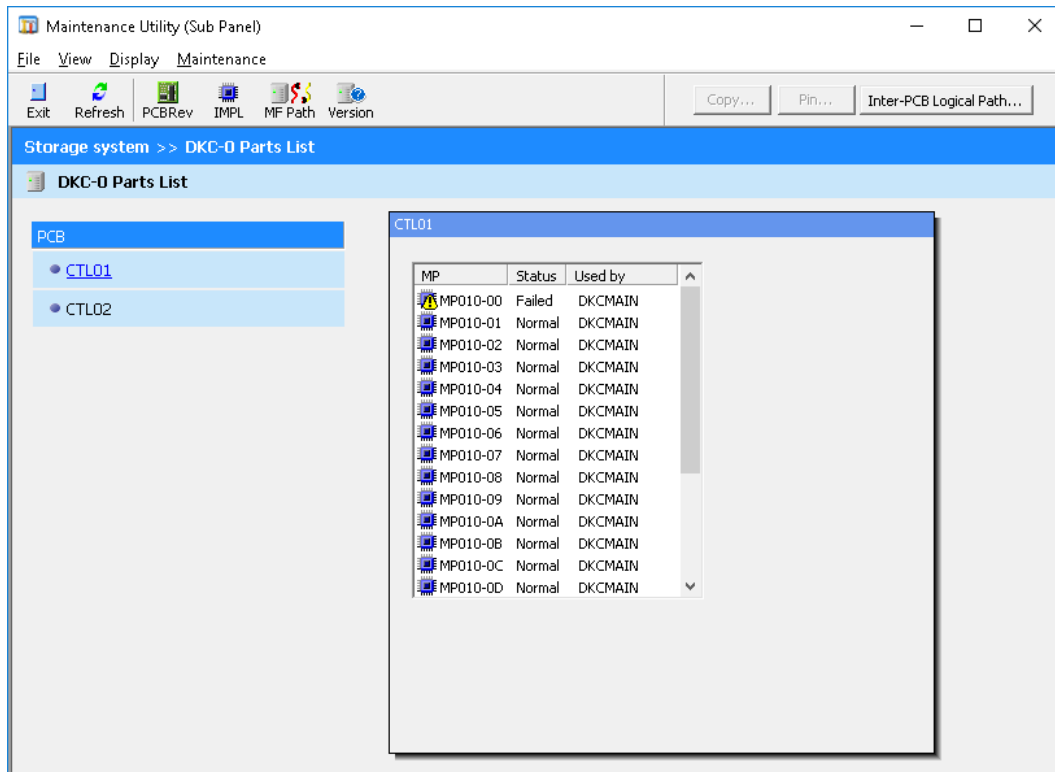
3.2.4 Drive Box Information View

When a Drive Box is selected in the storage system information view, a list of the drives in the Drive Box is displayed.

- To view the statuses of drives and other components in the Drive Box, use Maintenance Utility.
- The FMD Dump collections is performed by using the Drive Box information view (see SVP02-09-170).
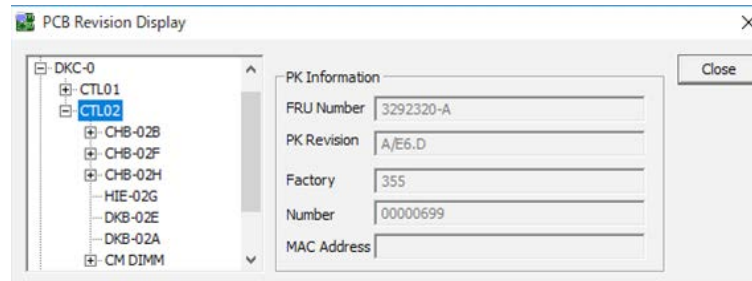
3.2.5 DKC Information View

When a DKC is selected in the storage system information view, a list of the CTLs in the DKC is displayed.

- To view the statuses of the components in the DKC, use Maintenance Utility.
- Clinking a CTL ([PCB]) displays the statuses of the MPs in the CTL in the right part of the window.
- Restoration of a failed MP is performed by using the DKC information view (see SVP02-25-10).

3.3 PCB/SFP Revision Display

1. From the menu of the Maintenance Utility (Sub Panel) window, select [Display]-[PCB Revision...].

2. "Reading or Writing PCB revision informations..." is displayed.

3. In the left part of the PCB Revision Display window, select a PCB whose revision you want to view.
   To view the SFP information, select a port under a CHB.
   Then, the information of the PCB/SFP is displayed in the right part of the window.

