WEB

This “WEB” volume describes the operating procedure for WEB.

Contents

Chapter 1. Before Using Web

Precautions when restarting.

- If the array used for a remote side of TrueCopy remote replication/TrueCopy Extended Distance restarts in the status that TrueCopy remote replication/TrueCopy Extended Distance is enabled, the following phenomena occur.
  - The paths of TrueCopy remote replication/TrueCopy Extended Distance are both blocked. The notice of E-mail Alert Function, SNMP Agent Support Function, and TRAP occur at the time of the path blockade.
    Perform the notice and the check to the Failure Monitoring Department in advance.
    The path blockade automatically recovers after restarting.
  - When the status of the pair of TrueCopy remote replication/TrueCopy Extended Distance is PAIR or COPY, the pair changes to PSUE.
    If the Pair status of TrueCopy remote replication/TrueCopy Extended Distance is either PAIR or COPY, suspend the pairs before restarting the array.
- When using the priced option, Power Saving/Power Saving Plus, and the power saving instruction of the I/O interlock disabled is executed, if the array restarts while the power saving status is “Normal (Command Monitoring)”, the status is changed to “Normal (Spindown Failed: PS OFF/ON)”.
  After executing the power saving instruction of the I/O interlock disabled, check that there is no RAID group whose power saving status is “Normal (Command Monitoring)” and then restart the array.
  If the spin-down fails, execute the spin-down again.

1.1 The Operating Environment

The operating environment where is able to use Web is shown below.

Table 1.1.1 Operating Environment

No.	Item	Description	Remark
1	OS	Microsoft Windows XP, Vista, 7, 8, Server 2008, Server 2012	When connecting with IPv6, we recommend Windows 7, 8, Server 2008, Server 2012.
2	Drive requirement	• 60 M bytes, under ordinary maintenance work • 15.0 G bytes per one Controller, under Full Dump collection(*1) {Storing temporary file of Browser : 7.5 G bytes Storing Full Dump: 7.5 G bytes}	• Data compression tool is required for Full Dump. • Refer to “3.5.3 Collecting Full Dump” (WEB 03-0470) for the capacity of Full Dump when it is uncompressed.

*1 : Full Dump collection may be requested by the Technical Support Center at the time of a tough failure.

1.2 Notices on (Restriction of) the Support Browser

- In Internet Explorer 10 (IE10), be sure to perform the following settings and enable the IE10 compatibility view function.
  (1) Press the [Alt] key and display the menu bar.
  (2) Click [Tools] of the menu bar.
  (3) Click [Compatibility View Settings].
  (4) Set the IP address of the target array (as URL) in the [Add this website] column.
  (5) Click [Add].
  (6) Check that the address entered at Step (4) is displayed in [Websites you've added to Compatibility View].
  (7) Click [Close].

- In Windows 7, 8, Server 2008, Server 2012, the value that security strengthened is default, so that the WEB function does not operate as is.
  To solve this, change the browser setting as shown below.
  - Register is as the reliable WEB site from [Tool] – [Internet Option] – [Security] – [Reliable Site] – [Site].

- When entering IPv6 address in URL in Windows 7, 8, Server 2008, Server 2012, Vista, you need to put the IP address in square brackets ([ ]) and specify it as URL. (e.g.: http://[fe80::16]/).

- The WEB function operates normally in other Windows because the security level is being [Medium]. However, set the following items in [Settings] of [Tools] - [Internet Options …] - [Security] - [Custom Level …] to [Enable].
  - Enable the [Active scripting] of the [Scripting].
  - Enable the [File download] of the [Downloads].

- There may be a case where a new line is started in a window depending on a setting of the browser. In such a case, make the character size smaller.
  < Method of character size change >
  In the case of IE
  Select "Middle" or smaller size for the "Character Size" in the "Display".

- When the window display of the WEB function is invalid (a part of the displayed items is not displayed or others) on Internet Explorer 10 (IE10), turn on the compatible display function of IE10. If you access the WEB page which requires the compatible display, the [Compatibility View] button is displayed on the side of the address bar in the WEB browser. If you click the button, the layout of the WEB page is displayed correctly.

- When using Internet Explorer 8.0, Internet Explorer 9.0 or Internet Explorer 10.0, a display in the WEB window may be slow down or Simple Trace collection may not be completed. Uncheck the checkbox of "Enable SmartScreen Filter" in the Internet Options Advanced Settings. If this problem is not solved, release the DNS server setting.

- When the security information window or security warning window is displayed at the time of starting Java Applet, check the displayed contents. Check the checkbox of “Trust the contents from this issuer at all times” or “Accept risks and execute this application” and click “Execute”.

1.3 The Characteristic of the Network Function

- LAN interface
  The connector for 10Base-T/100Base-TX, 1000 Base-T is equipped with the Controller. 10Base-T/100Base-TX, 1000 Base-T and half-duplex/full-duplex communication are selected automatically by the automatic negotiation function.

  NOTE : The fixed setting of the negotiation cannot be performed.
  Communicate by setting the device to be connected to the automatic negotiation.

- Network parameter

  The DF850 has the following network parameters, and the User management port of each Controller can be set or changed from the WEB browser or the Hitachi Storage Navigator Modular 2.

Network parameter		Description	Values set when shipped from the factory				Remark
			Controller #0		Controller #1		
			Maintenance port < Fixed IP >	User management port <Variable IP>	Maintenance port < Fixed IP >	User management port <Variable IP>	
IPv4	IP Address	The IP Address is changed/set up.	10.0.0.16	192.168.0.16	10.0.0.17	192.168.0.17	(*1)
	Subnet Mask	The Subnet Mask is changed/set up.	255.255.255.0	255.255.255.0	255.255.255.0	255.255.255.0	
	Default Gateway	The Default Gateway is changed/set up.	0.0.0.0	0.0.0.0	0.0.0.0	0.0.0.0	
	DHCP	Enable/Disable of the DHCP function is set up.	OFF	OFF	OFF	OFF	(*2)
IPv6	IP Address	The IP Address is changed/set up.	fe80::16	Automatic	fe80::17	Automatic	(*3)
	Subnet prefix	Set and change the length of the subnet prefix.	64	Automatic	64	Automatic	
	Default Gateway	The Default Gateway is changed/set up.	::	Automatic	::	Automatic	
	Automatic acquisition	Set Enabled/Disabled of the automatic acquisition function.	OFF	ON	OFF	ON	(*4)

*1 : The network connection is possible in the above IP Address (192.168.0.16) for the unchanging from the factory setting value. Please manage the IP Address after the change certainly, if the IP Address is changed from the IP Address of factory setting.

*2 : When DHCP mode is valid, IP address is obtained from the DHCP server.
When the DHCP server has not started up or DHCP function has been miss-set, obtaining the IP address fails and the device IP address remains to be “0.0.0.0”. (Hitachi Storage Navigator Modular 2 or Web cannot be used via LAN.) In this case, the device IP address can be obtained by starting up the DHCP server or setting DHCP function correctly if necessary.
When the IP address of this array is acquired using the DHCP function, if the network address of the reserved IP address for the maintenance port is assigned as an IP address, the IP addresses of the port for the user control and the port for the maintenance may not operate normally because they compete.
Request the system administrator that the DHCP server does not assign IP address of “10.0.0.x”, “192.168.0.x”, “192.168.233.x”, “172.23.211.x”, “10.197.181.x” to the device.

*3 : The shipment setting is automatic acquisition for the IP address of the user management port of IPv6.
You can check the IP address allocated to the user management port by searching from Hitachi Storage Navigator Modular 2.
When changing the IP address of the shipment setting, please manage the changed IP address responsibly.

*4 : When the automatic acquisition is enabled (ON), the IP address is acquired from the RA delivery server.
When the RA delivery server is not started or the setting of the RA delivery function is incorrect, the IP address acquisition fails and the IP address of the array remains as “::”. In such case, you can acquire the IP address correctly by starting the RA delivery server or set the RA delivery function correctly if needed.
When acquiring the IP address of this array by using the RA delivery server, if the IP address duplicated by the reserved IP address for the user maintenance port is allocated, the IP addresses for the user management port and the maintenance port compete and they may not be operated normally.
In such case, request the system administrator so that the RA delivery server does not allocate “fe80::/10” as prefix of the IP address.

- Manual change of network parameters of the Maintenance port
  When the User management port is set as the same network address as the Maintenance port, the communication cannot be made normally. Prepare five patterns of the network parameter fixed values to be used in the Maintenance port, and change the network parameter fixed values to be used in the Maintenance port manually by the network parameter of the User management port.
  The following can be set as the fixed values of the network parameters used in the Maintenance port.
  <In case of IPv4 Protocol>
  - 10.0.0.xxx
  - 192.168.0.xxx
  - 192.168.233.xxx
  - 172.23.211.xxx
  - 10.197.181.xxx

  <In case of IPv6 protocol>
  - fe80::xxx

  NOTE : • For the part of xxx, set 16 to CTL0 except when connecting the Maintenance port to the network (in that case, 17 is automatically set to CTL1).
  • For a Maintenance port, subnet mask and default gateway cannot be set. Thus a Maintenance port does not support the network including routers.
  • In case of IPv4 Protocol, when the network address of the LAN device, which is connected via the Gateway in the extension of the User management port, is the same as that of the Maintenance port, the communication cannot be made normally because of the conflict between them.
  In case of IPv6 protocol, when the IP address of the user management port becomes the same as the IP address of the maintenance port, they both compete and communication is not performed normally.
  Therefore, use a value other than the network address set to the maintenance port for the LAN device connected to the port for the user management via Gateway. Or change the IP address of the maintenance port to a value other than the network address of the LAN device connected via Gateway by Hitachi Storage Navigator Modular 2. (Refer to System Parameter “7.1 Setting Maintenance LAN” (SYSPR 07-0000).)

- Automatic change of network parameters of the Maintenance port (Only in case of IPv4 protocol)
  When setting the network parameters of the User management port, if “Maintenance port IP address automatic change mode” is enabled, the IP address of the Maintenance port is automatically changed as shown below according to the IP address value of the User management port to be set.
  - When setting the User management port of CTL0 to 10.xxx.xxx.xxx, the Maintenance port of CTL0 is 192.168.0.16.
  - When setting the User management port of CTL0 to other than 10.xxx.xxx.xxx, the Maintenance port of CTL0 is 10.0.0.16.
  - When setting the User management port of CTL1 to 10.xxx.xxx.xxx, the Maintenance port of CTL1 is 192.168.0.17.
  - When setting the User management port of CTL1 to other than 10.xxx.xxx.xxx, the Maintenance port of CTL1 is 10.0.0.17.

  When “Maintenance IP address automatic change mode” is disabled, it becomes the same operational specification as the manual change of the network parameters of the Maintenance port.

  NOTE : When the network address of the LAN device, which is connected via the Gateway in the extension of the User management port, is the same as that of the Maintenance port, the communication cannot be made normally because of the conflict between them.
  Therefore, use a value other than the network address set to the maintenance port for the LAN device connected to the port for the user management via Gateway. Or change the IP address of the maintenance port to a value other than the network address of the LAN device connected via Gateway by Hitachi Storage Navigator Modular 2. (Refer to System Parameter “7.1 Setting Maintenance LAN” (SYSPR 07-0000).)

1.4 Support Browser List

Table 1.4.1 Support Browser List

(○ : support × : not support)

No.	Platform	OS		Browser		Supported or not supported	Java Applet supported or not supported (*2) (*3)	Supported or not supported (IPv6)
		Type	Ver.	Type	Ver.(*1)			
1	PC	Windows	XP	Internet Explorer	6.0, 7.0, 8.0	○	○	×
			Vista	Internet Explorer	7.0, 8.0, 9.0	○	○	○
			7 (32bit/64bit)	Internet Explorer	8.0	○	○	○
					8.0 (64bit)	○	×	○
					9.0	○	○	○
					10.0	○	○(*4)	○
			8 (32bit/64bit)	Internet Explorer	10.0	○	○(*4)	○
			Server 2008	Internet Explorer	7.0, 8.0	○	○	○
					7.0 (64bit), 8.0 (64bit)	○	×	○
			Server 2012	Internet Explorer	10.0	○	○(*4)	○
		Red Hat Enterprise Linux	6.1	Mozilla Firefox	12.0	○	×	○

*1 : Service Pack 1 is included.

*2 : When installing the firmware, the Maintenance PC must be started by the OS from the drive C in order to prevent a problem of security from occurring.

*3 : Java Applet is used for the following cases.

- Firmware installation
- Host command trace download
- Online ENC firmware download
- Offline Drive Firmware download
- Online Drive Firmware download

*4 : In 64-bit Windows 7, 64-bit Windows 8 and Windows Server 2012, the expansion protection mode of the internet option newly installed in Internet Explorer 10.0 should be disabled (default is disabled).

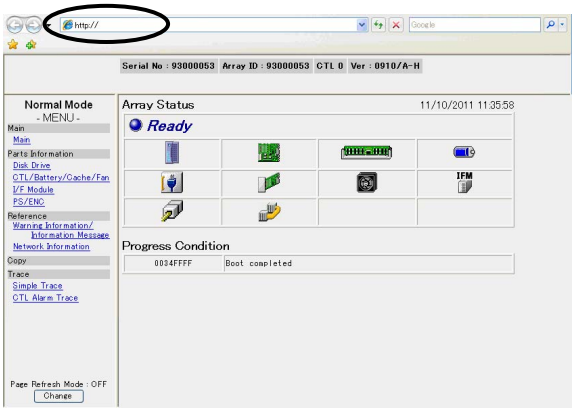
Chapter 2. The Normal Mode Operation Procedure

2.1 Transferring to the Normal Mode

For entering Normal mode, input IP address of Maintenance LAN connecter to which the LAN cable is connected into the [address] window of Web Browser.

Under dual system configuration, input one of IP addresses of LAN-Connecter for maintenance. The status of the devices (both Controllers) can be monitored from one controller.
If it is connected, the next screen is displayed.

NOTE :
- Set the TCP/IP to “Disable DNS” because the connection takes a long time when the TCP/IP of the network is set to the condition in which the DNS is used. For the setting procedure, refer to the instruction manual of the PC to be used.
- Make sure that the browser is set to the condition in which the proxy server is not used because the connection cannot be done if the proxy server is set to be used. To make sure the setting, refer to the instruction manual of the browser to be used.
- When a screen cannot be displayed on the Web browser, confirm whether the array fails. And then, execute ping command to confirm the network between maintenance PC and the array. When ping fails, confirm the network environment. When ping succeeds, restart the Web browser. When it cannot be connected again, restart the maintenance PC and browser.
- When the firmware version is 0940/A or more and the packet filtering is enabled, the LAN function may not be connected temporarily. In such case, update it again after taking a while (one minute or more).
- When the firmware version is 0940/A or more and the Port 80 Block is enabled, the WEB display is impossible. When collecting the trace in the normal mode, change the Port 80 Block to disabled. When using other functions in the normal mode, connection is possible by using https.



2.2 Screen Outline

If the function of the Normal Mode is shown with the menu form and clicked, the proper function is executed. The main screen outline of the Normal Mode is shown below.

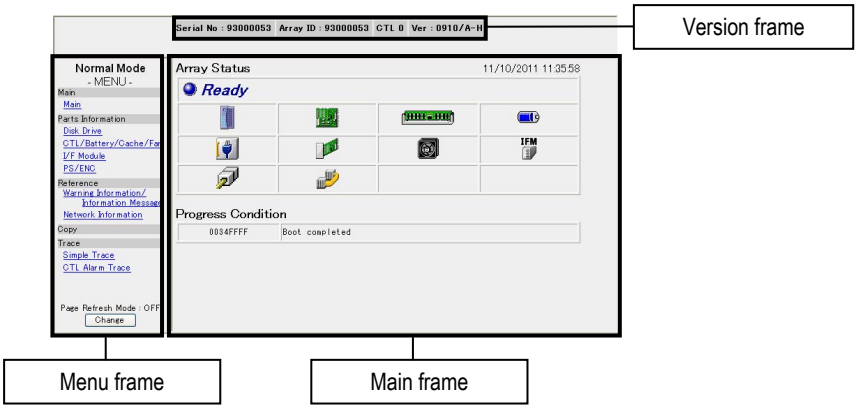


Figure 2.2.1 Main Screen Outline of the Normal Mode

(1) Version frame

- Web Title
  A Web title set by a user is displayed as it is. When it is not set, nothing is displayed.
- Serial No
  The array serial number is shown.
- CTL
  Shows the number of the Controller to which the Web is connected.
- Ver
  The version of the firmware of the device.

(2) Menu frame

If the function of the Normal Mode is displayed with the menu frame and clicked, the proper function is executed.

- Main
  The Main screen of the Normal Mode is displayed.
- Drive
  The status of the Drive is displayed.
- Controller/Battery/Cache/Fan (In the case of CBL)
  The status of the Controller, Cache Backup Battery, Cache Memory, and Fan Moduleare displayed.
- I/F Module (In the case of CBL)
  The status of the I/O Module is displayed.
- Controller/Battery/Cache/Interface Board (In the case of CBSS/CBSL/CBXSS/CBXSL)
  The status of the Controller, Cache Backup Battery, Cache Memory, and Host I/O Board/Module are displayed.

- PS/ENC
  The status of the Power Unit and I/O Module(ENC)/I/O Card(ENC) are displayed.
- PS/ENC/Side Card (In case of DBW)
  The status of the Power Unit, I/O Module(ENC), and Side Card are displayed.
- Warning Information/Information Message
  The fault information that was detected during the device operation and the status of the device information are displayed.
- Network Information
  The LAN port number is displayed.
- Simple Trace
  A window for collecting the Simple trace is displayed.
- CTL Alarm Trace
  A window for collecting the CTL Alarm trace is displayed.
- Page Refresh Mode
  The mode for setting turning on or off of the automatic display function is displayed.
  When the [Change] button is clicked, the mode is changed to on or off.
  As the [OFF] display : This is not refreshed.
  As the [ON] display : The screen of the mainframe is refreshed every 5 seconds.
  The time of the latest refreshment (RTC) is displayed in the upper right part of the main frame.

NOTE : When the PC enters the suspension status during operation while the Page Refresh Mode is set to [ON], the Web may not operate correctly after the PC is released from the suspension status.
In the case where the Web is connected for the purpose of status monitoring, etc., set the power management of the PC so that the PC should not enter the suspension status.

(3) Main frame

- Array Status
  The status of the device and the status of the exchange parts are displayed.
- Progress Condition
  The Progress Condition as the device booting is displayed.

2.3 Main Screen of the Normal Mode

The main screen of the Normal Mode is consisted of the Patrol Lamp, the summary of exchange parts status, the Progress Condition display box.
The Patrol Lamp shows the status of array.
The Progress Condition display box displays the progress condition the controller is booting.

The “summary of exchange parts status” notifies replacement parts errors by turning the parts in red.
If the image of the part is clicked, the details information of the proper part are displayed.

The Main screen of the Normal Mode is shown below.

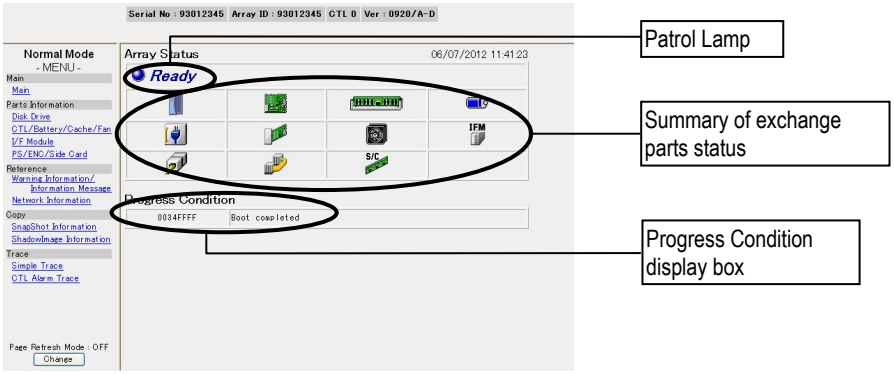


Figure 2.3.1 Main Screen of the Normal Mode

(1) Patrol Lamp

Monitoring the device, the status is displayed. The Status of the Patrol Lamp and the status shown on the Hitachi Storage Navigator Modular 2 are shown below.

