# HITACHI
# Gigabit Fibre Channel Adapter
# USER'S GUIDE
# (BIOS/EFI Edition)

Revision 58.0

May. 2015

HITACHI

Read this manual well and keep it near the system so that you can refer to it as needed.
Before starting operation, familiarize yourself with the safety instructions.


MK-99COM009-08.

# Information

- The BladeSymphony server name has been changed to Hitachi Compute Blade. If you are using BladeSymphony based server products, substitute references to Hitachi Compute Blade with BladeSymphony.
- The Hitachi Virtualization Manager (HVM) name has been changed to Hitachi logical partitioning manager (LPAR manager, or LP). If you are using HVM based logical partitioning feature, substitute references to Hitachi logical partitioning manager (LPAR manager, or LP) with HVM.

# Important Notes

- It is strictly forbidden to reprint or duplicate part or all of this manual without the permission of the publisher.
- The contents of this manual are subject to change without notice.
- Despite our meticulous care to ensure the accuracy of the contents, should you find any errors or questionable issues, or if you have opinions to share with us, please contact your dealer.
- Note that we shall not be liable for the consequences of operating this product in ways not stated in this manual.

# Reliability of the System Equipment

The system equipment you purchased is designed for general office work. Avoid using it for applications requiring high reliability that may seriously affect human life or property. We shall not assume any responsibility for any accidents resulting from such use of the product.

Examples of inappropriate applications of system equipment intended for general office work are:

- Control of a chemical plant, control of medical devices, and control of emergency communications, all of which require high reliability.

You need a different system for such high reliability applications. Please consult our sales department for the appropriate system.

# Regulatory Compliance Notices

## ❑ Federal Communications Commission (FCC) Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at personal expense.

The user is cautioned that changes or modifications not expressly approved by the manufacturer could void the user's right to operate the equipment.

## ❑ EN55022 Compliance

Warning: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

## ❑ Class A Emission Statement (Korea)

이 기기는 업무용(A급)으로 전자파적합등록을
한 기기이오니 판매자 또는 사용자는 이 점을
주의하시기 바라며, 가정외의 지역에서 사용하는
것을 목적으로 합니다.

## ❑ Canadian Compliance Statement

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

## ❑ Product recycling and disposal (EU and Norway) (Waste Electrical and Electronic Equipment Directive 2002/96/EC [WEEE])

The following mark on Products indicates that these Products are to be collected separately and to be recycled or discarded according to applicable local and national regulations. For further information regarding return, collection, recycle or disposal, please contact your sales company where you purchased the Products.

The above mark is not printed on the following Products but these Products are also subject to electrical and electronic equipment (EEE). These un-marked Products are, as well as marked Products, to be collected separately and to be recycled or discarded according to applicable local and national regulations. For further information, please contact your sales company where you purchased the Products.

| No. | Products code | Products name |
|---|---|---|
| **1** | **GVX-CC64G*BX, GVX-CC64G*** | **Fibre Channel Board** |
| **2** | **GVX-CC9FCCMB2BX, GVX-CC9FCCMB2** | **Combo Card For FCSW module** |
| **3** | **GVX-CC9IOCOMBBX, GVX-9IOCOMB** | **Combo Card For I/O module T3** |
| **4** | **GGX-CC9M4G2X1EX, GGX-CC9M4G2X1** | **FC mezzanine card** |

Note: The above regulation/marking applies only to countries within the European Union (EU) and Norway.

### ❑ Export control

To export this product, check the export control-related regulations and follow the necessary procedures. If you have any questions, contact our sales representative.

Note that the same handling is required for peripheral equipment and pre-installed software shipped with this product.

# Notes on Deleting Data when Disposing of or Transferring the System Equipment

Personal computers and system equipment are used for various purposes at the office and home. Important data of customers are recorded in the hard disks in these computers and system equipment.

You must erase these important data contents when transferring or disposing of the system equipment.

However, it is not easy to erase data written on the hard disk.

When you “erase data”, you generally do one or more of the following:

- Discard data in the “Recycle Bin”.
- “Delete” data.
- Erase data using the “Empty Recycle Bin” command.
- Perform initialization (formatting) of the hard disk using software utilities.
- Recover the factory defaults using a recovery CD.

The above operations only change the file management information of data recorded on the hard disk; actually the data is just blocked from view.

That is, although the data appears to have been erased, it was just made unavailable under an operating system such as Windows. The actual data remains on the hard disk and may be read using special data recovery software. Consequently, important data on the hard disk of the system equipment can be read and used for unexpected applications by malicious people.

To avoid unauthorized access to important data on the hard disk when disposing of or transferring the system equipment, it is extremely important for you to erase all data recorded on the hard disk at your own risk. When you erase the data, we recommend that you purchase and use a dedicated software or service, or corrupt the data on the hard disk physically or magnetically using a hammer or strong magnet to make it unreadable.

Transferring the system equipment without deleting software on the hard disk (operating system, applications, etc.) may be against software licensing agreements. Check your software licensing agreements carefully.

# Registered Trademarks and Trademarks

Microsoft, Windows, and Windows Server are registered trademarks or trademarks of Microsoft Corp. in and outside the U.S.

Pentium and Xeon are trademarks or registered trademarks of Intel Corporation in and outside the U.S.

Linux is a registered trademark or trademark of Linus Torvalds in and outside the U.S.

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# Introduction

Thank you for purchasing Hitachi Gigabit Fibre Channel Adapter. This manual describes procedures for the use of Hitachi Gigabit Fibre Channel Adapter such as installation, connection, and handling.

## Notation

### ❑ Symbols

Meanings of symbols used in this manual are as follows:

| | |
|---|---|
| ⚠ **WARNING** | This indicates the presence of a potential risk that might cause death or severe injury. |
| ⚠ **CAUTION** | This indicates the presence of a potential risk that might cause relatively mild or moderate injury. |
| ***NOTICE*** | This indicates the presence of a potential risk that might cause damage to the equipment and/or damage to surrounding properties. |
|  | This indicates notes not directly related to injury or severe damage to the equipment. |
|  | This indicates advice on how to make the best use of the equipment. |

# Information on Support and Service

## Missing Parts on Delivery

The product is checked by local support personnel when it is delivered.

In some cases, no checkout work is performed or no local support personnel visit you when the product is delivered. If you find any missing part or if you have any questions on the delivered product in such cases, contact your sales.

## When You Need Help

1. **Refer to the manual.**
   Refer to manuals. Also refer to other printed manuals provided with the product.
2. **Contact us by phone.**

   Contact the reseller where you have purchased the product.

# Precautions for Safe Use

Notes related to safety issues are marked as shown below.

This is a safety alert symbol. It calls attention to a potential safety hazard to humans. In order to avoid possible injury or death, follow the message provided after this symbol.

**⚠ WARNING** This symbol indicates the presence of a potential risk that might cause death or severe injury.

**⚠ CAUTION** This symbol indicates the presence of a potential risk that might cause relatively mild or moderate injury.

***NOTICE*** This symbol indicates the presence of a potential risk that might cause severe damage to the equipment and/or damage to surrounding properties.

This pictogram (△) indicates a precaution. The figure inside the triangle (△) indicates the type of hazard.

The example on the left indicates a shock hazard.

This pictogram (⃠) indicates an action that you must not take. The pictogram (⃠) is placed over a figure that depicts the “must-not” item involved.

The example on the left indicates “Do not disassemble”.

This pictogram (●) indicates an action to take. The figure inside the circle (●) shows the action to take.

The example on the left tells you to “Unplug the power cord from the outlet”.

**Common precautions concerning safety**

Please follow these safety instructions:

When operating the equipment, follow the instructions and procedures provided in the manual.

Be sure to follow notes, cautionary statements and advice indicated on the equipment or in the manual.

Failure to follow those instructions may lead to injury, fire or damage to the equipment.

**Operations and actions to perform**

Do not perform operations or actions other than those described in the manual.
Should you find any problem with the equipment, turn off the power, unplug the power cord from the electrical outlet, and then contact your dealer or call for maintenance personnel.

**Pay attention**

The equipment and the manual carry notes, cautionary statements and advice that have been fully examined and reviewed. However, unforeseeable situations may occur.
When operating the equipment, always stay alert.

# ⚠ WARNING

### Abnormal heat, smoke, abnormal noise, or abnormal smell

Should you find anything abnormal occurring, turn off the power and unplug all the power cords of the equipment (maximum of 5) from the electrical outlets. Using the power cord after such occurrences may lead to electric shock or fire.

Do not place any objects around the electrical outlet to allow users to unplug the power cord immediately.

### Do not repair, remodel or disassemble

Do not attempt to repair, remodel or disassemble the equipment on your own, except for expansion work to be performed in accordance with the instructions in this manual. Work performed by unqualified persons may lead to electric shock, fire, or burns. There are many high-voltage areas inside the power unit. It might be hazardous if you touch these areas.

### Insertion of foreign objects into the equipment

Do not allow clips, pins or any other metal items or flammable items to enter the equipment through a vent or by any other means. Continuing to operate the equipment with foreign objects may lead to electric shock or fire.

### Removal of cover or bracket

- Unless otherwise instructed, turn off the power, unplug all power cords of the equipment from the electrical outlets, and disconnect all cables from the equipment before removing covers or brackets. Even if you turn off the power to the equipment, some circuits are live and unexpected contact may cause a fire.
- Do not use the equipment with the cover removed. It may also result in electric shock or equipment failure.

### Handling of the power outlet

- Use a grounding 2-pole plug-in power outlet. Outlets of any other types would cause electric shock or fire.
- In order to prevent electric shock, use a ground wire to connect the outlet's grounding electrode to a ground terminal installed by a qualified electrician. Omission of this connecting step may cause electric shock in the event of a power failure.

### Do not place objects on the equipment

Do not place a vase, potted plant or any other container with water in it or small metal items like pins and clips on the equipment. Operating the equipment with conductive objects such those mentioned above may lead to electric shock, smoke, or fire.

### Handling of heavy loads

- The equipment is heavy. Be careful when moving it. Otherwise, handling of this equipment may hurt your arms or lumbar.
- To move or lift heavy loads such as this product, use tools or perform the task with the help of at least one other person. Otherwise handling of heavy loads could cause injury.

# ⚠ WARNING

### Handling of the power cables

Always use the power cables shipped with the equipment, and follow the instructions below: Failure to follow the correct handling practices may lead to damage to the power cables to expose the copper wires, or overheating due to short-circuiting or partial disconnection, which may cause electric shock or fire.

- Do not place any object on the power cables.
- Do not pull the cables.
- Do not apply pressure on the power cables.
- Do not fold the power cables.
- Do not work upon the power cables.
- Do not use the power cables near heat-generating appliances.
- Do not bundle the power cables.
- Do not subject the power cables to ultraviolet or strong visible light continuously.
- Do not use the power cables past their service life.
- Do not expose the power cables to alkali, acid, fat and oil, or humidity.
- Do not use the power cables in a high-temperature environment.
- Do not use the power cables above their specified rating.
- Do not use the power cables for other devices

### Not designed to operate near volatile liquid

Do not use volatile liquids such as nail polish remover near the equipment. Such volatile liquids could cause a fire if they enter inside the equipment and are ignited.

### Handling of the power plug

- When inserting the power plug into the electrical outlet or removing it, be sure to hold the plug section. Do not pull the cable; it may partially break the wire, heat the broken part and lead to a fire.
- If a long downtime is planned, remove the power plug from the outlet. The equipment is live even when not in use, and any damaged components may cause a fire.
- Be sure to handle the power plug with dry hands when inserting or removing it from the outlet. Handling it with wet hands may cause an electric shock.

### Impact from falling

Do not let the plug fall or hit it against another object. It may cause internal deformation and deterioration. Operating the equipment under such defective conditions may lead to electric shock or fire.

### Applicable power source

The equipment uses 200 VAC. Do not operate the equipment with a voltage other than that specified. It may lead to internal breakage or electric shock or fire due to overheating and deterioration (depending on the voltage magnitude).

## ⚠ WARNING

### Contact failure and tracking of the power plug

Comply with the following instructions for handling of the power plug.
Otherwise, tracking or contact failure may cause a fire.

- Make sure that the power plug is fully and securely inserted into the electrical outlet.
- Before inserting the power plug, check that there is no dust or water on the plug. If any dust or water is found, wipe it off with a dry cloth and then insert it.
- Check that the outlet can firmly hold the plug.

### Handling of batteries

The following actions must be avoided. Inappropriate handling may cause the battery to overheat, burst, and leak, resulting in injury, smoke or fire.

- Disassembling the battery
- Heating beyond 100°C
- Incinerating
- Wetting
- Using batteries other than those specified

### Storage location for batteries

Keep batteries out of the reach of young children. There is a danger that they might swallow them. Should a battery ever be swallowed, take care to secure a breathing path for the child and immediately call for medical assistance.

### Disposal of batteries

To dispose of batteries, consult your dealer or follow the relevant regulations and rules of your country.

### Storing batteries

When storing batteries, apply adhesive tape on the terminals for insulation. If the batteries are stored without insulation, the terminals can contact each other to cause a short-circuit and overheat or burst, leading to injury or fire.

### Multiple connections to a single outlet not allowed

Do not connect multiple power cables to a single electrical outlet. Overheating of the power cables or outlet may cause fire and trip the circuit breaker, stopping the operation of other devices on the same circuit.

# ⚠ WARNING

### Not designed to operate in a humid or dusty environment

Do not use the equipment near a place where water is used such as sink, in a humid basement, or in a dusty place. Such conditions may lower electric insulation, leading to electric shock or fire.

### Not designed to operate in a high-temperature environment

Do not install the equipment in a place subject to high temperatures and do not cover it with insulating material. It may cause a fire.

### Moving between two locations with a significant temperature gap

When you move the equipment from one location to another, a significant temperature gap between the two locations may cause condensation on the surface or inside the equipment. Using the equipment when condensation is present may lead to electric shock or fire. Leave the equipment at the new location for several hours before you start using it.

### Addition and connection of peripheral devices or optional components

To add or connect peripheral devices or optional components to the equipment, remove the power plug from the outlet and disconnect all cables from the equipment unless otherwise instructed. Use only peripheral devices and optional components which are explicitly listed as supported devices in the manual, and always follow the instructions in the manual.

Using devices other than those mentioned above would cause a failure of the peripheral devices or optional components, smoke, or fire due to the difference in connection specifications.

### Vents

Vents on the equipment aim to prevent internal temperature rise. Do not block the vents by placing any objects in front of or against them. Otherwise the internal temperature may rise, leading to smoke, fire or failure.

Keep vents clear of dust by periodically checking and cleaning them.

### Plastic bags for packaging

To avoid the risk of suffocation, do not leave plastic bags (such as air bubble cushioning for packaging) within the reach of young children.

### Handling the power supply module

The power supply module has a high-voltage area in it. Do not open the cover.
It may result in electric shock or equipment failure.

### Handling of the product

Install the product on a fixed rack. Do not lean against the product or stand on it.
Do not install the product in a place with weak floors and walls.
Do not subject the product to excessive vibration. It could fall and cause a failure.

# ⚠ CAUTION

### Contact with contact pins

- Do not touch the contact pins of connectors with your hand or any metal item. Do not any objects such as wire among the pins. Do not place the equipment in a place where there are metal pieces. Otherwise, contact failure may cause a malfunction.
- When you have to touch the card, take care not to hurt yourself. You can wear cotton gloves.

### Addition and replacement of parts in the equipment

Increasing the number of built-in options for a system device or replacing them must be entirely conducted by maintenance personnel. Avoid removing the cover from the device and avoid installing or removing built-in options. The system device contains parts mounted at high density, which suggests that unskilled work will lead to injury or device failure. If you need to add or replace options, you should contact your dealer or call the maintenance personnel.

### Contact with metal edges

When moving the equipment or adding parts, take care not to hurt yourself on the metal or plastic edges. You can wear cotton gloves.

### Using at an unstable place

Do not place the equipment on an inclined ground or at a narrow or unstable place. The equipment may fall and cause an injury.

### Use for purposes other than the stated purpose

Do not use the equipment for any other purpose other than its intended use. It may malfunction or fall and cause an injury.

### Consumables

Only use specified consumables. Using consumables other than those specified may not only reduce reliability of the product but also cause malfunction, electric shock or fire.

### Eye fatigue

Provide luminance of 300 to 1000 lux for viewing the display. Take a break of 10 to 15 minute every hour. Viewing the display for a long time results in eye fatigue.

### Cover for the power supply module

The power supply module, and its cover and handle are heated while that module is run. Take care when replacing a failed module or in other cases. You might get burned.

### Laser beam

- On this product, a Class 1 laser product is installed. Do not look directly at the laser beam. Do not look at the laser beam using an optical device.
- Under the laser module cover, a laser beam is being emitted. Do not remove the cover of an unused board.

# ⚠ CAUTION

### Signal cables

- When wiring cables, take care not to trip over the cables. It could cause injury or failure of devices connected to the equipment. It could also cause loss of valuable data.
- Do not place heavy items on the cables. Avoid wiring cables close to a thermal appliance. It may cause damage to cable sheaths, resulting in failure of the connected devices.

### Improper battery type

Improper type of battery used can cause explosion.

Replace the battery with a proper one as recommended by the manufacturer.

Dispose of the worn-out battery according to the manufacturer's instructions.

### Aluminum electrolytic capacitors

An aluminum electrolytic capacitor has a limited service life. Do not use it past its service life. Otherwise, leakage or depletion of the electrolyte may cause smoke or electric shock. To avoid such hazardous situations, replace limited-life parts once they are past their designated service life

### Handling of the system equipment

Addition or replacement of optional components must be performed by maintenance personnel.

Do not attempt to remove the cover of the equipment. Do not attempt to install or remove optional components. Parts implemented in the system equipment are high-density, and highly complex. Operation or maintenance by inexperienced persons may lead to injury or equipment failure.

When you need to add or replace optional components, contact your dealer or call maintenance personnel.

### Installing the equipment onto a rack

- To mount or remove the system equipment onto or from the rack cabinet, do not strain yourself to do so alone. Instead, always get help from at least one other person or use tools. If the system equipment has to be mounted on 31U and above of the rack cabinet or it is already mounted there, do not attempt to mount or remove it. Call maintenance personnel.
  Defective mounting may cause the system equipment to fall, resulting in an injury or equipment failure.
- To perform any operation with the equipment pulled out from the rack cabinet, be sure to mount a stabilizer to the rack cabinet. Applying excessive force could cause the rack cabinet to fall, resulting in an injury or equipment failure.
  If a stabilizer is not mounted, call maintenance personnel.

### High Temperature at the 10GBASE-R Transceiver

The 10GBASE-R transceiver in the 10Gbps LAN switch module increases in temperature during operation. To remove the transceiver, therefore, allow at least approximately 5 minutes after the power supply for the 10Gbps LAN switch module is stopped from the management module. Failure to do so may cause you to get burned.

# NOTICE

### Backing up data

Always create backup copies of important data on the hard disk to auxiliary storage. If the hard disk fails, all data stored on it will be lost.

### Not designed to operate outdoors

Do not operate the equipment outdoors. It could cause a failure.

### Disposal of the equipment

- For disposal by a business operator
  Check the industrial waste disposal regulations for your country and follow the necessary procedures.
- For disposal by an individual
  To dispose of this equipment, consult your dealer or follow the relevant regulations.

### Radio interference

When installed next to other electronic equipment, the equipment may interfere with each other. In particular, with a television set or a radio in the vicinity, some noise may occur on the equipment. If this happens, do the following:

- Place the equipment as far away as possible from the TV or radio.
- Change the orientation of the antenna of the TV or radio.
- Plug the electronic equipment into separate electrical outlets.

### Anti-earthquake measures

Strong vibration such as that generated by an earthquake could cause the equipment to move and fall, resulting in serious accidents.
In order to prevent disastrous outcomes, consult a maintenance company or an expert business for developing counter-seismic measures and implement them accordingly.

### Handling the hard disk

The hard disk is a precision instrument. Handle it carefully when you use it. Inappropriate handling may result in hard disk failure.

When carrying the system equipment or hard disk, handle it carefully and do not vibrate or hit it. Before handling the hard disk, remove static electricity or wear cotton gloves.

Before moving the system equipment, turn off the power, remove the power plug from the electrical outlet, and wait at least 30 seconds.

### Rat control

Rats can cause the following damage to a computer system:

Breakage of cable sheaths

Corrosion, contact failure, or soiled parts inside the equipment

In order to prevent the above damage, consult a maintenance company or an expert business for developing rat control measures and implement them accordingly.

# NOTICE

### Implementing a disk array

You must not change the disk array during system operations. Otherwise, the system would lose all data.

If you select [New Configuration], the hard disk will lose all data.

### Power operation

Follow the prescribed procedure for power operation. Power input or output not according to the prescribed procedure may cause problems to the system equipment.

### Faulty disk

If you attempt to replace a faulty disk using an incorrect procedure, data on the disk may be corrupted. Before starting disk replacement work, back up the data.

Replacing a hard disk without failure will corrupt the data on it. Do not remove any hard disk other than the faulty disk.

### Connecting a cable to the management module

When you connect the management module over a network, the system will incur an error if a device assigned with the same IP address as for the BMC on the management module or server blade exists on the network.

After the end of a network configuration, connect a cable to the management module.

### N + M cold standby function

When the N+M cold standby function is enabled, Pre-configuration is automatically executed and the status LED (CND) on the server blade lights solid green after the POWER LED on the front panel lights solid orange. Confirm that the POWER LED of the front panel lights solid orange to show Pre-configuration is completed before executing step 3 described above.

Make sure to use the same LPAR manager firmware version as the active partition for the standby partition. Otherwise, N+M failover may fail.

Do not move the EFI Shell to the highest booting priority in the EFI Setup menu. If the EFI Shell is on the top of the boot option, the OS will not successfully boot after N+M switching and failback.

For a Xeon server blade, executing the Pre-configure automatically changes the SAN booting priority to the lowest of the priority settings.

If you change the LPAR configuration (processors, memory, or device assignment), make sure to implement [F9]: “Save Configuration” on the LPAR manager Menu screen. For details, see “Saving Settings on the LPAR manager Screen”.

When a switching alert is issued by the BSM command execution, the active partition is forcibly powered off.

# First Aid for Electric Shock

First aid is the help you can provide before you can get professional medical help. For serious conditions, it is vitally important to take the victim to a doctor as soon as possible. Have someone call an ambulance at once while you apply first aid.

Break the victim's contact with the source of electricity in the quickest safe way possible. Turn off the main switch of the power distribution panel immediately and ground the circuits. Remove the victim from contact with the current, using a dry wooden pole, a dry rope or dry clothing. Do not touch the victim before contact with the current is broken.

## Warning labels

Warning labels can be found at the following locations on the system equipment.

< Hitachi Compute Blade system equipment>

# 1

# How to use the Manuals

This section describes the manuals provided with Hitachi Gigabit Fibre Channel Adapter.

# Manual Organization

Hitachi Gigabit Fibre Channel Adapter User's Guide has several edition published in parts.

The contents of the User's Guide are shown below.

### ❑ User's guide

| Edition | Contents |
|---|---|
| Hitachi Gigabit Fibre Channel Adapter User's Guide (Hardware Edition) | Describes overview of Hitachi Gigabit Fibre Channel Adapter and procedures for the use of Hitachi Gigabit Fibre Channel Adapter such as installation, connection, handling and checking of operation. |
| Hitachi Gigabit Fibre Channel Adapter User's Guide (BIOS/EFI Edition) | This manual.<br>Describes list of Option parameters of onboard BIOS and EFI. Also provides error log information of onboard BIOS and EFI. |
| Hitachi Gigabit Fibre Channel Adapter User's Guide (Windows Driver Edition) | Describes procedures how to install and update Windows driver. Also provides error log information and list of driver parameters. |
| Hitachi Gigabit Fibre Channel Adapter User's Guide (Linux/VMware Driver Edition) | Describes procedures how to install and update Linux/VMware driver. Also provides error log information and list of driver parameters. |
| Hitachi Gigabit Fibre Channel Adapter User's Guide (Support Matrix Edition) | Details driver version and functions combinations that are supported by driver on each OS. This document also includes on-board firmware support matrix. |
| Hitachi Gigabit Fibre Channel Adapter User's Guide (Utility Software Edition) | Describes list of parameters and operations of utility software to set and modify various parameters. |
| Hitachi Gigabit Fibre Channel Adapter User's Guide (Utility Software Edition - VMware) | Describes Installation and Usage of CIM utilities, CIM client and CIM provider to manage Hitachi Gigabit Fibre Channel for VMware ESXi5.0 or later |

# 2

# Before use

## Precautions

- In this document, “BASIC mode” refers to the mode which does not use LPAR mode of logical partitioning manager (LPAR manager) of Hitachi Compute Blade.
- If you use the additional WWN for N+M Cold Standby or the virtual WWN for LPAR manager in your system, WWN using in your system is different from the original WWN written on a white seal of the adapter. See user’s manual supplied with your Hitachi Compute Blade system how to set or confirm WWN in your system.
- Parameter for BASIC mode should be set on BASIC mode. Parameters set in BASIC environment are only applicable for BASIC mode.
- Parameters set in LPAR environment of LPAR manager are only applicable for LPAR mode. Parameters for LPAR environment should be set by EFI driver running on LPAR mode.
- When you use FC port as a shared FC of LPAR manager, boot may fail depending on the number of LPARs connected to the shared FC. In this case, you may avoid the problem by extending LOGIN DELAY time in the parameters of the Fiber Channel adapter. For details, refer to “Procedure to set option parameters” on the section “EFI Driver”.
- About connection type setting to FC port used as a shared FC of LPAR manager or used on VMware.

  ☐ When FC port is connected to a FC switch, set connection type according to the table below.

| FC Adapter | Server | HBA Firmware Version | Connection Type | Multiple PortID |
|---|---|---|---|---|
| 4Gbps adapter | Hitachi Compute Blade 2000 | 2x-08-12 or later | Auto or Point to Point | - (*2) |
| | | 2x-08-10 or less | Point to Point (*1) | - (*2) |
| | Hitachi Compute Blade 1000, Hitachi Compute Blade 320 | 2x-07-8C or later | Auto or Point to Point | - (*2) |
| | | 2x-07-89 or less | Point to Point (*1) | - (*2) |
| 8Gbps adapter | Hitachi Compute Blade 2500, Hitachi Compute Blade 2000, Hitachi Compute Blade 320, Hitachi Compute Blade 500, Hitachi Compute Rack Series | All version | Auto or Point to Point | - (*2) |
| 16Gbps adapter | Hitachi Compute Blade 2500, Hitachi Compute Blade 2000, Hitachi Compute Blade 500, Hitachi Compute Rack Series | All version | Auto or Point to Point | Disable |

(*1)When you use FC port on VMware but not use NPIV, "Auto" is possible.

(*2)"Multiple PORT" is not supported by 4Gbps adapter and 8Gbps adapter.

☐ When FC port is connected to a Disk directly, set connection type according to the table below.

| FC Adapter | Connection Type | Multiple PortID |
|---|---|---|
| 4Gbps adapter | Loop | - (*4) |
| 8Gbps adapter | Loop | - (*4) |
| 16Gbps adapter | Loop or Point to Point(*3) | Enable |

(*3) It's different in supported "Connection Type", depending on kinds of the connected disk. Fabric Emulation is a kind of FC Port connection (Connection Type setting is "Point to Point" and Multiple PortID setting is "Enable".) is supported by only Virtual Storage Platform G1000/VX7 in March 2015, If you want to use other disk and Fabric Emulation function, please refer to manuals of the Disk.

(*4)"Multiple PORT" is not supported by 4Gbps adapter and 8Gbps adapter.

About the setting procedure of connection type and Multiple PortID, refer to "SET CONNECTION TYPE menu" and "SET EXPANSION PARAMETERS menu" on the section “HBA BIOS” or "Procedure to set option parameters" on the section “EFI Driver”.

- Set the fixed data rate (link speed) for FC expansion card mounted on Hitachi Compute Blade 320 and do not set ‘Auto’. For detail explanation, see section about FC HBA settings on Hitachi Compute Blade 320 system user’s manual.
  For details how to set Data Rate (Link Speed), see “SET LINK SPEED menu(SET DATA RATE menu)
  ” on the section “HBA BIOS” or “Procedure to set option parameters” on the section “EFI Driver”
  In addition, it is not necessary to set data rate (link speed) setting again for the FC expansion card mounted on Hitachi Compute Blade 320 shipped after July 12, 2008, because fixed data rate (link speed) is already set to the FC expansion card.
  However, when you initialize setting data, it is necessary to set it in fixed data rate (link speed)again for the card because it returns to ‘Auto’ setting.
- Shutdown or reboot during writing the data into FLASH-ROM may destroy data stored in FLASH-ROM and may lead a failure of Fibre Channel adapter. Be very careful when you shutdown or reboot your server referring notes on ‘Restrictions’.
- When an FC port is used as a shared FC of LPAR manager, a connection type setting and data rate (link speed) setting cannot be changed. If the settings should be changed, change to the Dedicated mode.
- When the following conditions are met concurrently, please set boot priority by the procedure with “Procedure to set a Boot Priority manually(page.16)”.

  (1)Only 8Gbps Hitachi Fibre Channel adapter is installed on the system, and a firmware version of 8Gbps adapter is “30-04-39”.

  (2)The configuration that 8Gbps Hitachi Fibre Channel adapter is connected with Hitachi Universal Storage Platform, Hitachi Virtual Storage Platform, Hitachi Network Storage Controller or the configuration that the number of Logical Units connected per Target FC port are equal or over 256.

  If boot priority is set by the procedure with “Procedure to set a Boot Priority(page.13)”, zero data are set to the first 4 bytes of WWN on “SET BOOT PRIORITY” screen.
- When the hardware memory dump function of Hitachi Compute Blade runs, please register Target port and LU of the disk which made a DUMP PARTITION with BOOT PRIORITY setting. Please register the DUMP PARTITION disk with the priority that is lower than a BOOT disk.

  Please refer to User's Guide of Hitachi Compute Blade for the hardware memory dump function of Hitachi Compute Blade.
- Only the boot driver called OptionROM first resides in the boot driver of the Hitachi Fibre Channel adaptor and the boot driver called OptionROM since the second doesn't reside. The boot driver that is called OptionROM first and resided executes the control of all adaptor port.
  Because the control operation might be different when boot driver's version changes, it is recommended to update the firmware of all adaptors and to use it.
- When it is equipped with the 8Gb Fiber Channel card of the PCI card slot and the 4Gb Fiber Channel expansion card of the expansion card slot in P5 model of Hitachi Compute Blade 320 at the same time, both HBA-BIOS of the 8Gb Fiber Channel card and HBA-BIOS of the 4Gb Fiber Channel expansion card stay. Because each initialization processing message is displayed, please perform the HBA-BIOS setup from each HBA-BIOS.
  In addition, please confirm "system constitution guide" of Hitachi Compute Blade 320 because there is a deployment limit about the simultaneous deployment of the 8Gb Fiber Channel card of the PCI card slot and the 4Gb Fiber Channel expansion card of the expansion card slot in the Hitachi Compute Blade 320 P5 model.

- Notes concerning setting of LoginDelayTime【4Gbps adapter, 8Gbps adapter】

When the default configuration of LoginDelayTime is selected by EFI driver's set command, three seconds that are the default values of the EFI driver are set. At this time, EFI driver/OS driver's LoginDelayTime operates at three seconds. When the default configuration of LoginDelayTime is selected with HBA-BIOS, the LoginDelayTime setting value is cleared. At this time, HBA-BIOS/OS driver's LoginDelayTime operates by each default value.

| Set value \ LoginDelayTime Operation | | EFI Driver LoginDelayTime Operation | HBA-BIOS LoginDelayTime Operation | OS Driver LoginDelayTime Operation(*5) |
|---|---|---|---|---|
| Initial value | | 3 seconds | 3 seconds | 2 seconds(*5) |
| Default configuration (EFI Driver)(*1) | 3 Seconds are set | 3 seconds | 3 seconds | 3 seconds(*5) |
| Setting is clear (EFI Driver)(*2) | Setting is clear | | | 2 seconds(*5) |
| Default configuration (HBA-BIOS)(*3) | Setting is clear | 3 seconds | 3 seconds | 2 seconds(*5) |
| Setting is Clear (HBA-BIOS)(*4) | Setting is clear | | | |

(*1) Please refer to "Procedure to set Login Delay Time" in EFI driver's chapter for the procedure.
(*2) Please refer to "Procedure to restore default settings" in EFI driver's chapter for the procedure.
(*3) Please refer to "Procedure to set a Login Delay Time" in HBA-BIOS chapter for the procedure.
(*4) Please refer to "Procedure to restore default settings" in HBA-BIOS chapter for the procedure
(*5) In case of 16Gbps adapter, it is all 3seconds.

Please execute EFI driver's clear command and return an optional setting to an initial value when you want to operate each driver's LoginDelayTime by each default value in the EFI driver.
When the clear command is executed, all the settings are initialized. Therefore, please set an optional setting again by the set command.
Please refer to

- set command (P.93)
- clear command (P.103)

for the set command and the clear command.

■ Notes about relations of Connection Type setting and Multiple PortID setting【16Gbps adapter】

It is Connection Type which can be realized by a combination of connection type setting and Multiple PortID setting as follows.

| connection type setting value | Multiple PortID setting value | Connection Type | | | |
|---|---|---|---|---|---|
| | | Point to Point with connected directly | Loop with connected directly | Point to Point with fabric | Loop with fabric |
| Auto | Enable/Disable | Direct Point to Point (*1)(*2) | Private Loop | Fabric Point to Point | Public Loop |
| Point to Point | Enable | Fabric Emulation | × | × | × |
| | Disable | Direct Point to Point (*1)(*2) | × | Fabric Point to Point | × |
| FC-AL(Loop) | Enable | × | Private Loop | × | × |
| | Disable | × | Private Loop | × | Public Loop |

×: cannot be connected.

When the following errors detect by HBA-BIOS or EFI driver, please review a combination of connection type setting and Multiple PortID setting.

- HBA-BIOS Error Code : 00020004h or 00020022h
- EFI driver Error number : 0x40 or 0xD1

(*1) "Auto" setting is available only in the case that the disk connecting to the FC HBA supports "Point to Point" setting with connected directry.
(*2) When FC-HBA is connected to the disk which does not support "Point to Point" setting with directly connected and the disk is set in "Point to Point" setting by mistake, the system booting time may delay or fail.

In that case, please change the connection type of disk to "Loop" setting, or pull off the FC cable before booting the system, and then change the connection type of the HBA after booting the system.

# 3

# HBA BIOS

This section provides the information how to configure HBA BIOS parameters.

## HBA BIOS specifications

| # | Item | | HBA-BIOS version | | | |
|---|---|---|---|---|---|---|
| | | | v20.00.00.00 or later | v10.00.05.00 or later | v10.00.04.06 or earlier | v04.02.00 or earlier |
| 1 | Support adapter (*1) | HFC0201 | × | × | × | ○ |
| | | HFC04xxx | × | ○ | ○ | ○ |
| | | HFCE08xxx | × | ○ | ○ | × |
| | | HFCE16xxx | ○ | × | × | × |
| 2 | Max-number of FC port that detection is possible (*8) | | 256 | 256 | 128 | 32 |
| 3 | Max-number of FC port that boot control is possible | | 32 (*2) | 32 (*2) | 32 (*3) | 32 (*3) |
| 4 | Max-number of FC port that setup is possible | | 256 | 256 | 128 | 32 |
| 5 | Max-number of LU every FC port | | 8 | 8 | 8 | 8 |
| 6 | Max-number of LU all of FC port | | 8 (*4) | 8 (*4) | 8 (*4) | 32 (*4) |
| 7 | Max-number of LU that Boot Priority registration is possible (*5) | | 8 | 8 | 8 | 8 |
| 8 | Max-number of Target port that detection is possible every FC port(*6)(*8) | | 508 | 508 | 508 | 508 |
| 9 | Max-number of LU that detection is possible every Target port (*6)(*8) | | 256 | 256 | 256 | 256 |
| 10 | Maximum LU number (*7)(*8) | | 65535 | 65535 | 65535 | 255 |
| 11 | Over 2TB LU access | | ○ | ○ | × | × |

(*1)Refer to “HITACHI Gigabit Fibre Channel Adapter User's Guide(Support Matrix edition)” for model name.

(*2)The first 32 FC ports of FC ports which HBA BIOS Enable/Disable is set to “Enable” are detected.

(*3)The first 32 FC ports are detected regardless of the port setting (HBA BIOS Enable/Disable).

(*4)The maximum number of Boot Devices of the system (include a IDE and a SCSI disk) is 8.

(*5)Register LU satisfying both item#8 and item#9 with ‘Boot Priority’.
Even if it is registered LU, the LU is not recognizable if it became beyond the above agreement.

(*6)When building environment, please build it so that a boot disk exists within the maximum number of those.
'Max-number of Target port that detection is possible every FC port'(see #8) is the number of all Target ports including the Target ports which cannot LOGIN by the security setting of the Target port.

(*7)'Maximum LU number' is the recognizable number against the LU which is within the range of 'Max-number of LU that detection is possible every Target port'(see #9).
LU beyond 'Max-number of LU that detection is possible every Target port'(see #9) is not recognizable.

(*8)These maximum numbers may be different from an OS driver.
Data LU does not have any problem if within the range of these maximum numbers of OS driver, but OS boot LU, please build environment to exist within the range of small each maximum of a boot driver and the OS driver.

# HBA BIOS displays messages

## Start a initialization call process

It is a message displayed when HBA-BIOS starts initialization processing.

```
Hitachi Fibre Channel Adapter ROM BIOS Version 10.00.05.03
Copyright (C)HITACHI,Ltd 2004,2011. All rights reserved.

Press <Ctrl-R> to Enter BIOS
```

## Detect target LU

It is a message displayed when HBA-BIO detects a target LU in enabled FC port.
Information such as WWPN. LUN of target LU is displayed.

```
 HBA# : D-ID  :    WWPN          : LUN  : Manufact : Product
HBA#00  010002  500608E0 00345670  0000   HITACHI    DF600F
```

## HBA BIOS is disabled

It is a message displayed when the FC port is disabled.

```
HBA#00: BIOS is Disable
```

When two or more disabled ports are consecutive, it displays it as follows.
This message is available only on HBA-BIOS version 10.00.05.00 or later.

```
HBA#01-03: BIOS is Disable
```

## End a initialization call process

When initialization process is ended, HBA-BIOS displays either of following message.

[ HBA-BIOS detects some target LU, and it is installed ]

```
HBA BIOS Installed!
```

[ HBA-BIOS detects no target LU, and it is not installed ]

```
HBA BIOS not Installed!
```

## Error message

When HBA-BIOS detects an error, an error message is displayed.
For the error message that HBA-BIOS displays, please refer to “Error message information (P.173)” of this guide.

# HBA BIOS parameters

## Contents of HBA-BIOS parameters

| Type | Parameter | Default value | Range Of values | Description |
|---|---|---|---|---|
| Basic | HBA BIOS ENABLE/DISABLE | Disable | Enable/Disable | Enable or disable booting from a SAN. Set enable when you need to scan LU as a boot disk. Usually only one FC port using as a boot path needs to be enabled. |
| | CONNECTION TYPE *1) | Auto | Auto<br>Point to Point<br>Loop | Specify connection type in the FC interface. |
| | DATA RATE (LINK SPEED) *2) | Auto | 【4Gbps adapter】 Auto,1Gbps, 2Gbps,4Gbps<br>【8Gbps adapter】 Auto,2Gbps, 4Gbps,8Gbps<br>【10Gbps adapter】 Auto,10Gbps<br>【16Gbps adapter】 Auto,4Gbps, 8Gbps, 16Gbps | Specify data rate(link speed) in the FC interface. |
| | SPINUP DELAY | Disable | 【version10.00.00.00 or later】 Disable(0), 10sec～2550sec<br>【version04.02.00 or earlier】 Disable, 300sec | Disable or enable spinup delay and specify its delay time, which is the waiting time until the disk becomes READY. |
| | LOGIN DELAY TIME | 3sec. | 0-60sec. | Add delay time enough to make each target identify FC connection before LOGIN process starts. Set longer time when system connects dozens of targets or the system operating on high load. |
| | PERSISTENT BINDINGS | Enable | Enable/Disable | If this parameter is disabled, Persistent Binding setting is forcibly disabled. This parameter enables only for Linux and boot driver does not use this parameter. This value must correspond to the value of any other adapters within the same system. |
| | FORCE DEFAULT PARAMETER | Disable | Enable/Disable | If this parameter is enabled, the OS will be booted with default setting, and ignore any other settings configured previously. For detail explanation, see 'Precaution on setting 'FORCE DEFAULT PARAMETER" of section 'Before Use' in 'Hitachi Gigabit Fibre Channel Adapter Users Guide(Utility Software Edition)'. This parameter is driver-use only and boot driver does not use this parameters. |
| | BOOT PRIORITY | Disable | Enable/Disable | Enable or disable Boot Priority List. If it is enabled, boot driver scans boot LU only on boot Priority List. If it is disabled, boot driver scans boot LU on current available LUs ignoring boot Priority List. |
| | BOOT DEVICE LIST | All ‘0’ | WWN, LUN | Register the list of target LUs used for scanning when Boot Priority setting is enabled. In this case, boot driver scans target LUs only on this list. Even if no LU is detected, boot driver does not try to detect LU from current available LUs. |
| | Additional WWPN of FC port | All ‘0’ | WWPN, LUN | Display and set Additional WWN stored in FLASH-ROM of Fibre Channel Adapter. |

| Type | Parameter | Default value | Range Of values | Description |
|---|---|---|---|---|
| Ext | Multiple PortID *3) | Disable | Enable/Disable | This parameter is used in combination with 'Connection Type' to extend a connection type which connected FC port and the disk device directly. If it is enabled, this function becomes effective. This parameter can be set only to a 16Gbps adapter. |
| | HBA ISOL cmd | OFF | ON/OFF | When making a HBA port into an isolated state, it sets to ON. This parameter can be set only to a 16Gbps adapter |
| | Login Target Filter Ext (Login Target Filter 16G) *4) | pid(Enable) | pid(Enable)/no(Disable) | If it is enabled, the driver does not access to the port which have a same upper 2byte of PORT_ID as self PORT_ID. This parameter can be set only to a 16Gbps adapter and 8Gbps adapter(ver10.00.05.07 or later). |
| | Init Negotiation Timer | 120sec | 1sec～255sec | Set the Init Negotiation monitoring time of starting FC link initialization. This parameter can be set only to a 16Gbps adapter. |
| | MCK Link Down Time | 15sec | 0sec～60sec | Set how long you wait for the linkup after MCK is occurred. This parameter can be set only to a 16Gbps adapter. |
| LOG | ERROR LOGGING ENABLE/DISABLE | Enable | Enable/Disable | Specify whether boot driver preserves the log data of the failure in FLASH-ROM or not. |
| | LOG ENTRY OVERWRITE MODE | Not overwrite | Not overwrite/ Overwrite | Specify LOG entry overwrite mode. |
| | ERROR BREAK | Disable | Enable/Disable | If enabled, boot driver stops the execution until any key is pressed when ERROR occurred. |

*1) About connection type setting to FC port used as a shared FC of LPAR manager or used on VMware, Refer to clause "About connection type setting to FC port used as a shared FC of LPAR manager or used on VMware." of section "Precautions" of Chapter 2.

*2) Set the fixed data rate (link speed) for FC expansion card mounted on Hitachi Compute Blade 320 and do not set 'Auto Detection'. For detail explanation, see section about FC HBA settings on user's manual supplied with Hitachi Compute Blade 320 system.
In addition, it is not necessary to set data rate (link speed) setting again for the FC expansion card mounted on Hitachi Compute Blade 320 shipped after July 12, 2008, because fixed data rate (link speed) is already set to the FC expansion card. However, when you initialize setting data, it is necessary to set it in fixed data rate (link speed) again for the card because it returns to 'Auto' setting.

*3) About a combination of connection type setting and Multiple PortID setting to expand a direct connection, refer to
"Notes about relations of Connection Type setting and Multiple PortID setting"

*4) In the case of 8Gbps adapter(ver10.00.05.07 or later), the Login Target Filter Ext parameter setting is effective only for FC port used as a shared FC of LPAR manager or used on VMware, and default setting of that case is "pid(Enable)". In the case of other modes, it is the same regardless of setting contents when set in "no(Disable" ".
In the case of 16Gbps adapter, it works according to the setting of the Login Target Filter Ext parameter regardless of mode.

# Restrictions on maximum port numbers on HBA-BIOS

**【Ver10.00.00.00～10.00.04.06】**

You can set boot port only on the first 32 ports identified by HBA-BIOS. Therefore, 33rd or later port can not be specified for the items shown below.

| # | Parameter | Corresponding HBA-BIOS frame |
|---|---|---|
| 1 | HBA BIOS ENABLE/DISABLE | SET HBA BIOS ENABLE/DISABLE |
| 2 | BOOT PRIORITY | SET BOOT PRIORITY |

**【Ver10.00.05.00～】**

You can set boot port on the all ports identified by HBA-BIOS.
SAN boot is possible from all ports if the number of FC ports that the HBA BIOS setting is set to Enable is below 32 ports.

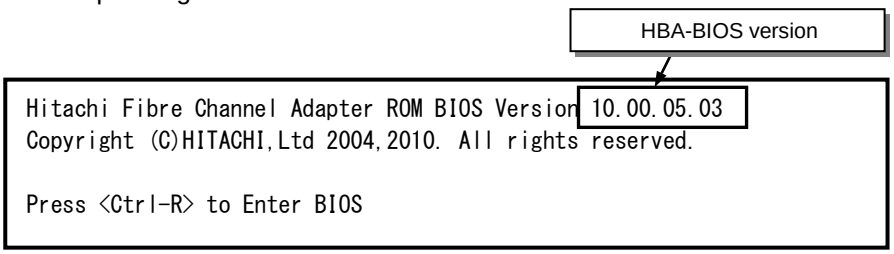
# Restrictions on mounting of 16Gbps adapter and other adapter

16Gbps adapter displays an initialization messages originally, even if other type of Hitachi Fibre Channel adapters are equipped server.
When it is equipped with 16Gbps adapter and other type of Hitachi Fibre Channel adapters, HBA BIOS of either may not work without enough memory space of the server. Thus, please set HBA BIOS ENABLE/DISABLE setting in ENABLE on only either one adapter.

# Procedure to confirms versions

## Confirms HBA-BIOS version

You can confirm HBA-BIOS version by checking initialization messages. Note that setup image may differ depending on the version of HBA-BIOS.




## Confirms Firmware version

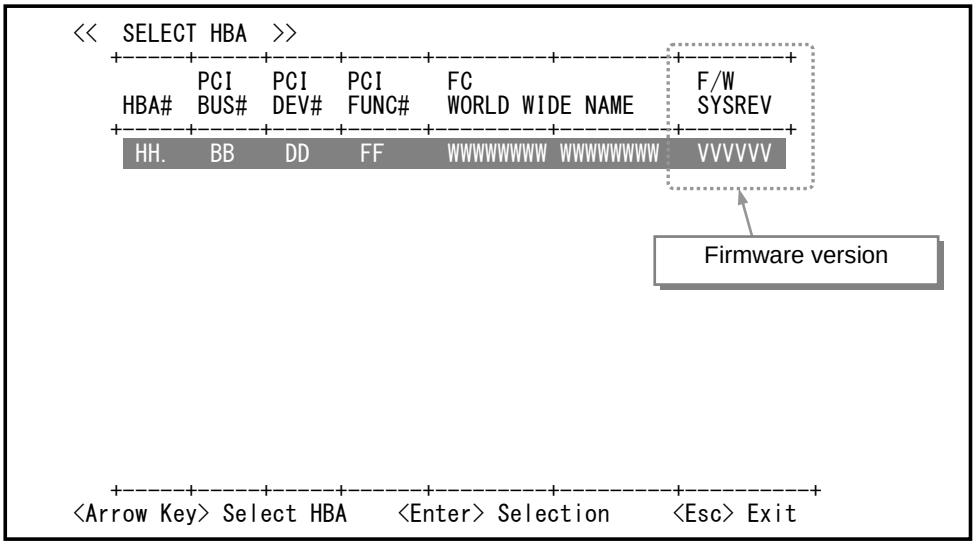
This procedure is available only on HBA-BIOS version 03.03.00 or later.

**1. Start HBA-BIOS setup menu**

Start HBA-BIOS setup menu ( refer to ”Procedure to start HBA-BIOS setup menu”(page.12) )

**2. Display SELECT HBA menu**

Select a “SELECT HBA” menu on “SELECT OPERATION” menu.
( refer to ”SELECT OPERATION menu“(page.30) )

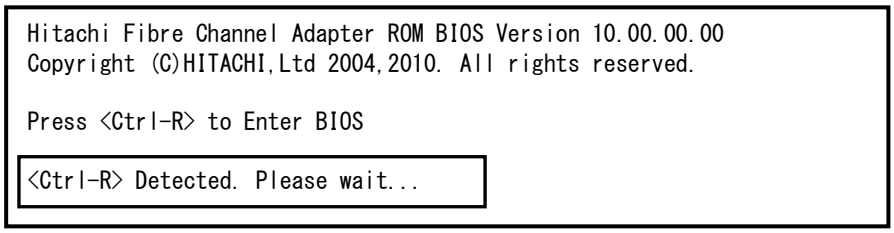


# Procedure to set HBA-BIOS parameters

## Procedure to start HBA-BIOS setup menu

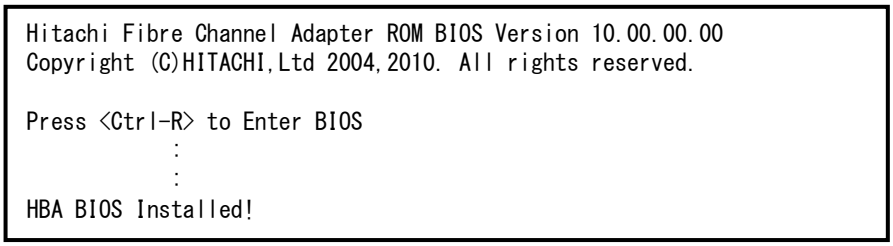
1. **Power on the server blade.**
2. **Hold down the [Ctrl] key and press the [R] key.**

   When "Press <Ctrl><R> to enter BIOS" is displayed at the screen, hold down the [Ctrl] key and press the [R] key. If HBA-BIOS identifies key input, the following message, “<Ctrl-R> Detected. Please wait...” is displayed.




**Note**

- [Ctrl] key and [A] key are also applicable as hot key.
- If you press the key too late to enter setup menu, exit the OS and restart the server. Be sure to restart the server after messages “HBA BIOS Installed!” or “HBA BIOS not Installed!” are displayed.



## Procedure to set a HBA-BIOS to Enable

Option parameter does not become effective until server is rebooted.

**1. Start “HBA-BIOS setup”**

Start HBA-BIOS setup menu.
(refer to『Procedure to start HBA-BIOS setup menu』(page.12) )

**2. Enter to “SELECT HBA” screen**

In a “SELECT OPERATION” screen, select a ‘SELECT HBA’ menu.
(refer to『SELECT OPERATION menu』(page.30) )

**3. Select a adapter port**

In a “SELECT HBA” screen, select a adapter port to set HBA-BIOS to Enable.
(refer to『SELECT HBA menu』(page.31) )

**4. Enter to “SET HBA BIOS ENABLE/DISABLE” screen**

In a “MAIN MENU” screen, select a ‘SET HBA BIOS ENABLE/DISABLE’ menu.
(refer to『MAIN MENU』(page.32) )

**5. Set HBA-BIOS to ‘Enable’**

In a “SET HBA BIOS ENABLE/DISABLE” screen, press a ‘Enter’ key several times until it is displayed with ‘ENABLE’.
(refer to『SET HBA BIOS ENABLE/DISABLE menu』(page.35) )

**6. Return to “MAIN MENU” screen**

Press ‘Esc’ key and return to “MAIN MENU” screen.

**7. Save and validate a changes**

According to the operation of 『Procedure to save and validate a changes』(page.22) ), make settings effective.

## Procedure to set a HBA-BIOS to Disable

Option parameter does not become effective until server is rebooted.

Change “Enable” into “Disable, and refer to 『Procedure to set a HBA-BIOS to Enable』(P.13).

# Procedure to set a Boot Priority

Option parameter does not become effective until server is rebooted.

**1. Start “HBA-BIOS setup”**

Start HBA-BIOS setup menu.
(refer to『Procedure to start HBA-BIOS setup menu』(page.12) )

**2. Enter to “SELECT HBA” screen**

In a “SELECT OPERATION” screen, select a ‘SELECT HBA’ menu.
(refer to『SELECT OPERATION menu』(page.30) )

**3. Select a adapter port**

In a “SELECT HBA” screen, select a adapter port to set BOOT PRIORITY.
(refer to『SELECT HBA menu』(page.31) )

**4. Enter to “SET BOOT PRIORITY” screen**

In a “MAIN MENU” screen, select a ‘SET BOOT PRIORITY’ menu.
(refer to『MAIN MENU』(page.32) )

**5. Change BOOT PRIORITY to ‘Enable’ or ‘Disable’**

refer to『SET BOOT PRIORITY menu』(page.36)

5-1 Confirm that the line of ‘ENABLE”, ‘DISABLE’ is selected.

If it is not selected, press an allow keys until the line of ‘ENABLE”, ‘DISABLE’ is selected.

5-2 Press an ‘Enter’ key several times until it is displayed with ‘ENABLE’ or ‘DISABLE’ which you need.

**6. Select an entry of boot device list**

Using allow keys, select an entry of boot device list that changes.
(refer to『SET BOOT PRIORITY menu』(page.36) )

**7. Scan target port and LU**

7-1 Press ‘Enter’ key, and enter ‘SELECT BOOT DEVICE’ screen.
(refer to『SELECT BOOT DEVICE menu』(page.38) )

7-2 Wait for several seconds until "Please wait...." message disappears.
(refer to『SELECT BOOT DEVICE menu』(page.38) )

7-3 Select a WWN of target port that registers, using allow keys.
(refer to『SELECT BOOT DEVICE menu』(page.38) )

7-4 Press ‘Enter’ key, and enter ‘SELECT LUN’ screen.
(refer to『SELECT LUN menu』(page.39) )

7-5 Wait for several seconds until "Please wait...." message disappears.
(refer to『SELECT LUN menu』(page.39) )

7-6 Select a LUN of target LU that registers, using allow keys.
(refer to『SELECT LUN menu』(page.39) )

**8. Register WWN and LUN of boot disk**

Press ‘Enter’ key, and return to “SET BOOT PRIORITY” screen with register WWN and LUN that select at step 7-3 and step 7-6.

(refer to『SET BOOT PRIORITY menu』(page.36) )

**9. Return to “MAIN MENU” screen**

Press ‘Esc’ key and return to “MAIN MENU” screen.

**10. Save and validate a changes**

According to the operation of 『Procedure to save and validate a changes』(page.22) ), make settings effective.

**Note【 FIRMWARE Version 30-04-39 】**

When the following conditions are met concurrently, please set boot priority by the procedure with "Procedure to set a Boot Priority manually(page.16)".

(1)Only 8Gbps Hitachi Fibre Channel adapter is installed on the system, and a firmware version of 8Gbps adapter is "30-04-39".

(2)The configuration that 8Gbps Hitachi Fibre Channel adapter is connected with Hitachi Universal Storage Platform, Hitachi Virtual Storage Platform, Hitachi Network Storage Controller or the configuration that the number of Logical Units connected per Target FC port are equal or over 256.

When you use hardware memory dump function of Hitachi Compute Blade, please register Target port and LU of the disk which made a DUMP PARTITION with BOOT PRIORITY setting. Please register the DUMP PARTITION disk with the priority that is lower than a BOOT disk.

# Procedure to set a Boot Priority manually

Option parameter does not become effective until server is rebooted.

This procedure is available only on HBA-BIOS version 03.02.02 or later.

**1. Enter to “SET BOOT PRIORITY” screen**

Referring to 『Procedure to set a Boot Priority』(page.14), enter “SET BOOT PRIORITY” screen.

**2. Change BOOT PRIORITY to ‘Enable’ or ‘Disable’**

Refer to 『Procedure to set a Boot Priority』(page.14) ).

**3. Select an entry of boot device list**

Using allow keys, select an entry of boot device list that changes.
(refer to『SET BOOT PRIORITY menu』(page.36) )

**4. Enter to a manual input mode**

Hold down the [Ctrl] key and press the [A] key, and enter to a manual input mode.
(refer to『SET BOOT PRIORITY menu』(page.36) )

**5. Type in WWN and LUN of boot disk**

Type in WWN and LUN of boot disk in hexadecimal.
You can use a key ‘0’ to ‘9’, ‘a’ to ‘f’ and ‘A’ to ‘F’ for input a number, and allow key (‘←’, ‘→’) for move a cursor.
(refer to『SET BOOT PRIORITY menu』(page.36) )

**6. Exit a manual input mode**

Press ‘Enter’ key or ‘Esc’ key to exit a manual input mode.

【For exit with holding changes】

Press ‘Enter’ key.

【For exit with discarding changes】

Press ‘Esc’ key.

(refer to『SET BOOT PRIORITY menu』(page.36) )

**7. Return to “MAIN MENU” screen**

Press ‘Esc’ key and return to “MAIN MENU” screen.

**8. Save and validate a changes**

According to the operation of 『Procedure to save and validate a changes』(page.22) ), make settings effective.

**Note【 FIRMWARE Version 30-04-39 】**
When the following conditions are met concurrently, please set boot priority by this procedure.

(1)Only 8Gbps Hitachi Fibre Channel adapter is installed on the system, and a firmware version of 8Gbps adapter is “30-04-39”.

(2)The configuration that 8Gbps Hitachi Fibre Channel adapter is connected with Hitachi Universal Storage Platform, Hitachi Virtual Storage Platform, Hitachi Network Storage Controller or the configuration that the number of Logical Units connected per Target FC port are equal or over 256.

When you use hardware memory dump function of Hitachi Compute Blade, please register Target port and LU of the disk which made a DUMP PARTITION with BOOT PRIORITY setting. Please register the DUMP PARTITION disk with the priority that is lower than a BOOT disk.

# Procedure to set a Connection Type

Option parameter does not become effective until server is rebooted.

**1. Start “HBA-BIOS setup”**

Start HBA-BIOS setup menu.
(refer to『Procedure to start HBA-BIOS setup menu』(page.12) )

**2. Enter to “SELECT HBA” screen**

In a “SELECT OPERATION” screen, select a ‘SELECT HBA’ menu.
(refer to『SELECT OPERATION menu』(page.30) )

**3. Select a adapter port**

In a “SELECT HBA” screen, select a adapter port to set.
(refer to『SELECT HBA menu』(page.31) )

**4. Enter to “SET CONNECTION TYPE” screen**

In a “MAIN MENU” screen, select a ‘SET CONNECTION TYPE’ menu.
(refer to『MAIN MENU』(page.32) )

**5. Select a Connection Type**

Move the reversing line to the line of connection type that you want to set, using allow key (‘↑’, ‘↓’). The connection type to which the display is reversed becomes effective.
(refer to『SET CONNECTION TYPE menu』(page.42) )

**6. Return to “MAIN MENU” screen**

Press ‘Esc’ key and return to “MAIN MENU” screen.

**7. Save and validate a changes**

According to the operation of 『Procedure to save and validate a changes』(page.22) ), make settings effective.

About connection type setting to FC port used as a shared FC of LPAR manager or used on VMware, refer to clause “About connection type setting to FC port used as a shared FC of LPAR manager or used on VMware.” of section “Precautions” of Chapter 2.

# Procedure to set a Data Rate

Option parameter does not become effective until server is rebooted.

**1. Start “HBA-BIOS setup”**

Start HBA-BIOS setup menu.
(refer to『Procedure to start HBA-BIOS setup menu』(page.12) )

**2. Enter to “SELECT HBA” screen**

In a “SELECT OPERATION” screen, select a ‘SELECT HBA’ menu.
(refer to『SELECT OPERATION menu』(page.30) )

**3. Select a adapter port**

In a “SELECT HBA” screen, select a adapter port to set.
(refer to『SELECT HBA menu』(page.31) )

**4. Enter to “SET LINK SPEED”(““SET DATA RATE”) screen**

In a “MAIN MENU” screen, select a ‘SET DATA RATE’ menu.
(refer to『MAIN MENU』(page.32) )

**5. Select a Link Speed(Data Rate)**

Move the reversing line to the line of link speed(data rate) that you want to set, using allow key (‘↑’, ‘↓’). The data rate to which the display is reversed becomes effective.
(refer to『SET LINK SPEED menu(SET DATA RATE menu)
』(page.43) )

**6. Return to “MAIN MENU” screen**

Press ‘Esc’ key and return to “MAIN MENU” screen.

