

Firmware

This “Firmware” volume describes the update installation of the firmware.

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Chapter 1. Installation of Firmware

This work is for update installation of the firmware in the subsystem.

Firmware version format is shown.

08xx/y

08: AMS 2000 series

xx: number or alphabet

y: alphabet

- NOTE :
- If new installation is performed, user data is lost. When user data already exists, be sure to perform update installation.
 - Do not perform the update installation of the firmware while the READY LED (green) on the front of the Basic Chassis is blinking at high speed (for the maximum of 30 to 50 minutes, or 40 to 60 minutes in case of the RKH), or the WARNING LED (orange) is blinking at high speed (for the maximum of 30 to 85 minutes).
 - Do not perform the new or update installation of the firmware while the array subsystem is being started.
 - When the TrueCopy remote replication or TrueCopy Extended Distance is used, verify that the firmware update is not operated in the connected array.

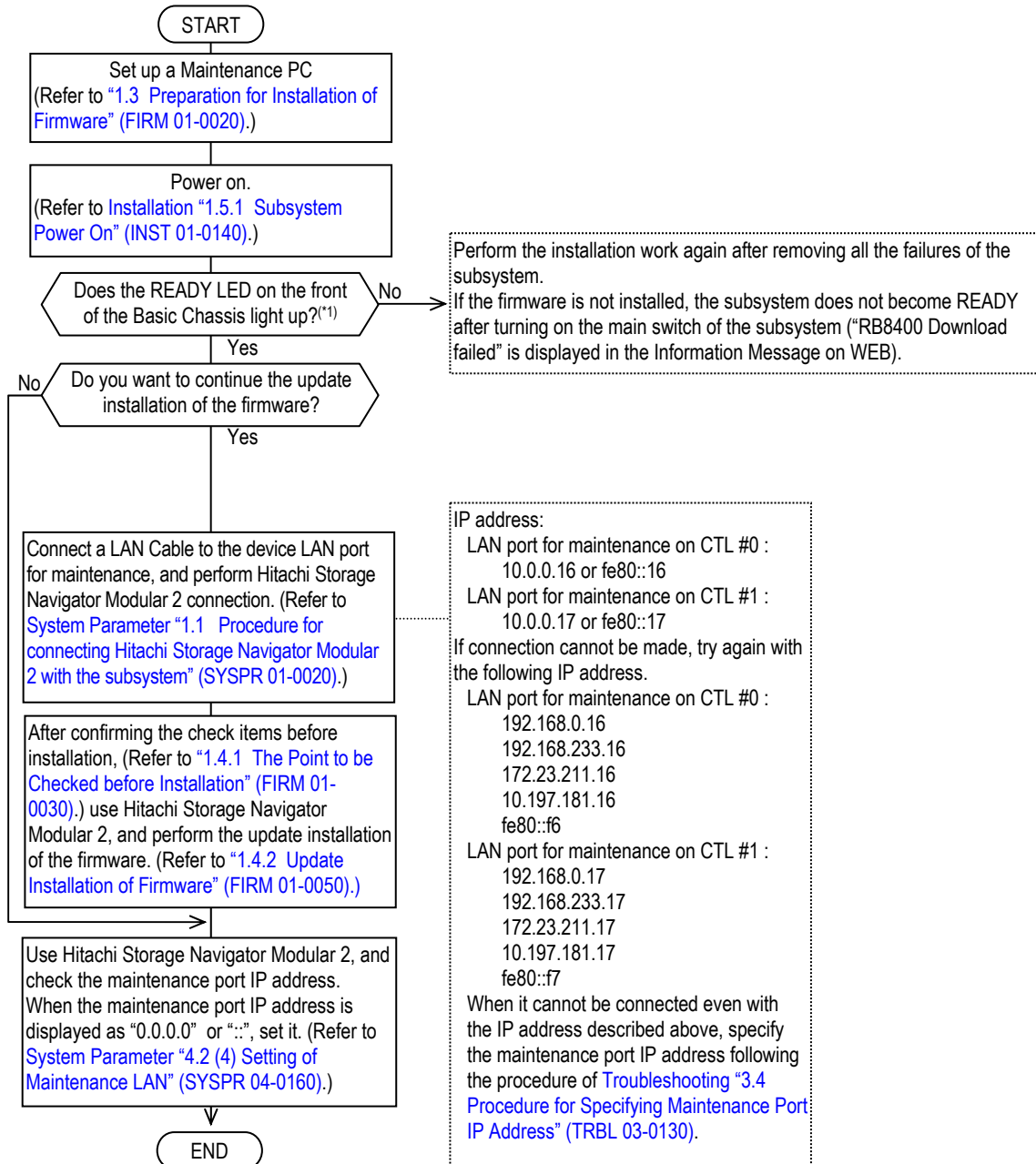
1.1 Materials Necessary for Installation

- firmware PC^(†1)
- LAN cross cable
- CD-ROM for firmware installation

†1 : The service PC must have a CD-ROM drive for the firmware installation. If the Maintenance PC has no CD-ROM drive, it must be set up beforehand via a network. (See [WEB "3.3.2 \(4\) Procedure for setting up the Maintenance PC" \(WEB 03-0310\)](#)).

1.2 Outline of Procedure for Installation (Update Installation)

- (1) Install the firmware using the WEB or Hitachi Storage Navigator Modular 2 connection from the Maintenance PC.
- (2) In the Maintenance PC, JRE ^(†1) 1.6 must be installed. (See WEB “3.3.2 (4) Procedure for setting up the Maintenance PC” (WEB 03-0310).)



*1 : Wait if the READY LED (green) on the front of the Basic Chassis is blinking at high speed (for the maximum of 30 to 50 minutes, or 40 to 60 minutes in case of the RKH), or the WARNING LED (orange) is blinking at high speed (for the maximum of 30 to 85 minutes).

*2 : When connecting to WEB with IPv6 address, put the address in square brackets ([]) and connect it (e.g. http://[fe80::16]/).

†1 : Java runtime environment.

1.3 Preparation for Installation of Firmware

1.3.1 Hierarchy of Firmware Storage Directories

The firmware is stored as the compression format (zip file) in the CD-ROM for firmware installation. Since the firmware (zip file) is stored under “program\microprogram” in the CD-ROM for firmware installation, store the ZIP file from the CD-ROM under the directory “C:\diskarray-microprogram\microprogram” and unzip it.

Table 1.3.1 CD-ROM Directory Hierarchy

| First stratum | Second stratum | Third stratum |
|---------------|--|-------------------|
| manual | HostInst | Manual file |
| | UG | |
| program | Microprogram | Firmware zip file |
| | DF800JSetup20.exe (Java setup file) | - |

The hierarchical structure of firmware storage ZIP file (08xxx.zip) directories is shown in [Table 1.3.2](#).

Table 1.3.2 ZIP File Directory Hierarchy

| First stratum | Second stratum | Third stratum | Fourth stratum |
|-------------------------------------|----------------|-------------------|---------------------|
| Unified version (Example: 0810A) | DF800EH | disk 01 - disk X | Firmware file |
| | | fmins | |
| | DF800EM | disk 01 - disk X | Firmware file |
| | | fmins | |
| | DF800ES | disk 01 - disk X | Firmware file |
| | | fmins | |
| | DF800EXS | disk 01 - disk X | Firmware file |
| | | fmins | |
| | DF800M | disk 01 - disk X | Firmware file |
| | | fmins | |
| | DF800S | disk 01 - disk X | |
| | | fmins | |
| | DF800H | disk 01 - disk X | |
| | | fmins | |
| | drvfirm | DKR2F-VIPERAP | Drive firmware file |
| | | : | |
| | ENC | ENC Firmware file | — |

1.4 Procedure for Installation

1.4.1 The Point to be Checked before Installation

Make sure of the following before starting installation

- Make sure that the main switch of the subsystem is turned on. If it is turned off, turn it on to start the subsystem.
- In the single configuration, to update a new firmware, turn off the main switch on the disk array subsystem, and then turn on it again. If the main switch is turned off, the access from the host cannot be gained. Therefore, before turning off the main switch, stop the access from the host.
- When the firmware is already installed in the disk array subsystem, check that the READY LED (green) on the front of the Basic Chassis lights up. When the READY LED (green) on the front of the Basic Chassis is blinking at high speed, do not perform the update work for the maximum of 30 to 50 minutes (or 40 to 60 minutes in case of the RKH) until the READY LED (green) lights up because the automatic download of the ENC firmware is being executed.
- When the firmware is already installed in the disk array subsystem, check that the WARNING LED (orange) on the front of the Basic Chassis goes out, and the READY LED (green) lights up. When the WARNING LED (orange) on the front of the Basic Chassis is blinking at high speed, do not perform the update operation for the maximum of 30 to 85 minutes until the WARNING LED (orange) on the front of the Basic Chassis goes out and the READY LED (green) lights up because the update of the flash program or the automatic download of the ENC firmware at the time of turning the power on in the single controller configuration is being executed.
- You cannot install it while rewriting the drive firmware (“IZ0000 HDU firmware download start” is displayed in the Information Message on WEB). Execute the installation after checking that “IZ0100 HDU firmware download end” is displayed in the Information Message on WEB.
- You cannot install it during the RAID group expansion. Execute the installation after checking that the RAID group expansion is completed.
- Check with Information Message on WEB (“I14100 System copy completed” is displayed for the Disk Drive indicated by “I14000 System copy start”) that the system copy is not being operated. If the system copy is being executed, install it after completing the system copy.

NOTE : When Power Saving of the priced option is used, if you perform the update installation of the firmware in the subsystem after executing the spin-down and before completing it, the spin-down may fail because of the recognition processing of the host immediately after the firmware replacement is completed.

Check that there is no RAID Group whose power saving status is “Normal (command monitoring)” after executing the spin-down, and then install the firmware in the subsystem.

If the spin-down fails, execute the spin-down again.

- Referring to the setting of the user management port on the subsystem ([System Parameter “4.2 \(3\) Setting of LAN” \(SYSPR 04-0120\)](#)), check that the subnet mask is not set to 0.0.0.0. Depending on the firmware revision, the subsystem does not operate normally. Therefore, check the correct value with the customer and set it before performing the firmware installation.

NOTE : If the firmware revision to be installed is 0872/D or later, this confirmation is not necessary.

| Firmware revision | Operation |
|---------------------|---|
| Earlier than 0860/A | Operates according to the class of the set IP address. IP address 0.0.0.0 to 127.255.255.255 -> Subnetmask 255.0.0.0 IP address 128.0.0.0 to 191.255.255.255 -> Subnetmask 255.255.0.0 IP address 192.0.0.0 to 223.255.255.255 -> Subnetmask 255.255.255.0 |
| 0860/A to 0872/C | Does not operate. A controller blockade will occur. |
| 0872/D or later | Operates according to the class of the set IP address. (Same as the one earlier than 0860/A) |

1.4.2 Update Installation of Firmware

There are following three ways for the update installation:

- When updating firmware continuing the I/O of both Control Units in the dual controller configuration, perform “(1) Update continuing the I/O of both Control Units (Dual controller configuration)” (FIRM 01-0060). (Normally, perform this way. However, when RKH is used and when the firmware before update is less than version 6.5/B, do not perform this procedure. Perform the procedure for updating firmware for each Control Unit stopping the I/O in the dual controller configuration.)

NOTE : When using the wizard for the update of the firmware, click [Update Firmware] from [Common Array Tasks] on the unit window.
Refer to Procedure (1-1)-(e) and the following.

- When updating firmware for each Control Unit one by one stopping the I/O in the dual controller configuration (Only when the instruction is given, perform this way.), perform “(2) Update stopping the I/O for each Control Unit (Dual controller configuration)” (FIRM 01-0110).

To perform this procedure, it needs to confirm if the I/O path can be switched, or if the I/O can be stopped because of stopping the I/O of the Control Unit whose firmware will be updated.

- In the single controller configuration, perform “(3) Update for single controller” (FIRM 01-0760).

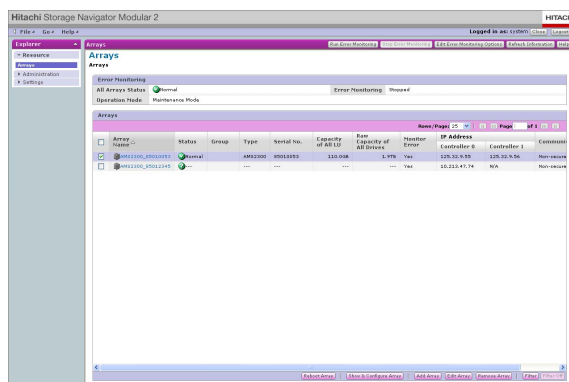
- (1) Update continuing the I/O of both Control Units (Dual controller configuration)
Replace the firmware of the subsystem.

- NOTE :
- When RKH is used and when the firmware before update is less than version 6.5/B, do not perform this procedure. Perform “(2) Update stopping the I/O for each Control Unit (Dual controller configuration)” (FIRM 01-0110).
 - Do not perform the update installation of the firmware while the READY LED (green) on the front of the Basic Chassis is blinking at high speed (for the maximum of 30 to 50 minutes, or 40 to 60 minutes in case of the RKH), or the WARNING LED (orange) is blinking at high speed (for the maximum of 30 to 85 minutes).
 - When registering the disk array subsystem at the time of connecting the disk array subsystem, specify only the Control Unit #0 in [Connection Destination] (refer to [System Parameter “1.1 \(4\) \(c\) Registering the disk array subsystem” \(SYSPR 01-0090\)](#)).
 - When the LU, whose status of the forced parity correction is any of “Correcting”, “Waiting”, “Waiting Drive Reconstruction”, “Uncorrected”, “Uncorrected 1” and “Uncorrected 2”, is in the subsystem, change the status of the LU to “Restored” or “Skip” by executing or skipping the forced parity correction (recommendation).

(1-1) Transfer and update firmware

- (a) Connect the LAN cross cable to the subsystem LAN connector for maintenance and connect the subsystem to the Web. (Refer to [Troubleshooting “3.1 Procedure to WEB Connection” \(TRBL 03-0000\)](#)).
- (b) Start Hitachi Storage Navigator Modular 2, put a checkmark to the array subsystem to set, press the [Ctrl] key, [Shift] key and [E] key at the same time, and change the operation mode to “Maintenance Mode”.^(‡1)

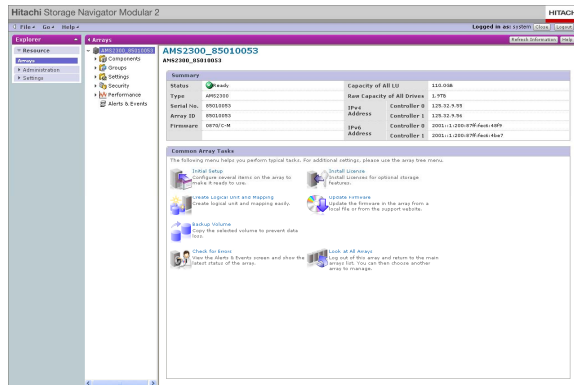
Check that “Maintenance Mode” is displayed in [Operation Mode] on the top of the main window.



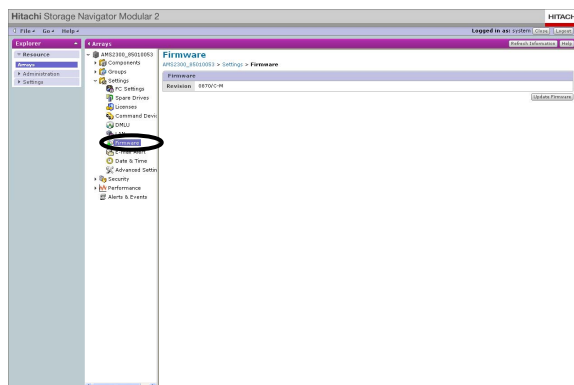
‡1 : When the array subsystem to operate is not registered, click the blank area (other than buttons and characters) in the “Arrays” window, and press the [Ctrl] key, [Shift] key and [E] key at the same time.

- (c) Click the array subsystem name, and open the unit window.

NOTE : When the main window is not displayed even if you select the array subsystem, check that the LAN port number is not changed. (Refer to [System Parameter “1.2 LAN Port Number Change by Hitachi Storage Navigator Modular 2” \(SYSPR 01-0120\)](#).) Use the changed LAN Port Number, and execute it again.



- (d) Select [Settings] - [Firmware] on the unit window.
Click the [Update Firmware] button.



- (e) Put a checkmark to the [Transfer and update Firmware] on the [Basic] tab, enter [Update file] (Specify the ZIP form file), set the necessary items of the [Advanced] tab, and click the [OK] button.

When using Windows®:

c:/diskarray-microprogram/microprogram/micro/0830A.zip

When using Solaris™ or Red Hat Linux®:

diskarray-microprogram/microprogram/micro/0830A.zip

Specified
firmware file
(ZIP form file)

Basic tab

Advanced tab

- (f) The confirmation window of the firmware to update is displayed. Check it, and then click the [Confirm] button.



- (g) When the Hitachi Storage Navigator Modular 2 is abnormally terminated, perform maintenance on each message.
- (g-1) Message code “DMEA000006”
- Check if a failure occurs in the subsystem.
If a failure occurs, perform maintenance or parts replacement, and then restore the subsystem condition to normal.
 - Check if a LAN failure occurs.
If a failure occurs, review the network condition, and then restore it to normal.
 - Perform the transfer and update of firmware again from the beginning.

(g-2) Message code “DMEA00200E”

(i) Check if a failure occurs in the subsystem.

If a failure occurs, perform maintenance or parts replacement, and then restore the subsystem condition to normal.

(ii) Check if a LAN failure occurs.

If a failure occurs, review the network condition, and then restore it to normal.

(iii) Check the [Update Firmware] radio button on [Basic] tab. Execute it again at least 3 times until it is normally completed.

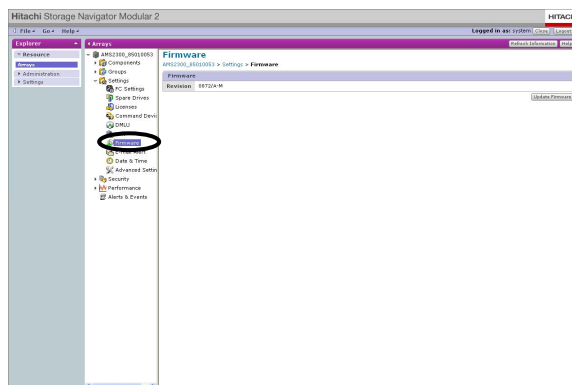
(iv) When it is not completed normally after the retries, turn off the subsystem once and then turn on it again after obtaining the consent of turning on/off the subsystem from your customer.

The replacement of firmware is completed by this operation.

(h) Since a message is displayed when the reading in of the firmware is completed, click the [Close] button.



(i) Select [Settings] - [Firmware] on the unit window, and click the [Refresh Information] button.



(j) Check that the revision of the replaced firmware is displayed.

(k) When the revision check is completed, the firmware replacement of the subsystem ends.

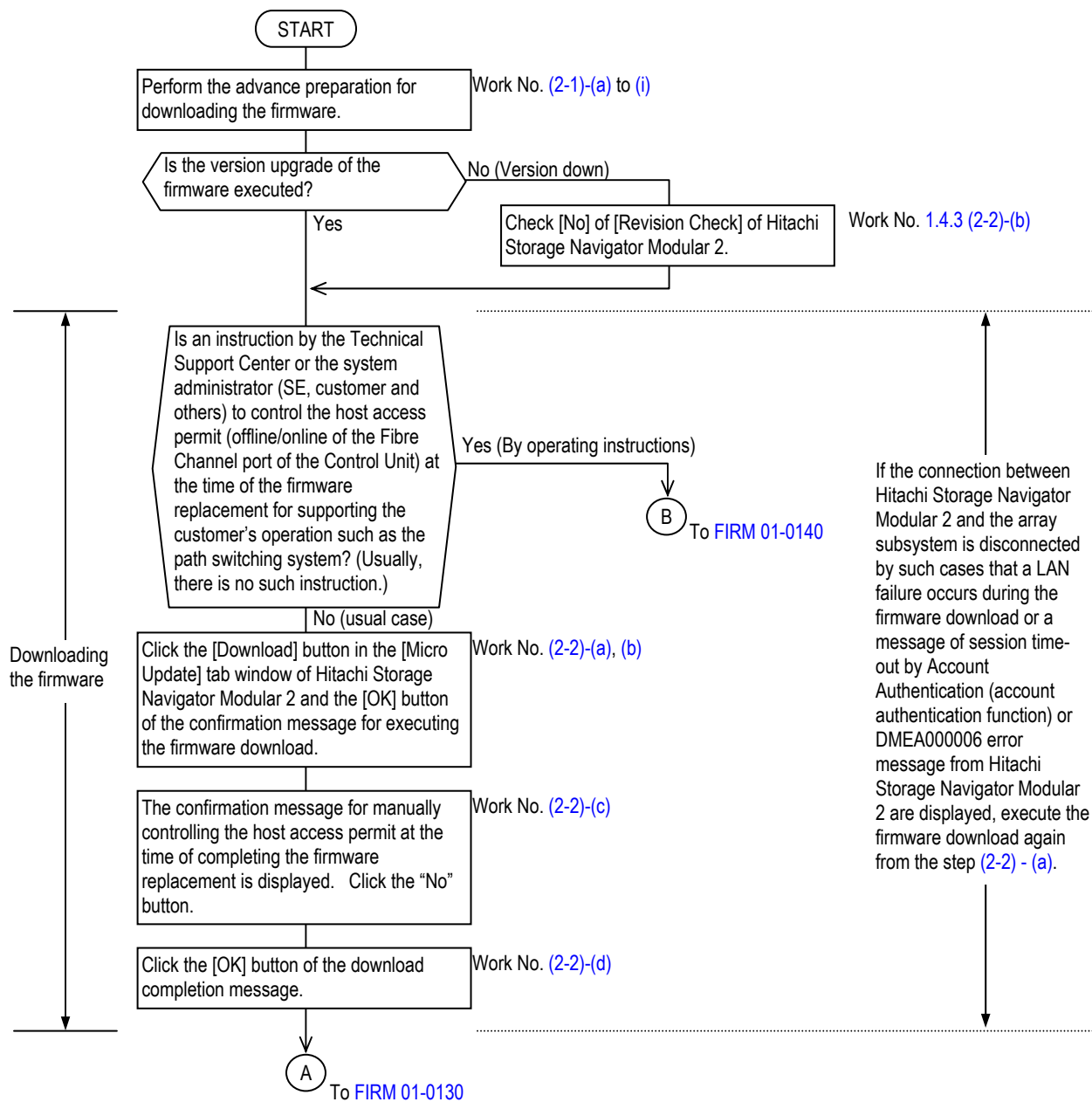
NOTE : When the firmware was replaced online after performing the processing to change the system configuration (LU formation, format, LU owner right change, etc.), the “I14000 System copy started” message may be displayed two or more times in Information Message on WEB, but it is not a problem.

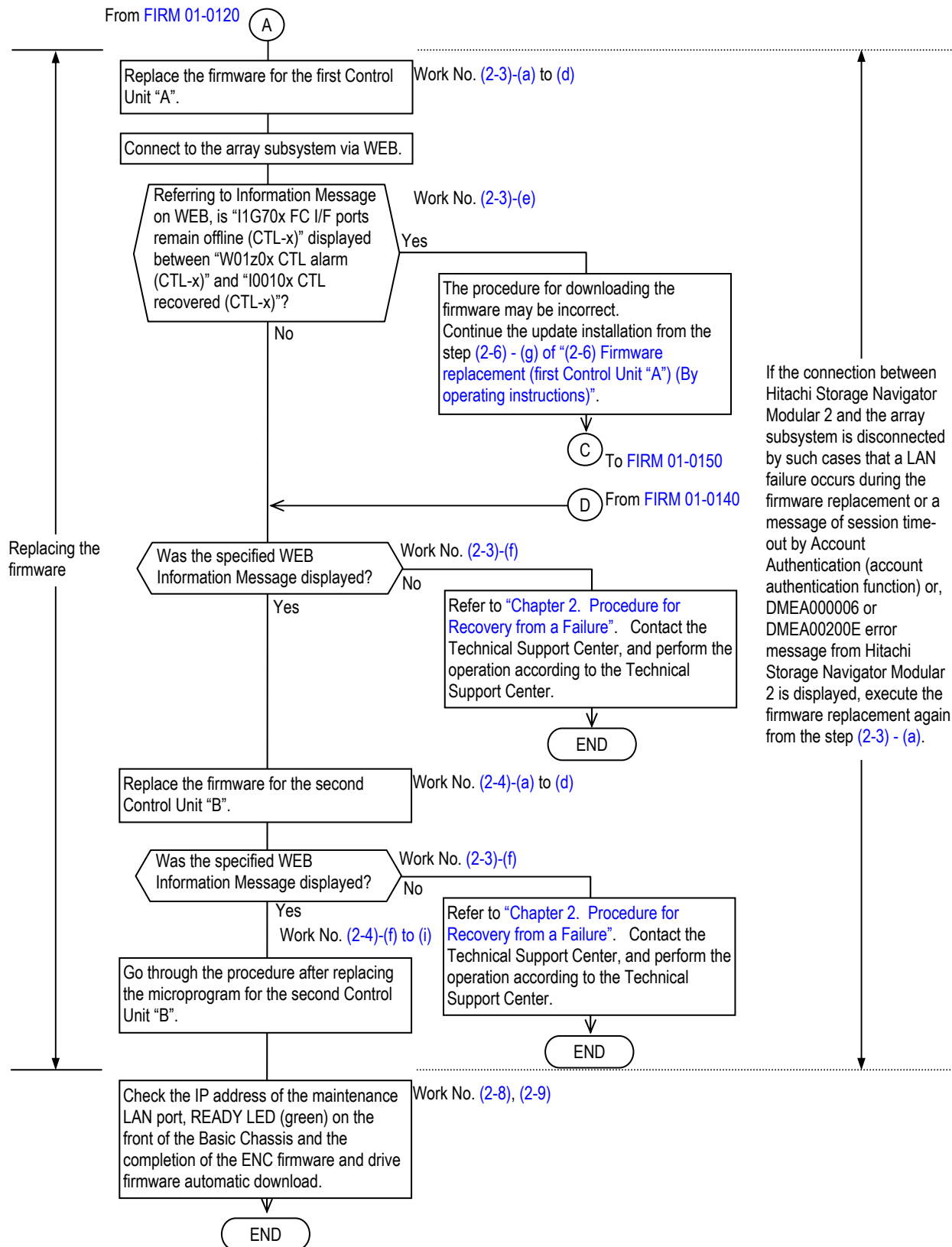
- (1-2) Checking the READY LED (green) on the front of the Basic Chassis
- Check that the READY LED (green) on the front of the Basic Chassis lights up. When the READY LED (green) on the front of the Basic Chassis is blinking at high speed, the READY LED (green) on the front of the Basic Chassis lights up after blinking at high speed for the maximum of 30 to 50 minutes (40 to 60 minutes in case of the RKH) because the automatic download of the ENC firmware is being operated.
- (1-3) Check that the start message and the end message of the drive firmware automatic download are displayed. When the drive firmware version of the Disk Drive is new, the start message and completion message of the drive firmware automatic download are not displayed.
- When the message indicating the abnormal termination is displayed, perform the maintenance according the recovery method in the message code. (Refer to [“1.6 \(4\) Checking the start message and end message of the automatic download” \(FIRM 01-0890\)](#).)