Patrol Lamp		Hitachi Storage Navigator Modular 2
Image	Status	Status
Booting... Black	• During the start	- -
		Normal(Waiting for KMSs Key Import)(*1)
		Normal(Booting with KMS) (*1)
		Normal(*2)
Ready Blue	• Normal	Normal
Warning Yellow	• Warning status	Warning
Alarm Red	• Alarm status	- -

*1 : In case of CBL (the firmware version is 0977/A and later), Hitachi Storage Navigator Modular 2 (version 27.70 and later), Data At Rest Encryption program product is installed and "Protect the Volumes by the Key Management Server" is enabled, "Normal(Waiting for KMS's Key Import)" or "Normal(Booting with KMS)" is displayed when the array is booting.

*2 : In case of CBL (the firmware version is 0977/A and later), Hitachi Storage Navigator Modular 2 (less than version 27.70), Data At Rest Encryption program product is installed and "Protect the Volumes by the Key Management Server" is enabled, Normal is displayed instead of "Normal(Waiting for KMS's Key Import)" or "Normal(Booting with KMS)" when the array is booting.

(2) Display of Progress Condition

The Progress Condition as the device booting is displayed.

(3) Summary of Exchange Parts Status

The condition of the exchange parts is displayed. If the image of the part is clicked, the details of the proper part are displayed. The status of each exchange part is shown below.

Cache Backup Battery

Image	Status
 Blue	• Normal (Cache Backup Battery capacity: 100%) The numeric field on the lower part shows the charged capacity in "%"
 Blue	• Recharging Cache Backup Battery (Cache Backup Battery capacity: from 50% to 99%) The numeric field on the lower part shows the charged capacity in "%"
 Blue	• Not enough Cache Backup Battery capacity. (Cache Backup Battery capacity: from 0% to 49%) The numeric field on the lower part shows the charged capacity in "%" When the capacity can't be collected because of an error, it shows "-%"
 Red	• Cache Backup Battery error The numeric field on the lower part shows "-%"

Power Unit

Image	Status
 Blue	• Normal
 Red	• Power Unit error

I/O Module(ENC) or I/O Card(ENC)

Image	Status
 Green	• Normal
 Red	• I/O Module(ENC) or I/O Card(ENC) error

Fan Module

Image	Status
 Black	• Normal
 Red	• Fan Module error

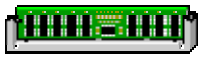
Drive

Image	Status
 Blue	• Normal
 Red	• Drive error (supported)
 Red and Black	• Drive error (unsupported)

Controller

Image	Status
 Green	• Normal
 Red	• Controller error
 Yellow	Controller pseudo blockade (The controller concerned becomes inaccessible from the host and the management program because the controller operation stops.)

Cache Memory

Image	Status
 Green	• Normal
 Red	• Cache Memory error

Host Connector

Image	Status
 Gray	• Normal
 Red	• Fault

Host I/O Board

Image	Status
 Green	• Normal
 Red	• Fault

I/F Module

Image	Status
 Gray	• Normal
 Red	• Fault

Side Card

Image	Status
 Green	• Normal
 Red	• Fault

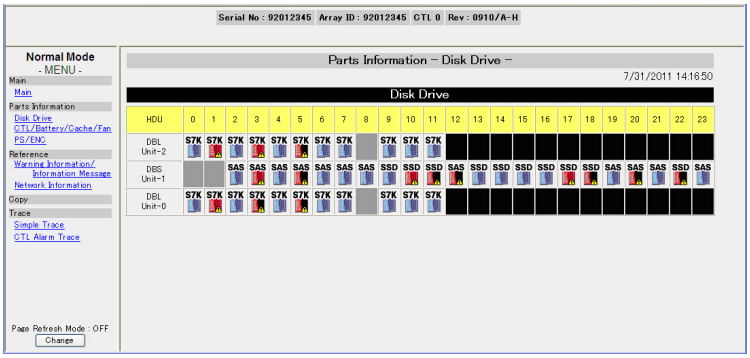
2.4 Display of Exchangeable Parts Status (Parts Information)

(1) Checking the status through an image

The display screen of exchange part status displays the status of the Drive, Controller, Cache Memory, Fan Module, Cache Backup Battery, Power Unit, I/O Module(ENC) or I/O Card(ENC), that are implemented. Furthermore, if no parts are implemented, the part status is not displayed and its status display area becomes gray. If the part concerned does not exist due to the integration of pats or cannot be implemented physically, the part status is not displayed and its status display area becomes black.

Also, the exchange part of abnormal status displays a red image. The Parts Information screen is shown below.

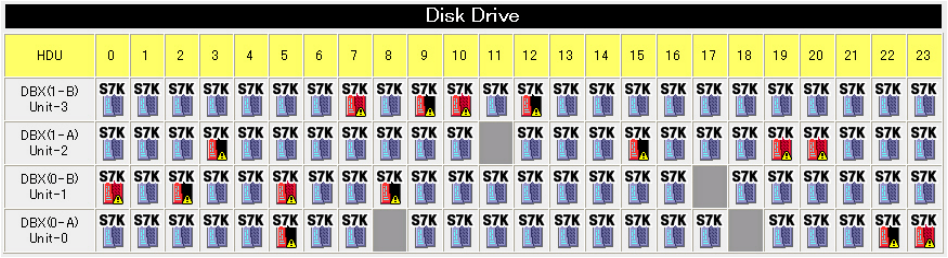
(a) Disk Drive



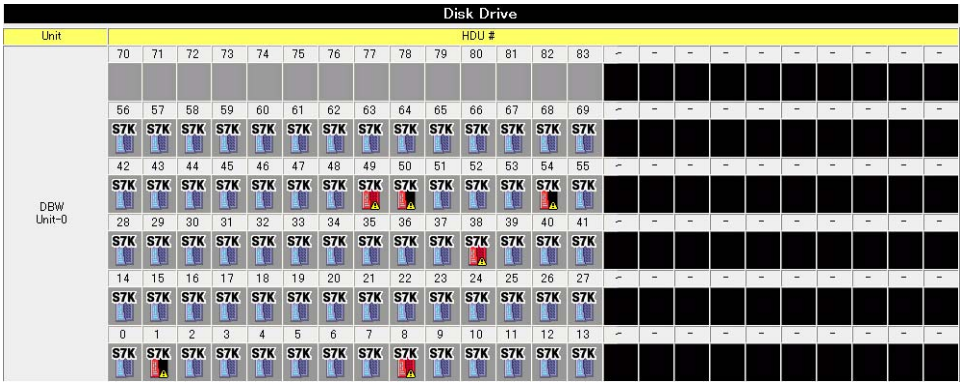
• Drive

Image			Status
SAS	SAS 7.2K	FMD	
SAS Blue	S7K Blue	FMD Blue	Normal
SAS Red	S7K Red	FMD Red	Fault has occurred to the Drive
SAS Red and Black	S7K Red and Black	FMD Red and Black	Drive port that the fault occurred is not implementing the Drive
No display			Drive is not implemented (Except for the status where the Drive that the fault occurred was drawn out), or although a failure occurs in the Drive, the Drive type cannot be determined.

DBX is treated as two units, each of which contains 24 Drives.
Seen from the front bezel side, the left side unit is called Unit A, and right side unit is called Unit B.
The label marked Unit A or Unit B is attached near the LED on the front bezel.
The unit number is assigned the running number of the DBL/DBS/DBF/DBW, and the Unit A and Unit B of the DBX. (The unit number of Unit B is a number adding 1 to the unit number of Unit A.)
DBX (x-A)(‡1) or DBX (x-B)(‡1) to be displayed indicates that the unit is Unit A or Unit B of the DBX.
When the DBX is mounted, the status shown below is displayed.

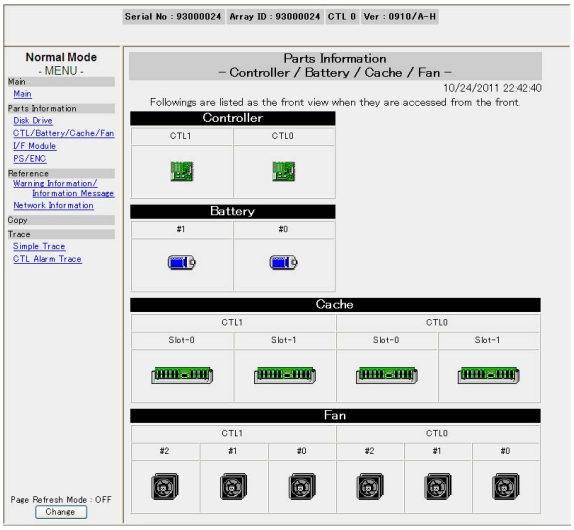


When the DBW is mounted, the status shown below is displayed.



‡1 : x (integer) is the running number of the DBX. The x is the same number in the Unit A and Unit B in pairs which compose the DBX.

(b) Controller/Battery/Cache/Fan (In the case of CBL)



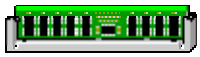
• Controller

Image	Status
Green	Normal
Red	Shutdown of the Controller (Status where it is not implemented with the setting of the dual system configuration is included)
Yellow	Controller pseudo blockade (The controller concerned becomes inaccessible from the host and the management program because the controller operation stops.)
No display	Even the fault has not occurred without being implemented with the setting of single system configuration

• Cache Backup Battery

Image	Status
Blue	• Normal (Cache Backup Battery capacity: 100%) The numeric field on the lower part shows the charged capacity in “%”
Blue	• Recharging Cache Backup Battery (Cache Backup Battery capacity: from 50% to 99%) The numeric field on the lower part shows the charged capacity in “%”
Blue	• Not enough Cache Backup Battery capacity. (Cache Backup Battery capacity: from 0% to 49%) The numeric field on the lower part shows the charged capacity in “%” When the capacity can’t be collected because of an error, it shows “-%”
Red	• Cache Backup Battery error The numeric field on the lower part shows “-%”

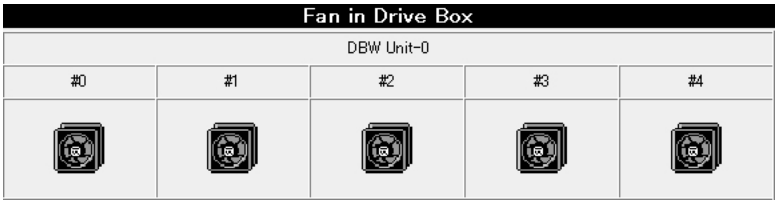
• Cache Memory

Image	Status
 Green	Normal
 Red	Fault (Status where is not implemented and extracted the fault Cache Memory is included)
No display	It is not implemented and there is not a fault

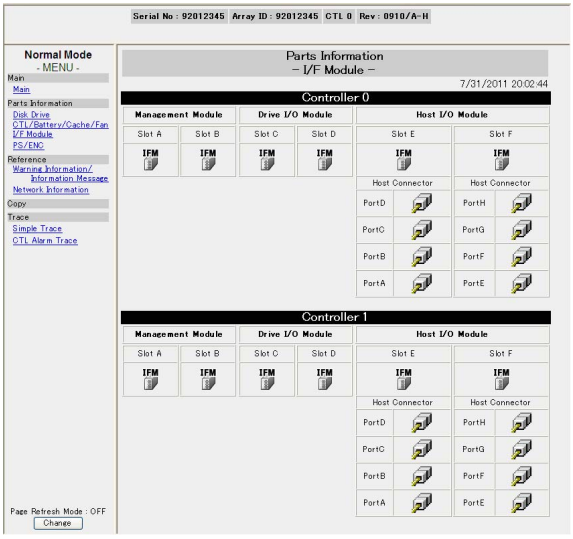
• Fan Module

Image	Status
 Gray	Normal
 Red	Fault

When the DBW is mounted, the status shown below is displayed.



(c) I/F Module(In the case of CBL)



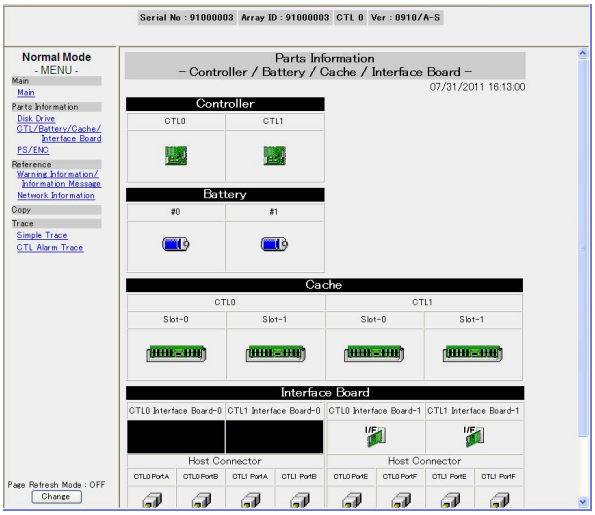
• Management Module/Drive I/O Module/ Host I/O Module

Image	Status
IFM Gray	Normal
IFM Red	Fault

• Host Connector

Image	Status
Gray	Normal
Red	Fault

(d) Controller/Battery/Cache/Interface Board(CBSS/CBSL/CBXSS/CBXSL)



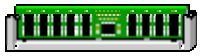
• Controller

Image	Status
Green	Normal
Red	Shutdown of the Controller (Status where it is not implemented with the setting of the dual system configuration is included)
Yellow	Controller pseudo blockade (The controller concerned becomes inaccessible from the host and the management program because the controller operation stops.)
No display	Even the fault has not occurred without being implemented with the setting of single system configuration

• Cache Backup Battery

Image	Status
 Blue	• Normal (Cache Backup Battery capacity: 100%) The numeric field on the lower part shows the charged capacity in "%"
 Blue	• Recharging Cache Backup Battery (Cache Backup Battery capacity: from 50% to 99%) The numeric field on the lower part shows the charged capacity in "%"
 Blue	• Not enough Cache Backup Battery capacity. (Cache Backup Battery capacity: from 0% to 49%) The numeric field on the lower part shows the charged capacity in "%" When the capacity can't be collected because of an error, it shows "-%"
 Red	• Cache Backup Battery error The numeric field on the lower part shows "-%"

• Cache Memory

Image	Status
 Green	Normal
 Red	Fault (Status where is not implemented and extracted the fault Cache Memory is included)
No display	It is not implemented and there is not a fault

• Host I/O Board

Image	Status
 Green	Normal
 Red	Fault

• Host Connector

Image	Status
 Gray	Normal
 Red	Fault

(e) PS/ENC (When no DBW is mounted)

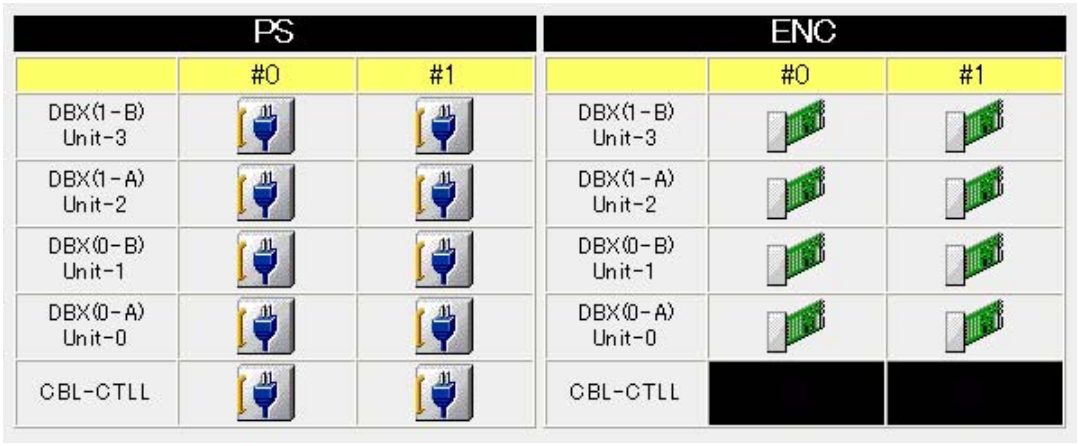
• Power Unit

Image	Status
 Blue	Normal
 Red	It is fault occurred or not implemented

• I/O Module(ENC) or I/O Card(ENC)

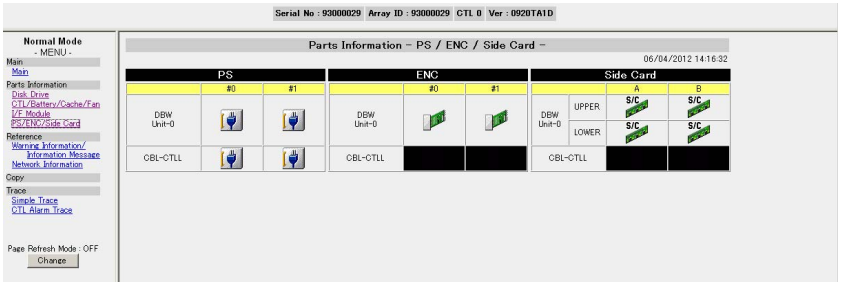
Image	Status
 Green	Normal
 Red	It is fault occurred or not implemented

DBX is treated as two units, each of which contains 24 Drives.
Seen from the front bezel side, the left side unit is called Unit A, and right side unit is called Unit B.
The label marked Unit A or Unit B is attached near the LED on the front bezel.
The unit number is assigned the running number of the DBL/DBS/DBF/DBW, and the Unit A and Unit B of the DBX. (The unit number of Unit B is a number adding 1 to the unit number of Unit A.)
DBX (x-A) or DBX (x-B) [‡1] to be displayed indicates that the unit is Unit A or Unit B of the DBX.
When the DBX is mounted, the status shown below is displayed.



‡1 : x(integer) is the running number of the DBX. The x is the same number in the Unit A and Unit B in pairs which compose the DBX.

(f) PS/ENC/Side Card (When the DBW is mounted)



• Power Unit

Image	Status
Blue	Normal
Red	It is fault occurred or not implemented

• I/O Module(ENC)

Image	Status
Green	Normal
Red	It is fault occurred or not implemented

• Side Card

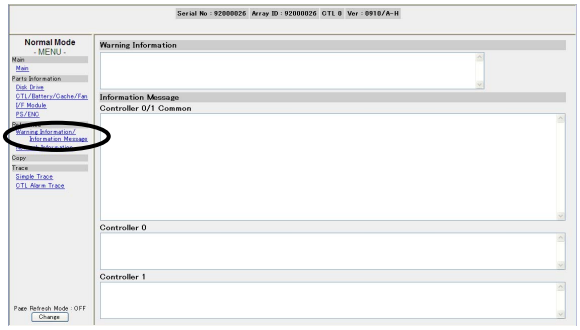
Image	Status
S/C Green	Normal
S/C Red	Fault

(2) Procedure of the Status checking by messages

A warning message about the failed part is displayed.

Refer to Troubleshooting “4.3 Confirm Log Messages” (TRBL 04-0120) for the details of the warning messages.

When checking the status of a component through a message, a clicking on the “Warning Information” of the menu frame in the main window changes the screen to the one shown below and a detailed message explaining the component status is displayed.

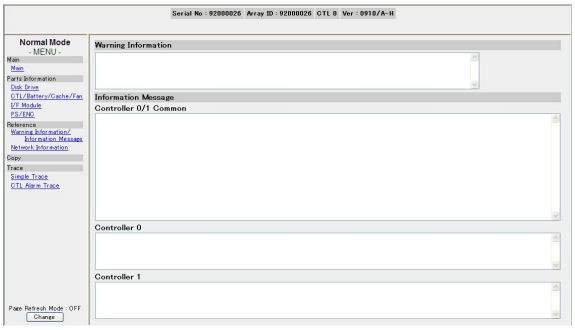


2.5 Information Message

The fault information and status information of the device that detected it in during the device operation are displayed.

The fault information and status information after the device booting are displayed in the Controller 0/1 Common box.
The fault information and status information as the device booting are displayed in the box of Controller 0 and Controller 1 every the controller.

