

FIRMWARE SECTION

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NOTICE: Unless otherwise stated, "firmware version" in this section indicates DKCMAIN firmware.

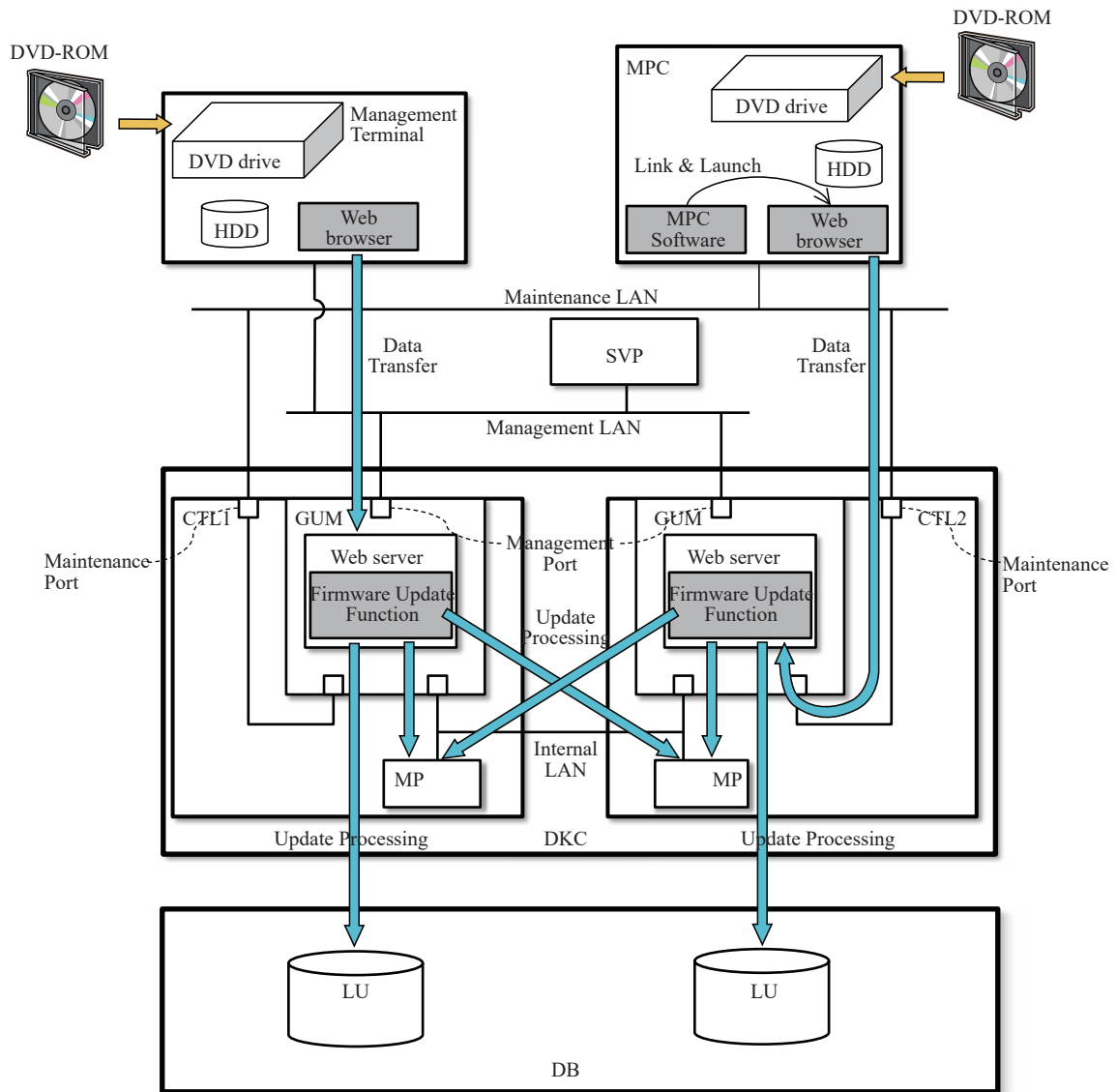
1. Overview

1.1 Firmware Types

The Firmware listed below can be exchanged via the Maintenance PC. Therefore, the exchange of Firmware requires operational knowledge of the Maintenance PC ([MPC00-00](#)).

Firmware	Written to
DKCMAIN	CFM/MP
CHB (FC16G)	CFM/CHB (FC16G)
CHB (FC32G)	CFM/CHB (FC32G)
CHB (iSCSI)	CFM/CHB (iSCSI)
DKB	CFM/DKB Port
RAMBOOT	CFM/MP
Expander	DB (ENC)
CONFIG	CFM/SM
CFM	CFM
HDD	DB (HDD)
GUM	CFM/GUM

1.2 Update Firmware Flow



NOTE: The DVD-ROM used for the Firmware update includes the OSS media.

1.3 Update Firmware

Firmware can be exchanged off-line or on-line.

1. Off-line

The storage system is blocked. → Firmware are rewritten. → The storage system is recovered.

2. On-line

Transfer firmware to the DKC



The processor is blocked for maintenance. → Firmware are rewritten. → The processor is recovered.



This is performed for each exchanging unit.

NOTE: Check version of the Firmware to be substituted before rewriting it. When the Maintenance PC determines that the Firmware cannot be rewritten, it displays an error message and cancels the exchange of the Firmware.

NOTICE: In case of ShadowImage/Volume Migration/Thin Image, the differential bitmap data on the Shared Memory of DKC is volatilized by the offline Update Firmware operation. Also, in case of Thin Image, the pool is blocked.

Execute the online Update Firmware operation not to volatilize the differential bitmap data on the Shared Memory of DKC and the Pool information on Thin Image.

2. Preprocessing Firmware

2.1 Connecting Maintenance PC

Set up the Maintenance PC, and then connect the Maintenance PC to the Storage System. For details, refer to the following workflows:

- MAINTENANCE PC SECTION [“1.2 Maintenance PC Setup Workflow”](#)
- MAINTENANCE PC SECTION [“2.1 Workflow of Settings and Operations of the Maintenance PC at Client’s Site”](#)

NOTICE: When operating “Storage Navigator” by SVP, terminate the operation and ask your customer to stop the service from Storage Device List by reference to “Service Processor Technical Reference”.

3. Update Firmware

You can update the firmware online or offline.

Perform the online firmware update in the usual case.

Perform the firmware downgrade only when directed by the factory.

3.1 Processing before Exchange (Online)

- Check the Storage System status through the entire status display. Check the versions of all the programs through the version display. See “[3.4 Procedure for Checking Firmware Version](#)” for how to check the versions.
- Check that no processing is running. See MAINTENANCE PC SECTION “[4.7.3.3 Checking the Progress in the Task](#)” for how to check the state.
- In case Dynamic Sparing, Correction Copy, or Copy Back is running, the Update Firmware can be performed if HDD Firmware is not included. For details, refer to “[3.3 Notes on Maintenance during LDEV Format/Drive Copy Operations](#)” on THEORY OF OPERATION SECTION.
- Check that the PIN data does not exist in the “Maintenance” window of the maintenance PC. If it exists, perform post-processing of the PIN data. See MAINTENANCE PC SECTION “[5.12.3 Pin Data Indication](#)” for how to check them.
- Check that the Storage System operates normally. See MAINTENANCE PC SECTION “[5.11 Maintenance Screen](#)” for how to check the state. If there is a blocked part, recovery it before firmware update.

NOTICE: It is recommended to execute this function in the status of all MP's utilization rates less than 50% because there is a possibility of receiving the influence of I/O processing at the processing time of this function.

NOTICE: If the status of LDEV which is created by external device mapping function is “Maintenance blockade” status and Update Firmware is operated, the maintenance blockaded LDEV status is restored and the status is changed to the normal status.

NOTICE: Please do not use the newly supported function until all Update Firmware operations are completed.

NOTICE: Please do not open the “Maintenance” window during Update Firmware. If the window is opened, Update Firmware may end abnormally. In the case that the “Maintenance” window needs to be opened due to an error and so on, contact T.S.D. for help.

Table 3-1 On-line Update Firmware time (approximate)

(unit : minutes)

Firmware	Firmware Transfer time (Uploading status)	Update Firmware time (Updating status)	Special instruction
DKCMAIN	5	10	The time is that when "By 1/4" is selected for reboot processors.
CHB (FC16G)	1	10	—
CHB (FC32G)		10	—
CHB (iSCSI) (*2)		15	—
DKB		10	—
RAMBOOT		10	—
CFM		5	—
Expander		5	The update time per Expander. Two Expanders are mounted in each Drive Box. Therefore, the update time is calculated as follows: $5 \times 2 \times$ the number of Drive Boxes
CONFIG		2	—
HDD	2	The update time depends on the storage system configuration.	
GUM	10	0	The update time is essentially zero because the update is performed in parallel with the update of the firmware other than GUM.
Total	16	79 (*1)	—

*1: The total update time depends on the storage system configuration and selected options at the time of update. If the update of the firmware other than GUM is already completed or if only the GUM firmware is updated, the total firmware update time is 30 minutes. (It might take a longer time, about ten minutes longer at a maximum, depending on the usage conditions of the SVP/Maintenance PC.).

*2: It takes up to 1 minute to connect the host per CHB. Add 1 minute (or less) \times the number of mounted CHB (iSCSI) to the firmware update time.

3.2 Processing before Exchange (Offline)

- Check the Storage System status through the “Maintenance Utility” display (Check the versions of the all programs through the version display.).
- Make sure that correction copy and other processing are not in progress.
- Check that the PIN data does not exist in the “Maintenance” window of the maintenance PC. If it exists, perform post-processing of the PIN data.
- Check that the Storage System operates normally.
- Check that all channel paths to the Storage System are off-line (to block all Firmware).
- DKCMAIN, RAMBOOT, DKB, and CHB Firmware can be also exchanged off-line.
- In case of performing the off-line Update Firmware for UR pairs, please make sure not to perform on the MCU and RCU simultaneously.
- In some primary Storage Systems and in some secondary Storage Systems, when off-line Update Firmware is executed under the Universal Replicator’s remote copy configuration, please suspend the pairs that were previously registered in EXCTG.
Furthermore, please do not exchange Firmware on the supervisor-side Storage System & subordinate-side Storage System at the same time.
- When exchanging the Firmware offline in the remote copy configuration using multiple primary and secondary Storage Systems of Universal Replicator, first suspend all the pairs in this configuration.
- To update the firmware off-line when global-active device pairs exist, suspend all the pairs.

NOTICE: If the status of LDEV which is created by external device mapping function is “Maintenance blockade” status and Update Firmware is operated, the maintenance blockaded LDEV status is resorted and the status is changed to the normal status.

NOTICE: When off-line Update Firmware is executed, monitor information on the collection on Dynamic Tiering/active flash is annulled. Therefore, the next relocation is not executed for the automatic execution mode. Please execute the termination processing of the monitor if necessary for the manual execution mode.
After off-line Update Firmware, the relocation executed before off-line Update Firmware is restarted regardless of the execution mode.

NOTICE: Please do not open the ‘Maintenance’ window during Update Firmware. If the window is opened, Update Firmware may end abnormally.
In the case that the ‘Maintenance’ window needs to be opened due to an error and so on, contact T.S.D. for help.

NOTICE: If the firmware that was not replaced by the offline firmware update should be replaced, replace it by the online firmware update.

Table 3-2 Off-line Update Firmware availability and Update Firmware time (approximate)

(unit : minutes)

Firmware	Firmware Transfer time (Uploading status)	Update Firmware time (Updating status) (*1)
DKCMAIN	5	25
CHB (FC16G)	1 (*3)	30
CHB (FC32G)		30
CHB (iSCSI)		30
DKB		30
RAMBOOT		25
Expander		— (*2)
CONFIG		
CFM		
HDD		
GUM		
Total	6	170

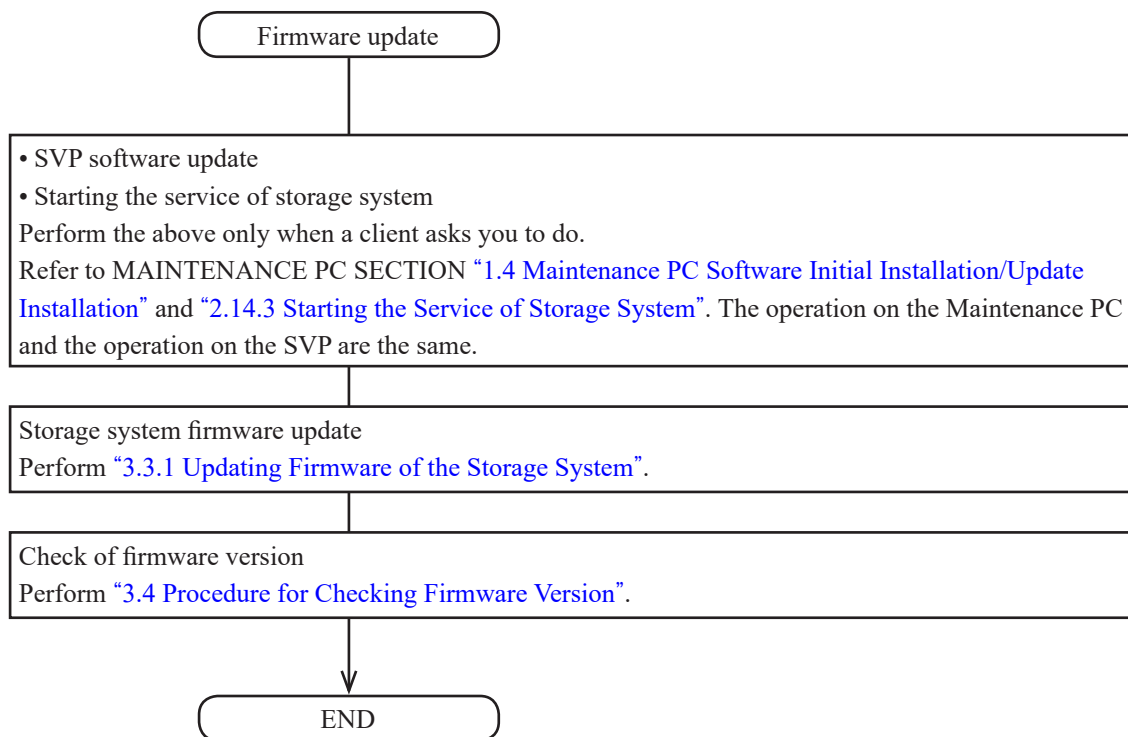
*1: This is the standard Update Firmware time. The Update Firmware time varies depending on the use situation, and is especially affected by the amount of write pending. When the amount of write pending is large, longer time than those shown in the above table might be required.

*2: Offline update is not available.

*3: Firmware Transfer time except for DKCMAIN is about one minute in total.

3.3 Operating Procedure

The general workflow of firmware update is shown below. The procedure for the online firmware update and the procedure for the offline firmware update are the same.



In the case of the online firmware update, you can also use Setup.exe in the installation media when performing "Storage system firmware update" in the workflow. For the detailed procedure, see "6.4 Procedure for Updating Firmware".

When using Setup.exe, note the following:

- You cannot update only certain firmware separately.
- The Maintenance PC software is also updated.

3.3.1 Updating Firmware of the Storage System

NOTICE: When the CHB (iSCSI) firmware version (88-01-XX-YY) is updated and YY is changed, the iSCSI protocol ASIC on the CHB reboots. The iSCSI port links down (for about 10 seconds) and then links up, which causes temporary disconnections from host servers. To avoid temporary disconnections, stop host I/Os on the path, or perform the preprocessing such as the pair suspend at the time of pair creation on the iSCSI path. Consult your customer about stopping I/Os or performing the preprocessing such as the pair suspend and create a procedure plan before starting the work.

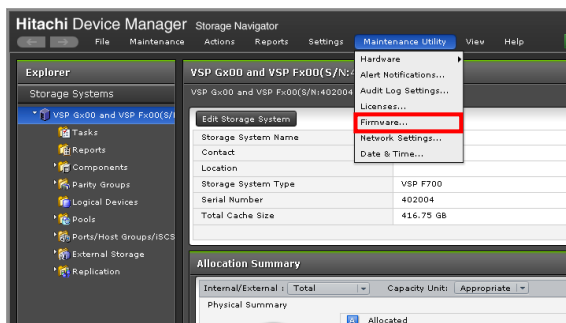
NOTICE: If the window indicating the expiration of the electronic certificate is displayed at the start-up of the Maintenance window when the installed Java version is Java 1.7.0_55 or later or Java 1.8.0_5 or later, the Java security settings must be changed. For the details, see MAINTENANCE PC SECTION "[1.3.5 Setting Java Security](#)".

NOTE: There is no problem if SIM=7d0900 is output when performing the offline firmware update. Furthermore, there is no problem if the Storage System status of the "Maintenance Utility" window becomes Failed. The Storage System status changes to Ready when the offline firmware update is completed.

1. Connect the maintenance PC to the storage system.
Connect the maintenance PC to the maintenance LAN of the storage system.

2. Starting "Firmware" window

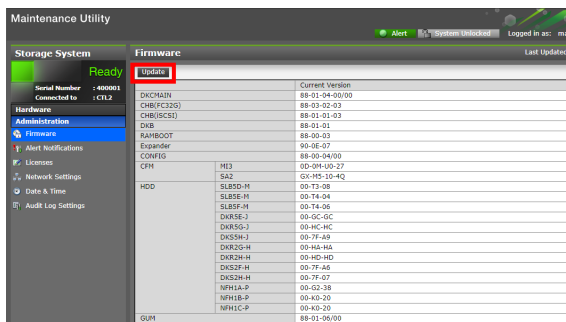
- (1) Start the Web Console referring to MAINTENANCE PC SECTION "2.5 Starting Web Console".
- (2) Select [Maintenance Utility] - [Firmware...] in the "Web Console" window.



3. Display the "Firmware" window

The firmware information is displayed. Click the [Update] button to display the update window.

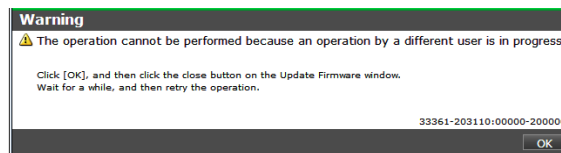
- NOTE:
- When GUM versions differ between CTL1 and CTL2, they are displayed as "CTL1:xx-xx-xx/xx CTL2:xx-xx-xx/xx". When the versions are the same in CTL1 and CTL2, they are displayed normally as "xx-xx-xx/xx".
 - If the window of [Internet Explorer cannot display the webpage] or [Unable to launch the application] is displayed in this procedure, close the window. After that, wait for one minute, and then click the [Update] button again.



4. Java start

- NOTICE:**
- While running the application, do not log out of the original Maintenance Utility that opened the firmware window or do not terminate the application forcibly (PC shutdown or others). If such operation is performed, the message [32061-208063] might be displayed at the time of logging next time. When the message is displayed, perform the following procedure.
 - If the application suddenly disappears while running it, click the refresh button to confirm that the message [32061-208063] is displayed. Then, perform the following procedure.
 - When the message “A time-out error occurred during communication with the web server.” is displayed, refresh the Maintenance Utility and confirm that the message [32061-208063] is displayed. Then, perform the following procedure.

1. Open the “Update Firmware” window from the newly opened “Maintenance Utility” window.
2. Confirm that the message “The operation cannot be performed because an operation by a different user is in progress.” is displayed.

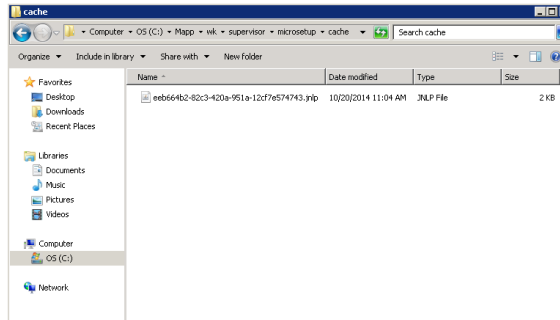


(If the progress window appears, the firmware is being updated. Then, wait until the firmware update is complete.)

3. Execute [Force Release System Lock]. (See MAINTENANCE PC SECTION [“3.17 Force Release System Lock”](#).)

NOTICE: If the screen does not display the “Update Firmware” window but returns to the “Environmental Settings” window even after starting the Java window, take the following corrective actions:

1. Open the installation folder of the Storage management software, wk\Supervisor\microsetup\cache.



2. Select the JNLP File.

Click the update date and time to rearrange the files.

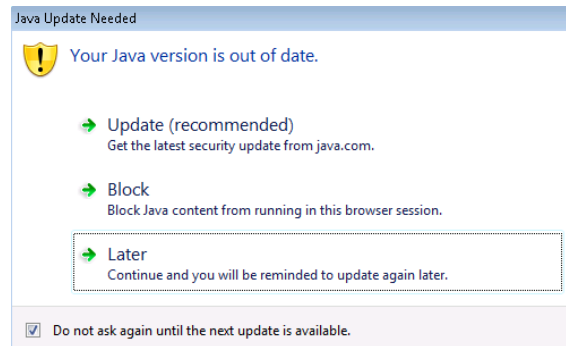
Select the file whose extension is “.jnlp” from the files with the latest update date and time, and then double-click it.

The displayed windows differ according to the JRE (Java Runtime Environment) versions.

In the case of JRE7 or JRE8, go to [Step \(1\)](#).

In the case of JRE6, go to [Step \(2\)](#).

- (1) In the case of JRE7 or JRE8
 - (a) The update of the Java application may be promoted.



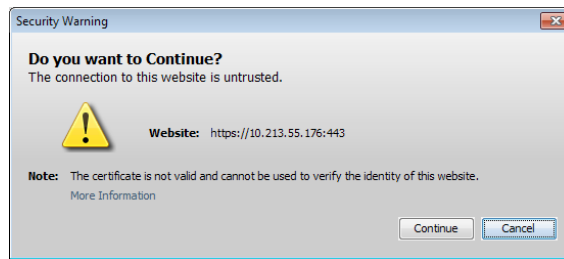
When using Maintenance Utility with the Java you are using, click [Later]. If you check the checkbox of [Do not ask again until the next update is available.] once and click [Later], this window is not displayed from now on. When clicking [Update(recommended)] and [Block], close the window of the Web browser and restart Maintenance Utility. When checking the checkbox of [Do not ask again until the next update is available.] and selecting [Update(recommended)] or [Block], Maintenance Utility cannot update the firmware. To allow Maintenance Utility to update the firmware, execute the following procedures.

- (i) Click [All Programs ([All apps] for Windows 10)] - [Java] - [Configure Java] from the [Start] menu of Windows and start [Java Control Panel].
- (ii) Click the [Security] tab of [Java Control Panel].
- (iii) If the checkbox of [Enable Java content in the browser] in the [Security] tab is checked, uncheck it once and click the [Apply] button.
- (iv) Check the checkbox of [Enable Java content in the browser] and click the [Apply] button.
- (v) Click the [OK] button of [Java Control Panel] to close the window.
- (vi) Restart Maintenance Utility.

NOTE: When changing the Java setting in [Java Control Panel], a message like “Java Plugin settings changed” may be displayed. If such message is displayed, click the [OK] button.

- (b) When the message “Do you want to Continue?” is displayed, click the [Continue] button.

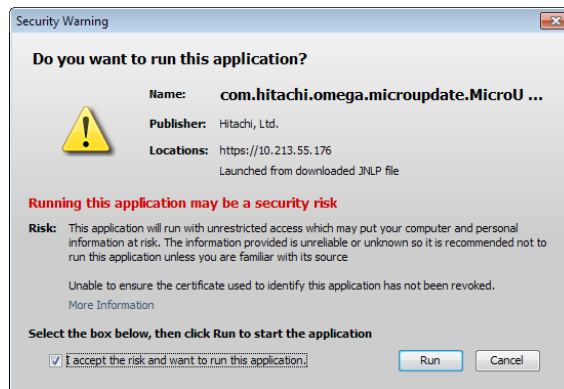
NOTE: This window may not be displayed.



- (c) When the message “Do you want to run this application?” is displayed, check [I accept the risk and want to run this application.] and click the [Run] button.

