

[DKB REPLACEMENT PROCESSING - RDKB]

1. Replacing a Disk Board for DKC

NOTE: The Disk Boards for SAS connection and the Disk Board for NVMe connection are available. The Disk Boards for SAS connection include the Disk Board that supports encryption and the Disk Board that does not support it. Check the type of the Disk Board to be replaced.

NOTE: In the Encryption Keys window of Web Console, check whether an encrypted Disk Board is installed. If the Attribute column shows only KEK and CEK or either of them, ask your customer to create as many Free-attribute encryption keys as possible before performing replacement (see “Encryption License Key User Guide”).

1. Connecting the Maintenance PC

Connect the Maintenance PC to the SSVP, and then log in to the SVP.

- “Attachment/Removal Procedure of Maintenance PC” ([INST\(IN\)13-02-10](#))
- “Connection to the SVP” ([SVP01-30](#))

2. Starting the SVP window

From the menu of Web Console, click [Maintenance Components] - [Maintenance Other Components].

3. Changing the operation mode

Change the mode to [View Mode].

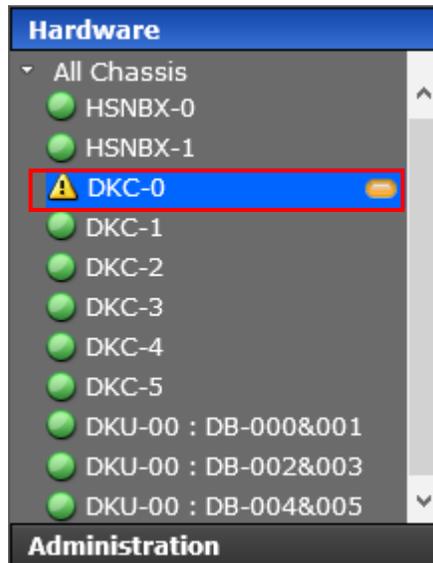
4. Starting Maintenance Utility

In the SVP window, click [Maintenance Utility]. (See “Starting Maintenance Utility” ([MU01-10](#)).)

5. Selecting replacement parts by Maintenance Utility.

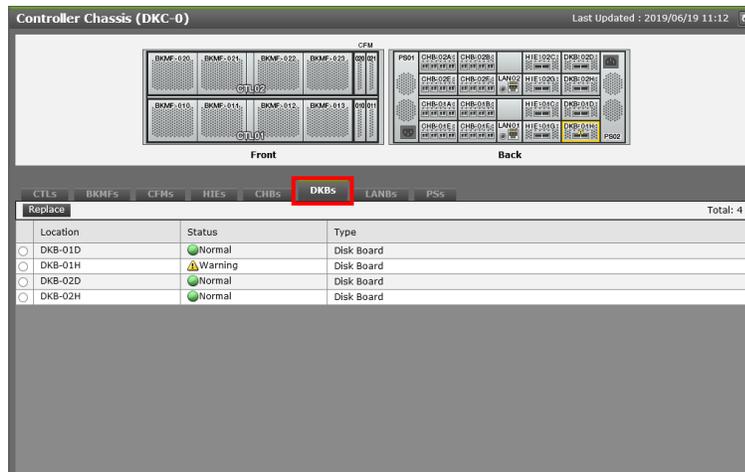
(1) <Main window>

Select [Controller Chassis] in the main window.