**7. Save and validate a changes**

According to the operation of 『Procedure to save and validate a changes』(page.22) ), make settings effective.

Note that set the fixed data rate(link speed) for FC expansion card mounted on Hitachi Compute Blade 320 and do not set ‘Auto’. For detail explanation, see section about FC HBA settings on user’s manual supplied with Hitachi Compute Blade 320 system.
In addition, it is not necessary to set data rate(link speed) setting again for the FC expansion card mounted on Hitachi Compute Blade 320 shipped after July 12, 2008, because fixed data rate(link speed) is already set to the FC expansion card. However, when you initialize setting data, it is necessary to set it in fixed data rate(link speed) again for the card because it returns to ‘Auto’ setting.

# Procedure to set a Login Delay Time

Option parameter does not become effective until server is rebooted.

**1. Start “HBA-BIOS setup”**

Start HBA-BIOS setup menu.
(refer to『Procedure to start HBA-BIOS setup menu』(page.12) )

**2. Enter to “SELECT HBA” screen**

In a “SELECT OPERATION” screen, select a ‘SELECT HBA’ menu.
(refer to『SELECT OPERATION menu』(page.30) )

**3. Select a adapter port**

In a “SELECT HBA” screen, select a adapter port to set.
(refer to『SELECT HBA menu』(page.31) )

**4. Enter to “SET ADVANCED SETTINGS” screen**

In a “MAIN MENU” screen, select a ‘SET ADVANCED SETTINGS’ menu.
(refer to『MAIN MENU』(page.32) )

**5. Enter to “SET LOGIN DELAY TIME” screen**

In a “SET ADVANCED SETTINGS” screen, select a ‘SET LOGIN DELAY TIME’ menu.
(refer to『SET ADVANCED SETTINGS menu』(page.45) )

**6. Enter to a setup mode**

Press the [Enter] key, and enter to a setup mode.
(refer to『SET ADVANCED SETTINGS menu』(page.45) )

**7. Change a Login Delay Time**

Set a Login Delay Time value that you want to set, using allow key (‘↑’, ‘↓’).
For return to default value, press the “d” key.
(refer to『SET ADVANCED SETTINGS menu』(page.45) )

**8. Exit a setup mode**

Press ‘Enter’ key or ‘Esc’ key to exit a setup mode.

【For exit with holding changes】

Press ‘Enter’ key.

【For exit with discarding changes】

Press ‘Esc’ key.

(refer to『SET ADVANCED SETTINGS menu』(page.45) )

**9. Return to “MAIN MENU” screen**

Press ‘Esc’ key several times, and return to “MAIN MENU” screen.

**10. Save and validate a changes**

According to the operation of 『Procedure to save and validate a changes』(page.22) ), make settings effective.

# Procedure to set a Target Login Filter Ext

**【16Gbps adapter and 8Gbps adapter(ver10.00.05.07 or later) only】**

Option parameter does not become effective until server is rebooted.

**1. Start “HBA-BIOS setup”**

Start HBA-BIOS setup menu.
(refer to『Procedure to start HBA-BIOS setup menu』(page.12) )

**2. Enter to “SELECT HBA” screen**

In a “SELECT OPERATION” screen, select a ‘SELECT HBA’ menu.
(refer to『SELECT OPERATION menu』(page.30) )

**3. Select a adapter port**

In a “SELECT HBA” screen, select a adapter port to set HBA-BIOS to Enable.
(refer to『SELECT HBA menu』(page.31) )

**4. Enter to “SET EXPANSION PARAMETERS” screen**

In a “MAIN MENU” screen, select a ‘SET EXPANSION PARAMETERS’ menu.
(refer to『MAIN MENU』(page.32) )

**5. Select a Login Target Filter Ext menu**

In a “SET EXPANSION PARAMETERS” screen, select a ‘Login Target Filter Ext’ menu.
(refer to『SET EXPANSION PARAMETERS menu』(page.63) )

**6. Set Login Target Filter Ext to ‘pid(Enable)’ or ‘no(Disable)’**

press a ‘Enter’ key several times until it is displayed with ‘pid(Enable)’ or ‘no(Disable)‘.
(refer to『SET EXPANSION PARAMETERS menu』(page.63) )

**7. Return to “MAIN MENU” screen**

Press ‘Esc’ key and return to “MAIN MENU” screen.

**8. Save and validate a changes**

According to the operation of 『Procedure to save and validate a changes』(page.22) ), make settings effective.

In the case of 8Gbps adapter(ver10.00.05.07 or later), the Login Target Filter Ext parameter setting is effective only for FC port used as a shared FC of LPAR manager or used on VMware, and default setting of that case is “pid(Enable)". In the case of other modes, it is the same regardless of setting contents when set in "no ".
In the case of 16Gbps adapter, it works according to the setting of the Login Target Filter Ext parameter regardless of mode.

# Procedure to restore default settings

Option parameter does not become effective until server is rebooted.

**1. Start “HBA-BIOS setup”**

Start HBA-BIOS setup menu.
(refer to『Procedure to start HBA-BIOS setup menu』(page.12) )

**2. Enter to “SELECT HBA” screen**

In a “SELECT OPERATION” screen, select a ‘SELECT HBA’ menu.
(refer to『SELECT OPERATION menu』(page.30) )

**3. Select a adapter port**

In a “SELECT HBA” screen, select a adapter port to set.
(refer to『SELECT HBA menu』(page.31) )

**4. Enter to “EXIT” screen**

In a “MAIN MENU” screen, select a ‘EXIT’ menu.
(refer to『MAIN MENU』(page.32) )

**5. Execute a ‘LOAD SETUP DEFAULT’**

Select a ‘LOAD SETUP DEFAULT’ and press a ‘Enter’ key.
Please reply “OK”, when confirmation message is appeared.
(refer to『EXIT menu』(page.59) )

**6. Return to “MAIN MENU” screen**

Press ‘Esc’ key and return to “MAIN MENU” screen.

**7. Save and validate a changes**

According to the operation of 『Procedure to save and validate a changes』(page.22) ), make settings effective.

# Procedure to save and validate a changes

## Procedure to save and validate a changes

**1. Enter to “SETUP CONFIRMATION” screen.**

In a any screen, it enter to “SETUP CONFIRMATION” screen by press a ‘Esc’ key several times.
(refer to『SETUP CONFIRMATION menu』(page.68) )

**2. Select a ‘YES: SAVE SETTING’**

Select a item ‘YES: SAVE SETTING‘ in “SETUP CONFIRMATION” screen, and save a settings.
(refer to『SETUP CONFIRMATION menu』(page.68) )

(*)After “SELECT HBA” screen is displayed, choose a next steps in necessary.
(a) Go to a setup procedure for another port, if you need to do.
(b) Go to a following step 3, for exit a HBA-BIOS setup menu.

**3. Enter to “EXIT SETUP” screen**

Press a ‘Esc’ key several times until “EXIT SETUP” screen is displayed.
(refer to『EXIT SETUP menu』(page.69) )

**4. Select a ‘EXIT SETUP’**

Select a ‘EXIT SETUP’ and press a ‘Enter’ key, and it reboots a system.
(refer to『EXIT SETUP menu』(page.69) )

**5. Start “HBA-BIOS setup”**

Start HBA-BIOS setup menu, referring to 『Procedure to start HBA-BIOS setup menu』(page.12).

**6. Shutdown the system**

Please shutdown the system, after “SELECT OPERATION” screen is displayed.

## Procedure to exit discarding changes

**1. Enter to “SETUP CONFIRMATION” screen.**

In a any screen, it enter to “SETUP CONFIRMATION” screen by press a ‘Esc’ key several times.
(refer to『SETUP CONFIRMATION menu』(page.68) )

**2. Select a ‘NO : NOT SAVE’**

Select a item ‘NO : NOT SAVE‘ in “SETUP CONFIRMATION” screen.
(refer to『SETUP CONFIRMATION menu』(page.68) )

(*)After “SELECT HBA” screen is displayed, choose a next steps in necessary.
(a) Go to a setup procedure for another port, if you need to do.
(b) Go to a following step 3, for exit a HBA-BIOS setup menu.

**3. Shutdown the system**

Please shutdown the system, after “SELECT HBA” screen is displayed.

# Procedure to refer HBA-BIOS error information

## Procedure to refer a Error Message Information

This procedure is available only on HBA-BIOS version 03.00.00 or later.

**1. Start “HBA-BIOS setup”**

Start HBA-BIOS setup menu.
(refer to『Procedure to start HBA-BIOS setup menu』(page.12) )

**2. Enter to “SELECT HBA” screen**

In a “SELECT OPERATION” screen, select a ‘SELECT HBA’ menu.
(refer to『SELECT OPERATION menu』(page.30) )

**3. Select a adapter port**

In a “SELECT HBA” screen, select a adapter port to set.
(refer to『SELECT HBA menu』(page.31) )

**4. Enter to “SET ADVANCED SETTINGS” screen**

In a “MAIN MENU” screen, select a ‘SET ADVANCED SETTINGS’ menu.
(refer to『MAIN MENU』(page.32) )

**5. Enter to “ERROR LOGGING” screen**

In a “SET ADVANCED SETTINGS” screen, select a ‘ERROR LOGGING’ menu.
(refer to『SET ADVANCED SETTINGS menu』(page.45) )

**6. Enter to “DISPLAY ERROR MESSAGE INFORMATION” screen**

In a “ERROR LOGGING” screen, select a ‘DISPLAY ERROR MESSAGE INFORMATION’ menu.
(refer to『ERROR LOGGING menu』(page.49) )

**7. Select the list of ERROR MESSAGE INFORMATION**

Select the ERROR MESSAGE INFORMATION from the list to which display detail.
Press ‘Enter’ key, and enter to “ERROR MESSAGE DETAIL” screen.
(refer to『DISPLAY ERROR MESSAGE INFORMATION menu』(page.57) )

**8. Check the detail information**

The detail information of the selected error message information is displayed.
(refer to『ERROR MESSAGE DETAIL menu』(page.58) )

**9. Return to “SELECT HBA” screen.**

press a ‘Esc’ key several times, until it returns to “SELECT HBA” screen.

> (*)After “SELECT HBA” screen is displayed, choose a next steps in necessary.
> (a) Select a another port, if you need to do.
> (b) Go to a following step 10, for exit a HBA-BIOS setup menu.

**10. Shutdown the system**

Please shutdown the system, after “SELECT HBA” screen is displayed.

# Procedure to erase a Log Data

This procedure is available only on HBA-BIOS version 03.00.00 or later.

**1. Enter to “ERROR LOGGING” screen**

Referring to 『Procedure to refer a Error Message Information』(page.23), enter “ERROR LOGGING” screen.

**2. Set ‘ERASE LOG DATA’ to ‘Enable’**

**2-1. Select ‘ERASE LOG DATA’**

Move the cursor to the line of a ‘ERASE LOG DATA’.
(refer to『ERROR LOGGING menu』(page.49) )

**2-2. Set ‘ERASE LOG DATA’ to ‘Enable’**

Press a ‘Enter’ key several times until it is displayed with ‘ENABLE’.
(refer to『ERROR LOGGING menu』(page.49) )

**3. Enter to “SETUP CONFIRMATION” screen.**

In a any screen, it enter to “SETUP CONFIRMATION” screen by press a ‘Esc’ key several times.
(refer to『SETUP CONFIRMATION menu』(page.68) )

**4. Select a ‘YES: SAVE SETTING’**

Select a item ‘YES: SAVE SETTING‘ and press ‘Enter’ key, it erases a Log Data.
(refer to『SETUP CONFIRMATION menu』(page.68) )

(*)After “SELECT HBA” screen is displayed, choose a next steps in necessary.
(a) Select a another port, if you need to do.
(b) Go to a following step 5, for exit a HBA-BIOS setup menu.

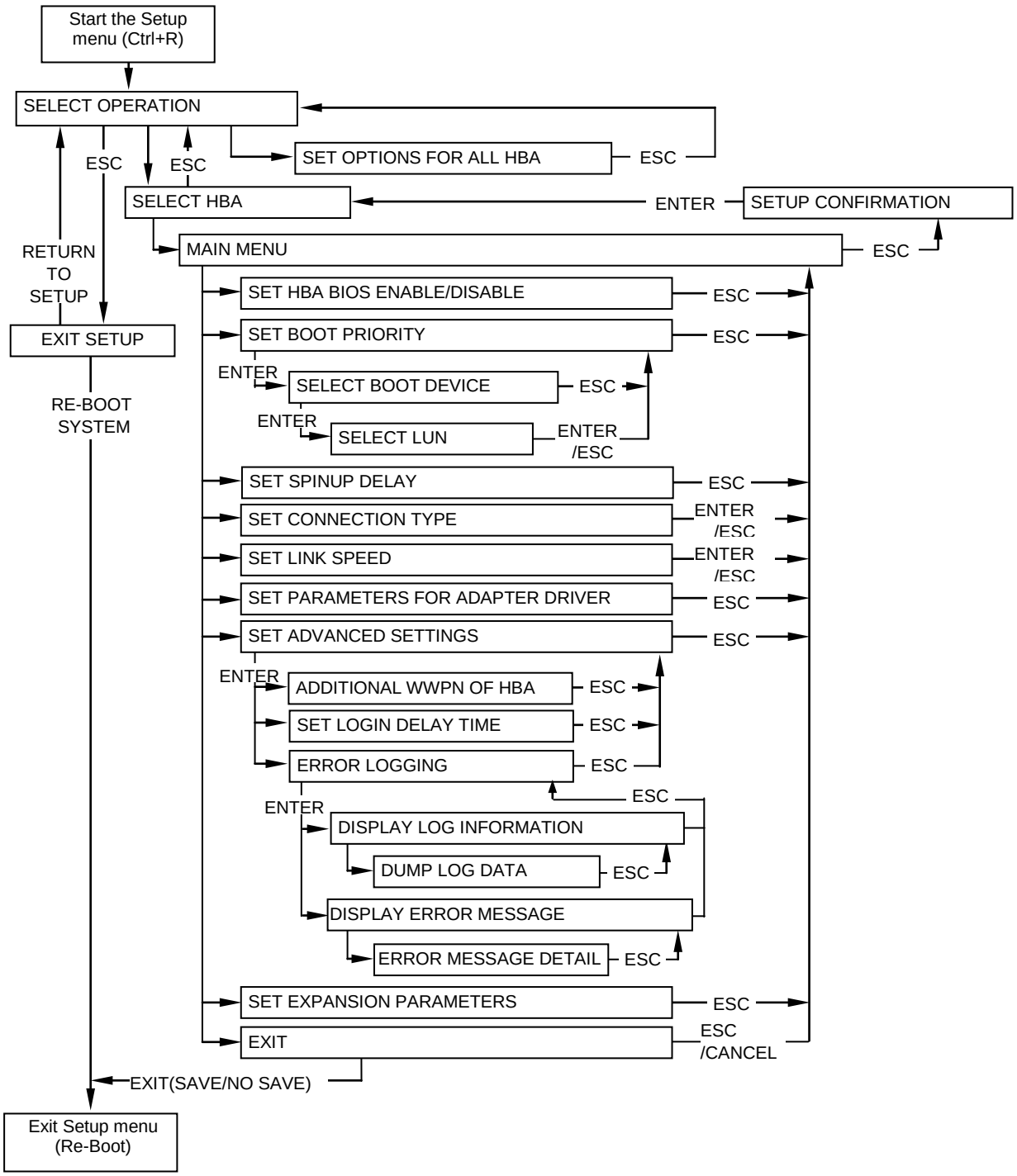
**5. Shutdown the system**

Please shutdown the system, after “SELECT HBA” screen is displayed.

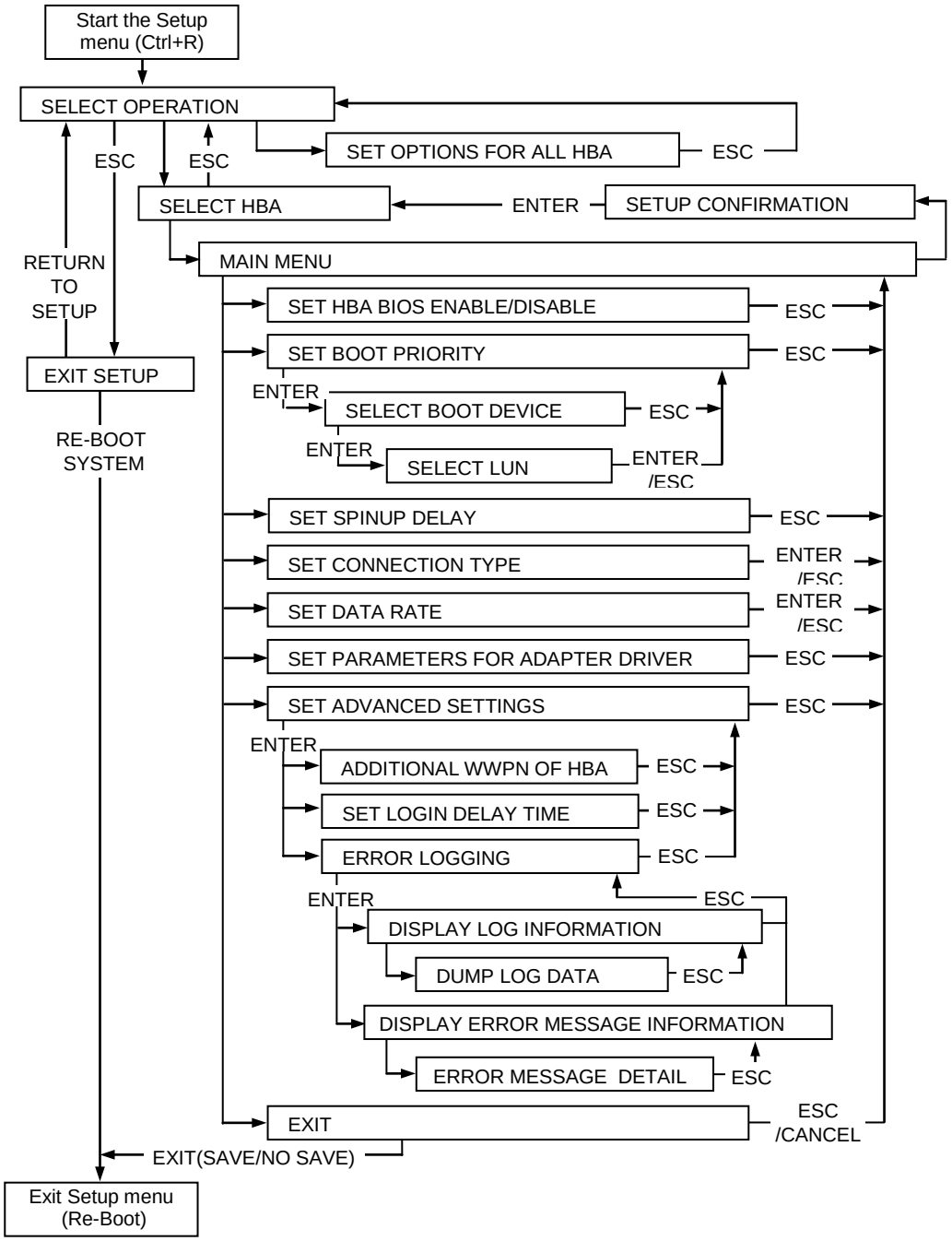
# Structure of setup menu

The structure of HBA BIOS setup menu is shown as follows. This structure varies depending on HBA-BIOS version.

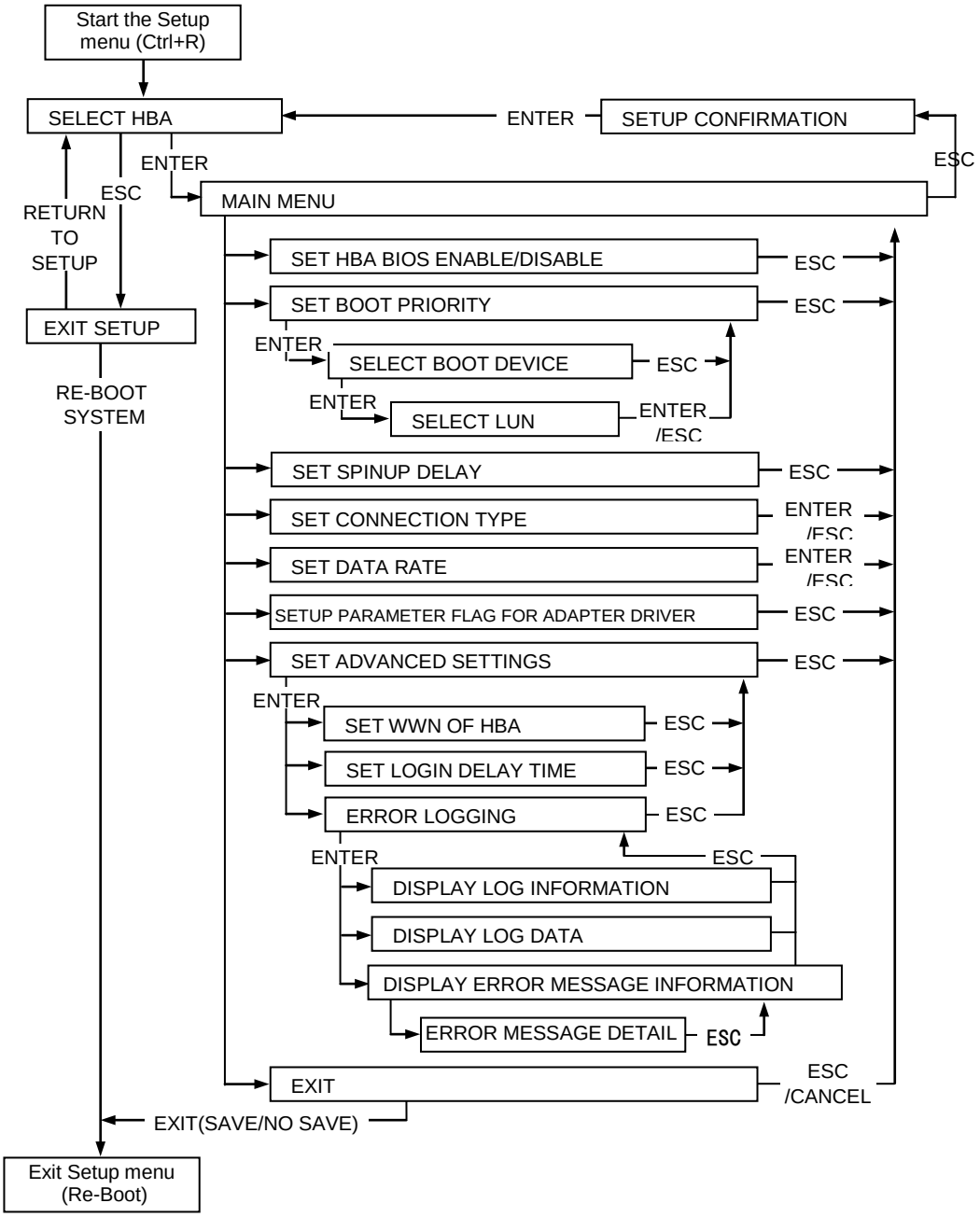
## HBA-BIOS ver10.00.05.07 or later



# HBA-BIOS ver10.00.00.00 or later



# HBA-BIOS ver04.02.00 or earlier



# Setup menu list

## Contents of Setup Menu

| Setup Menu Name | Contents | Pages |
|---|---|---|
| SELECT OPERATION | Specify changing parameters to all ports or the selected port. | P.30 |
| SELECT HBA | List all HBA ports mounted on the system and select HBA ports for changing settings. 16 HBA ports can be displayed at once and you can move the cursor using arrow keys. | P.31 |
| MAIN MENU | Main Menu screen for selecting setup items. | P.32 |
| SET HBA BIOS ENABLE/DISABLE | Submenu for ENABLE or DISABLE setting of “HBA BIOS (Boot Function)” | P.35 |
| SET BOOT PRIORITY | Submenu for ENABLE/DISABLE setting of “Boot Priority” and “Boot Device List”<br>Pressing [ENTER] key when selecting the entry of Boot Device List to shows its submenu, “SELECT BOOT DEVUCE “ | P.36 |
| SELECT BOOT DEVICE | Select the target port to be registered into “Boot Device List”.<br>Scan target port connected to the HBA port and display its result.<br>The number of Target port displayed at once is 16 and you can select target port with the arrow keys.<br>Pressing [ENTER: key when selecting target port shows its submenu, “SELECT LUN”. | P.38 |
| SELECT LUN | Show the LUN of the target port selected in “SELECT BOOT DEVICE” screen.<br>Scan LUN information of the target port and display its result.<br>The number of Target port displayed at once is 16 and you can select target port with the arrow keys. | P.39 |
| SET SPINUP DELAY | Submenu for ENABLE/DISABLE setting of “Spinup Delay” and “Spinup Delay Time”. | P.40 |
| SET CONNECTION TYPE | Submenu for “Connection Type” setting. | P.42 |
| SET LINK SPEED(SET DATA RATE) | Submenu for “Link Speed”(“Data Rate”) setting. | P.43 |
| SET PARAMETERS FOR ADAPTER DRIVER<br>(SETUP PARAMETER FLAG FOR ADAPTER DRIVER) | Submenu for “Persistent Binding” and “Force Default Parameter setting for OS driver”. | P.44 |
| SET ADVANCED SETTINGS | Sub menu for “Advanced Settings” | P.45 |
| ADDITIONAL WWPN OF HBA | Display and modify “Additional WWPN of FC Port”. | P.47 |
| SET LOGIN DELAY TIME | Display and modify “Login Delay Time”. | P.48 |
| ERROR LOGGING | Sub menu for “Error Logging Enable”, “Log entry Overwrite mode” and “Error Break” settings. You can also display the log and erase the log using this submenu. | P.49 |
| DISPLAY LOG INFORMATION | Show detailed logs stored in FLASH-ROM | P.52 |
| DUMP LOG DATA / DISPLAY LOG DATA | Show dumped image of the detailed log. | P.54, P.55 |
| DISPLAY ERROR MESSAGE INFORMATION | Show all logs stored in FLASH-ROM | P.57 |
| ERROR MESSAGE DETAIL | Show detailed data of selected HBA-BIOS log | P.58 |
| SET EXPANSION PARAMETERS | Submenu for “16GExt” type parameters. | P.63 |
| EXIT | Setup menu for exit. | P.59 |
| SET OPTIONS FOR ALL HBA | Submenu for changing parameter settings to all FC ports. Note that this menu stores parameters to FLASH-ROM. | P.65 |
| SETUP CONFIRMATION | This menu is displayed when returning from “MAIN MENU” to “SELECT HBA” submenu.<br>This menu make you confirm whether you store the changes in submenu to FLASH-ROM or discard the changes. | P.68 |
| EXIT SETUP | This menu is displayed when pressing [Esc] key at “SELECT HBA” submenu.<br>This menu makes you confirm whether reboot the system or return to “MAIN NEMU”. | P.69 |

# Restrictions on maximum port numbers on HBA-BIOS

**【Ver10.00.00.00～10.00.04.06】**

You can set BOOT port only on one of the first 32 ports identified by HBA-BIOS. Therefore, 33rd or later port can not be specified for the items shown below.

| # | Parameter | Corresponding HBA-BIOS frame | Details |
|---|---|---|---|
| 1 | HBA BIOS ENABLE/DISABLE | SET HBA BIOS ENABLE/DISABLE | SET HBA BIOS ENABLE/DISABLE menu |
| 2 | BOOT PRIORITY | SET BOOT PRIORITY | SET BOOT PRIORITY menu |

**【Ver10.00.05.00～】**

You can set boot port on the all ports identified by HBA-BIOS.
SAN boot is possible from all ports if the number of FC ports that the HBA BIOS setting is set to Enable is below 32 ports.

# Key Operations for the setup menu

In the setup menu, use the following keys to select and edit settings.

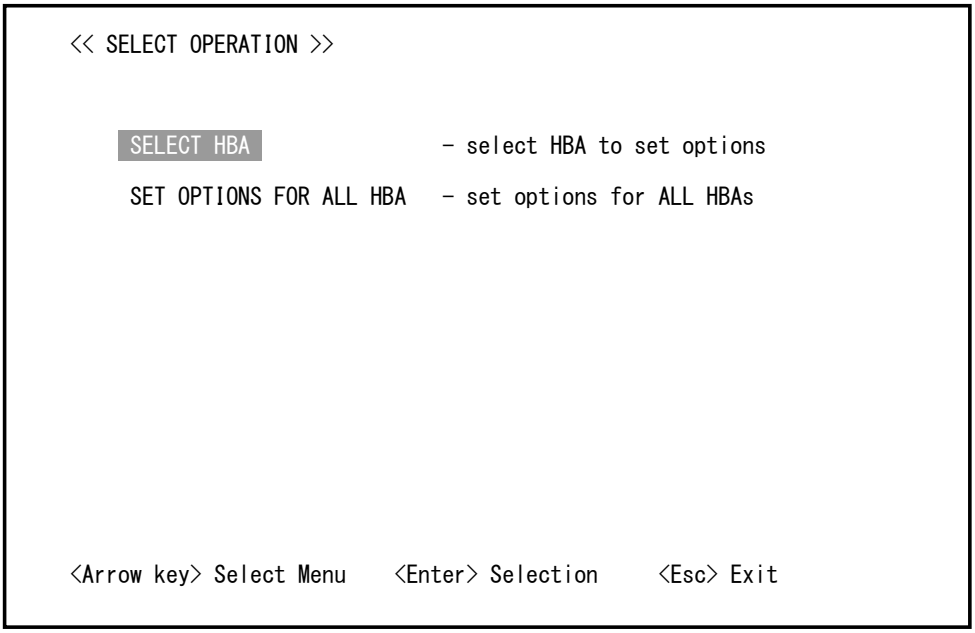
| Key | Function |
|---|---|
| [ ↑ ], [ ↓ ], [→ ], [←] | Move the cursor up or down in the menu.<br>Selected item is highlighted. |
| [Enter] | Display the submenu.  Execute a command. |
| [Esc] | Exit the submenu. Move to the previous menu. |
| Highlighted line | -Top line is highlighted when the menu is displayed just after pressing [CTRL]+[R]<br>- Submenu is highlighted when returning from submenu. |

# Detailed description of Setup Menu

## SELECT OPERATION menu

### 【Version 10.00.00.00 or later】

This menu specifies whether you apply the subsequent parameter settings to all ports or only on the selected port. This menu is displayed only when HBA-BIOS version is 10.00.00.0 or later.




(*1) The effective keys are as follows.

(*1-1) The above arrow key ‘↑’ and down arrow key ‘↓’:

These keys allow you to select a menu. The reversing display shows the menu that you are selecting now.

(*1-2) ‘Enter’:

The selection becomes be effective by pressing 'Enter' on the menu to which the display is reversed and it moves to the individual screen for the menu selected.

(*1-3) ‘ESC’ key:

It moves to " EXIT SETUP " to end all the settings by pressing ' ESC '.

(*2) Outline of menu

(*2-1) SELECT HBA

List all HBA ports mounted on the system and select HBA ports for changing settings.

(*2-2) SET OPTIONS FOR ALL HBA

Submenu for changing parameter settings to all FC ports.

(*3) Line of reversing display

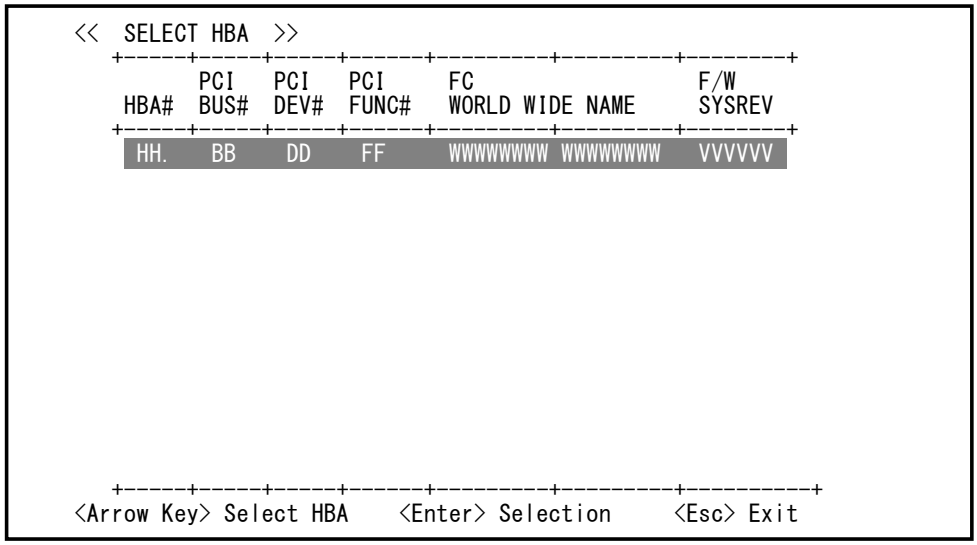
(*3-1) When this screen is displayed first, the top line is displayed in reverse.

(*3-2) When returning from the selected menu frame, the menu line is displayed in reverse.

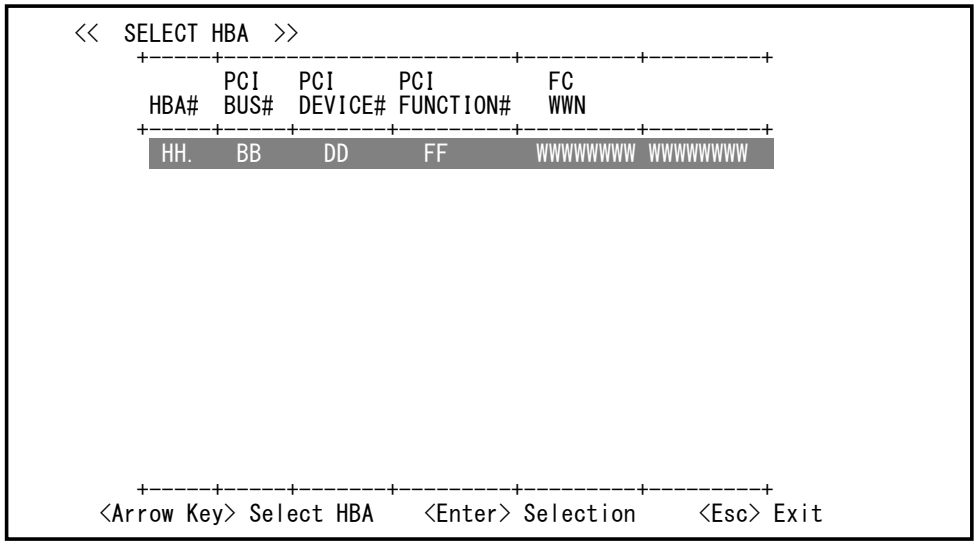
# SELECT HBA menu

Select FC port for executing setup. This menu varies depending on HBA-BIOS version.

**【Version 03.03.00 or later】**




**【Version 03.02.00 or earlier】**




(*1) HH : HBA Adapter number
(*2) BB / DD / FF : PCI Bus number / Device number / Function number
(*3) WWWWWWWW WWWWWWWW : World Wide Port Name
(*4) VVVVVV : SYSREV of HBA Firmware (Version 03.03.00 or later)
(*5) The effective keys are as follows.

(*5-1) The above arrow key ‘↑’ and down arrow key ‘↓’:
These keys allow you to select an adapter. The reversing display shows the FC port of Gigabit Fibre Channel Board that you are selecting now.

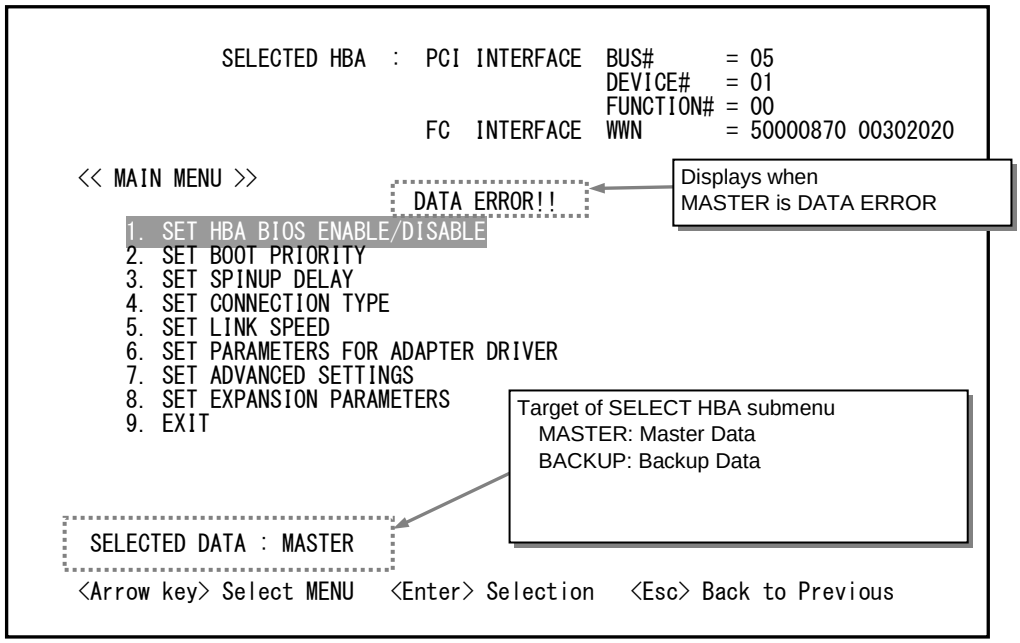
(*5-2) ‘Enter’:
The selection becomes be effective by pressing 'Enter' on the adapter to which the display is reversed and it moves to " MAIN MENU " for setting the selected FC port of Gigabit Fibre Channel Board.

(*5-3) ‘ESC’ key:
It moves to " EXIT SETUP " to end all the settings by pressing ' ESC '.

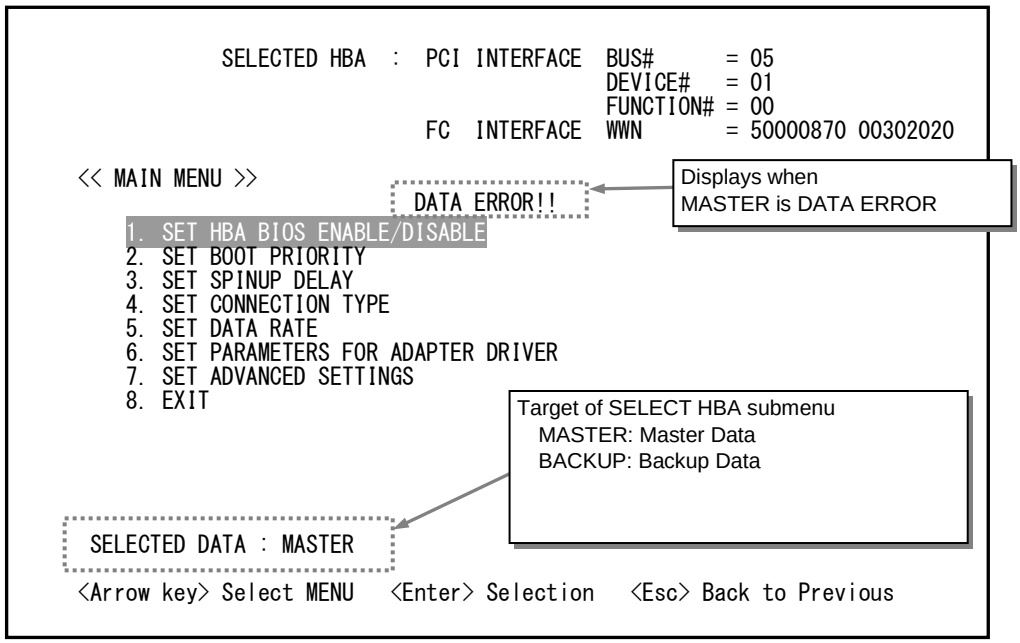
# MAIN MENU

Main Menu for setup. Selects each items to be changed.
This menu varies depending on HBA-BIOS version.

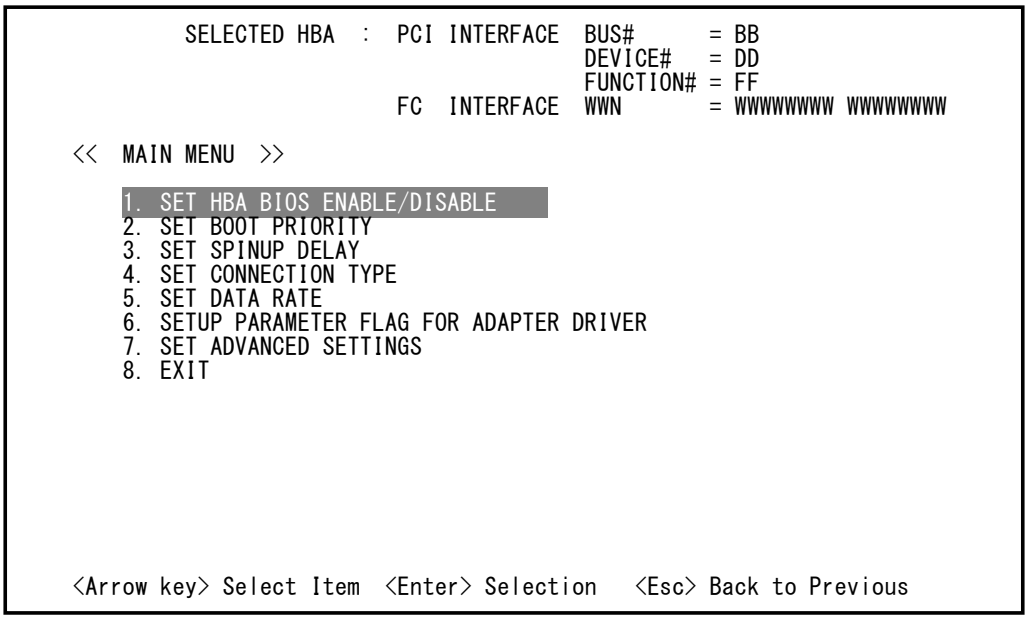
**【Version 10.00.05.07 or later】**



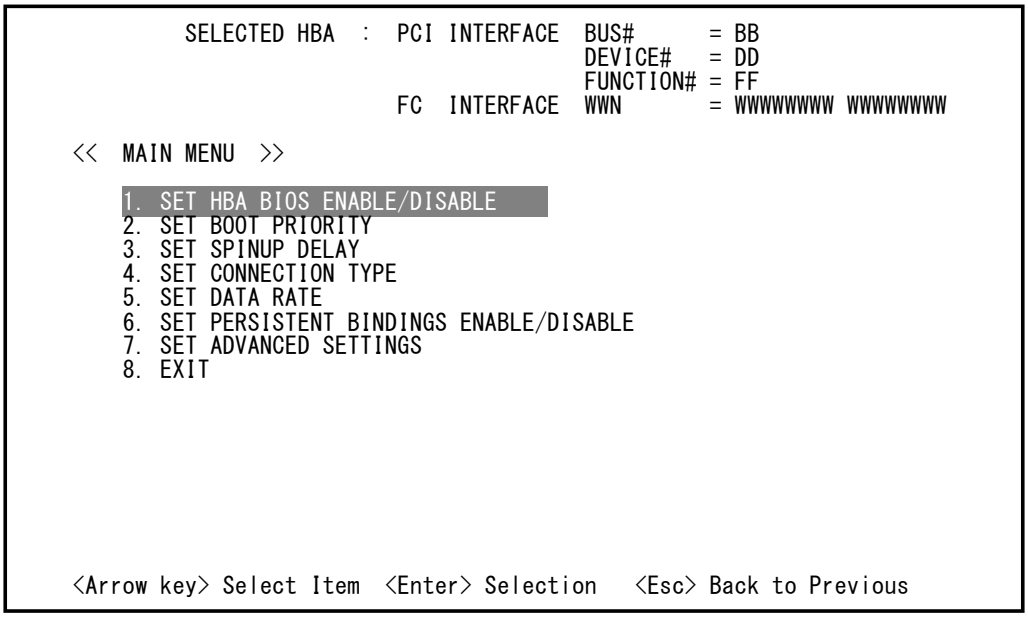

**【Version 10.00.00.00 or later】**



**【Version 02.02.00 or later】**




**【Version 02.01.00 or earlier】**



(*1) The effective keys are as follows.

(*1-1) The above arrow key ‘ ↑ ’ and down arrow key ‘ ↓ ’:

These keys allow you to select a menu. The reversing display shows the menu that you are selecting now.

(*1-2) ‘Enter’:

The selection becomes be effective by pressing 'Enter' on the menu to which the display is reversed and it moves to the individual screen for the menu selected.

(*1-3) ‘ESC’ key

‘ESC’ key allows you to return to the previous screen. " SETUP CONFIRMATION " is displayed before it returns to the previous screen.

(*2) The outlines of the menu in " MAIN MENU " are as follows.

(*2-1)「1. SET HBA BIOS ENABLE/DISABLE」

It enters the " SET HBA BIOS ENABLE/DISABLE " screen

(*2-2)「2. SET BOOT PRIORITY」

It enters the " SET BOOT PRIORITY " screen.

(*2-3)「3. SET SPINUP DELAY」

Display " SET SPINUP DELAY " screen.

(*2-4)「4. SET CONNECTION TYPE」

It enters the " SET CONNECTION TYPE " screen.

(*2-5)「5. SET LINK SPEED」(「5. SET DATA RATE」)

It enters the " SET LINK SPEED "(" SET DATA RATE ") screen.

(*2-6)「6. SET PARAMETERS FOR ADAPTER DRIVER」(Version 10.00.00.00 or later)

It enters the " SET PARAMETERS FOR ADAPTER DRIVER " screen.

(*2-7)「6. SETUP PARAMETER FLAG FOR ADAPTER DRIVER」(Version 02.02.00 or later)

It enters the " SETUP PARAMETER FLAG FOR ADAPTER DRIVER " screen.

(*2-8)「7. SET ADVANCED SETTINGS」

It enters the " SET ADVANCED SETTINGS " screen.

(*2-9)「8. SET EXPANSION PARAMETERS」(Version 10.00.05.07 or later)

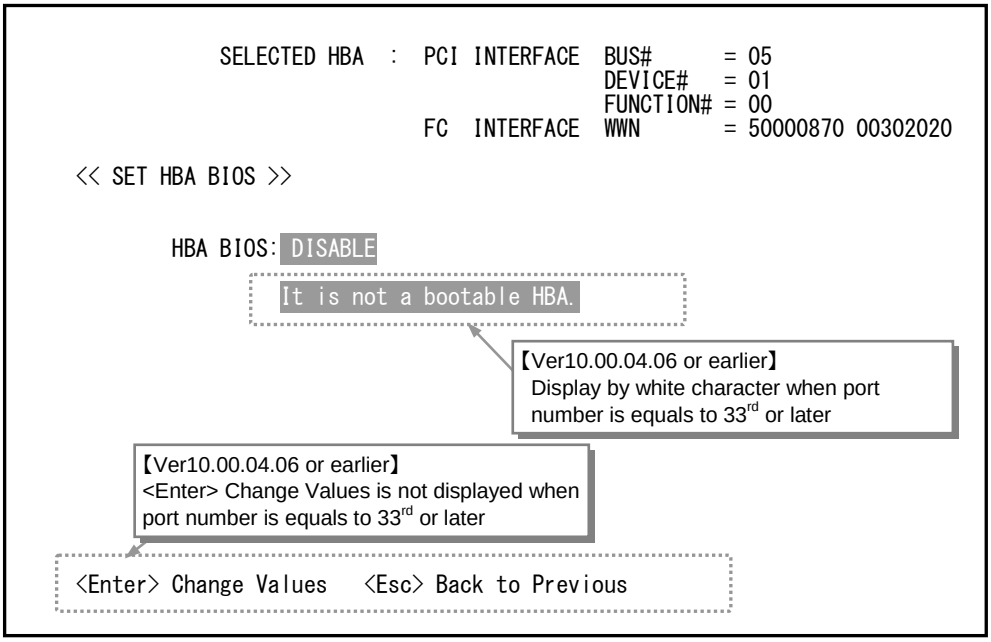
It enters the " SET EXPANSION PARAMETERS " screen.

(*2-10)「8. EXIT」

It enters the " EXIT " screen.

# SET HBA BIOS ENABLE/DISABLE menu

Set ENABLE or DISABLE of HBA BIOS (Boot Function).




(*1) The effective keys are as follows.

(*1-1) 'Enter':

"ENABLE" and "DISABLE" are alternately displayed by pressing 'Enter'. The effective setting is displayed.

(*1-2) 'ESC' key:

It returns to the previous screen, keeping the set content.

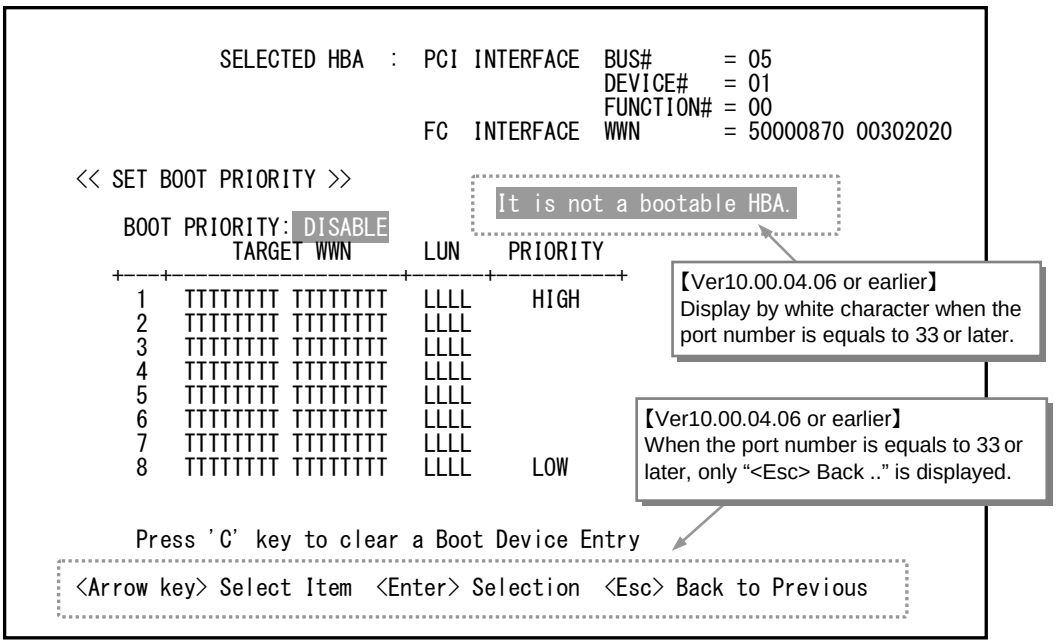
(*2) Default setting = "DISABLE"

**! Note**

Note that if you change HBA BIOS form DISABLE to ENABLE, you have to reboot the system. You mush change other settings after reboot.

# SET BOOT PRIORITY menu

Set ENABLE or DISABLE of “Boot Priority List” and set priority of the boot device.




(*1) The effective keys are as follows.

(*1-1) The above arrow key ‘↑’ and down arrow key ‘↓’:

These keys allow you to select a line that you configure. The reversing display shows the line that you are selecting now.

(*1-2) 'Enter':

(a)If you press ‘Enter’ when the display of "ENABLE" or "DISABLE" is reversed:

"ENABLE" and "DISABLE" are alternately displayed by pressing 'Enter'. The effective setting is displayed. The boot priority list is effective when "ENABLE" is specified, and HBA-BIOS detects the device from the list sequentially. The top device of the list is the highest priority device and the priority level lowers sequentially toward the lower direction of the list. Moreover, only the device shown in the list becomes be effective as a boot device.

The boot priority list is ineffective when " DISABLE " is specified and all detected devices are registered in the order that Gigabit Fibre Channel Board detects as a boot device. The device that detected first is the highest priority and the priority level lowers sequentially. When either "ENABLE" or "DISABLE" is selected, HBA-BIOS has a limitation of 8 devices/HBA and 31 devices/system.

(b) If you press 'Enter' when the display of the boot priority list is reversed:

It moves to "(5) SELECT BOOT DEVICE " to select the FC port of the boot device

(*1-3) ‘ESC’ key

It returns to the previous screen, keeping the set content.

(*1-4) 'C' Key

The setting of the line to which the display is reversed is cleared.

(*1-5) 'Ctrl+A' Key

This key is effective only HBA-BIOS version 03.02.02 or later.

Hold down the [Ctrl] key and press the [A] key when any BOOT DEVICE LIST is selected, it changes into a manual input mode.

In a manual input mode, you can type in the WWPN, LUN of boot disk directly.

For exit a manual input mode with holding changes, press ENTER key. For exit with discarding changes, press ESC key.

(*2) Default setting of "BOOT PRIORITY" = "DISABLE"

**Note【 FIRMWARE Version 30-04-39 】**

When the following conditions are met concurrently, please set boot priority by the procedure with "Procedure to set a Boot Priority manually(page.16)".

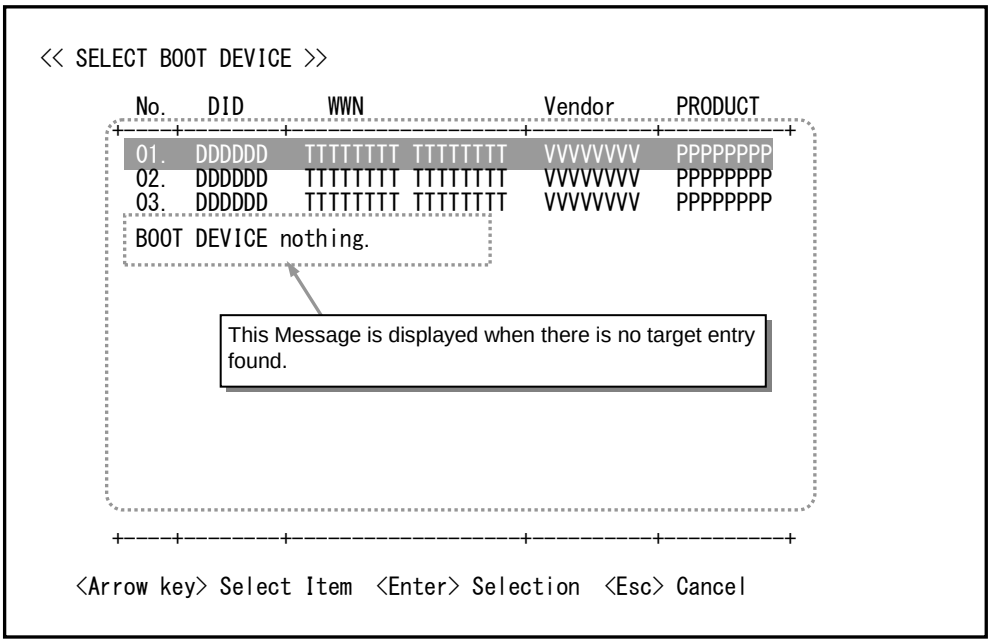
(1)Only 8Gbps Hitachi Fibre Channel adapter is installed on the system, and a firmware version of 8Gbps adapter is "30-04-39".

(2)The configuration that 8Gbps Hitachi Fibre Channel adapter is connected with Hitachi Universal Storage Platform, Hitachi Virtual Storage Platform, Hitachi Network Storage Controller or the configuration that the number of Logical Units connected per Target FC port are equal or over 256.

When you use hardware memory dump function of Hitachi Compute Blade, please register Target port and LU of the disk which made a DUMP PARTITION with BOOT PRIORITY setting. Please register the DUMP PARTITION disk with the priority that is lower than a BOOT disk.

# SELECT BOOT DEVICE menu

You can choose the target port to be registered in Boot Priority List as boot device among listed entries. If you choose target port and [ENTER] key, SELECT LUN submenu is displayed.




(*1) The effective keys are as follows.

(*1-1) The above arrow key ‘↑’ and down arrow key ‘↓’:

These keys allow you to select a FC port of the boot device. The reversing display shows the FC port that you are selecting now.

(*1-2) 'Enter':

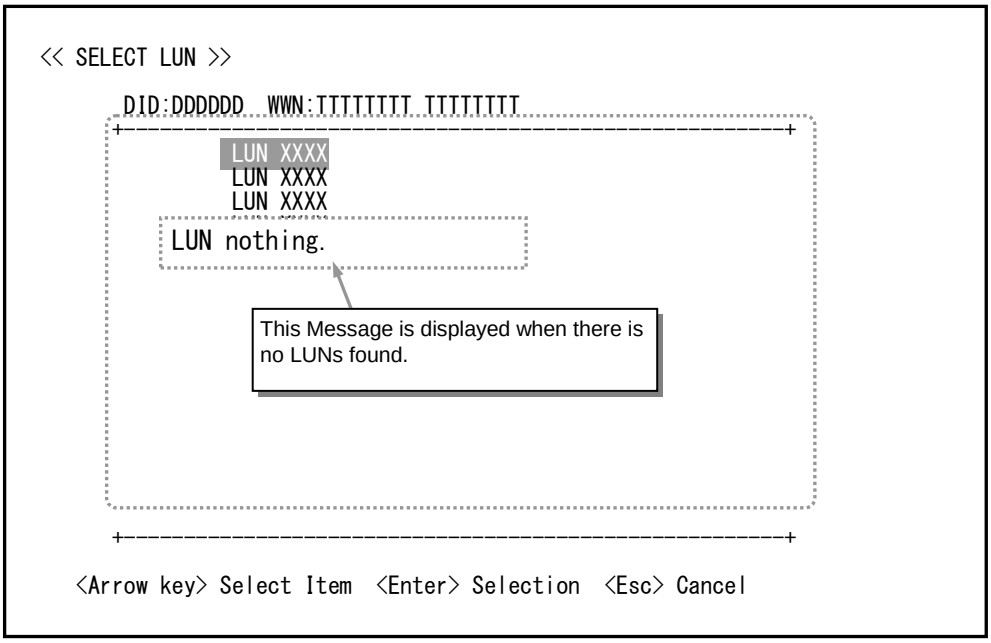
It moves to " SELECT LUN " to select the boot device.

(*1-3) ‘ESC’ key :

It returns to the previous screen, without keeping the set content.

# SELECT LUN menu

You can select LUN of a boot device.
Scan LUNs connected to selected target port in SELECT BOOT DEVICE menu.
You can choose LUN to be registered in Boot Priority List.




(*1) The effective keys are as follows.

(*1-1) The above arrow key ‘ ↑ ’ and down arrow key ‘ ↓ ’:
These keys allow you to select the boot device (LUN). The reversing display shows the boot device (LUN) that you are selecting now.

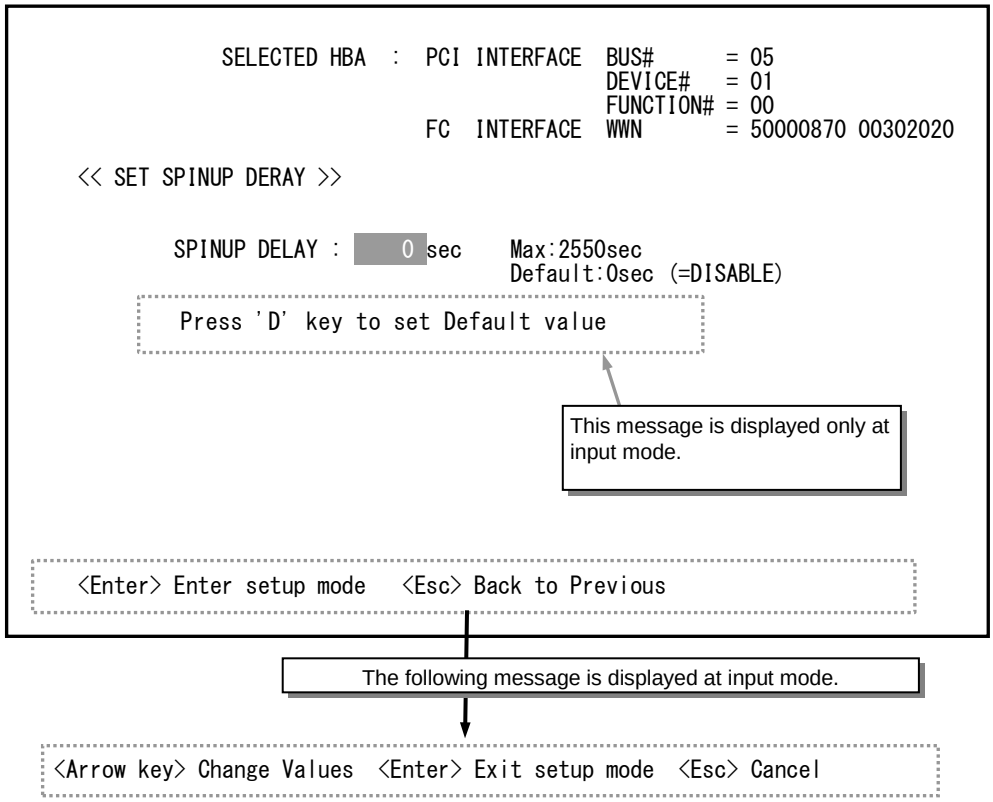
(*1-2) 'Enter' :
The selection becomes effective by pressing 'Enter' on the boot device (LUN) and it returns to " SET BOOT PRIORITY ". The selected boot device is displayed in the list.