Go to [Step 5](#).

NOTE: This window may not be displayed.

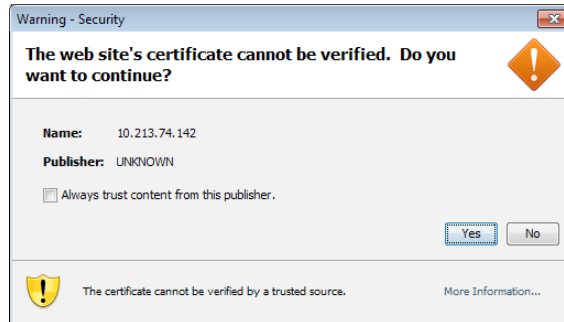


NOTE: When the “Application Blocked by Java Security” or “Application Blocked by Security Settings” window is displayed, refer to [TROUBLESHOOTING SECTION 3.28.1.1 Troubleshooting Related to Installation and Upgrade](#) and register the storage system in the exception site.

After the registration, perform the procedure of [3.3.1 Updating Firmware of the Storage System](#) again.

- (2) In the case of JRE6
- (a) When the message “The web site’s certificate cannot be verified. Do you want to continue?” is displayed, click the [Yes] button.

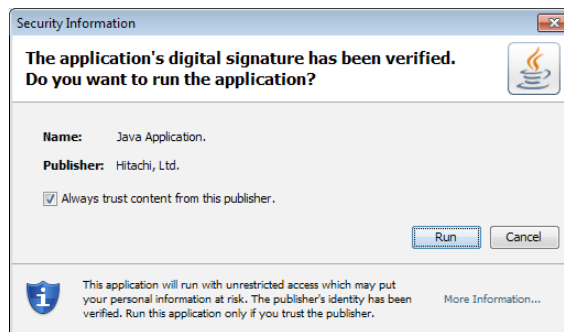
NOTE: This window may not be displayed.



- (b) When the message “The application’s digital signature has been verified. Do you want to run the application?” is displayed, check [Always trust content from this publisher.] and click the [Run] button.

Go to [Step 5](#).

NOTE: This window may not be displayed.



5. Configuring update

Select “firmware\AllFirmware.mda” from the media as a firmware file.

Specify Firmware selection or others. After completing the settings, click the [Apply] button.

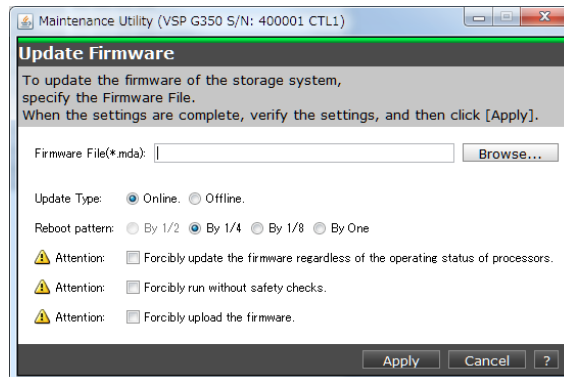


Table 3-3 Details of Update Firmware

Item		Description			
Firmware file		Select a file to be uploaded to the Storage System. <ul style="list-style-type: none"> • Select only one file. • One file includes information per model. The Storage System recognizes the models and only reads necessary information.			
Update Type	Online (default)	Update online <ul style="list-style-type: none"> • Entire Firmware can be updated online. 			
	Offline	Update offline <ul style="list-style-type: none"> • DKCMAIN, RAMBOOT, DKB and CHB Firmware are replaceable offline 			
Reboot Pattern (*1)	Reboot pattern	Description	Standard	Replacement time	Effect on performance of DKC
	By 1/2	Reboot half of all MPs at once.	Approx. 10 minutes	Short	Big
	By 1/4 (default)	Reboot a quarter of all MPs at once.	Approx. 15 minutes	:	:
	By 1/8.	Reboot 1/8 of all MPs at once.	Approx. 20 minutes	:	:
	By One	Reboot by minimum reboot unit.	Approx. 40 minutes	Long	Small
Attention: Forcibly update the firmware regardless of the operating status of processors.		If checked, it ignores the MP operation rate and updates the Firmware. (Unchecked by default)			
Attention: Forcibly run without safety checks.		If checked, it updates the Firmware without the safety check. (Unchecked by default)			
Attention: Forcibly upload the firmware.		If checked, the firmware is forcibly transferred. (Unchecked by default)			

*1: VSP G130 supports only "By 1/4". The radio button for reboot pattern selection is not displayed.

Table 3-4 Details of the Operation Rate of MPs that Firmware Update is Possible

Reboot Pattern	Operation Rate of MPs that Firmware Update Is Possible (*1)			
	VSP G130	VSP G350	VSP G370	VSP G700, G900
By 1/2	–	–	–	Less than 50%
By 1/4	Less than 65%	Less than 65%	Less than 65%	Less than 65%
By 1/8	–	Less than 75%	Less than 75%	Less than 75%
By One	–	Less than 80%	Less than 85%	Less than 85%

*1: The average availability of the past 60 seconds of one or more MPs should not exceed the specified value at the start of the firmware update.

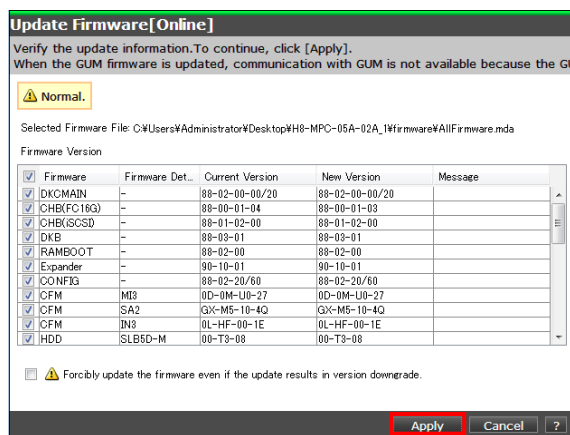
6. Version confirmation

The procedure varies depending on the firmware version (DKCMMAIN).

- When the firmware version is 88-01-05-x0/xx or later 6-1
- When the firmware version is earlier than 88-01-05-x0/xx 6-2

6-1 When the firmware version is 88-01-05-x0/xx or later

The firmware versions to be updated are displayed.



Perform the following procedure according to each case. If a message other than “Warning” is displayed, perform the described action for the message in [Table 3-5](#).

(1) In the case of firmware upgrade

(1-1) When nothing is displayed in the “Message” field

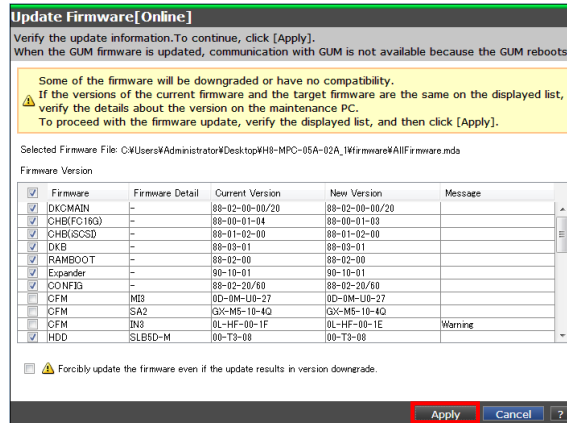
Click the [Apply] button.

The firmware versions for which the checkboxes are selected are updated (not updated when the current version and the new version are the same).

(1-2) When “Warning” is displayed in the “Message” field (HDD, CFM, and Expander only)

If a component whose firmware version is later than that in the installation media is installed, “Warning” is displayed in the “Message” field and the checkbox is unchecked. For example, the HDD, CFM, or Expander firmware version might be later than that in the installation media after the replacement is performed. In that case, “Warning” is displayed. However, the firmware version after the replacement is not displayed.

To upgrade only the earlier firmware versions of the components without updating the later firmware versions of the other components which are already upgraded by replacement, perform the following procedure.



- (a) Select the checkboxes of the HDD, CFM, and Expander firmware versions that you want to update.

NOTE: The HDD firmware versions belong to one group. The CFM firmware versions belong to one group. If “Warning” is displayed for any of the firmware versions in the group, all checkboxes in the group are unchecked.

If you select the checkbox of one HDD (or CFM) firmware version, the checkboxes of all HDD (or CFM) firmware versions are checked.

- (b) Apply the updates.

Make sure that [Forcibly update the firmware even if the update results in version downgrade.] at the bottom of the window is unchecked, and then click the [Apply] button.

If [Forcibly update the firmware even if the update results in version downgrade.] is unchecked, only the earlier firmware versions are updated, and the later firmware versions are not updated.

- (2) In the case of firmware downgrade

NOTICE: The firmware downgrade requires the approval of the Technical Support Division.

- (a) For the later firmware versions than those in the installation media, “Warning” is displayed in the “Message” field, and the checkboxes are unchecked.

NOTE: The HDD firmware versions belong to one group. The CFM firmware versions belong to one group. If “Warning” is displayed for any of the firmware versions in the group, all checkboxes in the group are unchecked.

- (b) Select the checkboxes of the firmware versions that you want to downgrade.

NOTE: If you select the checkbox of one HDD (or CFM) firmware version, the checkboxes of the other HDD (or CFM) firmware versions are also checked.

- (c) Select [Forcibly update the firmware even if the update results in version downgrade.] at the bottom of the window.

- (d) Click the [Apply] button.

For “Version error” and “Error” that are displayed in the “Message” field, see the following table.

Table 3-5 Version Check Message Table

No.	Message	Contents and Maintenance
1	Version error	The installation media might be wrong. Check that the installation media appropriate for the target storage system for the firmware update is used.
2	Error	The firmware cannot be updated because the version check failed. Follow the displayed error message.

6-2 When the firmware version is earlier than 88-01-05-x0/xx

Displays each firmware version.

Firmware	Description
With a checkmark	The version can be updated.
Without a checkmark	The version cannot be updated due to version down and others. Check the contents and actions to be taken in Table 3-6 .

When the version confirmation is completed, click the [Apply] button.

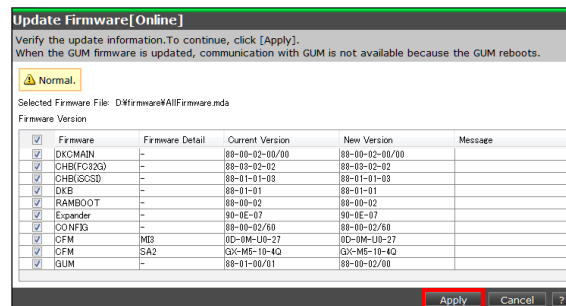


Table 3-6 Version Check Message Table

No.	Message	Contents and Maintenance
1	Version error	The installation media might be wrong. Check that the installation media appropriate for the target storage system for the firmware update is used.
2	Revision error	The DKCMAIN firmware revision ("RR" in 88-RR-xx-xx/xx) is downgraded. The downgrade requires the approval of the Technical Support Division. To downgrade the revision, check the checkbox, and then click the [Apply] button. NOTE: The revision can be downgraded only when the firmware update is performed offline. Therefore, if "Online" is selected for the Update Type (see "5. Configuring update"), click the [Cancel] button and then perform the update operations again.
3	Warning	Because the checkbox of the firmware to be updated is unchecked, checking the checkbox again is required to downgrade the version. (*1)
4	Error	The firmware cannot be updated because the version check failed. Follow the displayed error message.

*1: Perform the firmware update after replacing CFMs on both the CTL1 and CTL2. If "Warning" occurs on the CFMs, check the CFM versions.

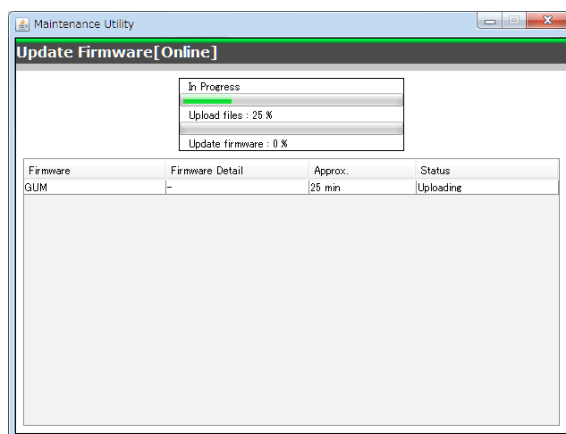
If the version displayed in "Current version" field is later than the version displayed in "New version" field, ensure that the check mark for the CFM is cleared, and then click the "Apply" button. In other cases, contact the Technical Support Division.

7. Starting update

The Firmware update progress is displayed.

NOTE: While displaying the progress window, do not close the window by the [×] button or log out of “Maintenance Utility” window. If the window is closed, perform the procedures from [Step 2](#) to [Step 4](#) and restart the work.

- When the window of [Step 7](#) is displayed after [Step 4](#):
The firmware update is in progress.
Keep the window open and wait to terminate it.
- When the window of [Step 5](#) is displayed after [Step 4](#):
The firmware update is suspended or completed. Display the firmware window and check the target firmware version.
(See “[3.4 Procedure for Checking Firmware Version](#)”.)
When the version is not changed, update the firmware again.



Item	Description
In Progress	Display the progress by “Progress Bar” and “Progress Display (xx%)”
Firmware	Display the Firmware name
Firmware Detail	Display the detail of the Firmware.
Approx	Display the standard update time
Status	Display the update status by “Waiting for Upload”, “Uploading”, “Updating”, and “Finished”

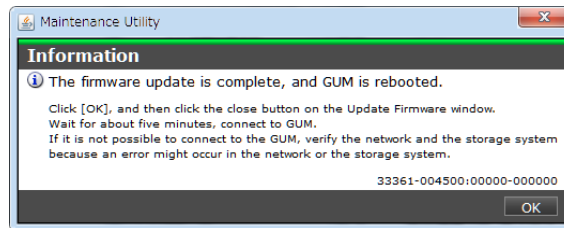
8. Reboot GUM

When the GUM firmware is not selected to be updated (when GUM is unchecked in the version confirmation window ([Step 6.](#))), go to [Step 9.](#)

When the GUM firmware is selected to be updated (when GUM is checked in the version confirmation window ([Step 6.](#))), the GUM reboots.

Follow the procedure below.

- (1) When the following message appears, click [OK].

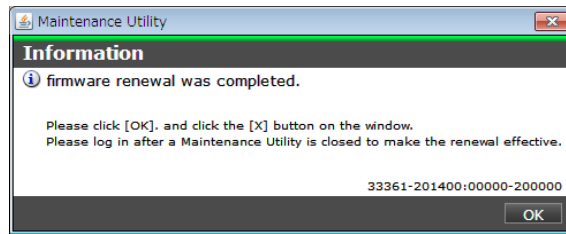


- (2) Wait for about five minutes until GUM starts up.
- (3) Go to [Step 10.](#)

9. Completing update

A message is displayed.

Click the [OK] button.



10. Completing the update work

When updating GUM by checking [GUM] in the version confirmation window ([Step 6.](#)), go to [Step \(1\)](#).

- (1) The progress window ([Step 7.](#)) is displayed. Click the [X] button to close the window.
- (2) The firmware window ([Step 3.](#)) is displayed. Click the [Log-out] button.
- (3) The login window is displayed. Click the [X] button to close the window.

11. Reconnection

- (1) Start the Web Console referring to MAINTENANCE PC SECTION "[2.5 Starting Web Console](#)".
- (2) Select [Maintenance Utility] - [Firmware...] in the "Web Console" window.

12. Version confirmation

The firmware window is displayed, and then check the target firmware version.

(See "[3.4 Procedure for Checking Firmware Version](#)".)

NOTE: When a message for the version update is not displayed in [Step 6](#), see "[4. Trouble Recovery Procedure in Firmware Update](#)".

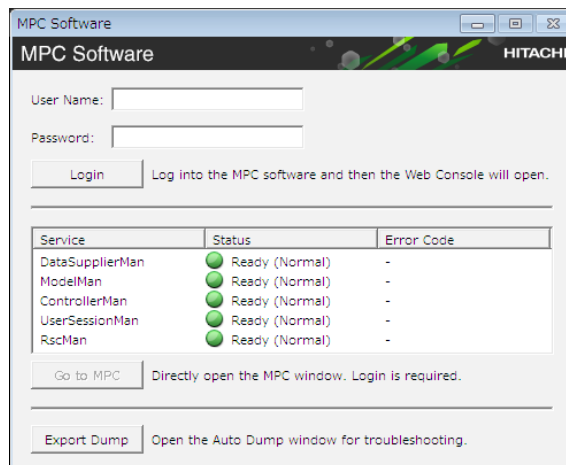
3.4 Procedure for Checking Firmware Version

1. Click the Storage System icon in the Storage Device List.

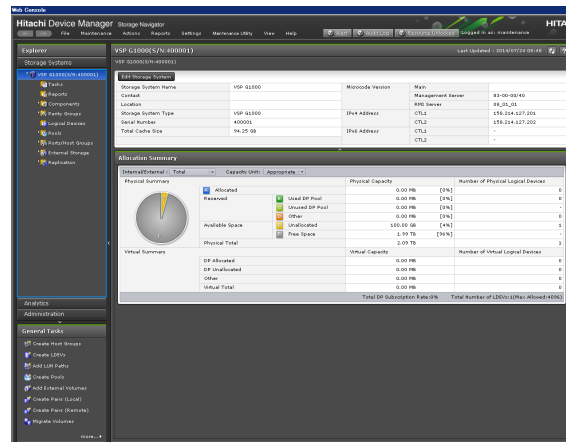


2. “MPC Software” is displayed and the service status is checked automatically.
Enter a user name and password for the maintenance account of the storage system, and then click the [Login] button. A password for the maintenance account of the storage system is changed by your customer after the storage system is installed. Ask your customer to let you know the password. When all become [Ready (Normal)], go to [Step 3](#).

NOTE: If not logged in, the “Web Console” window is not displayed. The [Login] button becomes inactive after logging in.




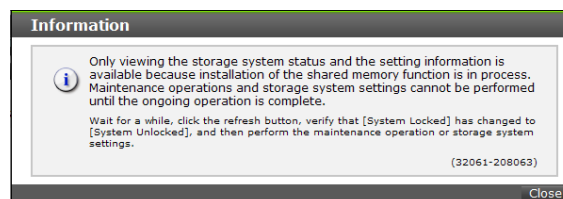
3. Web Console starts.



4. Selecting a menu from the toolbar [Maintenance Utility]-[Hardware]-[Other hardware maintenance...] in the "Web Console" window displays the "Maintenance Utility" window.

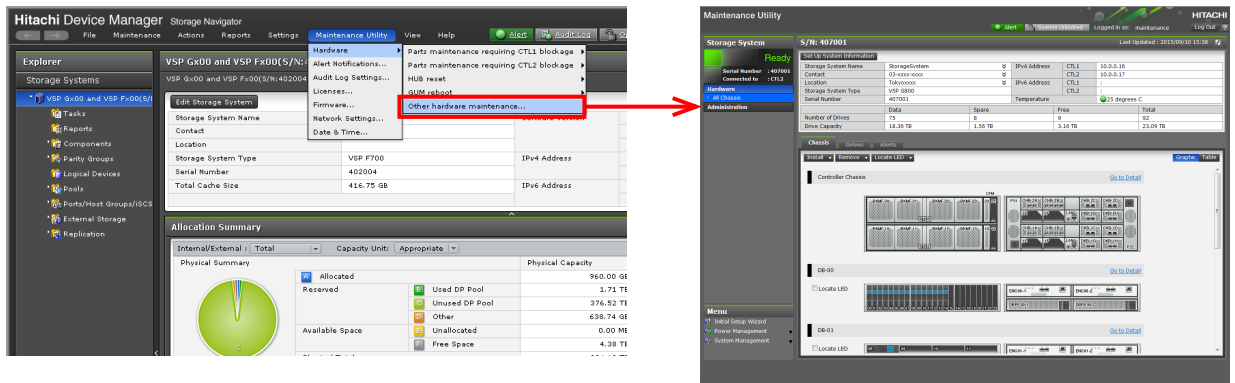
NOTICE: When running the maintenance operation in the other window, the part status might be displayed differently from the actual status. (Example: The Shared Memory function status before completing the addition is displayed as the status after the addition.)

In that case, complete the maintenance operation running in the other window, and then refresh the display information by clicking the [Refresh] button (). While running the maintenance operation or the maintenance processing, the messages like the following examples are displayed when logging into Maintenance Utility or refreshing the window.

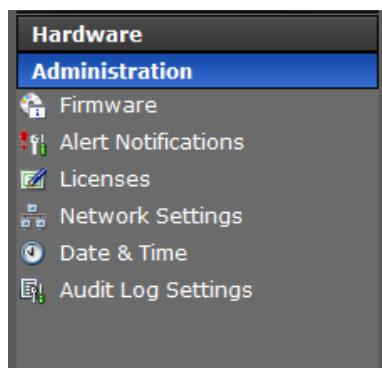


NOTICE: Do not use the Web browser menu.

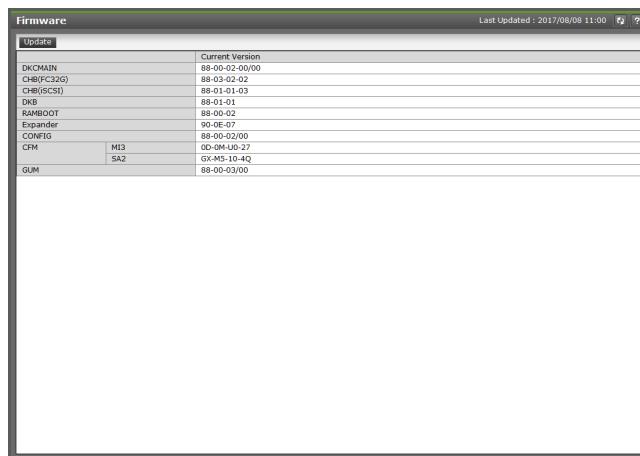
If you use the browser menu ([Back], [Forward]) or shortcut keys and function keys, you are logged out of Maintenance Utility forcibly and the settings that are operated in the window are discarded. To use Maintenance Utility again, close the Web browser window, and then start Maintenance Utility again.



5. In the “Maintenance Utility” window, select [Administration] - [Firmware].



6. In the “Firmware” window, check the firmware version of each component.



4. Trouble Recovery Procedure in Firmware Update

If an error message is displayed, fix the error according to the instructions in the message. Then, perform the following operations.

4.1 Recovery Procedure in Online Menu Was Selected

If trouble occurs while the firmwares are being exchanged, symptoms [Step 1](#) to [Step 7](#). below can be observed apparently. In these cases, use the recovery procedures shown in flowcharts [A] to [F].

NOTICE: Firmware update may fail when GUM is under heavy load. In that case, wait for one minutes, and then update the firmware again.
If the Firmware update operation failed again, perform the recovery operation by following the procedures in this section.

