NEC

MasterScope Network Manager 9.0 Setup Guide

For Windows / EXPRESSCLUSTER X environment

MasterScope

NVP0WCSE0900-01

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Introduction

Thank you for choosing MasterScope Network Manager.

This document describes how to set up MasterScope Network Manager 9.0.

- Throughout this manual, the installation path is described as *%NVP_INSTALL_PATH%*.
- Throughout this manual, the path specified the **Data Directory** is described as *%NVP_SHARE_PATH%*.
- To return to the former page after jumping from the hyper link in the PDF manual, press ALT + Left keys. (In the case of using Adobe Reader)
- Due to upgrades, the specifications and design of windows in this manual are subject to change without notice.

Notations and Text Conventions

Document Conventions

In this manual, the following notations are used to indicate items that require special attention and supplementary information.

Notations of Items Requiring Attention and Supplementary Information

Mark	Description
Caution	Indicates important points that the user should observe to configure and use the product properly.
1) **Note**	Describes notes placed in the text.
Tip	Indicates useful information.

Text Conventions

In this manual, the following text conventions are used.

Text Conventions

Notation	Description	Example
uiname	Indicates graphical user interfaces such as dialog boxes, tabs, menus, items, and buttons.	**Alert Detail** dialog, **OK**button
<*userinput*>	Indicates items that change depending on the user environment or items that the user must specify.	<*filepath*>
`configuration file`	Indicates the contents of the configuration file.	Set the following value: `port = 54321`
`command line`	Indicates command line operations.	Run the following script:

Notation	Description	Example
		`> NvPRODBSetup.bat`

Abbreviations

Abbreviations

Formal Name	Abbreviation
MasterScope Network Manager	Network Manager, NetMgr
Configuration management database	Configuration management DB, CMDB
Alert management database	AlertDB
sFlow database	sFlowDB
MasterScope Integrated Management Server	IMS
MasterScope Network Flow Analyzer	NFA

Install Path

Default installation directory: Windows

- 32bit OS: C:\Program Files\NEC\UMF\Operations
- 64bit OS: C:\Program Files (x86)\NEC\UMF\Operations

Contents

Chapter 1. Operating Environment

Contents

1.1 System Configuration

Shows the system configuration of Network Manager (cluster environment).

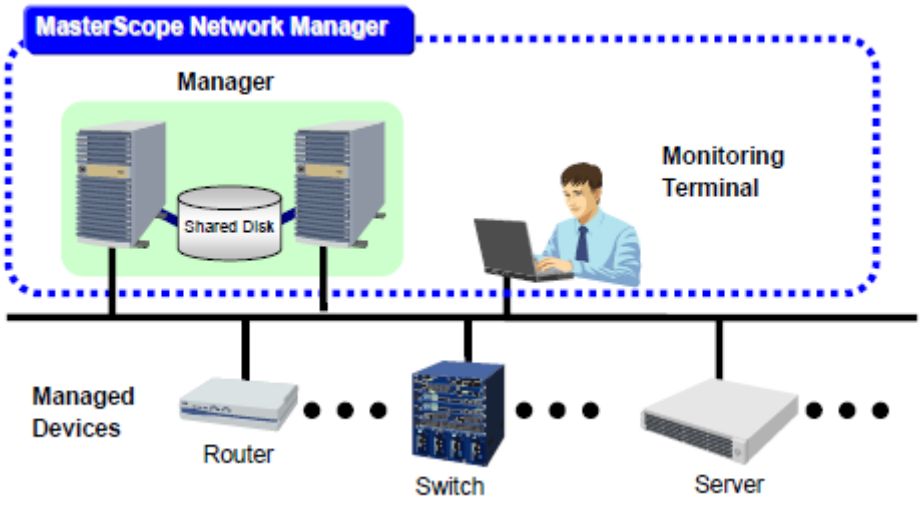

Figure 1-1 System Configuration

Network Manager consists of two functions: the manager function and the monitoring terminal function. The role of each function is shown in Table.

Table 1-1 Manager function and Monitoring Terminal function

Function	Description
Manager function	Manages and monitors target devices.
Monitoring Terminal function	Provides viewer functions such as operating and configuring the manager function and network status display.

Note

When the manager function and the monitoring terminal function are installed in the same machine in the cluster environment, only the monitoring terminal on the machine where the manager function is running can start normally. The monitoring terminal on the machine where the manager terminal is not running may not start normally. In the cluster environment, it is strongly recommended that the monitoring terminal function is installed in a machine outside the cluster in which the manager function is not installed.