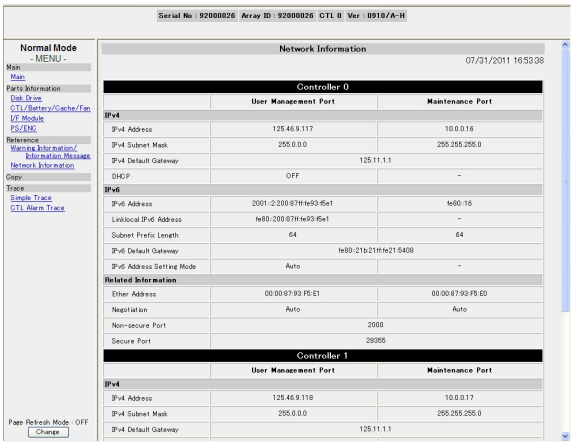
The Information Message screen is shown below.



2.6 Network Information

The set LAN Port Number is displayed.
Please click “LAN Port Number” of menu frame to enter into the LAN Port Number reference screen.

The LAN Port Number reference screen is shown below.



2.7 Collecting Simple Trace

This is a function to download current trace information.
To perform the download, a free capacity of approximately 40 M bytes is required in the PC.
Simple Trace needs to be collected from both Controllers. (You may fail to collect accurate information on the failed Controller if you collect Simple Trace only from the normal Controller.)

NOTE : If the following setting applies to Internet Explorer 8.0 or more, the Simple Trace collection may not be completed.

- The TCP/IP setting of the network may include a non-responding DNS server and an unnecessary default gateway with the Smart Screen filter setting enabled.
  In this case, check that the Smart Screen filter setting is disabled. Refer to the manual of the using browser for how to check the setting.

Serial number and the trace collection starting time (year/month/day/hour/minute/seconds) are added to the first file name.

smpl_trc0_xxxxxxxx_YYYYMMDDhhmmss_0E.dat

xxxxxxxx : Trace collection serial number
YYYYMMDDhhmmss : Trace collection starting time (year/month/day/hour/minute/seconds)

- The first file name when the collection from Controller #0 fits in a file
  “smpl_trc0_xxxxxxxx_YYYYMMDDhhmmss_0E.dat”
- The first file name when the collection from Controller #1 fits in a file
  “smpl_trc1_xxxxxxxx_YYYYMMDDhhmmss_0E.dat”
- The first file names when the collection from Controller #0 fits in two files
  “smpl_trc0_xxxxxxxx_YYYYMMDDhhmmss_0S.dat”
  “smpl_trc0_xxxxxxxx_YYYYMMDDhhmmss_1E.dat”
- The first file names when the collection from Controller #1 fits in two files
  “smpl_trc1_xxxxxxxx_YYYYMMDDhhmmss_0S.dat”
  “smpl_trc1_xxxxxxxx_YYYYMMDDhhmmss_1E.dat”
- The first file names when the collection from Controller #0 fits in three files
  “smpl_trc0_xxxxxxxx_YYYYMMDDhhmmss_0S.dat”
  “smpl_trc0_xxxxxxxx_YYYYMMDDhhmmss_1C.dat”
  “smpl_trc0_xxxxxxxx_YYYYMMDDhhmmss_2E.dat”
- The first file names when the collection from Controller #1 fits in three files
  “smpl_trc1_xxxxxxxx_YYYYMMDDhhmmss_0S.dat”
  “smpl_trc1_xxxxxxxx_YYYYMMDDhhmmss_1C.dat”
  “smpl_trc1_xxxxxxxx_YYYYMMDDhhmmss_2E.dat”

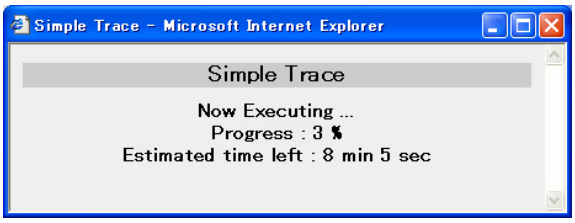
(1) Enter the IP address of the LAN connector for maintenance, to which the service PC is connected, from the browser. When the Web has already been connected, update the page by pressing the Update button.

(2) Click “Simple Trace” in the menu frame.

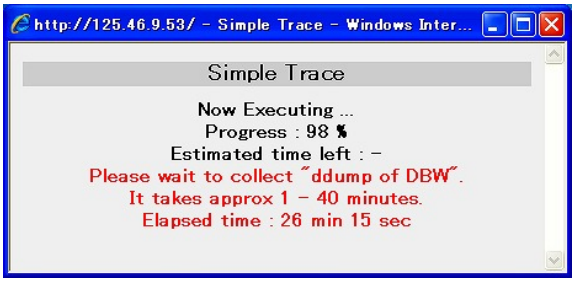
(3) When the “Simple Trace” is clicked, the following window is displayed.

(4) When the [OK] button is clicked, the following window is displayed.

NOTE : If the window update (e.g.: pressing F5 key) is performed in this window, the automatic update stops and so that the trace collection does not make progress. When the automatic update stops due to the window update, close this window and, after 20 minutes or more elapse, perform the simple trace collection again.

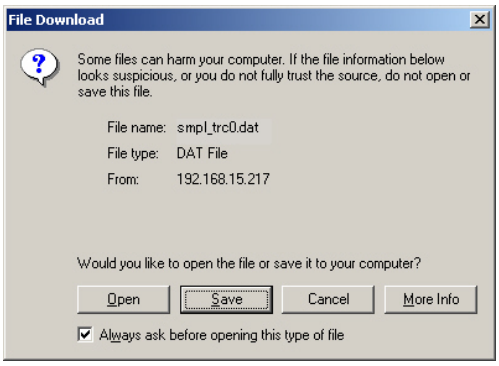


NOTE : If DBW is connected to the array, you may need to wait for one to 40 minutes with the following dialog box.

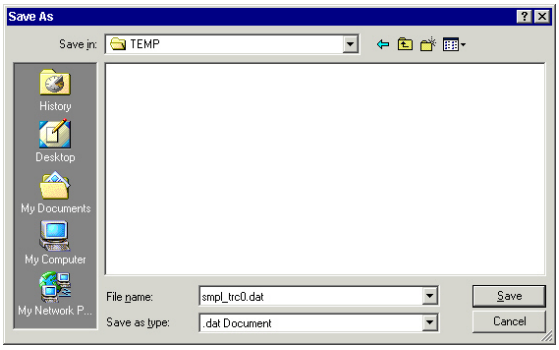


(5) The following window is displayed. Click the [Download] button.

(6) Please click [Save], if it is continued. Please click [Cancel], if it is stopped.

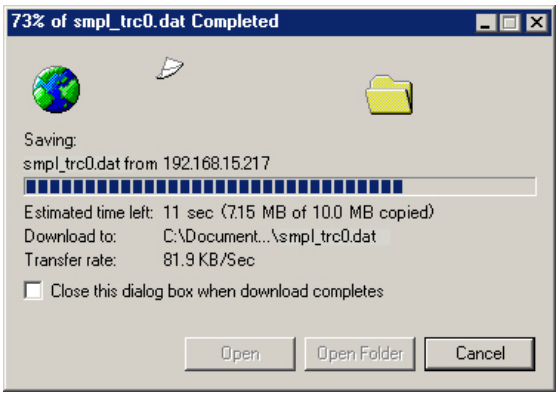


(7) If the following window is displayed, please click [Save] after file name is setting, if it is continued.(‡1) Please click [Cancel], if it is stopped.



‡1 : There may be a case where the first file name is given as “smpl_trc0xxxx.dat.dat” depending on the setting of the PC. In this case, “.dat” is deleted or any other name.

(8) The following window is displayed during execution download.



(9) When the downloading completes, the progress indicating message window is closed.

(10) If all traces cannot be collected, the following window is displayed.
Click the [Continue], and then collect traces in the next file beginning from the step (4).

NOTE : When performing an array boot or simple trace collection from the same Controller in the same array in the window shown below without clicking the [Continue], a error window is displayed, and the trace cannot be collected.

When all the traces can't be collected on the first time.

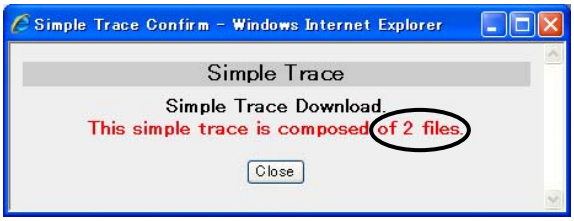
When all the traces can't be collected on the second time.

(11) The following window appears when all traces are collected.
Click the [Close] button. (If you failed to collect Simple Trace from both Controllers, return to (1) to collect Simple Trace from the other Controller.)

NOTE : Verify that the number of files described in the window is the same as the number of the files actually collected.

• When all traces can be collected in one file

When all traces can be collected in two files



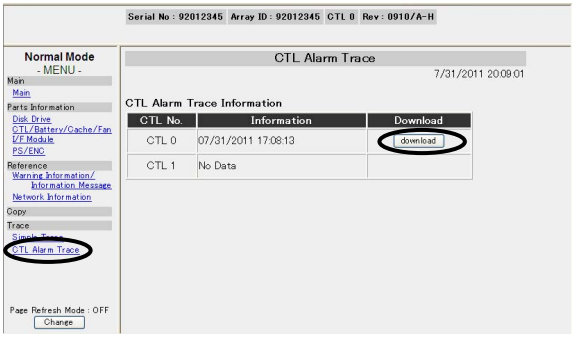
2.8 Collecting CTL Alarm Trace

Through the CTL Alarm Trace collection, detailed information (the CTL Alarm Trace) on the immediately Controller blockade stored in the Controller is collected. It may not be collected depending on the types of the failures which cause the controller blockade.

NOTE : When the Controller to be connected to WEB is blocked, the WEB connection may not be performed for ten minutes usually (for the maximum of 60 minutes) from the time when the Controller was blocked because the CTL alarm trace is being created.

Since the above-mentioned CTL Alarm Trace information is taken over from the blocked Controller to the replaced Controller, it can be collected after the Controller is recovered from the failure. Even after the collection, the information remains until the controller blockade trace is rewritten in the next controller blockade. If the Controller is blocked while collecting the CTL Alarm Trace may not be collected normally. Therefore, in this case, collect the CTL Alarm Trace again.
For collecting the CTL Alarm Trace, free drive space of 200 M bytes per one Controller is required.
Collect CTL Alarm Trace from each Controller.
In order to distinguish from which Controller it is collected, store the collected data in different directories or with different file names.
The method of collecting the CTL Alarm Trace is shown below.

(1) Click “CTL Alarm Trace” in the menu frame.
The CTL Alarm Trace Information window is displayed when the CTL alarm trace information is present.

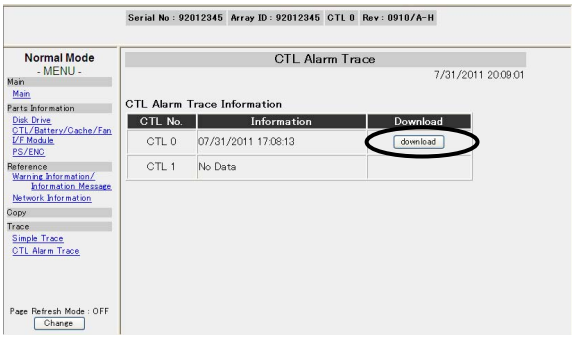


The following is displayed as contents of the information.

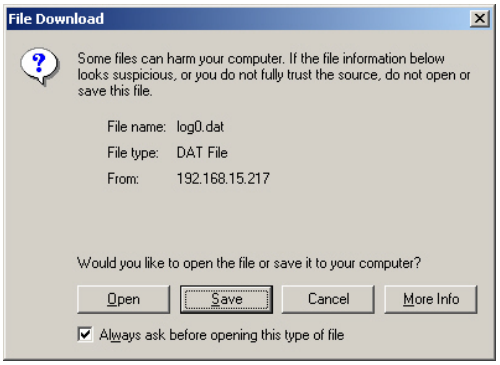
[Not Ready] .....: A status in which the trace area is not established in the array
[Not Data] .....: A status in which the CTL Alarm trace information is not present or being generated
[MM/DD/20XY hh:mm:ss] .....: A status in which the CTL alarm trace information is present

NOTE : When “Not Ready” or “No Data” is displayed on the description of “Information”, or when the date of the information is different from that of the collection of this time, the CTL alarm trace may not be collected normally. Connect the Maintenance PC to the LAN port of the blocked Controller, and collect the simple trace.
If simple trace cannot be obtained through detached Controller, connect the Maintenance PC to the Controller at the opposite side, and collect the simple trace.

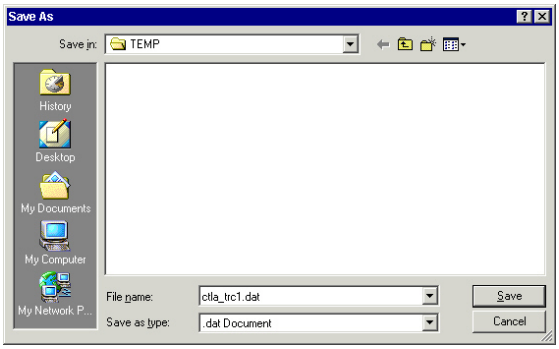
(2) To download the CTL Alarm trace information, press the “Download” button on the Controller side to be collected in “CTL Alarm Trace information”.



(3) The following window is displayed. Please click [Save], if it is continued. Please click [Cancel], if it is stopped.

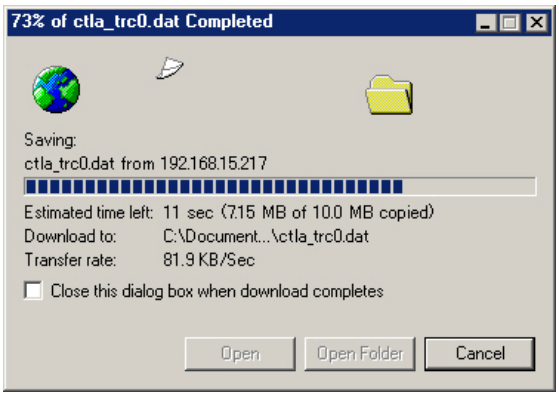


(4) If the following window is displayed, please click [Save] after file name is setting, if it is continued.(‡1) Please click [Cancel], if it is stopped.



‡1 : There may be a case where the default file name is given as “ctla_trc0.dat..dat” depending on the setting of the PC. In this case, “.dat” is deleted or any other name.

(5) The following window is displayed during execution download.



(6) When the downloading completes, the progress indicating message window is closed.

2.9 Host Command Trace Download

The following conditions are necessary to download the host command trace.
The host command trace information is required to analyze by executing the performance measurement.
If the host command trace exceeds a certain range, the new information is overwritten, so that the old information is deleted and cannot be analyzed.
This function is to collect the command information from the host in the Maintenance PC at a maximum.

Use this function only when the performance analysis is required. Do not use it normally.

- The READY LED (green) on the Front Bezel lights on.
- For Firmware "1.3 Preparation for Installation of Firmware" (FIRM 01-0020) is performed and the Maintenance PC is set up.

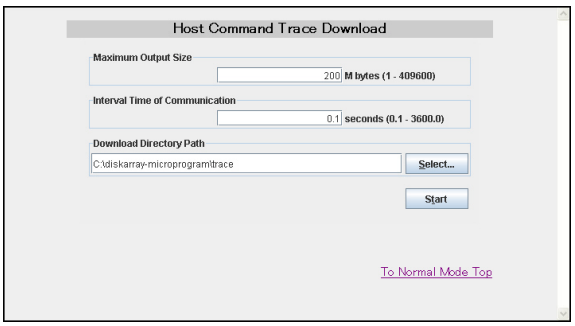
The data size of the host command trace that can be downloaded is affected by environments of the service PC and a LAN.
Therefore, it is recommended to do the downloading in the following environment.

- The downloading is done through the LAN port for maintenance.
- The LAN interface used by the Maintenance PC is 100Base-TX or the superior.

Incidentally, the size of the data that can be downloaded varies depending on the load of I/O's issued to the disk array system

(1) Display in the host command trace download window.
Enter "http://(IP address)/hcmd_trc" in the [Address] of the Web browser.
In the case of the dual system configuration, enter an IP address of any one of the Controllers. (Only the information of the input IP address is collected. If the information for both Controllers is required, start two Web browsers.)
A [User Name] and a [Password] may be requested at the time of Web connection or Web operation. In that case, input "maintenance" for the [User Name] and "hosyu9500" for the [Password].

(2) Input of “Maximum Output Size”, “Interval Time of Communication” and “Download Directory Path”.



[Maximum Output Size] : Check the empty drive space of the Maintenance PC and input the maximum output size (the initial value is 200 M bytes).

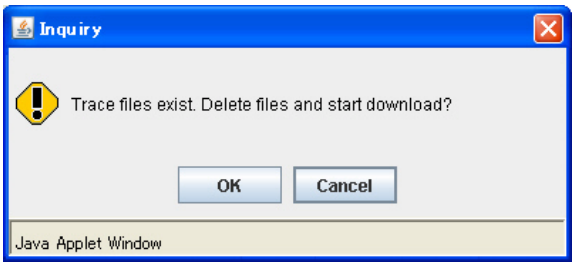
[Interval Time of Communication] : Input the interval time of downloading the host command trace (the initial value is 0.1 second).

[Download Directory Path] : Input the folder which stores the host command trace (the initial value is “C:\diskarray-microprogram\trace” and the folder can be selected by pressing the [Select] button).

- It is required to create the storage folder beforehand.
- The folder can be created only in the “C:\diskarray-microprogram” folder.
- The collected host command trace is divided into two or more files “hcmdtrc$p#_xxxxx.trc” ($: Controller number, #: port number, and xxxxx: following number) and output. When collecting the host command trace two or more times, create the folder in every case.

(3) Click the [Start] button to start the download.

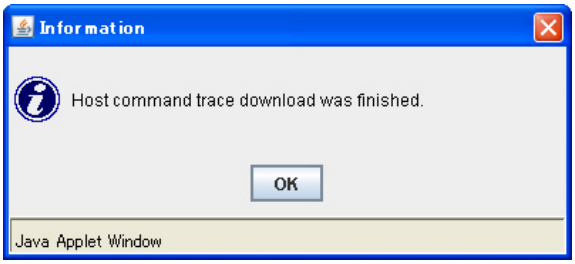
(4) The following window is displayed when the stored file exists.



Click the [OK] button.
Click [Cancel] if stopping it.

(5) The following window is displayed when executing the download.

(6) The following window is displayed when the download is completed.



If the [OK] button is clicked, the host command trace download window is displayed.

- Standard of the host command trace collection

  When collecting the host command trace, make the following a standard and set it.
  If the empty drive space of the host decreases, the system becomes unstable. Therefore, set the host command trace collection after checking the empty space.
  Also, when the command issue from the host exceeds the collectable IOPS, all the host commands are not collected.

$$\text{Required drive capacity (M bytes)} = \frac{\text{Host command trace collection time (second)}}{\text{Interval time of communication (second)}} \times 76.8\ (\text{k bytes})$$

Table 2.9.1 Required Drive Capacity for Host Command Trace Collection (M bytes)

Communication interval (second) and the collectable IOPS / Collection time (second)	0.1 6000	0.2 3000	0.5 1200
1	0.8	0.4	0.2
10	7.7	3.8	1.5
60	46.1	23.0	9.2

The collection time and the drive capacity vary depending on the issue interval of the command from the host.

2.10 Dump Collection of Flash Drives (FMD)

This is a function to collect the dump information of the Flash Drives (FMD) installed in the box by the service PC when the performance of the RAID Group configured with the Flash Drives (FMD) deteriorates or the write lifetime rate/battery lifetime rate increases.

