

[SAS/NVMe Cables REPLACEMENT PROCESSING - RSC1]

The following is the procedure for replacing the SAS cable and the NVMe cable. The SAS cable and the NVMe cable are referred to as just “cable”, except for some descriptions.

For MPC10/MPC20/MPC30/MPC1H cables, replace the SAS adapter (PQSFP) before replacing the cable. If the restoration fails even after the SAS adapter is replaced, replace the cable.

- NOTE:
- When replacing the cable connected to the DKC, it is necessary to block the ENC on the Drive Box.
 - When replacing the cable between the Drive Boxes, it is necessary to block the ENC on the Drive Box nearer to the Controller Chassis.

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].

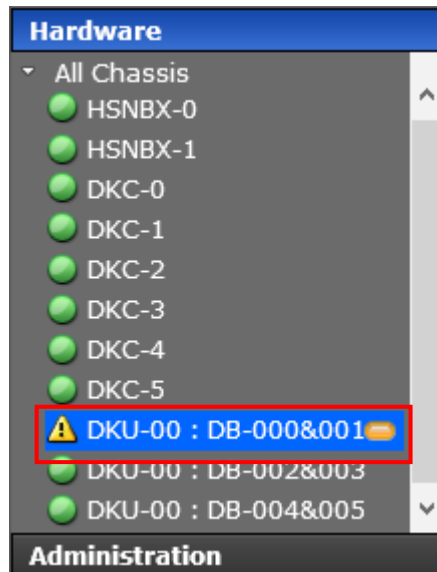
4. Starting Maintenance Utility

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

5. Selecting replacement parts by Maintenance Utility.

(1) <Main window>

Select the [DKU-XX] to which the cable to be replaced is connected in the main window.

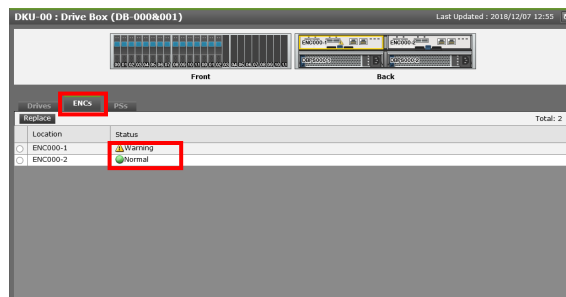


(2) <Drive Box window>

Click the [ENCs] tab in the Drive Box window to display an ENC status.

See “Alert Display Related to FRU (Field Replacement Unit)” ([MU02-10](#)) for [Status].

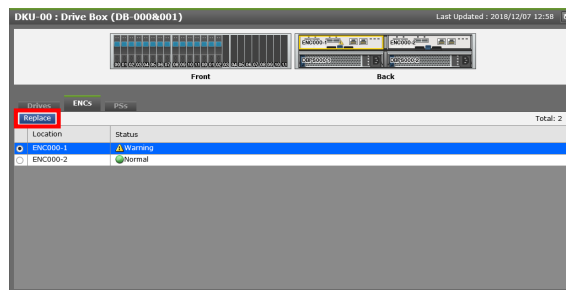
• In case of SBX



(3) <Select ENC>

Select an ENC to which the cable to be replaced is connected, and click [Replace].

- In case of SBX



(4) <Block ENC>

⚠ CAUTION

About “Forcibly run without safety checks”:

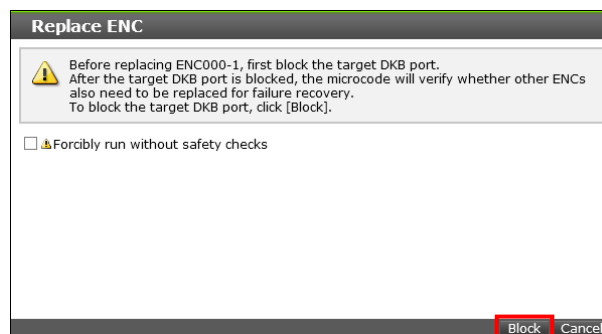
If you check this checkbox and execute the maintenance, the system may go down. Do not check it unless instructed by the message, the manual or the contact described in the manual.