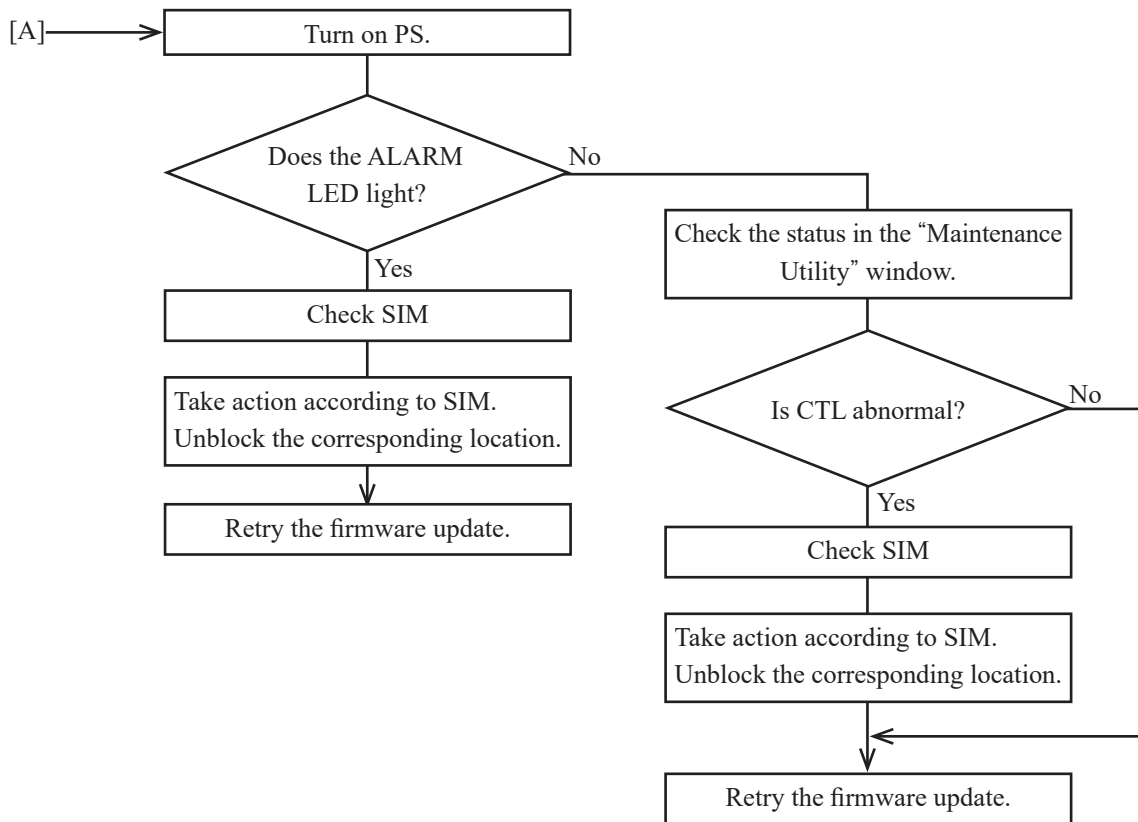
1. A power failure occurs.
→ Go to [A]. ([FIRM04-30](#))
2. In the case of incorrect version display (“??-??...” or incompatibility). (The disagreement of a binary version (Internal administrative information) contains it.) (See “[3.4 Procedure for Checking Firmware Version](#)”.)
→ Go to [B]. ([FIRM04-40](#))
3. When the message is “A time-out error occurred during communication with the web server.”
→ Go to [C]. ([FIRM04-60](#))

NOTE: Do not perform the troubleshooting [C] when the message is “An error occurred during communication with the web server.”. Perform procedure by following the messages.
4. When the GUM firmware update fails.
→ Take an action in accordance with the message
5. When the DKB firmware update fails.
→ Go to [D]. ([FIRM04-70](#))
6. When an error occurs during Java program startup.
→ Go to [E]. ([FIRM04-80](#))
7. When it fails for other factors.
→ Go to [F]. ([FIRM04-90](#))

[Sections to be referenced for recovery procedure]

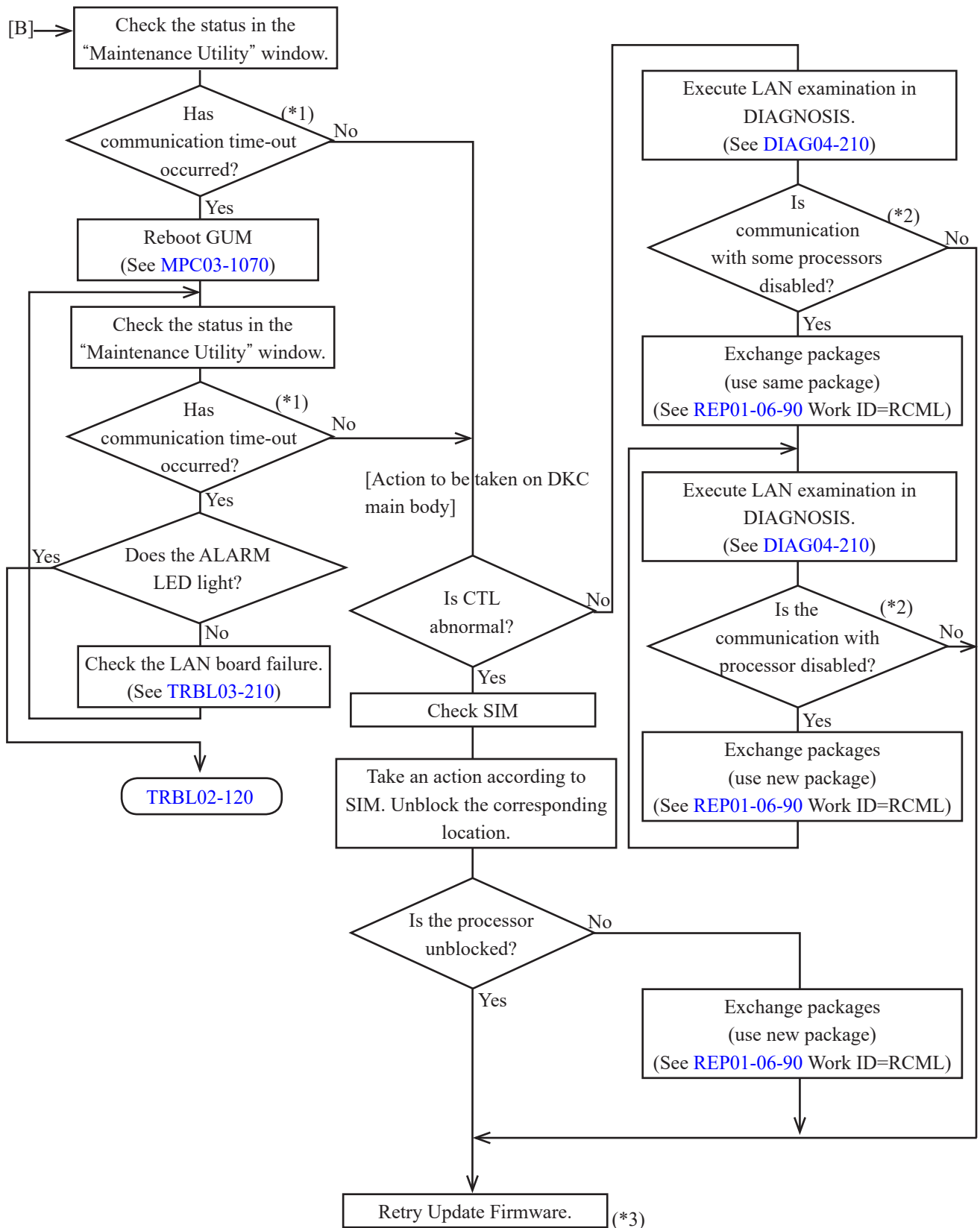
- (1) Status display : Maintenance Utility
 - Status of the whole system
 - MAINTENANCE PC SECTION “[11.3.3 Navigation Area](#)”
 - Status of each component
 - MAINTENANCE PC SECTION “[3.22 Alert Display Related to FRU \(Field Replacement Unit\)](#)”
 - Check of SIM
 - MAINTENANCE PC SECTION “[3.21 Alert Display](#)”
- (2) Version display : Version of Firmware
 - “[3.4 Procedure for Checking Firmware Version](#)”
- (3) Package exchange: Hot Replace
 - REPLACEMENT SECTION “[1.2 Hot Replacement Flowchart](#)”

[Recovery Procedure for Power Failure]



NOTE: When the firmware update is performed by using Setup.exe in the installation media, the update state in the "Environmental Settings" window might be changed to Completed at the time of turning on the PS. However, this should be ignored.

[Recovery Procedure for Communication Time-out/PC Trouble in Downloading Firmware /Version incompatibility]



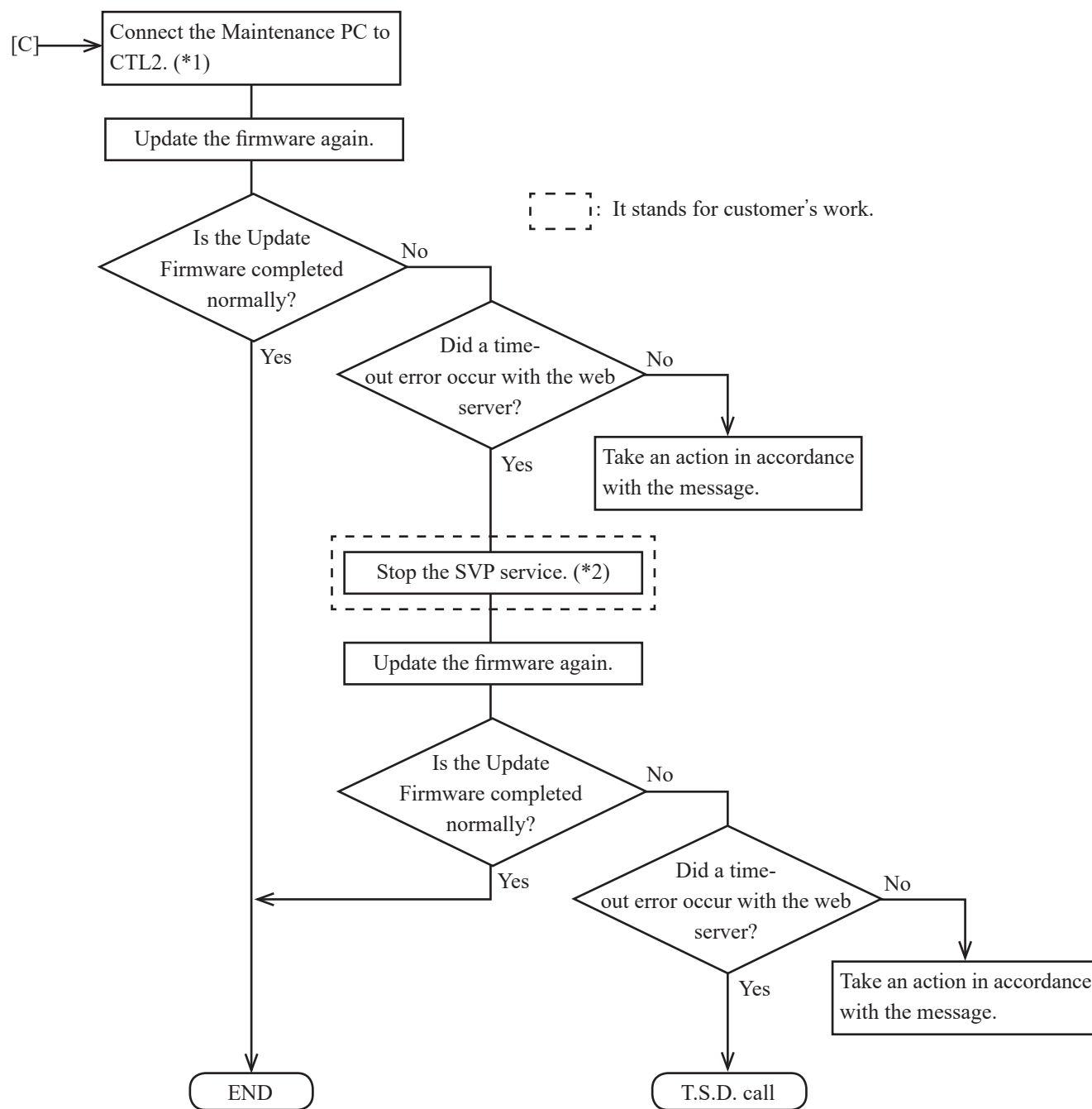
FIRM04-50

- *1: An error message is displayed and the hardware status cannot be referred to.
- *2: Each LAN error processor button blinks.
- *3: If this problem persists, contact the Technical Support Division.

The error code of initialization function is shown in 5C-5Fth byte of the SSB. The recovery procedures are as follows.

Error code of initialization function	Procedures	Note
56000041	Package Replace	Use the same package.
others	Package Replace	Use the same package.

[Recovery procedure when a time-out error occurred during communication with the web server]

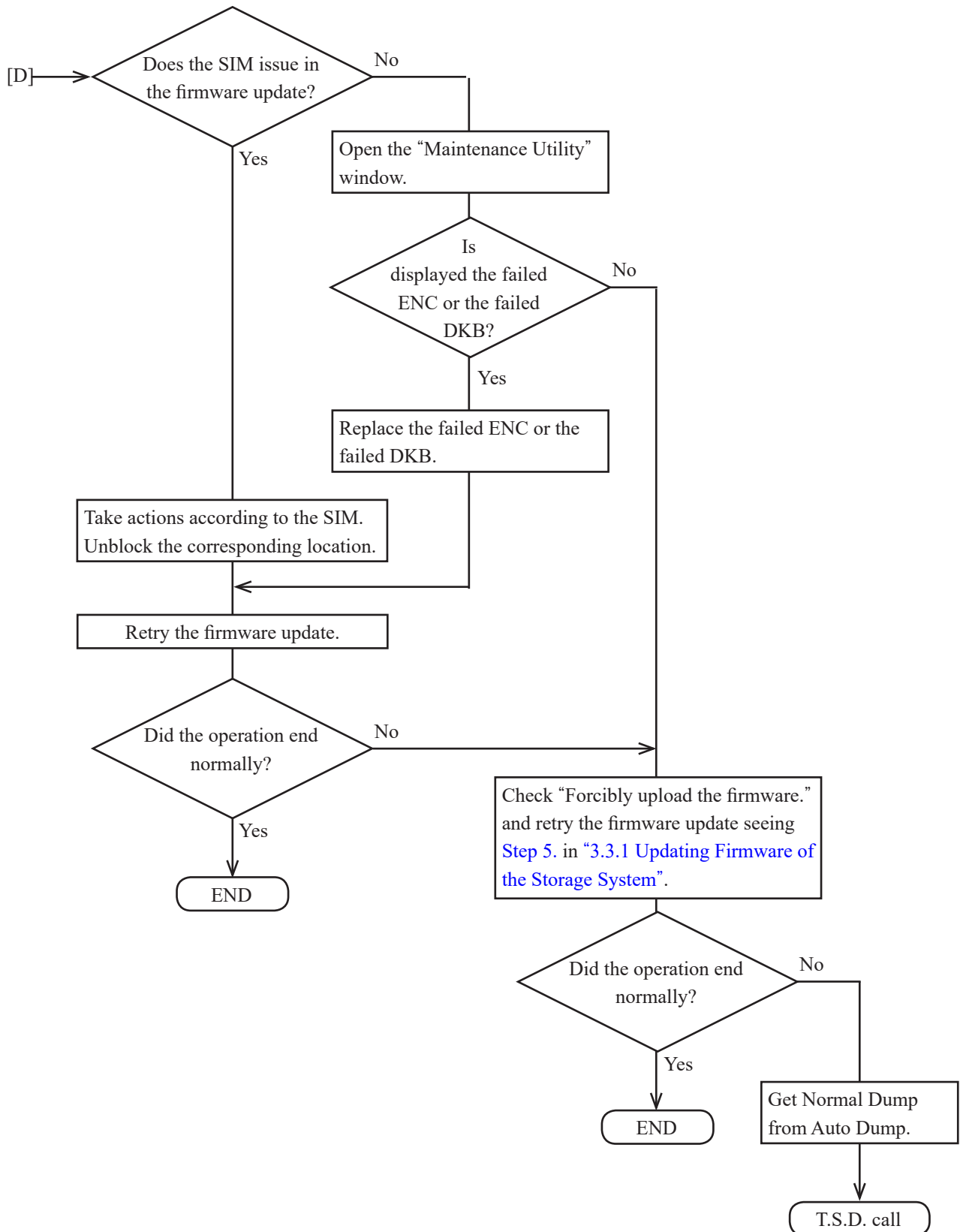


*1: Connect the Maintenance PC and CTL2 through the LAN cable. When the Maintenance PC is connected to CTL1 and CTL2 through HUB, remove the LAN cable connecting to the maintenance LAN port of CTL1 to keep only CTL2 connected.

After completing the work, put the LAN cable back to the original connection status. (See MAINTENANCE PC SECTION “2.2 Connecting Maintenance PC to Storage System”.)

*2: This operation is required only in the case of the configuration that contains the SVP. Ask your customer to perform the operation in accordance with “Service Processor Technical Reference”.

[Recovery procedure when a HDD error occurs during a downloading of the firmware (DKB firmware)]



[Procedure for collecting information when an error occurs during Java program startup]

[E] →

If an error re-occurs during Java program startup, collect information by following the procedure below.

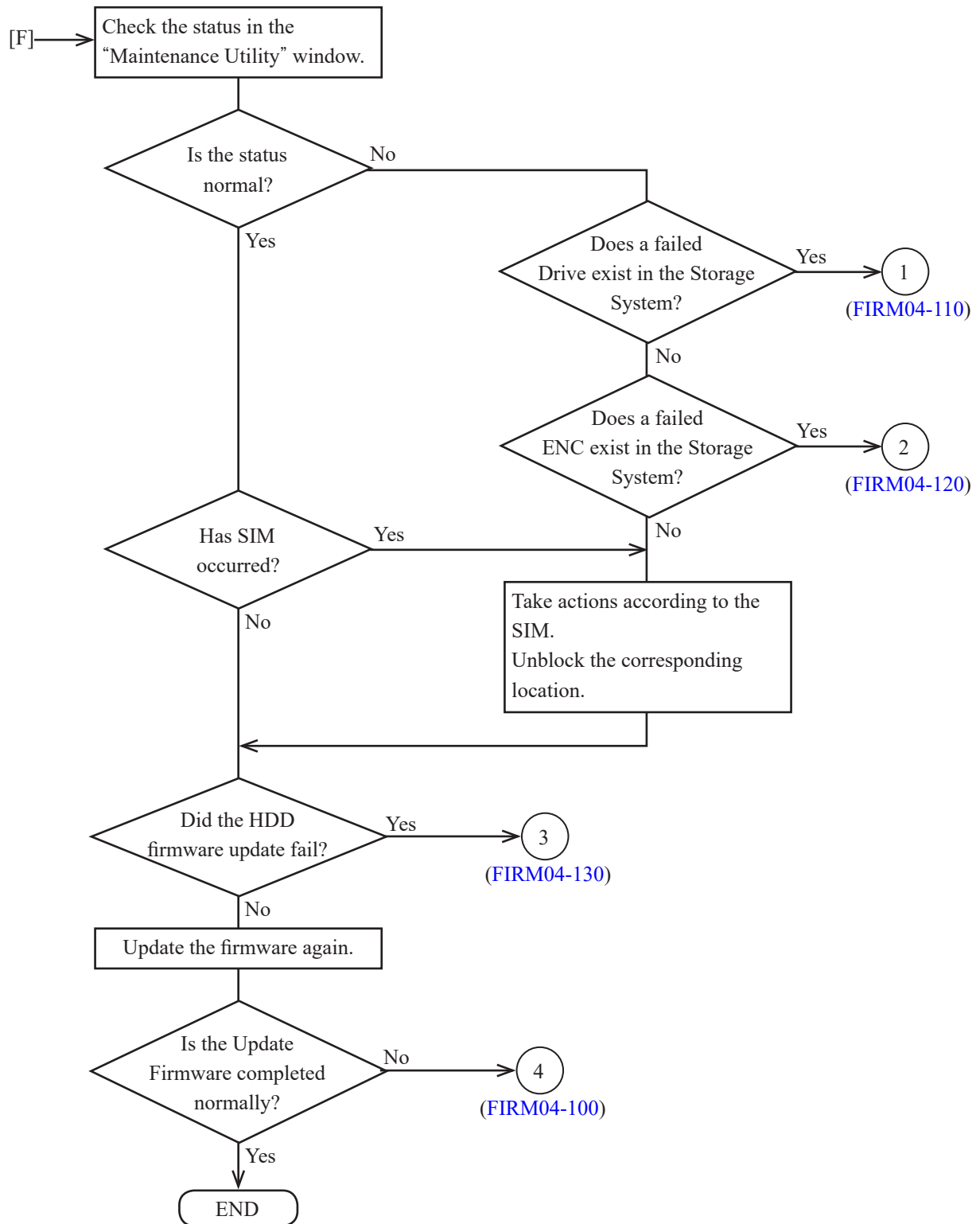
- (1) To start Java Console:
 - (a) Click the Windows [Start] menu to open.
 - (b) Click [All Programs].
 - (c) Look for [Java] program/list.
 - (d) Click [Configure Java] to start the Java Control Panel.
 - (e) Click the [Advanced] tab in the Java Control Panel.
 - (f) Select [Show console] from the [Java console] options, and then click [OK] button.
The Java Console opens at the Java startup by performing the procedure above.
Update the firmware again with the Java Console open.

- (2) To collect logs:
 - (a) After updating the firmwares, click the [Copy] button in the “Java Console” window.
 - (b) Start a text editor or any other text editing program, paste it, and then save the file with any name.

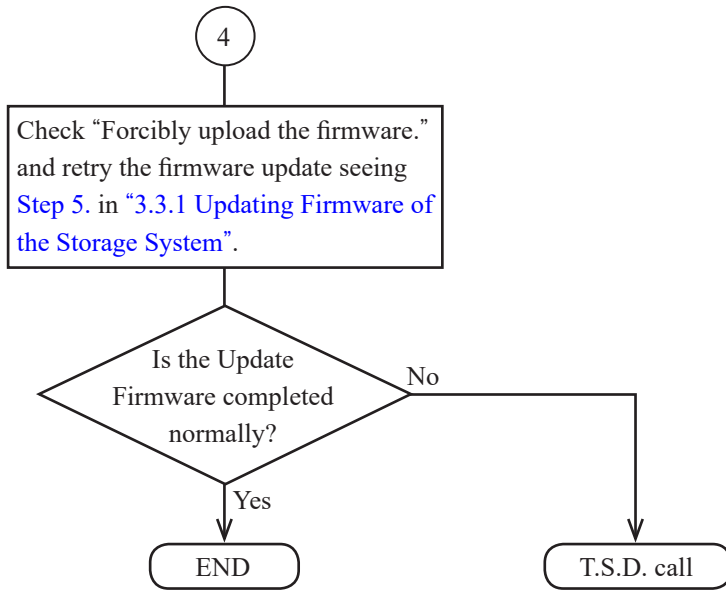
- (3) To disable the Java Console view:
 - (a) Select [Hide console] in the [Java console] option, and then click [OK] button.

FIRM04-90

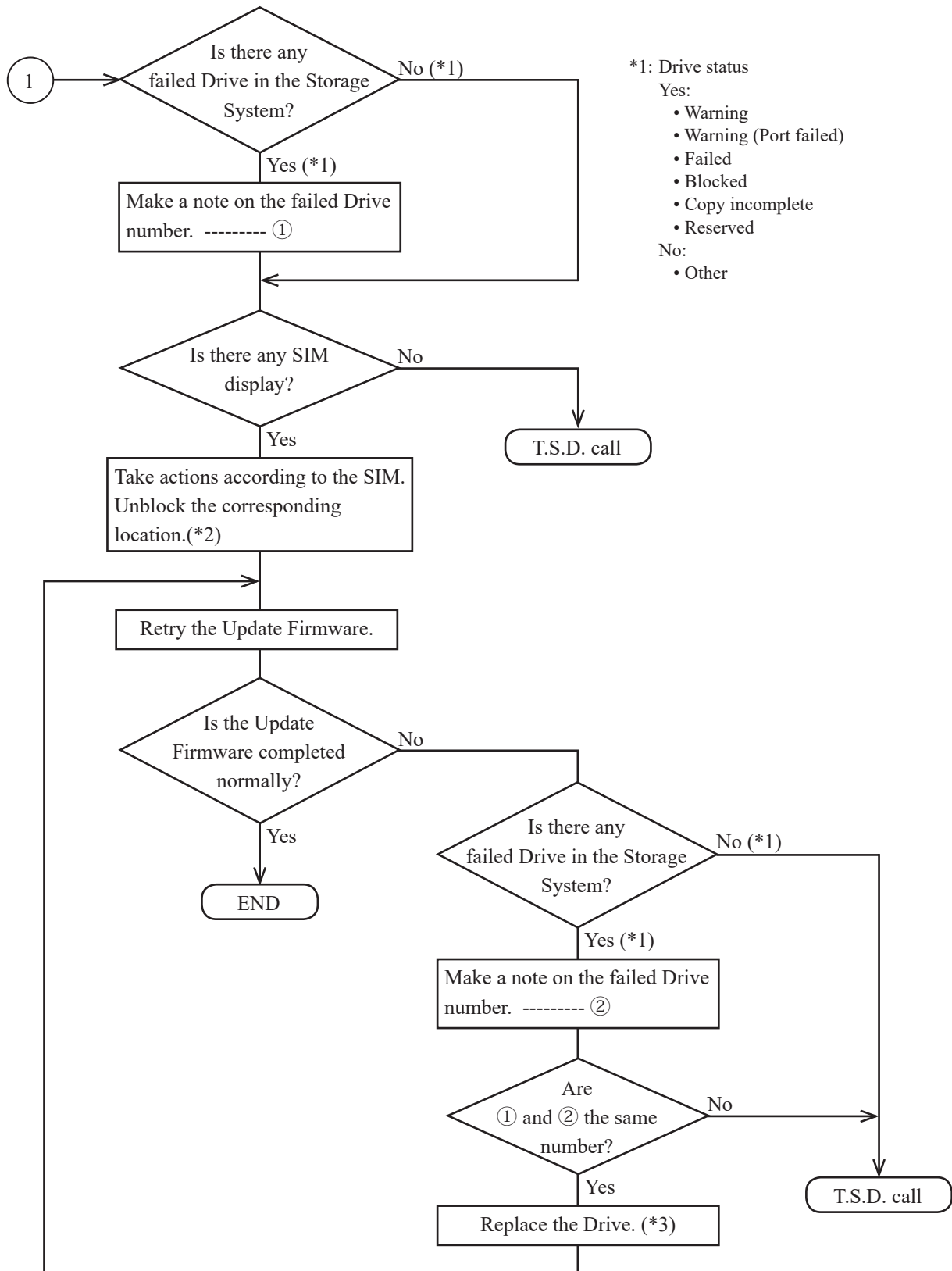
[Recovery procedure when the firmware update is failed.]



