

**NEC**

NEC  *DianaScope*

Installation Manual

Document Rev.1.33

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Tomcat: LICENSE under the <directory that Tomcat is installed>

JRE: LICENSE under the <directory that JRE is installed>

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## About This Document

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This document introduces remote management using the server management utility “NEC DianaScope” and explains the complete procedures from installation to managed server’s setup.

Before attempting to operate the server management utility NEC DianaScope, read this document so as to gain an adequate understanding of the contents.

### ■ Notes

This document is intended for persons who are familiar with the operating system’s functions and operations and the network’s functions and setup. For operations and inquiries about the operating system, see its online help information.

This document covers universal information about generally managed servers. The notes and restrictions on use of each product as a managed server are explained in the user’s guide provided with the managed server and “NEC DianaScope Managed Servers Summary”.

If the NEC EXPRESSBUILDER(SE) CD-ROM or Maintenance Management Tool CD-ROM is attached to the managed server, read the word in place of “NEC EXPRESSBUILDER” in this document.

Names used with screen images in this document are fictitious. They are unrelated to existing product names, names of organizations, or individual names. The setting values on the screen images are shown as examples, so setting values such as IP addresses on screen images are not guaranteed for operation.

In this document , “¥” expresses back slash.

### ■ About Symbols in This Document

The following explains three symbols that are used in this document:

- IMPORTANT:** Points or particular notes you must follow when handling software of servers.
- CHECK:** Points or notes you need to check when handling software or servers.
- TIPS:** Useful information.

### ■ Other Documents for NEC DianaScope

For other information about the NEC DianaScope, see the documents below.

- **Which servers can NEC DianaScope control?**  
See the “NEC DianaScope Managed Servers Summary”.
- **How to operate after setup.**  
See the NEC DianaScope’s online help information.
- **How to operate the command line Interface.**  
See the “NEC DianaScope Command Line Interface”.
- **Function and how to setup for ft Server.**  
See the “NEC DianaScope Installation Manual for ft Server”.

## **About Download of the Latest DianaScope**

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See the following URL for DianaScope information. You can download the latest version of the DianaScope from the URL.

<http://www.nec.co.jp/express/>

## Chapter1 About NEC DianaScope

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NEC DianaScope is software designed for reducing operational management costs by remotely managing servers.

The DianaScope is primarily made up of “NEC DianaScope Manager” running on a management PC (called a “DianaScope server”) and “NEC DianaScope Agent” running on a managed server.

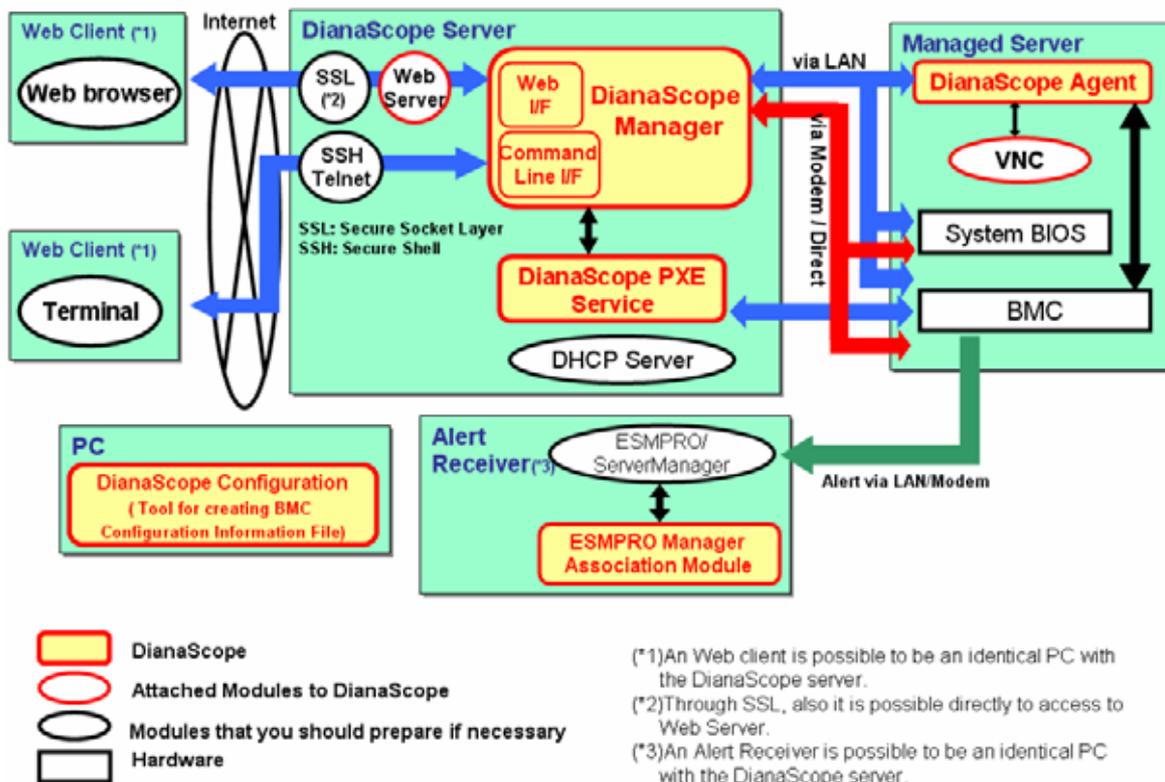
Remotely manageable servers with DianaScope are the servers that conform to IPMI (Intelligent Platform Management Interface) Ver.1.5 or Ver.2.0 as the industry standard for server management.

The DianaScope provides the following capabilities:

- **Rebuilding even if the operating system on the managed server has failed.**  
Even if the operating system on the managed server is inoperable (in the state of operating system’s stall, BIOS POST (Power On Self Test), or DC OFF), DianaScope allows you to collect the managed server’s hardware information and control the power supply.
- **Operation while viewing the managed server’s screen.**  
While key-in and mouse operations are enabled, the managed server’s screen can be viewed on the remote browser at any time during POST just after the managed server is turned ON and even after Windows or Linux has been booted.
- **Operation of more than one managed server at a time.**  
By specifying a server group, you can provide power control or change a setting for managed servers through a single operation.
- **Specification of remote operation time**  
The managed server can be turned OFF or information can be collected at pre-specified time, so DianaScope is available for nighttime batch processing.
- **Easy operation through the Internet.**  
The managed server can be operated with a Web browser. If you use Internet’s standard SSL (Secure Socket Layer) for the DianaScope, you enable secure remote operation from an external network.

## 1.1 Components

The following figure shows components used when a server is managed remotely from the DianaScope:



The DianaScope consists of the following software group:

- **Software running on the DianaScope server**
  - **DianaScope Manager**  
Manages a remote server by communicating with the BMC (Baseboard Management Controller), System BIOS, and DianaScope Agent that are on the managed server.
  - **DianaScope PXE Service**  
The DianaScope PXE Service is used to network-boot the managed server. Consequently, the BMC configuration information for remote management by the DianaScope Manager can be set on the managed server.
- **Software running on the managed server**
  - **DianaScope Agent**  
Configures the BMC on the managed server, and executes commands specified by the DianaScope Manager.

■ **Other software**

● **NEC ESMPRO Manager Association Module**

This software use at an alert receiver that receives an alert from BMC. When NEC ESMPRO service receives an alert notification from the BMC, the module registers the alert in the alert log of the NEC ESMPRO.

● **DianaScope Configuration**

Creates a “configuration information file” for configuring the BMC on the managed server. To configure the BMC on the managed server by using DianaScope PXE Service, you need a “configuration information file”. To configure the BMC on the managed server by using the NEC EXPRESSBUILDER DOS based with remote console feature, you need a “configuration information FD” containing the “configuration information file”.

.....  
**TIPS:**

- BMC is provided with form below. For details, see “DianaScope Managed Servers Summary”.
    - Managed server integrates BMC.
    - Managed server integrates EXPRESSSCOPE Engine.
    - Remote Management Card integrates BMC.
    - Advanced Remote Management Card integrates BMC.
    - ft Remote Management Card integrates BMC.
- .....

## 1.2 Connection Types

There are three types of connections that can be made between the DianaScope server and managed server.

■ **Connection via LAN**

The DianaScope server and a managed server are connected via Ethernet.  
LAN connection enables remote control for managed servers at the same time.  
All the DianaScope functions are available.

■ **Connection via Modem**

The DianaScope server and managed server are connected via a modem.  
Connection via Modem provides high security since the two servers are directly connected.

■ **Direct Connection**

The DianaScope server and managed server are connected over an RS-232C cross cable.

.....  
**IMPORTANT:**

- DianaScope Manager on Linux supports only connection via LAN.
  - Only LAN connection is supported for communication between the DianaScope Manager and DianaScope Agent.
  - See the “NEC DianaScope Managed Servers Summary” to confirm which connection type is supported for your server.
- .....

## 1.3 Functions

The DianaScope has following functions:

### ■ Remote console

The remote console function allows the operator to view the managed server's display screen from the remote console.

During POST (Power On Self Test) just after the power is turned ON, or while DOS is active, data can be input into the managed server from the keyboard. The managed server's BIOS setup and POST monitoring can be enabled remotely by this function.

Even after Windows or Linux has been booted, the operator can perform various operations such as OS setting change or application execution while viewing the managed server's screen on the remote browser.

### ■ Information collection

The information collection function allows the operator to collect information from the managed server.

Server Status:	Managed server's STATUS lamp state and power state.
Version Information:	Information about the versions of DianaScope Agent, operating system, LAN driver, and System BIOS
BMC Configuration:	BMC configuration information. You can also change the information.
Power Restore Delay:	Interval from AC-ON to DC-ON that is also set using BIOS Setup utility on the managed server.
IPMI Information:	Hardware information, log information, and the current status of each sensor.

### ■ Power control

The following power control is provided for the managed server:

Power ON
Power OFF
Power Cycle (turns power on after turning it off.)
Reset
DUMP Switch (The managed server performs the same operation as when the dump switch is pressed.)
Sutdown OS

### ■ Server Monitoring

The server monitoring function always monitors the managed server's STATUS lamp state and power state. When a failure occurs, the function notifies the operator of the failure.

If the managed server is a CPU blade, this function also monitors and notifies the operator of the slot change.

The server monitoring function is supported only via LAN.

■ **Remote batch**

The remote batch function enables the following control automatically at specified time:

- Power ON
- Power OFF
- Shutdown OS
- Clear System Event Log
- Collect System Event Log, Sensor Information, Filed Replaceable Unit Information

■ **Scheduled running**

The scheduled running function enables the setting of a down period for the managed server. According to the specified schedule, the managed server shuts down the operating system at the start of the down period and turns the power ON at the end.

■ **Operation through the command line**

In general, DianaScope is operated on the Web browser. The command line interface also provides commands like power control or information collection.

.....  
**TIPS:**

- For details of the command line interface, see “DianaScope Command Line Interface”.
- .....

■ **BMC configuration on the managed server with network booting**

This function uses the DianaScope PXE Service to set BMC configuration information on the managed server through the DianaScope server for managed server operation via the LAN from the DianaScope Manager.

■ **NEC ESMPRO Manager Association**

The DianaScope Manager’s module operates as part of NEC ESMPRO service. When NEC ESMPRO service receives an alert notification from the BMC or System BIOS on the managed server, the module called by the NEC ESMPRO service analyzes the contents of the alert, registers them in the alert log of the NEC ESMPRO.

.....  
**CHECK:**

- Some models of managed servers may not support all functions. See “NEC DianaScope Managed Servers Summary”.
  - DianaScope has some features for ft Server. See “NEC DianaScope Installation Manual for ft Server”.
- .....

### 1.3.1 DianaScope Agent Function

Before the following of the functions introduced in 1.3”Functions” can be used, DianaScope Agent must be installed in the managed server. These sections can be used via LAN because only LAN connection is supported for communication between the DianaScope Manager and the DianaScope Agent.

■ **Remote console**

DianaScope Agent is required for remote console function that displays the graphic screen after Windows or Linux has been booted on the managed server. The remote console screen data is encrypted by the DianaScope Agent, and then securely sent to the DianaScope Manager.

■ **Shutdown OS**

The DianaScope Agent shuts down the operating system upon request of the DianaScope Manager.

.....  
**TIPS:**

- When connection has been made via modem or directly, the DianaScope Manager sends an OS shutdown request to the NEC ESMPRO Agent. The remote shutdown function of NEC ESMPRO Agent needs to be enabled when the request is made.
- .....

■ **Version Information collection**

Information about the versions of the operating system, LAN driver, and BIOS in addition to the DianaScope Agent can be collected upon request of the DianaScope Manager.

■ **BMC configuration information collection/change**

The BMC configuration information set on the managed server can be collected or changed upon request of the DianaScope Manager.

■ **Scheduled Running**

According to the specified schedule sent by the DianaScope Manager, the DianaScope Agent shuts down the operating system at the start of the down period. It also makes a setting for the BMC to turn the power OFF at the end of the down period.

.....  
**TIPS:**

- DianaScope Agent will perform the scheduled running after the DianaScope Manager set the schedule in the DianaScope Agent.
- .....

#### 1.3.1.1 Independent function of DianaScope Agent

The following can be performed by directly operating the DianaScope Agent on the managed server:

■ **BMC configuration**

Configuration information can be set for the BMC on the managed server. Before the managed server can be operated from the DianaScope Manager, the configuration information must be set for the BMC.

■ **System Information (Version Information)**

The versions of DianaScope Agent, Sensor Data Information (SDR) and VNC can be collected.

## Chapter2 System Requirements

---

.....  
**TIPS:**

- To install NEC ESMPRO Manager Association module independently, see Chapter5 "NEC ESMPRO Manager Association Module".
  - For DianaScope Configuration, see Chapter6 "DianaScope Configuration".
  - To manage a chassis installed a EM card through DianaScope, see TBD.
- .....

### 2.1 DianaScope server

Install DianaScope Manager in a management PC.

The management PC installed the DianaScope Manager is called a "DianaScope server."

#### 2.1.1 DianaScope Manager

■ **Hardware**

● **Processor**

Intel Celeron 566MHz or more, , or equivalent compatible processor  
(Recommended Intel Pentium III 1GHz or more)

● **Memory**

128MB or more. (Recommended 256MB or more)

● **Availability of hard disk**

256MB or more

● **Communication Medium**

TCP/IP network

.....

**CHECK:**

- The required medium varies depending on the connection type with the managed server. See 2.4"Requirements for Connection between the DianaScope Server and Managed Server".
- .....

■ **Software**

● **Operating System**

Microsoft Windows 2000 Server/Professional (SP4)

Microsoft Windows XP Professional (SP1 or SP2)

Microsoft Windows Server 2003 Standard Edition/Enterprise Edition (or SP1)

Microsoft Windows Server 2003 R2 Standard Edition/Enterprise Edition

Microsoft Windows Server 2003 Standard /Enterprise x64 Edition

Microsoft Windows Server 2003 R2 Standard /Enterprise x64 Edition

Microsoft Windows Vista Business

Red Hat Enterprise Linux ES 2.1

Red Hat Enterprise Linux AS 2.1

Red Hat Enterprise Linux ES 3.0 (x86, Intel EM64T)

Red Hat Enterprise Linux AS 3.0 (x86, Intel EM64T)

Red Hat Enterprise Linux ES 4 (x86, IntelEM64T)

Red Hat Enterprise Linux AS 4 (x86, intelEM64T)

Miracle Linux Standard Edition 2.1

Miracle Linux 3.0 – Asianux Inside

Miracle Linux 3.0 – Asianux Inside (32bit, 64bit)

.....  
**CHECK:**

- DianaScope Manager Ver.1.12.00 and above can install on Windows Vista
- .....

● **Other Information**

The following software must be installed for using DianaScope Manager:

- Tomcat 4.1 (attached to DianaScope)
- JRE 1.4.2 (1.4.2\_12 and above is recommended) or JRE5.0 (32bit version)  
(JRE5.0 is attached to DianaScope)

The following software must be installed for using DianaScope NEC ESMPRO Manager Association Module:

- NEC ESMPRO Manager 4.11 and above
- .....

**CHECK:**

- DianaScope Manager Ver.1.09.00 and above supports JRE5.0.
  - If NEC MWA has been installed on DianaScope server, you must uninstall NEC MWA, and then install DianaScope Manager.
- .....

**TIPS:**

- DianaScope NEC ESMPRO Manager Association Module can be installed using DianaScope Manager installer.
- .....

■ **Number of managed servers**

One server license is required for each server to be managed remotely by using DianaScope. Addition of server licenses permits a single DianaScope Manager to manage a maximum of 512 servers.

.....  
**TIPS:**

- DianaScope Server License is provided as products below.
    1. UL1198-001E DianaScope Additional Server License(1)
    2. UL1198-011E DianaScope Additional Server License(10)
  - DianaScope Additional Server License(1) may be included in the product below.
    1. N8115-01CP01 Remote Management Card
    2. N8115-02CP01 Advanced Remote Management Card
    3. N8815-001/001A 10 Remote Management Card
- .....

## 2.1.2 DianaScope PXE Service

### ■ Hardware

- **Memory**  
128MB or more
- **Availability of hard disk**  
10MB or more
- **Communication medium**  
TCP/IP network

### ■ Software

- **Operating system**  
Microsoft Windows 2000 Server (SP4)  
Microsoft Windows Server 2003 Standard Edition/Enterprise Edition (or SP1)  
Microsoft Windows Server 2003 R2 Standard Edition/Enterprise Edition  
Microsoft Windows Server 2003 Standard /Enterprise x64 Edition  
Microsoft Windows Server 2003 R2 Standard /Enterprise x64 Edition
- **Other information**  
The following software must be installed for using DianaScope PXE Service:  
DianaScope Manager

.....  
**IMPORTANT:**

- DianaScope PXE Service can be installed only on DHCP server.
  - DianaScope PXE Service can be installed only on the DianaScope on which that DianaScope Manager is installed.
  - Before installation of the DianaScope PXE Service, stop other PXE services and software having the PXE service function in the network.
- .....

## 2.2 Web client

The DianaScope Manager is operable on Web clients connected to the DianaScope server via LAN that satisfy the following conditions:

The DianaScope server can also be used as a Web client.

### ■ Web browser

Internet Explorer 6.0 and above  
FireFox 1.5 and above

.....  
**CHECK:**

- Java Applet and Java scripts must be executable.
  - Web browser needs Java Plug-in 1.4.2 and above for DianaScope. If the web browser requests to install JRE, please follow the instruction.
  - 1024 by 768 pixels or more are recommended as a screen area in display properties.
- .....

## 2.3 Managed server

This section explains conditions for servers to be managed by the DianaScope Manager.

### ■ Hardware

- The server that integrates a standard BMC conforming to IPMI Ver.1.5 or Ver.2.0.
- The server that integrates EXPRESSSCOPE Engine conforming to IPMI Ver.1.5 or Ver.2.0.
- The server that is installed a Remote Management Card [N8115-01CP01] conforming to IPMI Ver.1.5 or Ver.2.0.
- The server that is installed an Advanced Remote Management Card [N8115-02CP01] conforming to IPMI Ver.1.5 or Ver.2.0.
- ft Server that is installed ft Remote Management Cards [N8815-001/001A] conforming to IPMI Ver.2.0.

.....  
**CHECK:**

- See “NEC DianaScope Managed Servers Summary”.
  - The required medium varies depending on the connection type with the managed server. See 2.4”Requirements for Connection between the DianaScope Server and Managed Server”.
- .....

### ■ Software

When the shutdown OS function is to be used via modem or with direct connection:  
NEC ESMPRO Agent

### 2.3.1 DianaScope Agent

Install DianaScope Agent in the server to be managed.

### ■ Hardware

- **Memory**  
128MB or more
- **Availability of hard disk**  
10MB or more

### ■ Software

- **Operating system**
  - Microsoft Windows 2000 Server/Advanced Server (SP4)
  - Microsoft Windows Server 2003 Standard Edition/Enterprise Edition (or SP1)
  - Microsoft Windows Server 2003 R2 Standard Edition/Enterprise Edition
  - Microsoft Windows Server 2003 Standard /Enterprise x64 Edition
  - Microsoft Windows Server 2003 R2 Standard /Enterprise x64 Edition
  
  - Red Hat Enterprise Linux ES 2.1
  - Red Hat Enterprise Linux AS 2.1
  - Red Hat Enterprise Linux ES 3.0 (x86)
  - Red Hat Enterprise Linux AS 3.0 (x86, IntelEM64T)
  - Red Hat Enterprise Linux ES 4 (x86, IntelEM64T)
  - Red Hat Enterprise Linux AS 4 (x86, intelEM64T)
  
  - Miracle Linux Standard Edition 2.1
  - Miracle Linux 3.0 – Asianux Inside
  - Miracle Linux 4.0 – Asianux Inside (32bit, 64bit)

.....  
**CHECK:**

- DianaScope Agent Ver.1.08 and above can install on Red Hat Linux ES 3.0 (x86) and on Red Hat Linux AS 3.0 (x86).
  - DianaScope Agent Ver.1.09.12 and above can install on Red Hat Enterprise Linux AS 3.0 (IntelEM64T), Red Hat Linux ES 4, Red Hat Linux AS 4 and Miracle Linux 3.0 – Asianux Inside.
  - DianaScope Agent Ver.2.03.02 and above can install on Miracle Linux 4.0 – Asianux Inside.
- .....

● **Other information**

DianaScope Agent on some models of managed servers must need following:  
 NEC ESMPRO Agent

If you use the remote management function for which DianaScope Manager requires to communicate with DianaScope Agent, DianaScope Agent must need following:  
 JRE 1.4.2 or JRE 5.0 (32bit version). (JRE 5.0 is attached to DianaScope)

The following software is necessary for using remote console function after Windows or Linux is booted:

- GUI remote console function (VNC 3.3.3) (attached to DianaScope)
- The available GUI remote console function depends on the OS.

OS	GUI remote console function
Microsoft Windows	VNC 3.3.3 (attached to DianaScope)
Red Hat Enterprise Linux ES 2.1 Red Hat Enterprise Linux AS 2.1 Miracle Linux Standard Edition 2.1	VNC 3.3.3 (attached to DianaScope)
Other OS	VNC attached the OS, or above version.

.....  
**CHECK:**

- To check whether to need NEC ESMPRO Agent, see “NEC DianaScope Managed Servers Summary”.
  - On Linux, A driver for server management must be installed even if NEC ESMPRO Agent is not required.
  - DianaScope Agent Ver.2.05.00 and above can support JRE 5.0.
  - If NEC MWA Agent that can configure BMC is installed already, you must uninstall NEC MWA Agent, and then install DianaScope Agent.
- .....

.....  
**TIPS:**

- Use the following command to confirm that VNC has been installed on Linux.  
`rpm -qa |grep vnc-server`
- .....

## 2.4 Requirements for Connection between the DianaScope Server and Managed Server

Provide an environment in accordance with the connection type to be used.

### ■ LAN connection

- TCP/IP network
- LAN port

-- LAN port that BMC uses depends on the type of BMC. Some BMC uses standard LAN port. Other BMC uses an exclusive LAN port (Management LAN Port). See the “NEC DianaScope Managed Servers Summary”.

(1) There are 2 types of managed servers that BMC uses standard LAN port: one type is permitted to use only LAN1 port, and the other type is permitted to use both LAN1 and LAN2 ports. See the “NEC DianaScope Managed Servers Summary”.

.....  
**CHECK:**

- Do not use a cross cable to connect the DianaScope server and managed server.
  - If the managed server is ft Server, be sure to connect the Management LAN Ports of both CPU/IO module #0 and #1 to the network.
- .....

### ■ Modem connection

- Phone line
- Modem

Use a modem that supports the following functions:

Board rate:	19.2Kbps
Data bits:	8bit
Parity:	None
Stop bits:	1bit
Flow control:	Hardware (CTS/RTS)

.....  
**CHECK:**

- Use the modem recommended for the managed server.
  - Connect the modem to the serial port 2 on the managed server.
- .....

- **Other Information**

When BMC send alert via modem, it is necessary the following:

Dial-up router or PPP server

■ **Direct connection**

● **RS-232C cross cable**

The serial port for direct connection on DianaScope server. DianaScope must be set following on the operating system:

Bits per speed:	It should be set a same value with a value of BMC configuration on a managed server. The default value of BMC configuration is 19.2Kbps.
Data bits:	8bits
Parity:	None
Stop bits:	1bit
Flow control:	Hardware (CTS/RTS)

.....  
**IMPORTANT:**

- Do not use an interlink cable.
  - Connect the RS-232C cross cable to serial port 2 on the managed server.
  - Some models of managed servers do not permit use of any RS-232C cross cable other than the specified one. See the user's guide provided with the server.
- .....

## 2.4.2 Notes on Managed Servers and Network Devices

This section explains particular notes on managed servers and network devices.

-- Use of network switch / router

When There is network switch / router between DianaScope server and the managed servers, please set the network switch / router to receive Gratuitous ARP. See each instruction manual of the switch / router about how to set it.

-- Use of a layer-2/layer-3 switching hub

Set "Disable" for the STP (Spanning Tree Protocol) function of the switching hub or the STP of the port to which a managed server is connected.

Set "Enable" for the auto-negotiation function of the port to which a managed server is connected.

-- Use of DHCP

In case that BMC on the managed server uses a standard LAN port, communication between the DianaScope Manager and System BIOS or BMC is not compatible with a DHCP environment.

Be sure to use a fixed IP address with the DianaScope server in which the DianaScope Manager is to be installed.

To use a managed server in a DHCP environment, start the DianaScope Agent.

-- Setting of Teaming for standard LAN with the OS (providing redundancy or multiplexing with multiple network adapters) for the managed server installed BMC that uses a standard LAN port:

The managed server installed BMC that uses a standard LAN port shares the embedded standard LAN controller between BMC, System BIOS and OS, but the BMC and System BIOS do not support the LAN teaming modes including AFT (Adapter Fault Tolerance) and ALB (Adaptive Load Balancing). So if the AFT mode or ALB mode was made available by OS, DianaScope Manager can communicate with BMC and System BIOS only under the following conditions while Failover does not occur.

- If RLB (Receive Load Balancing) is set with ALB (Adaptive Load Balancing), disable the RLB. (If RLB cannot be disabled, DianaScope Manager cannot communicate with BMC.)

- Make the Teaming-set address ("preferred primary") identical to the LAN1 IP address and MAC address in the BMC configuration information.

- Even if the configuration of LAN2 for the BMC on the managed server is available, do not set LAN2 in the BMC configuration information.

- Even if the configuration of LAN2 for the BMC on the managed server is available, do not set LAN2 in the BMC configuration information.
- If the teaming is set with channel bonding on Linux, please add “mode” and “primary” definition to the line of /etc/modprobe.conf or /etc/modules.conf as following.

```
options bondname mode=1 primary=eth0 miimon=100
```

- See “Appendix B. How to setup for using DianaScope Agent on the managed server that is set LAN teaming”-B.1 if you install DianaScope Agent for Windows on the managed server.  
Note that DianaScope is not available when you use RLB (Receive Load Balancing) or FEC (Fast Ether Channel) teaming mode on the managed server.

-- Setting of Teaming for LAN with the OS (providing redundancy or multiplexing with multiple network adapters) for the managed server installed BMC that uses an exclusive LAN port (Management LAN port):  
If the teaming setting was made available for the LAN port that DianaScope Agent uses, see “Appendix B. How to setup for using DianaScope Agent on the managed server that is set LAN teaming”.

-- Change of the hardware of a default gateway or an alert receiver  
In case that there is a gateway between DianaScope server and a managed server, re-configure BMC on the managed server after the change the hardware of the gateway. In case that there is not gateway between an alert receiver and a managed server, re-configure BMC on the managed server after the change the hardware of the alert receiver. The BMC on the managed server can know MAC address of the new hardware by setting the BMC configuration.

-- Use of a dialup router or a PPP server  
If an alert receiver via modem uses Windows Remote Access Service, please select “Allow any authentication including clear text” about the encryption on the Windows Remote Access Service properties.

-- Restrictions on use of the standard serial port 2 (COM2)  
The standard serial port 2 (COM2) on a managed server cannot be used for connecting another device in the following cases because the BMC occupies the serial port 2:  
- The managed server compatible with SOL and set enable on following BMC Configuration items:  
    “Remote control (WAN/Direct)”  
    “Redirection (LAN)”  
    “Redirection (WAN/Direct)”  
- Connection via modem or Direct connection has been made.  
- Direct connection has been set in the BMC configuration information. (Even if the DianaScope Manager and managed server are not connected, the BMC occupies the serial port 2 (COM2).)

.....  
**CHECK:**  
• See “NEC DianaScope Managed Servers Summary” to confirm whether that your server supports SOL.  
.....

## 2.5 Port numbers that DianaScope uses

DianaScope uses the following port numbers:

### 2.5.1 Web Client ↔ DianaScope Server

Function	Web Client		Protocol /direction	DianaScope Server	
	Module Name	Port No.		Port No.	Module Name
Management / monitoring	Web Browser	Unknown	UDP ↔	8080 (*1)	Tomcat

\*1 The port number used by Tomcat can be changed on setting of Tomcat.