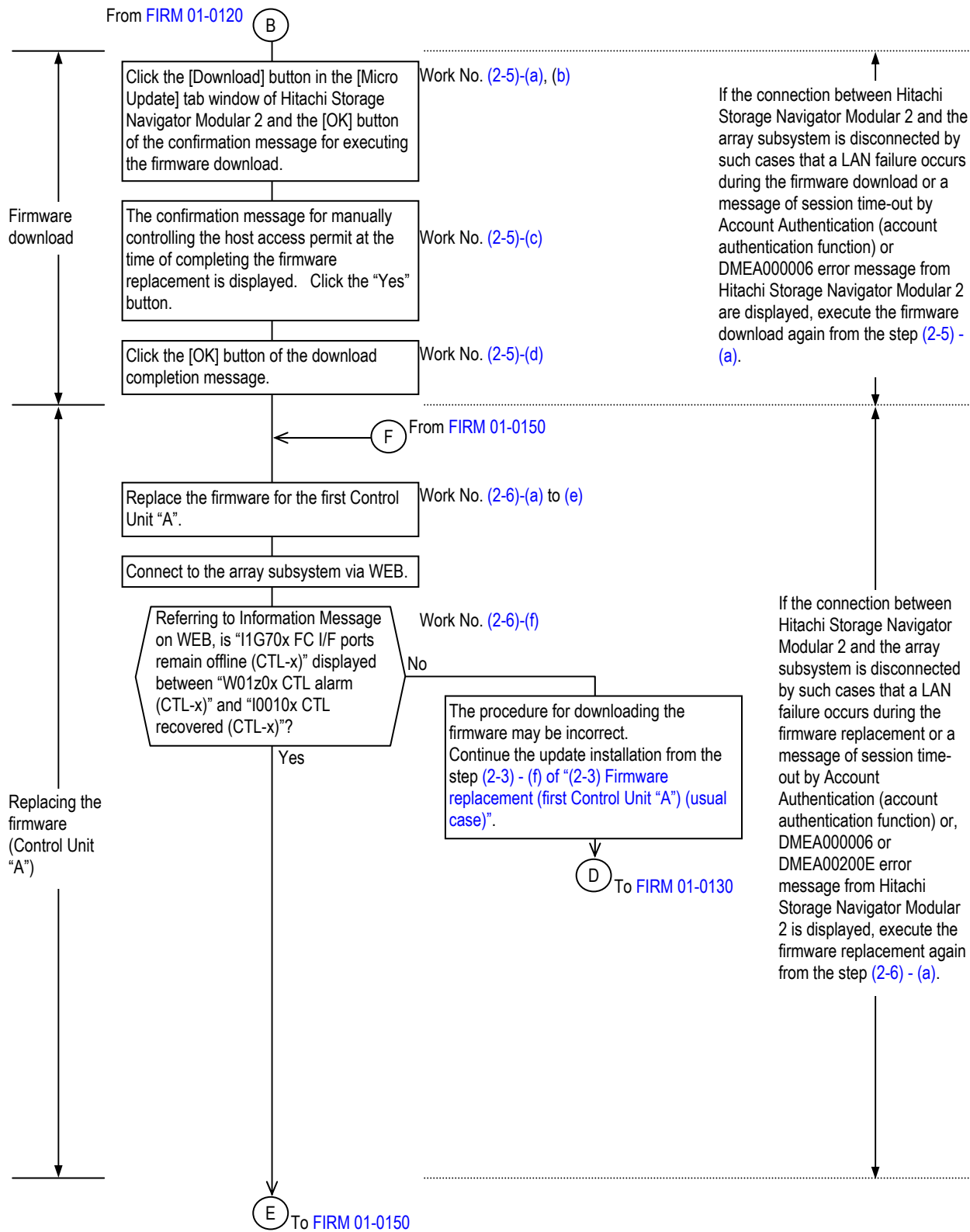
(2) Update stopping the I/O for each Control Unit (Dual controller configuration)

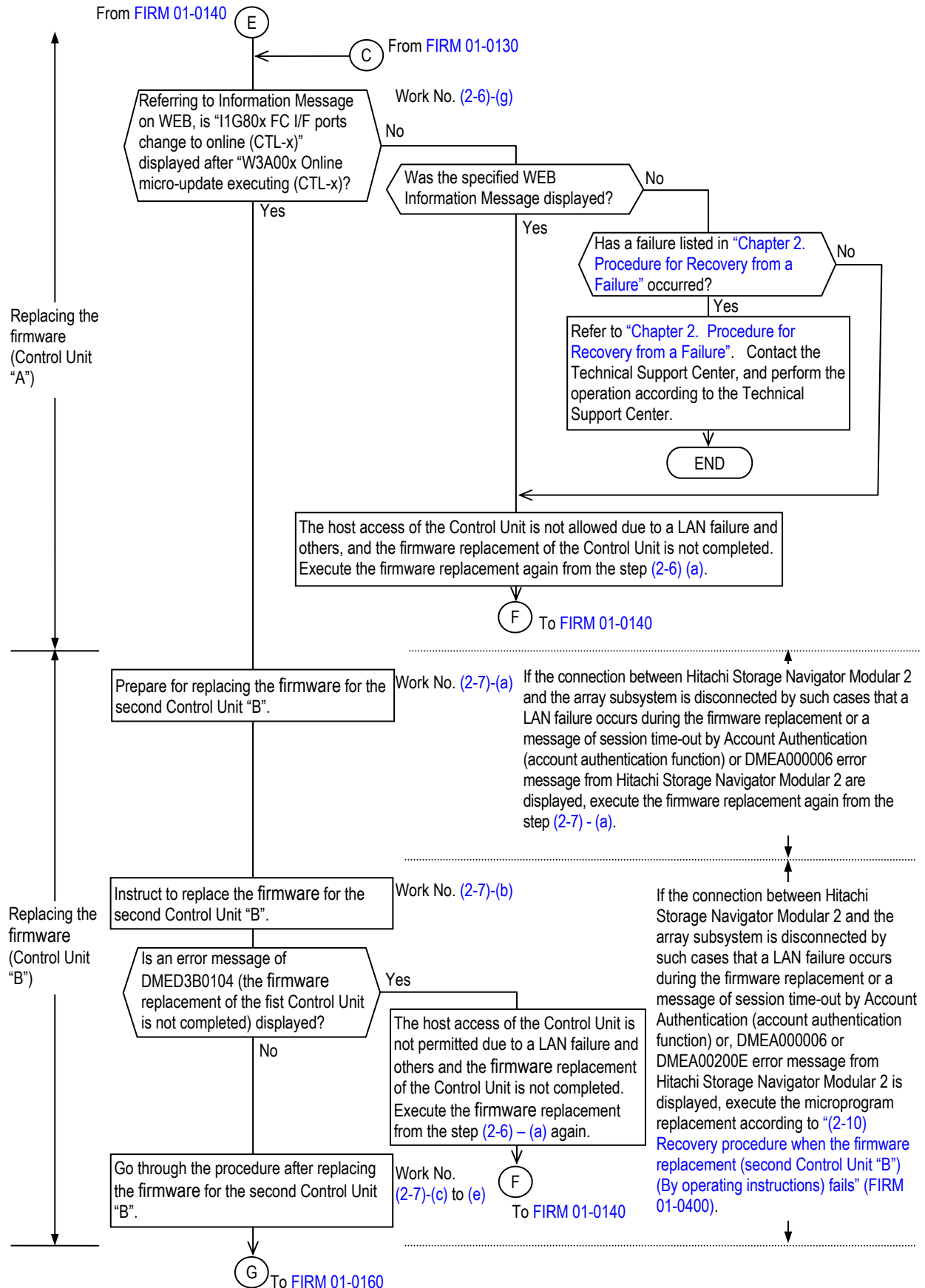
Refer to the following flowchart to perform the update installation.

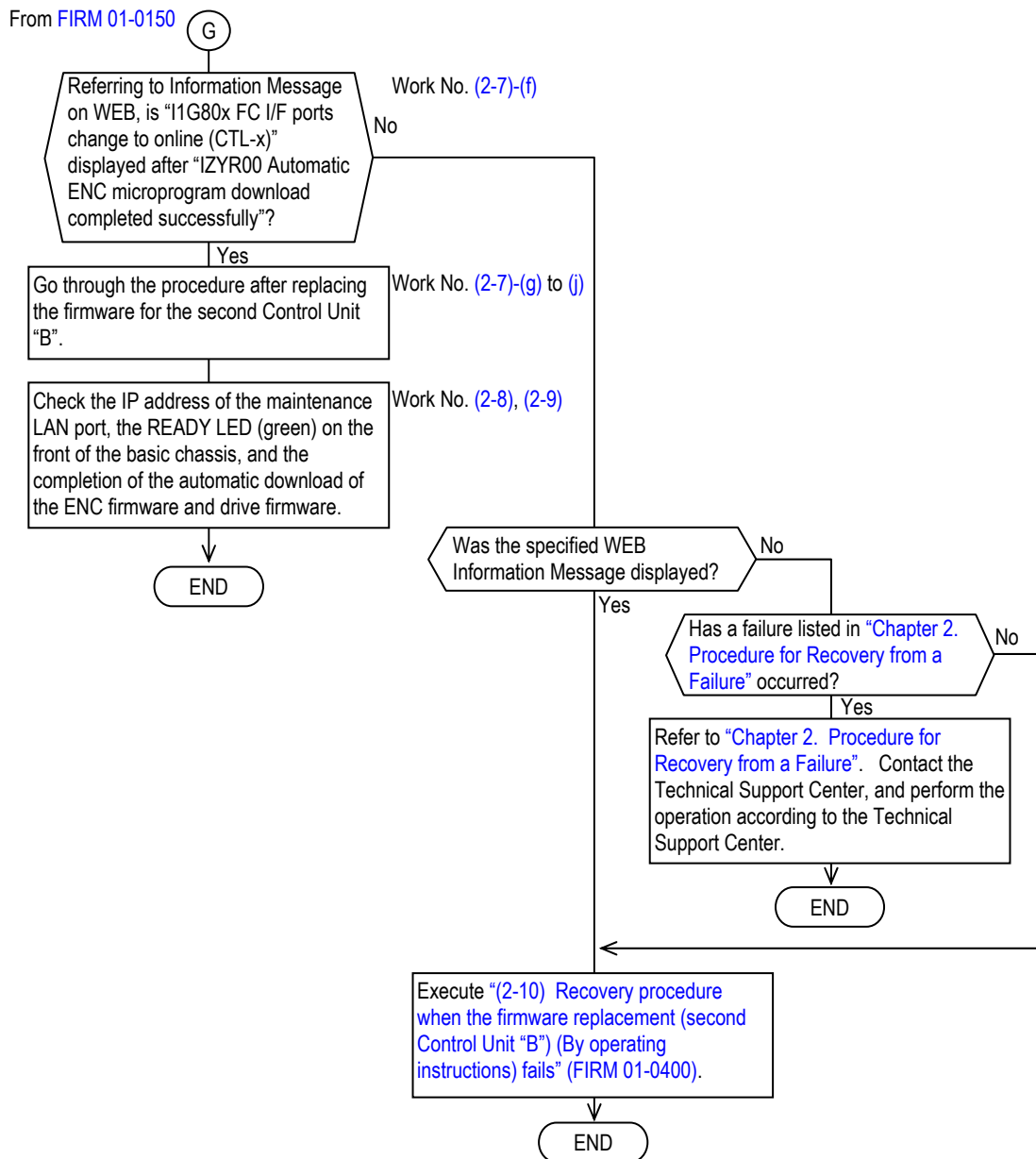
- NOTE :
- Do not perform the update installation of the firmware while the READY LED (green) on the front of the Basic Chassis is blinking at high speed (for the maximum of 30 to 50 minutes, or 40 to 60 minutes in case of the RKH), or the WARNING LED (orange) is blinking at high speed (for the maximum of 30 to 85 minutes).
 - When registering the disk array subsystem at the time of connecting the disk array subsystem, specify only the Control Unit #0 in [Connection Destination] (refer to [System Parameter "1.1 \(4\) \(c\) Registering the disk array subsystem" \(SYSPR 01-0090\)](#)).
 - When the LU, whose status of the forced parity correction is any of "Correcting", "Waiting", "Waiting Drive Reconstruction", "Uncorrected", "Uncorrected 1" and "Uncorrected 2", is in the subsystem, change the status of the LU to "Restored" or "Skip" by executing or skipping the forced parity correction (recommendation).







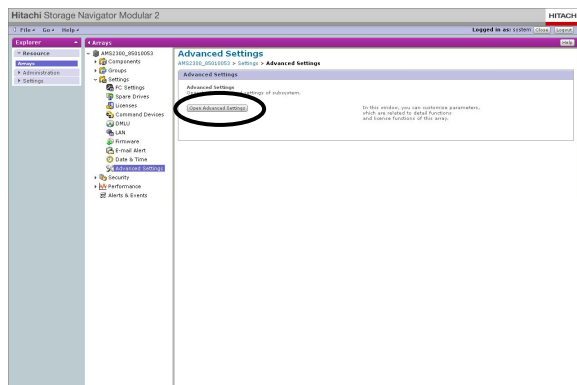




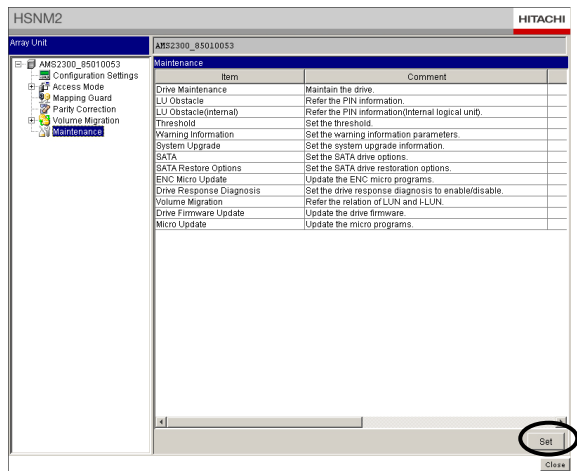
(2-1) Preparation for downloading the firmware

Download the firmware from the CD-R into the subsystem. In the download, the firmware is stored in the subsystem; the firmware of the subsystem is not replaced.

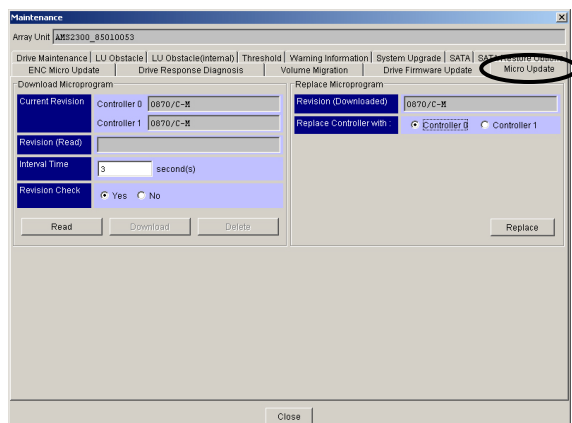
- (a) Store the firmware (ZIP file) in the Maintenance PC in which Hitachi Storage Navigator Modular 2 is installed, and decompress the stored ZIP file.
- (b) Connect the LAN cross cable to the subsystem LAN connector for maintenance and connect the subsystem to the Web. (See [Troubleshooting “3.1 Procedure to WEB connection” \(TRBL 03-0000\)](#)).
- (c) Select [Settings] - [Advanced Settings], and click the [Open Advanced Settings] button.



- (d) Select the [Maintenance] on the applet window, and click the [Set] button.



- (e) Click the [Micro Update] tab.



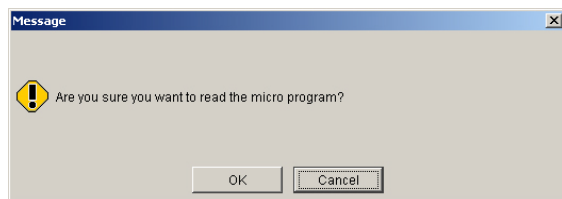
- (f) Read in the firmware to the Maintenance PC in which Hitachi Storage Navigator Modular 2 is installed. Click the [Read] button.

When a firmware revision is displayed in the [Revision(Read)] box, the firmware has already been read in. When only the Unified version directory^(†1) storing the firmware is specified, the whole firmware is read in automatically.

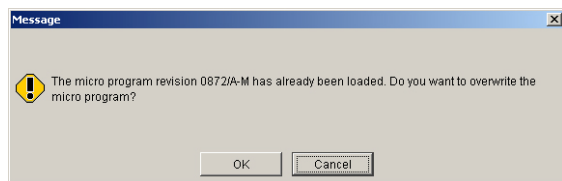
When firmware is not updated, click the [Delete] button, and then delete the read firmware from the Revision (Read).

- (g) Since a message asking for confirmation whether or not to read in the firmware, click the [OK] button.

NOTE : When a LAN failure, etc. occurred and the processing of the Hitachi Storage Navigator Modular 2 terminated abnormally, execute the download of the firmware again from the beginning.



In the case where the firmware has already been read in, the message asking for the confirmation is displayed. When you click the [OK] button, the firmware is overwritten. When you abort the reading in, click the [Cancel] button.



†1 : For the unified version directory, refer to “1.3.1 Hierarchy of Firmware Storage Directories” (FIRM 01-0020).

- (h) Since a window for specifying the directory in which the firmware to be read in is stored is displayed, specify the Unified version directory^(†1). When you click the [OK] button, reading in of the firmware is started.

Examples of the path entry are shown below.

When using Windows®:

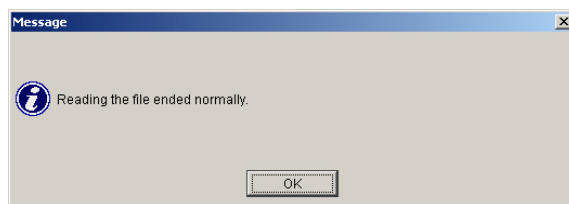
c: /diskarray-microprogram/microprogram/micro/0830A

When using Solaris™ or Red Hat Linux®:

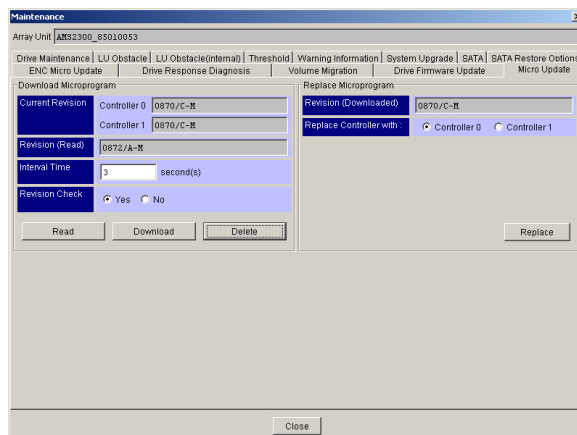
diskarray-microprogram/microprogram/micro/0830A

Unified version
directory^(†1) of
Specified
firmware

- (i) Since a message is displayed when the reading in of the firmware is completed, click the [OK] button.



The revision of the firmware that has been read in is displayed in the [Revision(Read)] box.

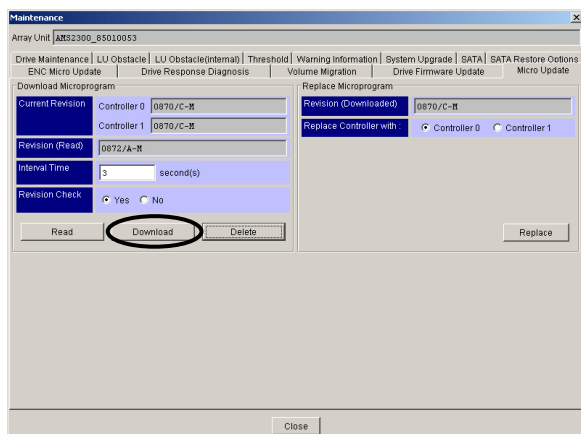


†1 : For the unified version directory, refer to “1.3.1 Hierarchy of Firmware Storage Directories” (FIRM 01-0020).

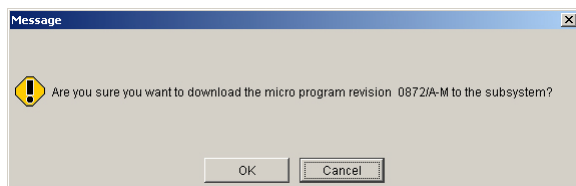
(2-2) Downloading the firmware (usual case)

If the connection between Hitachi Storage Navigator Modular 2 and the array subsystem is disconnected by such cases that a LAN failure occurs or a message of session time-out by Account Authentication (account authentication function) or DMEA000006 error message from Hitachi Storage Navigator Modular 2 are displayed, execute the firmware download again from the beginning ((2-2)-(a)).

(a) Click the [Download] button.



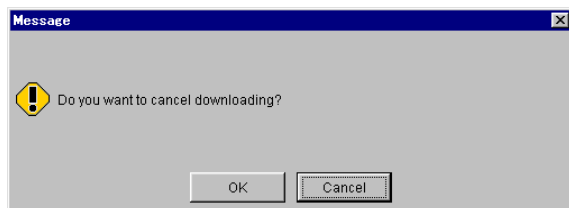
(b) The confirmation window is display. Click the [OK] button.



When you abort the downloading, click the [Cancel] button.

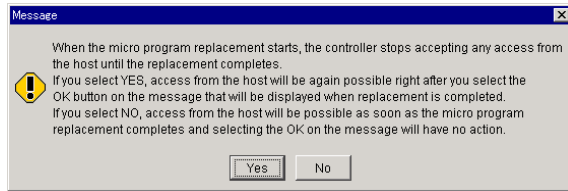
A message asking for confirmation is displayed. When you click the [OK] button, the downloading is aborted.

When you click the [Cancel] button, the downloading is continued.



- (c) The confirmation window is display. Click the [No] button.

The [No] button is selected by default. Therefore, just click the [No] button.



If the [Yes] button is pressed at the time, the download completion message of (d) is displayed. Click the [OK] button of the message, and then download the firmware again from the beginning ((2-2)-(a)).

- (d) Since a message is displayed when the downloading is completed normally, click the [OK] button.



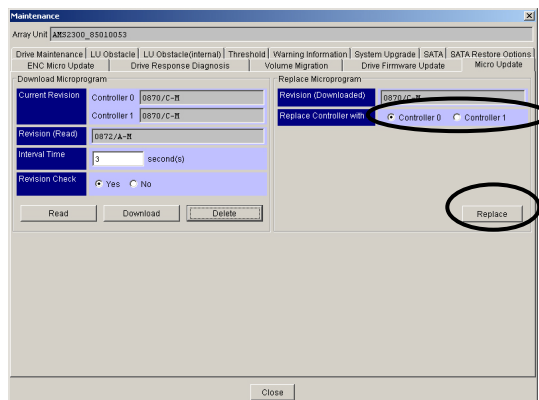
- NOTE :
- After the firmware is downloaded, be sure to restart the disk array subsystem or replace the firmware. If the Control Unit board is replaced in the online mode before restarting the disk array subsystem or replacing the firmware, the replaced Control Unit may be detached. When the subsystem is burdened with a heavy I/O load by a host at the time of the downloading, the downloading may be terminated abnormally. Perform the downloading again.
 - If the NAS Unit is connected and the NAS service is in operation, ask the NAS Unit administrator for planned shutdown of the NAS Unit. After rebooting the array device, ask the NAS Unit administrator to reboot the NAS Unit and check the status of the FC path (Fibre Channel path). Refer to [“Recovering from FC path errors”](#) in [“Hitachi NAS Manager User’s Guide”](#) to check the status of the FC path, and if there is a failure in the FC path, ask the NAS Unit administrator to recover the FC path.

(2-3) Firmware replacement (first Control Unit “A”) (usual case)

If the connection between Hitachi Storage Navigator Modular 2 and the array subsystem is disconnected by such cases that a LAN failure occurs during the firmware replacement or a message of session time-out by Account Authentication (account authentication function) or, DMEA000006 or DMEA00200E error message from Hitachi Storage Navigator Modular 2 is displayed, execute the firmware replacement again from the beginning ((2-3)-(a)).

Replace the firmware that was downloaded to the disk array subsystem with the firmware installed in the Control Unit. When making replacement, be sure to replace the firmware of the both Control Units 0 and 1. When the firmware of one of the Control Units is replaced and the unit window of Hitachi Storage Navigator Modular 2 is closed, the unit window may be opened no more. If the unit window becomes unable to be opened, replace the firmware after changing the registration to that in which only the Control Unit whose firmware has not be replaced is registered.

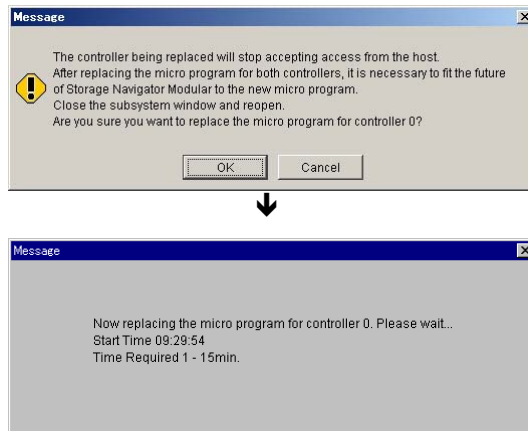
(a) Select the Control Unit whose firmware is to be replaced and click the [Replace] button.



NOTE : After this procedure, confirm if the I/O path can be switched, or if the I/O can be stopped because of stopping the I/O of the Control Unit whose firmware will be updated.

- (b) The confirmation window is display. Check if the selected Control Unit is correctly displayed and click the [OK] button.

NOTE : By clicking the [OK] button in the window, if a LAN failure and others occur and the Hitachi Storage Navigator Modular 2 processing terminates abnormally before “W3B00x Online micro-update started (CTL-x)” and “W01z0x CTL alarm (CTL-x)” are displayed in Information Message on WEB and the window of the procedure (2-3)-(d) is displayed, execute the firmware replacement again from the step (2-3)-(a).



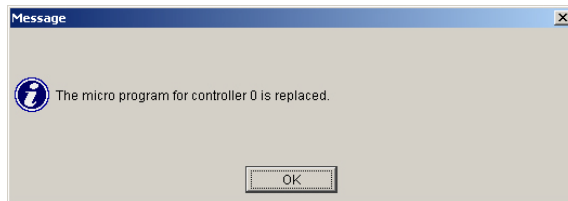
NOTE : Then “W01z0x CTL alarm (CTL-x)” message is displayed in information message of Web and Array Unit becomes Warning Status.

- (c) Click the [OK] button according to the dialog message.



NOTE : If the above-mentioned message is not displayed, and if DMEA00200E error message is displayed, execute the firmware replacement again from the step (2-3)-(a) according to the DMEA00200E error message.

- (d) When the replacement of the firmware terminates normally, a completion message is displayed. Click the [OK] button.



NOTE : When making the access from the host accepted by the instruction from Hitachi Storage Navigator Modular 2 (when the [Yes] is selected in the step (2-2)-(c)), the following message may be displayed if it is not operated for 20 minutes or more in the case where Account Authentication is valid, and it may not be completed normally. Perform the dummy replacement ^(†1) of the Control Unit whose firmware was replaced to make the access from the host accepted. If the access from the host is made accepted when the replacement of the firmware is completed, the dummy replacement ^(†1) is unnecessary.



- (e) Referring to the Information Message on WEB, confirm the following items. (Refer to [WEB "2.5 Information Message" \(WEB 02-0110\)](#).)
- The messages "W01z0x CTL alarm (CTL-x)" and "I0010x CTL recovered (CTL-x)" are displayed, and "I1G70x FC I/F ports remain offline (CTL-x)" is not displayed between those messages.

If the above-mentioned item is not established, continue the update installation of the firmware from the step (2-6)-(g) of "(2-6) Firmware replacement (first Control Unit "A") (By operating instructions)" (FIRM 01-0340).

^{†1} : To remove the part concerned once, and then to reinstall it after waiting for 20 seconds or more.

- (f) Referring to the Information message on WEB, check that the following message is displayed.
(Refer to [WEB “2.5 Information Message” \(WEB 02-0110\)](#).)