2.10.1 Restrictions on Dump Collection of Flash Drives (FMD)

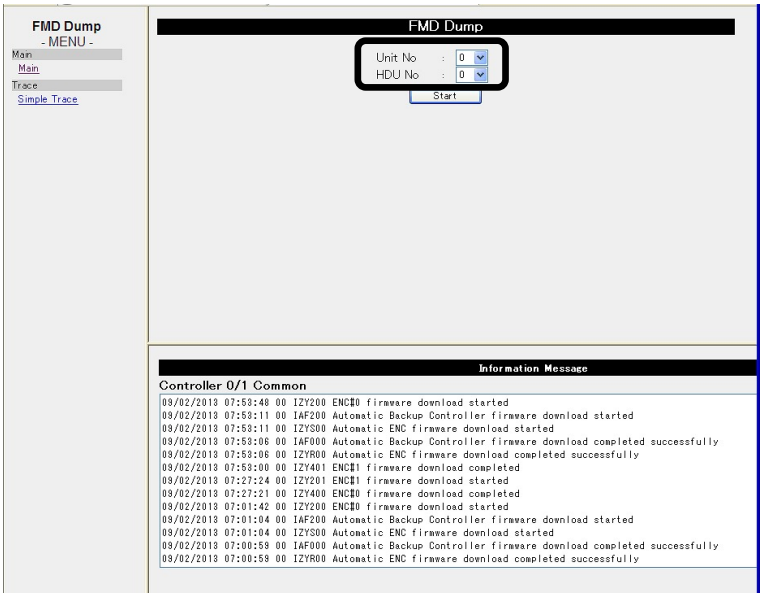
(1) You cannot collect the dump of the blocked Flash Drives (FMD).

(2) Do not collect the dump of Flash Drives (FMD) during update installation.
Collect dump of Flash Drives (FMD) after checking that "I19000 Online microprogram update completed [The firmware version ********]" is displayed in the Information Message on WEB.

2.10.2 Procedure for Collecting the Dump of Flash Drives (FMD)

(1) Input "http://IP-Address/fmd_dmp of Controller #0 connecting WEB/drvfirm" in URL of a browser.
When the "Enter Network Password" is displayed, enter [User Name] and [Password] and click the [OK] button.

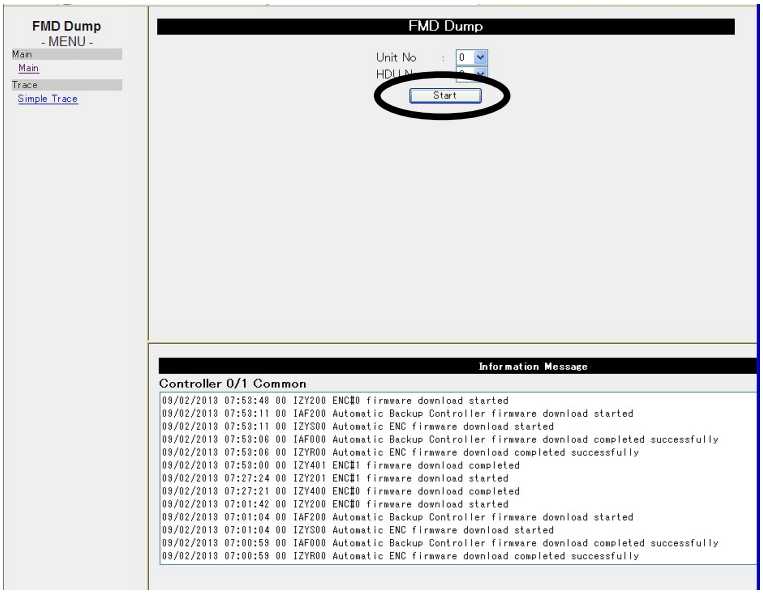
(2) The dump collection window of Flash Drives (FMD) is displayed. Specify Unit No. and HDU No. of the collection target.



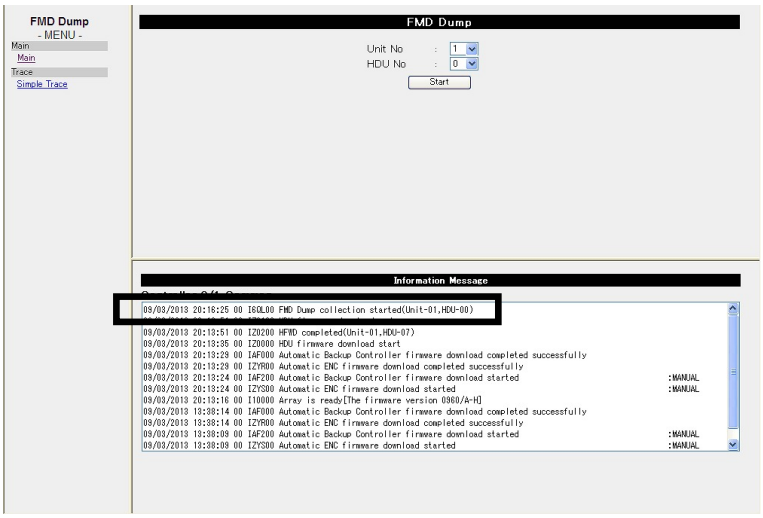
- When the system is starting, the dump collection window of Flash Drives (FMD) is not displayed and the following window is displayed.
  After the system becomes Ready, perform the procedure from Step (1) again.

- If no Flash Drive (FMD) is installed in the system, the dump collection window of Flash Drives (FMD) is not displayed and the following window is displayed.

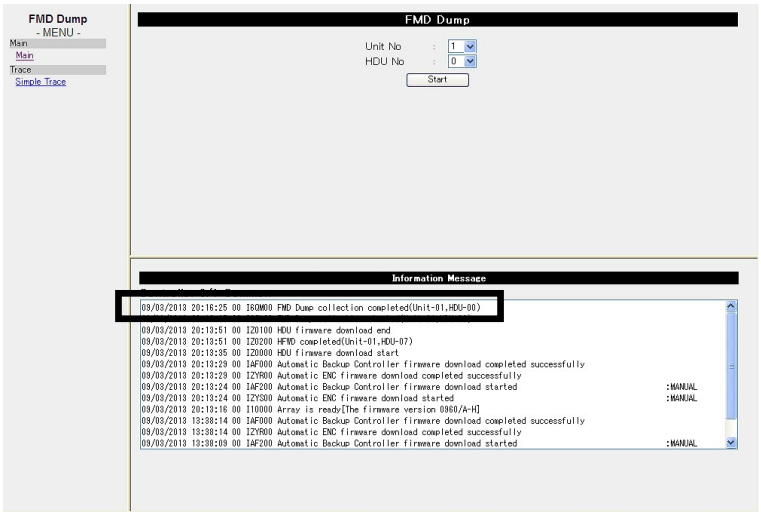
(3) Click the [Start] button in the dump collection window of Flash Drives (FMD).
The dump collection function of Flash Drives (FMD) operates.



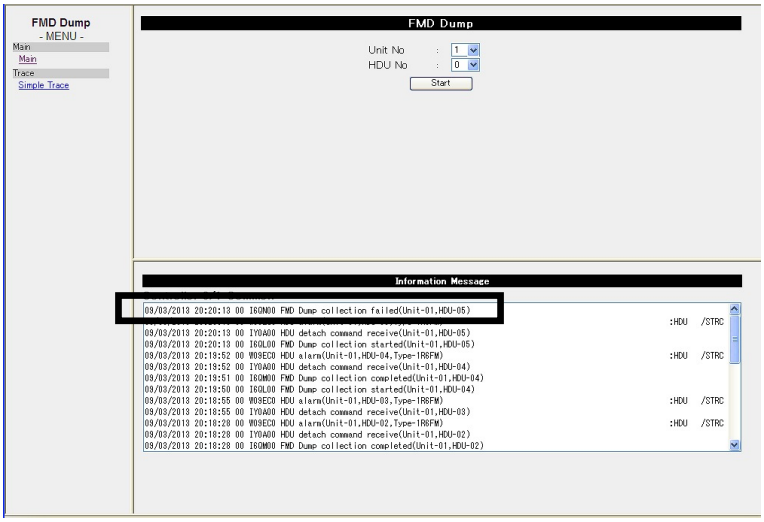
(4) Press “F5 key” or click the update button in the browser in the dump collection window of Flash Drives (FMD) to reload.
The message “I6QL00 FMD Dump collection started (Unit-x, HDU-y)” is displayed in Information Message and the dump collection processing of Flash Drives (FMD) starts.
When it is not displayed, check Information Message. If a failure has occurred, eliminate the failure and perform the procedure from Step (1) again.



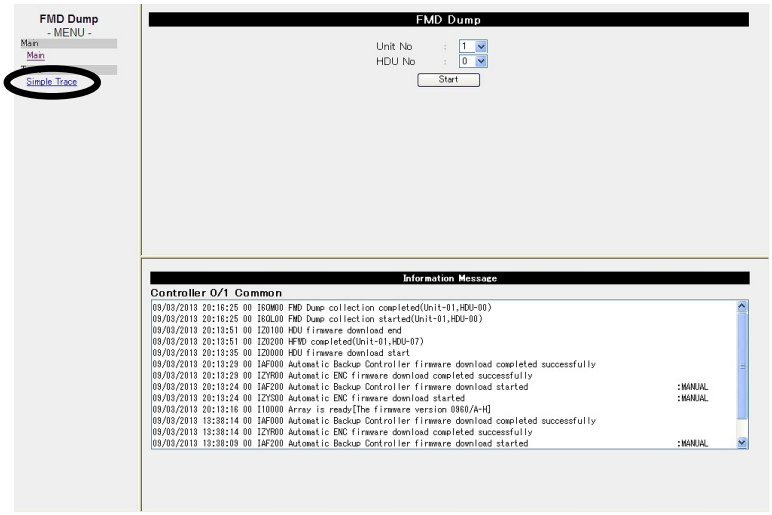
- If the message “I6QM00 FMD Dump collection completed (Unit-x, HDU-y)” is displayed in Information Message, the dump collection of Flash Drives (FMD) is completed.



- If the message “I6QN00 FMD Dump collection failed (Unit-x, HDU-y)” which indicates a dump collection failure of Flash Drives (FMD) is displayed, recover the failure in accordance with Information Message, and then perform the procedure from Step (1) again.



(5) After completing the dump collection of Flash Drives (FMD), click the [Simple Trace] button to collect the simple trace.



Chapter 3. The Maintenance Mode Operation Procedure

3.1 Transferring to the Maintenance Mode

The method of making the array enter the maintenance mode varies depending on the lighting status of the READY LED (green) and ALARM LED (red) on the front bezel of the Controller Box.

- Do not make the work when the READY LED (green) on the Front Bezel is blinking at high speed. When it is high-speed blinking, the ENC firmware is being downloaded. Make the work after making sure that the READY LED (green) lights on after the maximum of 30 to 50 minutes (CBL: for the maximum of 40 to 60 minutes (80 to 180 minutes when the DBW is connected to the CBL)).
- Do not work when the WARNING LED (orange) on the front of the Controller Box is blinking at high speed. While this WARNING LED (orange) is blinking at high speed, the update of the flash program or the automatic download of the ENC firmware and the backup controller firmware at the time of turning the power on in the single controller configuration is being executed. Perform the work after checking that this WARNING LED (orange) goes out in the maximum of 30 to 85 minutes, and the READY LED (green) on the front of the Controller Box lights up.
- When the READY LED (green) is on, proceed to the procedure starting from the step (2).
- When the ALARM LED (red) is on, wait for three minutes after making sure of the lighting of it, proceed to the procedure starting from the step (2).
- Also proceed to the procedure starting from the step (1) in the case where the READY LED (green) and ALARM LED (red) do not come on after waiting for ten minutes when the power is turned on.

(1) Make sure that the WARNING LED (orange) is not blinking fast. If it is blinking fast, wait for a while (80 seconds at the longest). It will cease to blink fast. There is no problem if it blinks slowly (at intervals of one second).

(2) Changing to the maintenance mode.

- In the array where the Power Saving/Power Saving Plus of the priced option is used, when RAID group whose power saving status is "Normal (command monitoring)" exists, do not change to the Maintenance Mode. Change to the Maintenance Mode after completing the spin-down, or have the user perform the spin-down or spin-up instruction, and then change to the Maintenance Mode after there is no RAID group whose power saving status is "Normal (command monitoring)".
- Single Controller

  Press the RST SW of the single Controller. (While pressing RST SW, the RST LED (orange) is on.) Use a tool with a thin tip (a precise screwdriver, etc.) because the hole of RST SW is small (3 mm in diameter).
- Dual Controller

(a) Press the RST SW of the Controller #0. (While pressing RST SW, the RST LED (orange) is on.) Use a tool with a thin tip (a precise screwdriver, etc.) because the hole of RST SW is small (3 mm in diameter).

(b) Wait for a while (about ten seconds) and check that the ALM LED (red) of the Controller lights up. Within ten seconds after the ALM LED (red) lights up, press the RST SW of the other Controller.

When the ALM LED (red) of the Controller #0 does not go out in spite of the above operation, turn off the main switch and disconnect the power cable, and then connect the power cable and turn on the main switch without pulling out or inserting the Controller. After that, return to step (1) and execute the procedure over again.

NOTE : Because the Controller is shutdown status for the Maintenance Mode, the command from the host is impossible execution. Rebooting of the Controller is required for the return.

When ALM LED (red) on Controller#0 turns off and READY LED (green) on Front Bezel turns off, it transfers to Maintenance mode.

(c) Start the setting after making sure that the array has entered the Ready status.

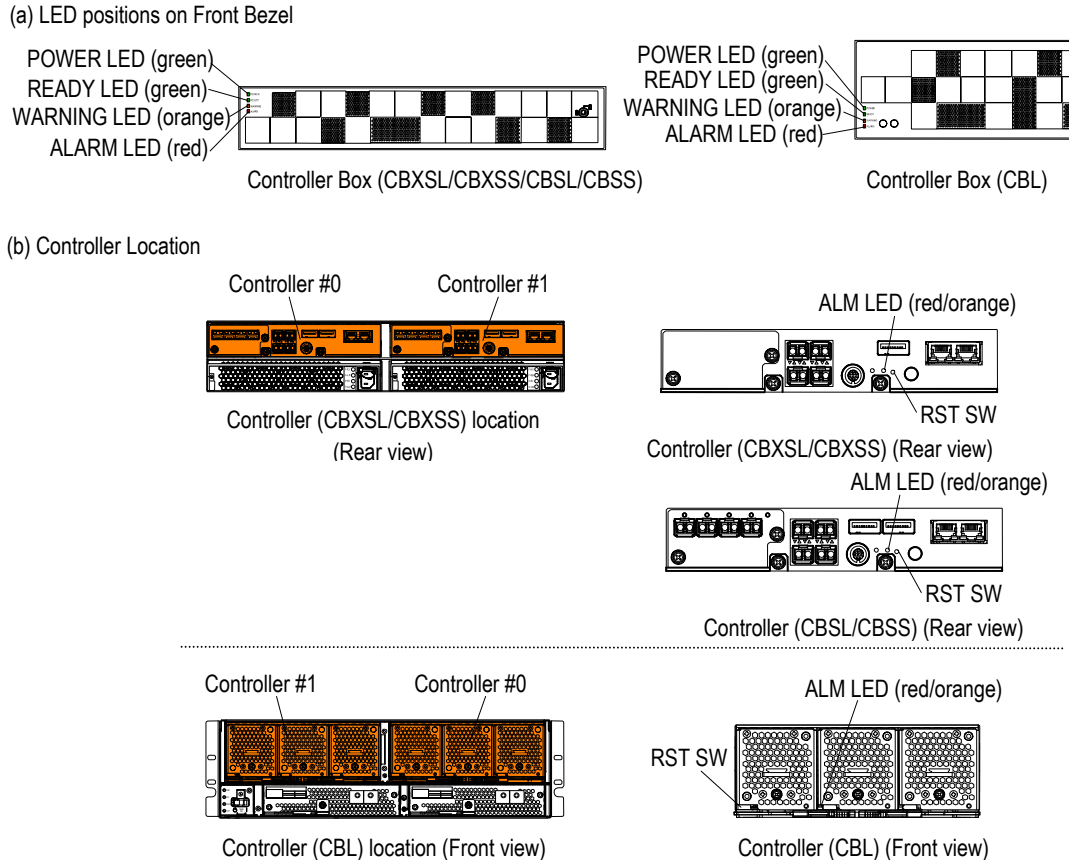


Figure 3.1.1 Indication Position

NOTE : • Set the TCP/IP to “Disable DNS” because the connection takes a long time when the TCP/IP of the network is set to the condition in which the DNS is used. For the setting procedure, refer to the instruction manual of the PC to be used.

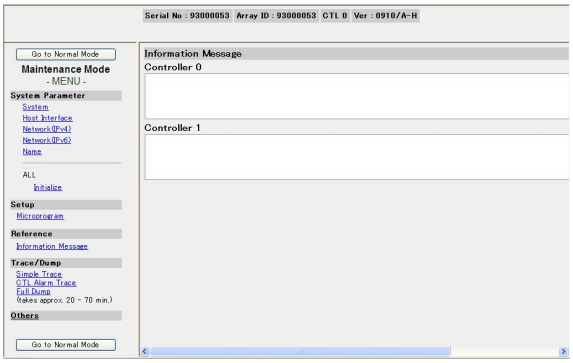
• Make sure that the browser is set to the condition in which the proxy server is not used because the connection cannot be done if the proxy server is set to be used. To make sure the setting, refer to the instruction manual of the browser to be used.

(3) Input the IP Address of the Controller where it was connected with the network to the browser. Input the page by the update button of the browser if it has already been connected with WEB.

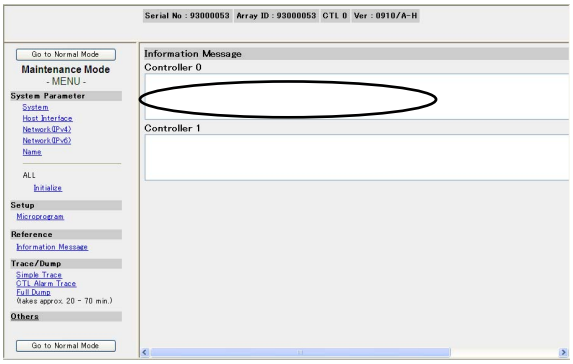
NOTE : The contents that were set up with “System Parameter” and the firmware that was installed with “Setup” come into effect after the rebooting of the Controller.

A [User Name] and a [Password] may be requested at the time of Web connection or Web operation. In that case, input “maintenance” for the [User Name] and “hosyu9500” for the [Password].

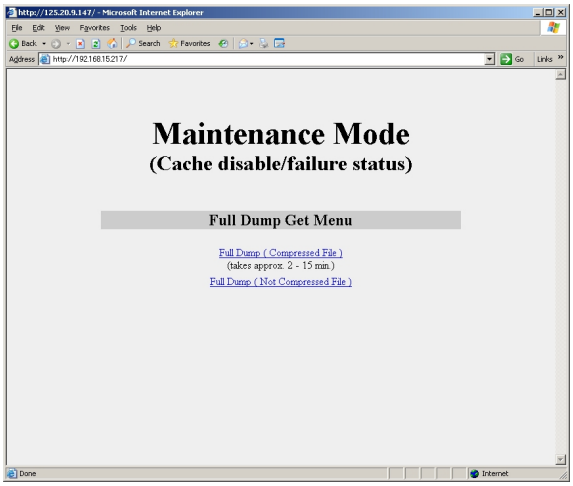
(4) Usually, the following window is displayed in the browser.



When this window is displayed in the browser, check if the “Series No” and the “CTL number”, which are displayed in the upper part of the window, match with the device number and the CTL number of the array to be connected to WEB. The WEB connection in the maintenance mode is completed when these are matched. If not matched, the specification of the IP address at the WEB connection is incorrect. Enter the correct IP address of the Controller to be connected to WEB in the browser again.

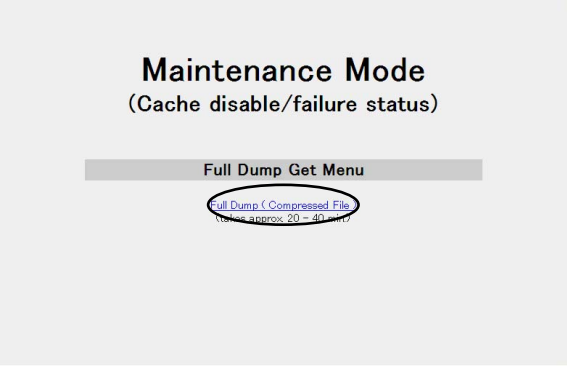


Also, when the Cache memory access failure occurs, in the Controller connected to WEB, the following window is displayed in the browser. At this time, refer to “3.1.1 WEB Operation in the Maintenance Mode During the Cache Memory Access Failure” (WEB 03-0050).