[Recovery procedure when the firmware update is failed.]



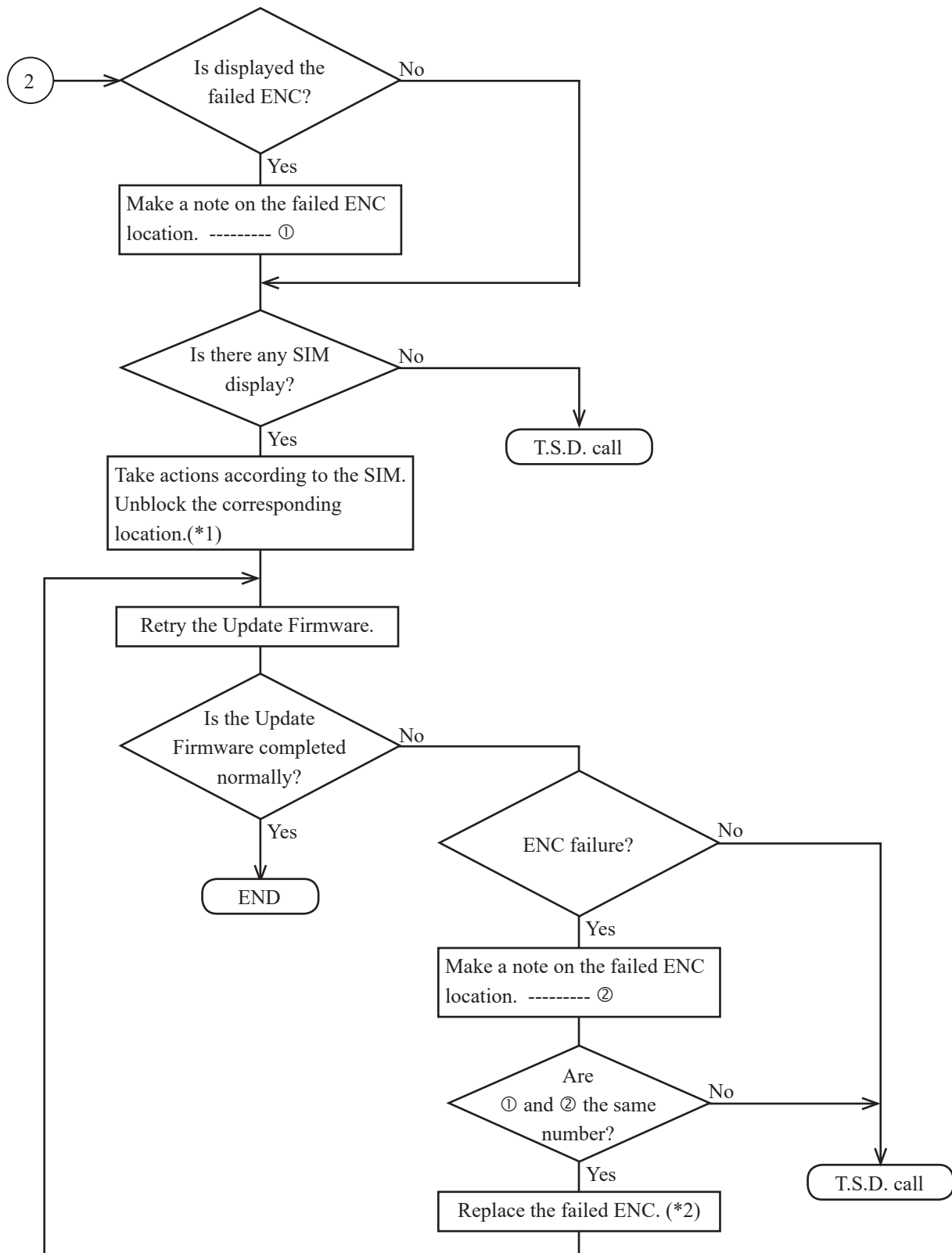
[Recovery procedure when a DB error occurs during a downloading of the Firmware (Drive Firmware)]



*2: If it is still blocked, contact the Technical Support Division.

*3: If this occurs twice or more, contact the Technical Support Division.

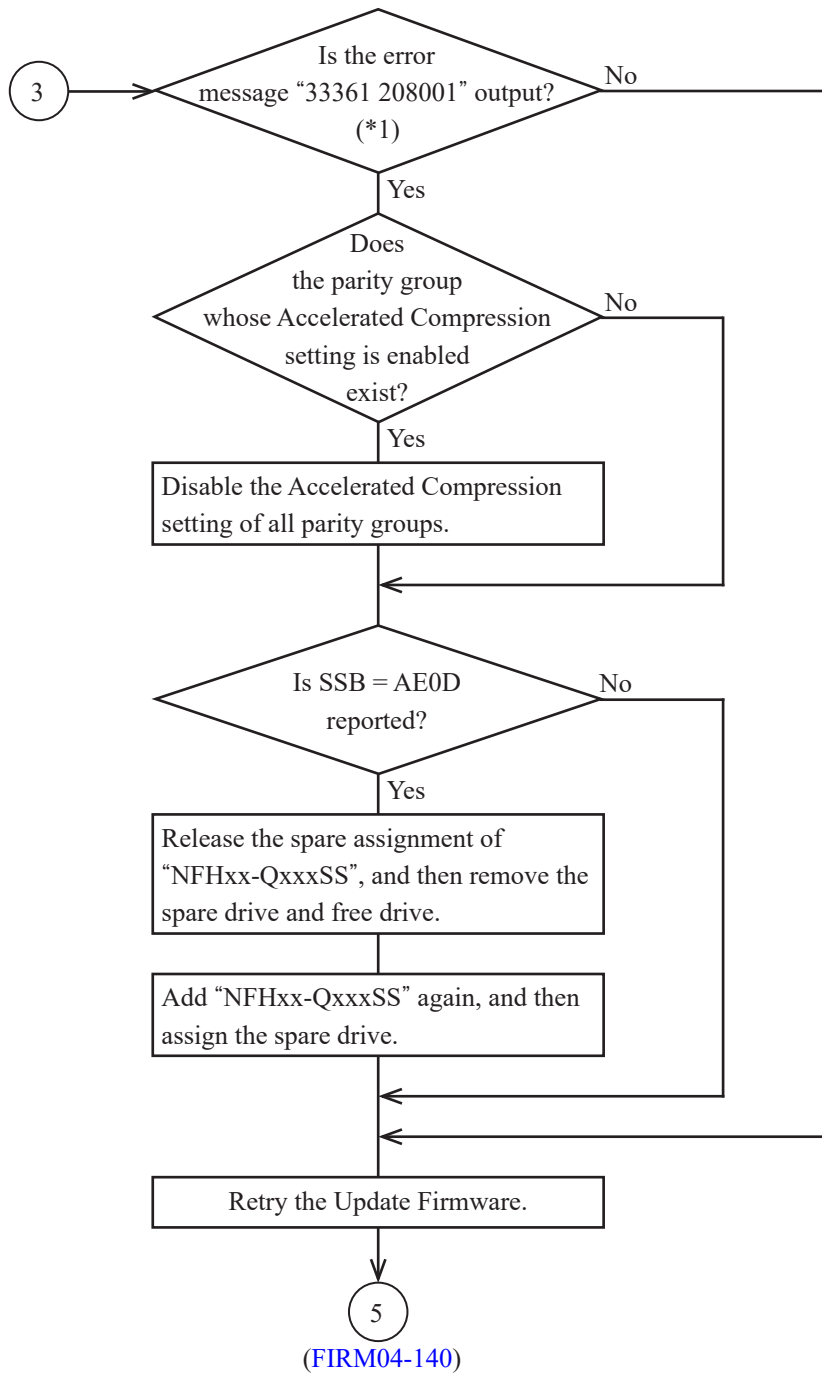
[Recovery procedure when a DB error occurs during a downloading of the Firmware (Expander/
Expander(FMU) Firmware)]



*1: If it is still blocked, contact the Technical Support Division.

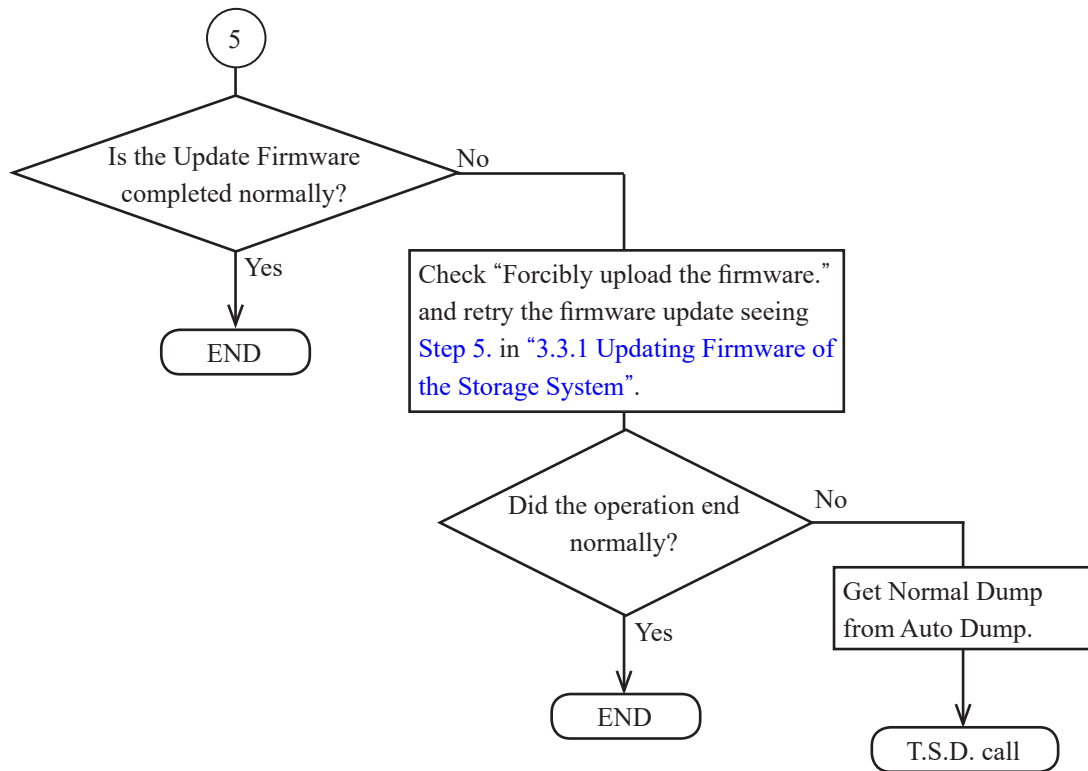
*2: If this occurs twice or more, contact the Technical Support Division.

[Recovery procedure when the firmware download (HDD firmware) fails]



*1: When the parity group whose Accelerated Compression setting is enabled, an upgrade to the firmware that does not support the Accelerated Compression cannot be performed. Therefore, disabling the Accelerated Compression setting of all parity groups is required.

[Recovery procedure when the firmware download (HDD firmware) fails]



4.2 Recovery Procedure in Offline Menu Was Selected

If trouble occurs while the Firmware are being exchanged, symptoms [Step 1](#) to [Step 4](#) below can be observed apparently. In these cases, use the recovery procedures shown in flowcharts [A] to [C].

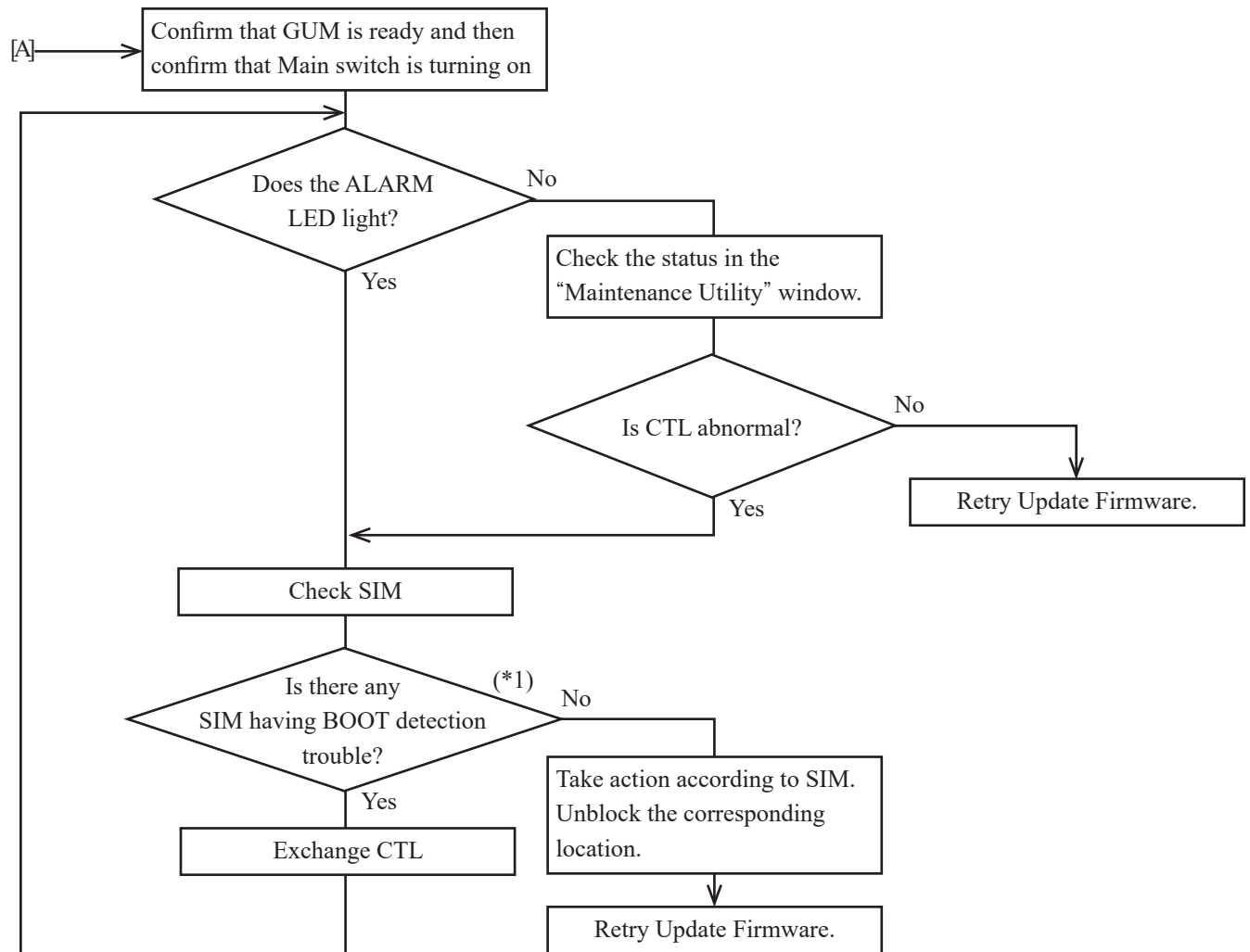
NOTICE: When Virus Checker, Monitor, etc. are in operation so that the Maintenance PC is in the heavy load state, the Update Firmware may fail. In this case, please wait for a while, and then perform the Update Firmware again.
If the Update Firmware operation still fails, please perform the recovery operations by following the procedures in this section.

1. A power failure occurs.
→ Go to [A]. ([FIRM04-160](#))
2. Recovery of a cache failure during the Update Firmware of DKCMAIN Action.
→ Go to [C]. ([FIRM04-190](#))
3. In the case of incorrect version display (“??-??...” or incompatibility). (The disagreement of a binary version (Internal administrative information) contains it.) (See “[3.4 Procedure for Checking Firmware Version](#)”.)
→ Go to [B]. ([FIRM04-170](#))
4. When it fails for other factors.
→ Go to [C]. ([FIRM04-190](#))

[Sections to be referenced for recovery procedure]

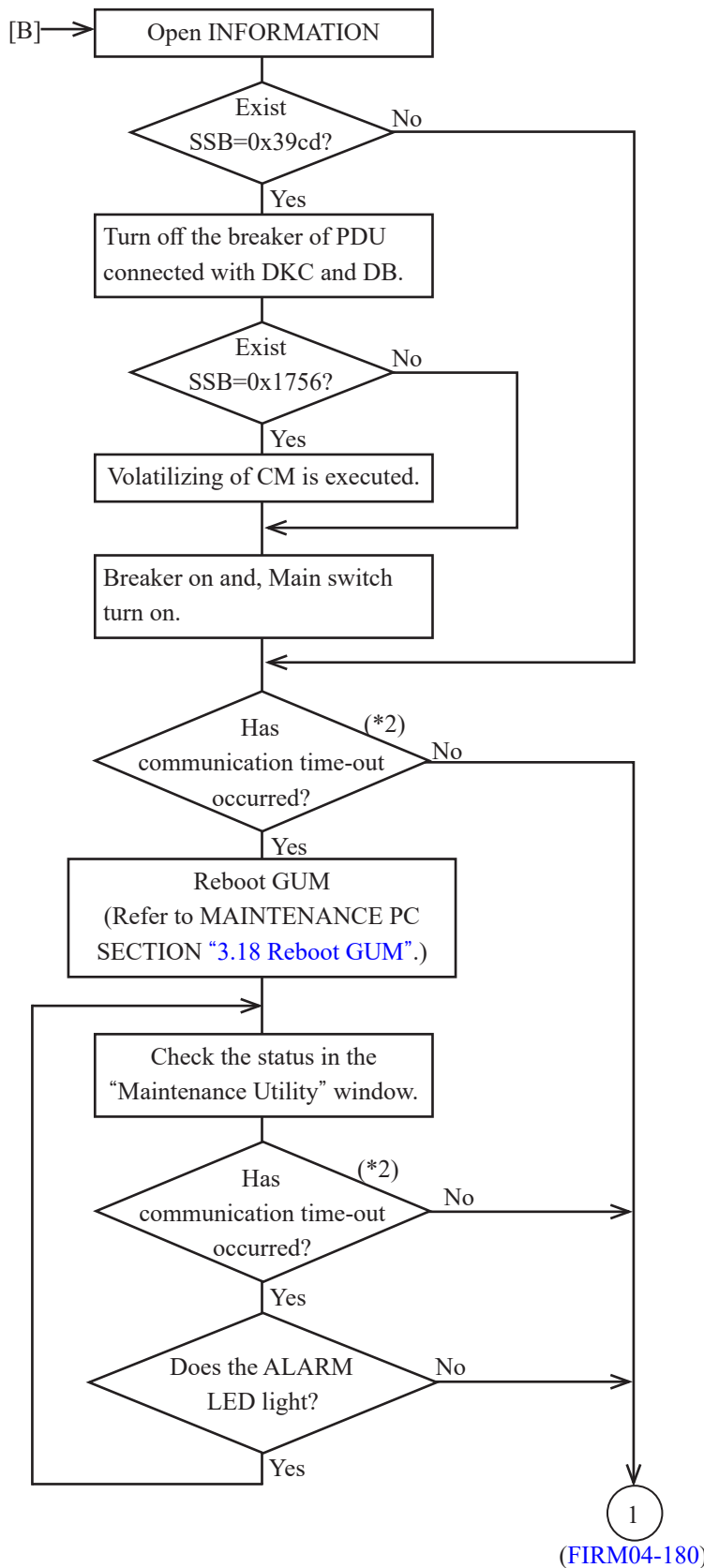
- (1) Status display : Maintenance Utility
 - Status of the whole system
MAINTENANCE PC SECTION “[11.3.3 Navigation Area](#)”
 - Status of each component
MAINTENANCE PC SECTION “[3.22 Alert Display Related to FRU \(Field Replacement Unit\)](#)”
 - Check of SIM
MAINTENANCE PC SECTION “[3.21 Alert Display](#)”
- (2) Version display : Version of Firmware
“[3.4 Procedure for Checking Firmware Version](#)”
- (3) Package exchange: Hot Replace
REPLACEMENT SECTION “[1.2 Hot Replacement Flowchart](#)”

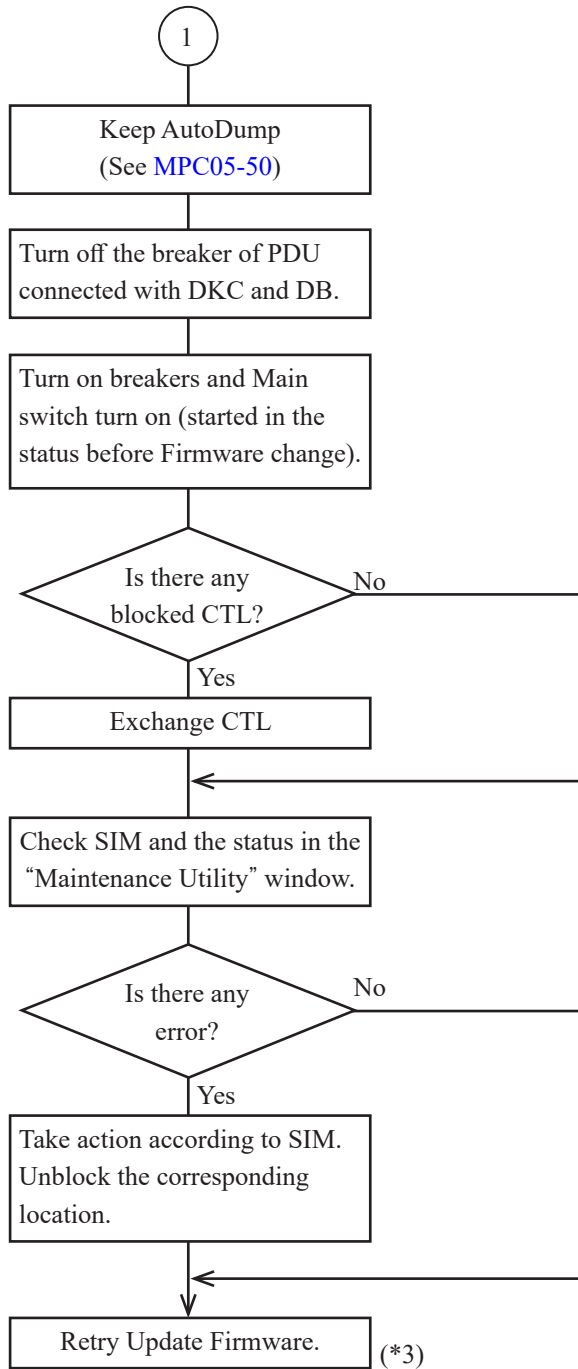
[Recovery Procedure for Power Failure]