3.4 Path of HTP

When [Display]-[Mainframe Path...] is clicked in the Maintenance Utility (Sub Panel) window, the Mainframe Path Information window is displayed.
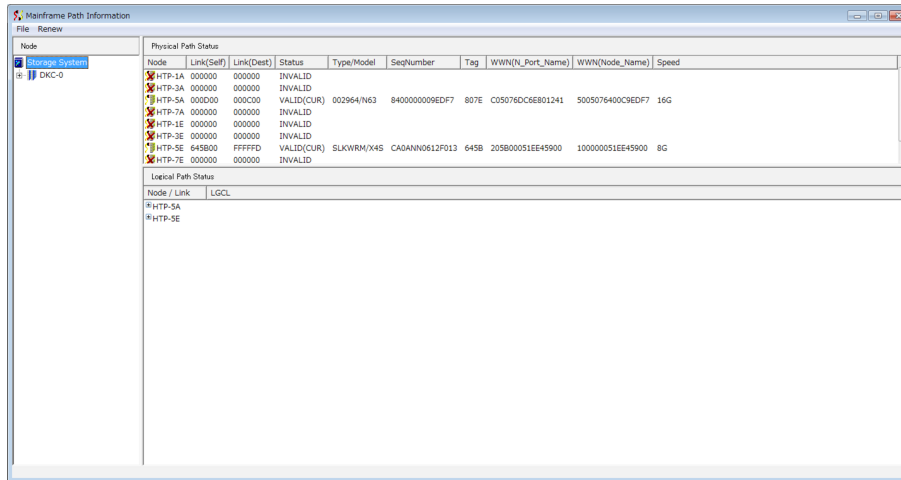

Table 3-1 Outline of Each Part

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 3-2 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 DKC, each CHB, or port concerned) is selected from the tree, the related physical path information is displayed in a list at the upper right part of the window.
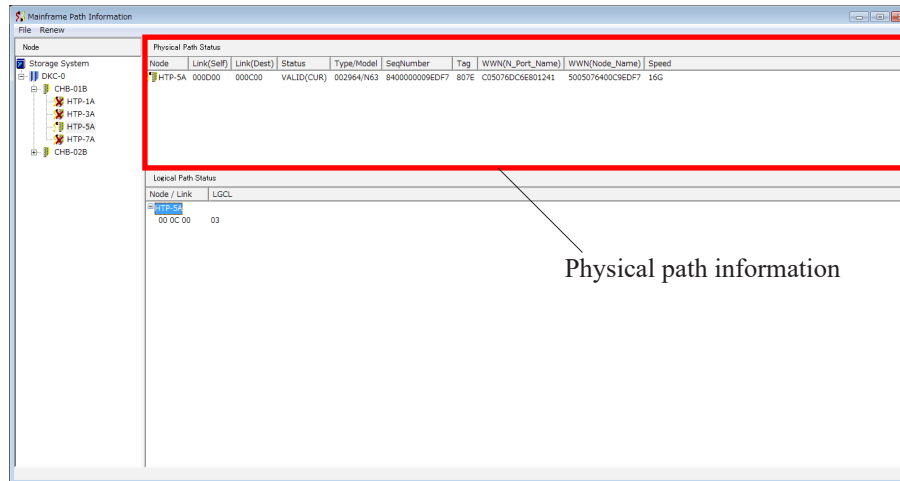

Physical path information

Table 3-3 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 DKC, each CHB, or port concerned) is selected from the tree, the related logical path information is displayed in a list at the lower right part of the window.
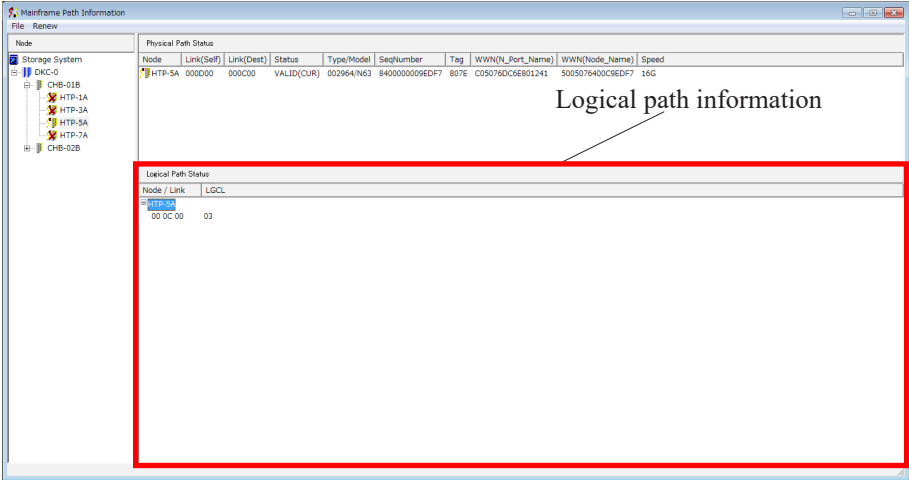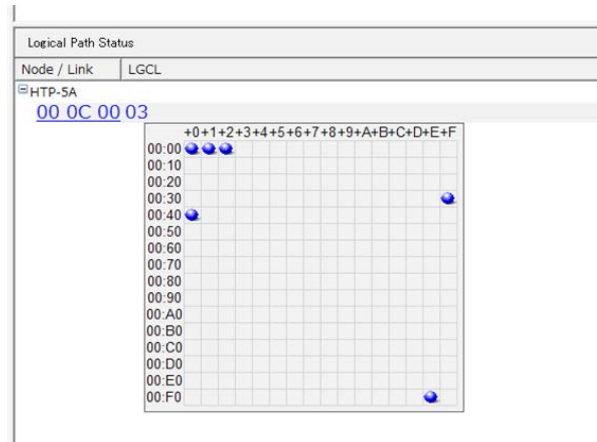