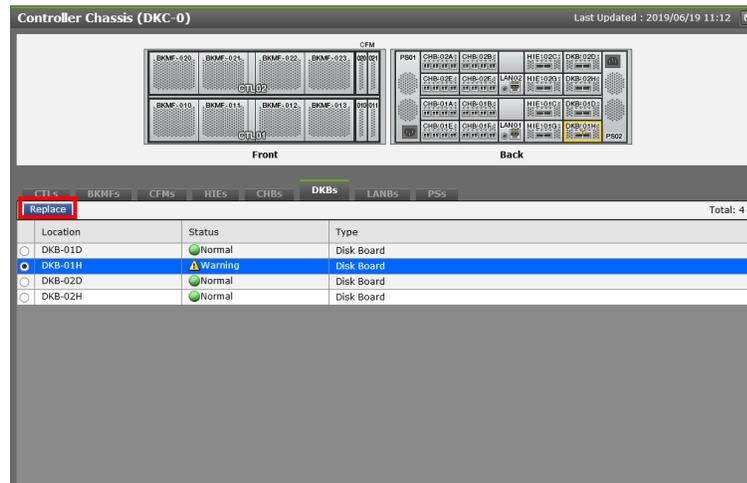
(2) <Controller Chassis window>

Click the [DKBs] tab in the Controller Chassis window to display a Disk Board status. See “Alert Display Related to FRU (Field Replacement Unit)” (MU02-10) for [Status].



(3) <Select Disk Board>

Select a Disk Board to be replaced. Click [Replace].



(4) <Block Disk Board>

⚠ CAUTION

About "Forcibly run without safety checks":

If you check this checkbox and execute the maintenance, the system may go down. Do not check it unless instructed by the message, the manual or the contact described in the manual.

About "Forcibly block":

If you check this checkbox and execute the maintenance, the system may go down. Do not check it unless instructed by the contact described in the manual.

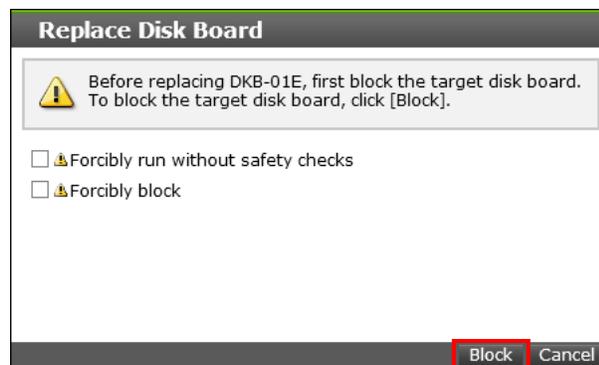
Click [Block] after checking that the Disk Board to be replaced is correct.

If a message other than the described is displayed, refer to Message Section ([MSG00-00](#)).

NOTE : The error list window is displayed if multiple errors are detected by the prior check.

If it is displayed, click the text of "Error Code" and recover the failures or the blockade in accordance with the details of the displayed errors.

NOTE : At the time of the Disk Board blockade, fans on Drive Boxes might rotate at a high speed temporarily.



(5) <Check the beginning of Disk Board replacement>

Check that the Disk Board is blocked and becomes ready for replacing.

NOTE : Do not click [Restore] at this time.

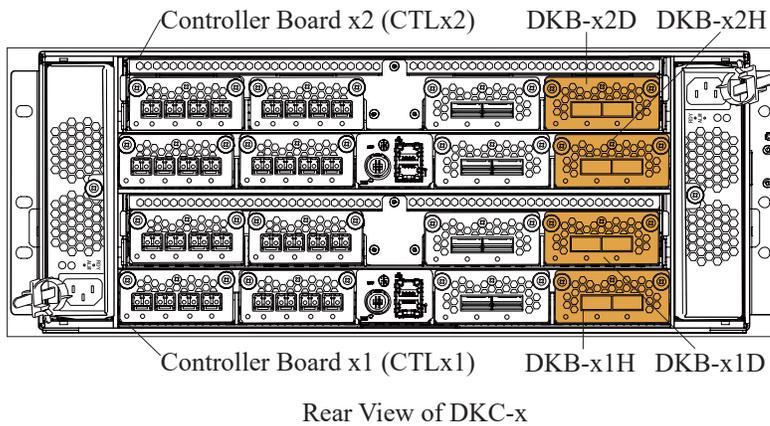
Click [Restore] after completing the replacement work.