NOTE : The following message is displayed when the firmware replacement is performed starting from the Control Unit #0. When it is performed starting from the Control Unit #1, convert the Control Unit number in the message.

When [No] is selected in the step [\(2-2\)-\(c\)](#), the following message is displayed.

If the following message is not displayed, refer to [“Chapter 2. Procedure for Recovery from a Failure” \(FIRM 02-0000\)](#).

Contact the Technical Support Center, and perform the operation according to the Technical Support Center.

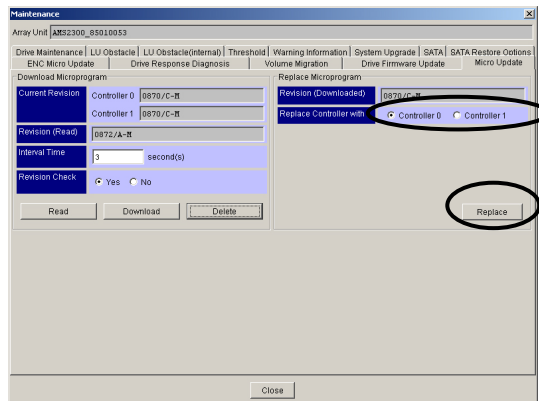
| | |
|---|------------|
| MM/DD/YYYY hh:mm:ss 00 W3A001 Online micro-update executing (CTL-1) | |
| MM/DD/YYYY hh:mm:ss 00 I42000 Online micro-update (CTL-0) | |
| MM/DD/YYYY hh:mm:ss 00 I00100 CTL recovered (CTL-0) | |
| MM/DD/YYYY hh:mm:ss 10 W01400 CTL alarm (CTL-0) | :CTL /CTRC |
| MM/DD/YYYY hh:mm:ss 10 W3B000 Online micro-update started (CTL-0) | |

- (g) In the case of the dual controller configuration, also replace the firmware of the other Control Unit.

(2-4) Firmware replacement (Second Control Unit “B”) (usual case)

If the connection between Hitachi Storage Navigator Modular 2 and the array subsystem is disconnected by such cases that a LAN failure occurs during the firmware replacement or a message of session time-out by Account Authentication (account authentication function) or, DMEA000006 or DMEA00200E error message from Hitachi Storage Navigator Modular 2 is displayed, execute the firmware replacement again from the step (2-3)-(a).

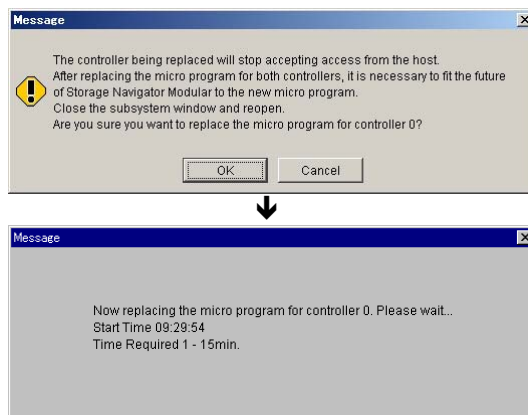
(a) Select the Control Unit whose firmware is to be replaced and click the [Replace] button.



NOTE : After this procedure, confirm if the I/O path can be switched, or if the I/O can be stopped because of stopping the I/O of the Control Unit whose firmware will be updated.

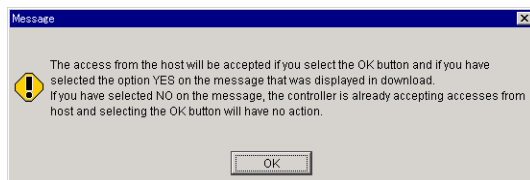
(b) The confirmation window is display. Check if the selected Control Unit is correctly displayed and click the [OK] button.

NOTE : By clicking the [OK] button in the window, if a LAN failure and others occur and the Hitachi Storage Navigator Modular 2 processing terminates abnormally before “W3B00x Online micro-update started (CTL-x)” and “W01z0x CTL alarm (CTL-x)” are displayed in Information Message on WEB and the window of the procedure (2-4)-(d) is displayed, execute the firmware replacement again from the step (2-3)-(a).



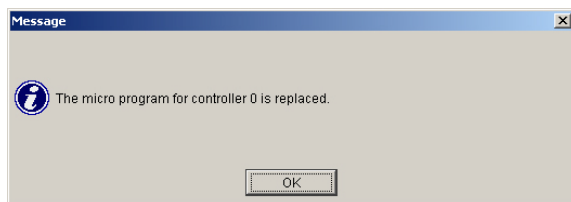
NOTE : Then “Wz100x CTL alarm (CTL-x)” message is displayed in information message of Web and Array Unit becomes Warning Status.

(c) Click the [OK] button according to the dialog message.

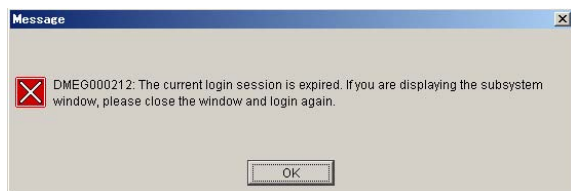


NOTE : If the above-mentioned message is not displayed, and if DMEA00200E error message is displayed, execute the firmware replacement again from the step (2-3)-(a) according to the DMEA00200E error message.

(d) When the replacement of the firmware terminates normally, a completion message is displayed. Click the [OK] button.



NOTE : When making the access from the host accepted by the instruction from Hitachi Storage Navigator Modular 2 (when the [Yes] is selected in the step (2-2)-(c)), the following message may be displayed if it is not operated for 20 minutes or more in the case where Account Authentication is valid, and it may not be completed normally. Perform the dummy replacement ^(‡1) of the Control Unit whose firmware was replaced to make the access from the host accepted. If the access from the host is made accepted when the replacement of the firmware is completed, the dummy replacement ^(‡1) is unnecessary.



‡1 : To remove the part concerned once, and then to reinstall it after waiting for 20 seconds or more.

- (e) Check that the following message is displayed referring to the Information Message on the WEB. (Refer to [WEB “2.5 Information Message” \(WEB 02-0110\)](#).)

NOTE : The following message is displayed when the firmware replacement is performed in order from Control Unit #0 to Control Unit #1. When it is performed in order from the Control Unit #1 to Control Unit #0, convert the Control Unit number in the message.

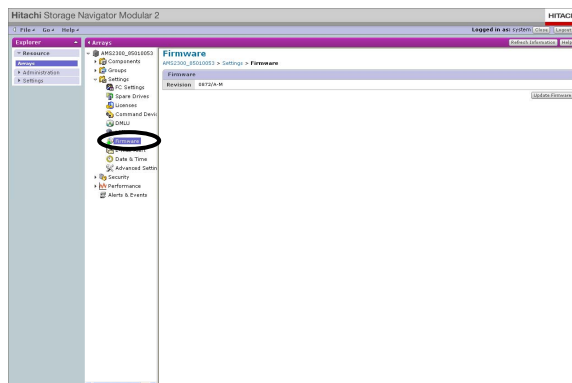
When [No] is selected in the step (2-2)-(c), the following message is displayed.

If the following message is not displayed, refer to [“Chapter 2. Procedure for Recovery from a Failure” \(FIRM 02-0000\)](#).

Contact the Technical Support Center, and perform the operation according to the Technical Support Center.

| | |
|---|------------|
| MM/DD/YYYY hh:mm:ss 10 I19000 Online micro-update completed | |
| MM/DD/YYYY hh:mm:ss 10 I42001 Online micro-update (CTL-1) | |
| MM/DD/YYYY hh:mm:ss 10 I00101 CTL recovered (CTL-1) | |
| MM/DD/YYYY hh:mm:ss 00 W01401 CTL alarm (CTL-1) | :CTL /CTRC |
| MM/DD/YYYY hh:mm:ss 00 W3B001 Online micro-update started (CTL-1) | |

- (f) Click the [Close] button in the [Micro Update] tab window.
 (g) Select [Settings] - [Firmware] on the unit window, and click the [Refresh Information] button.



- (h) Check that the revision of the replaced firmware is displayed.
 (i) When the revision check is completed, the firmware replacement of the subsystem ends.

NOTE :

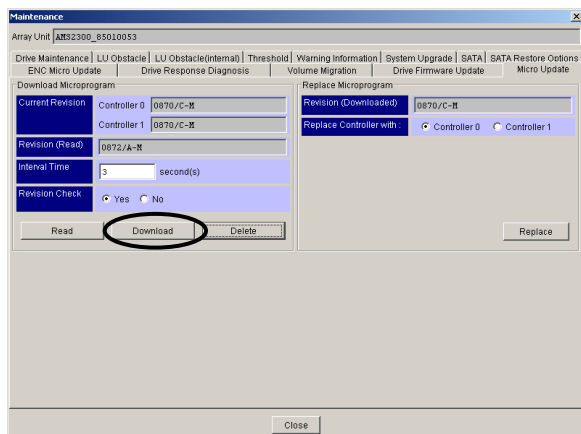
- When the replacement of the firmware is made for only one of the dual Control Unit, the disk array subsystem is put in the status in which a warning is issued. The warning is called off when the other one of the dual Control Unit is replaced. When you replace the firmware, be sure to make the replacement for the both Control Units continuously.
- When the firmware was replaced online after performing the processing to change the system configuration (LU formation, format, LU owner right change, etc.), the “I14000 System copy started” message may be displayed two or more times in Information Message on WEB, but it is not a problem.

(2-5) Downloading the firmware (Case with operating instructions)

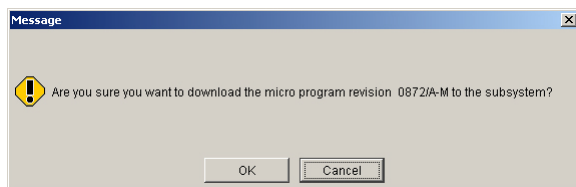
(In case that there is a special instruction by the Technical Support Center or the system administrator (SE, customer and others) to control the host access permit (offline/online of the Fibre Channel port of the Control Unit) at the time of the firmware replacement)

If the connection between Hitachi Storage Navigator Modular 2 and the array subsystem is disconnected by such cases that a LAN failure occurs or a message of session time-out by Account Authentication (account authentication function) or DMEA000006 error message from Hitachi Storage Navigator Modular 2 are displayed, execute the firmware download again from the step (2-5)-(a).

(a) Click the [Download] button.



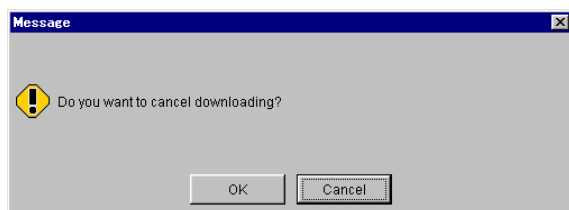
(b) The confirmation window is display. Click the [OK] button.



When you abort the downloading, click the [Cancel] button.

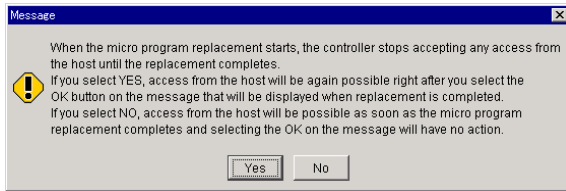
A message asking for confirmation is displayed. When you click the [OK] button, the downloading is aborted.

When you click the [Cancel] button, the downloading is continued.



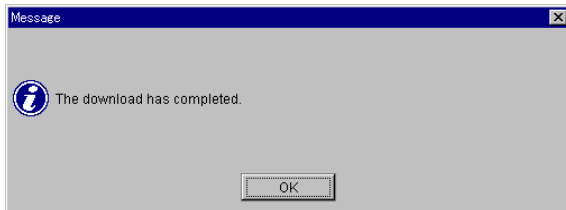
(c) The confirmation window is display. Click the [Yes] button.

The [No] button is selected by default. Click the [Yes] button not to be incorrect.



If the [No] button is pressed at this time the download completion message of (d) is displayed. Click the [OK] button of the message, and then download the firmware again from the beginning ((2-5)-(a)).

(d) Since a message is displayed when the downloading is completed normally, click the [OK] button.



NOTE : • After the firmware is downloaded, be sure to restart the disk array subsystem or replace the firmware. If the Control Unit board is replaced in the online mode before restarting the disk array subsystem or replacing the firmware, the replaced Control Unit may be detached. When the subsystem is burdened with a heavy I/O load by a host at the time of the downloading, the downloading may be terminated abnormally. Perform the downloading again.

- If the NAS Unit is connected and the NAS service is in operation, ask the NAS Unit administrator for planned shutdown of the NAS Unit. After rebooting the array device, ask the NAS Unit administrator to reboot the NAS Unit and check the status of the FC path (Fibre Channel path). Refer to [“Recovering from FC path errors”](#) in [“Hitachi NAS Manager User’s Guide”](#) to check the status of the FC path, and if there is a failure in the FC path, ask the NAS Unit administrator to recover the FC path.

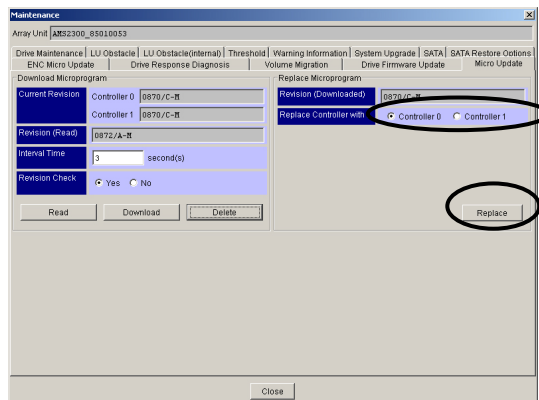
(2-6) Firmware replacement (first Control Unit “A”) (By operating instructions)

(In case that there is a special instruction by the Technical Support Center or the system administrator (SE, customer and others) to control the host access permit (offline/online of the Fibre Channel port of the Control Unit) at the time of the firmware replacement)

If the connection between Hitachi Storage Navigator Modular 2 and the array subsystem is disconnected by such cases that a LAN failure occurs during the firmware replacement or a message of session time-out by Account Authentication (account authentication function) or, DMEA000006 or DMEA00200E error message from Hitachi Storage Navigator Modular 2 is displayed, execute the firmware replacement again from the beginning ((2-6)-(a)).

Replace the firmware that was downloaded to the disk array subsystem with the firmware installed in the Control Unit. When making replacement, be sure to replace the firmwares of the both Control Units 0 and 1. When the firmware of one of the Control Units is replaced and the unit window of Hitachi Storage Navigator Modular 2 is closed, the unit window may be opened no more. If the unit window becomes unable to be opened, replace the firmware after changing the registration to that in which only the Control Unit whose firmware has not be replaced is registered.

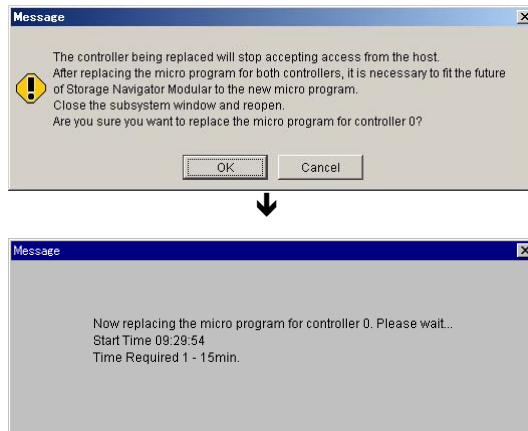
(a) Select the Control Unit whose firmware is to be replaced and click the [Replace] button.



NOTE : After this procedure, confirm if the I/O path can be switched, or if the I/O can be stopped because of stopping the I/O of the Control Unit whose firmware will be updated.

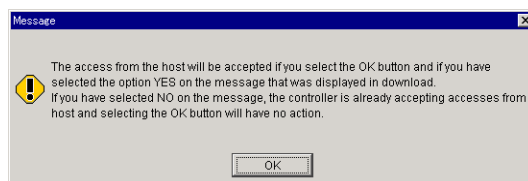
- (b) The confirmation window is display. Check if the selected Control Unit is correctly displayed and click the [OK] button.

NOTE : By clicking the [OK] button in the window, if a LAN failure and others occur and the Hitachi Storage Navigator Modular 2 processing terminates abnormally before “W3B00x Online micro-update started (CTL-x)” and “W01z0x CTL alarm (CTL-x)” are displayed in Information Message on WEB and the window of the procedure (2-6)-(e) is displayed, execute the firmware replacement again from the beginning ((2-6)-(a)).



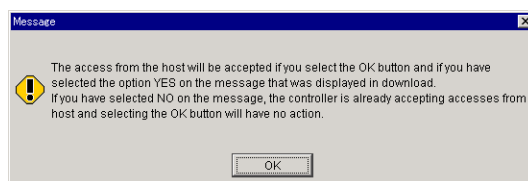
NOTE : Then “Wz100x CTL alarm (CTL-x)” message is displayed in information message of Web and Array Unit becomes Warning Status.

- (c) If the confirmation message of the host access permit is displayed, contact the Technical Support Center or the system administrator (SE, customer and others), and request the prior procedure necessary for the path switching.
Wait until the procedure is completed.

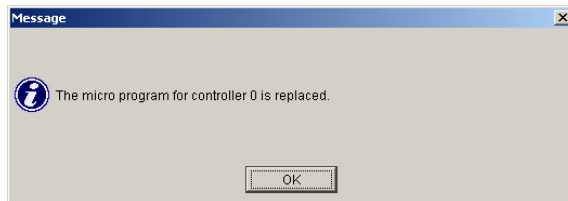


NOTE : If the above-mentioned message is not displayed, and if DMEA00200E error message is displayed, execute the firmware replacement again from the step (2-6)-(a) according to the DMEA00200E error message.

- (d) Click the [OK] button according to the dialog message



- (e) When the replacement of the firmware terminates normally, a completion message is displayed. Click the [OK] button.



NOTE : When making the access from the host accepted by the instruction from Hitachi Storage Navigator Modular 2 (when the [Yes] is selected in the step (2-5)-(c)), the following message may be displayed if it is not operated for 20 minutes or more in the case where Account Authentication is valid, and it may not be completed normally. Perform the dummy replacement ^(‡1) of the Control Unit whose firmware was replaced to make the access from the host accepted. If the access from the host is made accepted when the replacement of the firmware is completed, the dummy replacement ^(‡1) is unnecessary.



- (f) Referring to the Information Message on WEB, confirm the following items. (Refer to [WEB "2.5 Information Message" \(WEB 02-0110\)](#).)
- The message "I1G70x FC I/F ports remain offline (CTL-x)" is displayed between "W01z0x CTL alarm (CTL-x)" and "I0010x CTL recovered (CTL-x)".

If the above-mentioned item is not established, continue the update installation of the firmware from the step (2-3)-(f) of "(2-3) Firmware replacement (first Control Unit "A") (usual case)" (FIRM 01-0250) again.

‡1 : To remove the part concerned once, and then to reinstall it after waiting for 20 seconds or more.

- (g) Referring to the Information Message on WEB, confirm the following items. (Refer to [WEB “2.5 Information Message” \(WEB 02-0110\)](#).)
- The message “I1G80x FC I/F ports change to online (CTL-x)” is displayed after “W3A00x Online micro-update executing (CTL-x)”.

If the above- mentioned items are not established, referring to the Information message on WEB, check that the following message is displayed. (Refer to [WEB “2.5 Information Message” \(WEB 02-0110\)](#).)

NOTE : The following message is displayed when the firmware replacement is performed starting from the Control Unit #0. When it is performed starting from the Control Unit #1, convert the Control Unit number in the message.

When [Yes] is selected in the step [\(2-5\)-\(c\)](#), the following message is displayed.

If the following message is not displayed, refer to [“Chapter 2. Procedure for Recovery from a Failure” \(FIRM 02-0000\)](#).

Contact the Technical Support Center, and perform the operation according to the Technical Support Center.

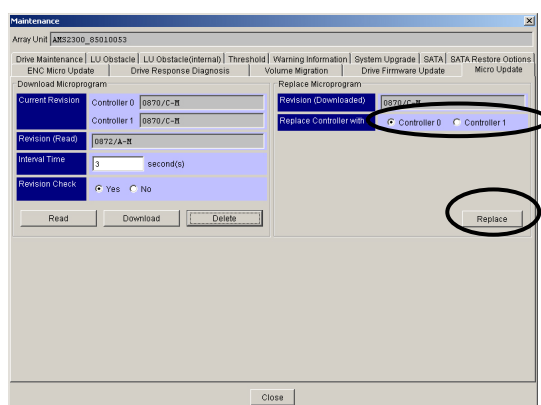
However, only when “I1G800 FC I/F ports change to online (CTL-0)” is not displayed, execute the update installation of the firmware of the same Control Unit again from the step [\(2-6\) \(a\) of “\(2-6\) Firmware replacement \(first Control Unit “A”\) \(By operating instructions\)”](#).

| | |
|---|------------|
| MM/DD/YYYY hh:mm:ss 00 I1G800 FC I/F ports change to online (CTL-0) | |
| MM/DD/YYYY hh:mm:ss 00 W3A001 Online micro-update executing (CTL-1) | |
| MM/DD/YYYY hh:mm:ss 00 I42000 Online micro-update (CTL-0) | |
| MM/DD/YYYY hh:mm:ss 00 I00100 CTL recovered (CTL-0) | |
| MM/DD/YYYY hh:mm:ss 00 I1G700 FC I/F ports remain offline (CTL-0) | :Manual |
| MM/DD/YYYY hh:mm:ss 10 W01400 CTL alarm (CTL-0) | :CTL /CTRC |
| MM/DD/YYYY hh:mm:ss 10 W3B000 Online micro-update started (CTL-0) | |

- (h) In the case of the dual controller configuration, also replace the firmware of the other Control Unit.

- (2-7) Replacing the firmware (second Control Unit “B”) (Case with operating instructions)
 (In case that there is a special instruction by the Technical Support Center or the system administrator (SE, customer and others) to control the host access permit (offline/online of the Fibre Channel port of the Control Unit) at the time of the firmware replacement)
 If the connection between Hitachi Storage Navigator Modular 2 and the array subsystem is disconnected by such cases that a LAN failure occurs during the firmware replacement or a message of session time-out by Account Authentication (account authentication function) or, DMEA000006 or DMEA00200E error message from Hitachi Storage Navigator Modular 2 is displayed, refer to the working flowchart, and execute the firmware replacement again from the step (2-6)-(a), (2-7)-(a) or (2-10).

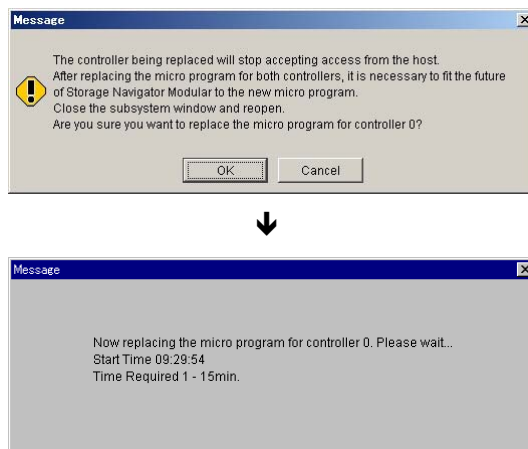
- (a) Select the Control Unit whose firmware is to be replaced and click the [Replace] button.



NOTE : After this procedure, confirm if the I/O path can be switched, or if the I/O can be stopped because of stopping the I/O of the Control Unit whose firmware will be updated.

- (b) The confirmation window is display. Check if the selected Control Unit is correctly displayed and click the [OK] button.

NOTE : By clicking the [OK] button in the window, if a LAN failure and others occur and the Hitachi Storage Navigator Modular 2 processing terminates abnormally before “W3B00x Online micro-update started (CTL-x)” and “W01z0x CTL alarm (CTL-x)” are displayed in Information Message on WEB and the window of the procedure (2-7)-(e) is displayed, execute the update installation of the firmware after this according to “(2-10) Recovery procedure when the firmware replacement (second Control Unit “B”) (By operating instructions) fails” (FIRM 01-0400).



NOTE : Then “W01z0x CTL alarm (CTL-x)” message is displayed in information message of Web and Array Unit becomes Warning Status.

NOTE : If a DMED3B0104 error message (firmware replacement on the Control Unit “A” side is not completed) is displayed after clicking the [OK] button to replace the firmware, click the [OK] button of the error message, and then execute the firmware replacement again from the step (2-6)-(a).



- (c) If the confirmation message of the host access permit is displayed, contact the Technical Support Center or the system administrator (SE, customer and others), and request the prior procedure necessary for the path switching.
Wait until the procedure is completed.



NOTE : If the above-mentioned message is not displayed, and if DMEA00200E error message is displayed, execute the firmware replacement again from the “(2-10) Recovery procedure when the firmware replacement (second Control Unit “B”) (By operating instructions) fails” according to the DMEA00200E error message.

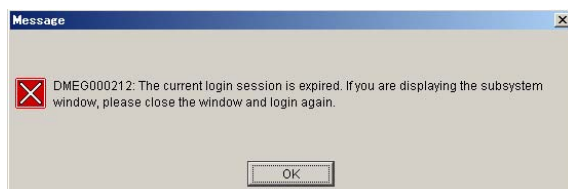
- (d) Click the [OK] button according to the dialog message.



- (e) When the replacement of the firmware terminates normally, a completion message is displayed. Click the [OK] button.



NOTE : When making the access from the host accepted by the instruction from Hitachi Storage Navigator Modular 2 (when the [Yes] is selected in the step (2-5)-(c)), the following message may be displayed if it is not operated for 20 minutes or more in the case where Account Authentication is valid, and it may not be completed normally. Perform the dummy replacement ^(†1) of the Control Unit whose firmware was replaced to make the access from the host accepted. If the access from the host is made accepted when the replacement of the firmware is completed, the dummy replacement ^(†1) is unnecessary.



†1 : To remove the part concerned once, and then to reinstall it after waiting for 20 seconds or more.

- (f) Referring to the Information Message on WEB, confirm the following items. (Refer to [WEB “2.5 Information Message” \(WEB 02-0110\).](#))
- The messages “I1G80x FC I/F ports change to online (CTL-x)” is displayed after “IZYR00 Automatic ENC microprogram download completed successfully”.

If the above- mentioned items are not established, refer to the Information Message on WEB, and check that the following message is displayed. (Refer to [WEB “2.5 Information Message” \(WEB 02-0110\).](#))

NOTE : The following message is displayed when the firmware replacement is performed in order from Control Unit #0 to Control Unit #1. When it is performed in order from the Control Unit #1 to Control Unit #0, convert the Control Unit number in the message.

When [Yes] is selected in the step (2-5)-(c), the following message is displayed.

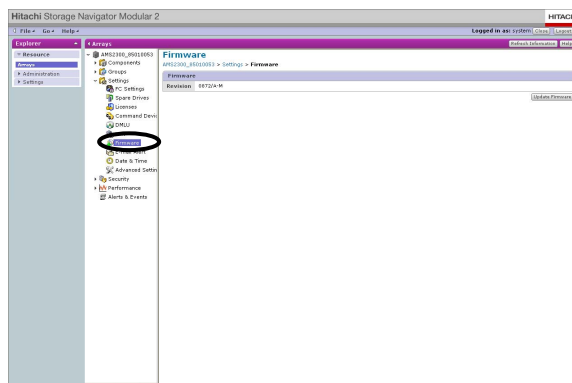
If the following message is not displayed, refer to [“Chapter 2. Procedure for Recovery from a Failure” \(FIRM 02-0000\).](#)

Contact the Technical Support Center, and perform the operation according to the Technical Support Center.

