GABD-000247

Ver.

OfficeServ NMS

User Guide

SAMSUNG ELECTRONICS

This guide should be read before the installation and operation, and the operator should correctly install and operate the product by using this guide.

This guide may be changed for the system improvement, standardization and other technical reasons without prior notice.
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INTRODUCTION

Purpose

This OfficeServ NMS User guide provides basic understanding of OfficeServ NMS and describes the necessary information for the operation of the OfficeServ NMS.

Document Content and Organization

This document consists of eight Chapters, two Annexes and Abbreviations.

Part I. NMS Introduction and Basic Management

CHAPTER 1. Introduction to OfficeServ NMS

This chapter describes the introduction of OfficeServ NMS and its operating environment.

CHAPTER 2. Basic Information

This chapter describes GUI of OfficeServ NMS and the basic operation method to operate OfficeServ NMS

CHAPTER 3. Network Configuration

This chapter describes network viewer and network configuration methods of OfficeServ NMS.

CHAPTER 4. General Management

This chapter describes general management window and function of OfficeServ NMS.

CHAPTER 5. Inventory Management

This chapter describes inventory management window and function of OfficeServ NMS.

CHAPTER 6. Fault Management

This chapter describes fault management window and function of OfficeServ NMS.

CHAPTER 7. Performance Management

This chapter describes performance management window and function of OfficeServ NMS.

CHAPTER 8. Security Management

This chapter describes user security management window and function of OfficeServ NMS.

ANNEX A. OfficeServ NMS Q & A

Q & A answers many of the questions operators could have about doing operations with OfficeServ NMS.

ANNEX B. Open Source Announcement

This chapter describes license information about open software using in OfficeServ NMS.

ABBREVIATION

Abbreviations frequently used in this document are described.

Part II. Voice Function Management

Part III. Data Function Management

Conventions

The following types of paragraphs contain special information that must be carefully read and thoroughly understood. Such information may or may not be enclosed in a rectangular box, separating it from the main text, but is always preceded by an icon and/or a bold title.

CHECKPOINT

Provides the operator with checkpoints for stable system operation.

NOTE

Indicates additional information as a reference.

Console Screen Output

- The lined box with '`Courier New`' font will be used to distinguish between the main content and console output screen text.
- '**`Bold Courier New`**' font will indicate the value entered by the operator on the console screen.

Reference

OfficeServ 7000 Series Installation Manuals

Describe the installation procedure and specifications for the OfficeServ 7000 Series Systems.

OfficeServ 7000 Series System Descriptions

Describe the business feature available with the OfficeServ 7000 Series System.

OfficeServ 7000 Series Call Server Programming Manual

Describe a programming method for the OfficeServ 7000 Series System Users.

Revision History

EDITION	DATE OF ISSUE	REMARKS
00	01. 2006.	Original Draft
01	03. 2008.	Added OfficeServ NMS v1.2 Features
02	08. 2008.	Added OfficeServ NMS v1.3 Features
03	12. 2008.	Added OfficeServ NMS v1.4 Features
04	10. 2009.	Added OfficeServ NMS v1.5 Features Separated into three parts
05	07. 2010.	Added OfficeServ NMS v1.6 Features
7.0	03. 2012.	- Manual Edition allocation method is changed.(Ed.06 → Ver.7.0) - Modified H/W and S/W Specifications.

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PART I. NMS Introduction and Basic Management

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CHAPTER 1. Introduction to OfficeServ NMS

This chapter describes the functions and specifications of OfficeServ NMS.

OfficeServ NMS

OfficeServ NMS is a Network Management System (NMS) that performs the function to manage, maintain and repair OfficeServ systems.

OfficeServ NMS provides the following management functions to efficiently operate OfficeServ NMS systems on the basis of ITU-T M.3010 standard.

- General Management
- System Configuration Management
- Telephony Management
- VoIP Management
- Switch Management
- Router Management
- Inventory Management
- Fault Management
- Performance Management
- User Security Management

OfficeServ NMS operates in server-client method.
A server is directly connected to the OfficeServ system, interfaces between clients and the OfficeServ system, and manages a variety of database.
A clients operates as a terminal providing operator interface.

The OfficeServ NMS server has been developed via JSP, Servlet, RMI, JDBC, and XML, and its clients have been developed via HTML, Java Applet, and Java Script. OfficeServ NMS implemented via Java language with excellent portability is not concerned about types of operating platforms. Interworking relationship between OfficeServ NMS and OfficeServ system is as follows:

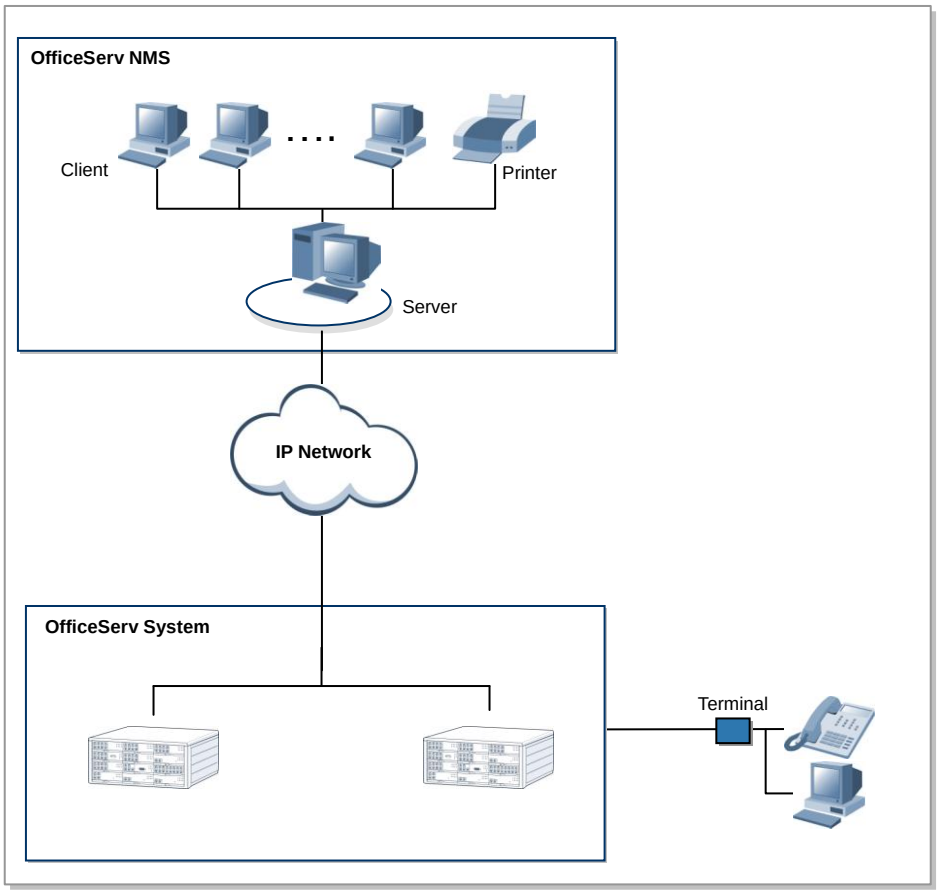

Figure 1.1 Interworking of OfficeServ NMS and OfficeServ System

In addition, OfficeServ NMS has many of advantages.

Real-Time System Status Monitoring

OfficeServ NMS collects the fault status generated in a system via SNMP in real time.

User Friendly GUI Design

OfficeServ NMS was developed via standard graphic interface.
All commands of OfficeServ NMS are composed of graphic menus so that operators can easily understand and use the functions of OfficeServ NMS.

Various Statistics Reports

OfficeServ NMS provides data including fault information, performance information, and traffic information to operators in text format, graphic format, or statistic data format. Operators can display these data in a file type or print out.

Object-oriented Approach

OfficeServ NMS was designed in object-oriented method. In OfficeServ NMS, several sub-systems are divided into objects so that operators can readily add and upgrade necessary functions.

Error Handling

If a command entered by an operator is not normally executed, OfficeServ NMS displays the relevant error message before running the next process. Therefore, since the operator can check the error message before running the wrong command, he/she can operate the system correctly and effectively.

Flexible Platform

OfficeServ NMS can be installed on a variety of platforms such as personal computers or workstations.
Therefore, operators can select proper OfficeServ NMS platforms in accordance with network size or management range.

Help

OfficeServ NMS has Help function composed of hypertexts. Help briefly describes the information to help the understanding about OfficeServ NMS or the usage of the menus provided by OfficeServ NMS.

OfficeServ NMS Specifications

Hardware Specifications

All systems using Unix/Linux/Windows OS can be used as the Hardware of OfficeServ NMS server. Client Software uses general personal computers (PC) (however, Hardware specifications may vary depending on the capacity supported by OfficeServ system.) In addition, laser printers for printing messages are available.
The Hardware for servers or clients should satisfy the following specifications:

Server

Category	Specifications
CPU	3.0 GHz (Intel Zeon processor) or higher recommended
Main Memory	4 GB or higher recommended
Hard Disk	SAS Hard Disk 300 GB or higher
ODD	DVD-ROM Drive
Monitor	19-inch Monitor
LAN Card	10/100Base-T (RJ-45 Connector)

Client

Category	Specifications
CPU	3.0 GHz (Intel Core Duo Processor) or higher recommended
Main Memory	2GB or higher recommended
Hard Disk	100 GB or higher
Monitor	Color Monitor with resolution of 1280 X 1024
LAN Card	10/100Base-T (RJ-45 Connector)

NOTE

Hardware Specifications

The specifications mentioned above are based on high capacity OfficeServ NMS. For low-capacity configuration and Linux/Windows-based configuration, the Hardware specifications may vary according to the management capacity.

Software Specifications

For the normal operation of OfficeServ NMS, the following software environment is required:

Server

Category	Software
OS	Linux (RedHat Enterprise 5)
JSP/Servlet Engine	Tomcat 5.0.28 or higher
Database	MySQL 5.1.51
JVM	JDK 1.6.0_20
Management Protocol	SNMP
Other Protocols	FTP

Client

Category	Software
OS	Windows XP or higher
Web Browser	Microsoft Internet Explorer version 6.0, 7.0 or 8.0

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CHAPTER 2. Basic Information

This chapter describes Graphic User Interface (GUI) of OfficeServ NMS and how to use OfficeServ NMS.

Access to OfficeServ NMS

This section describes the procedure for login/logout of OfficeServ NMS.

Login

The login procedure to use OfficeServ NMS is as follows:

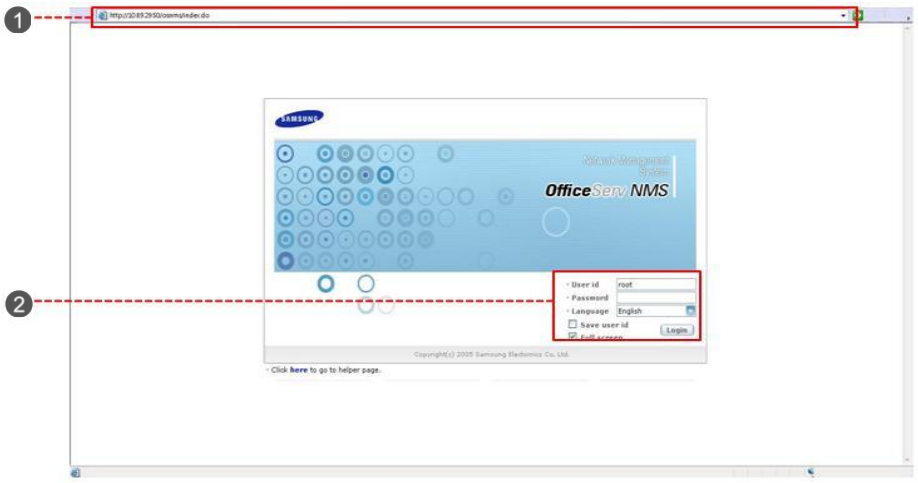


Figure 2.1 OfficeServ NMS Login Window

1. Run Microsoft Internet Explorer to access OfficeServ NMS.

2. Enter the IP address of the OfficeServ NMS server in the address box (❶) of Internet Explorer. The above Login window will appear.
Enter the user **'ID'** and **'Password'** in the information entry box on the Login window and click the **[OK]** button.

3. If the user information is authenticated, OfficeServ NMS is executed and the OfficeServ NMS window composed of four frames opens.

Logout

The logout procedure of OfficeServ NMS is as follows:

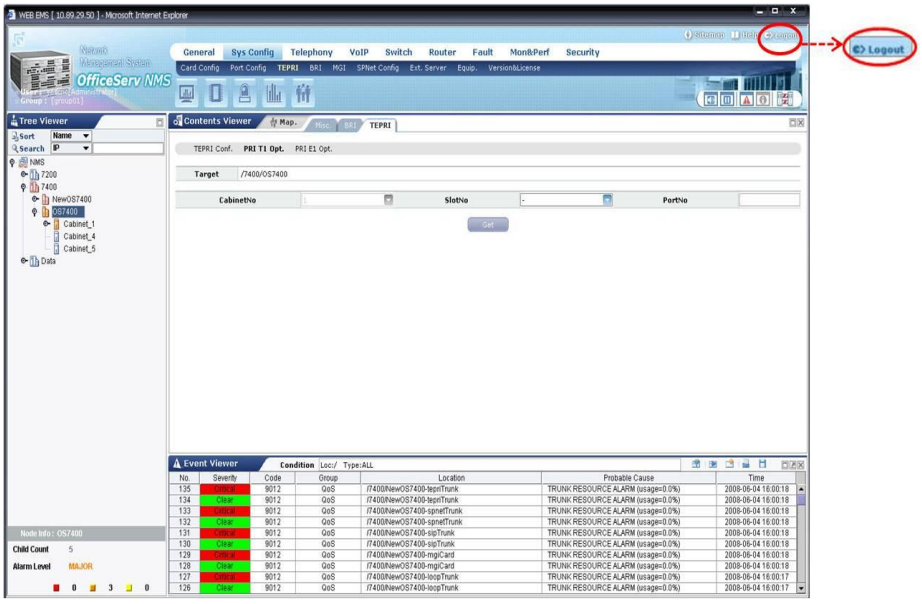


Figure 2.2 Logout Execution Button

1. If you click the **[LOGOUT]** button of the buttons on the upper right corner of the OfficeServ NMS window, an window to confirm the logout appears as shown in the figure below:

Figure 2.3 Logout Confirmation Window

2. Click the **[OK]** button on the window and OfficeServ NMS will be logged out.

CHECK

OfficeServ Operation in Logout Mode

In logout mode, OfficeServ NMS can perform various functions, such as the generation of fault messages and the reception of performance data.

Screen Organization

The OfficeServ NMS screen consists of four frames with the following functions:

- Menu Frame
- Main Frame
- Tree Viewer Frame
- Event Viewer Frame

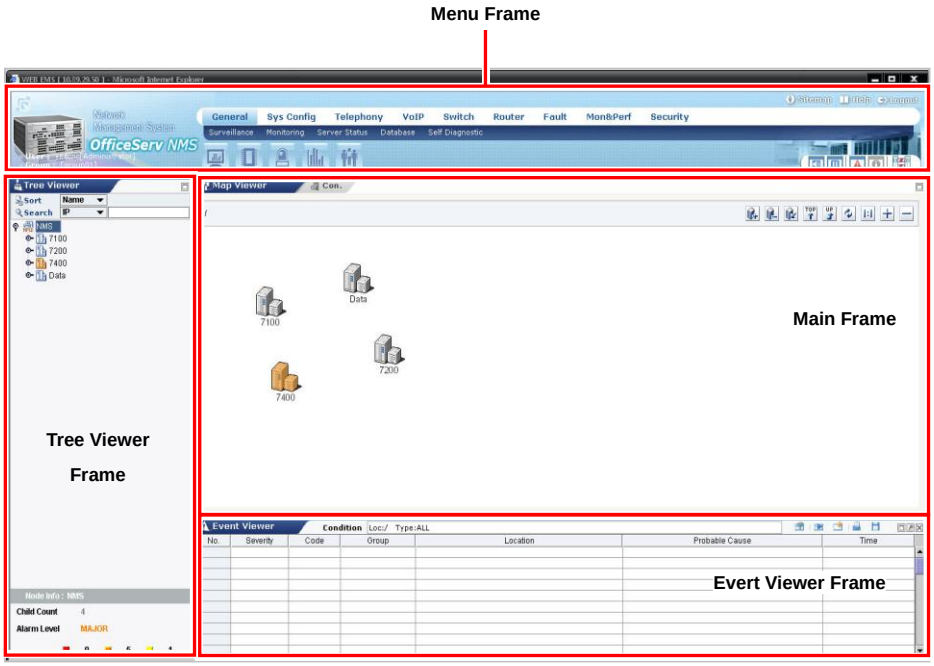


Figure 2.4 Configuration of OfficeServ NMS Frames

Menu Frame

The menu of OfficeServ NMS consists of seven management groups.
The Menu Frame displays the whole management group of OfficeServ NMS and enable to execute various functions pertaining to each management group. In addition, it supports some additional function.

The configuration and description of the Menu Frame are as follows:

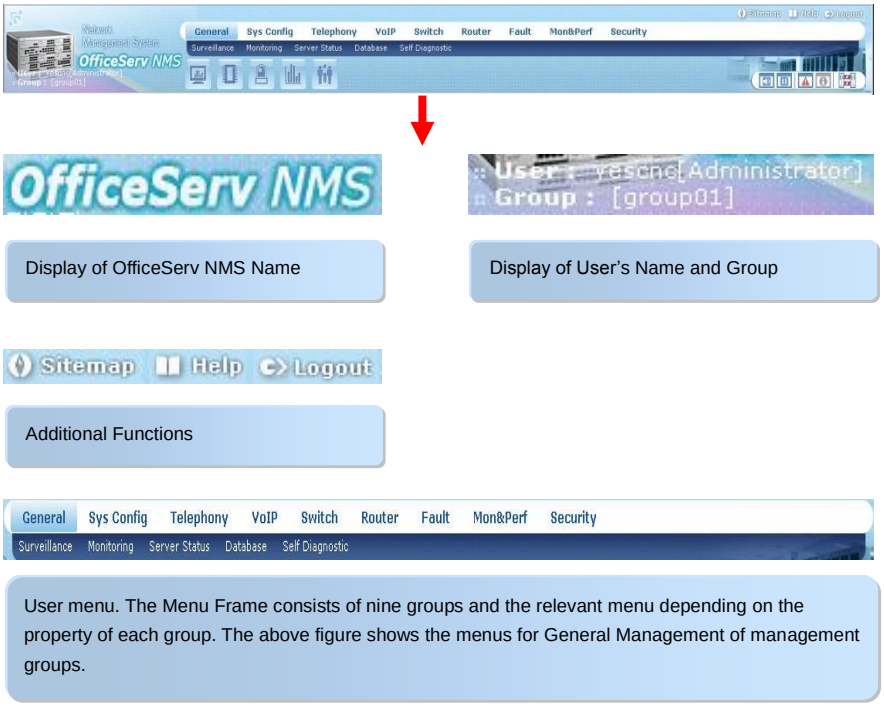


Figure 2.5 configuration of Menu Frame

Additional Function Buttons

The Menu Frame provides some buttons to perform additional functions.

Button	Description
Home	Return to the initial window.
Sitemap	Display the sitemap for the configuration of OfficeServ NMS.
Help	Execute the Help function.
Logout	Log out from the current OfficeServ NMS.

Main Frame

The Main Frame opens each Command Execution window and Command Execution Result window and displays the configuration and the information on the specified item.

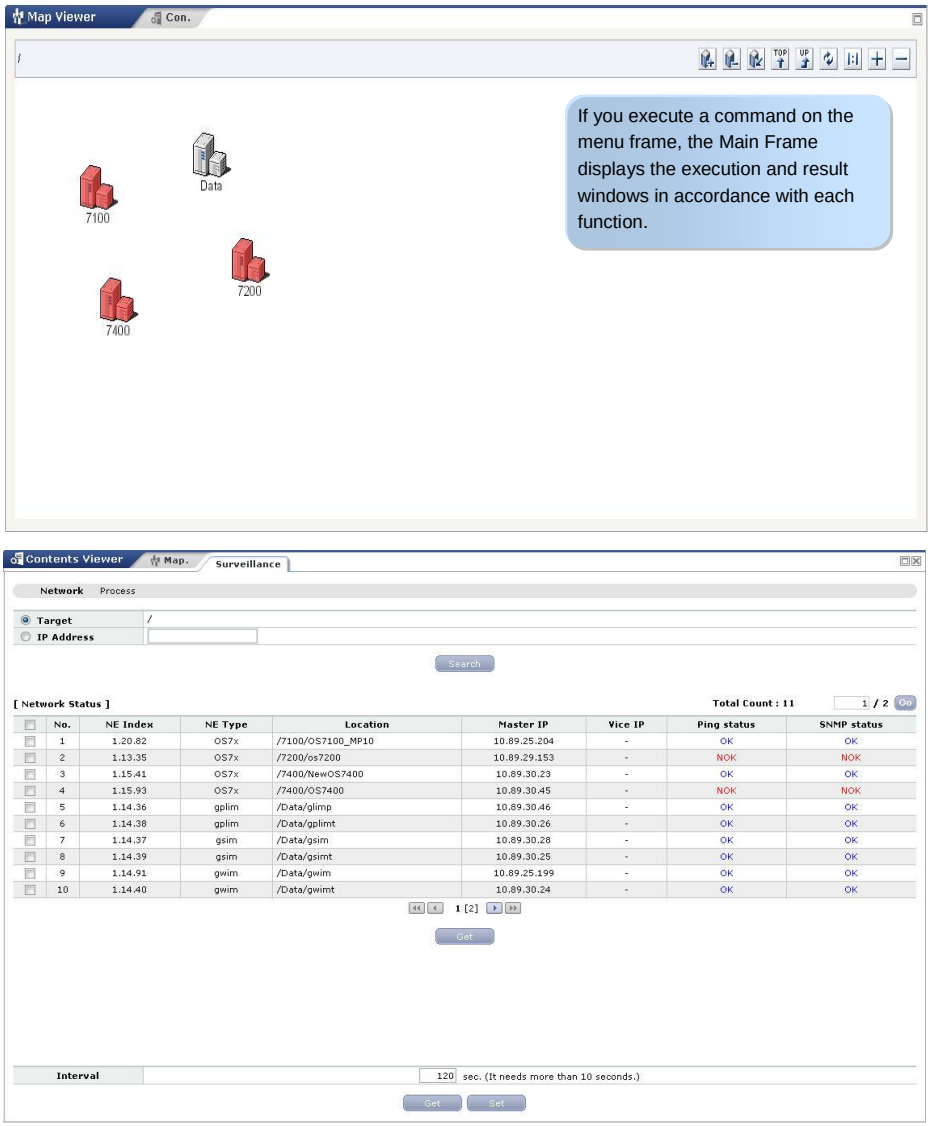


Figure 2.6 configuration of Main Frame

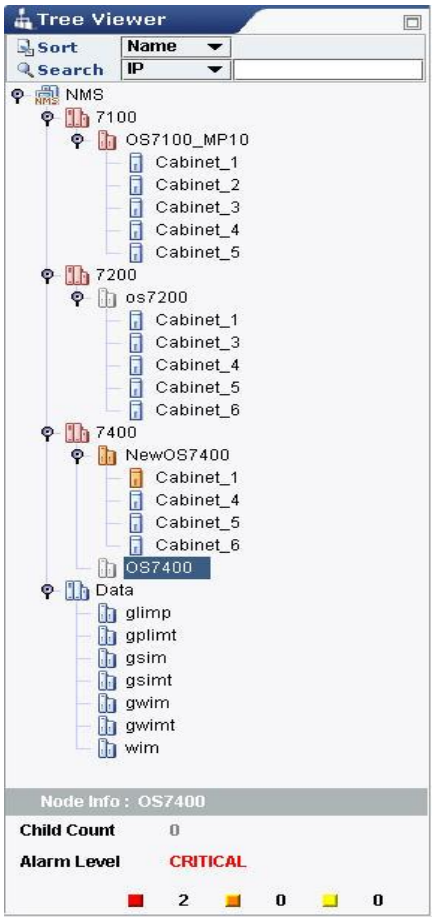
Icon Display

The Network Viewer of the Main Frame displays network elements and alarms in icon format.
Site and NE are displayed in the following icon formats and uses multiple colors to indicate the current alarm status.

Category	Normal (White)	Disabled	Critical (Red)	Major (Orange)	Minor (Yellow)
Subnetwork					
NE					

Tree Viewer

The Tree Viewer displays the OfficeServ system architecture in tree structure. The tree displays from the highest layer in turns of Network, Subnetwork, Network Element (NE), cabinet rack, and unit.



The tree structure enables operators to easily understand the upper-lower structure of OfficeServ NMS. If you search the lower items, click its upper item or located next to the item.

Figure 2.7 Tree Viewer Architecture

Icon display

The tree viewer composed of the following icons indicates the upper-lower relationship of network and displays alarms by means of the following icons. However, NMS icons do not indicate the alarm status.

Category	Normal (White)	Disable	Critical (Red)	Major (Orange)	Minor (Yellow)
NMS					
Subnetwork					
NE					
Cabinet					

System Viewer

The System Viewer displays the resource status of the OfficeServ NMS (Server System), the representative alarm for the node, and the managed NE count.

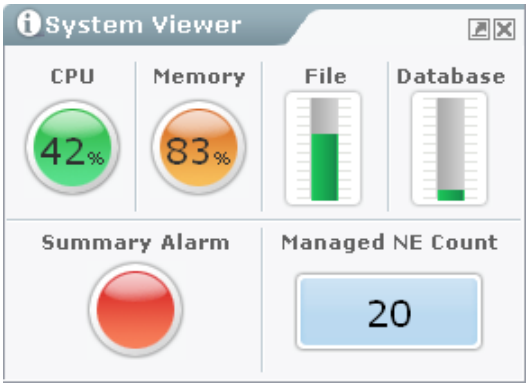


Figure 2.8 System Viewer Frame

Event Viewer

The Event viewer enables operators to view the information on various faults generated in the OfficeServ system.

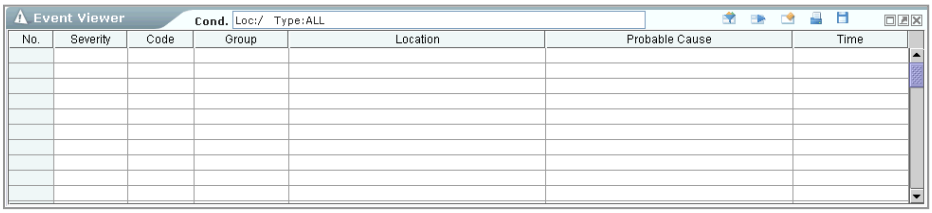


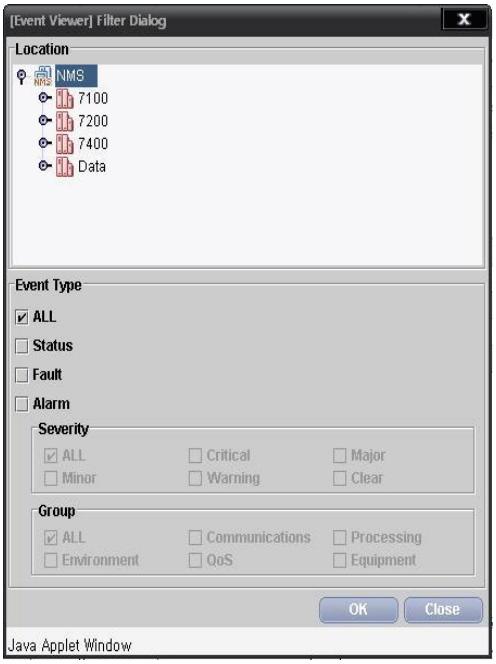
Figure 2.9 Event Viewer

The table below lists the descriptions about the event viewer items

Parameter	Description
Severity	Displays event severity. - Critical: Critical alarm - Major: Major alarm - Minor: General alarm - Warning: Alarm information - Inform: General information - Recovery: Recovery information
Code	Displays alarm code.
Group	Displays event group including the event concerned. Event Group Types: - Communication - Processing - Environmental - QoS - Equipment
Location	Displays the location where the event occurred.
Probable Cause	Displays the probable cause of the event occurred.
Time	Displays the time when the event occurred.