Check that the ENC to replace the cable is correct and click [Block].

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.

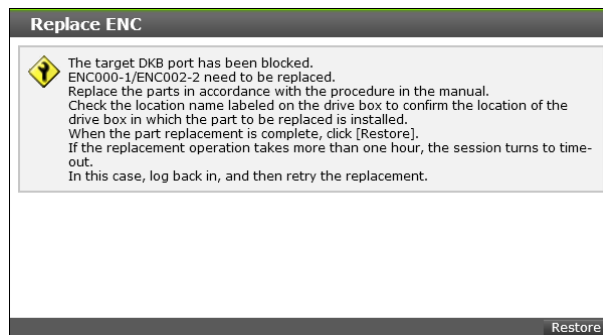


(5) <Check the beginning of cable replacement>

Check that the ENC is blocked and becomes ready for replacing.

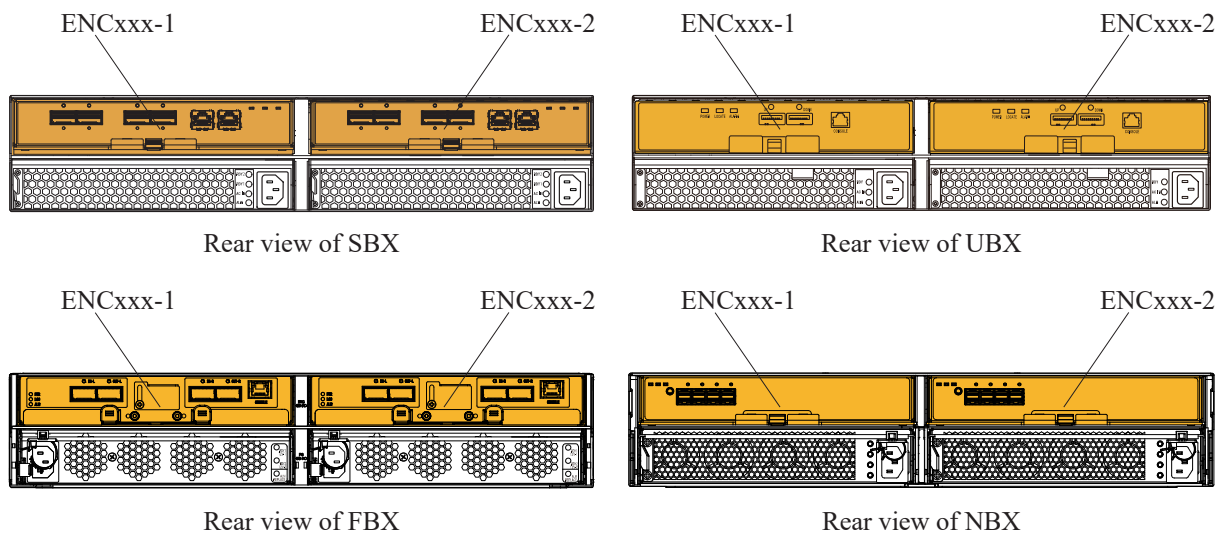
NOTE : Do not click [Restore] at this time.

Click [Restore] after completing the replacement work.



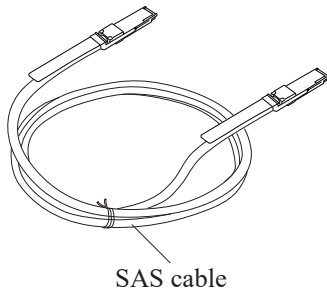
6. Cable (for Drive Box) Replacement Processing