Tip

- The monitoring terminal function can be installed in multiple machines and they can connect simultaneously to a single manager function.

Network Manager uses the bundled databases (internal databases) to store various information such as configurations, failure events, and performance data (sFlow). Network Manager can also use the databases installed in the manager server (external databases) to store the information.

Pay attention to the following points when selecting databases.

1. Internal databases and external databases cannot be used concurrently. If using external databases, configurations, failure events, and performance data (sFlow) information is stored in the external databases. Internal databases are not used.
2. You cannot change the databases in midstream. For example, if external databases were used before upgrading, you cannot switch to the internal databases.

1.2 System Requirements

Network Manager operates on the following Operating Systems.

Table 1-2 List of supported Operating Systems

Operating System	Manager function	Monitoring Terminal function
Windows Server 2019 (x64)	Y 1) 2)	Y 1) 2)
Windows Server 2016 (x64)	Y 1) 2)	Y 1) 2)
Windows Server 2012 R2 (x64)	Y 1)	Y 1)
Windows Server 2012 (x64)	Y 1)	Y 1)
Windows 10 Pro, Enterprise (32bit / x64)	N	Y 3)
Windows 8.1 Pro, Enterprise (32bit / x64)	N	Y
Windows 7 Professional/Enterprise/Ultimate (32bit / x64)	N	Y

Note

1. Windows Server Core is not supported.
2. Nano Server is not supported.
3. Tablet mode is not supported.

System Requirements (for the Windows manager function)

Table shows the system requirements for the manager function.

Table 1-3 System requirements for the manager function

Item	Description
CPU	Intel Dual-Core Xeon or higher, or equivalent compatible processor recommended
System memory	1 GB or more
Disk (free space)	2 GB or more (20GB or more is recommended)
Network	100 Mbps LAN or faster recommended
Required software	• Microsoft Visual C++ 2005 SP1 Redistributable Package (x86) 1) • Microsoft Visual C++ 2017 Redistributable Package (x86) 2)
Supported cluster	EXPRESSCLUSTER X 3.0 or later
External database software (Optional)	• Microsoft SQL Server 2014 3) • Microsoft SQL Server 2012 3)

Note

1. Microsoft Visual C++ 2005 SP1 Redistributable Package (x86) is required when using internal databases. It will be installed automatically in the manager function installation.
2. Microsoft Visual C++ 2017 Redistributable Package (x86) will be installed automatically in the manager function installation.

   For the following Operating Systems, the Windows KB2999226 update program must have been applied.

- Windows Server 2012 R2 (x64)
- Windows Server 2012 (x64)

If it has not been applied, perform a Windows Update or refer to the following information published by Microsoft to apply KB2999226.

https://support.microsoft.com/en-us/help/2999226/ *1

3. The following editions are not supported in the cluster environment.
   - Microsoft SQL Server 2014 Express
   - Microsoft SQL Server 2012 Express

System Requirements (for the monitoring terminal function)

Table 1-4 System requirements for the monitoring terminal function

Item	Description
CPU	Intel Core i3 or higher, or equivalent compatible processor recommended
System memory	512 MB minimum (1 GB or more is recommended)
Disk (free space)	400 MB
Network	100 Mbps LAN or faster recommended 1)
Required software	Telnet client 2)

Note

1. If the manager and monitoring terminal are connected with the network which has large communication latency like WAN, it may take a few minutes to start the monitoring terminal function.
2. The Remote Login function requires the telnet client. By default, the telnet client in Windows Operating Systems is disabled, so change it to enabled.

*1 This URL is current as of January 2019.

Chapter 2.
Setup Procedure Overview

This chapter describes the overview of Network Manager setup procedure.

Contents

There are two cases to set up Network Manager.

- New setup

  To set up the new environment, check"2.1 New Setup (page 6)"and start the process.

- Upgrading from previous version

  Upgrading can be achieved through an overwrite installation on the existing environment while retaining all the information from the previous version. Check "2.2 Upgrading (page 8)"and start the process.

Tip

To use Web Console, you need to install the component named IMS. For details, refer to *"MasterScope Network Management Web Console Getting Started Guide"*.

2.1 New Setup

This section describes the flow of Network Manager new setup.

"Table 2-1 The flow of new setup (page 6)" shows the setup flow when using internal databases. "Table 2-2 The flow of new setup (When using external databases) (page 7)" shows the setup flow when using external databases.