Reception of Specific Events

Users can set the Event Viewer to display only a specific event.
If a user click 'Detailed Information' of the menu item placed in the upper right of the Event Viewer, the following window appears.



Select NE to be displayed from the 'Location' box, fill check marks in the boxes of Event Type, Severity or Event Group to be received, and click the **[OK]** button.

Figure 2.10 Specific Event Reception Setup Window

Removal of a Displayed Event

Click the **[Clear]** button locates in the top of the Event Viewer to remove the event displayed in the current viewer. However, the history stored in database is not removed.

Basic Use Information

This section describes the basic information required for the use of OfficeServ NMS.

Adjustment of Frame Size

The sizes of Tree viewer Frame and Event Viewer Frame can be adjusted for the convenience of OfficeServ NMS operators.

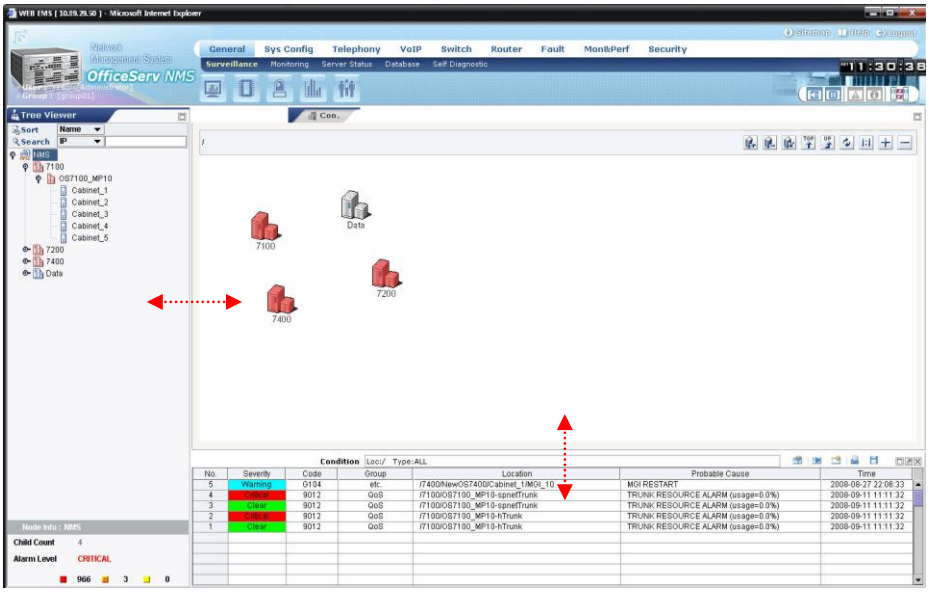
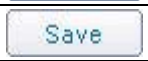


Figure 2.11 Adjustment of OfficeServ NMS Client Size

Buttons

The command buttons of OfficeServ NMS can perform the same functions in each different window. The table below describes the common command buttons of OfficeServ NMS.

Button	Description
	Check if an operator confirms the generated fault.
	Activate the selected task.
	Clear the selected data.
	Inactivate the selected task.
	Execute the selected command.
	Display the previously established or stored data.
	Save the selected data.
	Search the previously established or stored data.
	Set data or a function.
	Test the selected task.
	Check if an operator confirms the generated fault.

Basic Setups

In general, operators set several setups while executing functions of OfficeServ NMS.
The common setup is the setup of search period.

Event Viewer Frame some tasks have the item to set the search period.
The units and types of time in the search period setup table are as follows:

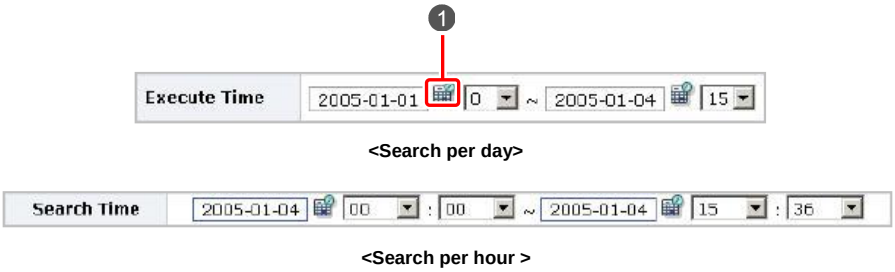


Figure 2.12 Types of Search Period Setups

To set the search period, enter the information in the text box directly or select a desired data from the calendar after clicking the Calendar button (1).

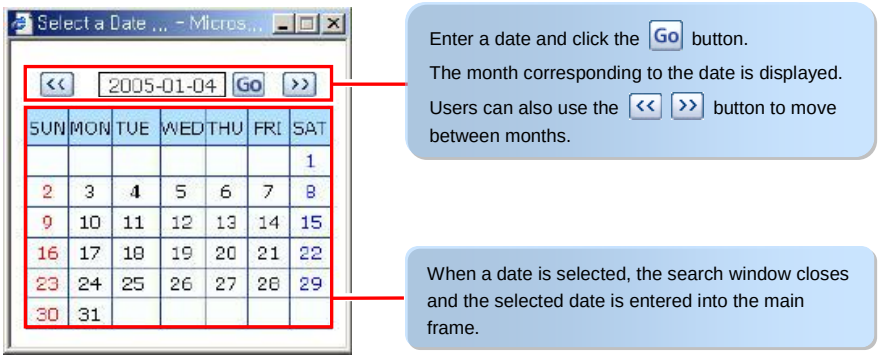


Figure 2.13 Data Selection Dialog Box Window

Sitemap

OfficeServ NMS provides the sitemap to help operators search the operation menu.
The sitemap enables operators to understand the organization of the entire menu and execute a function directly.

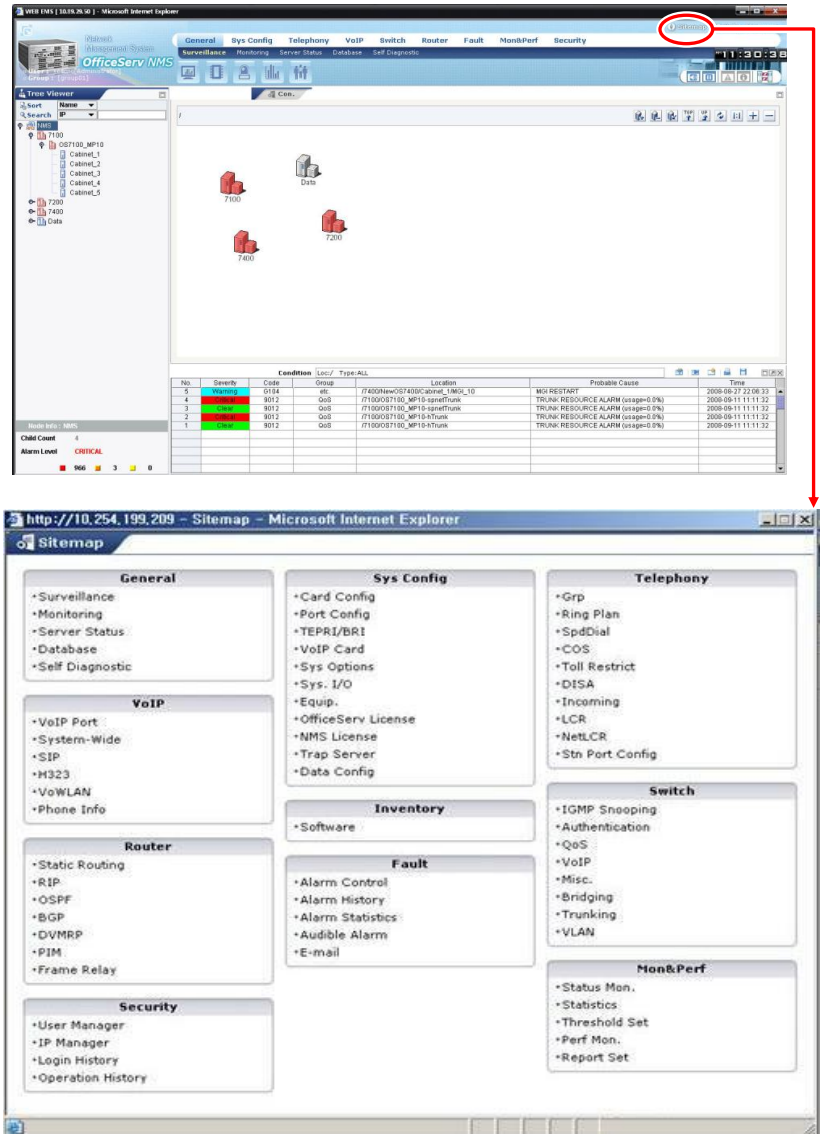


Figure 2.14 Sitemap Window

Online Help

OfficeServ NMS provides the sitemap to help operators search the operation menu.
The sitemap enables operators to understand the organization of the entire menu and execute a function directly.

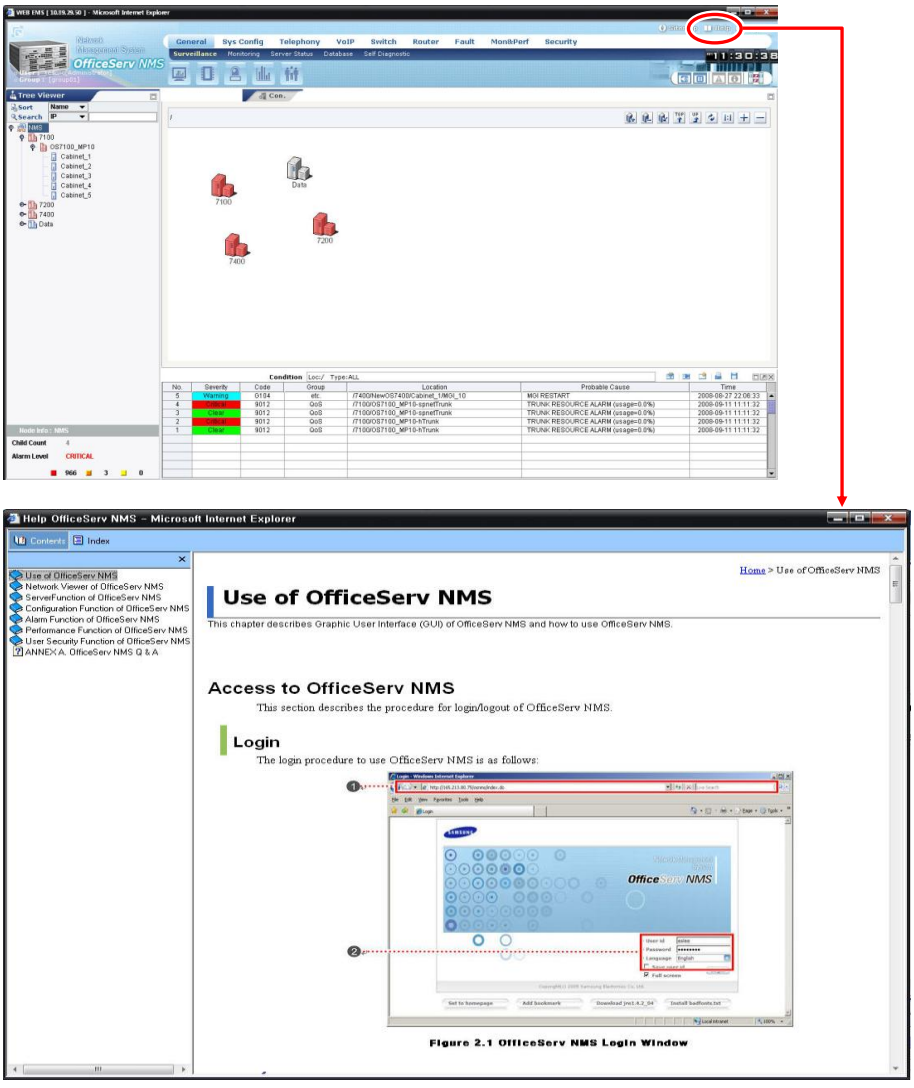


Figure 2.15 Online Help Window

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CHAPTER 3. Network Configuration

This chapter describes Network Viewer of OfficeServ NMS and how to use OfficeServ NMS.

Network Viewer

Configuration of Network Viewer

The Network Viewer provides a variety of functions to easily handle the Network Viewer as well as the Information window.

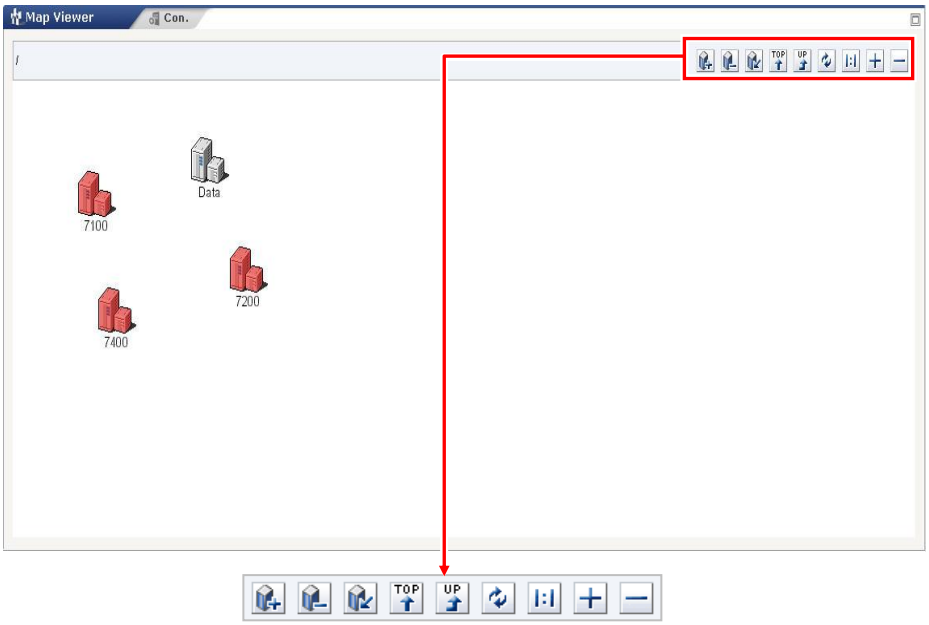


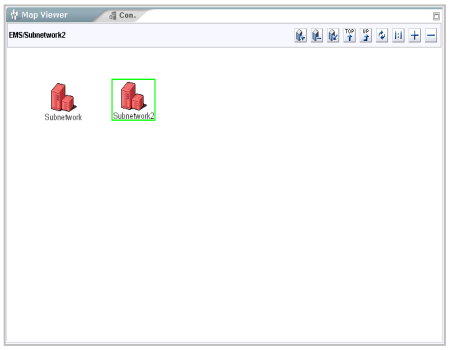
Figure 3.1 Network Viewer Menu

Button	Description	Button	Description
	Create Node Create a new node.		Delete Node Delete a node.
	Modify Node Modify the node information.		Move to TOP Move to the highest node map window.
	Move Up Convert the node map to the upper window by a level.		Refresh Reflect the latest information and refresh the node map.
	Zoom (1:1) Restore the enlarged or reduced window size into the original size.		Zoom (+) Zoom in the node map.
	Zoom (-) Zoom out the node map.		

Node Map of Network Viewer

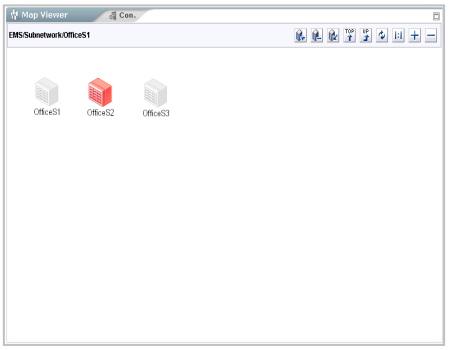
The Network Viewer provides three types of Maps according to the upper-lower layer structure of network. The Network Viewer supports the following Information windows:

- Network Node Map
- NE Node Map
- Cabinet Viewer



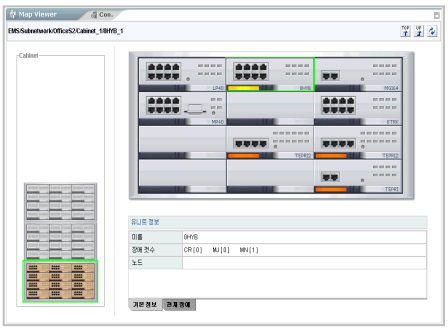
<Network Node Map>

Subnetwork nodes connected to OfficeServ System is displayed in icon symbols.



<NE Node Map>

NE nodes connected OfficeServ System is displayed in icon symbols.



<Cabinet Viewer>

The status of cabinets and units connected to OfficeServ System is displayed.

Figure 3.2 Types of Node Maps

Network Map Configuration

Network Node

Network node indicates the grouping of system to location. Network node can be created, deleted, searched, and changed in the Map viewer.

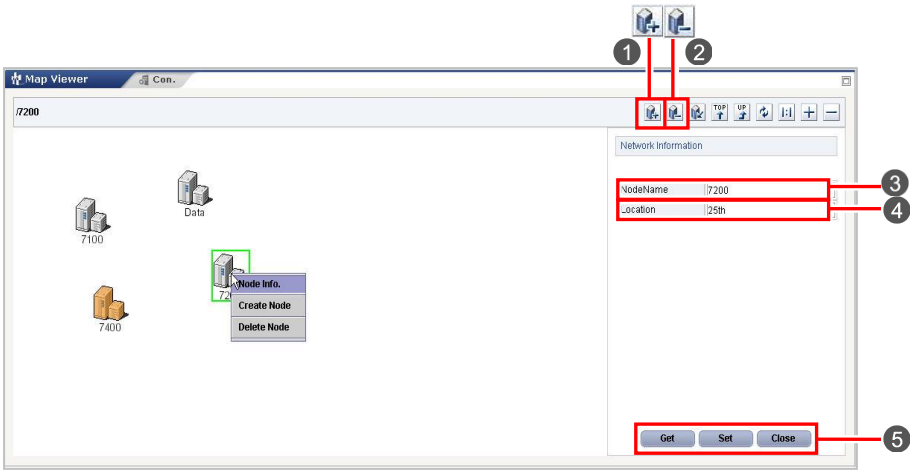


Figure 3.3 Network Creation Window

The parameters displayed in the window are described as follows:

Item	Description
NodeName	Network node (network group) name
Location	Location information of the network node (network group)

Creating a Network Node

1. When a network node is displayed in the Map viewer, click the **[Node Creation]** button (❶). Then, the <Network Creation> window that enables creating a network node in the Map viewer appears.

2. Enter the node name into the **'Alias'** field (❸) and enter the network node location information into the **'Location'** field (❹).

3. Click the **[Create]** button (❺). Then, the corresponding network node is created in the window.

Deleting a Network Node

1. Select the target network node from the Map viewer. Right click the node to open the pop-up menu or click the **[Node Deletion]** button (❷). Reconfirmation window ('Enter the password.') appears.

2. Enter the password and click the **[OK]** button. Then, the corresponding network node is deleted.

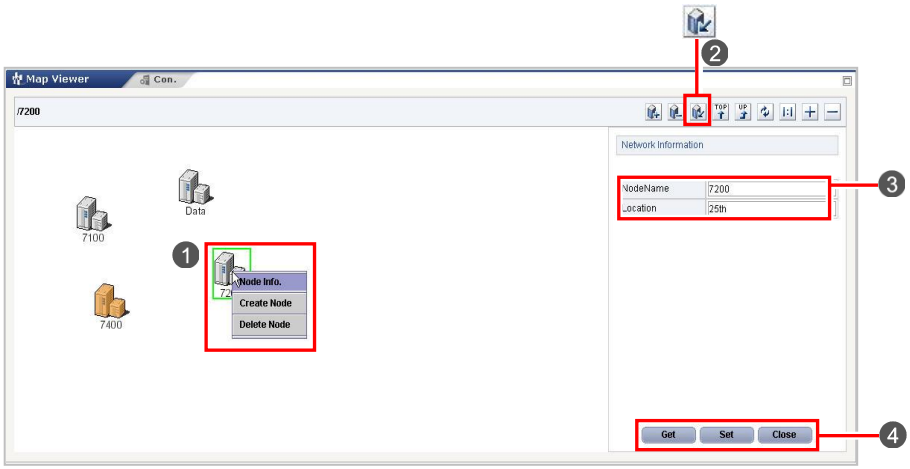


Figure 3.4 Network Information Window

Searching Network Node Information

1. Select the target network node from the Map viewer.
   Right click the node to open the pop-up menu (❶) or click the 'Node Information' icon (❷) to display the 'Network Information' window.

2. Then, the corresponding network node information is displayed in the information table (❸).

Changing Network Node Information

1. Select the target network node from the Map viewer.
   Right click the node to open the pop-up menu (❶) or click the **'Node Information'** icon (❷) to display the **'Network Information'** window.

2. Change the information in the information table (❸).

3. Click the **[Set]** button (❹). Then, the corresponding network node information is displayed in the information table.

NE Node Configuration

Network Element (NE) node is a network configuration element that includes a single IP. NE node can be created, deleted, searched, changed, and initialized in the Map viewer.

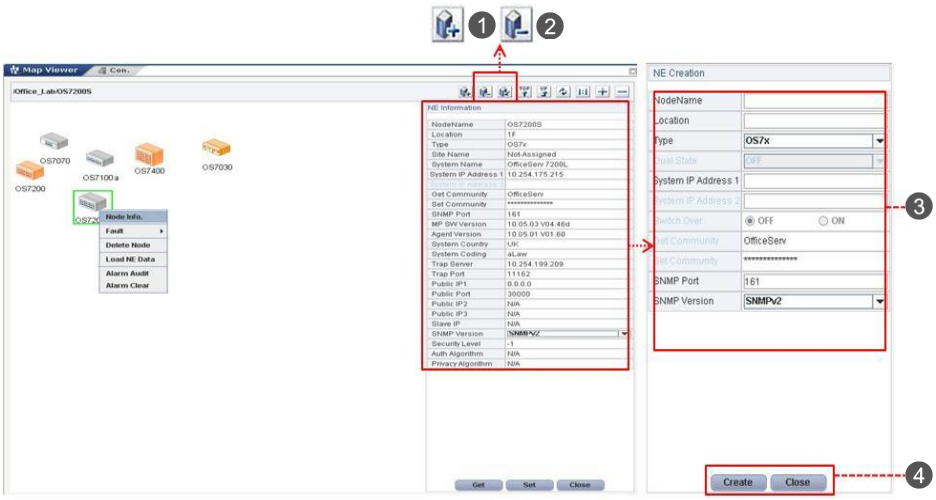


Figure 3.5 NE Creation Window

The parameters displayed in the window are described as follows:

Parameter	Description
Node Name	Node name
Location	Node location
Type	Select a NE type (Os7x, GWIM, GPLIM, GSIM etc)
Dual State	Dual status
IP Address 1	1st IP address of the node
IP Address 2	2nd IP address of the node
Switch Over	Sets automatic switchover
Get Community	SNMP retrieval community
Set Community	SNMP setup community
SNMP Port	SNMP communication port of NE
SNMP Version	The version of SNMP Protocol

Creating NE Node

1. When a NE node is displayed in the Map viewer, click the **[Node Creation]** button (❶). Then, the **'NE Creation'** window that enables creating a NE node in the Map viewer appears.

2. Enter the NE node information into the setup table (❸). The parameters displayed in the window are described as follows:

3. Click the **[Create]** button (❹). Then, the corresponding NE node is created in the window.

Deleting a NE Node

1. Select the target NE node from the Map viewer. Right click the node to open the pop-up menu or click the **[Node Deletion]** button (❷). Reconfirmation window ('Enter the password.') appears.

2. Enter the password and click the **[OK]** button. Then, the corresponding network node is deleted.

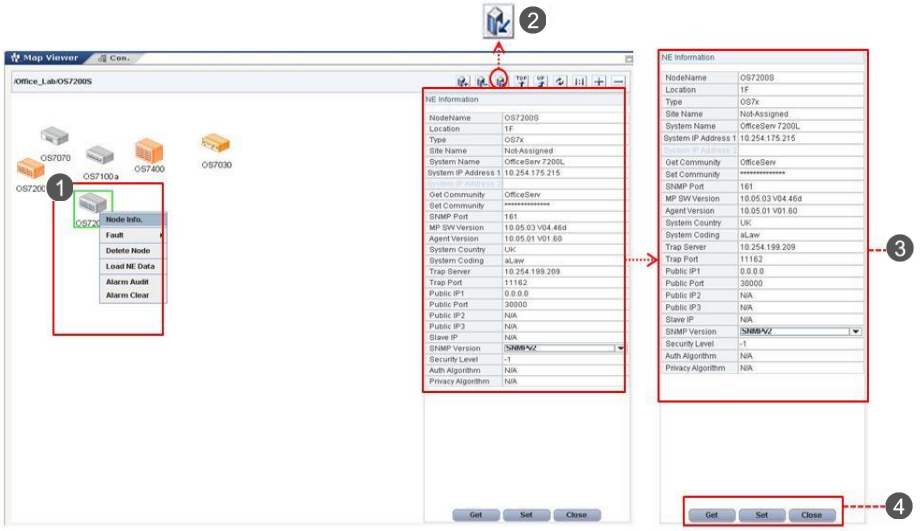


Figure 3.6 NE Information Window

The parameters displayed in the window are described as follows:

Parameter	Description
Node Name	Node name
Location	Node location Information
Type	Select a NE type (Os7x, GWIM, GPLIM, GSIM etc)
Site Name	Site name which is configured
System Name	System name
System IP Address 1	1st IP address of the node
System IP Address 2	2nd IP address of the node
Get Community	SNMP retrieval community
Set Community	SNMP setup community
SNMP Port	SNMP communication port of NE
MP SW Version	MP SW Version Information
Agent Version	Agent Version information in MP SW
System Country	Country Information which is configured
System Coding	It shows a-law or u-law for PBX System
Trap Server	Sets Trap Server IP Address for getting trap info

(Continued)

Parameter	Description
Trap Port	Sets Trap Port Number for getting trap info
Public IP1	1st public IP Address for System
Public Port	1st public Port for System
Public IP2	2nd public IP Address for System
Public IP3	3rd public IP Address for System
Slave IP	IP Address for Slave System (Only 7030 System)
SNMP Version	The version of SNMP Protocl
Security Level	Provide a security level (noAuthNoPriv, authNoPriv, authPriv)
Auth Algorithm	Provides MD5, SHA
Privacy Algorithm	Provides DES, AES

Searching NE Node Information

1. Select the target NE node from the Network viewer.
   Click the right mouse button to open the node to open the pop-up menu (❶) and execute the **'Node Info.'** Menu. In other way, click the **'Node Information'** icon (❷) to display the **'NE Information'** window.

2. Then, the corresponding NE node information is displayed in the information table (❸).

Loading NE Node Information

1. Select the target NE node from the Map viewer.
   Right click the node to open the pop-up menu (❶) and execute the **'Load NE Data'** menu. Reconfirmation window ('Do you want to load this NE data?') appears.

2. Click the **[Yes]** button. Then, the corresponding NE node information is loaded from the system.

Cabinet Viewer

If a user double clicks NE on the NE node map provided by the Map Viewer, the Cabinet Viewer to display cabinets and units is executed.

