Windows Server™ 2003 with SP1
Installation Guide

Version 1
855-900550-200

CONTENTS

Software Installation and Configuration Notes

Before setting

● **Partition size**

Minimum size of the partition can be calculated from the following formula.

1635MB + paging file size + dump file size
       1635MB   = required for installation
       Paging file size (recommendation) = installed memory size x 1.5
       Dump file size   = installed memory size + 12MB

Important   **Paging file size is required to collect debug information (memory dump). In case paging filesize is below recommendation, there might be a case that correct debug information (memory dump) can not be available.**

For example, when installation size is 1024MB, minimum partition size is as follows.
   1635MB + (1024MB × 1.5) + (1024MB + 12MB) = 4207MB

When partition size is smaller than "required size for installation + paging file size", please enlarge partition or add disks
Even if enough dump file size is not available, allocation of it to several disks can be the solution.

    1.   Set up required size + paging file size when installation
    2.   Set up debug information (for dump file size) to other disk. Please refer to the later mentioned set up method for failure treatment.
    （If enough space to write dump file size is not available in the disk, add new disk after installing "required size for installation + paging file size".）

● **Preparation for set up**

Before setting up, please prepare following disk and manual.
- ☐   64bit version Microsoft Windows Server 2003 Enterprise Edition CD-ROM or 64 bit version Microsoft Windows Server 2003 Datacenter Edition CD-ROM
- ☐   EXPRESSBUILDER CD-ROM
- ☐   Users guide

BIOS Setting

Before you install the Windows 2003 Server, confirm the BIOS setting.

Regarding the System Interruption mode
Confirm the BIOS setting of the system interruption mode corresponding to the OS type. Regarding the BIOS setting, refer to the Hardware Guide;

"System Hardware -> Shrink total number of interrupt vectors".

If the setting is not correct, set the correct setting as follows.

Type of OS's	Value
Windows Server 2003 Datacenter Edition	DISABLED
Windows Server 2003 Enterprise Edition	ENABLED

How to install

1. Power the system on

2. Set up DVD-ROM drive in the server "64bit version Microsoft Windows Server 2003 Enterprise Edition CD-ROM or 64bit version Microsoft Windows Server 2003 Datacenter Edition"

3. After setting up "64bit version Microsoft Windows Server 2003 Enterprise Edition CD-ROM or 64bit version Microsoft Windows Server 2003 Datacenter Edition" in DVD-ROM drive, please reset. (Press <Ctl> + <Alt> + <Delete>) or Power OFF/ON and reboot the server.

Hint	**If you want to re-install, follow the below procedure and delete the previous entry from EFI Boot manager, the go to step 4.**

   (1)Go to EFI Boot manager, select "Boot Option maintenance menu", press <Enter>.
   (2)Go to Main menu, select "Delete Boot Option(S)", press <Enter>.
   (3)Select "Windows Server 2003, Enterprise" or "Windows Server 2003, Datacenter", press <Enter>.
   (4)Press <Y> when "Delete selected Boot Option[Y-Yes, N-No] is shown.
   (5)Press <Y> when "Are you sure (Y or N)? " is shown.
   (6)Go to Boot Option(S), select "Exit", press <Enter>.
   (7)Press <Y> when "Save NVRAM?" shown.
   (8)Go to Main Menu and select "Exit".

4. Go to EFI Boot Manager, select "EFI Shell [Built-in]", press <Enter>. Shell screen will be shown.

5. Check the "X" number in fsX: fsX:Acpi(PNP0A03,0)/Pci(1F|1)/Ata(Primary, Master)/CDROM(Entry0)
   IF "X" is "0", follow go to 6.

6. Input "fs0:」after Shell>, press <Enter>
     Shell>fs0:

  Command prompt will change to fs0:＼

7. Input「setupldr」after fs0:＼>, press <Enter>
     fs0:＼>setupldr

When a SCSI/RAID adapter needs a driver other than OS standard driver, Please use the driver diskette
appended to the adapter, or the driver diskette which copied the driver files of EXPRESSBUILDER inclusion,
and execute OS installation in the following procedures.
For details, refer to the document appended to the adapter, or included on EXPRESSBUILDER.

   (1) Press <F6> when the following message appears on the screen.
   "Press F6 if you need to install..."
   (2) Press <S> to specify an additional device when the following message appears on the screen.

> Setup could not determine the type of one or more mass storage devices
> installed in your system, or you have chosen to manually specify an adapter.
> Currently, Setup will load support for the following mass storage devices(s):
> :
> :

   (3)   Insert the driver diskette and press <Enter> when the following message appears on the screen.

> Please insert the disk labeled
> Manufacturer-supplied hardware support disk
> into Drive A:
> *   Press ENTER when ready.

   (4) Select the appropriate driver from the list by arrow key. Press <Enter> to proceed.
   (5) Press <S> when the following message appears on the screen. And advance the OS installation according to message of the screen.

> The driver you provided seems to be older than the Windows
> default driver.
> :
> :
> S=Use the driver on floppy ENTER=Use the default Windows driver

(6) Press <Enter> when the reading from the Driver FD device is finalized, continue setup.

**When following dialog is shown, press [OK] and continue**

EMS Connection Detected ✕

An EMS connection has been detected on your system. You are being prompted for input over the Unattended Setup Channel on that connection. If you provide input over the EMS

If you prefer to configure Setup via this local connection, click OK and Setup will proceed, promptiong you for input.

OK

8. Continue set up following the message and complete installation.

Important

When following message is shown, press [Enter] and continue.

"System partition can not be found"

At the initial set up, Hard disk configuration is as follows. Please do not delete "Partition 1[FAT] " and "Partition 2[reserved]".

Partition1 [FAT]	Partition2 [reserved]	Open area
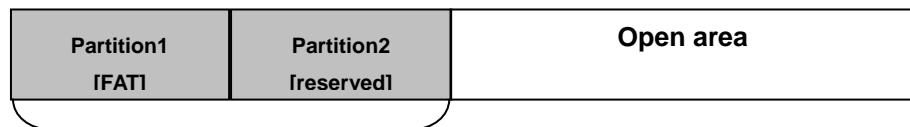
Do not delete

When the installation is completed, Windows Server 2003 Hot fixes are required to be installed. Please ask sales representative for details.

Installation and setup of the drivers

This section describes installation and setup of the standard devices' drivers.
After completion of the driver setup, go to "Setup for the trouble shooting" section.

The device developed by NEC

Installation of the driver for the device developed by NEC is executed from "Software Setup Menu" of NEC EXPRESSBUILDER.