Location	Function Name of Component		Part Name
Rear of SBX/UBX/FBX	1	SAS cable	<ul style="list-style-type: none"> • SAS cable (Copper 1.2 m/1.5 m) (SCCS) • SAS cable (Copper 1 m) (SCQ1) • SAS cable (Copper 1.5 m) (SCQ1F) • SAS cable (Optical 5 m) (SCQ5A) • Optical cable (10 m) (MPC10) • Optical cable (20 m) (MPC20) • Optical cable (30 m) (MPC30) • Optical cable (100 m) (MPC1H)
	2	SAS adapter	• SAS adapter
Rear of NBX	1	NVMe cable	• NVMe cable (1.2 m/1.5 m)

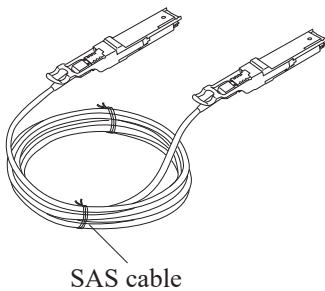


*1 : ENCxx-1
 ↳ DB No. (000, 001, 002,, 191)

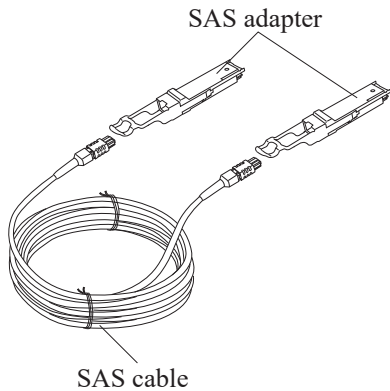
SAS cable (Copper)
(SCCS/SCQ1/SCQ1F)



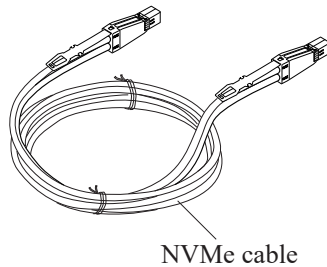
SAS cable (Optical)
(unremovable adapter) (SCQ5A)



Optical cable + SAS adapter (removable
adapter) (MPC10/MPC20/MPC30/
MPC1H+PQSFP)



NVMe cable (NCCS)



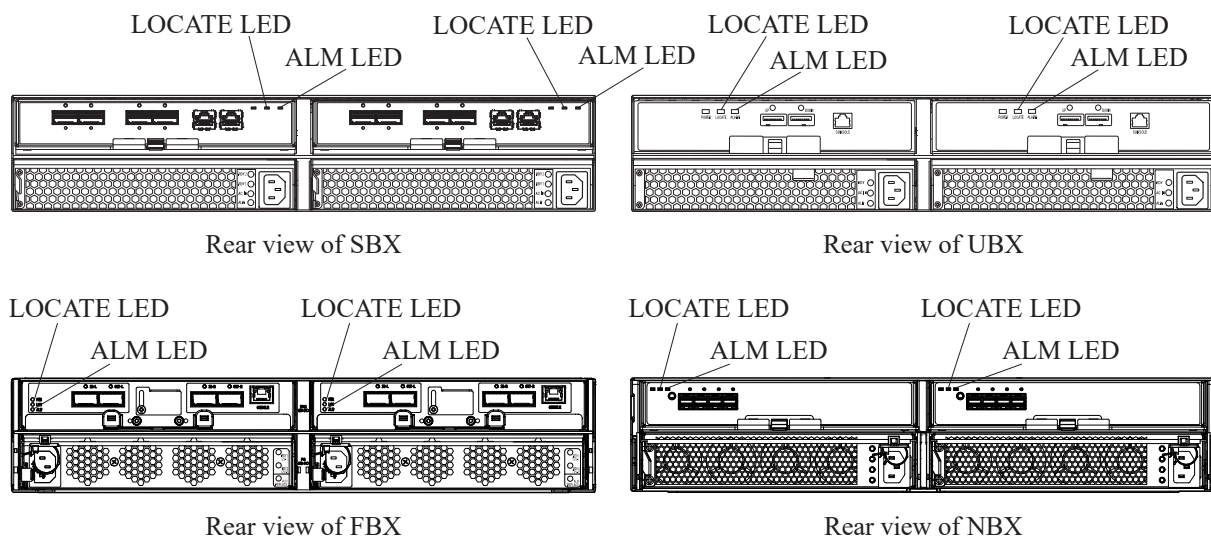
NOTICE: To prevent part failures caused by static electrical charge built up on your own body, be sure to wear a wrist strap connected to the Storage System before starting and do not take it off until you finish. Refer to “Note on Installing and Removing Parts” (REP(GE)01-30).