The Cabinet Viewer supports the following functions:

- Mounting status by cabinets and boards
- Fault status by cabinets and boards
- Current fault display by boards

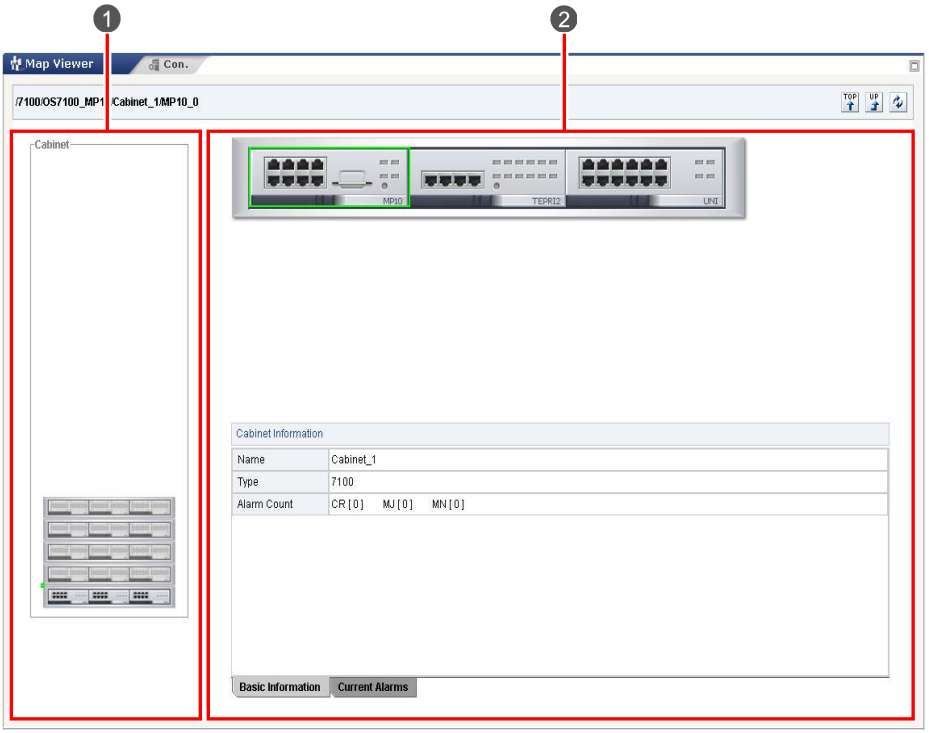


Figure 3.7 Cabinet Viewer Window (7100)

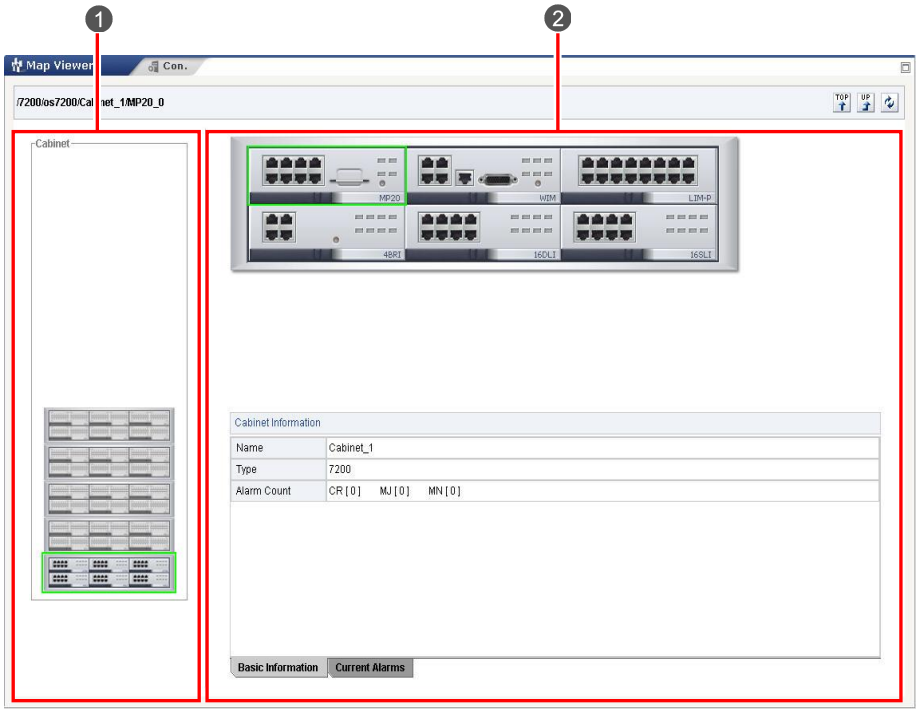


Figure 3.8 Cabinet Viewer Window (7200)

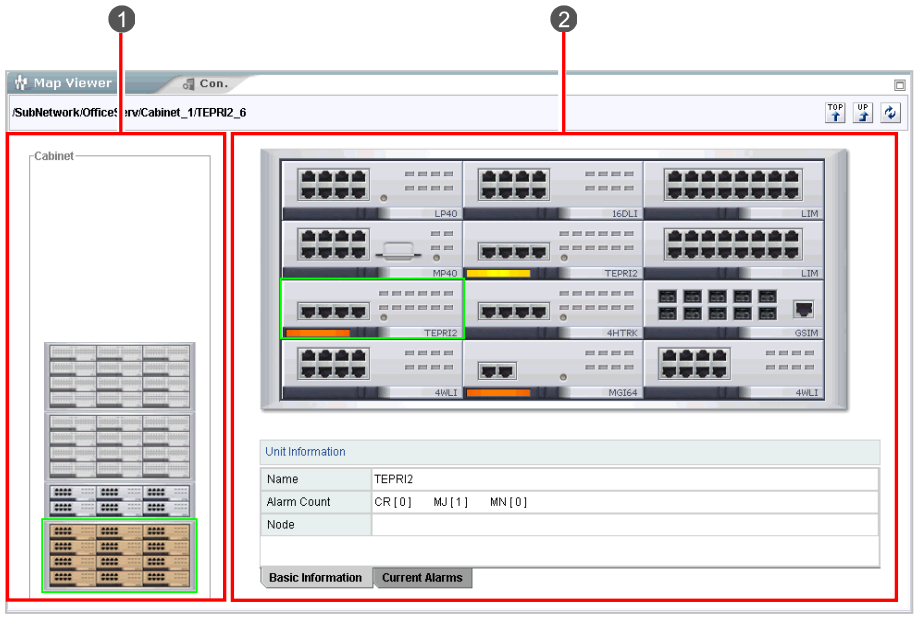


Figure 3.9 Cabinet Viewer Window (7400)

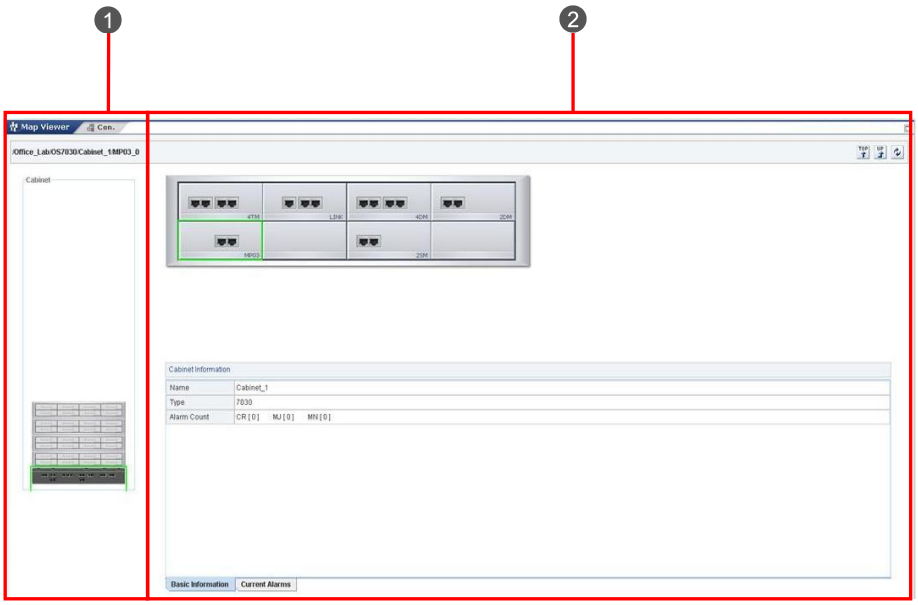


Figure 3.10 Cabinet Viewer Window (7030)

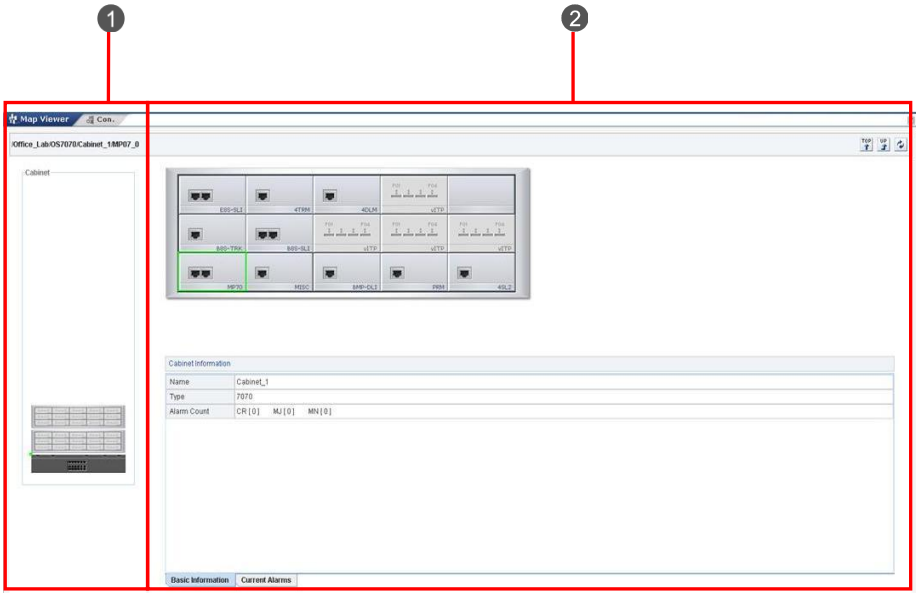
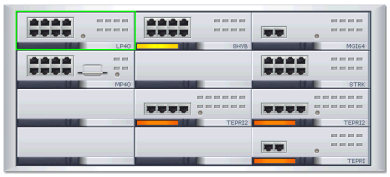


Figure 3.11 Cabinet Viewer Window (7070)

The Cabinet Viewer (1) displays each cabinet registered in NE as follows:

Real Cabinet	Virtual Cabinet
	

If a user click a specific cabinet in the Cabinet Viewer, the status of the relevant unit is displayed in the Unit View (2).

Real Unit View	Virtual Unit View
	

CHAPTER 4. General Management

This chapter describes general management window and function of OfficeServ NMS.

General Management is used to monitor whether functions and resources operate properly in NMS server and client and to provide various additional functions required for setting and controlling operational environment by an operator.

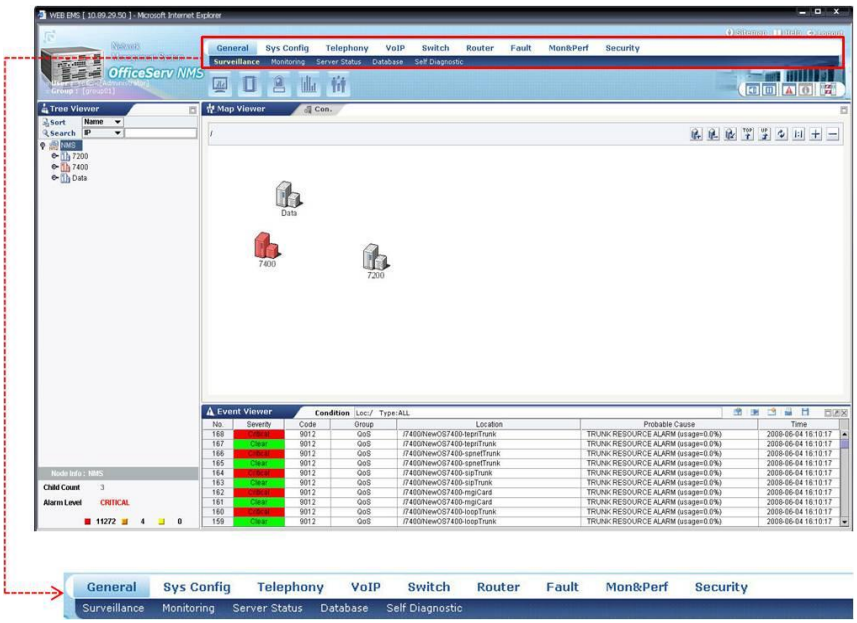


Figure 4.1 General Management Window

Surveillance

Network Monitoring (Network Status)

'Network Monitoring' menu is used to monitor network line status through regular ping test and to monitor agent status through hello message through the information saved in database of OfficeServ NMS server.
This function is performed in order of **[General Management]** → **[Surveillance]** → **[Network]**.

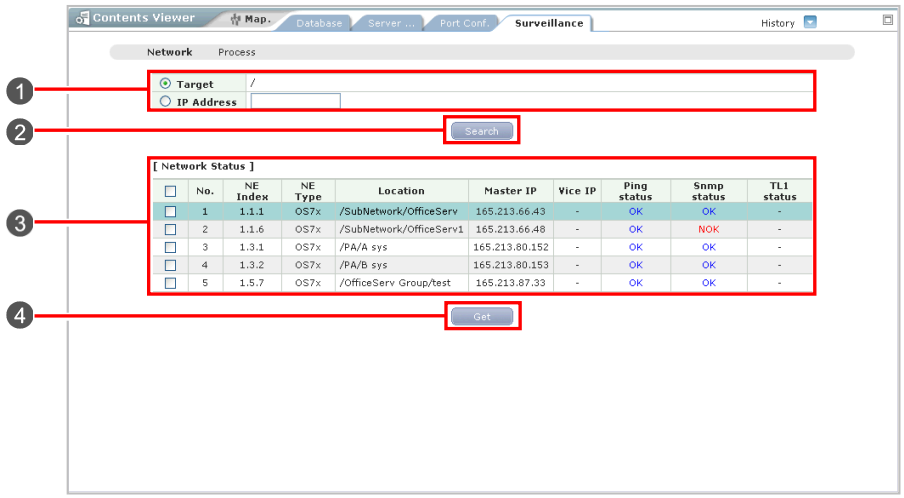


Figure 4.2 Network Window

Parameter	Description
Target	Target of Network monitoring
IP Address	IP address
NE Index	Index of NE
NE Type	Type of NE
Location	Location of Network monitoring
Master IP	Master IP address
Vice IP	Vice IP address
Ping Status	Status of Ping
SNMP Status	Status of SNMP agent

Searching Network Status

1. Select a target network from the 'Target' field of the setup table (1). You can select a target by selecting from the Tree Viewer or by entering an IP address.

2. Click the **[Search]** button (2).

3. Then, the search result is displayed in the result table (3).

Searching Network Status

To search the network status in real time, click the **[Get]** button (4). Select a NE list on the left and click the **[Get]** button. Then, the network connection status is searched in real time through a system device in NMS. (The retrieval result displayed in the window is a result searched regularly in NMS server.)

Process Monitoring

'Process Monitoring' menu is used to search the status information of each process that operates in OfficeServ NMS server and to restart a process. Process is restarted when a process that should operate in a server is abnormal.
When OfficeServ NMS client registers demon process in the server by using the demon process list search function, the process that should operate in the server restarts automatically.
This function is performed in order of **[General Management]** → **[Surveillance]** → **[Process]**.

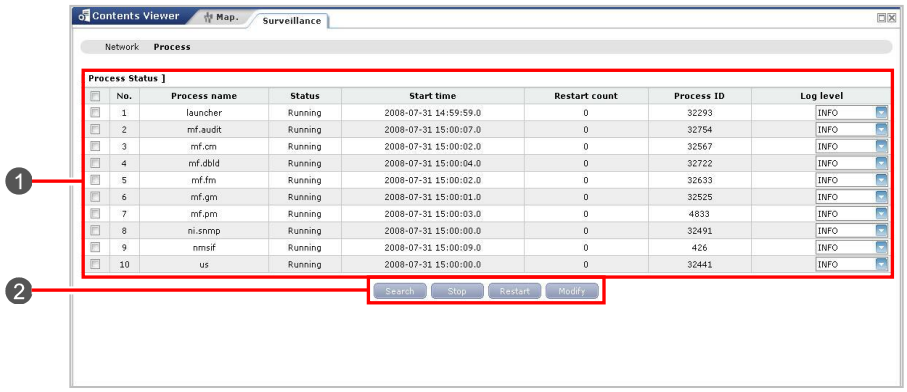


Figure 4.3 Process Window

Parameter	Description
Process name	name of process
Status	status of process
Start time	start time of process
Restart count	Count of restarting process
Process ID	ID of process
Log Level	Level that log is displayed

The Log Level parameters in the 'Process' menu are described as follows:

Parameter	Description
OFF	Not displayed in the log file.
ALL	All information is displayed.
SEVERE	The information required from program execution information is displayed When initial installation, 'SEVERE' is in default status.
WARNING	Lower level information is displayed from program execution information.
INFO	Most program's execution information is displayed.
CONFIG	Not used.

Searching Process Status

Click the **[Search]** button (❷) displays process in the result table (❶).

Stopping Process

Select the target check box from the **'Name'** item of the result table (❶).
Click the **[Stop]** button (❷) stops the process.

Restarting Process

Select the target check box from the **'Name'** item of the result table (❶).
Click the **[Restart]** button (❷) restarts the process.

Setting Log Level

1. Select the checkbox of the target process name in the result table and the target level from the 'Log Level' item (❶).

2. Click the **[Modify]** button (❷).

3. Log level modification is set. According to the log level, the log information size of the service is different. Thus, it is recommended that this function be used if necessary

Monitoring

Resource Monitoring (Monitoring)

‘Resource Monitoring’ menu is used to display the status value changes of CPU and memory, NMS resources, in a specific cycle.
This function is performed in order of **[General Management]** → **[Monitoring]**.

Figure 4.4 Resource Monitoring Window

Monitoring Resources

Click the **‘Resource Monitoring’** menu displays the resource monitoring window. When selecting a search cycle from Interval and clicking the Start button, the statuses of CPU and memory, NMS resources, are searched from database. The CPU status is displayed in the result chart (❶), and the memory status is displayed in the result chart (❷). Click the Stop button stops the automatic cycle search.

Server Status

CPU

'CPU' menu is used to search the information on CPU usage and set CPU threshold.
In case of a server that has over two CPUs, CPU usage information is displayed of each CPU. Setting threshold is a function that generates an alarm when the CPU usage of OfficeServ NMS server exceeds a specific value.
This function is performed in order of **[General Management]** → **[Server Status]** → **[CPU]**.

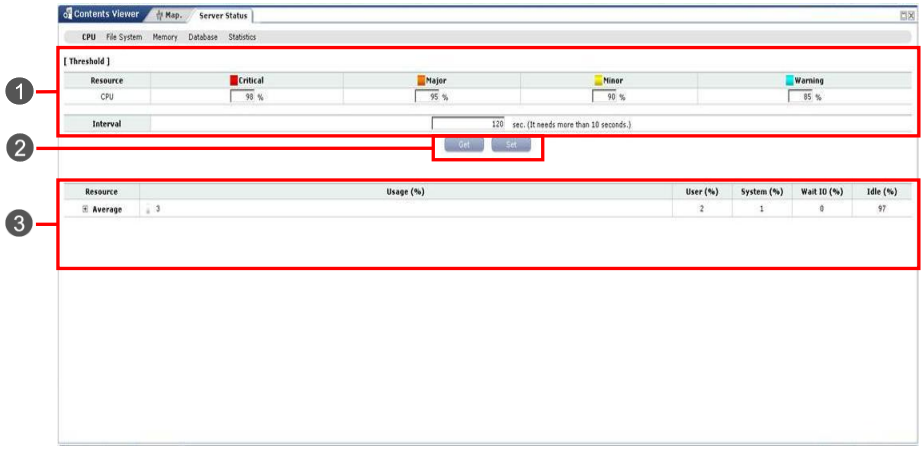


Figure 4.5 CPU Window

Parameter	Description
Resource	Type of resource
Interval	Period checking resource
Usage (%)	Usage percent of CPU
User (%)	Usage percent of CPU in user area
System (%)	Usage percent of CPU in system area
Wait IO (%)	Usage percent of CPU in Wait IO
Idle (%)	Idle percent of CPU

Searching CPU Occupancy Rate

Click the **'CPU'** menu searches CPU status automatically and the retrieval result is displayed in the result table (❸).
CPU status information is updated and displayed every 5 seconds.
Click the **[Get]** button (❷). Then, the status is retrieved immediately to display the result in the window.

Searching Threshold

1. Click the **'CPU'** menu searches CPU status automatically and the search result is displayed in the threshold table (❶).

2. Click the **[Get]** button (❷) Then, the threshold information is updated and displayed.

Setting Memory Threshold

1. Set the target threshold in the threshold table (❶).

2. Click the **[Set]** button (❷). Then, the threshold is set.

File System

'File System' menu is used to search the information on the usage of the file saved in OfficeServ NMS server and to set file threshold.
The attribute and location of each file is displayed. Setting threshold is a function that generates an alarm when the file usage of OfficeServ NMS server exceeds a specific value. This function is performed in order of **[General Management]** → **[Server Status]** → **[File System]**.

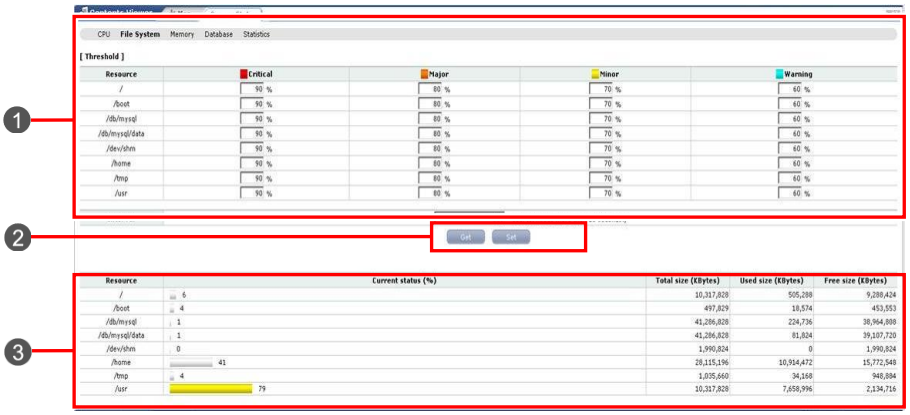


Figure 4.6 File System Window

Parameter	Description
Resource	type of resource (memory)
Interval	Period for checking file usages
Current status (%)	current status
Total size (Kbytes)	Total memory size
Used size (Kbytes)	Used memory size
Free size (Kbytes)	Free memory size

Searching File Usage

Click the **'File System'** menu searches file system status automatically and the retrieval result is displayed in the result table (❸).
File system information is updated and displayed every 5 seconds.

Searching Threshold

1. Click the **'File System'** menu searches CPU status automatically and the search result is displayed in the threshold table (❶).

2. Click the **[Get]** button (❷) updates and displays the setup threshold information.

Setting Threshold

1. Set the target threshold in the threshold table (❶).

2. Click the **[Set]** button (❷) sets the threshold.

Memory

'Memory' menu is used to search the information on the usage of the memory of OfficeServ NMS server and set memory threshold.
Memory usage is displayed by dividing the total memory installed by the memory usage being used. Setting threshold is a function that generates an alarm when the memory usage of OfficeServ NMS server exceeds a specific value. This function is performed in order of **[General Management]** → **[Server Status]** → **[Memory]**.

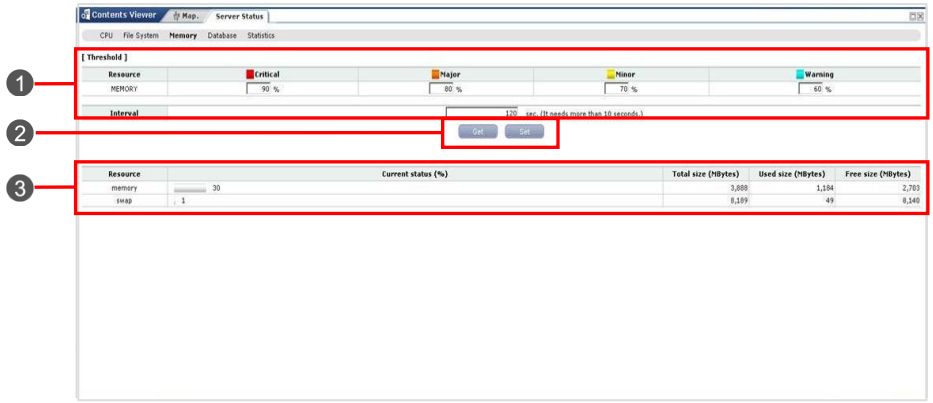


Figure 4.7 Memory Window

Parameter	Description
Resource	type of resource (memory)
Current status (%)	current status
Total size (Kbytes)	Total memory size
Used size (Kbytes)	Used memory size
Free size (Kbytes)	Free memory size

Searching Memory Usage

Click the **'Memory'** menu searches memory status automatically and the retrieval result is displayed in the result table (3).
Memory usage information is updated and displayed every 5 seconds.

Searching Threshold

1. Clicking the **'Memory'** menu searches CPU status automatically and the search result is displayed in the threshold table.

2. Click the **[Get]** button (❷) updates and displays the setup threshold information.

Setting Memory Threshold

1. Set the target threshold in the threshold table (❶).

2. Click the **[Set]** button (❷) sets the threshold.

Database

'Database' menu is used to search the information on database of OfficeServ NMS server and to set database threshold. Setting threshold is a function that generates an alarm when the database usage of OfficeServ NMS server exceeds a specific value. This function is performed in order of **[General Management]** → **[Server Status]** → **[Database]**.

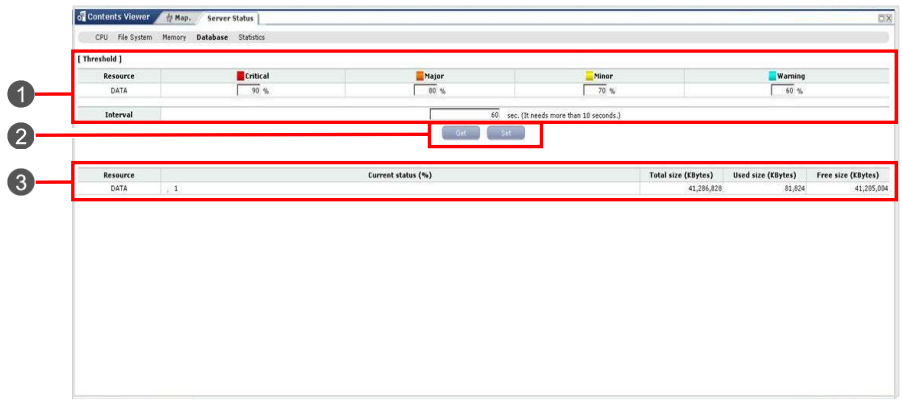


Figure 4.8 Database Window

Parameter	Description
Resource	type of resource (memory)
Current status (%)	current status
Total size (Kbytes)	Total memory size
Used size (Kbytes)	Used memory size
Free size (Kbytes)	Free memory size

Searching Database Usage

Click the 'Database' menu searches database status automatically and the retrieval result is displayed in the result table (3).
Database usage information is updated and displayed every 5 seconds.

Searching Threshold

1. Click the **'Database'** menu searches database status automatically and the search result is displayed in the threshold table.

2. Click the **[Get]** button of window buttons (❷) updates and displays the setup threshold information.

Setting Threshold

1. Set the target threshold in the threshold table (❶).

2. Click the **[Set]** button (❷) sets the threshold.

Resource Statistics

‘Resource Statistics’ menu is used to search and display the occupancy rate of resources (CPU, file system, memory, database) of OfficeServ NMS server. This function is performed in order of **[General Management]** → **[Server Status]** → **[Statistics]**.