6. Disk Board Replacement Processing

Location	Function Name of Component	Part Name
Rear of DKC	1 Disk Board	<ul style="list-style-type: none"> • DKB (BS12G) • EDKB (BS12GE) • DKBN (BN8G)

NOTE : There are multiple types of Disk Boards. Different types of Disk Boards cannot be installed in a CBX pair. Before replacing a Disk Board, check the type.



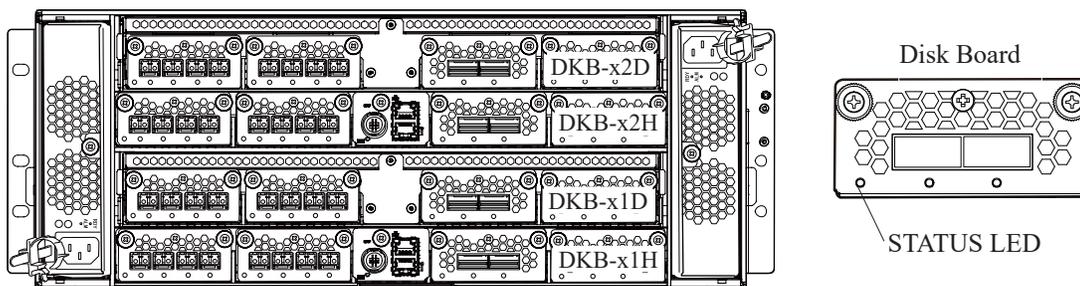
*1: DKC-x
 ↳DKC No. (0, 1, 2,, 5)

NOTE: The above illustrations are for VSP 5500 and VSP 5500H. For VSP 5100 and VSP 5100H, only CTL01 and CTL12 are installed.

NOTICE: To prevent part failures caused by static electrical charge built up on your own body, be sure to wear a wrist strap connected to the Storage System before starting and do not take it off until you finish. See “Note on Installing and Removing Parts (REP(GE)01-30)”.

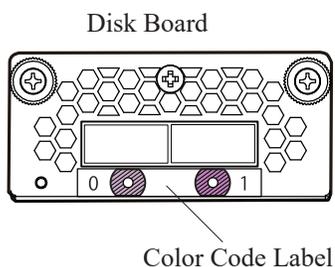
- (1) Check that the STATUS LED (red) on the DKC Disk Board to be replaced lights up. When the LED does not light up, check the location of the Disk Board to be replaced in the Maintenance Utility window.

Figure 1-1 STATUS LED Location



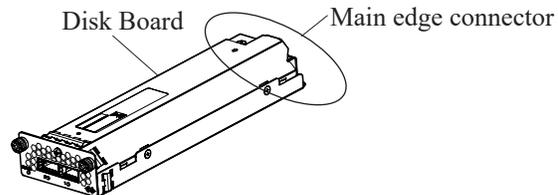
- (2) Remove the SAS cables/NVMe cables from the Disk Board to be replaced.
- (3) Attach the color code label of the same color as that for the Disk Board to be replaced to the new Disk Board.

Figure 1-2 Attaching Color Code Label



(4) Replace the Disk Board.

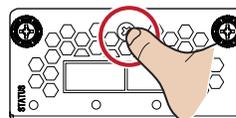
NOTICE: When removing the Disk Board, hold it with both hands and remove it straight not to apply a shock to with any components.



NOTICE: If Disk Boards are inserted randomly, malfunction may occur. Therefore, insert the Disk Boards in two steps, [Step \(c\)](#) and [Step \(d\)](#) shown below.