- (1) Check that the ALM LED (red) on the ENC to replace the SAS cable of the SBX/UBX lights up.

⚠ CAUTION

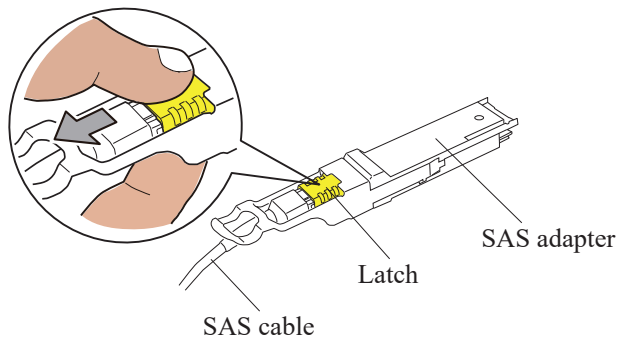
If replacing the ENC not to be replaced, the system will be down. Check that the ENC is to be replaced.

Figure 1-1 ALM LED Location



- (2) Remove the cable.
- In the case of replacing the SCCS/SCQ1/SCQ1F/SCQ5A/NCCS cable:
 - (a) Release the routing of the cable connected to the Drive Box in the reverse procedure of “Routing of SAS cables/NVME cables” (INST(IN)09-04-110).
 - (b) Remove the cable from Drive Box and any of DKC/Drive Box that is connected to Drive Box.
 - In the case of replacing the PQSFP SAS adapter:
 - (a) Remove the cable from Drive Box and any of Drive Box that is connected to Drive Box.
 - (b) Pull the latch of the cable to remove from the SAS adapter.
 - In the case of replacing the MPC10/MPC20/MPC30/MPC1H cable:
 - (a) Release the routing of the cable connected to the Drive Box in the reverse procedure of “Routing of SAS cables/NVMe cables” (INST(IN)09-04-110).
 - (b) Remove the cable from Drive Box and any of DKC/Drive Box that is connected to Drive Box.
 - (c) Pull the latch of the cable to remove from the SAS adapter.

Figure 1-2 Removing SAS adapter



- (3) When replacing the cable, attach the cable color codes of the same color as those for the removed cable to the new cable.

Figure 1-3 Attaching Cable Color Codes (SAS)