FIRM04-170

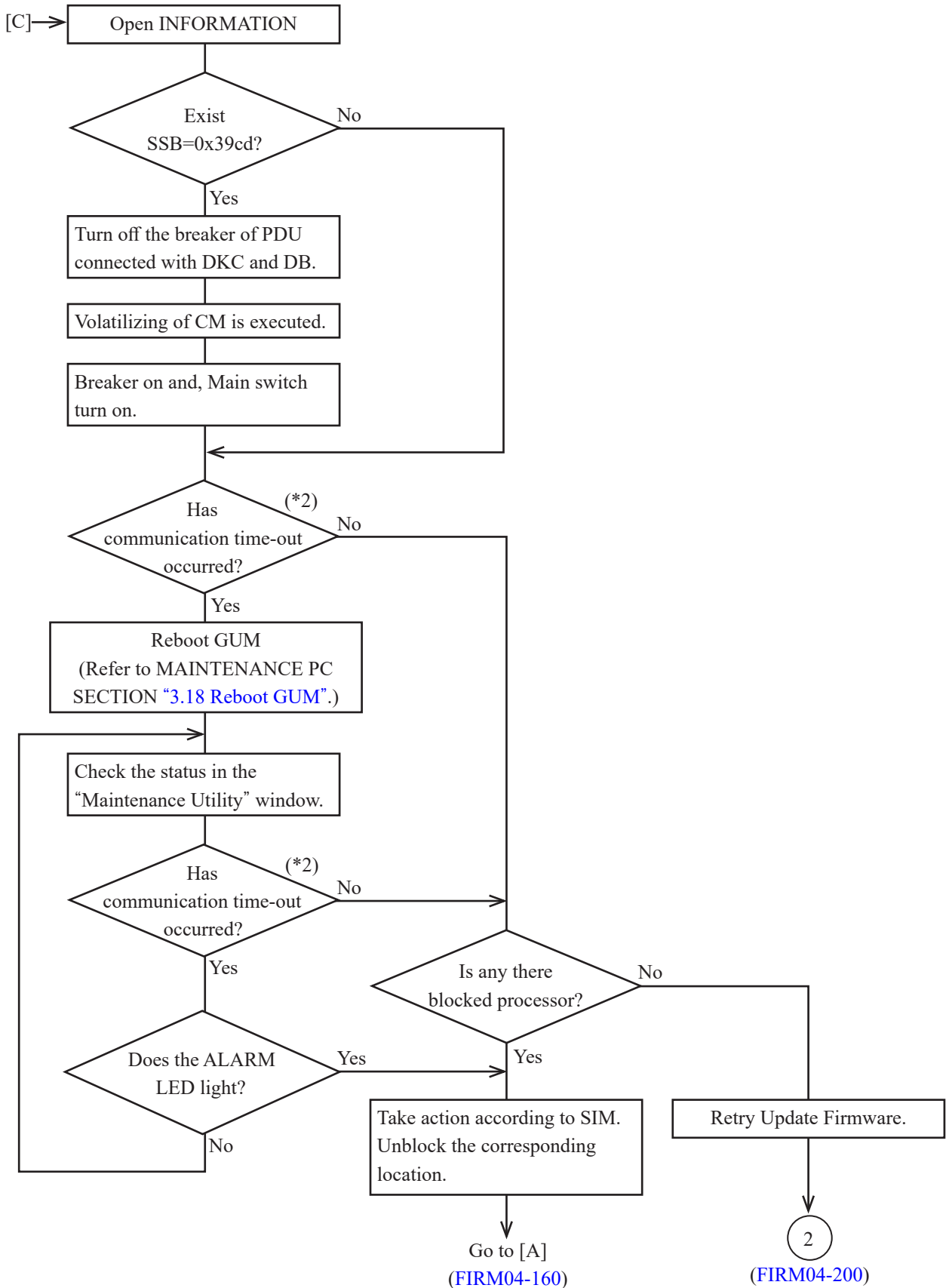
[Recovery procedure for communication time-out during system block processing/Firmware downloading/
Version incompatibility]

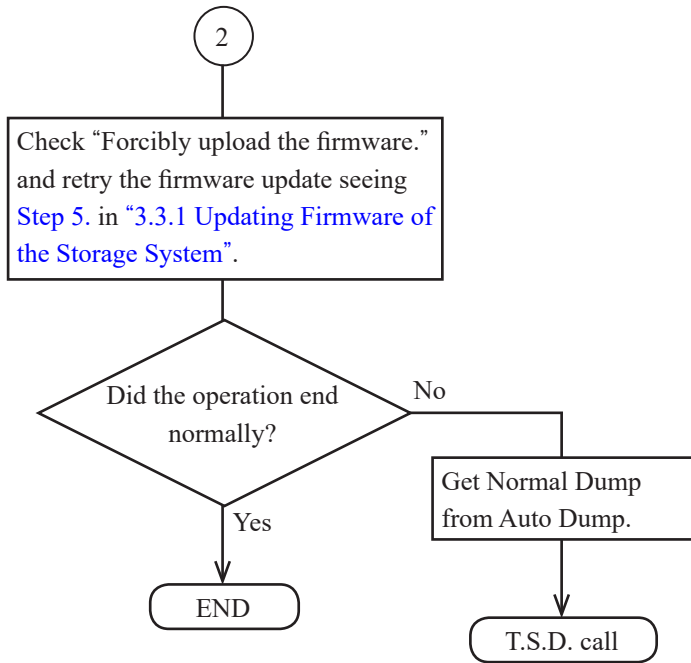




FIRM04-190

[Recovery Procedure for an error in data transferred to the DKC/AP error/MPC Software error]





[Recovery Procedure for I/O Error on Maintenance PC Hard Disk]

- *1: Reference code “7900xy”
xy: Shows processor id. (See [SIMRC02-420](#))
For details of the trouble, refer to the explanation about the BOOT detected error at SSB (Byte27=8c).
(See [SSBLOG05-620](#))
- *2: The message “connection error occurred MPC-GUM” and “connection error occurred GUM-DKC” are displayed.
- *3: If this problem persists, contact the Technical Support Division.

<Recovery of a cache failure during the Update Firmware of DKCMAIN Action>

1. Retry Update Firmware of DKCMAIN program.

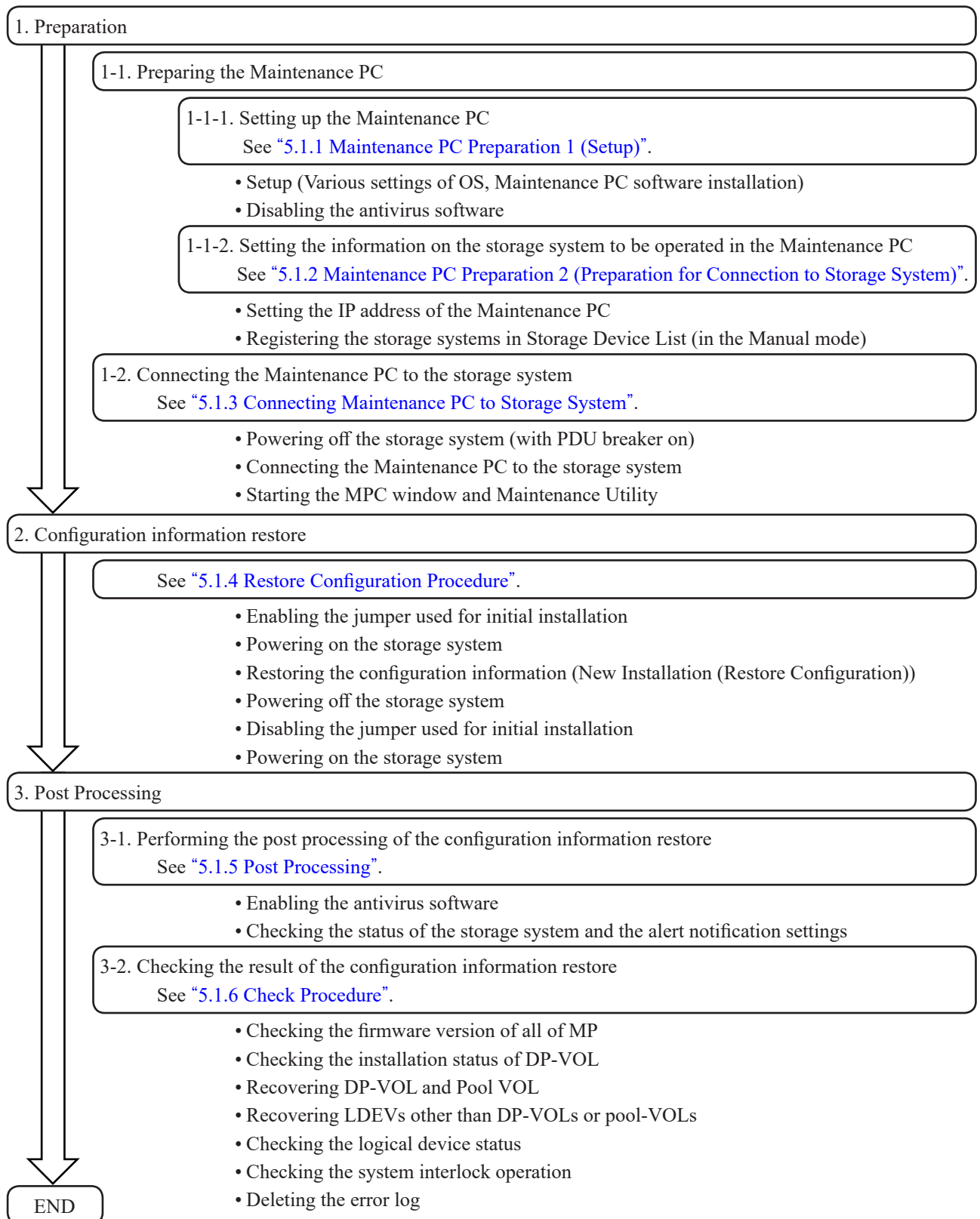
- NOTE:
- The processors which had finished the Update Firmware to new version will be skipped.
 - Password is necessary. Please call Technical Support Division for asking the password.

2. Replace the blocked part in accordance with the SIM message and ACC (ACTION CODE) SECTION ([ACC00-00](#)).

5. Configuration Information Restore/Initialization Procedure

5.1 Procedure of New Installation (Restore Configuration)

The workflow is shown below. If an error occurs during the work, see [“5.3 Troubleshooting of Config Exchange Procedure”](#).



 **CAUTION**

This is the procedure for setting the configuration of the Storage System again based on the backed up configuration information. Performing the procedure incorrectly causes system down or data loss.

Start up the storage system using the configuration information acquired by Config Backup.

NOTE: Performing this procedure initializes a part of setting information. Therefore, the initialized part of the information needs to be set again after this procedure is performed.

Ask your customer to set the information again following the user guides.

For the information to be set again, see [“6.3 Effect on the information due to configuration restoration”](#).

5.1.1 Maintenance PC Preparation 1 (Setup)

1. Backing up IIS configuration

In the New Installation procedure, the IIS server setting is automatically performed. Therefore, when the IIS server is used by an application other than the Maintenance PC Software, start the command prompt as an administrator and acquire the backup by performing the following procedure. The backup acquired in the following procedure is used for restoring the IIS configuration in the post processing of the New Installation procedure.

- (1) Execute the following command to acquire the backup.

```
%systemroot%\system32\inetsrv\appcmd add BACKUP "NAME_OF_BACKUP_A"
```

NOTE: Any name can be specified in NAME_OF_BACKUP_A.

- (2) Execute the following command to make sure that the backup is acquired.

Check that the name specified in (1) is displayed.

```
%systemroot%\system32\inetsrv\appcmd list BACKUP
```

2. Setting up the Maintenance PC

Perform the various settings of OS and the installation of the Maintenance PC software by following MAINTENANCE PC SECTION “[1.2 Maintenance PC Setup Workflow](#)”.

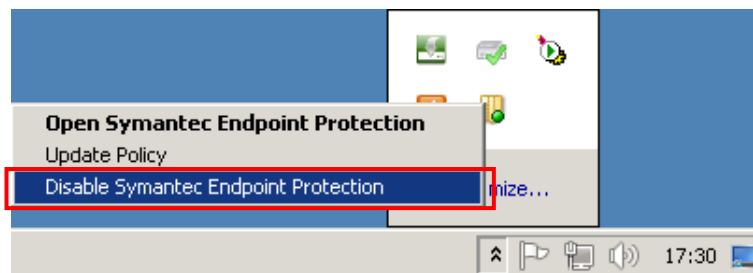
NOTE: The IIS/FTP server setup is required before executing New Installation. Confirm that the IIS/FTP server setup is complete to perform the operations using the Maintenance PC used for any maintenance work other than New Installation. (See MAINTENANCE PC SECTION “[1.3.8 IIS/FTP Server Setup](#)”.)

3. Disabling the antivirus software

Disable the antivirus software because the Maintenance PC and the storage system might not communicate with each other due to the influence of the antivirus software.

The procedure for Symantec Endpoint Protection is as follows:

Right-click the [Symantec Endpoint Protection] icon on the desktop and select [Disable Symantec Endpoint Protection].



5.1.2 Maintenance PC Preparation 2 (Preparation for Connection to Storage System)

Prepare for connecting the Maintenance PC to the storage system. Before starting, check the following information on the target storage system of new installation.

- IP address of the maintenance LAN port of CTL
- IP address of the Maintenance PC
- Storage system model name (VSP F900, VSP F700, and so on)
- Storage system serial number

1. IP address setting of Maintenance PC

Set the IP address by following MAINTENANCE PC SECTION [“2.3.1 IP Address Setting of Maintenance PC”](#).

In addition, the following settings are required depending on the condition of a client's site.

- MAINTENANCE PC SECTION [“2.3.2 Bridge Setting of LAN Ports”](#)
- MAINTENANCE PC SECTION [“2.3.3 Proxy Setting of Browser”](#)
- MAINTENANCE PC SECTION [“2.3.4 Preparation for Connecting to another Storage System That Has the Same IP Address via LAN”](#)

2. Registering the storage system in Storage Device List

Register the target storage system of new installation by following MAINTENANCE PC SECTION [“2.4 Registering Storage Systems to Be Maintained in Storage Device List”](#). In the “Add System” window, use the Manual mode.

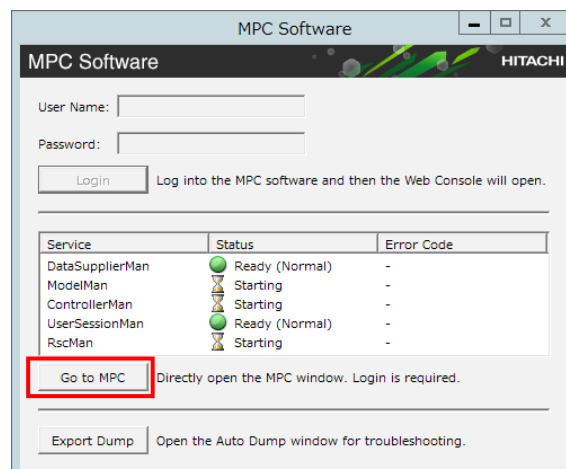
5.1.3 Connecting Maintenance PC to Storage System

1. Powering off the storage system
Power off the storage system while the PDU breaker is on by following INSTALLATION SECTION “1.5.2 Storage System Power Off (Planned Shutdown)”.

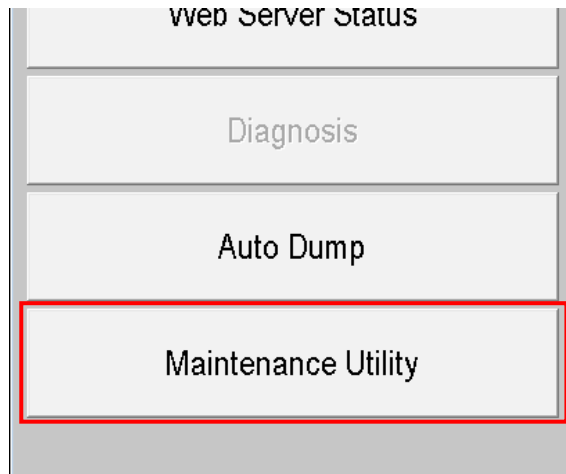
2. Connecting the Maintenance PC to the storage system
Connect the Maintenance PC to the storage system using a LAN cable by following MAINTENANCE PC SECTION “2.2 Connecting Maintenance PC to Storage System” Step 1 and Step 2.

3. Starting the Maintenance PC
Start the Maintenance PC.

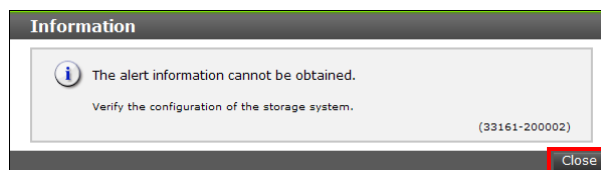
4. Starting the “MPC” window and Maintenance Utility
 - (1) Right-click the connection icon “Storage Device List” on the desktop of the Maintenance PC and select [Run as administrator].
 - (2) Click the Storage System icon to be operated in the “Storage Device List” window. In the “MPC Software” window, enter the user name and password for the maintenance account of the storage system, and then click the [Login] button. A password for the maintenance account of the storage system is changed by your customer after the storage system is installed. Ask your customer to let you know the password.
 - (3) Click the [Go to MPC] button in the “MPC Software” window.
Then, the “MPC” window opens.



- (4) Click the [Maintenance Utility] button in the “MPC” window.
Then, the “Maintenance Utility” window opens.



- (5) The alert information cannot be obtained from the storage system because the storage system is powered off and the “Information” window shown below is displayed. Click the [Close] button.



5.1.4 Restore Configuration Procedure

NOTICE: When the Storage System status is not Ready, only the backup data stored in the GUM can be downloaded.

1. Enabling the jumper used for initial installation
 - (1) On the bottom left of the “Maintenance Utility” window, select [Menu]-[System Management]-[Edit System Parameters] and enable “A jumper used for initial installation (CEMD)”. For details, refer to MAINTENANCE PC SECTION “[3.16 Edit or Confirm System Parameters](#)”.
 - (2) Click the [Log Out] button in the “Maintenance Utility” window.
The “Log Out” window is displayed. Click the [×] button to close the window.

2. Turning on the storage system
 - (1) Press the main switch on the front of the Controller Chassis for about three seconds to turn it on.
 - (2) Check that the POWER LED (green) on the front of the Controller Chassis lights up. Wait for about five minutes after the POWER LED lit to perform the following operation.

3. New Installation (Restore Configuration)

(1) Mode Change

- (a) Change the mode to [Initial Setting] on the “MPC” window.

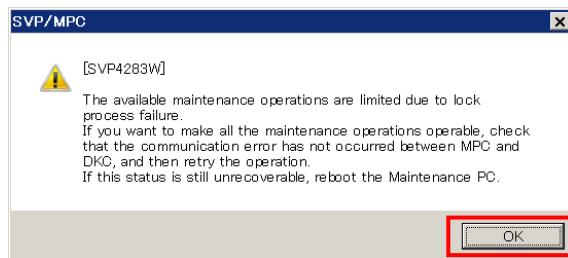
Select “Shift” + “Ctrl” + “I”.

Enter the password and click the [OK] button.

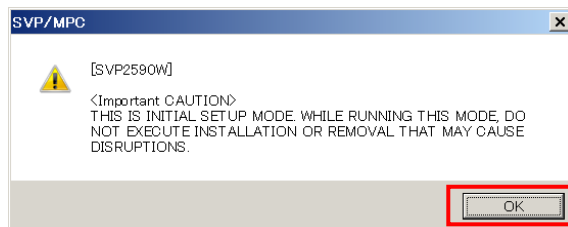
NOTE: For the password, contact the technical support division.

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

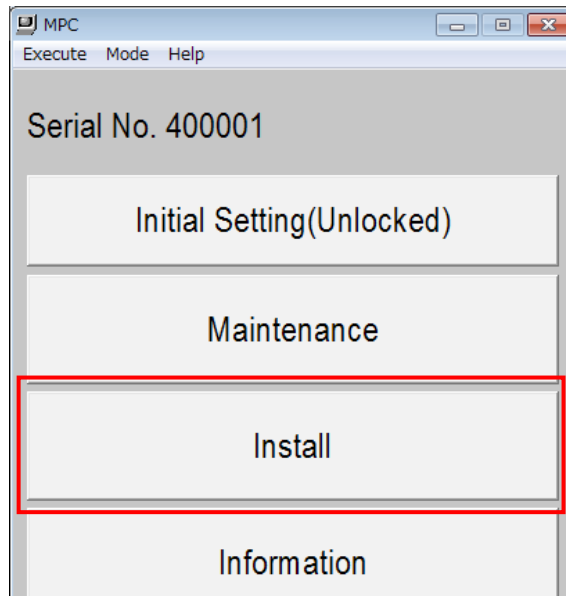
NOTE: If the Storage System was started with the state that the jumper used for the initial installation is enabled, the confirmation message “[4283] The available maintenance operations are limited due to lock process failure. If you want to make all the maintenance operations operable, check that the communication error has not occurred between MPC and DKC, and then retry the operation. If this status is still unrecoverable, reboot the Maintenance PC.” is displayed. Then, click the [OK] button.



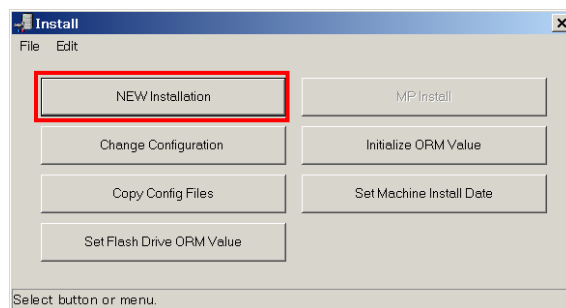
- (c) Click the [OK] button in response to the confirmation message, “[2590] <Important CAUTION> THIS IS INITIAL SETUP MODE. WHILE RUNNING THIS MODE, DO NOT EXECUTE INSTALLATION OR REMOVAL THAT MAY CAUSE DISRUPTIONS.”



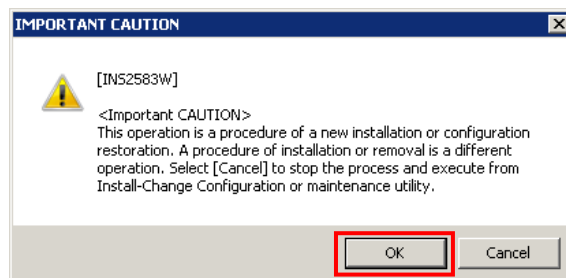
- (2) Click the [Install] button.
The “Install” window opens.



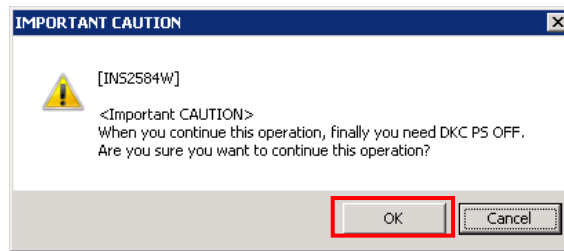
- (3) Click [NEW Installation] in the “Install” window.



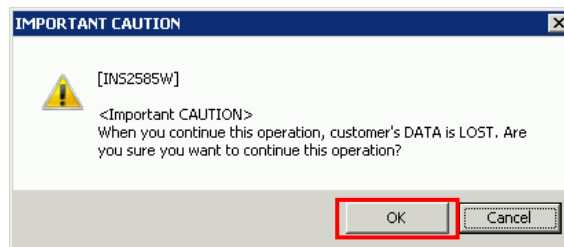
- (4) Click the [OK] button in response to the confirmation message, “[2583] <Important CAUTION>”.
This operation is a procedure of a new installation or configuration restoration. A procedure of installation or removal is a different operation. Select [Cancel] to stop the process and execute from Install-Change Configuration or maintenance utility.”.