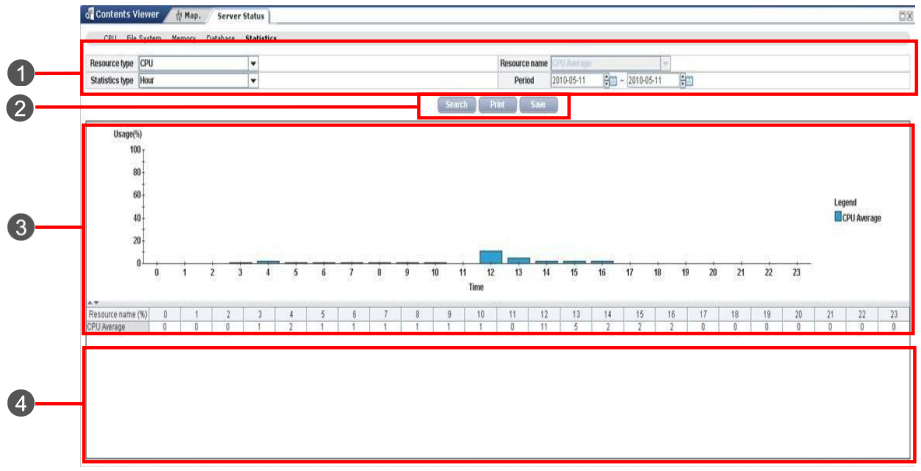


Figure 4.9 Statistics Window

The parameters displayed in the **‘Statistics’** menu are described as follows:

Item	Description
Resource	Resource type
Resource Name	Detailed item name of each resource type
Time Type	Hours, days, months
Period	Start time and end time

Searching Statistics on Resource

1. Select a target resource from the **'Resource'** field of the setup table (1).
2. Select the target name from the **'Resource Name'** field.
3. Select the target statistics type from the **'Time Type'** field.
4. Select the target time period from the **'Period'** field.
5. Click the **[Search]** button (2).

Database Management

Backup

‘Backup’ menu is used to back up database manually or automatically. For manual backup, an operator can set backup range, backup location, and backup file name. For automatic backup, an operator can register backup schedule on a daily, monthly, or weekly basis.
This function is performed in order of **[General Management]** → **[Database]** → **[Backup]**.

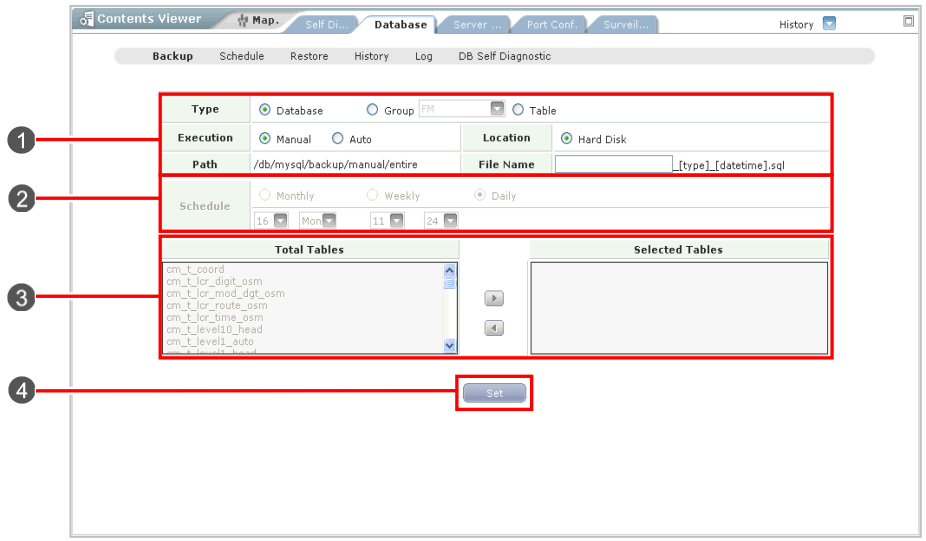


Figure 4.10 Backup Window

The parameters in the **‘DB Backup’** menu are described as follows:

Parameter	Description
Type	Backup range (Database, Group, Table)
Execution	Back execution mode (Auto, Manual)
Location	Back device (Hard Disk)
Path	Path where backup file is saved
File Name	Backup file name
Schedule	Auto backup schedule

Manual Backup

1. Assign backup range (Database, Group, Table), backup method (select Manual), backup location (Hard Disk, Tape), and backup file name (❶).

2. Click the **[Set]** button (❹) performs manual backup.

Automatic Backup

1. Assign backup range (Database, Group, Table), backup method (select Auto), backup location (Hard Disk, Tape), and backup file name (❶).

2. Set backup schedule (Daily, Weekly, Monthly) (❷).

3. Click the **[Set]** button (❹) registers automatic backup schedule.

Schedule

'Schedule' menu is used to search backup schedule information and delete registered backup schedule information. This function is performed in order of **[General Management]** → **[Database]** → **[Schedule]**.

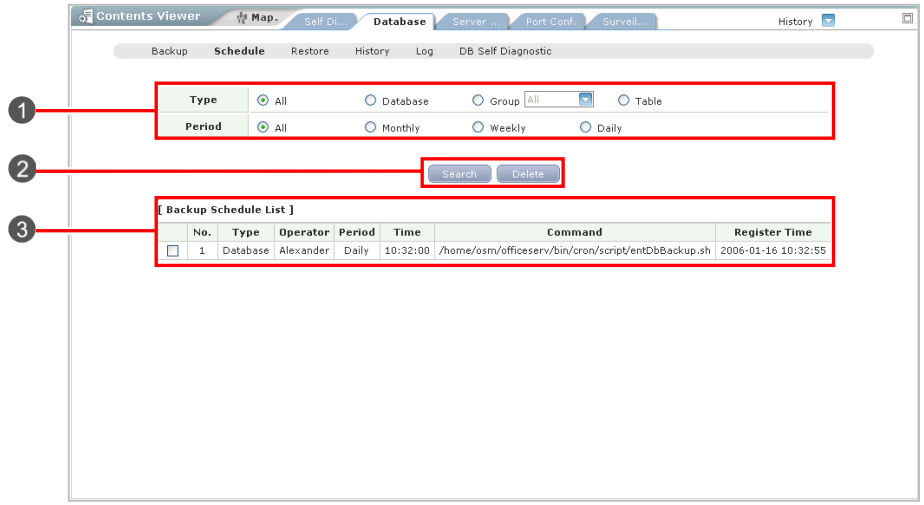


Figure 4.11 Schedule Window

The parameters in the **'Schedule'** menu are described as follows:

Parameter	Description
Type	Backup schedule type
Operator	Backup schedule registration worker
Period	Backup schedule (Daily, Weekly, Monthly)
Time	Backup time
Command	Schedule backup script
Register Time	Backup schedule registration time

Searching Backup Schedule Information

1. Set the target backup range (All, Database, Group, Table) and backup cycle (All, Daily, Weekly, Monthly) (❶).

2. Click the **[Search]** button (❷) displays registered schedule information.

Deleting Backup Schedule Information

1. Select the target backup schedule from the backup schedule list registered (❸).

2. Click the **[Delete]** button (❷) deletes automatic backup schedule.

Restore

‘Restore’ menu is used to search/delete database backup information and restore database through backup information.
This function is performed in order of **[General Management]** → **[Database]** → **[Restore]**.

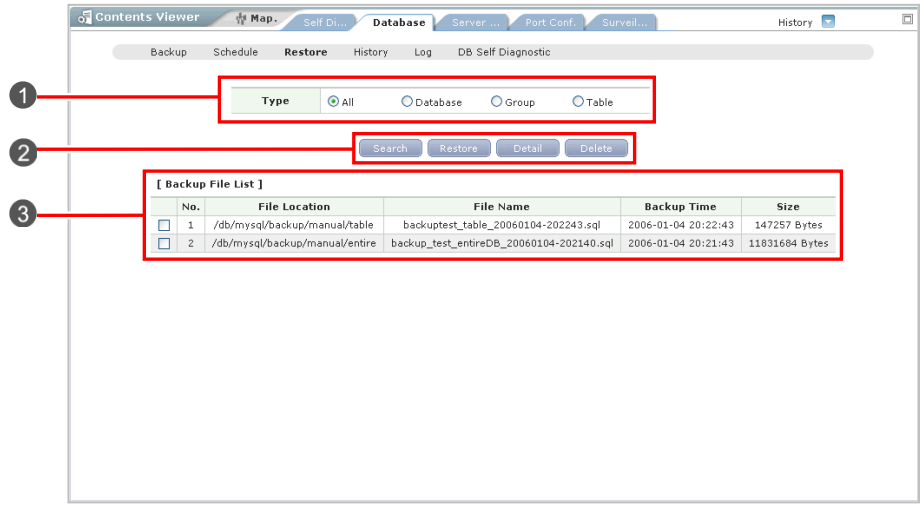


Figure 4.12 Restore Window

The parameters in the **‘Restore’** menu are described as follows:

Parameter	Description
Type	Backup file type (All, Database, Group, Table)
File Location	Backup file storage location
File Name	Backup file name
Backup Time	Backup file creation time
Size	Backup file size

Searching Restore Information

1. Set the target backup range (All, Database, Group, Table) (❶).

2. Click the **[Search]** button (❷) displays backup file information (❸).

Searching Detailed Restore Information

1. Select the target backup information (❸).

2. Click the **[Detail]** button (❷) displays detailed backup information.

Deleting Restore Information

1. Select the target backup information (❸).

2. Click the **[Delete]** button (❷) deletes the backup information.

History

'History' menu is used to search backup and restore history information. This function is performed in order of **[General Management]** → **[Database]** → **[History]**.

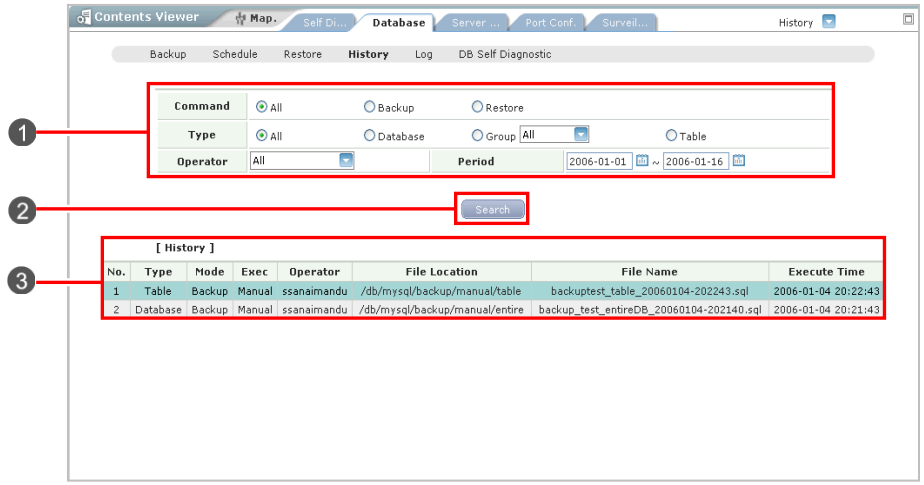


Figure 4.13 History Window

The parameters in the **'History'** menu are described as follows:

Parameter	Description
Command	Backup/Restore
Type	Backup/Restore type (All, Database, Group, and Table)
Operator	Backup/Restore worker
Period	Backup/Restore period
Mode	Backup/Restore
Exec	Manual/auto
File Location	Backup file location
File Name	Backup file name
Execute Time	Backup/Restore work time

Searching History Information

1. Assign the information to search (All, Backup, and Store) the target backup range (All Database, Group, Table) and backup cycle (❶).

2. Click the **[Search]** button (❷) displays backup and restore history information (❸).

Log Management

'Log Management' menu is used to set Raw Data, Hourly Data, Daily Data, and Monthly Data of PM, FM, and SM in server database and to delete data automatically according to the setup period.
This function is performed in order of **[General Management]** → **[Database]** → **[Log Management]**.

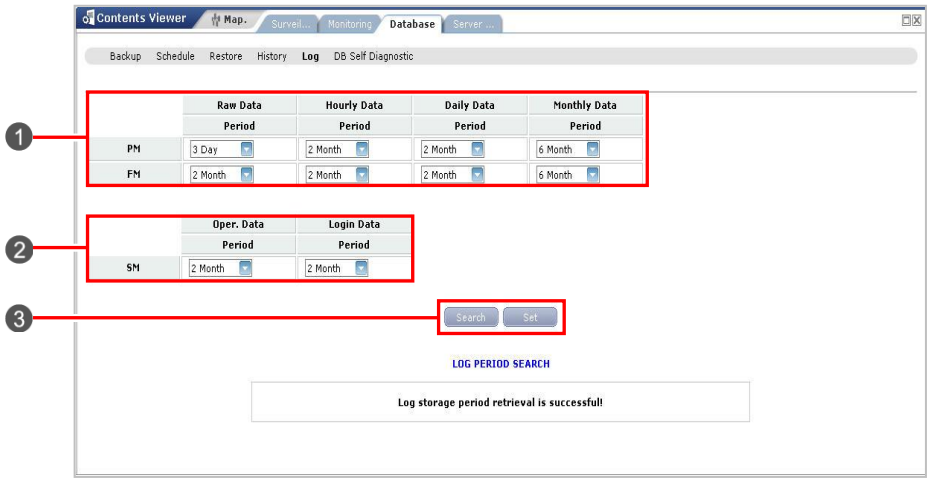


Figure 4.14 DB Log Management Window

Searching and Modifying DB Log Information Storage Cycle

1. After selecting the 'Log Management' menu, the current hold time information set in each FM, PM, and SM data is displayed (❶, ❷).

2. Click the **[Search]** button (❸).
Then, the setting threshold information is updated and displayed.

3. After changing the storage cycle of the target data, click the **[Set]** button (❸).

4. Click the selection box on the right of the storage cycle.
The log is backed up (❶, ❷) in the /db/oracle/backup/history directory of the server before data is automatically deleted from database.

DB Self Diagnostic

'DB SelfDiagnostic' menu is used to test the DB status of NMS server related processes. This function is performed in order of **[General Management]** → **[Database]** → **[DB Self Diagnostic]**.

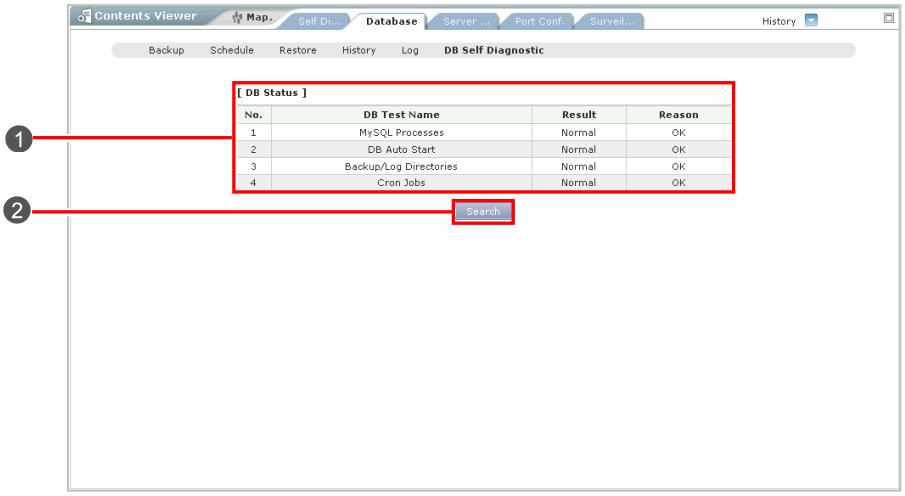


Figure 4.15 DB SelfDiagnostic Window

The parameters in the **'DB SelfDiagnostic'** menu are described as follows:

Parameter	Description
DB Test Name	DB SelfDiagnosis item
Result	SelfDiagnosis result - NORMAL: Normal - FIXED: Problem is solved. - ABNORMAL: Abnormal
Reason	Detailed information on abnormal case

Perfoming DB Self-Diagnosis

1. Select the 'DB SelfDiagnostic' menu to display the DB test result in the result table (❶).

2. If the DB test result is normal, Normal is displayed.
   If not, Abnormal is displayed.

3. Click the **[Search]** button (❷) to search event channel status again and display the search result in the window.

Self Diagnostic

‘Self Diagnostic’ menu is used to diagnose the current status of database automatically. The self-diagnosis result of database is displayed as Normal, Abnormal, or Fixed (an error is fixed).

Self Diagnostic

‘Server Diagnostic’ menu is used to search the RMI connection status, DB connection status, and event channel status of NMS server related processes. This function is performed in order of **[General Management]** → **[Self Diagnostic]**.

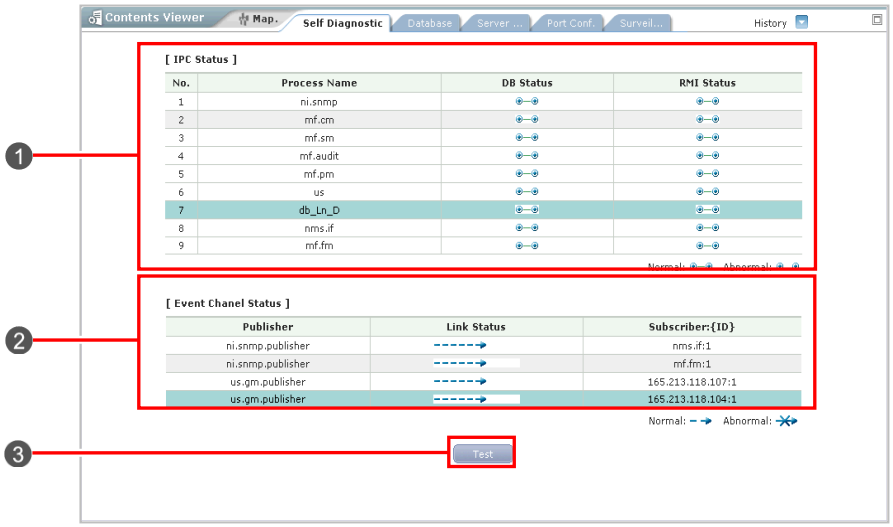


Figure 4.16 Self Diagnostic Window

The parameters displayed in the **'Self Diagnostic'** menu are described as follows:

Parameter	Description
Process Name	Process name
RMI Status	RMI connection status of a process. If normal, it is displayed as Normal, and if abnormal, it is displayed as Abnormal.
DB Status	Connection status between a process and database. If normal, it is displayed as Normal, and if abnormal, it is displayed as Abnormal.
Publisher	A process that distributes events
Link Status	Connection status between processes. If normal, it is displayed as Normal, and if abnormal, it is displayed as Abnormal.
Subscriber	A process that receives events

Searching IPC Status

1. If 'Server Status' menu is selected, the self diagnosis function of the IPC status is performed automatically and the diagnosis result is displayed (❶).

2. If the DB status and RMI status are normal, Normal is displayed.
If not, Abnormal is displayed.

3. Click the **[Search]** button (❸) performs the self diagnosis function of the IPC status again and displays the diagnosis result (❶).

Searching Event Channel Status

1. Select the **'Server Status'** menu to display the event channel status in the result table (❷).

2. If the event channel is normal, Up is displayed. If not, Down is displayed.

3. Click the **[Search]** button (❸) to search event channel status again and display the search result in the window.

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CHAPTER 5. Inventory Management

This chapter describes the Inventory Management screen of the OfficeServ NMS.

The Inventory Management function allows the user to check and control the S/W configuration information for the OfficeServ system.

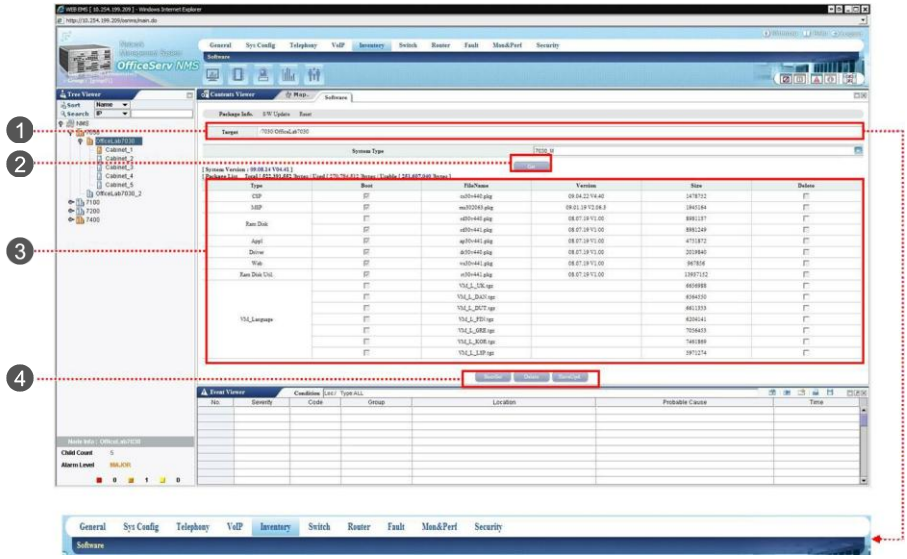

Figure 5.1 Inventory Management Screen

CHECK

Inventory Management Function not supported

OfficeServ 7030 and 7070 do not support Inventory Management.

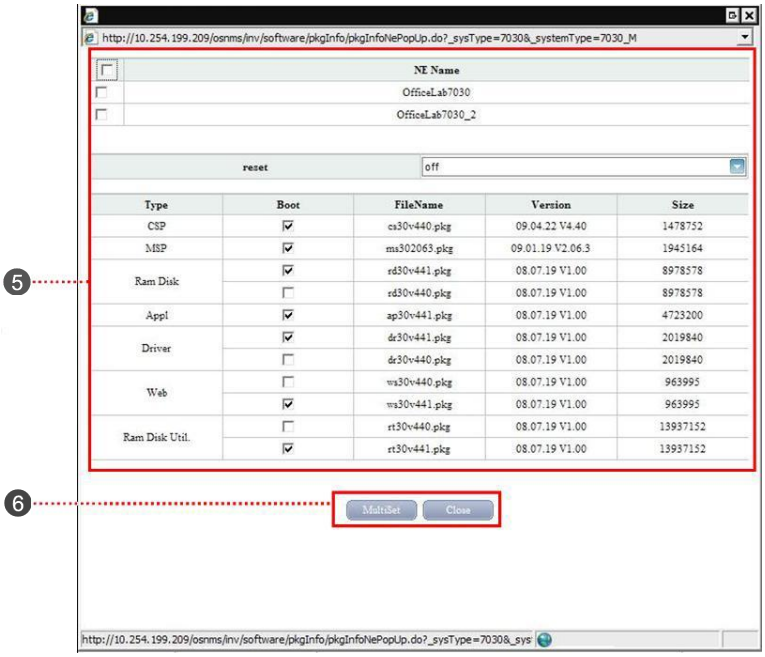

Figure 5.2 Screen for Changing Inventory Management Options

Since the Inventory function is only provided in the OfficeServ 7030 system, the following descriptions are only applicable to the OfficeServ 7030 system.

Parameter	Description
NE Name	A list of the registered NEs that can be the target systems
reset	After configuring a boot file, select whether to restart the system.
Type	The type of software package
Boot	Denotes whether the file is a boot file
File Name	The file name of the software package
Version	The version information for the software package
Size	The size of the software package

Software

Package Information Management Function

The Package Information Management function allows the user to view and change the memory information, package version, and software list parameters.

Select **[Inventory]** → **[Software]** → **[Package Info.]** to carry out the Package Information Management function.

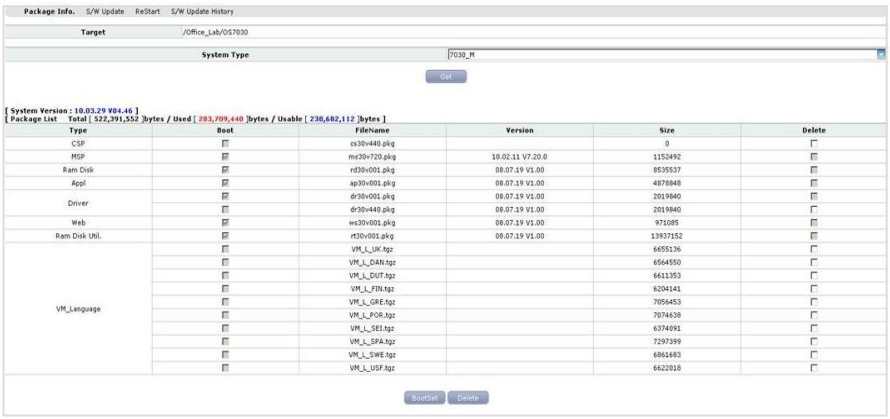

Figure 5.3 Package Information Management Screen

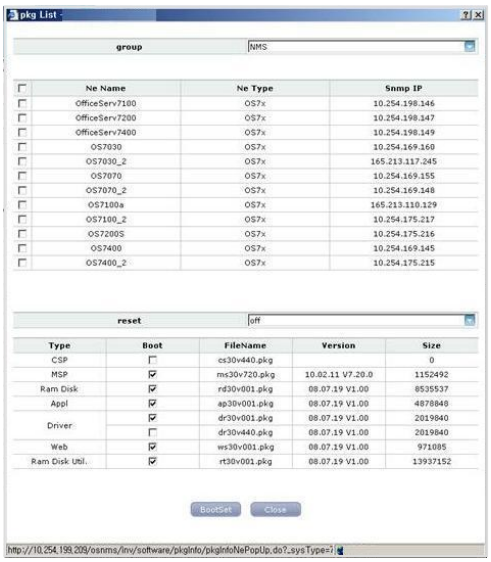

Figure 5.4 Package Information Management Window for Changing the Boot File Option for Multiple Files

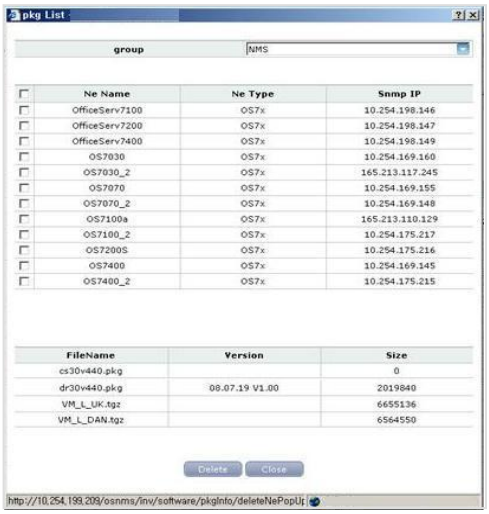

Figure 5.5 Package Information Management Window for Deleting Files from NEs

The table below describes the parameters shown in the Package Information Management screen, which is displayed when you select the **'Package Info.'** menu item.

Parameter	Description
Target	The registered NE that can be the target system
System Type	The system type of the selected NE
Type	The type of software package
Boot	Denotes whether the file is a boot file
File Name	The file name of the software package
Version	The version information for the software package
Delete	Select the checkboxes of the files you want to delete

Viewing Package Information

1. In the Tree view, select the target for which you want to carry out the function. The selected target is displayed in the **'Target'** field (❶) of the screen.

2. Click the **[Get]** button (❷) to retrieve the information.

3. The results are displayed in the Results table (❸) of the screen.

Changing the Boot File Option for Multiple Files

1. Click the **[MultiSet]** button (❹).

2. The window for changing the boot file option for multiple files is displayed. In this window, select the target NEs and the parameter values (❺) you want to apply and then click the **[MultiSet]** button (❻).

3. The Password Confirmation dialog box is displayed. Enter your password and click the **[OK]** button (❻).

4. The results of the change operation are displayed in the Results table (❸) of the screen.

Deleting Files from NEs

1. Select the Delete checkbox for the files you want to delete from their NEs and then click the **[Delete]** button (❹).

2. The window for deleting files from NEs is displayed. In this window, select the NEs (❺) from which you want to delete the selected files and then click the **[Delete]** button (❻).

3. The Password Confirmation dialog box is displayed.
   Enter your password and click the **[OK]** button (❻).

4. The results of the deletion operation are displayed in the Results table (❸) of the screen.

Software Update

The Software Update Management function updates the software of the OfficeServ system.
Select **[Inventory]** → **[Software]** → **[S/W Update]** to carry out the Software Update Management function.

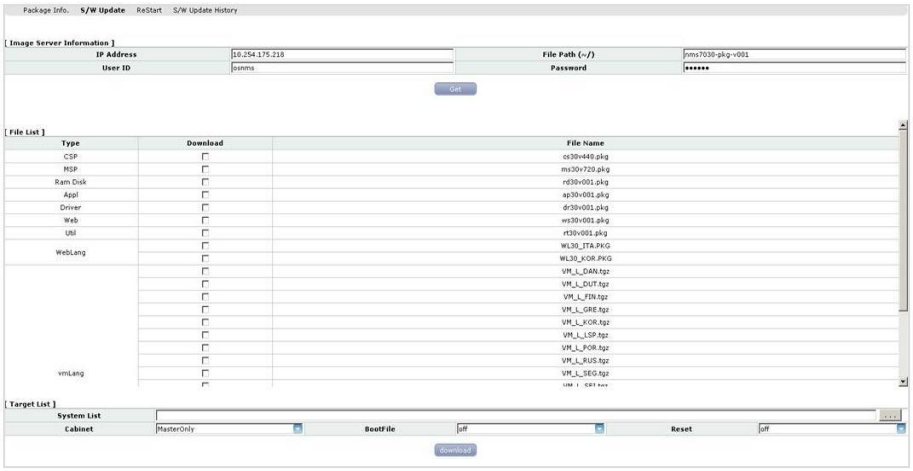

Figure 5.6 Software Update Management Screen

Figure 5.7 Software Update NE Selection Management Screen

The table below describes the parameters shown in the Software Update Management screen, which is displayed when you select the **'S/W Update'** menu item.