Table 3-4 Items Displayed in the Logical Path Information List

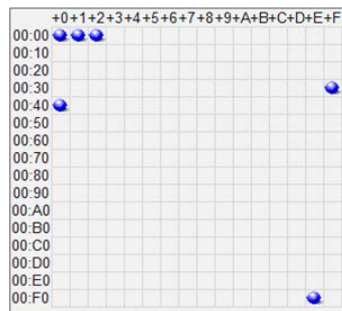| Item	Description
Node	Location where the HTP, in which the logical path exists, is installed.
Link	Link address of a host connected.
LGCL	Logical address of a host connected.

■ 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 the information after making sure that it is highlighted
(underlined in blue).

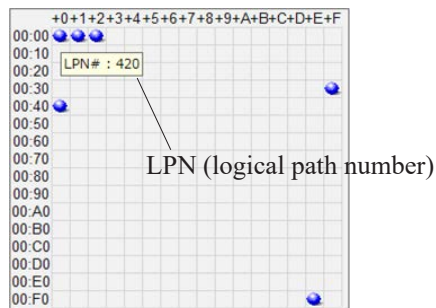<Window displaying CU# of the controller connected>

The CU# (control unit address) of the controller connected is displayed.

: Connected

Blank : Not 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)

3.5 Version of Microprogram

The Version window is displayed by selecting [Display]-[Version...] from the menu in the Maintenance
Utility (Sub Panel) window.

Version					✕
Basic Info	MP Ver.(Curt./Running)	MP Ver.(Curt./FM)	CFM/GUM Ver.	HDD Ver.	ENC Ver.	SSVP Ver.

Type	Current	CFM	SVP	Previous
DKCMAIN	90-01-60-00/01	90-01-60-00/01	90-01-60-00/01	90-01-60-00/01
HTP	90-01-01	90-01-01	90-01-01	90-01-01
ISCF	90-01-01-03	90-01-01-03	90-01-01-03	90-01-01-03
FCBK	90-03-01-05	90-03-01-05	90-03-01-05	90-03-01-05
ISW	90-00-00-D1	90-00-00-D1	90-00-00-D1	90-00-00-D1
DKB	90-00-05	90-00-05	90-00-05	90-00-05
DKBN	90-00-00	90-00-00	90-00-00	90-04-00
SVP	--------	--------	90-00-00/00	90-01-60/01
SSVP	--------	--------	90-01-01/00	90-01-01/00
GUM	90-01-60/01	90-01-60/01	90-01-60/01	90-00-20/00
FCDG	90-00-02	90-00-02	90-00-02	90-00-02
ROMBOOT	90-00-07	--------	--------	--------
RAMBOOT	90-00-02	90-00-02	90-00-02	90-00-02
Expander	--------	90-12-04	90-12-04	90-12-04
NSW	90-01-02	90-01-02	90-01-02	90-00-03
Config	90-01-02/60	90-01-02/60	90-01-02/60	90-01-02/60

<div align="right">Renew   Close</div>

- Information displayed in each tab is shown below.

Tab	Description	Referenced page
Basic Info	Version of each micro-program	SVP03-05-30
MP Ver. (Curt./Running)	Version of micro-program running on each MP/CHB port/ISW/DKB port	SVP03-05-40
MP Ver. (Curt./FM)	Version of micro-program stored in flash memory in each MP	SVP03-05-50
CFM/GUM Ver.	Version of CFM micro-program/GUM micro-program	SVP03-05-60
HDD Ver.	Version of drive micro-program	SVP03-05-80
ENC Ver.	Version of ENC micro-program	SVP03-05-100
SSVP Ver.	Version of SSVP micro-program	SVP03-05-120

- Matters common to each tab
    - The displayed version information is the information at the time of starting the Version window. To update the window display, click [Renew].
    - If there is a version inconsistency, an attention icon ⚠ is displayed on a tab. For the criteria of inconsistency, see each tab description.
    - Meanings of "-", "?", and "x" displayed instead of a version are shown below.