In the setup of the manager function, [active] indicates the process at the active host, and [standby] indicates the process at the standby host. [active / standby] indicates the process at both the active host and standby host.

Table 2-1 The flow of new setup

No	Operation	Description
1	Prepare setup	"3.1 Precautions of Setup (page 12)" Confirm the precautions of setup.
		"3.2 Setup Parameters (page 13)" Decide the parameters to be input in setup in advance.
2	Set up the manager function	[active / standby] "4.1 Creating a Failover Group (page 19)" Install cluster software in both the active host and standby host, and create a failover group.
		[active / standby] "4.2 Manager Function Installation (page 19)" Install Network Manager manager function in both the active host and standby host.
		[active] "4.3 Updating the configuration file (page 24)" Update the configuration file related to the use of the Web Console.
		[active / standby] "4.4 Configuring the Network Manager Services for Cluster Environment (page 26)" Configure start-stop settings of the Network Manager services so that the failover group can be switched between the active host and standby host.

No	Operation	Description
3	Set up the monitoring terminal function	"Chapter 5. Monitoring Terminal Function Setup (page 29)" Start the following Network Manager services if they are not running.
4	Configure the firewall	"Chapter 6. Configuring the Firewall (page 33)" Configure the firewall so that communications among the monitored devices, the manager function, and the monitoring terminal function can be built properly.
5	Start Network Manager	"7.1 Starting the Manager Function (page 37)" Confirm that the manager function services can start on both the active host and standby host.
		"7.2 Starting the Monitoring Terminal Function (page 37)" Start the monitoring terminal function and confirm that the monitoring terminal can connect to the manager.
6	Enable WebAPI communication	"8.1 Enable WebAPI communication (page 41)" In order to use the Web Console, enable the WebAPI communication. When not using the Web Console, this configuration is not necessary.
7	Activate the licenses	[active / standby] "8.2 Activating the License (page 41)" Request a codeword from the active host and standby host respectively, and register the issued codeword to the system.

Table 2-2 The flow of new setup (When using external databases)

No	Operation	Description
1	Prepare setup	"3.1 Precautions of Setup (page 12)" Confirm the precautions of setup.
		"3.2 Setup Parameters (page 13)" Decide the parameters to be input in setup in advance.
2	Set up the manager function	[active / standby] "4.1 Creating a Failover Group (page 19)" Install cluster software in both the active host and standby host, and create a failover group.
		[active / standby] "4.2 Manager Function Installation (page 19)" Install Network Manager manager function in both the active host and standby host.
		[active] "4.3 Updating the configuration file (page 24)" Update the configuration file related to the use of the Web Console.
		[active / standby] "A.1 Installing SQL Server (page 74)" Install database software in both the active host and standby host.
		[active] "A.2 Configuring the Databases (page 78)" Create the database tables used in Network Manager.
		[active / standby] "A.3 Clustering the Databases (page 86)"

No	Operation	Description
		Configure the databases used in Network Manager so that the failover group can be switched between the active host and standby host.
		[active / standby] "4.4 Configuring the Network Manager Services for Cluster Environment (page 26)" Configure start-stop settings of the Network Manager services so that the failover group can be switched between the active host and standby host.
3	Set up the monitoring terminal function	"Chapter 5. Monitoring Terminal Function Setup (page 29)" Install Network Manager monitoring terminal function.
4	Configure the firewall	"Chapter 6. Configuring the Firewall (page 33)" Configure the firewall so that communications among the monitored devices, the manager function, and the monitoring terminal function can be built properly.
5	Start Network Manager	"7.1 Starting the Manager Function (page 37)" Confirm that the manager function services can start on both the active host and standby host.
		"7.2 Starting the Monitoring Terminal Function (page 37)" Start the monitoring terminal function and confirm that the monitoring terminal can connect to the manager.
6	Enable WebAPI communication	"8.1 Enable WebAPI communication (page 41)" In order to use the Web Console, enable the WebAPI communication. When not using the Web Console, this configuration is not necessary.
7	Activate the licenses	[active / standby] "8.2 Activating the License (page 41)" Request a codeword from the active host and standby host respectively, and register the issued codeword to the system.

2.2 Upgrading

Upgrading can be achieved through an overwrite installation on the existing environment while retaining all the information from the previous version.

"Table 2-3 The flow of upgrading (page 8)" shows the upgrading flow when using internal databases. "Table 2-4 The flow of upgrading (When using external databases) (page 9)" shows the upgrading flow when using external databases.