(*1-3) ‘ESC’ key :
It returns to the “ SET BOOT PRIORITY ” screen, without keeping the set content.

# SET SPINUP DELAY menu

Set ENABLE/DISABLE of “Spinup Delay” and “Spinup Delay Time”.

**【Version 10.00.00.00 or later】**




(*1) The effective keys are as following.

(*1-1) ‘Enter’ key:

Whenever pressing ‘Enter’ key when the cursor is on “SPINUP DELAY” line, Start/End of the input mode is switched.

(*1-2) ‘ESC’ key :

(a) If you press ‘ESC’ when it is not in input mode:

It returns to the previous screen, keeping the set content.

(b) If you press ‘ESC’ when it is in input mode:

A set value is preserved and the input mode is ended.

(*1-3) The above arrow key ‘↑’ and down arrow key ‘↓’:

It is effective only in input mode and you can use them to change a set value.

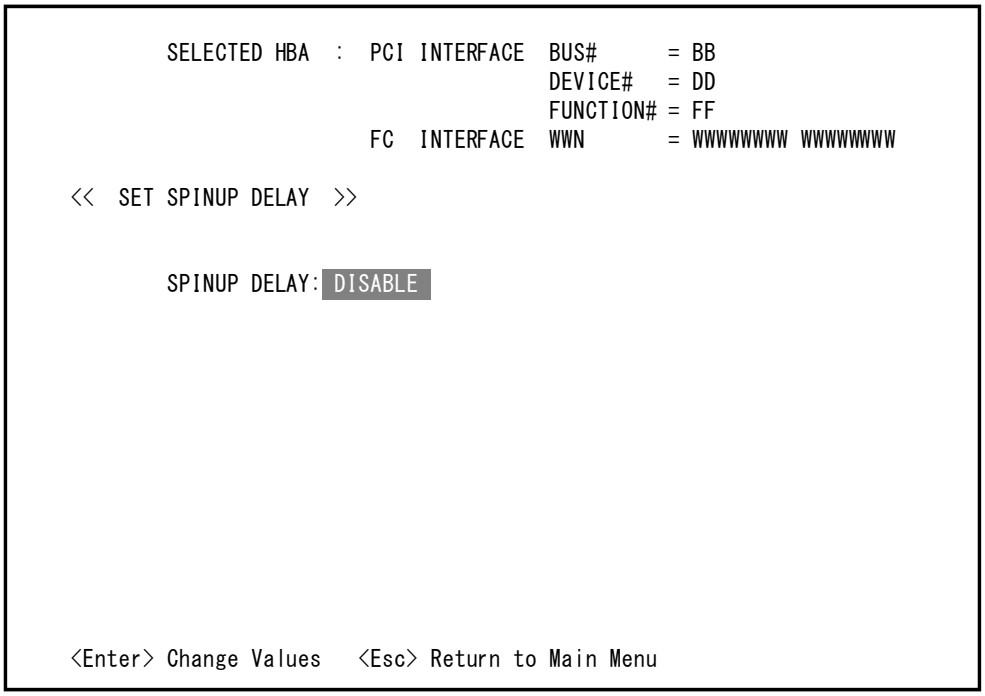
(*1-4) ‘D’ key and ‘d’ key:

It is effective only in input mode.

A set value is returned to the default value and the input mode is ended.

(*2) default setting = “0” s(DISABLE)

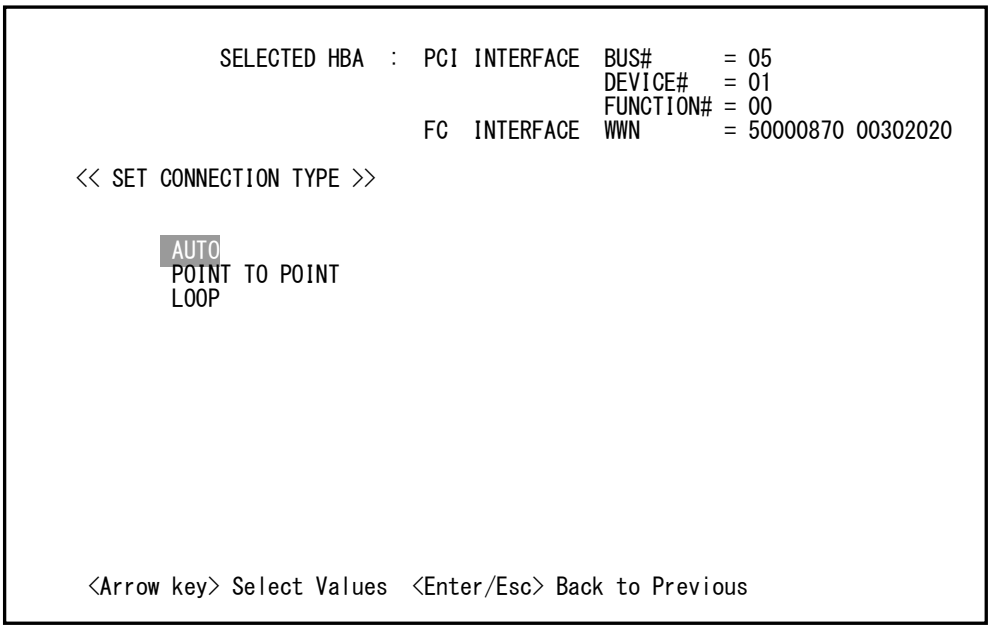
**【Version 04.02.00 or earlier】**




(*1) The effective keys are as follows.
(*1-1) 'Enter':
"ENABLE" and "DISABLE" is alternately displayed by pressing 'Enter'.
(*1-2) 'ESC' key:
It returns to the previous screen, keeping the set content.
(*2) default setting = "DISABLE"

# SET CONNECTION TYPE menu

Set connection type of FC interface.




(*1) The effective keys are as follows.

(*1-1) The above arrow key ‘↑’ and down arrow key ‘↓’:

These keys allow you to select a connection type of the FC interface. The reversing display shows the connection type of the FC interface that you are selecting now.

(*1-2) 'Enter':

The Connection type to which the display is reversed becomes effective by pressing 'Enter' and it returns to the previous screen.

(*1-3) ‘ESC’ key:

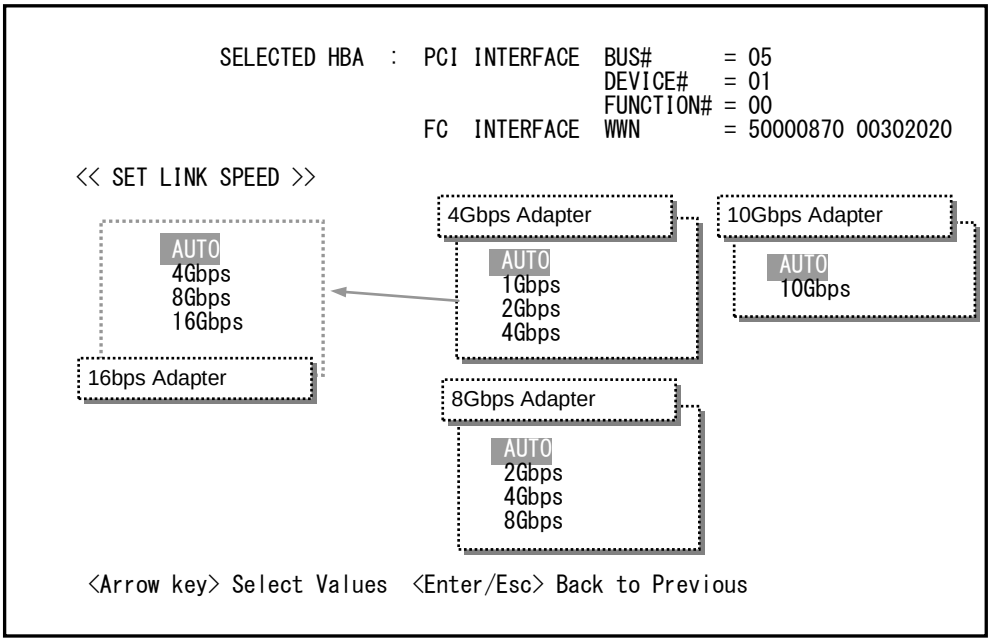
It returns to the previous screen, keeping the set content.

(*2) default setting = "AUTO"

About connection type setting to FC port used as a shared FC of LPAR manager or used on VMware, refer to clause “About connection type setting to FC port used as a shared FC of LPAR manager or used on VMware.” of section “Precautions” of Chapter 2.

# SET LINK SPEED menu(SET DATA RATE menu)

Sets link speed(data rate) of FC interface.




(*1) The effective keys are as following.

(*1-1) The above arrow key ‘↑’ and down arrow key ‘↓’:

These keys allow you to select the data transfer rate(link speed) of the FC interface. The reversing display shows the FC interface’s data transfer rate(link speed) that you are selecting now.

(*1-2) ‘Enter’:

The FC interface’s data transfer rate(link speed) which the display is reversed becomes effective by pressing 'Enter' and it returns to the previous screen.

(*1-3) ‘ESC’ key:

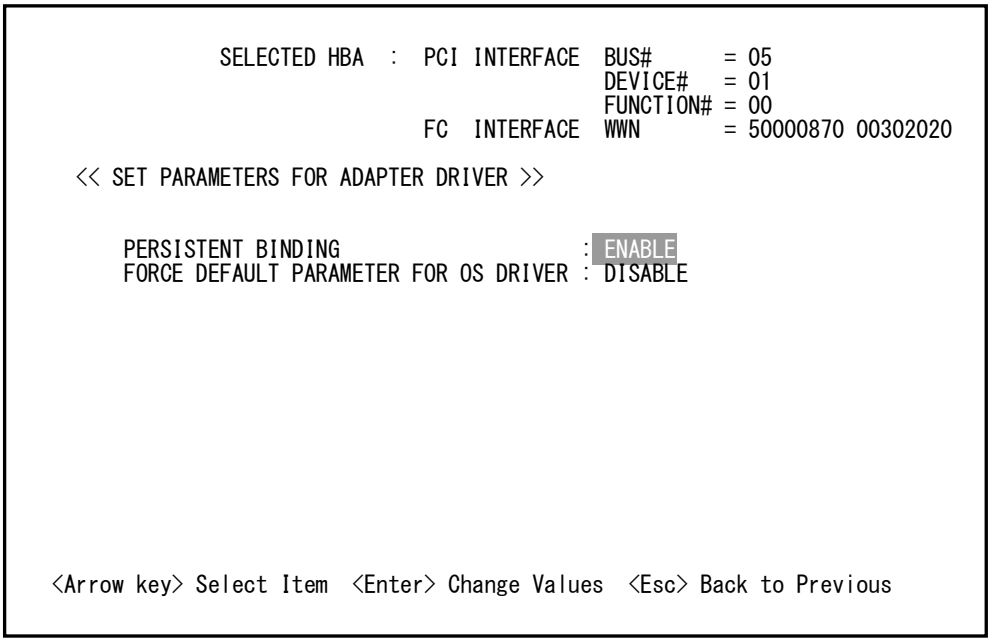
It returns to the previous screen, keeping the set content.

(*2) default setting = "AUTO"

Note that set the fixed data rate(link speed) for FC expansion card mounted on Hitachi Compute Blade 320 and do not set ‘Auto’. For detail explanation, see section about FC HBA settings on user’s manual supplied with Hitachi Compute Blade 320 system.
In addition, it is not necessary to set data rate(link speed) setting again for the FC expansion card mounted on Hitachi Compute Blade 320 shipped after July 12, 2008, because fixed data rate(link speed) is already set to the FC expansion card. However, when you initialize setting data, it is necessary to set it in fixed data rate(link speed) again for the card because it returns to ‘Auto’ setting.

# SET PARAMETERS FOR ADAPTER DRIVER and SETUP PARAMETER FLAG FOR ADAPTER DRIVER menu

Specify DISABLE or ENABLE of Persistent Binding function and Force Default Parameter to OS driver.
This menu is available only on HBA-BIOS version 02.02.00 or later.

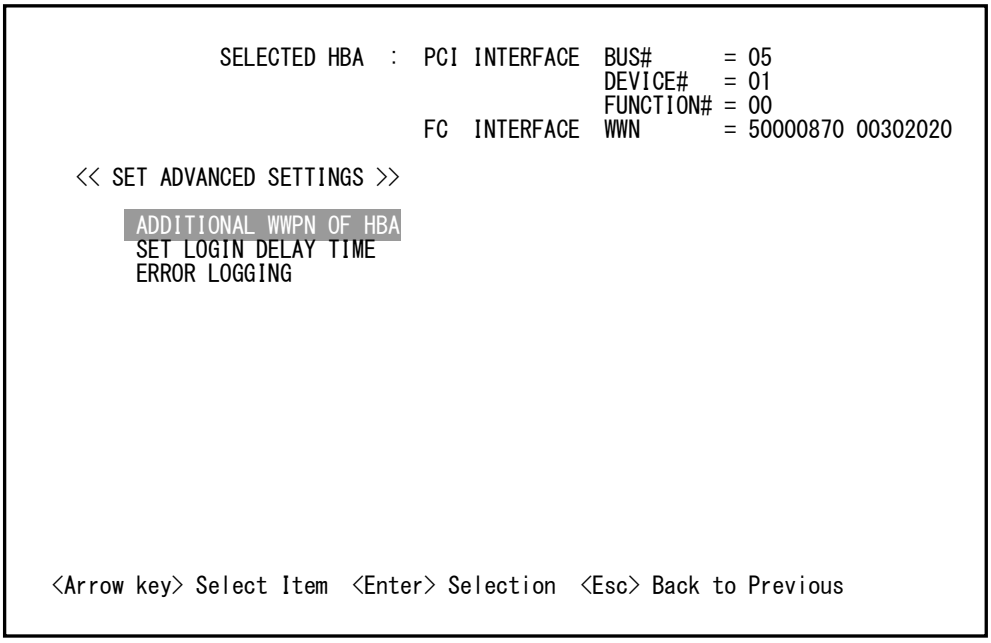



(*1) The effective keys are follows.
(*1-1) The above arrow key ‘↑’ and down arrow key ‘↓’:
These keys allow you to select an item. The reversing display shows the item that you are selecting now.
(*1-2) 'Enter':
"ENABLE" and "DISABLE" is alternately displayed by pressing 'Enter'. The effective setting is displayed.
(*1-3) ‘ESC’ key:
It returns to the previous screen, keeping the set contents.
(*2) The outlines of the menu are as follows.
(*2-1) ”PERSISTENT BINDINGS”
Please set ENABLE or DISABLE the Persistent Binding function for the adapter.
Default setting = "ENABLE".
(*2-2) ”FORCE DEFAULT PARAMETER”
Force adapter driver to use default setup value, instead of a value that set by SETUP TOOL.
Default setting = "DISABLE".

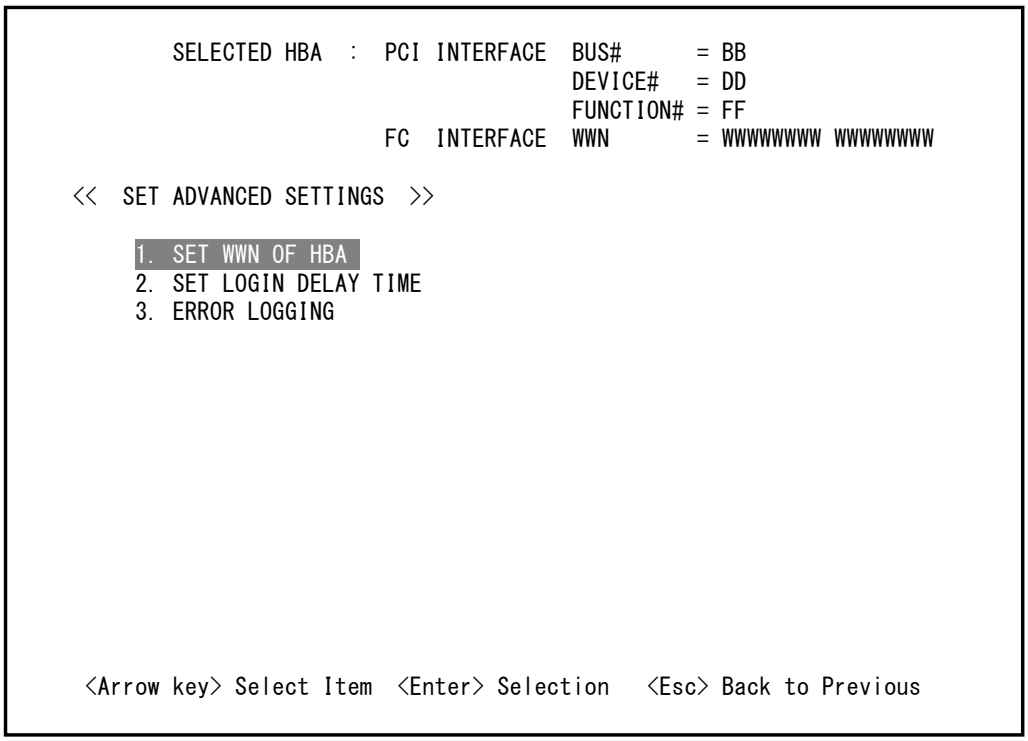
# SET ADVANCED SETTINGS menu

Select advanced settings.
This menu is available only on HBA-BIOS version 02.00.00 or later. This menu varies depending on HBA-BIOS version.

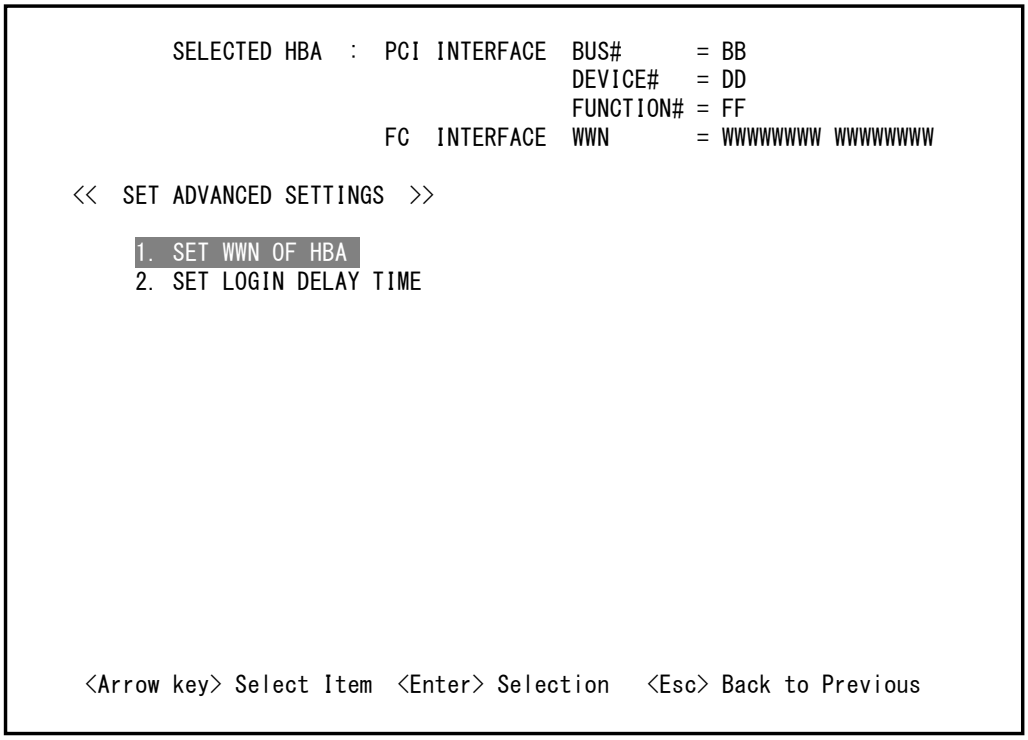
**【Version 10.00.00.00 or later】**




**【Version 03.00.00 or later】**



**【Version earlier than 03.00.00】**




(*1) The effective keys are as following.

(*1-1) The above arrow key ‘↑’ and down arrow key ‘↓’:

These keys allow you to select an item. The reversing display shows the item that you are selecting now.

(*1-2) 'Enter' key:

A set item of the line displayed in reverse is selected, and it moves to each set screen.

(a) It enters the SET WWN OF HBA screen to set Additional World Wide Port Name when 'Enter' is pushed while "1. SET WWN OF HBA" line is displayed in reverse.

(b) It enters the SET LOGIN DELAY TIME screen when "'Enter'" is pushed while "2. SET LOGIN DERAY TIME" line is displayed in reverse.

[BIOS Version: Since 03.00.00]

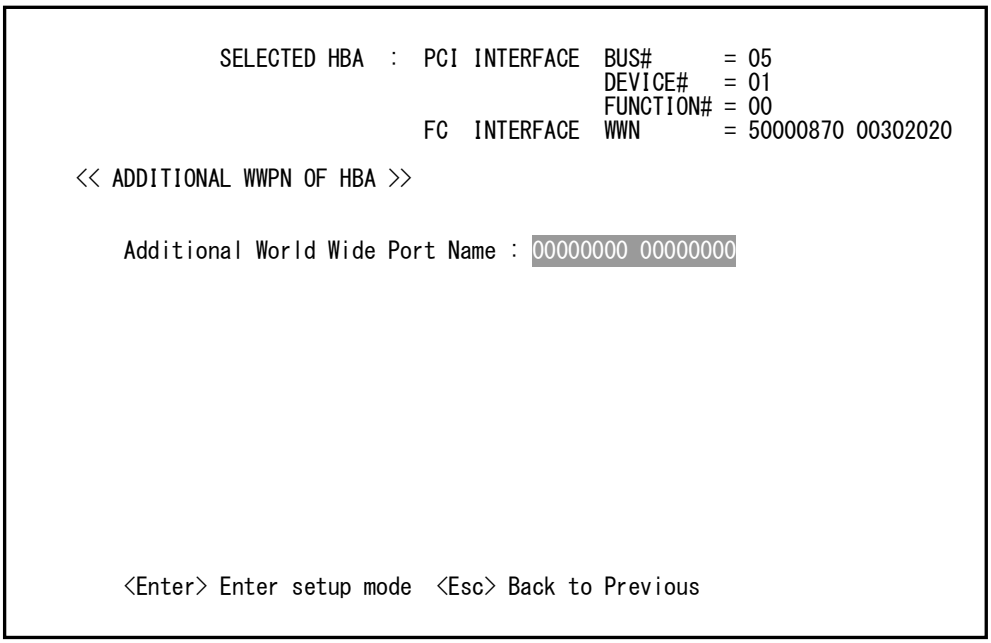
(c) It enters the ERROR LOGGING screen when "'Enter'" is pushed while "3. ERROR LOGGING" line is displayed in reverse.

(*1-3) ‘ESC’ key:

It returns to the MAIN MENU screen.

# ADDITIONAL WWPN OF HBA or SET WWN OF HBA menu

Specify Additional World Wide Port Name of Gigabit Fibre Channel Adapter.
This menu is available only on HBA-BIOS version 02.00.00 or later.




(*1) The effective keys are as following.

(*1-1) 'Enter' key:

Whenever pressing 'Enter' key when the cursor is on "Additional World Wide Port Name" line, Start/End of the input mode is switched.

(*1-2) '0'-'9', 'A'-'F' and 'a'-'f' keys:

They are effective and it is possible to set WWN only when the mode is the input mode.

(Note)Please set '5' to one first digit of WWN. Gigabit Fibre Channel Board cannot normally operate when violating the limitation

(*1-3) 'ESC' key:

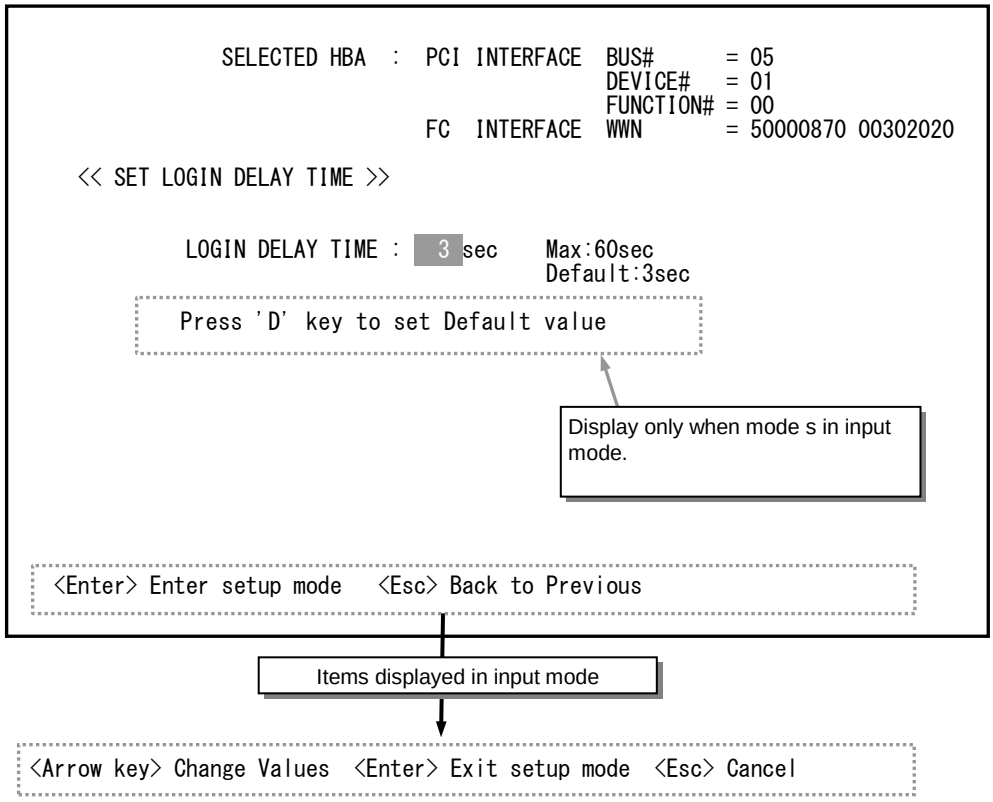
It returns to the previous screen, keeping the set content.

(*2) default setting = "00000000 00000000"

Note that this Additional World Wide Port Name is used only when Hitachi Compute Blade system is set to do so.
For details, see user's guide of your Hitachi Compute Blade system.

# SET LOGIN DELAY TIME menu

Specify delay time from establishing link connection to issuing LOGIN to fabric.
This menu is available only on HBA-BIOS version 02.00.00 or later.

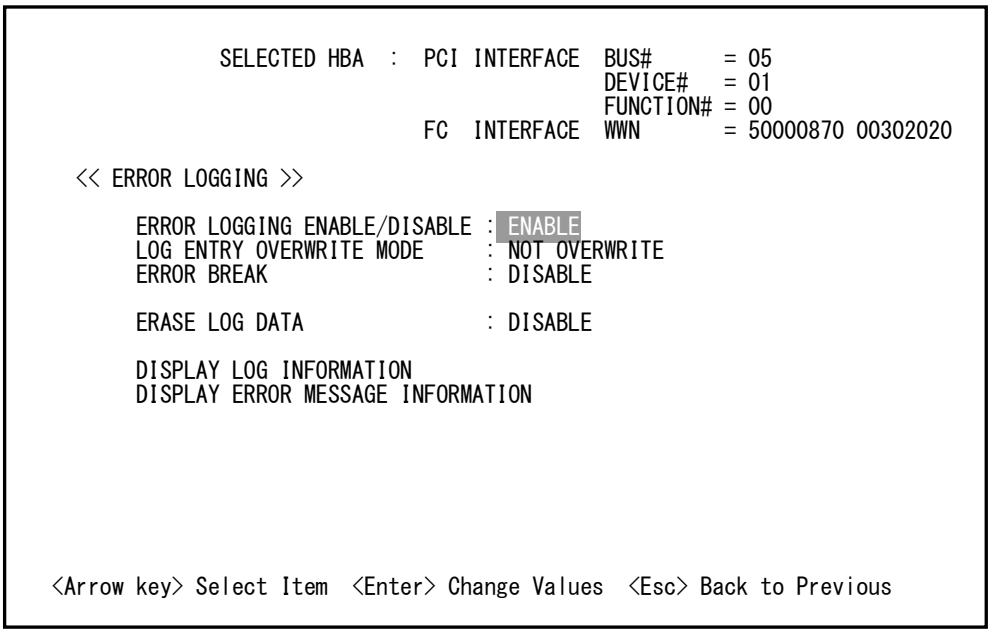



(*1) The effective keys are as following.
(*1-1) 'Enter' key:
Whenever pressing 'Enter' key when the cursor is on "LOGIN DELAY TIME" line, Start/End of the input mode is switched.
(*1-2) 'ESC' key :
(a) If you press 'ESC' when it is not in input mode:
It returns to the previous screen, keeping the set content.
(b) If you press 'ESC' when it is in input mode:
A set value is preserved and the input mode is ended.
(*1-3) The above arrow key ' ↑ ' and down arrow key ' ↓ ':
It is effective only in input mode and you can use them to change a set value.
(*1-4) 'D' key and 'd' key:
It is effective only in input mode.
A set value is returned to the default value and the input mode is ended.
(*2) default setting = "3" s

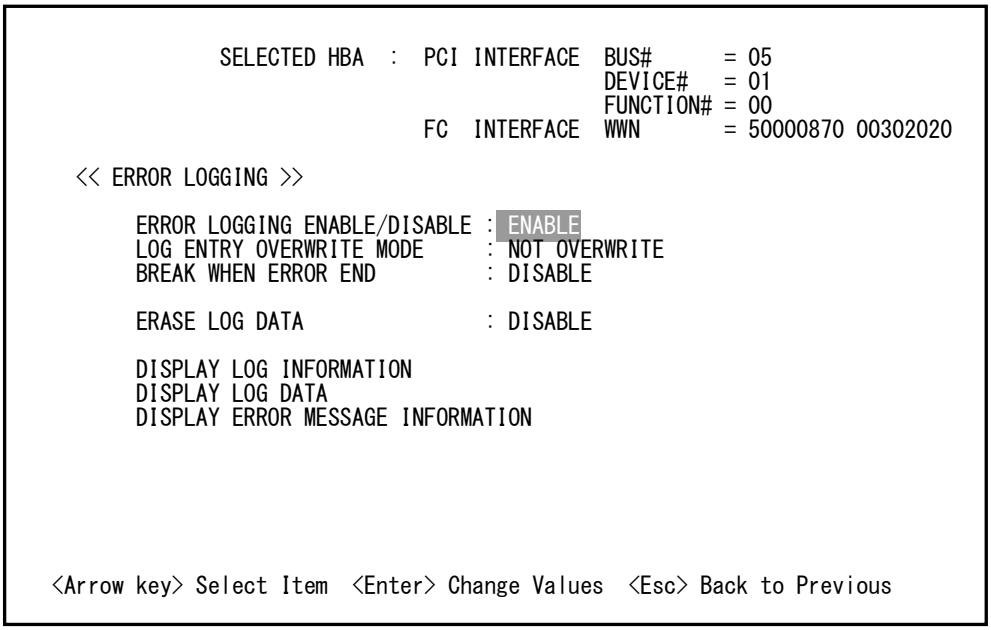
# ERROR LOGGING menu

Specify Logging settings when HBA-BIOS detects failure while it is in operation.
This menu is available only on HBA-BIOS version 03.00.00 or later.

**【Version 10.00.00.00 or later】**




**【Version 04.02.00 or earlier】**



(*1) The effective keys are as following.

(*1-1) The above arrow key ‘ ↑ ’ and down arrow key ‘ ↓ ’:

A set menu is selected. It is a set menu that the line displayed in reverse has selected now.

(*1-2) ‘Enter’ key:

(a) When the line of "ERROR LOGGING ENABLE/DISABLE" is displayed in reverse.
"ENABLE" and "DISABLE" is switched whenever pressing 'Enter'.

(b) When the line of "LOG ENTRY OVERWRITE MODE" is displayed in reverse.
It displays the LOG ENTRY OVERWRITE MODE subscreen.

(c) When the line of "ERROR BREAK" or “BREAK WHEN ERROR END” is displayed in reverse.
"ENABLE" and "DISABLE" is switched whenever pressing 'Enter'.

(d) When the line of "ERASE LOG DATA" is displayed in reverse.
"ENABLE" and "DISABLE" is switched whenever pressing 'Enter'.

(e) When the line of "DISPLAY LOG INFORMATION" is displayed in reverse.
It enters the "DISPLAY LOG INFORMATION" screen.

(f) When the line of "DISPLAY LOG DATA" is displayed in reverse.
It enters the "DISPLAY LOG DATA" screen.

(g) When the line of "DISPLAY ERROR MESSAGE INFORMATION" is displayed In reverse.
It enters the "DISPLAY ERROR MESSAGE INFORMATION" screen.

(*1-3) ‘ESC’ key:

It returns to the “SET ADVANCED SETTINGS”, keeping the set content.

(*2) Outline of set menu

(*2-1)ERROR LOGGING ENABLE/DISABLE

When the LOG data of the failure is preserved in FLASH-ROM, it sets it to "Enable".
Default is "ENABLE. "

(*2-2)LOG ENTRY OVERWRITE MODE

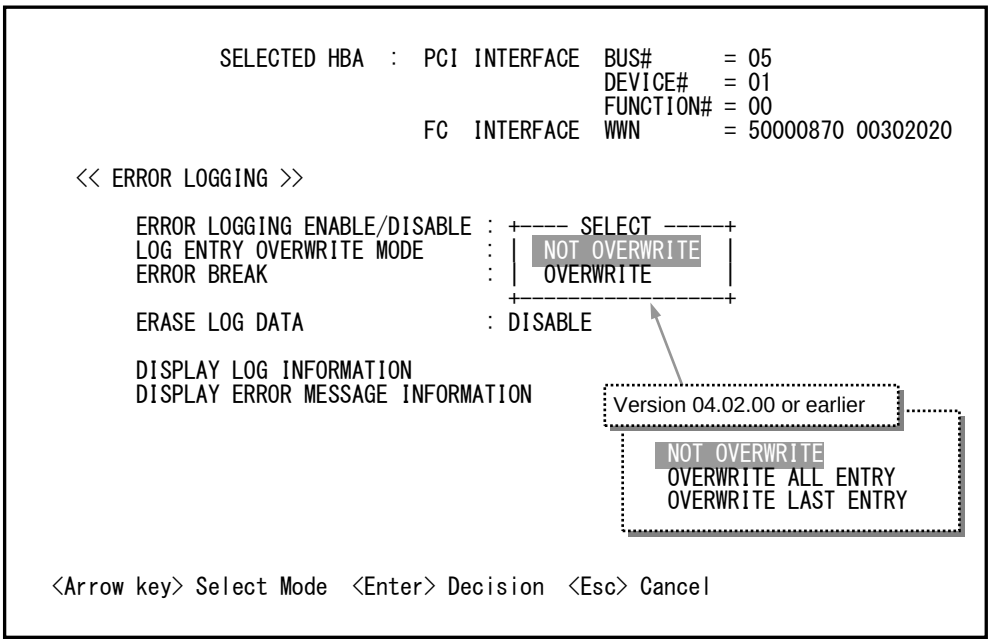
The method of overwriting LOG collection is set. Please refer to SUBSCREEN OF LOG ENTRY OVERWRITE MODE SETTING for details.
Default is "NOT OVERWRITE" mode.

(*2-3)ERASE LOG DATA

When erase in the LOG area is done, it sets it to "Enable". The erase processing is executed when the operation that the setting is preserved with the EXIT screen or SETUP CONFIRMATION screen is done.
Default is "DISABLE. "

# LOG ENTRY OVERWRITE MODE submenu

Specify overwrite mode of LOG ENTRY.
This menu is available only on HBA-BIOS version 03.00.00 or later.

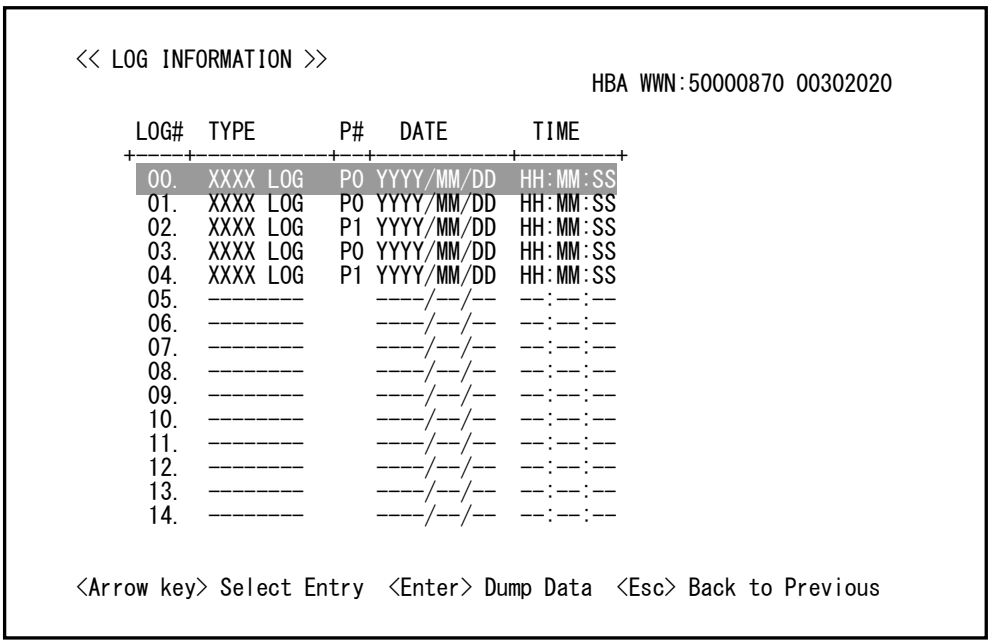



(*1) The effective keys are as following.
(*1-1) The above arrow key ‘↑’ and down arrow key ‘↓’:
Selects Overwrite mode from the following.
(a) Not overwrite: After writing all numbers, a new log data is not preserved.
(b) Overwrite All entry: After writing all numbers, it overwrites from the head.
(c) Overwrite Last entry: After writing all numbers, only the final is overwritten.
(*1-2) ‘ESC’ key:
Ends the subscreen, keeping the mode displayed in reverse, and it returns to the ERROR LOGGING screen.
(*1-3) ‘Enter’ key:
Invalidates the content for the change and it returns to the ERROR LOGGING screen. The mode before the subscreen is displayed becomes a set content.
(*2) Default value
Default is "NOT OVERWRITE" mode.

# DISPLAY LOG INFORMATION menu

Display header information of LOG data.
This menu is available only on HBA-BIOS version 03.00.00 or later.

**【Version 10.00.00.00 or later】**




(*1) Displayed item
- (*1-1) LOG# : Displays the number of the LOG entry.
- (*1-2) TYPE : LOG types such as MCK LOG, SOFT LOG, and MIH LOG are displayed.
  "------" shows that it is an empty entry.
- (*1-3) DATE/TIME : Displays the LOG collection date.
- (*1-4) P# : Port number.

(*2) The effective keys are as following.
- (*2-1) The above arrow key ' ↑ ' and down arrow key ' ↓ ' :
  Select the entry that displays detailed information. The entry that has been selected is displayed in reverse.
- (*2-2) 'Enter' key :
  Displays the "DUMP LOG DATA" screen to display error message information on the entry displayed in reverse.
- (*2-3) 'ESC' key :
  It returns to the ERROR LOGGING screen.

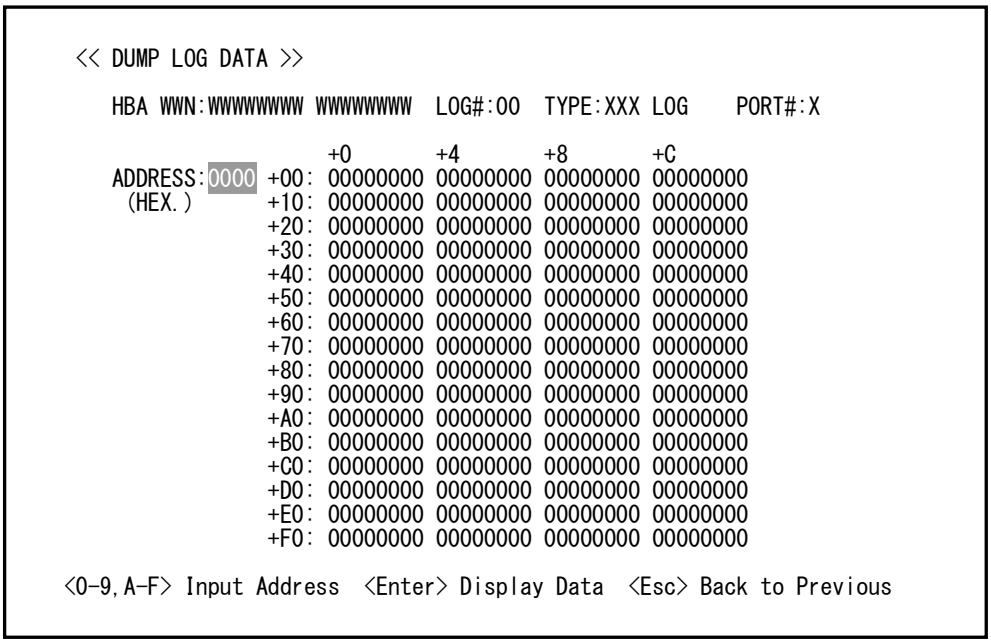
**【Version 04.02.00 or earlier】**

```
          SELECTED HBA  :  PCI INTERFACE  BUS#      = BB
                                          DEVICE#   = DD
                                          FUNCTION# = FF
                           FC  INTERFACE  WWN       = WWWWWWWW WWWWWWWW

    << DISPLAY LOG INFORMATION >>

        LOG#  TYPE        DATE        TIME
       +----+-----------+-----------+--------+
         00.  XXX LOG    YYYY/MM/DD  HH:MM:SS
         01.  XXX LOG    YYYY/MM/DD  HH:MM:SS
         02.  ------     ----/--/--  --:--:--
         03.  ------     ----/--/--  --:--:--









        <Esc> Back to Previous
```

(*1) Displayed item
  (*1-1) LOG#: Displays the number of the LOG entry.
  (*1-2) TYPE: LOG types such as MCK LOG, SOFT LOG, and MIH LOG are displayed.
    “------“ shows that it is an empty entry.
  (*1-3) DATE/TIME: Displays the LOG collection date.
(*2) The effective keys are as following.
  (*2-1) ‘ESC’ key :
    It returns to the ERROR LOGGING screen.

# DUMP LOG DATA menu

Display the first 256 bytes of LOG data selected in DISPLAY LOG INFORMATION menu.
This menu is available only on HBA-BIOS version 10.00.00.00 or later.




(*1) Displayed item
- (*1-1) HBA WWN: WWN of HBA selected on the SELECT HBA screen is displayed.
- (*1-2) TYPE: When LOG # is input, the LOG type of the LOG number is displayed.
  "------" shows that it is an empty entry.

(*2) Input Area
- (*2-1) LOG#: Input the number of the displayed LOG data.
  When the LOG number is input, LOG TYPE is displayed.
- (*2-2) ADDRESS: Input the first address of the display data in the offset address (Hex) in each LOG area.

(*3) The effective keys are as following.
- (*3-1) 'Tab' key:
  Whenever the Tab key is pushed, the cursor moves to "LOG#" and the "ADDRESS" input area, and LOG # and ADDRESS can be set again.
  The default position of the cursor displaying data is "ADDRESS" input area.
- (*3-2) 'Enter' key :
  Value (Hex.) of the ADDRESS column is the first address and display 0x100 byte data.
- (*3-3) 'ESC' key :
  It returns to the ERROR LOGGING screen.

# DISPLAY LOG DATA menu

Display 256 bytes of LOG data from specified log number and address.
This menu is available on HBA-BIOS version 04.02.00 or earlier.

**<Step 1>**

When you input LOG # confirmed on the DISPLAY LOG INFORMATION screen, the address input area is displayed. When you input the address, the log data is displayed on the screen on step 2.

```
<<  DISPLAY LOG DATA  >>

   HBA WWN:WWWWWWWW WWWWWWWW  LOG#:__  TYPE:------

                     +0       +4       +8       +C
   ADDRESS:____ +00:
    (HEX.)      +10:
                +20:
                +30:
                +40:
                +50:
                +60:
                +70:
                +80:
                +90:
                +A0:
                +B0:
                +C0:
                +D0:
                +E0:
                +F0:

   <Tab> Tab   <Enter> Display Data   <Esc> Back to Previous
```

**<Step 2>**

LOG DATA is displayed.

```
<<  DISPLAY LOG DATA  >>

   HBA WWN:WWWWWWWW WWWWWWWW  LOG#:00  TYPE:MCK LOG

                     +0       +4       +8       +C
   ADDRESS:0000 +00: 00000000 00000000 00000000 00000000
    (HEX.)      +10: 00000000 00000000 00000000 00000000
                +20: 00000000 00000000 00000000 00000000
                +30: 00000000 00000000 00000000 00000000
                +40: 00000000 00000000 00000000 00000000
                +50: 00000000 00000000 00000000 00000000
                +60: 00000000 00000000 00000000 00000000
                +70: 00000000 00000000 00000000 00000000
                +80: 00000000 00000000 00000000 00000000
                +90: 00000000 00000000 00000000 00000000
                +A0: 00000000 00000000 00000000 00000000
                +B0: 00000000 00000000 00000000 00000000
                +C0: 00000000 00000000 00000000 00000000
                +D0: 00000000 00000000 00000000 00000000
                +E0: 00000000 00000000 00000000 00000000
                +F0: 00000000 00000000 00000000 00000000

   <Tab> Tab   <Enter> Display Data   <Esc> Back to Previous
```

(*1) Displayed item

(*1-1) HBA WWN: WWN of HBA selected on the SELECT HBA screen is displayed.

(*1-2) TYPE: When LOG # is input, the LOG type of the LOG number is displayed.

"------" shows that it is an empty entry.

(*2) Input Area

(*2-1) LOG#: Input the number of the displayed LOG data. When the LOG number is input, LOG TYPE is displayed.

(*2-2) ADDRESS: Input the first address of the display data in the offset address (Hex) in each LOG area.

(*3) The effective keys are as following.

(*3-1) 'Tab' key:

Whenever the Tab key is pushed, the cursor moves to "LOG#" and the "ADDRESS" input area, and LOG # and ADDRESS can be set again.

The default position of the cursor displaying data is "ADDRESS" input area.

(*3-2) 'Enter' key :

Value (Hex.) of the ADDRESS column is the first address and display 0x100 byte data.

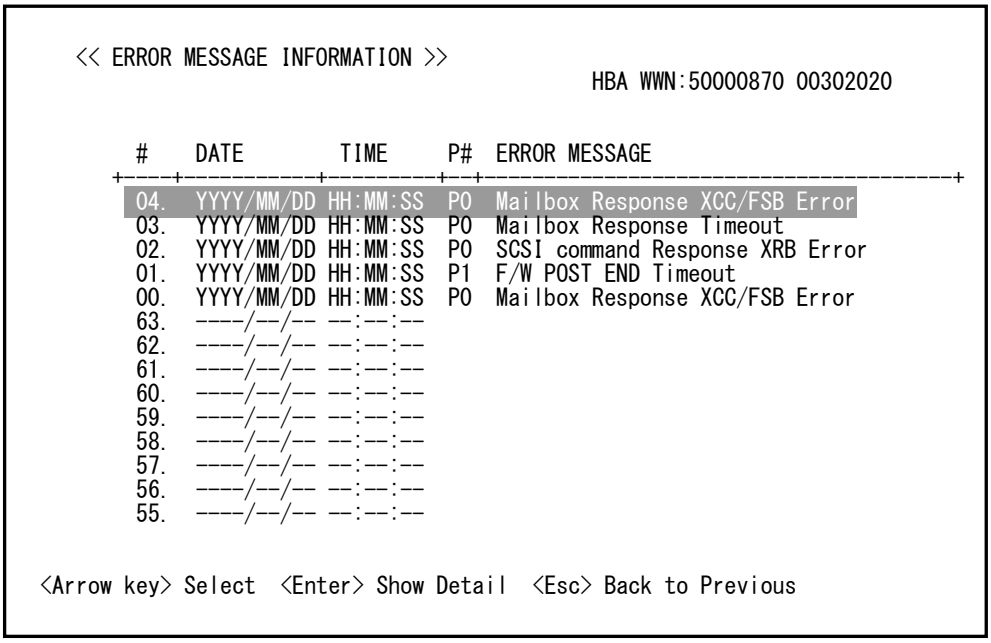
(*3-3) 'ESC' key :

It returns to the ERROR LOGGING screen.

# DISPLAY ERROR MESSAGE INFORMATION menu

Display error messages stored in FLASH-ROM. You can refer detailed error information. This menu is available only on HBA-BIOS version 03.00.00 or later.

Latest log is in front and logs are listed in descending order. If logs can not be displayed at once, pressing above arrow key '↑' in front or pressing down arrow key '↓' at end scrolls one line on the screen.

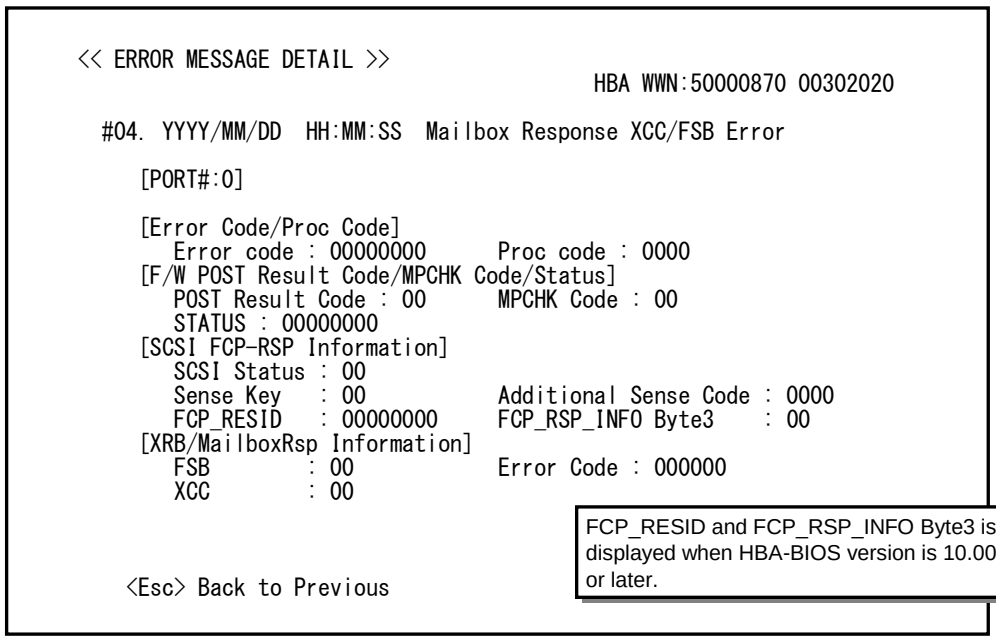



(*1) Displayed item
- (*1-1) # : Entry number of error message information.
- (*1-2) DATE/TIME: Collection date.
  - "------" shows that it is an empty entry.
- (*1-3) ERROR MESSAGE: Error message that displayed when error is detected

(*2) The effective keys are as following.
- (*2-1) The above arrow key ' ↑ ' and down arrow key ' ↓ ' :
  - Select the entry that displays detailed information. The entry that has been selected is displayed in reverse.
- (*2-2) 'Enter' key:
  - Displays the "ERROR MESSAGE DETAIL" screen to display error message information on the entry displayed in reverse.
- (*2-3) 'ESC' key:
  - It returns to the ERROR LOGGING screen.

# ERROR MESSAGE DETAIL menu

Display detailed error messages selected on DISPLAY ERROR MESSAGE INFORMATION menu.
This menu is available only on HBA-BIOS version 03.00.00 or later.




(*1) Items

(*1-1) #, YYYY/MM/DD HH:MM:SS：Displays the error number and the generation date of the selected entry.

(*1-2) Error Messages：Displays error messages of the selected entry.

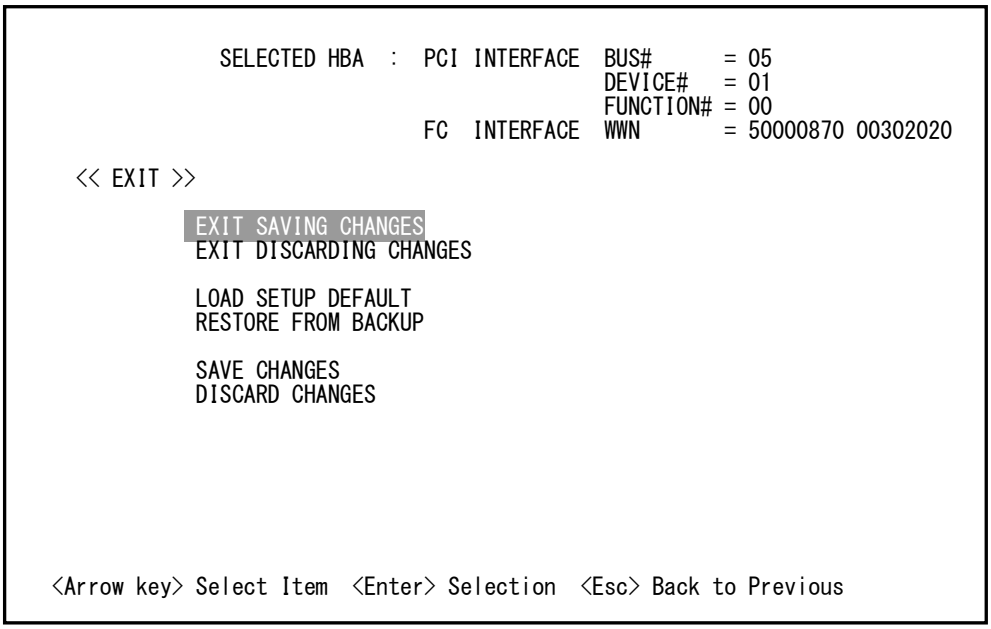
(*2) The effective keys are as following.

(*2-1) ‘ESC’ key: It returns to the DISPLAY ERROR MESSAGE INFORMATION screen.

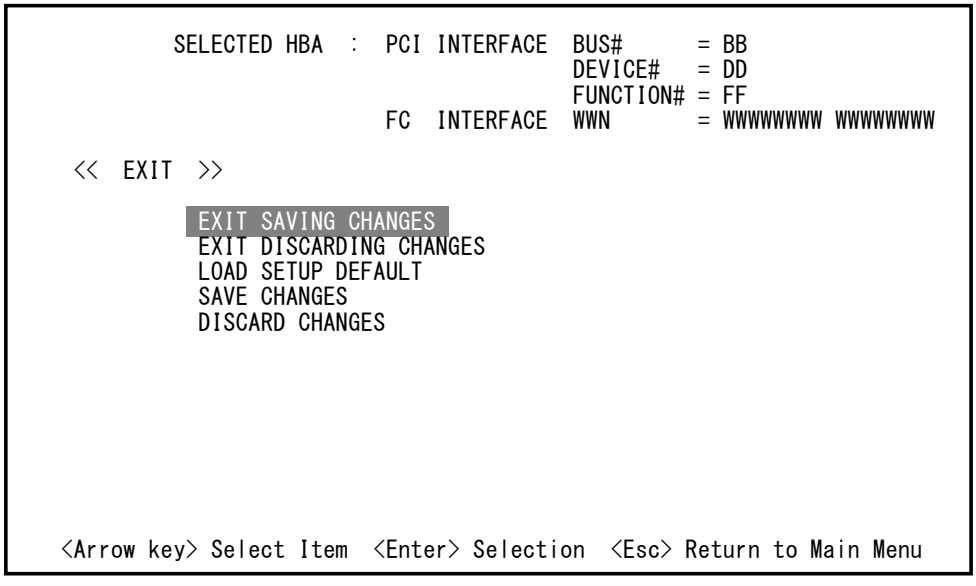
# EXIT menu

Display exit option menu of setup menu.

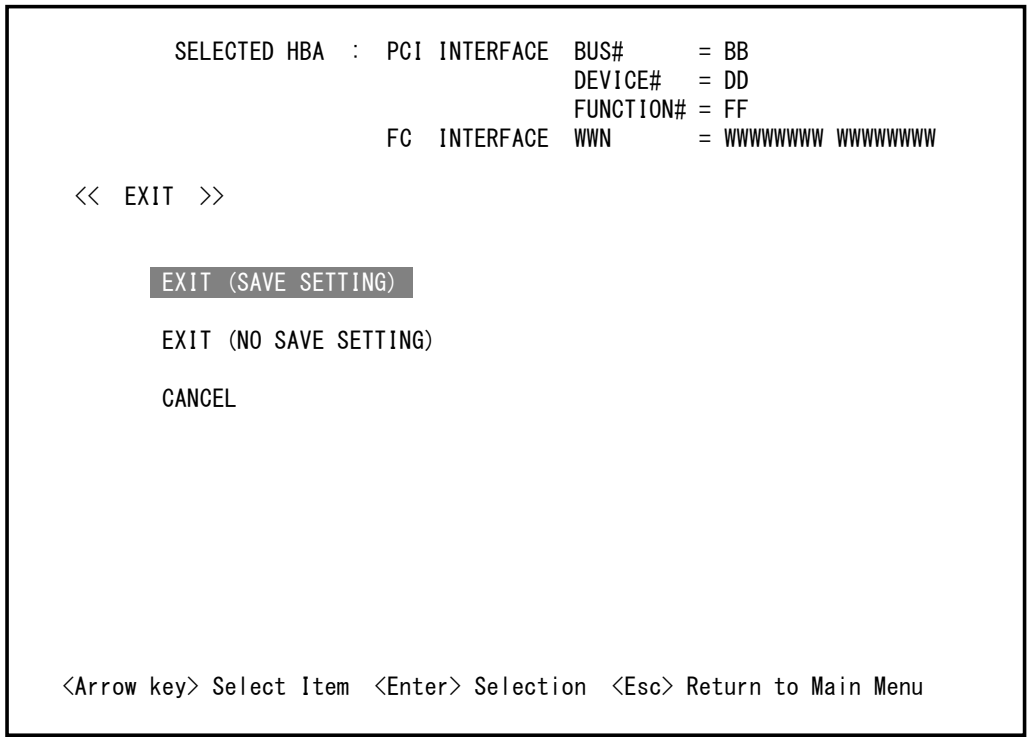
**【Version 10.00.00.00 or later】**




**【Version 03.03.00 - 04.02.00】**



**【Version 03.02.00 or earlier】**




(*1) The effective keys are as follows.

(*1-1) The above arrow key ‘↑’ and down arrow key ‘↓’:

These keys allow you to select the exit options. The reversing display shows the exit option that you are selecting now.

(*1-2) 'Enter' :

The selection becomes effective by pressing 'Enter' on the exit option to which the display is reversed. The operations are different depending on the exit option.

(*1-3) ‘ESC’ key:

It returns to the MAIN MENU screen.

(*2) The outlines of the menu

**【BIOS ver10.00.00.00 or later】**

(*2-1) "EXIT SAVING CHANGES"

It reboots after preserving the setting to the FLASH-ROM of the adapter.

(*2-2) "EXIT DISCARDING CHANGES”

It reboots without preserving the setting.

(*2-3) “LOAD SETUP DEFAULT”

It Initializes the settings to default.

You must execute “SAVE CHANGES” or "EXIT SAVING CHANGES" menu to preserving the setting.