Displayed character	Description
"-" (hyphen)	The micro-program is not installed.
"?"	The version information acquisition failed. (*1)
"x"	The acquired version information is invalid. (*1)

1: The version item is highlighted in red/white, and "" is put at the end. Also, an attention icon ⚠ is displayed on a tab.

3.5.1 Basic Info Tab

Each micro-program version is displayed.

Item	Description
Type	Micro-program name.
Current	Major version of the micro-program currently running.
CFM	Current micro-program version stored in CFM.
SVP	Current micro-program version stored in SVP.
Previous	Previous micro-program version stored in SVP. When the micro-program exchange is performed, the micro-program prior to the exchange is stored as the previous version.

If the SMI-S version in the SVP micro-program is inconsistent with the currently running version, the row of "SVP" is highlighted in red/white, and "*" is put at the end of each item. Also, an attention icon ⚠ is displayed on the tab.

3.5.2 MP Ver. (Curt./Running) Tab

Version of the micro-program running on each MP/CHB port/ISW/DKB port is displayed.

Item	Description
Current	Major version of the micro-program currently running. (*1)
	The same information as [Current] in the [Basic Info] tab is displayed.
Running (MP)	Version of the micro-program running on each MP. (*1)
Running (CHB PORT)	Version of the port program running on each CHB port. (*1)
Running (ISW)	Version of the ISW firmware running on each ISW. (*1)
Running (DKB PORT)	Version of the DKB, DKBN micro-program currently running on each DKB port. (*1)

1: If either of the following is met, the version item is highlighted in red/white, and "" is put at the end. Also, an attention icon ⚠ is displayed on the tab.
 • The version in [Running *(xx)*] area is inconsistent with the version in the [Current] area.
 • The DKCMAIN version in the [Current] area is inconsistent with the binary version (internal administrative information).

3.5.3 MP Ver. (Curt./FM) Tab

Version of the micro-program stored in flash memory in each MP is displayed.

Item	Description
Current	Major version of the micro-program currently running. (*1)
	The same information as [Current] in the [Basic Info] tab is displayed.
FM	Version of the micro-program stored in flash memory in each MP. (*1)

1:   If either of the following is met, the version item is highlighted in red/white, and "" is put at the
end. Also, an attention icon ⚠ is displayed on the tab.
   • A version in the [FM] area is inconsistent with the version in the [Current] area.
   • The DKCMAIN version in the [Current] area is inconsistent with the binary version (internal
     administrative information).

3.5.4 CFM/GUM Ver.Tab

Versions of CFM micro-programs and GUM micro-programs are displayed.

Item		Description
CFM	Current (*1)	Version of the running CFM micro-program of each CFM type (FRU number). If different versions of CFM micro-programs of the same CFM type are running on CFMs, multiple CFM micro-program versions of the same CFM type are displayed.
	CFM	Version of the current micro-program of each CFM micro-program type, which is stored in CFM.
	SVP	Version of the current micro-program of each CFM micro-program type, which is stored in SVP.
	Previous	Version of the previous micro-program of each CFM micro-program type, which is stored in SVP. When the micro-program exchange is performed, the micro-program prior to the exchange is stored as the previous version.
GUM	Current	Location of the CTL in which the GUM is installed and version of the running GUM micro-program. (*2)
	CFM	Version of the current GUM micro-program stored in CFM.
	SVP	Version of the current GUM micro-program stored in SVP.
	Previous	Version of the previous GUM micro-program stored in SVP. When the micro-program exchange is performed, the micro-program prior to the exchange is stored as the previous version.

*1: Double-clicking a line in the list of [Current] displays locations of CFMs whose CFM type (FRU number) and micro-program version are consistent with those displayed on the line (see Figure 3-1).

2: If a running GUM micro-program version is earlier than the version stored in SVP, the version item is highlighted in red/white, and "" is put at the end. Also, an attention icon ⚠ is displayed on the tab.