### 2.5.2 DianaScope Server ↔ Managed Server

Function	Web Client		Protocol /direction	DianaScope Server	
	Module Name	Port No.		Port No.	Module Name
Remote Console (CUI, non-SOL)	DianaScope Manager	47115	UDP ↔	2069	System BIOS
Remote Console (CUI, SOL)	DianaScope Manager	47117 (*2)	UDP ↔	623	BMC
Remote Console (GUI, GUI Remote Console Setting Enabled)	DianaScope Manager	Unknown (*3)	TCP ↔	47130-47139 (*4)	DianaScope Agent
Remote Console (GUI, GUI Remote Console Setting Disabled)	DianaScope Manager	Unknown (*3)	TCP ↔	5900	GUI Remote Console Function
Remote FD	DianaScope Manager	47115	UDP ↔	2069	System BIOS
Power Control	DianaScope Manager	47117 (*2)	UDP ↔	623	BMC
Server Monitoring	DianaScope Manager	47117 (*2)	UDP ↔	623	BMC
Information Collection (through DianaScope Agent)	DianaScope Manager	Unknown (*3)	TCP ↔	47120-47129 (*4)	DianaScope Agent
Information Collection (through BMC)		47117 (*2)	UDP ↔	623	BMC
Remote Batch	DianaScope Manager	47117 (*2)	UDP ↔	623	BMC
Scheduled Running	DianaScope Manager	Unknown (*3)	TCP ↔	47120-47129 (*4)	DianaScope Agent
Operation with Command Line I/F	DianaScope Manager	47117 (*2)	UDP ↔	623	BMC
BMC configuration with network booting	DianaScope PXE Service	67	UDP	68	System BIOS
		67 or 4011	↔	Unknown	
		69		Unknown	
Alert from BMC	ESMPRO Manager	162	UDP ←	623	BMC
ESMPRO Manager Association	ESMPRO Manager Association Module	47116	UDP →	623	BMC

\*2 The DianaScope Manager’s port number used for communication with the BMC can be changed on the “Environment” screen.

\*3 “Unknown” means that the module uses one port that any module does not use.

\*4 The module uses one port of the range.

### 2.5.3 DianaScope Server ↔ EM Card

Function	Web Client		Protocol /direction	DianaScope Server	
	Module Name	Port No.		Port No.	Module Name
Information Collection	DianaScope Manager	47117 (*2)	UDP ↔	623	EM Card
	DianaScope Manager	47170-47179 (*4)	TCP/IP ↔	623	EM Card
	DianaScope Manager	47180-47189 (*4)	UDP ↔	623	EM Card
Server Monitoring	DianaScope Manager	47117 (*2)	UDP ↔	623	EM Card
BMC configuration of CPU blade	DianaScope Manager	47117 (*2)	UDP ↔	623	EM Card
Operation with Command Line I/F	DianaScope Manager	47117 (*2)	UDP ↔	623	EM Card

\*2 The DianaScope Manager uses a same port number for communication with BMC and EM card. The port number can be changed on the “Environment” screen.

\*4 The module uses one port of the range.

### 2.5.4 DianaScope Server Inside

Function	Web Client		Protocol /direction	DianaScope Server	
	Module Name	Port No.		Port No.	Module Name
DianaScope Manager	DianaScope Manager	1099	UDP ↔	1099	DianaScope Manager
BMC Configuration with DianaScope PXE Service	DianaScope Manager	Unknown (*3)	TCP ↔	47160-47169	DianaScope PXE Service
	DianaScope PXE Service	31200	UDP ↔	31200	DianaScope PXE Service
DianaScope Manager Direct connection / Modem connection	DianaScope Manager	Unknown (*3)	TCP ↔	47140-47149 (*4)	DianaScope Manager (DianaScope Modem Agent)

\*3 “Unknown” means that the module uses one port that any module does not use.

\*4 The module uses one port of the range.

## Chapter3 DianaScope Manager Installation

---

Install the DianaScope Manager in the DianaScope server in following order:

- (1) Install the JRE
- (2) Install the Tomcat
- (3) Install the DianaScope Manager
- (4) Install the DianaScope PXE Service (For Windows only)  
DianaScope PXE Service should be installed if you need.

### 3.1 DianaScope Manager Installation for Windows

#### 3.1.1 Check before installation

Check the followings:

- See chapter 2.1 to check the system requirement of DianaScope server.
- Login to Windows as Administrator.
- If you need NEC ESMPRO Manager Association Module, You install NEC ESMPRO Manager, and then install DianaScope Manager.

#### 3.1.2 Start the installation menu

■ **If you install the DianaScope by using downloaded modules:**

Open the following files of the DianaScope Installer on web browser.

¥dianascope¥menu¥en¥menu.html

.....  
**CHECK:**

- Installation menu must be open using Microsoft Internet Explorer.
- .....

■ **If you install the DianaScope by using NEC EXPRESSBUILDER**

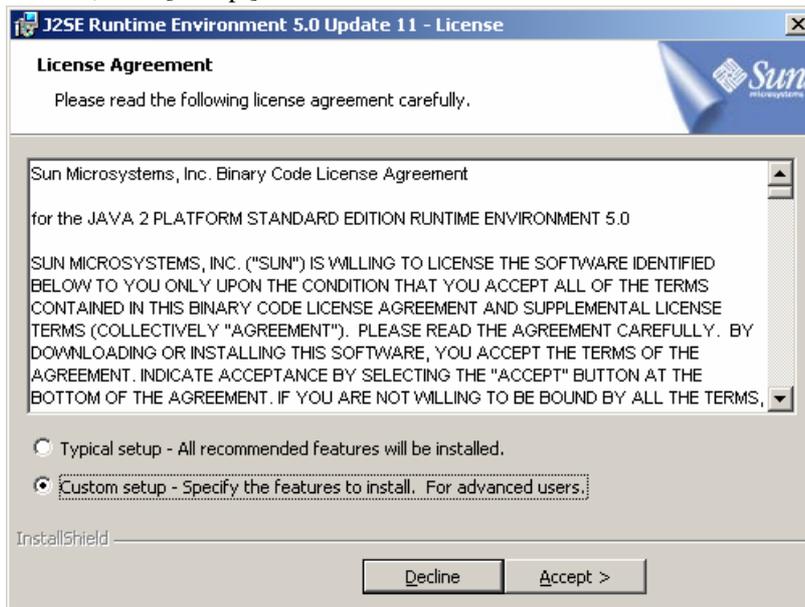
You can open the installation menu as follows:

- (1) Boot Windows on the PC in which you want to install the DianaScope Manager.
- (2) Insert the NEC EXPRESSBUILDER CD-ROM into the CD-ROM drive.  
The master control menu will be displayed by the Autorun function.
- (3) Click [Software Setup] → [NEC DianaScope].  
The DianaScope installation menu for Windows will appear.

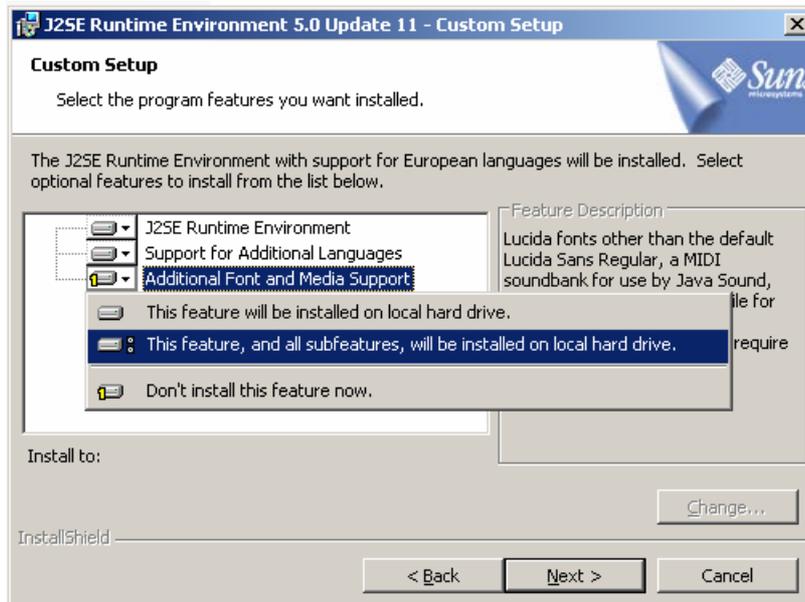
### 3.1.3 Install the JRE

Be sure to install the JRE of the version specified in chapter 2.1.

- (1) Click “Java Runtime Environment (JRE)” on the installation menu. . The “Download Files” dialog box will appear. Click [Open].  
The JRE installer will be started.
- (2) Select Custom Setup. Carefully read the terms of the license agreement for the product, and if you agree to the terms, click [Accept].



- (3) Designate “Support for Additional Languages” as installation object.



- (4) Install the JRE according to the installer’s instructions.

- (5) When the installation is completed, add the System Environment Variable “JAVA\_HOME” on the Windows system. For “Variable Value”, enter the name of the directory in which you have installed the JRE.

If JRE version is 5.0 Update11, the default directory for the installation is “C:\Program Files\Java\jre1.5.0\_11”.



.....  
**TIPS:**

- You can change the System Environment Variable on Windows as follows:  
"Control Panel" → "System" → "Advanced"
- .....

- (6) Rebooting the operating system is required to enable the Environment Variable. Remove the NEC EXPRESSBUILDER CD-ROM from CD-ROM drive and then reboot the system.

### 3.1.4 Install the Tomcat

Install the Tomcat after JRE is installed.

Be sure to install the Tomcat of the version specified in chapter 2.1.

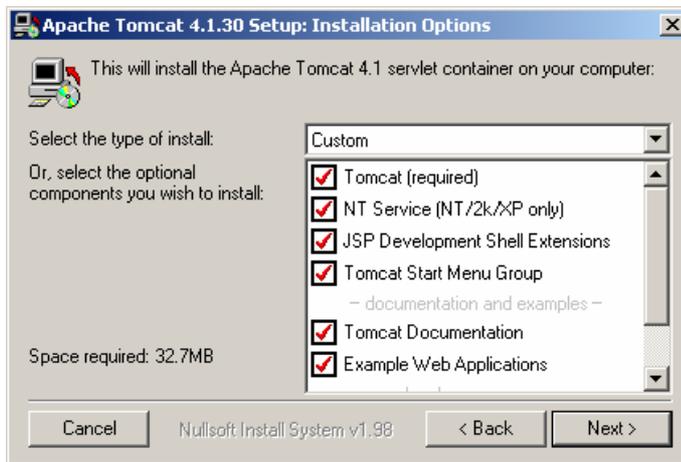
- (1) Click “Tomcat” on the installation menu. . The “Download Files” dialog box will appear. Click [Open]. The Tomcat installer will be started.

.....  
**CHECK:**

- The following explains notes on installing the Tomcat. Follow the installer’s instructions in addition to the notes.
- .....

- (2) Enable “NT Service [NT/2k/XP only]” on the “Installation Options” screen (putting a checkmark in the checkbox). Do not change the settings of the other checkboxes.

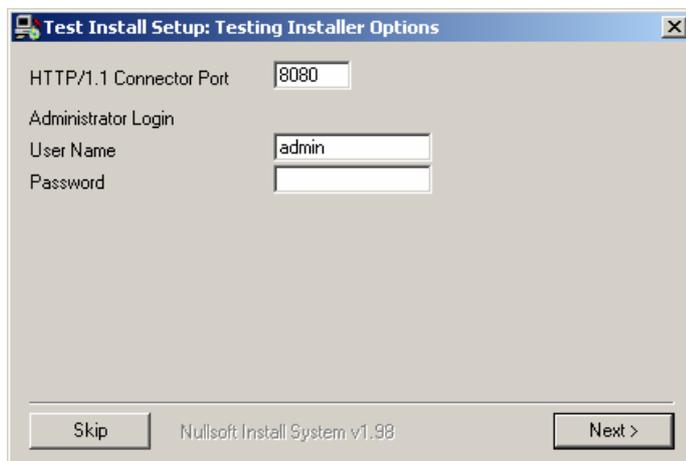
Screen Example is follows:



.....  
**TIPS:**

- It is okay to disable each check box of “documentation and examples”.
- .....

- (3) Enter the port number for “HTTP/1.1 Connector Port” on the “Testing Installer Options” screen. This port number is necessary for operating the DianaScope Manager through the browser.



.....  
**CHECK:**

- If an existing Web server or application is using the port number 8080, enter a different port number for “HTTP/1.1 Connector Port”.
  - “User Name” and “Password” for Tomcat is not used with the DianaScope Manager.
- .....

### 3.1.5 Install the DianaScope Manager

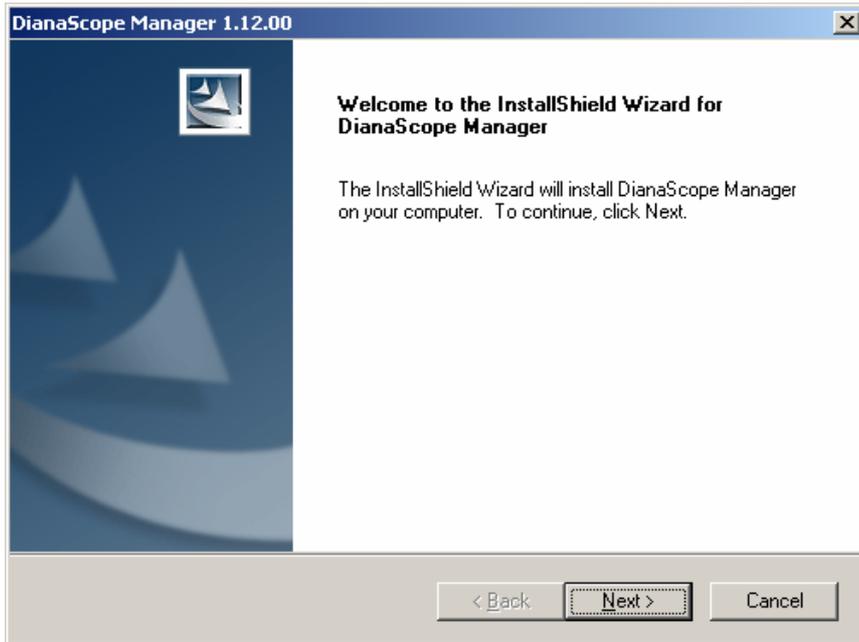
Install the DianaScope Manager after JRE and Tomcat are installed.

Check before perform the installation.

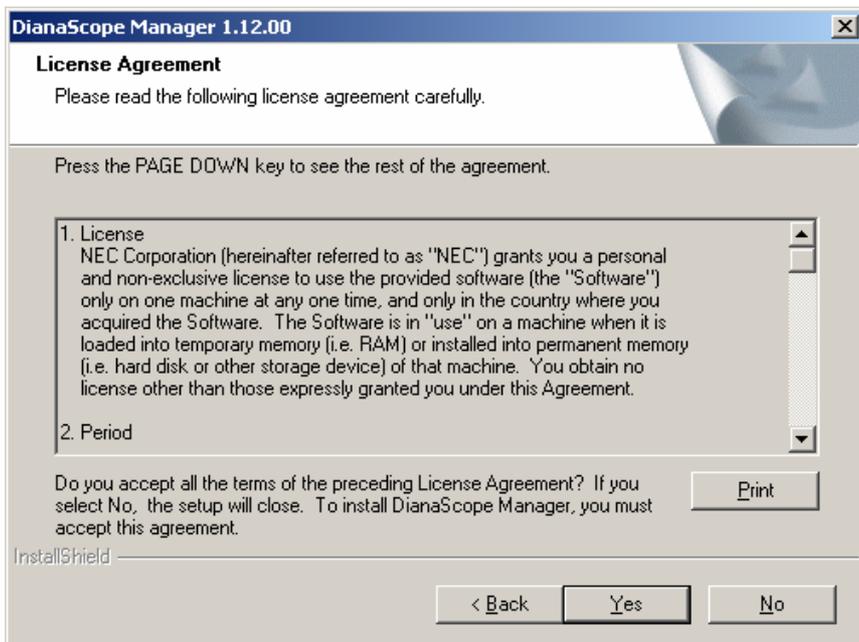
(1) Login to Windows as Administrator.

(2) Click [NEC DianaScope Manager] in the installation menu. The “Download Files” dialog box will appear. Click [Open].

(3) The DianaScope Manager installer will be started. Click [Next].



(4) The terms of the end user license agreement for the product will be displayed. Carefully read the terms, and if you agree to the terms, click [Yes].



- (5) The Web clients to login to the DianaScope Manager can be specified on the following screen. Enter the IP address range in which login to the DianaScope Manager is permitted. Click [Next].

**TIPS:**

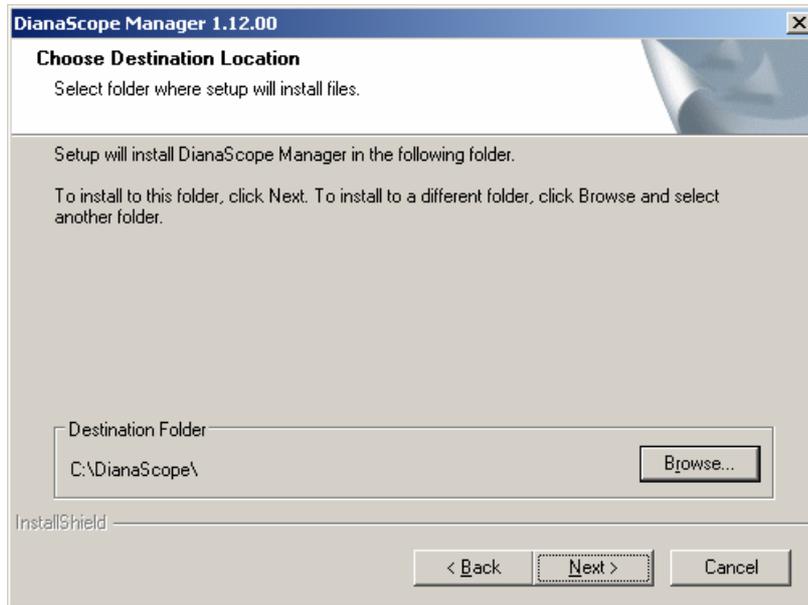
- You can also set this item after finishing the installation. If this item is not set, DianaScope Manager permits login from a web browser on the DianaScope server.

The screenshot shows a dialog box titled "DianaScope Manager 1.12.00" with the subtitle "Input of the IP address range in which login is to be permitted". The main text reads: "Enter the 'Web clients' IP address range in which login is permitted." Below this is a note: "<Note> Without an IP address range being set, you cannot log in through another Web client." There are two input fields: "Start IP address" and "End IP address". At the bottom, there are three buttons: "< Back", "Next >", and "Cancel". The "InstallShield" logo is visible in the bottom left corner.

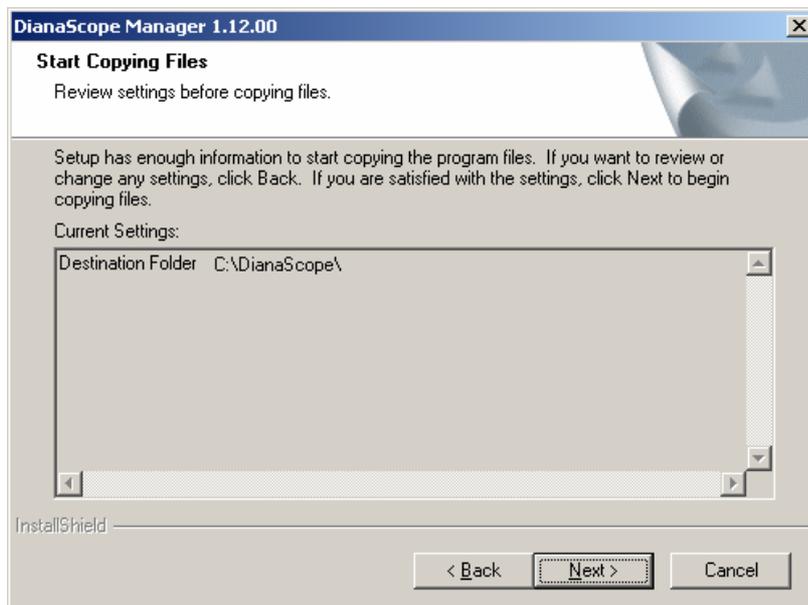
- (6) Register an administrator of DianaScope. Enter the administrator name and password. Click [Next].

The screenshot shows a dialog box titled "DianaScope Manager 1.12.00" with the subtitle "Input of the administrator name and password". The main text reads: "Please enter the administrator name and password." There are three input fields: "Administrator name", "Password", and "Password(check)". At the bottom, there are three buttons: "< Back", "Next >", and "Cancel". The "InstallShield" logo is visible in the bottom left corner.

- (7) Enter the name of directory to install. Click [Next]



- (8) Information about the installation will be displayed. Read the information, and click [Next]. The installation will be started.



When the installation is completed, the DianaScope Manager's services are started and are available at any time.  
The shortcut for login to the DianaScope is provided on the desktop and start menu on Windows.

- (9) If rebooting the operating system is required, remove NEC EXPRESSBUILDER CD-ROM from CD-ROM drive and reboot the system.

### 3.1.6 Install the DianaScope PXE Service

Install the DianaScope PXE Service after the DianaScope Manager is installed.

Check before perform the installation.

- The PC that is installed DianaScope PXE Service is DHCP service.
- Login to Windows as Administrator.
- Other PXE service or software that has PXE server function is not started.

.....  
**CHECK:**

- NEC DeploymentManager has PXE server function. Stop it before installing DianaScope PXE service.
  - See 7.2.2.1”Notes of Configuration with DianaScope PXE Service” to stop NEC DeploymentManager and other PXE service or software.
- .....

Perform installation in following order:

- (1) Click [NEC DianaScope PXE Service] in the installation menu. The “Download Files” dialog box will appear. Click [Open].
- (2) The DianaScope PXE Service installer will be started. Install the DianaScope PXE Service according to the installer’s instructions.

.....  
**TIPS:**

- DianaScope PXE service does not start after the installation is completed. You can start the DianaScope PXE Service from the DianaScope when you need.
- .....

## 3.2 DianaScope Manager Un-installation for Windows

To uninstall the software, perform it in following order:

- (1) Uninstall the DianaScope PXE Service  
Check before perform the un-installation.
  - Login to Windows as Administrator.
  - Stop the DianaScope PXE Service.
  - Exit the tools of DianaScope PXE Service.
- (2) Uninstall the DianaScope Manager.
- (3) Uninstall the Tomcat.
- (4) Uninstall the JRE
- (5) Uninstall the NEC ESMPRO Manager if you want.

Open “Add/Remove Programs” of control panel on Windows to uninstall them. Select each software name and click [Delete]. Uninstall it according to the on-screen instructions.

.....  
**IMPORTANT:**

- On Windows 2000 Server/Professional, please uninstall the Tomcat without rebooting after DianaScope Manager is uninstalled.
- .....

### 3.3 JRE Update for Windows

To update JRE on the DianaScope server which DianaScope Manager ver.1.05.03 and above has been installed on, perform it in following order.

An example for JRE 5.0 Update11 is shown.

- (1) Uninstall the Tomcat.
- (2) Install the JRE.

.....  
**IMPORTANT:**

- Do NOT uninstall the old version of the JRE before update of the DianaScope Manager.
- .....

- (3) Edit the System Environment Variable “JAVA\_HOME” on the Windows system. For “Variable Value”, enter the name of the directory in which you have installed the JRE.

If JRE version is 5.0 Update11, the default directory for the installation is “C:\Program Files\Java\jre1.5.0\_11”.Rebooting the operating system is required to enable the Environment Variable.

- (4) Install the Tomcat.
- (5) Install the DianaScope Manager ver.1.09.00 and above with update mode.

.....  
**CHECK:**

- The Tomcat and the DianaScope Manager use JRE version that is displayed in the Tomcat installer.
  - If the update installation of the DianaScope Manager fails, please execute the following operation:
    - (1) Open “Administrative Tools” – “Services” of the control panel on Windows, and change the startup type of the DianaScope Manager service from “automatic” to “manual”.
    - (2) Reboot the DianaScope server.
    - (3) Install the DianaScope Manager ver.1.09.00 and above with update mode.
    - (4) Open “Administrative Tools” – “Services” of the control panel on Windows, and change the startup type of the DianaScope Manager service from “manual” to “automatic”.
- .....

## 3.4 DianaScope Manager Installation for Linux

### 3.4.1 Check before installation

Check the followings:

- See chapter 2.1 to check the system requirement of DianaScope server.
- Login to Linux as root user, or get authority of root by su command.

### 3.4.2 Install the JRE

JRE installer is attached to the DianaScope installer. JRE installer (Linux) is in the below directory.

/dianascope/jre\_x

Regardless of below input examples, be sure to install the JRE of the version specified in chapter 2.1.

- (1) Copy JRE the installer into any directory.  
The following is an example of copying from NEC EXPRESSBUILDER to /usr/local/bin.  
(The mount path is dependent on the OS. Specify the right path.)

```
cp /mnt/cdrom/dianascope/jre_x/jre-1_5_0_11-linux-i586-rpm.bin /usr/local/bin
```

- (2) Move to the directory containing the JRE installer.  
The following is an example of copying into /usr/local/bin:

```
cd /usr/local/bin
```

- (3) Extract the JRE installer.
- (4) Install the JRE. JRE will be installed in the directory named JRE version under JRE/usr/java.

```
./jre-1_5_0_11-linux-i586-rpm.bin
```

- (5) Add the environment variable "JAVA\_HOME". Variable value should be the name of the directory containing the JRE.

bash:

```
export JAVA_HOME=/usr/java/jre1.5.0_11
```

tssh:

```
setenv JAVA_HOME /usr/java/jre1.5.0_11
```

- (6) Set the path of the JRE.

bash:

```
export PATH=$JAVA_HOME/bin:$PATH
```

tssh:

```
setenv PATH $JAVA_HOME/bin:$PATH
```

### 3.4.3 Install the Tomcat

Install the Tomcat after JRE is installed.

Tomcat installer is attached to the DianaScope installer. Tomcat installer is in the below directory.

/dianascope/tomcat\_x

Regardless of below input examples, be sure to install the JRE of the version specified in chapter 2.1.

- (1) Copy the Tomcat installer into the directory in which the Tomcat is to be installed.  
The following is an example of installation from NEC EXPRESSBUILDER to /usr/local/bin.  
(The mount path is dependent on the OS. Specify the right path.)

```
cp /mnt/cdrom/dianascope/tomcat_x/jakarta-tomcat-4.1.30.tgz /usr/local/bin
```

- (2) Move to the directory containing the Tomcat installer.  
The following is an example of installation into /usr/local/bin:

```
cd /usr/local/bin
```

- (3) Expand the Tomcat.

```
tar xvzf ./jakarta -tomcat-4.1.30.tgz
```

.....  
**CHECK:**

- If you procure the Tomcat individually and install it, you need to edit the "server.xml" of the Tomcat with text editor after the Tomcat is expanded.  
The "server.xml" is housed in the conf directory under the directory that is installed the Tomcat. Add the following 2 lines in the element <HOST>.  
<Context path="/dianascope" docBase="/usr/dianascope/manager"  
workDir="/usr/dianascope/manager/work/org/apache/jsp" debug="0" reloadable="true">  
</Context>
- .....

- (4) Add the environment variable "CATALINA\_HOME." Enter the name of the directory containing the Tomcat.

The following is an example of installation into /usr/local/bin:

bash:

```
export CATALINA_HOME=/usr/local/bin/jakarta-tomcat-4.1.30
```

tcsh:

```
setenv CATALINA_HOME /usr/local/bin/jakarta-tomcat-4.1.30
```

### 3.4.4 Install the DianaScope Manager

Install the DianaScope Manager after JRE and Tomcat are installed.

Check before perform the installation.

Login to Linux as root user, or get authority of root by su command.

DianaScope Manager installer (Linux) is in the below directory.

/dianascope/mgr\_x

In below input examples, the installer file name is shown like “dianascope-N.NN-x.i386.rpm.bin”. “N.NN” means the version.

- (1) Stop the Tomcat is if it is started.

```
$CATALINA_HOME/bin/shutdown.sh
```

.....  
**TIPS:**

- When you try to stop the Tomcat even though the Tomcat has been stopped, an exception will be occurred. After Tomcat is installed for the first time, the Tomcat is stopped.
- .....

- (2) Copy the DianaScope Manager installer into any directory.  
 The following is an example of copying from NEC EXPRESSBUILDER to /usr/local/bin.  
 (The mount path is dependent on the OS. Specify the right path.)

```
cp -r /mnt/cdrom/dianascope/mgr_x/ /usr/local/bin
```

- (3) Move to the directory containing the DianaScope Manager installer.  
 The following is an example of installation into /usr/local/bin:

```
cd /usr/local/bin/mgr_x
```

- (4) Start the DianaScope Manager installer.  
 The DianaScope Manager will be installed under usr/dianascope.

```
./dianascope-N.NN-x.i386.rpm.bin
```

- (5) The terms of the end user license agreement for the product will be displayed. Carefully read the terms, and if you agree to the terms, input “yes” and “Enter” key.

.....  
**CHECK:**

- When the DianaScope Manager has already been installed, a message to confirm whether you continue the installation is displayed. If you continue the installation, input “add” and “Enter” key. If you quit the installation, input “exit” and “Enter” key.
- .....

- (6) A message to confirm whether you set the automatic start of the Tomcat is displayed. Input “add” and “Enter” key.

With this setting, at the time of next the DianaScope server booting, the Tomcat starts automatically.

- (7) A message to register an administrator of DianaScope. Enter the administrator name and password.

- (8) A message to confirm whether you specify web clients to login to the DianaScope Manager is displayed. If you specify them, input “yes “ and “Enter” key. And then input IP address range in which login to the DianaScope Manager is permitted.

.....  
**TIPS:**

- You can also set this item after finishing the installation. If this item is not set, DianaScope Manager permits login from a web browser on the DianaScope server.
- .....

When the installation is completed, the following message is displayed:

“Installation of DianaScope Manager is now completed.”

The Tomcat service and the DianaScope Manager’s services are started and are available at any time.

## 3.5 DianaScope Manager Un-installation for Linux

To uninstall the software, perform it in following order:

- (1) Uninstall the DianaScope Manager
- (2) Uninstall the Tomcat
- (3) Uninstall the JRE

### 3.5.1 Uninstall the DianaScope Manager

In below input examples, the installer file name is shown like “dianascope-N.NN-x.i386.rpm.bin”. “N.NN” means the version.

- (1) Start the DianaScope Manager installer

```
./dianascope-N.NN-x.i386.rpm.bin
```

- (2) The terms of the end user license agreement for the product will be displayed. Input “yes” and “Enter” key.
- (3) A message to confirm whether you continue the installation is displayed. Input “delete “ and “Enter” key. When the un-installation is completed, the following message is displayed: “Uninstallation of DianaScope Manager is now completed.”