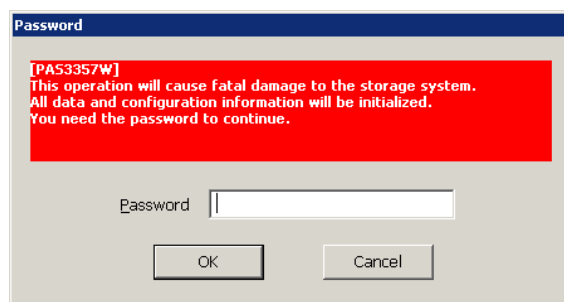
- (5) Click the [OK] button in response to the confirmation message, “[2584] <Important CAUTION> When you continue this operation, finally you need DKC PS OFF. Are you sure you want to continue this operation?”.



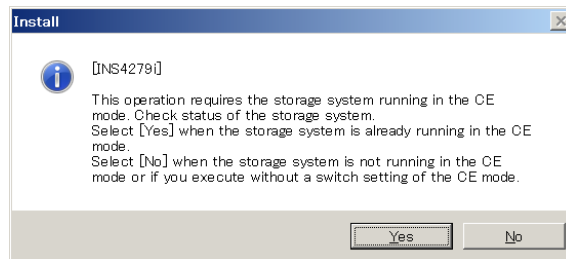
- (6) Click the [OK] button in response to the confirmation message, “[2585] <Important CAUTION> When you continue this operation, customer’s DATA is LOST. Are you sure you want to continue this operation?”.



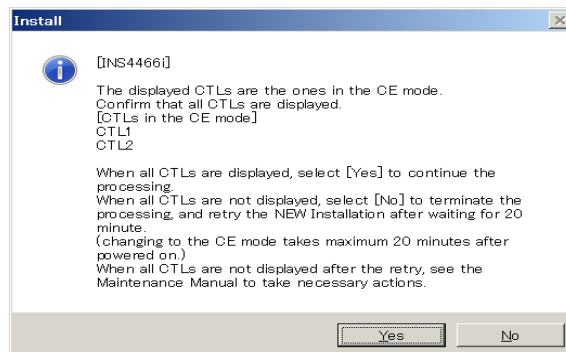
- (7) “Password”[3357] window is displayed.
Enter a password and click the [OK] button.
For the password, ask the Technical Support Division.



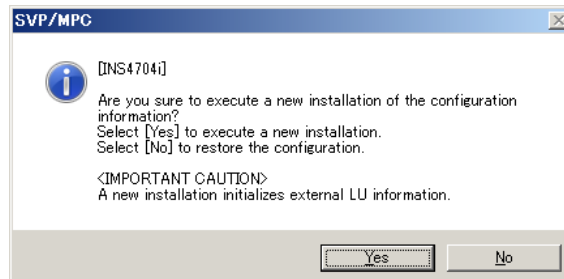
- (8) Response to the message “[4279] This operation requires the storage system running in the CE mode. Check status of the storage system. Select [Yes] when the storage system is already running in the CE mode. Select [No] when the storage system is not running in the CE mode or if you execute without a switch setting of the CE mode.”.
- Click the [Yes] button.



- (9) The message “[4466] The displayed CTLs are the ones in the CE mode. Confirm that all CTLs are displayed. [CTLs in the CE mode] CTL1 CTL2 When all CTLs are displayed, select [Yes] to continue the processing. When all CTLs are not displayed, select [No] to terminate the processing, and retry the NEW Installation after waiting for 20 minute. (changing to the CE mode takes maximum 20 minutes after powered on.) When all CTLs are not displayed after the retry, see the Maintenance Manual to take necessary actions.” is displayed. Click the [Yes] or [No] button in response to the message.
- When all CTLs are displayed:
Click the [Yes] button and go to [Step \(10\)](#).
 - When some CTLs are not displayed or when none of CTLs are displayed:
Click the [No] button to terminate the processing. Wait for 20 minutes, and then retry the new installation procedure from [Step \(3\)](#). After the retry, if some CTLs are not displayed, or if none of CTLs are displayed, click the [No] button to terminate the processing. Then, go back to [Step 1](#) to check the settings of the jumper used for initial installation (CEMD). If the jumper is disabled, enable it. Power off the storage system and go to [Step 2](#).
If the jumper is enabled, refer to TROUBLESHOOTING SECTION “[3.54 Recovery Procedure When the Initial Installation Fails](#)” to take necessary actions.

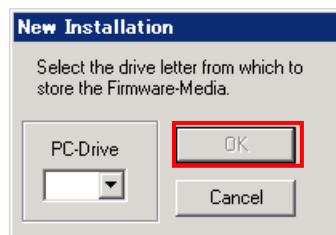


- (10) Click the [No] button in response to the confirmation message, “[4704] Are you sure to execute a new installation of the configuration information?”
Select [Yes] to execute a new installation.
Select [No] to restore the configuration.
<IMPORTANT CAUTION> A new installation initializes external LU information.”.

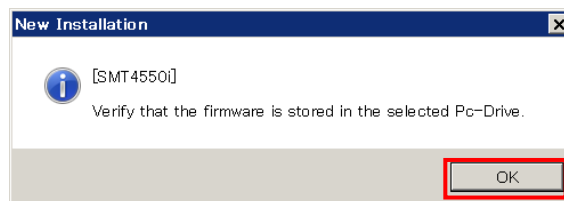


- (11) Select a drive to store the Firmware Media and click the [OK] button.

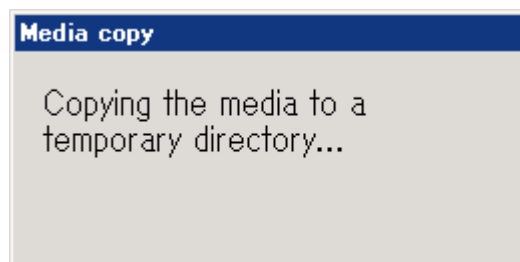
NOTICE: Do not use the configuration information media.



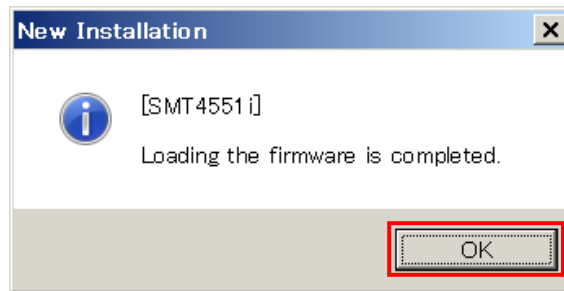
- (12) Store the media in the drive and click the [OK] button in response to the message “[4550] Verify that the firmware is stored in the selected Pc-Drive.”.



- (13) A message of copying from the Media is displayed.



- (14) Remove the Media and click the [OK] button in response to the “[4551] Loading the firmware is completed.”.



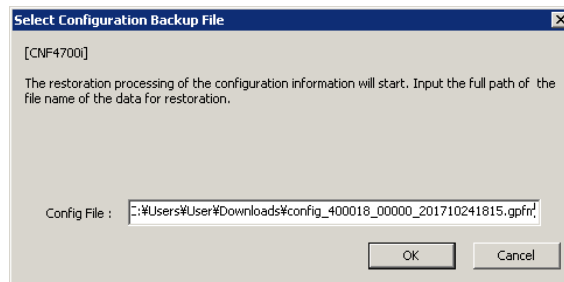
- (15) <Select Configuration Information of Restoration Targets>

The “Select Configuration Backup File”[4700] window is displayed.

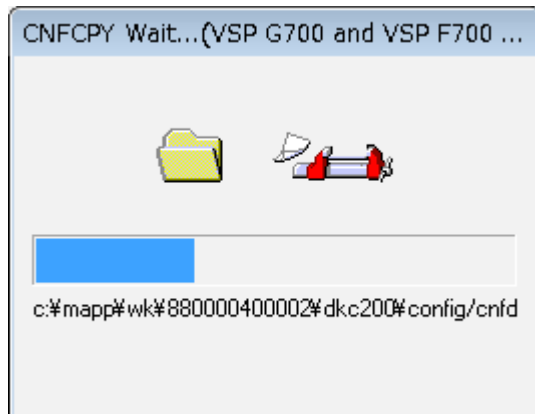
Enter the full path of the data file to be restored and click the [OK] button.

NOTE: Select a .gpfm file.

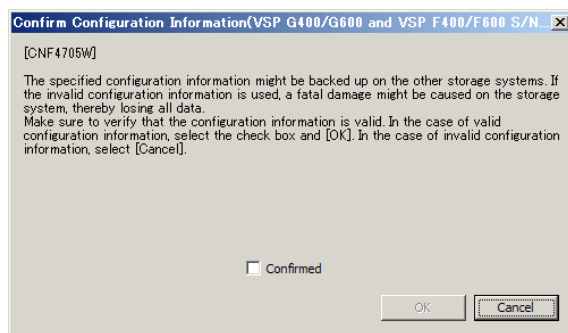
The characters that can be specified as the full path are any one-byte characters other than “\ / : * ? " < > |” and up to 258 characters in length. The file extension must be “gpfm”.



- (16) Make a copy of the configuration information.
During the copying, the “CNFCPY Wait...” window is displayed.



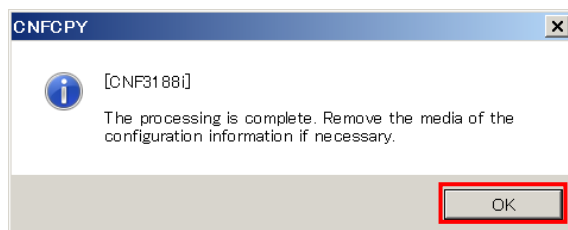
If it is not confirmed that the specified data file to be restored is backed up from the storage system whose configuration information is being restored, the following window is displayed.



The window shown above is displayed if you execute the processing of restoring the configuration information without changing the storage system status to Ready after you replace the controller board (CTL1) while the storage system is powered off.

Reconfirm that the specified file is not wrong, and then select the check box to continue the work.

- (17) A message, “[3188] The processing is complete. Remove the media of the configuration information if necessary.” is displayed. Remove the configuration information media as needed, and then click the [OK] button.



(18)

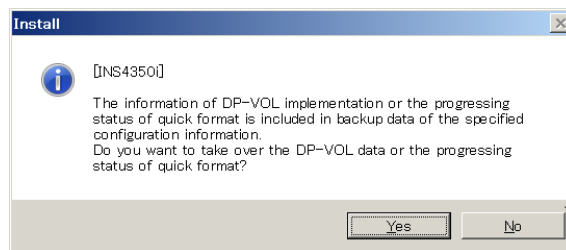
NOTICE:

- If you select the [No] button, the data stored in the DP-VOL is lost.
- To select the [Yes] button, follow the instructions by the Technical Support Division. The configuration information of the current Storage System and the configuration information selected in [Step \(15\)](#) need to be identical.

Response to the message “[4350] The information of DP-VOL implementation or the progressing status of quick format is included in backup data of the specified configuration information. Do you want to take over the DP-VOL data or the progressing status of quick format?”.

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

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

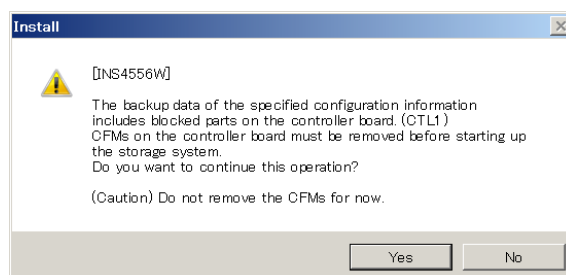


(19) When the backup data of the specified configuration information includes blocked parts on the Controller Board, the message “[4556] The backup data of the specified configuration information includes blocked parts on the controller board. (CTLn) CFMs on the controller board must be removed before starting up the storage system. Do you want to continue this operation? (Caution) Do not remove the CFMs for now.” is displayed.

To continue the processing, click the [Yes] button. Go to [Step \(20\)](#).

To suspend the processing, click the [No] button. The installation procedure terminates.

NOTE: When there is not a blocked part in Controller Board, this message is not displayed.



- (20) When the backup data of the specified configuration information includes blocked HDDs, the message “[4558] The backup data of the specified configuration information includes blocked HDDs. the blocked HDDs must be removed before starting up the storage system. Do you want to continue this operation?”

(Caution) Do not remove the HDDs for now.” is displayed.

To continue the processing, click the [Yes] button. Go to [Step \(21\)](#).

To suspend the processing, click the [No] button. The installation procedure terminates.

NOTE: When there is not a blocked HDD, this message is not displayed.

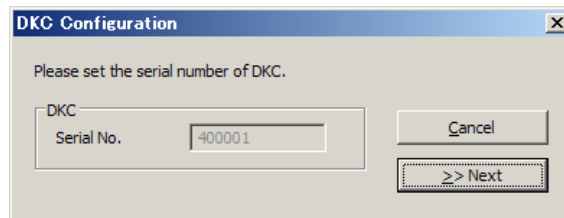


- (21) <DKC Configuration window>

The “DKC Configuration” window is displayed. Check the serial number.

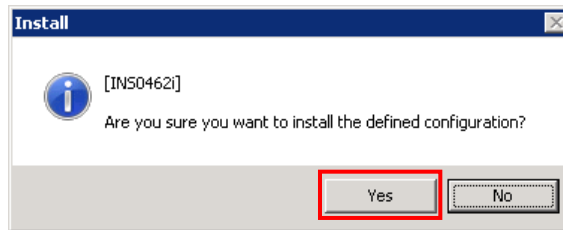
When the [>>Next] button is clicked, go to [Step \(22\)](#).

This procedure is completed when the [Cancel] button is clicked.

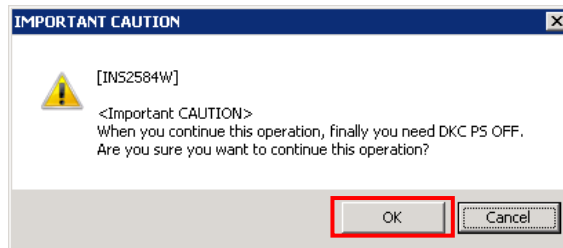


- (22) Click the [Yes] button in response to the confirmatory message, “[0462] Are you sure you want to install the defined configuration?”.

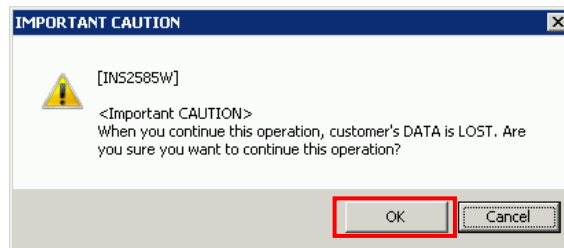
Selecting [No] cancels the configuration change processing and terminates the installation procedure.



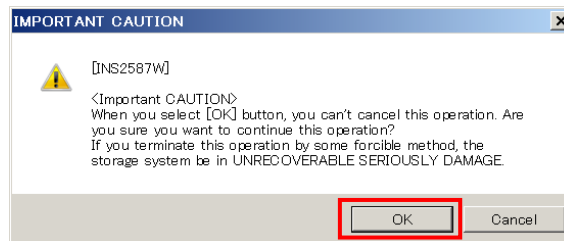
- (23) Click the [OK] button in response to the confirmatory message, “[2584] <Important CAUTION> When you continue this operation, finally you need DKC PS OFF. Are you sure you want to continue this operation?”.



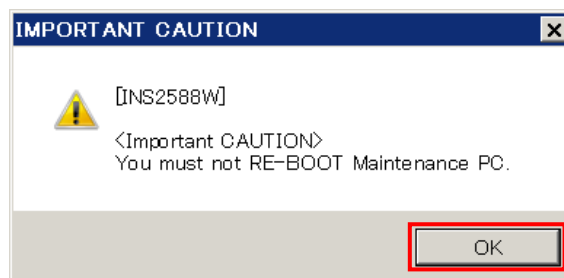
- (24) Click the [OK] button in response to the confirmatory message, “[2585] <Important CAUTION> When you continue this operation, customer’s DATA is LOST. Are you sure you want to continue this operation?”.



- (25) Click the [OK] button in response to the confirmatory message, “[2587] <Important CAUTION> When you select [OK] button, you can’t cancel this operation. Are you sure you want to continue this operation? If you terminate this operation by some forcible method, the storage system be in UNRECOVERABLE SERIOUSLY DAMAGE.”.

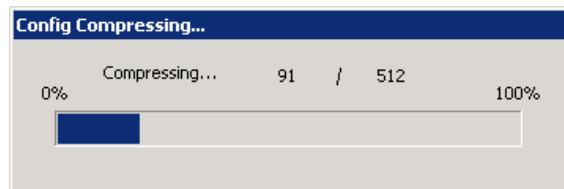


- (26) Click the [OK] button in response to the cautionary message, “[2588] <Important CAUTION> You must not RE-BOOT Maintenance PC.”.



(27) <Compressing of the configuration information>

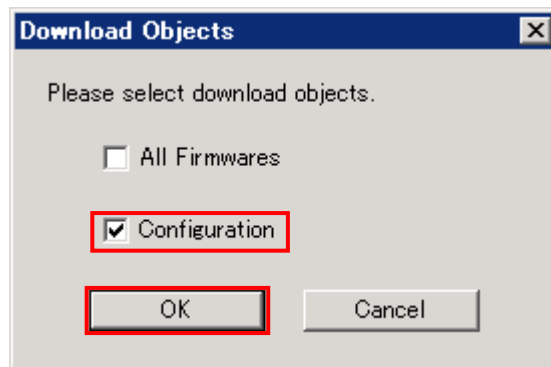
The configuration information is compressed. The dialog of “Config Compressing...” is displayed. After the compressing is completed, go to [Step \(28\)](#).



(28) <Download Objects window>

Confirm that [Configuration] is checked and click the [OK] button.

NOTE: Please do not click [All Firmwares].

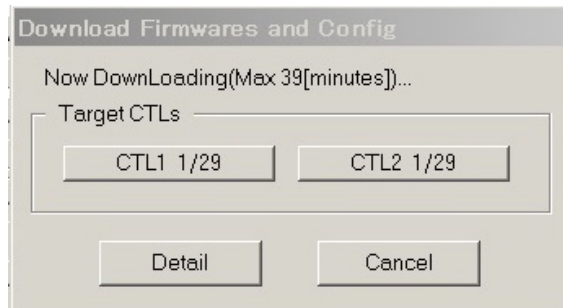


(29) <Configuration information transfer>

The configuration information is forwarded.

After the forward is completed, go to [Step \(30\)](#).

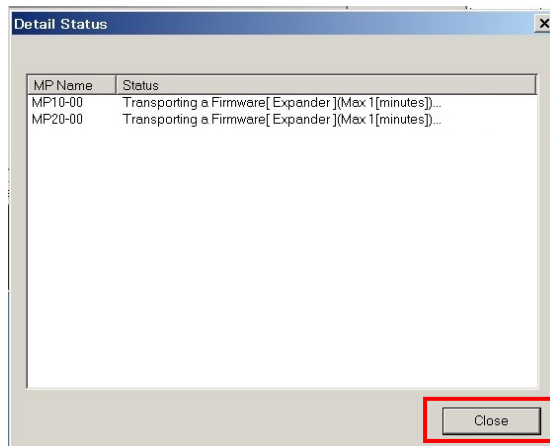
Click the [Detail] button to confirm the detail of the transfer status. Go to [Step \(a\)](#).



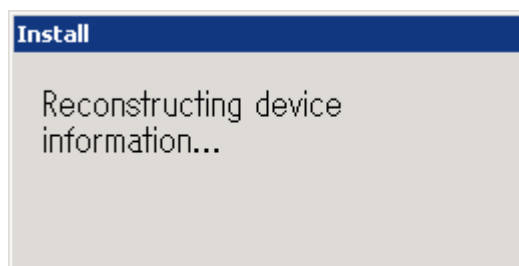
(a) Details of transfer situation are confirmed on “Detail Status” window.

When you close the “Detail Status” window, click the [Close] button.

NOTE: Be sure to close the “Details Status” window after the confirmation. If the window is left open, the transfer of the configuration information does not complete.



(30) “Reconstructing device information...” is displayed.



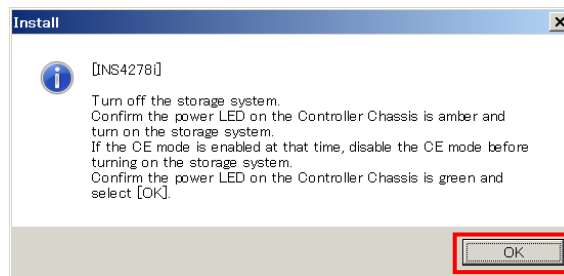
- (31) The On/Of procedure of the Storage System power differs depending on the availability of blocked parts.

When [4556] in [Step \(19\)](#) and [4558] in [Step \(20\)](#) are not displayed, the backup data of the specified configuration information does not include blocked parts. Go to [Step \(a\)](#).

When [4556] in [Step \(19\)](#) or [4558] in [Step \(20\)](#) is displayed, the backup data of the specified configuration information includes blocked parts. Go to [Step \(b\)](#).

- (a) When blocked parts do not exist

Click the [OK] button for the message “[4278] Turn off the storage system. Confirm the power LED on the Controller Chassis is amber and turn on the storage system. If the CE mode is enabled at that time, disable the CE mode before turning on the storage system. Confirm the power LED on the Controller Chassis is green and select [OK].” is displayed, perform the followings.

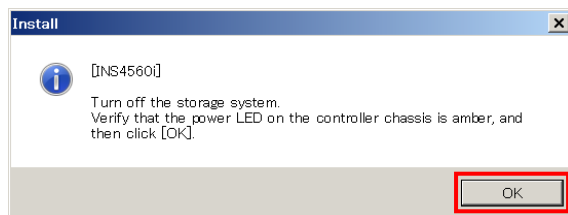


- (i) Press the main switch on the front of the Controller Chassis for about three seconds to turn off the Storage System.
- (ii) Open the “Maintenance Utility” window from the “MPC” window and disable the jumper used for the initial installation (CEMD).
 - How to set the jumper for initial installation: Refer to MAINTENANCE PC SECTION [“3.16 Edit or Confirm System Parameters”](#).
- (iii) Confirm that the POWER LED of the Controller Chassis is amber, and then turn on the Storage System.
- (iv) Confirm that the POWER LED of the Controller Chassis is green, and then select the [OK] button.

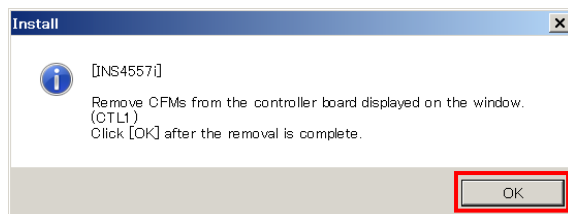
Go to [Step \(c\)](#).

(b) When blocked parts exist

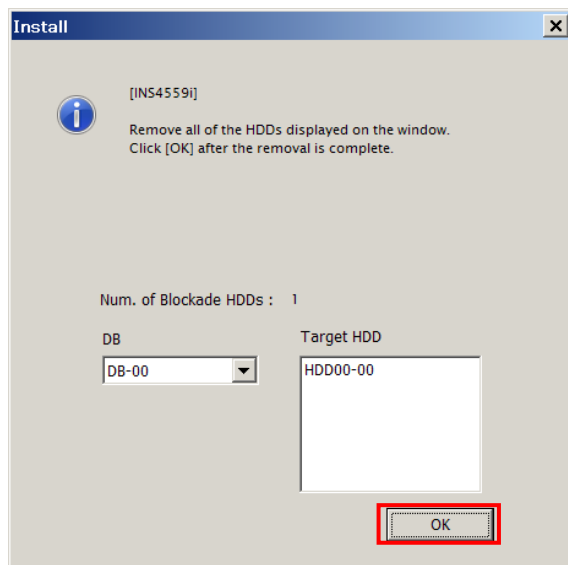
- (i) The message “[4560] Turn off the storage system. Verify that the power LED on the controller chassis is amber, and then click [OK].” is displayed. Check that the POWER LED on the front of the Controller Chassis is amber.
Click the [OK] button. Go to [Step \(ii\)](#).