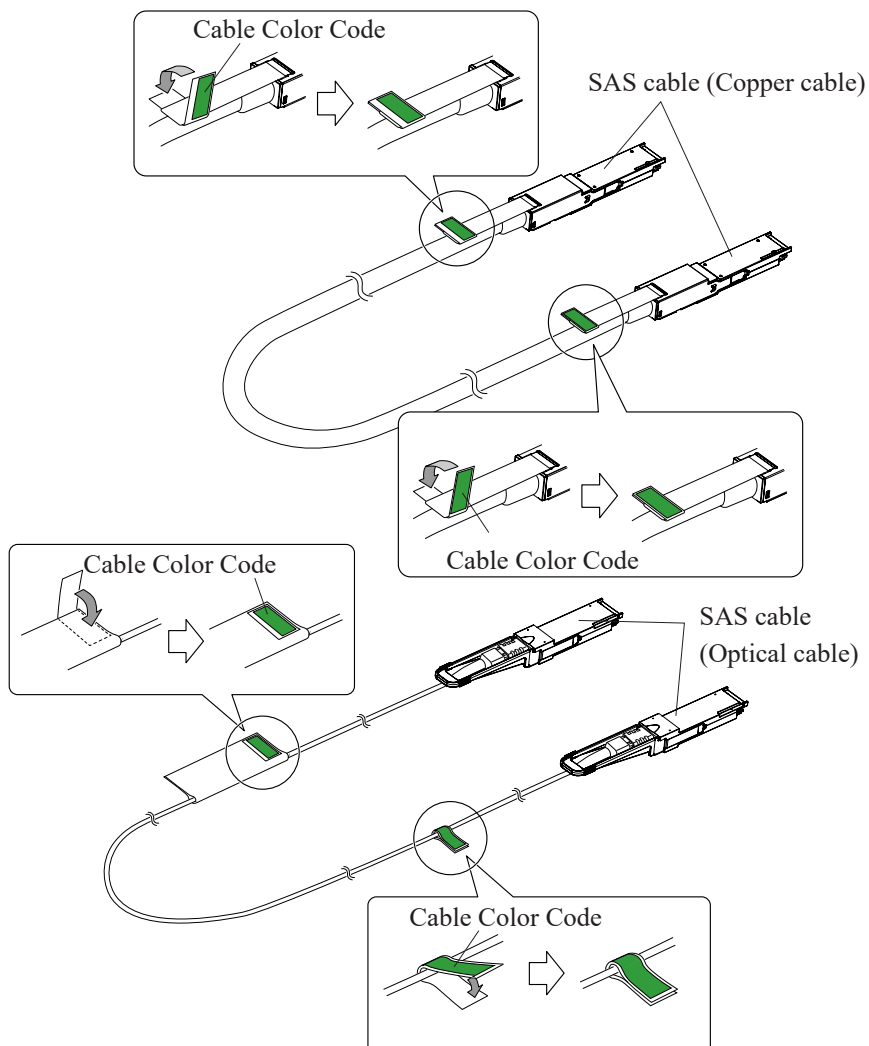
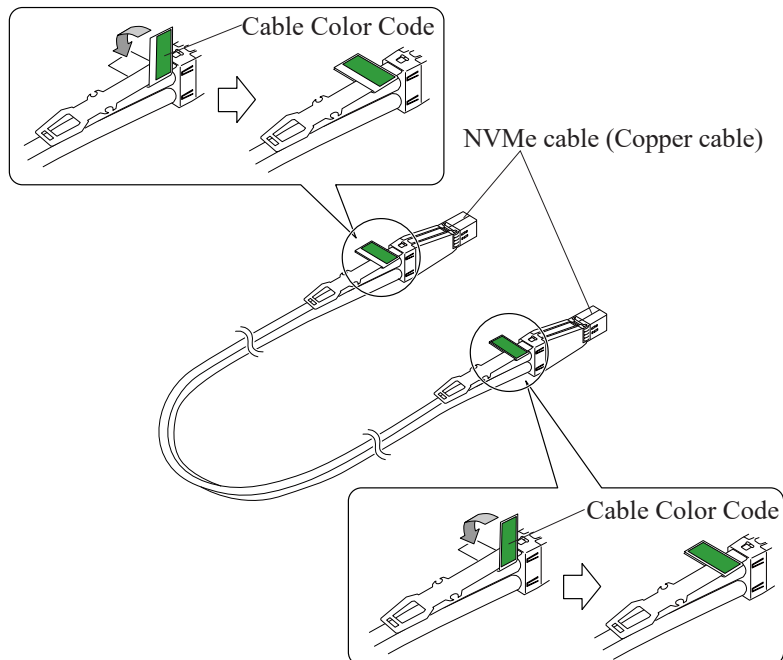
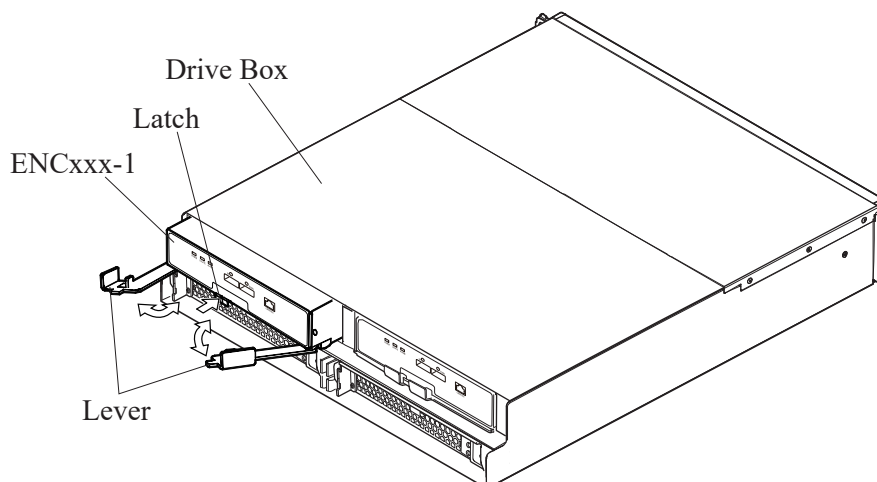