### 3.5.2 Uninstall the Tomcat

- (1) Move to the directory containing the Tomcat.  
The following is an example of installation into /usr/local/tomcat:

```
cd /usr/local/bin
```

- (2) Stop the Tomcat.

```
$(CATALINA_HOME)/bin/shutdown.sh
```

- (3) Uninstall the Tomcat.  
The following is an example that the version of the Tomcat is 4.1.30.

```
rm -rf jakarta-tomcat-4.1.30
```

### 3.5.3 Uninstall the JRE

The following is an example that the version of the JRE is 5.0 Update11.

```
rpm -e jre-1.5.0_11-fcs
```

### 3.6 JRE Update for Linux

To update JRE on the DianaScope server which DianaScope Manager has been installed on, perform it in following order.

An example for JRE 5.0 Update11 is shown.

- (1) Stop the DianaScope Manager.

```
/etc/rc.d/init.d/dianascope stop
```

- (2) Stop the Tomcat.

```
/etc/rc.d/init.d/tomcat stop
```

- (3) Install update version of JRE. JRE will be installed in the directory named JRE version under /usr/java.

```
rpm -Uvh ./jre-1_5_0_11-linux-i586-rpm.bin
```

- (4) Edit the environment variable file.  
Open the following file with text editor.

bash:

```
vi ~/.bashrc
```

tcsh:

```
vi ~/.tcshrc
```

Edit the path of JRE and save the file.

bash:

```
export JAVA_HOME=/usr/java/jre1.5.0_11
export PATH=/usr/java/jre1.5.0_11/bin:$PATH
```

tcsh:

```
setenv JAVA_HOME=/usr/java/jre1.5.0_11
setenv PATH /usr/java/jre1.5.0_11/bin:$PATH
```

- (5) Make the environment variable effective.

bash:

```
source ~/.bashrc
```

tcsh:

```
source ~/.tcshrc
```

- (6) Install the DianaScope Manager with update mode.

Move to the directory containing the DianaScope Manager installer, and start the DianaScope Manager installer.

A message to confirm whether you continue the installation is displayed. Input “add” and “Enter” key.

```
./dianascope-N.NN-x.i386.rpm.bin
```

.....  
**CHECK:**

- The Tomcat and the DianaScope Manager use JRE version that is displayed in the Tomcat installer.
- .....

### 3.7 Login

After installation of the DianaScope Manager is completed, confirm that you can log into the DianaScope Manager.

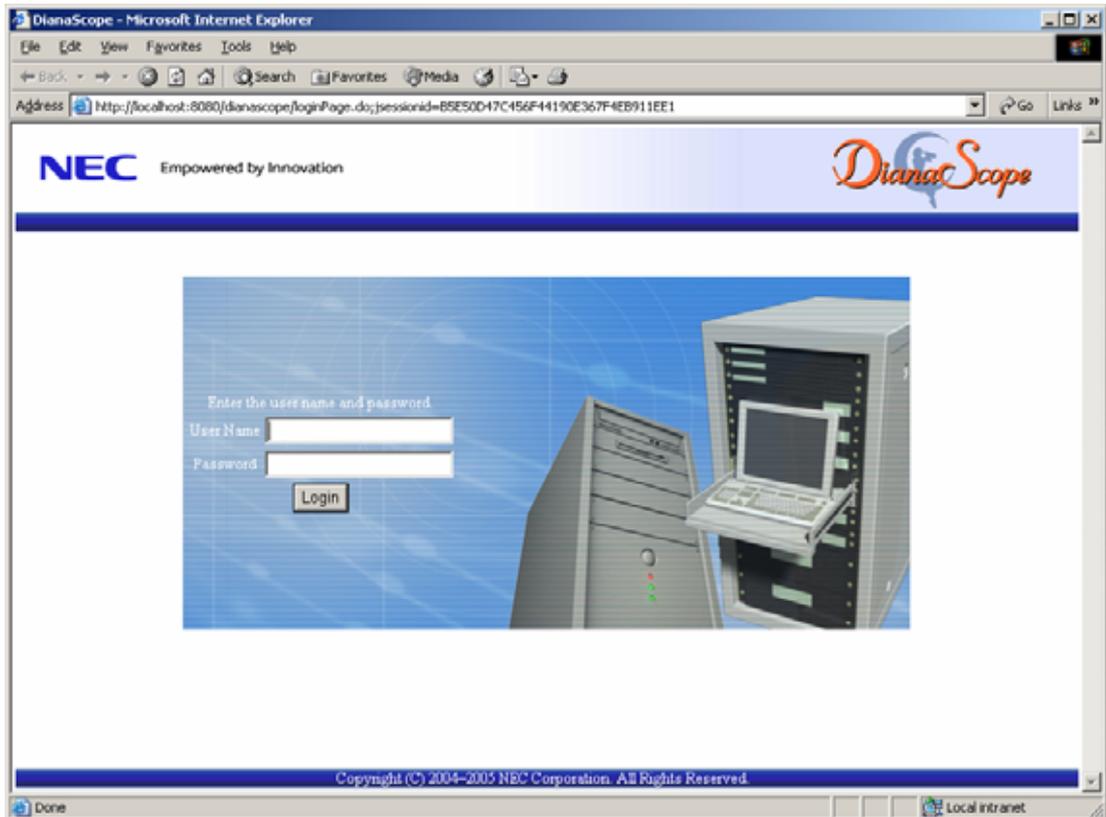
- (1) Make access to the following address using the Web browser on the Web client.  
URL: `http:// "the computer name installed the DianaScope Manager" : "port number that the Tomcat uses" /dianascope/`

An Example of address to access from the web browser on the DianaScope server is shown.  
"http://localhost:8080/dianascope/"

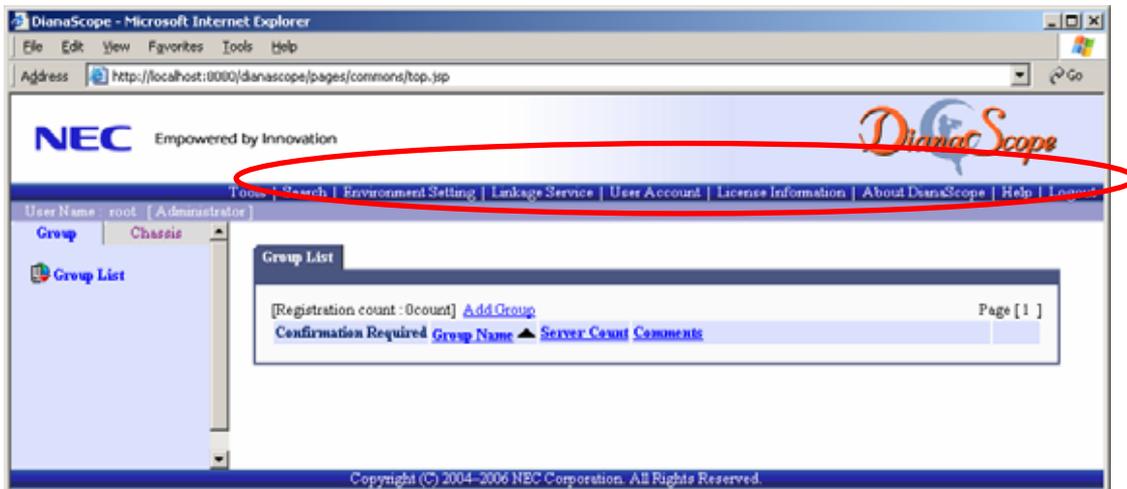
.....  
**TIPS:**

- When the DianaScope is installed on Windows, it is possible to start from start menu or the shortcut on the desktop on Windows.
- .....

- (2) The login screen of the DianaScope will be open.  
Input the administrator name and the password that has registered at the installation, and then click "login".



When the login is successful, the following screen will appear:



.....  
**CHECK:**

- “Tools”, “Search”, “Environment Setting” and other commands are displayed in the bar.  
 This bar is called “Header menu”.
- .....

### 3.8 Register the Server License

One server license is needed to register one managed server on to the DianaScope. Click “License Information” to register the server license key.

### 3.9 Setting Environment

You can change the optional setting of the DianaScope Manager. Click “Environment Setting” on the “Header menu” to check the setting. For details, see the DianaScope’s online help.

#### 3.9.1 Set a modem

The modem that is used to connect with a managed server should be set on the operating system on the DianaScope server.

If DianaScope server has plural modem driver on Windows, input the modem name to use the connection in the DianaScopeModemAgent.ini file under the Sytem32 directory. The modem names are shown on device manager on Windows. The following is an example of DianaScopeModemAgent.ini file.

```
modem=Standard 56000 bps modem
```

### 3.10 SSL

If you need to login to the DianaScope Manager using SSL, you should change the setting of the Tomcat. Perform the procedure that is necessary in order to use SSL with the Tomcat as follows:

(1) Create a key

The Key tool is needed for creating the key using with SSL. The Key tool is contained the JRE. Create the key as follows:

Windows:

```
%JAVA_HOME%\bin\keytool -genkey -alias tomcat -keyalg RSA
```

Linux:

```
$JAVA_HOME/bin/keytool -genkey -alias tomcat -keyalg RSA
```

.....  
**TIPS:**

- JAVA\_HOME is the name of the directory. It is set at JRE installation procedure.
- .....

Some messages are displayed with dialog style. Input the information about the creator of the key. You need to set the same password as the keystore password to the key password for <sdo>. The following is shown an example.

```
Enter keystore password: *****
What is your first and last name?
  [Unknown]: Scott Oaks
What is the name of your organizational unit?
  [Unknown]: SMCC
What is the name of your organization?
  [Unknown]: Sun Microsystems
What is the name of your City or Locality?
  [Unknown]: New York
What is the name of your State or Province?
  [Unknown]: NY
What is the two-letter country code for this unit?
  [Unknown]: US
Is <CN=Scott Oaks, OU=SMCC, O=Sun Microsystems, L=New York, S=NY, C=US> correct?
  [no]: yes

Enter key password for <sdo>
  (RETURN if same as keystore password): *****
```

Confirm that the key was created.

Windows:

```
%USERPROFILE%\%.keystore
```

Linux:

```
~/ .keystore
```

.....  
**TIPS:**

- %USERPROFILE% means C:\Document and Settings\  - ~/ means a home directory for login user.
- .....

(2) Change the setting of the Tomcat

Edit the server.xml file to enable SLL. The server.xml is in the directory containing the Tomcat.

Open the server.xml file with an editor tool, search the description of <Connector> which is specified port number 8443, and modify the description to a comment form with “<!--” and “-->”.

Modify the port number if you need.

Add the keystore file path and the password that is specified at the time creating the keystore, in the description of <Factory>.

```

<!-- NOTES: Delete these lines.
<Connector className="org.apache.coyote.tomcat4.CoyoteConnector"
    acceptCount="100" bufferSize="2048" compression="off"
    connectionLinger="-1" connectionTimeout="60000"
    connectionUploadTimeout="300000" debug="0"
    disableUploadTimeout="true" enableLookups="true"
    maxKeepAliveRequests="100" maxProcessors="75"
    minProcessors="5"
    port="8443" NOTES: Change it if you need.
    protocolHandlerClassName="org.apache.coyote.http11.Http11Protocol"
    proxyPort="0" redirectPort="443" scheme="https"
    secure="true" serverSocketTimeout="0"
    tcpNoDelay="true" useURIVValidationHack="false">
<Factory className="org.apache.coyote.tomcat4.CoyoteServerSocketFactory"
    clientAuth="false"
    keystoreType="JKS" protocol="TLS"
    keystoreFile="<the directory that contains keystore>/.keystore"
    keystorePass="<the password>" NOTES: Add these lines.
/>
</Connector>
--> NOTES: Delete these lines.
    
```

(3) Reboot the DianaScope server

Reboot the DianaScope server installed the Tomcat and the DianaScope Manager.

(4) Login

Confirm to login to the DianaScope Manager with “https:”.

Make access to the following address using the Web browser on the Web client.

URL: https:// the computer name installed the DianaScope Manager:” port number that is specified in server.xml”/dianascope/

An Example of address to access from the web browser on the DianaScope server is shown.

”https://localhost:8443/dianascope/”

## Chapter4 DianaScope Agent Installation

---

### 4.1 DianaScope Agent Installation for Windows

The installation for DianaScope Agent Ver.2.00.00 and above is explained.

Install the DianaScope Agent in the managed server in following order:

(1) Install the JRE

If you use only BMC configuration function of DianaScope Agent, it is unnecessary to install JRE.

(2) Install the GUI remote console function

Please install it if you use the GUI remote console function that displays the graphic screen of the managed server after Windows is booted.

(3) Install the DianaScope Agent

DianaScope Agent includes BMC configuration Function and DianaScope Agent service with which that DianaScope Manager requires to communicate for completing the remote management.

(4) Change the LAN port that DianaScope Agent uses

Do the setting only if BMC on the managed server uses an exclusive LAN port (Management LAN port).

#### 4.1.1 Check before installation

Check the followings:

-- See chapter 2.3 to check the system requirement of a managed server and the DianaScope Agent.

-- Login to Windows as Administrator.

#### 4.1.2 Start installation menu

Open the DianaScope Installation menu. See 3.1.2"Start the installation menu".

#### 4.1.3 Install the JRE

Be sure to install the JRE of the version specified in chapter 2.3.

(1) Click "Java Runtime Environment (JRE)" on the installation menu. . The "Download Files" dialog box will appear. Click [Open].

The JRE installer will be started.

(2) Install the JRE according to the installer's instructions.

#### 4.1.4 Install the GUI remote console function

Be sure to install the GUI remote console function of the version specified in chapter 2.3.

- (1) Click “GUI remote console function” on the installation menu. . The “Download Files” dialog box will appear. Click [Open].  
The installer will be started.
- (2) Install the module according to the installer’s instructions.

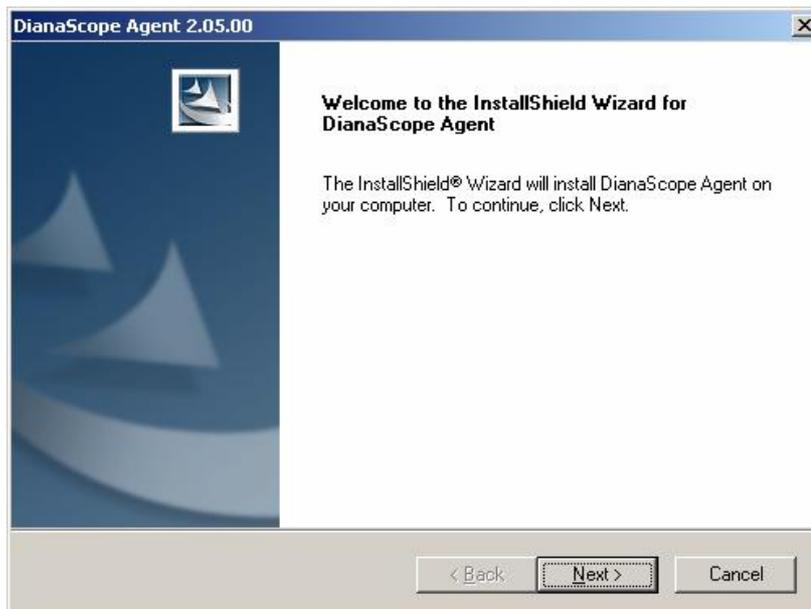
#### 4.1.5 Install the DianaScope Agent

Check before perform the installation.

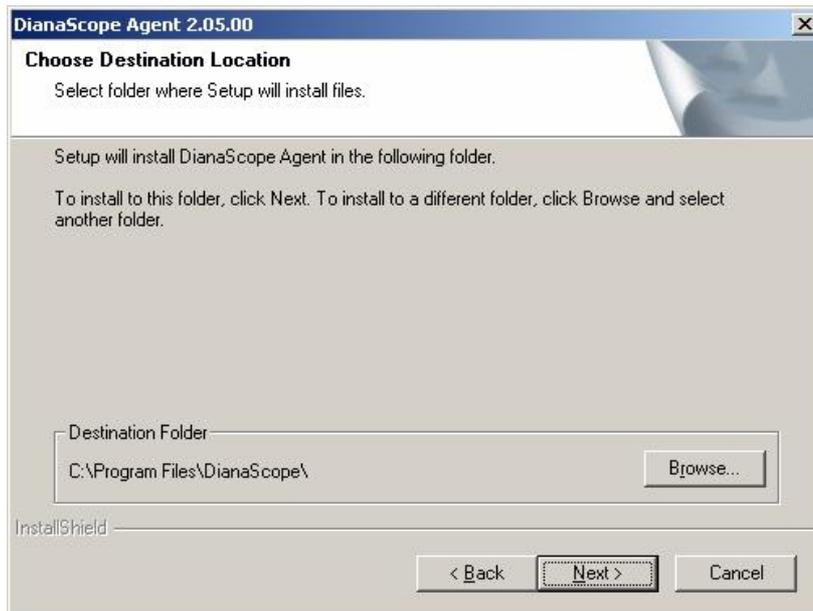
-- Login to Windows as Administrator.

-- Confirm that JRE has been installed, if you select the DianaScope Agent service. See chapter 2.3 for JRE version.

- (1) Click “NEC DianaScope Agent” on the installation menu. . The “Download Files” dialog box will appear. Click [Open].  
The DianaScope Agent installer will be started.
- (2) The DianaScope Agent installer will be started. Click [Next]..



- (3) Enter the name of directory to install. Click [Next].



- (4) Select the features to install. The BMC configuration function is required. And then, click [Next].



.....  
**TIPS:**

- If BMC configuration feature is not select, you cannot advance.
- .....

- (5) This dialog box is shown with following condition:
- GUI remote console function has been installed.
  - DianaScope Agent service has been selected.

Enter GUI remote console setting. Click [Next].

.....  
**TIPS:**

- You can also set this item after finishing the installation.
- .....

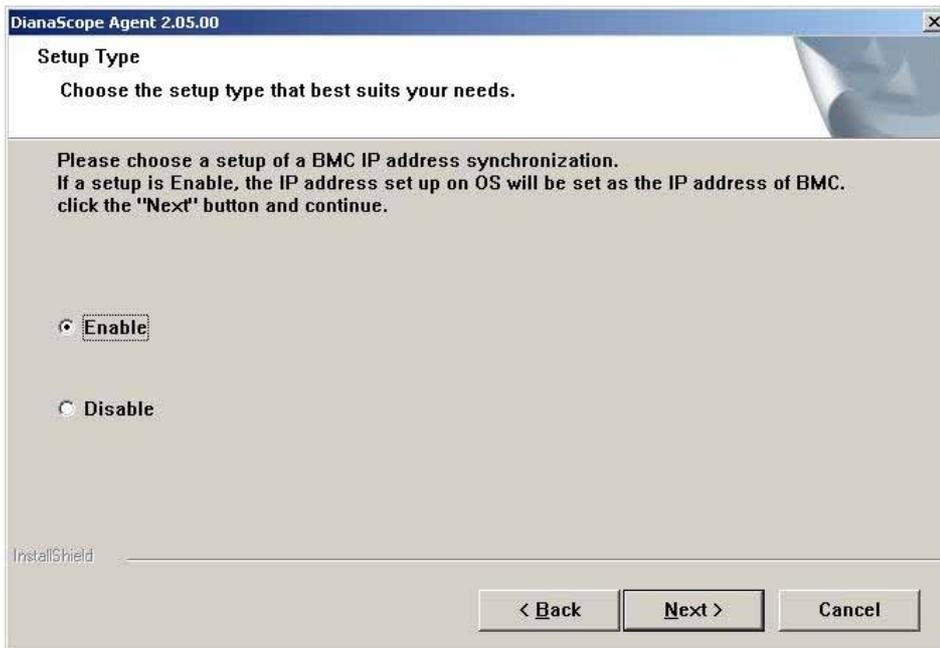


- (6) This dialog box is shown with following condition:
- The managed server has the BMC that uses an exclusive LAN port (Management LAN Port).
  - DianaScope Agent service has been selected.

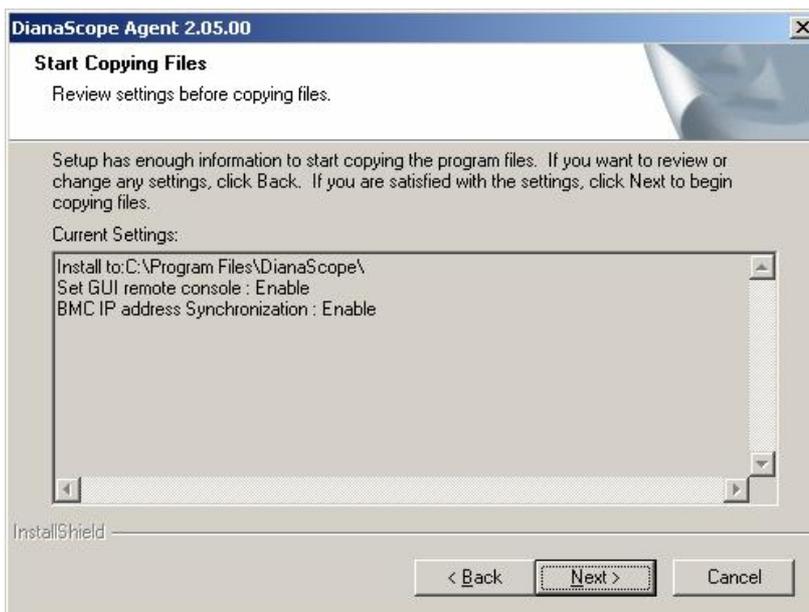
Enter BMC IP address synchronization setting. Click [Next].

**TIPS:**

- You can also set this item after finishing the installation.



- (7) Information about the installation will be displayed. Read the information, and click [Next]. The installation will be started.



When the installation is completed, the DianaScope Agent service is started and available at any time.

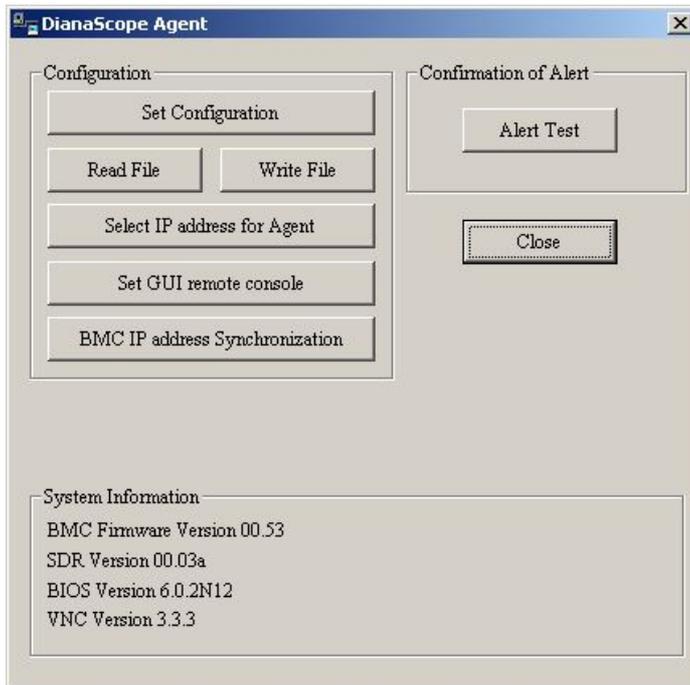
#### 4.1.6 Confirm whether the setting of DianaScope Agent opens

After the installation is completed, do the following operation to open the main dialog box of DianaScope Agent.

(1) Click “DianaScope Agent” – “DianaScope Agent” from [start] on Windows

You can operate BMC configuration etc in the dialog box. (Available functions of the dialog box depend on the kind of BMC.)

The following screen shows example for the managed server that the BMC uses standard LAN port.



.....

**TIPS:**

- Following functions are available only if DianaScope Agent service is started.
    - Select IP address for Agent
    - Set GUI remote console
    - BMC IP address Synchronization
- .....

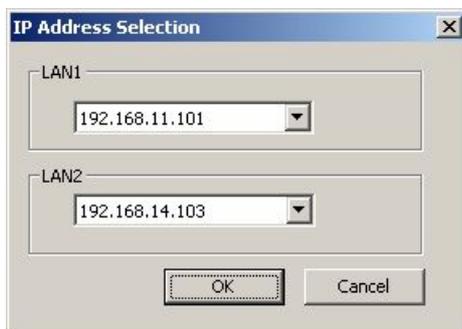
### 4.1.7 Change the LAN port that DianaScope Agent uses

Do the setting only if BMC on the managed server uses an exclusive LAN port (Management LAN port).

.....  
**TIPS:**

- If the BMC on the managed server uses standard LAN port, you do not need the setting because DianaScope Agent uses same LAN as BMC.
- .....

- (1) Click “DianaScope Agent” – “DianaScope Agent” from [start] on Windows to open the setting dialog box of the DianaScope Agent.
- (2) Click [Set Agent IP address] on the dialog box.
- (3) Select IP address for DianaScope Agent.



.....  
**CHECK:**

- Please execute [Set Agent IP address] again if you change the LAN ports or a new LAN card is inserted to the managed server. Perform the “Check Connection” of DianaScope Manager after the setting is changed.
- .....

## 4.2 DianaScope Agent Uninstallation for Windows

To uninstall the software, perform it in following order:

- (1) Uninstall the DianaScope Agent  
Close the dialog box of the DianaScope Agent if it has been opened, and then uninstall the DianaScope Agent.
- (2) Uninstall GUI remote console function
  - (2)-(a) Uninstall the Win VNC service  
Click “VNC” – “Administrative Tool” – “Remove Win VNC Service” from [start] on Windows.
  - (2)-(b) Uninstall the Win VNC
- (3) Uninstall the JRE

Open “Add/Remove Programs” of control panel on Windows to uninstall them except (2)-(a) Win VNC service. Select each software name and click [Delete]. Uninstall it according to the on-screen instructions.

## 4.3 JRE Update for Windows

To update JRE on the managed server which DianaScope Agent has been installed on, perform it in following order.

- (1) Install the JRE.

.....  
**IMPORTANT:**

- Do NOT uninstall the old version of the JRE before update of the DianaScope Manager.
- .....

- (2) Install the DianaScope Agent with update mode.

## 4.4 DianaScope Agent Installation for Linux

The installation for DianaScope Agent Ver.2.00.00 and above is explained.

To install the software, perform it in following order:

(1) Install the JRE

If you install DianaScope Agent service with which that DianaScope Manager requires to communicate for completing the remote management, please install the JRE.

(2) Copy and extract the DianaScope Agent installer

Copy the installer to the hard disk on the managed server and extract it.

(3) Install DianaScope Agent

GUI remote console function and DianaScope Agent can be installed at the same time.

(4) Change the LAN port that DianaScope Agent uses

Do the setting only if BMC on the managed server uses an exclusive LAN port (Management LAN port).

### 4.4.1 Check before installation

Check the followings:

-- See chapter 2.3 to check the system requirement of managed server and DianaScope Agent.

-- Login to Linux as root user, or get authority of root by su command.

### 4.4.2 Install the JRE

JRE installer is attached to DianaScope installer. JRE installer (Linux) is in the below directory.

/dianascope/jre\_x

Regardless of below input examples, be sure to install the JRE of the version specified in chapter 2.1.

(1) Copy JRE the installer into any directory.

The following is an example of copying from NEC EXPRESSBUILDER to /usr/local/bin.

(The mount path is dependent on the OS. Specify the right path.)

```
cp /mnt/cdrom/dianascope/jre_x/jre-1_5_0_11-linux-i586-rpm.bin /usr/local/bin
```

(2) Move to the directory containing the JRE installer.

The following is an example of copying into /usr/local/bin:

```
cd /usr/local/bin
```

(3) Install the JRE. JRE will be installed in the directory named JRE version under JRE/usr/java.

```
./jre-1_5_0_11-linux-i586-rpm.bin
```

### 4.4.3 Copy and extract DianaScope Agent installer

Copy the installer to the /usr/local/bin/dianascope/agent directory on the managed server.  
The DianaScope installer files are in /dianascope/agt\_x.

- (1) Create /dianascope/agent directory under /usr/local/bin.

```
mkdir -p /usr/local/bin/dianascope/agent
```

- (2) Copy the all installer files to /usr/local/bin/dianascope/agent.  
It is shown example that files is copied from NEC EXPRESSBUILDER to /root/workspace directory.  
(The mount path is dependent on the OS. Specify the right path.)

```
cp -r /mnt/cdrom/dianascope/agt_x/ /usr/local/bin/dianascope/agent
```

- (3) Move to the directory containing the installer.

```
cd /usr/local/bin/dianascope/agent
```

- (4) Extract the installer.

```
tar xzvf dianascopeagent-N.NN.NN-x.tgz
```

“N.NN.NN” in the example file name means the version.

### 4.4.4 Install the DianaScope Agent

- (1) Move to the directory that the installer was extracted.

```
cd /usr/local/bin/dianascope/agent/dianascopeagent-N.NN.NN-x
```

“N.NN.NN” in the example directory name means the version.

- (2) Execute the shell for the installation.

```
./dianascopeagent-N.NN.NN.sh
```

“N.NN.NN” in the example file name means the version.

- (3) A message to confirm whether to install BMC Configuration function of DianaScope Agent is displayed.  
Input “yes” and “Enter” key.  
The BMC Configuration function will be installed under /usr/DianaScopeSysman directory.
- (4) A message to confirm whether to install GUI remote console function is displayed. If you use GUI remote console function, input “yes” and “Enter” key.

- (5) A message to confirm whether to install DianaScope Agent service is displayed. If you use the remote management function for which DianaScope Manager requires to communicate with DianaScope Agent, input “yes” and “Enter” key.  
DianaScope Agent service will be installed under /usr/DianaScopeAgent directory.  
If you input ‘no’, the installer finishes the procedure.
- (6) A message to confirm the setting of the GUI remote console is displayed. Input “yes” and “Enter” key.  
When the function is set to enable, DianaScope Agent will use SSL and send the graphical screen data to DianaScope server safely.
- (7) In case that BMC on the managed server uses a standard LAN port, a message to confirm the setting of BMC IP address synchronization function is displayed. Input “yes” to set enable, or “no” to set disable.  
And then input “Enter” key.  
When the function is set to enable, DianaScope Agent service will set the OS IP address for BMC IP address.