(*2-4) “SAVE CHANGES”

It writes the settings to the FLASH-ROM of the adapter.

(*2-5) “DISCARD CHANGES”

It discards the changes.

(*2-6)" RESTORE FROM BACKUP"

It loads the backup settings from the FLASH-ROM of the adapter.

Before start the exit option execution mentioned above, it displays the "Confirmation message” such as the next page.

In addition, it displays the "Execution message" such as the next page during executing.

**【BIOS ver03.02.00 or earlier】**

(*2-7) "EXIT (SAVE SETTING)"

It reboots with preserving the setting.

(*2-8) "EXIT (NO SAVE SETTING)”

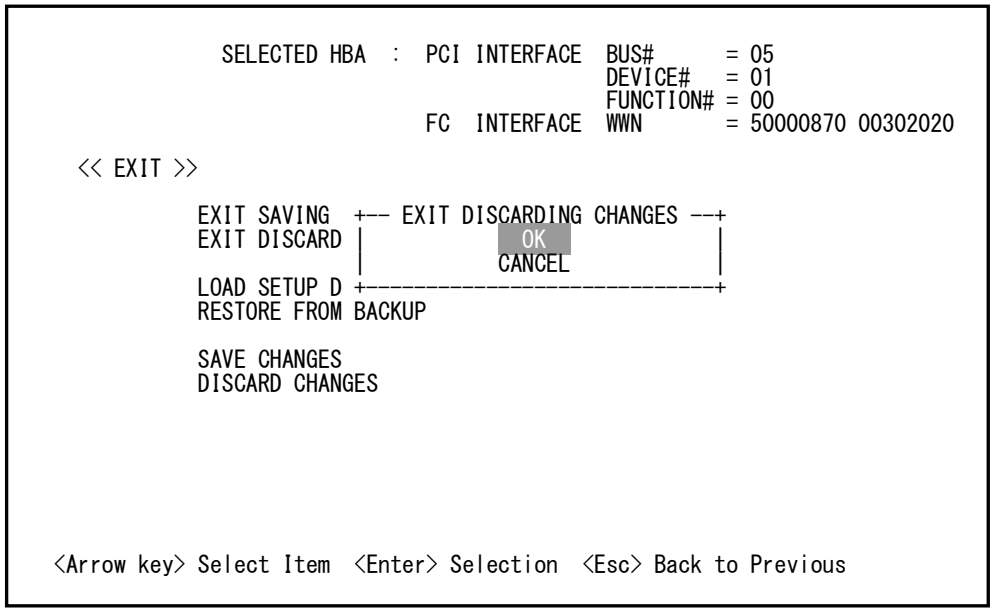
It reboots without preserving the setting.

(*2-9) “CANCEL”

It returns to the MAIN MENU screen.

## ❑ Message when exit option is selected

Confirmation message is appeared. If you select “OK” then the selected menu is started.
This menu is available only on HBA-BIOS version 03.00.00 or later.
See the following example when executing EXIT DISCARD CHANGES.



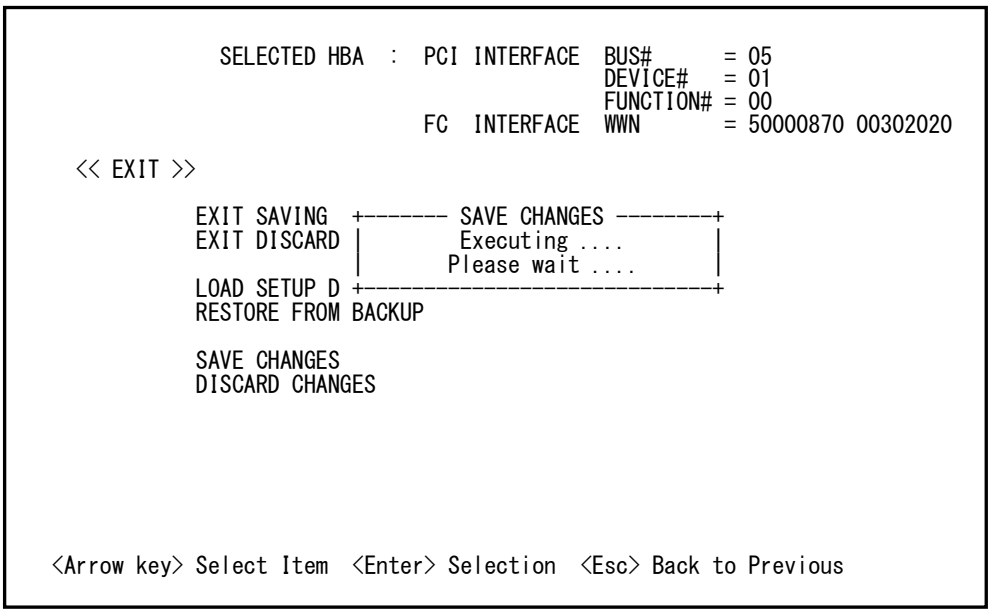

(*1) The effective keys are as follows.

(*1-1) The above arrow key ‘↑’ and down arrow key ‘↓’:
These keys allow you to select “OK” or “CANCEL”. The reversing display shows the item you are selecting now.

(*1-2) 'Enter' :
(a) “OK” : It starts exit option execution that you selected.
(b) “CANCEL” : It cancels exit option execution that you selected.

## ❑ Message while exit option is executing

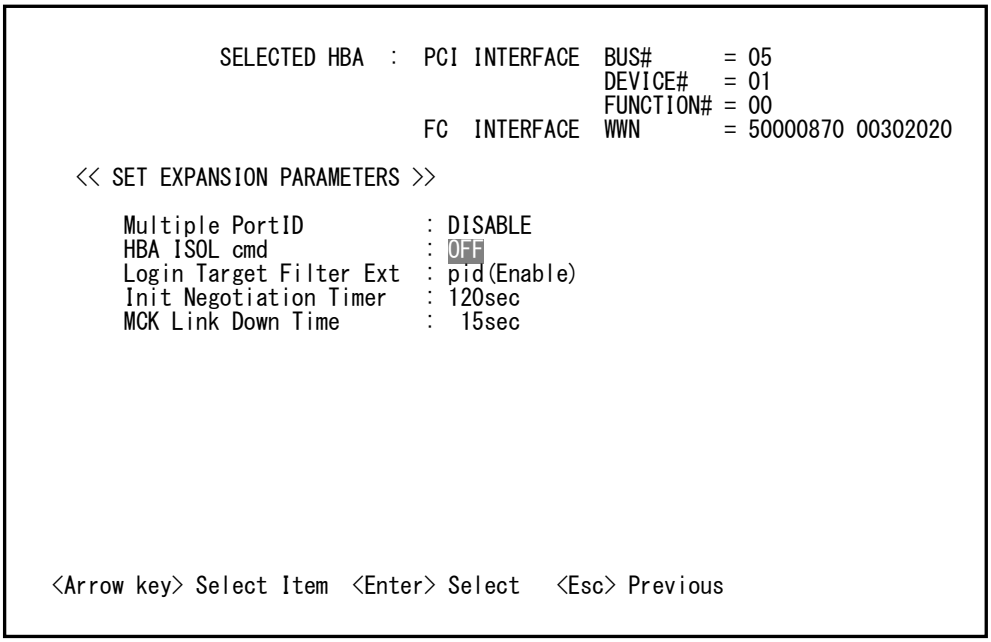
This message shows the option you selected is in executing. When the data is saved to FLASH-ROM, DO NOT reboot or turn the power off of server.
This menu is available on HBA-BIOS version 03.00.00 or later.
See the following example when executing SAVE CHANGES. In this case HBA-BIOS version is 10.00.00.00 or later. When finishing execution, return to the EXIT menu.



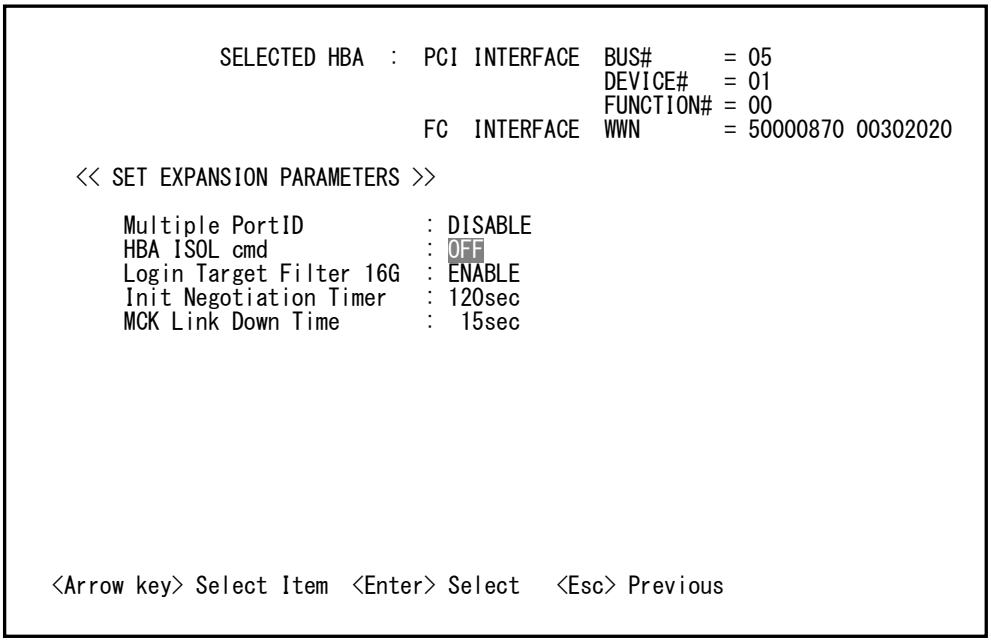
# SET EXPANSION PARAMETERS menu

This menu is available on HBA-BIOS version 10.00.05.07 or later.

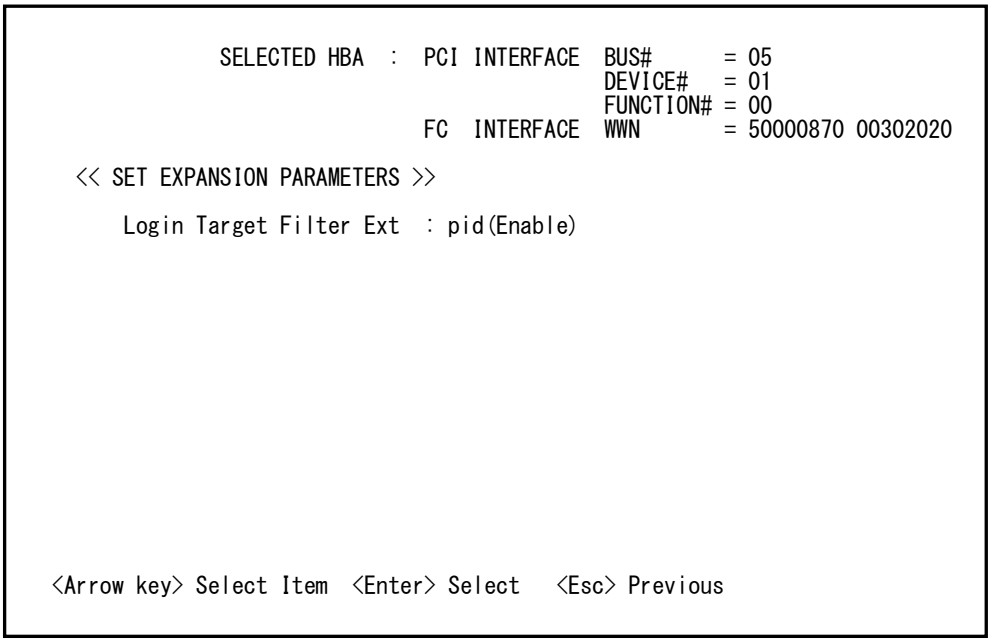
**【Version 20.02.00.09 or later】**




**【Version 20.00.00.00 or later】**



**【Version 10.00.05.07 or later】**

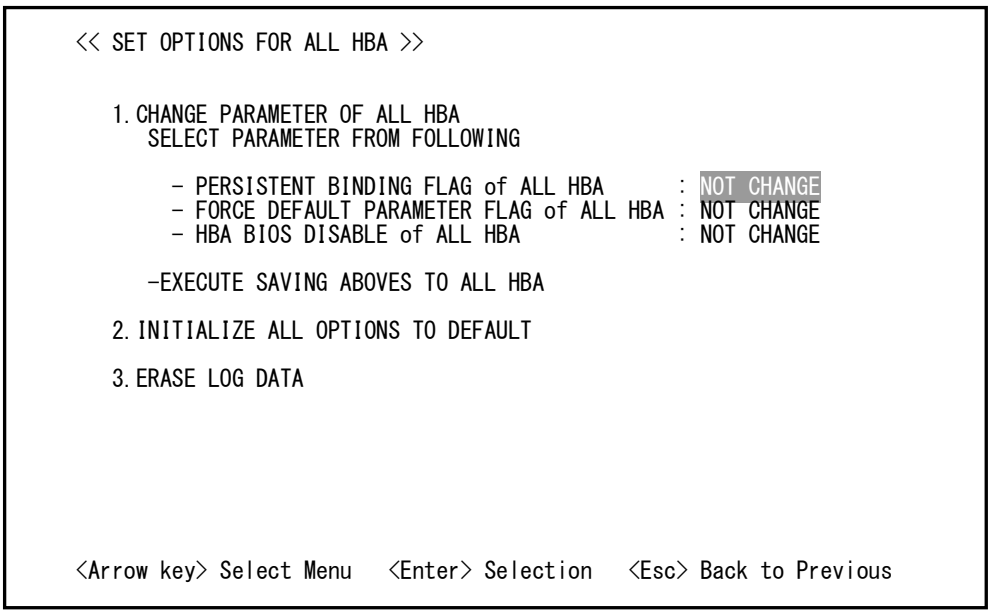



(*1) The effective keys are as following.
(*1-1) The up arrow key ‘↑’ and down arrow key ‘↓’:
These keys allow you to select an item. The highlighted item shows that it is selected now.
(*1-2) 'Enter' key:
A set item of the highlighted line is selected.
(*1-3) ‘ESC’ key:
It returns to a previous screen.
(*2) The outlines of the menu are as follows.
(*2-1) “Multiple PortID”
Set enable or disable Multiple PortID.
"ENABLE" and "DISABLE" are alternately displayed by pressing 'Enter'.
(*2-2) “HBA ISOL cmd”
Turn on or off HBA ISOL cmd.
"ON" and "OFF" are alternately displayed by pressing 'Enter'.
(*2-3) “Login Target Filter Ext” (“Login Target Filter 16G”)
Set Login Target Filter Ext(Login Target Filter 16G ).
"pid(ENABLE)" and "no(DISABLE)" are alternately displayed by pressing 'Enter'.
(*2-4) “Init Negotiation Timer”
Set Init Negotiation Timer.
By pressing ‘Enter’ key, start/end of the input mode is switched.
In the input mode;
(a)The up arrow key ‘↑’ and down arrow key ‘↓’ allow you to select timer value.
(b)By pressing ‘Enter’ key, an input mode is end with keeping change.
(c)By pressing ‘Esc’ key, an input mode is end with discarding change.
(*2-5) “MCK Link Down Time”
Set MCK Link Down Time.
By pressing ‘Enter’ key, start/end of the input mode is switched.
In the input mode;
(a)The up arrow key ‘↑’ and down arrow key ‘↓’ allow you to select timer value.
(b)By pressing ‘Enter’ key, an input mode is end with keeping change.
(c)By pressing ‘Esc’ key, an input mode is end with discarding change.

# SET OPTIONS FOR ALL HBA menu

Applies changes to all HBA ports mounted on the server.
This menu is available on HBA-BIOS version 10.00.00.00 or later.
As for the following parameters, you can apply the same value to all adapter ports simultaneously.

- Persistent Binding of OS driver: You can enable or disable Persistent Binding to all ports.
- Forced Default Parameter of OS driver: You can enable or disable Forced Default Parameter to all ports.
- HBA-BIOS: You can disable HBA-BIOS ENABLE/DISABLE to all ports. To enable HBA-BIOS ENABLE/DISABLE to all ports are not allowed.
- Initialize settings: You can recover option parameter of all adapter ports to the default value.
- Erase logs: You can erase log data of all adapter ports at once.




(*1) The effective keys are as following.
(*1-1) The above arrow key ‘↑’ and down arrow key ‘↓’:
These keys allow you to select an item. The reversing display shows the item that you are selecting now.
(*1-2) 'Enter' key:
A set item of the line displayed in reverse is selected.
(*1-3) ‘ESC’ key:
It returns to the SELECT OPERATION screen.
(*2) The outlines of the menu are as follows.
(*2-1) “PERSISTENT BINDING FLAG of ALL HBA”
You can enable or disable Persistent Binding to all ports.
It displays “SELECT” submenu such as following page, and you choose it with ‘Enter’ key.
For preserving the setting to the FLASH-ROM, you must execute “EXECUTE SAVING ABOVES TO ALL HBA” menu.
(*2-2) “FORCE DEFAULT PARAMETER FLAG of ALL HBA”
You can enable or disable Forced Default Parameter to all ports.
It displays “SELECT” submenu such as following page, and you choose it with ‘Enter’ key.
For preserving the setting to the FLASH-ROM, you must execute “EXECUTE SAVING ABOVES TO ALL HBA” menu.
(*2-3) “HBA BIOS DISABLE”
You can disable HBA-BIOS ENABLE/DISABLE to all ports.
It displays “SELECT” submenu such as following page, and you choose it with ‘Enter’ key.
For preserving the setting to the FLASH-ROM, you must execute “EXECUTE SAVING ABOVES TO ALL HBA” menu.

(*2-4) “EXECUTE SAVING ABOVES TO ALL HBA”

You can save above settings to the FLASH-ROM to all ports.

Before start the execution, it displays the "Execute?” submenu such as following page.

When execution is completed, it returns to “NOT CHANGE” of parameters.

(*2-5) “INITIALIZE ALL OPTIONS TO DEFAULT”

You can recover option parameter of all adapter ports to the default value, and save it to FLASH-ROM.

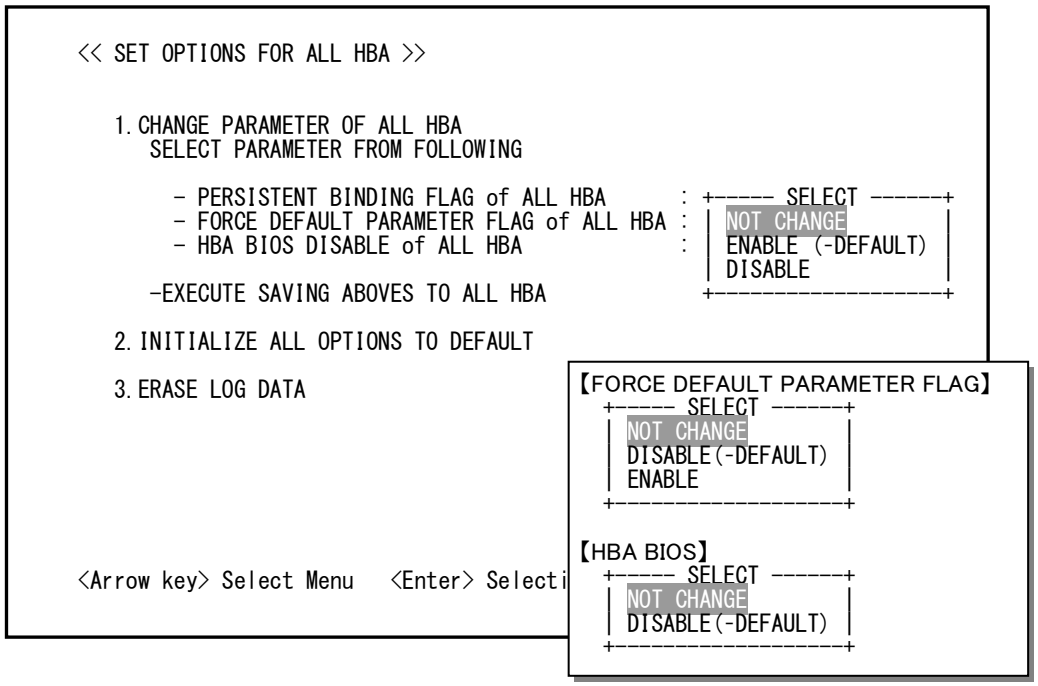
Before start the execution, it displays the "Execute?” submenu such as following page.

(*2-6) “ERASE LOG DATA”

You can erase log data of FLASH-ROM to all adapter port.

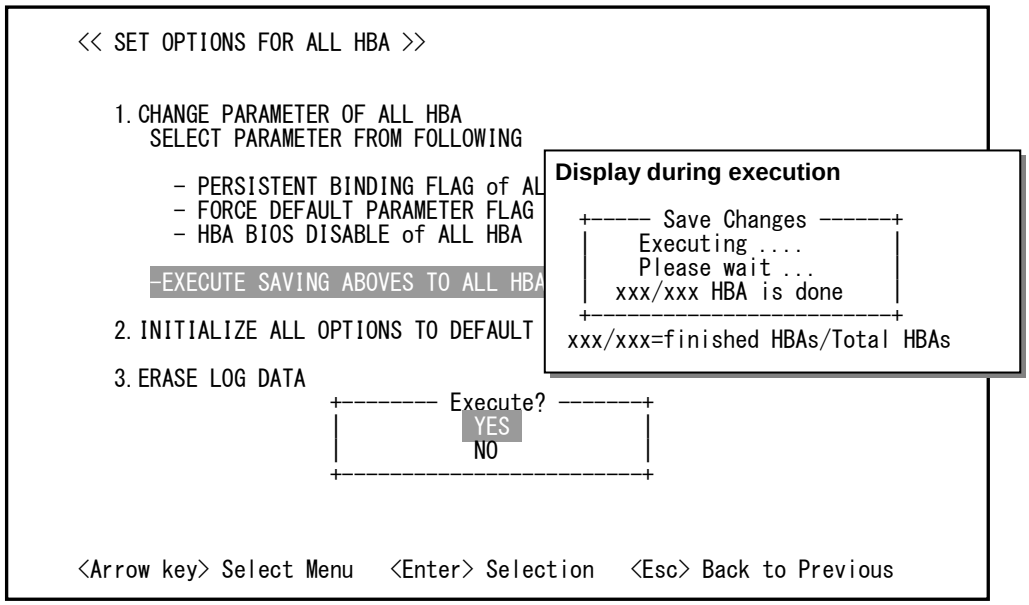
**Example of “SELECT” submenu**

Here is the example of PERSISTENT BINDINGS. This submenu is not displayed when selecting Initialize settings or Erase logs.



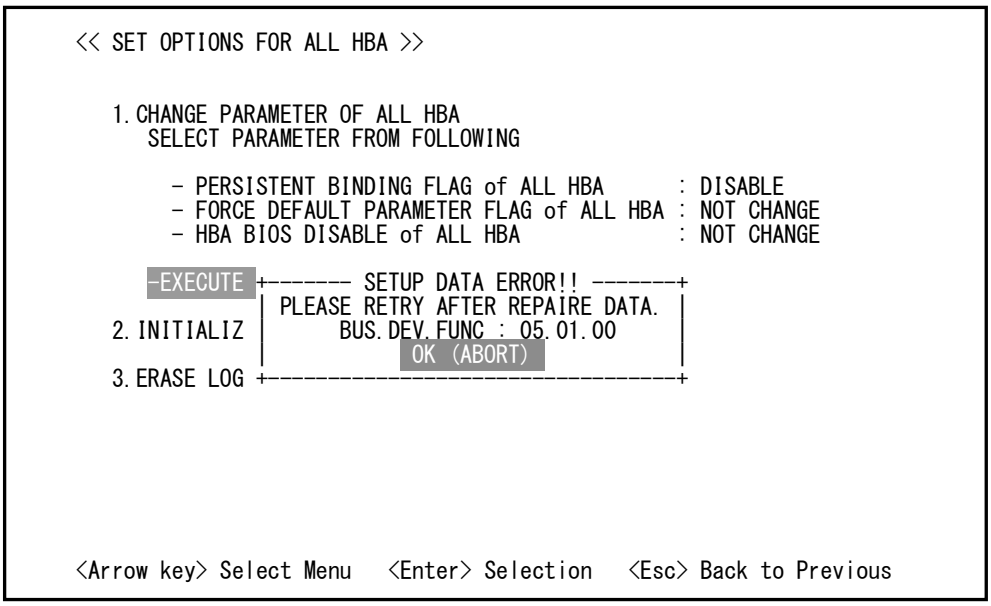

**Example of “Execute?” submenu**

Here is the example of selectong EXECUTE SAVING ABOVES TO ALL HBA.



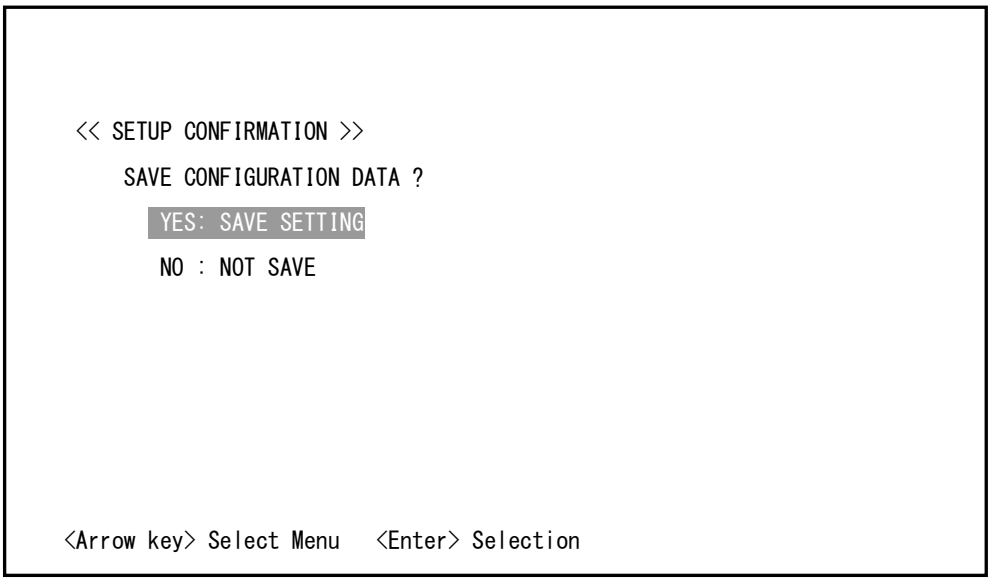
**Example of “DATA ERROR” submenu**

If any error occurred during execution, the following window is appeared.



# SETUP CONFIRMATION menu

The following menu is appeared when pressing [ESC] key on MAIN menu to confirm whether you need to store the changes to FLASH-ROM before exit or exit without saving changes.




(*1) The effective keys are as follows.

(*1-1) The above arrow key ‘↑’ and down arrow key ‘↓’:

These keys allow you to select the save operation. The reversing display shows the save operation that you are selecting now.

(*1-2) 'Enter':

It operates according to the save operation, and return to SELECT HBA screen.

(a) "YES: SAVE SETTING"

The setting is preserved and it ends.

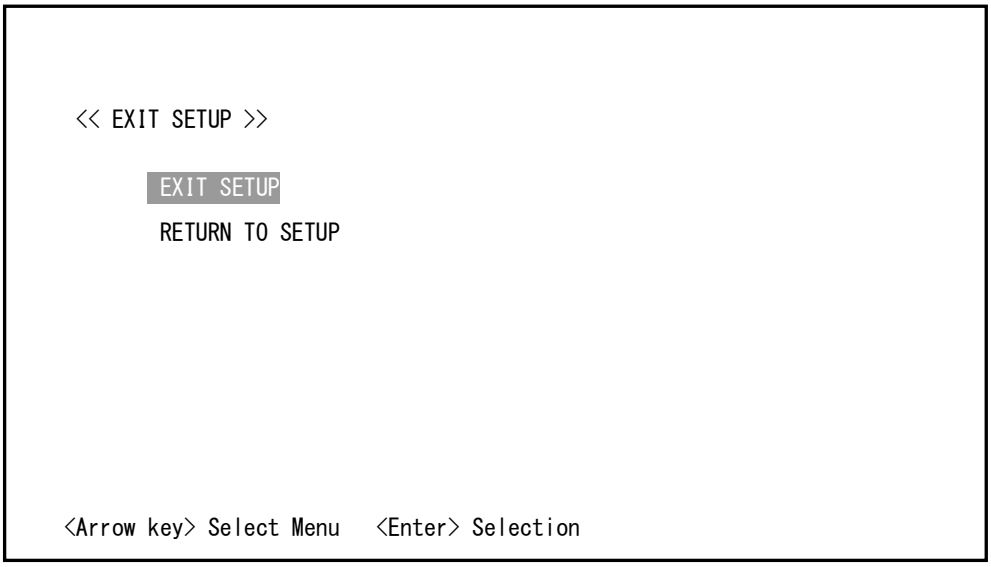
(b) "NO : NOT SAVE"

It ends without preserving the setting.

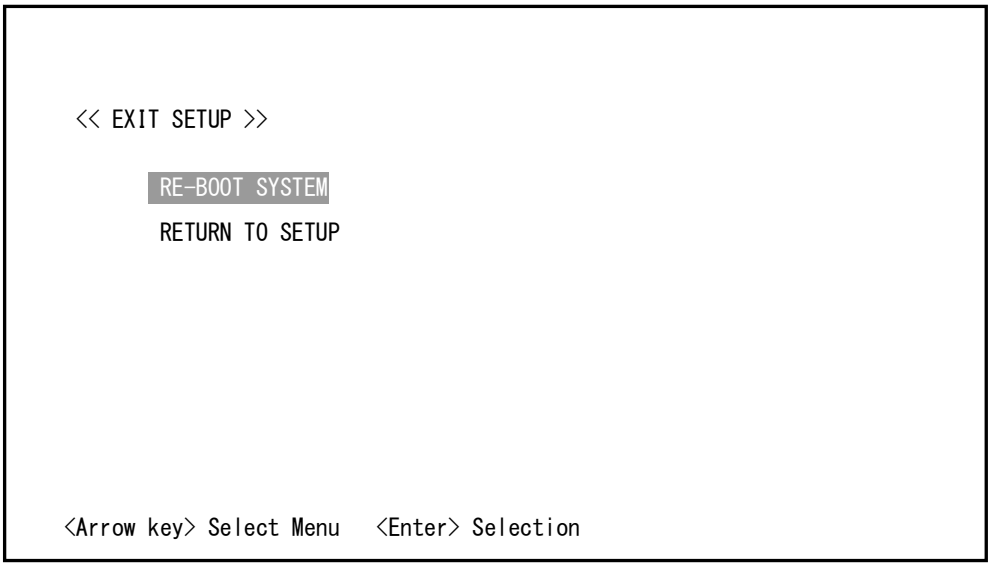
# EXIT SETUP menu

The following menu is appeared when pressing [ESC] key on SELECT OPERATION menu (HBA-BIOS version 10.00.00.00 or later) or when pressing [ESC] key on SELECT HBA menu (HBA-BIOS version 04.02.00 or earlier)

**【Version 10.00.00.00 or later】**




**【Version 04.02.00 or earlier】**




(*1) The effective keys are as follows.

(*1-1) The above arrow key ‘↑’ and down arrow key ‘↓’:

These keys allow you to select the exit operation. The reversing display shows the exit operation that you are selecting now.

(*1-2) 'Enter':

It operates according to the exit operation.

(a) “EXIT SETUP”, "RE-BOOT SYSTEM"

It reboots a system.

(b) "RETURN TO SETUP"

It returns to screen "((1) SELECT HBA ").

# 4

# EFI Driver

This section provides procedure how to set EFI (Extended Firmware Interface) driver parameters on EFI shell.
The option setup shell allows you to set parameters. The option setup shell is initiated when executing drvcfg command on EFI shell of the OS console.

## EFI driver specifications

| # | Item | | EFI driver version | | | |
|---|---|---|---|---|---|---|
| | | | v20.00.00.00 or later | v10.00.02.00 or later | v10.00.01.1B or earlier | v01.01.02.08 or earlier |
| 1 | Support adapter (*1) | HFC0201 | × | × | | × |
| | | HFC04xxx | × | ○ | | ○ |
| | | HFC08xxx | × | ○ | | × |
| | | HFCE16xxx | ○ | × | | × |
| 2 | Max-number of FC port that detection is possible (*5) | | 256 | 256 | 128 | 32 |
| 3 | Max-number of FC port that boot control is possible | | 256 | 256 | 128 | 32 |
| 4 | Max-number of FC port that setup is possible | | 256 | 256 | 128 | 32 |
| 5 | Max-number of LU every FC port | | 8(1-1024) | 8(1-1024) | | 8(1-1024) |
| 6 | Max-number of LU all of FC port | | 128(1-1024) | 128(1-1024) | | 32(1-1024) |
| 7 | Max-number of LU that Boot Priority registration is possible (*2) | | 8 | 8 | | 8 |
| 8 | Max-number of Target port that detection is possible every FC port (*3) (*5) | | 508 | 508 | | 508 |
| 9 | Max-number of LU that detection is possible every Target port (*3) (*5) | | 511 | 511 | | 511 |
| 10 | Maximum LU number (*4) (*5) | | 65535 | 65535 | | 255 |
| 11 | LPAR manager | | ○ | ○ | | ○ |
| 12 | Over 2TB LU access | | ○ | ○ | | × |
| 13 | Hitachi Compute Blade Hardware memory Dump function. | | ○ | ○(ver10.00.01.13or later) | | × |
| 14 | EFI Driver Multipath Function | | ○ | ○(ver10.00.01.18 or later) | | × |
| 15 | Max-number of logical path to the physical LU | | 8 | 8 (ver10.00.01.18 or later) | | |
| 16 | PCI multi segment number | | ○ | ○ | × | × |
| 17 | Secure Boot(*6) | | ○ | × | × | × |
| 18 | HII | | ○ | × | × | × |

(*1) Refer to “HITACHI Gigabit Fibre Channel Adapter User's Guide(Support Matrix edition)” for model name.

(*2) Register LU satisfying both item#8 and item#9 with 'Boot Priority'.
Even if it is registered LU, the LU is not recognizable if it became beyond the above agreement.

(*3)When building environment, please build it so that a boot disk exists within the maximum number of those.
'Max-number of Target port that detection is possible every FC port'(see #8) is the number of all Target ports including the Target ports which cannot LOGIN by the security setting of the Target port.

(*4)'Maximum LU number' is the recognizable number against the LU which is within the range of 'Max-number of LU that detection is possible every Target port'(see #9).
LU beyond 'Max-number of LU that detection is possible every Target port'(see #9) is not recognizable.

(*5)These maximum numbers may be different from an OS driver.
Data LU does not have any problem if within the range of these maximum numbers of OS driver, but OS boot LU, please build environment to exist within the range of small each maximum of a boot driver and the OS driver.

(*6) Secure boot is possible only at the server corresponding to secure boot. Please refer to the user's guide of a server for details.

# Parameters available on EFI driver

The EFI driver option is set by two kinds of method, "Procedure to set option parameters(option setup shell)", and "Procedure to set option parameters(Server setup menu)"

## Parameters available on EFI driver

| No | Items | Default | Range | Contents |
|---|---|---|---|---|
| Basic option settings | | | | |
| 1 | Boot Function | Disabled | Enabled<br>Disabled | Sets ENABLE/DISABLE of SAN boot function of EFI driver.<br>This parameter needs to be set to "Enable" when using the FC port as boot path. This parameter is the same as “SET HBA BIOS ENABLE/DISALBE” of HBA BIOS. |
| 2 | Connection Type<br>*1) | Auto | [Version earlier than 20.00.00.00]<br>Auto<br>Point to Point<br>Loop Only<br>[v20.00.00.00 or later]<br>Auto<br>Point to Point<br>FC-AL | The connection type in the FC interface is specified. Usually "Auto (Auto detection)" is selected.<br>You can only refer the current value when the port is used as a shared FC of LPAR manager.<br>If you need to change the settings, change to Dedicated mode. |
| 3 | [Version earlier than 20.00.00.00]<br>Data Rate<br>[v20.00.00.00 or later]<br>Link Speed<br>*2) | Auto | 【4Gbps adapter】<br>Auto,1Gbps,<br>2Gbps,4Gbps<br>【8Gbps adapter】<br>Auto,2Gbps,<br>4Gbps,8Gbps<br>【10Gbps adater】<br>Auto,10Gbps<br>【16Gbps adapter】<br>Auto,4Gbps,<br>8Gbps,16Gbps | The data rate(link speed) in the FC interface is specified. Usually use Auto setting.<br><br>You can only refer the current value when the port is used as a shared FC of LPAR manager.<br>If you need to change the settings, change to Dedicated mode. |
| 4 | Spinup Delay | Disabled | 【ver10.00.00.00<br>or later】<br>Disabled,<br>0～2550sec<br>【ver01.01.02.08<br>or earlier】<br>150, 300,<br>450, 600 sec | Disable or enable spinup delay and specify its delay time, which is the waiting time until the disk becomes READY. |
| 5 | Login Delay Time<br>*3) | 3 sec | [Version earlier than 20.00.00.00]<br>]<br>3 sec～60 sec<br>[v20.00.00.00 or later]<br>0 sec～60 sec | If you have a lot of nodes connected to FC-switch in your system, you may need to delay issuing fabric LOGIN. In this case set LOGIN Delay Time. |
| 6 | Persistent Bindings | Enabled | Enabled<br>Disabled | If this parameter is disabled, Persistent Binding setting is forcibly disabled. This parameter enables only for Linux and boot driver does not use this parameter. This value must correspond to the value of any other adapters within the same system. |

| No | Items | Default | Range | Contents |
|---|---|---|---|---|
| 7 | Force Default Parameter | Disabled | Enabled<br>Disabled | If this parameter is enabled, The OS will be booted with default settings without all settings configured previously. For detail explanation, see 'Precaution on setting 'FORCE DEFAULT PARAMETER' of section 'Before Use' in 'Hitachi Gigabit Fibre Channel Adapter Users Guide(Utility Software Edition)'.<br>This parameter is driver-use only and EFI driver does not use this parameters. |
| 8 | Select Boot Device Enable | Disabled | Enabled<br>Disabled | Enables or disables Boot Priority List. If it is enabled, Boot driver scans target LUs only on Boot Priority List. If it is disabled, Boot driver scans current available LUs ignoring Boot Priority List. |
| 9 | Boot Device List | (All Zero) | Target WWPN +LUN | Register the list of target LUs used for scanning when Boot Priority setting is enabled.<br>In this case, boot driver scans target LUs only on this list. Even if no LU is detected, boot driver does not try to detect LU from current available LUs |
| Extended option settings | | | | |
| 10 | Total number of LU | 32 | 【ver10.00.00.00 or later】<br>128,<br>【ver01.01.02.08 or earlier】<br>32 | Set the total number of LU which can be detected by EFI driver in the entire system. If there is one or more adapters are mounted in the system, settings of the first detected adapter apply to the entire system. |
| 11 | Number of LU per HBA FC Port | 8 | 1～1024 | Set the total number of LU that EFI driver detects for each FC port. The value must be less than “Total number of LU”<br>Each adapter can be set different value when there is one or more adapters are mounted in the system. EFI driver stops detecting LU at the time it detects LU over “Total number of LU” |
| 12 | Multipath Function *5) | Disabled | 【ver10.00.01.15 or later】<br>Enabled/Disabled | [EFI driver version is 10.00.01.15 or later]<br>Because of the redundancy between the identical LUs, if a failure occurs at the master path, the operation can be continued without interruption by switching the path to the alternate.<br>[EFI driver version is 10.00.01.14 or earlier]<br>This function is not supported. |
| 13 | Additional WWPN of FC Port | (All Zero) | | Show Additional WWPN used by Hitachi Compute Blade system. |
| 14 | Version Management support | Disabled | Disabled | Currently this function is not supported. |
| 15 | PLOGI Retry Timer | 200 msec | 50msec,<br>100msec,<br>200msec,<br>500msec,<br>1sec | Specify the retry interval for PLOGI after PLOGI fails. |
| 16 | PLOGI Retry count | 5 times | 0, 1, 5, 10,<br>20, 30 times | Specify the retry counts for PLOGI after PLOGI fails. |
| 17 | Link Initialize Rsp Timer | 【ver10.00.00.00 or later】<br>30sec<br>【ver01.01.02.08 or earlier】<br>60sec | 30, 45, 60,<br>75, 90, 120 sec | Set the time that EFI driver detects the timeout for “Link Initialize”. |
| 18 | LinkUp_timer | 20sec | 0, 20,40, 60 sec | Set the time that EFI driver waits “Link Up” after it detects “LinkDown”. |

| No | Items | Default | Range | Contents |
|---|---|---|---|---|
| 19 | Mailbox Rsp Timer | 【ver10.00.00.00 or later】 20sec 【ver01.01.02.08 or earlier】 30sec | 20, 30, 40, 50, 60 sec | Set the time that EFI driver detects the timeout for Mailbox other than “Link Initialize”. |
| 20 | Mailbox Retry Count | 1times | 0, 1, 3, 5, 8, 10 times | Set the retry counts when Mailbox fails. |
| 21 | SCSI command Rsp Timer | 20sec | 20, 30, 40, 50, 60 sec | Set the time that EFI driver detects the timeout for SCSI. |
| 22 | SCSI command Retry Count | 1times | 0, 1, 3, 5, 8, 10 times | Set the retry counts when SCSI command fails. |
| 23 | SCSI command Retry Timer | 200msec | 50msec, 100msec, 200msec, 500msec, 1sec | Specify the retry interval after issuing subsequent SCSI command after SCSI command fails. |
| LOG option settings | | | | |
| 24 | Error Logging Enable | Enabled | Enabled Disabled | Set Error logging function valid or invalid. |
| 25 | LOG Entry Overwrite Mode | Wrap | Wrap, Not Wrap | Set how to save the LOG to the entries. Wrap: EFI driver saves the LOG to the top entry again after the last entry is used. Not Wrap: EFI driver does not save the LOG after the last entry is used. |
| Extended option settings | | | | |
| 26 | HBA ISOL cmd | OFF | ON OFF | When making a HBA port into an isolated state, it sets to ON. This parameter can be set only to a 16Gbps adapter. |
| 27 | Init Negotiation Timer | 120 sec | 1 sec～255 sec | Set the Init Negotiation monitoring time of starting FC link initialization. This parameter can be set only to a 16Gbps adapter. |
| 28 | Login Target Filter Ext (Login Target Filter 16G) *6) | pid(Enabled) | pid(Enabled) no(Disabled) | If it is enabled, the driver does not access to the port which have the same value in the upper 2bytes of PORT_ID as self PORT_ID. This parameter can be set only to a 16Gbps adapter and 8Gbps adapter(ver10.00.02.0A or later). |
| 29 | MCK Link Down Time | 15 sec | 0 sec～60 sec | Set waiting time to linkup after MCK is occurred. This parameter can be set only to a 16Gbps adapter. |
| 30 | Multiple PortID *4) | Disabled | Enabled Disabled | This parameter is used in combination with ‘Connection Type’ to extend a connection type which connected FC port and the disk device directly. This parameter can be set only to a 16Gbps adapter. |

*1) About connection type setting to FC port used as a shared FC of LPAR manager or used on VMware, please refer to clause “About connection type setting to FC port used as a shared FC of LPAR manager or used on VMware.” of section “Precautions” of Chapter 2.

*2) Set the fixed data rate(link speed) for FC expansion card mounted on Hitachi Compute Blade 320 and do not set ‘Auto Detection’. For detail explanation, see section about FC HBA settings on user’s manual supplied with Hitachi Compute Blade 320 system.
In addition, it is not necessary to set data rate(link speed) setting again for the FC expansion card mounted on Hitachi Compute Blade 320 shipped after July 12, 2008, because fixed data rate(link speed) is already set to the FC expansion card. However, when you initialize setting data, it is necessary to set it in fixed data rate(link speed) again for the card because it returns to ‘Auto’ setting.

*3) When the default configuration of the LoginDelayTime setting is selected by EFI driver's set command, the EFI driver/OS driver's operation becomes the same operation as the case to set three seconds.

Please refer to “Notes concerning setting of LoginDelayTime” of section “Precautions” of Chapter 2.

*4) About a combination of connection type setting and Multiple PortID setting to expand a direct connection, refer to
“Notes about relations of Connection Type setting and Multiple PortID setting”

*5) The disk which is supporting Multipath Function is as follows.

| # | Disk | Support |
|---|---|---|
| 1 | SANRISE 9500V Series | ○ |
| 2 | AMS200/500/1000 | ○ |
| 3 | AMS2100/2300/2500 | ○ |
| 4 | SANRISE 9900V Series | ○ |
| 5 | Hitachi USP/NSC | ○ |
| 6 | Hitachi H12000/H10000 | ○ |
| 7 | Hitachi USP-V/USP-VM | ○ |
| 8 | Hitachi H24000/H20000 | ○ |
| 9 | Hitachi VSP | ○ |

*6) In the case of 8Gbps adapter(ver10.00.02.0A or later), the Login Target Filter Ext parameter setting is effective only for FC port used as a shared FC of LPAR manager or used on VMware, and default setting of that case is “pid(Enabled)". In the case of other modes, it is the same regardless of setting contents when set in "no(Disabled) ".
In the case of 16Gbps adapter, it works according to the setting of the Login Target Filter Ext parameter regardless of mode.

# Option shell commands available on EFI driver

The following commands can be used on option setup shell.

| # | Category | # | Commands | Function | Pages |
|---|---|---|---|---|---|
| 1 | Option settings | 1 | set | Execute basic optional settings.<br>You must execute “save” commands to save the settings. | P.93 |
| | | 2 | advset | Execute extended optional settings.<br>You must execute “save” commands to save the settings. | P.97 |
| | | 3 | logset | Execute optional settings of LOG.<br>You must execute “save” commands to save the settings. | P.99 |
| | | 4 | setall | [EFI driver version is 10.00.00.00 or later]<br>Apply the same settings to all ports. You do not need to execute “save” commands to save the settings. | P.101 |
| 2 | Adapter Information | 1 | info | Display the following information of all FC ports in the entire system.<br>Bus/Dev/Func, WWN<br>FLASH-ROM version, EFI Driver Version | P.104 |
| 3 | Operation | 1 | select | Display the list of all FC ports in the entire system and select the FC port for the changing setting.<br>When no FC port is selected, commands other than “info”, “help” and “exit” are not executed. | P.92 |
| | | 2 | save | Save the settings set by “set”, “advset” and “logset”. | P.102 |
| | | 3 | discard | Discard the settings set by “set”, “advset” and “logset”. | P.103 |
| | | 4 | clear | Initialize the settings to default.<br>You must execute “save” commands to save the settings.<br>[ver10.00.02.03 or earlier]<br>Also when using as a shared FC mode, all the option settings is initialized.<br>[ver10.00.02.04 or later]<br>When using as a shared FC mode, option settings except Connection Type, Data Rate(link speed) is initialized. | P.103 |
| | | 5 | exit | Exits the “Set options shell”. | P.102 |
| | | 6 | help | Display the list of the commands available on “Set options shell”. | P.104 |
| | | 7 | logmf | Display the error messages in the FLASH-ROM of FC adapter. | P.105 |
| | | 8 | logdf | Display the error logs in the FLASH-ROM of the FC adapter. | P.108 |
| | | 9 | dump | Display the following information that EFI driver controls.<br>(1)INIT_TABLE, (2)XOB, (3)XRB, (4)Mailbox | P.110 |
| | | 10 | logerase | Erase the error messages and the error logs. | P.113 |
| | | 11 | valid | Display option settings of selected FC port | P.112 |
| 4 | Operation-2 [ver10.00.00.00 or later] | 1 | clearall | Clear settings of all ports and set factory default settings. You do not need to execute “save” commands to save the settings.<br>[ver10.00.02.03 or earlier]<br>Also when using as a shared FC mode, all the option settings is initialized.<br>[ver10.00.02.04 or later] | P.114 |

| | | | | | |
|---|---|---|---|---|---|
| | | | | When using as a shared FC mode, option settings except Connection Type, Data Rate(link speed) is initialized. | |
| | | 2 | dumpefi | Display the table information and the PCI memory space. | P.111 |
| | | 3 | logeraseall | Display the error message and log data of all adapters. | P.113 |
| | | 4 | path | Display LU path information detected by all adapters. | P.118 |
| | | 5 | restore | Restore parameter settings from backup when error occurred. If both current and backup settings are detected as error, force EFI driver to set default value. | P.115 |
| 5 | Operation-3 [ver10.00.01.1A or later] | 1 | trcshow | Display EFI Driver trace of selected FC port | P.119 |
| 6 | Operation-4 [ver10.00.02.0A or later] | 9 | loginfilter | Set Login Target Filter 16G. | P.127 |
| 7 | Operation-5 [ver20.00.00.00 or later] | 1 | conntype | Set Connection Type. | P.120 |
| | | 2 | conntypeshow | Display Connection Type. | P.121 |
| | | 3 | hbaisol | Set HBA_ISOL. | P.122 |
| | | 4 | initnegotime | Set Init Negotiation Timer. | P.123 |
| | | 5 | linkspeed | Set LinkSpeed. | P.124 |
| | | 6 | linkspeedshow | Display Link Speed. | P.125 |
| | | 7 | linkstateshow | Display Link Speed and Connection Type | P.125 |
| | | 8 | logindelay | Set LoginDelayTime. | P.126 |
| | | 9 | mcklinkdowntime | Set MCK Link Down Timer. | P.128 |
| | | 10 | multipid | Set Multiple PortID. | P.129 |

# Procedure to confirms versions

## Confirms EFI Driver Version

**1. Initiate EFI shell**

Initiate EFI shell after reboot or power-on.

**2. Confirm driver handle**

Display EFI driver information using drivers command and confirm the EFI driver version.

```
Shell> drivers
           T   D
D          Y C I
R          P F A
V  VERSION  E G G #D #C DRIVER NAME                          IMAGE NAME
== ======== = = = == == ================================== ==================
0E 00000010 B - -  3 10 PCI Bus Driver                      PciBus
0F 00000010 D - -  1  - PC-AT ISA Device Enumeration Driver  PcatIsaAcpi
                   :
2B 01020000 ? X X  -  - LSI Logic Ultra160 SCSI Driver      PciRom Seg=00000000
2C 10000113 B X -  2  2 Hitachi PCI-X/PCIe Fibre channel Dr EFIdriver
33 00000010 ? X X  -  - PCI IDE/ATAPI Bus Driver            IdeBus
                   :
46 FFFFFFF0 ? - -  -  - Serial Mouse Driver                 SerialMouse

Shell>
```

**EFI Driver Version**

Depending on the adapter type, the following message is displayed.
4/8Gbps adapter :Hitachi PCI-X/PCIe Fibre channel Driver
16Gbps adapter :Hitachi 16Gbps Fibre channel Driver

## Confirms Firmware Version

**1. Start “set options shell”**

Initiate EFI Driver set option shell. ( refer to『The option setup shell for HBA parameter setup』(P.79) )

**2. Confirm Firmware Version**

Execute ‘info’ command, and confirm FLASH-ROM Version.

```
hfccfg>info
Adapter Information Display:
Num Seg Bus Dev Func  current WWPN      original WWPN     FLASH-ROM   EFI Driver
                                                          Version     Version
--- --- --- --- ----  ----------------  ----------------  ----------  ----------
 1 - 00  03  00  00   23100000870CC082                     30044D      10000201
 2 - 00  03  00  01   23100000870CC0A2                     30044D      10000201

hfccfg>
```

A ‘Seg’(segment number) is displayed only on version 10.00.02.00 or later.

**Firmware Version**

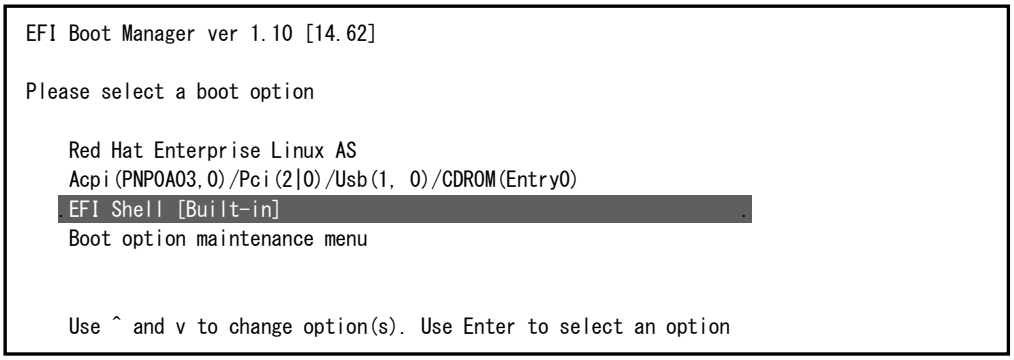
# Procedure to set option parameters(option setup shell)

## Confirms EFI Driver execution

The option parameter of EFI driver can be set when EFI driver of HBA is working.

**1.** Initiate EFI shell after reboot or power-on.

Here is the example of IPF server module.

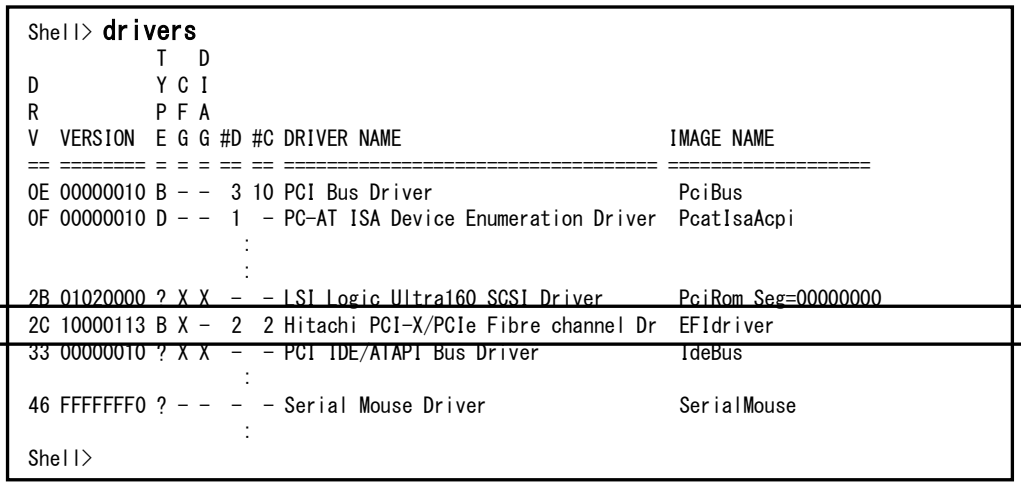



**2.** When EFI Shell prompt " Shell >" appears, execute ‘drivers’ command.

Shell>drivers

(Execute ‘drivers –b’ when data is not fit into on the screen at once).

**3.** Confirm whether ‘Hitachi PCI-X/PCIe Fibre channel Driver ‘or ‘Hitachi Fibre channel Driver’ or ‘Hitachi 16Gbps Fibre channel Driver’ exists. If so, EFI driver is initiated normally.



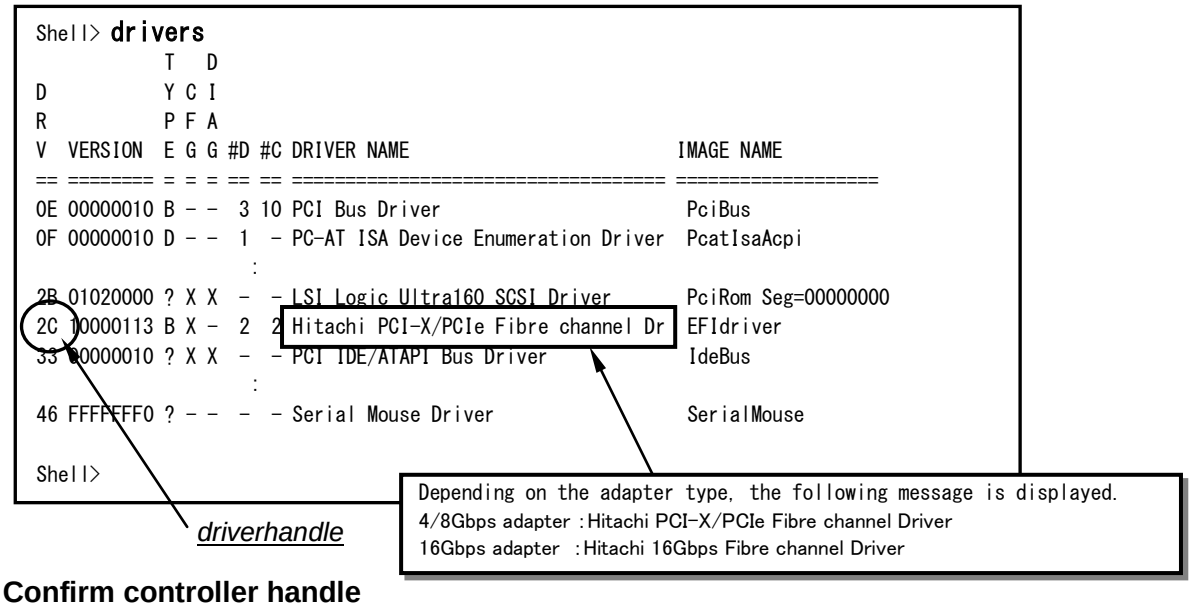
# The option setup shell for HBA parameter setup

### 1. Initiate EFI shell

Initiate EFI shell after reboot or power-on.

### 2. Confirm driver handle

Display EFI driver information using drivers command and confirm the driver handle of EFI driver.

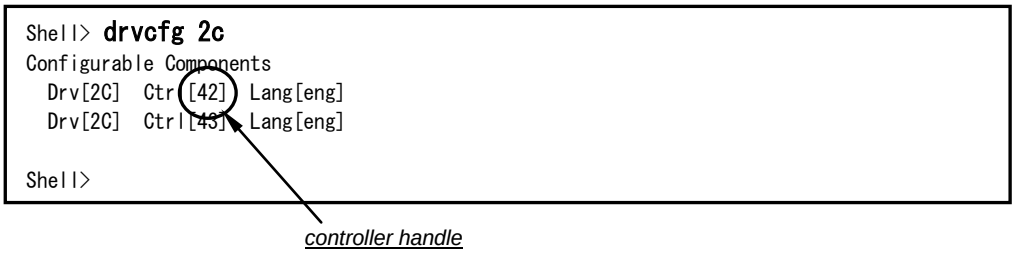



### 3. Confirm controller handle

Execute drvcfg command and display configurable controller handle.

Shell>drvcfg <driverhandle>

(*) <driverhandle> :Driver handle confirmed by ‘drivers’ command. In this example, ‘driver handle’ is ‘2C’.




(*)The total number of ‘Controller handle’ is the number of adapter port mounted on this server. If there are multiple handles exist, you can use any ‘Controller handle’. In the example below uses the first Controller handle.

### 4. Start “set options shell”

Execute drvcfg command using Driver handle and Control handle confirmed by step 2 and 3.

Shell>drvcfg -s <driverhandle> <controllerhandle>


(*) Command prompt becomes hfccfg after option setup shell is initiated.
In case the command prompt is not “hfccfg”, execute from step 2 to 4 again.

## Procedure to set a Boot Function to Enable

Option parameter does not become effective until server is rebooted.

**1. Start “set options shell”**

Initiate EFI Driver set option shell.
( refer to『The option setup shell for HBA parameter setup』(P.79) )

**2. Select the adapter port**

Execute ‘select’ command, and select adapter port.
( refer to『select command』(P.92) )

**3. Start “Basic optional settings”**

Execute ‘set’ command, and start Basic optional settings.
( refer to『set command』(P.93) )

**4. Setting Boot Function to Enable**

4-1.Type ‘y’ key after “Boot Function” is displayed.

4-2.’1’ is selected.

4-3.Press ‘Enter’ key several times to return to the prompt.

**5. Save the settings**

Execute ‘save’ command, and save the settings.
( refer to『save command』(P.102) )

**6. End “set options shell”**

Execute ‘exit’ command, and return to “EFI shell”.
( refer to『exit command』(P.102) )

**7. Making settings effective**

Execute it referring to 『Procedure to make option settings effective』(P.88).

## Procedure to set a Boot Function to Disable

Option parameter does not become effective until server is rebooted.

Change “Enable” into “Disable, and refer to 『Procedure to set a Boot Function to Enable』(P.80)

# Procedure to set Boot Device List

Option parameter does not become effective until server is rebooted.