1. Insert the NEC EXPRESSBUILDER CD-ROM in the CD-ROM drive.
   The NEC EXPRESSBUILDER Master Control Menu appears.
2. Select the "Setup".
   The Software Setup Menu appears.
3. Click "the device developed by NEC" to run the set up program.
4. Click [Open], if the [download] dialog box appeard.
5. When the [installation completed] dialog appears, click [OK].

The driver installation for devices developed by NEC is completed.

Other devices

Installation and setup of the driver for other devices, please refer to the document attached to the device, and provided in the NEC EXPRESSBUILDER CD-ROM.

Important
Be sure to update a driver according to the document, although Windows standard driver will be installed automatically in these devices. System may become unstable unless the driver has not updated.

The standard devices which are listed below, use Windows standard driver.
- Floppy disk drive
- DVD-ROM drive (ATAPI)
- USB
- COM port
- Mouse
- Keyboard
- System devices

Network device (Additional Setup)

Set up link speed and Duplex mode after installing a network driver.

Important
If you deleted the network driver, reboot the system. Then, network drivers will be installed automatically.

Hint
· **We recommend you to add a [network monitor] from [Add/Remove Windows Components] of a control panel. The network monitor can supervise the message sending/receiving frame (or packet) of a computer on which it is installed. It is a tool effective in the analysis of a network obstacle etc.**
Refer to the section of "Setup of obstacle processing" next to this part.
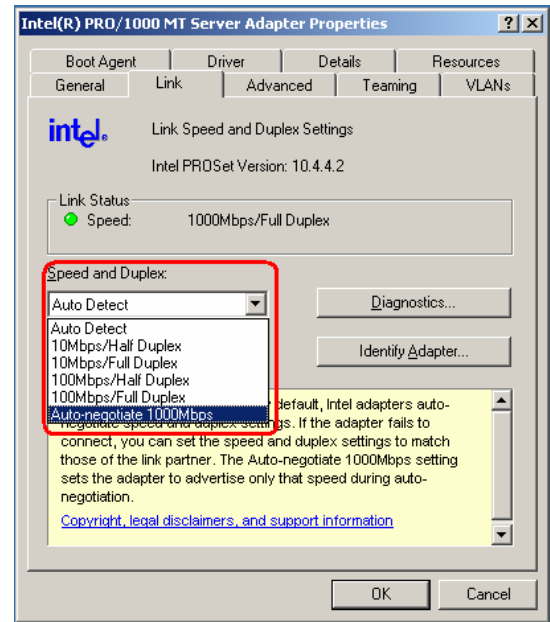**Here is the procedure, provided it is indicated in the described way.**
   -**Select "taskbar's properties" and "Start Menu" tab, click "Classic Start menu".**
   -**Select "explorer's folder options", click "Show common tasks in folders".**

   -**Select "display's properties" and "Setting" tab, select "Windows Classic style" from "windows and buttons" pull-down menu.**

1. Click Start menu, Click [Settings] and Click [Network Connections].
   The [Network Connections] dialog box appears.
2. Right-click [Local Area Connection] and click [Properties] from pop-up menu.
   The [Local Area Connection Properties] dialog box appears.
3. Click [Configure].
   The property dialog box for network adapter appears.
4. Select [Advanced] tab and set the [Link Speed & Duplex] value the same as the value specified for HUB.
5. Click [OK] on the property dialog box for network adapter.

The network driver setup is completed.

Setup for the trouble shooting

In order to recover the system from the unexpected trouble, please finish the following setup in advance. When you finish the following setup, please go on with the section of "Installation of Management utility".

Here is the procedure, provided it is indicated in the described way.
- **Select "taskbar's properties" and "Start Menu" tab, click "Classic Start menu".**
- **Select "explorer's folder options", click "Show common tasks in folders".**
- **Select "display's properties" and "Setting" tab, select "Windows Classic style" from "windows and buttons" pull-down menu.**

Setup of the Backup Tool

The periodical backup by the OS standard backup tool (Ntbackup) or other backup tools on market is highly recommended. Please send your inquiries to the shop where you bought the tool or the service company for the details about the backup tool which could be used in this equipment.

Setup of Memory Dump (Information for Debug)

This setup is for collecting the Memory Dump (Information for Debug) of the server.

Important

Notice for the Memory Dump

- **The collection of Memory Dump could be done only by the workers of the service company. Please set up the memory dump only yourself.**
- **After the setup introduced here, if the machine is rebooted to keep the memory dump while trouble occurs, sometimes the message of insufficient virtual memory appears. Please go on with your reboot. After the reboot, sometimes the memory dump could be kept correctly.**
- **It is necessary to reset the memory dump when the memory is enhanced.**

Here is the procedure of Memory Dump Setup.

1. Click the "Control Panel" from the start menu.
   The "Control Panel" window appears.
2. Double click the "System" icon in the window of "Control Panel". The window of "System Property" appears.
3. Click the "Advanced" tag.
4. Click the "Setting " tag of the "Startup" box.
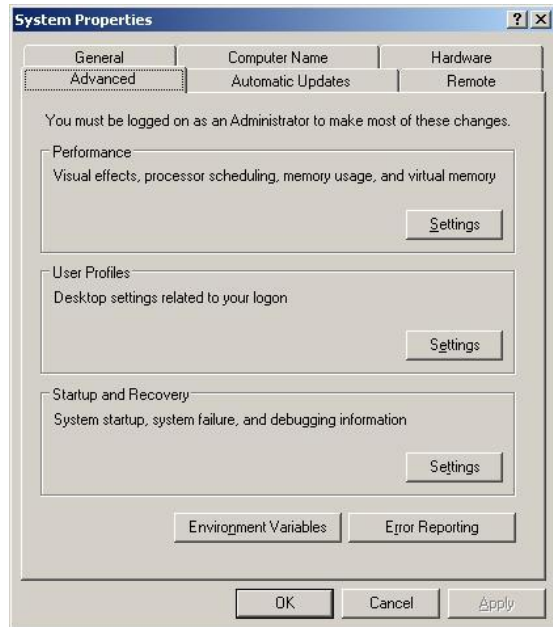
5. Enter the debug information into the text box for text input, and click "OK". For example, if you want to record your information into the file of MEMORY.DMP under D drive, input