Figure 3-1
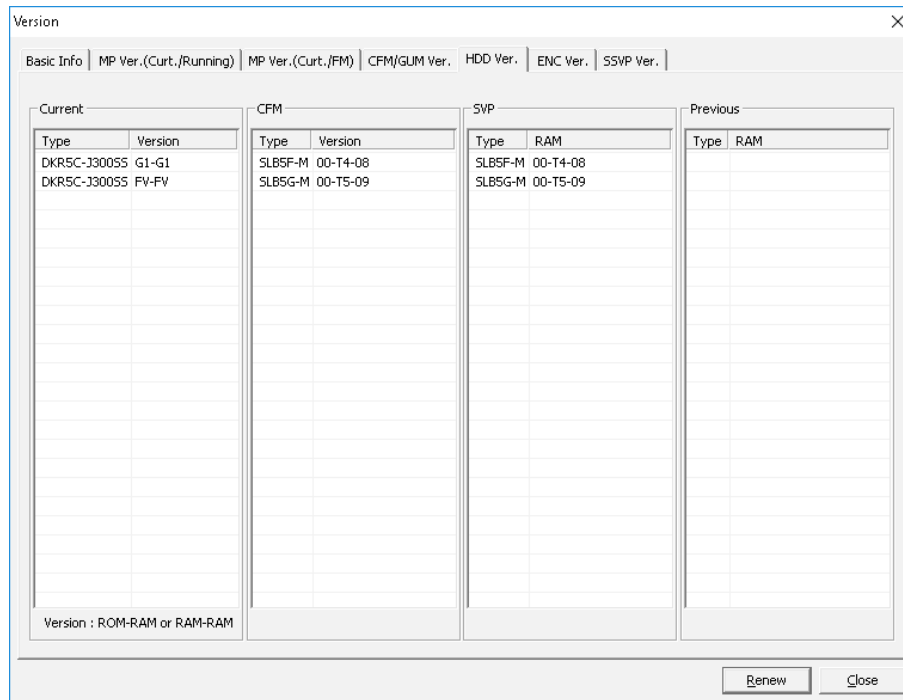
CFM List

| CFM Type | 3292315-A |
| Version | GX-M5-10-4Q |

CTL Location	CFM Location
CTL01	CFM-010
CTL02	CFM-020

OK

3.5.5 HDD Ver. Tab

Versions of drive micro-programs are displayed.

Item	Description
Current (*1)	Version of the running drive micro-program of each drive type. (*2)
	If different versions of drive micro-programs of the same drive type are running on drives, multiple drive micro-program versions of the same drive type are displayed.
	OEM drive micro-program version is displayed in the "RAM version - RAM version" format.
	Version other than the above is displayed in the "ROM version - RAM version" format.
CFM	Version of the current micro-program of each drive type, which is stored in CFM.
SVP	Version of the current micro-program of each drive type, which is stored in SVP.
Previous	Version of the previous micro-program of each drive type, which is stored in SVP.
	When the micro-program exchange is performed, the micro-program prior to the exchange is stored as the previous version.

*1: Double-clicking a line in the list of [Current] displays locations of drives whose drive type and micro-program version are consistent with those displayed on the line (see Figure 3-2).

2: If a running drive micro-program version of each drive type is earlier than the version stored in SVP, the version item is highlighted in red/white, and "" is put at the end. Also, an attention icon ⚠ is displayed on the tab.

Figure 3-2

3.5.6 ENC Ver. Tab

ENC micro-program versions are displayed.

Item	Description
Current (*1)	Version of the running ENC micro-program. (*2) If different versions of ENC micro-programs are running on ENCs, multiple ENC micro-program versions are displayed.
CFM	Version of the current ENC micro-program stored in CFM.
SVP	Version of the current ENC micro-program stored in SVP.
Previous	Version of the previous ENC micro-program stored in SVP. When the micro-program exchange is performed, the micro-program prior to the exchange is stored as the previous version.

*1: Double-clicking a line in the list of [Current] displays locations of ENCs to which the ENC micro-program version is applied (see Figure 3-3).

2: If a running ENC micro-program version is earlier than the version stored in SVP, the version item is highlighted in red/white, and "" is put at the end. Also, an attention icon ⚠ is displayed on the tab.