### 1. Start “set options shell”

Initiate EFI Driver set option shell.
( refer to『The option setup shell for HBA parameter setup』(P.79) )

### 2. Select the adapter port

Execute ‘select’ command, and select adapter port.
( refer to『select command』(P.92) )

### 3. Start “Basic optional settings”

Execute ‘set’ command, and start Basic optional settings.
( refer to『set command』(P.93) )

### 4. Setting Select Boot Device to Enable or Disable

4-1. Type ‘Enter’ key to the item of the remainder until "Select Boot Device" is displayed.

4-2. Type ‘y’ key after "Select Boot Device" is displayed.

4-3. Enter one of the following when “please select -->” is displayed.

- Type ‘0’ key when you change the setting to Enable
- Type ‘1’ key when you change the setting to Disable
- Type ‘n’ key or ’Enter’ key when you don’t change the settings

### 5. Setting Boot Device List

5-1. Type 'y' key after "Select Boot Device" is displayed.

5-2. Type the entry number that changes after "please select a number(1-8,c(cancel)) -->" is displayed.

5-3. Register WWPN and LUN of boot device. Select the registration method as follows.

- When registering by an auto scan -> refer to『(1) Auto scan of the target device』(P.95)
- When registering by a manual setup -> refer to『(2) Manual setup of the target device』(P.96)

5-4. Press ‘Enter’ key several times to return to the prompt.

( refer to『set command』(P.93) )

### 6. Save the settings

Execute ‘save’ command, and save the settings.
( refer to『save command』(P.102) )

### 7. End “set options shell”

Execute ‘exit’ command, and return to “EFI shell”.
( refer to『exit command』(P.102) )

### 8. Making settings effective

Execute it referring to 『Procedure to make option settings effective』(P.88).

When you use hardware memory dump function of Hitachi Compute Blade, please register Target port and LU of the disk which made a DUMP PARTITION with BOOT PRIORITY setting. Please register the DUMP PARTITION disk with the priority that is lower than a BOOT disk.

# Procedure to set a Connection Type

Option parameter does not become effective until server is rebooted.

### 1. Start “set options shell”

Initiate EFI Driver set option shell.
( refer to『The option setup shell for HBA parameter setup』(P.79) )

### 2. Select the adapter port

Execute ‘select’ command, and select adapter port.
( refer to『select command』(P.92) )

### 3. Start “Basic optional settings”

Execute ‘set’ command, and start Basic optional settings.
( refer to『set command』(P.93) )

### 4. Setting Connection type

4-1. Type ‘Enter’ key to the item of the remainder until "Connection Type" is displayed.

4-2. Type 'y' key after "Connection Type" is displayed.

4-3. Enter one of the following.

- Type ‘0’ key when you change the setting to “Auto Detection”
- Type ‘1’ key when you change the setting to “Point to Point Only”
- Type ‘2’ key when you change the setting to “Loop Only” (After "Ver.20.00.00.00", it is displayed as "FC-AL")
- Type ‘c’ key when you don’t change the settings

4-4. Press ‘Enter’ key several times to return to the prompt.
( refer to『set command』(P.93) )

### 5. Save the settings

Execute ‘save’ command, and save the settings.
( refer to『save command』(P.102) )

### 6. End “set options shell”

Execute ‘exit’ command, and return to “EFI shell”.
( refer to『exit command』(P.102) )

### 7. Making settings effective

Execute it referring to 『Procedure to make option settings effective』(P.88).

- Connection Type cannot be changed when using as a shared FC of Hitachi Virtualization. If you need to change the settings, change to Dedicated mode.
- About connection type setting to FC port used as a shared FC of LPAR manager or used on VMware, please refer to clause “About connection type setting to FC port used as a shared FC of LPAR manager or used on VMware.” of section “Precautions” of Chapter 2.

## Procedure to set a Multiple PortID to Enable

Option parameter does not become effective until server is rebooted.

**1. Start “set options shell”**

Initiate EFI Driver set option shell.
( refer to『The option setup shell for HBA parameter setup』(P.79) )

**2. Select the adapter port**

Execute ‘select’ command, and select adapter port.
( refer to『select command』(P.92) )

**3. Start “Basic optional settings”**

Execute ‘set’ command, and start Basic optional settings.
( refer to『set command』(P.93) )

**4. Setting Boot Function to Enable**

4-1.Type ‘y’ key after “Multiple PortID” is displayed.

4-2. Select ’1’.

4-3.Press ‘Enter’ key several times to return to the prompt.

**5. Save the settings**

Execute ‘save’ command, and save the settings.
( refer to『save command』(P.102) )

**6. End “set options shell”**

Execute ‘exit’ command, and return to “EFI shell”.
( refer to『exit command』(P.102) )

**7. Making settings effective**

Execute it referring to 『Procedure to make option settings effective』(P.88).

## Procedure to set a Multiple PortID to Disable

Option parameter does not become effective until server is rebooted.

Change “Enable” into “Disable, and refer to 『Procedure to set a Multiple PortID to Enable』(P.83)

# Procedure to set a Data Rate

Option parameter does not become effective until server is rebooted.

### 1. Start “set options shell”

Initiate EFI Driver set option shell.
( refer to『The option setup shell for HBA parameter setup』(P.79) )

### 2. Select the adapter port

Execute ‘select’ command, and select adapter port.
( refer to『select command』(P.92) )

### 3. Start “Basic optional settings”

Execute ‘set’ command, and start Basic optional settings.
( refer to『set command』(P.93) )

### 4. Setting Data Rate(After "Ver.20.00.00.00", it is displayed as "Link Speed")

4-1. Type ‘Enter’ key to the item of the remainder until "Data Rate" is displayed.

4-2. Type 'y' key after "Data Rate" is displayed.

4-3. Enter one of the following.

【4Gbps adapter】

- Type ‘0’ key when you change the setting to “Auto Detection”
- Type ‘1’ key when you change the setting to “1Gbps Only”
- Type ‘2’ key when you change the setting to “2Gbps Only”
- Type ‘3’ key when you change the setting to “4Gbps Only”
- Type ‘c’ key when you don’t change the settings

【8Gbps adapter】

- Type ‘0’ key when you change the setting to “Auto Detection”
- Type ‘1’ key when you change the setting to “2Gbps Only”
- Type ‘2’ key when you change the setting to “4Gbps Only”
- Type ‘3’ key when you change the setting to “8Gbps Only”
- Type ‘c’ key when you don’t change the settings

【10Gbps adapter】

- Type ‘0’ key when you change the setting to “Auto Detection”
- Type ‘1’ key when you change the setting to “10Gbps Only”
- Type ‘c’ key when you don’t change the settings

【16Gbps adapter】

- Type ‘0’ key when you change the setting to “Auto Detection”
- Type ‘1’ key when you change the setting to “4Gbps Only”
- Type ‘2’ key when you change the setting to “8Gbps Only”
- Type ‘3’ key when you change the setting to “16Gbps Only”
- Type ‘c’ key when you don’t change the settings

4-4. Press ‘Enter’ key several times to return to the prompt.

( refer to『set command』(P.93) )

### 5. Save the settings

Execute ‘save’ command, and save the settings.
( refer to『save command』(P.102) )

### 6. End “set options shell”

Execute ‘exit’ command, and return to “EFI shell”.
( refer to『exit command』(P.102) )

### 7. Making settings effective

Execute it referring to 『Procedure to make option settings effective』(P.88).

- Data Rate cannot be changed when using as a shared FC of Hitachi Virtualization. If you need to change the settings, change to Dedicated mode.
- About connection type setting to FC port used as a shared FC of LPAR manager or used on VMware, please refer to clause “About connection type setting to FC port used as a shared FC of LPAR manager or used on VMware.” of section “Precautions” of Chapter 2.

## Procedure to set Login Delay Time

Option parameter does not become effective until server is rebooted.

### 1. Start “set options shell”

Initiate EFI Driver set option shell.
( refer to『The option setup shell for HBA parameter setup』(P.79) )

### 2. Select the adapter port

Execute ‘select’ command, and select adapter port.
( refer to『select command』(P.92) )

### 3. Start “Basic optional settings”

Execute ‘set’ command, and start Basic optional settings.
( refer to『set command』(P.93) )

### 4. Setting Login Delay Time

4-1. Type ‘Enter’ key to the item of the remainder until "Login Delay Time" is displayed.

4-2. Type 'y' key after "Login Delay Time" is displayed.

4-3. Type the set value by the decimal number. Range is 3-60.

4-4. Press ‘Enter’ key several times to return to the prompt.
( refer to『set command』(P.93) )

### 5. Save the settings

Execute ‘save’ command, and save the settings.
( refer to『save command』(P.102) )

### 6. End “set options shell”

Execute ‘exit’ command, and return to “EFI shell”.
( refer to『exit command』(P.102) )

### 7. Making settings effective

Execute it referring to 『Procedure to make option settings effective』(P.88).

- There is a case that doesn't operate normally according to the number of connected LPAR when using as a shared FC of Hitachi Virtualization. This phenomenon might be able to be evaded by extending Login Delay Time.

- When the default configuration of the LoginDelayTime setting is selected by EFI driver's set command, the EFI driver/OS driver's operation becomes the same operation as the case to set three seconds.
  Please refer to “Notes concerning setting of LoginDelayTime” of section “Precautions” of Chapter 2.

# Procedure to set a Multipath Function to Enable

Option parameter does not become effective until server is rebooted.

**【v10.00.01.15 or earlier】**

**1. Start “set options shell”**

Initiate EFI Driver set option shell.
( refer to『The option setup shell for HBA parameter setup』(P.79) )

**2. Select the adapter port**

Execute ‘select’ command, and select adapter port.
( refer to『select command』(P.92) )

**3. Start “Extended optional settings”**

Execute ‘advset’ command, and start extended optional settings.
( refer to『advset command』(P.97) )

**4. Setting Boot Priority to Enable**

4-1. Type ‘Enter’ key to the item of the remainder until "Multipath Function" is displayed.

4-2. Type 'y' key after "Multipath Function" is displayed.

4-3. ‘1’ is selected.

4-4. Press ‘Enter’ key several times to return to the prompt.

( refer to『advset command』(P.97) )

**5. Save the settings**

Execute ‘save’ command, and save the settings.
( refer to『save command』(P.102) )

**6. End “set options shell”**

Execute ‘exit’ command, and return to “EFI shell”.
( refer to『exit command』(P.102) )

**7. Making settings effective**

Execute it referring to 『Procedure to make option settings effective』(P.88).

# Procedure to set a Multipath Function to Disable

Option parameter does not become effective until server is rebooted.

Change “Enable” into “Disable, and refer to 『Procedure to set a Multipath Function to Enable』(P.86)

# Procedure to set a LoginTarget Filter Ext

**【16Gbps adapter and 8Gbps adapter(ver10.00.02.0A or later) only】**

Option parameter does not become effective until server is rebooted.

### 1. Start “set options shell”

Initiate EFI Driver set option shell.
( refer to『The option setup shell for HBA parameter setup』(P.79) )

### 2.Confirm a number of the adapter for setting

refer to『select command』(P.92)

**2.1 Execute ‘select’ command**

Execute ‘select’ command, and confirm a number of the adapter for setting.

```
>select
 HBA FC Port List:
     Num Seg Bus Dev Func  current WWPN      original WWPN
     --- --- --- --- ----  ----------------  ----------------
      1 – ........
      2 – ......
      c - cancel
 select Number -->
```

**2.2 Terminate ‘select’ command**

Input ‘c’, and terminate.

```
    select Number --> c
```

3.Setting Login Target Filter Ext

( refer to『loginfilter command』(P. 127) )

**3.1 Execute ‘loginfilter’ command**

Execute ‘loginfilter’ command.

```
>loginfilter
```

**3.2 select adapter port**

Input adapter number that confirmed by step 2.

```
select HBA(1-x, a(All))->
```

**3.3 select the adapter port**

Input one of the followings.

- Input ‘0’ key when you change the setting to pid(Enabled)
- Input ‘1’ key when you change the setting to no(Disabled)

```
     0 – pid(Enabled) -[default]
     1 – no(Disabled)
     c - cancel
please select -->
```

**3.4 Save the setteing**

Input ‘y’, and save the setting.

```
    Save Change? (y/[n]) --> y
    Now executing....
    done.
>
```

### 4. End “set options shell”

Execute ‘exit’ command, and return to “EFI shell”.
( refer to『exit command』(P.102) )

### 5. Making settings effective

Execute it referring to 『Procedure to make option settings effective』(P.88).

In the case of 8Gbps adapter(ver10.00.02.0A or later), the Login Target Filter Ext parameter setting is effective only for FC port used as a shared FC of LPAR manager or used on VMware, and default setting of that case is “pid(Enabled)". In the case of other modes, it is the same regardless of setting contents when set in "no(Disabled) ".
In the case of 16Gbps adapter, it works according to the setting of the Login Target Filter Ext parameter regardless of mode.

# Procedure to restore default settings

Option parameter does not become effective until server is rebooted.

**1. Start “set options shell”**

Initiate EFI Driver set option shell.
( refer to『The option setup shell for HBA parameter setup』(P.79) )

**2. Select the adapter port**

Execute ‘select’ command, and select adapter port.
( refer to『select command』(P.92) )

**3. Start “Default settings”**

Execute ‘clear’ command, and start default settings.
( refer to『clear command』(P.103) )

**4. returning to default settings**

4-1. Type 'y' key after "please select (y/[n])" is displayed.

4-2. wait until “done.” is displayed.

**5. Save the default settings**

Execute ‘save’ command, and save the default settings.
( refer to『save command』(P.102) )

**6. End “set options shell”**

Execute ‘exit’ command, and return to “EFI shell”.
( refer to『exit command』(P.102) )

**7. Making settings effective**

Execute it referring to 『Procedure to make option settings effective』(P.88).

[ver10.00.02.03 or earlier]
Also when using as a shared FC mode, all the option settings is initialized.
[ver10.00.02.04 or later]
When using as a shared FC mode, option settings except Connection Type, Data Rate(Link Speed) is initialized.

# Procedure to make option settings effective

To making option settings effective, either the following is executed.

【Basic mode】

(1) The server device is reactivated.

Refer to the manual of the server device for the procedure reactivating the server device.

【LPAR mode of LPAR manager】

(1) The reconnect command of the EFI shell command is executed.

shell> reconnect –r

(2) Reactivation of LPAR

Refer to the manual of the server device for the reactivation of LPAR.

(3) The server device is reactivated.

Refer to the manual of the server device for the procedure reactivating the server device.

# Procedure to refer EFI Driver error information

## Procedure to refer an error messages

### 1. Start “set options shell”

Initiate EFI Driver set option shell.
( refer to『The option setup shell for HBA parameter setup』(P.79) )

### 2. Select the adapter port

Execute ‘select’ command, and select adapter port.
( refer to『select command』(P.92) )

### 3. EFI Driver error messages is displayed

Execute ‘logmf’ command.
( refer to『logmf command』(P.105) )

### 4. Details of EFI Driver error messages are displayed.

4-1. Confirm the collection time, the message, and Num(EFI Driver error messages number) of EFI Driver error messages. EFI Driver error messages is displayed from latest information on the collection time in the descending order.

4-2. Type the Num of EFI Driver error messages that refers after "select(1-x, c[c])" is displayed.
( refer to『logmf command』(P.105) )

### 5. End the reference to EFI Driver error messages

5-1. Type 'c' key after "select(1-x, c[c])" is displayed.
( refer to『logmf command』(P.105) )

5-2. Execute 'exit' command on the 'set options shell'.
( refer to『exit command』(P.102) )

# Procedure to refer a detailed error logs

### 1. Start “set options shell”

Initiate EFI Driver set option shell.
( refer to『The option setup shell for HBA parameter setup』(P.79) )

### 2. Select the adapter port

Execute ‘select’ command, and select adapter port.
( refer to『select command』(P.92) )

### 3. EFI Driver detailed error logs is displayed

Execute ‘logdf’ command.
( refer to『logdf command』(P.108) )

### 4. Details of EFI Driver detailed error logs are displayed

4-1. Confirm the collection time, the message, and Num(EFI Driver detailed error logs number) of EFI Driver detailed error logs. EFI Driver detailed error logs is displayed from latest information on the collection time in the descending order.

4-2. Type the Num of EFI Driver detailed error logs that refers after "select(1-x, c[c])" is displayed.
( refer to『logdf command』(P.108) )

### 5. End the reference to EFI Driver detailed error logs

5-1. Type 'c' key after "select(1-x, c[c])" is displayed.
( refer to『logdf command』(P.108) )

5-2. Execute 'exit' command on the 'set options shell'.
( refer to『exit command』(P.102) )

# Procedure to delete an EFI Driver error information (only the selected FC port)

**1. Start “set options shell”**

Initiate EFI Driver set option shell.
( refer to『The option setup shell for HBA parameter setup』(P.79) )

**2. Select the adapter port**

Execute ‘select’ command, and select adapter port.
( refer to『select command』(P.92) )

**3. Start deletion of EFI Driver error information**

Execute ‘logerase’ command.
( refer to『logerase command』(P.113) )

**4. Execute deletion of EFI Driver error information**

4-1. Type 'y' key after "please select (y/[n])" is displayed.

4-2. wait until “done.” is displayed.

( refer to『logerase command』(P.113) )

**5. End the deletion of EFI Driver error information**

Execute 'exit' command on the 'set options shell'.
( refer to『exit command』(P.102) )

# Procedure to delete an EFI Driver error information (all FC port)

**1. Start “set options shell”**

Initiate EFI Driver set option shell.
( refer to『The option setup shell for HBA parameter setup』(P.79) )

**2. Start deletion of EFI Driver error information**

Execute ‘logeraseall’ command.
( refer to『logeraseall command』(P.113) )

**3. Execute deletion of EFI Driver error information**

3-1. Type 'y' key after "please select (y/[n])" is displayed.

3-2. wait until “done.” is displayed.

( refer to『logeraseall command』(P.113) )

**4. End the deletion of EFI Driver error information**

Execute 'exit' command on the 'set options shell'.
( refer to『exit command』(P.102) )

# Detailed commands

## select command

Execute “select” command to select the adapter (port) for settings.

(a)Command

hfccfg>select

(b)Enter one of the followings when “select Number -->” is displayed.

- Type the number(Num) when you select the adapter.
- Type ‘c’ key when you cancel the operation.

The following is an example that “select” command is executed.

When running in LPAR mode on LPAR manager

```
hfccfg>select
  HBA FC Port List:
      Num Seg Bus Dev Func  current WWPN      original WWPN
      --- --- --- --- ----  ----------------  ----------------
       1 - 00  05  01  00   2301000087130000
       2 - 00  05  01  01   2301000087930000
        c - cancel
  select Number -->1
hfccfg.2301000087130000>
```

Seg#(Seg) is displayed when EFI driver version is 10.00.02.00 Or later.

original WWPN：(Blank)
current WWPN：Display vfcWWPN

When running in BASIC mode

```
hfccfg>select
  HBA FC Port List:
      Num Seg Bus Dev Func  current WWPN      original WWPN
      --- --- --- --- ----  ----------------  ----------------
       1 - 00  05  01  00   2400000087033FC8  5000087000565D68
       2 - 00  05  01  01   2400000087033FCA  5000087000565D6A
        c - cancel
  select Number -->1
hfccfg. 2400000087033FC8>
```

Seg#(Seg) is displayed when EFI driver version is 10.00.02.00 Or later.

original WWPN：Display original WWPN
current WWPN：Display current available WWPN either original WWPN or additional WWPN

The WWPN is added into the command prompt by executing the “select” command, and you can confirm the target adapter.

(*) Note the settings by executing set, advset and logset commands are ignored when executing select command before executing save command.

# set command

Execute “set” command to configure Basic optional settings.

(a)Command

> set

(b-1) Enter one of the following when “change? (y/[n]) -->” is displayed.

- Type ‘y’ key when you change the settings
- Type ‘n’ key or ’Enter’ key when you don’t change the settings

(b-2) Enter one of the following when “please select -->” is displayed.

- Type the number to the option when you change the settings
- Type ‘c’ when you don’t change the settings

(c)Operation required after the command is executed

Execute one of the following

- Execute “advset” or “logset” command.
- Execute “save” command when you don’t execute “advset” and “logset” command.

**Note**

This example responds y to all items. If you do not want to change the item, just press [ENTER] key and move to the next item.

```
hfccfg.2301000087130000>set<Enter>
  Base Settings:
    ** Boot Function = Disabled
       change? (y/[n]) -->y<Enter>
           0 - Disabled -[default]
           1 - Enabled
           c - cancel
        please select -->1<Enter>
    ** Connection Type = Auto Detection
       change? (y/[n]) -->y<Enter>
           0 - Auto Detection -[default]
           1 - Point to Point Only
           2 - Loop Only
           c - cancel
        please select -->0<Enter>
    ** Multiple PortID = Disabled
       change? (y/[n]) -->y
           0 - Disable -[default]
           1 - Enable
           c - cancel
        please select -->1<Enter>
    ** Data Rate = Auto Detection
       change? (y/[n]) -->y<Enter>
           0 - Auto Detection -[default]
           1 - 2Gbps Only
           2 - 4Gbps Only
           3 - 8Gbps Only
           c - cancel
        please select -->0<Enter>
    ** Spinup Delay = Disabled
       change? (y/[n]) -->y<Enter>
          range : 10-2550(sec)
           0 - Disabled -[default]
           c - cancel
        please select or enter the number of
(Continue to the next page)
```

About connection type setting to FC port used as a shared FC of LPAR manager or used on VMware, refer to clause “About connection type setting to FC port used as a shared FC of LPAR manager or used on VMware.” of section “Precautions” of Chapter 2.

If the adapter is used as FC shared mode of LPAR manager, you can not change the settings.
If you need to change the settings, change to Dedicated mode.

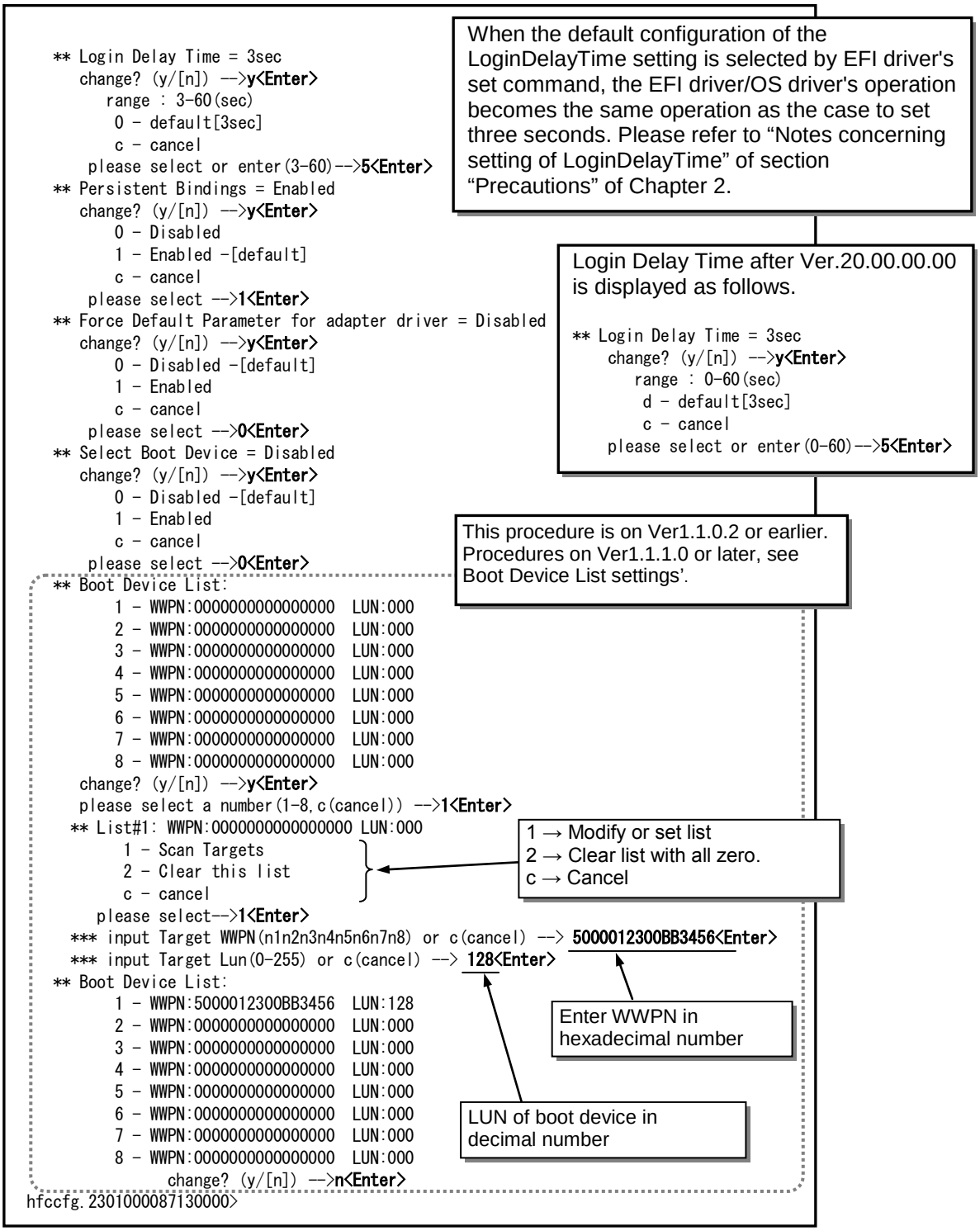
Data rate is diferrent depending on adapter type.

Please set the fixed data rate for FC expansion card mounted on Hitachi Compute Blade 320 and do not set ‘Auto’. For detail explanation, see section about FC HBA settings on user’s manual supplied with Hitachi Compute Blade 320 system.
In addition, it is not necessary to set data rate setting again for the FC expansion card mounted on Hitachi Compute Blade 320 shipped after July 12, 2008, because fixed data rate is already set to the FC expansion card. However, when you initialize setting data, it is necessary to set it in fixed data rate again for the card because it returns to ‘Auto’ setting.

Data Rate is displayed as Link Speed after Ver.20.00.00.00..

‘Loop Only’ of Connection Type is displayed as ‘FC-AL’ by a 16Gbps adapter. .

‘Multiple PortID' is displayed only as a 16Gbps adapter.




If you execute “advset” or “logset” command, execute the command continuously. Execute “save” command to save the settings when you execute neither.

## ❑ Boot Device List setting

When you use hardware memory dump function of Hitachi Compute Blade, please register Target port and LU of the disk which made a DUMP PARTITION with BOOT PRIORITY setting. Please register the DUMP PARTITION disk with the priority that is lower than a BOOT disk.

### (1) Auto scan of the target device

The following example shows auto scan of the target device available on EFI driver version 1.1.1.0 of later.

```
** << Boot Device List >> (LUN:decimal)
       1 - WWPN:0000000000000000  LUN:000
       2 - WWPN:0000000000000000  LUN:000
       3 - WWPN:0000000000000000  LUN:000
       4 - WWPN:0000000000000000  LUN:000
       5 - WWPN:0000000000000000  LUN:000
       6 - WWPN:0000000000000000  LUN:000
       7 - WWPN:0000000000000000  LUN:000
       8 - WWPN:0000000000000000  LUN:000
  change? (y/[n]) -->y
  please select a number(1-8,c(cancel)) -->1<Enter>
 ** List#1: WWPN:0000000000000000 LUN:000
       1 - Scan Target
       2 - Manual setup
       3 - Clear this list
       c - cancel
     please select-->1<Enter>
   ===> Target port serching... please wait
   ===> Target port serch End.
     << Target Device List >>
        1 - D-ID:020400  WWPN:50060E8000C27992  HITACHI   DF600F
        c - cancel(return to <<Boot Device List>>)
     select a Target for Boot Device. (1-xx, c): 1<Enter>
     *** #1: D-ID:020400  WWPN:50060E8000C27992 is selected ***
        1 - Scan Lun
        c - cancel(return to <<Target Device List>>)
     please select -->1<Enter>
     << LUN List (decimal)>>
        1 - LUN : 000
        2 - LUN : 001
        c - cancel(return to <<Target Device List>>)
     select a LUN for Boot Device. (1-xx, c): 1<Enter>
     *** List#1 new WWPN and LUN ***
          WWPN : 50060E8000C27992
          LUN  : 000
     Update List#1 ? (y/[n]) -->y
     List#1 update end
** << Boot Device List >> (LUN:decimal)
       1 - WWPN:50060E8000C27992  LUN:000
       2 - WWPN:0000000000000000  LUN:000
       3 - WWPN:0000000000000000  LUN:000
       4 - WWPN:0000000000000000  LUN:000
       5 - WWPN:0000000000000000  LUN:000
       6 - WWPN:0000000000000000  LUN:000
       7 - WWPN:0000000000000000  LUN:000
       8 - WWPN:0000000000000000  LUN:000
   change? (y/[n]) -->
```

Select the number of list you need to register.

WWN of the detected target port is displayed after executing scan. Select device you need to register.

LUN connected to the selected target port is displayed. Select LUN you need to register.

WWPN and LUN on the list are replaced by LUN and WWN selected above when selecting 'Y'. Return to the previous state when selecting 'N'.

### (2) Manual setup of the target device

```
** << Boot Device List >> (LUN:decimal)
       1 - WWPN:50060E8000C27992  LUN:000
       2 - WWPN:0000000000000000  LUN:000
       3 - WWPN:0000000000000000  LUN:000
       4 - WWPN:0000000000000000  LUN:000
       5 - WWPN:0000000000000000  LUN:000
       6 - WWPN:0000000000000000  LUN:000
       7 - WWPN:0000000000000000  LUN:000
       8 - WWPN:0000000000000000  LUN:000
   change? (y/[n]) -->y
   please select a number(1-8,c(cancel)) -->2<Enter>
  ** List#2: WWPN:0000000000000000 LUN:000
        1 - Scan Target
        2 - Manual setup
        3 - Clear this list
        c - cancel
     please select -->2<Enter>
     *** input Target WWPN(n1n2n3n4n5n6n7n8) or c(cancel) -->1122334455667788<Enter>
     *** input Target Lun(0-255(decimal)) or c(cancel) -->123<Enter>
** << Boot Device List >> (LUN:decimal)
       1 - WWPN:50060E8000C27992  LUN:000
       2 - WWPN:1122334455667788  LUN:123
       3 - WWPN:0000000000000000  LUN:000
       4 - WWPN:0000000000000000  LUN:000
       5 - WWPN:0000000000000000  LUN:000
       6 - WWPN:0000000000000000  LUN:000
       7 - WWPN:0000000000000000  LUN:000
       8 - WWPN:0000000000000000  LUN:000
   change? (y/[n]) -->
```

Select the number of list you need to register.

Enter WWPN of target device in hexadecimal number.

Enter LUN of the target device in decimal number.

### (3) Clear Boot Device List

```
** << Boot Device List >> (LUN:decimal)
       1 - WWPN:50060E8000C27992  LUN:000
       2 - WWPN:1122334455667788  LUN:123
       3 - WWPN:0000000000000000  LUN:000
       4 - WWPN:0000000000000000  LUN:000
       5 - WWPN:0000000000000000  LUN:000
       6 - WWPN:0000000000000000  LUN:000
       7 - WWPN:0000000000000000  LUN:000
       8 - WWPN:0000000000000000  LUN:000
   change? (y/[n]) -->y
   please select a number(1-8,c(cancel)) -->2<Enter>
  ** List#2: WWPN:1122334455667788 LUN:123
        1 - Scan Target
        2 - Manual setup
        3 - Clear this list
        c - cancel
     please select -->3<Enter>
** << Boot Device List >> (LUN:decimal)
       1 - WWPN:50060E8000C27992  LUN:000
       2 - WWPN:0000000000000000  LUN:000
       3 - WWPN:0000000000000000  LUN:000
       4 - WWPN:0000000000000000  LUN:000
       5 - WWPN:0000000000000000  LUN:000
       6 - WWPN:0000000000000000  LUN:000
       7 - WWPN:0000000000000000  LUN:000
       8 - WWPN:0000000000000000  LUN:000
   change? (y/[n]) -->
```

Select the number of the list you need to clear.

# advset command

Execute “advset” command to configure extended optional settings.

(a) Command

> advset

(b-1) Enter one of the following when “change? (y/[n]) -->” is displayed.

- Type ‘y’ key when you change the settings
- Type ‘n’ key or ’Enter’ key when you don’t change the settings

(b-2) Do one of the following when “please select -->” is displayed.

- Type the number to the option when you change the settings
- Type ‘c’ when you don’t change the settings

(c) Operation required after the command is executed

Do one of the following

(1)Execute “set” or “logset” command when you configure Basic optional settings or LOG option settings.

(2)Execute “save” command when you don’t execute “set” and “logset” command.

**Note**

This example responds y to all items. If you do not want to change the item, just press [ENTER] key and move to the next item.

```
hfccfg.c2c2c2c2c2c2c2c2>advset<Enter>
  Advanced Settings:
    ** Total number of LU = 128
       change? (y/[n]) -->y
          range : 1-1024
           0 - default[128]
           c - cancel
        please enter Total number of LU(1-1024) -->xxxx<Enter>
    ** Number of LU per HBA FC Port = 8
       change? (y/[n]) -->y
          range : 1-1024
           0 - default[8]
           c - cancel
        please enter LU per HBA FC Port(1-1024) -->xxxx<Enter>
    ** Multipath Function = Disabled
       change? (y/[n]) -->y
           0 - Disabled -[default]
           1 - Enabled
           c - cancel
        please select -->x<Enter>
    ** Version Management support = Disabled
       please Enter --><Enter>
    ** Additional WWPN of FC Port = xxxxxxxx xxxxxxxx
       change? (y/[n]) -->y
           0 - default[0]
           c - cancel
        please enter Additional WWPN -->xxxxxxxxxxxxxxxx<Enter>
       please Enter --><Enter>

(Continue to the next page)
```

Multipath Function is supported only on Ver10.00.01.15 or later.
Please set this function to Disabled on Ver10.00.01.14 or earlier.

Additional WWPN can be changhed only on Ver10.00.00.00 or later.

```
   ** PLOGI Retry Timer = 200msec
      change? (y/[n]) -->y
          0 - 50msec
          1 - 100msec
          2 - 200msec -[default]
          3 - 500msec
          4 - 1sec
          c - cancel
       please select -->x<Enter>
   ** PLOGI Retry Count = 5times
      change? (y/[n]) -->y
          0 - 0
          1 - 1time
          2 - 5times -[default]
          3 - 10times
          4 - 20times
          5 - 30times
          c - cancel
       please select -->x<Enter>
   ** Link Initialize Rsp Timer = 30sec
      change? (y/[n]) -->y
          0 -30sec -[default]
          1 -45sec
          2 -60sec
          3 -75sec
          4 -90sec
          5 -120sec
          c - cancel
       please select -->x<Enter>
   ** Linkup Timer = 20sec
      change? (y/[n]) -->y
          0 - 0sec
          1 - 20sec -[default]
          2 - 40sec
          3 - 60sec
          c - cancel
       please select -->x<Enter>
   ** Mailbox Rsp Timer = 20sec
      change? (y/[n]) -->y
          0 -20sec -[default]
          1 -30sec
          2 -40sec
          3 -50sec
          4 -60sec
          c - cancel
       please select -->x<Enter>
   ** Mailbox Retry Count = 1time
      change? (y/[n]) -->y
          0 - 0
          1 - 1time -[default]
          2 - 3times
          3 - 5times
          4 - 8times
          5 - 10times
          c - cancel
       please select -->x<Enter>
```

(Continue to the next page)

The following items are not displayed for a 16Gbps adapter.
- PLOGI Retry Timer
- PLOGI Retry Count
- Link Initialize Rsp Timer
- Linkup Timer
- Mailbox Rsp Timer
- Mailbox Retry Count

```
   ** SCSI command Rsp Timer = 20sec
      change? (y/[n]) -->y
          0 -20sec -[default]
          1 -30sec
          2 -40sec
          3 -50sec
          4 -60sec
          c - cancel
       please select -->x<Enter>
   ** SCSI command Retry Count = 1time
      change? (y/[n]) -->y
          0 - 0
          1 - 1time -[default]
          2 - 3times
          3 - 5times
          4 - 8times
          5 - 10times
          c - cancel
       please select -->x<Enter>
   ** SCSI command Retry Timer = 200msec
      change? (y/[n]) -->y
          0 - 50msec
          1 - 100msec
          2 - 200msec -[default]
          3 - 500msec
          4 - 1sec
          c - cancel
       please select -->x<Enter>
hfccfg.c2c2c2c2c2c2c2c2>
```

If you execute “set” or “logset” command, execute the command continuously. Execute “save” command to save the settings when you execute neither.

## logset command

Execute “logset” command to configure LOG option settings.

(a) Command
> logset

(b-1) Enter one of the following when “change? (y/[n]) -->” is displayed.
- Type ‘y’ key when you change the settings.
- Type ‘n’ key or ’Enter’ key when you don’t change the settings.

(b-2) Enter one of the following when “please select -->” is displayed.
- Type the number according to the option when you change the settings
- Type ‘c’ when you don’t change the settings

(c) Operation required after the command is executed
Enter one of the following
- Execute “set” or “advset” command when you configure Basic optional settings or Extended optional settings.
- Execute “save” command when you don’t execute “advset” and “logset” command.

**Note**
This example responds y to all items. If you do not want to change the item, just press [ENTER] key and move to the next item.

```
hfccfg.c2c2c2c2c2c2c2c2>logset
  LOG control data Settings:
    ** Error Logging Enable/Disable = Enabled
       change? (y/[n]) -->y<Enter>
           0 -Disabled
           1 -Enabled -[default]
           c - cancel
        please select -->n<Enter>
    ** LOG Entry Overwrite Mode = Wrap mode
       change? (y/[n]) -->y<Enter>
           0 -Wrap mode -[default]
           1 -Not Wrap mode
           c - cancel
        please select -->n<Enter>
hfccfg.c2c2c2c2c2c2c2c2>
```

LOG Entry Overwrite Mode is not displayed when FC adapter is shared mode of LPAR manager.

If you execute “set” or “advset” command, execute the command continuously. Execute “save” command to save the settings when you execute neither.

# setall command

If you set parameters to all FC ports at once, execute setall command. This command is available on version 10.00.00.00 or later.

(a) Command

> setall

(b-1) Enter one of the following when “change? (y/[n]) -->” is displayed.

- Type ‘y’ key when you change the settings.
- Type ‘n’ key or ’Enter’ key when you don’t change the settings.

(b-2) Enter one of the following when “please select -->” is displayed.

- Type the number according to the option when you change the settings
- Type ‘c’ when you don’t change the settings

**Note**
This example responds y to all items. If you do not want to change the item, just press [ENTER] key and move to the next item.

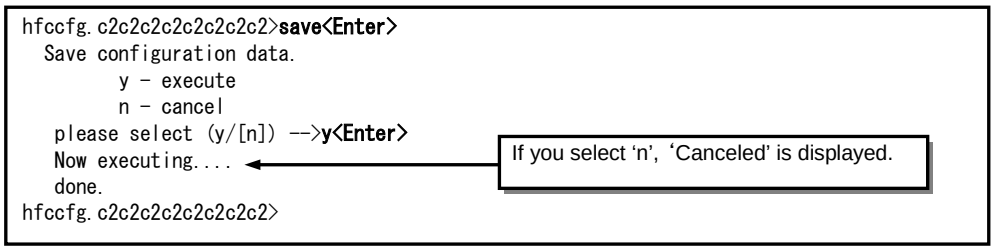
```
hfccfg>setall<Enter>
  set for ALL HBAs:
    ** Persistent Binding of ALL HBAs
       change? (y/[n]) -->y
           0 - Disabled
           1 - Enabled -[default]
           c - cancel(not change)
        please select -->c<Enter>
    ** Force default Parameter for OS driver of ALL HBAs
       change? (y/[n]) -->y
           0 - Disabled -[default]
           1 - Enabled
           c - cancel(not change)
        please select -->c<Enter>
    ** Boot Function of ALL HBAs
       change? (y/[n]) -->y
           0 - Disabled -[default]
           c - cancel(not change)
        please select -->c<Enter>
    ** Multipath Function of ALL HBAs
       change? (y/[n]) -->y
           0 - Disabled -[default]
           c - cancel(not change)
        please select -->c<Enter>
    ** Total number of LU
       change? (y/[n]) -->y
          range : 1-1024
           0 - default[128]
           c - cancel
        please enter Total number of LU(1-1024) -->c<Enter>
  Save configuration data.
         y - execute
         n - cancel
    please select (y/[n]) -->n
  Canceled.
hfccfg>
```

## save command

Execute “save” command to save the Basic optional settings, Extended optional settings and Log option settings.
When you don’t execute “save” command, the settings become invalid. Also when you execute “select” command before executing “save” command, the settings become invalid, too.

(a) Command
> save

(b) Execute one of the following when “please select (y/[n]) -->” is displayed.
- Type ‘y’ key when you save the settings
- Type ‘n’ key or ’Enter’ key when you don’t save the settings




## exit command

Execute “exit” command when you exit “option setup shell”.

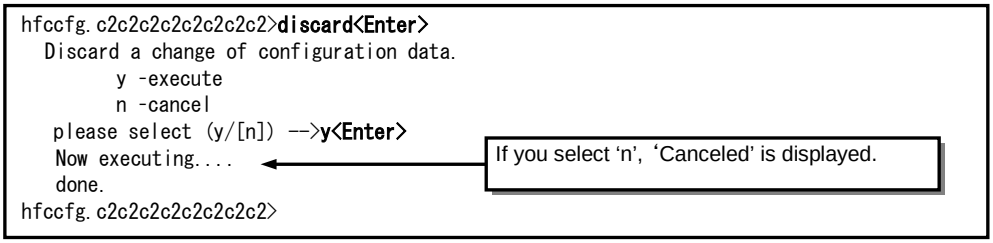
(a) Command
> exit

## discard command

Execute “discard” command when you cancel the settings that set by “set”, “advset” or “logset” command before executing “save” command. However, the cancellation of settings is impossible after executing “save” command.

(a) Command
> discard

(b) Execute one of the following when “please select (y/[n]) -->” is displayed.
- Type ‘y’ key when you cancel the settings
- Type ‘n’ key or ’Enter’ key when you don’t cancel the settings

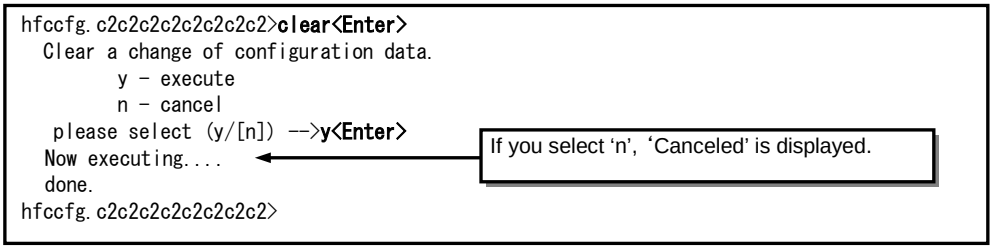



## clear command

Execute “clear” command to initialize the settings. Execute “save” command to save the settings initialized.

(a) Command
> clear

(b) Execute one of the following when “please select (y/[n]) -->” is displayed.
- Type ‘y’ key when you clear the settings
- Type ‘n’ key or ’Enter’ key when you don’t clear the settings




[ver10.00.02.03 or earlier]
Also when using as a shared FC mode, all the option settings is initialized.
[ver10.00.02.04 or later]
When using as a shared FC mode, option settings except Connection Type, Data Rate(Link Speed) is initialized.

# info command

Execute “info” command to display the adapter information.

(a) Command
> info

**【v10.00.01.1C or earlier】**

```
hfccfg>info
  Adapter Information Display:
      Num  Bus Dev Func  current WWPN      original WWPN     FLASH-ROM   EFI Driver
                                                             Version     Version
      ---  --- --- ----  ----------------  ----------------  ---------   ----------
        1 - xx  xx   xx  xxxxxxxxxxxxxxxx  xxxxxxxxxxxxxxxx   xxxxxx      xxxxxx
        2 - xx  xx   xx  xxxxxxxxxxxxxxxx  xxxxxxxxxxxxxxxx   xxxxxx      xxxxxx
        3 - xx  xx   xx  xxxxxxxxxxxxxxxx  xxxxxxxxxxxxxxxx   xxxxxx      xxxxxx
        4 - xx  xx   xx  xxxxxxxxxxxxxxxx  xxxxxxxxxxxxxxxx   xxxxxx      xxxxxx
        5 - xx  xx   xx  xxxxxxxxxxxxxxxx  xxxxxxxxxxxxxxxx   xxxxxx      xxxxxx
        6 - xx  xx   xx  xxxxxxxxxxxxxxxx  xxxxxxxxxxxxxxxx   xxxxxx      xxxxxx
          :
       16 - xx  xx   xx  xxxxxxxxxxxxxxxx  xxxxxxxxxxxxxxxx   xxxxxx      xxxxxx
       17 - xx  xx   xx  xxxxxxxxxxxxxxxx  xxxxxxxxxxxxxxxx   xxxxxx      xxxxxx
          :
       32 - xx  xx   xx  xxxxxxxxxxxxxxxx  xxxxxxxxxxxxxxxx   xxxxxx      xxxxxx
hfccfg>
```

original WWPN ：Display original WWPN. Original WWPN is not displayed when the system is running on LPAR mode of LPAR manager.
current WWPN ：Display WWPN using currently on system. Current WWPN is one of the Original WWPN, additional WWPN or vfcWWPN.

**【v10.00.02.00 or later】**

```
hfccfg>info
Adapter Information Display:
Num Seg Bus Dev Func  current WWPN      original WWPN     FLASH-ROM   EFI Driver
                                                         Version     Version
--- --- --- --- ----  ----------------  ----------------  ---------   ----------
 1 - xx  xx  xx  xx   xxxxxxxxxxxxxxxx  xxxxxxxxxxxxxxxx   xxxxxx      xxxxxx
 2 - xx  xx  xx  xx   xxxxxxxxxxxxxxxx  xxxxxxxxxxxxxxxx   xxxxxx      xxxxxx
 3 - xx  xx  xx  xx   xxxxxxxxxxxxxxxx  xxxxxxxxxxxxxxxx   xxxxxx      xxxxxx
 4 - xx  xx  xx  xx   xxxxxxxxxxxxxxxx  xxxxxxxxxxxxxxxx   xxxxxx      xxxxxx
 5 - xx  xx  xx  xx   xxxxxxxxxxxxxxxx  xxxxxxxxxxxxxxxx   xxxxxx      xxxxxx
 6 - xx  xx  xx  xx   xxxxxxxxxxxxxxxx  xxxxxxxxxxxxxxxx   xxxxxx      xxxxxx
       :
16 - xx  xx  xx  xx   xxxxxxxxxxxxxxxx  xxxxxxxxxxxxxxxx   xxxxxx      xxxxxx
17 - xx  xx  xx  xx   xxxxxxxxxxxxxxxx  xxxxxxxxxxxxxxxx   xxxxxx      xxxxxx
       :
32 - xx  xx  xx  xx   xxxxxxxxxxxxxxxx  xxxxxxxxxxxxxxxx   xxxxxx      xxxxxx
hfccfg>
```

original WWPN ：Display original WWPN. Original WWPN is not displayed when the system is running on LPAR mode of LPAR manager.
current WWPN ：Display WWPN using currently on system. Current WWPN is one of the Original WWPN, additional WWPN or vfcWWPN.

# help command

Execute “help” command to display the commands that you can use on “Option setup shell”.

(a) Command
> help

# logmf command

**【When system is running on BASIC mode or Dedicated mode】**

Execute “logmf” command to display the error messages that saved in FLASH-ROM on adapter.

**【When system is running on shared FC mode】**

If EFI driver is version 10.00.00.00 or later, error information stored in memory is displayed. Other than that, this command is not supported.

(a) Command

> logmf

**【v00.00.03.01 or earlier】**

```
hfccfg.c2c2c2c2c2c2c2c2>logmf<Enter>
  << EFI driver Error Message >>
   [Error Message List]
      Num   Date        Time     ERR#    Message
      --- ----------  --------   ----   ------------------------------------
       1. 2006/12/08  10:32:47    2B    Error Message1(XX)
       2. 2006/12/10  18:21:34    xx    Error Message2(XX)
       :                :
       :                :
      30. 2006/12/15  11:46:13    xx    Error Message31(XX)
      31. 0000/00/00  00:00:00    --
       c. Cancel(End)
  select(1-31, c[c]): 1<Enter>

   [Error Message Information]
     #1. 2006/12/08  10:32:47   Error Message1 (XX)
        ERROR# : 0x00
         [Firmware information]
              POST Result code : 0xFF
              MPCK code : 0x00
         [XRB/Mailbox response information] --
              XCC : 0x00
              FSB : 0x00
              Error code : 0x00000000
              XOB# : 0x00  XRB# : 0x00
              Exp RID : 0x00 Act RID : 0x00
         [Mailbox Req/Int Information]
              Mailbox Request Command/Sub-Cmd : 0x0000
              Mailbox IntReq  Int-Req/Sub-Int : 0x0000
         [SCSI FCP RSP information]
              SCSI command code : 0x00
              SCSI Status : 0x00
              Sense Key   : 0x00
              ASC/ASCQ    : 0x0000

  << Press  'Enter'  to List >> <Enter>

   [Error Message List]
      Num   Date        Time    ERR#    Message
      --- ----------  --------  ----   --------------------------------
       1. 2006/12/08  10:32:47   2B    Error Message1(XX)
       2. 2006/12/10  18:21:34   xx    Error Message2(XX)
       :                :
      30. 2006/12/15  11:46:13   xx    Error Message31(XX)
      31. 0000/00/00  00:00:00   --    --
       c. Cancel(End)
  select(1-31, c[c]): c<Enter>
hfccfg.c2c2c2c2c2c2c2c2>
```

Enter the number of the list to be displayed.
If you terminate the command, enter ‘c’.

**【v01.01.00.00 or later】**

```
hfccfg.c2c2c2c2c2c2c2c2>logmf<Enter>
  << EFI driver Error Message >>
   [Error Message List]
      Num   Date        Time    PT#  ERR#    Message
      --- ----------  --------  ---  ----   ----------------------------------
       1. 2006/12/15  11:46:13   P0   xx    Error Message30(XX)
       2. 2006/12/15  10:25:48   P0   xx    Error Message29(XX)
       :                :
       :                :
      30. 2006/12/08  10:32:47   P1   2B    Error Message1(XX)
       c. Cancel(End)
  select(1-31, c[c]): 1<Enter>

   [Error Message Information]
     #1. 2006/12/08  10:32:47   Error Message1 (XX)   PORT#:0
        ERROR# : 0x00
         [Firmware information]
              POST Result code : 0xFF
              MPCK code : 0x00
         [STATUS Register information]
              STATUS : 0x00000000
         [XRB/Mailbox response information] --
              XCC : 0x00
              FSB : 0x00
              Error code : 0x00000000
              XOB# : 0x00  XRB# : 0x00
              Exp RID : 0x00 Act RID : 0x00
         [Mailbox Req/Int Information]
              Mailbox Request Command/Sub-Cmd : 0x0000
              Mailbox IntReq  Int-Req/Sub-Int : 0x0000
         [SCSI FCP RSP information]
              SCSI command code : 0x00
              SCSI Status : 0x00
              Sense Key   : 0x00
              ASC/ASCQ    : 0x0000
              FCP_RESID   : 0x00000000
              FCP_RSP_INFO Byte3 : 0x00

  << Press 'Enter' to List >> <Enter>

   [Error Message List]
      Num   Date        Time    PT#  ERR#    Message
      --- ----------  --------  ---  ----   ----------------------------------
       1. 2006/12/15  11:46:13   P0   xx    Error Message30(XX)
       2. 2006/12/15  10:25:48   P0   xx    Error Message29(XX)
       :                :
       :                :
      30. 2006/12/08  10:32:47   P1   2B    Error Message1(XX)
       c. Cancel(End)
  select(1-31, c[c]): c<Enter>
hfccfg.c2c2c2c2c2c2c2c2>
```

Port#(PT#, PORT#) is displayed when EFI driver version is 10.00.01.04 Or later.

FCP_RESID and FCP_RSP_INFO Byte3 is displayed when EFI Driver version is 10.00.01.18 Or later.

Enter the number of the list to be displayed.
If you terminate the command, enter 'c'.

**【v20.00.00.00 or later】**

```
hfccfg.c2c2c2c2c2c2c2c2>logmf<Enter>
  << EFI driver Error Message >>
   [Error Message List]
      Num   Date        Time    PT#  ERR#    Message
      --- ----------  --------  ---  ----   ----------------------------------
       1. 2006/12/15  11:46:13   P0   xx    Error Message30(XX)
       2. 2006/12/15  10:25:48   P0   xx    Error Message29(XX)
       :                :
       :                :
      30. 2006/12/08  10:32:47   P1   2B    Error Message1(XX)
       c. Cancel(End)
  select(1-31, c[c]): 1<Enter>

   [Error Message Information]
     #1. 2006/12/15  11:46:13   Error Message30 (XX)   PORT#:0
        ERROR# : 0x00
         [Firmware information]
              POST Result code : 0xFF
              MPCK code : 0x00
         [STATUS Register information]
              STATUS[0]-[3] : 0x00000000
              STATUS[5] : 0x00
         [XRB/Mailbox response information]
              XCC : 0x00
              FSB : 0x00
              Error code : 0x00000000
              XOB# : 0x00  XRB# : 0x00
         [Mailbox Req/Int Information]
              Mailbox Request Command/Sub-Cmd : 0x0000
              Mailbox IntReq  Int-Req/Sub-Int : 0x0000
              Mailbox Payload[0-1] : 0x00000000
              Mailbox Payload[8-9] : 0x0000
         [SCSI FCP RSP information]
              SCSI command code : 0x00
              SCSI Status : 0x00
              Sense Key   : 0x00
              ASC/ASCQ    : 0x0000
              FCP_RESID   : 0x00000000
              FCP_RSP_INFO Byte3 : 0x00

  << Press 'Enter' to List >> <Enter>

   [Error Message List]
      Num   Date        Time    PT#  ERR#    Message
      --- ----------  --------  ---  ----   ----------------------------------
       1. 2006/12/15  11:46:13   P0   xx    Error Message30(XX)
       2. 2006/12/15  10:25:48   P0   xx    Error Message29(XX)
       :                :
       :                :
      30. 2006/12/08  10:32:47   P1   2B    Error Message1(XX)
       c. Cancel(End)
  select(1-31, c[c]): c<Enter>
hfccfg.c2c2c2c2c2c2c2c2>
```

Enter the number of the list to be displayed.
If you terminate the command, enter 'c'.

# logdf command

**【When system is running on BASIC mode or Dedicated mode】**

Execute “logdf” command to display the error logs that saved in FLASH-ROM on adapter.

**【When system is running on shared FC mode】**

If EFI driver is version 10.00.00.00 or later, detailed error information stored in memory is displayed. Other than that, this command is not supported.

(a) Command

> logdf

**【v00.00.03.01 or earlier】**

```
hfccfg.c2c2c2c2c2c2c2c2>logdf<Enter>
  << EFI driver Error LOG >>

   [Error LOG List]
      Num   Date         Time     ERR#    LOG
      --- ----------  --------  ----   ----------------------------
       1. 2006/11/30  21:02:13   2B    MCK LOG
       2. 2006/12/02  14:31:24   XX    IML FAIL LOG
                         :
                         :
      13. 2006/12/09  10:14:43   XX    MIH LOG
      14. 2006/12/12  17:34:38   XX    SOFT LOG
      15. 0000/00/00  00:00:00   --    -
       c. Cancel(End)
  select(1-15, c[c]): 13<Enter>

   [LOG Display]
     #13. 2006/12/09  10:14:43   MIH LOG
        ERROR# : 0x00
        input Address (hex, a=All, c=Cancel) : 100<Enter>
                  +0       +4       +8       +C
          +0100: 00000000 00000000 00000000 00000000
          +0110: 00000000 00000000 00000000 00000000
          +0120: 00000000 00000000 00000000 00000000
                                :
                                :
          +01E0: 00000000 00000000 00000000 00000000
          +01F0: 00000000 00000000 00000000 00000000
        input Address (hex, a=All, c=Cancel) : 200<Enter>
                  +0       +4       +8       +C
          +0200: 00000000 00000000 00000000 00000000
          +0210: 00000000 00000000 00000000 00000000
          +0220: 00000000 00000000 00000000 00000000
                                :
          +02E0: 00000000 00000000 00000000 00000000
          +02F0: 00000000 00000000 00000000 00000000
        input Address (hex, a=All, c=Cancel) : c<Enter>

   [Error LOG List]
      Num   Date         Time     ERR#    LOG
      --- ----------  --------  ----   ----------------------------
       1. 2006/11/30  21:02:13   2B    MCK LOG
       2. 2006/12/02  14:31:24   XX    IML FAIL LOG
                         :
                         :
      13. 2006/12/09  10:14:43   XX    MIH LOG
      14. 2006/12/12  17:34:38   XX    SOFT LOG
      15. 0000/00/00  00:00:00   --    -
       c. Cancel(End)
  select(1-15, c[c]): c<Enter>
hfccfg.c2c2c2c2c2c2c2c2>
```

Enter the offset address you want to display in hexadecimal number.

If you terminate the command, enter ‘c’.

Enter the number of log to be displayed.
If you terminate the command, enter ‘c’.

**【v01.01.00.00 or later】**

```
hfccfg.c2c2c2c2c2c2c2c2>logdf<Enter>
  << EFI driver Error LOG >>

   [Error LOG List]
      Num   Date        Time    PT#  ERR#    LOG
      --- ----------  --------  ---  ----   ----------------------------
       1. 2006/12/12  17:34:38   P0   23    SOFT LOG
       2. 2006/12/09  10:14:43   P1   XX    MIH LOG
                         :
                         :
      13. 2006/12/02  14:31:24   P0   XX    IML FAIL LOG
      14. 2006/11/30  21:02:03   P0   XX    MCK LOG
       c. Cancel(End)
  select(1-15, c[c]): 2<Enter>

   [LOG Display]
     #13. 2006/12/09  10:14:43   MIH LOG   PORT#:1
        ERROR# : 0x00
        input Address (hex, a=All, c=Cancel) : 100<Enter>
                 +0       +4       +8       +C
          +0100: 00000000 00000000 00000000 00000000
          +0110: 00000000 00000000 00000000 00000000
          +0120: 00000000 00000000 00000000 00000000
                                :
                                :
          +01E0: 00000000 00000000 00000000 00000000
          +01F0: 00000000 00000000 00000000 00000000
        input Address (hex, a=All, c=Cancel) : 200<Enter>
                 +0       +4       +8       +C
          +0200: 00000000 00000000 00000000 00000000
          +0210: 00000000 00000000 00000000 00000000
          +0220: 00000000 00000000 00000000 00000000
                                :
                                :
          +02E0: 00000000 00000000 00000000 00000000
          +02F0: 00000000 00000000 00000000 00000000
        input Address (hex, a=All, c=Cancel) : c<Enter>

   [Error LOG List]
      Num   Date        Time    PT#  ERR#    LOG
      --- ----------  --------  ---  ----   ----------------------------
       1. 2006/12/12  17:34:38   P0   23    SOFT LOG
       2. 2006/12/09  10:14:43   P1   XX    MIH LOG
                         :
                         :
      13. 2006/12/02  14:31:24   P0   XX    IML FAIL LOG
      14. 2006/11/30  21:02:03   P0   XX    MCK LOG
       c. Cancel(End)
  select(1-15, c[c]): c<Enter>
hfccfg.c2c2c2c2c2c2c2c2>
```

Port#(PT#, PORT#) is displayed when EFI driver version is 10.00.01.04 Or later.

Enter the offset address you want to display in hexadecimal number.

If you terminate the command, enter 'c'.

Enter the number of log to be displayed.
If you terminate the command, enter 'c'.

# dump command

Execute “dump” command to display the memory information of the EFI driver.