In the setup of the manager function, [active] indicates the process at the active host, and [standby] indicates the process at the standby host. [active / standby] indicates the process at both the active host and standby host.

Table 2-3 The flow of upgrading

No	Operation	Description
1	Prepare setup	"3.1 Precautions of Setup (page 12)" Confirm the precautions of setup.
2	Backup	Back up data Back up the existing environment data just in case. *1

No	Operation	Description
		For the backup procedure, refer to the setup guide for the previous version.
3	Set up the manager function	[active / standby] "Perform overwrite install of the manager function (page 19)" Stop the manager function and perform an overwrite installation on both the active host and standby host.
		[active] "4.3 Updating the configuration file (page 24)" Update the configuration file related to the use of the Web Console.
		[active / standby] "4.4 Configuring the Network Manager Services for Cluster Environment (page 26)" A part of the start-stop settings of the Network Manager services might be reset after an overwrite installation. Make sure the settings are correct.
4	Set up the monitoring terminal function	"Perform overwrite install of the monitoring terminal function (page 29)" Stop the monitoring terminal function and perform an overwrite installation.
5	Configure the firewall	"Chapter 6. Configuring the Firewall (page 33)" Configure the firewall so that communications among the monitored devices, the manager function, and the monitoring terminal function can be built properly. New communication processings may be added in the latest version. Confirm the difference between the latest version and previous version.
6	Start Network Manager	"7.1 Starting the Manager Function (page 37)" Confirm that the manager function services can start on both the active host and standby host.
		"7.2 Starting the Monitoring Terminal Function (page 37)" Start the monitoring terminal function and confirm that the monitoring terminal can connect to the manager.
7	Enable WebAPI communication	"8.1 Enable WebAPI communication (page 41)" In order to use the Web Console, enable the WebAPI communication. When not using the Web Console, this configuration is not necessary.

Table 2-4 The flow of upgrading (When using external databases)

No	Operation	Description
1	Prepare setup	"3.1 Precautions of Setup (page 12)" Confirm the precautions of setup.
2	Backup	Back up data Back up the existing environment data just in case.*1 For the backup procedure, refer to the setup guide for the previous version.

*1 Overwrite installation inherits all data from the previous version, but if a trouble occurs while the setup, restoration from the backup may be needed.

No	Operation	Description
3	Set up the manager function	[active / standby] "Perform overwrite install of the manager function (page 19)" Stop the manager function and perform an overwrite installation on both the active host and standby host.
		[active] "4.3 Updating the configuration file (page 24)" Update the configuration file related to the use of the Web Console.
		[active] "A.2 Configuring the Databases (page 78)" On the active host, create the database tables which are newly added in this version.
		[active / standby] "4.4 Configuring the Network Manager Services for Cluster Environment (page 26)" A part of the start-stop settings of the Network Manager services might be reset after an overwrite installation. Make sure the settings are correct.
4	Set up the monitoring terminal function	"Perform overwrite install of the monitoring terminal function (page 29)" Stop the monitoring terminal function and perform an overwrite installation.
5	Configure the firewall	"Chapter 6. Configuring the Firewall (page 33)" Configure the firewall so that communications among the monitored devices, the manager function, and the monitoring terminal function can be built properly. New communication processings may be added in the latest version. Confirm the difference between the latest version and previous version.
6	Start Network Manager	"7.1 Starting the Manager Function (page 37)" Confirm that the manager function services can start on both the active host and standby host.
		"7.2 Starting the Monitoring Terminal Function (page 37)" Start the monitoring terminal function and confirm that the monitoring terminal can connect to the manager.
7	Enable WebAPI communication	"8.1 Enable WebAPI communication (page 41)" In order to use the Web Console, enable the WebAPI communication. When not using the Web Console, this configuration is not necessary.

Chapter 3. Preparation before Installation

This chapter describes the precautions and the parameters to be input when setup.

Contents

3.1 Precautions of Setup

Confirm the following precautions before starting the setup.