3.1.1 WEB Operation in the Maintenance Mode During the Cache Memory Access Failure

The message display and the setting operation do not function during the Cache memory access failure. Select “Full Dump (Compressed File)” on the window, and collect Full Dump. And then, contact the Technical Support Center.



* The time displayed on the window changes by the model or the status of the array.

Also, connect WEB to the other Controller, and continue the maintenance work for the dual Controller system.

3.2 Reference/Setting of the System Parameter and Initialize

System Parameter is being classified to the following group and selecting each group executes the reference/setting and Initialize.

(1) System
Reference and setting of the system parameter regarding the array is executed. (Refer to "3.2.1 System" (WEB 03-0070).)

(2) Host Interface
Reference and setting of the system parameter regarding the host interfacing are executed. (Refer to "3.2.2 Host Interface" (WEB 03-0120).)

(3) Network
Reference and setting of the system parameter regarding the network are executed. (Refer to "3.2.3 Network" (WEB 03-0160).)

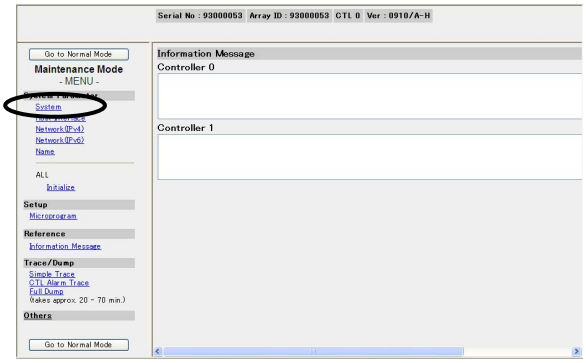
(4) Name
Reference and setting of the system parameter such as the Vendor ID, Product ID, Controller Name are executed. (Refer to "3.2.4 Name" (WEB 03-0210).)

(5) ALL
The system parameter information is initialized. (Refer to "3.2.5 ALL" (WEB 03-0250).)

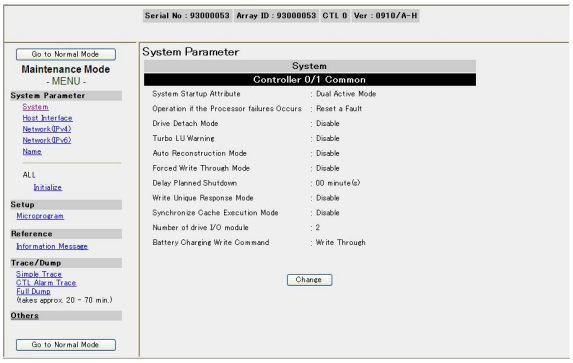
3.2.1 System

This function sets up/refer to the item regarding the System in the device.

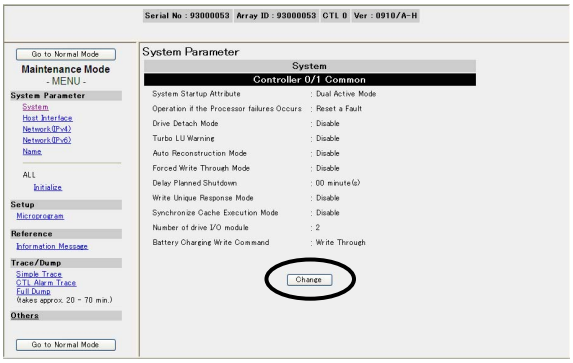
(1) Click “System”.



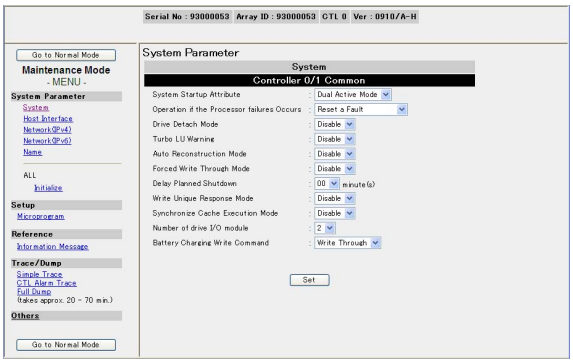
(2) The present setting value (the current value) is displayed.



(3) Click [Change] for the setting.
Click [Back] of the browser for the unsetting.



(4) Select the item that is set up from the pull-down menu of the corresponding item that is set up. At this time, set up the item that is set up all.



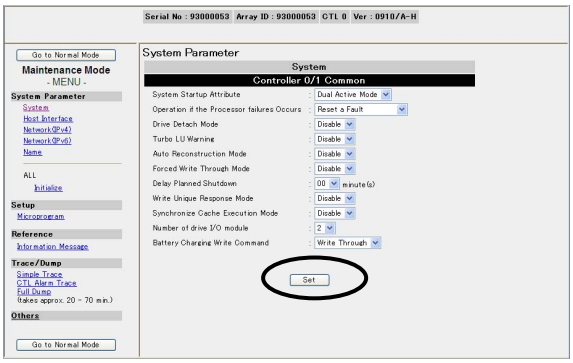
Explanation with regard to each item

[Controller 0/1 Common]

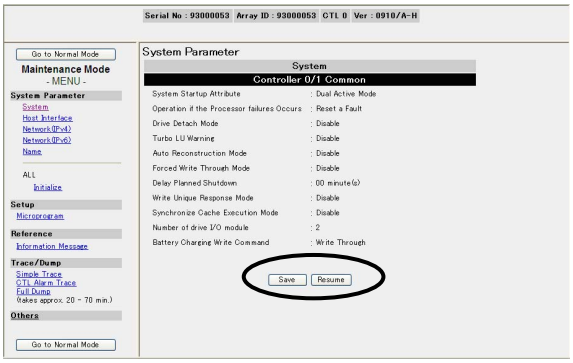
- System Startup Attribute
  The System Operation Attribute is designated.
  [Single Mode] : This is Single controller configuration.
  [Dual Active Mode] : This is Dual controller configuration.
- Operation if the Processor failures Occurs
  The operation as the processor fault occurrence is designated.
  [Reset a Fault] : A fault is reset.
  [Shutdown the System] : The controller is shutdown.
- Drive Detach Mode
  The Drive Shutdown Mode is designated.
  [Enable] : The Drive Shutdown Mode is enabled.
  [Disable] : The Drive Shutdown Mode is disabled.
- Turbo LU Warning
  Suppression of the R/W command operation regarding the Volume concerned for the case where the Turbo Volume Residence function becomes ineffective is set.
  [Enable] : The operation is suppressed.
  [Disable] : The operation is not suppressed
- Auto Reconstruction Mode
  The Auto Reconstruction Mode (Data restoration to a spare drive to be done when a drive is pulled out) is designated.
  [Enable] : The Auto Reconstruction Mode is enabled.
  [Disable] : The Auto Reconstruction Mode is disabled.
- Forced Write Through Mode
  The Forced Write Through Mode is designated.
  [Enable] : The Forced Write Through Mode is enabled.
  [Disable] : The Forced Write Through Mode is disabled.
- Delay Planned Shutdown
  The Delay Planned Shutdown (Time from the power switch turning off to the deliberate shutdown) is designated. 00 to 60 minute
- Write Unique Response Mode
  Specify this when setting the Write Unique Response Mode.
  [Enable] : The Write Unique Response Mode is enabled.
  [Disable] : The Write Unique Response Mode is disabled.
- Synchronize Cache Execution Mode
  This is specified when the Synchronize Cache command is executed.
  [Enable] : The Synchronize Cache Execution Mode is enabled.
  [Disable] : The Synchronize Cache Execution Mode is disabled.

- Number of drive I/O module
  The number of Drive I/O modules is designated. Do not change the value from 2.
- Battery Charging Write Command
  Selects Write operation when the Cache Backup Battery capacity of the 2 controllers is not enough to start 1 Store.
  [Write Through] : Executes Write Through operation.
  [Write Back] : Executes Write Back (Write After) operation.

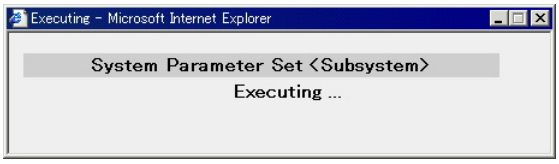
(5) Click [Set] after setting completion.



(6) The screen that confirms the following setting contents is displayed.
Click [Save] if the setting is correct. Click [Resume] if the setting contents are changed.



(7) If [Resume] is clicked, it returns to the setting window of before. If [Save] is clicked, the following window is displayed.



(8) The following window is displayed at the later time for a while.
Click [OK], if the setting is continued. Click [Cancel], if the setting is stopped.
If [Cancel] was clicked, the system parameter is not set up.

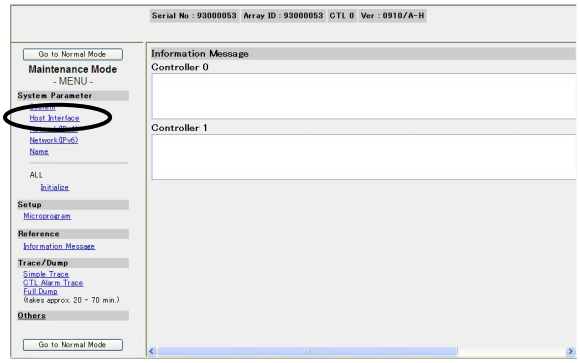
(9) If [OK] is clicked, the following window is displayed.

(10) If the following window is displayed at the later time for a while, the setting is completed.
If [OK] is clicked, it returns to the menu.

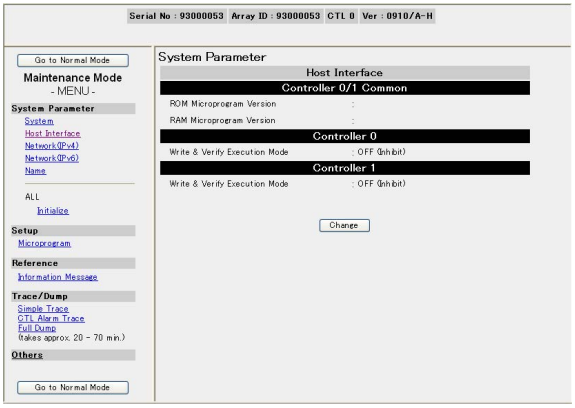
3.2.2 Host Interface

This function sets up/refer to the item regarding the host interfacing of the device.

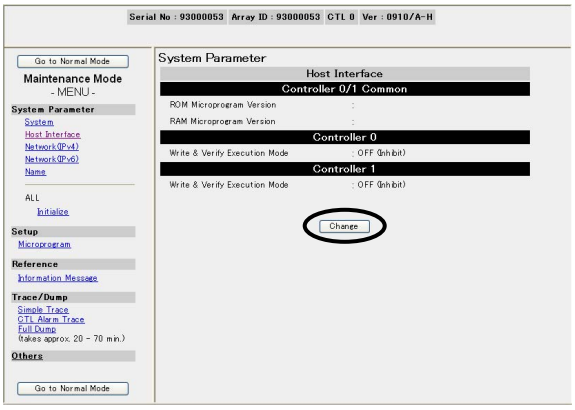
(1) Click “Host Interface”.



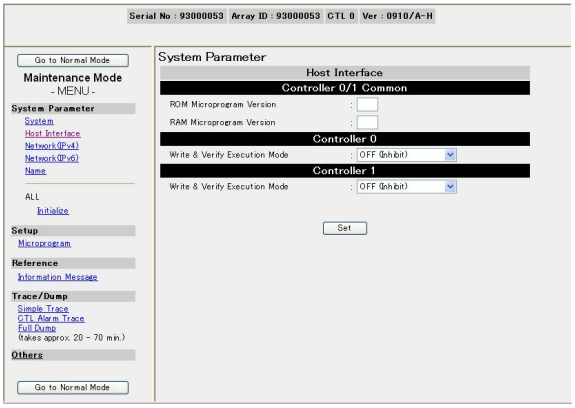
(2) The present setting value (the current value) is displayed.



(3) Click [Change] for the setting.
Click [Back] of the browser for the unsetting.



(4) Select the item that is set up from the pull-down menu of the corresponding item that is set up. At this time, set up the item that is set up all.



Explanation with regard to each item

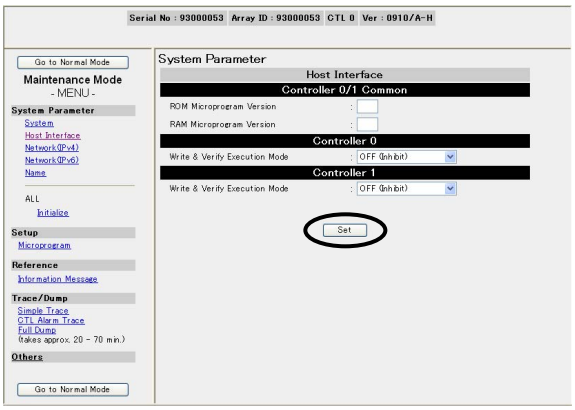
[Controller 0/1 Common]

- ROM Microprogram Version :
  The response value of Product Revision Level (ROM Microprogram Version) in the Inquiry command is shown.
- RAM Microprogram Version :
  The response value of Product Revision Level (RAM Microprogram Version) in the Inquiry command is shown.

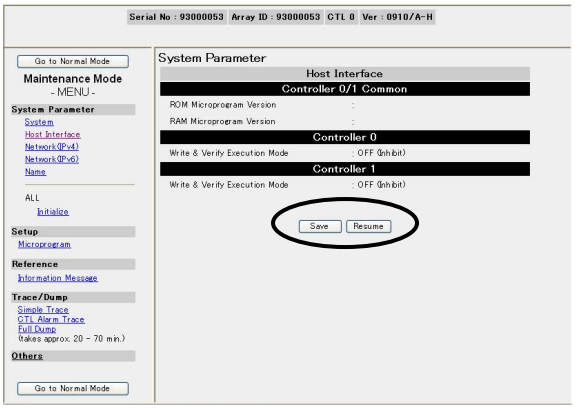
[Controller]

- Write & Verify Execution Mode
  The operations inside the Write & Verify command from the host are shown.
  [ON (Does not inhibit)] : The Write & Verify are executed.
  [OFF (Inhibit)] : This is executed and replace to the Write.

(5) Click [Set] after setting completion.



(6) The screen that confirms the following setting contents is displayed.
Click [Save] if the setting is correct. Click [Resume] if the setting contents are changed.



(7) If [Resume] is clicked, it returns to the setting window of before. If [Save] is clicked, the following window is displayed.

(8) The following window is displayed at the later time for a while.
Click [OK], if the setting is continued. Click [Cancel], if the setting is stopped.
If [Cancel] was clicked, the system parameter is not set up.

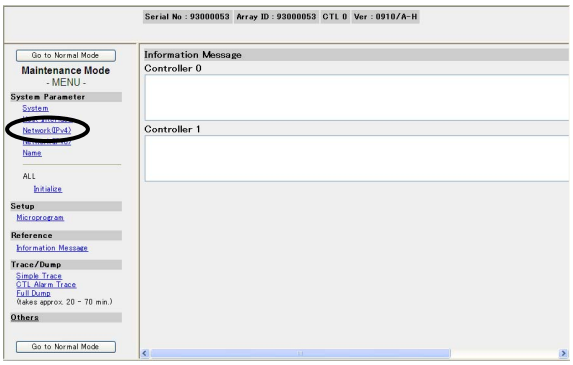
(9) If [OK] is clicked, the following window is displayed.

(10) If the following window is displayed at the later time for a while, the setting is completed.
If [OK] is clicked, it returns to the menu.

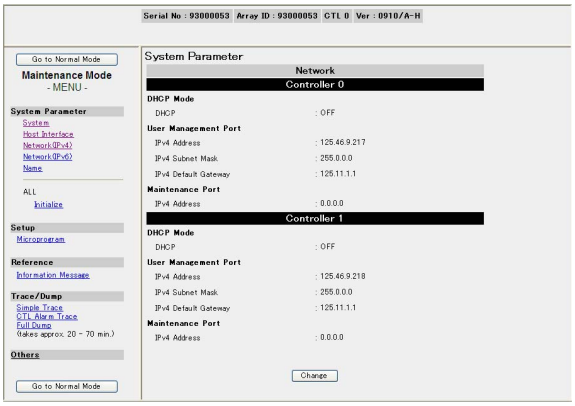
3.2.3 Network

This function sets up/refer to the item regarding the network (Setting the user management LAN port) of the device.

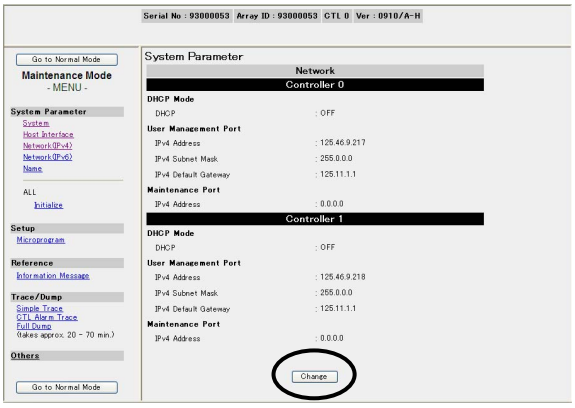
(1) Click “Network (IPv4)”.



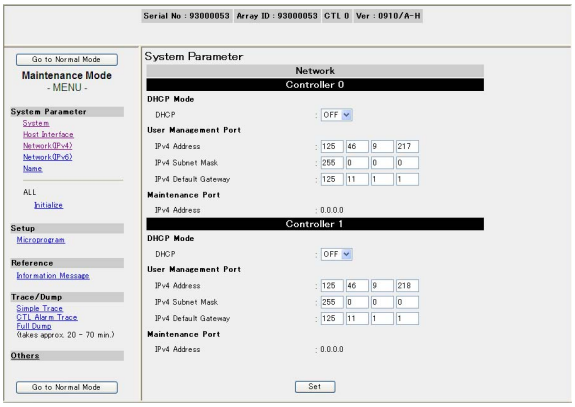
(2) The current IPv4 address setting value (current value) is displayed.



(3) Click [Change] for the setting.
Click [Back] of the browser for the unsetting.



(4) Set up/select the corresponding item that is set up from the pull-down menu or input them.
At this time, set up the item that is set up all.



Explanation with regard to each item

[Controller 0]/[Controller 1]

- DHCP Mode

  DHCP : The DHCP function (‡1) is specified.

  [OFF] : Invalid the DHCP mode.

  [ON] : Valid the DHCP mode.

- User Management Port

  IPv4 Address : Sets the IPv4 ADDRESS.

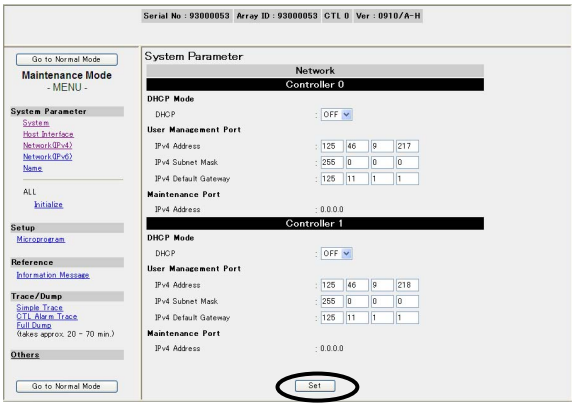
  IPv4Subnet Mask : Sets the IPv4 Subnet Mask.

  IPv4Default Gateway : Sets the IPv4 Default Gateway.

- Maintenance Port

  IPv4 Address(‡2) : The IPv4 address of the maintenance port, which is currently set, is displayed. It cannot be changed.

(5) Click [Set] after setting completion.