(a) Command

> dump

Seg#(Seg) is displayed when EFI driver version is 10.00.02.00 Or later.

```
hfccfg.c2c2c2c2c2c2c2c2>dump<Enter>
  << EFI driver Memory Dump >>
  [INIT_TABLE] Seg:ss Bus:bb Dev:dd Func:ff  currWWPN:c2c2c2c2c2c2c2c2
    INIT_TABLE address : xxxxxxxxxxxx
                        +0       +4       +8       +C
                +0000: 00000000 00000000 00000000 00000000
                +0010: 00000000 00000000 00000000 00000000
                   :                 :
                +0220: 00000000 00000000 00000000 00000000
                        +0       +4       +8       +C
                +0700: 00000000 00000000 00000000 00000000
                   :                 :
                +0740: 00000000 00000000 00000000 00000000
  [XOB] Seg:ss Bus:bb Dev:dd Func:ff  currWWPN:c2c2c2c2c2c2c2c2
    XOB address : xxxxxxxxxxxx
       [XOB#00]         +0       +4       +8       +C
                +0000: 00000000 00000000 00000000 00000000
                   :                 :
                +0070: 00000000 00000000 00000000 00000000
          :                          :
       [XOB#1F]         +0       +4       +8       +C
                +0F80: 00000000 00000000 00000000 00000000
                   :                 :
                +0FF0: 00000000 00000000 00000000 00000000
  [XRB] Seg:ss Bus:bb Dev:dd Func:ff  currWWPN:c2c2c2c2c2c2c2c2
    XRB address : xxxxxxxxxxxx
       [XRB#00]         +0       +4       +8       +C
                +0000: 00000000 00000000 00000000 00000000
                   :                 :
                +01F0: 00000000 00000000 00000000 00000000
          :                          :
       [XRB#07]         +0       +4       +8       +C
                +0E00: 00000000 00000000 00000000 00000000
                   :                 :
                +0FF0: 00000000 00000000 00000000 00000000
  [MAILBOX] Seg:ss Bus:bb Dev:dd Func:ff  currWWPN:c2c2c2c2c2c2c2c2
    MAILBOX address : xxxxxxxxxxxx
      [MAILBOX REQ]     +0       +4       +8       +C
                +0000: 00000000 00000000 00000000 00000000
                   :                 :
     [MAILBOX RSP]     +0       +4       +8       +C
                +0200: 00000000 00000000 00000000 00000000
                   :                 :
     [MAILBOX INT]     +0       +4       +8       +C
                +0400: 00000000 00000000 00000000 00000000
                   :                 :
hfccfg.c2c2c2c2c2c2c2c2>
```

# dumpefi command

Execute “dumpefi” command to display table information and the PCI memory space using by EFI driver.

(a) Command

> dumpefi

Seg#(Seg) is displayed when EFI driver version is 10.00.02.00 Or later.

```
hfccfg.c2c2c2c2c2c2c2c2>dumpefi<Enter>
  << EFI driver Memory Dump >>
  [HEFI_COM_TABLE] Seg:ss Bus:bb Dev:dd Func:ff  currWWPN: c2c2c2c2c2c2c2c2
    address : xxxxxxxxxxxx  Size : xx
                      +0       +4       +8       +C
                +0000: 00000000 00000000 00000000 00000000
                   :                 :
                +0050: 00000000 00000000 00000000 00000000
  [HEFI_ADAP_PORT_INFO] Seg:ss Bus:bb Dev:dd Func:ff  currWWPN: c2c2c2c2c2c2c2c2
    address : xxxxxxxxxxxx  Size : xx
                      +0       +4       +8       +C
                +0000: 00000000 00000000 00000000 00000000
                   :                 :
                +04D0: 00000000 00000000 00000000 00000000
  [HEFI_DEV_PATH_INFO] Seg:ss Bus:bb Dev:dd Func:ff  currWWPN: c2c2c2c2c2c2c2c2
    Entry Count : x Entry Size : xx
    [TARGET#xx] address : xxxxxxxxxxx
                      +0       +4       +8       +C
                +0000: 00000000 00000000 00000000 00000000
                   :                 :
                +0080: 00000000 00000000 00000000 00000000
  [HEFI_LG_DEV_PATH_INFO] Seg:ss Bus:bb Dev:dd Func:ff  currWWPN: c2c2c2c2c2c2c2c2
    Entry Count : x Entry Size : xx
   [TARGET#xx] address : xxxxxxxxxxxx
                      +0       +4       +8       +C
                +0000: 00000000 00000000 00000000 00000000
                   :                 :
                +01D0: 00000000 00000000 00000000 00000000
  [PCI MEMORY] Seg:ss Bus:bb Dev:dd Func:ff  currWWPN: c2c2c2c2c2c2c2c2
    address : xxxxxxxxxxxx
     [PCI MEMORY]     +0       +4       +8       +C
                +0000: 00000000 00000000 00000000 00000000
                   :                 :
                +04F0: 00000000 00000000 00000000 00000000
  [PCI CONFIG] Seg:ss Bus:bb Dev:dd Func:ff  currWWPN: c2c2c2c2c2c2c2c2
    address : xxxxxxxxxxxx
     [PCI CONFIG]     +0       +4       +8       +C
                +0000: 00000000 00000000 00000000 00000000
                   :                 :
                +00F0: 00000000 00000000 00000000 00000000
hfccfg.c2c2c2c2c2c2c2c2>
```

# valid command

Execute “valid” command to display all option parameters at once.

(a) Command

> valid

```
hfccfg.c2c2c2c2c2c2c2c2>valid<Enter>

 [** selected HBA  **]
   Seg:ss Bus:bb Dev:dd Func:ff  current WWPN: c2c2c2c2c2c2c2c2
 [Base Settings:]
  **Boot Function = Disabled
  **Connection Type = Auto Detection
  **Multiple PortID = Disabled
  **Data Rate = Auto Detection
  **Spinup Delay = Disabled
  **Login Delay Time = 3 sec
  **Persistent Bindings = Enabled
  **Force Default Parameter for adapter driver = Disabled
  **Select Boot Device = Disabled
  **Boot Device List
        1 - WWPN:wwwwwwwwwwwwwwww  LUN:nn
        2 - WWPN:wwwwwwwwwwwwwwww  LUN:nn
        3 - WWPN:wwwwwwwwwwwwwwww  LUN:nn
        4 - WWPN:wwwwwwwwwwwwwwww  LUN:nn
        5 - WWPN:wwwwwwwwwwwwwwww  LUN:nn
        6 - WWPN:wwwwwwwwwwwwwwww  LUN:nn
        7 - WWPN:wwwwwwwwwwwwwwww  LUN:nn
        8 - WWPN:wwwwwwwwwwwwwwww  LUN:nn
 [Advanced Settings:]
  **Total number of LU = 32
  **Number of LU per HBA FC Port = 1
  **Multipath Function = Disabled
  **Version Management support = Disabled
  **Additional WWPN of FC Port = xxxxxxxx xxxxxxxx
  **PLOGI Retry Timer = 200msec
  **PLOGI Retry Count = 5times
  **Link Initialize Rsp Timer = 30sec
  **Linkup Timer = 20sec
  **Mailbox Rsp Timer = 20sec
  **Mailbox Retry Count = 1times
  **SCSI command Rsp Timer = 20sec
  **SCSI command Retry Count = 1times
  **SCSI command Retry Timer = 200msec
 [LOG control data Settings:]
  **Error Logging Enable/Disable = Enabled
  **LOG Entry Overwrite Mode = Wrap mode

   Display setting data End
hfccfg.c2c2c2c2c2c2c2c2>
```

Seg#(Seg) is displayed when EFI driver version is 10.00.02.00 Or later.

‘Multiple PortID' is displayed only for a 16Gbps adapter.

Data Rate is displayed as Link Speed after Ver.20.00.00.00..

The following items are not displayed for a 16Gbps adapter.

- PLOGI Retry Timer
- PLOGI Retry Count
- Link Initialize Rsp Timer
- Linkup Timer
- Mailbox Rsp Timer
- Mailbox Retry Count

Additional WWPN of FC Port is displayed only on BASIC mode.

LOG Entry Overwrite Mode Is not displayed when the adapter is assigned as shared FC mode.

## logerase command

Execute “logerase” command to erase the error messages and error log that saved in FLASH-ROM on adapter.

(a) Command

> logerase

(b) Execute one of the following when “please select (y/[n]) -->” is displayed.

- Type ‘y’ key when you erase the error messages and the error logs.
- Type ‘n’ key or ’Enter’ key when you don’t erase the error messages and the error logs.

```
hfccfg.c2c2c2c2c2c2c2c2>logerase<Enter>
  Erase Log data.
        y -execute
        n -cancel
   please select (y/[n]) -->-->y<Enter>
Now executing....
  done.
hfccfg.c2c2c2c2c2c2c2c2>
```

If you select ‘n’, ‘Canceled’ is displayed.

## logeraseall command

Execute “logerase” command to erase the error messages and error log that saved in FLASH-ROM on all adapters mounted on the system.
This command is supported by EFI driver version 10.00.00.00 or later.

(a) Command

> logeraseall

(b) Execute one of the following when “please select (y/[n]) -->” is displayed.

- Type ‘y’ key when you erase the error messages and the error logs.
- Type ‘n’ key or ’Enter’ key when you don’t erase the error messages and the error logs.

```
hfccfg.c2c2c2c2c2c2c2c2>logeraseall<Enter>
  Erase Log data.
        y -execute
        n -cancel
   please select (y/[n]) -->-->y<Enter>
Now executing....
  done.
hfccfg.c2c2c2c2c2c2c2c2>
```

If you select ‘n’, ‘Canceled’ is displayed.

# clearall command

Execute “clearall” command to erase all parameter settings and initialize settings with default value and store them to FLASH-ROM.
This command is supported by EFI driver version 10.00.00.00 or later.

(a) Command
> clearall

(b) Execute one of the following when “please select (y/[n]) -->” is displayed.
- Type ‘y’ key when you erase the error messages and the error logs.
- Type ‘n’ key or ’Enter’ key when you don’t erase the error messages and the error logs.

```
hfccfg>clearall<Enter>
  Clear a configuration data of all HBAs.
         y - execute
         n - cancel
    please select (y/[n]) -->y
Now executing....
X/X HBA  done.
hfccfg>
```

If you select ‘n’, ‘Canceled’ is displayed.

[ver10.00.02.03 or earlier]
Also when using as a shared FC mode, all the option settings is initialized.
[ver10.00.02.04 or later]
When using as a shared FC mode, option settings except Connection Type, Data Rate(Link Speed) is initialized.

# restore command

Execute “restore” command to restore the data from the backup when settings are identified as an error. If both settings and backup are identified as errors, initialize the settings to the default value. This command is supported by EFI driver version 10.00.00.00 or later.

(a) Command
> restore

(b) Execute one of the following when “please select (y/[n]) -->” is displayed.
- Type ‘y’ key when you erase the error messages and the error logs.
- Type ‘n’ key or ’Enter’ key when you don’t erase the error messages and the error logs.

```
hfccfg.c2c2c2c2c2c2c2c2>restore<Enter>
    This command loads backup data for all FUNCTION of this adapter.
    Please check option settings of all FUNCTION after this operation.
    Execute selected operation?
        y - execute
        n - cancel
    please reply (y/[n]) -->y
   executing....
    done.
    List current settings of all FUNCTION.
         y - continue
         n - cancel
    please reply (y/[n]) -->y
**** FUNCTION#0 option setting

 [** selected HBA  **]
    Seg:ss Bus:bb Dev:dd Func:ff  current WWPN:c2c2c2c2c2c2c2c2
  [Base Settings:]
    ** Boot Function = Disabled
    ** Connection Type = Auto Detection
    ** Multiple PortID = Disabled
    ** Data Rate = Auto Detection
    ** Spinup Delay = Disabled
    ** Login Delay Time = 3sec
    ** Persistent Bindings = Enabled
    ** Force Default Parameter for adapter driver = Disabled
    ** Select Boot Device = Disabled
    ** Boot Device List:
           1 - WWPN:0000000000000000  LUN:0000
           2 - WWPN:0000000000000000  LUN:0000
           3 - WWPN:0000000000000000  LUN:0000
           4 - WWPN:0000000000000000  LUN:0000
           5 - WWPN:0000000000000000  LUN:0000
           6 - WWPN:0000000000000000  LUN:0000
           7 - WWPN:0000000000000000  LUN:0000
           8 - WWPN:0000000000000000  LUN:0000
    << Press any key to continue >>

   (Continue to the next page)
```

Seg#(Seg) is displayed when EFI driver version is 10.00.02.00 Or later.

‘Multiple PortID' is displayed only for a 16Gbps adapter.

Data Rate is displayed as Link Speed after Ver.20.00.00.00..

```
  [Advanced Settings:]
    ** Total number of LU = 128
    ** Number of LU per HBA FC Port = 8
    ** Multipath Function = Disabled
    ** Version Management support = Disabled
    ** Additional WWN of FC Port = 0000000000000000
    ** PLOGI Retry Timer = 200msec
    ** PLOGI Retry Count = 5times
    ** Link Initialize Rsp Timer = 30sec
    ** Linkup Timer = 20sec
   ** Mailbox Rsp Timer = 20sec
    ** Mailbox Retry Count = 1times
    ** SCSI command Rsp Timer = 20sec
    ** SCSI command Retry Count = 1times
    ** SCSI command Retry Timer = 200msec
  [LOG control data Settings:]
    ** Error Logging Enable/Disable = Enabled
    ** LOG Entry Overwrite Mode = Wrap mode

  Display setting data End

**** FUNCTION#1 option setting

 [** selected HBA  **]
    Seg:ss Bus:bb Dev:dd Func:ff  current WWPN:c2c2c2c2c2c2c2c2
  [Base Settings:]
    ** Boot Function = Disabled
    ** Connection Type = Auto Detection
    ** Data Rate = Auto Detection
    ** Spinup Delay = Disabled
    ** Login Delay Time = 3sec
    ** Persistent Bindings = Enabled
    ** Force Default Parameter for adapter driver = Disabled
    ** Select Boot Device = Disabled
    ** Boot Device List:
           1 - WWPN:0000000000000000  LUN:0000
           2 - WWPN:0000000000000000  LUN:0000
           3 - WWPN:0000000000000000  LUN:0000
           4 - WWPN:0000000000000000  LUN:0000
           5 - WWPN:0000000000000000  LUN:0000
           6 - WWPN:0000000000000000  LUN:0000
           7 - WWPN:0000000000000000  LUN:0000
           8 - WWPN:0000000000000000  LUN:0000
  << Press any key to continue >>

  (Continue to the next page)
```

The following items are not displayed for a 16Gbps adapter.
- PLOGI Retry Timer
- PLOGI Retry Count
- Link Initialize Rsp Timer
- Linkup Timer
- Mailbox Rsp Timer
- Mailbox Retry Count

Seg#(Seg) is displayed when EFI driver version is 10.00.02.00 Or later.

The following items are not displayed for a 16Gbps adapter.
- PLOGI Retry Timer
- PLOGI Retry Count
- Link Initialize Rsp Timer
- Linkup Timer
- Mailbox Rsp Timer
- Mailbox Retry Count

```
   [Advanced Settings:]
     ** Total number of LU = 128
     ** Number of LU per HBA FC Port = 8
     ** Multipath Function = Disabled
     ** Version Management support = Disabled
     ** Additional WWN of FC Port = 0000000000000000
     ** PLOGI Retry Timer = 200msec
     ** PLOGI Retry Count = 5times
     ** Link Initialize Rsp Timer = 30sec
     ** Linkup Timer = 20sec
     ** Mailbox Rsp Timer = 20sec
     ** Mailbox Retry Count = 1times
     ** SCSI command Rsp Timer = 20sec
     ** SCSI command Retry Count = 1times
     ** SCSI command Retry Timer = 200msec
   [LOG control data Settings:]
     ** Error Logging Enable/Disable = Enabled
     ** LOG Entry Overwrite Mode = Wrap mode

   Display setting data End

*Please re-setup if necessary, after saving this data.
    Saving data?
        y - save this data
        n - discard this data
    Please reply (y/[n]) -->y
    Now executing....
    done.
hfccfg.c2c2c2c2c2c2c2c2>
```

# path command

Execute “path” command to display LU path information detected by all adapters. This command is supported by EFI driver version 10.00.00.00 or later.

(a) Command
> path

(b) Execute one of the following when “please select (y/[n]) -->” is displayed.
- Type ‘1’ or ‘Enter’ key in ascending order of LU.
- Type ‘2’ in ascending order of HBA.

**【v10.00.01.0D or earlier】**

```
hfccfg.c2c2c2c2c2c2c2c2>path<Enter>
  Please select an Display form.

     1 - displays in order of LU   -[default]
     2 - displays in order of HBA
     c - cancel
   please select -->1<Enter>

[Path]
  Main : Main Path
  Sub  : Sub Path
   *   : Not support disk
   -   : Multipath Function is Disabled

No   LuID     WWPN(Disk)      H-LUN  status    HBA#      WWPN(HBA)      Path
001  000   XXXXXXXXXXXXXXXX  0000   online     00   XXXXXXXXXXXXXXXX   -
002  001   XXXXXXXXXXXXXXXX  0001   online     00   XXXXXXXXXXXXXXXX   -

LU Information Display. select No(1-1, c[c]) :1<Enter>

No    D-ID         WWPN         H-LUN  VendorID  ProductID
001  XXXXXX  XXXXXXXXXXXXXXXX   000   XXXXXXXX  XXXXXXXXX

LU Information Display. select No(1-1, c[c]) :c<Enter>
hfccfg.c2c2c2c2c2c2c2c2>
```

**【v10.00.01.0E or later】**

```
hfccfg.c2c2c2c2c2c2c2c2>path<Enter>
  Please select an Display form.

     1 - displays in order of LU   -[default]
     2 - displays in order of HBA
     c - cancel
   please select -->1<Enter>

[Path]
  Main : Main Path
  Sub  : Sub Path
   *   : Not support disk
   -   : Multipath Function is Disabled

No   LuID     WWPN(Disk)      H-LUN  status  Seg Bus Dev Func     WWPN(HBA)      Path
001  000   XXXXXXXXXXXXXXXX  0000   online   ss  bb  dd  ff   XXXXXXXXXXXXXXXX   -
002  001   XXXXXXXXXXXXXXXX  0001   online   ss  bb  dd  ff   XXXXXXXXXXXXXXXX   -

LU Information Display. select No(1-1, c[c]) :1<Enter>

No    D-ID         WWPN         H-LUN  VendorID  ProductID
001  XXXXXX  XXXXXXXXXXXXXXXX   000   XXXXXXXX  XXXXXXXXX

LU Information Display. select No(1-1, c[c]) :c<Enter>
hfccfg.c2c2c2c2c2c2c2c2>
```

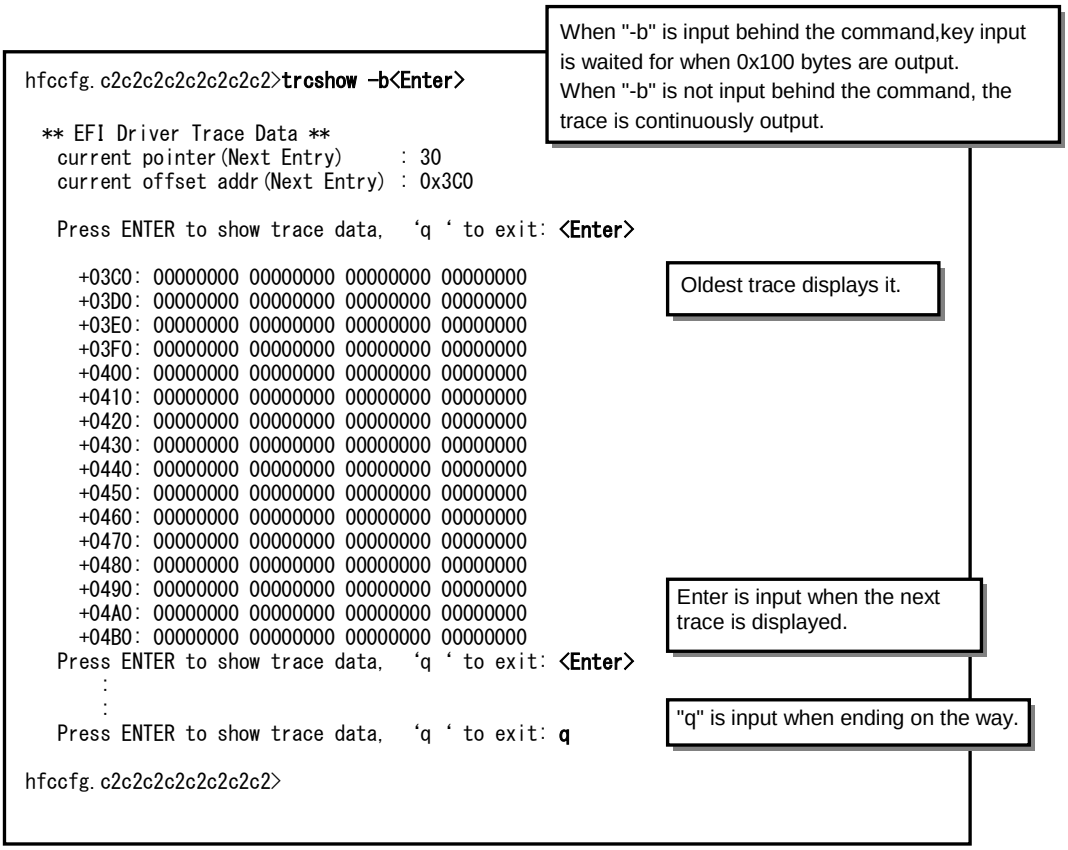
Seg#(Seg) is displayed when EFI driver version is 10.00.02.00 Or later.

# trcshow command

Execute “trcshow” command to display EFI Driver trace. This command is supported by EFI driver version 10.00.01.1A or later.

(a) Command

> trcshow



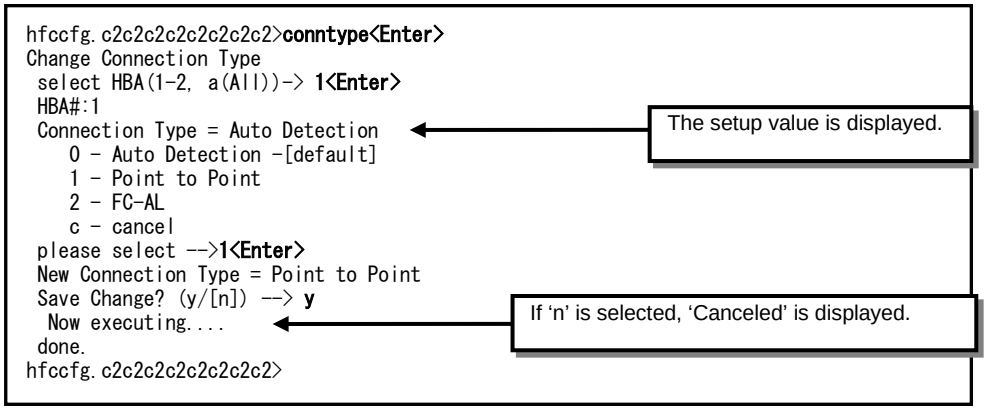
# conntype command

Execute “conntype” command to ‘Connection Type’ set up. This command is supported by EFI driver version 20.00.00.00 or later.

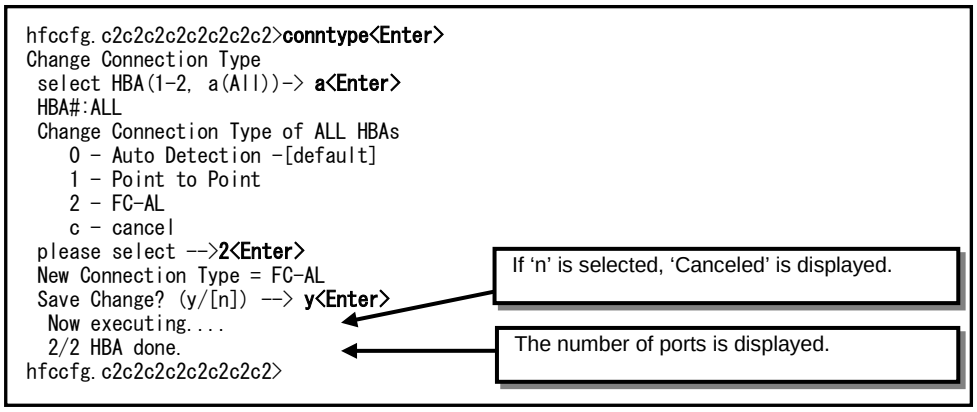
(a) Command

> conntype

**【Single Port】**




**【All Port】**



# conntypeshow command

Execute “conntypeshow” command to The information about 'Connection Type' of FC port is displayed. The information displayed is as follows.

- Current Connection Type : The value of ‘Connection Type’ which is operating now
- Setup Connection Type : The value of ‘Connection Type’ which is setup now
- Setup Multiple PortID : The value of ‘Multiple PortID’ Type which is setup now
- Boot Function : The value of ‘Boot Function’ Type which is setup now

This command is supported by EFI driver version 20.00.00.00 or later.

(a) Command

> conntypeshow

```
hfccfg.c2c2c2c2c2c2c2c2>conntypeshow<Enter>
[HBA#1] Vnd/Dev : 1054/3070
 Current Connection Type : Point to Point[fabric]
 Setup Connection Type   : Point to Point
 Setup Multiple PortID   : Disabled
 Boot Function           : Enabled
[HBA#2] Vnd/Dev : 1054/3070
 Current Connection Type :    -
 Setup Connection Type   : FC-AL
 Setup Multiple PortID   : Disabled
 Boot Function           : Disabled
hfccfg.c2c2c2c2c2c2c2c2>
```

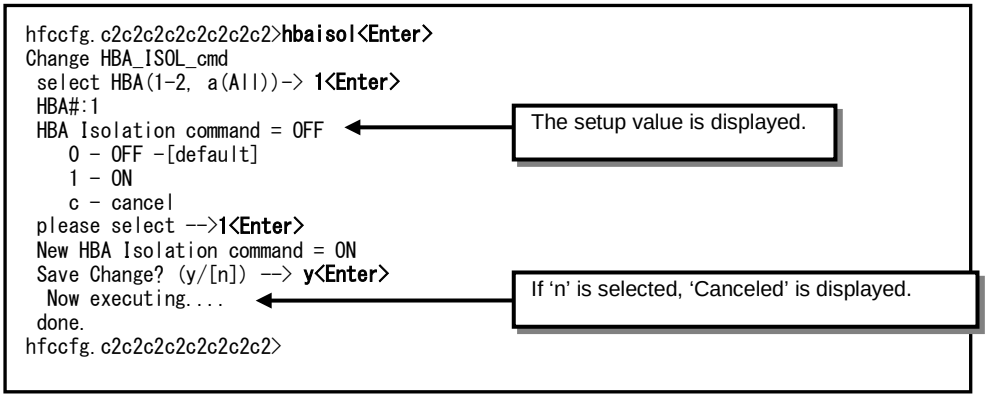
# hbaisol command

Execute “hbaisol” command to ‘HBA ISOL cmd’ set up. This command is supported by EFI driver version 20.00.00.00 or later.

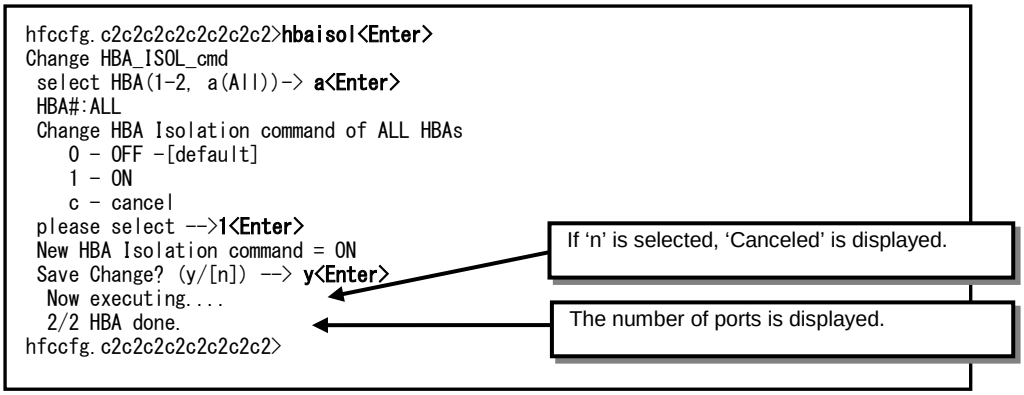
(a) Command

> hbaisol

**【Single Port】**




**【All Port】**



# initnegotime command

Execute “initnegotime” command to ‘Init Negotiation Timer’ set up. This command is supported by EFI driver version 20.00.00.00 or later.

(a) Command

> initnegotime

**【Single Port】**

```
hfccfg.c2c2c2c2c2c2c2c2>initnegotimer<Enter>
Change Init Negotiation Timer
 select HBA(1-2, a(All))-> 1<Enter>
 HBA#:1
 Curr Init Negotiation Timer = 120sec
    range : 1-255sec
    d - default(120sec)
    c - cancel
 input time(1-255,d,c) -->255<Enter>
 New Init Negotiation Timer = 255sec
 Save Change? (y/[n]) --> y<Enter>
  Now executing....
 done.
hfccfg.c2c2c2c2c2c2c2c2>
```

The setup value is displayed.

If ‘n’ is selected, ‘Canceled’ is displayed.

**【All Port】**

```
hfccfg.c2c2c2c2c2c2c2c2>initnegotimer<Enter>
Change Init Negotiation Timer
 select HBA(1-2, a(All))-> a<Enter>
 HBA#:ALL
    range : 1-255sec
    d - default(120sec)
    c - cancel
 input time(1-255,d,c) -->255<Enter>
 New Init Negotiation Timer = 255sec
 Save Change? (y/[n]) --> y<Enter>
  Now executing....
  2/2 HBA done.
hfccfg.c2c2c2c2c2c2c2c2>
```

If ‘n’ is selected, ‘Canceled’ is displayed.

The number of ports is displayed.

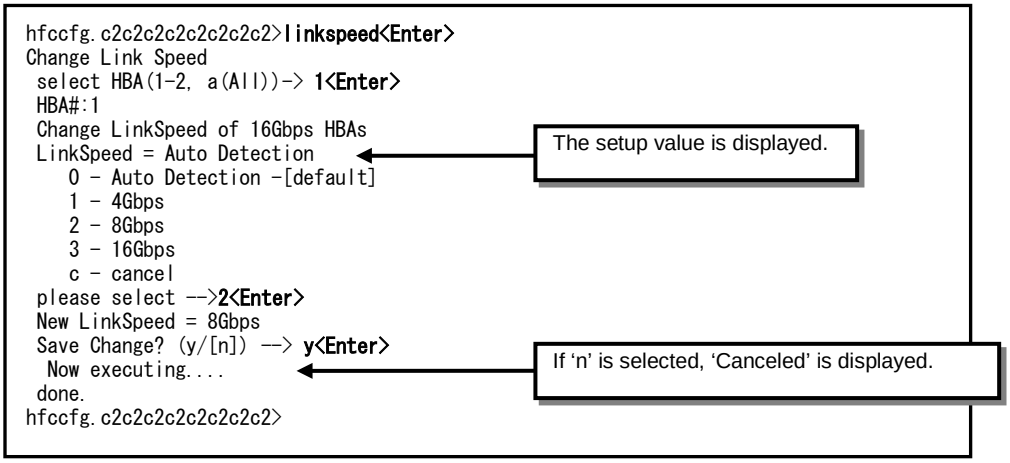
# linkspeed command

Execute “linkspeed” command to ‘Link Speed’ set up. This command is supported by EFI driver version 20.00.00.00 or later.

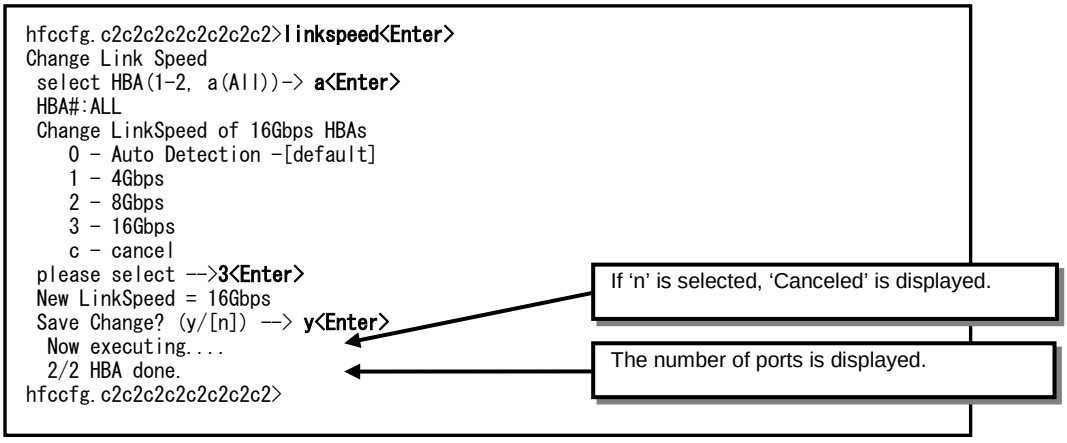
(a) Command

> linkspeed

**【Single Port】**




**【All Port】**



# linkspeedshow command

Execute “linkspeedshow” command to the information about ‘LinkSpeed' of FC port is displayed. The information displayed is as follows.

- ・Current Link Speed : The value of ‘Link Speed’ which is operating now
- ・Setup Link Speed : The value of ‘Link Speed’ which is setup now
- ・Boot Function : The value of ‘Boot Function’ Type which is setup now

This command is supported by EFI driver version 20.00.00.00 or later.

(a) Command

> linkspeedshow

```
hfccfg.c2c2c2c2c2c2c2c2>linkspeedshow<Enter>
[HBA#1] Vnd/Dev : 1054/3070
 Current LinkSpeed : 8Gbps
 Setup LinkSpeed   : Auto
 Boot Function     : Enabled
[HBA#2] Vnd/Dev : 1054/3070
 Current LinkSpeed :    -
 Setup LinkSpeed   : Auto
 Boot Function     : Disabled
hfccfg.c2c2c2c2c2c2c2c2>
```

# linkstateshow command

Execute “linkstateshow” command to the information about ‘LinkSpeed' and ‘Connection Type’ of FC port is displayed. The information displayed is as follows.

- ・Current Connection Type : The value of ‘Connection Type’ which is operating now
- ・Current Link Speed : The value of ‘Link Speed’ which is operating now
- ・Multiple PortID : The value of ‘Multiple PortID’ Type which is setup now
- ・Boot Function : The value of ‘Boot Function’ Type which is setup now

This command is supported by EFI driver version 20.00.00.00 or later.

(a) Command

> linkstateshow

```
hfccfg.c2c2c2c2c2c2c2c2>linkstateshow<Enter>
[HBA#1] Vnd/Dev : 1054/3070
 Current Connection Type : Point to Point[fabric]
 Current LinkSpeed       : 8Gbps
 Multiple PortID         : Disabled
 Boot Function           : Enabled
[HBA#2] Vnd/Dev : 1054/3070
 Current Connection Type :    -
 Current LinkSpeed       :    -
 Multiple PortID         : Disabled
 Boot Function           : Disabled
hfccfg.c2c2c2c2c2c2c2c2>
```

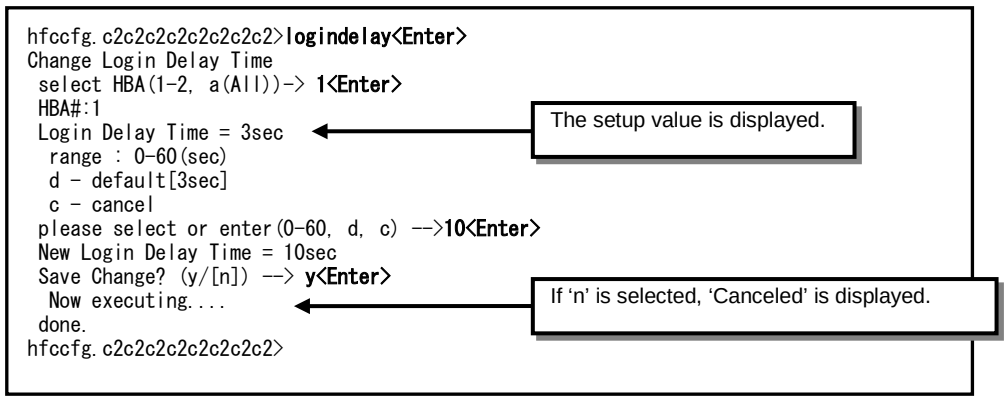
# logindelay command

Execute “logindelay” command to ‘LoginDelayTime’ set up. This command is supported by EFI driver version 20.00.00.00 or later.

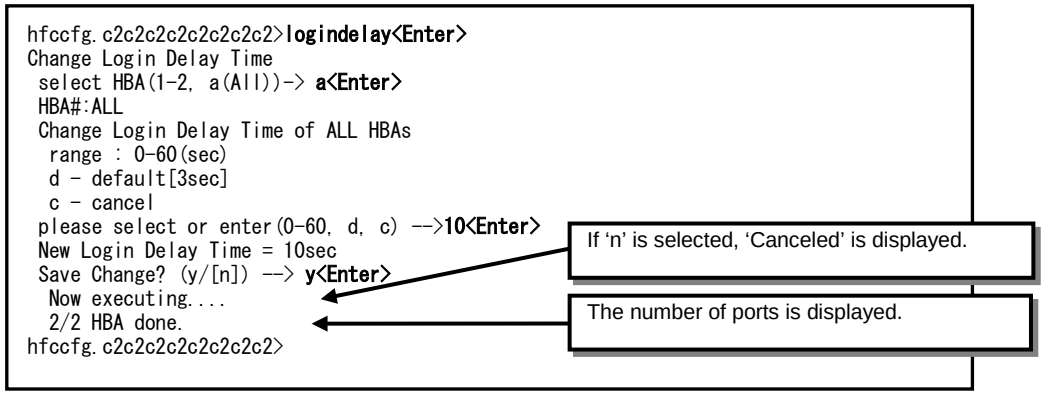
(a) Command

> logindelay

**【Single Port】**




**【All Port】**



# loginfilter command

Execute “loginfilter” command to ‘Login Target Filter Ext’(‘Login Target Filter 16G’) set up.
This command is supported by 16Gbps adapter and 8Gbps adapter (ver10.00.02.0A or later).

(a) Command
> loginfilter

In case of ver20.00.00.15 and earlier
parameter name :Login Target Filter 16G
items:Enabled, Disabled

**【Single Port】**

```
hfccfg.c2c2c2c2c2c2c2c2>loginfilter<Enter>
Change Login Target Filter Ext
 select HBA(1-2, a(All))-> 1<Enter>
 HBA#:1
 Login Target Filter Ext = pid(Enabled)
    0 - pid(Enabled) -[default]
    1 - no(Disabled)
    c - cancel
 please select -->1<Enter>
 New Login Target Filter Ext = no(Disabled)
 Save Change? (y/[n]) --> y<Enter>
  Now executing....
 done.
hfccfg.c2c2c2c2c2c2c2c2>
```

The setup value is displayed.

If ‘n’ is selected, ‘Canceled’ is displayed.

**【All Port】**

```
hfccfg.c2c2c2c2c2c2c2c2>loginfilter<Enter>
Change Login Target Filter Ext
 select HBA(1-2, a(All))-> a<Enter>
 HBA#:ALL
 Change Login Target Filter Ext of ALL HBAs
    0 - pid(Enabled) -[default]
    1 - no(Disabled)
    c - cancel
 please select -->0<Enter>
 New Login Target Filter Ext = pid(Enabled)
 Save Change? (y/[n]) --> y<Enter>
  Now executing....
  2/2 HBA done.
hfccfg.c2c2c2c2c2c2c2c2>
```

If ‘n’ is selected, ‘Canceled’ is displayed.

The number of ports is displayed.

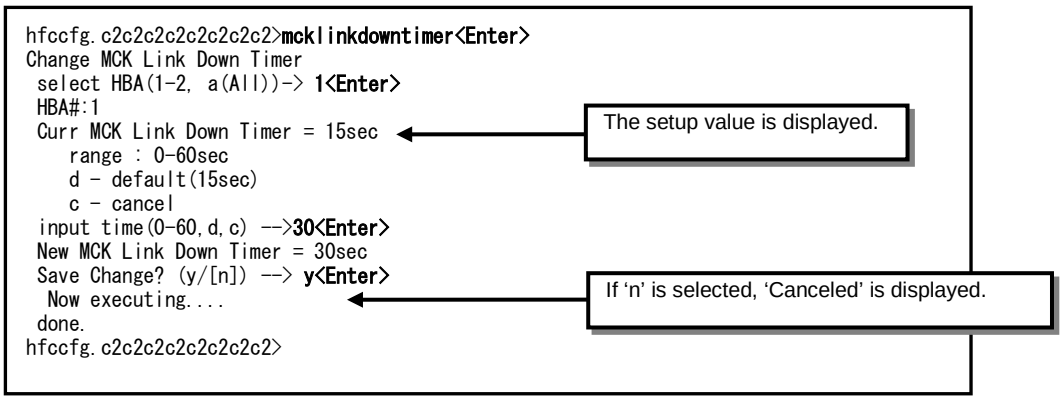
# mcklinkdowntimer command

Execute “mcklinkdowntimer” command to ‘MCK Link Down Timer’ set up. This command is supported by EFI driver version 20.00.00.00 or later.

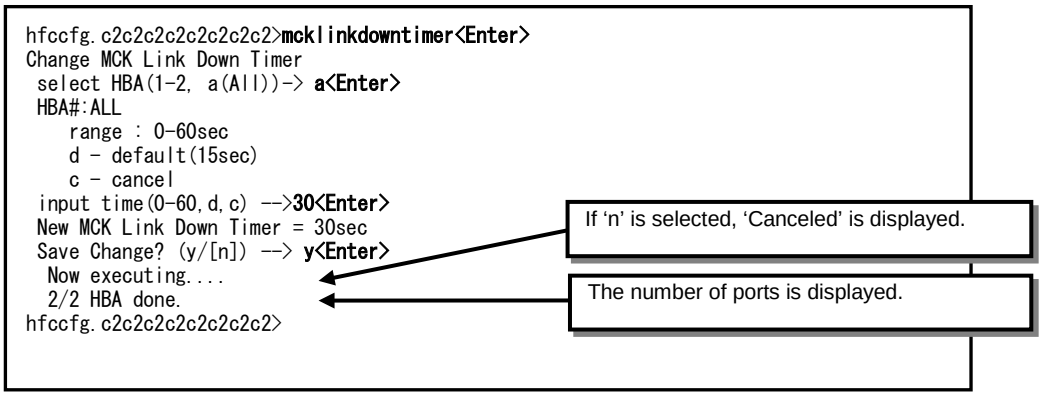
(a) Command

> mcklinkdowntimer

**【Single Port】**




**【All Port】**



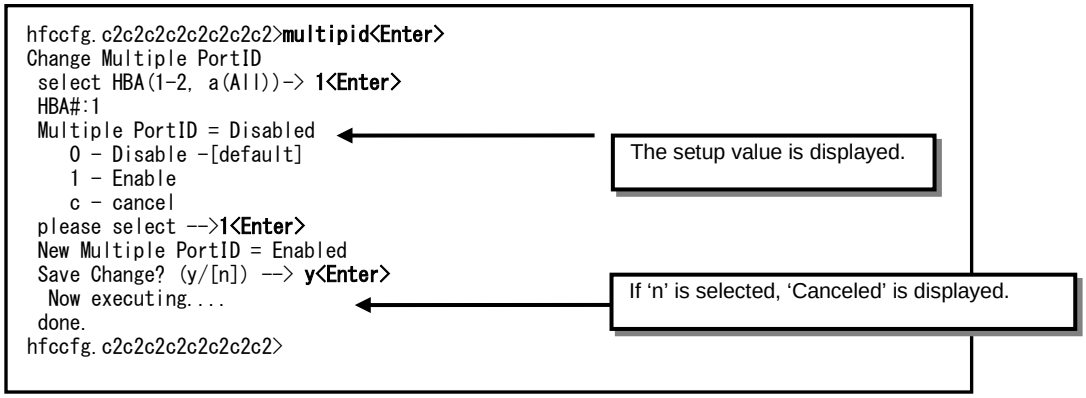
# multipid command

Execute “multipid” command to ‘Multiple PortID’ set up. This command is supported by EFI driver version 20.00.00.00 or later.

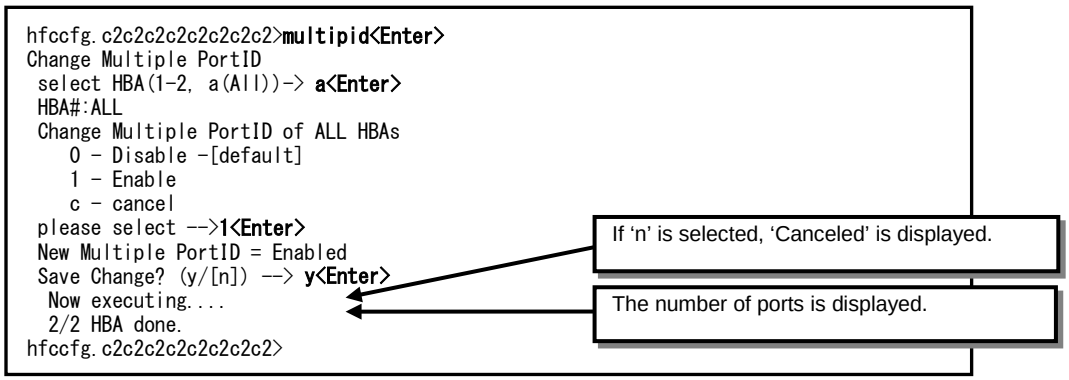
(a) Command

> multipid

**【Single Port】**




**【All Port】**



# Displays EFI driver settings

This section describes the procedure how to display a list of the current EFI driver settings at once. The following commands are available to all ports.

| # | Category | # | Command | Function |
|---|---|---|---|---|
| 1 | Operation | 1 | select | Displays all FC ports in the system and selects the FC port operated. |
| | | 2 | exit | Exits the Option setup shell. |

## The option setup shell for HBA parameter setup

**1. Initiate EFI shell**

**2. Confirm driver handle**

Display EFI driver information using drivers command and confirm the driver handle of EFI driver.

```
Shell> drivers
            T   D
D           Y C I
R           P F A
V  VERSION  E G G #D #C DRIVER NAME                          IMAGE NAME
== ======== = = = == == ================================= ==================
0E 00000010 B - -  3 10 PCI Bus Driver                      PciBus
0F 00000010 D - -  1  - PC-AT ISA Device Enumeration Driver  PcatIsaAcpi
                   :
2B 01020000 ? X X  -  - LSI Logic Ultra160 SCSI Driver      PciRom Seg=00000000
2C 10000113 B X -  2  2 Hitachi PCI-X/PCIe Fibre channel Dr EFIdriver
33 00000010 ? X X  -  - PCI IDE/ATAPI Bus Driver            IdeBus
                   :
46 FFFFFFF0 ? - -  -  - Serial Mouse Driver                 SerialMouse

Shell>
```

*driverhandle*

Depending on the adapter type, the following message is displayed.
4/8Gbps adapter :Hitachi PCI-X/PCIe Fibre channel Driver
16Gbps adapter :Hitachi 16Gbps Fibre channel Driver

**3. Confirm controller handle**

Confirm the controller handle that you can configure by executing “drvcfg” command.

Shell>drvcfg <*driverhandle*>

(*) <*driverhandle*> : driver handle confirmed in (1)

```
Shell> drvcfg 2c
Configurable Components
  Drv[2C]  Ctr[42]  Lang[eng]
  Drv[2C]  Ctrl[43]  Lang[eng]

Shell>
```

*controller handle*

The number of controller handle displayed is same as the number of the adapter (port) installed in the systems. When the two or more controller handles are displayed, you can select any of them. The following is the example that the first entry is selected.

**4. Start “valid options shell”**

Execute “drvcfg –s” command with the driver handle and controller handle confirmed in (1) and (2).

Shell>drvcfg -v <*driverhandle*> <*controllerhandle*>

```
Shell> drvcfg -v 2c 42
Validate Configuration Options
  Drv[2C]  Ctrl[33]  Lang[eng]
hfccfg>
```

When “Display options shell” starts, the command prompt becomes “hfccfg”. When the Prompt character does not change to “hfccfg”, retry the previous procedure.

## select command

Execute “select” command to select the adapter (port) to be listed of option parameters. If you select multiple adapters, repeat the following procedure.

hfccfg>select

WWPN is different when the system is running on BASIC or LPAR mode.

Seg#(Seg) is displayed when EFI driver version is 10.00.02.00 Or later.

Enter adapter number.
Enter ‘c’ when you do not need to display.

‘Multiple PortID' is displayed only for a 16Gbps adapter.

Data Rate is displayed as Link Speed after Ver.20.00.00.00..

The following items are not displayed for a 16Gbps adapter.
- PLOGI Retry Timer
- PLOGI Retry Count
- Link Initialize Rsp Timer
- Linkup Timer
- Mailbox Rsp Timer
- Mailbox Retry Count

Additional WWPN of FC Port Is displayed only on BASIC mode,

LOG Entry Overwrite Mode Is not displayed when the system is running on LPAR mode.

```
hfccfg>select<Enter>
HBA FC Port List:
    Num  Seg Bus Dev Func  current WWPN      original WWPN
    ---  --- --- --- ----  ----------------  ----------------
     1 -  ss  bb  dd  ff   c1c1c1c1c1c1c1c1  o1o1o1o1o1o1o1o1
     2 -  ss  bb  dd  ff   c2c2c2c2c2c2c2c2  o2o2o2o2o2o2o2o2
      c - cancel
select Number -->1<Enter>

[** selected HBA  **]
    Bus:bb Dev:dd Func:ff  current WWPN:c1c1c1c1c1c1c1c1
[Base Settings:]
**Boot Function = Disabled
**Connection Type = Auto Detection
**Multiple PortID = Disabled
**Data Rate = Auto Detection
**Spinup Delay = Disabled
**Login Delay Time = 3 sec
**Persistent Bindings = Enabled
**Force Default Parameter for adapter driver = Disabled
**Select Boot Device = Disabled
**Boot Device List
1 - WWPN:wwwwwwwwwwwwwwww  LUN:nn
2 - WWPN:wwwwwwwwwwwwwwww  LUN:nn
3 - WWPN:wwwwwwwwwwwwwwww  LUN:nn
4 - WWPN:wwwwwwwwwwwwwwww  LUN:nn
5 - WWPN:wwwwwwwwwwwwwwww  LUN:nn
6 - WWPN:wwwwwwwwwwwwwwww  LUN:nn
7 - WWPN:wwwwwwwwwwwwwwww  LUN:nn
8 - WWPN:wwwwwwwwwwwwwwww  LUN:nn
[Advanced Settings:]
**Total number of LU = 32
**Number of LU per HBA FC Port = 1
**Multipath Function = Disabled
**Version Management support = Disabled
**Additional WWPN of FC Port = xxxxxxxx xxxxxxxx
**PLOGI Retry Timer = 200msec
**PLOGI Retry Count = 5times
**Link Initialize Rsp Timer = 30sec
**Linkup Timer = 20sec
**Mailbox Rsp Timer = 20sec
**Mailbox Retry Count = 1times
**SCSI command Rsp Timer = 20sec
**SCSI command Retry Count = 1times
**SCSI command Retry Timer = 200msec
  [LOG control data Settings:]
    **Error Logging Enable/Disable = Enabled
**LOG Entry Overwrite Mode = Wrap mode

  Display setting data End
hfccfg>
```

## exit command

Execute “exit” command when you exit “option setup shell”.

(a) Command

> exit

```
hfccfg>exit<Enter>
Shell>
```

# Initializes EFI driver settings to default value

This clause describes the procedure to initialize the settings to default value.

| # | Category | # | Command | Function |
|---|---|---|---|---|
| 1 | Operation | 1 | select | Displays all FC ports in the system and selects the FC port operated. |
| | | 2 | exit | Exits “Display options shell”. |

[ver10.00.02.03 or earlier]
Also when using as a shared FC mode, all the option settings is initialized.
[ver10.00.02.04 or later]
When using as a shared FC mode, option settings except Connection Type, Data Rate(Link Speed) is initialized.

## The option setup shell for EFI parameter initialization

**1. Initiate EFI shell**

**2. Confirm driver handle**

Display EFI driver information using drivers command and confirm the driver handle of EFI driver.

```
Shell> drivers
            T   D
D           Y C I
R           P F A
V  VERSION  E G G #D #C DRIVER NAME                          IMAGE NAME
== ======== = = = == == ================================= ==================
0E 00000010 B - -  3 10 PCI Bus Driver                      PciBus
0F 00000010 D - -  1  - PC-AT ISA Device Enumeration Driver  PcatIsaAcpi
                     :
2B 01020000 ? X X  -  - LSI Logic Ultra160 SCSI Driver      PciRom Seg=00000000
2C 10000113 B X -  2  2 Hitachi PCI-X/PCIe Fibre channel Dr EFIdriver
33 00000010 ? X X  -  - PCI IDE/ATAPI Bus Driver            IdeBus
                     :
46 FFFFFFF0 ? - -  -  - Serial Mouse Driver                 SerialMouse

Shell>
```

*driverhandle*

Depending on the adapter type, the following message is displayed.
4/8Gbps adapter :Hitachi PCI-X/PCIe Fibre channel Driver
16Gbps adapter :Hitachi 16Gbps Fibre channel Driver

**3. Confirm controller handle**

Confirm the controller handle that you can configure by executing “drvcfg” command.

Shell>drvcfg <*driverhandle*>

(*) <*driverhandle*> : driver handle confirmed in (1)

```
Shell> drvcfg 2c
Configurable Components
  Drv[2C]  Ctr[42]  Lang[eng]
  Drv[2C]  Ctrl[43]  Lang[eng]

Shell>
```

*controller handle*

The number of controller handle displayed is same as the number of the adapter (port) installed in the systems. When the two or more controller handles are displayed, you can select any of them. The following is the example that the first entry is selected.

**4. Start “force options shell”**

Execute “drvcfg –f” command with the driver handle and controller handle.

Shell>drvcfg -f <*driverhandle*> <*controllerhandle*>

```
Shell> drvcfg -f 2c 42
Force Default Configuration to DefaultType 00000000
  Drv[2C]  Ctrl[33]  Lang[eng]
hfccfg>
```

When “Force options shell” starts, the command prompt becomes “hfccfg”. When command prompt does not change to “hfccfg”, retry the previous procedure.

# select command

Execute “select” command to select the adapter (port) to be initialized.

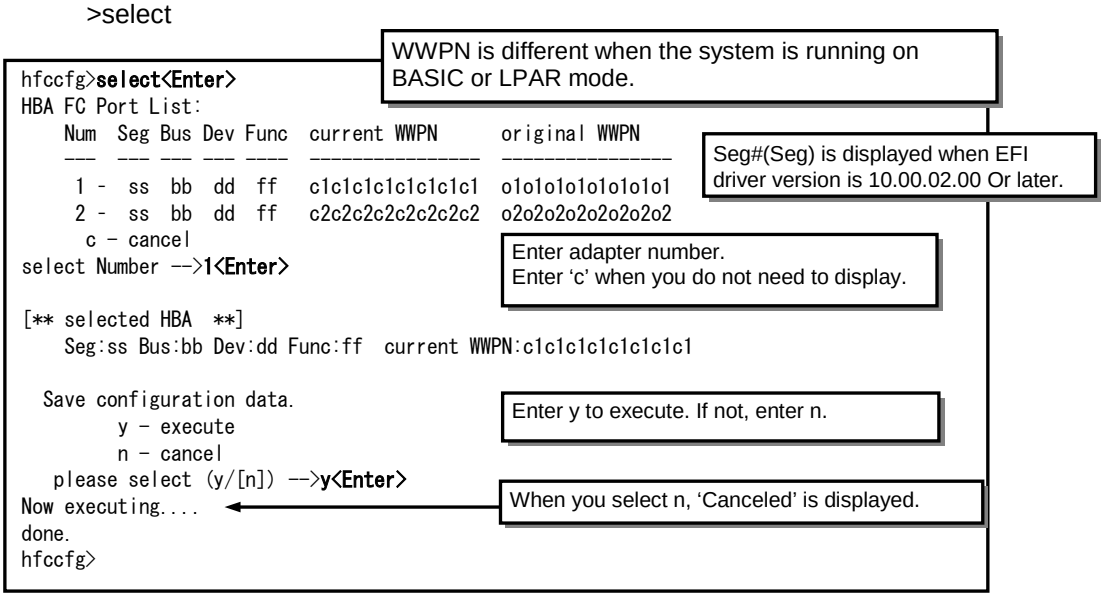
(a) Command

hfccfg>select

(b) Execute one of the following when “please select (y/[n]) -->” is displayed.

- Type ‘y’ key when you initialize the settings
- Type ‘n’ key or ’Enter’ key when you don’t initialize the settings

>select




```
hfccfg>select<Enter>
HBA FC Port List:
    Num  Seg Bus Dev Func  current WWPN      original WWPN
    ---  --- --- --- ----  ----------------  ----------------
     1 -  ss  bb  dd  ff   c1c1c1c1c1c1c1c1  o1o1o1o1o1o1o1o1
     2 -  ss  bb  dd  ff   c2c2c2c2c2c2c2c2  o2o2o2o2o2o2o2o2
      c - cancel
select Number -->1<Enter>

[** selected HBA  **]
    Seg:ss Bus:bb Dev:dd Func:ff  current WWPN:c1c1c1c1c1c1c1c1

  Save configuration data.
        y - execute
        n - cancel
   please select (y/[n]) -->y<Enter>
Now executing....
done.
hfccfg>
```

# exit command

Execute “exit” command when you exit “option setup shell”.

(a) Command

> exit

```
hfccfg>exit<Enter>
Shell>
```

# Procedure to set option parameters(Server setup menu)

## Notes

1) Depending on the server to be used, all items may be unable to display on one screen.
   In that case, please scroll a screen by an arrow key.
2) If the ESC key is pressed, it can return to a server setup menu, and if the item is the middle of change, a preset value cannot be guaranteed. Please refer to "the procedure which returns to a server setup menu".

## Key Operations for the setup menu

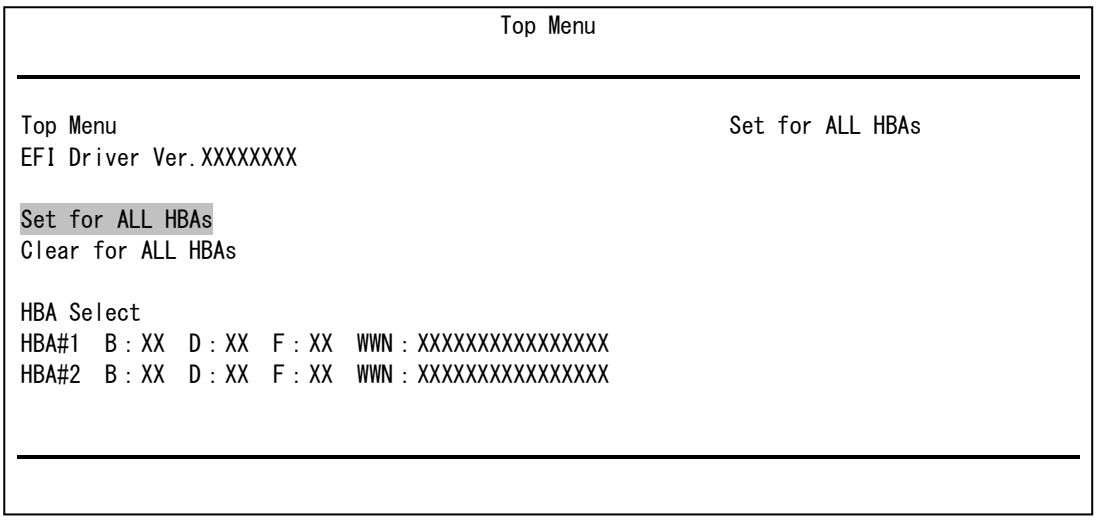
The keys used by option setup from a server setup menu are the following keys.

| Key | Use |
|---|---|
| [↑], [↓], [→], [←] | It is used for selection of an item. Moreover, it is used for scrolling of a screen. |
| [Enter] | It is used when selected item is determined. |
| [Back space] | It is used when the inputted character is deleted. |
| [Esc] | It is used when ending an option setup. Moreover, it is used when canceling a part of setup. |
| [a] ～[z], [A]～[Z], [0]～[9] | It is used for the input of an alphabetic character or a number. |

## Procedure to setup menu

**1.** Start “Server setup menu”.
Please start a server setup menu after a system startup.
Refer to the user's guide of a server for the starting method of a server setup menu.