1. Execute the setup procedures as a member of Administrators group.
2. The installer does not check for free space in the disk where the product is to be installed. Make sure the free space in the disk meets the disk space requirements in "1.2 System Requirements (page 3)" in advance.
3. As a work area for installation, 1GB free space is required in the folder specified by the environmental valuables *%TMP%* or *%TEMP%*. Make sure that the environmental valuable *%TMP%* or *%TEMP%* is defined and the folder is writable. In addition, secure at least 1GB of free space on the system drive as a work area.
4. If the environmental valuable *%TMP%* or *%TEMP%* contains the UNICODE surrogate pair character, the installation might fail.
5. Before setup, assign an IP address (except "0.0.0.0" and "127.0.0.1") to at least one network interface of the manager server. If no IP address is assigned to the network interfaces, some services might not start. If multiple IP addresses are assigned on one network interface and one of them is "0.0.0.0" or "127.0.0.1", some services might not start. In addition, configure DNS and hosts file correctly in order to resolve the manager host name to the IP address. If not configured correctly, some services might not start.
6. Set the same time zone and same clock time to both the manager server and monitoring terminal.
7. In Network Manager, there are some limitations shown in "11.1 Limitations when Using with Other Products (page 67)" Confirm the server environment where the product is to be set up in advance.
8. To perform monitoring using the IPv6 communication, the IPv6 global unicast address needs to be set in the manager server. The IPv6 global unicast addresses are all addresses that do not match the addresses listed in Table.

Table 3-1 IPv6 addresses that are not IPv6 global unicast addresses

Type	Address
Unspecified address	::
Loopback address	::1
Multicast address	FF00::/8
Link-local address	FE80::/10
IPv4-compatible address	0000:0000:0000:0000:0000:0000::/96
IPv4-mapped address	0000:0000:0000:0000:0000:FFFF::/96
6to4 address	2002::/16
ISATAP address	xxxx:xxxx:xxxx:xxxx:0000:5EFE:xxxx:xxxx (xxxx is user-specified address)
NSAP address	0200::/7
IPX address	0400::/7
Reserved address	0000::/8

3.2 Setup Parameters

This section describes the setup parameters of Network Manager. Decide the parameter values in advance.

Caution

These parameters will be required to back up, restore, and upgrade software. Keep the parameters in a safe place after finishing setup.

3.2.1 Manager function setup parameters

This section describes the setup parameters for the Network Manager manager function.

"Figure 3-1 Setup image of the manager function in the cluster environment (page 13)" shows the setup image of the manager function in the cluster environment.

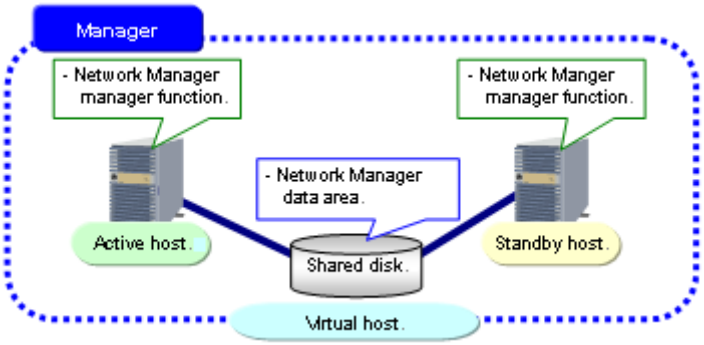

Figure 3-1 Setup image of the manager function in the cluster environment

Before setting up the manager function, prepare the setup parameters shown in "Table 3-2 Setup parameters for the Network Manager manager function (page 13)". For each parameter, unless otherwise specified, specify the same value on the active host and standby host.

Table 3-2 Setup parameters for the Network Manager manager function

Setting Item	Description	Default Value
Install directory path	Path of a folder where to install the product. Do not use non-ASCII characters. Maximum length is 90 characters.	C:\Program Files (x86)\NEC\UMF \Operations [1)]
Self hostname	Virtual Host name in a cluster environment. Do not use non-ASCII characters. Normally, need to change from the default value. Specify a host name that can be resolved to the virtual IP address of the manager. Maximum length is 64 characters.	*%COMPUTERNAME%*
Agent port	Communication port used for cooperation with other MasterScope products. The range is 1024 to 65535.	12520
Viewer port	Communication port between the manager function and the monitoring terminal function. The range is 1024 to 65535.	12521
Change Data Directory	Specify "Yes" when installing Network Manager to the cluster environment.	No

Setting Item	Description	Default Value
Data Directory	Specify a shared data installation path on the shared disk. Do not use non-ASCII characters. Maximum length is 128 characters. (Example: `X:\MasterScope\Operations`)	(empty)
Store initial setting data	Specify "Yes" when installing to the active host, specify "No" when installing to the standby host. When "Yes" is specified, the shared data is installed in the Data Directory specified above.	Yes
Using CMDB	Select either internal or external databases where Network Manager data is to be stored. [2) 3)] • Internal DB: specify "Use bundled DB" • External DB: specify "Use other DB"	Use bundled DB
CMDB port	Communication port used for between the manager function and the internal database. The range is 1024 to 65535. [3)]	12630
Service number	Service number of the manager function. The range is 1 to 999.	(empty)