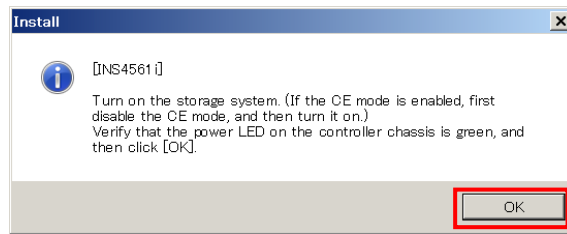
- (ii) When the backup data of the specified configuration information includes blocked parts on the Controller Board, the message “[4557] Remove CFMs from the controller board displayed on the window. (CTLn) Click [OK] after the removal is complete.” is displayed. Remove the CFMs of the displayed Controller Board.
Click the [OK] button. Go to [Step \(iii\)](#).



- (iii) When the backup data of the specified configuration information includes blocked HDDs, the message “[4559] Remove all of the HDDs displayed on the window. Click [OK] after the removal is complete.” is displayed. Remove the displayed HDDs.
Multiple DBs may be the targets. Operate the [DB] list to remove the targets. Click the [OK] button. Go to [Step \(iv\)](#).



- (iv) The message “[4561] Turn on the storage system. (If the CE mode is enabled, first disable the CE mode, and then turn it on.) Verify that the power LED on the controller chassis is green, and then click [OK].” is displayed, perform the followings.



1. Open the “Maintenance Utility” window from the “MPC” window and disable the jumper used for the initial installation (CEMD).
 - How to set the jumper for initial installation: Refer to MAINTENANCE PC SECTION “[3.16 Edit or Confirm System Parameters](#)”.
 2. Confirm that the POWER LED of the Controller Chassis is amber, and then turn on the Storage System.
 3. Confirm that the POWER LED of the Controller Chassis is green, and then select the [OK] button.
- (c) Close the “Install” window.
- (d) Change the mode from [Initial Setting(Unlocked)] to [View Mode].

5.1.5 Post Processing

1. Turning on the storage system

Check that the READY LED (green) on the front of the Controller Chassis lights up.

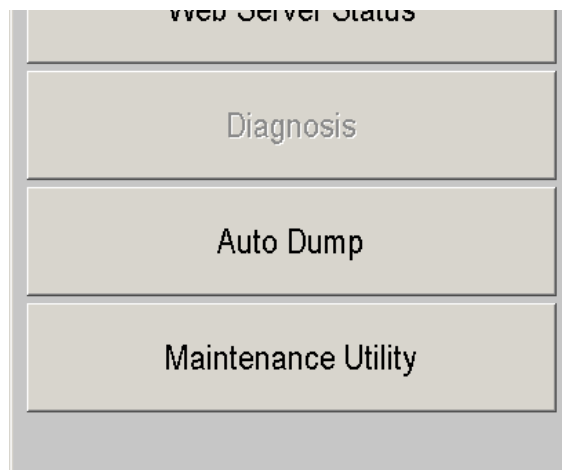
NOTE: It takes about 30 minutes until the READY LED changes to green.

-
2. Enabling the antivirus software

Enable the antivirus software.

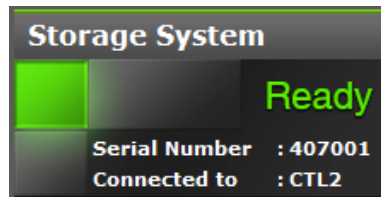
-
3. Logging in to the “Maintenance Utility” window

Click the [Maintenance Utility] button in the “MPC” window.



4. Check Status

Please make sure that it is displayed as the “Ready” status of the Storage System in the “Maintenance Utility” window.



Status	Procedure
Ready	The processing is not required.
Information	Some SIMs are not checked. Check the SIM contents. (After checking the SIMs, refreshing the window changes the status to “Ready”.) (*1)
Warning	There is a failed part. Check the “MAIN” window and the SIM, and then take a necessary action. (*1) (*2)
Power-on in progress	The Storage System power-on is in progress. Log out of it once, and log in to the “Maintenance Utility” window after a while.

*1: Refer to MAINTENANCE PC SECTION [“3.21 Alert Display”](#) for how to check SIMs.

*2: Refer to SIM RC SECTION ([SIMRC00-00](#)) for the contents of SIMs.

NOTICE: When the SIM = afa0xx, afa1xx, or afa2xx is reported, perform the dummy replacement of the SWPK. (Refer to TROUBLESHOOTING SECTION [“3.68 Recovery Procedure When the CHBB Firmware Update Occurs \(SIM = afa0xx, afa1xx, afa2xx\)”](#).)

If the dummy replacement of the SWPK is not performed, a serious failure might occur while the storage system in which the CHBB is installed is operating.

NOTICE: Although the SIM = 47ec00 might be reported, no action is required for the SIM.

5. Confirming the Set Up Alert Notifications

See MAINTENANCE PC SECTION [“3.4.1.2 Procedure”](#) and check that the information different from the contents to be configured is not set by the [Email], [Syslog] and [SNMP] tabs in the “Set Up Alert Notifications” window. If it is set, delete or reset it as needed.

6. Restoring IIS configuration

When the IIS is used by an application other than the Maintenance PC software, restore the IIS configuration using the following command.

- Restore command

```
%systemroot%\system32\inetsrv\appcmd restore BACKUP "NAME_OF_BACKUP_A"
```

Specify the name of the acquired backup of the IIS configuration of the application other than the Maintenance PC Software before performing the New Installation procedure in “NAME_OF_BACKUP_A”.


7. Setting the setting information other than the configuration information to be restored again

If you restore the configuration information without powering on the storage system after the cold replacement of the CTL, set the following setting information again. Follow the instructions provided by the Technical Support Division.

- Setting information set through the Maintenance Utility
- GUM system option setting information

5.1.6 Check Procedure

1. Check all MPs Firmware version

In the “Version” window, open the [MP Ver.(Curt./Running)] tab and the [MP Ver.(Curt./FM)] tab to check that the error icon  is not displayed. (See MAINTENANCE PC SECTION “[5.12.2.2 MP Ver.\(Curt./Running\)](#)” and “[5.12.2.3 MP Ver.\(Curt./FM\)](#)”.)

To display the “Version” window, click the [Version] button in the “Maintenance” window.

2. Start Web Console

Start the Web Console.

See MAINTENANCE PC SECTION “[2.5 Starting Web Console](#)” for the procedure.

3. Check installation status of DP-VOL

All LDEVs are blocked after “[5.1.4 Restore Configuration Procedure](#)” is performed.

When you select the [No] button in [Step \(18\)](#) of “[5.1.4 Restore Configuration Procedure](#)”, follow the instructions provided by the Technical Support Division. Then, go to [Step 5](#).

When you select the [Yes] button in [Step \(18\)](#) of “[5.1.4 Restore Configuration Procedure](#)”, confirm the SSB logs.

- When SSB = 2C90 is reported, go to [Step 4](#).
 - When SSB = 2C90 is not reported, stop the check procedure and contact the Technical Support Division.
-

4. Recover DP-VOL and Pool VOL

Recover the pool-VOL forcibly. Then, recover the DP-VOL forcibly.

See MAINTENANCE PC SECTION “[4.4.4 Force Restore LDEVs](#)” for forcible recovery procedure.

5. Recover LDEVs other than DP-VOLs or pool-VOLs

When you do not take over the data, format the blocked LDEVs. To take over the data, follow the instructions provided by the Technical Support Division.

6. Check logical device status

Check if Logical Devices are normal in accordance with the “Logical Devices” window on the Web Console.

7. Check system interlock operation

Start the test program from the host to check for normal Storage System's interlocked operation with the host.

8. Delete error log

Power ON/OFF the Storage System to make sure that the Storage System starts normally. (Confirm that the ALARM LED and the WARNING LED on the Controller Chassis are OFF.)

Delete all error log information from the Maintenance PC and transfer the Storage System to the user.
See MAINTENANCE PC SECTION ["5.3.2 Log Delete"](#).

5.2 Automatic Configuration Definition Mode (System Configuration Initialization)

CAUTION

Executing this procedure initializes all the configuration information and all the encryption key including the user data in the Storage System. Never use it except the Storage System initialization. Furthermore, the system information such as the system option mode is initialized to the default value. If needed, set it again after executing this procedure. The system option modes to be turned on by default are 15, 142, 164, 449, 459, 467, 506, 734, 789, 790, 832, 867, 872, 899, 990, 1068 and 1097.

CAUTION

Check whether [Internal Network] of the network setting is changed from the initial value (10.251.0.15/4.15). If it is changed, refer to MAINTENANCE PC SECTION “[3.6 Network Setting](#)” and return [Internal Network] to the initial value (10.251.0.15/4.15) before starting this work.

5.2.1 Procedure for Automatic Configuration Start

1. Check that the Storage System is powered on and its status is normal.
2. Refer to MAINTENANCE PC SECTION “[3.16 Edit or Confirm System Parameters](#)” and enable [Automatic Configuration Definition Mode].
3. Wait until the POWER LED on the Controller Chassis changes from green lighting (Logic power-on status) to amber lighting (Sub power-on status).
4. After confirming that the POWER LED is amber lit, stop the service of the storage system referring to MAINTENANCE PC SECTION “[2.14.2 Stopping the Service of Storage System](#)”. Then, turn on the storage system (DKC) referring to MAINTENANCE PC SECTION “[3.10 Power on Storage System](#)”.
5. After confirming that the POWER LED is green lit, start the service of the storage system referring to MAINTENANCE PC SECTION “[2.14.3 Starting the Service of Storage System](#)”. Then, make sure that the READY LED (green) on the front of the Controller Chassis is lit.

NOTE:

- It takes about 30 minutes until the READY LED changes to green.
- When the Storage System does not start (cannot connect to Web Console or others) in [Step 5](#), the internal network setting may have been changed from the initial value. Refer to MAINTENANCE PC SECTION “[3.6 Network Setting](#)” and set [Internal Network] to the initial value (10.251.0.15/4.15).

5.3 Troubleshooting of Config Exchange Procedure

No	Failure	Recovery action
1	When it displayed the “Media copy” dialog, The error occurred the “INS3005E”	<p>It is not setting correct Maintenance PC.</p> <p>(1) Check whether “MPC IP Address” in Storage Device List matches the IP address of the Maintenance PC.</p> <p>(a) Click the text of [MPC IP Address] on the top right of the screen of Storage Device List, and set the IP Address of Maintenance PC on the [Change MPC IP Address] dialog.</p> <p>(b) Reboot Maintenance PC.</p> <p>(2) Confirm a firmware media name of the drive that you appointed in PC-Drive D:\firmware\AllFirmware.mda D changes by the drive name that I appointed in PC-Drive.</p>
2	When it displayed the “Download Firmwares and Config” dialog, The “FTP Communication error” occurred	<p>It is not setting correct ftp server.</p> <p>(1) Open [User Accounts] from [Start] - [Control Panel]. Click the [Manage another account]. If “Manage Accounts” window is not display [bakeduser], Perform “1.4 Maintenance PC Software Initial Installation/Update Installation” after starting the MAINTENANCE PC SECTION of “8.2 Maintenance PC Software Uninstallation”.</p> <p>(2) Set up the IIS/FTP server again (see MAINTENANCE PC SECTION “1.3.8 IIS/FTP Server Setup”).</p> <p>(3) Confirm the GUM IP address. Confirm whether the Storage System icon is the maintenance LAN address in “Table 2-2 Icon Display Item” of MAINTENANCE PC SECTION.</p> <p>(4) Failed to connect to the Storage System.</p> <p>(a) Execute “1.5.2 Storage System Power Off (Planned Shutdown)” and “1.5.1 Storage System Power On” of INSTALLATION SECTION.</p> <p>(b) Reboot the Maintenance PC.</p> <p>(c) Execute “5. Configuration Information Restore/Initialization Procedure” again.</p>
3	When it displayed the “Download Firmwares and Config” dialog, The “Communication error has occurred.” occurred	<p>The Maintenance PC and the Storage system cannot communicate</p> <p>(1) Execute “1.5.2 Storage System Power Off (Planned Shutdown)” and “1.5.1 Storage System Power On” of INSTALLATION SECTION.</p> <p>(2) Reboot the Maintenance PC.</p> <p>(3) Execute “5. Configuration Information Restore/Initialization Procedure” again.</p>

(To be continued)

(Continued from the preceding page)

No	Failure	Recovery action
4	The error other than the above has occurred in the "Download Firmwares and Config" dialog.	(1) Execute "1.5.2 Storage System Power Off (Planned Shutdown)" and "1.5.1 Storage System Power On" of INSTALLATION SECTION. (2) Reboot the Maintenance PC. (3) Execute "5. Configuration Information Restore/Initialization Procedure" again.
5	It displayed [SMT4555E].	The Maintenance PC and the Storage System unmatched "System type". (1) Confirm whether the Storage System model name matches "Type" (Storage System type) of the Storage System icon in "Table 2-2 Icon Display Item" of MAINTENANCE PC SECTION. (2) If it matched "System type", it executes "2.4 Replacing a Controller Board" of REPLACEMENT SECTION again.

6. Appendixes

6.1 Function ID Table

Function ID	Function	Contents	Action
00 : 04	VSP G130 virtual storage machine	Suppress version downgrade from the firmware capable of creating VSP G130 virtual storage machines to the firmware not capable of creating VSP G130 virtual storage machines.	Delete the VSP G130 virtual storage machines first, then perform version downgrade to the firmware not capable of creating VSP G130 virtual storage machines.
03 : 16	GAD-NDM support	Suppress the version downgrade when the GAD-NDM configuration is created.	Execute the firmware update again after waiting for the completion of the data migration with NDM, or after deleting all GAD pairs linked with GAD-NDM.
03 : 23	GAD+VM/SI Quick Restore	Suppress version downgrade from the firmware supporting GAD+VM/SI Quick Restore to the firmware not supporting GAD+VM/SI Quick Restore.	<p>Retry the firmware update after performing the following procedure.</p> <p>(1) If there is a Volume Migration pair sharing its volumes with a global-active device pair, perform either of the following:</p> <ul style="list-style-type: none"> • Delete the global-active device pair. • Delete the Volume Migration pair. <p>(2) If there is a ShadowImage pair sharing its volumes with a global-active device pair, and the ShadowImage pair is in the process of Quick Restore, perform either of the following:</p> <ul style="list-style-type: none"> • Delete the global-active device pair. • Wait until the Quick Restore of the ShadowImage pair ends.
03 : 30	Combined use of DKC compression/deduplication and VM	Suppress version downgrade from the firmware supporting the combined use of DKC compression/deduplication and VM to the firmware not supporting the combined use of DKC compression/deduplication and VM.	<p>Retry the firmware update after performing either of the following operations:</p> <ul style="list-style-type: none"> • Wait until the Volume Migration pairs whose volumes use the DKC compression/deduplication function are completely migrated. • Delete the Volume Migration pairs whose volumes use the DKC compression/deduplication function.
04 : 15	HSAE Server Configuration Ver.2 Support	Suppress version downgrade from the firmware that allows you to change the HSAE server configuration through Hitachi Storage Advisor Embedded (HSAE) or a user interface other than HSAE to the firmware not supporting this function.	Retry the firmware update after performing the operations described in TROUBLESHOOTING SECTION “3.70 Procedure for Version Downgrade from the Configuration Using HSAE Server” .

6.2 Function ID Table for GUM

NOTE: Even if the function ID (GXX:XX) is displayed in the Update Firmware window and the firmware update processing is suspended, each of firmware might be updated at the time of the maintenance other than the firmware update if the data transfer is completed.

If the function ID (GXX:XX) is displayed, perform any of the following.

- Perform the contents described in the Action column of the GUM function ID table, and then select the same firmware type as the one that the error occurred and update the firmware.
- Select the same firmware type as the one that the error occurred and update the firmware by the media of the version before the update.

Function ID	Function	Contents	Action
G00 : 32	Support for G130	The installation media does not contain the GUM firmware supporting VSP G130.	Update the firmware by using the installation media containing the GUM firmware supporting VSP G130.

6.3 Effect on the information due to configuration restoration

Performing New Installation (Restore Configuration) initializes the following setting information of the Storage System.

Ask your customer to set the information again following the user guides.

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

(To be continued)

(Continued from the preceding page)

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

- *1: When the [Yes] button is selected to take over the DP-VOL data in [Step \(18\)](#) in “[5.1 Procedure of New Installation \(Restore Configuration\)](#)”.
- *2: When the [No] button is selected not to take over the DP-VOL data in [Step \(18\)](#) in “[5.1 Procedure of New Installation \(Restore Configuration\)](#)”.
- *3: Not setting information. Not required to be set again.

6.4 Procedure for Updating Firmware

NOTICE: When updating the firmware, the installation media for the Maintenance PC is used. If you update the firmware on both types of the storage systems, DW800 and DW850, with one Maintenance PC, prepare the installation media of each storage system type.
For the procedure for updating the firmware of DW800, refer to the Maintenance Manual of DW800.

CAUTION

There are the installation media for the Maintenance PC and the installation media for the SVP. Use the installation media corresponding to the PC (Maintenance PC/SVP) for the installation/update.

If an incorrect installation media is used, the Maintenance PC or the SVP does not operate correctly. In this case, uninstall the Maintenance PC software or the SVP software, then install the software again using the correct installation media. Once the software is uninstalled, the set information is initialized. Therefore, set the same information again after the correct software is installed. (See MAINTENANCE PC SECTION "[8.2 Maintenance PC Software Uninstallation](#)" and "[1.4 Maintenance PC Software Initial Installation/Update Installation](#)". For the SVP software, procedures are the same.)

NOTICE: If the window indicating the expiration of the electronic certificate is displayed at the start-up of the Maintenance window when the installed Java version is Java 1.7.0_55 or later or Java 1.8.0_5 or later, the Java security settings must be changed.
For the details, see MAINTENANCE PC SECTION "[1.3.5 Setting Java Security](#)".

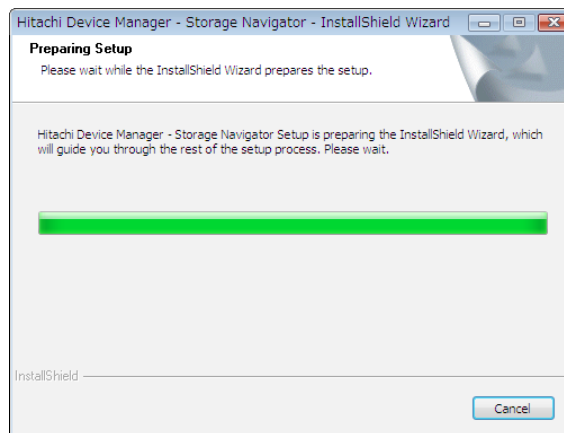
1. Insert [Installation Media for Maintenance PC] into the DVD Drive of the Maintenance PC.

2. Right-click Setup.exe immediately under the drive to select [Execute as Administrator].

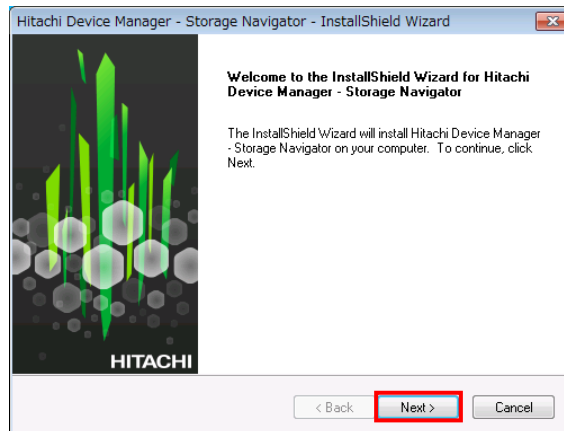
NOTE: If a DVD drive is not mounted on a PC, copy all the files of installation media for the Maintenance PC to “work folder”. For a “work folder” name, do not use a double-byte character because Setup.exe might not start if a double-byte character is included in the name.

Then, use the files in “work folder”.

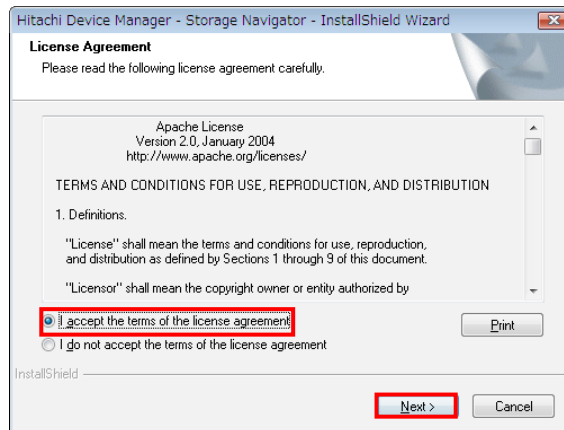
3. The “Preparing Setup” window is displayed. Wait until the preparation is completed.



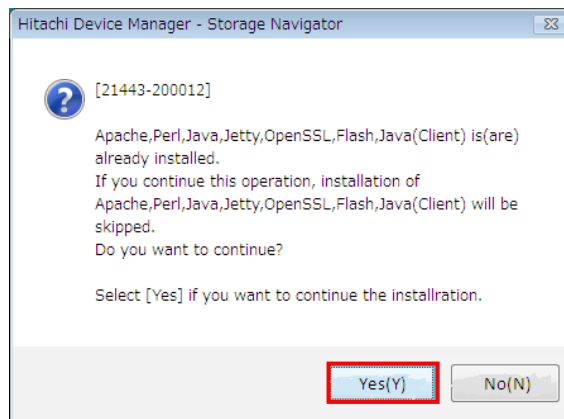
4. The “Welcome” window is displayed when the preparation is completed. Click the [Next] button.



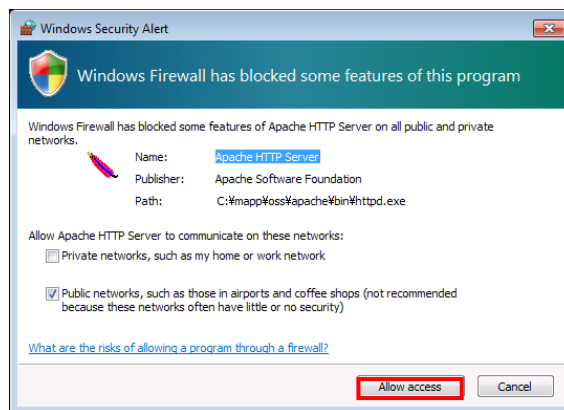
5. The “Confirmation” window of the OSS licenses is displayed.
Select [I accept the terms of the license agreement] and click the [Next] button.



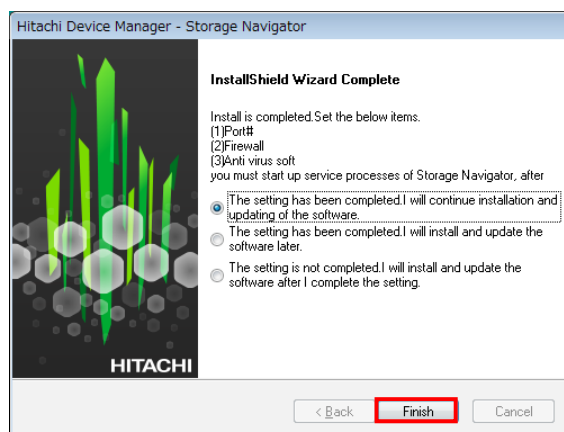
6. The skip confirmation message is displayed. Click the [Yes] button.



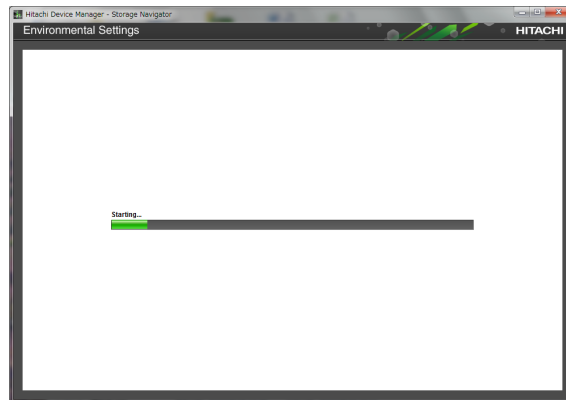
NOTE: When the "Windows Security Alert" window is displayed, click [Allow access] button.