Figure 1-4 Attaching Cable Color Codes (NVMe)



- (4) Perform the dummy replacement of the blocked ENC.
 - Remove the ENC once, and then install it again.
 - (a) Push the latch on the ENC toward the arrow direction to unlock the lever.
 - (b) Open the lever fixing the ENC.
 - If the lever opens completely, the ENC is pulled out.
 - (c) Wait for 20 seconds or more.
 - (d) Insert the ENC until the right and left levers close slightly, and then push the lever into the ENC side.

Figure 1-5 Dummy Replacement of the ENC



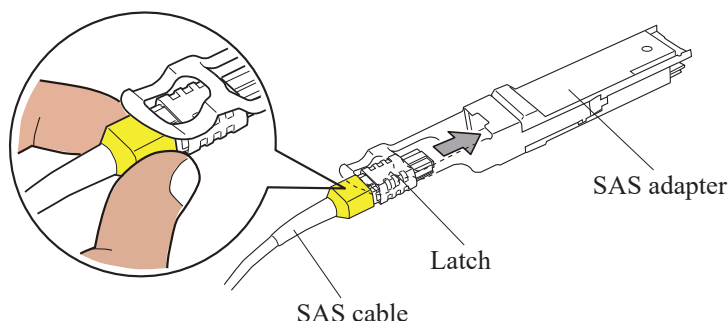
NOTICE: Never insert metal or the like into the cable connector or a short-circuit may occur.

- (5) Connect the cable.
- In the case that the SCCS/SCQ1/SCQ1F/SCQ5A/NCCS cable was replaced:
 - (a) Connect the new cable to Drive Box and any of DKC/Drive Box that is connected to Drive Box. (Refer to “Connecting Cables” (INST(IN)09-01-10) and “Connecting SAS Cables/NVMe Cables” (INST(IN)09-04-10).)
 - (b) Route the cable. (Refer to “Routing of SAS cables/NVMe cables” (INST(IN)09-04-110).)
 - In the case that the PQSFP SAS adapter was replaced:
 - (a) Attach the new SAS adapter to the SAS cable.

NOTE: When connecting the PQSFP cable to the SAS adapter, check that cable latch clicks and the cable is surely connected to the SAS adapter.
 - (b) Connect the cable to Drive Box and any of DKC/Drive Box that is connected to Drive Box. (Refer to “Connecting Cables” (INST(IN)09-01-10) and “Connecting SAS Cables/NVMe Cables” (INST(IN)09-04-10).)
 - In the case that the MPC10/MPC20/MPC30/MPC1H SAS cable was replaced:
 - (a) Attach the SAS adapter to the new cable.

NOTE: When connecting the MPC10/MPC20/MPC30/MPC1H cable to the SAS adapter, check that cable latch clicks and the cable is surely connected to the SAS adapter.
 - (b) Connect the new cable to Drive Box and any of DKC/Drive Box that is connected to Drive Box. (Refer to “Connecting Cables” (INST(IN)09-01-10) and “Connecting SAS Cables/NVMe Cables” (INST(IN)09-04-10).)
 - (c) Route the cable. (Refer to “Routing of SAS cables/NVMe cables” (INST(IN)09-04-110).)