Note

1. In 32bit OS, the default path is `C:\Program Files\NEC\UMF\Operations` .
2. If you select "Use other DB", refer to "3.2.1.1 Setup parameters for the databases(SQL Server) (page 15)" and prepare additional parameters for external databases.
3. If other products that also use the configuration management database (CMDB) of MasterScope framework are installed in the same folder, you must specify the same parameters.

When using the Web Console, prepare the setup parameters for connecting to the IMS component shown in "Table 3-3 Setup parameters for connecting to the IMS component (page 14)"

⚠ Caution

When using the Web Console, you need to set up the IMS component separately. Refer to *"MasterScope Network Management Web Console Getting Started Guide"* for the IMS component setup.

Table 3-3 Setup parameters for connecting to the IMS component

Setting Item	Description	Default Value
InstanceID (manager id)	Specify the ID so that the IMS component can identify the Network Manager to be connected. Available characters are single-byte alphanumeric characters. This parameter must match the value of the configuration file (ims-conf.ini) on the IMS component.	1
MessageQueueIP (ims ip address)	Specify the IPv4 address of the server where the IMS component is installed. If the IMS component is installed on the cluster system, specify the floating IP address of the cluster system.	127.0.0.1
MessageQueuePort (port number)	Specify the communication port number to be used for communication with the Message Queue of the IMS component.	28110

Setting Item	Description	Default Value
sendEvent	Specify as follows whether to notify the IMS component of alert information detected by the Network Manager. • 1 : Notify alert information. Normally, specify *"1"*. • 0 : Does not notify alert information.	1

3.2.1.1 Setup parameters for the databases(SQL Server)

If you selected other than "**Use bundled DB**" in "Use CMDB" parameter ("Table 3-2 Setup parameters for the Network Manager manager function (page 13)"), Network Manager uses external databases to store data.

Refer to "Table 3-4 Setup parameters for databases (page 15)" and prepare the database setup parameters in advance.

Table 3-4 Setup parameters for databases

Setting Item	Description	Default Value
Configuration management database (CMDB) [1)]		
database name	Name of the configuration management database. Do not use non-ASCII characters. Maximum length is 123 characters.	wfdb
server name	Name of the server where database service is running. The default value "localhost" must be specified.	localhost
instance name	Name of the database instance where the configuration management database is placed.	SQLEXPRESS
recovery model	Recovery model of SQL Server database [2)] Normally, select "Simple" model.	-
sa password	Password for sa account (SQL administrator) which is specified when installing SQL Server.	-
Alert management database (AlertDB)		
database name	Name of the alert management database. Do not use non-ASCII characters. Maximum length is 123 characters.	nvprodb
server name	Name of the server where database service is running. The default value "localhost" must be specified.	localhost
instance name	Name of the database instance where the configuration management database is placed. Specify the same value as the instance name of the configuration management database.	SQLEXPRESS
recovery model	Recovery model of SQL Server database[2)] Normally, select "Simple" model.	-
sFlow database (sFlowDB) [3)]		
database name	Name of the sFlow database. Do not use non-ASCII characters. Maximum length is 123 characters.	sflowdb
user name	Name of the sFlow database user.	SFLOW

Setting Item	Description	Default Value
	Do not use non-ASCII characters. Maximum length is 128 characters.	
password	Password of the sFlow database user. Do not use non-ASCII characters. Maximum length is 128 characters.	NVPROSFLOW
server name	Name of the server where database service is running. The default value "localhost" must be specified.	localhost
instance name	Name of the database instance where the sFlow database is placed. It must be different from instance name of the configuration management database.	SFLOW
recovery model	Recovery model of SQL Server database 2) Normally, select "Simple" model.	-
sa password	Password for sa account (SQL administrator) which is specified when installing SQL Server.	-

Note

1. If other products that also use the configuration management database (CMDB) of MasterScope framework are installed in the same folder, you must specify the same parameters.
2. The default model of SQL Server Standard Edition or higher is "Full." If the recovery mode is "Full," the file size of the transaction log is increasing until after transaction logs are backed up. It is recommended to select "Simple" recovery mode for Network Manager databases. For details regarding SQL Server recovery model, refer to SQL Server manuals.
3. The sFlow database parameters are needed only when performance management by sFlow is implemented.