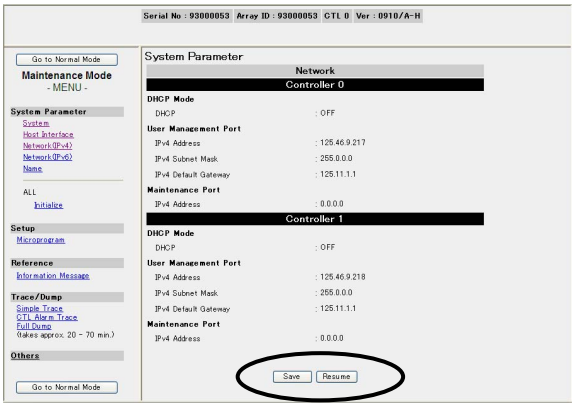


‡1: When DHCP mode is valid, IP address is obtained from the DHCP server.
When the DHCP server has not started up or DHCP function has been miss-set, obtaining the IP address fails and the device IP address remains to be “0.0.0.0”. (Hitachi Storage Navigator Modular 2 or WEB cannot be used via LAN.)
In this case, the device IP address can be obtained by starting up the DHCP server or setting DHCP function correctly if necessary.
In the configuration which uses this array as an external Drive of the DHCP server, when the IP address of this array is acquired using the DHCP function, if the network address of the reserved IP address for the maintenance port is assigned as an IP address, the IP addresses of the port for the user control and the port for the maintenance may not operate normally because they compete.
Request the system administrator that the DHCP server does not assign IP address of “10.0.0.x”, “192.168.0.x”, “192.168.233.x”, “172.23.211.x”, “10.197.181.x” to the device.

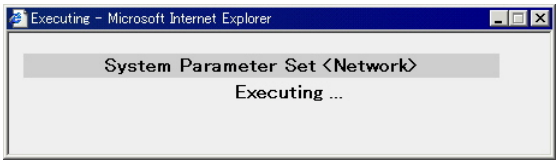
‡2: The IP address with the same network address as the displayed IP address of the maintenance port cannot be set. Also, set up the network after restarting the array and setting the IP address of the maintenance port (refer to System Parameter “7.1 Setting Maintenance LAN” (SYSPR 07-0000)) when the IP address of the maintenance port is displayed as “0.0.0.0”.

‡3: IPv6 address cannot be set on WEB (reference only). When setting IPv6 address, set it from Hitachi Storage Navigator Modular 2.

(6) The screen that confirms the following setting contents is displayed.
Click [Save] if the setting is correct. Click [Resume] if the setting contents are changed.

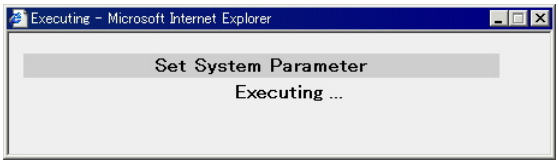


(7) If [Resume] is clicked, it returns to the setting window of before. If [Save] is clicked, the following window is displayed.



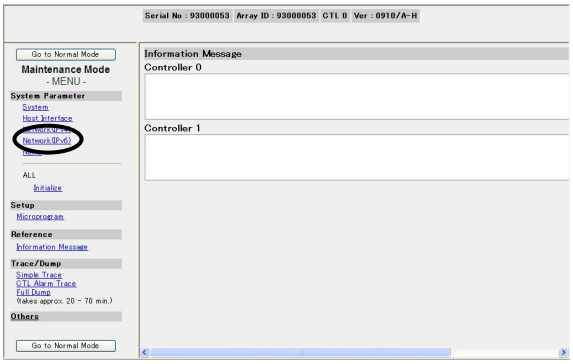
(8) The following window is displayed.
Click [OK], if the setting is continued. Click [Cancel], if the setting is stopped.
If [Cancel] was clicked, the system parameter is not set up.

(9) If [OK] is clicked, the following window is displayed.

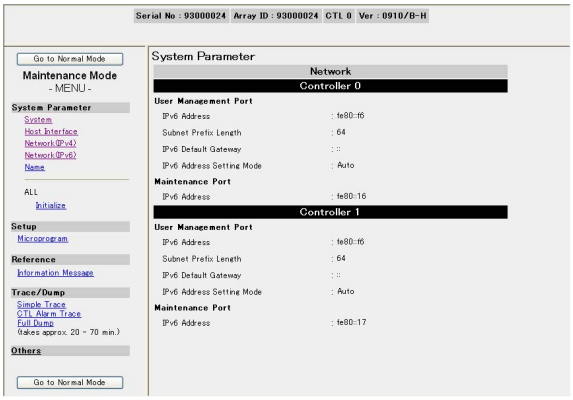


(10) If the following window is displayed at the later time for a while, the setting is completed. If [OK] is clicked, it returns to the menu.

(11) Click “Network (IPv6)”.



(12) The current IPv6 address setting value (current value) is displayed.

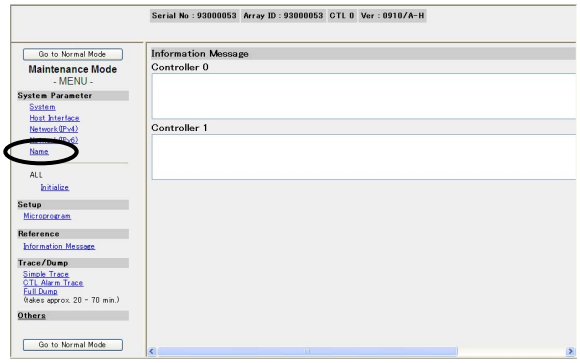


NOTE : IPv6 address cannot be set on WEB (reference only). When setting IPv6 address, set it from Hitachi Storage Navigator Modular 2.

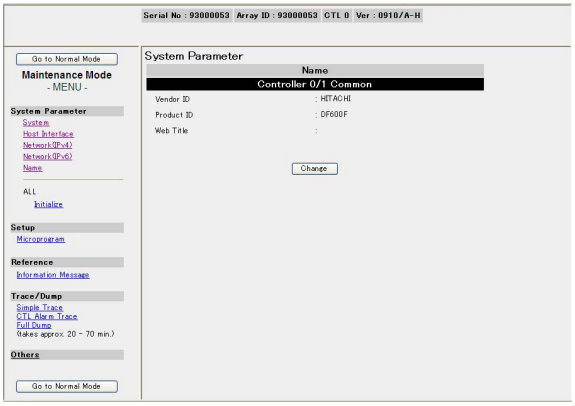
3.2.4 Name

This function can set up/refer to the item of the vendor name, model name etc. of the device.

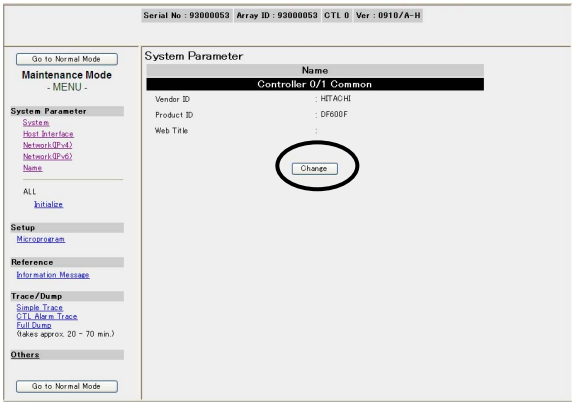
(1) Click “Name”.



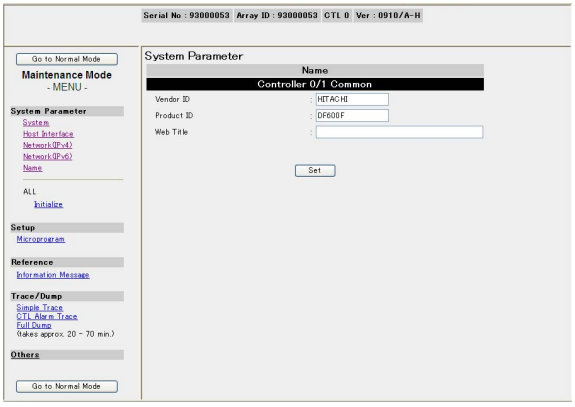
(2) The present setting value (the current value) is displayed.



(3) Click [Change] for the setting.
Click [Back] of the browser for the unsetting.



(4) Set up/select the corresponding item that is set up from the pull-down menu or input them.
At this time, set up the item that is set up all.



Explanation with regard to each item

[Controller 0/1 Common]

- Vendor ID

  The vendor name that is reported with the Inquiry command is set up.

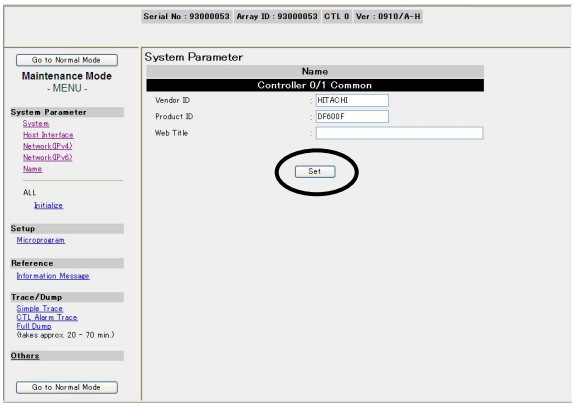
- Product ID

  The model name that is reported with the Inquiry command is set up.

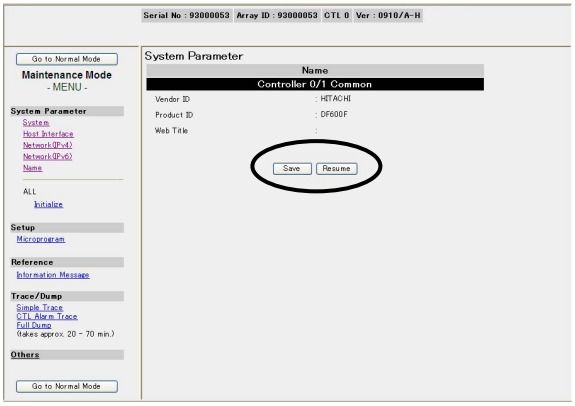
- Web Title

  Sets the Web Title.

(5) Click [Set] after setting completion.



(6) The screen that confirms the following setting contents is displayed.
Click [Save] if the setting is correct. Click [Resume] if the setting contents are changed.



(7) If [Resume] is clicked, it returns to the setting window of before. If [Save] is clicked, the following window is displayed.

(8) Click [OK], if the setting is continued. Click [Cancel], if the setting is stopped. If [Cancel] was clicked, the system parameter is not set up.

(9) If [OK] is clicked, the following window is displayed.

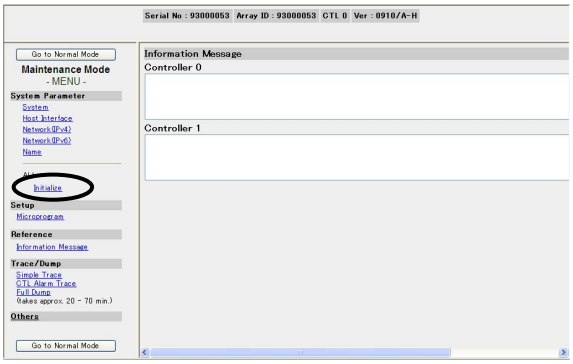
(10) If the following window is displayed at the later time for a while, the setting is completed. If [OK] is clicked, it returns to the menu.

3.2.5 ALL

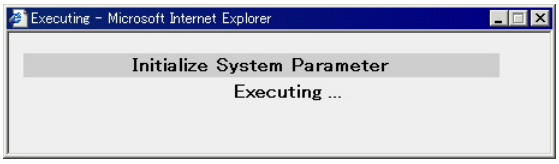
(1) Initialize

This function sets up the system parameter information of the device to the initial state. If this function was executed, the resetting of the system parameter becomes necessary, because the system parameter becomes the initial state.

(a) Click “Initialize”.

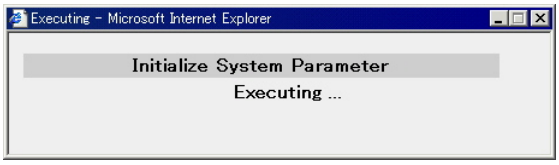


(b) If [Initialize] is clicked, the following window is displayed.



(c) If the following confirmation message is displayed for a while, click [OK], if it is continued.

(d) If [OK] is clicked, the following window is displayed.



(e) The system parameter becomes the initial state, the following window is displayed.
If [OK] is clicked, it returns to the menu.

3.3 Setup

3.3.1 Microprogram

This function installs firmware of the array. There are two types of installation as shown below.

- Update installation ..... To install the firmware with configuration information and system parameters taken over
- Initial setting up ..... To install the firmware with configuration information and system parameters cleared

When the version of the firmware is downgraded, click “Others” of the menu frame beforehand and display the “Others” window, and then check “Down Grade Check” of the displayed main frame for [Disable]. Change “Current” to “Disable” of “Down Grade Check” by clicking the [Change] button. (Refer to “3.6 Others” (WEB 03-0510).)

(1) Set Up for the Maintenance PC

(a) Outline

Set up the Maintenance PC before installing the firmware. The setting up is completed when the installer stored in the DVD of the firmware is executed. Outline of the setting up is shown below

- Installation of the JRE 6 update 29
- Creating the "C:\diskarray-microprogram\microprogram" folder and setting the security

(b) Prerequisites for setting up of a Maintenance PC

Prerequisites concerning the user ID of Windows are as follows.

- The user ID of Windows at the time when the firmware is installed in the Maintenance PC must be identical with that at the time when a maintenance work is done.
- The user ID mentioned above must be defined not with full size Japanese characters but with half size alphabetic characters and/or numerals.

A prerequisite of a drive for booting the OS of the Maintenance PC

- The drive for booting the OS must be the c drive.

(c) Java error codes displayed at the time of update installation and actions for coping with them.

When the PC does not satisfy the prerequisite shown in Item (b) Prerequisites for setting up of a Maintenance PC. Details of the Java errors and actions for coping with them are shown below.

If the message code of the Java error that occurred does not exist in Table 3.3.1, refer to Message "Chapter 7. Web Error Messages" (MSG 07-0000).

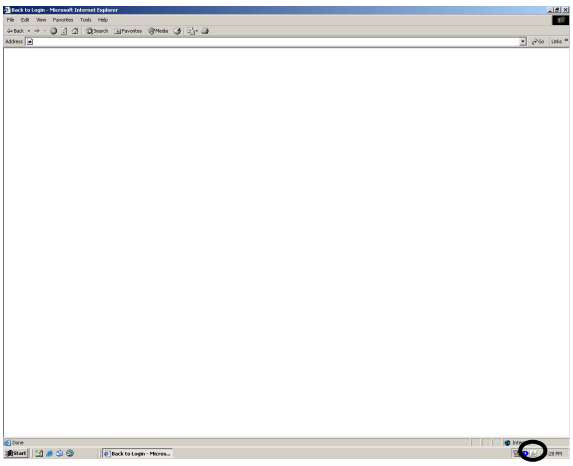
Table 3.3.1 Java Error Codes

Message code	Message text	Time when the error occurs/ Cause estimated	Action for coping with the error
1216	Access to the property information was rejected. Confirm the setup of the security policy.	Time when the error occurs • The error occurs immediately after the [Select] key is pressed when the firmware is selected. Cause estimated • A drive for booting the OS is not the c drive. • The user name of Windows at the time when the firmware was installed in the Maintenance PC is not identical with that at the time when the firmware is updated, or two-byte characters (full size characters or Japanese characters) are used to define the user name	① Check if the drive for booting the OS is the c drive. (Refer to the (c) (i) Method for checking the drive for booting the OS (WEB 03-0300).) In the case of the dual boot, boot Windows using the c drive and perform the installation again. ② Check if the user name of Windows at the time when the firmware is installed in the Maintenance PC is identical with that at the time when the firmware is updated and if two-byte characters (such as full size characters and Japanese characters) are not used. If an illegal specification has been made, perform the logon over again using an appropriate user name and perform the installation again after connecting the browser.
1219	An error occurred during the communication with the array. Confirm the array status and the LAN environment.	Time when the error occurs • The file transfer fails because the file transfers time out occurs. Cause estimated • An error occurred to a LAN port in the Maintenance PC. • An error occurred to a LAN port in the array. • An error occurred to the network devices between the Maintenance PC to the array.	① Reboot the array and the Maintenance PC and quit unnecessary application programs. Make sure that the array is in the Ready status, place the array in the Maintenance mode, and perform the installation again. ② If the error recurs in spite of the operations above, replace the Maintenance PC and perform the installation over again from the beginning. Use a Maintenance PC whose memory capacity is as large as possible. ③ If the error recurs in spite of the operations above and the Maintenance PC connects to the array via the LAN network which configures the LAN switches etc., connect the Maintenance PC to the array directly and install the firmware again.

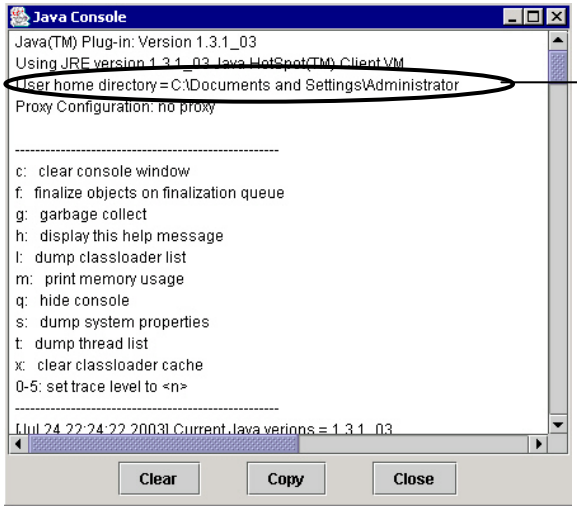
(i) Method for checking the drive for booting the OS

A method for checking the boot drive when the Java message (message code: 1216) is issued is shown below.

① Right-click [: Java Icon] on the task tray at the lower right of the service PC window, and click [Open Console].



② Since the JavaConsole window opens, make sure that the [User Home Directory] is the c drive (=C: *****…).



If "=C:***** …" is displayed here, the boot drive is the c drive.

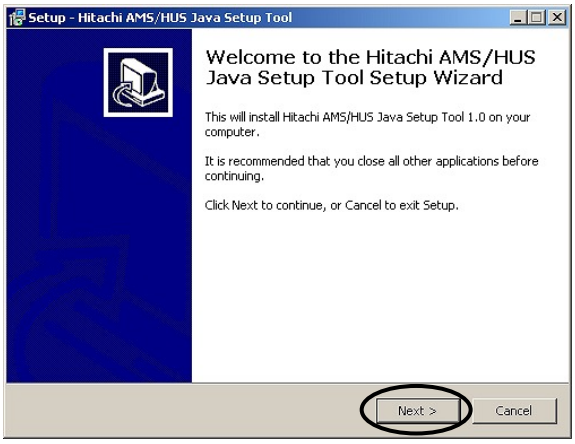
(d) Procedure for setting up the Maintenance PC

NOTE : When using Windows 8, Windows Server 2008, and Windows Server 2012, Java Environmental Construction Tool Version 2.0 or more and JRE 6 Update10 are required (JRE 6 Update29 is included in the Java Environmental Construction Tool Version 2.0 or more). Execute this procedure by the administrator authority.

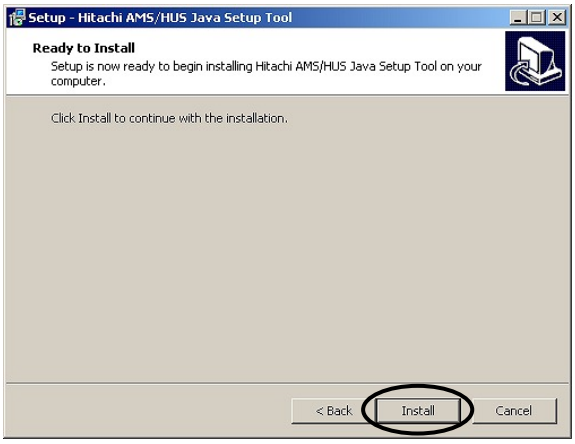
(i) When JRE of other version than JRE 6 Update29 is installed in the service PC, the firmware may not be replaced normally. If JRE of other version than JRE 6 Update29 is installed, be sure to uninstall the JRE, and then install the Java Environmental Construction Tool. Open [Setting] – [Control Panel] from the start menu of Windows, and delete the JRE by "Addition and Deletion of Applications" to uninstall the JRE.