   D:\MEMORY.DMP

   While the memory was enhanced, select "None" in the box for text input. After clicking "OK", please set the "Kernel Memory Dump" again.
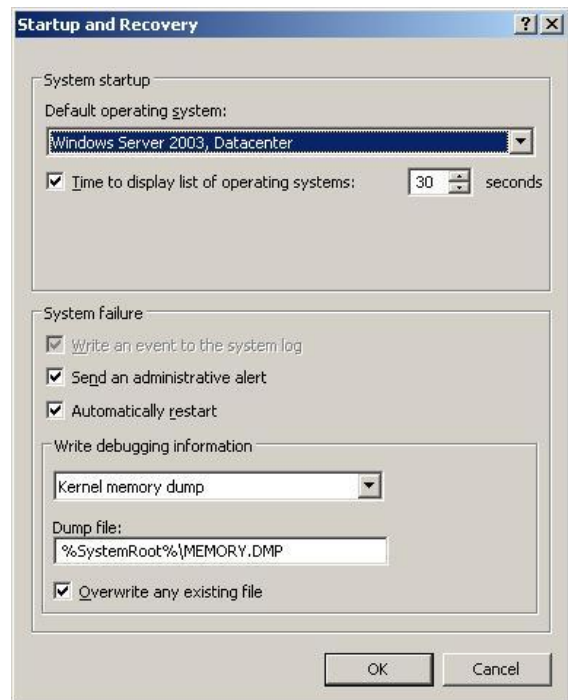

Important
- Please specify the "Debug Information Record" to the "Kernel Memory Dump".
- Please specify the drive whose free space is at least 12MB more than the memory.
- Provided the memory is enhanced, the size of collected debugs information (Memory Dump) changes. Please confirm the free space where the debug information will be recorded in advance.
- The whole memory dump could not be selected if the equipped memory size becomes larger than 2GB.
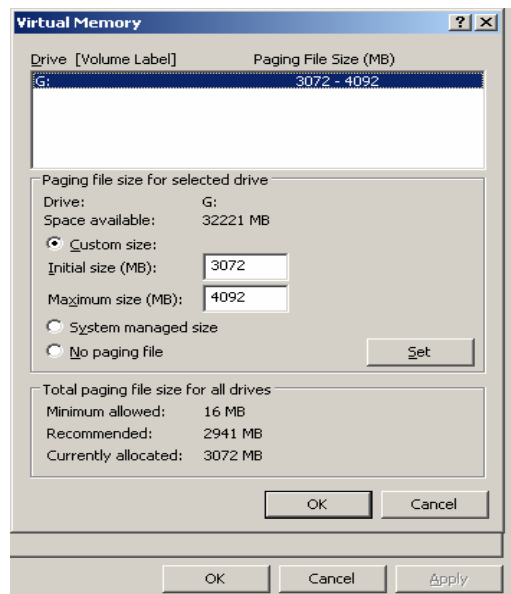
6. Click the "Setting" tag of the "Performance" box. The window of "Performance Option" appears.
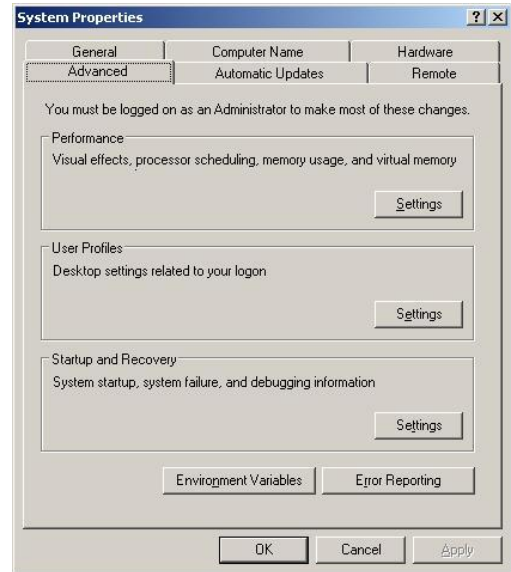
7. Click the "Detailed Setup" tag of the "Performance Option" window.
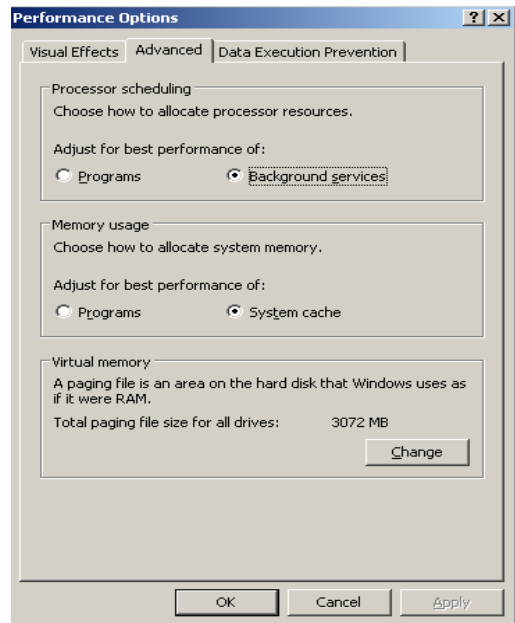
8. Click the ″Change″ tag of the ″Virtual Memory″ box.

9. Change the "Initial Value" larger than the recommended value in the "Paging File Size of the Selected Drive", and Click the "Set" tag. Please set the "Initial Value" of the paging file to about 1.5 times of the equipped memory.

- **Please be sure to create the paging file in the OS partition.**
- **Correct information might not be collected if the initial size is set smaller than the recommended value.**
- **Please set the paging file again according to the new memory capacity when memory is enhanced.**
- Provided the paging file is set again, sometimes it is created in the partition other than the OS partition. Please change the drive on which paging file is created at will.
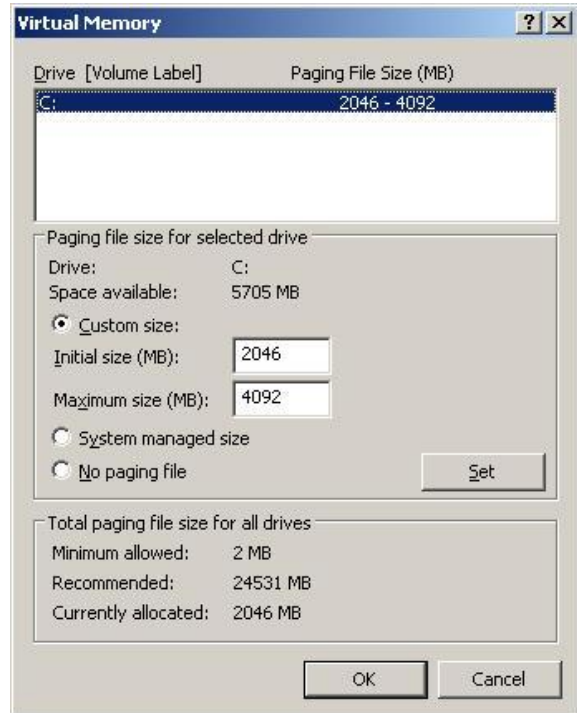
10. Click "OK".
Depending on the modification of the setup, message for system reboot appears. Please reboot your system according to the message.