Figure 3-3

```
NSW List

   Version : 90-01-02

   ┌─────────────────────┐
   │ ENC Location        │
   ├─────────────────────┤
   │ ENC000-1            │
   │ ENC000-2            │
   │ ENC002-1            │
   │ ENC002-2            │
   │ ENC004-1            │
   │ ENC004-2            │
   │ ENC006-1            │
   │ ENC006-2            │
   │                     │
   │                     │
   │                     │
   └─────────────────────┘

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

3.5.7 SSVP Ver. Tab

SSVP micro-program versions are displayed.

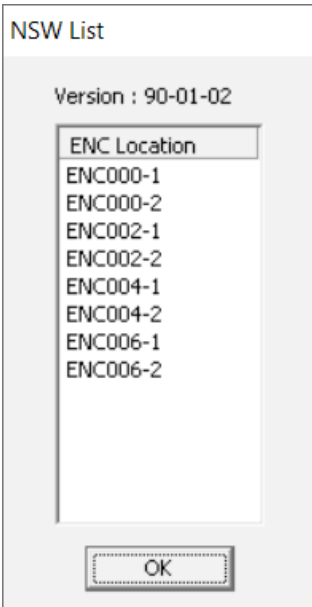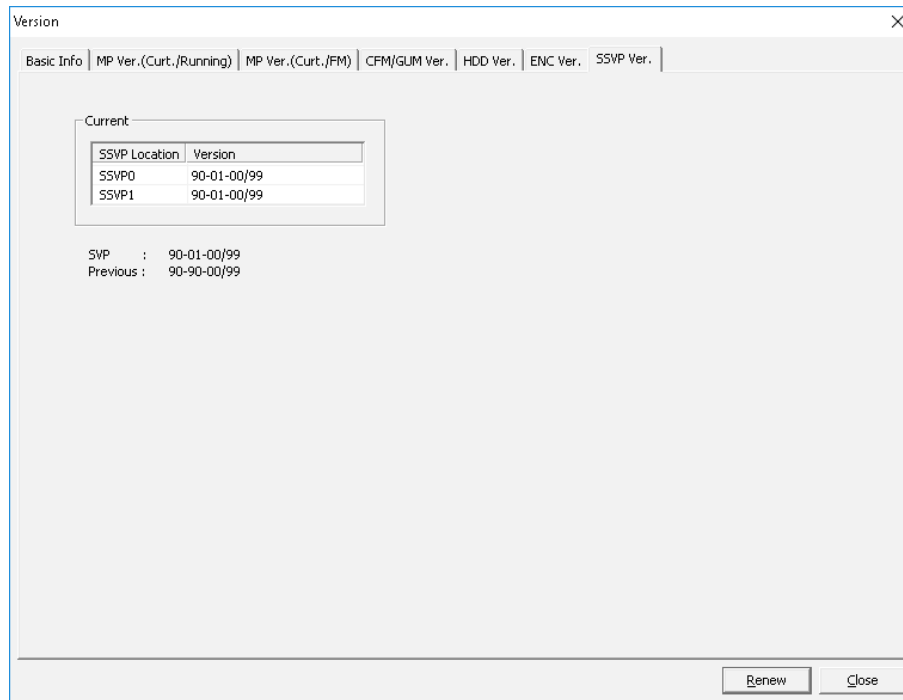| Item	Description
Current	Location of the SSVP and version of the running SSVP micro-program. (*1)
SVP	Version of the current SSVP micro-program stored in SVP.
Previous	Version of the previous SSVP micro-program stored in SVP. When the micro-program exchange is performed, the micro-program prior to the exchange is stored as the previous version.

1: If a running SSVP micro-program version is earlier than the version stored in SVP, the version item is highlighted in red/white, and "" is put at the end. Also, an attention icon ⚠ is displayed on the tab.

3.6 Drive Copy Execution State

The Copy Status view is displayed by clicking [Copy...] on the dialog bar of the Maintenance Utility (Sub Panel) window.
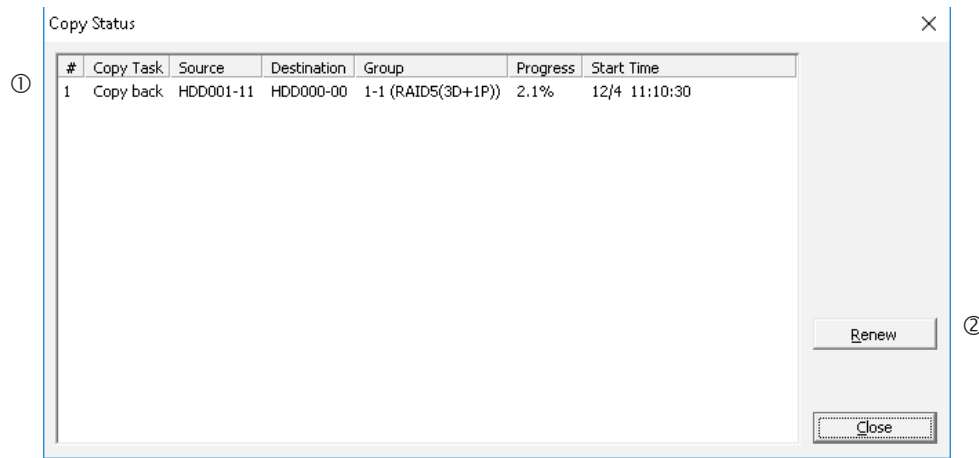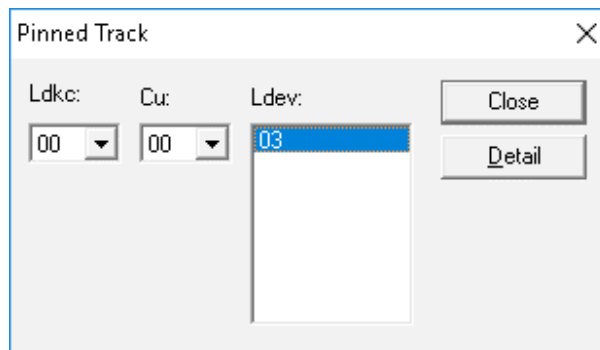
①

Copy Status ✕

#	Copy Task	Source	Destination	Group	Progress	Start Time
1	Copy back	HDD001-11	HDD000-00	1-1 (RAID5(3D+1P))	2.1%	12/4 11:10:30

Renew ②

Close

Table 3-5 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.	
		[Close]	Exits the Copy Status View.	

3.7 Pin Slot Information

You can save the pinned data file, by performing the Auto Dump operation.

1. Click [Pin...] on the dialog bar of the Maintenance Utility (Sub Panel) window.

2. Display an LDEV with a pinned slot.
   • Select the LDEV, details of which you want to display, in "Ldkc:", "Cu:", "Ldev:" and click [Detail].
     Go to Step 3.
   • When you close the Pinned Track window, click [Close].

   > 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.

SVP03-07-20

3. Display the detail of a Pin Slot.
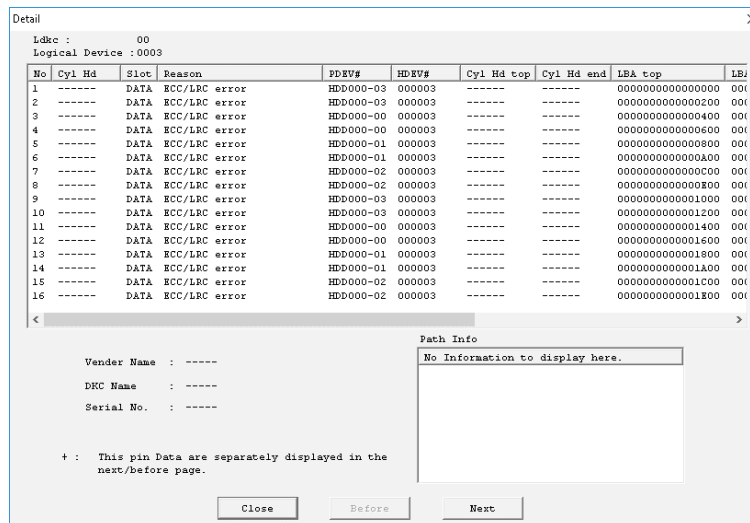   Description of each item is shown in Table 3-6.
   (If there are more than 17 Pin Slots, click [Next] will display other Pin Slots.)

> NOTE: 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.

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

> NOTE: LDEV might not be displayed according to the timing of the information acquisition. In that case, try to click [Refresh] of the Maintenance Utility (Sub Panel) window, and to acquire information.