However, only when “I1G800 FC I/F ports change to online (CTL-1)” is not displayed, execute the update installation of the firmware, from now on, along the flow chart in operation and according to [“\(2-10\) Recovery procedure when the Firmware replacement \(second Control Unit “B”\) \(By operating instructions\) fails” \(FIRM 01-0400\)](#) or the step (2-14) (a).

```
MM/DD/YYYY hh:mm:ss 10 I1G801 FC I/F ports change to online (CTL-1)
:
:
MM/DD/YYYY hh:mm:ss 10 I19000 Online micro-update completed
MM/DD/YYYY hh:mm:ss 10 I42001 Online micro-update(CTL-1)
MM/DD/YYYY hh:mm:ss 10 I00101 CTL recovered(CTL-1)
MM/DD/YYYY hh:mm:ss 10 I1G701 FC I/F ports remain offline (CTL-1)      :MANUAL
MM/DD/YYYY hh:mm:ss 00 W01401 CTL alarm (CTL-1)                      :CTL /CTRC
MM/DD/YYYY hh:mm:ss 00 W3B001 Online micro-update started (CTL-1)
```

- (g) Click the [Close] button in the [Micro Update] tab window.
- (h) Select [Settings] - [Firmware] on the unit window, and click the [Refresh Information] button.



- (i) Check that the revision of the replaced firmware is displayed.
- (j) When the revision check is completed, the firmware replacement of the subsystem ends.

NOTE :

- When the replacement of the firmware is made for only one of the dual Control Unit, the disk array subsystem is put in the status in which a warning is issued. The warning is called off when the other one of the dual Control Unit is replaced. When you replace the firmware, be sure to make the replacement for the both Control Units continuously.
- When the firmware was replaced online after performing the processing to change the system configuration (LU formation, format, LU owner right change, etc.), the “I14000 System copy started” message may be displayed two or more times in Information Message on WEB, but it is not a problem.

(2-8) Checking the READY LED (green) on the front of the Basic Chassis

Check that the READY LED (green) on the front of the Basic Chassis lights up. When the READY LED (green) on the front of the Basic Chassis is blinking at high speed, the READY LED (green) on the front of the Basic Chassis lights up after blinking at high speed for the maximum of 30 to 50 minutes (40 to 60 minutes in case of the RKH) because the automatic download of the ENC firmware is being operated.

(2-9) Checking the automatic download of the ENC firmware and drive firmware

(a) Checking the completion of the automatic download of the ENC firmware

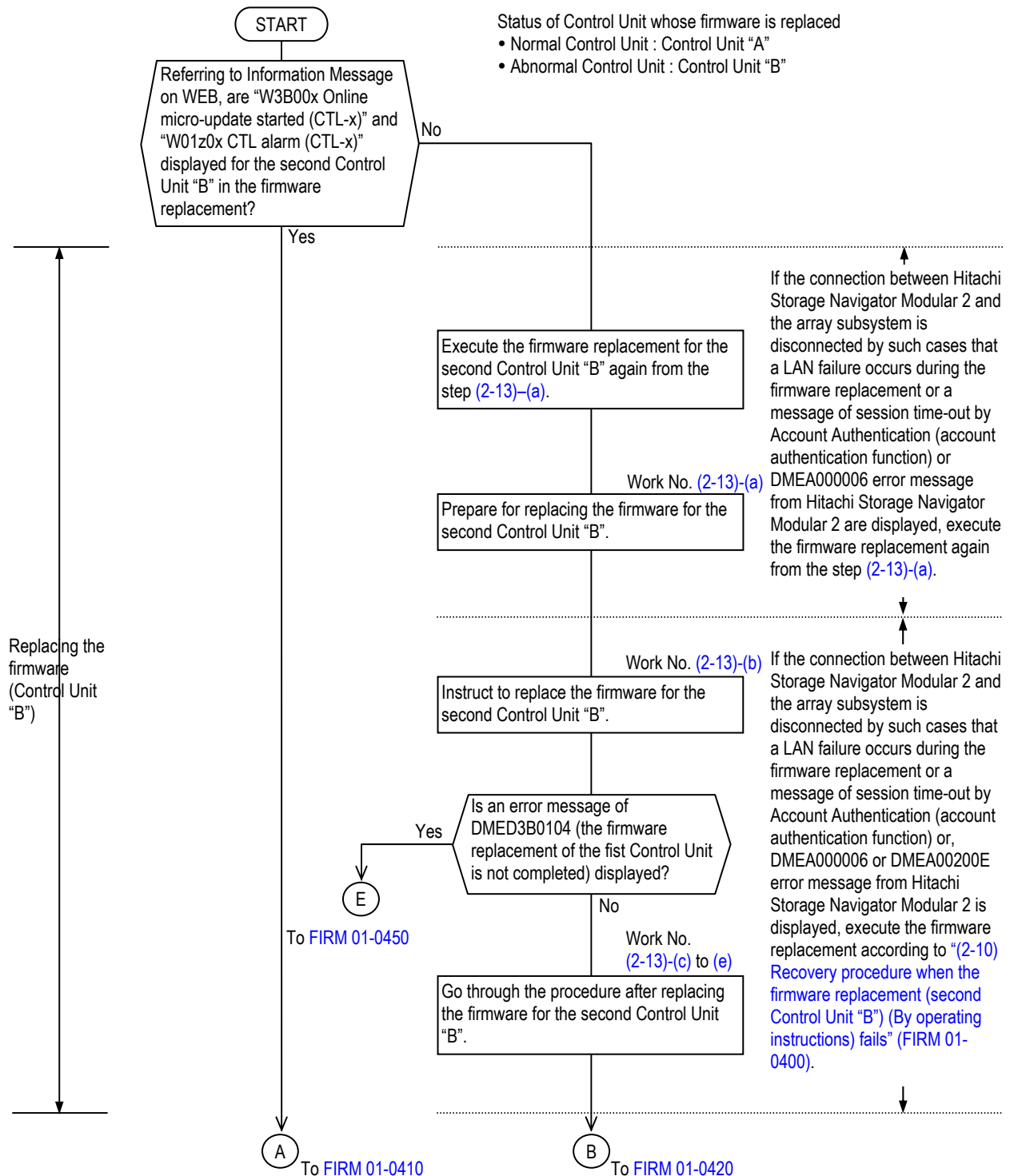
Check that “IZYR00 Automatic ENC microprogram download completed successfully” and “IZYS00 Automatic ENC microprogram download start” are displayed in Information Message on WEB.

When “IZYQ00 Automatic ENC microprogram download failed” is displayed in Information Message on WEB, perform the maintenance according to the recovery method of the message code. However, in the unit window of Hitachi Storage Navigator Modular 2, select [Settings] - [Detailed Settings] and press the [Start Detailed Settings] button. Next, select [Maintenance] and press the [Settings] button, and then select the [ENC Micro Update] tab. If [Automatic Download] is set to [Disabled], the procedure (2-9)-(a) is not required.

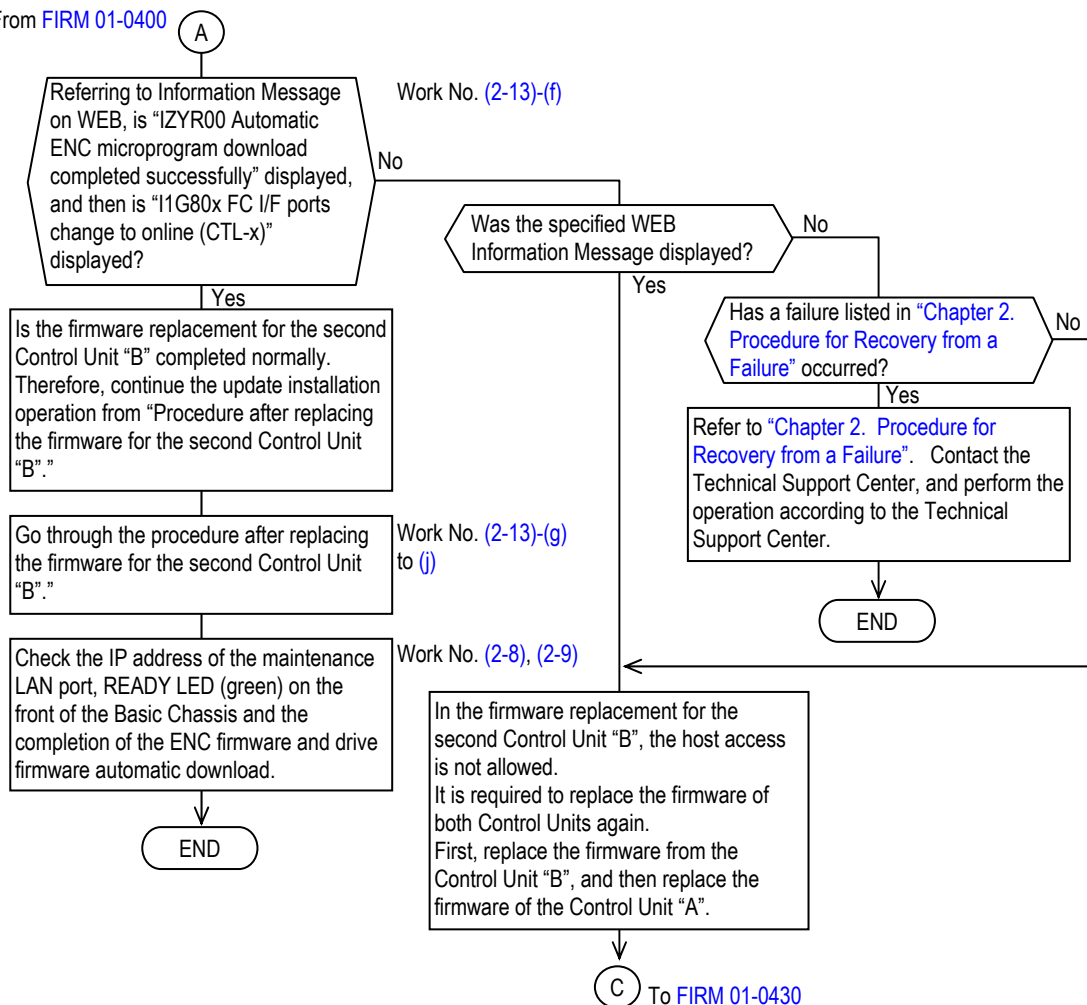
- (b) Check that the start message and the end message of the drive firmware automatic download are displayed. When the drive firmware version of the Disk Drive is new, the start message and completion message of the drive firmware automatic download are not displayed. When the message indicating the abnormal termination is displayed, perform the maintenance according the recovery method in the message code. (Refer to “1.6 (4) [Checking the start message and end message of the automatic download](#)” (FIRM 01-0890).)

(2-10) Recovery procedure when the firmware replacement (second Control Unit "B") (By operating instructions) fails

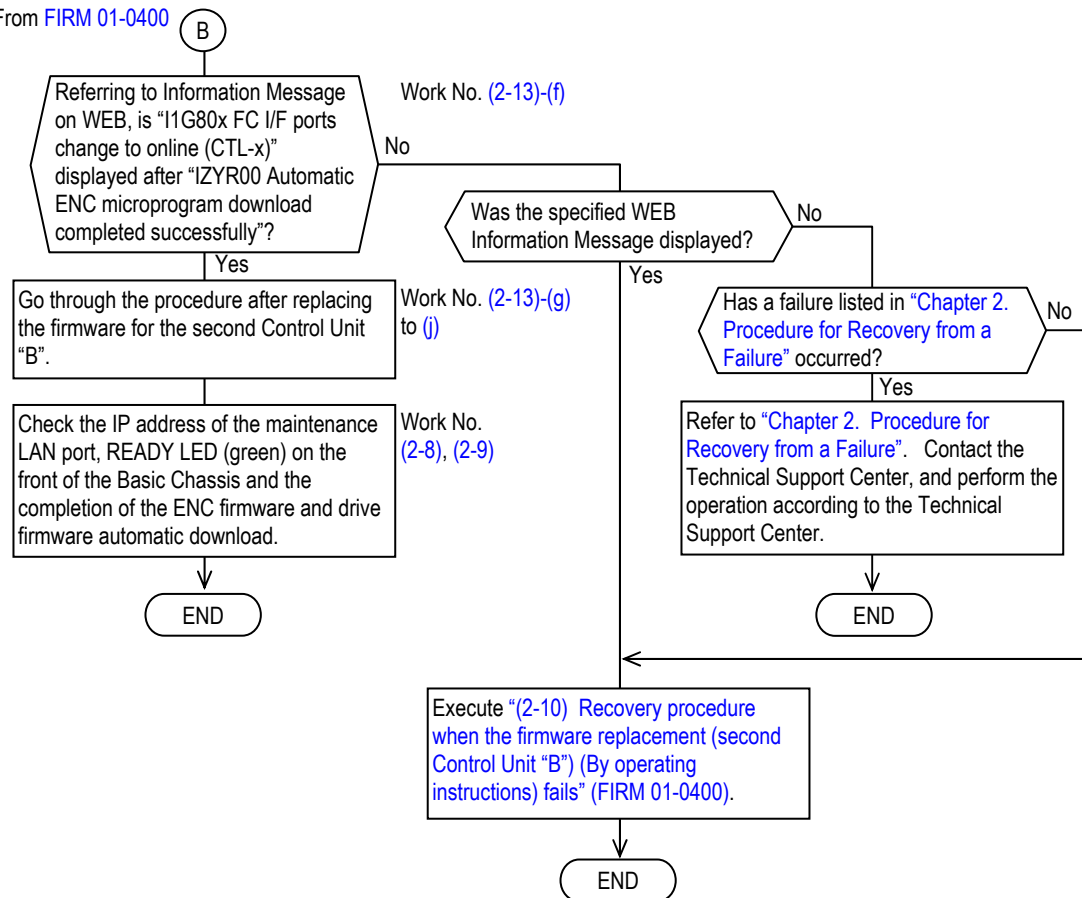
(In case that there is a special instruction by the Technical Support Center, SE, customer and others to control the host access permit (offline/online of the Fibre Channel port of the Control Unit) at the time of the firmware replacement)