Parameter	Description
IP Address	The IP address of the FTP from which the software package can be downloaded
File Path	The location of the software package in the FTP server
User ID	The user account used to connect to the FTP server
Password	The password used to connected to the FTP server
Type	The type of software package
Download	Select the checkboxes of the files you want to download to the system. For the files used as boot files, only one file can be selected.
FileName	The file name of the software package
System Type	The system type of the selected NE
System List	A list of the systems registered as NEs
Cabinet	For 7030, Select whether to update only the master (Master Only) or both of the master and slave (Master/Slave). In the other systems except 7030, if Mater/Slave is selected, the slave is ignored.
Boot File	Select whether to use the package you want to update as the boot file. This option is available only when all the files used as boot files are selected.
Reset	Select whether to restart the system when the operation is finished. This option is available only when a boot file is selected to be modified.

Executing Software Update

1. Enter the information (IP Address, File Path, UserId, Password) for the server where the software package is stored, and then click the **[Get]** button (❷) in the screen to retrieve the information.

2. The results are displayed in the Results table (❸) of the screen.

3. Select the file you want to update in the File List section.

4. Select the system type in the Target List section and then click the button to the right of the System List item. The window for selecting the target NEs for which the software update will be performed is displayed. In this window, select the target NEs and then click the **[Set]** button (❹). Set a value in the Cabinet, BootFile, and Reset items.

5. Click the **[Download]** button (❹) to start downloading.

ReStart

The ReStart Management function restarts the system.
Select **[Software]** → **[Software]** → **[ReStart]** to carry out the ReStart Management function.

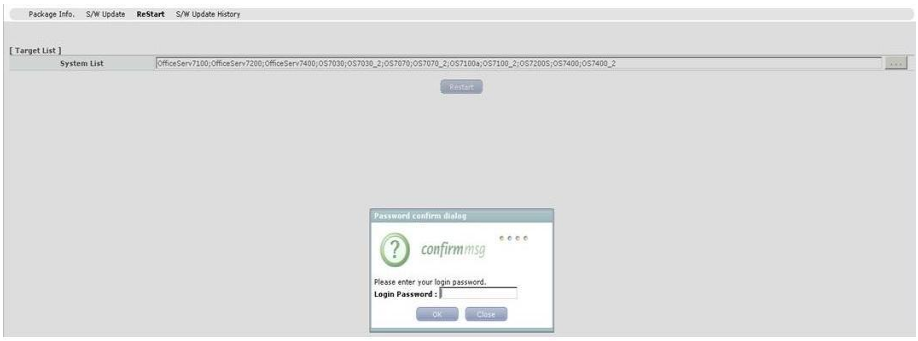

Figure 5.8 ReStart Management Screen

Figure 5.9 ReStart NE Selection Management Screen

The table below describes the parameters shown in the Reset Management screen, which is displayed when you select the **'Restart'** menu item.

Parameter	Description
System Type	The system type of the selected NE
System List	A list of the systems registered as NEs

Restartting NEs

1. Select the system type in the Target List section and then click the button to the right of the System List item. The window for selecting the target NEs for which the software update will be performed is displayed. In this window, select the target NEs and then click the **[Set]** button (4).

2. Click the **[ReStart]** button (2) in the screen.

3. The Password Confirmation dialog box is displayed.
   Enter your password and click the **[OK]** button (6).

Viewing the Optional Ports

1. In the Tree view, select the target for which you want to carry out the function. The selected target is displayed in the **'Target'** field (1) of the screen.

2. When you want to retrieve the information for a specific port, enter its port number too. If a specific port number is not entered, the information for all ports of the selected cabinet is retrieved.

3. Click the **[View]** button (2) to retrieve the information for the optional port (s).

4. The results are displayed in the Results table (3) of the screen.

System Update History

The System Update History Management function shows the system update command history.

Select **[Software]** → **[Software]** → **[System Update History]** to carry out the Software Update History Management function.

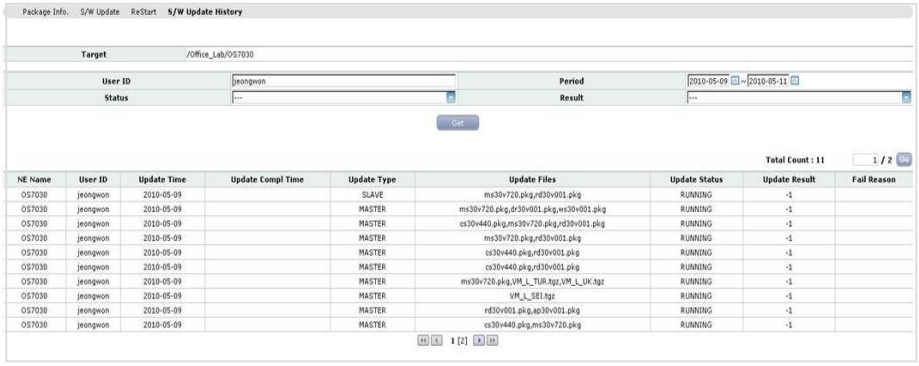

Figure 5.10 System Update History Management Screen

The table below describes the parameters shown in the System Update History Management screen, which is displayed when you select the **'System Update History'** menu item.

Parameter	Description
Target/NE Name	NE Name which is requested this functions
User ID	User ID who's requested this functions
Period	Select Period which is queried
Update Time	Update Time which is requested this functions This is the Server Time
Update Compl Time	Update Complete Time which is completed this functions, This is the Server Time that is reached a completed notification from a NE
Update Type	Update Type which's requested
Update Files	Files List which's requested
Update Status	Update Status Information
Update Result	The Result after finishing this function
Fail Reason	Detailed Fail Reason

Searching Update History

1. In the Tree view, select the target for which you want to carry out the function. The selected target is displayed in the **'Target'** field (❶) of the screen.

2. Click the **[Get]** button (❷) to retrieve the information.

3. The results are displayed in the Results table (❸) of the screen.

CHAPTER 6. Fault Management

This chapter describes fault management window and function of OfficeServ NMS.

The **'Fault Management'** menu provides various additional functions to manage faults generated in the system.

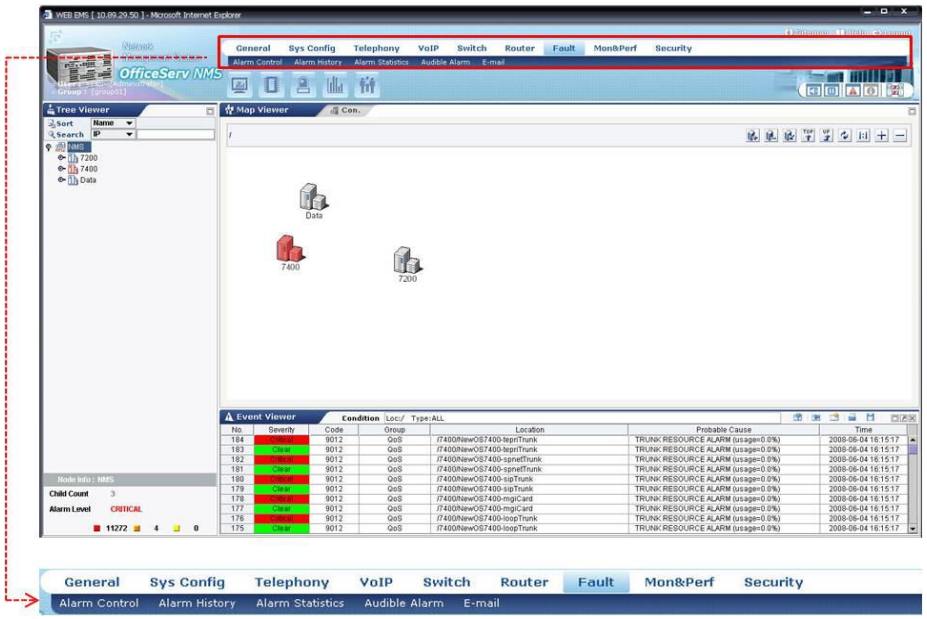

Figure 6.1 Fault Management Window

Event Viewer

This function allows a client to display faults and events of the OfficeServ, which are received from a server.

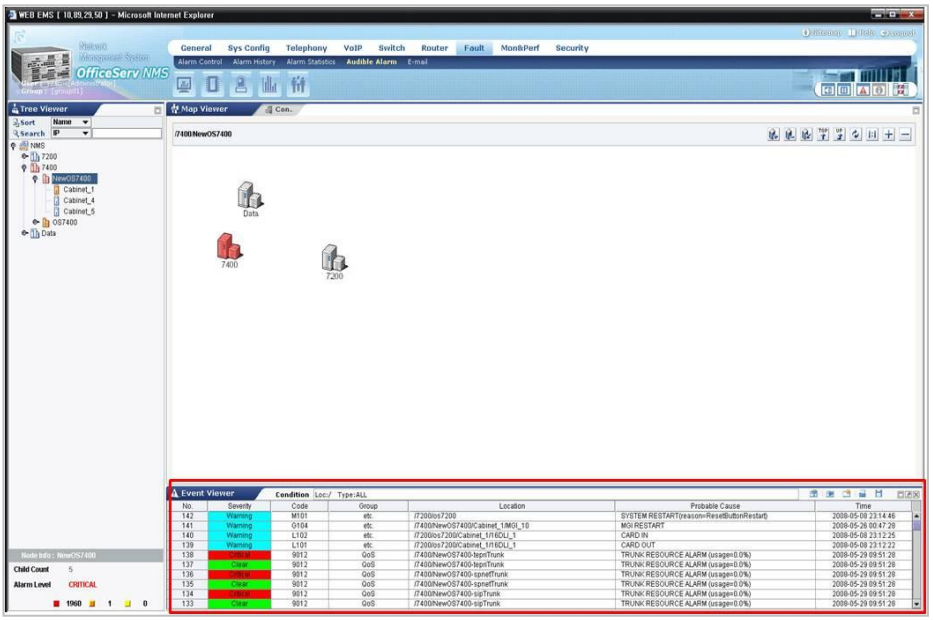

Figure 6.2 Event Viewer Window

Parameters displayed on the **'Event Viewer'** window are described as follows:

Parameter	Description
Severity	Displays the level of an event. - Critical: Critical Faults - Major: Major Faults - Minor: Minor Faults - Warning: Fault Information - Indeterminate: Fault not defined in the level - Status: General Information
Code	Displays the code of an alarm.

(Continued)

Parameter	Description
Group	Displays the event group where an event is included. The types of event groups are as follows: - Communication: Communication Process/Procedure - Processing: Software/Processing - Environmental: Equipment External Environment - QoS: Service Quality Deterioration - Equipment: Equipment Fault - etc: Others (Fault and Status) except faults are included in here.
Location	Displays the location where an event occurs.
Probable Cause	Displays the cause that an event occurs.
Time	Displays the time when an event occurs.

Receiving Specific Event

The user can set up to only display specific events on the event viewer.
If clicking 'Filter Icon' ( ) located on the top of the Event Viewer window, select the event condition to display from the following window.

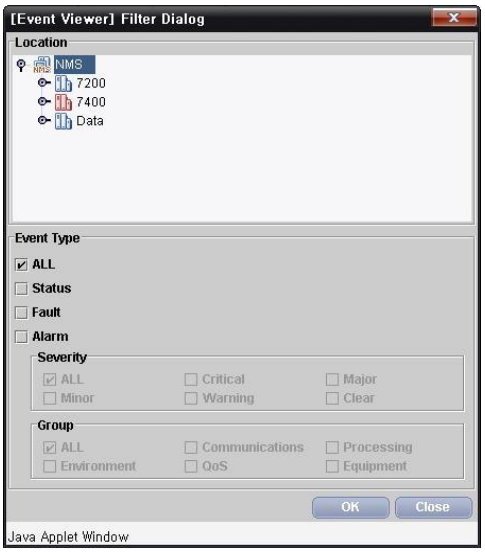

Figure 6.3 Specific Event Reception Selection Window

Stopping/Receiving Event

If clicking the 'Pause Icon' ( ) on the top of the Event Viewer, the pause button changes to the Resume button ( ). The subsequent event is not displayed. If clicking the **[Resume]** button again, the **[Resume]** button changes to the **[Pause]** button. The event that was not displayed during the pausing time is displayed.

Deleting an Displayed Event

If clicking the **[Clear]** button ( ) on the top of Event Viewer, the event displayed on the current Event Viewer is deleted. However, the event history stored in the database is not deleted.

Displaying Event

If clicking the **[Print]** button ( ) on the top of the event viewer, the event displayed on the current Event Viewer is displayed.

Saving Event

If clicking the **[Save]** button ( ) on the top of the event viewer, the event displayed on the current Event Viewer is saved in an excel file format.

Alarm Control

'Alarm Control' menu is used to retrieve and change alarm grades and to control and allow a specific alarm occurrence.
This function is performed in order of **[Alarm Management]** → **[Alarm Control]**.

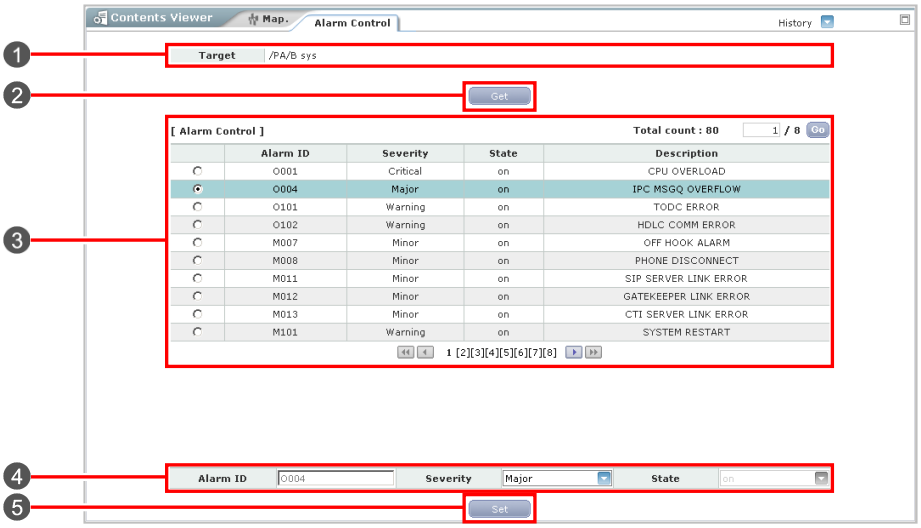

Figure 6.4 Alarm Control Window Window

Parameters displayed on the **'Alarm Control'** window are described as follows:

Parameter	Description
Alarm ID	ID of alarm
Severity	Displays the level of alarm
State	State
Description	Description of alarm

Retrieving Alarm Information

1. Select the target alarm from the Tree viewer.
   The alarm is displayed in the **'Target'** field (❶).

2. Clicking the **[Get]** button (❷) retrieves the alarm information.

3. The retrieval result is displayed in the result table (❸).

Changing Alarm Grade

1. Select the target alarm from **'Alarm Information'** displayed in the result table (❸).

2. Set Severity to the target grade. (❹)

3. Click the **[Set]** button (❺).

4. Check if the selected alarm information is properly changed in the result table (❸).

EMS History

‘Alarm History’ menu is used to retrieve alarm occurrence history, which is saved in the system, of each search condition.
This function is performed in order of **[Alarm Management]** → **[Alarm History]**.

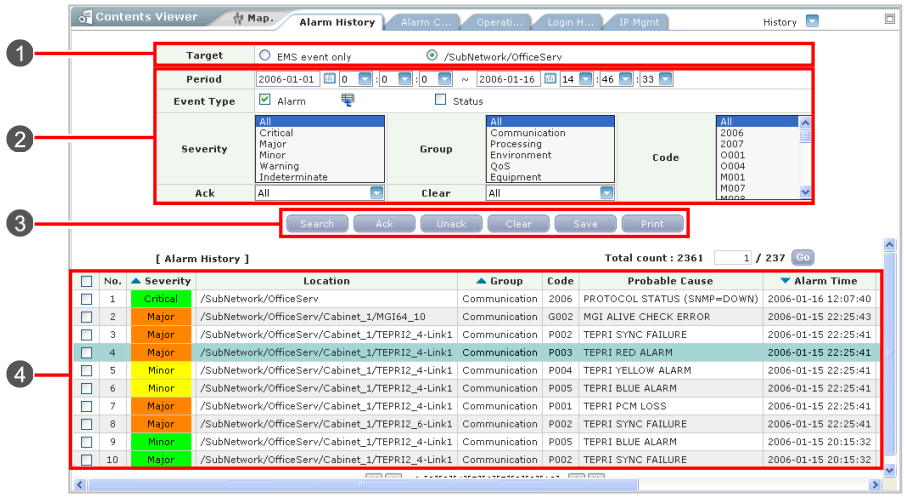

Figure 6.5 Alarm History Window

Parameters displayed on the **‘Alarm History’** menu are described in the table below:

Parameter	Description
Severity	Displays the level of an event. - Critical: Critical Failures - Major: Major Failures - Minor: Minor Failures - Warning: Failure Information - Indeterminate: Fault not defined in the level - Status: General Information
Clear Type	Displays the ‘Clear Type’ when clearing alarms **[Auto/Manual]**
Location	Displays the location where an event occurs.

(Continued)

Parameter	Description
Group	Displays the event group where an event is included. The types of event groups are as follows: - Communication: Communication Process/Procedure - Processing: Software/Processing - Environmental: Equipment External Environment - QoS: Service Quality Deterioration - Equipment: Equipment Fault - etc: Others (Fault and Status) except faults are included in here.
Code	Displays the code of an alarm.
Probable Cause	Displays the cause that an event occurs.
Alarm Time	Displays the time when an event occurs.
Clear Time	Display the time when an alarm is cleared.
Alarm Duration	Display the time until the alarms ends from the alarm occurrence.

Retrieving Alarm History

1. Select an NE to retrieve in Tree Viewer of the main window.
The selected NE is displayed on the 'Target' field (❶) of the main window. When the root ('/') of Tree is selected, the alarms including EMS alarm in all of the locations are retrieved. Select the **[EMS]** button (❸) to retrieve the EMS occurrence alarm only.

2. Select 'Alarm, Status, and Fault' in the Event Type of the window (❷). When 'Alarm' is selected, the items of 'Severity, Group, Ack, Clear, and Code' in the field can be selected and retrieved. The values of items in the field of 'Severity, Group, Ack, Clear, and Code' are not applied when 'Alarm' is not selected.

3. Click the **[Search]** button (❸) among the window buttons.

4. Click the **[Save]** button among the window buttons to save a result (❹).

5. Check if clicking the Alarm Code pops up the help page for the corresponding alarm code.

6. If you want to print the result, click the **[Print]** icon.
Then, the **'Print Friendly'** page is displayed and the page can be printed.

Setting/Releasing Alarm Recognition

1. Select an alarm to indicate the Ack (Acknowledgement) in the result table (❹).

2. Click the **[Ack]** button (❸) among the window buttons.

3. Check in the 'No.' column of the result table if the selected alarm information is normally acknowledged and displayed (❹).

4. Click the **[Unack]** button (❸) among the window buttons to acknowledge and clear an alarm after selecting an alarm from the result table.

Clearing Alarm

1. Select an alarm to clear in the result table (❹).

2. Click the **[Clear]** button (❸) among the window buttons.

3. Check in the 'Severity' column background color and 'Clear Time' column of the result table if the selected alarm information is normally acknowledged and displayed (❹).

Alarm Statistics

'Alarm Statistics' is used to search alarm statistics saved in the database of EMS through various setup cases.
This function is performed in order of **[Alarm Management]** → **[Alarm Statistics]**.

Figure 6.6 Alarm Statistics Window

Retrieving Alarm Statistics

1. Select an NE to retrieve in Tree Viewer of the main window.
The selected NE is displayed on the 'Target' field (❶) of the window.
When the root ('/') of Tree is selected, the alarm statistics including the EMS alarm in all of the locations are retrieved. Select the **[EMS]** button (❶), only to retrieve the EMS occurrence alarm.

2. Select and retrieve a specific group from the Group field.

3. It is possible to select in the Series field (❷) whether the statistics are 'Severity' or 'Code' Then, the results allow the series of the result chart and the column name of the result table to be modified.

4. It is possible to select a summary (Hourly Sum, Daily Sum, Monthly Sum) by each time unit, only when you select Severity as Series, and Time as Item.

5. Set a type of statistics (Hourly, Daily, Monthly, Hourly Sum, Daily Sum, Monthly Sum.) in the Time Type field (❷). The result enables to modify the initial value of a period.

6. Click the **[Search]** button on the window (❸).

7. Check if the information on the alarm statistics to meet a selected condition is displayed in the result table and the chart (❹).
Drag the Chart by the mouse to enlarge the selected parts, and the scroll bar is activated. Deactivate the scroll bar to click the **[Zoom Out]** button. Then, the chart is modified into the original size.

8. Click the **[Print]** button for the result to be printed out (❸)

9. Click the **[Save]** button (❸). Then, you can save the result table as the EXCEL file, and the result chart as the PDF file.

Audible Alarm

'Audible Alarm' menu enables to provide a function of letting a user know the alarm. The method of the user's acknowledgement is to make an audible sound. This function is performed in order of **[Alarm Management]** → **[Audible Alarm]**.

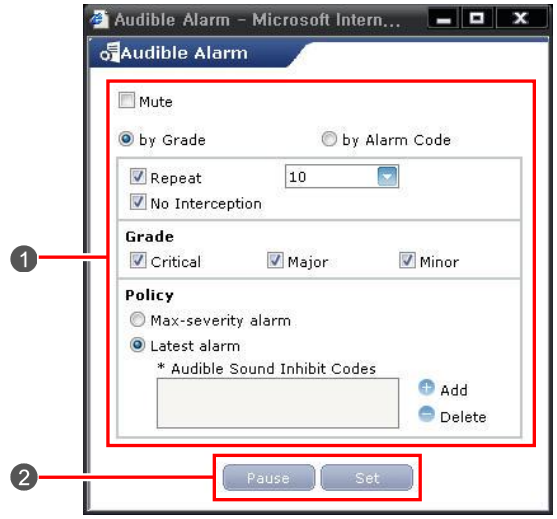

Figure 6.7 Audible Alarm Window

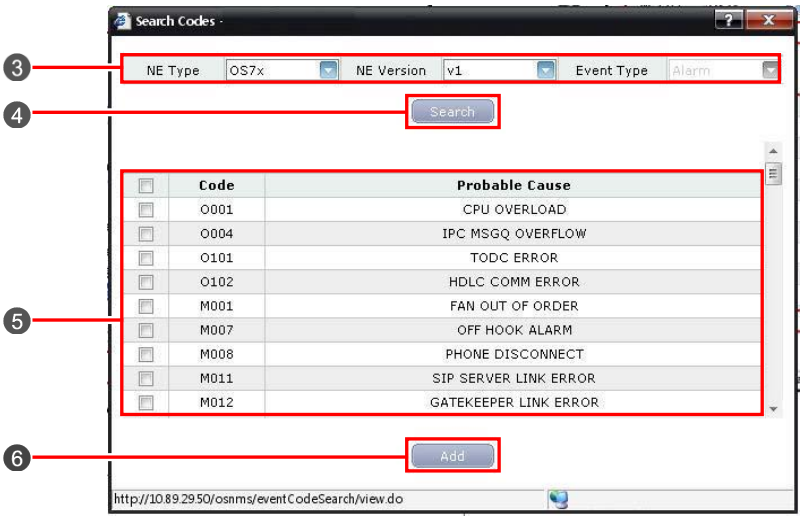

Figure 6.8 Audible Alarm Codes Window

Setting Audible Alarm

1. The audible alarm-setting window is popped up when you select the 'Audible' of the 'fault' menu.

2. Set 'Sound on/off' with the 'Mute' button (❶).

3. Set whether the audible alarm type 'by Grade' or 'by Alarm Code'.

4. Set whether the audible alarm is produced once or repeatedly according to the check status of the 'Repeat' button. You can select a number of times of repetition when you select the 'Repeat' button (❶).

5. If the 'No Interception' button (❶) is checked, the next alarm will be replayed after the first alarm is all replayed even if other audible alarms occur during the first audible alarm replayed.

6. Set a severity to produce an audible alarm in the 'Grade' checkbox.

7. The 'Policy' is a check box for the selection of the policy concerned with producing an audible alarm. It can be selected from either 'Max-severity alarm' or 'Latest alarm'.

8. You can select the 'Audible Sound Inhibit Codes' when you select the 'Latest alarm'. If clicking the **[Add]** button (❶) on the window, 'Search Codes' window is displayed. You can select the alarm code to inhibit sound on 'Search Codes' window. If you want to delete the inhibit code, select the code and click the **[Delete]** button (❶).

9. Complete the setting by clicking the **[Set]** button (❷) of the window.

10. The audible alarm is stopped by clicking the **[Pause]** (❷) button.

11. If Select **[LatestAlarm]**. Click the **[Add]** (❷).

12. Select **[NE Type]**, **[NE Version]**, **[Event Type]** (❸).
    Click the **[Search]** button (❹).

13. Then, the detailed information on the codes is display (5).

14. Check the Checkbox (5). Click the **[Add]** button (6).

15. Then, Click the **[Set]** button (2) to complete the setup.

16. Click the **[Pause]** button (2) to stop the audible alarm currently being generated.

E-mail

E-mail Management

Email Management is used to retrieve, register, and delete e-mail addresses.

This function is performed in order of **[Alarm Management]** → **[E-mail]** → **[E-mail Manager]**.

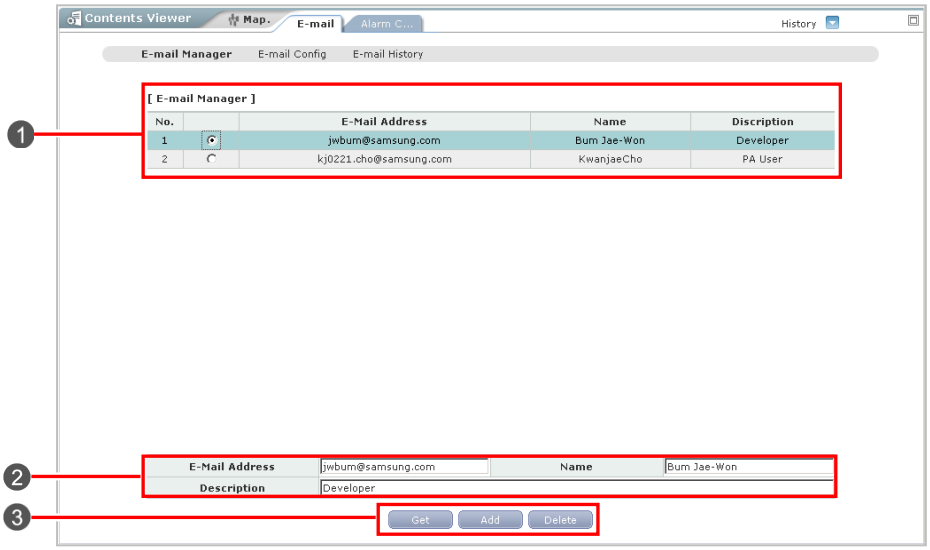

Figure 6.9 E-mail Management Window

Retrieving E-mail Information

1. The **[Get]** button (3) retrieves the e-mail information.

2. The retrieval result is displayed in the result table (1).

Registering E-mail Information

1. Enter the target e-mail address, name, and description into the input fields on the lower part of the window (❷).

2. Clicking the **[Add]** button (❸) registers an e-mail information.

3. The registration result is displayed in the result table (❶).

Deleting E-mail Information

1. Select the target e-mail from **'E-mail Information'** displayed in the result table (❶).

2. Click the **[Delete]** button (❸).

3. Check if the selected e-mail information is properly deleted in the result table (❶).

E-Mail Config

E-Mail Config is used to set e-mail sending of each alarm to send an e-mail when a specific alarm occurs.