3.2.2 Monitoring terminal function setup parameters

"Table 3-5 Setup parameters for Network Manager monitoring terminal function (page 16)" shows the setup parameters which are required to be input when installing the Network Manager monitoring terminal function, and the default values of these parameters. To change from the default values, determine other values in advance.

Table 3-5 Setup parameters for Network Manager monitoring terminal function

Setting Item	Description	Default Value
Install directory path	Path of a folder where to install the product. Do not use non-ASCII characters. Maximum length is 90 characters.	C:\Program Files (x86)\NEC\UMF \Operations 1)
Self hostname	Host name of the monitoring terminal. Do not use non-ASCII characters. Maximum length is 64 characters.	*%COMPUTERNAME%*
Manager hostname	Virtual Host name of the manager. Do not use non-ASCII characters. Maximum length is 64 characters. Name resolution is performed on this host name in order to connect to the manager.	(empty)
Manager port	Communication port between the manager function and the console terminal.	12521 2)

Setting Item	Description	Default Value
	The range is 1024 to 65535. It must be the same number as "Viewer port" in the setup parameters of the "Table 3-2 Setup parameters for the Network Manager manager function (page 13)".	
Service Identifier	Character strings to identify the manager to be connected. Maximum length is 16 characters.It can be omitted. This identifier is displayed to the name of startup icon and the start menu, and the window title of the monitoring terminal. When multiple monitoring terminal functions are installed in the same machine (multi-instance), it cannot be omitted.	(empty)

Note

1. Default value(32bit OS) `C:\Program Files\NEC\UMF\Operations`

Chapter 4. Manager Function Setup

This chapter describes how to set up the manager function.

Contents

4.1 Creating a Failover Group

Install EXPRESSCLUSTER X on both the active host and standby host, respectively, and create the cluster environment.

For details regarding EXPRESSCLUSTER X installation and configuration, refer to the EXPRESSCLUSTER X documentations.

1. Synchronize system time

   Keep the system time synchronized between the active host and standby host anytime by using NTP protocol etc.

2. Create a failover group

   Create a failover group which consists of the active host and standby host.

   If other MasterScope framework-compatible products are installed, you can use same failover group.

3. Configure cluster resources

   Register the following resources in the created failover group for Network Manager.

   - Floating IP resource
   - Mirror disk resource or
   - Script resource

This completes installation of the cluster package.

Next, proceed to "4.2 Manager Function Installation (page 19)".

4.2 Manager Function Installation

Install the manager function of Network Manager into the active host and standby host respectively.

Caution

- When installing on the active host, installation needs to be performed with the shared disk space accessible.
- To perform the overwrite installation for upgrading the manager, the following Network Manager services need to be stopped before installation. If service monitoring is performed, stop it while installation.
  - NvPRO ResourceManagerAPI Service
  - MasterScope UMF Operations Manager_*n* *1
  - NvPRO Base Manager
  - FTBase service
  - Wfdb_wfdb*n* *1 *2
  - Wfdb_nvalertdb*n* *1 *2
  - Wfdb_nvsflowdb*n* *1 *2

  Stopping the services manually:

  1. Open the Control Panel window and search "Administrative Tools".

*1 *n* is a service number larger than 1.

*2 These services do not exist when using external databases.

2. In the Administrative Tools window, open the **Services**.
3. Select the services to stop from the Service window and click **Stop Service**.

- When an overwrite installation for upgrading is performed while implementing the performance management by sFlow, confirm whether there is no NvPROSFlowCmd.exe process after above the Network Manager services are stopped. If the process exists, perform the overwrite installation after the process is finished.
  - How to confirm NvPROSFlowCmd.exe process:

    Press Ctrl + Shift + Esc keys at the same time to start Windows Task Manager. Select the **Process** tab and check if `NvPROSFlowCmd.exe` exists in **Image Name** column.
- When an overwrite installation for upgrading is performed while registering the Network Provisioning license, confirm whether there is no cimserver.exe process after above the Network Manager services are stopped. If the process exists, perform the overwrite installation after the process is finished.
  - How to confirm cimserver.exe process:

    Press Ctrl + Shift + Esc keys at the same time to start Windows Task Manager. Select the **Process** tab and check if `cimserver.exe` exists in **Image Name** column.