7. The installation completion message is displayed. Select [The setting has been completed. I will continue installation and updating of the software.] and click the [Finish] button.

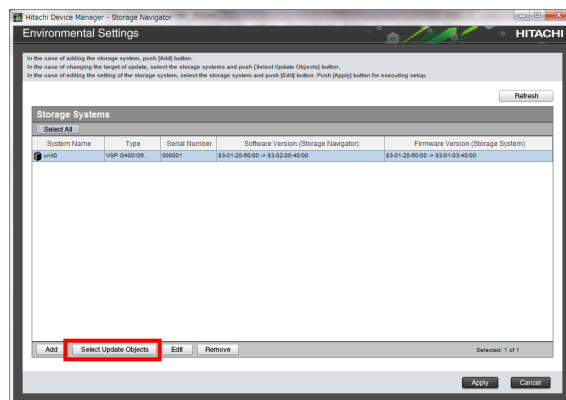


8. Prepare update processing. The Preparing update window is displayed. Wait until the preparation is complete.

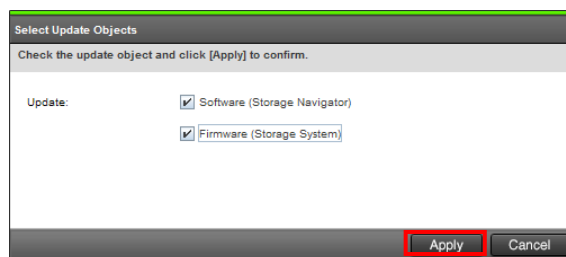


9. Select whether to update the firmware and add the storage system simultaneously. Select the storage systems that change the state whether to update and click the [Select Update Objects] button.

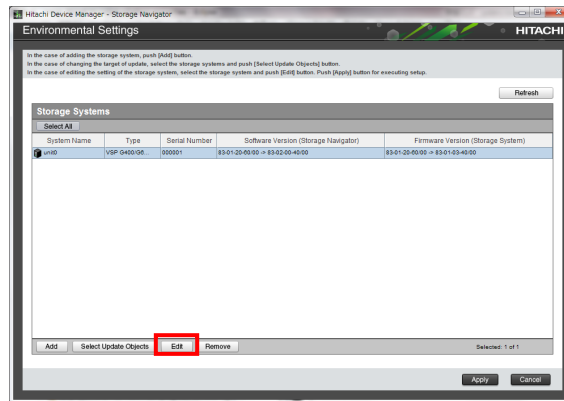
NOTE: If both types of the storage systems, DW800 and DW850, are displayed, select only the storage systems supported by the installation media.



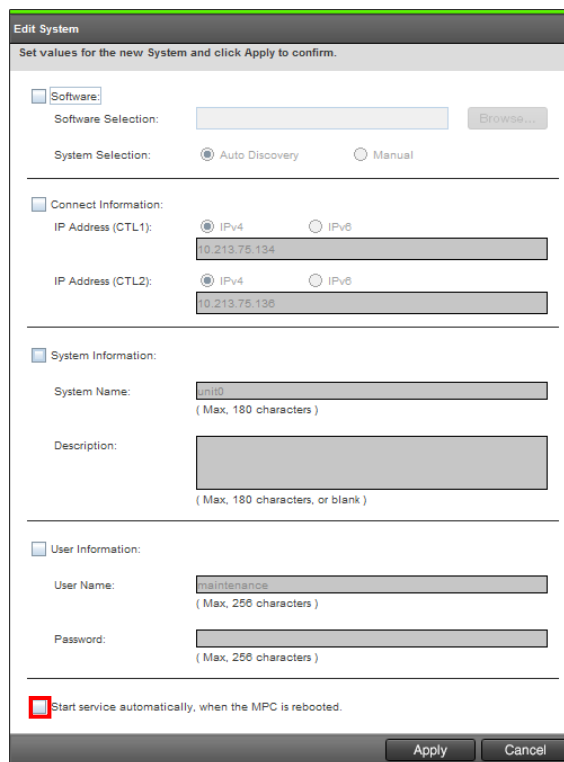
10. The "Select Update Objects" window is displayed. To update the software, check the check box of Software (Storage Navigator). If not, uncheck the check box. Check the Firmware (Storage System) to update the firmware. If not, uncheck it and click the [Apply] button.



11. When the [Apply] button is clicked, the display is returned to the [Environmental Settings] window.
To update the firmware, perform the following operations.
- (1) Select the target storage system and click the [Edit] button.



- (2) Confirm that the checkbox of “Start service automatically, when the MPC is rebooted.” is unchecked. If the checkbox is checked, uncheck it.

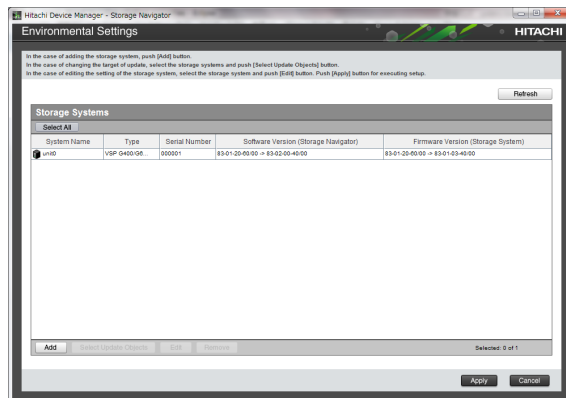


- (3) When the confirmation and the input are completed, click the [Apply] button.

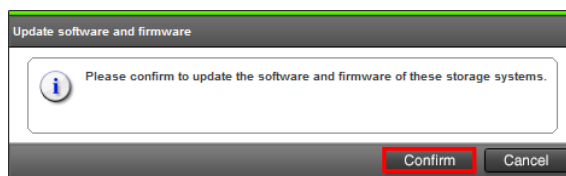
12. Repeat [Step 9](#) to [Step 11](#) for all the storage systems.

Check whether the current software version/firmware version and the new software version/firmware version are correct.

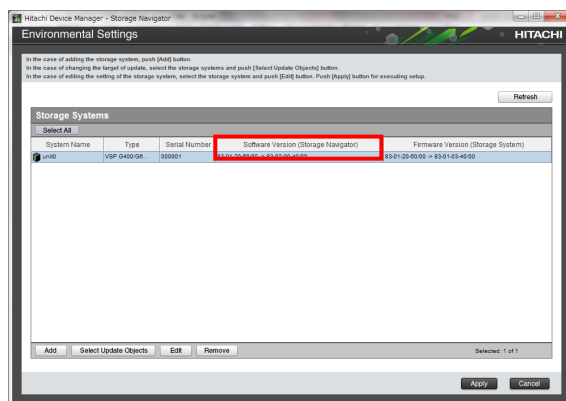
When the settings and version confirmation are completed for all the storage systems, click the [Apply] button in the target storage system list window.



13. The “Update software and firmware” window is displayed. Click the [Confirm] button.



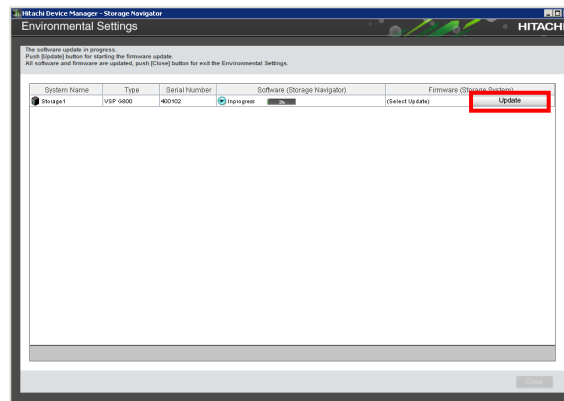
14. The Run update window is displayed and the software update of the storage system starts automatically. You can check the software update status in the Software (Storage Navigator) row.



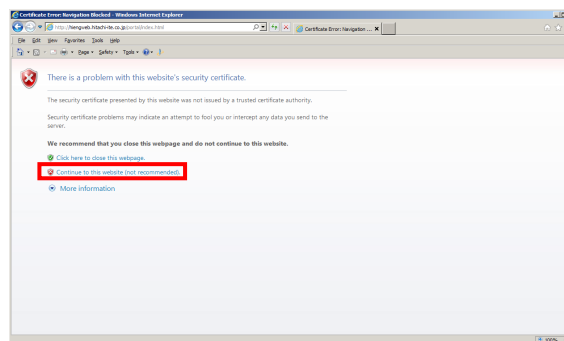
The software update status is as shown below.

Status	Description
Waiting	Software is not updated. Software is updated one by one. If the software of a storage system is already updated, the other storage systems are in this state.
In Progress	Software update is running.
Completed	Software update is complete.
Failed	Software update failed. If storage systems were added, the addition might not be complete. Click and follow the message.
(Not Update)	This is not selected as a software update target. If storage systems were added, this state does not appear.

15. Access the storage system and update the firmware. To update the firmware, click [Update] in the Firmware (Storage System) row. This procedure is required only when the Firmware is selected as an update target.



- (1) If the Security warning window is displayed, click [Continue to this website] to display the Update Firmware window. Then, close the browser.

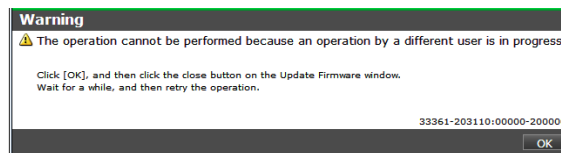


- NOTE:
- If Firmware was not selected as an update target, this step is not required. Do the operation all over again.
 - If the window of [Internet Explorer cannot display the webpage] or [Unable to launch the application] is displayed in this procedure, close the window. Then, see [“3.3.1 Updating Firmware of the Storage System”](#) and update the firmware again.

(2) Java start

- NOTICE:**
- While running the application, do not terminate it forcibly (PC shutdown or others). If such operation is performed, the message [32061-208063] might be displayed when logging into Maintenance Utility. When the message is displayed, perform the following procedure from [Step 1.](#) through [Step 3.](#)
 - If the application suddenly disappears while running it, click the [Close] button in the Run update window to close the window. Confirm that the message [32061-208063] is displayed when logging into Maintenance Utility that is newly opened. Then, perform the procedure from [Step 1.](#) through [Step 3.](#)
 - When the message “A time-out error occurred during communication with the web server.” is displayed, refresh the Maintenance Utility and confirm that the message [32061-208063] is displayed. Then, perform [Step 1.](#) through [Step 3.](#)

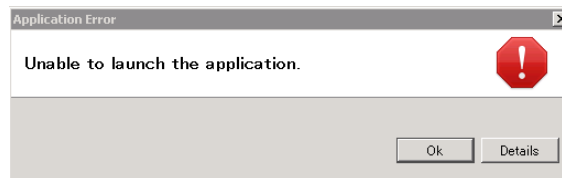
1. Open the “Update Firmware” window from the newly opened “Maintenance Utility” window.
2. Confirm that the message “The operation cannot be performed because an operation by a different user is in progress.” is displayed.



(If the progress window appears, the firmware is being updated. Then, wait until the firmware update is complete.)

3. Execute [Force Release System Lock]. (See MAINTENANCE PC SECTION [“3.17 Force Release System Lock”](#).)

NOTICE: If Java displays the following error, perform the following recovery procedure, and then repeat from [Step 15](#).



Recovery procedure

1. Open the Internet Explorer, and then open the [Internet Options].
2. Click the [General] tab.
3. When the check box for [Delete browsing history on exit] is selected, click the [Delete] button, and then open the "Delete Browsing History" window.
4. When the check box for [Temporary internet files and website files] is selected, clear the check box, and then click the [Delete] button.
5. Click the [Advanced] tab.
6. When the browser is closed, if the check box for [Empty Temporary Internet Files folder when browser is closed] is selected, clear the check mark, and then click the [OK] button.
7. Close the browser.

NOTE: If the Maintenance PC is used for the maintenance work on AMS2000/HUS100 disk array system, the check box might be selected as mentioned above.

To perform the maintenance work on AMS2000/HUS100 disk array system after changing the check box setting, restore the check box setting from "unchecked" to "checked".

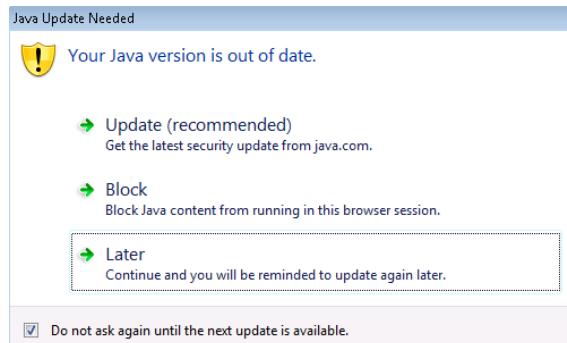
If the failure still occurs, perform the following steps:

1. Open the Internet Explorer, and then open the [Internet Options].
2. Click [Settings] on the [General] tab, open [Website Data Settings] window, and then click the [Caches and databases] tab.
3. Clear the check mark for the [Allow website caches and databases], and then click the [OK] button.
4. Close the browser.
5. Repeat Steps 1 and 2, select the check box for [Allow website caches and databases], and then click the [OK] button.
6. Close the browser.

The displayed windows differ according to the JRE (Java Runtime Environment) versions. In the case of JRE7 or JRE8, go to Step (a). In the case of JRE6, go to [Step \(b\)](#).

(a) In the case of JRE7 or JRE8

(a-1) The update of the Java application may be promoted.



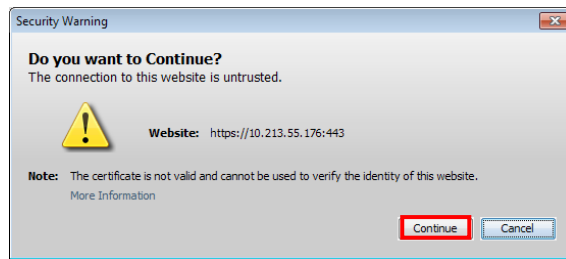
When using Maintenance Utility with the Java you are using, click [Later]. If you check the checkbox of [Do not ask again until the next update is available.] once and click [Later], this window is not displayed from now on. When clicking [Update(recommended)] and [Block], close the window of the Web browser and restart Maintenance Utility. When checking the checkbox of [Do not ask again until the next update is available.] and selecting [Update(recommended)] or [Block], Maintenance Utility cannot update the firmware. To allow Maintenance Utility to update the firmware, execute the following procedures.

- (i) Click [All Programs ([All apps] for Windows 10)] - [Java] - [Configure Java] from the [Start] menu of Windows and start [Java Control Panel].
- (ii) Click the [Security] tab of [Java Control Panel].
- (iii) If the checkbox of [Enable Java content in the browser] in the [Security] tab is checked, uncheck it once and click the [Apply] button.
- (iv) Check the checkbox of [Enable Java content in the browser] and click the [Apply] button.
- (v) Click the [OK] button of [Java Control Panel] to close the window.
- (vi) Restart Maintenance Utility.

NOTE: When changing the Java setting in [Java Control Panel], a message like “Java Plugin settings changed” may be displayed. If such message is displayed, click the [OK] button.

(a-2) When the message “Do you want to Continue?” is displayed, click the [Continue] button.

NOTE: This window may not be displayed.



NOTE: If you press the [Cancel] button in the window, the firmware update is not complete. Do the operation all over again.

(a-3) When the message “Do you want to run this application?” is displayed, check [I accept the risk and want to run this application.] and click the [Run] button. Go to [Step \(3\)](#).

NOTE: This window may not be displayed.



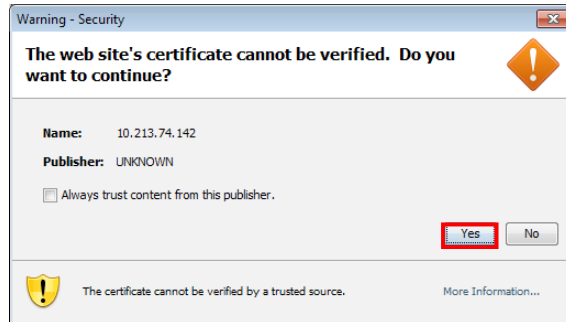
NOTE: If you press the [Cancel] button in the window, the firmware update is not complete. Do the operation all over again.

NOTE: When the “Application Blocked by Java Security” or “Application Blocked by Security Settings” window is displayed, refer to TROUBLESHOOTING SECTION [“3.28.1.1 Troubleshooting Related to Installation and Upgrade”](#) and register the storage system in the exception site. After the registration, do the operation all over again.

(b) In the case of JRE6

(b-1) When the message “The web site’s certificate cannot be verified. Do you want to continue?” is displayed, click the [Yes] button.

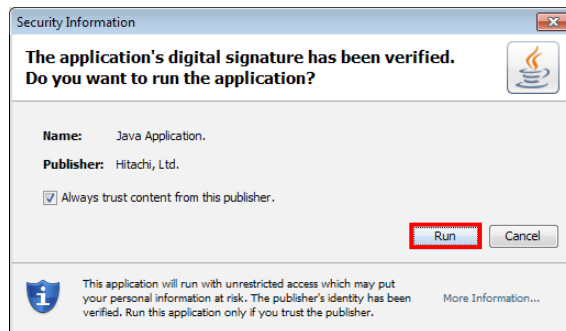
NOTE: This window may not be displayed.



NOTE: If you press the [No] button in the window, the firmware update is not complete. Do the operation all over again.

(b-2) When the message “Do you want to run this application?” is displayed, check [I accept the risk and want to run this application.] and click the [Run] button. Go to [Step \(3\)](#).

NOTE: This window may not be displayed.

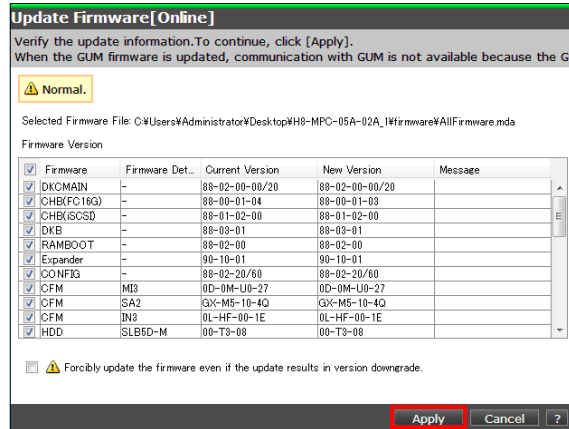


NOTE: If you press the [Cancel] button in the window, the firmware update is not complete. Do the operation all over again.

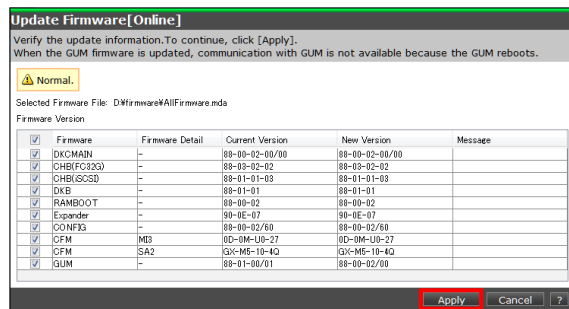
(3) Update Firmware

The Update Firmware window is displayed. Click the [Apply] button.

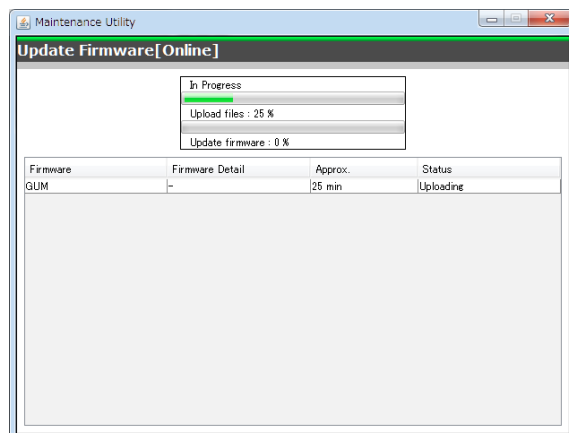
[When the firmware version is 88-01-05-x0/xx or later]



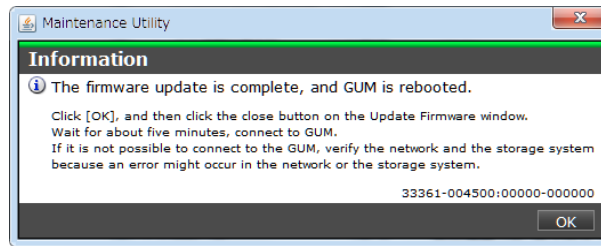
[When the firmware version is earlier than 88-01-05-x0/xx]



(4) The progress of the firmware update is displayed.

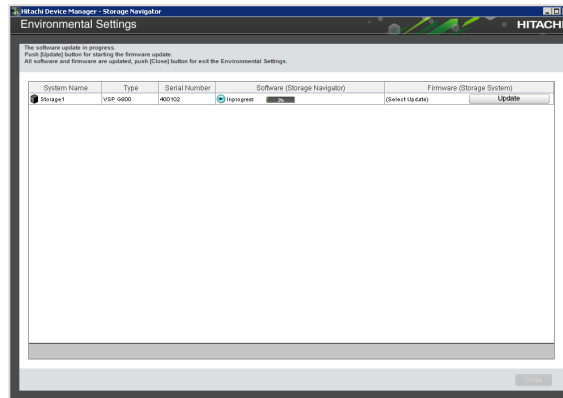


- (5) When the following message appears, click [OK] button.



- (6) Click [×] button in the progress rate window.
- (7) Wait for about 5 minutes until GUM reboot is completed and the update status of the Environmental Settings window becomes completed.

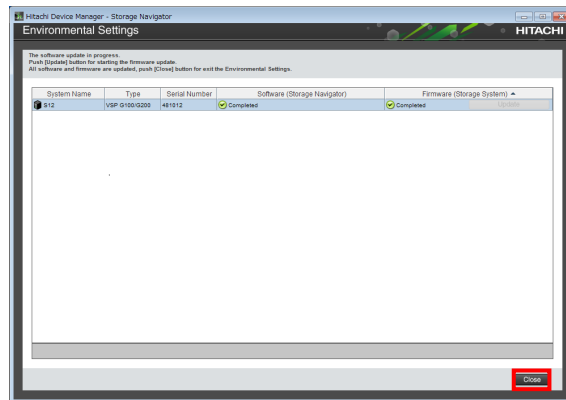
16. You can check the firmware update status in the Firmware (Storage System) row.
Wait until the firmware update is complete.



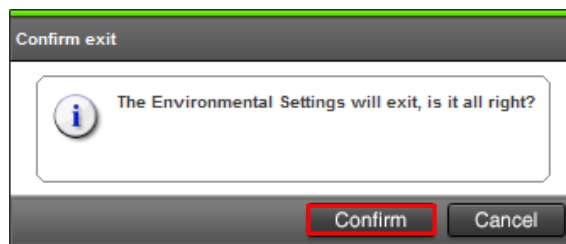
The firmware update status is as shown below.

Status	Description
(Select Update)	Wait for starting the [Update Firmware] window. Click [Update] to display the [Update Firmware] window.
In Progress	The [Update Firmware] window started and the firmware update is not complete. This state appears even if the firmware update is cancelled.
Completed	Firmware update is complete.
Failed	Firmware update failed. Click [Update] to display the [Update Firmware] window and check the error details. When an error occurs, see “3.3.1 Updating Firmware of the Storage System” and update the firmware again.
Communication Timeout	The completion of the firmware update in time (200 minutes) is not confirmed. Check the state in the [Update Firmware] window.
(Not Update)	This is not selected as a firmware update target.

17. After completing the update of the software and the firmware, click the [Close] button.



18. Click the [Confirm] button to terminate the tool.



19. Start the service of the storage system in accordance with the procedure of MAINTENANCE PC SECTION "2.14.3 Starting the Service of Storage System".

20. If the setting of "Start service automatically, when the MPC is rebooted." is changed, restore the setting.