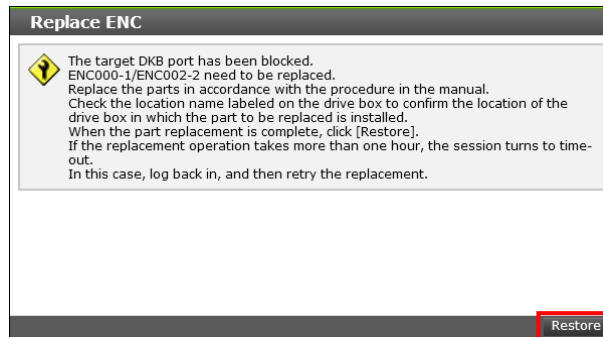
Figure 1-6 How to Install SAS adapter



7. Restoring replacement parts by Maintenance Utility

(1) <Restore replacement parts>

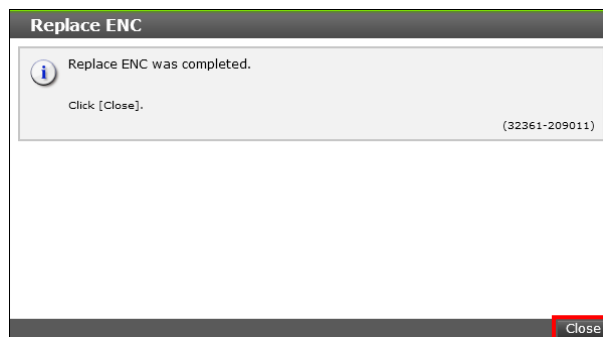
Click [Restore].



(2) <Check replacement parts restoration>

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

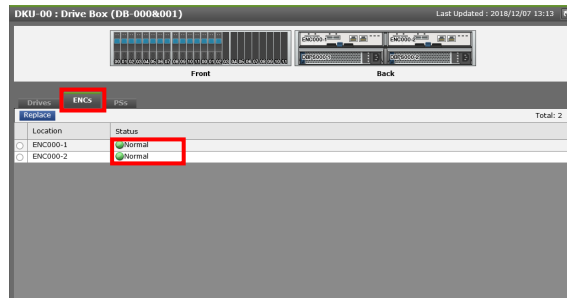
If a message other than the described is displayed, refer to Message Section [\(MSG00-00\)](#).



(3) <Check ENC restoration>

Click the [ENCs] tab in the Drive Box window to check that the status of the ENC with the replaced cables is “Normal”.

• In case of SBX



8. Closing Maintenance Utility

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

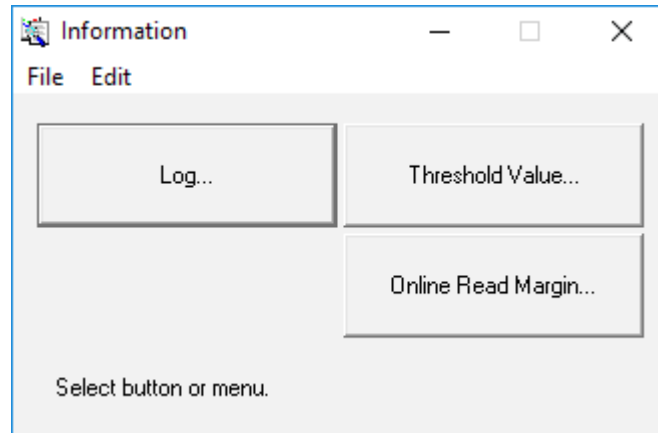
(2) <Get the error information>

Collect dumps “Rapid” for dump type by referring to “Dump/Auto Dump” ([SVP02-09-10](#)).