(ii) Install the "DFJavaSetup.exe" for firmware installation. (You can get "DFJavaSetup.exe" from maintenance tools DVD)

(iii) The initial window of the setting up appears.
The confirmation window is displayed. Click the [Next] button.

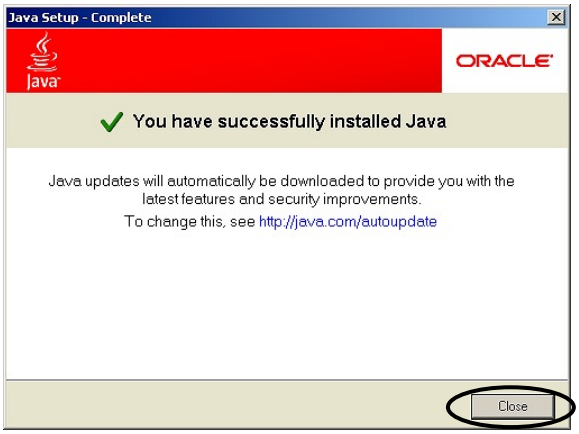


(iv) The confirmation window is displayed. Click the [Install] button.

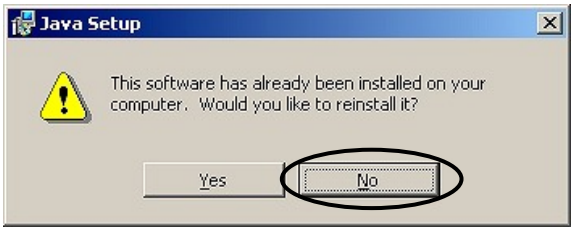


(v) Install JRE 6.
The confirmation window is displayed. Check the license agreement and click the [Accept] button.

(vi) Click the [Finish] button.



(vii) When JRE 6 Update29 is already installed, the next window is displayed. Click the [No] button, and go to the next step.



(viii) The setting up is completed. Press the [Finish] button.

(e) Notes

(i) Note that the settings of the security policy file is changed when the Maintenance PC is set up.

(ii) Do not change a name of the unified version directory(‡1) or directory in a stratum under the unified version directory. The firmware becomes unable to be installed if the directory name is changed.

‡1 : For the unified version directory, refer to "3.3.1 (2) Hierarchy of Firmware Storage Directories" (WEB 03-0340).

(2) Hierarchy of Firmware Storage Directories

The firmware is stored as the compression format (zip file) in the DVD for firmware installation.

Since the firmware (zip file) is stored under "Firmware\program\microprogram" in the DVD for firmware installation, store the ZIP file from the DVD under the directory "C:\diskarray-microprogram\microprogram".

Table 3.3.2 DVD Directory Hierarchy

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

The hierarchical structure of firmware storage ZIP file (09xxx.zip) directories is shown in Table 3.3.3.

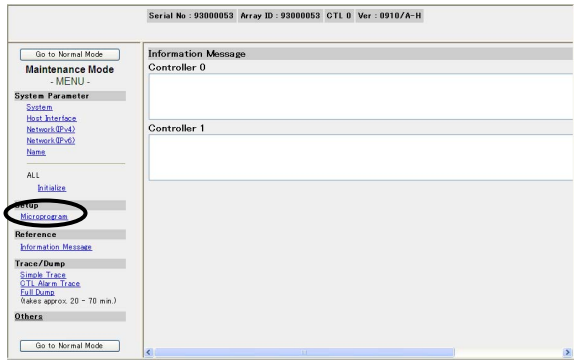
Table 3.3.3 ZIP File Directory Hierarchy

First stratum	Second stratum	Third stratum	Fourth stratum
Unified version (Example: 0915B)	DF850MH	disk 01 - disk X	Firmware file
		fmins	
	DF850MHD	disk 01 - disk X	
		fmins	
	DF850S	disk 01 - disk X	
		fmins	
	DF850XS	disk 01 - disk X	
		fmins	
	drvfirm	DKR2F-VIPERAP	Drive firmware file
		:	
	ENC850	ENC Firmware file	–

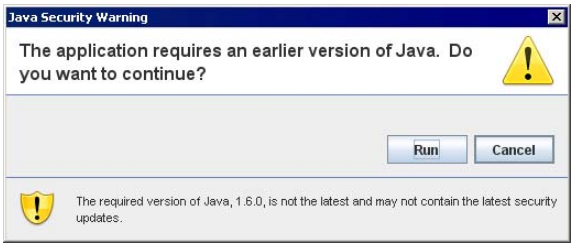
(3) Installation Procedure

NOTE : When using Windows 8, Windows Server 2008, and Windows Server 2012, the firmware may not be replaced normally depending on the authority of the user who is logging in. Execute it by the administrator authority.

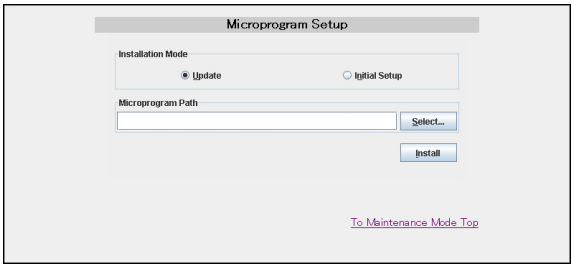
(a) Click “Microprogram”.



(b) When JRE 6 and JRE 6 Update29 are installed in the service PC at the same time, the following window may be displayed. Click [Cancel] here, and continue the operation with the JRE 6 Update29 (it is executed by JRE 6 if “Execute” is clicked, but this is not recommended because it may not be operated normally depending on the execution environment).



(c) When the Java is started, the following window is displayed.

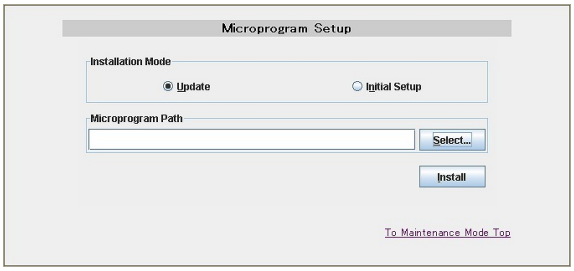


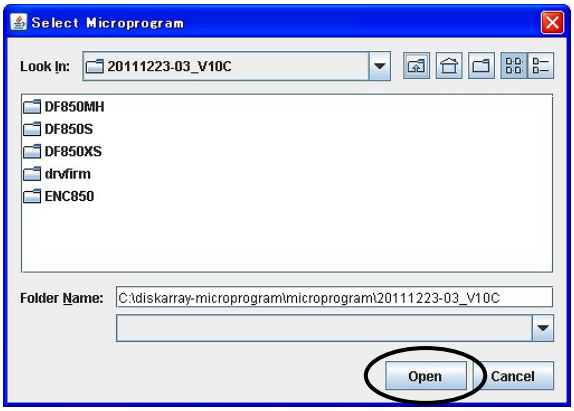
(d) Select the installation type in the “Installation Mode”.

- Update····· Update installation
- Initial Setup····· Initial setting up

In the Firmware Path field, specify the Unified version directory(‡1) in which the firmware to be installed is stored.
When the “Select” button is clicked, the “Select Microprogram” window is displayed. Select the Unified version directory in which the firmware is stored and click the “Open” button.

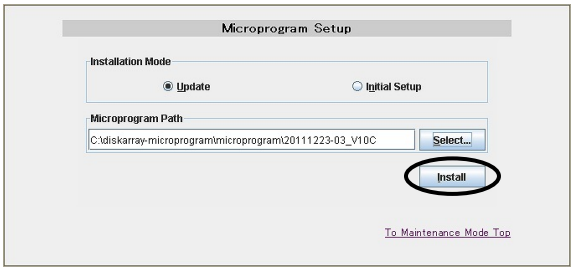
NOTE : If the window is not displayed, the JRE 6 update29 may have not been installed or the installation of it may have failed.
Perform the installation of the JRE 6 update29 (Refer to “3.1.1 (1) Set Up for the Maintenance PC” (WEB 03-0280).) again.



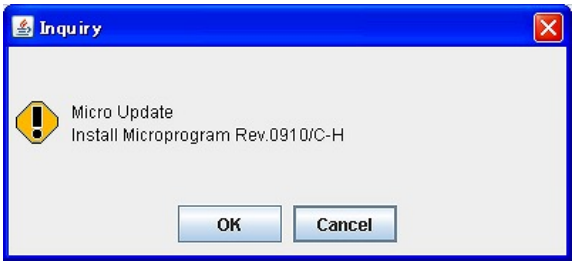


‡1 : For the unified version directory, refer to “3.3.1 (2) Hierarchy of Firmware Storage Directories” (WEB 03-0340).

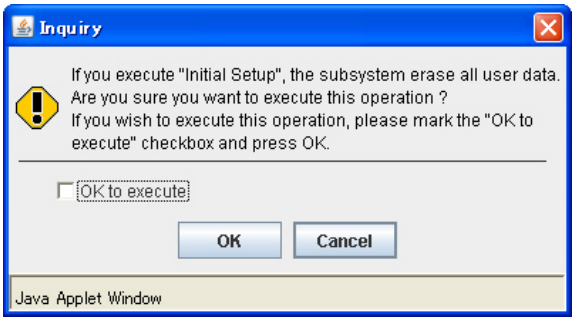
(e) Press the [Install] button.



(f) A dialog box for confirming whether to execute the installation is displayed.
Press the [OK] button when you want to install or [Cancel] when you want to abort.



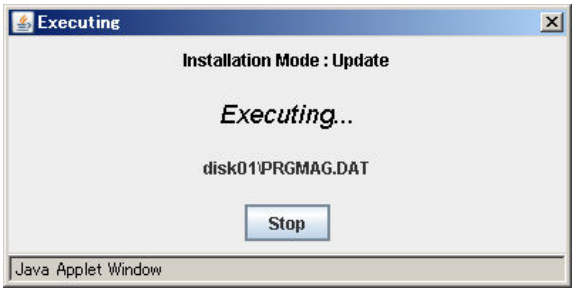
(g) The following dialog box is displayed when the firmware has already been installed in the array in the case where the initial setting up is specified.



(h) When you want to continue the installation, press the [OK] button. When you want to abort the installation, press the [Cancel] button.

(i) When the installation is started, the following dialog box showing that the installation is in progress is displayed. The installation type and a name of a file being processed is displayed in the dialog box. When you abort the installation, press the [Stop] button.

NOTE : When a LAN failure, etc. occurred and the processing of WEB terminated abnormally before the window in the procedure (j) was displayed, execute the new installation procedure again from the beginning.



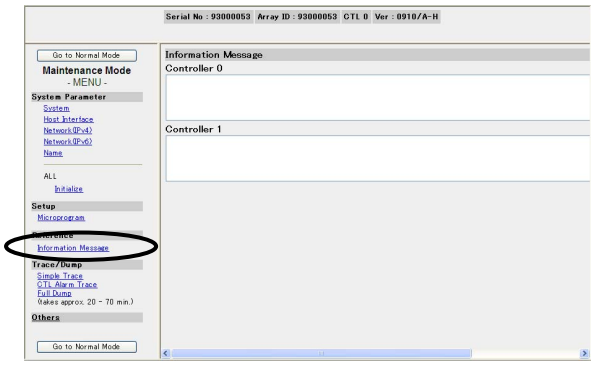
(j) When the installation is completed, the completion window is displayed. Click the [OK] button.

3.4 Reference

3.4.1 Information Message

If the abnormality occurred to the array device, this function displays the fault information.

The fault information of Controller # 0 is displayed in “Information Message” and the fault information of Controller # 1 is displayed in “Information Message”.



3.5 Trace/Dump

3.5.1 Collecting Simple Trace

This is a function to download current trace information.
To perform the download, a free capacity of approximately 40 M bytes is required in the PC.
Simple Trace needs to be collected from both controllers.

NOTE : If the following setting applies to Internet Explorer 8.0 or more, the Simple Trace collection may not be completed.

- The TCP/IP setting of the network may include a non-responding DNS server and an unnecessary default gateway with the Smart Screen filter setting enabled.
  In this case, check that the Smart Screen filter setting is disabled. Refer to the manual of the using browser for how to check the setting.

Serial number and the trace collection starting time (year/month/day/hour/minute/seconds) are added to the first file name.

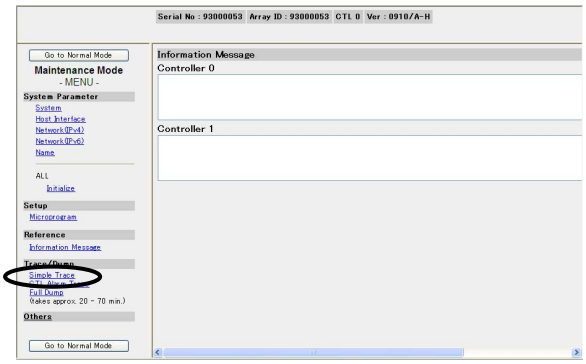
smpl_trc0_xxxxxxxx_YYYYMMDDhhmmss_0E.dat

xxxxxxxx : Trace collection serial number
YYYYMMDDhhmmss : Trace collection starting time (year/month/day/hour/minute/seconds)

- The first file name when the collection from Controller #0 fits in a file
  “smpl_trc0_xxxxxxxx_YYYYMMDDhhmmss_0E.dat”
- The first file name when the collection from Controller #1 fits in a file
  “smpl_trc1_xxxxxxxx_YYYYMMDDhhmmss_0E.dat”
- The first file names when the collection from Controller #0 fits in two files
  “smpl_trc0_xxxxxxxx_YYYYMMDDhhmmss_0S.dat”
  “smpl_trc0_xxxxxxxx_YYYYMMDDhhmmss_1E.dat”
- The first file names when the collection from Controller #1 fits in two files
  “smpl_trc1_xxxxxxxx_YYYYMMDDhhmmss_0S.dat”
  “smpl_trc1_xxxxxxxx_YYYYMMDDhhmmss_1E.dat”
- The first file names when the collection from Controller #0 fits in three files
  “smpl_trc0_xxxxxxxx_YYYYMMDDhhmmss_0S.dat”
  “smpl_trc0_xxxxxxxx_YYYYMMDDhhmmss_1C.dat”
  “smpl_trc0_xxxxxxxx_YYYYMMDDhhmmss_2E.dat”
- The first file names when the collection from Controller #1 fits in three files
  “smpl_trc1_xxxxxxxx_YYYYMMDDhhmmss_0S.dat”
  “smpl_trc1_xxxxxxxx_YYYYMMDDhhmmss_1C.dat”
  “smpl_trc1_xxxxxxxx_YYYYMMDDhhmmss_2E.dat”

(1) Clear the cache of the browser in the following procedure before collecting the Simple Trace so that the old data collected last time is not saved.
- In the case of Internet Explorer, select the [Tools], [Internet Options], [General], [Temporary Internet files], and [Delete Files] in this order.

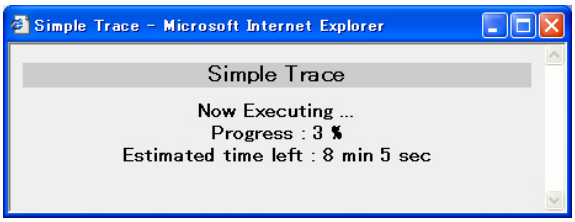
(2) Click “Simple Trace” in the menu frame.



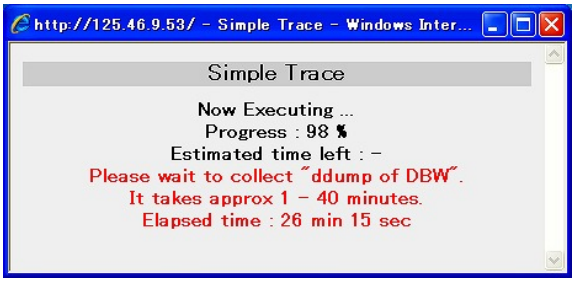
(3) When the “Simple Trace” is clicked, the following window is displayed.

(4) When the [OK] button is clicked, the following window is displayed.

NOTE : If the window update (e.g.: pressing F5 key) is performed in this window, the automatic update stops and so that the trace collection does not make progress. When the automatic update stops due to the window update, close this window and, after 20 minutes or more elapse, perform the simple trace collection again.

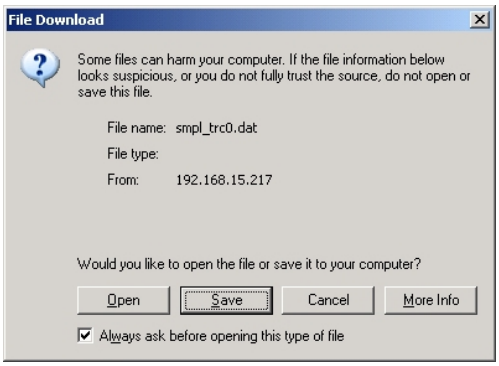


NOTE : If DBW is connected to the array, you may need to wait for one to 40 minutes with the following dialog box.

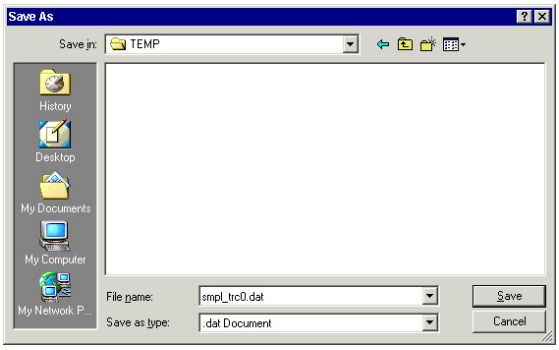


(5) The following window is displayed. Click the [Download] button.

(6) Click [Save], if it is continued. Click [Cancel], if it is stopped.

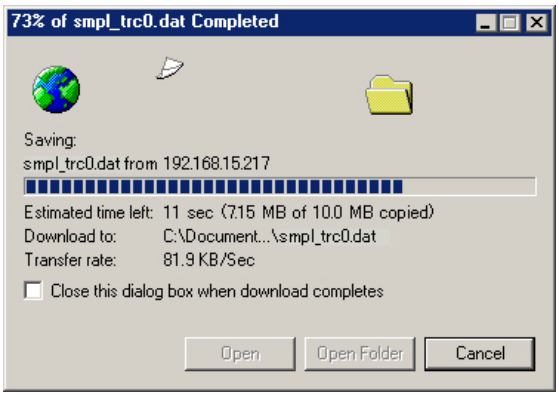


(7) If the following window is displayed, click [Save] after file name is setting, if it is continued.(‡1) Click [Cancel], if it is stopped.



‡1 : There may be a case where the first file name is given as “smpl_trc0xxxx.dat..dat” depending on the setting of the PC. In this case, “.dat” is deleted or any other name.

(8) The following window is displayed during execution download.



(9) When the downloading completes, the progress indicating message window is closed.

(10) If all traces cannot be collected, the following window is displayed.
Click the [Continue], and then collect traces in the next file beginning from the step (4).

NOTE : When performing an array boot or simple trace collection from the same Controller in the same array in the following window without clicking the [Continue], a error window is displayed, and the trace cannot be collected.

When all the traces can't be collected on the first time.

When all the traces can't be collected on the second time.

(11) The following window appears when all traces are collected.
Click the [Close] button.

NOTE : Verify that the number of files described in the window is the same as the number of the files actually collected.

- When all traces can be collected in one file

- When all traces can be collected in two files

3.5.2 Collecting CTL Alarm Trace

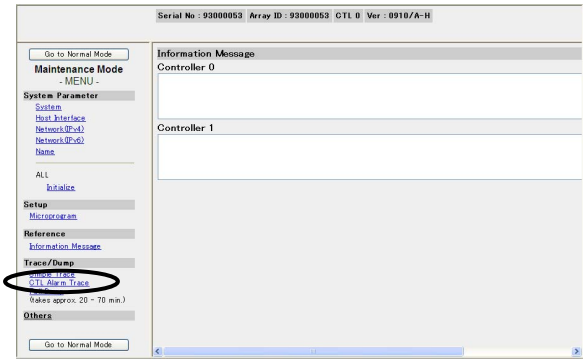
Through the CTL Alarm Trace collection, detailed information (the CTL Alarm Trace) on the immediately Controller blockade stored in the Controller is collected. It may not be collected depending on the types of the failures which cause the controller blockade.