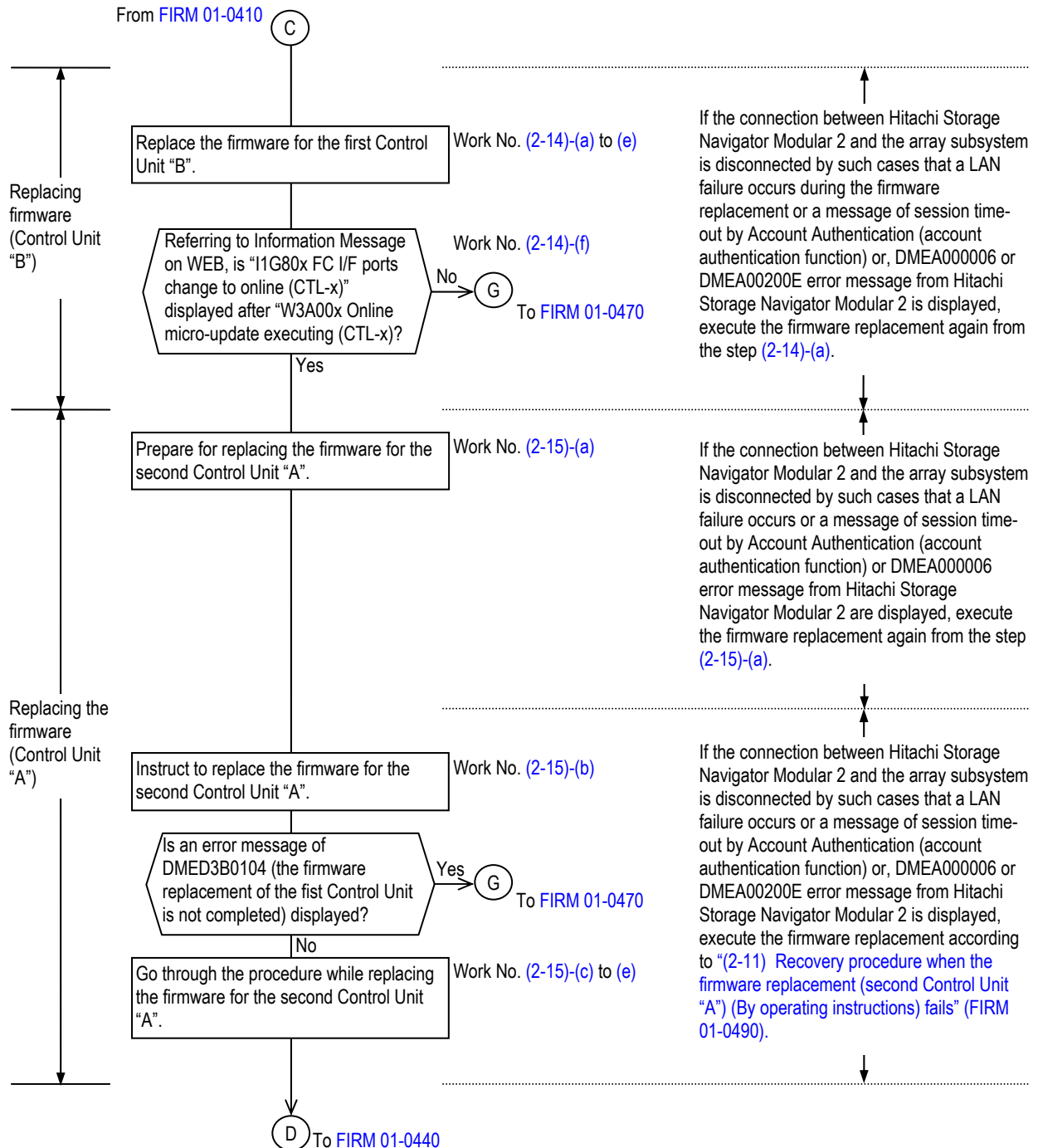


From FIRM 01-0400

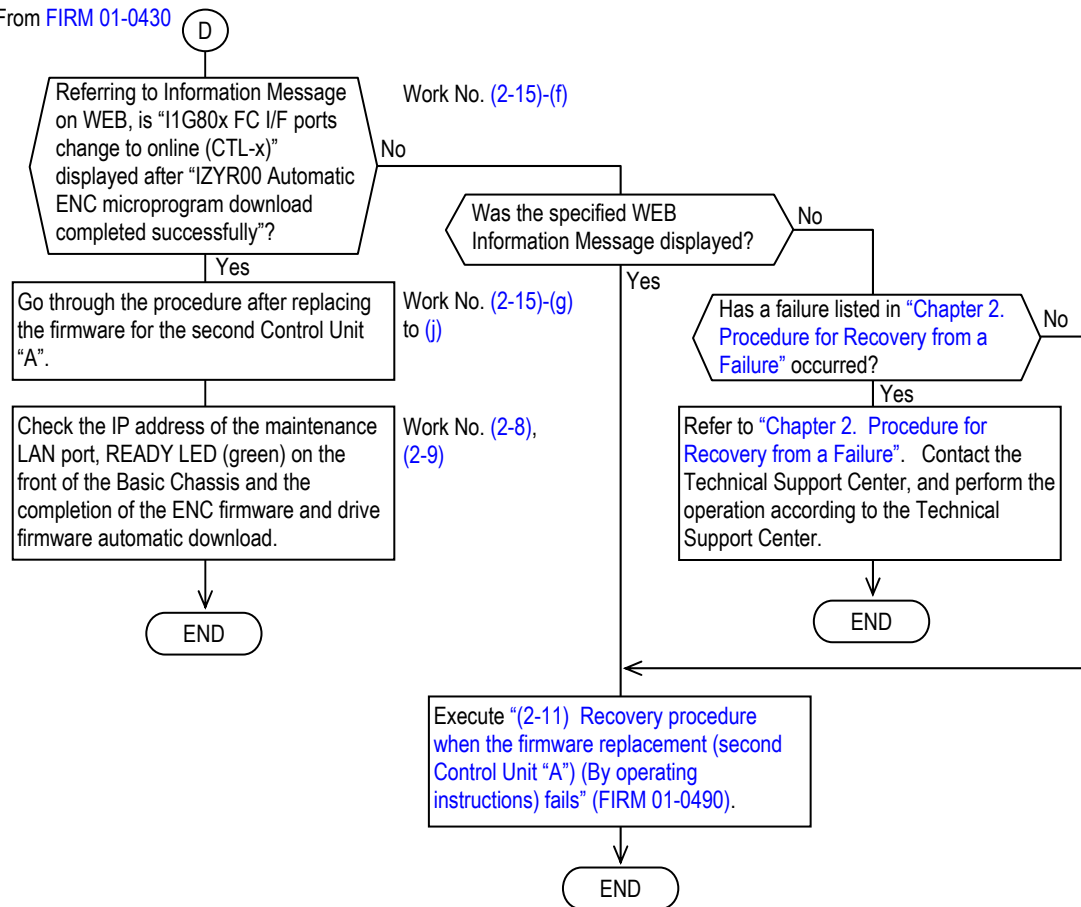


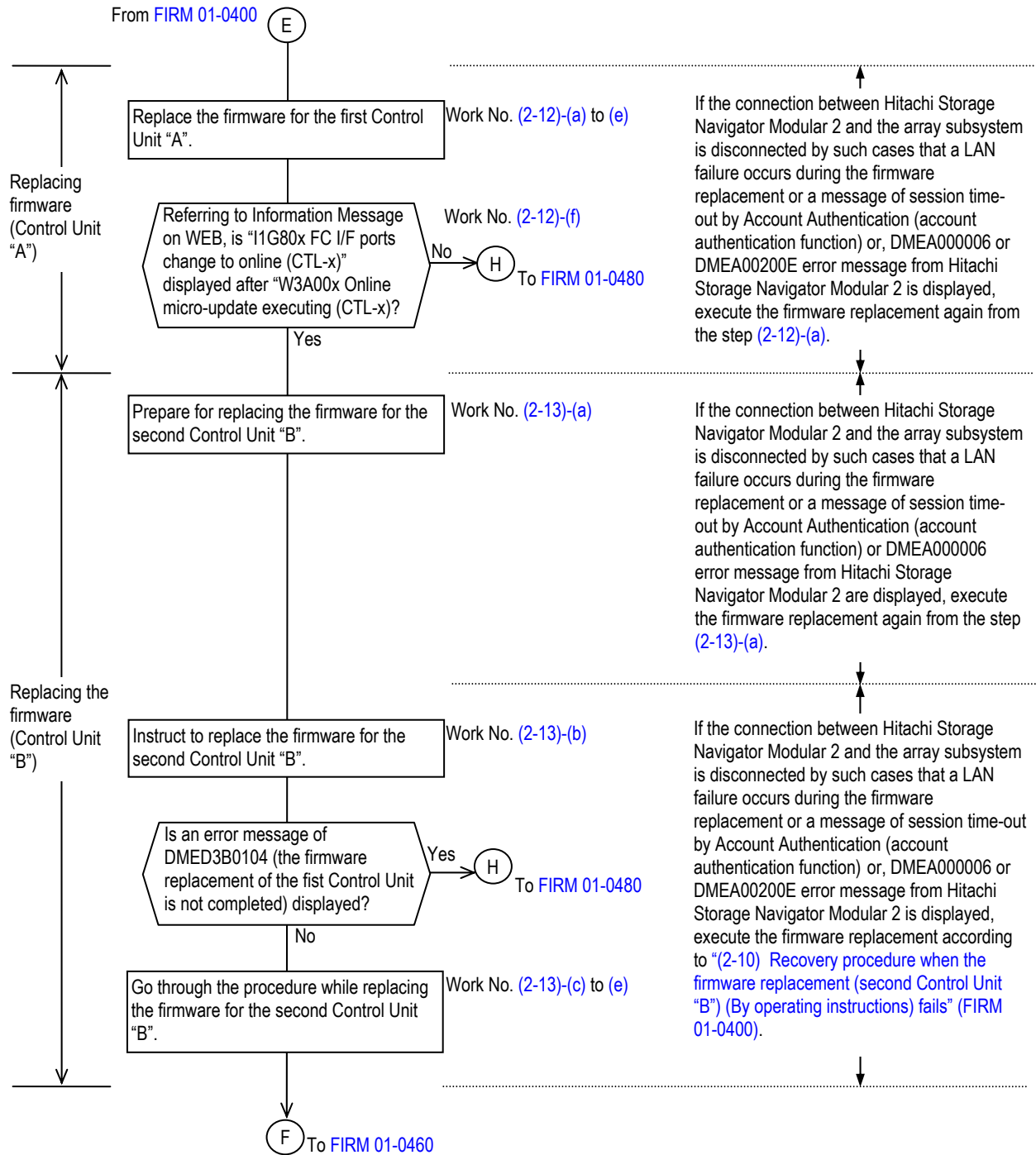
From FIRM 01-0400



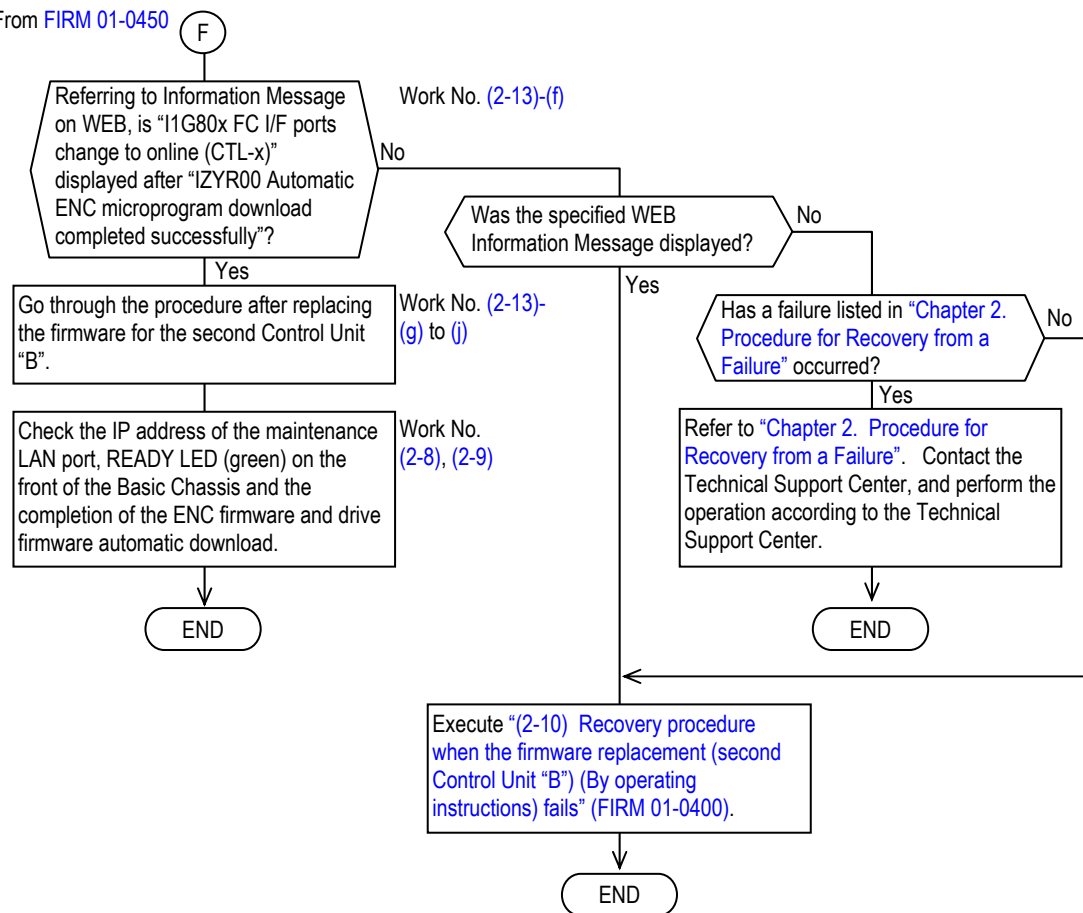


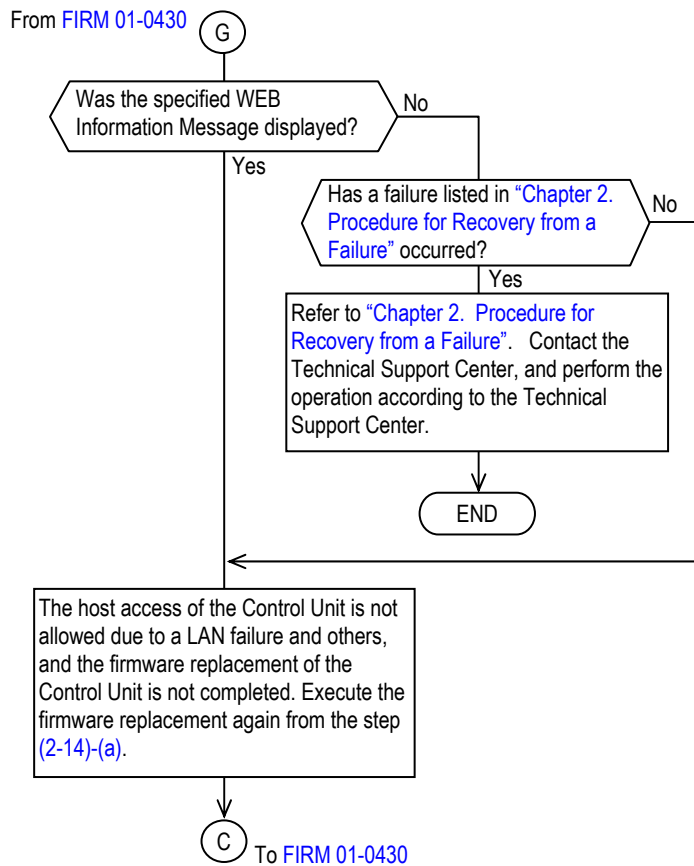
From FIRM 01-0430

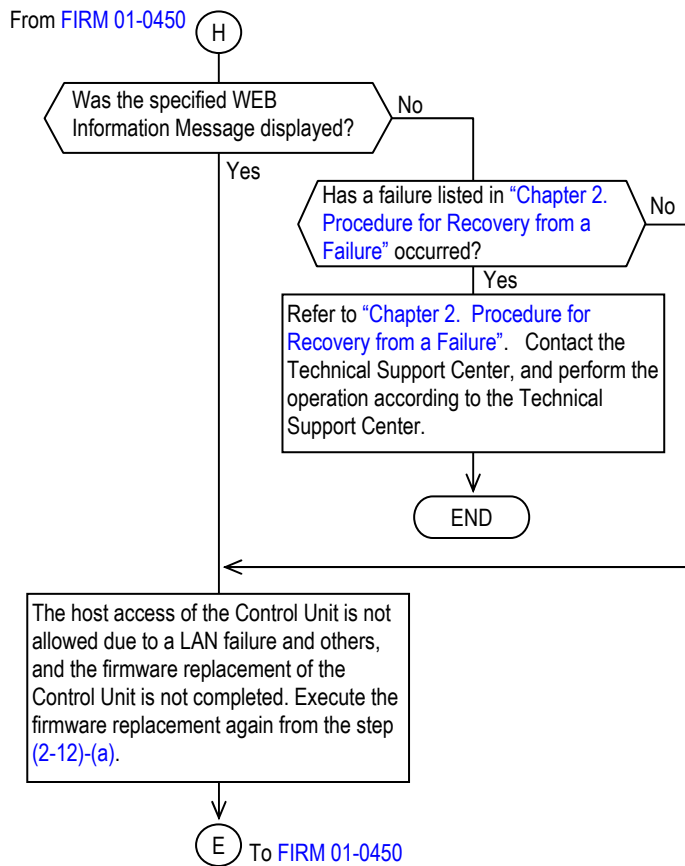




From FIRM 01-0450

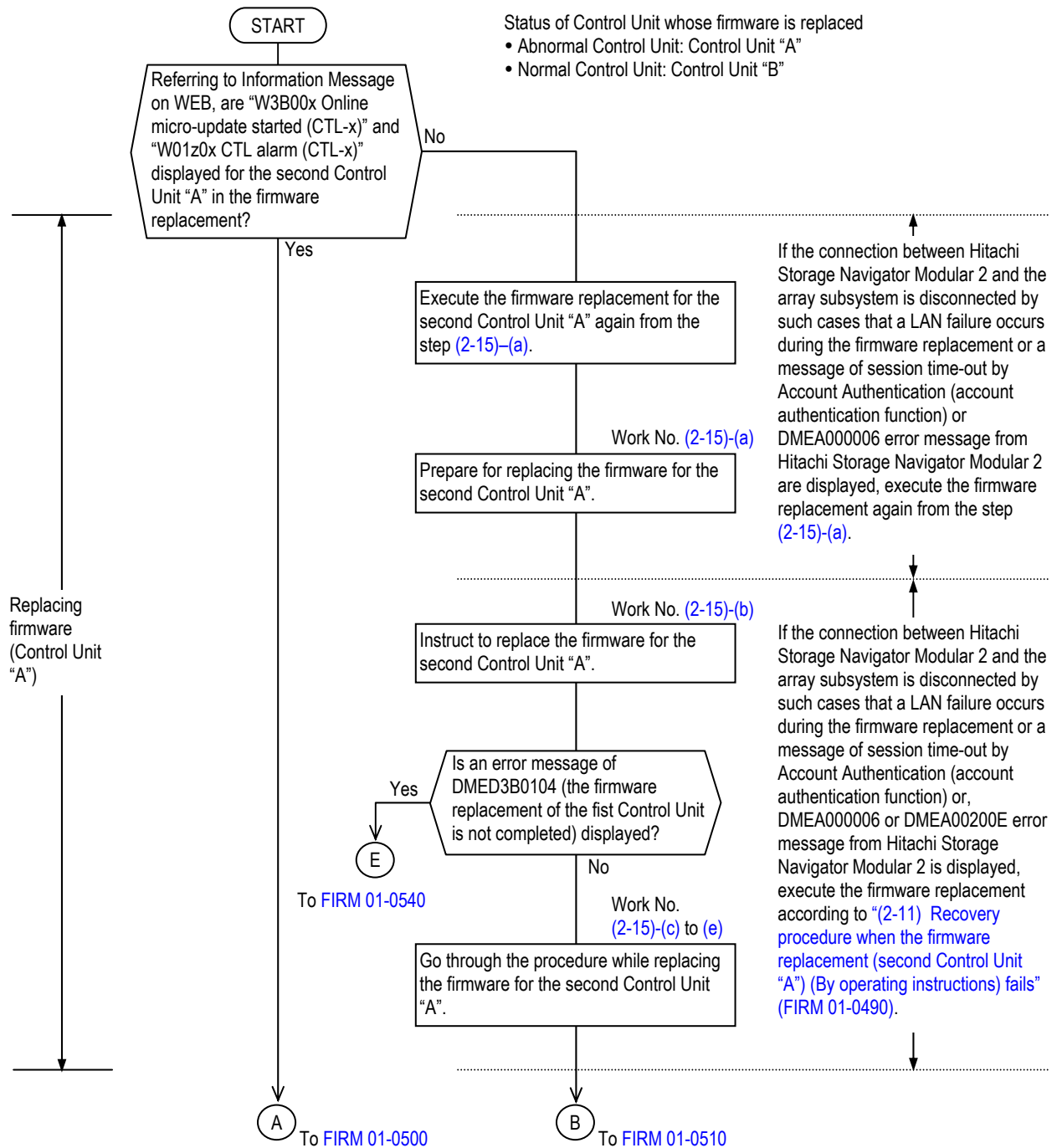




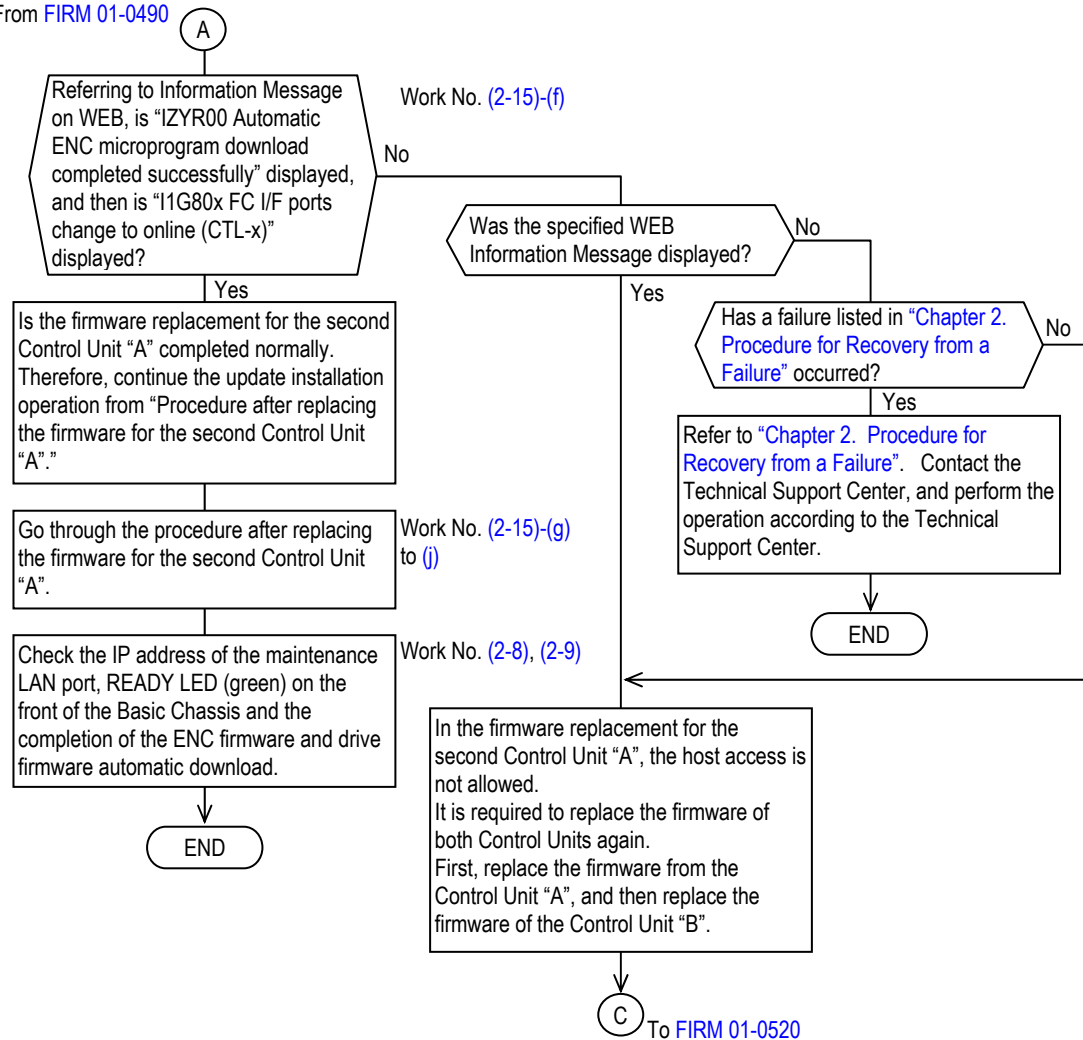


(2-11) Recovery procedure when the firmware replacement (second Control Unit "A") (By operating instructions) fails

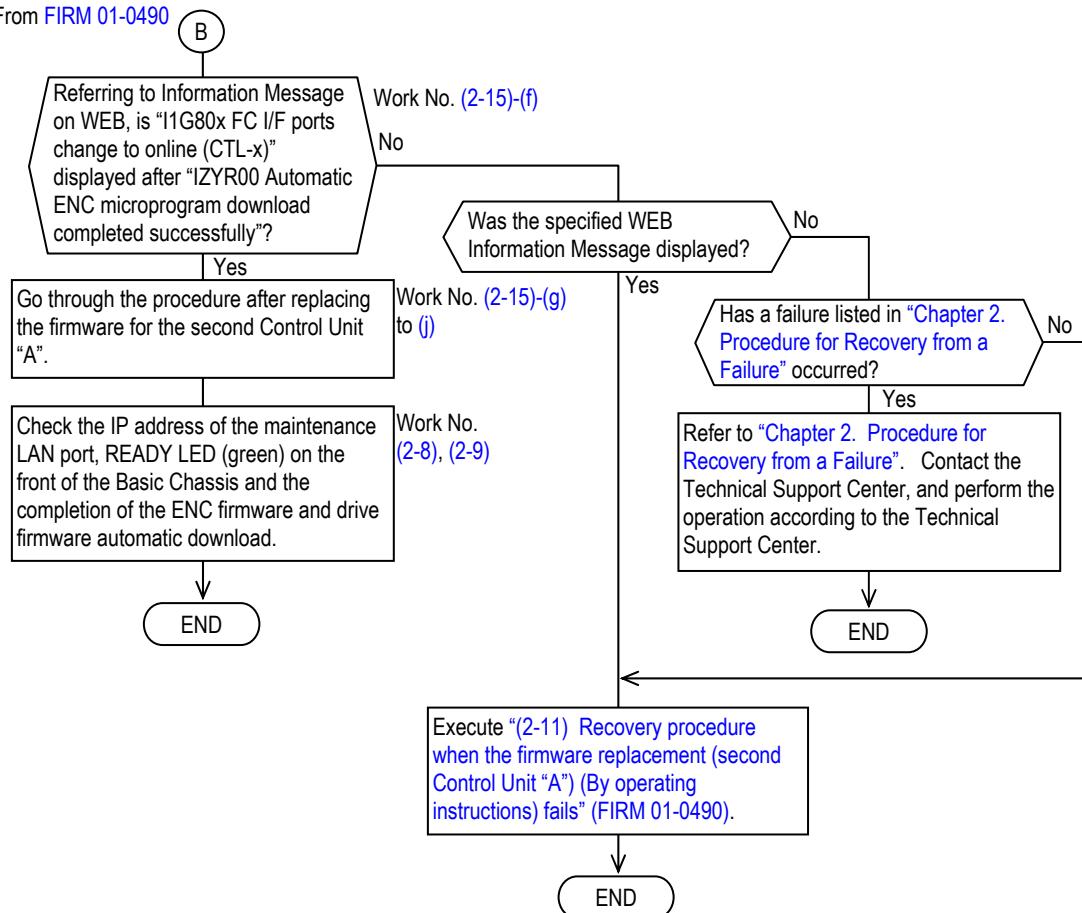
(In case that there is a special instruction by the Technical Support Center, SE, customer and others to control the host access permit (offline/online of the Fibre Channel port of the Control Unit) at the time of the firmware replacement)