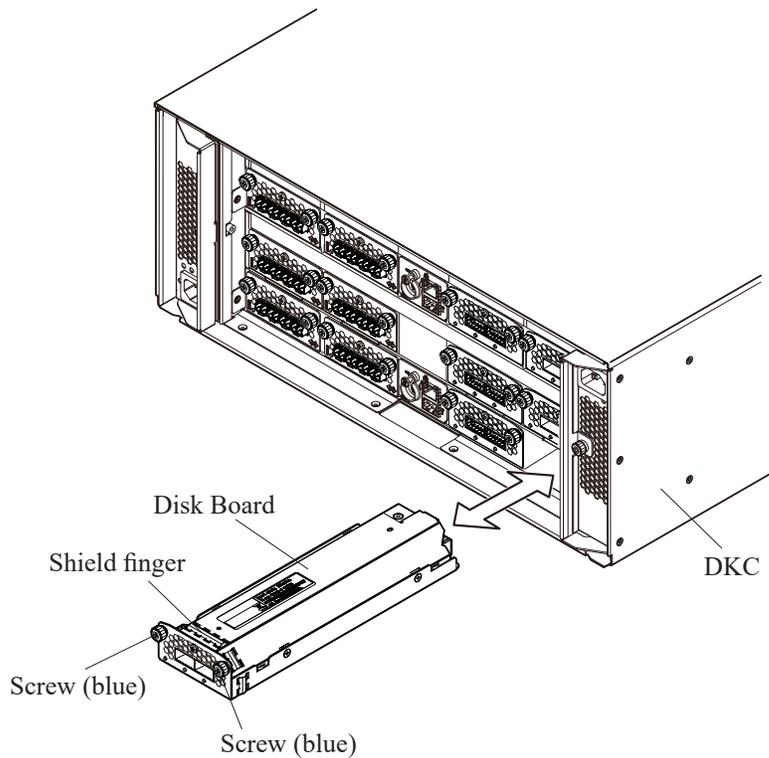
- (a) Loosen the two screws (blue) which fix the Disk Board.
- (b) Pull out and remove the Disk Board while holding the screws (blue).
- (c) Insert the Disk Boards to be added into the slots just before the shield finger.
- (d) Push the Disk Boards gently all the way in.

NOTICE: Push the front side of the Disk Board all the way to insert it to the end.



- (e) Tighten the two screws (blue) to fix the Disk Board.

Figure 1-3 Replacement of Disk Board



- (5) Check the state of SAS cable/NVMe cables connectors.

NOTE:

- If there is foreign matter or dust, remove it with cut gauze.
- If you find a deformation, break, or the like, replace the SAS cable with a spare part.

- (6) Connect the SAS cables/NVMe cables to the replaced Disk Board.

When connecting SAS cables/NVMe cables, be careful not to damage the tips of the cables. (Refer to "Precautions when Connecting SAS Cables/NVMe cables" [\(INST\(IN\)09-04-10\)](#)).

7. Restoring replacement parts by Maintenance Utility

(1) <Restore replacement parts>

Click [Restore].

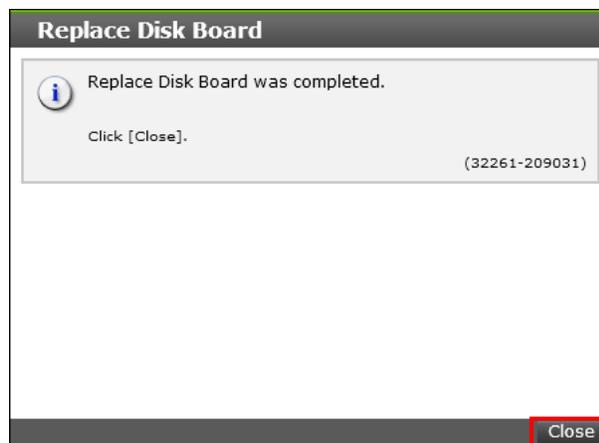
NOTE : At the time of the Disk Board recovery, fans on Drive Boxes might rotate at a high speed temporarily.



(2) <Check replacement parts restoration>

Check that the following message is displayed and click [Close].