**2.** Start “EFI Driver setup menu”.
Please choose "Hitachi Fibre Channel Adapter Setting" from a server setup menu by an arrow key, and press the Enter key. The places where "Hitachi Fibre Channel Adapter Setting" is displayed differ by the server currently used. Please check if the following top menu screen is displayed after pressing the Enter key.



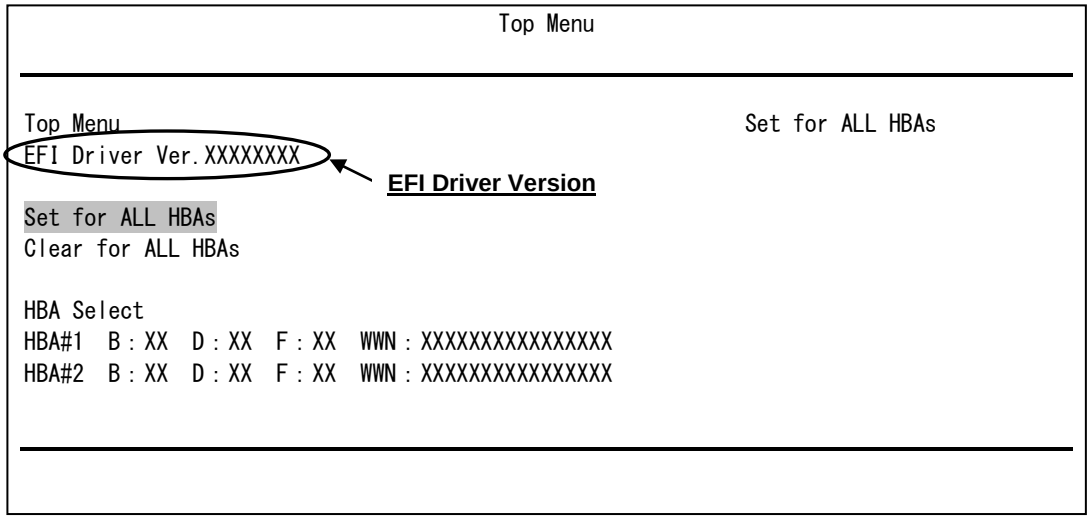
# Confirms EFI Driver Version

**1. Start “EFI driver setup”**

After starting a system, an EFI driver setup is started.
(refer to 『Procedure to setup menu』(P.136))

**2. Confirm EFI Driver Version**

Please check an EFI driver version from the following top menu screen.



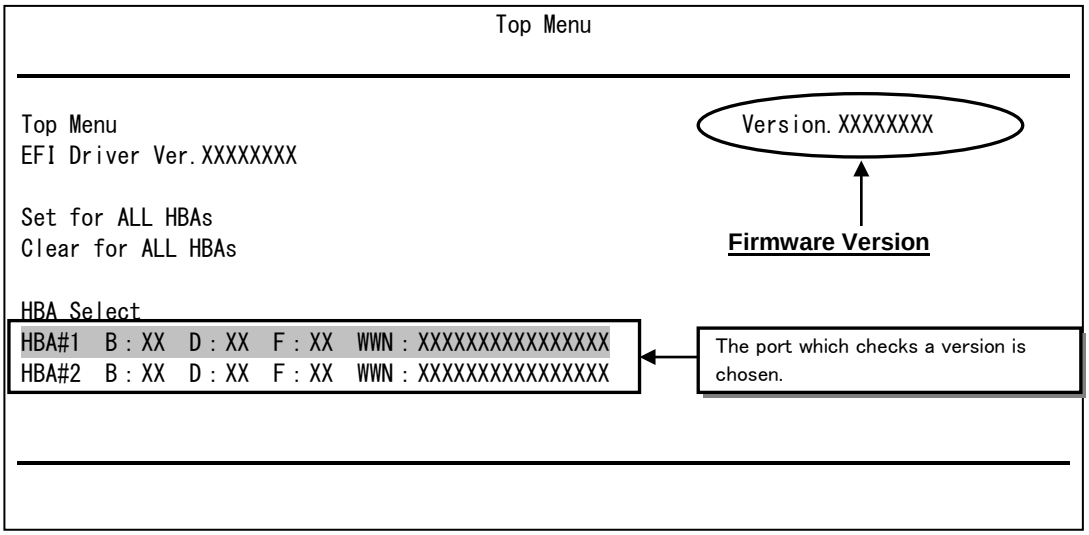

# Confirms Firmware Version

**1. Start “EFI driver setup”**

After starting a system, an EFI driver setup is started.
(refer to 『Procedure to setup menu』(P.136))

**2. Confirm Firmware Version**

Please check a Firmware version from the following top menu screen.

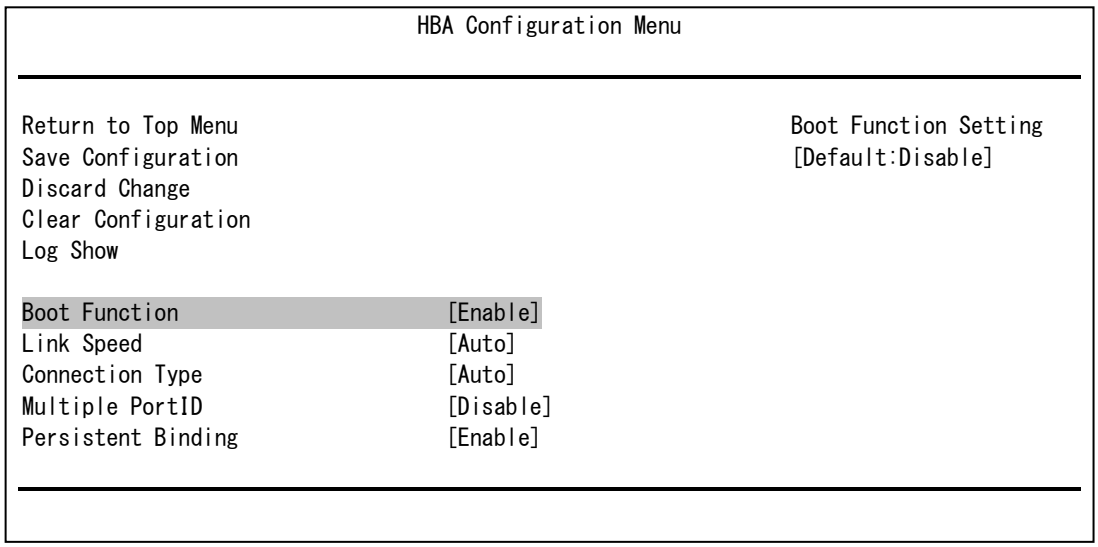


# Procedure to option setup

The method of an option setup is following one of three sorts.

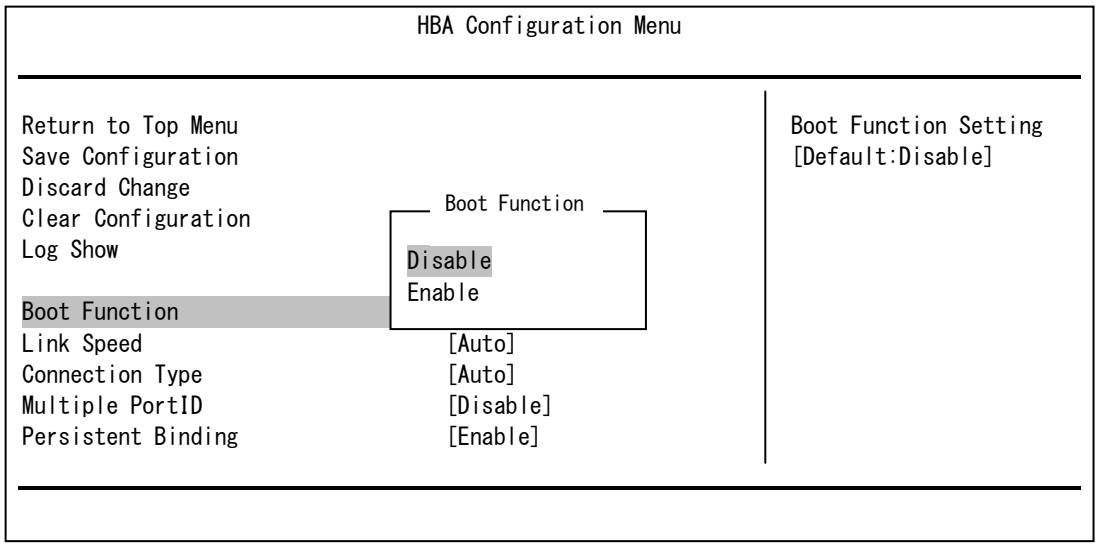
1) Selection

One is chosen from two or more setup. As an example, a setup of ‘Boot Function’ is described below.‘Boot Function’ is chosen by an arrow key and the Enter key is pressed.

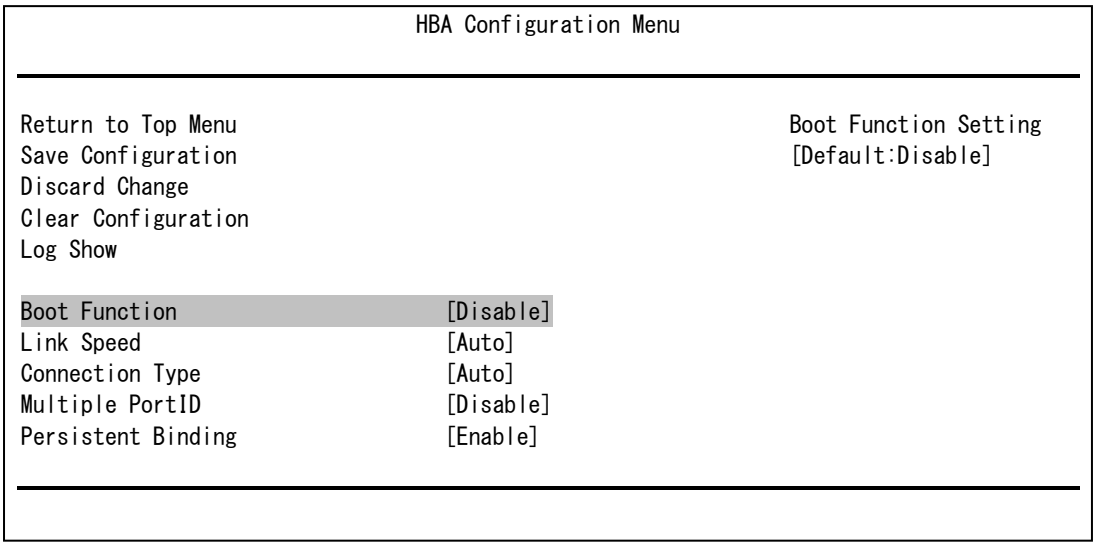



Since a dialog is displays, an item to set up is chosen by an arrow key and the Enter key is pressed. The ESC key is pressed to cancel without changing.

The setup value of ‘Boot Function’ is changed into ‘Disable’ in this example.

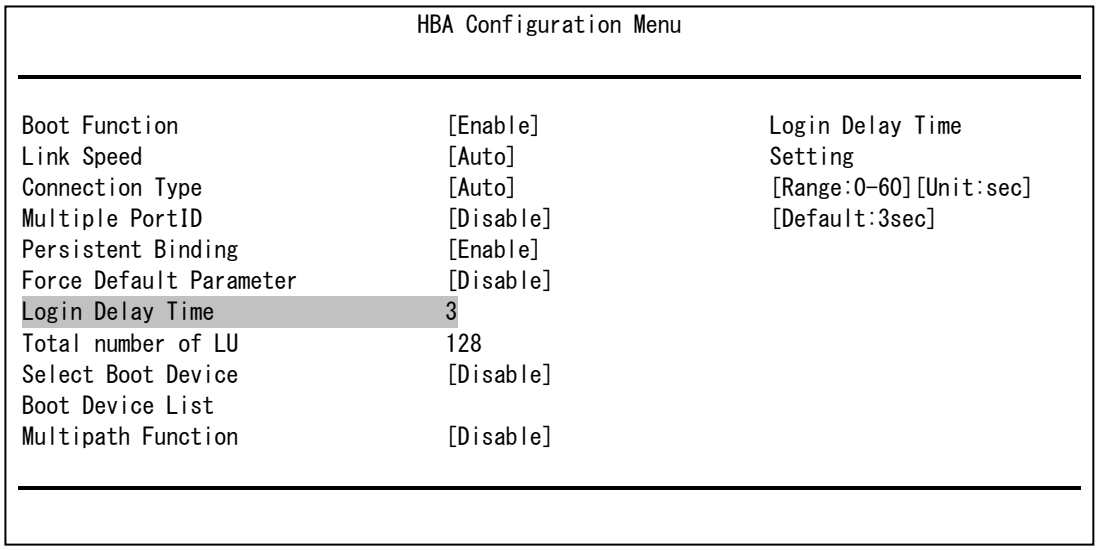


If "Disable" is chosen and the Enter key is pressed, a dialog will disappear and "Boot Function" will change into "Disable.".

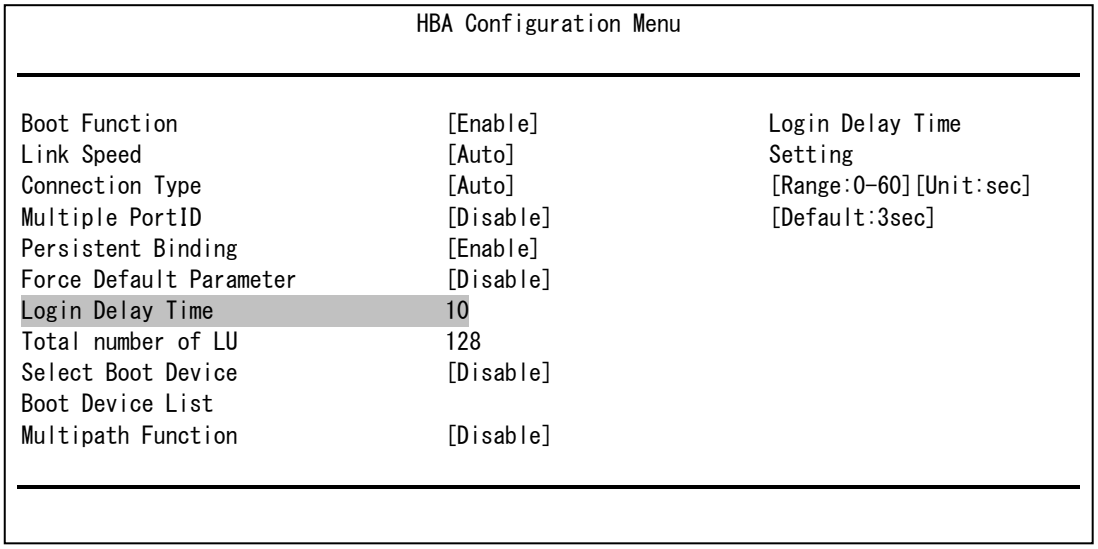


2) Numerical input

A numerical value is inputted and set up. As an example, a setup of ‘Login Delay Time’ is described below. ‘Login Delay Time’ is chosen by an arrow key and the Enter key is pressed.

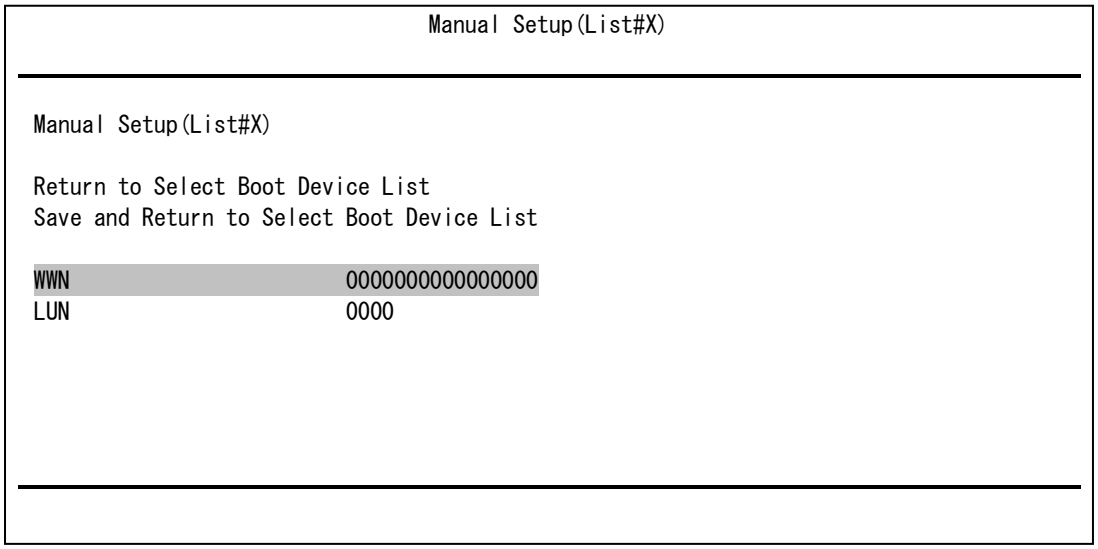



A preset value will be changed, if the value changed by a number key is inputted and the Enter key is pressed. If the value besides the range is inputted, an error will be outputted and it will return to the value before a preset value inputting. 'Login Delay Time' is changed into 10 in this example.



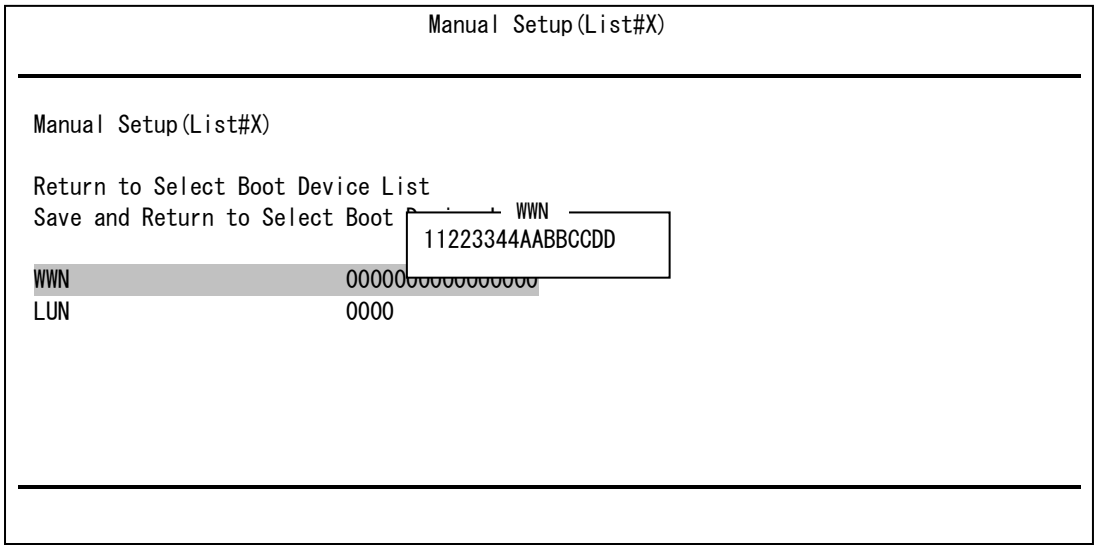
3) Character string input

A character string is inputted and set up. As an example, a manual setup of 'Boot Device List' is described below. The item of WWN is chosen by an arrow key and the Enter key is pressed.

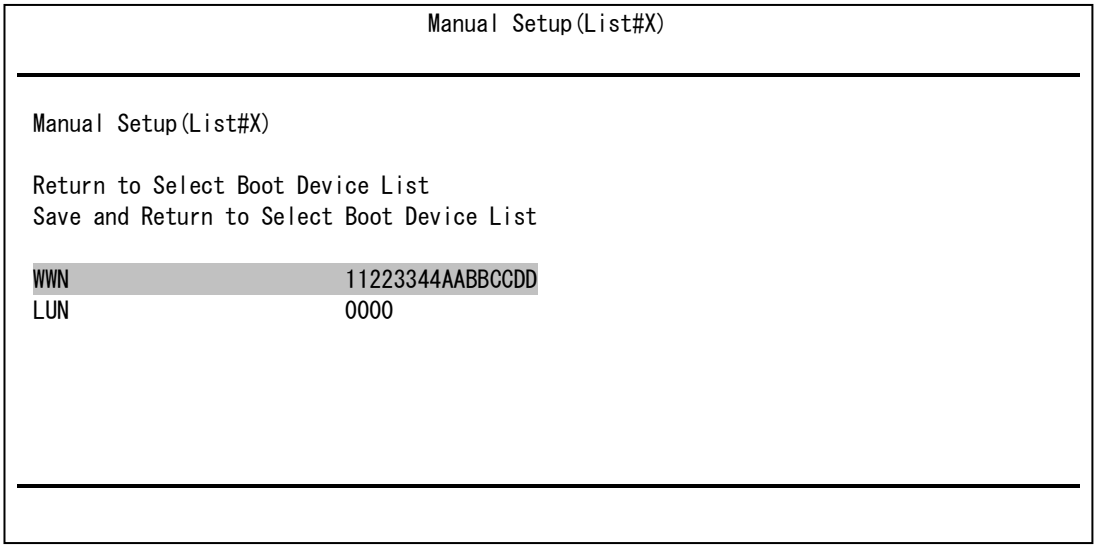



Since a dialog displays, the character string to set up is inputted by the alphabetic character / number key, and the Enter key is pressed. The ESC key is pressed to cancel without changing. When the character string is already set up, please input the character string changed after deleting by the backspace key.

The preset value of WWN is changed into "11223344AABBCCDD" in this example.



If a character string is inputted and the Enter key is pressed, a dialog will disappear and the setup value of WWN will be changed into "11223344AABBCCDD.".



## Procedure to set a Boot Function to Enable

Setup changed until it rebooted the server does not become effective.

**1. Start “EFI driver setup”**

After starting a system, an EFI driver setup is started.
(refer to 『Procedure to setup menu』(P.136))

**2. Select the adapter port**

The port to set up is chosen from a top menu screen.
( refer to『Top Menu』(P.156) )

**3. Setting Boot Function to Enable**

3-1. The item of "Boot Function" is chosen by an arrow key, and the Enter key is pressed.

3-2. Since a dialog is displayed, Enable is chosen by an arrow key and the Enter key is pressed.
When any change is not needed, ESC key is pressed.

**4. Save the settings**

Execute it referring to 『Procedure to saving a setup』(P.152).

**5. Setup of another HBA is changed.**

When setting up another HBA, "Return to Top Menu" is chosen by an arrow key, the Enter key is pressed, and it returns to (procedure-2). When a setup is terminated, it progresses to (procedure-6).

**6. Returns to a server setup menu.**

Execute it referring to 『Procedure to return to server setup menu』(P.152).

**7. Making settings effective**

Execute it referring to 『Procedure to make option settings effective』(P.152).

## Procedure to set a Boot Function to Disable

Setup changed until it rebooted the server does not become effective.

Change “Enable” into “Disable, and refer to 『Procedure to set a Boot Function to Enable』(P.143)

# Procedure to set Boot Device List

Setup changed until it rebooted the server does not become effective.

### 1. Start “EFI driver setup”

After starting a system, an EFI driver setup is started.
(refer to 『Procedure to setup menu』(P.136))

### 2. Select the adapter port

The port to set up is chosen from a top menu screen.
( refer to『Top Menu』(P.156) )

### 3. Setting Select Boot Device to Enable or Disable

3-1. Select Boot Device is chosen by an arrow key, and the Enter key is pressed.
3-2. If a dialog is displayed, one of following will be carried out.

・When changing into Disable
"Disable" is chosen by an arrow key and the Enter key is pressed.
・When changing into Enable
"Enable" is chosen by an arrow key and the Enter key is pressed.
・When not changing
The ESC key is pressed.

### 5. Select Boot Device List

5-1. Boot Device List is chosen by an arrow key, and the Enter key is pressed.
5-2. The entry of the list to change is chosen by an arrow key, and the Enter key is pressed.

### 6. WWPN and LUN of Boot Device are registered.

The method of registering has two types, automatically and manually.
[automatically]
・Go to (procedure-7)
[manually].
・Skip to (procedure-8)

### 7. The procedure registered automatically

7-1. "Target Scan" is chosen by an arrow key and the Enter key is pressed.
( refer to『Boot Device List Setting Menu』(P.160) )
7-2. The target device to register is chosen from the detected target device list by an arrow key, and the Enter key is pressed.
( refer to『Target Port Select』(P.161) )
7-3. LUN to register is chosen from the list of displayed LUN by an arrow key, and the Enter key is pressed.
( refer to『LUN Select』(P.162) )
7-4. The selected target device and LUN are displayed.
When registering, "Yes" is chosen by an arrow key, and the Enter key is pressed.
When not registering, "No" is chosen by an arrow key, and the Enter key is pressed.
( refer to『Registration Device Confirmation』(P.163) )
7-5. The procedure registered automatically is completion. Skip to (procedure-9).

### 8. The procedure registered manually

8-1. "Manual Setup" is chosen by an arrow key and the Enter key is pressed.
( refer to『Boot Device List Setting Menu』(P.160) )

8-2. "WWN" is chosen by an arrow key and the Enter key is pressed. Since a dialog is displayed, WWN of the target device to register is inputted by a hexadecimal number by the alphabetic character / number key.
( refer to『Manual Setup』(P.164) )

8-3. "LUN" is chosen by an arrow key and the Enter key is pressed. Since a dialog is displayed, LUN of the target device to register is inputted by a decimal number by a number key.
( refer to『Manual Setup』(P.164) )

8-4. When registering into a boot device list WWN and LUN which were inputted, "Save and Return to Boot Device List" is chosen by an arrow key, and the Enter key is pressed.
( refer to『Manual Setup』(P.164) )

8-5. The procedure registered manually is completion. Go to (procedure-9).

### 9. returns to an ‘Configuration Menu’ screen

‘Return to Configuration Menu’ is chosen by an arrow key and the Enter key is pressed.
( refer to『Select Boot Device List』(P.159) )

### 10. Save the settings

Execute it referring to 『Procedure to saving a setup』(P.152).

### 11. Setup of another HBA is changed.

When setting up another HBA, "Return to Top Menu" is chosen by an arrow key, the Enter key is pressed, and it returns to (procedure-2). When finishing a setup, it progresses to (procedure-12).

### 12. Returns to a server setup menu.

Execute it referring to 『Procedure to return to server setup menu』(P.152).

### 13. Making settings effective

Execute it referring to 『Procedure to make option settings effective』(P.152).

# Procedure to set Connection Type

Setup changed until it rebooted the server does not become effective.

### 1. Start “EFI driver setup”

After starting a system, an EFI driver setup is started.
(refer to 『Procedure to setup menu』(P.136))

### 2. Select the adapter port

The port to set up is chosen from a top menu screen.
( refer to『Top Menu』(P.156) )

### 3. Setting Connection Type

3-1. The item of "Connection Type" is chosen by an arrow key, and the Enter key is pressed.

3-2. Since a dialog is displayed, Enter one of the following.

- ”Auto” is chosen when the setting is changed to “Auto Detection”
- ”Point to Point” is chosen when the setting is changed to “Point to Point Only”
- ”FC-AL” is chosen when the setting is changed to “Loop Only”
- ESC Key is pressed when the settings are not needed to change

### 4. Save the settings

Execute it referring to 『Procedure to saving a setup』(P.152).

### 5. Setup of another HBA is changed.

When setting up another HBA, "Return to Top Menu" is chosen by an arrow key, the Enter key is pressed, and it returns to (procedure-2). When a setup is terminated, it progresses to (procedure-6).

### 6. Returns to a server setup menu.

Execute it referring to 『Procedure to return to server setup menu』(P.152).

### 7. Making settings effective

Execute it referring to 『Procedure to make option settings effective』(P.152).

## Procedure to set a Multiple PortID to Enable

Setup changed until it rebooted the server does not become effective.

**1. Start “EFI driver setup”**

After starting a system, an EFI driver setup is started.
(refer to 『Procedure to setup menu』(P.136))

**2. Select the adapter port**

The port to set up is chosen from a top menu screen.
( refer to『Top Menu』(P.156) )

**3. Setting Multiple PortID to Enable**

3-1. The item of "Multiple PortID" is chosen by an arrow key, and the Enter key is pressed.

3-2. Since a dialog is displayed, Enable is chosen by an arrow key and the Enter key is pressed.
The ESC key is pressed when not changing.

**4. Save the settings**

Execute it referring to 『Procedure to saving a setup』(P.152).

**5. Setup of another HBA is changed.**

When setting up another HBA, "Return to Top Menu" is chosen by an arrow key, the Enter key is pressed, and it returns to (procedure-2). When a setup is terminated, it progresses to (procedure-6).

**6. Returns to a server setup menu.**

Execute it referring to 『Procedure to return to server setup menu』(P.152).

**7. Making settings effective**

Execute it referring to 『Procedure to make option settings effective』(P.152).

## Procedure to set a Multiple PortID to Disable

Setup changed until it rebooted the server does not become effective.

Change “Enable” into “Disable, and refer to 『Procedure to set a Multiple PortID to Enable』(P.147)

# Procedure to set a Link Speed

Setup changed until it rebooted the server does not become effective.

### 1. Start “EFI driver setup”

After starting a system, an EFI driver setup is started.
(refer to 『Procedure to setup menu』(P.136))

### 2. Select the adapter port

The port to set up is chosen from a top menu screen.
( refer to『Top Menu』(P.156) )

### 3. Setting Link Speed

3-1. The item of "Link Speed" is chosen by an arrow key, and the Enter key is pressed.

3-2. Since a dialog is displayed, Enter one of the following.

- ”Auto” is chosen when the setting is changed to “Auto Detection”
- ”4Gbps” is chosen when the setting is changed to “4Gbps Only”
- ”8Gbps” is chosen when the setting is changed to “8Gbps Only”
- ”16Gbps” is chosen when the setting is changed to “16Gbps Only”
- ESC Key is pressed when the settings are not needed to change

### 4. Save the settings

Execute it referring to 『Procedure to saving a setup』(P.152).

### 5. Setup of another HBA is changed.

When setting up another HBA, "Return to Top Menu" is chosen by an arrow key, the Enter key is pressed, and it returns to (procedure-2). When a setup is terminated, it progresses to (procedure-6).

### 6. Returns to a server setup menu.

Execute it referring to 『Procedure to return to server setup menu』(P.152).

### 7. Making settings effective

Execute it referring to 『Procedure to make option settings effective』(P.152).

# Procedure to set Login Delay Time

Setup changed until it rebooted the server does not become effective.

**1. Start “EFI driver setup”**

After starting a system, an EFI driver setup is started.
(refer to 『Procedure to setup menu』(P.136))

**2. Select the adapter port**

The port to set up is chosen from a top menu screen.
( refer to『Top Menu』(P.156) )

**3. Setting Login Delay Time**

3-1. The item of "Login Delay Time" is chosen by an arrow key, and the Enter key is pressed.

3-2. The number of seconds to set up is inputted by a decimal number, and the Enter key is pressed.

**4. Save the settings**

Execute it referring to 『Procedure to saving a setup』(P.152).

**5. Setup of another HBA is changed.**

When setting up another HBA, "Return to Top Menu" is chosen by an arrow key, the Enter key is pressed, and it returns to (procedure-2). When a setup is terminated, it progresses to (procedure-6).

**6. Returns to a server setup menu.**

Execute it referring to 『Procedure to return to server setup menu』(P.152).

**7. Making settings effective**

Execute it referring to 『Procedure to make option settings effective』(P.152).

# Procedure to set a Multipath Function to Enable

Setup changed until it rebooted the server does not become effective.

**1. Start “EFI driver setup”**

After starting a system, an EFI driver setup is started.
(refer to 『Procedure to setup menu』(P.136))

**2. Select the adapter port**

The port to set up is chosen from a top menu screen.
( refer to『Top Menu』(P.156) )

**3. Setting Multipath Function to Enable**

3-1. The item of "Multipath Function" is chosen by an arrow key, and the Enter key is pressed.

3-2. Since a dialog is displayed, Enable is chosen by an arrow key and the Enter key is pressed.
The ESC key is pressed when not changing.

**4. Save the settings**

Execute it referring to 『Procedure to saving a setup』(P.152).

**5. Setup of another HBA is changed.**

When setting up another HBA, "Return to Top Menu" is chosen by an arrow key, the Enter key is pressed, and it returns to (procedure-2). When a setup is terminated, it progresses to (procedure-6).

**6. Returns to a server setup menu.**

Execute it referring to 『Procedure to return to server setup menu』(P.152).

**7. Making settings effective**

Execute it referring to 『Procedure to make option settings effective』(P.152).

# Procedure to set a Multipath Function to Disable

Setup changed until it rebooted the server does not become effective.

Change “Enable” into “Disable, and refer to 『Procedure to set a Multipath Function to Enable』(P.150)

# Procedure to set a LoginTarget Filter Ext

**【16Gbps adapter and 8Gbps adapter(ver10.00.02.0A or later) only】**

| Option parameter does not become effective until server is rebooted. |
|---|

**1. Start “EFI driver setup”**

After starting a system, an EFI driver setup is started.
(refer to 『Procedure to setup menu』(P.136))

**2. Select the adapter port**

The port to set up is chosen from a top menu screen.
( refer to『Top Menu』(P.156) )

**3. Sett**ing Login Target Filter Ext

3-1. The item of "Login Target Filter Ext" is chosen by an arrow key, and the Enter key is pressed.

3-2. Since a dialog is displayed, pid (Enabled) or no(Disabled) is chosen by an arrow key and the Enter key is pressed.

**4. Save the settings**

Execute it referring to 『Procedure to saving a setup』(P.152).

**5. Setup of another HBA is changed.**

When setting up another HBA, "Return to Top Menu" is chosen by an arrow key, the Enter key is pressed, and it returns to (procedure-2). When a setup is terminated, it progresses to (procedure-6).

**6. Returns to a server setup menu.**

Execute it referring to 『Procedure to return to server setup menu』(P.152).

**7. Making settings effective**

Execute it referring to 『Procedure to make option settings effective』(P.152).

## Procedure to restore default settings

Setup changed until it rebooted the server does not become effective.

**1. Start “EFI driver setup”**

After starting a system, an EFI driver setup is started.
(refer to 『Procedure to setup menu』(P.136))

**2. Select the adapter port**

The port to set up is chosen from a top menu screen.
( refer to『Top Menu』(P.156) )

**3. Restore default settings**

3-1. The item of "Clear Configuration" is chosen by an arrow key, and the Enter key is pressed.

3-2. If a screen changes, "Yes" is chosen by an arrow key and the Enter key is pressed.
It does not restore to default configuration. A case chooses "No" by an arrow key and presses the Enter key.

**5. Restore default settings of another HBA.**

When another HBA is made into default settings, "Return to Top Menu" is chosen by an arrow key, the Enter key is pressed, and it returns to (procedure-2). When a setup is terminated, it progresses to (procedure-6).

**6. Returns to a server setup menu.**

Execute it referring to 『Procedure to return to server setup menu』(P.152).

**7. Making settings effective**

Execute it referring to 『Procedure to make option settings effective』(P.152).

## Procedure to saving a setup

(1). The item of "Save Configuration" is chosen by an arrow key, and the Enter key is pressed.

(2). If a screen changes, "Yes" is chosen by an arrow key and Enter key is pressed

## Procedure to return to server setup menu

(1). Choosing "Return to ～" is continued until it becomes a top menu screen..
( refer to『Top Menu』(P.156) )

(2). If the ESC key is pressed after returning to a top menu screen, It will return to a server setup menu.

## Procedure to make option settings effective

(1) The server device is reactivated. Refer to the manual of the server device for the procedure reactivating the server device.

# Procedure to refer EFI Driver error information(Server Setup Menu)

## Procedure to refer an error messages

**1. Start “EFI driver setup”**

After starting a system, an EFI driver setup is started.
(refer to 『Procedure to setup menu』(P.136))

**2. Select the adapter port**

The port which refers to EFI driver error information is chosen from a top menu screen.
( refer to『Top Menu』(P.156) )

**3. Select “Log show”**

The item of "Log show" is chosen by an arrow key, and the Enter key is pressed.
( refer to『HBA Configuration Menu』(P.157) )

**4. Select “Driver Log”**

The item of "Driver Log" is chosen by an arrow key, and the Enter key is pressed.
( refer to『Log Show』(P.166) )

**5. Select EFI driver error messages**

The EFI driver error messages to refer to is chosen from a log list by an arrow key, and the Enter key is pressed.
( refer to『Driver Log Select』(P.169) )

**6. Reference to EFI driver error messages**

The displayed EFI driver error messages are checked.
( refer to『Driver Log Show』(P.170) )

## Procedure to refer a detailed error logs

**1. Start “EFI driver setup”**

After starting a system, an EFI driver setup is started.
(refer to 『Procedure to setup menu』(P.136))

**2. Select the adapter port**

The port which refers to EFI driver error information is chosen from a top menu screen.
( refer to『Top Menu』(P.156) )

**3. Select “Log show”**

The item of "Log show" is chosen by an arrow key, and the Enter key is pressed.
( refer to『HBA Configuration Menu』(P.157) )

**4. Select “Error Log”**

The item of "Error Log" is chosen by an arrow key, and the Enter key is pressed.
( refer to『Log Show』(P.166) )

**5. Select EFI Driver detailed error logs**

The EFI Driver detailed error logs to refer to is chosen from a log list by an arrow key, and the Enter key is pressed.
( refer to『Error Log Select』(P.167) )

**5. Reference to EFI Driver detailed error logs**

The displayed EFI Driver detailed error logs are checked.
( refer to『Error Log Show』(P.168) )

# Procedure to all port setup

**1. Start “EFI driver setup”**

After starting a system, an EFI driver setup is started.
(refer to 『Procedure to setup menu』(P.136))

**2. Select “Set for all HBAs”**

The item of "Set for all HBAs" is chosen by an arrow key, and the Enter key is pressed.
( refer to『Top Menu』(P.156) )

**3. Setup to all HBA**

3-1. Setup is changed.
3-2. "Save Configuration" is chosen by an arrow key and the Enter key is pressed. If a screen changes, "Yes" will be chosen and the Enter key will be pressed.
( refer to『Set for ALL HBAs』(P.171) )

**4. Returns to a server setup menu.**

Execute it referring to 『Procedure to return to server setup menu』(P.152).

**5. Making settings effective**

Execute it referring to 『Procedure to make option settings effective』(P.152).

# Procedure to initialize all port setup

**1. Start “EFI driver setup”**

After starting a system, an EFI driver setup is started.
(refer to 『Procedure to setup menu』(P.136))

**2. Select “Clear for all HBAs”**

The item of "Clear for all HBAs" is chosen by an arrow key, and the Enter key is pressed.
( refer to『Top Menu』(P.156) )

**3. Initialize to all HBA setup**

If a screen changes, "Yes" will be chosen and the Enter key will be pressed. When not initializing, "No" is chosen and the Enter key is pressed.
( refer to『Clear for ALL HBAs』(P.172) )

**4. Returns to a server setup menu.**

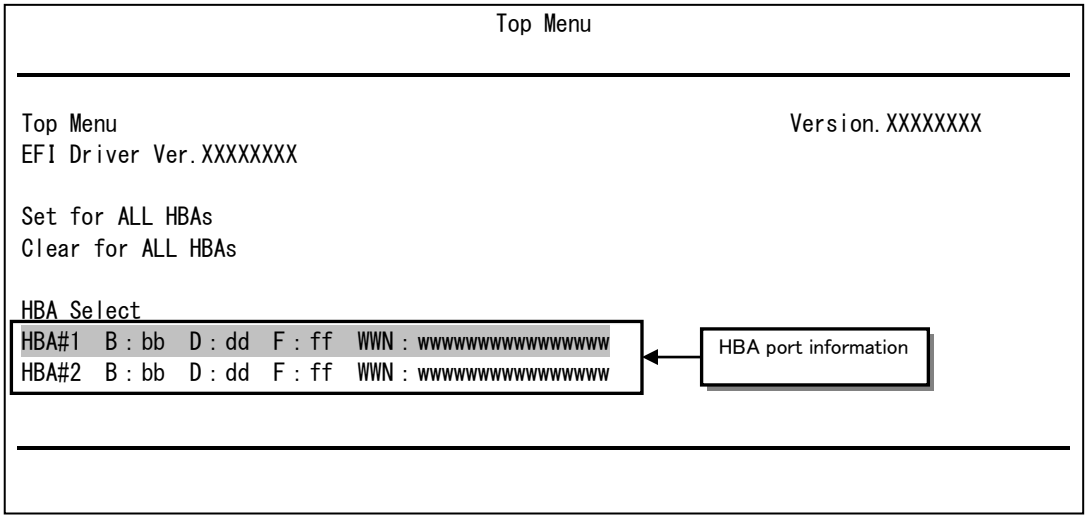
Execute it referring to 『Procedure to return to server setup menu』(P.152).

**5. Making settings effective**

Execute it referring to 『Procedure to make option settings effective』(P.152).

# Details of a screen

## Top Menu




The item of a “Top Menu” is described below.

| Item | Explanation |
|---|---|
| EFI Driver Ver.XXXXXXXX | The version of the EFI driver under execution |
| Version.XXXXXXXX | The firmware version of the chosen HBA port<br>（It displays, only when the HBA port is chosen.） |
| Set for ALL HBAs | setup for all HBA |
| Clear for ALL HBAs | Initialize setup for all HBA |
| HBA port information | HBA port information is displayed.<br>bb：PCI Bus Number<br>dd：PCI Device Number<br>ff ：PCI Function Number<br>wwwwwwwwwwwwwwww：World Wide Port Name |

The key used with a “Top Menu” is described below.

| Key | Explanation |
|---|---|
| [↑], [↓],<br>[→], [←] | (1) Selection of an item.<br>(2) Scrolling of a screen |
| [Enter] | (1) When “Set for ALL HBAs” is chosen, it changes on a “Set for ALL HBAs” screen.<br>(2) When “Clear for ALL HBAs” is chosen, it changes on a “Clear for ALL HBAs” screen.<br>(3) When HBA port information is chosen, it changes on a “HBA Configuration Menu” screen. |
| [Back space] | Not use |
| [Esc] | Changes to server setup screen. |
| [a] ～[z], [A]～[Z],<br>[0]～[9] | Not use |

# HBA Configuration Menu

```
                                HBA Configuration Menu

HBA Configuration Menu                                          Return to Top Menu
HBA#XX   B : XX  D : XX  F : XX  WWN : XXXXXXXXXXXXXXXX

Return to Top Menu
Save Configuration
Discard Change
Clear Configuration
Log Show

Boot Function                       [Enable]
Link Speed                          [Auto]
Connection Type                     [Auto]
Multiple PortID                     [Disable]
Persistent Binding                  [Enable]
Force Default Parameter             [Disable]
Login Delay Time                    3
Total number of LU                  128
Select Boot Device                  [Disable]
Boot Device List
Multipath Function                  [Disable]
Number of LU per HBA                8
SCSI Command Rsp Timer              [20sec]
SCSI Command Retry Count            [1time]
SCSI Command Retry Timer            [200msec]
Spinup Delay                        0
Init Negotiation Timer              120
HBA ISOL cmd                        [OFF]
Login Target Filter Ext             [pid(Enable)]
MCK Linkdown Timer                  15
Additional WWPN of FC               XXXXXXXXXXXXXXXX
Error Logging                       [Enable]
Log Entry Overwrite Mode Setting    [Wrap Mode]
```

The item of a “HBA Configuration Menu” is described below.

| Item | Explanation |
|---|---|
| HBA#XX | HBA port number |
| B:XX | PCI Bus Number |
| D:XX | PCI Device Number |
| F:XX | PCI Function Number |
| WWN:XXXXXXXXXXXXXXXX | World Wide Port Name |
| Return to Top Menu | Changes to “Top Menu” screen. |
| Save Configuration | Setup is saved. |
| Discard Change | It Return, before changed a setup. |
| Clear Configuration | Setup value is changed into an initial state. |
| Log Show | Changes to “Log show” screen. |

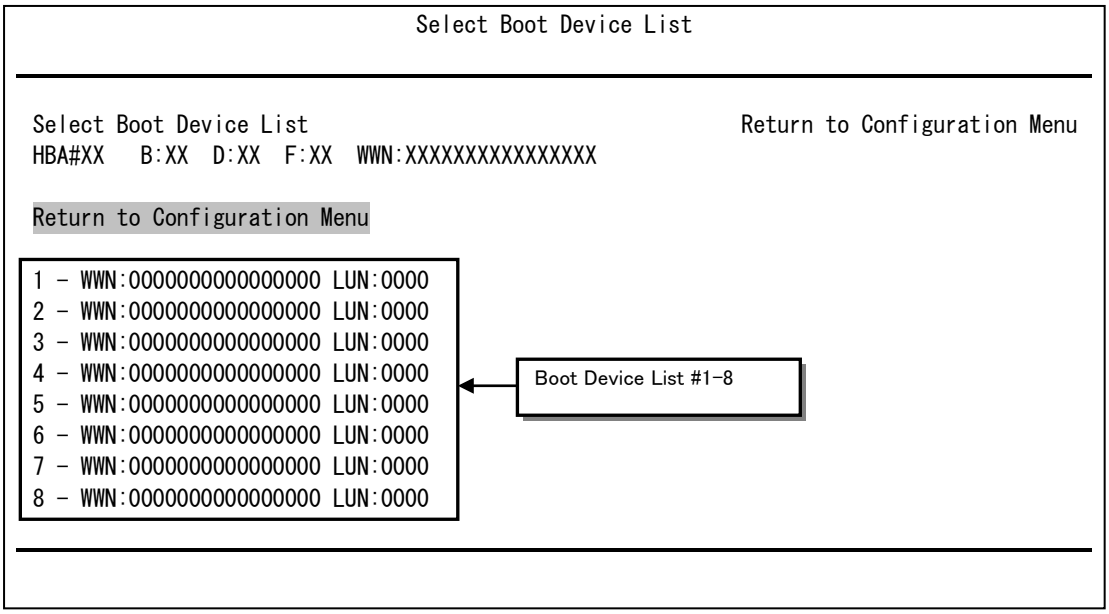
The list of the parameters which can be set on a "HBA Configuration Menu" is described.
"Parameters available on EFI driver" is referred to for details.

| Item | Explanation | Setting method |
|---|---|---|
| Boot Function | Set Enable/Disable SAN boot function | Selection |
| Link Speed | Set Link speed | Selection |
| Connection Type | Set Connection Type. | Selection |
| Multiple PortID | Set Enable/Disable Multiple PortID. | Selection |
| Persistent Binding | Set Enable/Disable Persistent Binding. | Selection |
| Force Default Parameter | Set Enable/Disable Force Default Parameter. | Selection |
| Login Delay Time | Set Login Delay Time. | Numerical input |
| Total Number of LU | Set Total Number of LU. | Numerical input |
| Select Boot Device | Set Enable/Disable Boot Device List. | Selection |
| Boot Device List | Set Boot Device List. | – |
| Multipath Function | Set Enable/Disable Multipath Function. | Selection |
| Number of LU per HBA | Set Number of LU per HBA. | Numerical input |
| SCSI Command Rsp Timer | Set SCSI Command Rsp Timer. | Selection |
| SCSI Command Retry Count | Set SCSI Command Retry Count | Selection |
| SCSI Command Retry Timer | Set SCSI Command Retry Timer. | Selection |
| Spinup Delay | Set Enable/Disable Spinup Delay. | Numerical input |
| Init Negotiation Timer | Set Init Negotiation Timer. | Numerical input |
| HBA ISOL Cmd | Set Enable/Disable HBA ISOL cmd. | Selection |
| Login Target Filter Ext | Set Enable/Disable Login Target Filter Ext. | Selection |
| MCK Linkdown Timer | Set MCK Linkdown Timer. | Numerical input |
| Additional WWPN of FC Port | Set Additional WWPN. | Character string input |
| Error Logging | Set Enable/Disable Error Logging. | Selection |
| Log Entry Overwrite Mode | Set Log Entry Overwrite Mode. | Selection |

The key used with a “HBA Configuration Menu” is described below.

| Key | Explanation |
|---|---|
| [ ↑ ], [ ↓ ],<br>[→ ], [←] | (1) Selection of an item.<br>(2) Scrolling of a screen |
| [Enter] | (1) When “Return to Top Menu“ is chosen, it changes on a “Top Menu” screen.<br>(2) Setup is saved when "Save Configuration" is chosen.<br>(3) When "Discard Configuration" is chosen, it returns, before changing a setup.<br>(4) Setup value is initialized when "Clear Configuration" is chosen.<br>(5) When “Log show” is chosen, it changes on a “Log show” screen.<br>(6) When “Boot Device List” is chosen, it changes on a “Select Boot Device List” screen.<br>(7) Option parameter is set when the option parameter is chosen. |
| [Back space] | (1) Changes to server setup screen.<br>(2) When the dialog of setting change is displayed, change is canceled and a dialog is closed. |
| [Esc] | Not use |
| [0]～[9] | The value to set up is inputted when changing the following parameters.<br>・「Login Delay Time」<br>・「Total Number of LU」<br>・「Number of LU per HBA」<br>・「Spinup Delay」<br>・「Init Negotiation Timer」<br>・「Additional WWPN of FC Port」 |
| [a] ～[z], [A]～<br>[Z], | The value to set up is inputted when changing the following parameters.<br>・「Additional WWPN of FC Port」 |

# Select Boot Device List



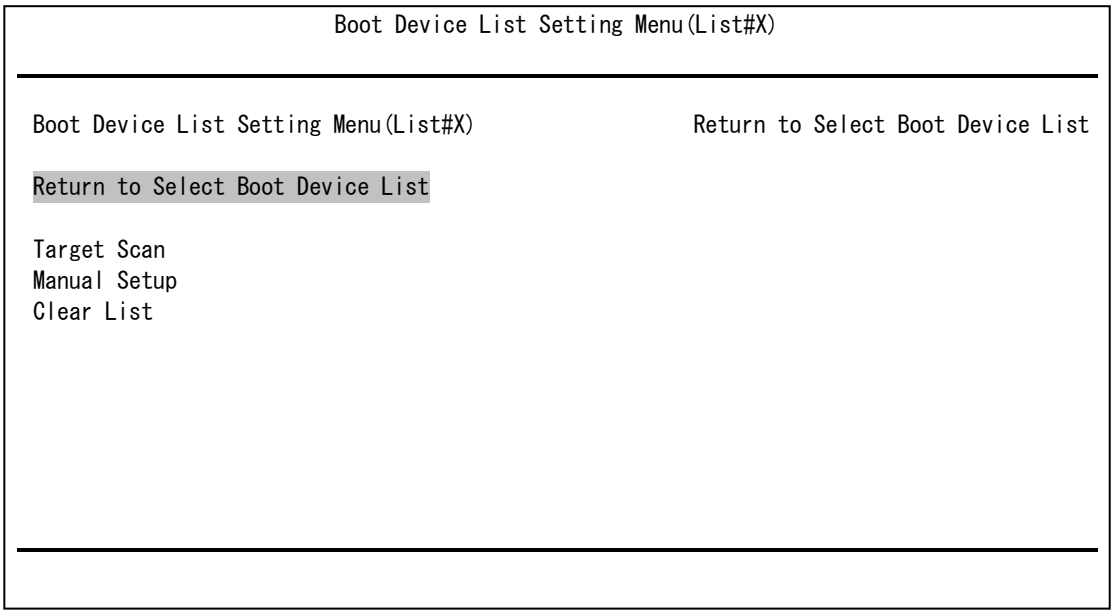

The item of a “Select Boot Device List” is described below.

| Item | Explanation |
|---|---|
| HBA#XX | HBA port number |
| B:XX | PCI Bus Number |
| D:XX | PCI Device Number |
| F:XX | PCI Function Number |
| WWN:XXXXXXXXXXXXXXXX | World Wide Port Name |
| Return to Configuration Menu | Changes to “HBA Configuration Menu” screen. |
| Boot Device List #1-8 | The setup value of Boot Device List registered is displayed. |

The key used with a “Select Boot Device List” is described below.

| Key | Explanation |
|---|---|
| [↑], [↓], [→], [←] | (1) Selection of an item.<br>(2) Scrolling of a screen |
| [Enter] | (1) When "Return to Configuration Menu" is chosen, it changes on a “HBA Configuration Menu” screen.<br>(2) When Boot Device List is chosen, it changes on a “Boot Device List Setting Menu” screen. |
| [Back space] | No use |
| [Esc] | Changes to server setup screen. |
| [a] ～[z], [A]～[Z], [0]～[9] | No use |

# Boot Device List Setting Menu



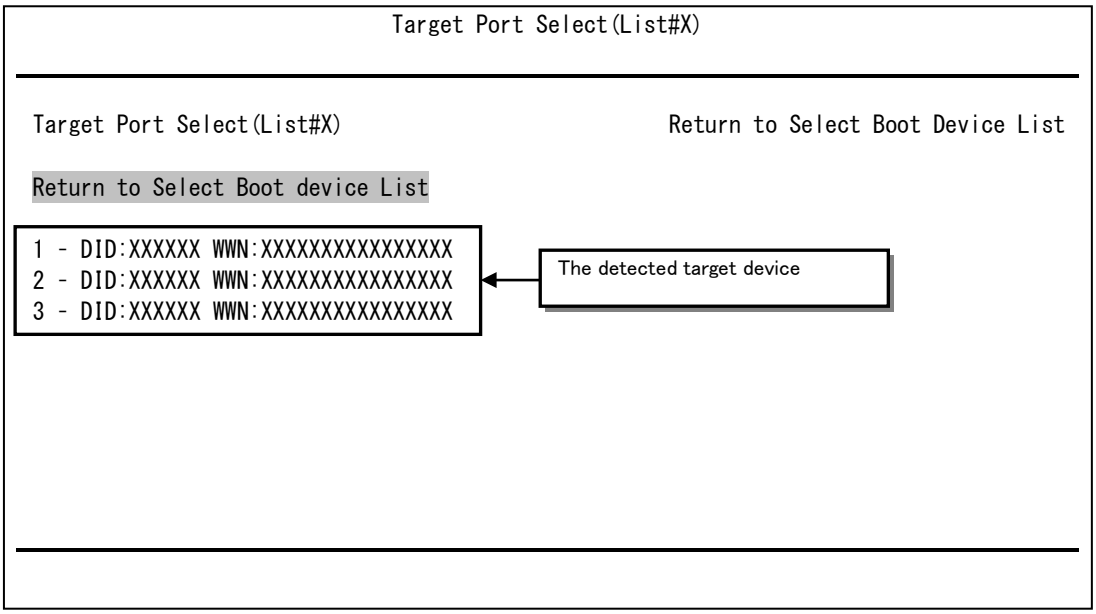

The item of a “Boot Device List Setting Menu” is described below.

| Item | Explanation |
|---|---|
| List#X | The number of a boot device list |
| Return to Select Boot Device List | Changes to “Select Boot Device List” screen. |
| Target Scan | Changes to “Target Port Select” screen. |
| Manual Setup | Changes to “Manual Setup” screen. |
| Clear List | Changes to “Cleat List” screen. |

The key used with a “Boot Device List Setting Menu” is described below.

| Key | Explanation |
|---|---|
| [↑], [↓], [→], [←] | (1) Selection of an item.<br>(2) Scrolling of a screen |
| [Enter] | (1) When "Return to Select Boot Device List" is chosen, it changes on a “Select Boot Device List” screen.<br>(2) When "Target Scan " is chosen, it changes on a “Target Port Select” screen.<br>(3) When "Manual Setup" is chosen, it changes on a “Manual Setup” screen.<br>(4) When "Clear List" is chosen, it changes on a “Clear List” screen. |
| [Back space] | Not use |
| [Esc] | Changes to server setup screen. |
| [a] ～[z], [A]～[Z], [0]～[9] | Not use |

# Target Port Select



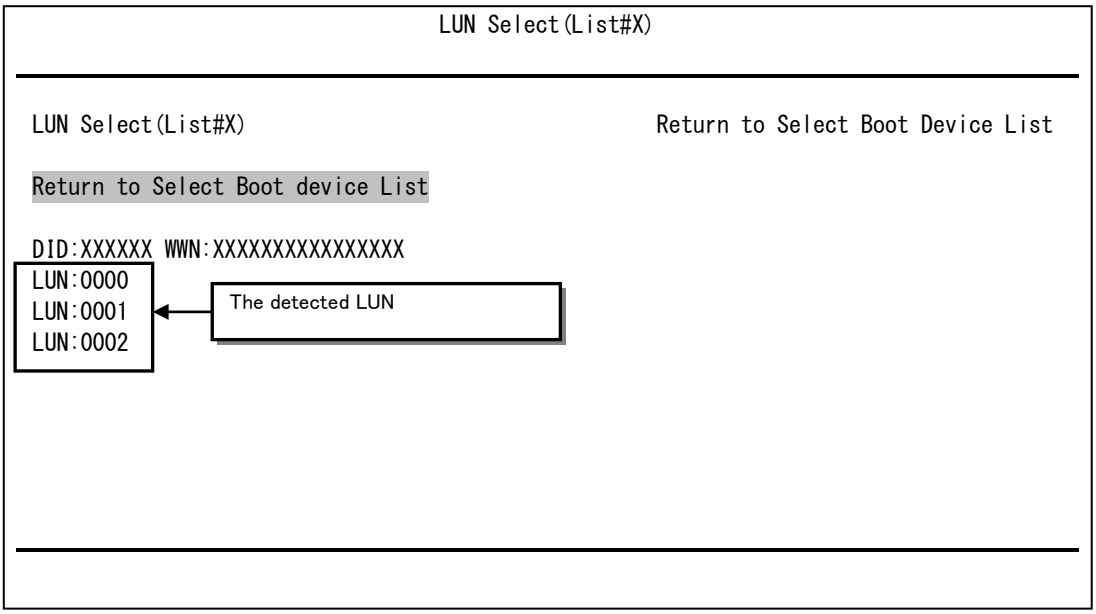

The item of a “Target Port Select” is described below.

| Item | Explanation |
|---|---|
| List#X | The number of a boot device list |
| Return to Select Boot Device List | Changes to “Select Boot Device List” screen. |
| DID | Destination-ID of the detected target device |
| WWN | World Wide Port Name of the detected target device |

The key used with a “Target Port Select” is described below.

| Key | Explanation |
|---|---|
| [↑], [↓], [→], [←] | (1) Selection of an item.<br>(2) Scrolling of a screen |
| [Enter] | (1) When "Return to Select Boot Device List" is chosen, it changes on a “Select Boot Device List” screen.<br>(2) When target device is chosen, it changes on a “LUN Select” screen. |
| [Back space] | No use |
| [Esc] | Changes to server setup screen. |
| [a] ～[z], [A]～[Z], [0]～[9] | No use |

# LUN Select



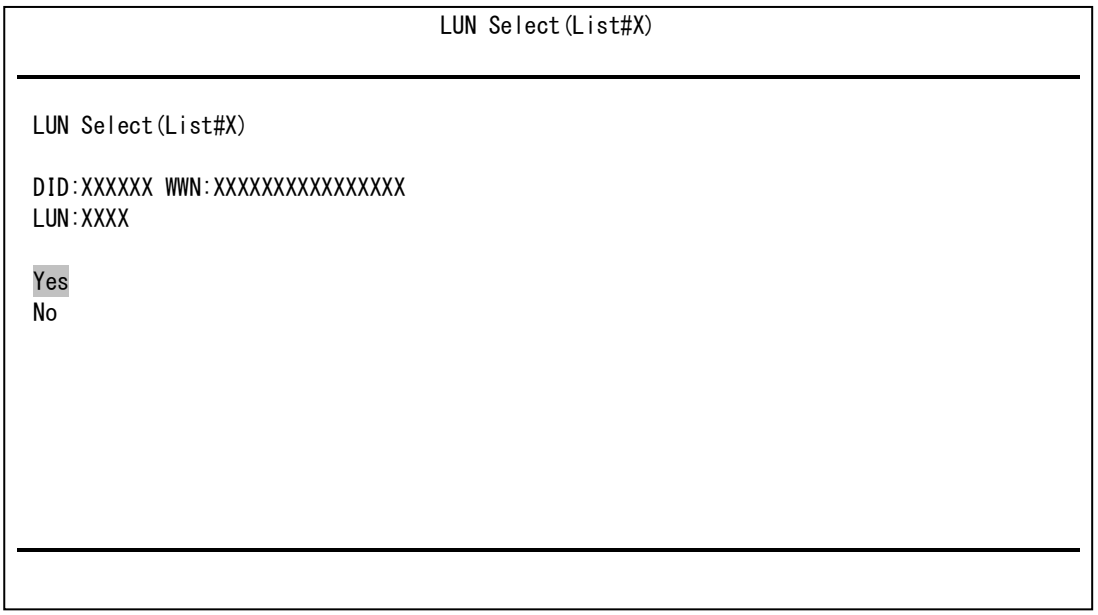

The item of a “LUN Select” is described below.