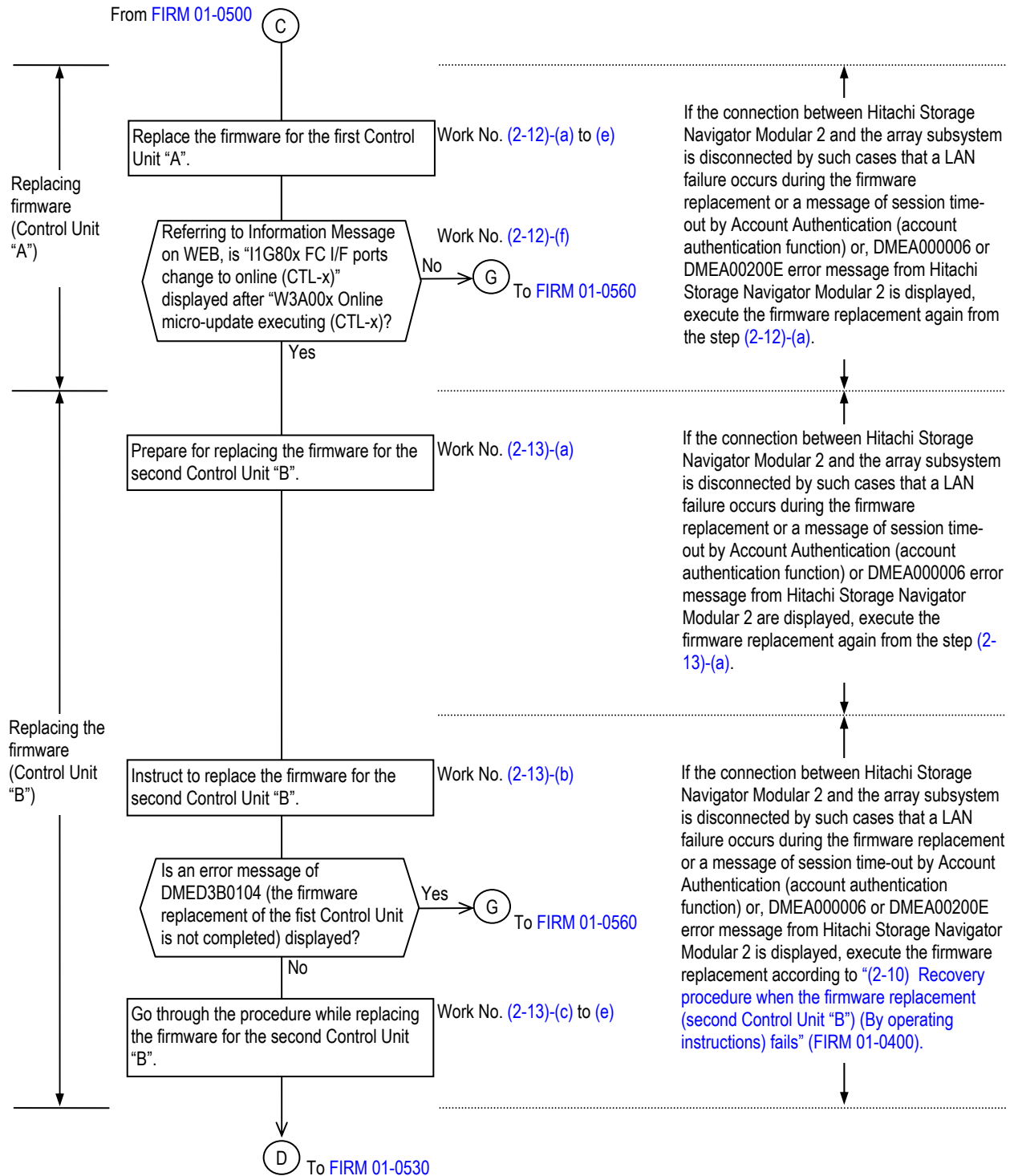


From FIRM 01-0490

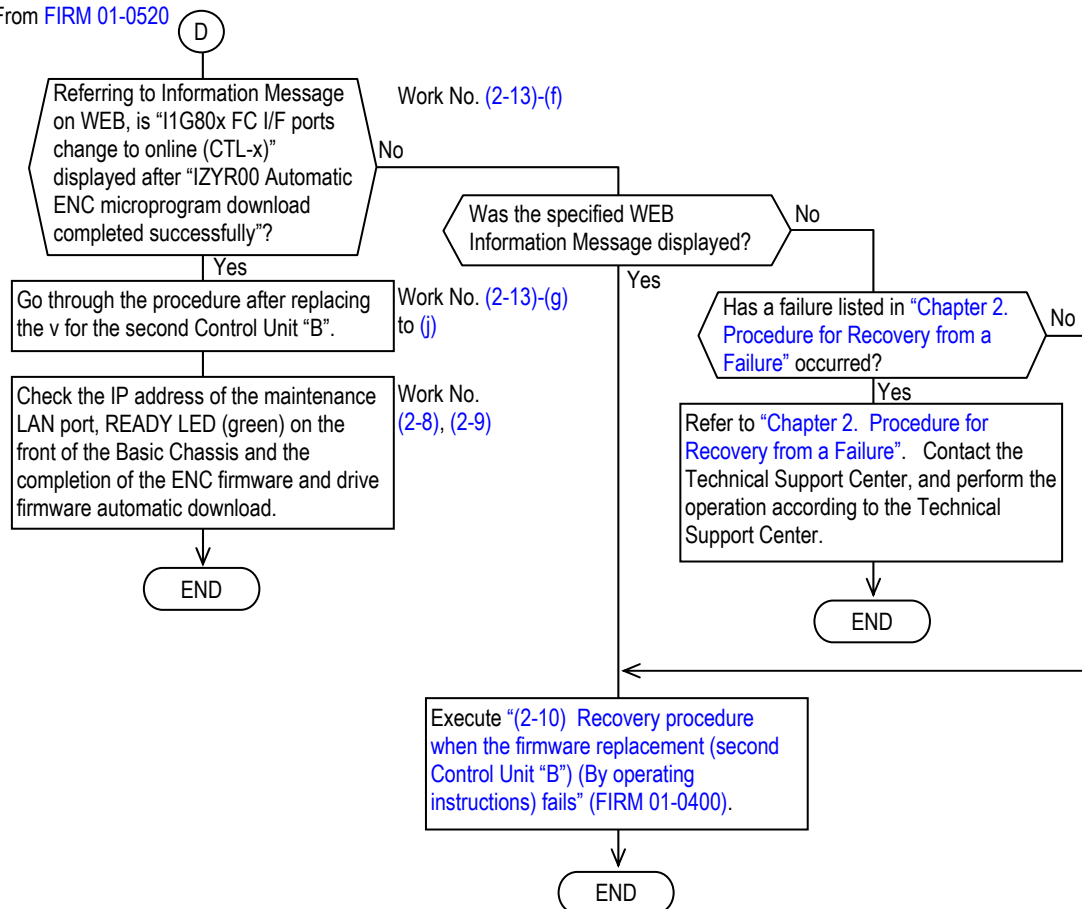


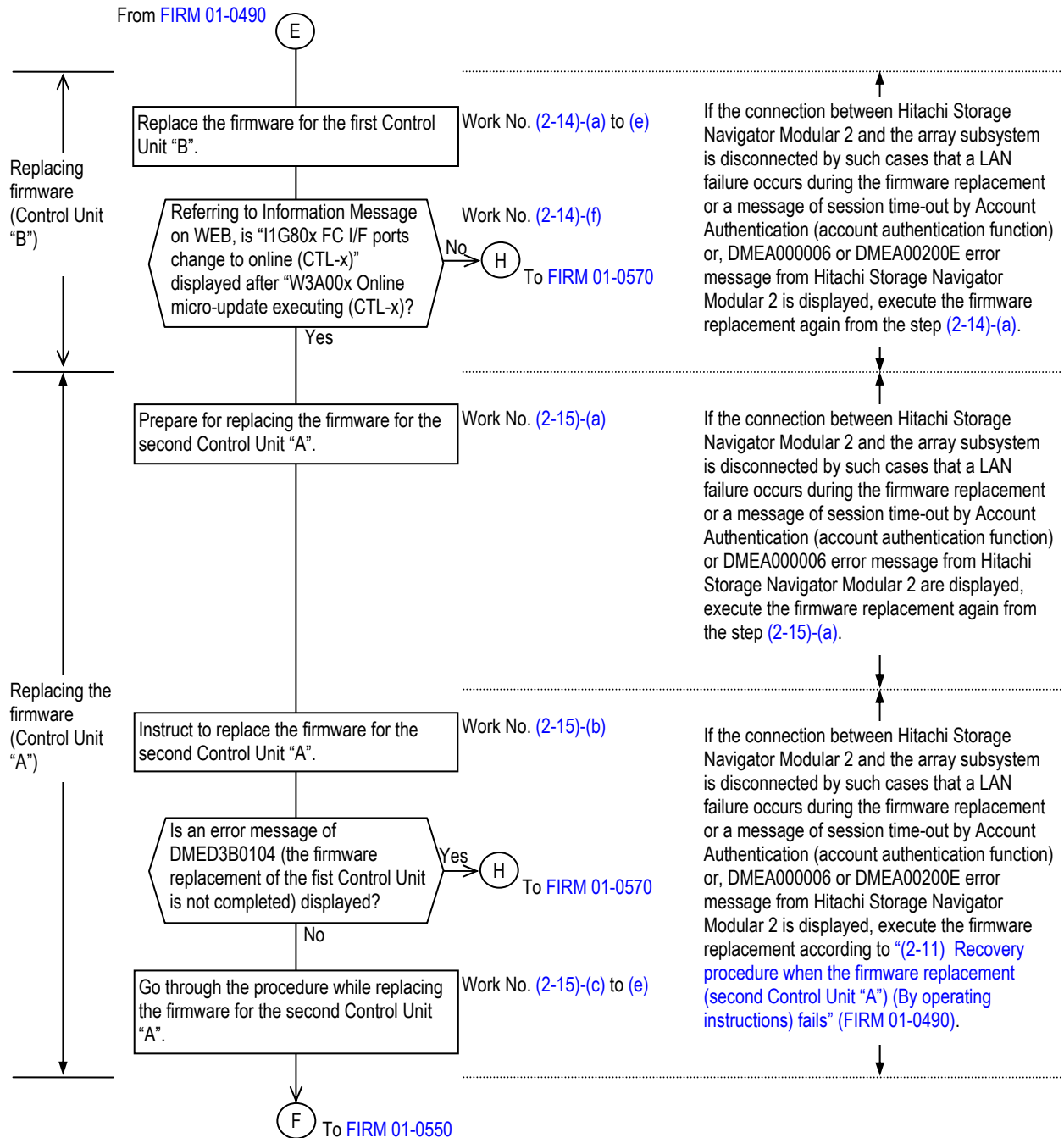
From FIRM 01-0490



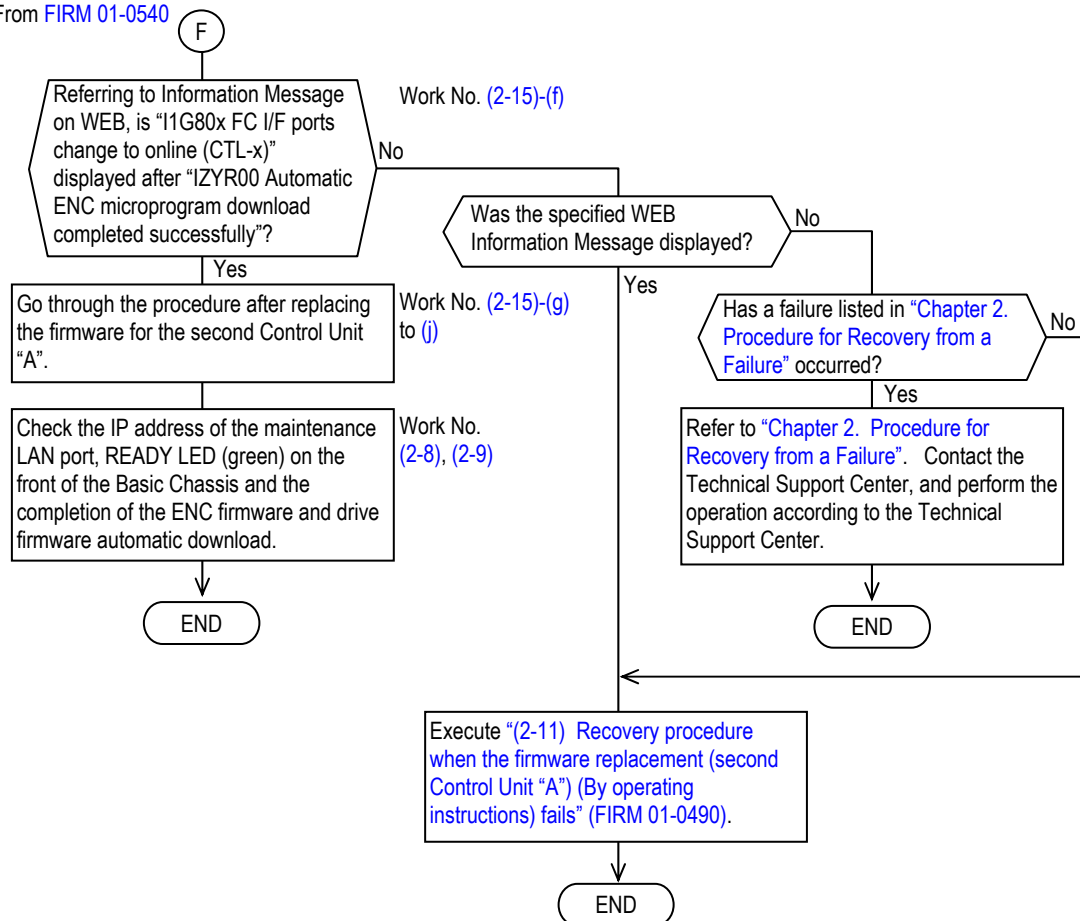


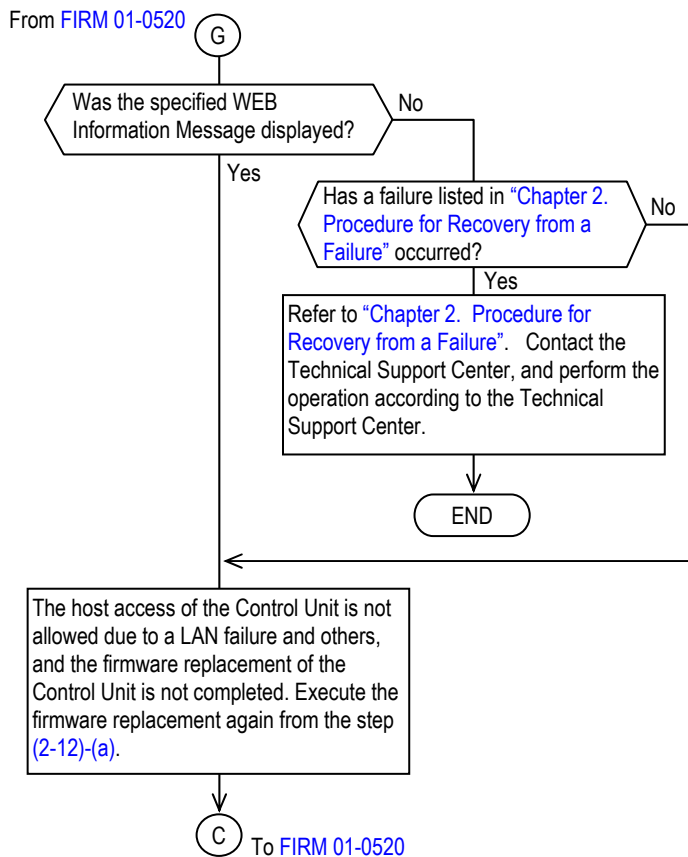
From FIRM 01-0520

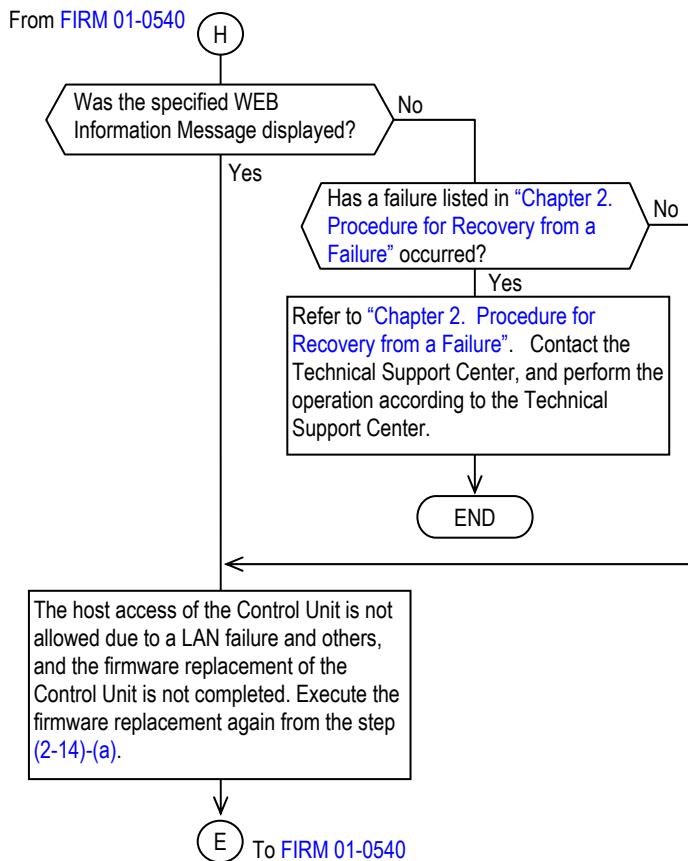




From FIRM 01-0540







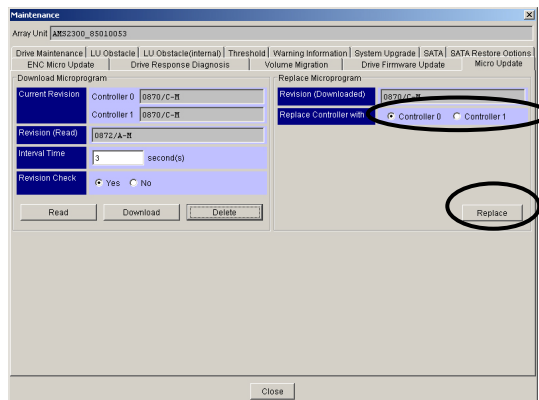
(2-12) Replacing the firmware (first Control Unit “A”) (By operating instructions)

(In case that there is a special instruction by the Technical Support Center or the system administrator (SE, customer and others) to control the host access permit (offline/online of the Fibre Channel port of the Control Unit) at the time of the firmware replacement)

If the connection between Hitachi Storage Navigator Modular 2 and the array subsystem is disconnected by such cases that a LAN failure occurs or a message of session time-out by Account Authentication (account authentication function) or, DMEA000006 or DMEA00200E error message from Hitachi Storage Navigator Modular 2 is displayed, execute the firmware replacement again from the beginning ((2-12)-(a)).

Replace the firmware that was downloaded to the disk array subsystem with the firmware installed in the Control Unit. When making replacement, be sure to replace the firmware of the both Control Units 0 and 1. When the firmware of one of the Control Units is replaced and the unit window of Hitachi Storage Navigator Modular 2 is closed, the unit window may be opened no more. If the unit window becomes unable to be opened, replace the firmware after changing the registration to that in which only the Control Unit whose firmware has not be replaced is registered.

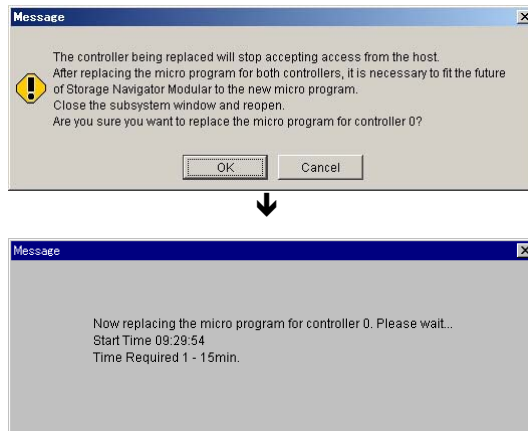
(a) Select the Control Unit whose firmware is to be replaced and click the [Replace] button.



NOTE : After this procedure, confirm if the I/O path can be switched, or if the I/O can be stopped because of stopping the I/O of the Control Unit whose firmware will be updated.

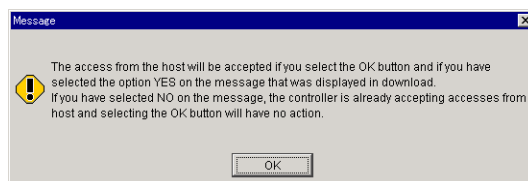
- (b) The confirmation window is display. Check if the selected Control Unit is correctly displayed and click the [OK] button.

NOTE : By clicking the [OK] button in the window, if a LAN failure and others occur and the Hitachi Storage Navigator Modular 2 processing terminates abnormally before “W3B00x Online micro-update started (CTL-x)” and “W01z0x CTL alarm (CTL-x)” are displayed in Information Message on WEB and the window of the procedure (2-12)-(e) is displayed, execute the firmware replacement again from the beginning ((2-12)-(a)).



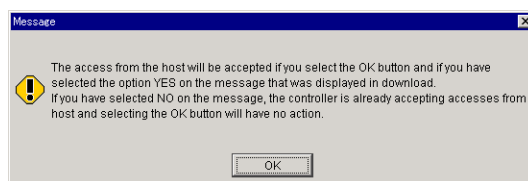
NOTE : Then “W01z0x CTL alarm (CTL-x)” message is displayed in information message of Web and Array Unit becomes Warning Status.

- (c) If the confirmation message of the host access permit is displayed, contact the Technical Support Center or the system administrator (SE, customer and others), and request the prior procedure necessary for the path switching. Wait until the procedure is completed.

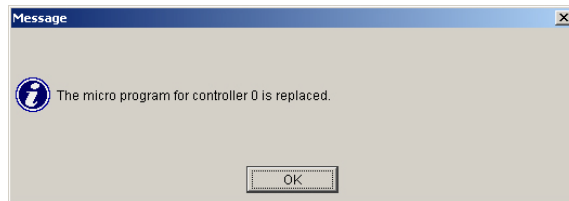


NOTE : If the above-mentioned message is not displayed, and if DMEA00200E error message is displayed, execute the firmware replacement again from the step (2-12)-(a) according to the DMEA00200E error message.

- (d) Click the [OK] button according to the dialog message.



- (e) When the replacement of the firmware terminates normally, a completion message is displayed. Click the [OK] button.



NOTE : When making the access from the host accepted by the instruction from Hitachi Storage Navigator Modular 2 (when the [Yes] is selected in the step (2-5)-(c)), the following message may be displayed if it is not operated for 20 minutes or more in the case where Account Authentication is valid, and it may not be completed normally. Perform the dummy replacement ^(‡1) of the Control Unit whose firmware was replaced to make the access from the host accepted. If the access from the host is made accepted when the replacement of the firmware is completed, the dummy replacement ^(‡1) is unnecessary.



‡1 : To remove the part concerned once, and then to reinstall it after waiting for 20 seconds or more.

- (f) Referring to the Information Message on WEB, confirm the following items.
- The messages “I1G80x FC I/F ports change to online (CTL-x)” is displayed after “W3A00x Online micro-update executing (CTL-x)”.

If the above- mentioned items are not established, refer to the Information Message on WEB, and check that the following message is displayed. (Refer to [WEB “2.5 Information Message” \(WEB 02-0110\).](#))

NOTE : The following message is displayed when the firmware replacement is performed starting from the Control Unit #0. When it is performed starting from the Control Unit #1, convert the Control Unit number in the message.

When [Yes] is selected in the step [\(2-5\)-\(c\)](#), the following message is displayed.

If the following message is not displayed, refer to [“Chapter 2. Procedure for Recovery from a Failure” \(FIRM 02-0000\)](#).

Contact the Technical Support Center, and perform the operation according to the Technical Support Center.

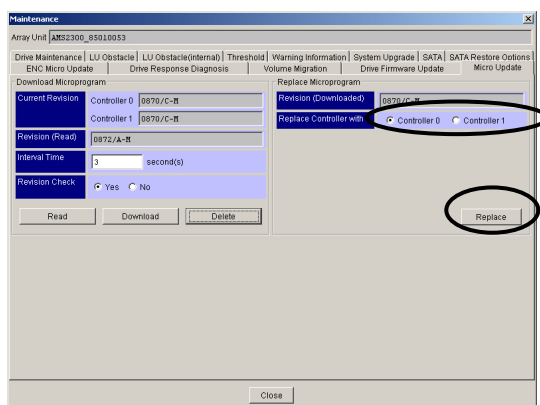
However, only when “I1G800 FC I/F ports change to online (CTL-0)” is not displayed, execute the update installation of the firmware of the same Control Unit again from the step [\(2-12\) Replacing the firmware \(first Control Unit “A”\) \(By operating instructions\)”](#).

| | |
|---|------------|
| MM/DD/YYYY hh:mm:ss 00 I1G800 FC I/F ports change to online (CTL-0) | |
| MM/DD/YYYY hh:mm:ss 00 W3A001 Online micro-update executing (CTL-1) | |
| MM/DD/YYYY hh:mm:ss 00 I42000 Online micro-update (CTL-0) | |
| MM/DD/YYYY hh:mm:ss 00 I00100 CTL recovered (CTL-0) | |
| MM/DD/YYYY hh:mm:ss 00 I1G700 FC I/F ports remain offline (CTL-0) | :Manual |
| MM/DD/YYYY hh:mm:ss 10 W01400 CTL alarm (CTL-0) | :CTL /CTRC |
| MM/DD/YYYY hh:mm:ss 10 W3B000 Online micro-update started (CTL-0) | |

- (g) In the case of the dual controller configuration, also replace the firmware of the other Control Unit.

- (2-13) Replacing the firmware (second Control Unit “B”) (Case with operating instructions)
 (In case that there is a special instruction by the Technical Support Center or the system administrator (SE, customer and others) to control the host access permit (offline/online of the Fibre Channel port of the Control Unit) at the time of the firmware replacement)
 If the connection between Hitachi Storage Navigator Modular 2 and the array subsystem is disconnected by such cases that a LAN failure occurs during the firmware replacement or a message of session time-out by Account Authentication (account authentication function) or, DMEA000006 or DMEA00200E error message from Hitachi Storage Navigator Modular 2 is displayed, refer to the working flowchart, and execute the firmware download again from the step (2-10), (2-12) or (2-14).

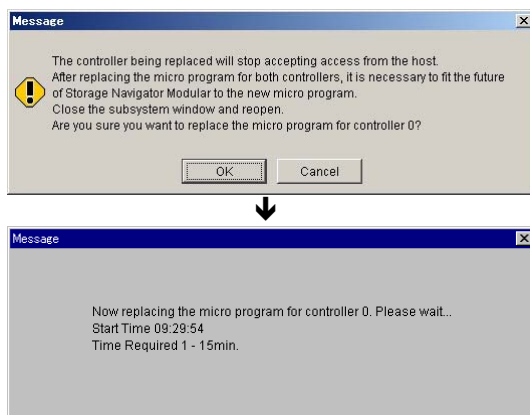
- (a) Select the Control Unit whose firmware is to be replaced and click the [Replace] button.



NOTE : After this procedure, confirm if the I/O path can be switched, or if the I/O can be stopped because of stopping the I/O of the Control Unit whose firmware will be updated.

- (b) The confirmation window is display. Check if the selected Control Unit is correctly displayed and click the [OK] button.

NOTE : By clicking the [OK] button in the window, if a LAN failure and others occur and the Hitachi Storage Navigator Modular 2 processing terminates abnormally before “W3B00x Online micro-update started (CTL-x)” and “W01z0x CTL alarm (CTL-x)” are displayed in Information Message on WEB and the window of the procedure (2-13)-(e) is displayed, execute the update installation of the firmware after this according to “(2-10) Recovery procedure when the firmware replacement (first Control Unit “B”) (By operating instructions) fails” (FIRM 01-0400).



NOTE : Then “W0100x CTL alarm (CTL-x)” message is displayed in information message of Web and Array Unit becomes Warning Status.

NOTE : If a DMED3B0104 error message (firmware replacement on the Control Unit “A” side is not completed) is displayed after clicking the [OK] button to replace the firmware, click the [OK] button of the error message, and then execute the firmware replacement again from the step (2-12)-(a).



- (c) If the confirmation message of the host access permit is displayed, contact the Technical Support Center or the system administrator (SE, customer and others), and request the prior procedure necessary for the path switching.
Wait until the procedure is completed.

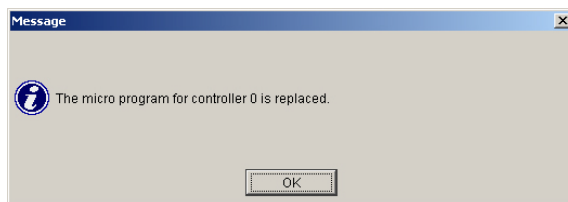


NOTE : If the above-mentioned message is not displayed, and if DMEA00200E error message is displayed, execute the firmware replacement again from the “(2-10) Recovery procedure when the firmware replacement (second Control Unit “B”) (By operating instructions) fails” according to the DMEA00200E error message.

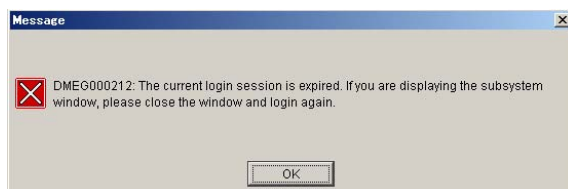
- (d) Click the [OK] button according to the dialog message.



- (e) When the replacement of the firmware terminates normally, a completion message is displayed. Click the [OK] button.



NOTE : When making the access from the host accepted by the instruction from Hitachi Storage Navigator Modular 2 (when the [Yes] is selected in the step (2-5)-(c)), the following message may be displayed if it is not operated for 20 minutes or more in the case where Account Authentication is valid, and it may not be completed normally. Perform the dummy replacement ^(†1) of the Control Unit whose firmware was replaced to make the access from the host accepted. If the access from the host is made accepted when the replacement of the firmware is completed, the dummy replacement ^(†1) is unnecessary.



†1 : To remove the part concerned once, and then to reinstall it after waiting for 20 seconds or more.

- (f) Referring to the Information Message on WEB, confirm the following items. (Refer to [WEB “2.5 Information Message” \(WEB 02-0110\).](#))
- The messages “I1G80x FC I/F ports change to online (CTL-x)” is displayed after “IZYR00 Automatic ENC microprogram download completed successfully”.

If the above- mentioned items are not established, refer to the Information Message on WEB, and check that the following message is displayed. (Refer to [WEB “2.5 Information Message” \(WEB 02-0110\).](#))

NOTE : The following message is displayed when the firmware replacement is performed in order from Control Unit #0 to Control Unit #1. When it is performed in order from the Control Unit #1 to Control Unit #0, convert the Control Unit number in the message.

When [Yes] is selected in the step (2-5)-(c), the following message is displayed.

If the following message is not displayed, refer to [“Chapter 2. Procedure for Recovery from a Failure” \(FIRM 02-0000\).](#)

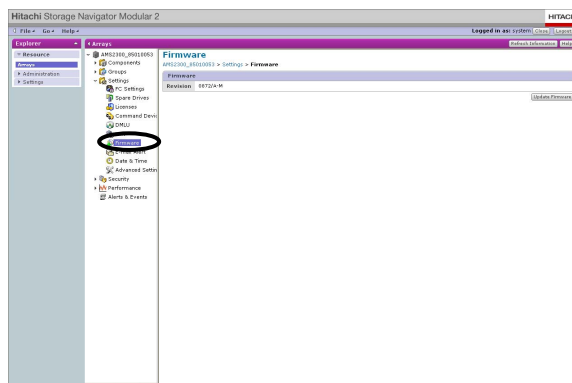
Contact the Technical Support Center, and perform the operation according to the Technical Support Center.

However, only when “I1G800 FC I/F ports change to online (CTL-1)” is not displayed, execute the update installation of the firmware, from now on, along the flow chart in operation and according to [“\(2-10\) Recovery procedure when the firmware replacement \(second Control Unit “B”\) \(By operating instructions\) fails” \(FIRM 01-0400\)](#) or the step (2-14) (a).

```
MM/DD/YYYY hh:mm:ss 10 I1G801 FC I/F ports change to online (CTL-1)
:
:
MM/DD/YYYY hh:mm:ss 10 I19000 Online micro-update completed
MM/DD/YYYY hh:mm:ss 10 I42001 Online micro-update (CTL-1)
MM/DD/YYYY hh:mm:ss 10 I00101 CTL recovered (CTL-1)
MM/DD/YYYY hh:mm:ss 10 I1G701 FC I/F ports remain offline (CTL-1)      :MANUAL
MM/DD/YYYY hh:mm:ss 00 W01401 CTL alarm (CTL-1)                      :CTL /CTRC
MM/DD/YYYY hh:mm:ss 00 W3B001 Online micro-update started (CTL-1)
```

- (g) Click the [Close] button in the [Micro Update] tab window.

- (h) Select [Settings] - [Firmware] on the unit window, and click the [Refresh Information] button.



- (i) Check that the revision of the replaced firmware is displayed.
- (j) When the revision check is completed, the firmware replacement of the subsystem ends.

NOTE :

- When the replacement of the firmware is made for only one of the dual Control Unit, the disk array subsystem is put in the status in which a warning is issued. The warning is called off when the other one of the dual Control Unit is replaced. When you replace the firmware, be sure to make the replacement for the both Control Units continuously.
- When the firmware was replaced online after performing the processing to change the system configuration (LU formation, format, LU owner right change, etc.), the “I14000 System copy started” message may be displayed two or more times in Information Message on WEB, but it is not a problem.

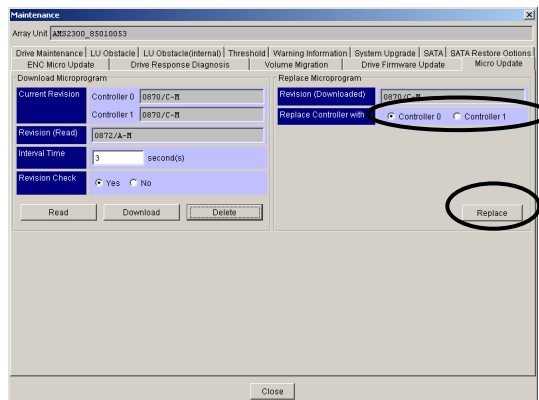
(2-14) Replacing the firmware (first Control Unit “B”) (By operating instructions)

(In case that there is a special instruction by the Technical Support Center or the system administrator (SE, customer and others) to control the host access permit (offline/online of the Fibre Channel port of the Control Unit) at the time of the firmware replacement)

If the connection between Hitachi Storage Navigator Modular 2 and the array subsystem is disconnected by such cases that a LAN failure occurs or a message of session time-out by Account Authentication (account authentication function) or, DMEA000006 or DMEA00200E error message from Hitachi Storage Navigator Modular 2 is displayed, execute the firmware replacement again from the beginning ((2-14)-(a)).

Replace the firmware that was downloaded to the disk array subsystem with the firmware installed in the Control Unit. When making replacement, be sure to replace the firmwares of the both Control Units 0 and 1. When the firmware of one of the Control Units is replaced and the unit window of Hitachi Storage Navigator Modular 2 is closed, the unit window may be opened no more. If the unit window becomes unable to be opened, replace the firmware after changing the registration to that in which only the Control Unit whose firmware has not be replaced is registered.

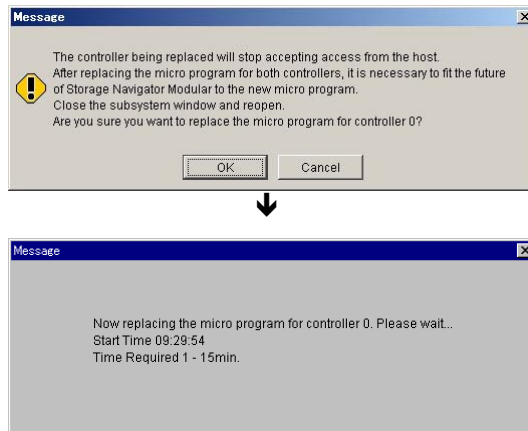
- (a) Select the Control Unit whose firmware is to be replaced and click the [Replace] button.



NOTE : After this procedure, confirm if the I/O path can be switched, or if the I/O can be stopped because of stopping the I/O of the Control Unit whose firmware will be updated.

- (b) The confirmation window is display. Check if the selected Control Unit is correctly displayed and click the [OK] button.

NOTE : By clicking the [OK] button in the window, if a LAN failure and others occur and the Hitachi Storage Navigator Modular 2 processing terminates abnormally before “W3B00x Online micro-update started (CTL-x)” and “W01z0x CTL alarm (CTL-x)” are displayed in Information Message on WEB and the window of the procedure (h) is displayed, execute the firmware replacement again from the beginning ((2-14)-(a)).



NOTE : Then “W01z0x CTL alarm (CTL-x)” message is displayed in information message of Web and Array Unit becomes Warning Status.

- (c) If the confirmation message of the host access permit is displayed, contact the Technical Support Center or the system administrator (SE, customer and others), and request the prior procedure necessary for the path switching.
Wait until the procedure is completed.

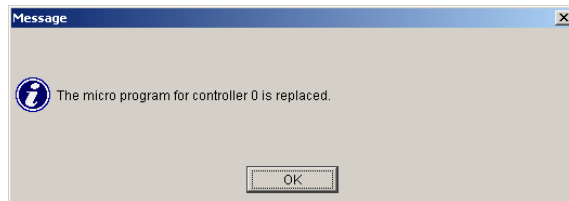


NOTE : If the above-mentioned message is not displayed, and if DMEA00200E error message is displayed, execute the firmware replacement again from the step (2-14)-(a) according to the DMEA00200E error message.

- (d) Click the [OK] button according to the dialog message.



- (e) When the replacement of the firmware terminates normally, a completion message is displayed. Click the [OK] button.



NOTE : When making the access from the host accepted by the instruction from Hitachi Storage Navigator Modular 2 (when the [Yes] is selected in the step (2-5)-(c)), the following message may be displayed if it is not operated for 20 minutes or more in the case where Account Authentication is valid, and it may not be completed normally. Perform the dummy replacement ^(‡1) of the Control Unit whose firmware was replaced to make the access from the host accepted. If the access from the host is made accepted when the replacement of the firmware is completed, the dummy replacement ^(‡1) is unnecessary.



‡1 : To remove the part concerned once, and then to reinstall it after waiting for 20 seconds or more.

- (f) Referring to the Information Message on WEB, confirm the following items.
- The messages “I1G80x FC I/F ports change to online (CTL-x)” is displayed after “W3A00x Online micro-update executing (CTL-x)”.

If the above- mentioned items are not established, refer to the Information Message on WEB, and check that the following message is displayed. (Refer to [WEB “2.5 Information Message” \(WEB 02-0110\).](#))

NOTE : The following message is displayed when the firmware replacement is performed starting from the Control Unit #0. When it is performed starting from the Control Unit #1, convert the Control Unit number in the message.

When [Yes] is selected in the step [\(2-5\)-\(c\)](#), the following message is displayed.

If the following message is not displayed, refer to [“Chapter 2. Procedure for Recovery from a Failure” \(FIRM 02-0000\)](#).

Contact the Technical Support Center, and perform the operation according to the Technical Support Center.

However, only when “I1G800 FC I/F ports change to online (CTL-0)” is not displayed, execute the update installation of the firmware of the same Control Unit again from the step [\(2-14\) \(a\) of “\(2-14\) Replacing the firmware \(first Control Unit “B”\) \(By operating instructions\)”](#).

| | |
|---|------------|
| MM/DD/YYYY hh:mm:ss 00 I1G800 FC I/F ports change to online (CTL-0) | |
| MM/DD/YYYY hh:mm:ss 00 W3A001 Online micro-update executing (CTL-1) | |
| MM/DD/YYYY hh:mm:ss 00 I42000 Online micro-update (CTL-0) | |
| MM/DD/YYYY hh:mm:ss 00 I00100 CTL recovered (CTL-0) | |
| MM/DD/YYYY hh:mm:ss 00 I1G700 FC I/F ports remain offline (CTL-0) | :Manual |
| MM/DD/YYYY hh:mm:ss 10 W01400 CTL alarm (CTL-0) | :CTL /CTRC |
| MM/DD/YYYY hh:mm:ss 10 W3B000 Online micro-update started (CTL-0) | |

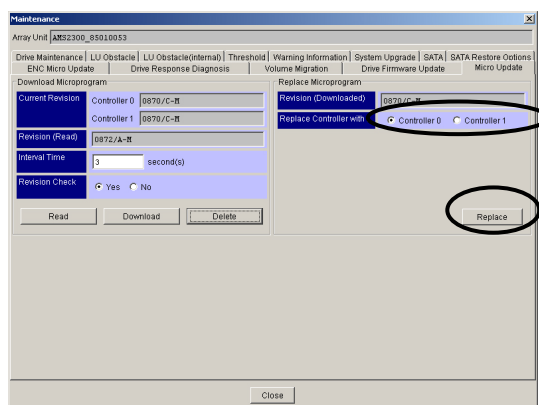
- (g) In the case of the dual controller configuration, also replace the firmware of the other Control Unit.