NOTE : When the Controller to be connected to WEB is blocked, the WEB connection may not be performed for ten minutes usually (for the maximum of 60 minutes) from the time when the Controller was blocked because the CTL alarm trace is being created.

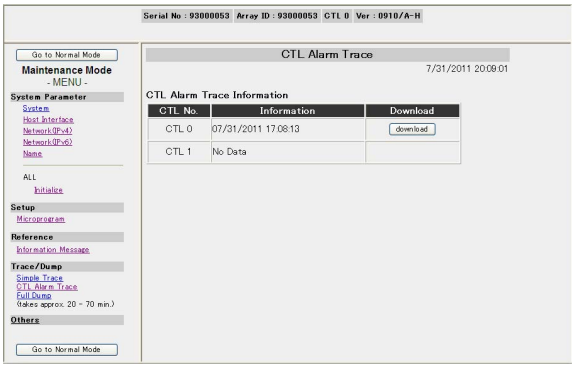
Since the above-mentioned CTL Alarm Trace information is taken over from the blocked Controller to the replaced Controller, it can be collected after the Controller is recovered from the failure. Even after the collection, the information remains until the controller blockade trace is rewritten in the next controller blockade. If the Controller is blocked while collecting the CTL Alarm Trace may not be collected normally. Therefore, in this case, collect the CTL Alarm Trace again.
For collecting the CTL Alarm Trace, free drive space of 200 M bytes per one Controller is required.
Collect CTL Alarm Trace from each Controller.
In order to distinguish from which Controller it is collected, store the collected data in different directories or with different file names.
The method of collecting the CTL Alarm Trace is shown below.

(1) Clear the cache of the browser in the following procedure before collecting the CTL Alarm Trace so that the old data collected last time is not saved.
- In the case of Internet Explorer, select the [Tools], [Internet Options], [General], [Temporary Internet files], and [Delete Files] in this order.

(2) Click “CTL Alarm Trace” in the menu frame.
The CTL Alarm Trace Information window is displayed when the CTL alarm trace information is present.



(3) To download the CTL Alarm trace information, press the “Download” button on the Controller side to be collected in “CTL Alarm Trace information”.(‡1)



The following is displayed as contents of the information.

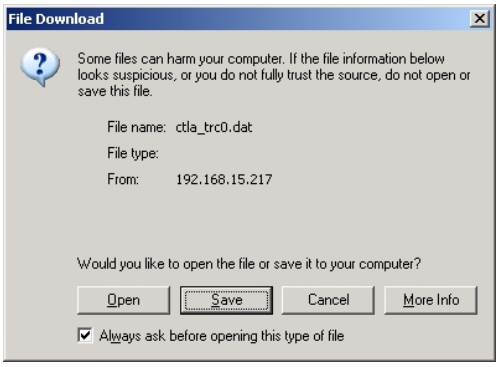
[Not Ready] ..... : A status in which the trace area is not established in the array

[Not Data] ..... : A status in which the CTL Alarm trace information is not present or being generated

[MM/DD/20XY hh:mm:ss] . : A status in which the CTL alarm trace information is present

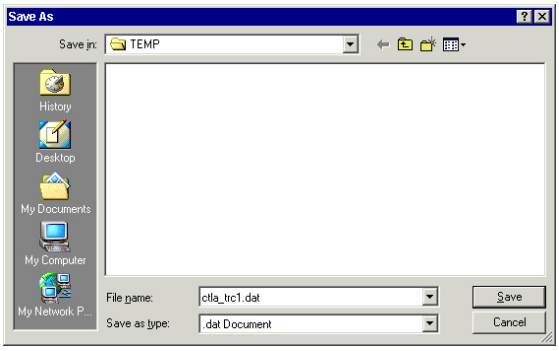
NOTE : When “Not Ready” or “No Data” is displayed on the description of “Information”, or when the date of the information is different from that of the collection of this time, the CTL alarm trace may not be collected normally. Therefore, collect the simple trace.
If simple trace cannot be obtained through detached Controller, connect the Maintenance PC to the Controller at the opposite side, and collect the simple trace.

(4) The following window is displayed. Click [Save], if it is continued. Click [Cancel], if it is stopped.

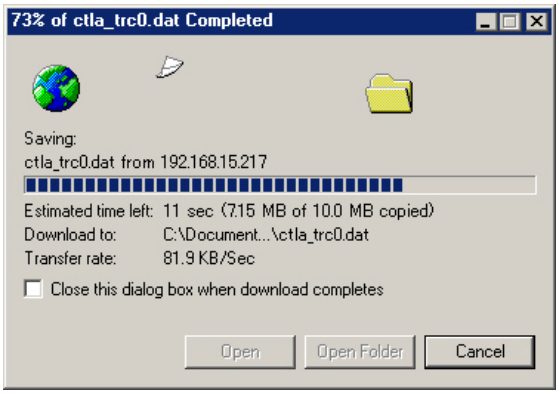


‡1 : An error message may be displayed. If it is displayed, click [OK], and collect the CTL Alarm Trace again after waiting for a while.

(5) If the following window is displayed, click [Save] after file name is setting, if it is continued. Click [Cancel], if it is stopped.



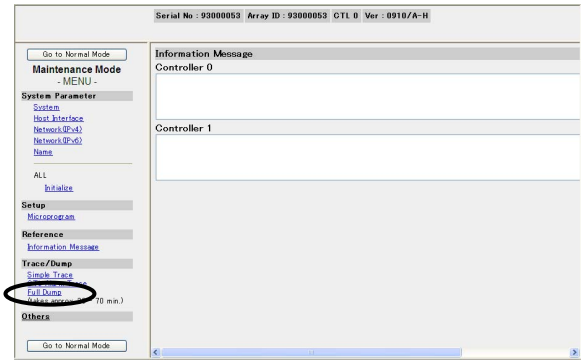
(6) The following window is displayed during execution download.



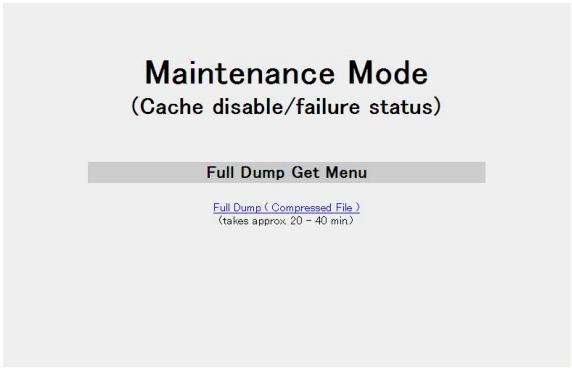
(7) When the downloading completes, the progress indicating message window is closed.

3.5.3 Collecting Full Dump

This function (Full Dump) is to download the logging information of the array.



The cache memory access failure occurs when the following window is displayed. Refer to "3.1.1 WEB Operation in the Maintenance Mode During the Cache Memory Access Failure" (WEB 03-0050).



Collect Full Dump from each Controller.

In order to distinguish from which Controller it is collected, store the collected data in different directories or with different file names.
To download, the following free capacity size is needed on PC.

Table 3.5.1 Free Capacity needed on PC

	Installed cache per Controller	DP(*1) Information	DT(*2) Information	Free Capacity needed on PC	
				no compression	compression (*3)
CBXSL/CBXSS	4 G bytes	Disabled	Disabled	4,527 M bytes	453 M bytes
		Enabled	Disabled	4,858 M bytes	486 M bytes
		Enabled	Enabled	4,908 M bytes	491 M bytes
CBSL/CBSS	8 G bytes	Disabled	Disabled	4,966 M bytes	497 M bytes
		Enabled	Disabled	5,464 M bytes	546 M bytes
		Enabled	Enabled	5,664 M bytes	566 M bytes
	16 G bytes	Disabled	Disabled	6,025 M bytes	603 M bytes
		Enabled	Disabled	6,523 M bytes	652 M bytes
		Enabled	Enabled	6,703 M bytes	670 M bytes
CBL	8 G bytes	Disabled	Disabled	5,030 M bytes	503 M bytes
		Enabled	Disabled	6,351 M bytes	635 M bytes
		Enabled	Enabled	6,551 M bytes	655 M bytes
	16 G bytes	Disabled	Disabled	6,089 M bytes	609 M bytes
		Enabled	Disabled	7,410 M bytes	741 M bytes
		Enabled	Enabled	7,610 M bytes	761 M bytes

*1 : Dynamic Provisioning
*2 : Dynamic Tiering
*3 : The value with compression has described the value when the compression rate is 10% as a standard.

Table 3.5.2 Free Capacity needed on PC (Dynamic Provisioning Advanced Mode is enable)

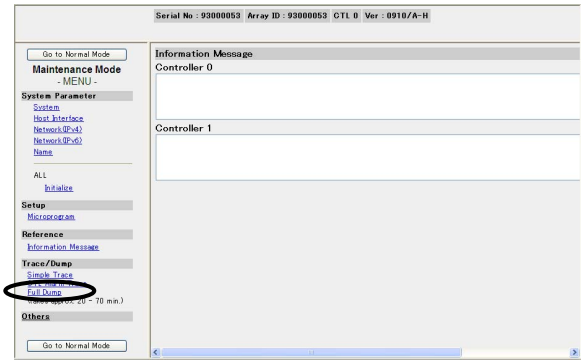
	Installed cache per Controller	DP(*1) Information	DT(*2) Information	Free Capacity needed on PC	
				no compression	compression (*3)
CBXSL/CBXSS	4 G bytes	Disabled	Disabled	4,527 M bytes	453 M bytes
		Enabled	Disabled	5,406 M bytes	541 M bytes
		Enabled	Enabled	5,456 M bytes	546 M bytes
CBSL/CBSS	8 G bytes	Disabled	Disabled	4,966 M bytes	497 M bytes
		Enabled	Disabled	6,287 M bytes	629 M bytes
		Enabled	Enabled	6,487 M bytes	649 M bytes
	16 G bytes	Disabled	Disabled	6,025 M bytes	603 M bytes
		Enabled	Disabled	7,346 M bytes	735 M bytes
		Enabled	Enabled	7,536 M bytes	754 M bytes
CBL	8 G bytes	Disabled	Disabled	5,030 M bytes	503 M bytes
		Enabled	Disabled	7,672 M bytes	767 M bytes
		Enabled	Enabled	7,872 M bytes	787 M bytes
	16 G bytes	Disabled	Disabled	6,089 M bytes	609 M bytes
		Enabled	Disabled	8,731 M bytes	873 M bytes
		Enabled	Enabled	8,931 M bytes	893 M bytes

*1 : Dynamic Provisioning
*2 : Dynamic Tiering
*3 : The value with compression has described the value when the compression rate is 10% as a standard.

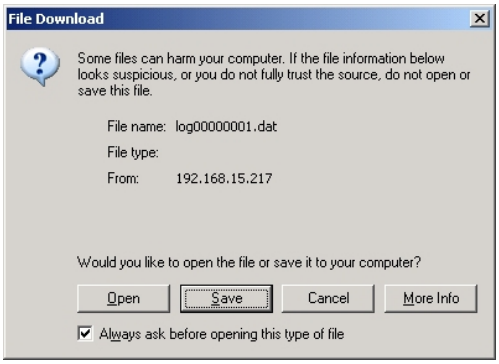
NOTE : When this function is used, the menu other than Logging Data comes not to use it. Enter into the Maintenance Mode again by the reset switch of the Controller, once again, if other menus are used, after this function was used.

(1) Clear the cache of the browser in the following procedure before collecting the Full Dump so that the old data collected last time is not saved.
- In the case of Internet Explorer, select the [Tools], [Internet Options], [General], [Temporary Internet files], and [Delete Files] in this order.

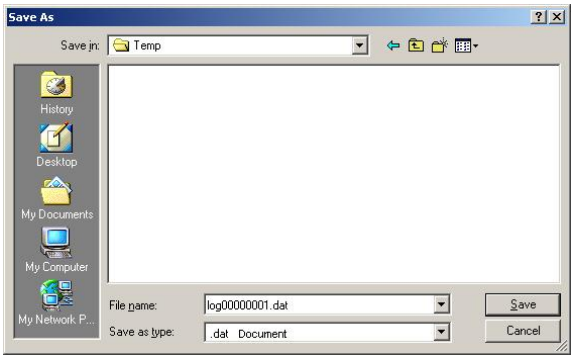
(2) Click “Full Dump”.



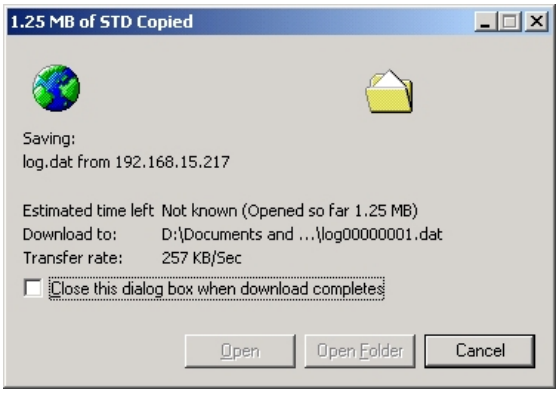
(3) The following window is displayed. Click [Save], if it is continued. Click [Cancel], if it is stopped.



(4) If the following window is displayed, click [Save] after file name is setting, if it is continued.(‡1) Click [Cancel], if it is stopped.



(5) The following window is displayed during execution download.
There is no problem although it is displayed that the presumption remaining time is uncertain.



(6) When the downloading completes, the progress indicating message window is closed.

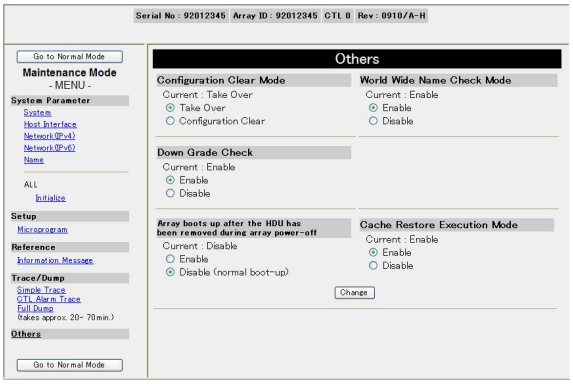
‡1 : There may be a case where the default file name is given as “logx.dat.dat” depending on the setting of the PC. In this case, “.dat” is deleted or any other name. (x: Controller serial numbers)

3.6 Other

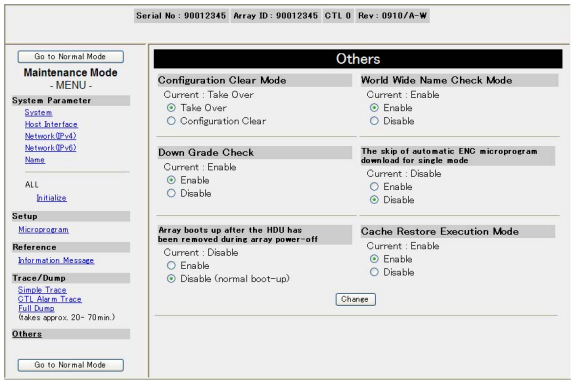
The others are set up.
The contents that were set up in this function are not taken over and not step over the PS-OFF/ON.

(1) Confirm the setting value of each item and click the check box of the item that the setting contents are changed. Click [Change], if the setting contents are updated.

CBL/CBSS/CBSL



CBXSS/CBXSL



Explanation with regard to each item

- Configuration Clear Mode :
  The transfer information initialization as the booting is designated.
  [Take Over] : Transfer booting (default).
  [Configuration Clear] : Default booting.
- World Wide Name Check Mode :
  The World Wide Name Check Mode as the booting is designated.
  [Enable] : The WWN Check is executed (default).
  [Disable] : The WWN Check is not executed.
- Data Down Grade Check Mode :
  It specifies whether to make the check of the version downgrade of the firmware enable or disable when performing the update installation of the firmware by using WEB.
  [Enable] : Guard the version downgrade of the firmware (default).
  It is specified usually when the version of the firmware is updated.
  [Disable] : The version downgrade of the firmware is not checked.
  It is specified before the update installation is performed when the version of the firmware is downgraded.
- The skip of automatic ENC microprogram download for single mode :
  It skips or specifies the automatic ENC firmware download in case the array is set to the single mode.
  [Enable] : It skips the automatic ENC firmware download.
  [Disable] : It does not skip the automatic ENC firmware download (default).

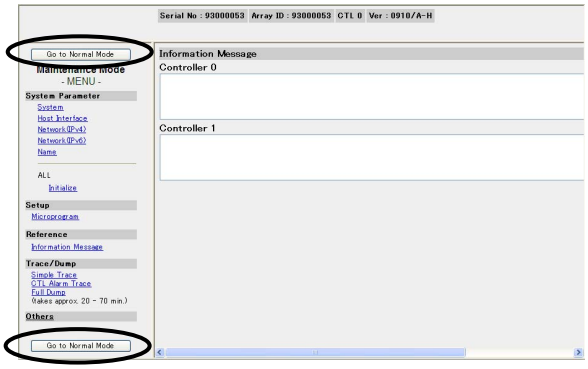
- Array boots up after the HDU has been removed during array power-off :
  When starting the array from the maintenance mode, if the array is not Ready, it specifies whether to permit the removal or not.
  [Enable] : The removal of the Drive is not checked.
  [Disable] : The removal status of the Drive is checked d (default).
- Cache Restore Execution Mode :
  In case of power-off due to power outage, it stores the Cache Memory data in the backup device by flash backup function. When starting the array, it specifies whether to restore the stored data from the backup device to the Cache Memory or not.
  [Enable] : It executes the restoration and starts up the array (default).
  [Disable] : It does not execute the restoration, discards the data in the backup device and starts up the array.

(2) Confirm that the setting value was updated.

3.7 Return Method to the Normal Mode

The method that returns from the Maintenance Mode to the Normal Mode is shown.

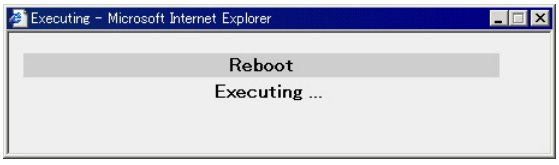
(1) Click [Go To Normal Mode]. The button of [Go To Normal Mode] is in the top and down on the menu window. Select either button.



(2) The following window is displayed during execution. Do not click the ☒ while the window is displayed(‡1).

(3) If the following confirmation message is displayed for a while, click [OK], if it is continued.

(4) The following window remains displayed during execution. Whether you click the [OK] or [Cancel] in the confirmation message window of (3), do not click the ☒ while the following window is displayed(‡1).



‡1 : If you click the ☒, reenter the Maintenance Mode, and then click the [Go To Normal Mode] again.

(5) If the return to the Usually Mode completes, the array device becomes the Ready status. Confirm that the READY LED of the device entire surface is lighted. (Usually Controller recovers in about 5 to 7 minutes for CBXSL/CBXSS, about 5 to 8 minutes for CBSL/CBSS, and about 5 to 10 minutes for CBL.)
Check that the READY LED (green) on the front of the Controller Box lights up, and the ALARM LED (red) and the WARNING LED (orange) go out[‡1]. The READY LED (green) may blink at high speed (for the maximum of 30 to 50 minutes, or 40 to 60 minutes in case of the CBL (80 to 180 minutes when the DBW is connected to the CBL)) or the WARNING LED (orange) may blink at high speed (for the maximum of 30 to 85 minutes) before the READY LED (green) on the front of the Controller Box lights up.

(6) Check that the start message and the end message of the drive firmware automatic download are displayed. When the drive firmware version of the Drive is new, the start message and completion message of the drive firmware automatic download are not displayed.
When the message indicating the abnormal termination is displayed, perform the maintenance according the recovery method in the message code. (Refer to Firmware “1.6 (4) Checking the start message and end message of the automatic download” (FIRM 01-1620).)

‡1 : When it is blinking at low speed, perform the maintenance according to the recovery method of the message referring to the Information Message on WEB. If the array is in the Warning status when the Information Message on WEB was referred to, the WARNING LED (orange) on the front of the Controller Box lights up, and if the array is not in the Warning status, the WARNING LED (orange) goes out.