.....  
**TIPS:**

- You can also set this item after finishing the installation.
- .....

When the installation is completed, the DianaScope Agent service and GUI remote console function are started and available at any time.

#### 4.4.5 Confirm whether the setting of DianaScope Agent opens

After the installation is completed, do the following operation to open the setting function of DianaScope Agent

```
/usr/DianaScopeSysman/agentconf
```

You can operate BMC configuration etc in the setting screen.

#### 4.4.6 Change LAN port that DianaScope Agent uses

Do the setting only if BMC on the managed server uses an exclusive LAN port.

.....  
**TIPS:**

- If the BMC on the managed server uses standard LAN port, you do not need the setting because DianaScope Agent uses same LAN as BMC.
- .....

- (1) Open the setting of DianaScope Agent.
- (2) Select “Select IP address for Agent”.
- (3) Select IP address that DianaScope Agent uses.

## 4.5 DianaScope Agent Uninstallation for Linux

Login to Linux as root user, or get authority of root by su command.

To uninstall the software, perform it in following order:

- (1) Uninstall the DianaScope Agent
- (2) Uninstall the JRE

### 4.5.1 Uninstall the DianaScope Agent

- (1) Move to the directory in which is copied the all files for the installation.

```
cd /usr/local/bin/dianascope/agent/dianascopeagent-N.NN.NN-x
```

“N.NN.NN” in the example directory name means the version.

- (2) Execute the shell for the uninstallation.

```
./dianascopeagent-N.NN.NN-x.sh
```

“N.NN.NN” in the example file name means the version.

- (3) A message to confirm whether to uninstall BMC configuration function of DianaScope Agent is displayed. Input “delete” and “Enter” key.
- (4) A message to confirm whether to uninstall DianaScope Agent service is displayed. Input “delete” and “Enter” key.
- (5) A message to confirm whether to uninstall GUI remote console function is displayed. Input “yes” and “Enter” key.

### 4.5.2 Uninstall the JRE

The following is an example that the version of the JRE is 5.0 Update11.

```
rpm -e jre-1.5.0_11-fcs
```

## 4.6 JRE Update for Linux

Perform it in following order to update JRE software on the managed server which DianaScope Agent has been installed on:

This example is for updating JRE to ver.5.0 Update11 when you use DianaScope ver.2.00.00 and above.

- (1) Stop DianaScope Agent service.

```
/etc/rc.d/init.d/dianscopeagent stop
```

- (2) Update JRE.

```
rpm -Uvh ./jre-1_5_0_11-linux-i586-rpm.bin
```

- (3) Start DianaScope Agent service.

```
/etc/rc.d/init.d/dianscopeagent start
```

## Chapter5 NEC ESMPRO Manager Association Module

---

### 5.1 Overview

NEC ESMPRO Manager Association Module is one of DianaScope Manager modules. But it performs as apart of NEC ESMPRO Manager service. When NEC ESMPRO service receives an alert notification from the BMC, this module registers the alert in the alert log of the NEC ESMPRO.

However DianaScope Manager installer is installed the module, to install only NEC ESMPRO Manager Association Module, you should use the exclusive installer.

See 9.2 "Alert form BMC".

### 5.2 System Requirements

#### ■ Hardware

- **Memory**  
128MB and more
- **Availability of hard disk**  
1MB and more

#### ■ Software

- **OS**
  - Microsoft Windows 2000 Server/Professional (SP4)
  - Microsoft Windows XP Professional (SP1 or SP2)
  - Microsoft Windows Server 2003 Standard Edition/Enterprise Edition (or SP1)
  - Microsoft Windows Server 2003 R2 Standard Edition/Enterprise Edition
  - Microsoft Windows Server 2003 Standard /Enterprise x64 Edition
  - Microsoft Windows Server 2003 R2 Standard /Enterprise x64 Edition
  - Microsoft Windows Vista Business
- **Other Information**

The following software must be installed for using DianaScope NEC ESMPRO Manager Association Module:

  - NEC ESMPRO Manager 4.11 and above

### 5.3 NEC ESMPRO Manager Association Module Installation

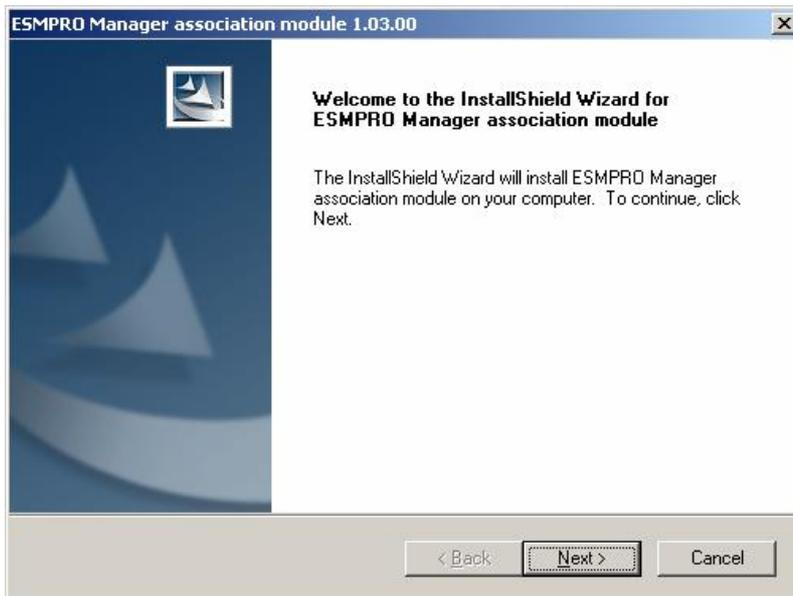
Install only NEC ESMPRO Manager Association Module.

Check the followings:

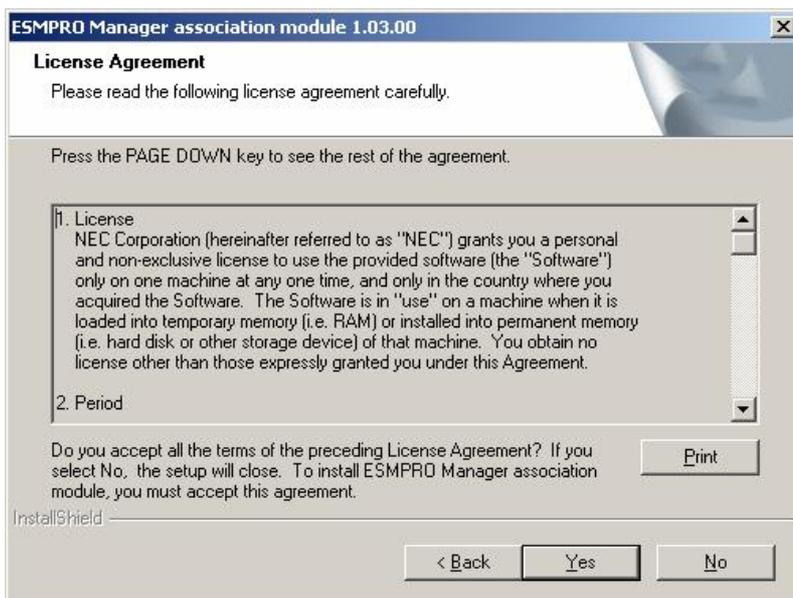
-- Login to Windows as Administrator.

-- If you need NEC ESMPRO Manager Association Module, You install NEC ESMPRO Manager, and then install DianaScope Manager.

- (1) Open the DianaScope install menu. See 3.1.2 "Start the installation menu".
- (2) Click "NEC ESMPRO Manager Association Module" on the installation menu. The "Download Files" dialog box will appear. Click [Open].
- (3) The installer will be started. Click [Next].



- (4) The terms of the end user license agreement for the product will be displayed. Carefully read the terms, and if you agree to the terms, click [Yes] to begin copying files.



## **5.4 NEC ESMPRO Manager Association Module Uninstallation**

To uninstall the software, perform it in following order:

- (1) Uninstall the NEC ESMPRO Manager Association Module
- (2) Uninstall the NEC ESMPRO Manager if you want.

To uninstall the software, Open “Add/Remove Programs” of control panel on Windows name and click [Delete]. Select the software name and click [Delete]. Uninstall it according to the on-screen instructions.

## Chapter6 DianaScope Configuration

---

### 6.1 Overview

DianaScope Configuration is a tool that creates a “configuration information file” for configuring the BMC on the managed server.

To configure the BMC on the managed server by using DianaScope PXE Service, you need a “configuration information file”.

To configure the BMC on the managed server by using the NEC EXPRESSBUILDER DOS based with remote console feature, you need a “configuration information FD” containing the “configuration information file”.

The managed server can also be configured by reading the pre-created “configuration information file” through the DianaScope Agent.

### 6.2 System Requirements

#### ■ Hardware

- **Memory**  
128MB or more
- **Availability of hard disk**  
3MB or more
- **Availability of hard disk**  
FD drive

#### ■ Software

- **OS**
  - Microsoft Windows 2000 Server/Professional (SP4)
  - Microsoft Windows XP Professional (SP1 or SP2)
  - Microsoft Windows Server 2003 Standard Edition/Enterprise Edition (or SP1)
  - Microsoft Windows Server 2003 R2 Standard Edition/Enterprise Edition
  - Microsoft Windows Server 2003 Standard /Enterprise x64 Edition
  - Microsoft Windows Server 2003 R2 Standard /Enterprise x64 Edition

### 6.3 DianaScope Configuration Installation

- (1) Open the DianaScope Installation menu. See 3.1.2”Start the installation menu”.
- (2) Click “DianaScope Configuration” on the installation menu. . The “Download Files” dialog box will appear. Click [Open].  
The installer will be started.
- (3) Install the DianaScope Configuration according to the installer’s instructions.

After the installation is completed, you can start the DianaScope Configuration from start menu on Windows.

### 6.4 DianaScope Configuration Uninstallation

Close the tool, and then uninstall it.

Open “Add/Remove Programs” of control panel on Windows to uninstall it. Select the software name and click [Delete]. Uninstall it according to the on-screen instructions.

## Chapter7 Setup for Managed Server (for LAN connection)

---

This chapter explains the setup procedure for the DianaScope Manager to manage the BMC and DianaScope Agent on a managed server remotely via LAN connection.

.....  
**CHECK:**

- If the managed server is ft Server, it has a different way to setup. See “NEC DianaScope Installation Manual for ft Server”.
- .....

### 7.1 Setup Flow (for LAN connection)

Perform the following setup procedure:

- (1) Connects the DianaScope server and the managed server on the same network.  
See Chapter2 “System Requirements”.
- (2) Configure BMC on the managed server.
- (3) Register the managed server on the DianaScope Manager

### 7.2 Configure BMC on Managed Server (for LAN connection)

Configure BMC of the managed server at first.

.....  
**TIPS:**

- This section explains about the minimum setting that is necessary for connection the DianaScope Manger with the managed server. For details of BMC configuration, see Chapter9 “BMC Configuration Information ”.
- .....

There are three methods for configuring the BMC on a managed server for LAN connection.

#### ■ Configuration with DianaScope Agent or “System Management” tool of NEC EXPRESSBUILDER CD-ROM

This document explains the configuration procedure using the DianaScope Agent for Windows.

.....  
**CHECK:**

- There are other BMC configuration tools, but do not use the following tools for setup with DianaScope.  
-- NEC MWA Agent  
-- ”System management” started from EXPRESSBUILDER that does not contain DianaScope.
- .....

#### ■ Configuration with DianaScope PXE Service.

On DHCP server, you can set the configuration of the BMC with DianaScope PXE Service

.....  
**CHECK:**

- DianaScope PXE Service can be installed only on Windows.
  - If the managed server has been installed ft Remote Management Card, DianaScope PXE Service cannot configure the BMC.
- .....

- **Configuration with NEC EXPRESSBUILDER DOS based with remote console feature.**  
NEC EXPRESSBUILDER DOS based with remote console feature is to configure the BMC on the managed server when a keyboard is not connected.

.....  
**CHECK:**

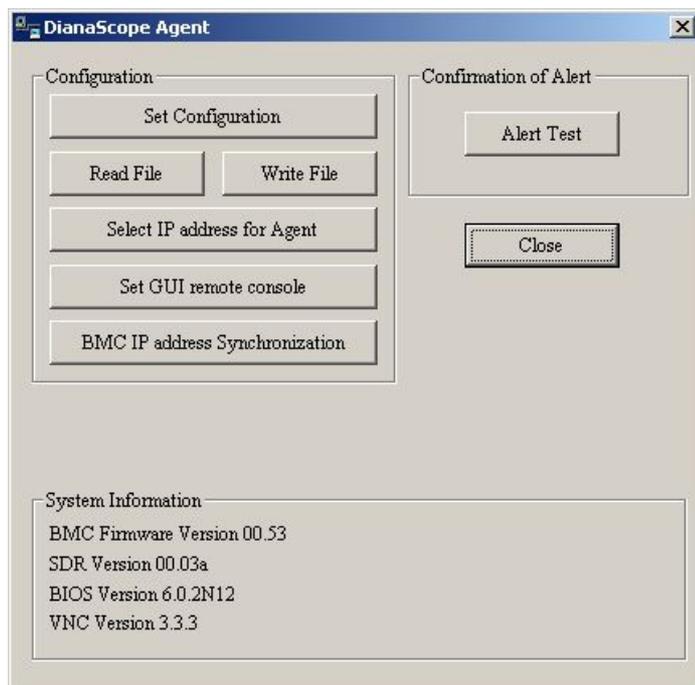
- Configuration with NEC EXPRESSBUILDER DOS based with remote console feature can be available only from the NEC EXPRESSBUILDER that contains DianaScope.
  - See the user's guide provided with the managed server about NEC EXPRESSBUILDER DOS based with remote console feature.  
If there is the description about NEC EXPRESSBUILDER DOS based with remote console feature, the feature is available.
- .....

### 7.2.1 Configuration with DianaScope Agent (for LAN connection)

This document explains the configuration procedure using the DianaScope Agent for Windows. The operation for DianaScope Agent Ver.2.00.00 and above is explained.

- (1) After booting Windows on the managed server, click Windows [start] and start the BMC configuration function of DianaScope Agent.
- (2) The main dialog box will be appeared.  
Click [Set Configuration]. When a confirmation message is displayed, click [OK].

The following screen shows example for the managed server that the BMC uses standard LAN port.

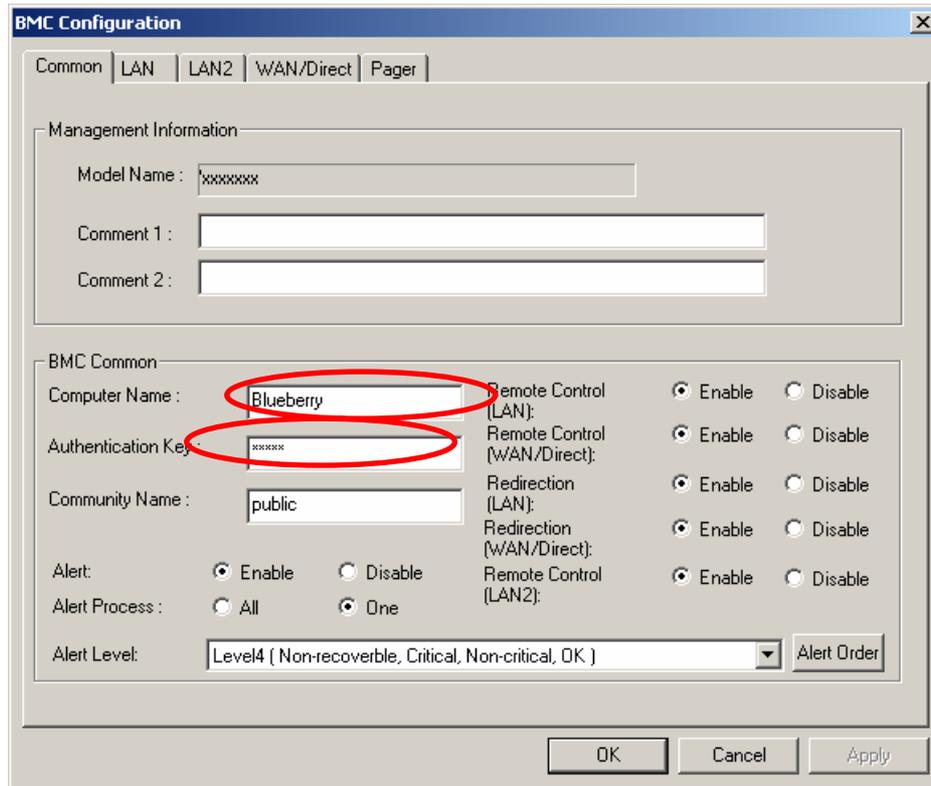


(3) “BMC Configuration” dialog box will be display. Click “Common” tab page.

Be sure to set the below item. The other items can be used with the default values.

- ”Computer Name”  
Enter a unique name for each managed server.
- “Authentication Key”

The following screen shows example.



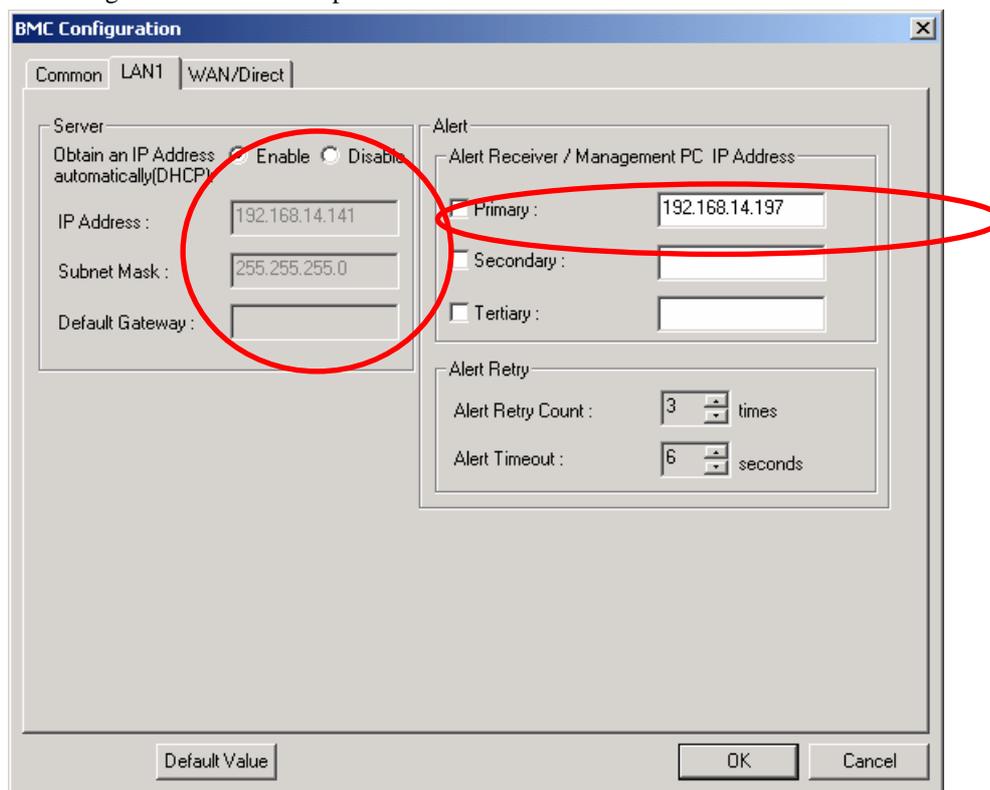
**TIPS:**

- If a managed server is compatible with SOL and “Enable” is selected for the item “Redirection (LAN),” the following items necessary for the remote console via the LAN will be changed automatically.  
 ”Common” tab page – “Redirection (WAN/Direct)” : Enable  
 “WAN/Direct” page – “Flow Control” : RTS/CTS

- (4) Select “LAN1” tab page for LAN port 1 of the BMC.  
Set the below items. The other items can be used with the default values.

- “Obtain an IP Address automatically (DHCP)”  
Determine whether to dynamically obtain an IP address from a DHCP server.  
If the item is set enable and registered, the BMC set the value obtained from DHCP server on “IP Address”, “Subnet Mask” and “Default Gateway”.  
You can set enable on the item only if the BMC supports this capability.
- “IP Address”  
Case that BMC on the managed server uses an exclusive LAN port (Management LAN port); enter the IP address for the exclusive LAN port.  
Case that BMC on the managed server uses a standard LAN port; be sure to make the setting identical to the setting on the operating system of the managed server.
- “Subnet Mask”  
Enter the subnet mask for the IP address.
- “Default Gateway”  
Enter the default gateway if the managed server connects to DianaScope Server via any gateway
- “Alert Receiver / Management PC IP Address” – “Primary”.  
Enter the IP address of DianaScope server.

The following screen shows example.



**CHECK:**

- When you enter “Management PC IP Address”, the same IP address is displayed for “Alert Receiver/Management PC (1)”.
- The “LAN2” tab is displayed only when the managed server’s BMC supports communication via LAN2. To communicate with the DianaScope Manager via LAN2, make the setting on the “LAN2” tab as same as “LAN1” tab.

- (5) If you set “Default Gateway”, please connect the managed server via LAN port used by BMC and the gateway to network.  
If you set “Alert Receiver / Management PC IP Address” on same network with the managed server, please connect the managed server via LAN port used by BMC and the alert receiver/management PC to network.
- (6) Click [Register].  
The configuration information will be set in the BMC. The MAC addresses of the gateway and the alert receivers will be also set in the BMC.

## 7.2.2 Configuration with DianaScope PXE Service (for LAN connection)

Set configuration information for the BMC on the managed server by using the DianaScope PXE Service. The DianaScope PXE Service accepts network- boot requests only from the server to be managed by the DHCP server.

.....  
**CHECK:**

- DianaScope PXE Service can be installed only on Windows.
  - If the managed server has been installed ft Remote Management Card, DianaScope PXE Service cannot configure the BMC.
- .....

There are two methods.

- **Configuring the IP address assigned by the DHCP.**
- **Configuring the IP address specified in the computer information list.**

### 7.2.2.1 Notes of Configuration with DianaScope PXE Service

This section explains particular notes of Configuration with DianaScope PXE Service.

- If the managed server has been installed ft Remote Management Card, DianaScope PXE Service cannot configure the BMC.
- When you configure the IP address assigned by the DHCP, DianaScope PXE Service configures the BMC to obtain the IP address by the DHCP if the managed server has been installed the BMC that uses an exclusive LAN port (Management LAN Port).  
Since the DianaScope PXE Service does not configure the IP address, the IP address is not shown in Computer Information list of the DianaScope PXE Service.
- DianaScope PXE Service Ver.1.02.00 and above supports the configuration for EXPRESSSCOPE Engine.  
DianaScope PXE Service Ver.1.03.00 and above supports the configuration for Advanced Remote Management Card.
- If the managed server has been installed Advanced Remote Management Card, the BMC may not immediately obtain the IP address after DianaScope PXE Service configures the BMC to obtain the IP address by the DHCP. Please turn the managed server AC-OFF and AC-ON because the BMC try to obtain the IP address whenever the managed server is turned AC-ON.
- If the DHCP server does not respond within the fixed period of time, The BMC will stop trying to obtain the IP address. Then DianaScope cannot search the managed server with the function "Auto Registration". In this case, please turn the managed server AC-OFF and AC-ON. See 7.2.2.5 Procedure to retry configuration with DianaScope PXE Service for retry.
- If the managed server has been installed the BMC that uses standard port, the managed server needs to be made network-boot via LAN1. Set the priority to LAN1 to become higher than LAN2 with BIOS Setup Utility.
- While the DianaScope PXE Service is active, do not network-boot a managed server that has been configured by a method other than using the DianaScope PXE Service. Otherwise, the configuration is performed with the DianaScope PXE Service, resulting in the change of the original configuration information. In this case, the server may not be managed through the DianaScope Manager.

(1) Before starting the DianaScope PXE Service, stop other PXE services and software having the PXE service function in the network. If you use other PXE services and software having the PXE service function, stop the DianaScope PXE service and then start them.  
This procedure is necessary to start the service that you want to use.

<How to stop/start NEC DeploymentManager that has PXE server function. >

Click “Run” from [start] of Windows. Enter the command as following example. It shows case that the installed directory of NEC DeploymentManager is “C:\Program Files\NEC\DeploymentManager”.

Stop: ”C:\Program Files\NEC\DeploymentManager\svcctrl” –stop

Start: ”C:\Program Files\NEC\DeploymentManager\svcctrl” –start

<How to stop/start Remote Install service>

Stop:

Stop 3 services. Click [run] from [start] on Windows. Execute following each command:

”net stop BINLSVC”

”net stop TFTPDP”

”net stop Groveler”

Start:

(1) Click “control Panel” – “asministrative tool” – ”Active Directory user and computer” from [start] on Windows.

(2) Find “Remote Install” server computer in the “Active Directory user and computer” snap in

(3) Click the server computer and them click “Property”.

(4) Click [Check server] on the “Remote install” tab.

(5) Follow the instruction of the wizard.

-- About that the end of the network-boot procedure of DianaScope PXE Service.

Do not operate the destination server until network-boot procedure of DianaScope PXE Service completes.

When you have some operation before that, the DianaScope PXE Service cannot be stopped from the DianaScope.

See 7.2.2.4”How to confirm the status of the network-boot procedure by DianaScope PXE Service”.

(2) While the DianaScope PXE Service is executing the network-boot procedure, the operations below cannot execute. Please wait until network boot procedure ends.

-- Stop the DianaScope PXE Service.

### 7.2.2.2 Configuring the IP address assigned by the DHCP

Perform the following procedure with DianaScope Manager Ver.1.04.00 and above and DianaScope PXE Service Ver.1.03.00 and above:

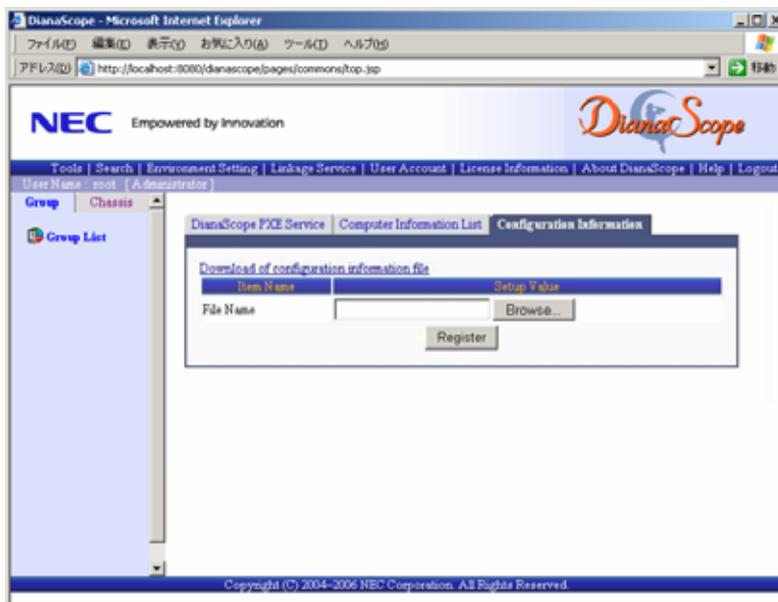
- (1) See 7.2.3.1 "Create a configuration information file" to create a configuration information file.

.....  
**IMPORTANT:**

- To use the configuration information file for DianaScope PXE Service, there are some different from the description of 7.2.3.1 "Create a configuration information file". These items will not be set to the managed server.
  - If the managed server integrates EXPRESSSCOPE Engine:
    - "Common" tab page
      - "Computer Name"
    - "LAN1" tab page
      - "Obtain an IP Address automatically (DHCP)"
      - "IP Address"
      - "Subnet Mask"
      - "Default Gateway"
  - If the managed server is installed Advanced Remote Management Card:
    - "Common" tab page
      - "Computer Name"
    - "LAN1" tab page
      - "Obtain an IP Address automatically (DHCP)"
      - "IP Address"
      - "Subnet Mask"
  - If the managed server is installed other BMC:
    - "Common" tab page
      - "Computer Name"
    - "LAN1" tab page
      - "Obtain an IP Address automatically (DHCP)"
      - "IP Address"
    - "LAN2" tab page
      - All items
- The configuration file name and path name are not required specified names.  
.....

- (2) To start DianaScope PXE Service, click "Linkage Service" from the "Header menu" on the DianaScope. Click [Start] on the "DianaScope PXE Service" screen. The DianaScope PXE Service will start and be ready to accept network-boot requests.

- (3) To register the configuration information file, open the “Configuration Information” screen of “Linkage Service” on the DianaScope. Specify the path name of the configuration information file, and click [Register].



.....  
**TIPS:**

- You can also register the configuration information file on the DianaScope PXE Service by using DianaScope PXE Service Management tool. To use the tool, start “DianaScope PXE Service Management” of the “DianaScope PXE Service” from start menu of Windows on the DianaScope server.
- .....

- (4) Change the boot device priority so that the highest priority will be given to network-boot devices, using the managed server’s BIOS Setup Utility.

.....  
**TIPS:**

- If the managed server is Blade Server, the network-boot is initially set with the highest priority.
- .....

- (5) If you set “Default Gateway” at creating the configuration information file, please connect the managed server via LAN port used by BMC and the gateway to network.  
 If you set “Alert Receiver / Management PC IP Address” on same network with the managed server at creating the configuration information file, please connect the managed server via LAN port used by BMC and the alert receiver/management PC to network.

- (6) Reboot the managed server.  
The DianaScope PXE Service accepts a network-boot request from the managed server, sets the following configuration items, and then reboots the server.

-- "IP Address":

The IP address assigned by the DHCP server is set.

-- "Computer Name":

The managed server's MAC address is registered with "PXE" prefixed.

.....  
**TIPS:**

- Other configuration items are set with values of the configuration information file. The MAC addresses of the gateway and the alert receivers will be also set in the BMC.
- .....