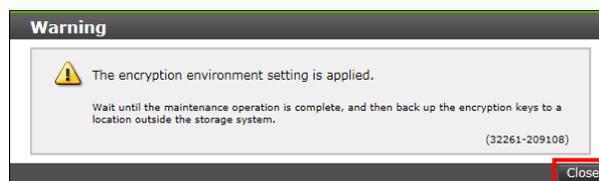
If a message other than the described is displayed, refer to Message Section [\(MSG00-00\)](#).



(3) <Check back up the encryption key Messages>

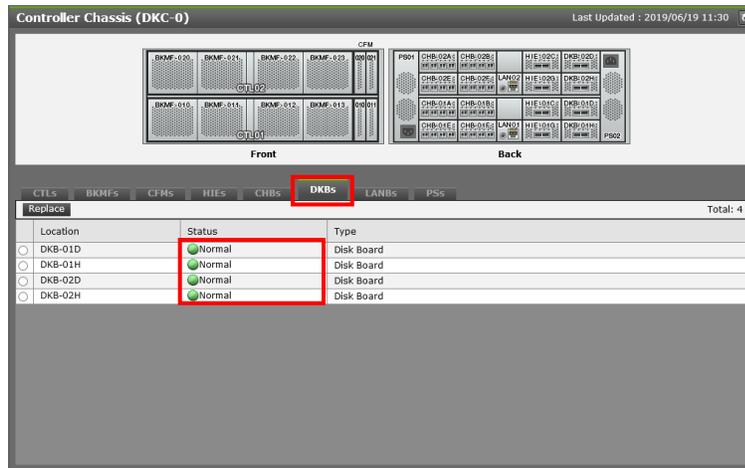
When the encryption environment is applied, the following message is displayed.

Check the message and click [Close].



(4) <Check Disk Board restoration>

Click the [DKBs] tab in the Controller Chassis window and check that a Status of the replaced Disk Board is “Normal”.



8. Closing Maintenance Utility

(1) Click [Logout] to close the window.

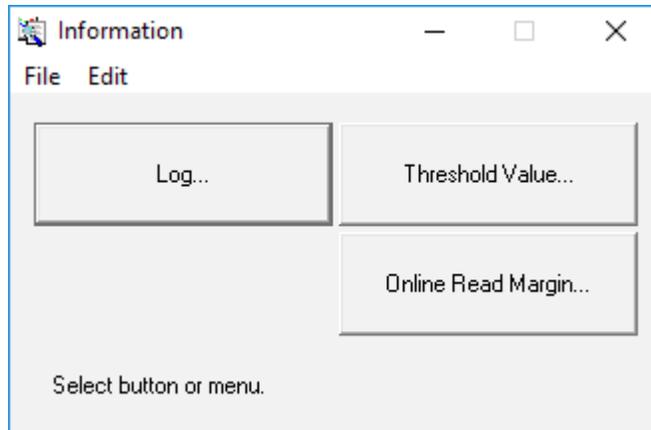
(2) <Get the error information>

Collect small system dumps by referring to “Dump/Auto Dump” ([SVP02-09-10](#)).

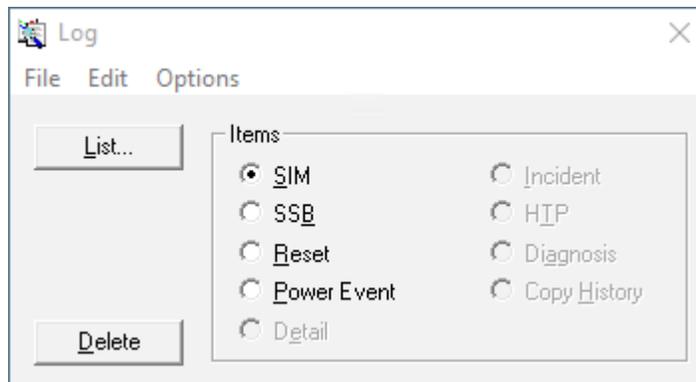
(3) Refer to the “Use of OnlineDumpTool” ([SVP02-21-10](#)), please upload the error information.