Memory Dump

When the system stalls unexpectedly, you can dump system memory as follows:
How to invoke the dump command on the SP console:

    iSPyz:---> dp <ENTER>

Refer to the Operation Manual "SP command reference, DP (System Dump)" about the details of the command;
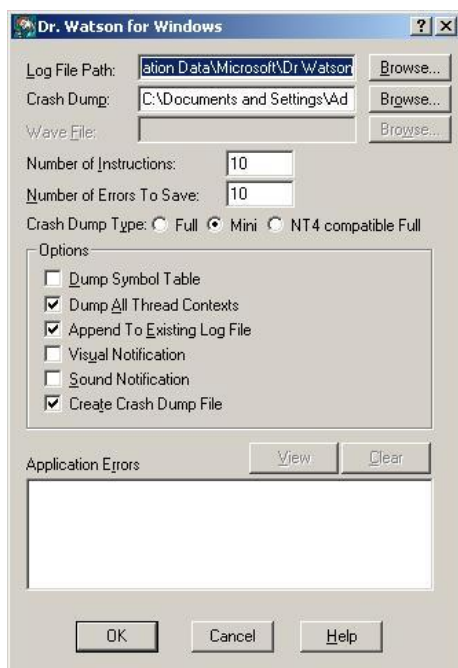
Dr. Watson

"Dr Watson" is the debugger for Application error. When an application error is detected, it diagnoses the server and logs the diagnosis information. To extract the diagnosis information, set up as follows.

1. Click [Run.] in Start menu.

2. Input "drwtsn32.exe" in the name box.

3. Specify the location where the diagnosis massages will be saved in [Log File Path] (L).

| Check |

   Network Path can not be specified.
   Specify the path on the local computer.

4. Specify the location where the Crash Dump File will be saved.

| Hint |

   Crash Dump File is a binary file readable for Windows Debugger.

5. Set "ON" for following check box in [Option] box

- Dump Symbol Table
- Dump All Thread Contexts
- Append to Existing Log File
- Create Crash Dump File

6. Click [OK].

Remote Desktop

Following is the explanation for the validation of the remote desktop connection and the connection method from the client.

The validation of remote desktop connection on the server

Set as follows.

1. Select [Control Panel] in Start menu. Then Control Panel Window is displayed.

2. Double Click [System] in the window.

3. Click [Remote] tab.

4. Check [Allow users to connect remotely to this computer].
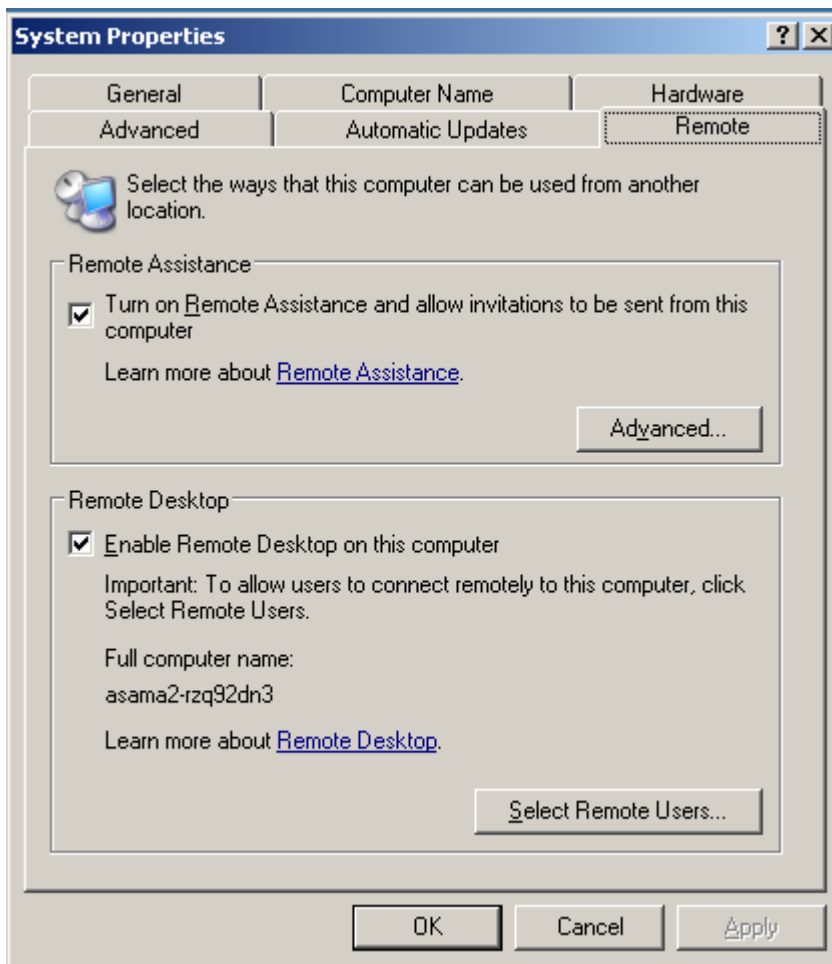
5. When the following message is displayed, Click [OK] and set the password of the user who executes the remote desktop connection.

Sharing Setup Folder of the remote client

To execute the remote desktop connection from Windows95, Windows 98, Windows NT 4.0 or Windows 2000, the installation of Remote Desktop Client is needed.

The client software is available from the following folder on the server.

%SystemRoot%\System32\Clients\Tsclient\win32

In order to install the client easily to other computer, make a shared folder on the server with following procedure.

1. Move to the below folder by Window Explorer.

   %SystemRoot%\System32\Clients\Tsclient
   Mostly, "%SystemRoot%" is "C:\Windows" folder.

2. Click "Win32" folder by right button and click [Sharing and Security].

3. Click [Sharing this folder].

4. Click [OK].

Client of Remote Desktop connection feature

"Remote Desktop connection feature" have been installed as default at Windows XP and all version of Windows Server 2003.
The installation will be started by connecting above feature when you use Microsoft Windows 95, Microsoft Windows 98, Microsoft Windows Millennium Edition (Me), Microsoft Windows NT 4.0 and Microsoft Windows 2000.