- (7) After the managed server has been network-booted, reboot again and change the boot priority back to original using the BIOS Setup Utility.  
See 7.2.2.4 "How to confirm the status of the network-boot procedure by DianaScope PXE Service".
- (8) Click DianaScope "Linkage Service" to display the "DianaScope PXE Service" screen, and stop the DianaScope PXE Service.

### 7.2.2.3 Configuring the IP address specified in Computer Information List File

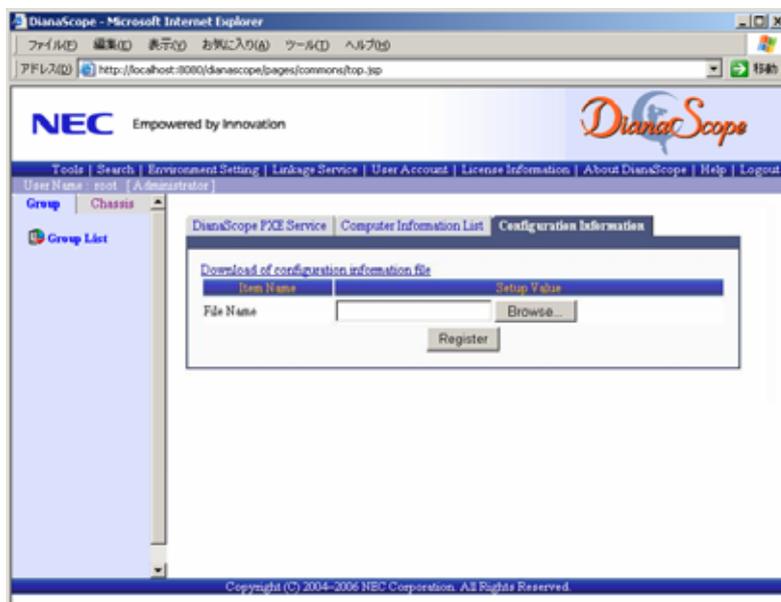
Perform the following procedure with DianaScope Manager Ver.1.04.00 or above and DianaScope PXE Service Ver.1.03.00 or above:

- (1) See 7.2.3.1”Create a configuration information file” to create a configuration information file.

.....  
**IMPORTANT:**

- To use the configuration information file for DianaScope PXE Service, there are some different from the description of 7.2.3.1”Create a configuration information file” These items will not be set to the managed server.
    - “Common” tab page  
 “Computer Name”
    - “LAN1” tab page  
 “Obtain an IP Address automatically (DHCP)”  
 “IP Address”
    - “LAN2” tab page  
 All items
  - The configuration file name and path name are not required specified names.
- .....

- (2) To start DianaScope PXE Service, click “Linkage Service” from the “header menu” on the DianaScope. Click [Start] on the “DianaScope PXE Service” screen. The DianaScope PXE Service will start and be ready to accept network-boot requests.
- (3) To register the configuration information file, open the “Configuration Information” screen of “Linkage Service” on the DianaScope. Specify the path name of the configuration information file, and click [register].



.....  
**TIPS:**

- You can also register the configuration information file on the DianaScope PXE Service by using DianaScope PXE Service Management tool. To use the tool, start “DianaScope PXE Service Management” of the ”DianaScope PXE Service” from start menu of Windows on the DianaScope server.
- .....

(4) Register the computer information.

There are two methods to register computer information.

(4)-(a) Register computer information directly.

(4)-(b) Register a computer information list file that includes plural computer information records.

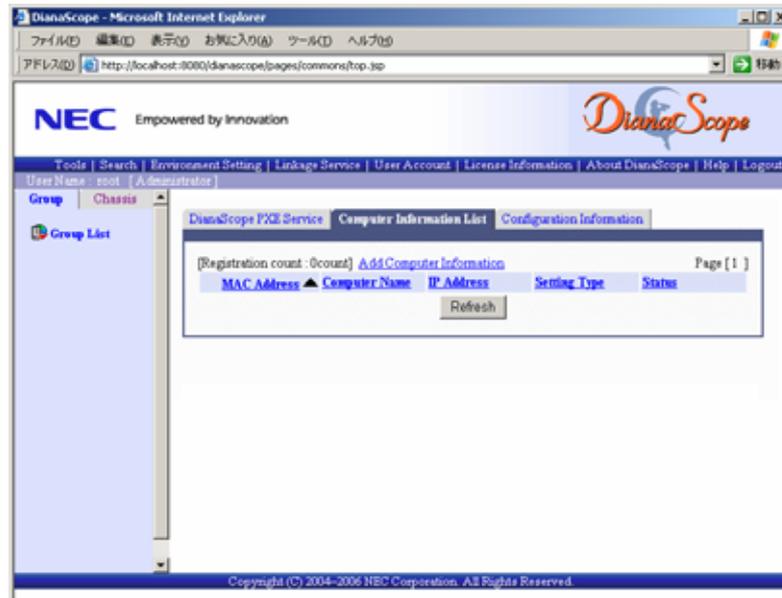
When a lot of computer information records are added, (4)-b is recommended.

.....  
**TIPS:**

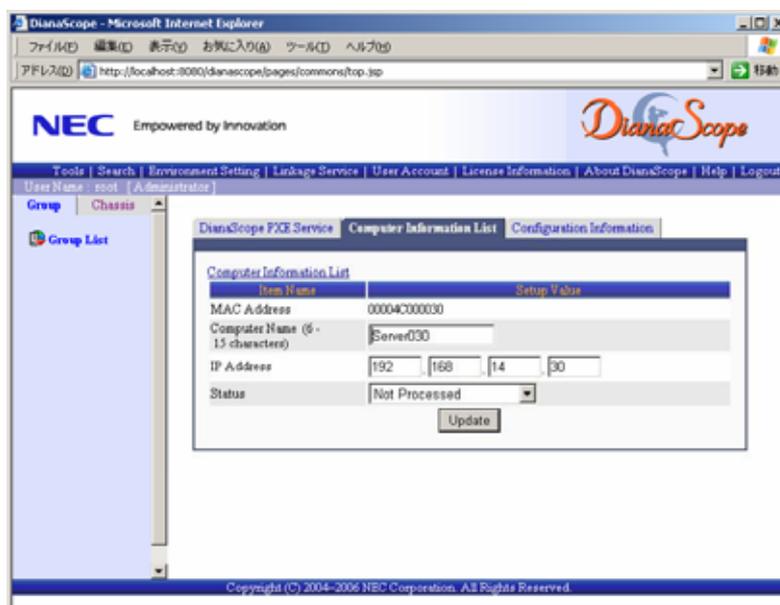
- You can also register the computer information on the DianaScope PXE Service by using DianaScope PXE Service Management tool. To use the tool, start “DianaScope PXE Service Management” of the ”DianaScope PXE Service” from start menu of Windows on the DianaScope server.  
.....

(4)-(a) Register computer information directly.

(4)-(a)-(i) Click “Linkage Service” from the “header menu” on the DianaScope. Click [Add Computer Information] on the “Computer Information List” screen.



- (4)-(a)-(ii) The information should be input on “Individual addition” screen.  
 Enter the MAC address of the server that you want to request network-booting.  
 Enter the computer name and IP address that will be set in BMC configuration by DianaScope PXE Service.  
 Check that “Status” indicates “Not Processed”, and then click [Add].



- (4)-(a)-(iii) [Apply] will be displayed on the “Computer Information List” screen. Click [Apply].

(4)-(b) Register a computer information list file that includes plural computer information records.

- (4)-(b)-(i) Create computer information list file.

The computer information list file has the CSV format. Specify one record of information on each line. The file name extension should be “.csv”.

The 1-record format is as follows:

“MAC-Address,Computer-Name,IP-Address”

You should write only one record per line. You cannot input any other characters on the line.

**-- MAC Address**

Specify the MAC address of the managed server on which configuration information is to be set.

**-- Computer Name**

Enter a comma “,” as a delimiter between the MAC address and computer name. Following the comma, specify the computer name to be set for the managed server.

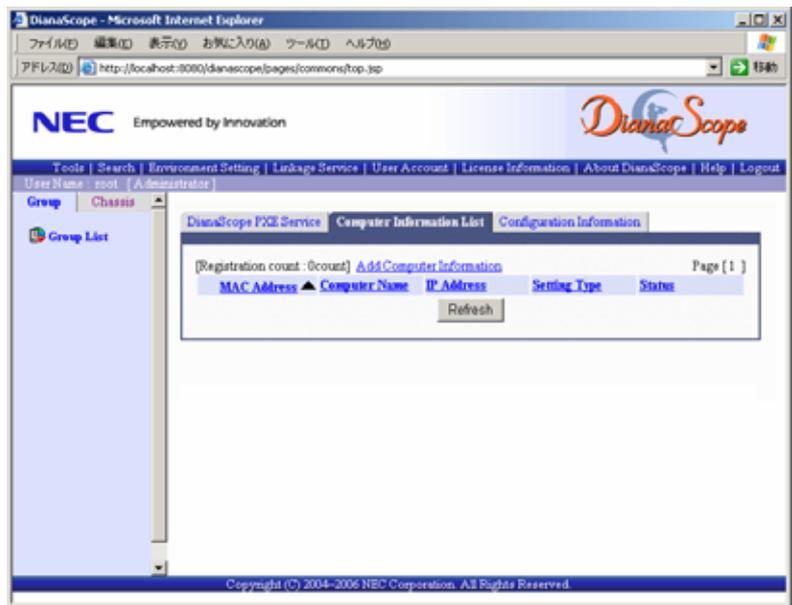
**(5) IP Address**

Enter a comma “,” as a delimiter between the computer name and IP address. Following the comma, specify the IP address to be set for the managed server’s BMC.

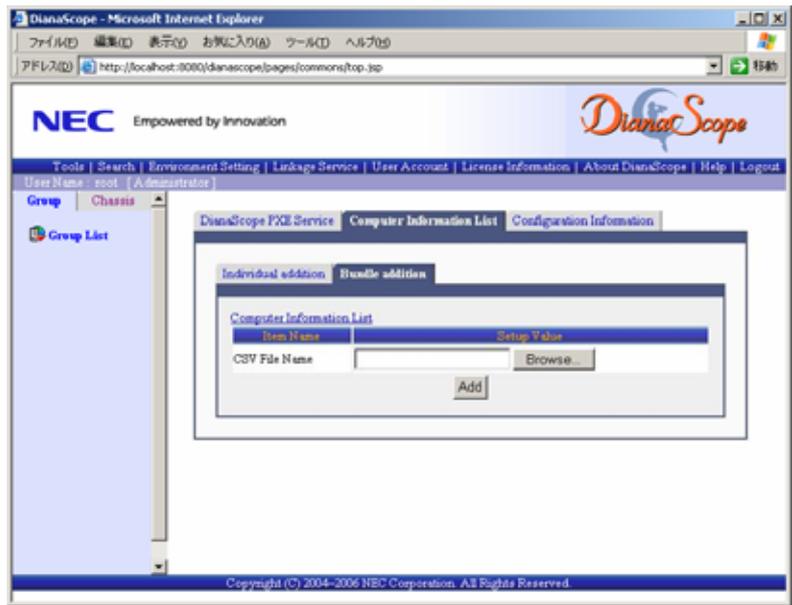
Example of computer information list file is shown below.

```
111111111111,Server1,192.168.14.1
222222222222,Server2,192.168.14.2
333333333333,Server3,192.168.14.3
444444444444,Server4,192.168.14.4
```

- (5)-(a)-(i) Click “Linkage Service” from the “header menu” on the DianaScope. Click [Add Computer Information] on the “Computer Information List” screen.



- (5)-(a)-(ii) Specify the path name of the computer information list file on “Bundle addition” screen. Click [Add].



(5)-(a)-(iii) [Apply] will be displayed on the “Computer Information List” screen. Click [Apply].

(6) Change the boot device priority so that the highest priority will be given to network-boot devices, using the managed server’s BIOS Setup Utility.

.....  
**TIPS:**

- If the managed server is Blade Server, the network-boot is initially set with the highest priority.
- .....

(7) If you set “Default Gateway” at creating the configuration information file, please connect the managed server via LAN port used by BMC and the gateway to network.

If you set “Alert Receiver / Management PC IP Address” on same network with the managed server at creating the configuration information file, please connect the managed server via LAN port used by BMC and the alert receiver/management PC to network.

(8) Reboot the managed server.

The DianaScope PXE Service accepts a network-boot request from the managed server, confirms the managed server’s MAC address, configures the IP address and computer name that have been specified in the computer information, and then reboots the server.

**-- IP Address**

Specify the IP address specified on computer information .

**-- Computer Name**

Specify the computer name specified on computer information .

.....  
**TIPS:**

- Other configuration items are set with default values. For details, see Chapter9 “BMC Configuration Information ”. The MAC addresses of the gateway and the alert receivers will be also set in the BMC.
- .....

(9) After the managed server has been network-booted, reboot again and change the boot priority back to original using the BIOS Setup Utility.

See7.2.2.4”How to confirm the status of the network-boot procedure by DianaScope PXE Service”.

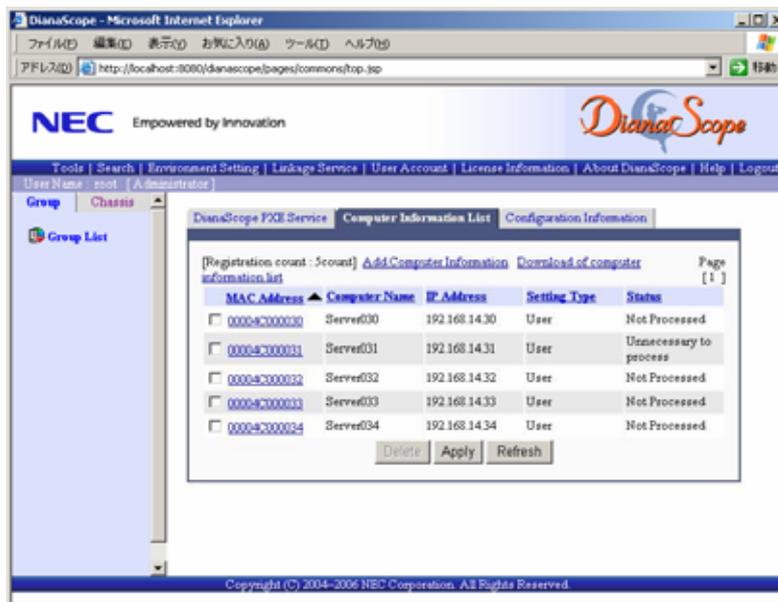
(10) Click DianaScope “Linkage Service” to display the “DianaScope PXE Service” screen, and stop the DianaScope PXE Service.

### 7.2.2.4 How to confirm the status of the network-boot procedure by DianaScope PXE Service

You can confirm the status of the network-boot procedure by DianaScope PXE Service with the order below.

- (1) Click “Linkage Service” from the “header menu” on the DianaScope. Click [Refresh] on the “Computer Information List” screen.

The latest status of the network-boot procedure for each destination server will be shown.



**TIPS:**

- You can also confirm the status on the computer information by using DianaScope PXE Service Management tool. To use the tool, start “DianaScope PXE Service Management” of the “DianaScope PXE Service” from start menu of Windows on the DianaScope server.

- (2) If “Status” column of the table has “Completed”, the network-boot procedure of the destination server has completed.

See the list below for “Status”.

Status	Meaning
Not Processed	DianaScope PXE Service does not execute the network-boot procedure yet.
Completed	DianaScope PXE Service finished the network-boot procedure. (DianaScope PXE Service will not set BMC configuration for this computer even if network-boot is requested again. See 7.2.2.5 Procedure to retry configuration with DianaScope PXE Service for retry.)
Failed	DianaScope PXE Service failed to execute the network-boot procedure. (See 7.2.2.5 Procedure to retry configuration with DianaScope PXE Service for retry.)
Processing	DianaScope PXE Service is executing the network-boot procedure. (It is maximum 10 minutes after the last network-boot request from the destination server.)
Unnecessary to process	DianaScope PXE Service does not execute network-boot procedure for this computer. (Change “Status” to this status when the computer has no BMC or when you do not want to execute the network-boot for the computer.)

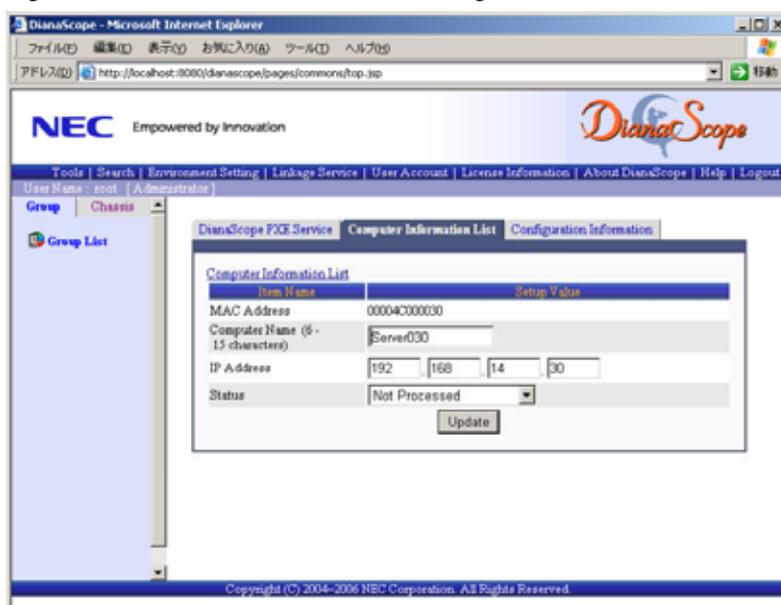
### 7.2.2.5 Procedure to retry configuration with DianaScope PXE Service

After setting the configuration for the managed server, DianaScope PXE Service records the managed server on the computer information. When the managed server has been recorded status “Completed” on the computer information, the DianaScope server does not set the configuration even though the managed server requires network-boot.

If “Auto Registration” function of DianaScope cannot find the managed server configured with the DianaScope PXE service, Edit the computer information of the managed server and then retry configuration.

The order is below.

- (1) Click “Linkage Service” from the “header menu” on the DianaScope. Click MAC address of the managed server that cannot be found “Auto Registration” function of DianaScope.



- (2) Change “Status” to “Not Processed” and click [Update].
- (3) Click [Apply] on the “Computer Information List” screen.
- (4) Retry the configuration with DianaScope PXE Service.

.....  
**TIPS:**

- You can also change the status on the computer information by using DianaScope PXE Service Management tool. To use the tool, start “DianaScope PXE Service Management” of the ”DianaScope PXE Service” from start menu of Windows on the DianaScope server.
- .....

### 7.2.3 Configuration with NEC EXPRESSBUILDER DOS based with remote console feature (for LAN connection)

NEC EXPRESSBUILDER DOS based with remote console feature can configure the BMC on the managed server with the configuration information FD containing the configuration information.

.....  
**CHECK:**

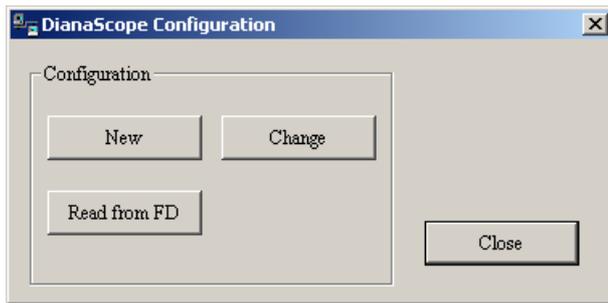
- Configuration with NEC EXPRESSBUILDER DOS based with remote console feature can be available only from the NEC EXPRESSBUILDER that contains DianaScope.
  - See the user's guide provided with the managed server about NEC EXPRESSBUILDER DOS based with remote console feature.  
If there is the description about NEC EXPRESSBUILDER DOS based with remote console feature, the feature is available.
- .....

Perform the following procedure:

- (1) Create a configuration information file
- (2) Run NEC EXPRESSBUILDER DOS based with remote console feature

#### 7.2.3.1 Create a configuration information file

- (1) Start the DianaScope configuration installed on any PC to create the configuration information file.



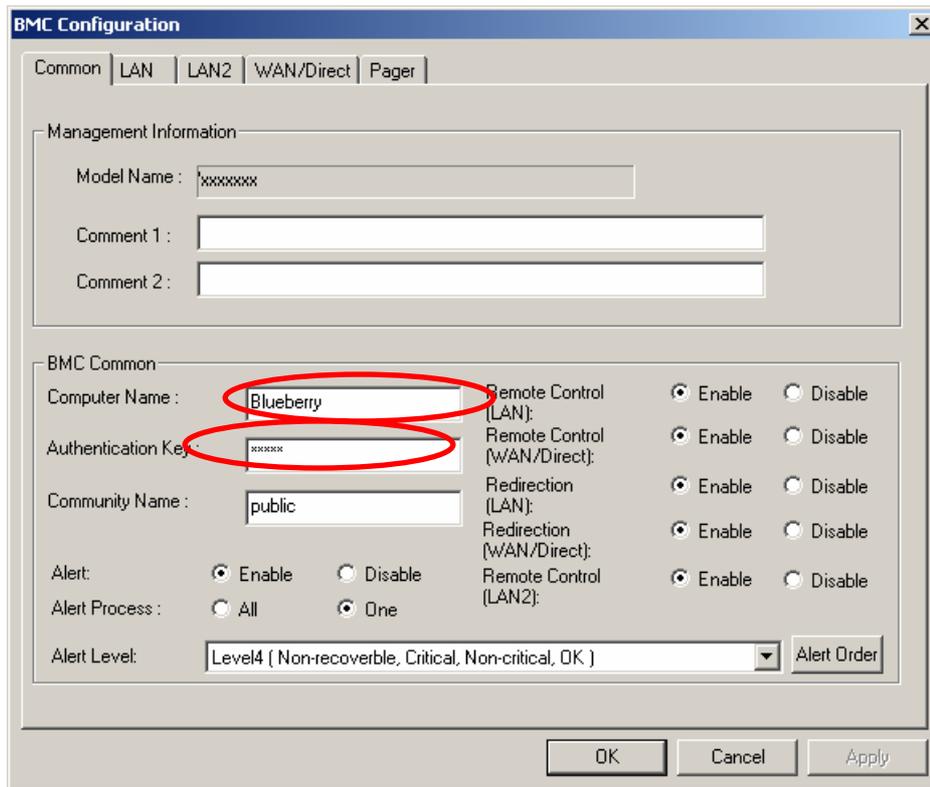
- (2) Click [New]. The confirming message will be displayed. Click [OK].

- (3) The “BMC Configuration” dialog box will appear.  
Click “Common” tab page.

Be sure to set the below item. The other items can be used with the default values.

- “Computer Name”  
Enter a unique name for each managed server
- “Authentication Key”
- Set “Remote Control (LAN)”, “Remote Control (WAN/Direct)”, “Redirection (LAN)” and “Redirection (WAN/Direct)” to enable

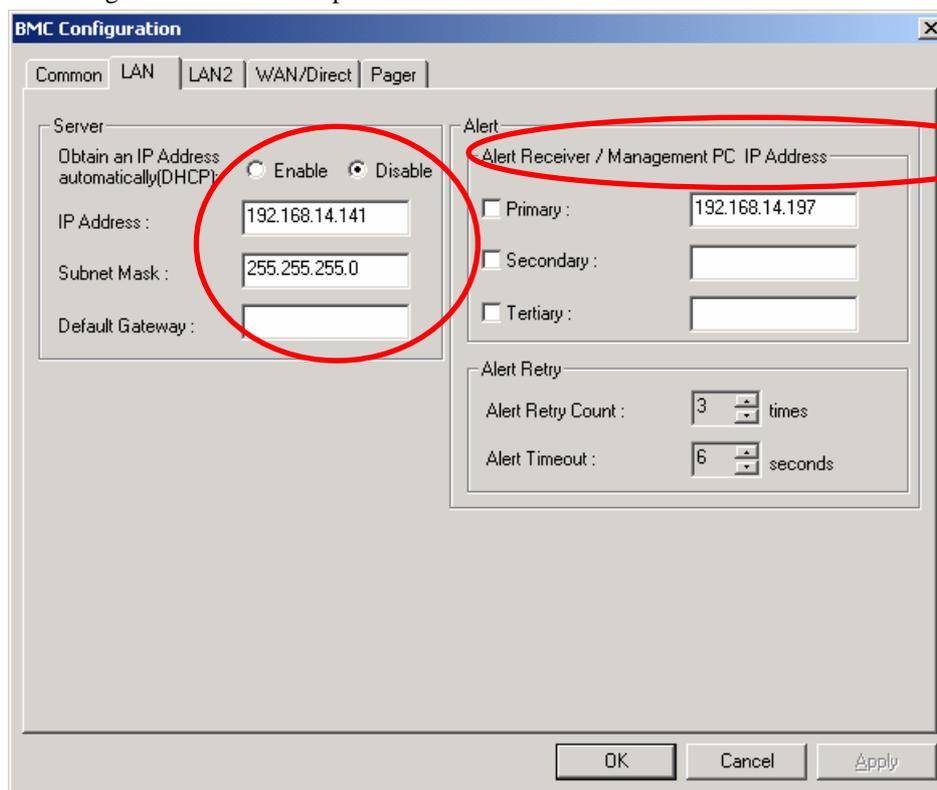
The following screen shows example.



- (4) Select “LAN” tab page for LAN port 1 of the BMC.  
Set the below items. The other items can be used with the default values.

- ”Obtain an IP Address automatically (DHCP)”  
Determine whether to dynamically obtain an IP address from a DHCP server.  
If the item is set enable and registered, the BMC set the value obtained from DHCP server on “IP Address”, “Subnet Mask” and “Default Gateway”.  
You can set enable on the item only if the BMC supports this capability.
- ”IP Address”  
Case that BMC on the managed server uses an exclusive LAN port (Management LAN port); enter the IP address for the exclusive LAN port.  
Case that BMC on the managed server uses a standard LAN port: be sure to make the setting identical to the setting on the operating system of the managed server.
- ”Subnet Mask”  
Enter the subnet mask for the IP address.
- ”Default Gateway”  
Enter the default gateway if the managed server connects to DianaScope server via any gateway.
- ”Management PC IP Address” – “Primary”  
Enter the IP address of DianaScope server.

The following screen shows example.



**CHECK:**

- To communicate with the DianaScope Manager via LAN2, make the setting on the “LAN2” tab as same as “LAN” tab. If the BMC of the managed server does not support communication via LAN2, the values of “LAN2” tab page have no effect with the managed server.
- The managed server installed the BMC that uses an exclusive LAN port (Management LAN port) supports the function of ”Obtain an IP Address automatically (DHCP)”.

- (5) Insert a formatted floppy disk into the FD drive, and click [OK]. A dialog box will appear for specifying a location where the configuration information is to be saved.
- (6) Specify the floppy disk's root directory as the location.  
Enter "CSL\_LESS.CFG" for the file name, and click [OK].

The configuration information file will be saved on the floppy disk. This floppy disk is called a "configuration information FD".

.....  
**CHECK:**

- Place the configuration information FD in the write-enable state.
- .....

### 7.2.3.2 Run NEC EXPRESSBUILDER DOS based with remote console feature

- (1) If you set “Default Gateway” at creating the configuration information file, please connect the managed server via LAN port used by BMC and the gateway to network.  
If you set “Alert Receiver / Management PC IP Address” on same network with the managed server at creating the configuration information file, please connect the managed server via LAN port used by BMC and the alert receiver/management PC to network.
  
- (2) Configure the BMC of the managed server with the configuration information.  
Insert the NEC EXPRESSBUILDER CD-ROM into the CD-ROM drive and the “configuration information FD” into the FD drive on the managed server. And then turn on the server.  
After NEC EXPRESSBUILDER DOS based with remote console feature is started and the configuration information is loaded from the FD into the managed server. The MAC addresses of the gateway and the alert receivers will be also set in the BMC. And then the managed server will be rebooted.

.....

**TIPS:**

- If the setting in the configuration information file is already configured, the managed server will be not rebooted.
- When the console-less function for LAN connection is used, the BIOS settings are changed as follows:  
Serial Port Address: On Board COM B (only for the managed server supporting SOL)  
Baud Rate: 19.2kbps (only for the managed server supporting SOL)  
Flow Control : RTS/CTS for the managed server supporting SOL  
No Flow for the managed server not supporting SOL  
Terminal Type (Console Type) : PC-ANSI (only for the managed server supporting SOL)  
To check whether that the managed server supports SOL, see ”NEC DianaScope Managed Servers Summary”
- The managed server is opened the main menu of the NEC EXPRESSBUILDER after executing the feature.  
After registering the managed server on th DianaScope and confirm the remote console for the managed server, remove the NEC EXPRESSBUILDER from the CD-ROM drive if you need.

.....

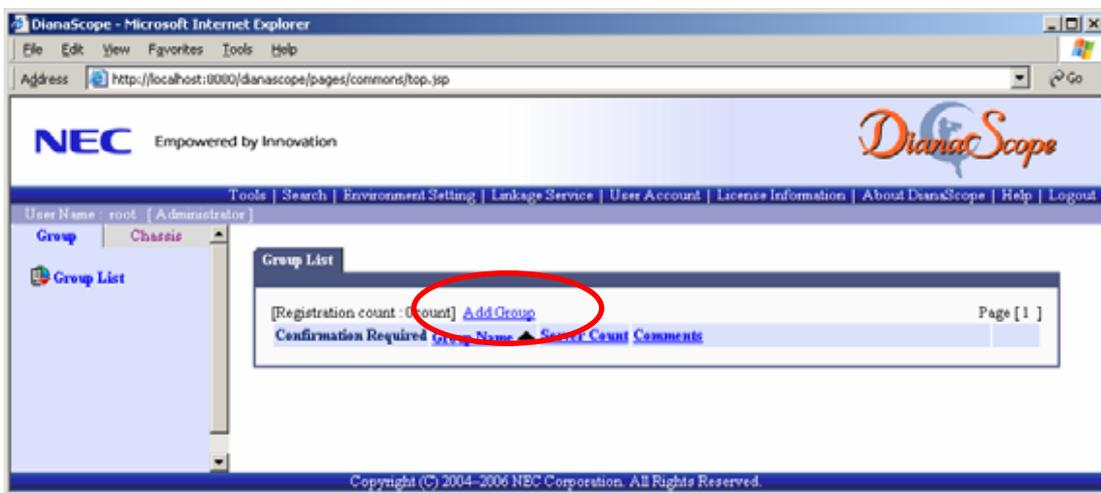
## 7.3 Register a managed server on DianaScope Manager (for LAN connection)

To register the managed server on the DianaScope Manager, login to the DianaScope Manager and perform in the following order:

- (1) Add the group to which the managed server belongs.
- (2) Register a managed server.