This function is performed in order of **[Alarm Management]** → **[E-mail]** → **[E-mail Config]**.

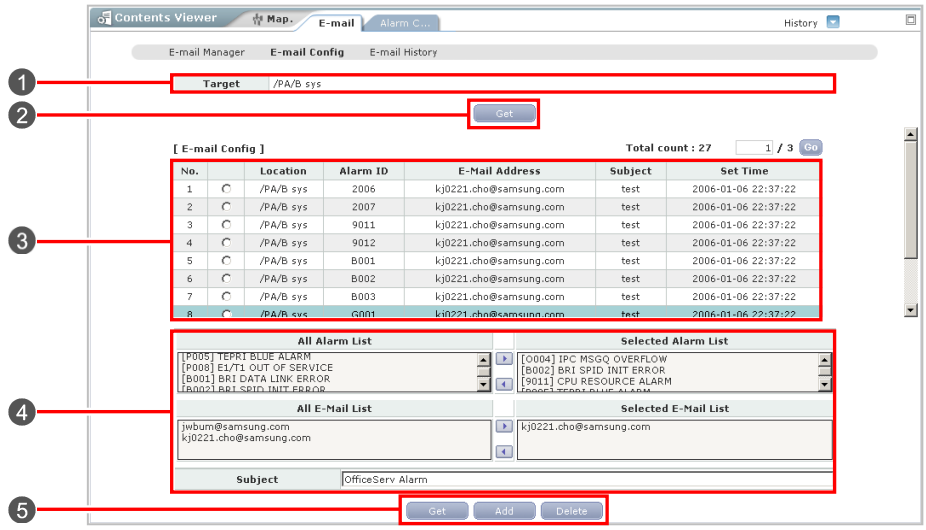

Figure 6.10 E-Mail Config Window

Retrieving E-mail Setup

1. Select the target e-mail from the Tree viewer. The e-mail is displayed in the **'Target'** field (1).

2. Clicking the **[Get]** button (2) retrieves the e-mail information.

3. The retrieval result is displayed in the result table (3).

Registering E-mail Setup

1. Select the target e-mail from the Tree viewer. The e-mail is displayed in the **'Target'** field (❶).

2. Select the target alarms from All Alarm List on the lower part of the window.

3. Select the target e-mail addresses from All E-Mail List on the lower part of the window.

4. Enter the title of the e-mail sent into Subject.

5. Click the **[Add]** button (❺).

6. The registration result is displayed in the result table (❸).

Deleting E-mail Setup

1. Select the target e-mail from **'E-mail Information'** displayed in the result table (❸).

2. Click the **[Delete]** button (❺).

3. Check if the selected e-mail information is properly deleted in the result table (❸).

E-Mail History

E-Mail History is used to check if an e-mail is properly sent when an alarm occurs. This function is performed in order of **[Alarm Management]** → **[E-mail]** → **[E-mail History]**.

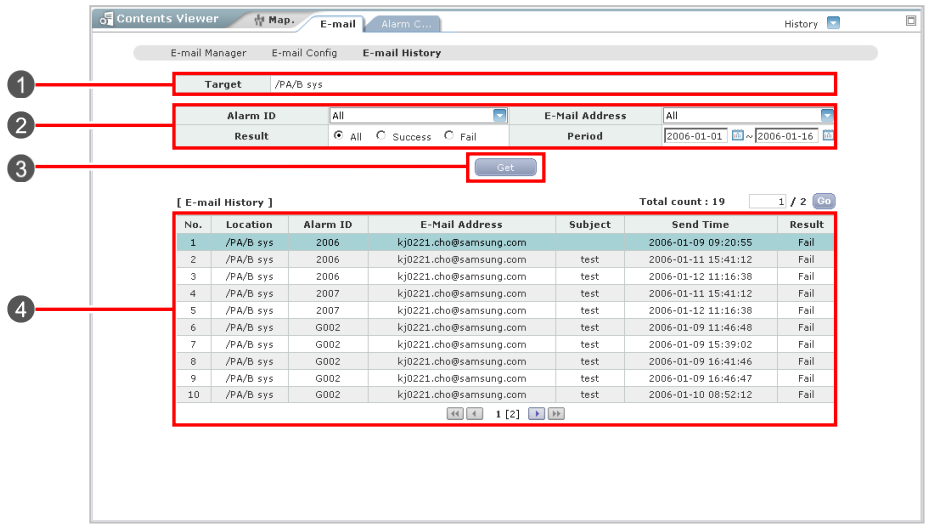

Figure 6.11 E-Mail History Window

Retrieving E-mail History

1. Select the target NE from the Tree viewer. The NE is displayed in the **'Target'** field (1).

2. An alarm ID and e-mail address can be selected from **'Alarm ID'** (2) and **'E-Mail Address'** (2). In addition, e-mail transmission result can be retrieved in **'Result'**.

3. Enter the target period from Period.

4. Clicking the **[Get]** button (3) retrieves e-mail history information.

5. The retrieval result is displayed in the result table (4).

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CHAPTER 7. Performance Management

This chapter describes performance management window and function of OfficeServ NMS.

Performance Management is used to manage the items related with the performance of each network resource.
Through this function, performance related information created in SSX5000 system is regularly collected.
The information is collected on an hourly, daily, and monthly basis for analyzing the performance of network resources. The collected information is saved and managed in database and is provided to an operator.

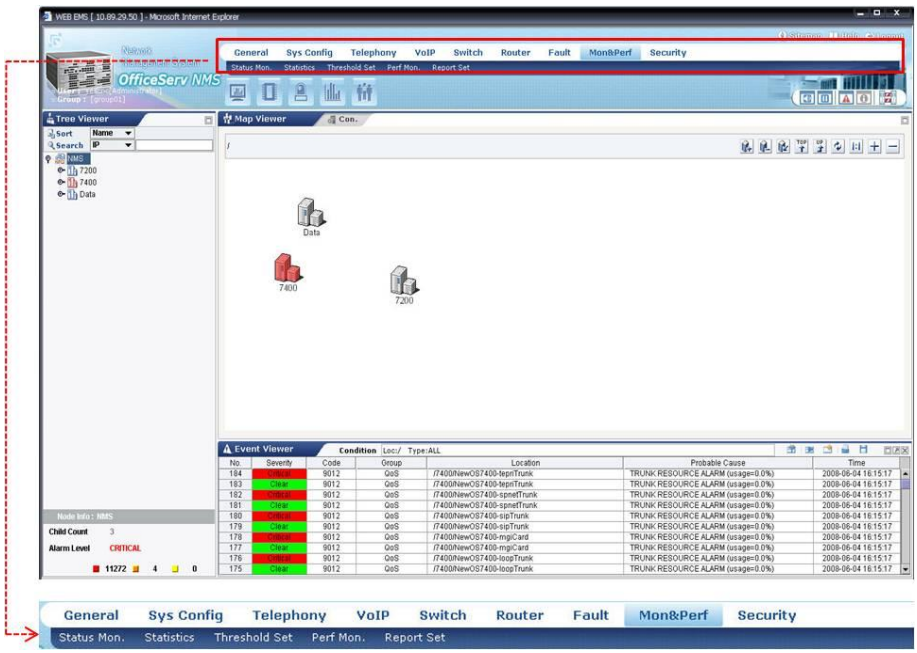

Figure 7.1 Performance Management Window

Status Mon.

Real Port Status Management

Real Port Status Monitoring is used to monitor the real port status of each card and the port status of each Telno. The information on a specific port can be searched in detail while the port status of each card is being monitored.

This function is performed in order of **[Mon & Perf]** → **[Status Mon.]** → **[Real Port Status]**.

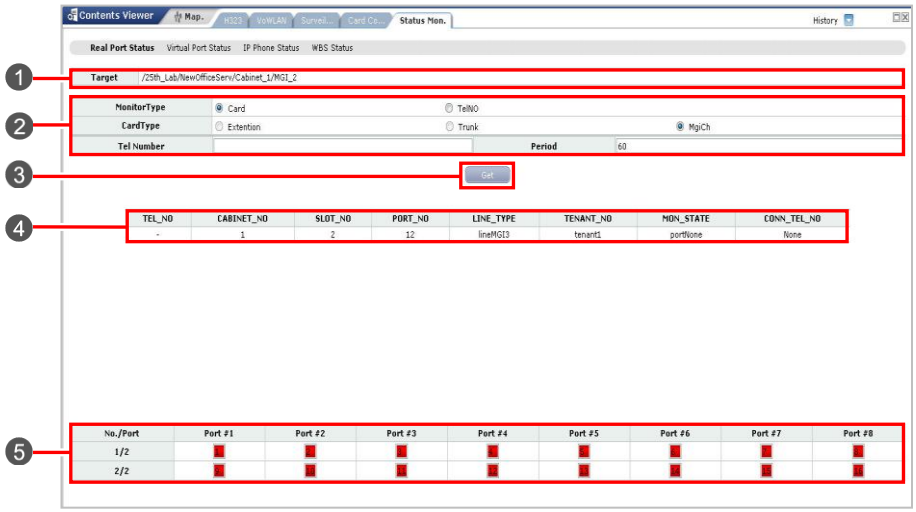

Figure 7.2 Real Port Status Management Window

The parameters displayed in the **'Real Port Status'** window are described as follows:

Parameter	Description
Target	Location of Monitoring Target
Monitor Type	Monitoring Target Type (Card/Tel No)
Card Type	Monitoring Port Type (Extension/Trunk/Mgich)
Tel Number	Tel Number
Period	Monitor Cycle

Monitoring Real Port Status

1. Select the target IP from the Tree viewer.
   The selected IP is displayed in the **'Target'** field (❶).

2. Select the target real port from the parameter window (❷) and click the **[Get]** button (❸).

3. Then, the port status is displayed in the result table (❺).

4. In the port status monitoring result (❺) of each card, double click a port. Then, the detailed information on the port is displayed (❹).

5. If you selected the telNo, write the tel Number from the parameter window (❷).

6. Then, the port status is displayed in the result table (❺).

Virtual Port Status Management

Virtual Port Status Monitoring is used to monitor the virtual port status of each card and the port status of each Telno. The information on a specific port can be searched in detail while the port status of each card is being monitored.

This function is performed in order of **[Mon & Perf]** → **[Status Mon.]** → **[Virtual Port Status]**.

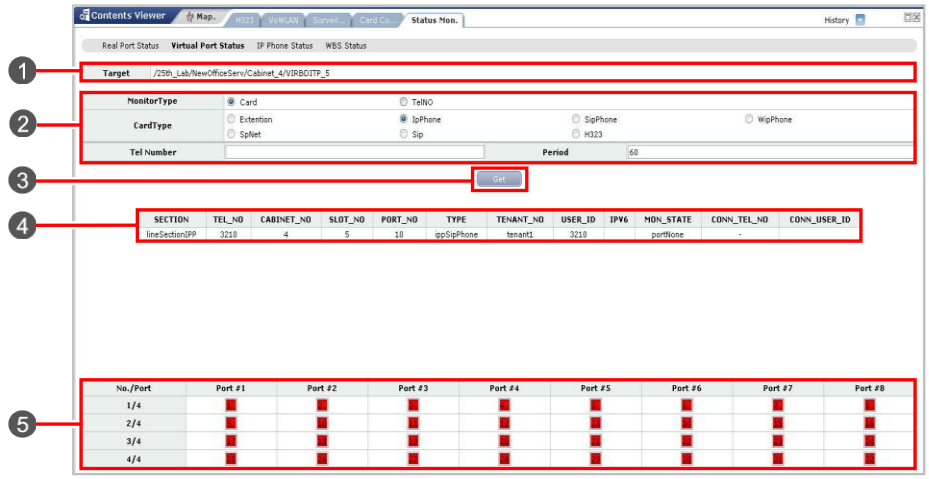

Figure 7.3 Virtual Port Status Management Window

The parameters displayed in the **'Virtual Port Status'** window are described as follows:

Parameter	Description
Target	Location of Monitoring Target
Monitor Type	Type of Monitoring Target (Card/Tel No)
Card Type	Monitoring Port Type (Extension/IpPhone/SipPhone/WipPhone/SpNet/Sip/H323)
Tel Number	Tel Number
Period	Monitor Cycle

Monitoring Virtual Port Status

1. Select the target IP from the Tree viewer.
   The selected IP is displayed in the **'Target'** field (❶).

2. Select the target virtual port from the parameter window (❷) and click the **[Get]** button (❸).

3. Then, the port status is displayed in the result table (❺).

4. In the port status monitoring result (❺) of each card, double click a port. Then, the detailed information on the port is displayed (❹).

IP Phone Status Management

Phone Status Management is used to monitor phone subscriber status.

This function is performed in order of **[Mon & Perf]** → **[Status Mon.]** → **[IP Phone Status]**.

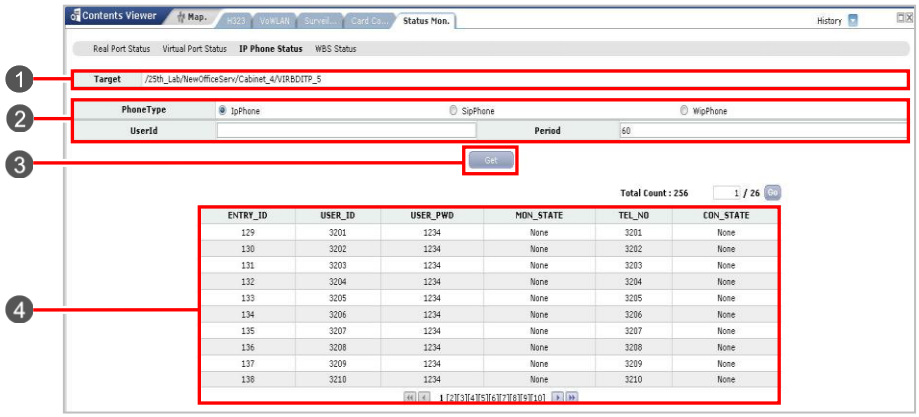

Figure 7.4 IP Phone Status Management Window

The parameters displayed in the **'Phone Status'** window are described as follows:

Parameter	Description
Target	Location of Monitoring Target
Phone Type	Monitor's Phone type (IpPhone/SipPhone/WipPhone)
User Id	User ID to Monitor a Specific User
Period	Monitor Cycle

Monitoring Phone Status

1. Select the target IP from the Tree viewer.
   The selected IP is displayed in the **'Target'** field (❶).

2. Select the target virtual port from the parameter window (❷) and click the **[Get]** button (❸).

3. Then, the subscriber ID status is displayed in the result table (❹).

WBS Status Management

WBS Status Management is used to monitor WLI card status.

This function is performed in order of **[Mon & Perf]** → **[Status Mon.]** → **[WBS Status]**.

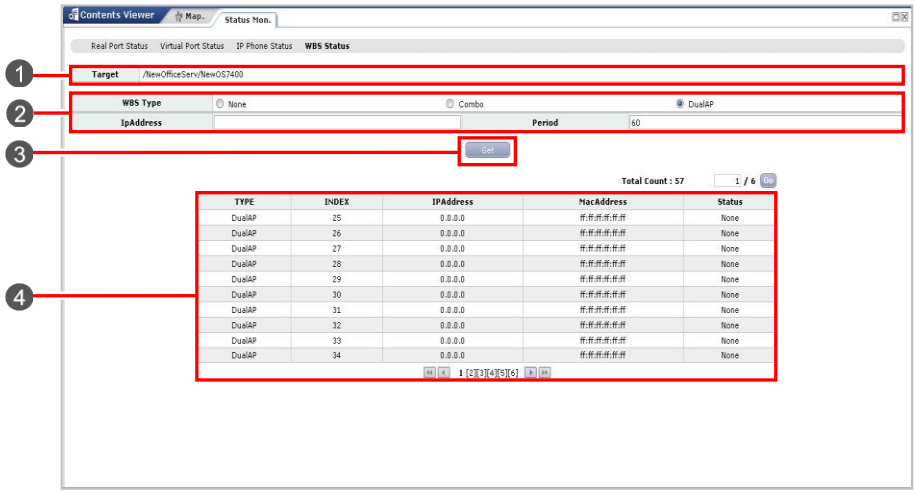

Figure 7.5 WBS Status Management Window

The parameters displayed in the **'WBS Status'** window are described as follows:

Parameter	Description
Target	Location of Monitoring Target
WBS Type	WBS Type (Combo/Basic Type)
Index	Index
IpAddress	Monitor of IP addresses configured by ports
MacAddress	MacAddress
Status	Status

Monitoring WBS Status.

1. Select the target IP from the Tree viewer.
   The selected IP is displayed in the **'Target'** field (❶).

2. Select the target virtual port from the parameter window (❷) and click the **[Get]** button (❸).

3. Then, the WBS status is displayed in the result table (❹).

Performance Statistics

Real Card

'Performance Statistics' is used to search alarm statistics saved in the database of OfficeServ NMS server through various setup cases.

This function is performed in order of **[Mon & Perf]** → **[Statistics]** → **[Real Card]**.

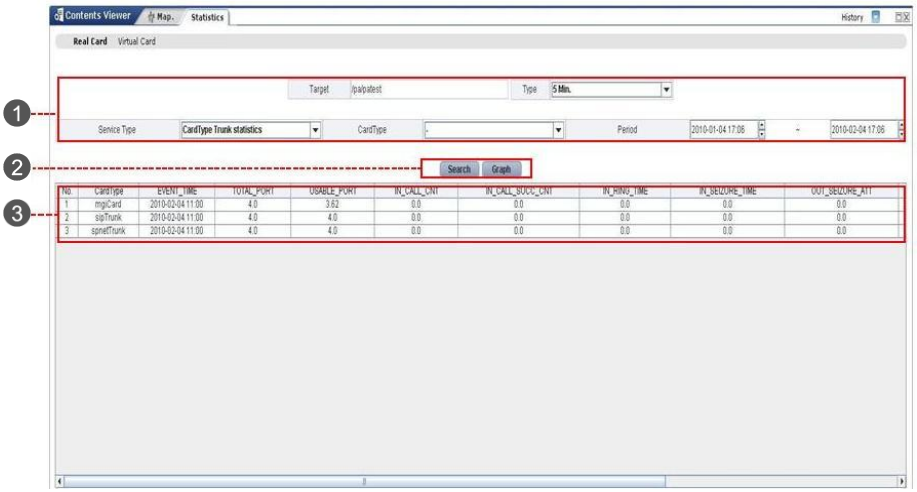

Figure 7.6 Performance Statistics RealCard Window

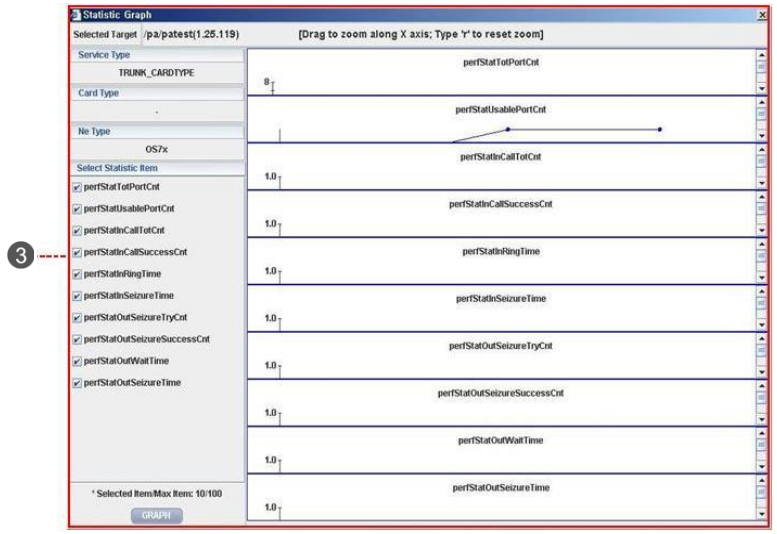

Figure 7.7 Performance Statistics RealCard Graph Window

The parameters displayed in the **'Performance Statistics RealCard'** window are described as follows:

Parameter	Description
Target	Location of Monitoring Target
Type	Type (Hourly Summary, Daily Summary, Monthly Summary, Hourly, Daily, Monthly, 5 Min)
Service Type	Service Type (Trunk Statistics/CardType/Trunk Statistics)
CardType	Card Type (briTrunk/hTrunk/loopTrunk/mgiTrunk/tepriTrunk)
Period	Period

Searching Performance Statistics

1. Select the target NE from the Tree viewer. The NE is displayed in the **'Target'** field (1).

2. Select the target statistics from **'Service Type, Card Type'** in the setup table (1).

3. Select the target period from **'Period'** in the setup table (1).

4. Click the **[Search]** button (2) to search performance statistics.

5. The performance statistics result is displayed in the result table (3).

Virtual Card

'Performance Statistics' is used to search alarm statistics saved in the database of OfficeServ NMS server through various setup cases.
This function is performed in order of **[Mon & Perf]** → **[Statistics]** → **[Virtual Card]**.

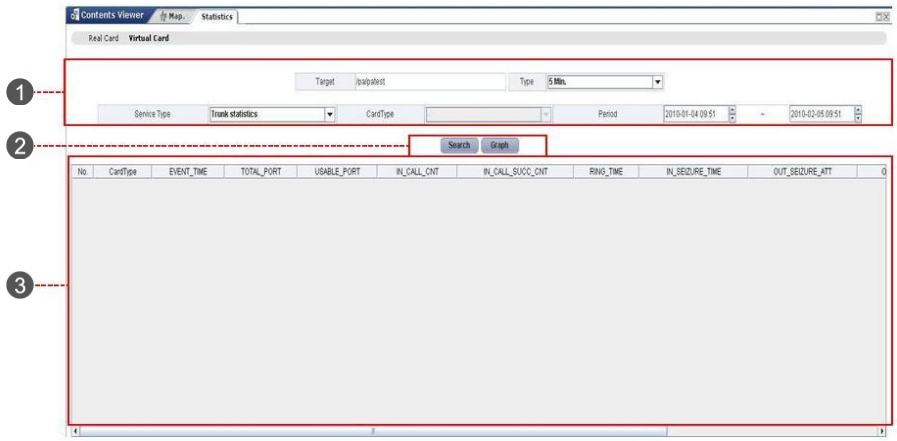

Figure 7.8 Performance Statistics VirtualCard Window

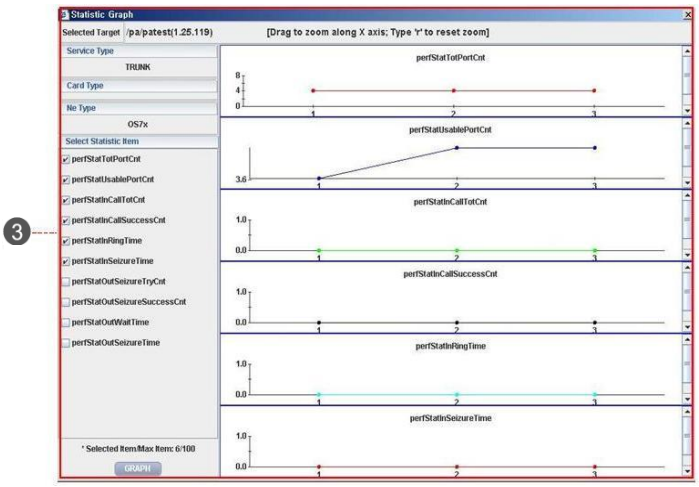

Figure 7.9 Performance Statistics VirtualCard Graph Window

The parameters displayed in the **'Performance Statistics VirtualCard'** window are described as follows:

Parameter	Description
Target	Location of Monitoring Target
Type	Type (Hourly Summary, Daily Summary, Monthly Summary, Hourly, Daily, Monthly, 5 Min)
Service Type	Service Type (Trunk Statistics/CardType/Trunk Statistics)
CardType	Card Type (spnetTrunk/sipTrunk/h323Trunk)
Period	Period

Searching Performance Statistics

1. Select the target NE from the Tree viewer. The NE is displayed in the **'Target'** field (❶).

2. Select the target statistics from **'Service Type, Card Type'** in the setup table (❶).

3. Select the target period from **'Period'** in the setup table (❶).

4. Click the **[Search]** button (❷) to search performance statistics.

5. The performance statistics result is displayed in the result table (❸).

Threshold Management

Threshold Set

‘Threshold Set’ menu is used to set the overload threshold of an OfficeServ system. CPU threshold and trunk usage ratio threshold of each node can be set. Categorize the threshold range into Critical, Major, Minor, and Normal and report the current status to an operator regularly.

This function is performed in order of **[Mon & Perf]** → **[Threshold Set]**.

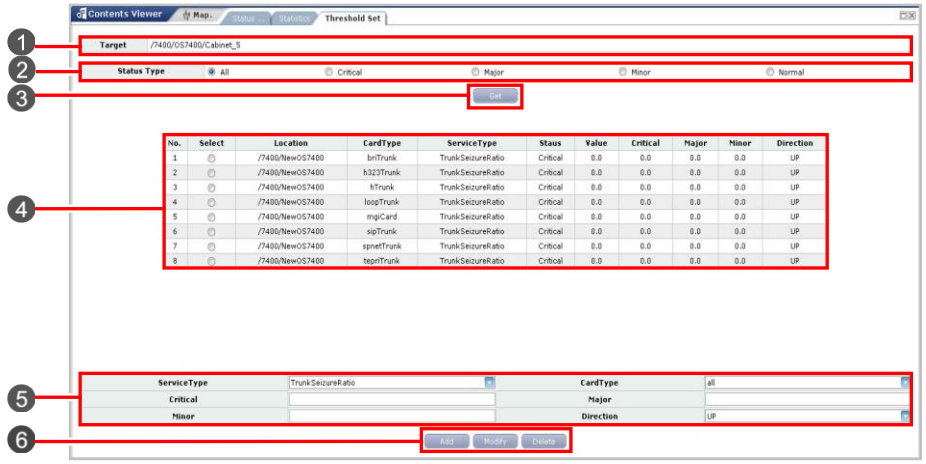

Figure 7.10 Threshold Set Window

The parameters displayed in the **‘Threshold Set’** menu are described as follows:

Parameter	Description
Target	Location of Monitoring Target
Status Type	All/Critical/Magor/Miner/Normal
Location	Location
Service Type	Performance parameter type that can set threshold (TrunkSeizueRatio/Cpu Load)
Card Type	Card type for data of each card if Service is set to TrunkSeizrueRatio

(Continued)

Parameter	Description
Status	Status
Value	Value
Critical	Threshold of Critical
Major	Threshold of Major
Minor	Threshold of Minor
Direction	Threshold violation direction (Up/Down)


NOTE

Retrieving, Add Threshold

When retrieving, retrieving to whole managing in EMS without Target division. When add, use Target value.

Retrieving Threshold

1. Select the target threshold from the Tree viewer.
   The threshold is displayed in the **'Target'** field (❶).

2. Select the target resource type from resource selection area (❷).

3. Click the **[Get]** button (❸).

4. The retrieval result is displayed in the result table (❹).

Adding Threshold

1. Retrieve the threshold currently being set.

2. Mark the check box of the target node from the result displayed in the result table (❹).

3. Select the parameter in the setup table (❺).

4. Click the **[Add]** button (❻). The threshold is displayed in the result table (❹) and printed

Setting Threshold

1. Retrieve the threshold currently being set.

2. Mark the check box of the target node from the result displayed in the result table (❹).

3. Select the parameter in the setup table (❺).

4. Click the **[Modify]** button (❻). The threshold is displayed in the result table (❹) and printed.

Deleting Threshold

1. Retrieve the threshold currently being set.

2. Mark the check box of the target node from the result displayed in the result table (❹).

3. Click the **[Delete]** button (❻). The threshold is displayed in the result table (❹) and printed.

Performance Monitoring

RealCard

'Perf Mon.' menu is used to monitor the current value of Performance Indicator (PI) set in Threshold Management.