Connect to above feature. The share name is "¥¥Server's_name¥TSC Client".
"¥¥Server's_name" should be set to the computer's name which is set up the Remote Desktop connection feature. There is no needed to recognize the Capital letters and Small letters.
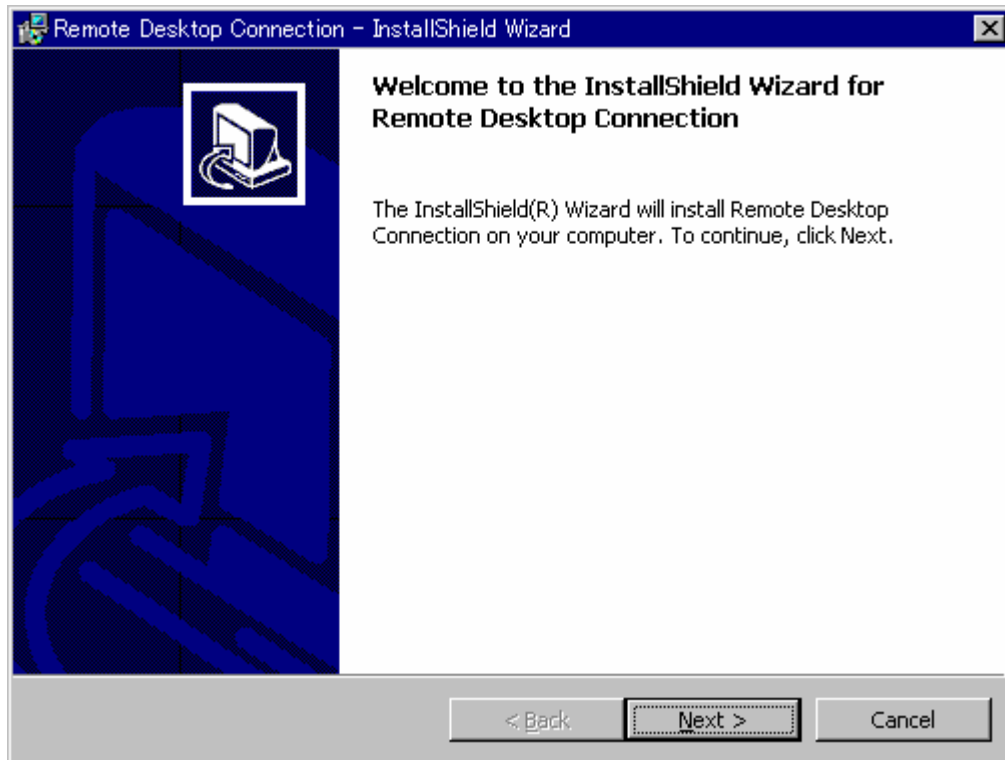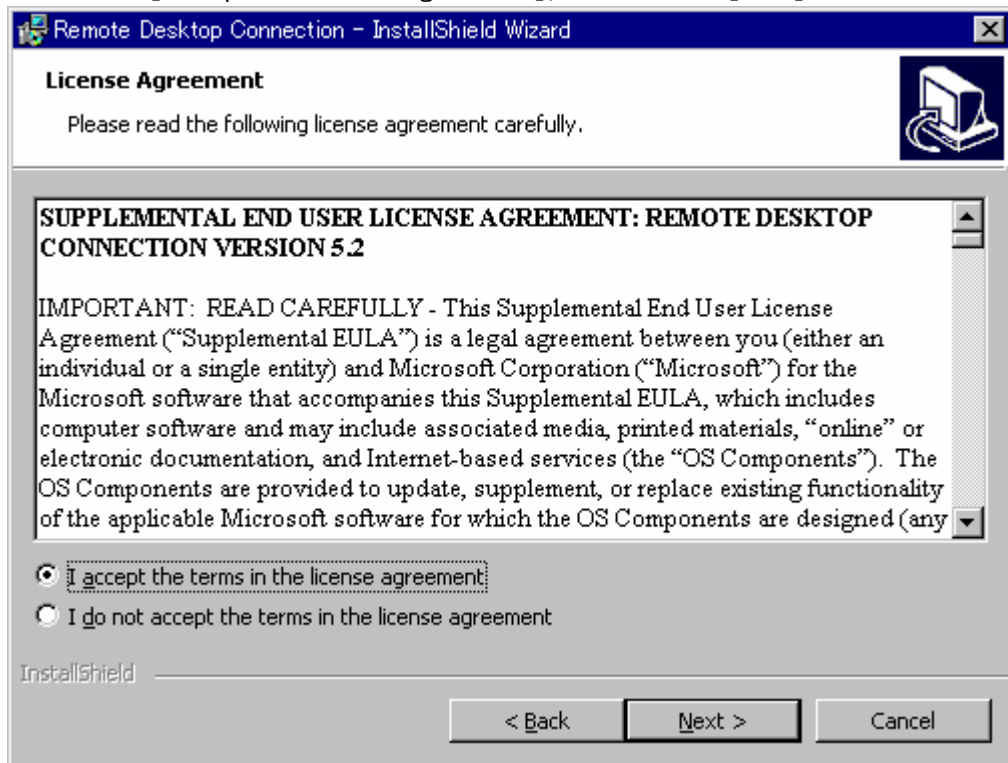

Installation

Install the client of Remote Desktop connection feature by following procedure.

1. Connect to "¥¥Server's_name¥TSClient" which is made by above.
   If it is not set the password for administrator of the server yet, set the password at first for a security.
   At the case of the Headless installation, the password has to be set.

2. Double click the "win32¥Setup.exe".
   [Remote desktop connect -InstallShield wizard] dialog box is displayed.
   Clock the "Next".