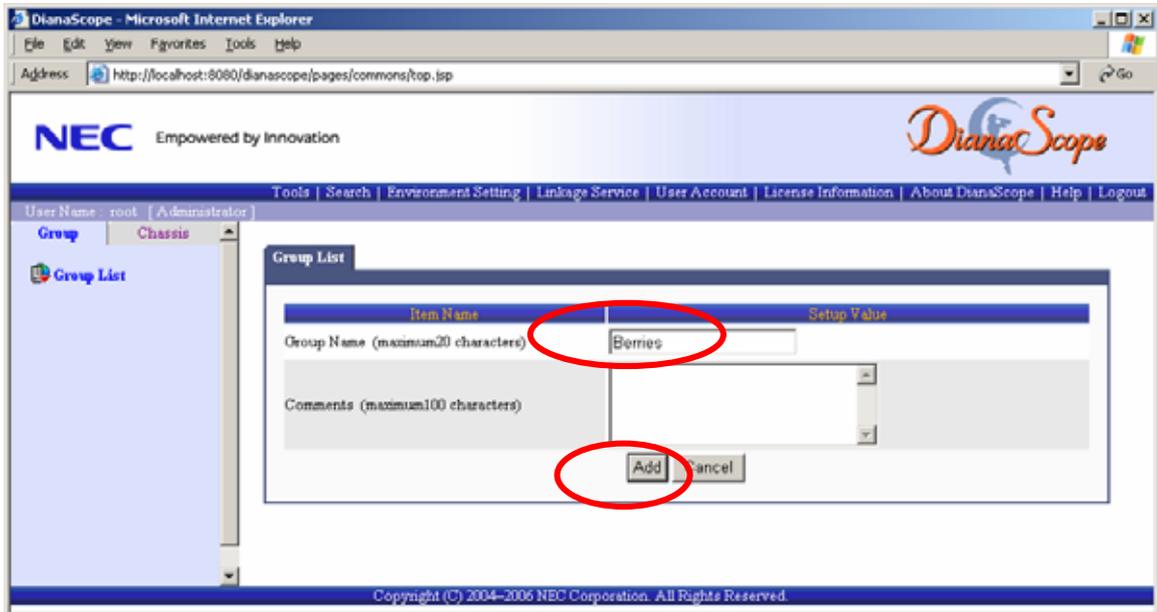
### 7.3.2 Add Group which the managed server belongs

- (1) Click “Add Group” on the “Group List” screen.



- (2) Enter the group name, and click [Add].

The following screen shows an example.



The added group will be displayed on the “Groups List” screen.



### 7.3.3 Register the Managed Server (for LAN connection)

Use either of the two methods to register the managed server.

- **Manual Registration**

This method requires the operator to directly enter the managed server's information such as the IP address of the BMC and to perform "Check Connection".

- **Auto Registration**

This method automatically searches the network for managed servers that are not registered yet on the DianaScope Manager, and registers the managed servers. This method is available only when LAN connection is used.

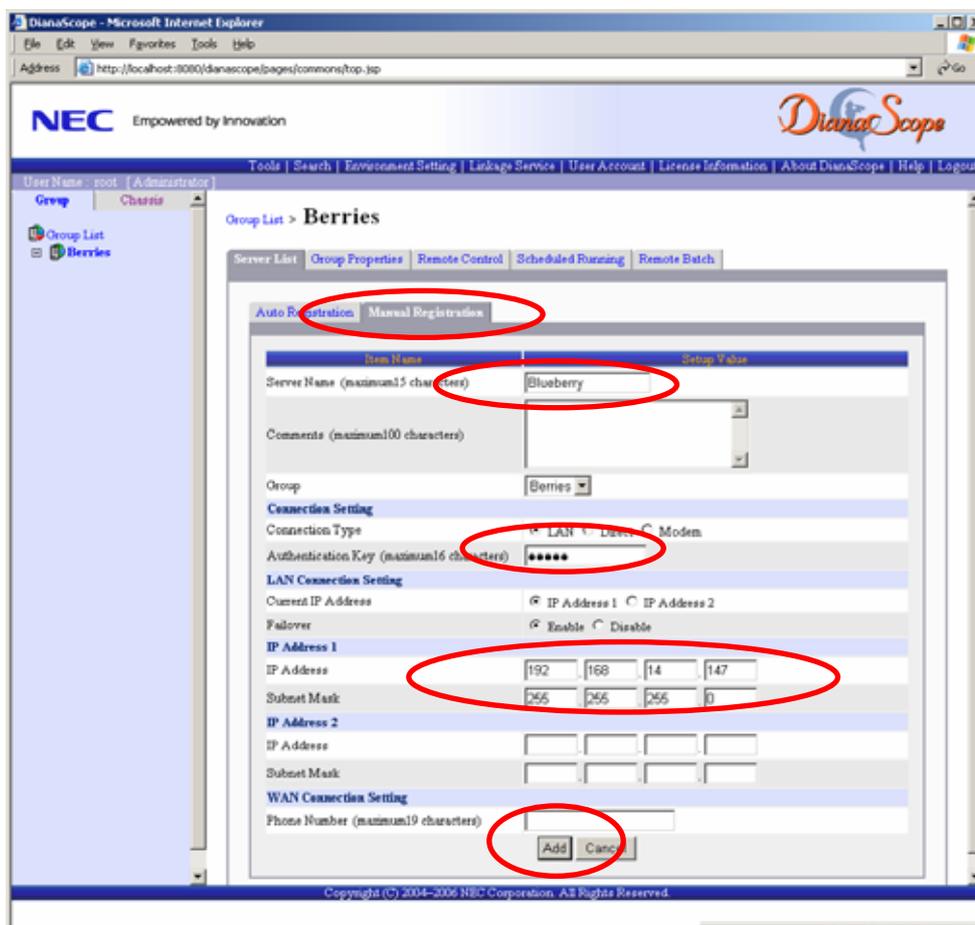
#### 7.3.3.1 Manual Registration

- (1) Click the managed server's "Group name" on the "Group List".
- (2) Click the "Add Server" on the "Server List" of the group.

(3) Click "Manual Registration" tab. Input the following items:

- "Server Name"  
Enter the managed server name on the DianaScope.
- "Authentication Key"  
Enter the authentication key that is set on the BMC configuration of the managed server.
- "IP address 1"  
Enter the IP address and subnet mask you have set in the managed server's BMC configuration information.
- "IP address 2"  
To use both LAN1 and LAN2 for communication with the BMC on the managed server, enter another IP address and subnet mask for "IP Address 2."

The following screen shows an example.



**TIPS:**

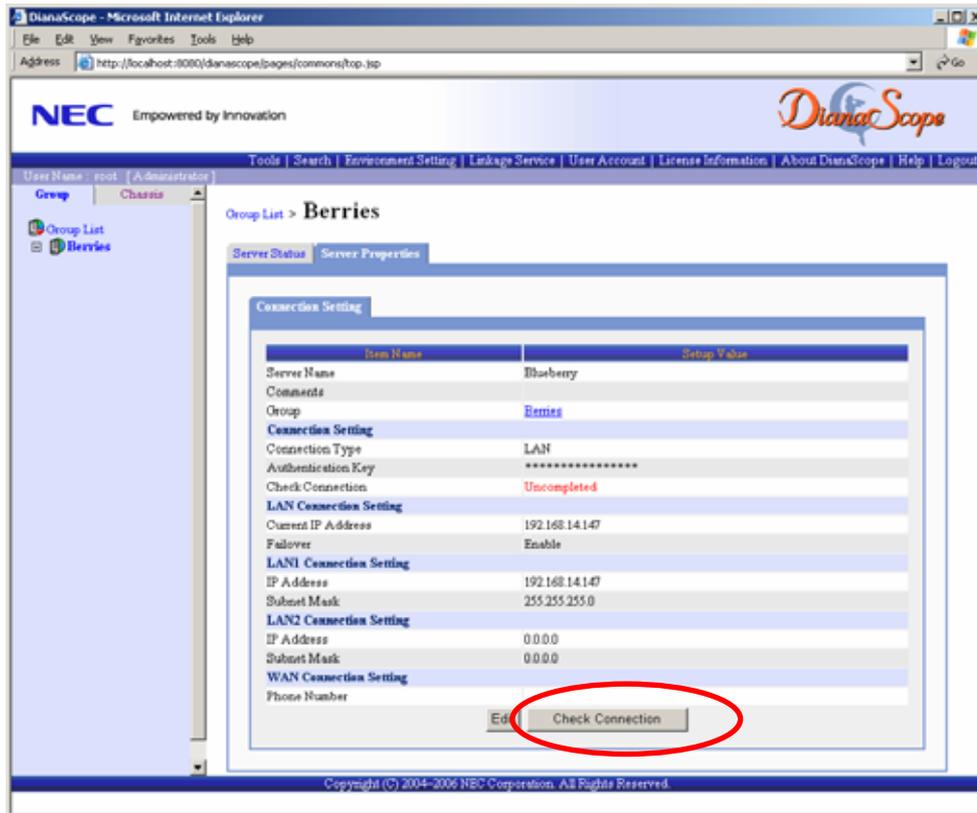
- For details of other items, see the DianaScope online help.

(4) Click [Add].

**TIPS:**

- A managed server cannot be controlled remotely by only registering it. Perform a “Check Connection”.

(5) Click [Check Connection] on “Connection Setting”



DianaScope Manager will execute “Check Connection” and collect the server information for the management.

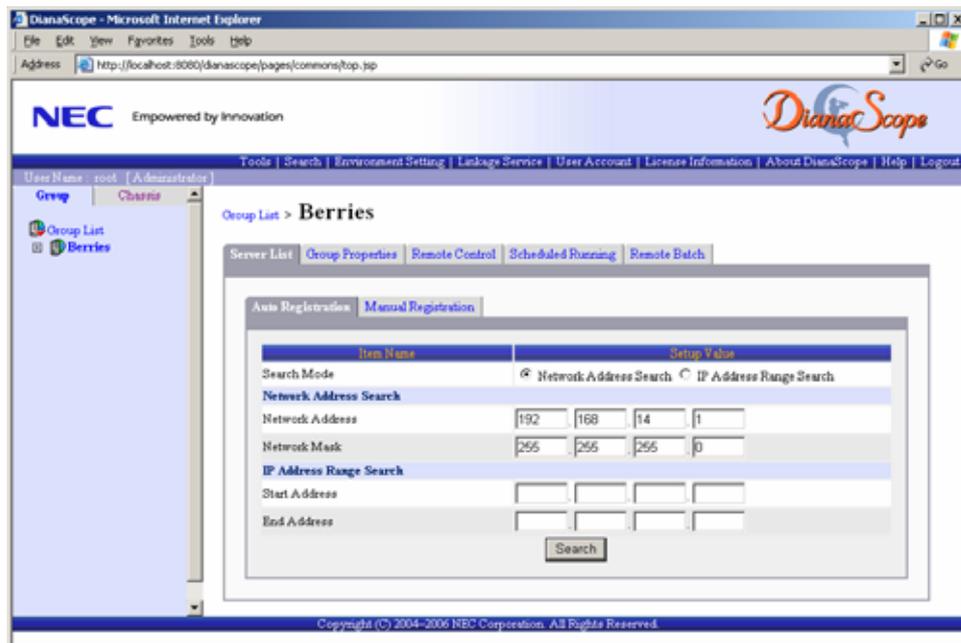
When the “Check Connection” is completed, the DianaScope Manager can control the managed server.

### 7.3.3.2 Auto Registration

- (1) Click the managed server's "Group name" on the "Group List".
- (2) Click the "Add Server" on the "Server List" of the group.
- (3) Select "Search Mode" on the "Auto Registration" screen.  
 With "Network Address Search", enter the network address and network mask.  
 With "IP Address Range Search", enter the "start address" and "end address" of the IP address range.  
 After that, click [Search].

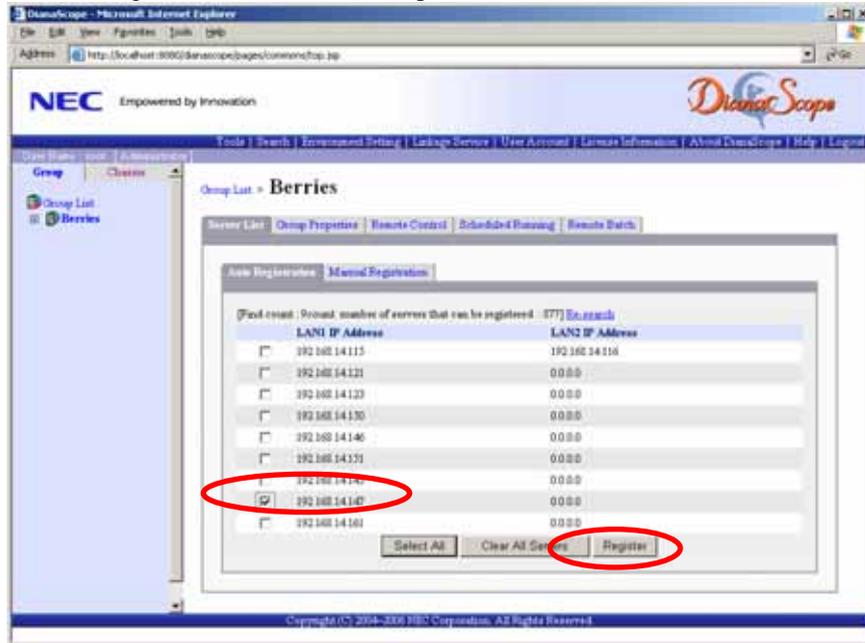
The search for the managed servers will start.

The following screen is an example display with "Network Address Search" selected.

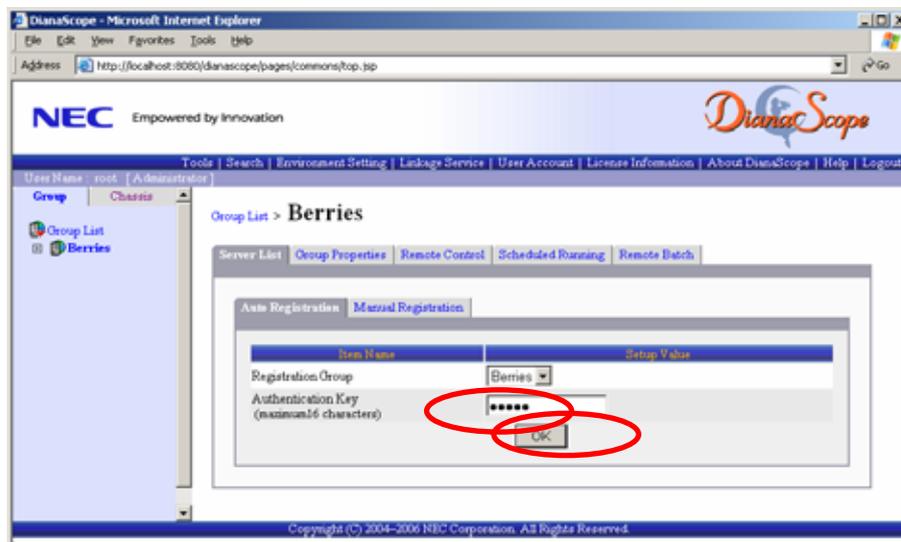


- (4) The IP addresses of the found managed servers' BMCs will be listed. Select the managed server to be registered. Click [Register].

The following screen is shown an example.



- (5) Enter "Authentication Key" for the managed server and click [OK].



The DianaScope Manager will execute "Check Connection".  
When the "Check Connection" is completed, the DianaScope Manager can control the managed server.

**TIPS:**

- When the managed server is registered by auto registration, the "Server Name" of the managed server is set to the computer name that has been set on BMC configuration for the managed server. (If the same server name has been registered, some number is added to the server name.)  
You can change the server name on "Server Properties" – "Connection Setting".

## **Chapter8 Setup for the Managed Server (for modem / direct connection)**

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This chapter explains the setup procedure for the DianaScope Manager to manage the BMC and DianaScope Agent on a managed server remotely via modem / direct connection.

Case of direct connection is explained on the center.

### **8.1 Setup Flow (for modem/direct connection)**

Perform the following setup procedure:

- (1) Connects the DianaScope server and the managed server on the same on the network.  
See Chapter2 “System Requirements”.  
With direct connection, connect the DianaScope server and the managed server directly with RS-232C cross cable. The serial port of the DianaScope server DianaScope is specified on the “Environment Setting” screen of the DianaScope.
- (2) Configure the BMC on the managed server.
- (3) Register the managed server on the DianaScope Manager.

## 8.2 Configure BMC on Managed Server (for modem/direct connection)

Configure BMC of the managed server at first.

.....  
**TIPS:**

- This section explains about the minimum setting that is necessary for connection the DianaScope Manger with the managed server. For details of BMC configuration, see Chapter9 “BMC Configuration Information ”.
- .....

There are three methods for configuring the BMC on a managed server for modem / direct connection.

■ **Configuration with DianaScope Agent or “System Management” tool of NEC EXPRESSBUILDER CD-ROM**

This document explains the configuration procedure using the DianaScope Agent for Windows.

.....  
**CHECK:**

- There are other BMC configuration tools, but do not use the following tools for setup with DianaScope.
    - NEC MWA Agent
    - ”System management” started from EXPRESSBUILDER that does not contain DianaScope.
- .....

■ **Configuration with NEC EXPRESSBUILDER DOS based with remote console feature.**

NEC EXPRESSBUILDER DOS based with remote console feature is to configure the BMC on the managed server when a keyboard is not connected. This method cannot use for modem connection.

.....  
**CHECK:**

- Configuration with NEC EXPRESSBUILDER DOS based with remote console feature can be available only from the NEC EXPRESSBUILDER that contains DianaScope.
  - See the user’s guide provided with the managed server about NEC EXPRESSBUILDER DOS based with remote console feature.  
If there is the description about NEC EXPRESSBUILDER DOS based with remote console feature, the feature is available.
- .....

### 8.2.1 Configuration with DianaScope Agent (for modem/direct connection)

This document explains the configuration procedure using the DianaScope Agent for Windows.

- (1) After booting Windows on the managed server, click Windows [start] and start the BMC configuration function of DianaScope Agent.
- (2) The main dialog box will be appeared.  
Click [New]. When a confirmation message is displayed, click [OK].
- (3) “BMC Configuration” dialog box will be display. Confirm “Common”  
Click “Common” tab page.

Be sure to set the below item. The other items can be used with the default values.

-- “Computer Name”

Enter a unique name for each managed server.

-- “Authentication Key”

- (4) Select “WAN/Direct” tab page for LAN port 1 of the BMC.  
Be sure to set the below items. The other items can be used with the default values.  
  
-- “Serial Port Mode”  
Select “Direct” for direct connection.  
Select “WAN (modem)” for modem connection.  
-- ”Flow Control”  
Select ”RTS/CTS”
- (5) Click [Register].  
The configuration information will be set in the BMC.

## 8.2.2 Configuration with NEC EXPRESSBUILDER DOS based with remote console feature (for modem/direct connection)

NEC EXPRESSBUILDER DOS based with remote console feature can configure the BMC on the managed server with the configuration information FD containing the configuration information. This section explains for direct connection.

.....  
**CHECK:**

- Configuration with NEC EXPRESSBUILDER DOS based with remote console feature can be available only from the NEC EXPRESSBUILDER that contains DianaScope.
  - See the user's guide provided with the managed server about NEC EXPRESSBUILDER DOS based with remote console feature.  
If there is the description about NEC EXPRESSBUILDER DOS based with remote console feature, the feature is available.
- .....

Perform the following procedure:

- (1) Creates a configuration information file
- (2) Run NEC EXPRESSBUILDER DOS based with remote console feature

### 8.2.2.1 Creates a configuration information file

- (1) Start the DianaScope configuration installed on any PC to create the configuration information file.
- (2) Click [New]. The confirming message will be displayed. Click [OK].
- (3) The "BMC Configuration" dialog box will appear.  
Click "Common" tab page.

Be sure to set the below item. The other items can be used with the default values.

- "Computer Name"  
Enter a unique name for each managed server.
- "Authentication Key"  
-- Set "Remote Control (WAN/Direct)" and "Redirection (WAN/Direct)" to enable.

- (4) Select "WAN/Direct" tab page.

Be sure to set the below items. The other items can be used with the default values.

- "Serial Port Mode"  
Select "Direct" for direct connection.  
Select "WAN (modem)" for modem connection.
- "Flow Control"  
Select "RTS/CTS"

- (5) Insert a formatted floppy disk into the FD drive, and click [OK]. A dialog box will appear for specifying a location where the configuration information is to be saved.
- (6) Specify the floppy disk's root directory as the location.  
Enter "CSL\_LESS.CFG" for the file name, and click [OK].

The configuration information file will be saved on the floppy disk. This floppy disk is called a "configuration information FD".

.....  
**CHECK:**

- Place the configuration information FD in the write-enable state
- .....

### 8.2.2.2 Run NEC EXPRESSBUILDER DOS based with remote console feature

- (1) Configure the BMC of the managed server with the configuration information.  
Insert the NEC EXPRESSBUILDER CD-ROM into the CD-ROM drive and the “configuration information FD” into the FD drive on the managed server. And then turn on the server.

After NEC EXPRESSBUILDER DOS based with remote console feature is started and the configuration information is loaded from the FD into the managed server, the managed server will be rebooted.

.....  
**TIPS:**

- If the setting in the configuration information file is already configured, the managed server will be not rebooted.
  - When the console-less function for direct connection is used, the BIOS settings are changed as follows:
    - Serial Port Address: On Board COM B
    - Baud Rate: 19.2kbps
    - Flow Control: RTS/CTS for the managed server supporting SOL  
No Flow for the managed server not supporting SOL
    - Terminal Type (Console Type) : PC-ANSITo check whether that the managed server supports SOL, see ”NEC DianaScope Managed Servers Summary”
  - The managed server is still opened the main menu of the NEC EXPRESSBUILDER after executing the feature.  
After registering the managed server on th DianaScope and confirm the remote console for the managed server, remove the NEC EXPRESSBUILDER from the CD-ROM drive if you need.
- .....

## 8.3 Register the managed server on DianaScope Manager (for modem/direct connection)

Register the managed server on the DianaScope Manager, login to the DianaScope Manager and perform the “Check Connection”.

Login to the DianaScope Manager and perform in the following order :

- (1) Add the group to which the managed server belongs.
- (2) Register a managed server.

### 8.3.1 Add Group which the managed server belongs

See 7.3.2.

### 8.3.2 Register the Managed Server (for modem/direct connection)

- (1) Click the managed server’s “Group name” on the “Group List”.
- (2) Click the “Add Server” on the “Server List” of the group.
- (3) Click ”Manual Registration” tab.
- (4) Input the following items:

- “Server Name”  
Enter the managed server name on the DianaScope.
- ”Authentication Key”  
Enter the authentication key to be set on the BMC configuration of the managed server.
- “Connection Type”  
Select “Direct” for direct connection. Select “WAN (modem)” for modem connection.

.....  
**TIPS:**

- For details of other items, see the DianaScope online help.
- .....

- (5) Click [Add].

.....  
**TIPS:**

- A managed server cannot be controlled remotely by only registering it. Perform a “Check Connection”.
- .....

- (6) Click [Connect] on “Connection Setting”.

- (7) Click [Check Connection].

DianaScope Manager will communicate with the BMC of the managed server to check the connection. The DianaScope Manager will also collect the server information for the management.

When the “Check Connection” is completed, the DianaScope Manager can control the managed server.

.....  
**CHECK:**

- After the operation for the managed server is finished, click [Disconnect] on the “Connection Setting”.
- .....

## Chapter9 BMC Configuration Information Items

### 9.1 BMC Configuration Items

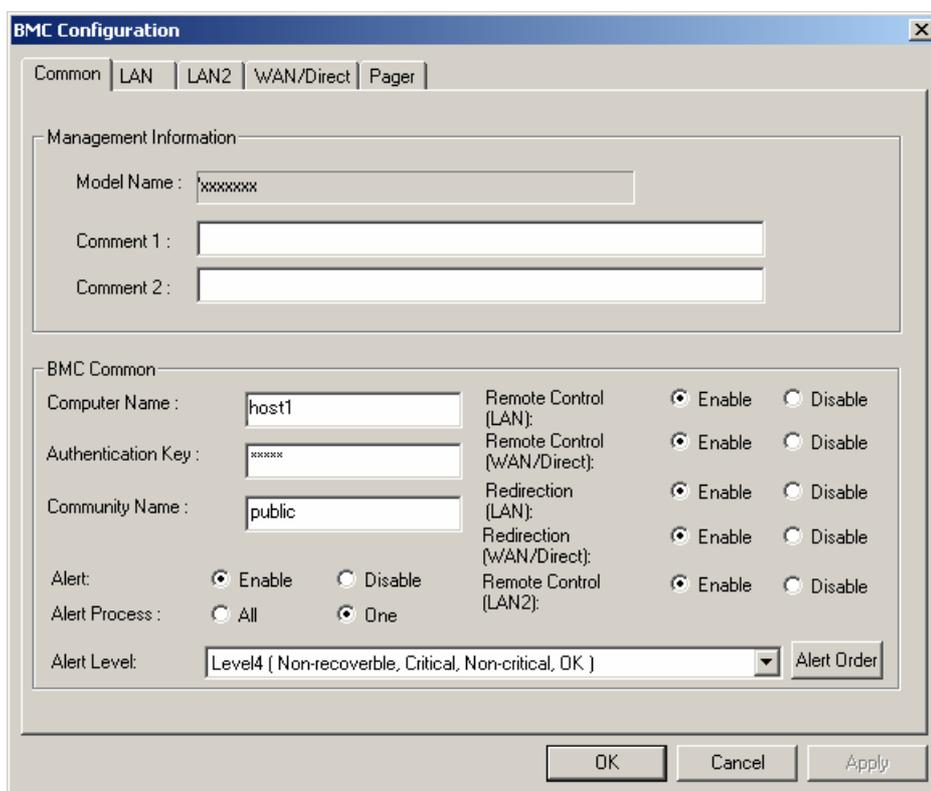
This chapter explains all the BMC configuration information items. Items that are not mandatory can be used with the default values.

The following screens are example displays for creating new configuration information with DianaScope Agent.

.....  
**CHECK:**

- If the managed server is ft Server, it has a different BMC configuration items. See “NEC DianaScope Installation Manual for ft Server”.
- .....

(1) Common



Item	Description	Default Value
Management Information	Management information setting on the managed server side	
Model Name	Displays the model name of the managed server. (The model name included in the FRU information is displayed. It may be different from the official product name.)	-
Comments 1, 2	Set comments. Comments can be freely entered. (The comments cannot be viewed remotely.)	Blank
BMC Common	BMC-common setting	
Computer Name	Enter any name for managing the server on DianaScope. The computer name of each server to be managed must be unique.	host1

Item	Description	Default Value
Authentication Key	Set the authentication key for connection with the BMC.	guest
Community Name	Set the community name of the SNMP trap to be sent by the BMC. *1	public
Alert *2	Determine whether to enable/disable the sending of alerts. When "Disable" is selected, alerts are not to be sent to any alert receivers. When "Enable" is selected, they are sent depending on the alert process, alert level, and whether each alert receiver is enabled/disabled.	Enable
Alert Process *3	Select either "All Alert Receivers" or "One Alert Receiver". When "All Alert Receivers" is selected, alerts are sent to all alert receiver media in the following order. (1) via LAN (2) via Modem (3) pager. When "One Alert Receiver" is selected, alerts are not to be sent to the lower priority receiver medium than the alert receiver to which the alert is sent successfully.	One Alert Receiver
Alert Level	Set a level for determining whether to send alerts, depending on the importance of events which have occurred on the managed server. *2	Level 4
Remote Control (LAN1)	Determine whether to enable/disable remote control via LAN1. When "Disable" is selected, connection via LAN1 from DianaScope cannot be made.	Enable
Remote Control (LAN2)	Determine whether to enable/disable remote control via LAN2. When "Disable" is selected, connection via LAN2 from DianaScope cannot be made. This item is displayed only when the managed server supports communication with DianaScope via LAN2.	Enable
Remote Control (WAN/Direct)	Determine whether to enable/disable remote control via WAN/Direct connection. When "Disable" is selected, WAN/Direct connection from DianaScope cannot be made.	Enable
Redirection (LAN)	Determine whether to enable/disable a remote console via LAN by BIOS. When "Disable" is selected, the remote console function via LAN cannot be used.	Enable
Redirection (WAN/Direct)	Determine whether to enable/disable a remote console via WAN/Direct connection by BIOS. When "Disable" is selected, the remote console function via WAN/Direct connection cannot be used.	Enable

\*1: When you change Community Name, please set up the community name so that the alert receiver can receive it via LAN.

\*2: See 9.2 "Alert form BMC".

\*3: The alert levels are as follows:

Alert Level	Importance of Alert Event
1	Unrecoverable
2	Unrecoverable, <b>Error</b>
3	Unrecoverable, Error, <b>Warning</b>
4	Unrecoverable, Error, Warning, <b>Recoverable</b>
5	Unrecoverable, Error, Warning, Recoverable, <b>Notice</b>
6	Unrecoverable, Error, Warning, Recoverable, Notice, <b>Monitoring</b>

**IMPORTANT:**

- When you use the serial port 2 of the managed server to connect device such as UPS, please disable the following three items. In this case, it becomes impossible to use a remote console via LAN when the managed server supports SOL.
  - "Remote Control (WAN/Direct)"
  - "Redirection (LAN)"
  - "Redirection (WAN/Direct)"
 Please refer to "NEC DianaScope Managed Servers Summary" to confirm the managed server supports SOL.