```
Detail                                                                              ×
  Ldkc :            00
  Logical Device : 0003

 No | Cyl Hd | Slot | Reason            | PDEV#     | HDEV#  | Cyl Hd top | Cyl Hd end | LBA top          | LBA
 1    ------   DATA   ECC/LRC error      HDD000-03   000003   ------       ------       0000000000000000   00(
 2    ------   DATA   ECC/LRC error      HDD000-03   000003   ------       ------       0000000000000200   00(
 3    ------   DATA   ECC/LRC error      HDD000-00   000003   ------       ------       0000000000000400   00(
 4    ------   DATA   ECC/LRC error      HDD000-00   000003   ------       ------       0000000000000600   00(
 5    ------   DATA   ECC/LRC error      HDD000-01   000003   ------       ------       0000000000000800   00(
 6    ------   DATA   ECC/LRC error      HDD000-01   000003   ------       ------       0000000000000A00   00(
 7    ------   DATA   ECC/LRC error      HDD000-02   000003   ------       ------       0000000000000C00   00(
 8    ------   DATA   ECC/LRC error      HDD000-02   000003   ------       ------       0000000000000E00   00(
 9    ------   DATA   ECC/LRC error      HDD000-03   000003   ------       ------       0000000000001000   00(
 10   ------   DATA   ECC/LRC error      HDD000-03   000003   ------       ------       0000000000001200   00(
 11   ------   DATA   ECC/LRC error      HDD000-00   000003   ------       ------       0000000000001400   00(
 12   ------   DATA   ECC/LRC error      HDD000-00   000003   ------       ------       0000000000001600   00(
 13   ------   DATA   ECC/LRC error      HDD000-01   000003   ------       ------       0000000000001800   00(
 14   ------   DATA   ECC/LRC error      HDD000-01   000003   ------       ------       0000000000001A00   00(
 15   ------   DATA   ECC/LRC error      HDD000-02   000003   ------       ------       0000000000001C00   00(
 16   ------   DATA   ECC/LRC error      HDD000-02   000003   ------       ------       0000000000001E00   00(

 <                                                                              >

                                             Path Info
                                             No Information to display here.
         Vender Name  : -----

         DKC Name     : -----

         Serial No.   : -----


     + :  This pin Data are separately displayed in the
           next/before page.