This function is performed in order of **[Mon&Perf]** → **[Perf Mon.]** → **[Real Card]**.

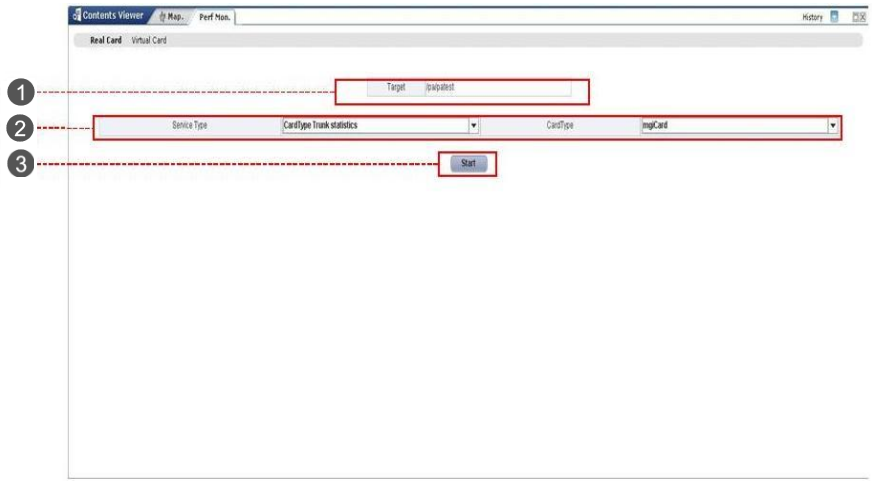

Figure 7.11 Perf Mon. RealCard Window

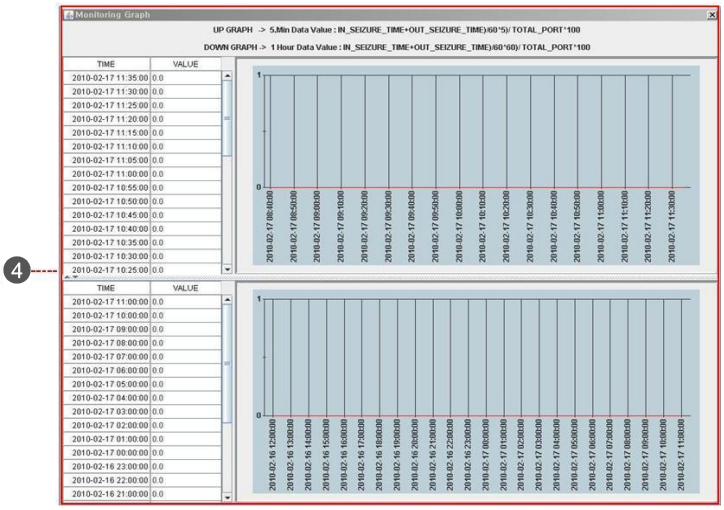

Figure 7.12 Perf Mon. RealCard Graph Window

The parameters displayed in the **'Perf Mon. RealCard'** menu are described as follows:

Parameter	Description
Target	Location that threshold can set
Service Type	Performance parameter type that can set threshold (Trunk Statisticd/Card Type Trunk Statistics)
Card Type	Card type for data of each card if Service is set to Trunk (loopTrunk/hTrunk/briTrunk/tepriTrunk/mgiCard)
5 Min. Data	Value = ((IN_SEIZURE_TIME + OUT_SEIZURE_TIME)/ 60*5)/TOTAL_PORT*100 = Port average use pulse duration factor
1 Hour Data	Value = ((IN_SEIZURE_TIME + OUT_SEIZURE_TIME)/ 60*60)/TOTAL_PORT*100 = Port average use pulse duration factor

Monitoring Performance

1. Select the target NE from the Tree viewer. The NE is displayed in the **'Target'** field (❶).

2. Select the target resource **'Service Type'** from monitoring area (❷).

3. Click the **[Search]** button (❸).

4. 3-hour history of 5-minute data and 24-hour history of 1-hour data are displayed in the result table (❹) in a graphical format and as a chart.

5. The current value is displayed in the table (❹) and in a graphical format every period.

VirtualCard

'Perf Mon.' menu is used to monitor the current value of Performance Indicator (PI) set in Threshold Management.

This function is performed in order of **[Mon & Perf]** → **[Perf Mon.]** → **[Real Card]**.

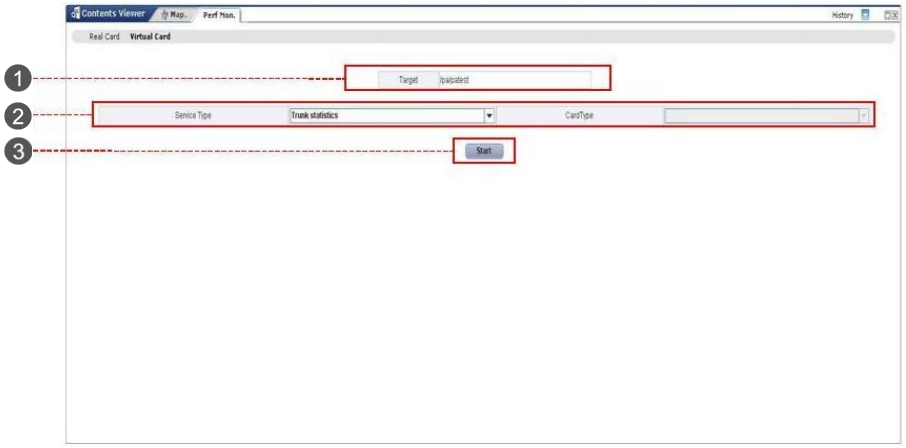

Figure 7.13 Perf Mon. VirtualCard Window

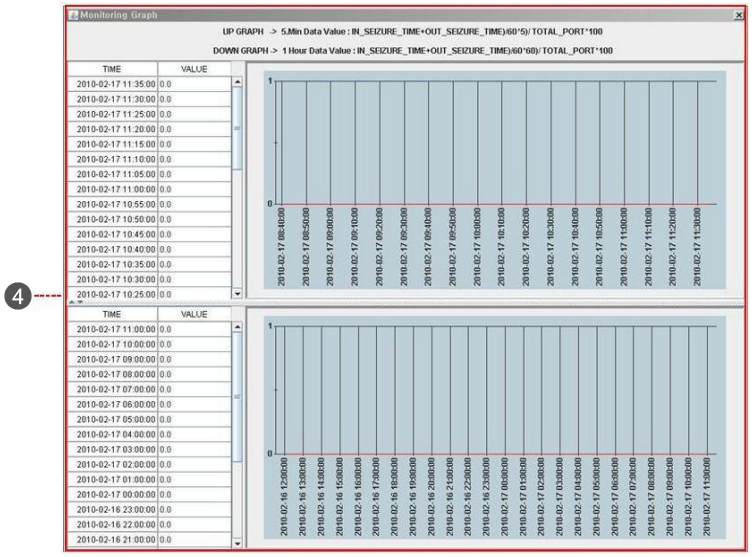

Figure 7.14 Perf Mon. VirtualCard Graph Window

The parameters displayed in the **'Perf Mon. VirtualCard'** menu are described as follows:

Parameter	Description
Target	Location that threshold can set
Service Type	Performance parameter type that can set threshold (Trunk Statisticd/Card Type Trunk Statistics)
Card Type	Card type for data of each card if Service is set to Trunk (spnetTrunk/sipTrunk/h323Trunk)
5 Min. Data	Value = ((IN_SEIZURE_TIME + OUT_SEIZURE_TIME)/ 60*5)/TOTAL_PORT*100 = Port average use pulse duration factor
1 Hour Data	Value = ((IN_SEIZURE_TIME + OUT_SEIZURE_TIME)/ 60*60)/TOTAL_PORT*100 = Port average use pulse duration factor

Monitoring Performance

1. Select the target NE from the Tree viewer. The NE is displayed in the 'Target' field (❶).

2. Select the target resource **'Service Type'** from monitoring area (❷).

3. Click the **[Search]** button (❸).

4. 3-hour history of 5-minute data and 24-hour history of 1-hour data are displayed in the result table (❹) in a graphical format and as a chart.

5. The current value is displayed in the table (❹) and in a graphical format every period.

Auto Report Management

'Report Set' menu is used to display the target data information regularly at the corresponding display time when an operator registers the report display information and display time.
This function is performed in order of **[Mon & Perf]** → **[Report Set]**.

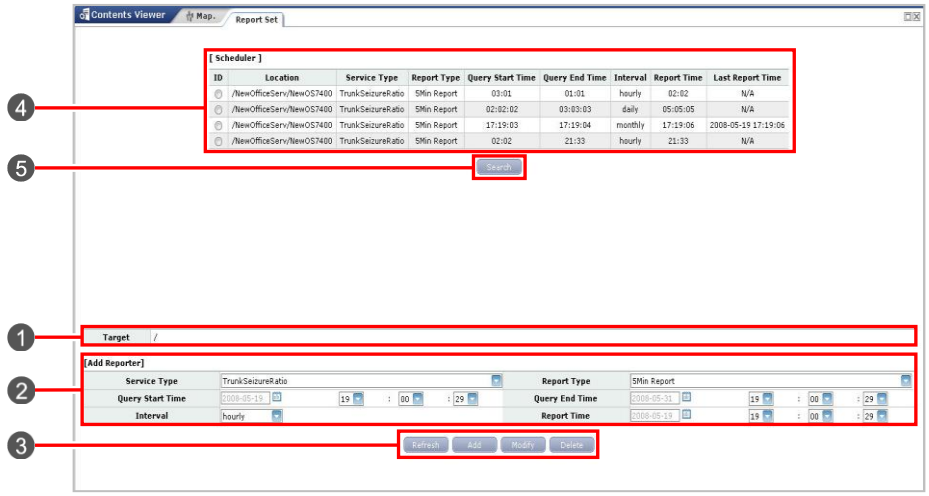

Figure 7.15 Report Set Window

The parameters displayed in the **'Auto Report'** menu are described as follows:

Parameter	Description
Target	Auto report target location
Location	Location
Service Type	Performance data type of auto report target (TrunkSeizueRatio/CardTrunkSeizueRatio)
Report Type	Display report type of auto report (5 minute/hour/day/month)
Query Start Time	Search start time
Query End Time	Search end time
Interval	Auto report cycle (hourly/daily/monthly)
Report Time	Auto report display time
Last Report Time	Auto report display Last time

NOTE

Report Type

5 Min → Interval is valid hourly and daily only.
Hourly → Interval is valid daily and monthly only.
Daily → Interval is valid Monthly and yearly only.
Monthly → Interval is valid yearly only.

Searching Report Set

1. Select the target value from the Tree viewer. The selected target is displayed in the **'Target'** field (❶).

2. Select the auto report information from auto report selection area (❷).

Refreshing Report Set

1. Select the target value from the Tree viewer. The selected target is displayed in the **'Target'** field (❶).

2. Click the **[Refresh]** button (❸).

3. The setup result is displayed in the result table (❹).

Adding Report Set

1. Select the target value from the Tree viewer. The selected target is displayed in the **'Target'** field (❶).

2. Select the parameter in the setup table (❺).

3. Click the **[Add]** button (❸).

4. The setup result is displayed in the result table (❹).

Setting Report Set

1. Select the target value from the Tree viewer. The selected target is displayed in the **'Target'** field (❶).
2. Select the auto report information from auto report selection area (❷).
3. Select the parameter in the setup table (❺).
4. Click the **[Modify]** button (❸).
5. The setup result is displayed in the result table (❹).

Deleting Report Set

1. Select the target value from the Tree viewer. The selected target is displayed in the **'Target'** field (❶).
2. Select the auto report information from auto report selection area (❷).
3. Click the **[Delete]** button (❸).
4. The setup result is displayed in the result table (❹).

CHAPTER 8. Security Management

This chapter describes user security management window and function of OfficeServ NMS.

'Security Management' menu enables to register, change, search, and delete a user to make it possible for a user who can only access to the system for security in the security management. In addition, this menu enables to set to limit a usage authorization of a user's, and retrieve various histories of the user.

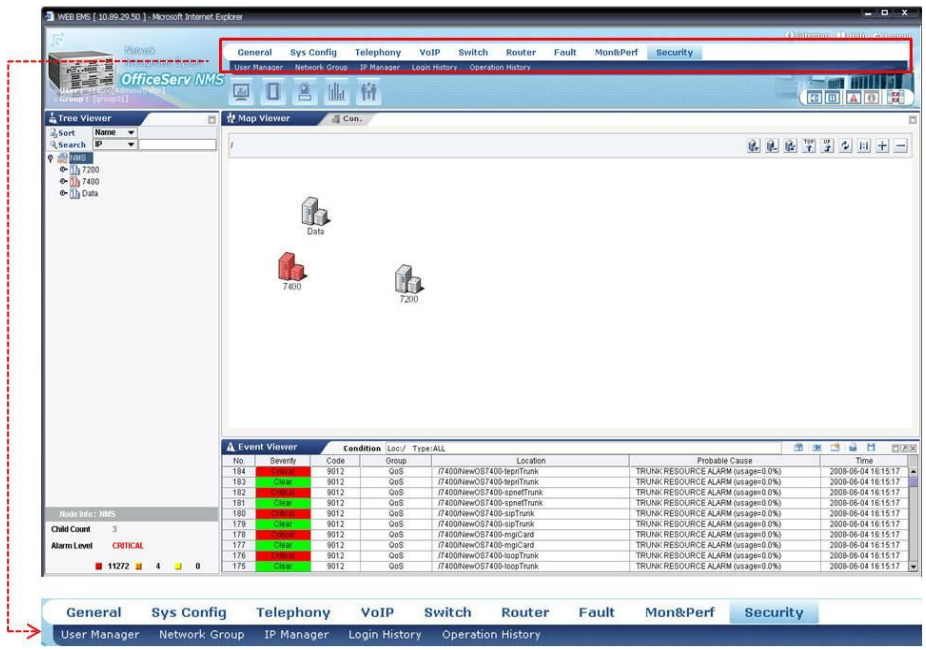

Figure 8.1 Security Management Window

User Management

User Manager

The User Manager function allows you to set, view, modify, and delete the operator ID, operator information, privilege, and command range for each operator.
This function is performed in order of **[Security Management]** → **[User Management]** → **[User Manager]**.

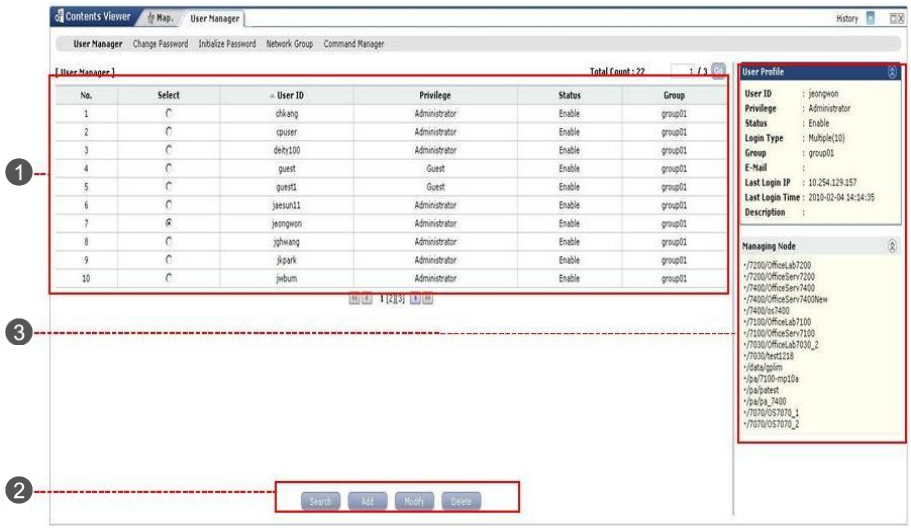

Figure 8.2 User Manager Window

NOTE

Enter user ID and password

The user ID can be entered up to five to twenty letters, and the passwords can be entered up to eight to twelve letters with a combination of letter (English as Standard) and number.

NOTE

Password alteration restriction item

Password can be change once a day and recently used password can not be reusable.

Searching User Information

1. If clicking the 'User Manager' menu, the whole user information (1) and detailed information of the user who logged (3) in can be searched and displayed.

2. If clicking the **[Search]** button (2) among the window buttons, the user information can be changed into the updated information and be displayed.

Registering a User

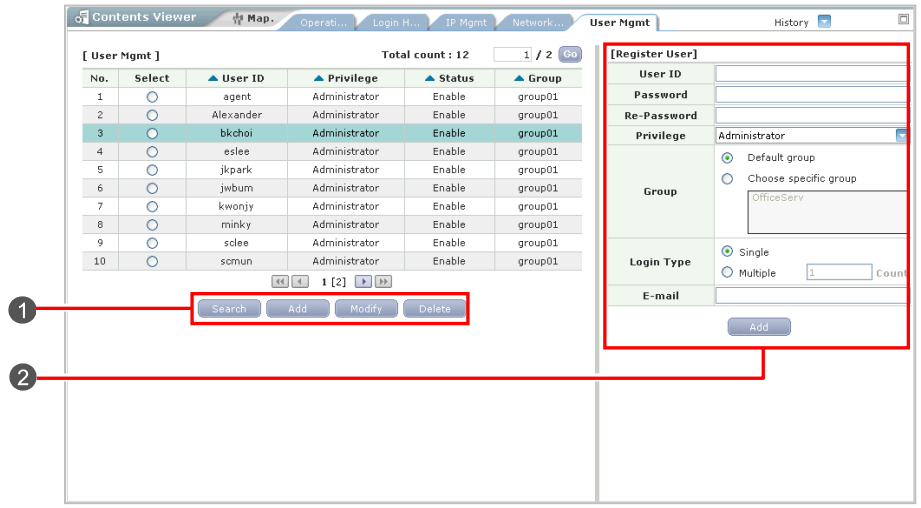

Figure 8.3 User Registration Window

Parameter	Description
User ID	User ID
Password	User password
Re-Password	Confirms the user password
Privilege	As a user level, it is classified into Administrator, Operator, and Guest
Group	Sets NE group that can be managed by a user. The highest level user should select default group.
Login Type	Set if it is possible to connect simultaneously with a same ID, and enter the connectable session counts that are when possible to connect simultaneously.
E-mail	E-mail address

1. If clicking the **[Add]** button (❶) on the window, the user registration window is displayed on the setting table (❷).

2. Click the **[Add]** button (❷) in the Register User window to display a message that confirms the registration.

3. If clicking the **[OK]** button, the execution result is reflected and displayed on the result table.

Changing User Information

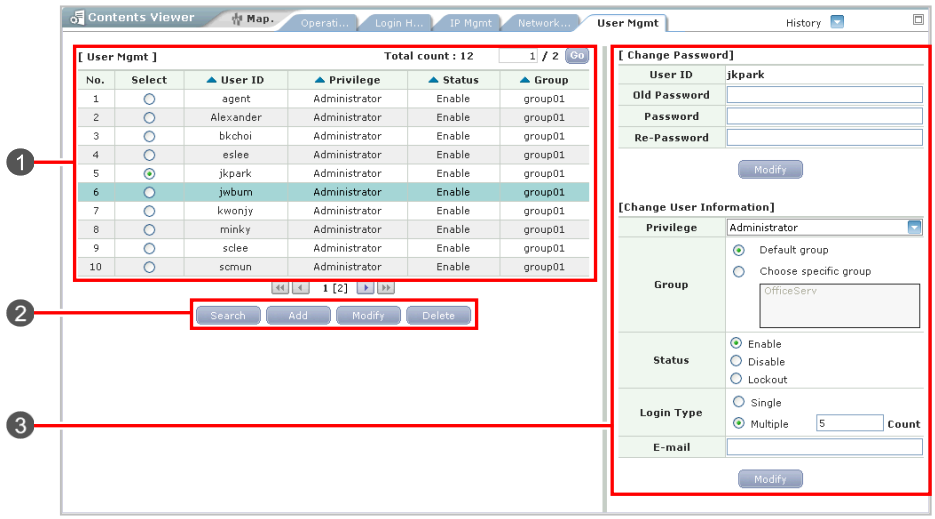

Figure 8.4 User Information Modification Window

1. Click the target user name from the result table (❶) of the User Manager window.

2. Click the **[Modify]** button (❷) in the window to display the user information previously set in the setup table (❸).

3. Chang the user information and click the **[Modify]** button (❸).

4. The changed user information is displayed in the result table (❶).

User Password Information

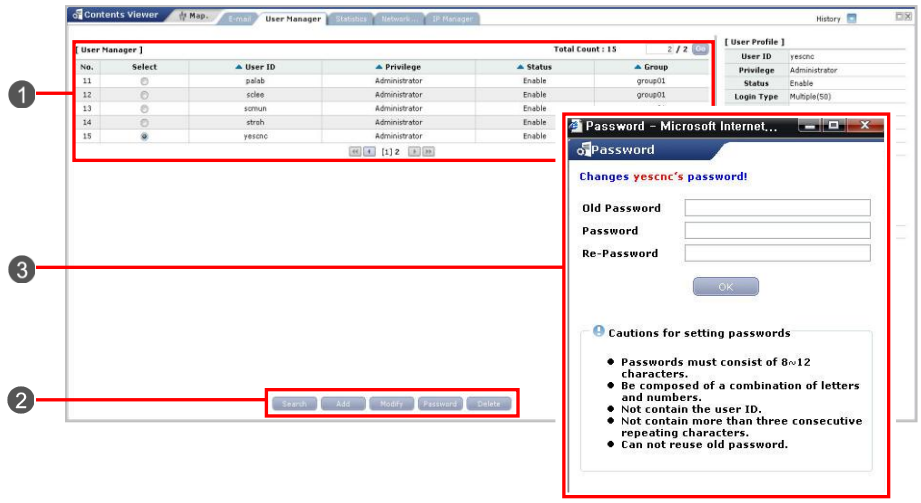

Figure 8.5 User Password Window

1. Click the target user name from the result table (❶) of the User Manager window.

2. Click the **[Password]** button (❷) to display the password input window (❸).

3. Write the old password, Password, Re-Password and click the **[OK]** button. Then, the execution result is displayed in the result table (❶).

Deleting User Information

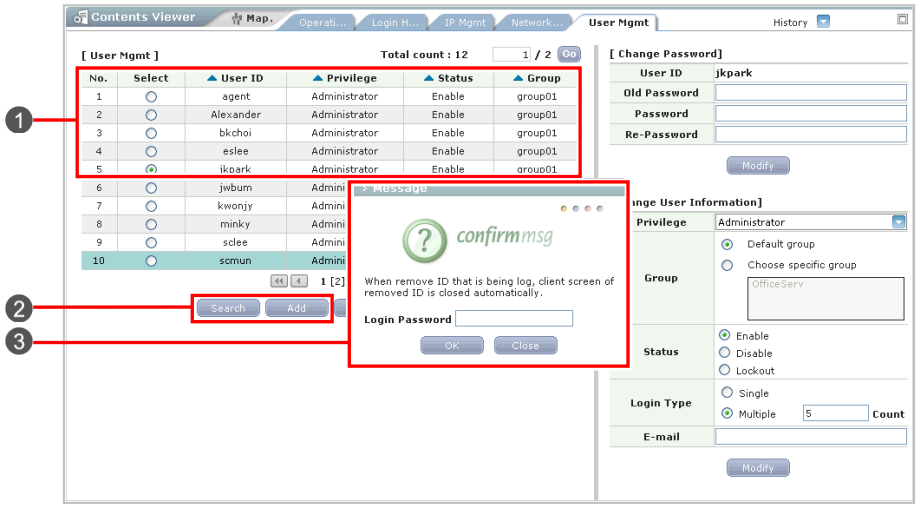

Figure 8.6 User Deletion Window

1. Click the target user name from the result table (❶) of the User Mgmt. window.

2. Click the **[Delete]** button (❷) to display the password input window (❸).

3. Enter the user password and click the **[OK]** button.
Then, the execution result is displayed in the result table (❶).

Change Password

'Change Password' menu is used to change the user password. This function is performed in order of **[Security Management]** → **[User Management]** → **[Change Password]**.

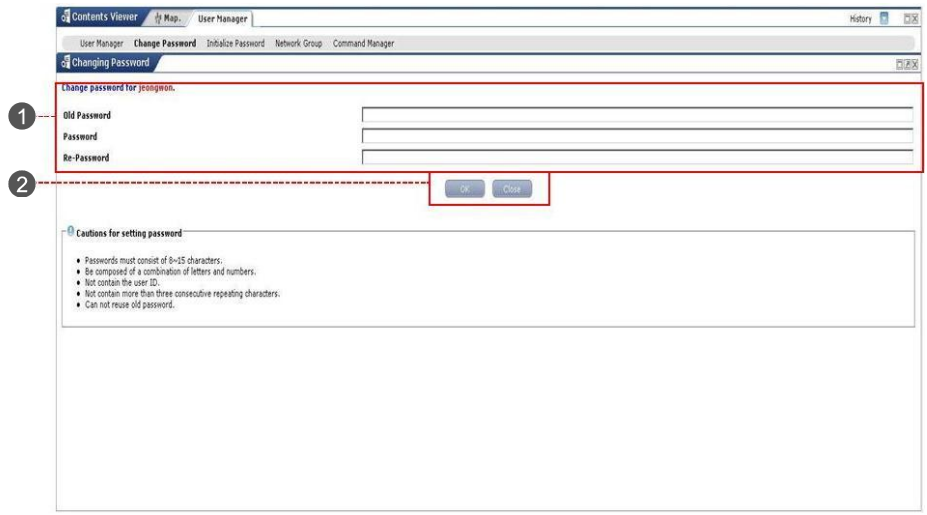

Figure 8.7 Change Password Manager Window

NOTE

Enter user ID and password

The user ID can be entered up to five to twenty letters, and the passwords can be entered up to eight to twelve letters with a combination of letter (English as Standard) and number.

NOTE

Password alteration restriction item

Password can be change once a day and recently used password can not be reusable.

Changing Change Password

1. Type the current password and a new password on the text fields (1) of the window.

2. Click the **[OK]** button (2). Then, the password will be changed.

Initialize Password

'Initialize Password' menu provides Security Administrator can initialize a user password.
When a user logged in with initialized password, the password must be changed after login.

This function is performed in order of **[Security Management]** → **[User Management]** → **[Initialize Password]**.

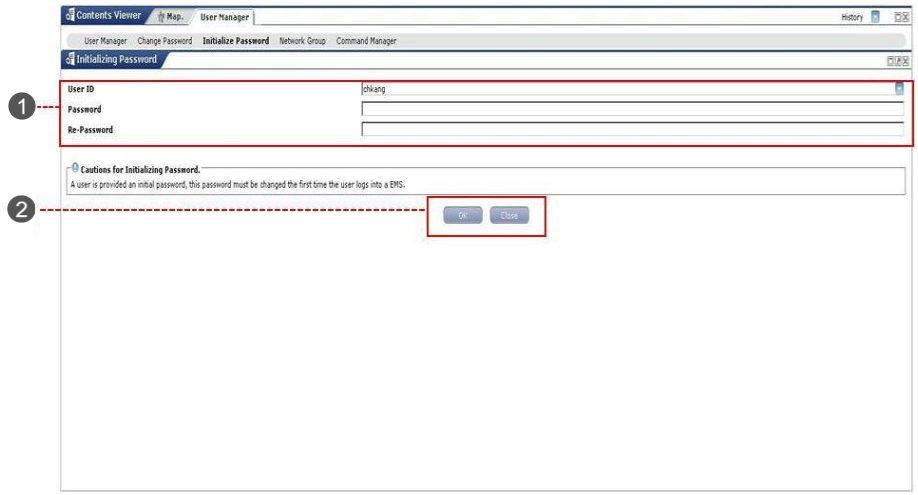

Figure 8.8 Initialize Password Manager Window

NOTE

Enter user ID and password

The user ID can be entered up to five to twenty letters, and the passwords can be entered up to eight to twelve letters with a combination of letter (English as Standard) and number.

NOTE

Password Changing Restriction

Password can be change once a day and recently used password can not be reusable.

Initializing Password

1. Choose User ID and type the new password on the text fields (❶) of the window.

2. Click the **[OK]** button (❷). Then, the password will be initialized.

Network Group Management

'Network Group' menu is used to allow or inhibit login of each client IP. This function is performed in order of **[Security Management]** → **[User Management]** → **[Network Group]**.