3. Check the ［Accept the license Agreement］, and click the ［Next］

4. Type the [User name] and [Organization] at ［User Information］ dialog box. And click [Next].
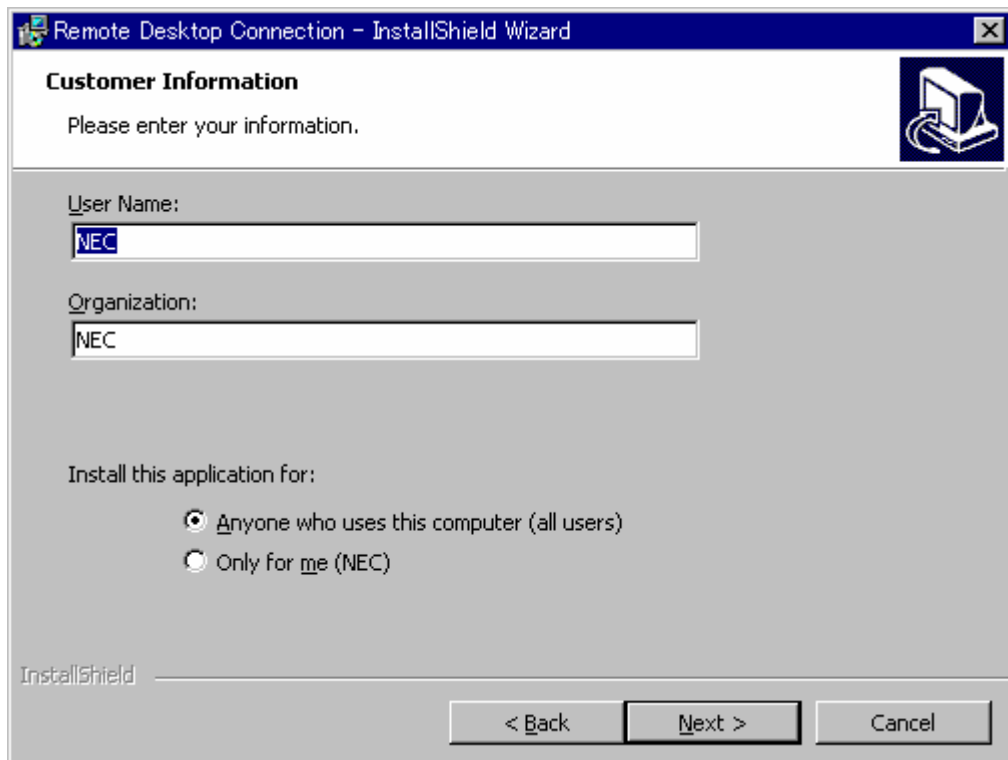
5.
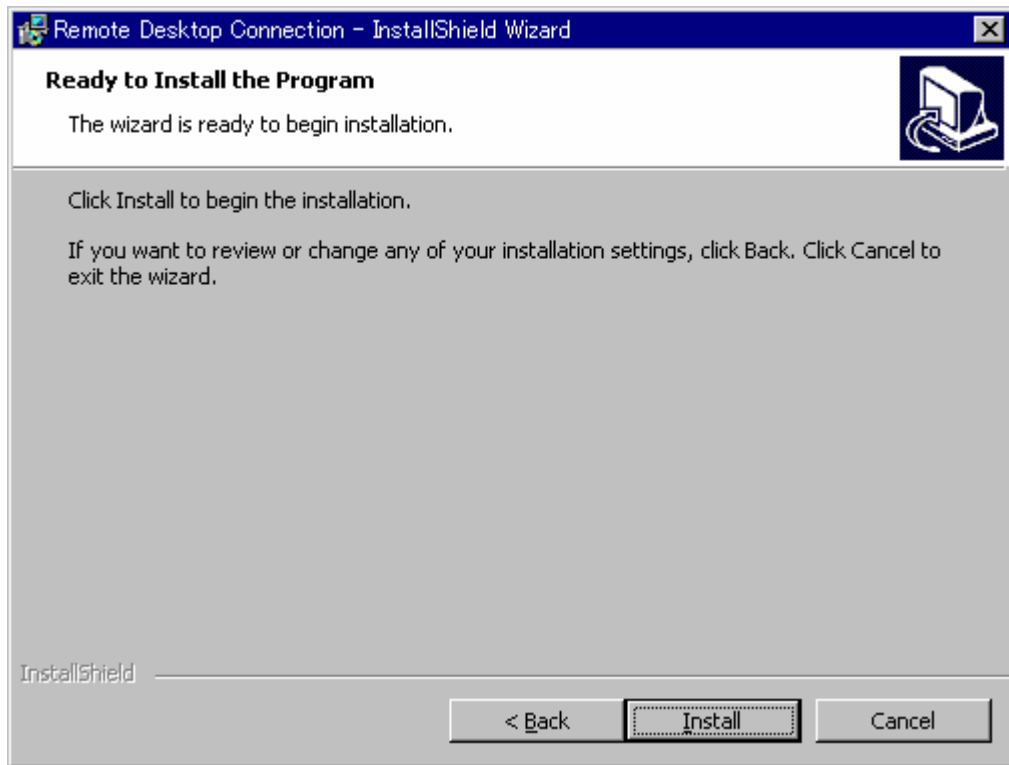
Click [Install] when the [completion of program installation] is displayed.

How to connect to Server from the Remote Desktop Client

This is displayed.

1. Select [Program] -> [Accessories] -> [Communications] -> [Remote Desktop Connection] from startup menu.
2. [Remote Desktop Connection] is started.
   IP address or computer name should be typed.
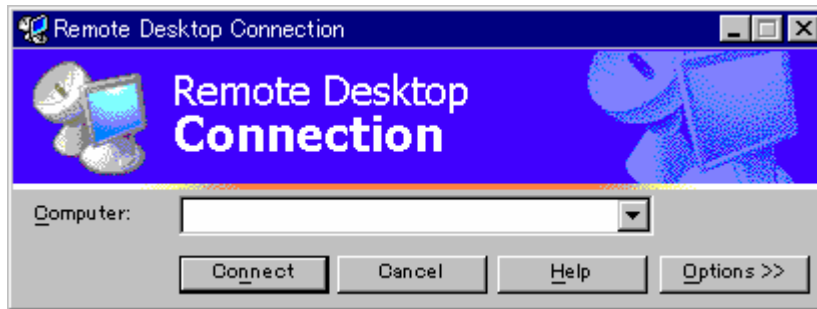
Recovery of System

The Recovery console should be used for system repair when the system cannot to bootup by something. But please note that this procedure is suggested only for power users who have a lot of knowledge or system administrators.

Please refer to the online manuals for details.

Trouble shooting

When the Windows Server 2003 does not work well, please check the following check list before you will ask maintainer to repair the PC. When the PC's condition has been matched to items, obey to the confirmation and the transactions.
But it does not work well, please call maintenance service after the display messages should be written down.

A hard disk drive cannot be initialized.
The Windows DiskManager of Windows Server 2003 have been stalled.

☐ Have you tried to initialize the plural hard disk drives?
➡ Windows Disk Manager is stalled when the plural hard disk drives are initialized in same time from Windows Disk Manager of Windows Server 2003. Please initialize an unused hard disk drive in individually.

Cannot recognized in network.

☐ The network cable is connected?
➡ Please certainly connect the network cable to the back panel of the server. And please also confirm that the network cable is conformed to the network interface standardization.

☐ Have you finished setup the protocols and services?
➡ Please install the network drives this is characteristic for the Server. And please confirm the setting for a protocol of TPC/IP etc. and various services which are certainly set.

Cannot collect the dump when the memory have been attached.