(2-15) Replacing the firmware (second Control Unit “A”) (Case with operating instructions)

(In case that there is a special instruction by the Technical Support Center or the system administrator (SE, customer and others) to control the host access permit (offline/online of the Fibre Channel port of the Control Unit) at the time of the firmware replacement)

If the connection between Hitachi Storage Navigator Modular 2 and the array subsystem is disconnected by such cases that a LAN failure occurs during the firmware replacement or a message of session time-out by Account Authentication (account authentication function) or, DMEA000006 or DMEA00200E error message from Hitachi Storage Navigator Modular 2 is displayed, refer to the working flowchart, and execute the firmware download again from the step (2-11), (2-12) or (2-14).

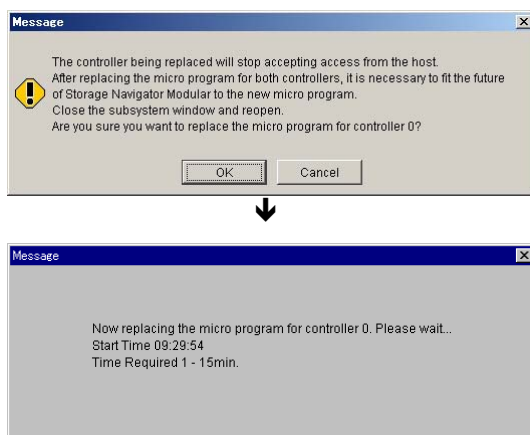
(a) Select the Control Unit whose firmware is to be replaced and click the [Replace] button.



NOTE : After this procedure, confirm if the I/O path can be switched, or if the I/O can be stopped because of stopping the I/O of the Control Unit whose firmware will be updated.

- (b) The confirmation window is display. Check if the selected Control Unit is correctly displayed and click the [OK] button.

NOTE : By clicking the [OK] button in the window, if a LAN failure and others occur and the Hitachi Storage Navigator Modular 2 processing terminates abnormally before “W3B00x Online micro-update started (CTL-x)” and “W01z0x CTL alarm (CTL-x)” are displayed in Information Message on WEB and the window of the procedure (h) is displayed, execute the update installation of the firmware after this according to “(2-11) Recovery procedure when the firmware replacement (second Control Unit “A”) (By operating instructions) fails” (FIRM 01-0490).



NOTE : Then “W01z0x CTL alarm (CTL-x)” message is displayed in information message of Web and Array Unit becomes Warning Status.

NOTE : If a DMED3B0104 error message (firmware replacement on the Control Unit “B” side is not completed) is displayed after clicking the [OK] button to replace the firmware, click the [OK] button of the error message, and then execute the firmware replacement again from the step (2-14)-(a).



- (c) If the confirmation message of the host access permit is displayed, contact the Technical Support Center or the system administrator (SE, customer and others), and request the prior procedure necessary for the path switching.
Wait until the procedure is completed.

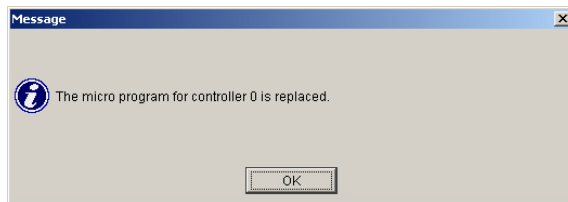


NOTE : If the above-mentioned message is not displayed, and if DMEA00200E error message is displayed, execute the firmware replacement again from the “(2-11) Recovery procedure when the firmware replacement (second Control Unit “A”) (By operating instructions) fails” (FIRM 01-0490) according to the DMEA00200E error message.

- (d) Click the [OK] button according to the dialog message.



- (e) When the replacement of the firmware terminates normally, a completion message is displayed. Click the [OK] button.



NOTE : When making the access from the host accepted by the instruction from Hitachi Storage Navigator Modular 2 (when the [Yes] is selected in the step (2-5)-(c)), the following message may be displayed if it is not operated for 20 minutes or more in the case where Account Authentication is valid, and it may not be completed normally. Perform the dummy replacement ^(†1) of the Control Unit whose firmware was replaced to make the access from the host accepted. If the access from the host is made accepted when the replacement of the firmware is completed, the dummy replacement ^(†1) is unnecessary.



^{†1} : To remove the part concerned once, and then to reinstall it after waiting for 20 seconds or more.

- (f) Referring to the Information Message on WEB, confirm the following items. (Refer to [WEB “2.5 Information Message” \(WEB 02-0110\)](#).)
- The messages “I1G80x FC I/F ports change to online (CTL-x)” is displayed after “IZYR00 Automatic ENC microprogram download completed successfully”.

If the above- mentioned items are not established, refer to the Information Message on WEB, and check that the following message is displayed. (Refer to [WEB “2.5 Information Message” \(WEB 02-0110\)](#).)

NOTE : The following message is displayed when the firmware replacement is performed in order from Control Unit #0 to Control Unit #1. When it is performed in order from the Control Unit #1 to Control Unit #0, convert the Control Unit number in the message.

When [Yes] is selected in the step (2-5)-(c), the following message is displayed.

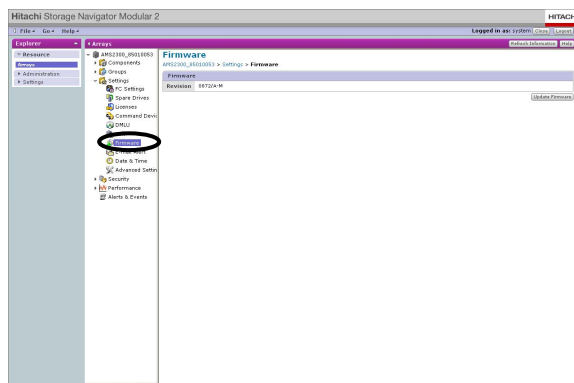
If the following message is not displayed, refer to [“Chapter 2. Procedure for Recovery from a Failure” \(FIRM 02-0000\)](#).

Contact the Technical Support Center, and perform the operation according to the Technical Support Center.

However, only when “I1G800 FC I/F ports change to online (CTL-1)” is not displayed, execute the update installation of the firmware, from now on, along the flow chart in operation and according to [“\(2-11\) Recovery procedure when the firmware replacement \(second Control Unit “A”\) \(By operating instructions\) fails” \(FIRM 01-0490\)](#) or the step (2-12) (a).

```
MM/DD/YYYY hh:mm:ss 10 I1G801 FC I/F ports change to online (CTL-1)
:
:
:
MM/DD/YYYY hh:mm:ss 10 I19000 Online micro-update completed
MM/DD/YYYY hh:mm:ss 10 I42001 Online micro-update (CTL-1)
MM/DD/YYYY hh:mm:ss 10 I00101 CTL recovered (CTL-1)
MM/DD/YYYY hh:mm:ss 10 I1G701 FC I/F ports remain offline (CTL-1)      :MANUAL
MM/DD/YYYY hh:mm:ss 00 W01401 CTL alarm (CTL-1)                      :CTL /CTRC
MM/DD/YYYY hh:mm:ss 00 W3B001 Online micro-update started (CTL-1)
```

- (g) Click the [Close] button in the [Micro Update] tab window.
- (h) Select [Settings] - [Firmware] on the unit window, and click the [Refresh Information] button.



- (i) Check that the revision of the replaced firmware is displayed.
- (j) When the revision check is completed, the firmware replacement of the subsystem ends.

NOTE :

- When the replacement of the firmware is made for only one of the dual Control Unit, the disk array subsystem is put in the status in which a warning is issued. The warning is called off when the other one of the dual Control Unit is replaced. When you replace the firmware, be sure to make the replacement for the both Control Units continuously.
- When the firmware was replaced online after performing the processing to change the system configuration (LU formation, format, LU owner right change, etc.), the “I14000 System copy started” message may be displayed two or more times in Information Message on WEB, but it is not a problem.

(3) Update for single controller

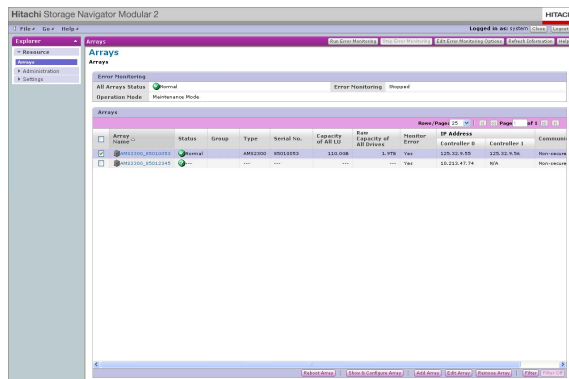
NOTE : • Do not perform the update installation of the firmware while the READY LED (green) on the front of the Basic Chassis is blinking at high speed (for the maximum of 30 to 50 minutes, or 40 to 60 minutes in case of the RKH), or the WARNING LED (orange) is blinking at high speed (for the maximum of 30 to 85 minutes).

- When registering the disk array subsystem at the time of connecting the disk array subsystem, specify only the Control Unit #0 in [Connection Destination] (refer to [System Parameter “1.1 \(4\) \(c\) Registering the disk array subsystem” \(SYSPR 01-0090\)](#)).
- When the LU, whose status of the forced parity correction is any of “Correcting”, “Waiting”, “Waiting Drive Reconstruction”, “Uncorrected”, “Uncorrected 1” and “Uncorrected 2”, is in the subsystem, change the status of the LU to “Restored” or “Skip” by executing or skipping the forced parity correction (recommendation).

(3-1) Transfer and update of firmware

- Connect the LAN cross cable to the subsystem LAN connector for maintenance and connect the subsystem to the Web. (Refer to [Troubleshooting “3.1 Procedure to WEB Connection” \(TRBL 03-0000\)](#)).
- Start Hitachi Storage Navigator Modular 2, put a checkmark to the array subsystem to set, press the [Ctrl] key, [Shift] key and [E] key at the same time, and change the operation mode to “Maintenance Mode”.^{‡1}

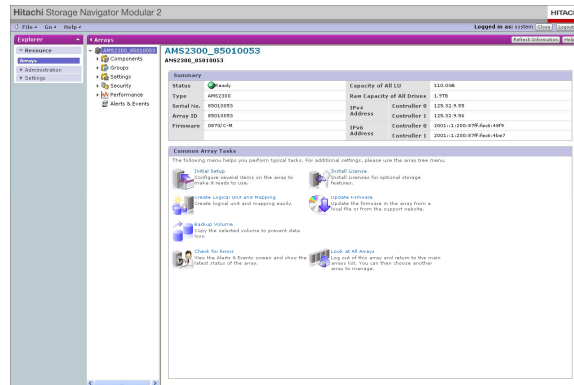
Check that “Maintenance Mode” is displayed in [Operation Mode] on the top of the main window.



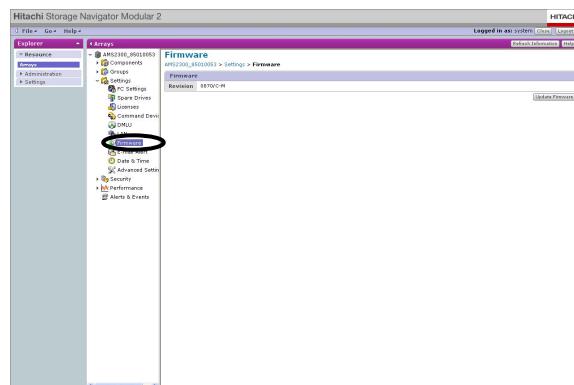
‡1 : When the array subsystem to operate is not registered, click the blank area (other than buttons and characters) in the “Arrays” window, and press the [Ctrl] key, [Shift] key and [E] key at the same time.

- (c) Click the array subsystem name, and open the unit window.

NOTE : When the main window is not displayed even if you select the array subsystem, check that the LAN port number is not changed. (Refer to [System Parameter “1.2 LAN Port Number Change by Hitachi Storage Navigator Modular 2” \(SYSPR 01-0120\).](#)) Use the changed LAN Port Number, and execute it again.



- (d) Select [Settings] - [Firmware] on the unit window.
Click the [Update Firmware] button.



- (e) Enter [Update file] (Specify the ZIP form file) on the [Basic] tab, set the necessary items of the [Advanced] tab, and click the [OK] button.

When using Windows®:

c:/diskarray-microprogram/microprogram/micro/0830A.zip

When using Solaris™ or Red Hat Linux®:

diskarray-microprogram/microprogram/micro/0830A.zip

Specified
firmware file
(ZIP form file)

Basic tab

HSNM2 HITACHI

Update Firmware

Firmware Properties

Update the firmware in the array. Enter the information for firmware to be updated and click OK to move to the screen for confirming the update. Note that firmware update files are in ZIP format. Use the ZIP file without extracting the contents to perform the update.

Current revision: 0870/C-M

Basic Advanced

Update operation: Transfer Firmware (This only transfers the firmware to the array but does not enable the new firmware. To enable the new firmware, to turn off the array Main Switch then turn on again after the transfer.)

To download Firmware from network, go to the support site.

* Update file: (local directory)

* Required field

OK Cancel

Advanced tab

HSNM2 HITACHI

Update Firmware

Firmware Properties

Update the firmware in the array. Enter the information for firmware to be updated and click OK to move to the screen for confirming the update. Note that firmware update files are in ZIP format. Use the ZIP file without extracting the contents to perform the update.

Current revision: 0870/C-M

Basic Advanced

Begin this operation only if the array is not busy: ☒ Yes

Check revision: ☒ Yes (Degradation is prevented)

Interval to transfer parts of firmware to array: seconds

From 3 to 60

* Required field

OK Cancel

- (f) The confirmation window of the firmware to update is displayed. Check it, and then click the [Confirm] button.

HSNM2 HITACHI

Update Firmware

Confirm the following information to transfer the firmware.

When the firmware transfer begins, the performance from the host I/O is affected until the installation completes. Therefore, it is recommended that this operation is executed while the host I/O traffic is lower or you can stop host I/O.

YOU CANNOT UNDO THIS OPERATION.

Current revision: 0870/C-M

Local file revision: 0872/A-M

☒ Yes, I have read the above warning and want to transfer the firmware.

↓

HSNM2 HITACHI

Update Firmware

currently transferring the firmware.

Please wait for a moment. Time required about 32 ~ 53 min. (Start time 13:47)

(g) When the Hitachi Storage Navigator Modular 2 is abnormally terminated, perform maintenance on each message.

(g-1) Message code “DMEA000006”

(i) Check if a failure occurs in the subsystem.

If a failure occurs, perform maintenance or parts replacement, and then restore the subsystem condition to normal.

(ii) Check if a LAN failure occurs.

If a failure occurs, review the network condition, and then restore it to normal.

(iii) Perform the transfer firmware again from the beginning.

(g-2) Message code “DMEA00200E”

(i) Check if a failure occurs in the subsystem.

If a failure occurs, perform maintenance or parts replacement, and then restore the subsystem condition to normal.

(ii) Check if a LAN failure occurs.

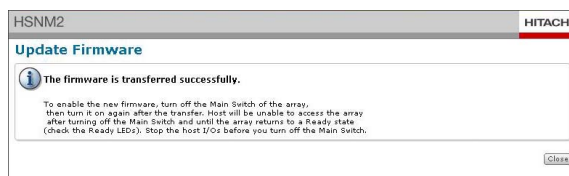
If a failure occurs, review the network condition, and then restore it to normal.

(iii) Check the [Update Firmware] radio button on [Basic] tab. Execute it again at least 3 times until it is normally completed.

(iv) When it is not completed normally after the retries, turn off the subsystem once and then turn on it again after obtaining the consent of turning on/off the subsystem from your customer.

The replacement of firmware is completed by this operation.

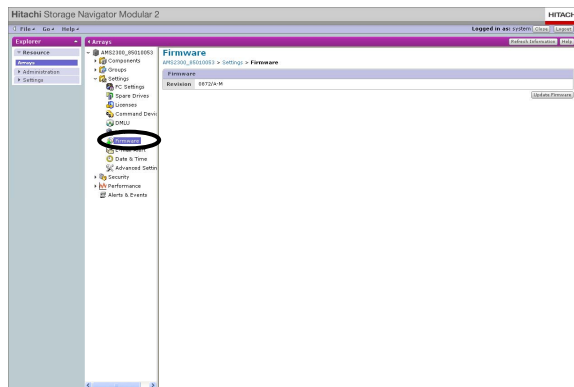
(h) Since a message is displayed when the reading in of the firmware is completed, click the [Close] button.



(i) After waiting one or more minutes after turning off the main switch (after the POWER LED is turned off), turn on the main switch.

Check that the READY LED (green) on the front of Basic Chassis lights up. If the WARNING LED (orange) on the front of Basic Chassis blinks at high speed, the READY LED (green) on the front of Basic Chassis (green) lights up after the WARNING LED blinks at high speed for the maximum of 30 to 85 minutes.

- (j) Select [Settings] - [Firmware] on the unit window, and click the [Refresh Information] button.



- (k) Check that the revision of the replaced firmware is displayed.
 (l) When the revision check is completed, the firmware replacement of the subsystem ends.

NOTE : When the firmware was replaced online after performing the processing to change the system configuration (LU formation, format, LU owner right change, etc.), the “I14000 System copy started” message may be displayed two or more times in Information Message on WEB, but it is not a problem.

- (3-2) Checking the READY LED (green) on the front of the Basic Chassis
 Check that the READY LED (green) on the front of the Basic Chassis lights up. When the READY LED (green) on the front of the Basic Chassis is blinking at high speed, the READY LED (green) on the front of the Basic Chassis lights up after blinking at high speed for the maximum of 30 to 50 minutes (40 to 60 minutes in case of the RKH) because the automatic download of the ENC firmware is being operated.
- (3-3) Check that the start message and the end message of the drive firmware automatic download are displayed. When the drive firmware version of the Disk Drive is new, the start message and completion message of the drive firmware automatic download are not displayed.
 When the message indicating the abnormal termination is displayed, perform the maintenance according the recovery method in the message code. (Refer to [“1.6 \(4\) Checking the start message and end message of the automatic download” \(FIRM 01-0890\)](#).)

1.4.3 Procedure for the Version Downgrade

NOTE : Do not perform the update installation of the firmware while the READY LED (green) on the front of the Basic Chassis is blinking at high speed (for the maximum of 30 to 50 minutes, or 40 to 60 minutes in case of the RKH), or the WARNING LED (orange) is blinking at high speed (for the maximum of 30 to 85 minutes).

(1) Restrictions of the version downgrade of the firmware

For the restrictions of the version downgrade of the firmware, refer to [“1.7 Restrictions of the Version Downgrade of the Firmware” \(FIRM 01-0910\)](#).

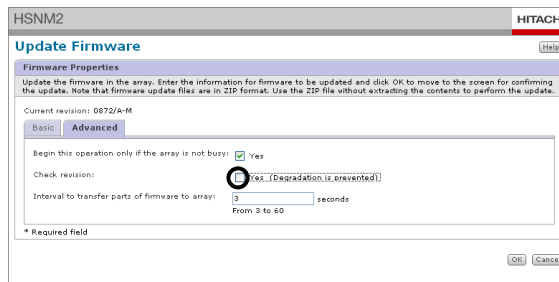
(2) Download of the firmware

(2-1) Concurrent update in both Control Units (Dual controller configuration)

- (a) Prepare for the version downgrade according to the procedure of update installation. (Refer to [“1.4.2 Update Installation of Firmware \(1\) Concurrent update for both Control Units \(Dual controller configuration\) \(1-1\)-\(a\) to \(e\)” \(FIRM 01-0060 to FIRM 01-0080\)](#).)

(b) Click the [Advanced] tab.

Take the checkmark off from [Check revision], and click the [OK] button.

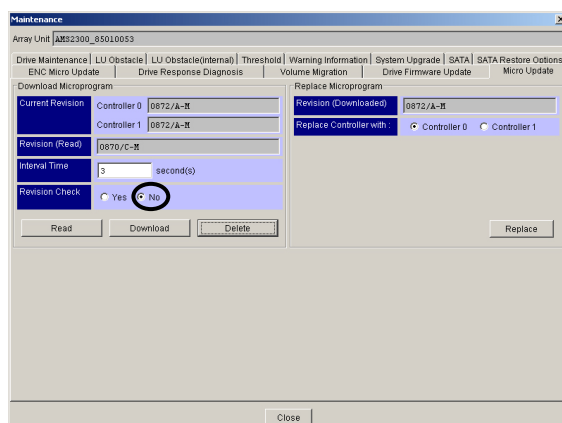


- (c) Update the firmware according to the procedure of update installation. (Refer to [“1.4.2 Update Installation of Firmware \(1\) Concurrent update for both Control Units \(Dual controller configuration\) \(1-1\)-\(f\) to \(j\)” \(FIRM 01-0080 to FIRM 01-0090\)](#).)

(2-2) Update for each Control Unit (Dual controller configuration)

- (a) Prepare for the version downgrade according to the procedure for update installation ([“1.4.2 Update Installation of Firmware \(2\) Update for each Control Unit \(Dual controller configuration\) \(2-1\)-\(a\) to \(i\)” \(FIRM 01-0170 to FIRM 01-0190\)](#)).

(b) Check [No] of [Revision Check].



(c) Update the firmware according to the procedure for update installation (“1.4.2 Update Installation of Firmware (2) Update for each Control Unit (Dual controller configuration)” (FIRM 01-0110)).

(2-3) Update for single controller

(a) Prepare for the version downgrade according to the procedure of update installation. (Refer to “1.4.2 Update Installation of Firmware (3) Update for single controller (3-1)-(a) to (e)” (FIRM 01-0760 to FIRM 01-0780).)

(b) Click the [Advanced] tab.

Take the checkmark off from [Check revision], and click the [OK] button.



(c) Update the firmware according to the procedure of update installation. (Refer to “1.4.2 Update Installation of Firmware (3) Update for single controller (3-1)-(f) to (j)” (FIRM 01-0780 to FIRM 01-0800).)

1.5 Checking the Start and the Termination of the ENC Firmware Automatic Download

The ENC firmware is a function that is managed as a part of the firmware and checks the version of all ENC firmware in the subsystem when the subsystem starts or the ENC Unit is replaced, and downloads it automatically if necessary.

(1) Opportunity to start the automatic download

The ENC firmware starts the download automatically in the following opportunities.

In the single controller configuration, the automatic download of the ENC firmware operates only at the time of the starting opportunity.

<Start-up Opportunity>

- When the main switch of the subsystem is turned on, and the subsystem enters the READY status
- When rebooting on remote
- When rebooting automatically
- When rebooting the Control Unit in the maintenance mode

<Maintenance Opportunity>

- When the Control Unit is inserted online
- When the ENC Unit are inserted online
- When the chassis frame is added online
- When the firmware is changed online
- When the ENC firmware automatic download function is enabled
- When the following warnings are released before starting the automatic download
ENC Warning/Control Unit Warning/SNMP Warning/Disk drive Warning/PIN Warning/Power Unit Warning/UPS Warning/Battery backup Unit Warning/Battery backup circuit Warning/Fan Unit Warning
- When the following warnings, which caused the abnormal termination of the automatic download, are released
Loop Warning/ENC Unit Warning/Control Unit Warning/Disk Drive Warning/ENC replacement which occurred in the SES error

(2) Restriction items during the automatic download

Do not perform the following work during the ENC firmware automatic download.

- Planned shutdown
- Update installation of the firmware from Hitachi Storage Navigator Modular 2
- Setting change of Boot Options by Hitachi Storage Navigator Modular 2
- Setting change of LAN by Hitachi Storage Navigator Modular 2
- Text file input of Boot Options of the configuration copy information by Hitachi Storage Navigator Modular 2
- Unlocking of the priced options by Hitachi Storage Navigator Modular 2
- Setting change of SNMP by Hitachi Storage Navigator Modular 2
- Setting change of Cache Residency Manager by Hitachi Storage Navigator Modular 2
- Validation of Power Saving with Hitachi Storage Navigator Modular 2
- Parts replacement

- Adding optional components
- Subtracting optional components
- Relocation / Removal work
- Changing to the maintenance mode of the array subsystem by pressing RST SW of the Control Unit

Execute the above-mentioned work after the ENC firmware automatic download is completed.

(3) Checking the start messages and the termination messages of the automatic download.

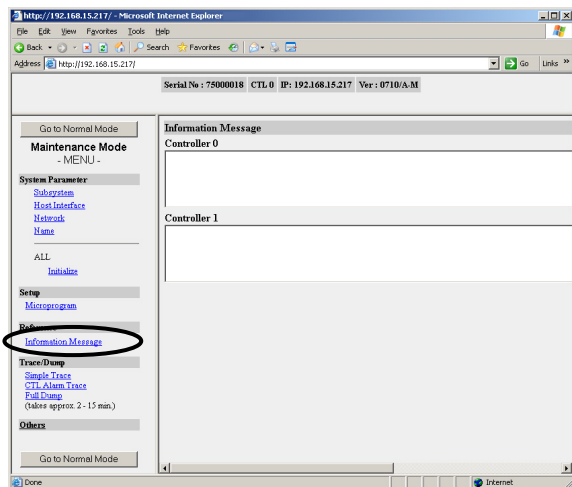
When the download starts, it takes up to 30 to 85 minutes to terminate it.

NOTE : The download does not start when the subsystem is in the warning status.

Connect to the WEB and perform the recovery procedure for each on the Information Message. (Refer to [Troubleshooting “Chapter 4. Trouble Analysis by WEB Connection” \(TRBL 04-0000\).](#))

If the warning status is recovered and the subsystem is maintained in the normal status for one minute, the download starts.

- (a) Connect the LAN cross cable to the LAN connector for maintenance of the subsystem and connect to WEB. (Refer to [Troubleshooting “3.1 Procedure to WEB Connection” \(TRBL 03-0000\).](#))
- (b) Click [Information Message] in the main window menu frame in the normal mode.



- (c) Check that there are the start message and the normal termination message displayed in “Information Message”.

Table 1.5.1 Message Check

| Message | Content |
|---|---|
| IZYS00 Automatic ENC microprogram download start | Indicates that the automatic download started. |
| IZYR00 Automatic ENC microprogram download completed successfully | Indicate that the automatic download terminated normally. |
| IZYQ00 Automatic ENC microprogram download failed | Indicate that the automatic download terminated abnormally. |

<Message Check Example>

- When it is normal (ENC Unit #0 and #1 are objects)
 - IZYS00 Automatic ENC microprogram download start
 - IZY200 ENC#0 microprogram download start
 - IZY400 ENC#0 microprogram download complete
 - IZY201 ENC#1 microprogram download start
 - IZY401 ENC#1 microprogram download complete
 - IZYQ00 Automatic ENC microprogram download completed successfully
- When it is normal (when there is no object ENC Unit)
 - IZYS00 Automatic ENC microprogram download start
 - IZYQ00 Automatic ENC microprogram download completed successfully
- When it is abnormal
 - IZYS00 Automatic ENC microprogram download start
 - IZY200 ENC#0 microprogram download start
 - IZY400 ENC#0 microprogram download complete
 - IZY201 ENC#1 microprogram download start
 - WOFA00 ENC alarm (Unit-01, ENC-1)
 - :
 - IZYM01 ENC microprogram download error detected (Unit-01)
 - :
 - IZY401 ENC#1 microprogram download complete
 - IZYQ00 Automatic ENC microprogram download failed

- (4) Recovery method when terminating abnormally after starting the automatic download.
- (a) Perform the maintenance for the warnings which were output from the automatic download start to the abnormal termination.
 - (b) Check the start message and the termination message of the automatic download again.