| Item | Explanation |
|---|---|
| List#X | The number of a boot device list |
| Return to Select Boot Device List | Changes to “Select Boot Device List” screen. |
| DID | Destination-ID of the selected target device |
| WWN | World Wide Port Name of the selected target device |
| LUN | LUN connected to the selected target device. |

The key used with a “LUN Select” is described below.

| Key | Explanation |
|---|---|
| [↑], [↓], [→], [←] | (1) Selection of an item.<br>(2) Scrolling of a screen |
| [Enter] | (3) When "Return to Select Boot Device List" is chosen, it changes on a “” Select Boot Device List” screen.<br>(4) When LUN is chosen, it changes to a “Registration Device Confirmation” screen.. |
| [Back space] | Not use |
| [Esc] | Changes to server setup screen. |
| [a] ～[z], [A]～[Z], [0]～[9] | Not use |

# Registration Device Confirmation



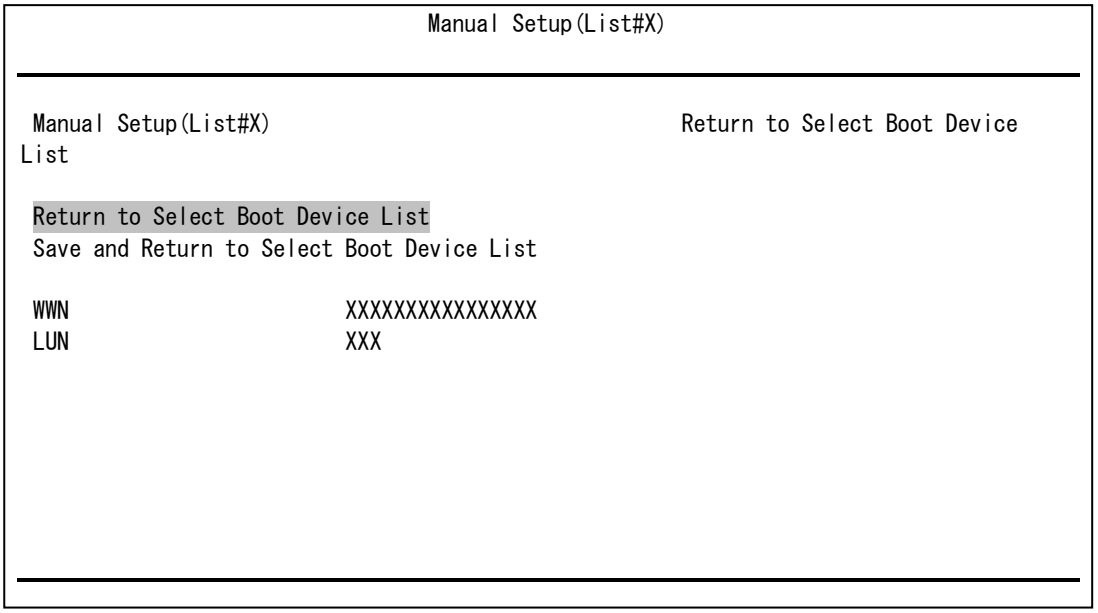

The item of a “Registration Device Confirmation” is described below.

| Item | Explanation |
|---|---|
| List#X | The number of a boot device list |
| DID | Destination-ID of the selected target device |
| WWN | World Wide Port Name of the selected target device |
| LUN | LUN of the selected target device |
| Yes | The selected target device is registered into a Boot Device List, and it changes to “Select Boot Device List” screen. |
| No | The selected target device is not registered into a Boot Device List, and it changes to “Select Boot Device List” screen. |

The key used with a “Registration Device Confirmation” is described below.

| Key | Explanation |
|---|---|
| [↑], [↓], [→], [←] | (1) Selection of an item.<br>(2) Scrolling of a screen |
| [Enter] | (1) When "Yes" is chosen, selected WWN and LUN of a target device are registered into a Boot Device List, and it changes on a “Select Boot Device List” screen.<br>(2) When "No" is chosen, selected WWN and LUN of a target device are not registered into a Boot Device List, and it changes on a “Select Boot Device List” screen. |
| [Back space] | Not use |
| [Esc] | Changes to server setup screen. |
| [a] ～[z], [A]～[Z], [0]～[9] | Not use |

# Manual Setup



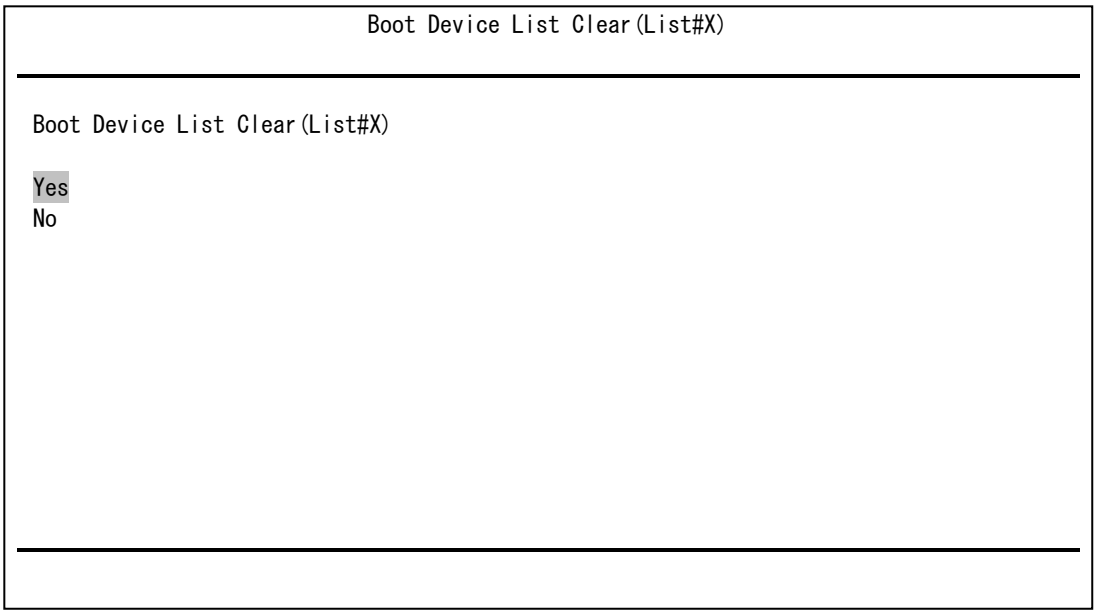

The item of a “Manual Setup” is described below.

| Item | Explanation |
|---|---|
| List#X | The number of a boot device list |
| Return to Select Boot Device List | Changes to “Select Boot Device List” screen.<br>WWN and LUN which were inputted are canceled. |
| Save and Return to Select Boot Device List | Changes to “Select Boot Device List” screen.<br>WWN and LUN which were inputted are registered into Boot Device List. |
| WWN | Inputted WWN. |
| LUN | Inputted LUN. |

The key used with a “Manual Setup” is described below.

| Key | Explanation |
|---|---|
| [↑], [↓],<br>[→], [←] | (1) Selection of an item.<br>(2) Scrolling of a screen |
| [Enter] | (1) When "Return to Select Boot Device List" is chosen, WWN and LUN which were inputted are canceled and it changes on a “Select Boot Device List” screen.<br>(2) When "Save and Return Select Boot Device List" is chosen, WWN and LUN which were inputted are registered into a Boot Device List, and it changes on a “Select Boot Device List” screen.<br>(3) WWN input dialog is displayed at the time of "WWN" selection.<br>(4) LUN input dialog is displayed at the time of "LUN" selection. |
| [Back space] | The inputted character is deleted when the input dialog of WWN or LUN is displayed. |
| [Esc] | (1) Changes to server setup screen.<br>(2) When the input dialog of WWN or LUN is displayed, an input is canceled and a dialog is closed. |
| [a] ～[z], [A]～[Z],<br>[0]～[9] | WWN/LUN is inputted when the setting dialog of WWN or LUN is displayed. |

# Boot Device List Clear



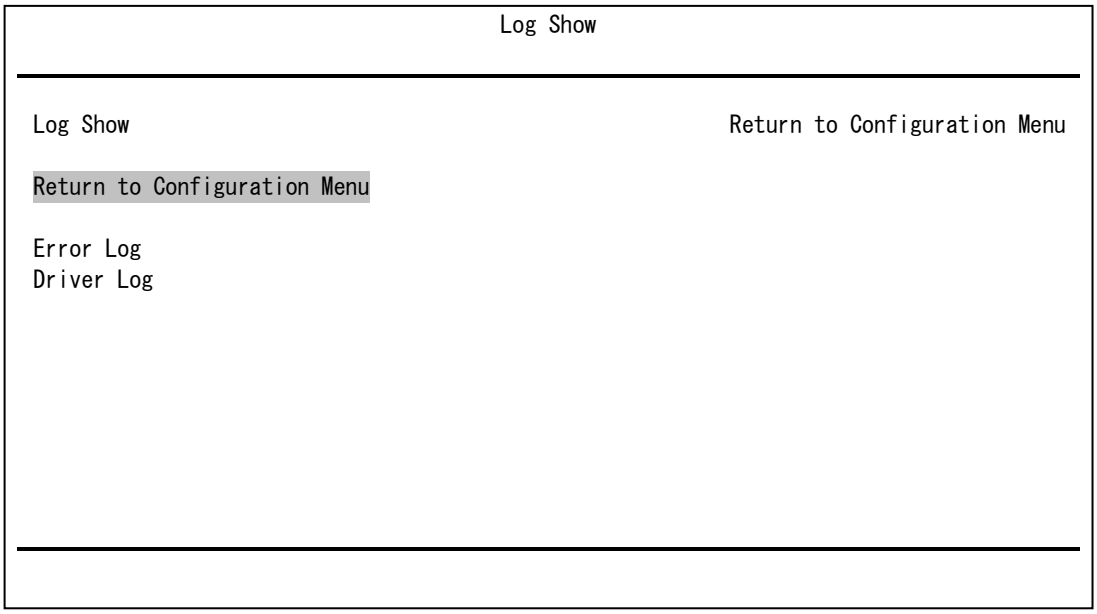

The item of a “Boot Device List Clear” is described below.

| Item | Explanation |
|---|---|
| List#X | The number of a boot device list |
| Yes | The selected Boot Device List is cleared and it changes on a “Select Boot Device List” screen. |
| No | The selected Boot Device List is not cleared and it changes on a “Select Boot Device List” screen. |

The key used with a “Boot Device List Clear” is described below.

| Key | Explanation |
|---|---|
| [↑], [↓], [→], [←] | (1) Selection of an item.<br>(2) Scrolling of a screen |
| [Enter] | (1) When "Yes" is chosen, the selected Boot Device List is cleared and it changes on a “Select Boot Device List” screen.<br>(2) When "No" is chosen, the selected Boot Device List is not cleared and it changes on a “Select Boot Device List” screen. |
| [Back space] | Not use |
| [Esc] | Changes to server setup screen |
| [a] ～[z], [A]～[Z], [0]～[9] | Not use |

# Log Show



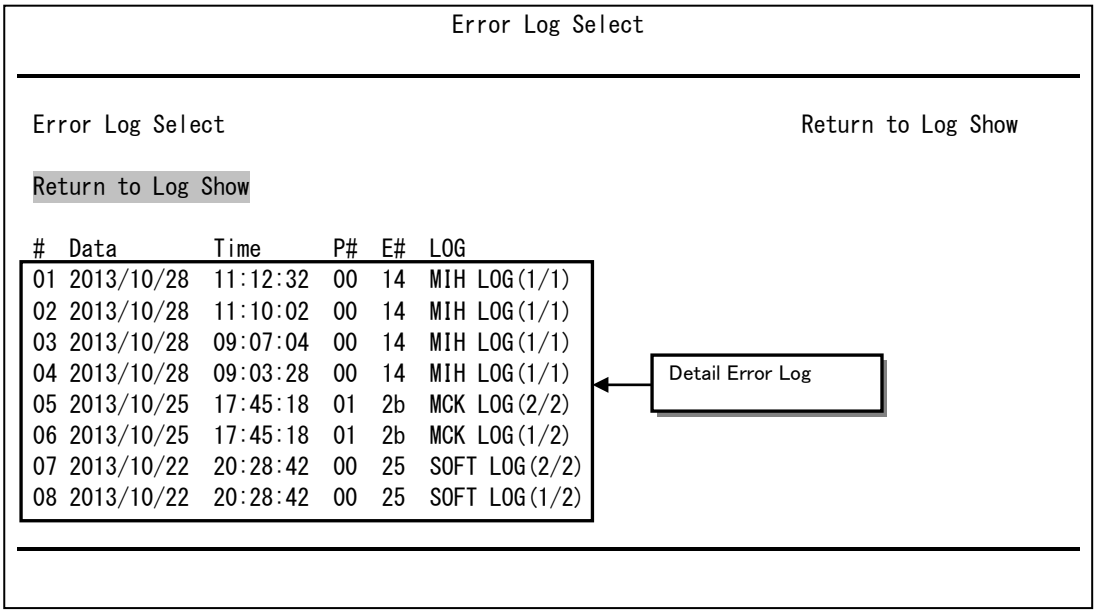

The item of a “Log Show” is described below.

| Item | Explanation |
|---|---|
| Return to Configuration Menu | Changes to “HBA Configuration Menu” screen. |
| Error Log | Changes to “Error Log Select” screen. |
| Driver Log | Changes to “Driver Log Select” screen. |

The key used with a “Log Show” is described below.

| Key | Explanation |
|---|---|
| [↑], [↓], [→], [←] | (1) Selection of an item.<br>(2) Scrolling of a screen |
| [Enter] | (1) When "Return to Configuration Menu" is chosen, it changes on a “HBA Configuration Menu” screen.<br>(2) When "Error Log" is chosen, it changes on a “Error Log Select” screen.<br>(3) When "Driver Log" is chosen, it changes on a “Driver Log Select” screen |
| [Back space] | No use |
| [Esc] | Changes to server setup screen |
| [a] ～[z], [A]～[Z], [0]～[9] | No use |

# Error Log Select



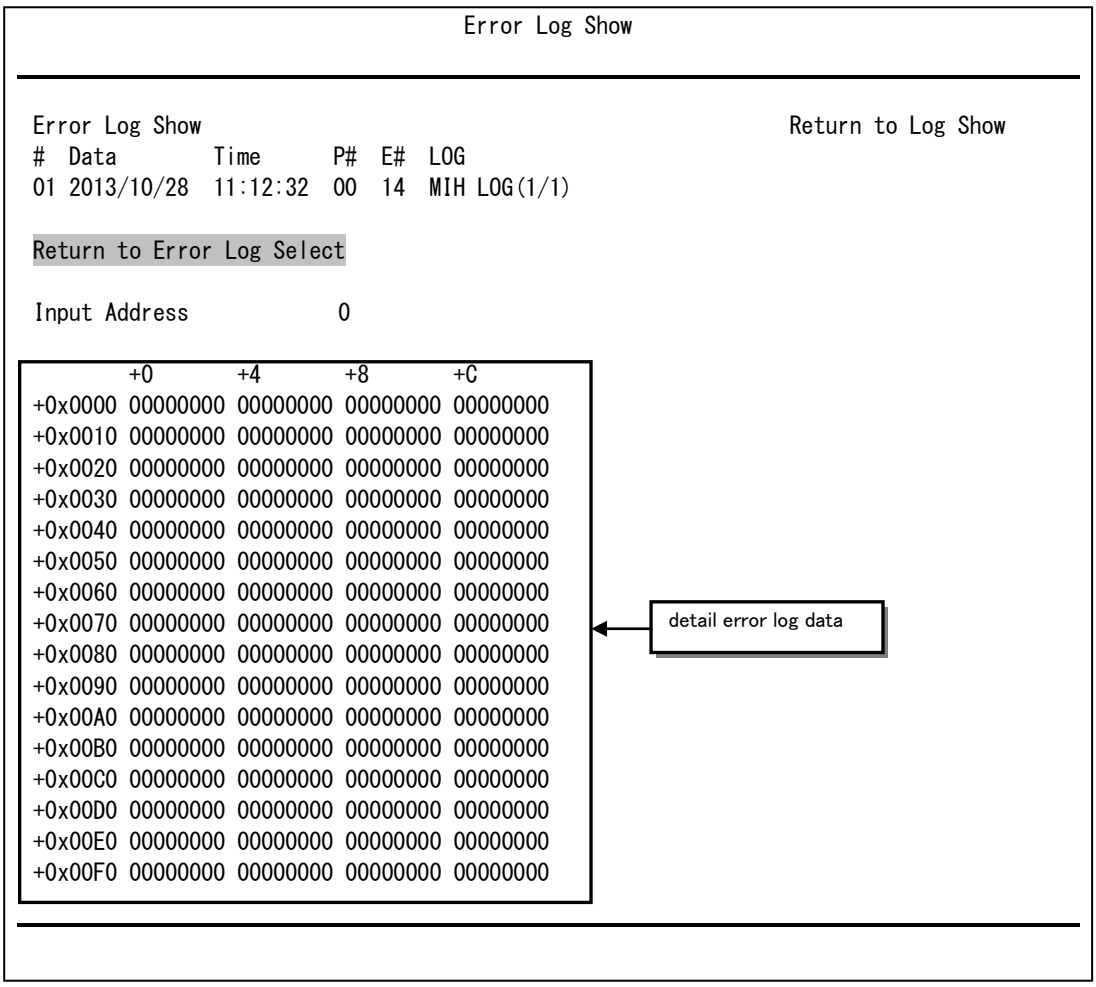

The item of a “Error Log Select” is described below.

| Item | Explanation |
|---|---|
| Return to Log Show | Changes to “Log Show” screen. |
| # | The number of a detail error log. |
| Date | The date which extracted the detail error log |
| Time | The time which extracted the detail error log |
| P# | The HBA port which extracted the detailed error log |
| E# | Error ID of a detailed error log |
| LOG | The name of a detailed error log |

The key used with a “Error Log Select” is described below.

| Key | Explanation |
|---|---|
| [↑], [↓], [→], [←] | (1) Selection of an item.<br>(2) Scrolling of a screen |
| [Enter] | (1) When "Return to Log Show" is chosen, it changes on a “Log Show” screen.<br>(2) When detail error log is chosen, it changes on a “Error Log Show” screen. |
| [Back space] | No use |
| [Esc] | Changes to server setup screen |
| [a] ～[z], [A]～[Z], [0]～[9] | No use |

# Error Log Show



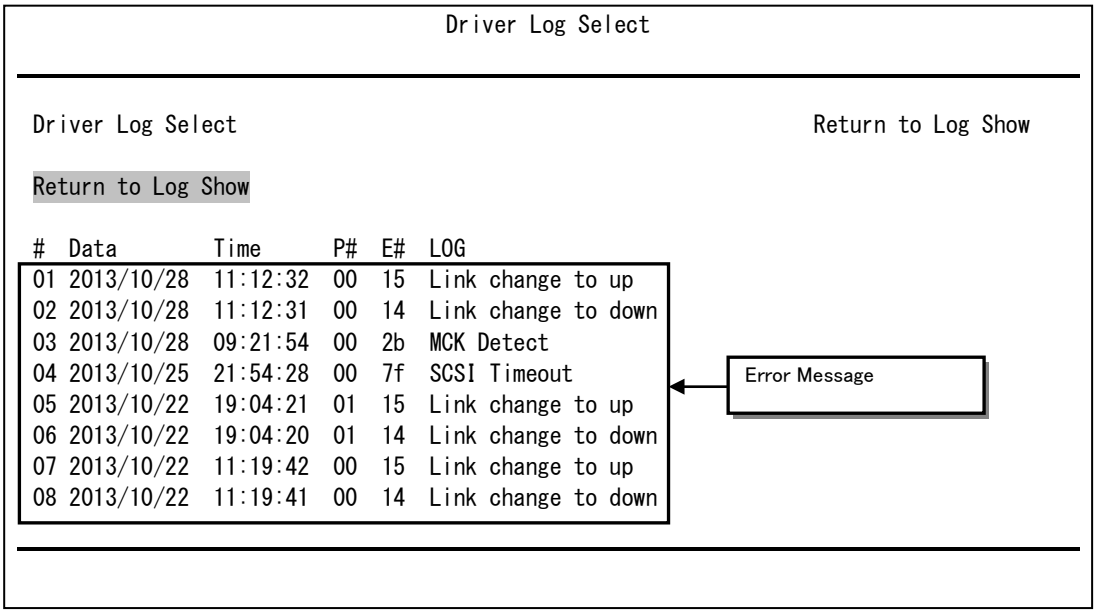

The item of a “Error Log Show” is described below.

| Item | Explanation |
|---|---|
| # | The number of a detail error log. |
| Date | The date which extracted the detail error log |
| Time | The time which extracted the detail error log |
| P# | The HBA port which extracted the detailed error log |
| E# | Error ID of a detailed error log |
| LOG | The name of a detailed error log |
| Return to Error Log Select | Changes to “Error Log Select” screen. |
| Input Address | The address of the detailed log to display is inputted by a hexadecimal number. |
| Detail error log data | It displays by 0x100 bytes from the address inputted into "Input Address". |

The key used with a “Error Log Show” is described below.

| Key | Explanation |
|---|---|
| [↑], [↓], [→], [←] | (1) Selection of an item.<br>(2) Scrolling of a screen |
| [Enter] | (1) When "Return to Error Log Select" is chosen, it changes on a “Error Log Show” screen.<br>(2) When "Input Address" is chosen, the address of a detail error log is inputted. |
| [Back space] | No use |
| [Esc] | Changes to server setup screen |
| [a] ～[z], [A]～[Z], [0]～[9] | When "Input Address" is chosen, the address of the detail error log to display is inputted by a hexadecimal number. |

# Driver Log Select



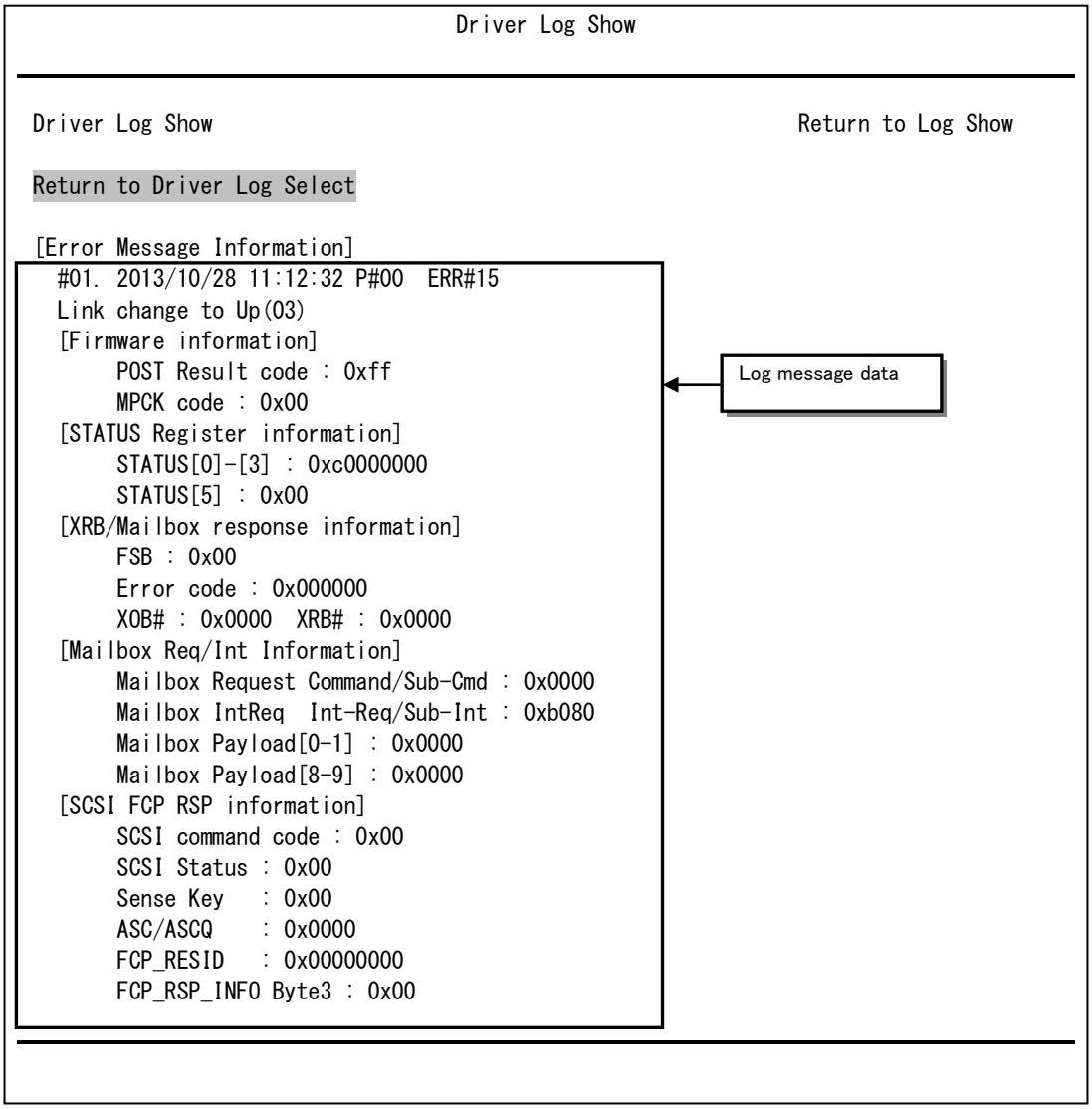

The item of a “Driver Log Select” is described below.

| Item | Explanation |
|---|---|
| Return to Log Show | Changes to “Log Select” screen. |
| # | The date which extracted the error message. |
| Data | The time which extracted the error message. |
| Time | The HBA port which extracted the error message. |
| P# | The HBA port which extracted the error message. |
| E# | Error ID of an error message. |
| LOG | The name of an error message. |

The key used with a “Driver Log Select” is described below.

| Key | Explanation |
|---|---|
| [↑], [↓], [→], [←] | (1) Selection of an item.<br>(2) Scrolling of a screen |
| [Enter] | (1) When "Return to Log Show" is chosen, it changes on a “Log Show” screen.<br>(2) When error message is chosen, it changes on a “Driver Log Show” screen. |
| [Back space] | Not use |
| [Esc] | Changes to server setup screen |
| [a] ～[z], [A]～[Z], [0]～[9] | Not use |

# Driver Log Show



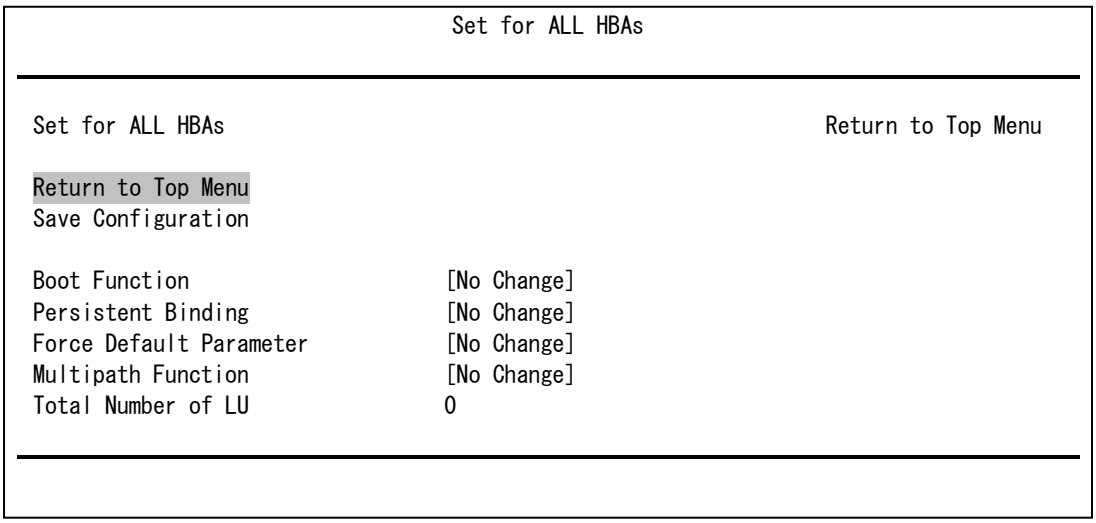

The item of a “Driver Log Show” is described below.

| Item | Explanation |
|---|---|
| Return to Driver Log Select | Changes to “Driver Log Select” screen. |
| Log message data | The data of a Log message is displayed. |

The key used with a “Driver Log Show” is described below.

| Key | Explanation |
|---|---|
| [↑], [↓], [→], [←] | (1) Selection of an item.<br>(2) Scrolling of a screen |
| [Enter] | When "Return to Log Select" is chosen, it changes on a “Driver Log Select” screen |
| [Back space] | Not use |
| [Esc] | Changes to server setup screen |
| [a] ～[z], [A]～[Z], [0] ～[9] | Not use |

# Set for ALL HBAs




The item of a “Set for ALL HBAs” is described below.

| Item | Explanation |
|---|---|
| Return to Top Menu | Changes to “Top Menu” screen. |
| Save Configuration | Change is saved to all the adapters. |

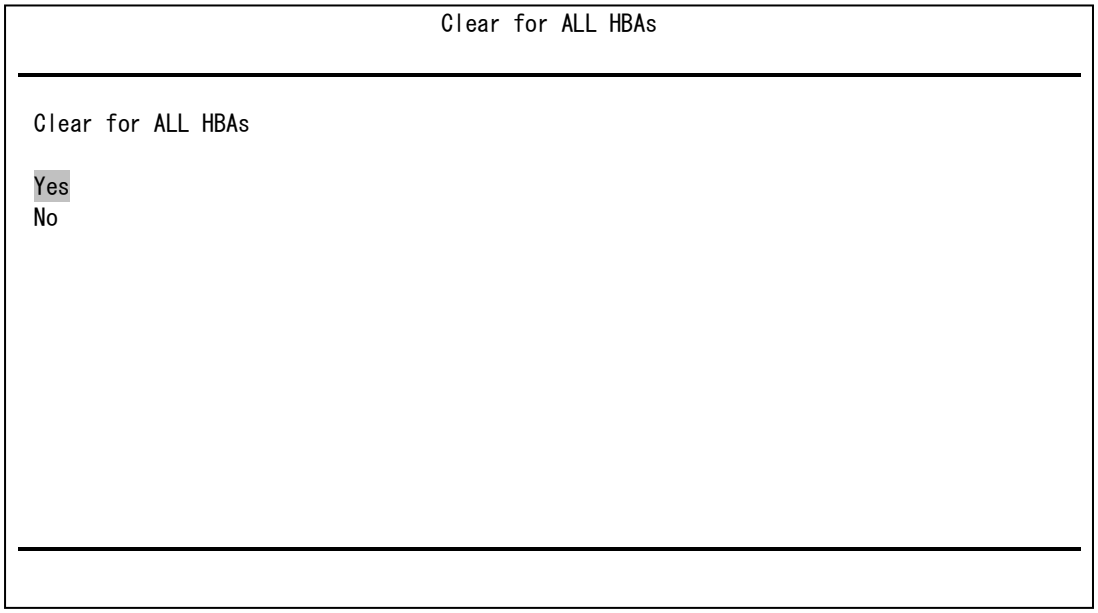
The list of the parameters which can be set on a "Set for ALL HBAs" is described.
"Parameters available on EFI driver” is referred to for the details of a parameter.
"Procedure to option setup" is referred to for the setting method.

| Item | Explanation | Setting method |
|---|---|---|
| Boot Function | Disable SAN boot function for ALL HBAs. If "No Change" is selected, the parameter is not changed. | Selection |
| Persistent Binding | When repealing a "Persistent Binding" setup saved on OS, it sets to "Disable". If you select "No Change", the parameter is not changed. | Selection |
| Force Default Parameter | When the parameter saved on OS is disregarded and it starts OS by a default value, it sets to “Enable”. If you select "No Change", the parameter is not changed. | Selection |
| Multipath Function | Disable Multipath Function for ALL HBAs. If "No Change" is selected, the parameter is not changed. | Selection |
| Total Number of LU | Set the total number of LU which can be detected by EFI driver in the entire system. If you select 0, the parameter is not changed | Numerical input |

The key used with a “Set for ALL HBAs” is described below.

| Key | Explanation |
|---|---|
| [↑], [↓], [→], [←] | (1) Selection of an item.<br>(2) Scrolling of a screen |
| [Enter] | (1) When "Return to Top Menu" is chosen, it changes on a “Top Menu” screen<br>(2) Option parameter is set when the option parameter is chosen. |
| [Back space] | Not use |
| [Esc] | Changes to server setup screen |
| [a] ～[z], [A]～[Z], [0]～[9] | When "Total Number of LU" is chosen, setup value is inputted by a decimal number. |

# Clear for ALL HBAs




The item of a “Clear for ALL HBAs” is described below.

| Item | Explanation |
|---|---|
| Yes | Setup of all the HBA adapters is initialized and changes on a “Top Menu” screen. |
| No | All the HBA adapters do not initialize and changes on a “Top Menu” screen. |

The key used with a “Clear for ALL HBAs” is described below.

| Key | Explanation |
|---|---|
| [↑], [↓], [→], [←] | (1) Selection of an item.<br>(2) Scrolling of a screen |
| [Enter] | When "Yes" is chosen, it initializes and changes to a “Top Menu” screen.<br>When "No" is chosen, it does not initialize and changes to a “Top Menu” screen. |
| [Back space] | Not use |
| [Esc] | Changes to server setup screen |
| [a] ～[z], [A]～[Z], [0] ～[9] | Not use |

# 5

# Error Log information

HBA-BIOS and EFI driver provides error log information to identify each failure.

## HBA BIOS

When HBA BIOS detected the error, the following error messages are displayed on the system console, and error message information and detailed log are stored in FLASH-ROM on the adapter.

### Error message information

You can refer the error message information stored in FLASH-ROM using DISPLAY ERROR MESSAGE INFORMATION and ERROR MESSAGE DETAIL menu.
Error messages and those meaning are as follows.

HBA-BIOS error message information

| Error Message | | Content of error | |
|---|---|---|---|
| Error Code (Hex) | Simplified error contents message (Fault information with FW notification) | | |
| 00010001 | System not support PMM | The system that installs the adapter does not support PMM(*4) that is a function necessary so that HBA-BIOS may operate. | |
| 00010002 | Detect F/W POST Error (F/W POST Result Code) | When the adapter firmware executed POST(*5), the adapter detected abnormality of the adapter. | |
| 00010003 | HBA Ready Timeout | The adapter firmware not in the READY status | |
| | STATUS Register Error | Error is detected on STATUS register. | |
| 00010004 | MCK detect | MCK detect | |
| 00020001 | SCSI Status Information (SCSI_Status, Sense Key) | Reception of status frame from connected device. (It is a message to show the state, and not a message usually to show the trouble especially.) | |
| | SCSI command End with Check Condition (SCSI_Status, Sense Key) | Reception of status frame from connected device. (message to show trouble) | |
| | SCSI FCP_RESID_OVER Info (FCP_RESID) | FCP_RESID_OVER is detected in the SCSI operation. | |
| | SCSI FCP_RSP_INFO (FCP_RSP_INFO Byte3) | FCP_RSP_LEN_VALID=1 is detected in the SCSI operation. | |
| | FW detect error (FSB/ErrorCode, XCC) | (*1) | An internal trouble is detected while the adapter firmware is processing the SCSI start. |
| | | (*2) | The FC interface trouble is detected while the adapter firmware is processing the SCSI start. |
| | SCSI command Response XRB Error (FSB/ErrorCode, XCC) | (*1) | An internal trouble is detected while the adapter firmware is processing Mailbox start (*3). |
| | | (*2) | The FC interface trouble is detected while the adapter firmware is processing Mailbox start (*3). |
| 00020003 | Mailbox Response XCC/FSB error (FSB/ErrorCode, XCC) | (*1) | An internal trouble is detected while the adapter firmware is processing Mailbox start (*3). |
| | | (*2) | The FC interface trouble is detected while the adapter firmware is processing Mailbox start (*3). |
| 00020004 | Invalid ConnectionType/LinkSpeed | ConnectionType and LinkSpeed are Illegal. | |
| 00020005 | SCSI command Response Timeout | SCSI command time-out | |

| Error Message | | Content of error |
|---|---|---|
| Error Code (Hex) | Simplified error contents message (Fault information with FW notification) | |
| 00020007 | Mailbox Response Timeout | The adapter firmware doesn't respond in the specified time for Mailbox start (*3) that HBA-BIOS issued, and HBA-BIOS detects the time-out. |
| 00020009 | Invalid SCSI command code. Mk_Scsi | Illegal parameter |
| | Invalid SCSI command code. Mk_XOB | |
| | LBA value is out of range, at SCSI Read/Write command | |
| 0002000A | Memory Allocation Error | Internal contradiction |
| | PCI configuration Error | |
| | Internal Error at Fw_Start | |
| | Memory access Error | |
| | SCSI command code error. | |
| | FLASH-ROM access Error | |
| | Internal Error at Mailbox Response | |
| | Internal Error at Mailbox Request | |
| | Internal Error at SCSI command process | |
| 0002000B | Invalid Optical Module install | Unsupported optical transceiver was installed. |
| 0002000C | Detected Error of Adapter Transceiver | Error is detected in adapter transceiver. (E11002) |
| 0002000D | Detected Error of Optical Module | Error is detected in optical module. (E11003) |
| 0002000E | Optical Module has come off | Optical transceiver is unplugged. (E11004) |
| 0002000F | Link Down Receive | Link Down Receive |
| 00020010 | Warning:A target port does not exist. (Fabric) | There is no target port. (Fabric) (*7) |
| 00020011 | Warning:A target port does not exist. (Loop) | There is no target port. (Loop) (*8) |
| 00020012 | Warning: target port does not exist, after Linkup | Target port does not exist after LinkDown-Up. |
| 00020020 | Link change to Down | Link change to Down |
| 00020021 | Link Up Receive | Link Up Receive |
| 00020022 | Link Up process fail by timeout | Link Up process fail by timeout |
| 00020023 | Link Down Receive(runtime) | Link Down Receive (runtime) |
| 000F0000 | Detect Setup Data Error | Error is detected in the setteing of HBA-BIOS. |
| 000F0001 | Savimg Setup Data Start | The process of the setting data is started (*6) |
| 000F0002 | Savimg Setup Data End | The process of the setting data is completed (*6) |
| 000F0003 | Saving Setup Data all HBA Start | The process of the setting all data is started(*6) |
| 000F0004 | Saving Setup Data all HBA End | The process of the setting all data is completed(*6) |

(*1) For excluding "FSB/Error Code=02xxxxxx"

(*2) For "FSB/Error Code=02xxxxxx"

(*3) Mailbox start:

HBA-BIOS issues the mailbox request to initiate the process except for the SCSI initiation. The mailbox request is a synchronized request, so it has one initiation request and the corresponding end request.

The commands executed by the mailbox request are as follows.

a) Link establishment instruction in FC interface.

b) Frame transmission instruction of login etc.

c) Trouble information (log) collection instruction

(*4) PMM: Post Memory Management. The memory management mechanism which is controlled by SYSTEM BIOS during executing Power On Self Test and its information is provided to Option ROM and so on.

(*5) POST : Power On Self Test. In this case, POST means the diagnostic test executed on the adapter.

(*6) These are events only for notification. There are not errors.

(*7)【Case of Fabric】

It records when a target port does not exist at the Port Identifiers data which acquired from FC-Switch or AL-PA table.

(*8)【Case of Loop】

It records when the target port doesn't exist in AL-PA table, though Link Initialization has succeeded.

# Detailed Error logs

You can display the detailed error logs that saved in FLASH-ROM on adapter with DISPLAY LOG INFORMATION menu.
The following table shows the error number and the type of the detailed error logs.

| No. | Err# | Category | Condition | Remarks |
|---|---|---|---|---|
| 1 | 23 | SOFT LOG | Detected XRB error | |
| 2 | 25 | SOFT LOG | Detected Mailbox Rsp error | |
| 3 | 2B | MCK LOG | Detected MCK | |
| 4 | 35 | IML FAIL LOG | Detected IML failure | |
| 5 | 7F | MIH LOG | XRBTimeout | |
| 6 | 14 | MIH LOG | Receive Link Down | |
| 7 | 1A | MIH LOG | Link Up process fail by timeout | |

# EFI Driver

**【BASIC mode or FC dedicated mode on LPAR manager】**

EFI driver saves error messages and detailed error logs in FLASH-ROM of the Fibre Channel adapter when a fault is detected.

**【FC shared mode on LPAR manager】**

EFI driver saves error messages and detailed error logs in the memory temporarily when the EFI driver version is 10.00.00.00 or later.

In all versions, EFI driver saves the detailed error log in the guest LPAR area.

## Error message information

You can display the error messages that saved in FLASH-ROM or the memory on the adapter with “logmf” command.
The following table shows the error number and its meaning.

| No. | Error number | Message | Description | Remarks |
|---|---|---|---|---|
| 1 | 01 | EFI Library execution error | Detected error on EFI Library execution. | |
| 2 | 02 | Protocol install fail(1) | Image protocol installation failed or “Unload” function registration failed. | |
| 3 | 03 | Protocol install fail(2) | “scsi_pass_thru” protocol installation failed. | |
| 4 | 04 | Protocol install fail(3) | “device_path” , “scsi_io” or “block_io” protocol installation failed. | |
| 5 | 05 | Create event fail | “ExitBootService” function registration failed. | |
| 6 | 06 | ScsiPassThru found | EFI interface error on “Start()” function (“ScsiPassThru” protocol is already installed) | |
| 7 | 07 | com_table alloc error | Adapter table allocation failed. | |
| 8 | 08 | adap_port_info alloc error | Port table allocation failed. | |
| 9 | 09 | dev_path_info alloc error | Device table allocation failed. | |
| 10 | 0A | PCI mem/conf access error | PCI (configuration or memory space) access error | |
| 11 | 10 | Alloc Memory Error(1) | FW table allocation failed. | |
| 12 | 11 | Alloc Memory Error(2) | Target_scan_table allocation failed. | |
| 13 | 12 | Alloc Memory Error(3) | GID_FT Data allocation failed. | |
| 14 | 13 | Alloc Memory Error(4) | Sense Data allocation failed. | |
| 15 | 14 | Link change to Down | Detected LinkDown | |
| 16 | 15 | Link change to Up | Detected LinkUp | |
| 17 | 1A | Load Setup data error | Error on reading the option settings | |
| 18 | 1B | Load World Wide Name error | Error on reading the WWN | |
| 19 | 1C | Invalid World Wide Name | WWN format error | |
| 20 | 1D | Vendor/DeviceID unmatch | EFI interface error on “Start()” function (not expected VendorID or DeviceID) | |
| 21 | 20 | Error detect F/W Start | Detected error on “FW_START” | |
| 22 | 22 | SCSI_STATUS error | SCSI_STATUS Error | |
| 23 | 23 | SCSI Error(XCC!=80,FSB!=0) | In the SCSI response, XCC≠80 or FSB≠00 | |
| 24 | 25 | Mailbox Rsp(XCC=83,FSB!=00) | In the Mailbox response, XCC=83 or FSB≠00 | (*1) |
| 25 | 26 | PositionMAP: AL_PA count=1 | AL_PA count=1 in PositionMAP | |
| 26 | 27 | Inquiry: DevType is not Disk | In the “Inquiry” command, Peripheral Device type is not “Disk” | |
| 27 | 28 | ReportLUNS: LU count=0 | In the “ReportLUNS” command, there is no LU. | |

| No. | Error number | Message | Description | Remarks |
|---|---|---|---|---|
| 28 | 29 | GID_FT: Port_Number=1 | In the “GID_FT” operation, there is only the own Port_ID. | |
| 29 | 2A | Mailbox Timeout | Detected Mailbox Time-Out | (*1) |
| 30 | 2B | MCK Detect | Detected MCK | |
| 31 | 2D | Mailbox Rsp(FLAG:bit0=0) | In the Mailbox response, detected the error (FLAG:bit0=0) | (*1) |
| 32 | 2E | Mailbox Rsp(XCC!=80) | In the Mailbox response, XCC≠80 | (*1) |
| 33 | 34 | Access denied by SCSI error | Unable to access the specified device in the SCSI operation | |
| 34 | 35 | H/W status error | Check error of initial value of H/W status | |
| 35 | 36 | POST Result code error | POST error | |
| 36 | 37 | F/W Ready Timeout | CH READY Time-Out | |
| 37 | 39 | Free Pool Error | Detected an error on the memory releasing | |
| 38 | 3A | Uninstall Error | Detected error on uninstallation | |
| 39 | 3B | Parameter Error | Detected error on parameter | |
| 40 | 40 | FC Interface Initialize Error | FC Interface Initialize Error | (*3) |
| 41 | 44 | TransferRate Invalid Error | TransferRate Invalid Error | |
| 42 | 45 | Connection Type Invalid Error | Connection Type Invalid Error | |
| 43 | 46 | Receive Uncorresponded Mailbox | Receive Uncorresponded Mailbox | |
| 44 | 47 | Core ALL Error | All the cores are error. | |
| 45 | 48 | GPN_FT: Port_Number=1 | There is no target port after GPN_FT. | |
| 46 | 50 | FC Interface Initialize Timeout(EventTimer) | Timeout in FC interface initialization. | |
| 47 | 51 | Mailbox Response Timeout(EventTimer) | Timeout in processing of Mailbox. | |
| 48 | 52 | Linkup Timeout(EventTimer) | Timeout in processing of Linkup | |
| 49 | 7F | SCSI Timeout | Detected Time-Out in the SCSI operation | |
| 50 | 9C | Unsupported optical transceiver is installed | The unsupported optical transceiver is installed. | |
| 51 | 9D | Detected the trouble of the adapter transceiver | Detected a failure of the adapter's transmitter. | |
| 52 | 9E | Detected the trouble of the optical transceiver | Detected a failure of the optical transceiver. | |
| 53 | 9F | The optical transceiver has come off | The optical transceiver is disconnected. | |
| 54 | B2 | XRB unmatch | DriverUsedArea unmatch is detection in the SCSI operation | |
| 55 | D1 | FC-AL(MultiplePortID =Enable) & FC-SW | FC-SW connection and Multiple PortID is Enable. | (*4) |
| 56 | E0 | Detect FCP_RESID_OVER=1 | FCP_RESID_OVER is detected in the SCSI operation. | |
| 57 | E1 | Detect FCP_RSP_INFO Information | FCP_RSP_LEN_VALID=1 is detected in the SCSI operation. | |
| 58 | F0 | Detect Setup Data Error | Error is detected in the setteing of HBA-BIOS. | |
| 59 | F1 | Saving Setup Data Start | The process of the setting data is started (*2) | |
| 60 | F2 | Saving Setup Data End | The process of the setting data is completed (*2) | |
| 61 | F3 | Saving Setup Data of ALL HBAs Start | The process of the setting all data is started(*2) | |
| 62 | F4 | Saving Setup Data of ALL HBAs End | The process of the setting all data is completed(*2) | |

(*1) Mailbox :

EFI driver issues the mailbox request to initiate the process except for the SCSI initiation. The mailbox request is a synchronized request, so it has one initiation request and the corresponding end request.

The commands executed by the mailbox request are as follows.

a) Link establishment instruction in FC interface.

b) Frame transmission instruction of login etc.

(*2) These are events only for notification. There are not errors.

(*3) When this error message is extracted, inconsistency of a preset value and a connection state can be considered. Please refer to “Notes about relations of Connection Type setting and Multiple PortID setting”, and correct a preset value and a connection state.
(*4) When this error message is extracted, Please refer to
"Notes about relations of Connection Type setting and Multiple PortID setting” and correct a preset value and a connection state.

## Detailed Error Logs

You can display the detailed error logs that saved in FLASH-ROM or the memory on adapter with “logdf” command.

The following table shows the error number and the type of the detailed error logs that EFI driver collects.

EFI Driver Error Log

| No. | Err# | Category | Condition | Remarks |
|---|---|---|---|---|
| 1 | 23 | SOFT LOG | Detected XRB error | |
| 2 | 25 | SOFT LOG | Detected Mailbox Rsp error | |
| 3 | 2B | MCK LOG | Detected MCK | |
| 4 | 35 | IML FAIL LOG | Detected IML failure | |
| 5 | 7F | MIH LOG | XRB Timeout is detected | |
| 6 | 14 | MIH LOG | Receive Link Down | |
| 7 | 1A | MIH LOG | Link Up process fail by timeout | |

# EFI driver Error message

The following error messages are displayed during the execution of EFI driver.

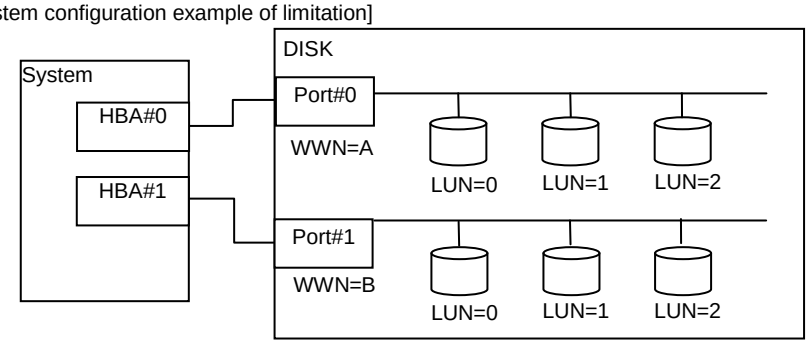
Error messages of EFI driver

| No | Message | Description | Error information (*1) |
|---|---|---|---|
| 1 | hfcedd detect setup data error! | Detects the error at validation check of the settings stored in adapter. | Yes |
| 2 | setup data error | | |
| 3 | Fail! Port Init Error! | Unable to execute auto scan of the target device registered in Boot Device List because the hardware failure of FC port is detected. | Yes |
| 4 | Fail! Cannot Open! | Unable to execute auto scan of the target device registered in Boot Device List because the communication memory area between the adapter firmware and the EFI driver can not be allocated. | No |
| 5 | Fail! Port Open Error! | Detects the FC link initialization error when executing auto scan of the target device registered in Boot Device List. | Yes |
| 6 | Fail! Memory allocation error. | Unable to allocate required memory area for the followings.<br>(1) Set Command - Auto scan procedure of the target device registered in Boot Device List.<br>(2) Logmf and logdf commands in shared mode.<br>(3) Path command<br>(4) Setall command<br>(5) Clearall command<br>(6) (6) Restore command | No |
| 7 | Target Device nothing. | Set command : Unable to detect the available target port to be connected when executng the auto scan of the target device registered in Boot Device List. | Yes |
| 8 | LUN not found. | Set command : Unable to detect the available LU to be connected when executng the auto scan of the target device registered in Boot Device List. | Yes |

(*1)See Error message information.

# 6

# Restrictions

| # | Restrictions |
|---|---|
| 1 | HBA BIOS is operable only under SYSTEM BIOS that supports PMM. |
| 2 | Up to 8 boot disks including IDE and the SCSI connected is available in an entire system. |
| 3 | In the following configuration, When you set the setup menu "Boot-->Hard disk" of SYSTEM BIOS, The priority level of device's group connected with one path should be consecutive. The change of the priority level in the group of the device connected with one path is possible.<br><br>[System configuration example of limitation]<br>  <br><br><br>In the above configuration, when the setting is not done with SYSTEM BIOS for the boot priority, the setup menu "Boot-->Hard disk" of SYSTEM BIOS is displayed in the following order.<br><br>1 HBA#0-WWNA-LU0<br>2 HBA#0-WWNA-LU1<br>3 HBA#0-WWNA-LU2<br>4 HBA#1-WWNB-LU0<br>5 HBA#1-WWNB-LU1<br>6 HBA#1-WWNB-LU2<br><br>The example of limiting the boot priority shown by limitations is as follows.<br><br><< prohibition 1 >><br>1 HBA#0-WWNA-LU0<br>2 HBA#0-WWNA-LU1<br>3 HBA#0-WWNA-LU2<br>4 HBA#1-WWNB-LU0<br>5 HBA#1-WWNB-LU1<br>6 HBA#1-WWNB-LU2<br><br>One (LU1) of devices connected with HBA#1 is moved in the group of the devices connected with HBA#0.<br><br><< prohibition 2 >><br>1 HBA#0-WWNA-LU0<br>2 HBA#0-WWNA-LU1<br>3 HBA#0-WWNA-LU2<br>4 HBA#1-WWNB-LU0<br>5 HBA#1-WWNB-LU1<br>6 HBA#1-WWNB-LU2<br><br>One (LU1) of devices connected with HBA#0 is moved in the group of the devices connected with HBA#1.<br><br><< permission 1 >><br>1 HBA#0-WWNA-LU0<br>2 HBA#0-WWNA-LU1<br>3 HBA#0-WWNA-LU2<br>4 HBA#1-WWNB-LU0<br>5 HBA#1-WWNB-LU1<br>6 HBA#1-WWNB-LU2<br><br>The entire group of the devices connected with HBA#1 is moved ahead of the group of the devices connected with HBA#0.<br><br><< permission 2 >><br>1 HBA#0-WWNA-LU0<br>2 HBA#0-WWNA-LU1<br>3 HBA#0-WWNA-LU2<br>4 HBA#1-WWNB-LU0<br>5 HBA#1-WWNB-LU1<br>6 HBA#1-WWNB-LU2<br><br>Changes the priority level in group of devices connected with HBA#1 |

<table>
<tr><th>#</th><th>Restrictions</th></tr>
<tr><td>4</td><td>The versions of the firmware in which HBA BIOS is stored are classified as shown in the following table when seeing from Support Functions of HBA BIOS.
<table>
<tr><th rowspan="2">Type#</th><th colspan="2">Firmware</th><th colspan="4">Support</th></tr>
<tr><th>Version</th><th>Object</th><th>HBA-BIOS</th><th>HFC0201 control (*1)</th><th>HFC04xxx control (*1)</th><th>HFC08xxx control (*1)</th></tr>
<tr><td>R1</td><td>030400 or less<br>040C00</td><td>HFC0201 (*1)</td><td>×</td><td>×</td><td>×</td><td>×</td></tr>
<tr><td>R2</td><td>040700 ～ 040B00<br>040D00 ～ 041200</td><td>HFC0201 (*1)</td><td>○</td><td>○</td><td>×</td><td>×</td></tr>
<tr><td>R4-1</td><td>041300 or later</td><td>HFC0201 (*1)</td><td>○</td><td>○</td><td>○</td><td>×</td></tr>
<tr><td>R4-2</td><td>100200 or later</td><td>HFC04xxx (*1)</td><td>○</td><td>○</td><td>○</td><td>×</td></tr>
<tr><td rowspan="2">R5</td><td>2x0807 or later</td><td>HFC04xxx (*1)</td><td>○</td><td>○</td><td>○</td><td>×</td></tr>
<tr><td>3x0000 or later</td><td>HFC08xxx (*1)</td><td>○</td><td>×</td><td>○<br>(When all HBAs are in R5)</td><td>○</td></tr>
</table>
When each version of the firmware shown in the above table is consolidated on the same system, We will recommend to update to the firmware of each latest version of GV-CC62G1 and GVX-CC64Gx. Please follow the following instructions when the versions are consolidated unavoidably.<br>
1) When classification # R1 in the above table exists:<br>
It is permitted in an environment without SAN boot. In the SAN boot environment, please update it to the firmware of each latest version of GV-CC62G1 and GVX-CC64Gx.<br>
2) When classification # R2 and classification # R4-2 in the above table are consolidated:<br>
It is permitted in an environment without SAN boot. In the SAN boot environment, please update it to the firmware of each latest version of GV-CC62G1 and GVX-CC64Gx.<br>
3) When it is neither (1) nor (2):<br>
Though there is no limitation especially, we will recommend to update to the firmware of the latest version<br><br>
(*1) Refer to “HITACHI Gigabit Fibre Channel Adapter User's Guide(Support Matrix edition)” for model name.</td></tr>
<tr><td>5</td><td>OS booting may fail when using the lilo as the boot loader whose version is earlier than 22.7. Follow one of the conditions below.<br>
1) Use GRUB as the boot loader.<br>
2) Use lilo whose version is 22.7 or later.<br>
3) The total number of Fibre channel ports installed per one system on the one system up four ports.</td></tr>
<tr><td>6</td><td>Boot from devices other than the disk is not supported.</td></tr>
<tr><td>7</td><td>There is a possibility that the boot priority that SYSTEM BIOS manages due to a temporary trouble while booting changes. Please confirm the boot priority of SYSTEM BIOS when it is not possible to boot it according to the expectation. The example of the problem is shown below.<br><br>
1) The SAN boot fails when boot is executed as follows at the state in the SAN boot environment.<br>
a) The cable is pulled out.<br>
b) The power supply of the device fell.<br>
c) When a temporary trouble occurs on the boot path, and it fails in the recognition of the boot device<br>
2) When the state that boot fails as (1) is removed and boot is executed again, the boot priority of SYSTEM BIOS changes (the boot priority of the disk at which the SAN boot fails lowers most) and boot fails as a result.<br>
3) Please raise the boot priority of the disk for SAN boot most by setting SYSTEM BIOS.</td></tr>
<tr><td>8</td><td>HBA-BIOS whose firmware version is 041300 or less has the following trouble.<br>
When the cable is connected, and GV-CC62G1xx/GVX-CC64Gxxx receives the optical signal and the optical signal synchronization cannot be established (The link cannot be established) in the path that sets HBA-BIOS to Enable, there is a possibility that the log that shows hardware failure is reported (*1).<br>
(*1) When the link speed set of the port at both ends connected with the FC cable is different, the above-mentioned is generated.<br>
Please confirm the link speed set for the ports at both ends connected with the FC cable when it fails in the SAN boot and the log that shows hardware failure is reported.</td></tr>
</table>

| # | Restrictions |
|---|---|
| 9 | **【Note on shutdown or reboot during updating Flash-ROM】**<br><br>Shutdown or reboot during updating FLASH-ROM may cause the disruption of the FLASH-ROM and lead to the HBA failure. Please be careful when shutdown or reboot the system referring the following notes.<br><br>1. During execution of the HBA-BIOS<br><br>HBA-BIOS may update FLASH-ROM when executing. Do not shutdown or reboot during the following period.<br>(1) The period between Hitachi Fibre Channel Adapter ROM BIOS Version xx.xx.xx.xx message is displayed and HBA BIOS Installed! Or HBA BIOS not Installed! Message is displayed.<br><br>Hitachi Fibre Channel Adapter ROM BIOS Version xx.xx.xx.xx<br>Copyright (C)HITACHI,Ltd 2004,2010. All rights reserved.<br><br>Press <Ctrl-R> to Enter BIOS<br>:<br>:<br>:<br>HBA BIOS Installed! *(Or* HBA BIOS not Installed!*)*<br><br>(2) The period between pressing <CTRL-R> key and appearing of SELECT HBA menu<br>(3) The period of the store process by executing the following operation on HBA BIOS Setup.<br>(a) The period between executing “EXIT (SAVE SETTING)” and appearing HBA BIOS Setup menu on EXIT menu.<br>(b) The period of the appearance of “Executing…” message displayed by executing “EXIT SAVING CHANGE”<br>(c) The period of the appearance of “Executing…” message displayed by executing “SAVE CHANGES”.<br>(d) The period between executing “YES: SAVE SETTING” and appearing SETUP CONFIRMATION menu.<br>2. During execution of the updating or restoring firmware.<br>Please be careful you don’t terminate the application forcedly, shutdown or reboot the system before the process of updating or restoring firmware finish.<br><br>3. During execution of the following operation of EFI driver.<br>(1) Please be careful you don’t shutdown or reboot the system while you execute the following operation on option setting shell.<br>(a) The period between executing “save” command and appearing “hfccfg” shell.<br>(b) The period between executing “logerase” command and appearing “hfccfg” shell.<br>(2) Please be careful you don’t shutdown or reboot the system while you execute the following operation on force default setting shell.<br>(a) The period between executing “select” command and appearing “hfccfg” shell. |

# HITACHI
# Gigabit Fibre Channel Adapter
# USER'S GUIDE
# (BIOS/EFI Edition)

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