☐ Have the memory dump setting been reconfigured?
➡ Please reconfigure the memory dump setting referring to "memory dump" section of Software guide.

Re-use a disk.

☐ When you try to install an Itanium-based version of Windows Server 2003, the text mode part of Setup may not work.
➡ Please refer to following URL for details.

http://support.microsoft.com/kb/897038/en-us
http://support.microsoft.com/kb/320417/en-us

Notes after install.

☐ When you bootup, event logs were recorded. But the correct system operation is guaranteed.
➡ Please refer to following URL for details.

http://support.microsoft.com/kb/922095/en-us

→ Messages of OS event log

Type	Source	Event ID	User	description
Warning	PNPMEM	0	NA	Failed to add memory range starting at 0x7F000000 for 0x300000 bytes. This operation exceeded the maximum memory capacity of the operating system or the server is not configured to support dynamic memory operations.
Warning				Failed to add memory range starting at 0x140000 for 0x30000 bytes. This operation exceeded the maximum memory capacity of the operating system or the server is not configured to support dynamic memory operations.
Warning				Failed to add memory range starting at 0x100000 for 0x22000 bytes. This operation exceeded the maximum memory capacity of the operating system or the server is not configured to support dynamic memory operations.

PNPMEM : Plug and Play Memory (Hot-Add Memory)

NEC EXPRESSBUILDER

The CD-ROM that comes with your server contains a setup utility called "NEC EXPRESSBUILDER."
When you have first installed the server or append features to the server, use the NEC EXPRESSBUILDER
to set up your server.

The major functions of the NEC EXPRESSBUILDER are:

- To install the utilities.
  It installs the management utilities.

- To install device drivers.

- To read the online documents.
  It opens the online document files (".pdf" files or ".html" files).

Starting NEC EXPRESSBUILDER

Insert NEC EXPRESSBUILDER CD-ROM into the CD-ROM drive.

Master Control Menu appears on the screen automatically.

NOTES:

- Master Control Menu requires Microsoft Windows 2000 (or later).

- To read documents (HTML and PDF files) in the NEC EXPRESSBUILDER CD-
  ROM, the HTML browser (Microsoft Internet Explorer Version 5.0 (or later) or
  Netscape Communicator Version 4.0 (or later)), and Adobe Reader are required in
  your system.

NEC EXPRESSBUILDER

NEC Express5800 Series

Online Document

Setup

Quit

Master Control Menu

(c)NEC Corporation 2003-2006

NEC
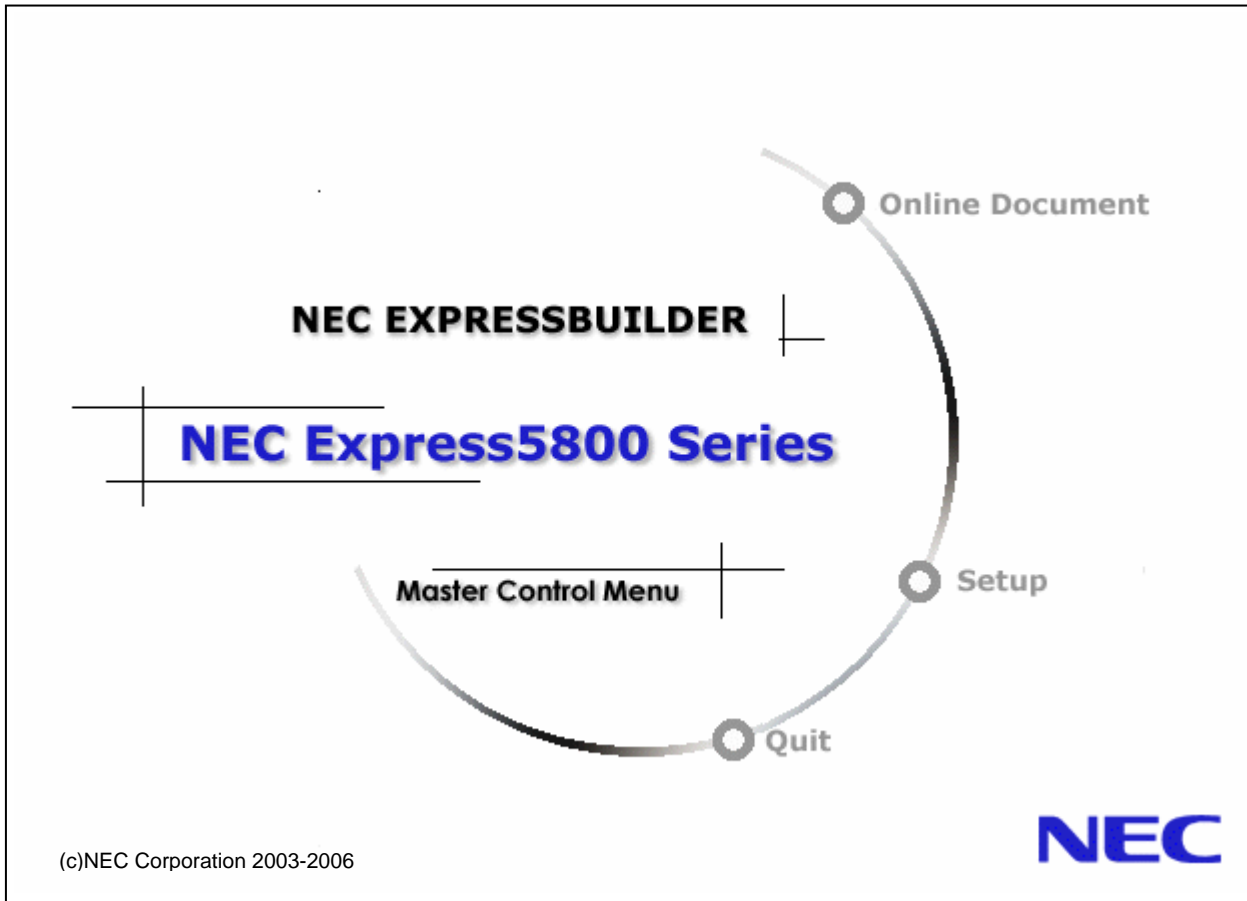
To use Master Control Menu, click [Online Document], [Setup] or [Quit]. These items are as follows:

- Online Document
  You can refer to installation guides and online document on each utility.

- Setup
  You can install utilities.
  For installation procedure and detailed explanations on each utility, please refer to the online document.

- Quit
  Master Control is closed.

IMPORTANT:	Do not remove the NEC EXPRESSBUILDER CD-ROM while NEC EXPRESSBUILDER is running.