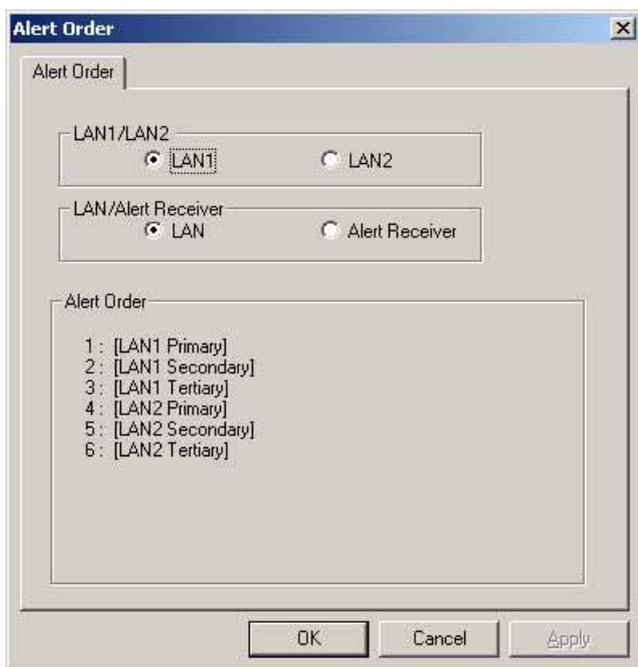
**TIPS:**

- If the managed server supports SOL, the following items are changed automatically when you register the configuration information with "Redirection (LAN)" enabled.
  - "Redirection (WAN/Direct)" item in "Common" tab : Enable
  - "Flow control" item in "WAN/Direct" tab : RTS/CTS

(2) Alert Order

Priorities are displayed when the managed server's BMC supports communication via LAN2.

Click [Alert Order] on the "Common" tab page.



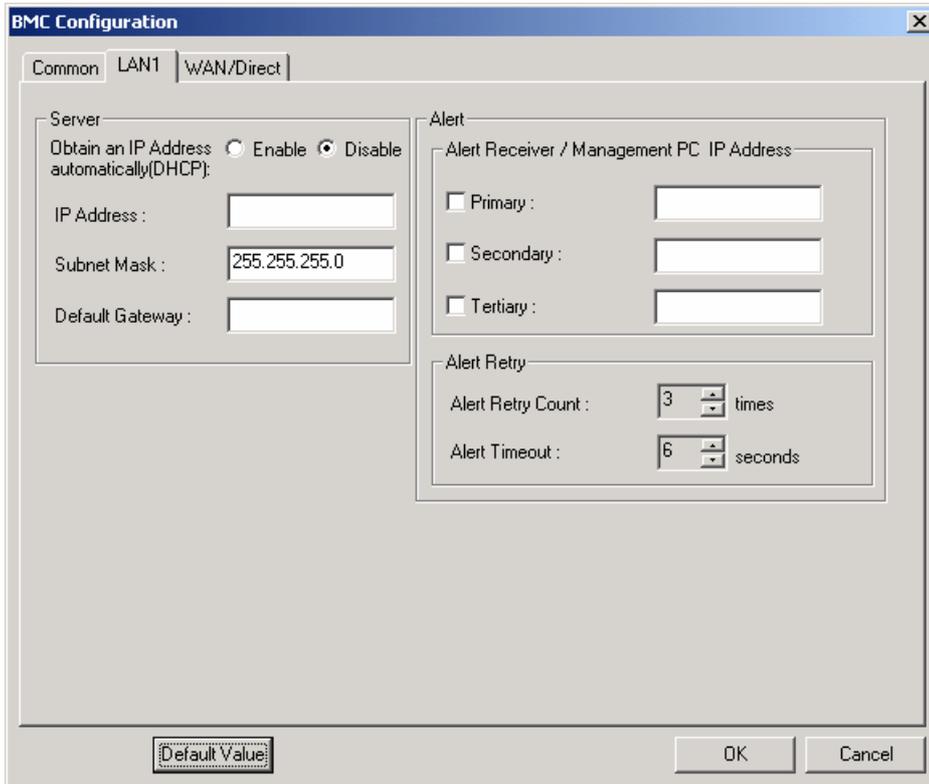
Item	Description	Default Value
LAN1/LAN2	Determine whether to give priority to alerts via LAN1 or LAN2.	LAN1
LAN/Alert Receiver	Determine whether to give priority to alerts via the same LAN or to assign priorities to the alert receivers. When priority is given to LAN, alerts are sent to all alert receivers via the same LAN, and then alerts via the other LAN are sent. When priorities are assigned to the alert receivers, alerts are sent to them in priority descending order via LAN1 and LAN2 by turns.	LAN

(3) LAN1/LAN2

“LAN2” tab page is displayed when the managed server supports communication with DianaScope via LAN2.

**IMPORTANT:**

- Do not change the default values of “LAN1” and “LAN2” when you do not use LAN connection.



Item	Description	Default Value
Server	Setting for network to be used with the managed server.	
Obtain an IP Address automatically(DHCP)	Determine whether to dynamically obtain an IP address from a DHCP server. If the item is set enable and registered, the BMC set the value obtained from DHCP server on "IP Address", "Subnet Mask" and "Default Gateway". You can set enable on the item only if the BMC supports this capability.	BladeServer: Enable Other server: Disable
IP Address	Set the IP address of the managed server's BMC.	0.0.0.0 or Blank
Subnet Mask	Set the subnet mask of the managed server.	255.255.255.0
Default Gateway	Set the IP address of the managed server's default gateway. When you set the gateway for this item, please connect the managed server via LAN port used by BMC and the gateway to network before register the configuration to BMC.	Blank
Alert Receiver / Management PC	Setting of the DianaScope server that manages the server, or alert receiver that receives alerts from BMC.	
Alert (Check Box)	Determine whether to enable/disable the sending of alerts to the alert receiver.	Disable
IP Address	Set the IP address of the DianaScope server or the alert receiver. Please set the IP address of DianaScope server for Primary Alert Receiver / Management PC  When you set alert receiver / management PC on same network with the managed server for this item, please connect the managed server via LAN port used by BMC and the alert receiver / management PC to network before register the configuration to BMC.	0.0.0.0
Alert Retry	Setting for alert retry	
Alert Retry Count	Set the number of times an alert retried.	3
Alert Timeout	Set a timeout period (seconds) for an alert.	6

**CHECK:**

- The managed server included the BMC that uses an exclusive LAN port (Management LAN port) supports the function of "Obtain an IP Address automatically (DHCP)".
- If the managed server has been installed Advanced Remote Management Card or ft Remote Management Card, the BMC may not immediately obtain the IP address after the BMC is configured to obtain the IP address by the DHCP. Please turn the managed server AC-OFF and AC-ON because the BMC try to obtain the IP address whenever the managed server is turned AC-ON.

(4) WAN/Direct

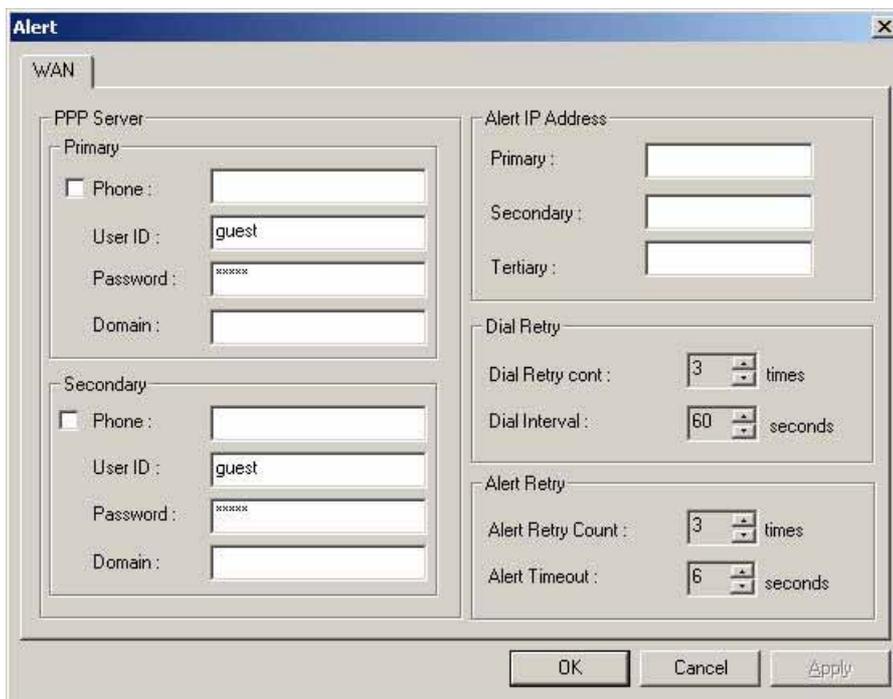


Item	Description	Default Value
Serial Port	Setting for the COM port to be used with the managed server	
Mode *1	Select "WAN (Modem)" for WAN connection, and "Direct" for direct connection.	Direct
Baud Rate *1	Select a baud rate.	19.2Kbps
Flow Control *1	Select a flow control method. For a server conforming to IPMI Ver.1.5 or Ver.2.0, be sure to select "RTS/CTS."	None
Modem	Setting for the modem to be used with the managed server	
Dial Mode	Enter "Pulse" for a "pulse" circuit, and "Tone" for a "tone" circuit.	Pulse
Initialization Command	Set the initialization command to use the modem.	ATE1Q0V1X4&D2&C1S0=0
Hang-up Command	Set the command to disconnect the line.	ATH
DTR Hang-up	Determine whether to enable/disable line disconnection in time with the DTR signal.	Enable
Escape Command	Set the command to change the communication mode from "online mode" to "offline mode."	+

\*1 Items that match the BIOS settings

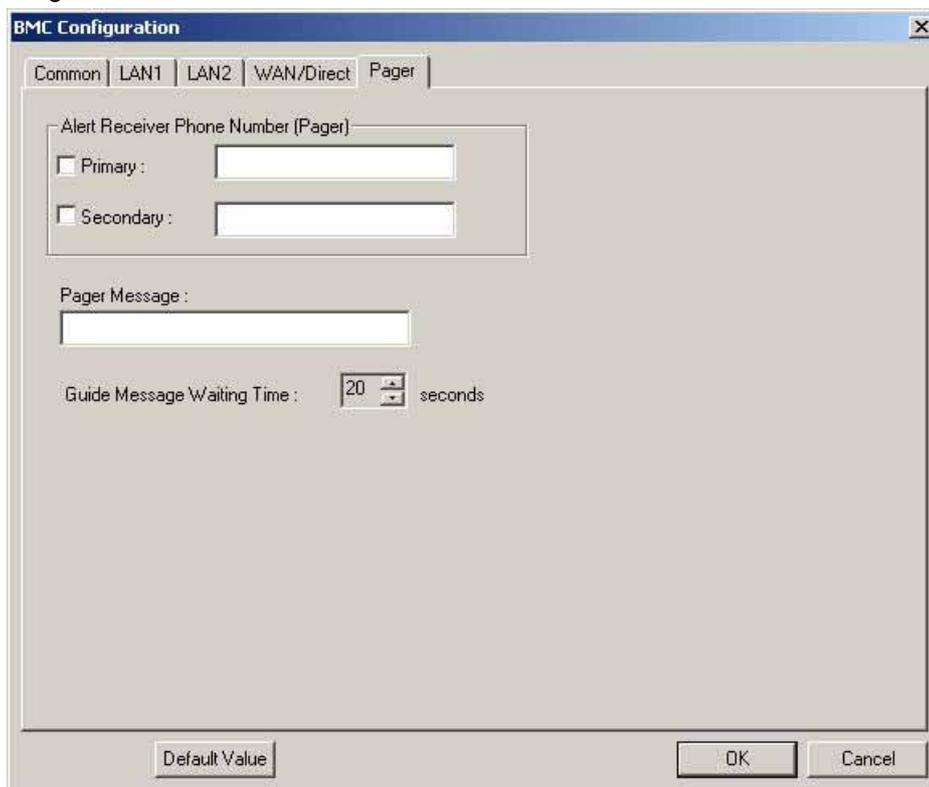
(5) WAN (setting for alerts)

This dialog box is displayed when you click “Alert setting” button in “WAN/Direct” tab of the DianaScope Agent.



Item	Description	Default Value
PPP Server n	Setting for the alert receiver to which PPP connection is made from the managed server's BMC	
Alert (Check Box)	Determine whether to enable/disable the sending of alerts.	Disable
Phone	Set the phone number of the alert receiver to which PPP connection is made.	Blank
User ID	Set the user ID for PPP connection.	guest
Password	Set the password for PPP connection.	guest
Domain	Set the domain name for PPP connection. Set this item when it is necessary for setting on the PPP server side.	Blank
Alert IP Address	Set the IP address of the alert receiver management PC.	0.0.0.0
Dial Retry	Setting for dial-up retry when alerts are sent via WAN	
Dial Retry Count	Set the number of times dial-up retried. Setting range: 0-7	3
Dial Retry Interval	Set intervals (seconds) at which dial-up is retried. Setting range: 60-240 seconds	60
Alert Retry	Setting for alert retry when alerts are sent via WAN	
Alert Retry Count	Set the number of times an alert retried. Setting range: 0-7	3
Alert Timeout	Set a timeout period (seconds) for an alert. Setting range: 3-30 seconds	6

(6) Pager



Item	Description	Default Value
Alert Receiver n	Setting for the alert receiver to which PPP connection is made from the managed server's BMC	
Alert (Check Box)	Determine whether to enable/disable the sending of alerts.	Disable
Phone No.	Set the phone number of the pager.	Blank
Message	Setting for the message to be sent from the managed server's BMC to the pager	
Pager Message	Set the message to be sent from the managed server's BMC to the pager.	Blank
Guide Message Wait Time	Set the wait time until the message is sent after dialing the pager center's phone number. Setting range: 0-30 seconds	20

**TIPS:**

- The items of the Dial-up Retry and the Alert Retry in the “WAN (Alert setting)” are also applied to the “Pager”.
- The managed server that integrates EXPRESSCPE Engine does not support the alert to pagers.

## 9.2 Alert form BMC

In the case that the item “Alert” on BMC Configuration is enabled, BMC will alert directly to the specified alert receiver when the event which is in specified alert level.

If NEC ESMPRO Manager and DianaScope Manager (or ESMPRO Manager Association Module) are installed on the alert receiver, the alert from BMC is registered on ESMPRO AlertManager.

Sending the alert from BMC depends on exist of ESMPRO Agent.

- (1) When ESMPRO Agent has been installed on the managed server.
  - If OS does not run on the managed server, BMC send the alert when the specified event happens.
  - After OS runs and ESMPRO Agent starts, BMC does not send the alert even if the event happens, because ESMPRO Agent sends the alert.
- (2) When ESMPRO Agent has not been installed on the managed server.
  - BMC sends the alert whenever the specified event happens.

## Chapter10 EM Card and Chassis Management

---

### 10.1 Overview

The DianaScope has following functions by communication with the EM card in a blade enclosure,

#### ■ Information Collection

DianaScope collects the status and the information of the blade enclosure as follows.

-- Blade / EM Card / Switch Module List

If the slot state of CPU blade, EM card or switch module is changed, DianaScope collects current slot state.

-- Chassis Information

DianaScope collects the Blade enclosure name, the name and ID of the rack in which the blade enclosure is installed.

-- EM Card / Switch Module Status

DianaScope obtains the STATUS Lamp of the EM card and the switch module.

#### ■ Server Monitoring

DianaScope always monitors the slot state in the blade enclosure and the STATUS Lamp of the EM card and the Switch Module. When some slot state change or failure occurs, DianaScope notifies the operator.

#### ■ CPU Blade Auto Setting

When DianaScope detects new CPU blade installed in the blade enclosure, the DianaScope configures BMC on the CPU blade (managed server) through the EM card to control the managed server remotely. DianaScope also registers the managed server for its own, and execute the “Check Connection”.

### 10.2 System Requirements

DianaScope Manager can manage the following EM card.

#### ■ Hardware

EM card that is indicates “DianaScope Managed Servers Summary”.

#### ● Communication Medium

TCP/IP network

.....  
**CHECK:**

- DianaScope Agent cannot be installed on EM card.
  - DianaScope does not need a server license for an EM card. However, please notice that the server license is necessary temporarily until success of the “Check Connection”.
- .....

## 10.3 Setup for EM Card

.....  
**CHECK:**

- DianaScope does not need a server license for an EM card. However, please notice that the server license is necessary temporarily until success of the “Check Connection”. Register the EM card on the DianaScope at first, and then register the other managed server.
- .....

### 10.3.1 Setup Flow

Perform the following setup procedure:

- (1) Connects the DianaScope server and the EM card.
- (2) Setup EM card for communication with DianaScope.
- (3) Register the EM card on DianaScope Manager.

### 10.3.2 Setup EM Card for communication with DianaScope

Setup the EM Card as follows. See Users Guide that attached to EM Card for detail.

- (1) Set the Fixed IP address of the EM Card.
- (2) Setup EM Card with setdsl command for communication with DianaScope.

### 10.3.3 Register EM Card on DianaScope Manager

You can register the EM card with similar way of registering the ordinary managed server. Login to the DianaScope Manager and perform in the following order :

- (1) Add the group to which the EM card belongs temporary.
- (2) Register the EM card.

#### 10.3.3.1 Add Group

.....  
**CHECK:**

- DianaScope needs the group when EM card is registered. DianaScope distinguishes the EM card from ordinary managed server by “Check Connection”, and then deletes the EM card from the group.
- .....

- (1) Click the “Group name” on the “Group List”.
- (2) Click the “Add Server” on the “Server List” of the group.

### 10.3.3.2 Register EM Card

Use either of the two methods to register EM card.

■ **Manual Registration**

This method requires the operator to directly enter the EM card's information such as the IP address and to perform "Check Connection".

■ **Auto Registration**

This method automatically searches the network for managed servers and EM card that are not registered yet on the DianaScope Manager, and registers them.

.....  
**TIPS:**

- DianaScope distinguishes the EM card from ordinary managed server by "Check Connection".
  - After "Check Connection" of the EM card is completed, Information of the blade enclosure (chassis) is displayed on the "Chassis List" on the DianaScope.
  - The chassis name on the DianaScope is set to the first 8 characters of the blade enclosure name. If the same name is already registered, some number is added to the name.  
You can change the chassis name on "Chassis Properties" – "Information".
- .....

(1) Manual Registration

(1)-(a) Click the any group name on the "Group List"

(1)-(b) Click the "Add Server" on the "Server List" of the group.

(1)-(c) Click "Manual Registration" tab. Input the following items:

- "Server Name"  
Enter the EM card name on the DianaScope.
- "Authentication Key"  
Enter the "user password for linking with NEC DianaScope" that is set on the EM card.
- "IP address 1"  
Enter the Fixed IP address and subnet mask of the EM card.

(1)-(d) Click [Add].

(1)-(e) Click [Check Connection] on "Connection Setting".  
DianaScope Manager will execute "Check Connection" and collect the information for the management. When the "Check Connection" is completed, the DianaScope Manager can control the EM card.

(2) Auto Registration

(2)-(a) Click the any group name on the "Group List"

(2)-(b) Click the "Add Server" on the "Server List" of the group.

(2)-(c) Select "Search Mode" on the "Auto Registration" screen.  
With "Network Address Search", enter the network address and network mask.  
With "IP Address Range Search", enter the "start address" and "end address" of the IP address range.  
After that, click [Search]. The search for the managed servers will start.

(2)-(d) The IP addresses of the found managed servers' BMCs and EM cards will be listed. Select the IP address to be registered.  
Click [Register].

(2)-(e) Enter "Authentication Key" for the managed server and click [OK].  
The DianaScope Manager will execute "Check Connection".  
When the "Check Connection" is completed, the DianaScope Manager can control the EM card.

.....  
**TIPS:**

- When the EM card is registered by auto registration, the EM card name is set to "host" + number. You can change the EM card name on "EM Card Properties" – "Connection Setting".
- .....

## 10.4 Operation of EM card

You can open the screen to check the STATUS lamp and to turn UID lamp on as follows.

- (1) Click "Chassis" from the tree view.
- (2) Click the chassis name on the "Chassis List".
- (3) Click "EM Card List".
- (4) Click the EM card name.

## 10.5 CPU Blade Auto Registration

DianaScope monitors blade slot state of the blade enclosure in which the EM card is installed. If DianaScope detects new CPU blade installed on the chassis, DianaScope configures BMC on the CPU blade (managed server) through the EM card. To control the managed server, DianaScope also register the managed server and executes "Check Connection".

You should set the item for the BMC configuration and server registration on the DianaScope on the "Chassis Properties" – "CPU Blade Auto Setting".

See the online help of the DianaScope for the details of the items.

## Chapter11 Precautions for Use

---

### 11.1 About DianaScope Manager

#### 11.1.1 About installation

- If you install the DianaScope Manager on Windows Server 2003, please do not delete user account “Administrator” from “Impersonate a client after authentication” of “Local Security Policy”.
- DianaScope Manager (Windows) Installer cannot upgrade from DianaScope Manager Ver.1.00.01. Uninstall DianaScope Manager Ver.1.00.01, and then install new version.  
Note: All the registered information will be deleted as the result of the uninstalling.
- DianaScope Manager (Windows & Linux) Installer cannot downgrade to the older version. If you want to use the older version, uninstall the current version and then install new version.  
Note: All the registered information will be deleted as the result of the uninstalling.
- DianaScope Manager (Windows) Installer may indicate a message that requests some disk if you upgrade the DianaScope Manager with the installer on CD-ROM after installing with the installer on HDD. In this case, copy the installer on the HDD and then upgrade.
- You should logout from DianaScope before the DianaScope Manager is upgraded. After the DianaScope is upgraded during login, some error may be displayed on any web browser. When the error is displayed, you should close web browser that is login to the DianaScope, and restart the Tomcat.

#### 11.1.2 Windows Firewall

If Windows firewall is enabled on the DianaScope server, web client cannot communicate to DianaScope Manager.

Please perform following settings:

- (1) Open “Windows firewall” from “control panel” of Windows.
- (2) Select “Add Port” on “Exceptions” tab page.
- (3) Enter following setting:  
Name: arbitrary name  
Port number: 8080 (You can change the port number for Tomcat.)  
TCP/UDP: TCP

See 11.3.2”Windows Firewall” for NEC ESMPRO Manager Association Module.

#### 11.1.3 About restarting service

When you stop DianaScope Manager service and re-start it, please also re-start service of Tomcat.

#### 11.1.4 About use of two or more DianaScope Manager

A single managed server can be controlled remotely by up to three DianaScope servers. Follow these notes on the remote control:

- Use only one DianaScope Manager to set/execute the scheduled running function and remote batch function.
- While one DianaScope Manager is using the remote console function of a managed server, the other DianaScope Managers cannot use the managed server’s remote console function.
- More than one DianaScope Manager cannot collect IPMI information from the same managed server concurrently.
- Do not use more than one DianaScope PXE Service. Start the DianaScope PXE Service on only one of DianaScope servers on the same network.
- Use one DianaScope Manager for managing an EM card. Use one DianaScope Manager for all EM cards

and CPU blades on one blade enclosure.

### **11.1.5 About Power Control**

#### **11.1.5.1 Power OFF, Power Cycle, Reset, and Dump**

Since power control is provided by hardware regardless of the state of the managed server's operating system, the system may be damaged. Be careful of operation under power control.

#### **11.1.5.2 Power OFF, Power Cycle, Reset with the BIOS Setup Utility Active**

Do not control the power supply while the BIOS Setup Utility is active on the managed server. Otherwise, the alert setting of BMC configuration will be disabled.

### **11.1.6 About IPMI Information Collection**

While a managed server is tuned OFF, some records of management controller information and FRU (Field Replaceable Unit) information cannot be read in. Error messages about records which could not be read in are shown in the details display area.

The current status of some sensors cannot be read in either while the managed server is turned OFF.

### **11.1.7 About Remote Console**

#### **11.1.7.1 Restriction on Concurrent Connection to the Remote Console**

When a single DianaScope Manager is operating the remote console of a managed server, another Manager cannot execute the remote console function for the managed server. A managed server can transmit redirection data to only a single DianaScope Manager.

#### **11.1.7.2 About Remote Console before OS boot or during DOS program running**

If a graphic screen is displayed on a managed server, data cannot be displayed correctly on the CUI remote console. The CUI remote console screen is displayed only when the managed server displays a text screen.

If the DOS program running on a managed server displays Japanese words, follow these notes:

- On the BIOS Setup Utility screen of the managed server, select "Server" → "Console Redirection" and change Terminal Type" to "PC-ANSI" in advance. (If a managed server of which BIOS Setup does not include the item Terminal Type, Terminal Type is already set to PC-ANSI, so the managed server can be used as it is.)
- Boot the DOS in English mode (with no Japanese-language driver). At this time, the screen contents cannot be displayed correctly on the managed server, but Japanese words are displayed correctly on the CUI remote console of the DianaScope Manager.

#### **11.1.7.3 About Remote Console after starting Linux**

Notes in the case of using the remote console after starting Linux on the managed server by the redirection function of Linux are shown below.

- While the CUI remote console is accessed via WAN/Direct connection, unintentionally keyed data may appear on the managed server when the DianaScope Manager issues a command to the BMC.
- The Home key and End key are not enabled when you operate Linux with the CUI remote console function.
- If the managed server is rebooted after DianaScope displays CUI remote console for the managed server that runs Linux, you may not input following keys on remote console:  
F5-F12, Arrows, Insert, Delete, Home, End, Page Up, and Page Down.  
Close the remote console window and re-open it.

#### **11.1.7.4 In Case of Interruption to Remote Console**

After the BMC on a managed server establishes communication via WAN/Direct connection, communication with the DianaScope Agent may ends up with a timeout or the remote console may not be updated any more. This is because priority is given to communication with the BMC.

To restart the remote console, use the [Restart Redirection] button on the DianaScope Manager.

#### **11.1.7.5 About the display of a special character**

The CUI remote console screen is not displayed correctly in the following cases:

- Terminal Type  
If Terminal Type is not set to PC-ANSI on the BIOS Setup Utility screen of a managed server, Japanese words on the POST or DOS screen cannot be displayed correctly on the CUI remote console.
- Special character  
Ruled lines , arrows correctly and en-size left arrows cannot be displayed.
- User definition font  
User definition font cannot be displayed.

#### **11.1.7.6 In Case of Display of Illegally Keyed Data on the Remote Console**

Unintentionally keyed data may appear on a managed server in the following conditions when the DianaScope Manager issues a command to the BMC:

- WAN/Direct connection
- The SAC screen at Windows boot or the CUI remote console under Linux is accessed.

#### **11.1.7.7 In Case of Key-in Failure on the Remote Console**

During DOS boot or access to the FD or CD-ROM drive immediately after the managed server's power switch is turned ON, data cannot be keyed in from the remote console or the keyed data display may be delayed.

#### **11.1.7.8 About RAID EzAssist Configuration Utility**

Please refer to 11.4.3.1"SOL".

#### **11.1.7.9 About power off during GUI remote console**

If the managed server is forced a power off by using a power button, reset or pushing DUMP switch during GUI remote console, the GUI remote console will not be updated. Please reopen the remote console window in this case.

#### **11.1.8 About Remote FD**

- In comparison with the FD drive on a managed server, operation of the remote drive may take much more time.
- Provide the DOS boot FD that is to be used with the remote drive.
- Do not install EMM386.EXE when you are to execute the DOS program using the remote drive. Doing so may cause the managed server to stall.

#### **11.1.9 About CPU blade auto registration**

- When "Check Connection" of "CPU blade auto registration" was failed.  
Retry of "CPU Blade auto registration" is not necessary. You can execute "Check Connection" on "Server Properties" – "Connection Setting". If a specified IP address is set from a CPU blade to another CPU blade during "CPU blade auto registration" process (ex. when you replace CPU blade and execute "CPU blade auto registration"), DianaScope may not be able to connect the CPU blade because old information remains in the ARP table on the DianaScope server. Wait for a few minutes and try the "Check Connection".

#### **11.1.10 Detect of CPU blade / switch module Insertion / remove**

When the DianaScope server has two or more Network Interface Cards, The detection of the events that some CPU blades or some switch modules are inserted and/or removed on the Blade Enclosure might be delayed. DianaScope ver.1.10.00 will improve the issue. Please download the latest version of the DianaScope from the URL.

<http://www.nec.co.jp/express>

### **11.1.11 About the coexistence of DianaScope Manager with DianaScope Agent on the same server**

If the managed server is installed Advanced Remote Management Card or EXPRESSSCOPE Engine (the BMC uses exclusive LAN port (management LAN port)), DianaScope can manage the server itself installed. Notice that you cannot use the GUI Remote Console function,

If the managed server is installed BMC that uses the standard LAN port, DianaScope Manager cannot manage the server itself installed. It is possible only to install DianaScope Manager and DianaScope Agent on the same server. But the communication with BMC on the server is prevented by local loopback function of OS and the BMC cannot receive any packets from the DianaScope Manager.

### **11.1.12 Windows Vista**

#### **11.1.12.1 FDD utility**

When OS of DianaScope server is Windows Vista, you cannot use FDD utility on the DianaScope.

#### **11.1.12.2 DianaScope command line interface**

When user account control is enabled on Windows Vista, you must permit to access the folder to execute DianaScope command line interface as follows.

- (1) Open explorer on Windows, and click “manager” folder which is under the DianaScope installation folder.
- (2) Permit to access the folder with indication of the dialog box.

When allowing to access the folder, standard users can also use the DianaScope command line interface.

## 11.2 About DianaScope PXE Service

### 11.2.1 About installation

-- DianaScope PXE Service Installer cannot upgrade from DianaScope PXE Service under Ver.1.01.01. Uninstall the older version, and then install new version.