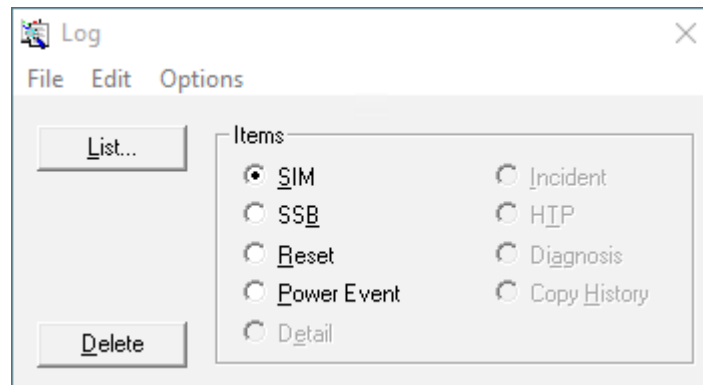
(3) Refer to the “Use of OnlineDumpTool” ([SVP02-21-10](#)), please upload the error information.

9. Completing the SIM log

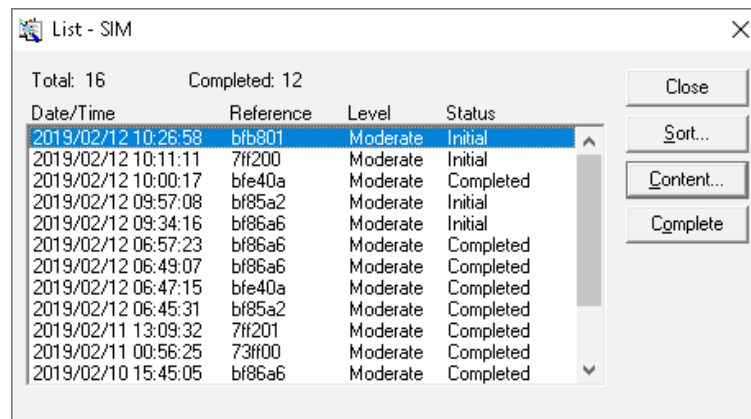
- (1) Change the mode to [Modify Mode], and then select [Information].
- (2) In the Information window, click [Log...].



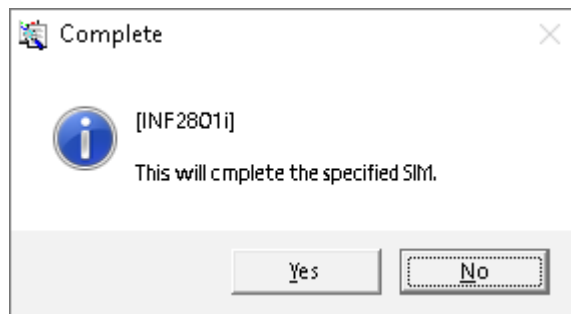
- (3) In the Log window, select [SIM] and then click [List...].



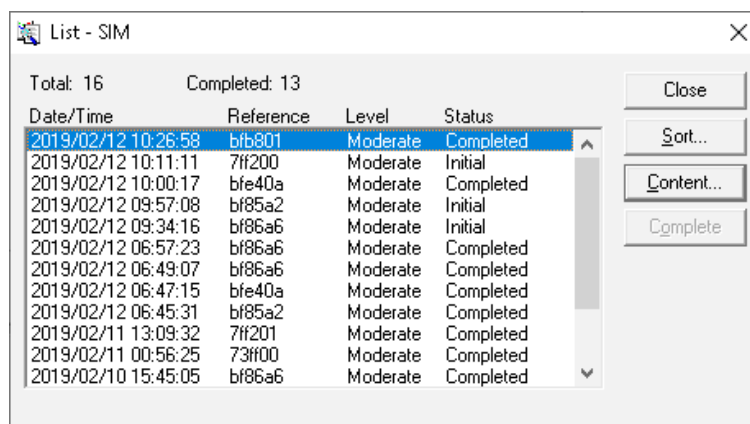
- (4) In the List-SIM window, select the data for which you end the process, and then click [Complete].



- (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)”.