Troubleshooting problems

When the Windows Server 2003 does not work well, please check the following check list before you will ask maintainer to repair the PC. When the PC's condition has been matched to items, obey to the confirmation and the transactions.
But it does not work well, please call maintenance service after the display messages should be written down.

If NEC EXPRESSBUILDER does not operate as expected, read and check the following:

Cannot read the online documents

Did you install the HTML browser?

→ Some of online documents are ".HTML" files. Please install the HTML browser to the using operating system in advance. (Internet Explorer 5.x or later).

Is the relation of the HTML file correct?

→ You can access Online Documents by selecting local file on the CD-ROM. If Internet Explorer and Netscape Communicator coexisted, the extension [htm, html] of the HTML document might not be correctly related to the browser.
Please set the relations by follow procedure (Internet Explorer 5.0)..

1. Boot up Internet Explorer .
2. Select "Tool", "Internet option".
3. Double Click "Program" tab, and click "Reset Web setting".
4. The Diag. box appeared for check. Click the "yes" tab,

Did you install Adobe Reader to the server or client computers?

→ Some of online documents are ".PDF" files. Please install Adobe Reader to the server or client computers in advance. You can install Adobe Reader from NEC EXPRESSBUILDER.
Insert the NEC EXPRESSBUILDER CD-ROM into the CD-ROM drive of to the server or client computers. Master Control Menu is displayed. Click "Online Document" and then click "LIBRARY". LIBRARY page is displayed. It has a "Get Adobe Reader Web logo". This logo is an active link to the Adobe Reader Download Page on Adobe's official web site.
Adobe Reader operation was not guaranteed on IPF version Windows at the time of October 2004.

Difficult to see NEC EXPRESSBUILDER menu image

Is the number of colors displayed on monitor 256 or more?

→ If the number of colors displayed on monitor is less than 256, it is difficult to see images on monitor. Please change to the color settings or change a monitor which you can set the number of the colors displayed on to 256 or more.

The master control menu fails to appear:

The menu might not be automatically displayed by the condition of the system. In this case, you tried "\MC\MC.EXE" or "\MC\MC_64.EXE"(Itanium environment) on the CD-ROM.

(1) Is your system Windows NT 4.0 or later, or Windows 98 SE or later?

→ The Master Control menu is supported by Windows NT 4.0 or later and Windows 98 SE or later.
The target OS of the EXPRESSBUILDER is Windows Server 2003 or Windows 2000/XP or later.

(2) Is **Shift** pressed?

→ Setting the CD-ROM with Shift pressed down cancels the Autorun feature.

(3) Did you install the HTML browser on your server?

→Master Control Menu is ".html" file. Please install the HTML browser on Windows in advance.

(4) Is ".html files or .htm files" linked to the HTML browser correctly?

→ Make sure that ".html files or .htm files" is linked to the HTML browser correctly as the following way (e.g. Internet Explorer).
  1. Open Internet Explorer
  2. Click [tools] tab. Then Tools menu opens. Select [Internet options] item. Then "Internet Options" window is displayed.
  3. Make sure that "Internet Explorer should check to see whether is the default browser" is checked.

ESMPRO/ServerAgent (Windows)

ESMPRO/ServerAgent(Windows) lets a system administrator manage remote servers across a network. ESMPRO/ServerAgent monitors server hardware and software configurations, failures, and performance. With log data collected by NEC ESMPRO, a system administrator can track long-term and short-term performance, monitor server usage, create graphs to record trends, and check server failure rates. The administrator can use the information collected to create more efficient data routing procedures and optimize server usage.

For installation procedure and detailed explanations on NEC ESMPRO, refer to the online document in the NEC EXPRESSBUILDER CD-ROM.

IMPORTANT:
"SNMP system ID" should be set before installation of ESMPRO/ServerAgent. It is used for automatic discovery of ESMPRO/ServerAgent Manager and integration with SystemGlobe GlobalMaster. The SG (SP Settings) in a maintenance manual explains how to set it.

COMPLEMENT:

About ESMPRO/ServerAgent log

ESMPRO/ServerAgent holds Hardware log(System Event Log) at the area (%EsmDir%¥log¥esmsmsel.log).
If the size of esmsmsel.log file is enlarged, back up it, remove esmsmsel.log file.
※%EsmDir%: ESMPRO/ServerAgent install directory
            Ex）C:¥ESM

SystemGlobe GlobalMaster Agent

"SystemGlobe GlobalMaster Agent" is management software for partition. The partition installed this software can be controlled by management PC. (The management PC has to be installed "SystemGlobe GlobalMaster Manager".)

For installation procedure and detailed explanations on "SystemGlobe GlobalMaster R2.2 Installation Guide (Agent Version)", refer to the online document in the NEC EXPRESSBUILDER CD-ROM.

NEC ESMPRO Manager

NEC ESMPRO lets a system administrator manage remote servers across a network. NEC ESMPRO monitors server hardware and software configurations, failures, and performance. With log data collected by NEC ESMPRO, a system administrator can track long-term and short-term performance, monitor server usage, create graphs to record trends, and check server failure rates. The administrator can use the information collected to create more efficient data routing procedures and optimize server usage.

For installation procedure and detailed explanations on NEC ESMPRO, refer to the online document in the NEC EXPRESSBUILDER CD-ROM.

In use of NEC ESMPRO on this system, please note the followings in addition to the notes in the online

document.

About the Memory Bank

In DataViewer, [Module Information] on "Memory Bank" shows that the total size of memory mounted in CELL as one module.

In case one CELL mounts 32GB or more memories, [Module Size] shows "0KB." and [Bank Size] shows the sum of each [Module size].

About the power supply information

Unit Status Information, which is displayed on [ESMPRO]-[Enclosure]-[PowerSupply]-[Main chassis] of DataViewer, corresponds with DPS in the following cabinet:

Unit Name	Chassis
power supply 0-5, 8-13	Main Cabinet
power supply 32-37, 40-45	IO Expansion Cabinet

*Information on non-mounted DPS is not displayed.

About a setting of temperature and fan monitoring

Temperature and fan monitoring, [ESMPRO]-[Enclosure]-[Temperature] or [Fan] of DataViewer, return to the default setting of being checked on the check box when a system is rebooted with the setting cleared.

SystemGlobe GlobalMaster Manager

"SystemGlobe GlobalMaster Manager" is management software for management PC. The management PC installed this software can control partition. (The partition have to be installed "SystemGlobe GlobalMaster Agent".)

For installation procedure and detailed explanations on "SystemGlobe GlobalMaster R2.2 Installation Guide (Mnager Version)", refer to the online document in the NEC EXPRESSBUILDER CD-ROM.