Note: All the registered information will be deleted as the result of the uninstalling.

-- DianaScope PXE Service Installer cannot downgrade to the older version. If you want to use the older version, uninstall the current version and then install older version.

Note: All the registered information will be deleted as the result of the uninstalling.

### 11.2.2 About Configuration

See 7.2.2.1 "Notes of Configuration with DianaScope PXE Service".

### 11.2.3 Windows Firewall

If Windows firewall is enabled on the DianaScope server,, web client may not be able to communicate to DianaScope Manager.

Please perform following settings:

(1) Open "Windows firewall" from "control panel" of Windows.

(2) Select "Add Port" on "Exceptions" tab page.

(3) Enter following setting:

Name: arbitrary name  
Port number: 67  
TCP/UDP: UDP

Name: arbitrary name  
Port number: 69  
TCP/UDP: UDP

Name: arbitrary name  
Port number: 4011  
TCP/UDP: UDP

Name: arbitrary name  
Port number: 31200  
TCP/UDP: UDP

## 11.3 About NEC ESMPRO Manager Association Module

### 11.3.1 About installation

-- If you install the NEC ESMPRO Manager Association Module on Windows Server 2003, please do not delete user account "Administrator" from "Impersonate a client after authentication" of "Local Security Policy".

-- NEC ESMPRO Manager Association Module Installer cannot upgrade from NEC ESMPRO Manager Association Module Ver.1.00. Uninstall the older version, and then install new version. Note: All the registered information will be deleted as the result of the uninstalling.

(1) NEC ESMPRO Manager Association Module Installer cannot downgrade to the older version. If you want to use the older version, uninstall the current version and then install older version. Note: All the registered information will be deleted as the result of the uninstalling.

### 11.3.2 Windows Firewall

If Windows firewall is enabled on the PC installed the NEC ESMPRO Manager Association Module, the alert from BMC cannot be received.

Please perform following settings:

(1) Open "Windows firewall" from "control panel" of Windows.

(2) Select "Add Port" on "Exceptions" tab page.

(3) Enter following setting:

Name: arbitrary name  
Port number: 162  
TCP/UDP: UDP

## 11.4 About managed server

### 11.4.1 About DianaScope Agent installation

-- DianaScope Agent Installer (Linux) under Ver.2.00.00 cannot upgrade from the older version. Uninstall the older version, and then install the new version.

Note: All the registered information except BMC configuration will be deleted as the result of the uninstalling.

-- DianaScope Agent Installer (Windows & Linux) cannot downgrade to the older version. If you want to use the older version, uninstall the current version and then install older version.

Note: All the registered information will be deleted as the result of the uninstalling.

-- DianaScope Agent Ver.1.09.12 needs ncurses package on Red Hat Enterprise Linux AS 3.0 (IntelEM64T), Red Hat Enterprise Linux ES 4 (IntelEM64T) and Red Hat Enterprise Linux AS 4 (IntelEM64T). Execute the following command to confirm whether the package is installed.

```
rpm -qal | grep ncurses | grep /usr/lib/
```

You can use “Package Management Tool” to add the package. (“Package Management Tool” is opened from main menu – “System Settings” – “Add/Remove Applications”) Please Enable the check box [Compatibility Arch Support] on the “Package Management Tool” and click [Update].

-- DianaScope Agent (Windows) Installer may indicate a message that requests some disk if you upgrade the DianaScope Agent with the installer on CD-ROM after installing with the installer on HDD. In this case, copy the installer on the HDD and then upgrade.

### 11.4.2 Windows Firewall

If Windows firewall is enabled on the managed server, DianaScope Agent may not work correctly.

Please perform following settings:

(1) Open “Windows firewall” from “control panel” of Windows.

(2) Select “Add Port” on “Exceptions” tab page.

(3) Enter following setting:

Name: arbitrary name

Port number: Port number that you need to add.

If DianaScope Manager cannot communicate with DianaScope Agent:

47120 – 47129

If the remote console does not display the Windows screen of the managed server:

The setting of GUI remote console function is enabled: 47130

The setting of GUI remote console function is disabled: 5900

TCP/UDP: TCP

See 11.4.3.5”About Windows Server 2003 x64 Edition” for remote console function.

### 11.4.3 About Remote Console

#### 11.4.3.1 SOL

The SOL (Serial over LAN) system implements a CUI remote console via LAN by the following method: the BMC gets redirection data that has been output to the serial port 2 by System BIOS or console-less OS and transmits the data via the LAN. If the remote console has been set in the BMC configuration information, the serial port 2 (COM2) cannot be used for connecting another device such as UPS because the BMC occupies the serial port 2.

Please refer to ”NEC DianaScope Managed Servers Summary” to confirm the managed server supports SOL.

The remote console of Linux or SAC (Special Administration Console) of Windows Server 2003 can be used when the managed server support SOL. However, there are the following notes:

-- Use of serial port 2 is restricted. See 2.4.2"Notes on Managed Servers and Network Devices".

There are the following notes in the managed server which does not support SOL:

-- Do not attempt to boot Windows or Linux on the managed server when you use Remote Control function with utility boot mode via LAN connection. Booting of Windows or Linux may result in a failure.

-- To operate RAID EzAssist for a SOL-incompatible managed server from the CUI remote console via LAN, set the item "Console Redirection" to "Disable" on the BIOS Setup Utility screen, reboot the system, and then boot the RAID EzAssist Configuration Utility.

(1) The remote console by the redirection function of Linux and the remote console of SAC (Special Administration Console) of Windows Server 2003 cannot be used via LAN.

#### **11.4.3.2 About video adapter**

When the managed server does not use the driver corresponding to the video adapter, the remote console of DianaScope may not display the Windows screen.

If the remote console does not display the Windows screen of the managed server, please confirm a setting shown below at the managed server side.

(1) The driver corresponding to the video adapter is set in properties for Display of Windows.

#### **11.4.3.3 Power Control with the BIOS Setup Utility Active**

Do not control the power supply while the BIOS Setup Utility is active on the managed server. Otherwise, the alert setting of BMC configuration will be disabled.

#### **11.4.3.4 CUI Remote Console of DOS**

(1) To execute the CUI remote console function of the DOS screen, select "Server" -> "Console Redirection" and change "ACPI Redirection" to "Disable" on the BIOS Setup Utility screen of the managed server.

#### **11.4.3.5 About Windows Server 2003 x64 Edition**

If OS of managed server is Windows Server 2003 x64 Edition, the remote console of DianaScope may not display the Windows screen correctly. Please perform following settings:

(1) To open the properties dialog box of VNC, click "Start" -> "All Programs" -> "VNC" -> "Administrative Tools" -> "Slow Default Settings".

(2) Change following settings in "Update Handling":

- Uncheck "Poll Console Windows Only".
- Check "Poll Window Under Cursor".

(3) Click [OK].

#### **11.4.3.6 CUI Remote Console after Windows Boot**

-- The remote console via LAN cannot be used for SAC if the managed server does not support SOL.

-- To execute the CUI remote console function of the SAC screen after Windows boot, select "Server" -> "Console Redirection" and change "ACPI Redirection" to "Enable" on the BIOS Setup Utility screen of the managed server.

When "ACPI Redirection" is set to "Enable" on the BIOS Setup Utility screen, the CUI remote console function cannot be executed after POST.

#### **11.4.3.7 CUI Remote Console under Linux**

-- The remote console by the redirection function of Linux cannot be used via LAN if the managed server

does not support SOL.

- To execute the CUI remote console function of the Linux redirection, select “Server” -> “Console Redirection” and change “ACPI Redirection” to “Disable” on the BIOS Setup Utility screen of the managed server.

(1) Make a setting like the following example in the setting file (/etc/inittab) on Linux:

```
S0:2345:respawn:/sbin/agetty -h -L 19200 ttyS1 vt100
```

(Explanation of the example setting)

agetty is to be used in the following conditions:

- \* Hardware control (RTS/CTS) is enabled. (This setting is an example. Determine whether to enable/disable it, conforming to the configuration information setting on the managed server.)
- \* A directly connected local line not requiring carrier detection is assumed.
- \* Baud rate 19200 bps (This setting is an example. Set the baud rate conforming to the BMC configuration information setting on the managed server.)
- \* Serial1 port 2 of the managed server is used.
- \* The terminal type is vt100.

- Even if connection with a managed server is of any type (LAN, WAN, or Direct), Linux on the managed server recognizes that operation through the remote console of the DianaScope Manager is connection via the serial port. The initial setting on Linux does not permit any super-user (root) to log in via the serial port. To log in as a super-user, disable the security function for the serial port 2. Be very careful of operation in this case.

To disable the security function for the serial port 2, add “ttyS1” to the /etc/security file.

(2) To display the editor or menu screen on the CUI remote console, set the OS terminal screen to the 80-column, 24-line size.

#### **11.4.3.8 In case of Change of the authentication key**

If you do not use DianaScope Agent ver.2.00.00 and above, please execute either way below when you change the authentication key of the configuration information,

- Reboot the managed server.
- Restart the VNC service on the managed server.

### **11.4.4 About BMC Configuration**

#### **11.4.4.1 About BMC Configuration tool**

Among the BMC configuration information tools there are some tools which cannot be used to setup DianaScope.

- NEC MWA Agent cannot be used.
- If the DianaScope is not stored in the EXPRESSBUILDER CD-ROM, “A setup of a system management” stored in the CD-ROM cannot be used.
- The Console-less function of the EXPRESSBUILDER can be used only when DianaScope is stored in the same EXPRESSBUILDER CD-ROM.

#### **11.4.4.2 In Case of Exchange of DianaScope Server**

If a DianaScope server as an alert receiver has been exchanged, register the managed server’s BMC configuration information again even when the IP address of the DianaScope server remains unchanged. Otherwise, the BMC may fail to recognize the alert receiver.

#### **11.4.4.3 About BMC IP address synchronization of DianaScope Agent**

If BMC on the managed server uses a standard LAN port, DianaScope Agent has the function that corrects the IP address of the BMC automatically to the IP address set on the operating system when the operating system is started. In the case below, it is possible that competition or repetition of IP address occurs.

- When your DHCP environment is possible to set a different IP address to the managed server every booting the operating system, the DHCP server expects that the IP address is released after the operating system of the managed server is shut down. But BMC continues to use the IP address because the BMC IP address synchronization function set the IP address to the BMC. If the DHCP server reuses the IP address, competition of IP address will occur.
- When the managed server has cluster system, the BMC IP address synchronization of the DianaScope Agent set the logical IP address for the cluster system to BMC. It is possible to let occur the repetition of the IP address.

Cause of these problems is that BMC has shared the standard LAN port of the managed server. These problems do not occur for Advanced Remote Management Card because the BMC on the card uses an exclusive LAN port (Management LAN port).

If the IP address for the BMC is different from the IP address for the operating system, you can avoid these problems. Refer to the following operation for Windows:

- (1) Please update the DianaScope Agent on the managed server to ver.2.00.00 and above.
- (2) Click [synchronization] on the main dialog box of the DianaScope Agent to disable the BMC IP address synchronization function.  
When DianaScope Manager is ver.1.03.00 and above, you can change it by remote control.
- (3) Set the different IP address for the BMC from the IP address of the operation system.
- (4) Add a static entry to the ARP table of the DianaScope server or of the gateway server that resolves the IP address used by BMC to the MAC address.

When the DianaScope server and the managed server are in the same network, add a static entry to the ARP table of the DianaScope server.

When the DianaScope server is in the different network from and the managed server, add a static entry to the ARP table of the gateway server for the managed server.

The example is shown below. (IP address 157.55.85.212, MAC address 00-aa-00-62-c6-09)

```
arp -s 157.55.85.212 00-aa-00-62-c6-09
```

#### 11.4.4.4 About the function “Obtain an IP Address automatically (DHCP)”

The managed server included the BMC that uses an exclusive LAN port (Management LAN port) supports the function “Obtain an IP Address automatically (DHCP)”.

- (1) Following version of DianaScope modules supports the setting of the function.

Managed server	DianaScope	
The managed server that integrates EXPRESSSCOPE Engine.	DianaScope Manager	Ver.1.07.01 and above
	DianaScope PXE Service	Ver.1.02.00 and above
	DianaScope Agent	Ver.2.03.05 and above
	DianaScope Configuration	Ver.1.02 and above
The managed server installed Advanced Remote Management Card or ft Remote Management Card.	DianaScope Manager	Ver.1.11.00 and above
	DianaScope PXE Service	Ver.1.03.00 and above *1
	DianaScope Agent	Ver.2.06.00 and above
	DianaScope Configuration	Ver.1.02 and above

\*1 Not Support the managed server installed ft Remote Management Card.

When you use the module that does not support the setting of the function “Obtain an IP Address automatically (DHCP)” for the managed server that supports the function, please note followings:

- If DianaScope Agent does not support the setting of the function, the DianaScope Agent always set

“disable” for the function when it registers the BMC configuration. The DianaScope Agent also set “disable” when it writes the BMC configuration information file.

- If DianaScope Configuration does not support the setting of the function, the DianaScope Configuration always set “disable” for the function when it writes the BMC configuration information file.
- If “System Management” tool on EXPRESSBUILDER does not support the setting of the function, the tool always set “disable” for the function when it registers the BMC configuration. The tool also set “disable” when it writes the BMC configuration information file.
- If remote console feature of NEC EXPRESSBUILDER does not support the setting of the function, the tool always set “disable” for the function when it registers the BMC configuration.
- If DianaScope Manager does not support the setting of the function, the DianaScope Manager cannot set disable for the function nor change IP address when DianaScope Agent support the setting of the function and the function has been set enable.

(2) If the managed server has been installed Advanced Remote Management Card or ft Remote Management Card, the BMC may not immediately obtain the IP address after DianaScope PXE Service configures the BMC to obtain the IP address by the DHCP. Please turn the managed server AC-OFF and then AC-ON because the BMC try to obtain the IP address whenever the managed server is turned AC-ON.

#### 11.4.5 About shutdown OS

When the screen of a managed server is rocked (for example, by screen saver with password), DianaScope Agent cannot shutdown OS of the managed server.

#### 11.4.6 About shutdown OS during DC-OFF state by scheduled running

When “Agent Setting” – “Shut down OS after DC-ON during Scheduled Running Halt” on DianaScope Manager is enabled, the DianaScope Agent shutdowns OS if the managed server is powered up during the down period (DC OFF state time by scheduled running).

Only if the managed server is powered up from DianaScope Manager, DianaScope Agent does not shutdown OS. However, in case that any error is occurred during booting, DianaScope Agent may shutdown OS even though power up by DianaScope Manager.

#### 11.4.7 About the Port that BMC uses

In case that Linux on the managed server uses port 623, DianaScope Manager cannot communicate with the BMC that uses standard LAN port.

Please perform following settings:

- (1) Add following entries in services files (/etc/services) to reserve port 623.

```
asf-rmcp 623/tcp ASF Remote Management and Control Protocol
asf-rmcp 623/udp ASF Remote Management and Control Protocol
```

- (2) Reboot the OS.

#### 11.4.8 About the management of ft Server

See “NEC DianaScope Installation Manual for ft Server”.

## **11.5 About Web client**

### **11.5.1 About the operation from two or more browsers**

DianaScope cannot be operated using two or more browser windows by one Web client. When you use the browser which has tabbed browsing, the DianaScope cannot be operated using two or more tab.

### **11.5.2 About downloading configuration information file**

When you try to download the file from “Configuration Information File” of “Linkage Service” on DianaScope, Internet Explorer may block the download. Internet Explorer will also display the message on the information bar.

In this case, you can download the file with following settings:

- (1) Click information bar on Internet Explorer.
- (2) Click “Download File”.
- (3) Please read the information carefully, and select [save].

### **11.5.3 About the login to EXPRESSSCOPE Engine**

#### **11.5.3.1 About Java Plug-in**

To login to EXPRESSSCOPE Engine through DianaScope, Java plug-in of the web browser should be version 1.4.2\_12 and above. If JRE plug-in version is 1.4.2\_11 and below, the web browser may stall.

#### **11.5.3.2 About Microsoft Internet Explorer**

If OS of DianaScope server is as follows, the “login to EXPRESSSCOPE Engine” screen might not be displayed.

- Microsoft Windows Server 2003 Standard Edition/Enterprise Edition (SP1)
- Microsoft Windows Server 2003 R2 Standard Edition/Enterprise Edition
- Microsoft Windows Server 2003 Standard /Enterprise x64 Edition
- Microsoft Windows Server 2003 R2 Standard /Enterprise x64 Edition

In this case, add URL of the EXPRESSSCOPE Engine to “Add this Web site to the zone”.

- (1) Select “Internet Options” on “Tools” menu of Internet Explorer.
- (2) Click the Security tab.
- (3) Click “Local Internet” zone, and then click [Sites].
- (4) Enter the URL of the EXPRESSSCOPE Engine on “add this Web site to the zone”.  
For example: If the EXPRESSSCOPE Engine has IP address 192.168.0.100, the URL is “http://192.168.0.100”.
- (5) Click “Local Internet” zone, and then click [Sites].

## **11.6 Others**

### **11.6.1 About Use with NEC MWA**

#### **11.6.1.1 Installation into the Same DianaScope Server**

Do not install NEC MWA and DianaScope Manager on a same server.

Do not install NEC MWA Agent and DianaScope Agent on a same server.

## Appendix A. How to setup for the managed server that does not has local console

---

Even if a managed server does not have local consoles like a keyborad, You can operate BIOS setup and DOS tools of the managed server using DianaScope. Here procedure of the minimum in order to use the remote control for the managed server is shown.

1. Install DianaScope Manager and set the Environment.
2. Configure BMC on a managed server.
3. Register a managed server on DianaScope Manager.
4. Open the remote console.

### 1. Install DianaScope Manager and set the Environment.

- (1) Install DianaScope Manager on a management PC.  
Order of the installation is JRE, Tomcat and DianaScope Manager.  
Refer to [DianaScope Manager Installation for Windows](#).  
Refer to [DianaScope Manager Installation for Linux](#).
- (2) Confirm that you can login to the DianaScope Manager.  
Refer to [Login](#).
- (3) Register a DianaScope server license.  
Refer to [Register the Server License](#).

.....  
**TIPS:**

- DianaScope Additional Server License(1) may be attached to the product that does not have local consoles. Check the attachment.
- .....

- (4) When you use LAN connection, connect the DianaScope server and the managed server on the network.  
Refer to [Requirements for Connection between the DianaScope Server and Managed Server](#).
- (5) When you use direct connection, connect a serial port of the DianaScope server to serial port 2 of the managed server using RS232-C cross cable. Then, set the serial port of the DianaScope server on OS.  
Refer to [Requirements for Connection between the DianaScope Server and Managed Server](#) for details.
- (6) Install DianaScope Configuration on any PC.  
Refer to [DianaScope Configuration Installation](#).

## 2. Configure BMC on a managed server.

- (1) Configure BMC of the managed server.

When you use LAN connection, refer to [Configuration with NEC EXPRESSBUILDER DOS based with remote console feature \(for LAN connection\)](#).

When you use direct connection, refer to [Configuration with NEC EXPRESSBUILDER DOS based with remote console feature \(for modem/direct connection\)](#).

## 3. Register a managed server on DianaScope Manager.

- (1) After login to DianaScope, register Add a new group that the managed server belongs.

Refer to [Add Group which the managed server belongs](#).

- (2) Register the managed server.

For LAN connection, refer to [Auto Registration](#).

For direct connection, refer to [Register the Managed Server \(for modem/direct connection\)](#).

## 4. Open the remote console.

- (1) Select the managed server on DianaScope and click remote console tab to open the remote console.

- (2) Select the managed server on DianaScope and click remote control tab.

Reboot the managed server using some remote control command.

When the managed server is booted using NEC EXPRESSBUILDER CD-ROM, the main menu of NEC EXPRESSBUILDER will be displayed on the remote console of DianaScope.

.....  
**TIPS:**

- If you use DOS based tool on the managed server, execute a remote control command with checking the check box of “Utility Boot” on remote control tab.
  - If the anything is not displayed on the remote console:  
For LAN connection input ESC+{ key on the remote console.  
For direct connection, click [Resume Redirection] and then input ESC+{ key on the remote console.
- .....

.....  
**CHECK:**

- After the operation to the managed server is finished, click [disconnect] on “Connection setting” to disconnect for direct connection.
- .....

## **Appendix B. How to setup for using DianaScope Agent on the managed server that is set LAN teaming**

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Please setup DianaScope with the procedure below.  
The operation for DianaScope Agent Ver.2.00.00 and above is explained.

How to setup is depended on the type of the managed server which the DianaScope Agent has been installed on.

- On the managed server that BMC uses standard LAN port.
- On the managed server that BMC uses an exclusive LAN port (Management LAN port).

Please see the appropriate explanation.

### **B.1 On the managed server that BMC uses standard LAN port**

See 2.4.2”Notes on Managed Servers and Network Devices” about the setting of LAN Teaming that is available for DianaScope.

If OS on the managed server is Linux, how to setup the DianaScope is not depended on LAN teaming. If OS on the managed server is Windows, please setup the DianaScope with the procedure below.

1. Invalidate BMC IP address synchronization function of the DianaScope Agent.
2. Set BMC configuration by using the DianaScope Agent.
- 3 Select IP address for DianaScope Agent.
4. Register the managed server on the DianaScope Manager.

#### **1. Invalidate BMC IP address synchronization function of the DianaScope Agent.**

- (1) Click “DianaScope Agent” – “DianaScope Agent” from the start menu on Windows.
- (2) Click [synchronization] on the dialog box of the DianaScope Agent.
- (3) Set the BMC IP address synchronization to disable..

#### **2. Set BMC configuration by using the DianaScope Agent.**

- (1) See 7.2.1”Configuration with DianaScope Agent (for LAN connection)” and set BMC configuration information.

Note the followings:

- Set LAN1 IP address to same value of the teaming-set IP address.
- Even if the configuration of LAN2 for the BMC on the managed server is available, do not set LAN2 in the BMC configuration information. (If LAN2 IP address for BMC is already set, change it to “0.0.0.0”.)

.....  
**CHECK:**

- Even if the BMC configuration has been already set, confirm the LAN1 IP address and register it again after invalidating BMC IP address synchronization function.
- .....

#### **3 Select IP address for DianaScope Agent.**

- (1) Select [Select IP address for Agent] on the DianaScope Agent.

(2) Enter the teaming address for LAN1.

**4. Register the managed server on the DianaScope Manager.**

(2) See 7.3"Register a managed server on DianaScope Manager (for LAN connection)" and register the managed server.

.....  
**CHECK:**  
• Confirm the IP address of the managed server even if the "Check Connection" for the managed server has been completed. If the IP address is different from the teaming-set IP address that is set in the procedure "2. Set BMC configuration through the DianaScope Agent", edit it and perform "Check Connection" again.  
.....

**B.2 On the managed server that BMC uses an exclusive LAN port (Management LAN port)**

Please setup the DianaScope with the procedure below. This procedure does not depend on OS of the managed server.

1. Set BMC configuration by using the DianaScope Agent.
2. Set IP address that DianaScope Agent uses on the DianaScope Agent.
3. Register the managed server on the DianaScope Manager.

**1. Set BMC configuration by using the DianaScope Agent.**

(1) See 7.2.1"Configuration with DianaScope Agent (for LAN connection)" and set BMC configuration information.

**2. Set IP address that DianaScope Agent uses on the DianaScope Agent.**

- (1) Cancel the setting of the LAN teaming temporarily.
- (2) Set the IP address that is used for Teaming on any LAN.
- (3) Select the IP address on [Set Agent IP address] of DianaScope Agent.
- (4) Set LAN teaming again.

**3. Register the managed server on the DianaScope Manager.**

(3) See 7.3"Register a managed server on DianaScope Manager (for LAN connection)" and register the managed server.

.....  
**CHECK:**  
• If the "Check Connection" for the managed server has been completed, perform "Check Connection" again after performing "2. Set IP address that DianaScope Agent uses on the DianaScope Agent".  
.....

**Revision History**

1.00	2004/07/12	Initial edition
1.01	2004/07/26	Adds TIPS about DianaScope Manager (Windows) uninstallation. Modifies descriptions about DianaScope Agent (Linux) installation / uninstallation. Corrects writing errors about DianaScope Agent Function.
1.02	2004/07/27	Modifies descriptions about DianaScope Configuration. Modifies descriptions about configuration with DianaScope PXE Service. Modifies descriptions about configuration with NEC EXPRESSBUILDER DOS based with remote console features.
1.03	2004/07/29	Corrects writing error about the system environment (OS) of DianaScope PXE Service. Corrects writing errors.
1.04	2004/09/15	Appends explanation about linkage with VNC. Corrects writing errors about installation / uninstallation of JRE for Linux. Appends a precaution about video adapter. Improves others.
1.05	2004/10/19	Appends [N8115-01CP01] and [N8115-02CP01]. Appends OS (Windows XP (SP2)) as System Requirement. Appends precautions about installation of DianaScope Manager and NEC ESMPRO Manager Association Module.
1.06	2004/10/28	Appends Red Hat Enterprise Linux ES/AS 3.0 in OS of system requirement. Appends how to open the setting of DianaScope Agent. Appends how to change LAN port that DianaScope Agent uses, if the managed server included Advanced Remote Management Card. Appends a precaution about Windows XP (SP2). Appends how to setup for the managed server that does not has local console. Improves others.
1.08	2004/12/01	Modifies example about JRE installation / uninstallation. Replaces an image of the main dialog box of DianaScope Agent (Windows). Modifies the explanation about configuration with DianaScope PXE Service. Adds notes about DianaScope PXE Service. Modifies explanation about registration of the managed server on DianaScope Manager. Append precaution about IP address synchronization of DianaScope Agent. Corrects writing errors.
1.09	2004/12/08	Appends 1099 as port number that DianaScope uses.
1.10	2004/12/16	Appends a precaution about coexistence of DianaScope Manager with DianaScope Agent on the same server. Corrects writing errors.
1.11	2005/01/31	Modifies the explanation about SSL. Modifies the explanation for DianaScope PXE Service Ver.1.01.01 or above about DianaScope Manager uninstallation and configuration with DianaScope PXE Service. Corrects writing errors.
1.12	2005/02/15	Appends how to setup DianaScope if ALT or ALB setting is used on the managed server.
1.13	2005/03/15	Changes JRE version about installation/uninstallation. Modifies the LAN port used by BMC. Updates the screen image of DianaScope Agent and DianaScope PXE Service. Modifies explanation about computer information list file.

- 1.14 2005/04/06 Changes product name of UL1198-001E / UL1198-011E.  
Corrects writing errors.
- 1.15 2005/05/20 Appends OS (Windows Server 2003 (SP1) and Windows Server 2003 x64 Edition) as System Requirement.  
Appends a precaution about Windows Server 2003 (SP1) and Windows Server 2003 x64 Edition.  
Appends port numbers that DianaScope PXE service uses.
- 1.16 2005/06/21 Modifies explanation about the port numbers that DianaScope PXE service uses.  
Updates the uninstallation procedure of DianaScope Manager and NEC ESMPRO Manager associated function.  
Changes functions' name of DianaScope Agent.  
Modifies explanation about DianaScope Agent.  
Updates the procedure of the configuration with DianaScope PXE Service.  
Deletes old product numbers of Remote Management Card and Advanced Remote Management Card.  
Appends precautions about GUI remote console, Downloading configuration information file and Microsoft Internet Explorer 64-bit version.  
Corrects writing errors.
- 1.17 2005/12/12 Appends OS as System Requirement.  
Append a precaution about JRE 5.0 and available VNC as System Requirement.  
Appends the auto-negotiation to "Notes on Managed Servers and Network Device".  
Modifies example about JRE installation / uninstallation.  
Corrects writing errors.
- 1.18 2005/12/27 Appends description for ft Server.  
Appends change of a gateway or an alert receiver to "Notes on Managed Servers and Network Device".
- 1.19 2006/02/28 Appends OS as System Requirement.  
Modifies explanation about LAN teaming.  
Appends the procedure for JRE update.  
Appends a precaution about port 623 that BMC uses.  
Updates about Install / uninstall DianaScope Agent (Linux).  
Modifies example about JRE installation / uninstallation.
- 1.21 2006/03/19 Updates about Install DianaScope Manager (Linux).
- 1.22 2006/05/01 Appends OS for DianaScope Agent as System Requirement  
Updates explanation about System Requirement, installation and operation for DianaScope Agent Ver.2  
Modifies explanation about port numbers that DianaScope uses.  
Appends explanation about BMC alert  
Correct writing errors.
- 1.23 2006/05/31 Appends OS as System Requirement  
Modifies explanation about port numbers that DianaScope uses.
- 1.24 2006/06/20 Correct writing errors.
- 1.25 2006/06/29 Appends new item "Obtain an IP Address automatically(DHCP)" of BMC configuration.
- 1.26 2006/07/25 Modifies about DianaScope PXE Service supporting EXPRESSSCOPE Engine.  
Appends the requirement and the precaution about web browser.  
Correct writing errors.

1.27	2006/08/03	Modifies explanations because DianaScope Agent integrates the function for ft Server.
1.28	2006/10/17	Appends explanation about EM card and blade enclosure. Updates Installation procedure of DianaScope Manager (Linux) Update precaution about upgrade of DianaScope Manager and Agent, coexistence of DianaScope Manager with DianaScope Agent on the same server, and Web client. Correct writing errors.
1.29	2006/11/10	Appends URL of the DianaScope information.
1.30	2006/12/20	Supports JRE5.0. Supports FireFox. Appends a precaution.
1.31	2007/01/20	Appends Port numbers that DianaScope uses.
1.32	2007/03/23	Updates about JRE update for Windows.
1.33	2007/04/05	Appends descriptions about the item "Obtain an IP Address automatically (DHCP)" of BMC configuration for Advanced Remote Management Card and ft Remote Management Card. Modifies about DianaScope PXE Service supporting Advanced Remote Management Card. Appends Miracle Linux 4.0 and Windows Vista as System Requirement for DianaScope Manager. Appends Miracle Linux 4.0 (64bit) as System Requirement for DianaScope Manager.