1.6 Checking the Start and End of the Drive Firmware Automatic Download

The drive firmware is managed as a part of the firmware, and it has a function which checks the firmware version of all the drives in the subsystem at the time of starting the subsystem or replacing the drive and downloads it automatically as needed.

(1) Opportunities to start the automatic download

Check the necessity of the drive firmware download in the following opportunities. When the download is required (the drive firmware is old, etc.) by the necessity check, the download starts automatically.

[Starting opportunities]

- When turning on the main switch of the subsystem and the subsystem becomes the Ready status
- When rebooting the subsystem by remote
- When the blocked Control Unit was recovered by automatic reboot
- When rebooting the Control Unit in the maintenance mode to transfer it to the normal mode
- When rebooting the subsystem from the Hitachi Storage Navigator Modular 2

[Maintenance opportunities]

- When inserting the Control Unit online
- When inserting/adding the drive online
- When replacing the firmware online
- When changing the power saving status from “Spin-down” to “Normal (Spin-up)” with the Power Saving function
- When setting the drive firmware automatic download function from the “Disable” to the “Enable” (The default setting is “Enable”).

[Regular opportunity]

- Once in 24 hours

(2) Restrictions during the automatic download

Do not execute the following works during the drive firmware automatic download because the following processing inside the subsystem does not run. When the works were executed, Hitachi Storage Navigator Modular 2 outputs the message, and the works will not be executed. DMED3D0001: The process cannot be performed because the drive firmware is being replaced. Please retry after replacement completes.

- Update installation of the firmware from Hitachi Storage Navigator Modular 2
- Giving the instruction of the power saving (spin-down) in the Power Saving by Hitachi Storage Navigator Modular 2
- Executing RAID Group creation/deletion/expansion by Hitachi Storage Navigator Modular 2
- Executing creation/deletion/capacity change (expansion and reduction) of LUs by Hitachi Storage Navigator Modular 2
- ENC firmware download by Hitachi Storage Navigator Modular 2

Do not execute the following works during the drive firmware automatic download because the following processing inside the subsystem does not run. When the works were executed, Hitachi Storage Navigator Modular 2 outputs the message, and the works will not be executed. DMED260017: The process cannot be performed because the drive firmware is being replaced. Please retry after replacement completes.

- Executing DP pool creation/deletion/capacity expansion by Hitachi Storage Navigator Modular 2

Do not execute the following works during the drive firmware automatic download because the drive firmware automatic download processing is affected by the works, and may terminate abnormally.

- Replacing the parts
- Adding the options
- Removing the subsystem
- Moving/removal work
- Moving to the maintenance mode of the array subsystem by pressing RST SW of the Control Unit

Execute the works above after completing the drive firmware automatic download.

(3) Supplementary explanation for the specification

(a) Target Disk Drive for the drive firmware automatic download execution is only SAS Disk Drive and Flash Drive.

(b) Drive firmware is not downloaded into the Disk Drive with the power saving (spin-down) setting.

To the Disk Drive with the power saving (spin-down) setting, when the power saving status is released (spin-up), the drive firmware is downloaded automatically.

(c) To the blocked Disk Drive, drive firmware is not downloaded automatically.

(d) If only one normal system disk exist (when four system disks which are blocked or whose the system area is blocked exist), the drive firmware is not downloaded automatically for the system disk.

In this case, by performing the maintenance to restore abnormal system disk to normal and replacing the Disk Drive, drive firmware is downloaded automatically to the system disk.

(e) To the Disk Drive which configures the regressed parity group, drive firmware is not downloaded automatically.

In this case, by replacing the blocked Disk Drive, drive firmware is downloaded automatically to the Disk Drive that configures this parity group.

(f) If Control Unit is blocked due to a certain failure when drive firmware automatic download runs, the drive firmware automatic download is interrupted.

After the Control Unit is recovered, the drive firmware automatic download restarts.

(g) If the drive firmware update terminates abnormally in a certain Disk Drive, to avoid multiple Disk Drives blockage due to the same failure factor, terminate the drive firmware automatic download abnormally at the time. To the subsequent Disk Drive, drive firmware will not be downloaded automatically.

In this case, perform the maintenance according to the message output to the WEB information message.

(h) When any of the following operations runs, drive firmware automatic download does not run even if it meets the opportunities described in (1). After the following operation is completed, the drive firmware automatic download starts.

- Firmware update runs
- ENC firmware automatic down load runs
- ENC firmware manual download runs with the subsystem power on
- A failure occurs in the subsystem backend part and then the backend diagnostic processing runs
- RAID group expansion processing runs
- DP pool creation, deletion, or capacity expansion runs

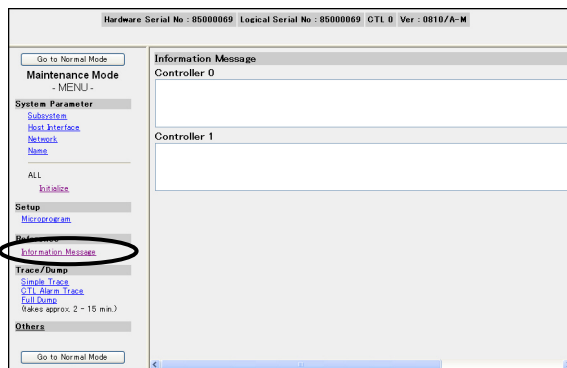
(4) Checking the start message and end message of the automatic download.

If the automatic download starts, it takes time of the maximum of 30 to 60 minutes × the number of drive types^{‡1)}.

NOTE : • When a failure occurs in the drive or Control Unit, it does not start the automatic download. Connect it to WEB and execute the recovery procedure for each message on the Information Message (refer to [Troubleshooting “Chapter 4. Trouble Analysis by WEB Connection \(TRBL 04-0000\)”](#)).

- When the message “IZ0000 HDU firmware download start” indicating the start of the drive firmware is not displayed although you wait for up to two minutes after the message “IZYR00 Automatic ENC microprogram download completed successfully” indicating the completion of the ENC firmware automatic download is displayed, the drive firmware automatic download will not be performed because the version of the drive firmware is new.

- (a) Connect the LAN cross cable to the maintenance LAN connector and connect the subsystem to WEB (refer to [Troubleshooting “3.1 Procedure to WEB Connection \(TRBL 03-0000\)”](#)).
- (b) Click [Information Message] from the main window menu frame in the normal mode.



- (c) Check that the start message and normal termination message are displayed in the Information Message.

NOTE : If any of “IZ0G00 HDU firmware download failed”, “IZ0E00 HDU firmware update was skipped (Unit-x, HDU-y)” or “IZ0300 HDU update failed (Unit-x, HDU-y)” is not displayed when “IZ0100 HDU firmware download end” is not displayed, drive firmware is being downloaded. Wait for the completion of the automatic download.

‡1 : It indicates the number of drives distinguished by the drive capacity. For example, only 146 Gbytes and 300 Gbytes drives are installed in the subsystem, the number of the drive type is 2.

Table 1.6.1 Checking the Messages

| Message | Content |
|--|---|
| IZ0000 HDU firmware download start | Indicates that the automatic download starts |
| IZ0100 HDU firmware download end | Indicates that the automatic download is completed normally |
| IZ0G00 HDU firmware download failed | Indicates that the automatic download terminated abnormally |
| IZ0E00 HDU firmware update was skipped (Unit-x, HDU-y) | Indicates that the automatic download terminated abnormally |
| IZ0300 HDU update failed (Unit-x, HDU-y) | Indicates that the automatic download terminated abnormally |

<Example of the message check>

- In case of normal
 - IZ0000 HDU firmware download start
 - IZ0200 HFWD completed (Unit-00, HDU-00)
 - IZ0200 HFWD completed (Unit-00, HDU-01)
 - IZ0200 HFWD completed (Unit-00, HDU-02)
 - :
 - IZ0100 HDU firmware download end
- In case of trouble
 - IZ0000 HDU firmware download start
 - :
 - IZ0300 HDU update failed (Unit-00, HDU-00)
 - :
 - IZ0G00 HDU firmware download failed

- (5) Recovery method when terminating abnormally after starting the automatic download
- (a) Perform the maintenance for Warning output between the automatic download start and abnormal termination.
 - (b) Check the start message and end message of the automatic download again.
(The automatic download is executed again not immediately after the maintenance but within 24 hours depending on the failure.)

1.7 Restrictions of the Version Downgrade of the Firmware

The version of the firmware cannot be downgraded if corresponding to the conditions in [Table 1.7.1](#), so follow the actions to be taken.

Table 1.7.1 Restrictions of the Version Downgrade of the Firmware

| Unified version ^{(*)1} ("x" is optional.) | | Restrictions of the Firmware to be downloaded | Actions to be taken |
|--|-------------------------------------|---|---|
| Firmware of the Control Unit | Firmware to be downloaded | | |
| 0830/A or more | 0830/A | - | - |
| 0852/A or more | 0852/A or less | The RAID Group is under expansion or the specific operation of the RAID Group is performed. | Install it again after completing the expansion of all RAID Groups. If the expansion of all RAID Groups is completed, install the firmware whose integrated version is 0852/A or more. |
| 0860/A or more | 0860/A or less | The installation or the addition of the RKAKX was executed. | Install the firmware whose integrated version is 0860/A or more. Or, after backing up the user data, cancel the connection with the host, and remove the additional subsystems so that no RKAKX be connected. ^{(*)2} |
| | | The server (NTP server, Syslog server, SMTP server or SNMP Manager) with the IPv6 address is used. | If you downgrade the version as is, it will not be able to communicate with the server correctly. Therefore, change all the server settings so that the IPv4 address is used, and then downgrade the version. |
| 0862/A or more | 0862/A or less | The license of TrueCopy Modular Distributed is unlocked and enabled, and the TrueCopy Modular Distributed mode is Hub. | Lock or disable the license of TrueCopy Modular Distributed, and then execute the version downgrade again. |
| 0872/G or more | 0872/G or less | The problem may occur when all following conditions are met. • Dynamic Provisioning Program Product using. • DP pool is made. | Please execute sequential shutdown and power on after completing the firmware version down. (Refer to Installation "1.5 Power On/Off Procedure" (INST 01-0130) .) The problem may occur when the cash volatilizing is generated. There is no influence as long as the cash volatilizing by the power supply determination is not generated. However, a same problem occurs when the firmware upgrade is executed without the sequential shutdown and power on operation. |
| 0880/A or more | 0860/A or more and less than 0880/A | When the Basic Chassis is RKS, two or more RKAKXs were installed or added. | Install the firmware whose integrated version is 0880/A or more. Or, after backing up the user data, cancel the connection with the host, and remove the additional subsystems so that one or less RKAKX be connected. ^{(*)2} |
| 0890/A or more | 0890/A or less | The problem may occur when all following conditions are met. • Account Authentication Program Product using. • Advanced Security Mode is enabled. | Lock of Account Authentication or disable of the Advanced Security Mode, and then execute the version downgrade again. |

*1 : Refer to ["1.3.1 Hierarchy of Firmware Storage Directories" \(FIRM 01-0020\)](#) for the unified version.

*2 : Refer to [Addition/Removal/Relocation "2.3 Removing Additional Subsystem on Rack Frame" \(ADD 02-0130\)](#).

1.8 Adaptable Firmware Revision

Check the firmware revision adapted to the type name referring to [Table 1.8.1](#).

Table 1.8.1 Adaptable Firmware Revision

- : No limits N/A : Unsupported

| Part name | Type name | Model name | | | |
|-----------------------|-----------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| | | AMS2100 | | AMS2300 | |
| | | H/W Rev.0100 | H/W Rev.0200 | H/W Rev.0100 | H/W Rev.0200 |
| | | Initial revision : 0832/E-S | Initial revision : 0890/A-X | Initial revision : 0832/E-M | Initial revision : 0890/A-Y |
| Basic Chassis | DF800-RK2 | 0846/A-S | - | 0846/A-M | - |
| | DF800-RKEM | N/A | N/A | N/A | - |
| | DF800-RKES | N/A | - | N/A | N/A |
| Additional Chassis | DF-F800-RKAK | - | - | - | - |
| | DF-F800-RKAKX | 0860/A-S | - | 0860/A-M | - |
| SAS Disk Drive | DF-F800-AKH146 | - | - | - | - |
| | DF-F800-AKH300 | - | - | - | - |
| | DF-F800-AKH450 | 0850/A-S | - | 0850/A-M | - |
| | DF-F800-AKH450X | 0890/B-S | 0890/B-X | 0890/B-M | 0890/B-Y |
| | DF-F800-AKH600 | 0883/A-S | - | 0883/A-M | - |
| | DF-F800-AKH600X | 0890/B-S | 0890/B-X | 0890/B-M | 0890/B-Y |
| | DF-F800-AKF400 | - | - | - | - |
| SATA Disk Drive | DF-F800-AVE500 | - | - | - | - |
| | DF-F800-AVE750 | - | - | - | - |
| | DF-F800-AVE1K | - | - | - | - |
| | DF-F800-AVE1KX | 0860/A-S | - | 0860/A-M | - |
| | DF-F800-AVE2K | 0883/A-S | - | 0883/A-M | - |
| | DF-F800-AVE2KX | 0883/A-S | - | 0883/A-M | - |
| Flash Drive | DF-F800-AKS200 | 0883/A-S | - | 0883/A-M | - |
| Cache Unit | DF-F800-C1GK | - | - | - | - |
| | DF-F800-C2GK | - | - | - | - |
| | DF-F800-C4GK | 0845/A-S | - | 0845/A-M | - |
| FC Interface Board | DF-F800-DKF42 | - | - | N/A | N/A |
| | DF-F800-DKF44 | N/A | N/A | - | - |
| | DF-F800-DKF84 | N/A | N/A | 0872/A-M | - |
| | DF-F800-DKF82 | N/A | - | N/A | N/A |
| ISCSI Interface Board | DF-F800-DKS12 | 0843/A-S | - | 0843/A-M | - |
| Control Unit | DF-F800-F1KM | N/A | N/A | - | N/A |
| | DF-F800-F1KS | - | N/A | N/A | N/A |
| | DF-F800-F1KEM | N/A | N/A | N/A | - |
| | DF-F800-F1KES | N/A | - | N/A | N/A |

| Part name | Type name | Model name | | |
|------------------------|-----------------|--------------------------------|--------------------------------|--------------------------------|
| | | AMS2500 | | AMS2010 |
| | | H/W Rev.0100 | H/W Rev.0200 | H/W Rev.0200 |
| | | Initial revision : 0840/B-H | Initial revision : 0890/A-Z | Initial revision : 0890/A-W |
| Basic Chassis | DF800-RK2 | N/A | N/A | - |
| | DF800-RKH2 | 0846/A-H | N/A | N/A |
| | DF800-RKEXS | N/A | N/A | - |
| | DF800-RKHE | 0850/A-H | N/A | N/A |
| | DF800-RKHE2 | 0850/A-H | N/A | N/A |
| | DF800-RKHED | 0862/A-H | N/A | N/A |
| | DF800-RKEH | 0890/A-Z | - | N/A |
| | DF800-RKEH2 | 0890/A-Z | - | N/A |
| | DF800-RKEHD | 0890/A-Z | - | N/A |
| | DF800-RKEH2D | 0890/A-Z | - | N/A |
| Additional Chassis | DF-F800-RKAK | - | - | - |
| | DF-F800-RKAKX | 0860/A-H | - | - |
| | DF-F800-RKAKD | 0862/A-H | - | N/A |
| SAS Disk Drive | DF-F800-AKH146 | - | - | - |
| | DF-F800-AKH300 | - | - | - |
| | DF-F800-AKH450 | 0850/A-H | - | - |
| | DF-F800-AKH450X | 0890/B-H | 0890/B-Z | 0890/B-W |
| | DF-F800-AKH600 | 0883/A-H | - | - |
| | DF-F800-AKH600X | 0890/B-H | 0890/B-Z | 0890/B-W |
| | DF-F800-AKF400 | - | - | - |
| SATA Disk Drive | DF-F800-AVE500 | - | - | - |
| | DF-F800-AVE750 | - | - | - |
| | DF-F800-AVE1K | - | - | - |
| | DF-F800-AVE1KX | 0860/A-H | - | - |
| | DF-F800-AVE2K | 0883/A-H | - | - |
| | DF-F800-AVE2KX | 0883/A-H | - | - |
| Flash Drive | DF-F800-AKS200 | 0883/A-H | - | - |
| Cache Unit | DF-F800-C1GK | - | - | - |
| | DF-F800-C2GK | - | - | - |
| | DF-F800-C4GK | 0845/A-H | - | - |
| FC Interface Board | DF-F800-DKF44 | - | - | N/A |
| | DF-F800-DKF84 | 0872/A-H | - | N/A |
| ISCSI Interface Board | DF-F800-DKS12 | 0860/A-H | - | N/A |
| Control Unit | DF-F800-F1KEXS | N/A | N/A | - |
| Additional Battery Box | DF-F800-N1RK | 0850/B-H | - | N/A |
| | DF-F800-N1RKD | 0862/A-H | - | N/A |

Chapter 2. Procedure for Recovery from a Failure

2.1 Procedure for Recovery from a Failure during Installation

Identify a factor of the failure based on the statuses of the LEDs and follow the recovery procedure concerned.

<Failure which causes system down>

- LED status

| WARNING LED | ALARM LED | Recovery procedure |
|-------------|-----------|---|
| Blinking | On | Connect the WEB and recover from the failure following the recovery procedure against each on the Information Message. For the details, refer to Troubleshooting "Chapter 4. Trouble Analysis by WEB Connection" (TRBL 04-0000) . |

- Details of WEB error logs (Refer to [Message "Chapter 5. Flash Detected Messages" \(MSG 05-0000\)](#) for the detail of content or recovery methods.)

| Message code | Message text | Recovery procedure |
|--------------|--|---|
| RB0000 | Upload system error | The configuration of the directory from which the firmware is installed on the client PC is incorrect. |
| RB0100 | File remove error | The file in the RAM disk on the device cannot be deleted. |
| RB0A00 | Upload file SUM check error | An error was detected in the file by SUM check. |
| RB3100 | File open error | The file in the RAM disk on the device cannot be opened. |
| RB3200 | File read error | The file in the RAM disk on the device cannot be read. |
| RB3500 | Bad block ID | The block ID is illegal. |
| RB7000 | Program size too large | The program size is too large for the storage capacity. |
| RB8100 | Install failed | The writing to all the system drives failed. |
| RB8300 | Empty system retry full install | The updating installation cannot be done because the firmware is not installed. |
| RBA000 | Down grade check NG | Although the version downgrade of the firmware was attempted, the update installation terminated abnormally because Down Grade Check was not Disable. |
| RBC000 | No drive available | The access to all the system drives is disabled. |
| RBC10x | Drive block size error (Unit-0, HDU-x) | The value of the block size of the capacity data reported from the Disk Drive was other than the specified value. |
| RBC20x | Unknown drive (Unit-0, HDU-x) | The value of the logical block address of the capacity data reported from the Disk Drive was equal to or less than the size of the system area. |

<Install partially complete (The installation of some of the Disk Drives failed.)>

- LED status

| WARNING LED | ALARM LED | Recovery procedure |
|-------------|-----------|--|
| Off | Off | Connect the WEB and recover from the failure following the recovery procedure against each on the Information Message. For the details, refer to Troubleshooting "Chapter 4. Trouble Analysis by WEB Connection" (TRBL 04-0000) . It may be a Disk Drive failure. For the details, refer to "Chapter 3. Procedure for Isolating Cause of Disk Drive Failure when "Install partially complete" Message is Output" (FIRM 03-0000) . |

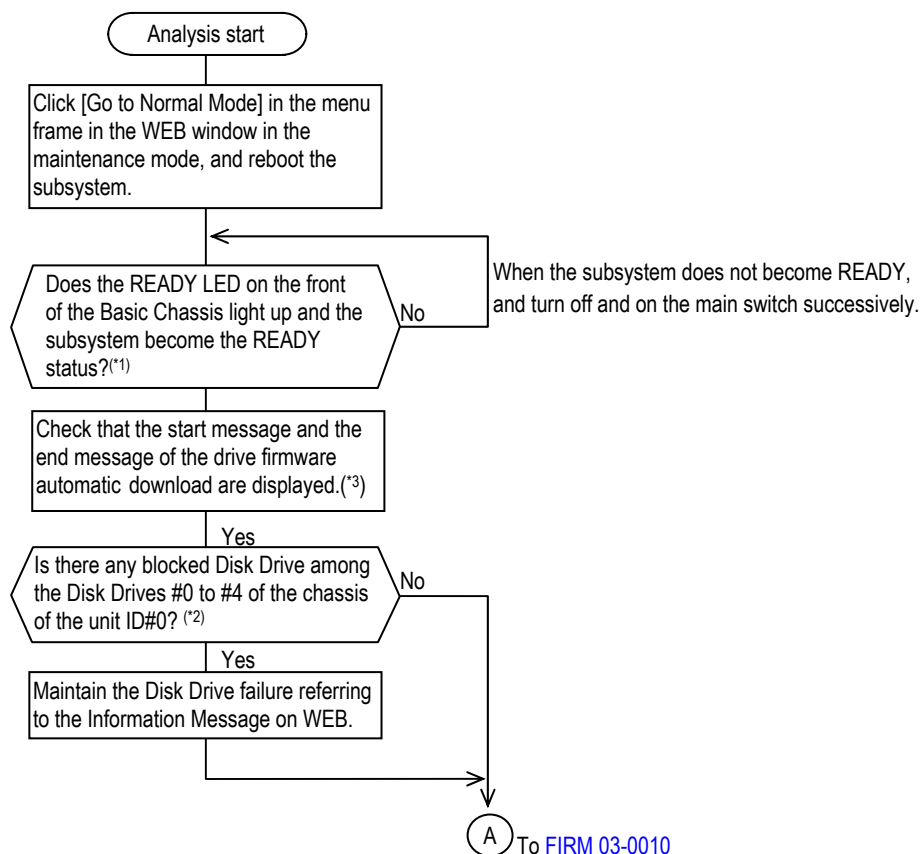
- Details of WEB error logs

| Message code | Message text | Recovery procedure |
|--------------|----------------------------|---|
| RB8200 | Install partially complete | The installation of some of the Disk Drives failed. |

Chapter 3. Procedure for Isolating Cause of Disk Drive Failure when “Install partially complete” Message is Output

The “Install partially complete” message is displayed in the WEB window when the subsystem detected either of the following statuses. Also, the “Install partially complete” status can be checked in the LED status. When this message code is displayed on WEB, there may be a Disk Drive failure. Therefore, analyze it in the following procedure, and take a necessary action.

- When the firmware was installed in the maintenance mode, at least one Disk Drive was not installed among the Disk Drives #0 to #4 of the chassis of the unit ID#0.
- When the firmware was installed in the maintenance mode, at least one failed in the write of the firmware among the Disk Drives #0 to #4 of the chassis of the unit ID#0.



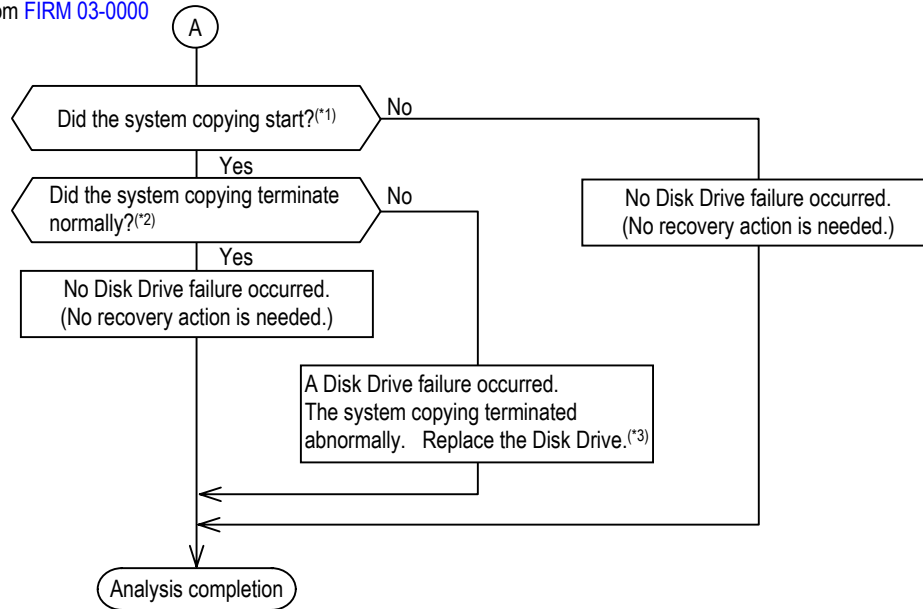
*1 : Wait if the READY LED (green) on the front of the Basic Chassis is blinking at high speed (for the maximum of 30 to 50 minutes, or 40 to 60 minutes in case of the RKH), or the WARNING LED (orange) is blinking at high speed (for the maximum of 30 to 85 minutes).

*2 : The ALM LED (red) on the Disk Drive lights up, and any of the following messages is displayed in the Information Message on WEB.

- HDU alarm message“W09zab HDU alarm” or “W0Azab SATA HDU alarm”
- Spare HDU alarm message ...“W0Bzab Spare HDU alarm” or “W0Czab SATA Spare HDU alarm”

*3 : When the drive firmware version of the disk drive is new, the start message and completion message of the drive firmware automatic download are not displayed. To check the drive firmware automatic download, refer to [Firmware “1.6 \(4\) Checking the start message and end message of the automatic download \(FIRM 01-0890\)”](#).

From [FIRM 03-0000](#)



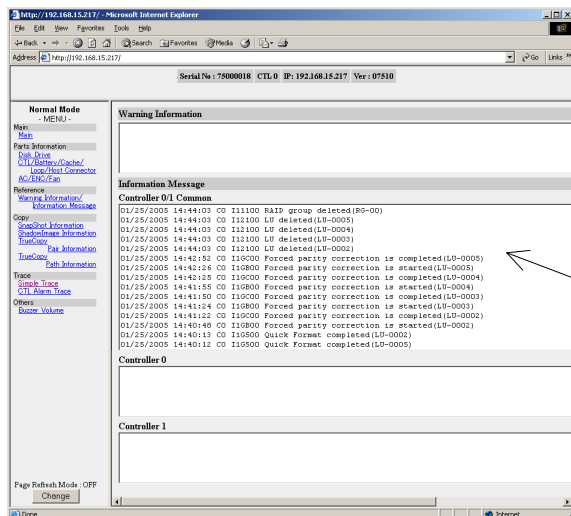
*1 : Refer to [“3.1 Procedure for Checking whether System Copy Operation Occurred” \(FIRM 03-0020\)](#).

*2 : Refer to [“3.2 Procedure for Checking the Status of System Copy Complete” \(FIRM 03-0030\)](#).

*3 : For the replacement of the Disk Drive, refer to the [Replacement “2.2.1 Replacing Disk Drive” \(REP 02-0030\)](#).

3.1 Procedure for Checking whether System Copy Operation Occurred

You can verify whether the system copy operation has occurred by viewing the “Information Message” window in the WEB window.



- When the occurred of system copy

MM/DD/YYYY hh:mm:ss xy I14000 System copy started (Unit-x, HDU-y)

Date

Time

x : Detect Controller #

x : Unit ID #, y : Disk Drive #

y : Detect Core #

- When the not occurred of system copy

The message above is not displayed but a message “I10000 Subsystem is Ready” is displayed.