                 [ Close ]      [ Before ]     [ Next ]
```

When you want to close the Detail window, click [Close].
Return to Step 2.

Table 3-6 List of Items

Item	Description
Logical Device	Logical device number in which pinned data exists "#" : External Volume "V" : Virtual Volume "A" : ALU Volume "S" : SLU Volume "X" : DP Volume "M" : Migration Volume
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 (TRBL03-29-10) for the recovery procedure at the following reason. ECC/LRC errorr　　　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 "#" : External Volume "V" : Virtual Volume "A" : ALU Volume "S" : SLU Volume "X" : DP Volume "M" : Migration Volume
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 "#" : External Volume "V" : Virtual Volume "A" : ALU Volume "S" : SLU Volume "X" : DP Volume "M" : Migration Volume
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 PIN slot resides outside the user area (TSE-VOL and others area). In this case, even if Dynamic Provisioning is used, HDEV number is displayed in the item of HDEV#, not in the item of HDEV# (DP).
See (TRBL06-10) for the PIN track recovery procedure of TSE-VOL.

3.8 Inter-PCB Logical Path

The Inter-PCB Logical Path Status window is displayed by clicking [Inter-PCB Logical Path...] on the dialog bar of the Maintenance Utility (Sub Panel) window.

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

Path (Check box) ----

	CTL-CM	: Specifies display of summary path between CTL and CM
	MP-CM	: Specifies display of summary path between MP and CM
	MP-MP	: Specifies display of summary path between MP and MP
	MP-CTL	: Specifies display of summary path between MP and CTL

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

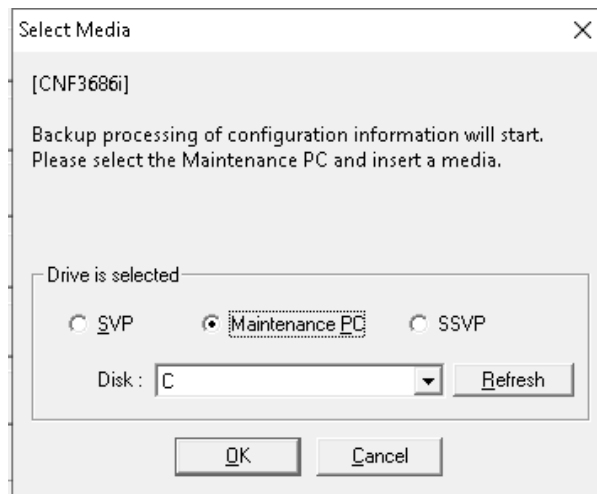   Blockade   : Status in which a path concerned is blocked

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

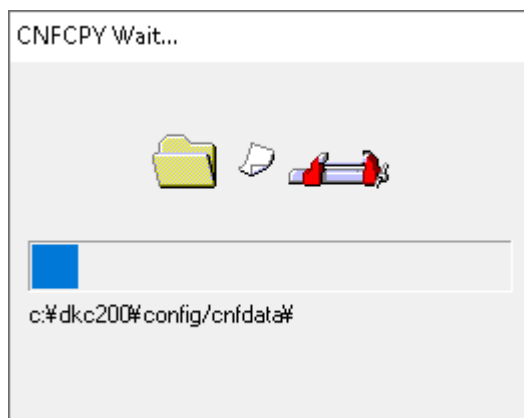Group Information -- Information of each group making up summary path.

4. Appendix

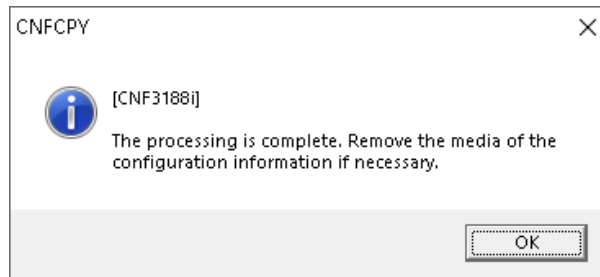## 4.1 Storing a backup of configuration information (config) to a media

1. To store a backup of the config, prepare a blank media.

2. If the DKC200 directory exists in the root of the hard disk (C drive) of the Maintenance PC to which the backup of the config is stored temporarily, delete the DKC200 directory.

3. Perform the backup processing of the config.
   Select the drive (C drive) prepared in Step 2.

4. The backup processing is performed. The CNFCPY Wait... window appears.

5. A message [CNF3188i] is displayed. Click [OK].

```
CNFCPY                                          ×

     (i)   [CNF3188i]

           The processing is complete. Remove the media of the
           configuration information if necessary.


                                        [    OK    ]
```

6. The DKC200 directory exists in the root of the drive (C drive) specified in Step 3. Use the CD writing
   tool to copy the DKC200 directory to the root directory of the media, which was prepared in Step 1.