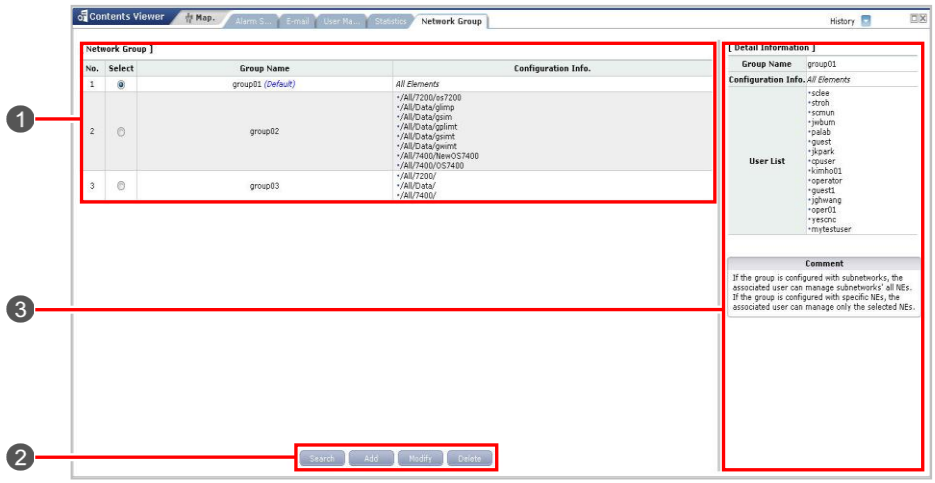

Figure 8.9 Network Group Management Window

The parameters displayed in the **'Network Group'** menu are described as follows:

Item	Description
Group Name	Network Group Name
Configuration Info	Configuration Info
All Items	Network components list of the NE, to be possible for registering
Selected Items	Network components list of the NE, which is registered already
Comment	Comment

Retrieving Network Group

1. Clicking the **'Network Group'** menu retrieves network information and displays the information in the result table (❶).

2. Click the **[Search]** button (❸) to update the network group information and display the updated network group information.

Adding a Network Group

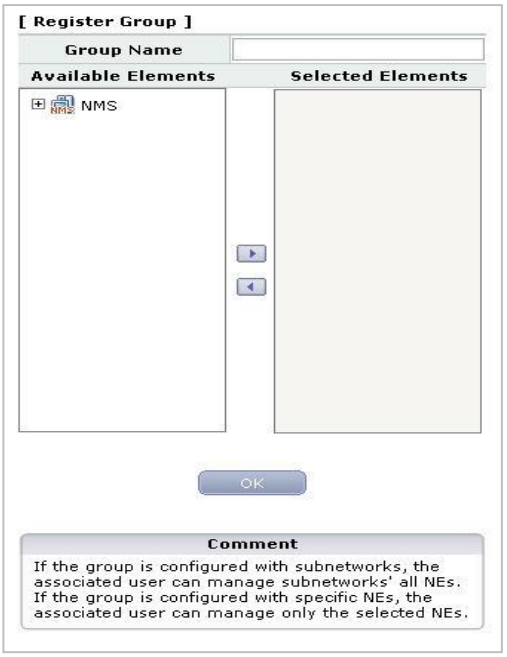

Figure 8.10 Network Group Add Management Window

1. If clicking the **[Add]** button (❷) on the window, the network group registration window is displayed on the setting table (❸).

The information to enter is described as follows:

Input Item	Description
Group Name	Network group name
Available Elements	The network configuration elements that can be registered are displayed as tree format.
Selected Elements	Configuration item allocated to the network group among all items.

2. If clicking the **[OK]** button (❸) on 'Register Group' of the window, the message to confirm registration is displayed.

3. If clicking the **[OK]** button (❸), the execution result is reflected and displayed on the result table (❶).

Changing a Network Group

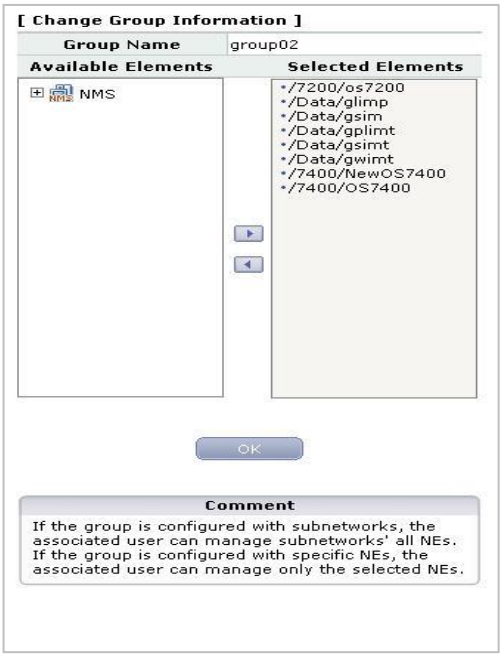

Figure 8.11 Network Group Change Management Window

1. Click a group name to change the information from the result table of the Network group window (❶).

2. If clicking the **[Modify]** button (❷) among the window buttons, the group information that is originally set in the setting table is displayed.

3. Change the group information on the setting window and click the **[OK]** button (❸).

4. The changed group information is reflected and displayed on the result table (❶).

Deleting a Network Group

Figure 8.12 Network Group Deletion Management Window

1. Click a group name to delete the information from the result table (❶) of the Network group window.

2. The confirm window will be displayed if clicking the **[Delete]** button (❷) among the buttons in Network group window.

3. Click the **[OK]** button (❸), the execution result is reflected and displayed on the result table (❶).

Command Manger

The Command Manager function allows you to view a list of the commands that an EMS operator can perform and set the privilege to access to menu and command for each operator.

This function is performed in order of **[Security Management]** → **[User Management]** → **[Command Manager]**.

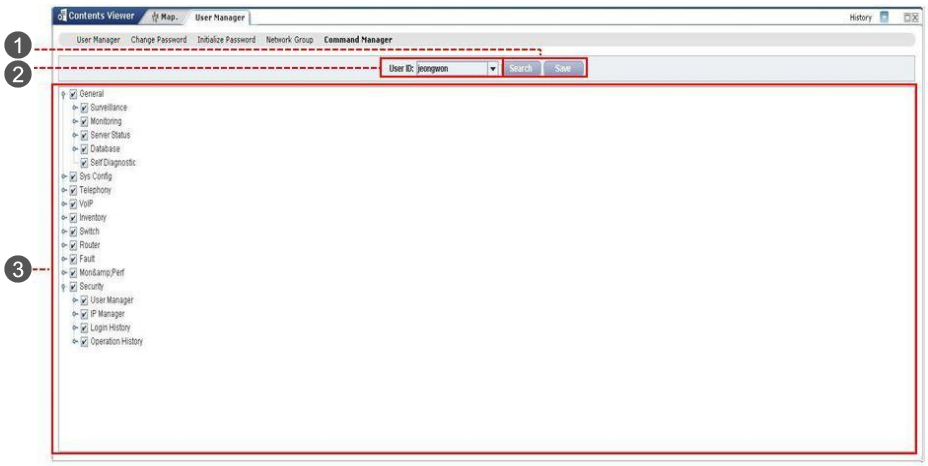

Figure 8.13 Command Manager Window

Viewing the Command List

1. If you click the Command Manager menu, a list of the commands which are configured for each operator is displayed on the Command Manager window (3).

2. You can view the commands allowed to each operator using the User ID combo box (1).

Saving the Command List

1. From the User ID combo box (1), select the ID of the operator for which you want to change the commands he can execute.

2. Click Search (2) on Command Manager window.

3. Change the commands that the selected operator can execute and then click **[Save]** button to save the changes.

IP Management

'IP Manager' menu is used to allow or inhibit login of each client IP. This function is performed in order of **[Security Management]** → **[IP Manager]**.

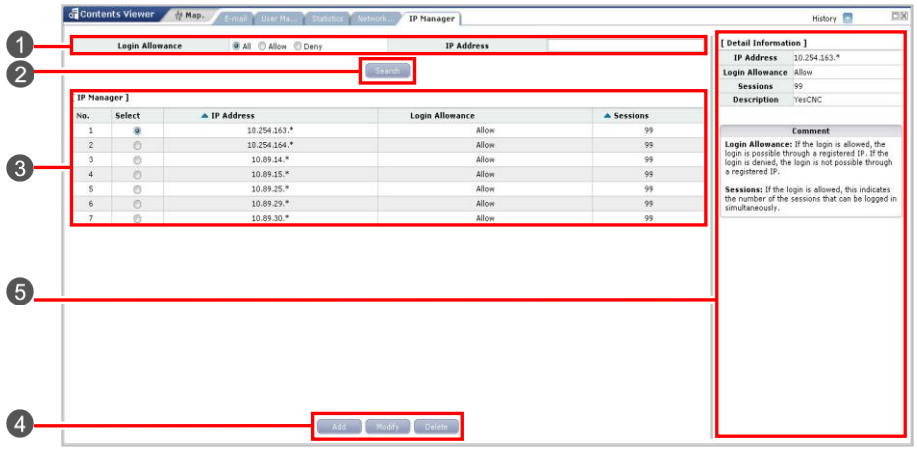

Figure 8.14 IP Manager Window

The parameters displayed in the **'IP Manager'** menu are described as follows:

Item	Description
IP Address	Client IP information
Login Allowance	Login Allowance
Description	Description of the IP to be registered
Type	Sets whether to allow login. If Allowed is selected, login is possible with the registered IP. If Denied, login is not possible.
Sessions	The number of sessions that simultaneous login is possible if login is allowed.

Retrieving IP Address

1. If clicking the ‘IP Manager’ menu, the whole IP address information and detailed information of the first item can be searched and displayed (❶).

2. Set the ‘Login Allowance’ field (❶) of the setting table. If choosing ‘All’, all the IP address information can be retrieved. If choosing ‘Allow’, allowed IP address information can be retrieved. If choosing ‘Deny’, denied IP address information can be retrieved.

3. Enter the IP address on the ‘IP address’ field of the setting table.

4. If clicking the **[Search]** button (❷) among the window buttons, the IP address information can be changed into the updated information and be displayed (❸).

Adding an IP Address

Figure 8.15 IP Manager Add Window

Input Item	Description
IP Address	Client IP address
Login Allowance	Sets whether to allow the login. If allow, the login through the registered IP is available. If deny, the login through the registered IP is not available.
Sessions	The number of simultaneously sessions.
Description	IP description.

1. If clicking the **[Add]** button (❹) on the window, the IP address registration window is displayed on the setting table (❺).

   The information to enter is described as follows:

2. If clicking the **[OK]** button (❺) on 'Add IP Address' of the window, the message to confirm registration is displayed.

3. If clicking the **[OK]** button (❺), the execution result is reflected and displayed on the result table (❸).

Changing an IP Address

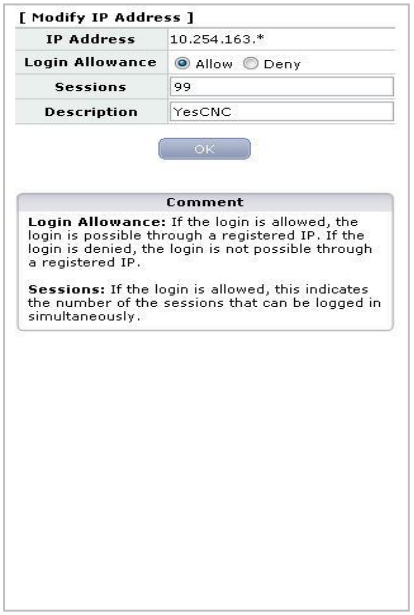

Figure 8.16 IP Manager Change Window

1. Click a IP address to change the information from the result table (❸) of the IP address window.

2. If clicking the **[Modify]** button (❹) among the window buttons, the IP address information that is originally set in the setting table is displayed (❺).

3. Change the group information on the setting window and click the **[OK]** button (❺).

4. The changed group information is reflected and displayed on the result table (❸).

Deleting an IP Address

Figure 8.17 IP Manager Deletion Window

1. Click a group name to delete the information from the result table (❸) of the Network group window.

2. The confirm window will be displayed if clicking the **[Delete]** button (❹) among the buttons in Network group window.

3. Click the **[OK]** button, the execution result is reflected and displayed on the result table (❸).

Login History

History

The ‘History’ menu allows searching information on an operator who accesses to the system and operates the system on database of the OfficeServ NMS server, and information on an operator to whom the current session is set up. This function is performed in the order of **[Security Management]** → **[Login History]** → **[History]**.

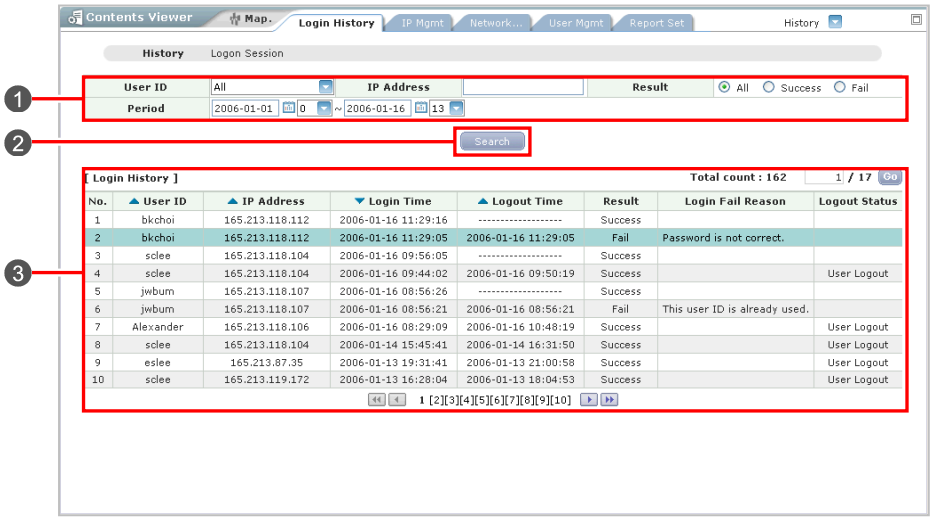

Figure 8.18 History Window

Parameters displayed on the **‘History’** menu are described as follows:

Item	Description
User ID	User Account logged in
Period	Period
IP Address	Client IP Information
Login Time	Time when an operator logged in
Logout Time	Time when an operator logged out
Result	Result for Operator’s Access
Login Fail Reason	Reason for Login Failure
Logout Status	Logout Status

Searching History

1. Set whether to retrieve only the specific user information or all the users' information in the 'User ID' field of the setting table (❶).

2. Enter the IP address of the client that logged in on the 'IP address' field (❶). of the setting table.

3. Set the mode of the access result history in the 'Result' field (❶) of the setting table. If choosing 'All', all the history that was logged in can be retrieved. If choosing 'Success', the login success history can be retrieved. If choosing 'Fail', the login failure history can be retrieved.

4. Set the time duration to retrieve from the 'Period' field (❶) of the setting table.

5. If clicking the **[Search]** button (❷) among the window buttons, a user can retrieve the login history.

6. The retrieval result of the login history is displayed on the result table (❸).

Saving/Printing

1. Search the login history on the Login History window (❸).

2. Click Search (❷) on the Login History window. The displayed data is saved as an Excel file.

3. If you want to print the displayed data, first save it as an Excel file and then print that Excel file using the printing function of Excel.

Logon Session

The **'Logon Session'** menu enables to provide the functions of retrieving the user information that is being logged on in the OfficeServ NMS server, and stopping it compulsorily if necessary. This function is performed in the order of **[Security Management]** → **[Login History]** → **[Logon Session]**.

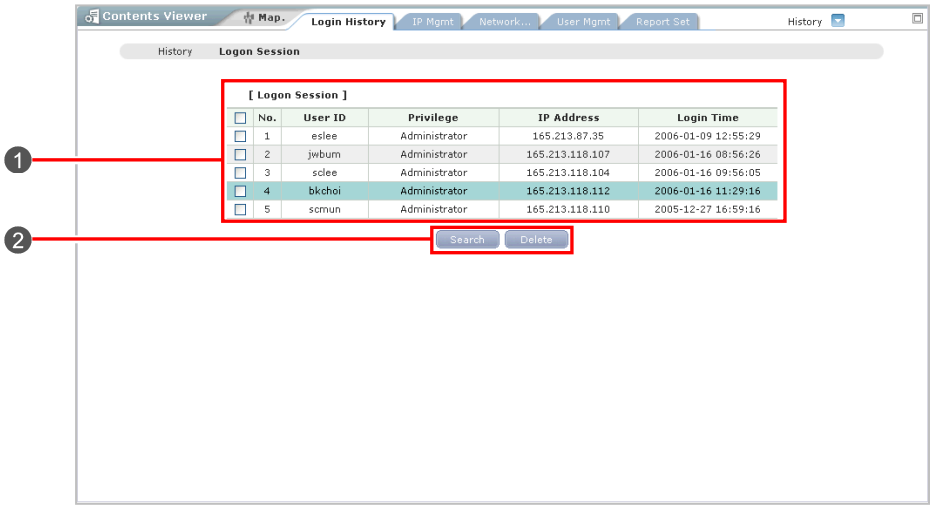

Figure 8.19 Logon Session Window

Item	Description
User ID	User Account logged in
Privilege	Privilege
IP Address	Client IP Information
Login Time	Time when an operator logged in

Searching Login Session

1. If you click the Logon Session menu item, the currently logged-in sessions are displayed in the Results table.

2. If you click Search on the Logon Session window, the currently logged-in sessions are searched and displayed again.

Ending Login Session Compulsorily

1. The session that is currently being logged in is displayed on the result table (❶).

2. Select the checkbox corresponding to the user ID that is compulsorily stopped in the ‘User ID’ field of the result table (❶).

3. If clicking the **[Delete]** button (❷) among the window buttons, the session of the corresponding user is ended.

Operation History

The **'Operation History'** enables to provide a function of retrieving various operation histories in the database of the OfficeServ NMS server.
A user can enter the user ID, function, message, command, and retrieval duration with the retrieval condition.
This function is performed in the order of **[Security Management]** → **[Operation History]**.

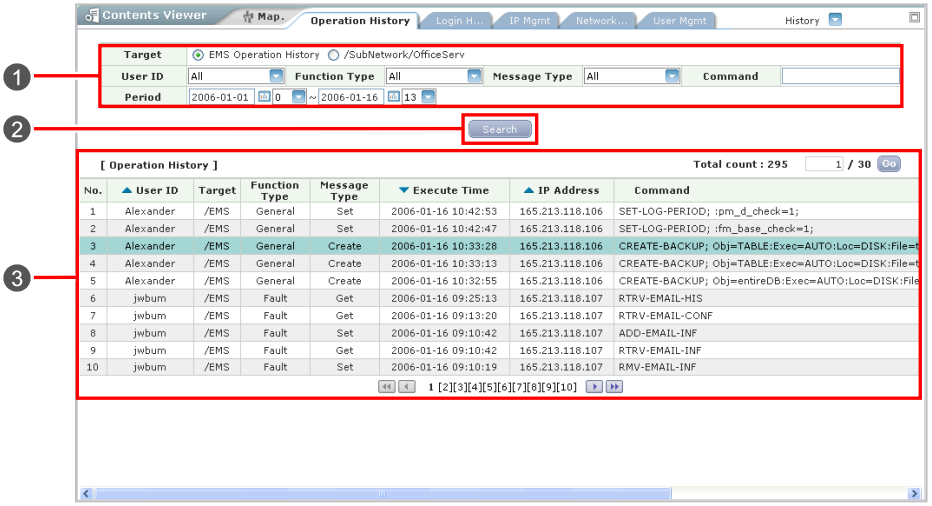

Figure 8.20 Operation History Window

Parameters displayed on the **'Operation History'** menu are described as follows:

Item	Description
User ID	The logged-in user account
Target	Target that performed the command
Function	Division of EMS block that used the corresponding command
Message	Division of the command type
Request Time	Time that requested the command
Response Time	Time that completed the command execution
IP Address	The client IP address that performed the command
Command	Performed commands

(Continued)

Item	Description
Result	Results that performed the commands
Fail Reason	Failing reason when the command fails
Additional Info	The parameter information that is used when the command is executed

Retrieving Operation History

1. Select the system to retrieve the operation history from Tree Viewer. The selected system is displayed on the 'Target' field of the setting table (❶).

2. Enter the time duration, user ID, function, message, and command that a user wants to retrieve in the setting table (❶).

3. If clicking the **[Search]** button (❷) among the window buttons, the operation history is retrieved.

4. The retrieval result of the operation history is displayed on the result table (❸).

Saving/Printing

1. Search the login history on the Login History window (❸).

2. Click Search (❷) on the Login History window. The displayed data is saved as an Excel file.

3. If you want to print the displayed data, first save it as an Excel file and then print that Excel file using the printing function of Excel.

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ANNEX A. OfficeServ NMS Q & A

How many clients can be accessed simultaneously to the OfficeServ NMS server in order to operate the server?

The number of the accessible clients is theoretically limitless because the OfficeServ NMS is made of Web structure. However, in case of the simultaneous operation of the several clients, there can occur the delay of the working processing in the OfficeServ NMS.
Therefore, it is desirable that the number of clients be limited into about 10.

Can be the access to the server made in spite that the IP network groups of the server and the client are different from each other?

The client can access the server in spite that the IP Address network group between two are different from each other. The easiest way to know whether to be the access available or not is to perform the ping test from the client into the server. If the ping test result is shown as normal, the access to the server can be made. (It is because the client and the server perform their communication between themselves by using the TCP-based HTTP protocol.)

Can the client access the server by using DSU?

As explained before, DSU interface function is not currently supported because the server and the client perform the TCP/IP communication.
The access to the server in the DSU mode cannot be made because the application program has no function to process the X.25 protocol in spite that the LAN card installed at the client server and the workstation for the server is removed and the X.25-supporting card is installed.

What is the SNMP protocol?

The Simple Network Management Protocol (SNMP) has become the industrial standard in the network management since it had developed in 1988. SNMP has many strong points. SNMP has relatively little number of codes necessary for its execution. Therefore, it makes the SNMP agent fast commercialized. And it has a excellent extensibility by which the network management functions can be easily added. Furthermore, SNMP has separated the management system from the hardware device system, and therefore it has the wider supporting range for several companies.
The most important thing to be mattered is that the SNMP, unlike other standards, is the widely usable protocol today, not the simple specification of the document.

The features of SNMP can be described as follows:

- UDP/IP-based network management protocol
- Communication protocol between the manager and the agent (Between server and client).
- Description into ASN 1 (Abstract Syntax Notation 1).
- The interface between the manager and the agent is configured with MIB-I and MIB-II.
- General messages: #161 port used.
- Trap message: #162 port used.
- Defined firstly at the RFC 1067.
- Complemented at RFC 1098.
- The overall standards are regulated at RFC 1157.
- The overall standards of MIB-I are regulated into RFC 1066 → RFC 1156
- The standard of MIB-II is regulated into RFC 1158 → RFC 1231.

The SNMP protocol is composed of five simple commands.

- Get-Request: Collects the information on NE.
- Get-Next-Request: Repeats the collection of NE. (Collects many messages in a lump.)
- Set-Request: Modifies the information on NE.
- Get-Response: Produces the result message for the command of Get or Set
- Trap: Used in case that the NE reports urgently the information, such as the failure information, to the OfficeServ NMS.

What should be done if the database contents are to be backuped into the external media?

OfficeServ NMS client window does not support the backup function into the external storage device.
Only the backup data saved at the specific directory of the OfficeServ NMS server can be saved into the external storage media using the Unix command or the FTP.
If trying to recover the file saved at the external media, move the backuped file to a specific directory by using the UNIX command or the FPT, and recover the database contents into the external media by using the 'database management' function on the 'general management' menu.
The data recovery should be performed only after the existing data should be moved to a specific directory in the server. If the backuped data is recovered, the data used in the previous is all cleared. Therefore, if the backuped data is not perfect, the existing data can be deleted.

We have many unnecessary failure messages received. We want those messages not produced on the window because we know well about the messages. What should we do for the problem?

OfficeServ NMS provides the failure-filtering function by the unit.
The use of the failure-filtering function can make the failure messages not produced although a failure message occurs. In addition, the TCA information can be filtered by setting the parameter at the alarm profile as '0'.

The OfficeServ is installed, but is not displayed on the OfficeServ NMS window.

OfficeServ NMS automatically searches for the newly installed OfficeServ to display its result on the window. For this process, if the power is supplied after the OfficeServ is installed, the message about it is notified to the OfficeServ NMS. If the IP address of OfficeServ NMS is not set at the OfficeServ, or if there occurs a trouble in the network when the message is transmitted, the OfficeServ NMS cannot recognize whether to occur or not the new OfficeServ.

The OfficeServ NMS does not operate properly after the java plug-in is installed.

If the java plug-in is not installed to the client PC that is to access the OfficeServ NMS server, the window requesting the plug-in installation is executed. In general, it is enough to execute the OfficeServ NMS right after the java plug-in is installed. But there are the case sometimes that the OfficeServ NMS does not operate properly because the system resources run short, or the Java Virtual Machine (JVM) cannot recognize the plug-in. In such a case, it is desirable for the stable execution to terminate the browser after the plug-in installation, and to access the OfficeServ NMS by executing the browser again.

OfficeServ NMS Web pages are not properly viewed.

OfficeServ NMS can be optimized in the mode of the browser of the internet explorer 5.0+, the resolution of 1280*1024. If a browser other than the internet explorer 5.0+ is used or if its resolution is not set as 1280*1024 mode, some GUI window of the OfficeServ NMS cannot be properly displayed.
In such a case, the trouble can be settled by the use of the internet explorer 5.0+ and the set of its resolution as the 1280*1024 mode.

The download of the Jar file stops during its execution when logging in the OfficeServ NMS.

The downloading of the Jar files necessary for the execution of the server can stop if the usable resources in the client PC run short.
In this case, terminate the program by force, and then execute it again,
If the same trouble occur again, reboot the PC to initialize the resources, and execute the program again.

RMI server is blocked out by the firewall, and does not perform its operation.

RMI operates in the TCP/IP protocol. Therefore, if the TCP/IP communication cannot be performed because the RMI server is blocked out by the firewall, the proper service by the OfficeServ NMS cannot be executed. The 1099 port, which is the RMI port in the server's side, should be set so that the communication can be performed outside as well.
Request the external access permission for the 1099 port in the RMI server equipment.

ANNEX B. Open Source Announcement

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Apache Jakarta Commons Digester	Apache 1.1	Apache XML Xalan-Java	Apache 2.0
Apache Jakarta Slide	Apache 1.1	Apache XML-Commons Resolver	Apache 2.0
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ABBREVIATION

A

AP	Access Point

B

BRI	Basic Rate Interface

C

CPU	Control Processing Unit

D

DID	Direct Inward Dialing
DISA	Direct Inward System Access
DSP	Digital Sinal Processing

E

EMS	Element Management System

F

FTP	File Transfer Protocol

G

GUI	Graphic User Interface

H

HTTP	Hypertext Transfer Protocol

I

ID	IDentifier
IMS	Internet Multimedia Subsystem
IP	Internet Protocol
ISDN	Integrated Services Digital Network
ITU-T	International Telecommunications Union-Telecommunication Standardization Sector

L

LAN	Local Area Network
LCR	Least Cost Routing

M

MB	Mega Bytes
MGI	Media gateway Interface module
MIB	Management Information base
MSN	Multiple Subscriber Number

N

NE	Network Element
NMS	Network Management System

O

ODD	Optical Disc Drive

Q

QoS	Quality of Service

S

SIP	Session Initiation Protocol
SNMP	Simple Network Management Protocol
SPNet	Samsung Private Network

T

TCP	Transmission Control Protocol
TEPRI	T1, E1 and PRI

U

UDP	User Datagram Protocol

V

VLAN	Virtual LAN
VoIP	Voice over Internet Protocol
VoWLAN	Voice over Wireless LAN

W

WAN	Wide Area Network
WBS	Wireless Base Station
WLI	Wireless LAN Interface module

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OfficeServ NMS
User Guide

SAMSUNG ELECTRONICS