9. Completing the SIM log

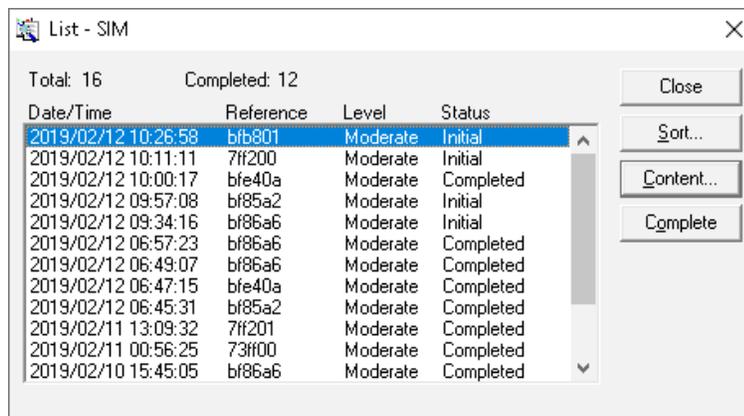
- (1) Change the mode to [Modify Mode], and then select [Information].
- (2) In the Information window, click [Log...].



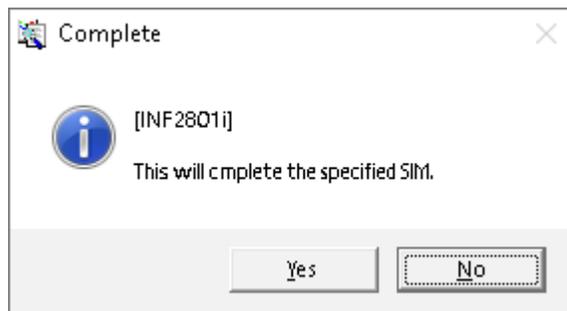
- (3) In the Log window, select [SIM] and then [List...].



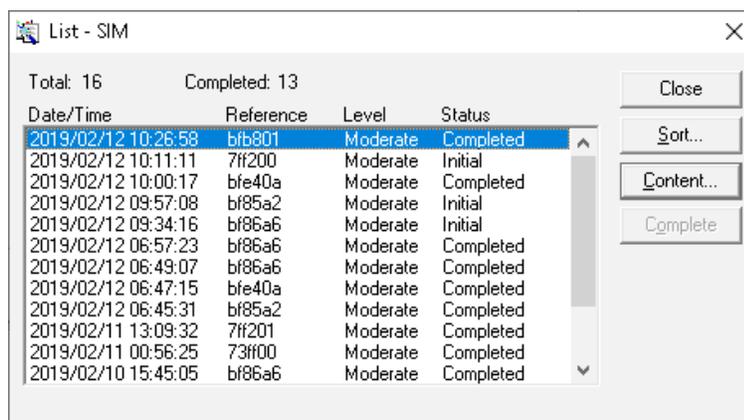
- (4) In the List-SIM window, select the data for which you end the process, and then click [Complete].



- (5) In the Complete window, click [Yes].



- (6) In the List-SIM window, confirm that the “Status” of the data has become “Completed”.



- (7) In the List-SIM window, click [Close].

Close the Log window, then the Information window.

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

NOTE: If the MESSAGE LED is lit on the HSNPANEL after you complete all SIMs, display SIMs to check that SIM statuses are “Completed”. If SIM statuses are not “Completed”, wait for five minutes, and then perform the procedure for completing the SIM log again.

10. Checking Normality

Perform the normality check according to “Checking Normality ([TRBL02-06-10](#))”.

11. Back up the encryption key

If the message is displayed in [Step 7\(3\)](#), ask your customer to back up the encryption key using Storage Navigator (refer to Encryption License Key User Guide).

NOTE: When a message is not displayed in [Step 7\(3\)](#), this procedure is not required.