---

1. Start the installer

   Double-click `\NvPRO\Windows\Setup.exe` on the DVD-ROM drive.

   Tip

   To install using MasterScope Media, operate with the following path.

   Path of the installer: `\Windows\Setup.exe`

   If the dialog box is displayed which says "the initialization failed", refer to the troubleshooting "12.1 Failed to Start the Installer (page 69)" and install again.

2. Start installation

   When the Welcome screen is displayed. Select **Install** and click **Next**.

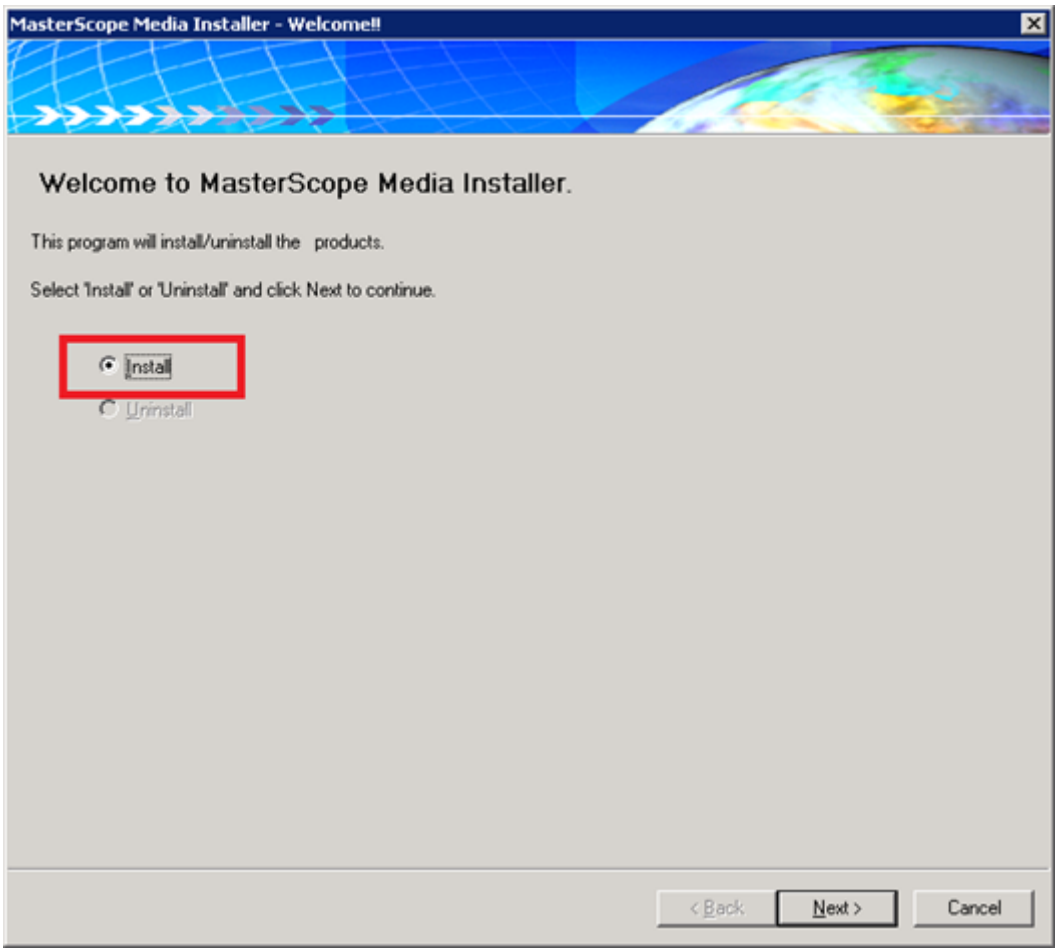

Figure 4-1 Welcome screen (installation start window)

3. Select the products to install

   The products that can be installed are listed. Check the "MasterScope Network Manager (Manager)" as shown in Figure and click **Next**.

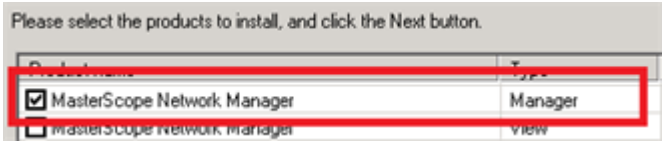

Figure 4-2 Selection screen of the products to install

4. Configure the install parameters

   The products to be installed are listed in the Contents list. Configure the settings using the parameters prepared in "3.2.1 Manager function setup parameters (page 13)"

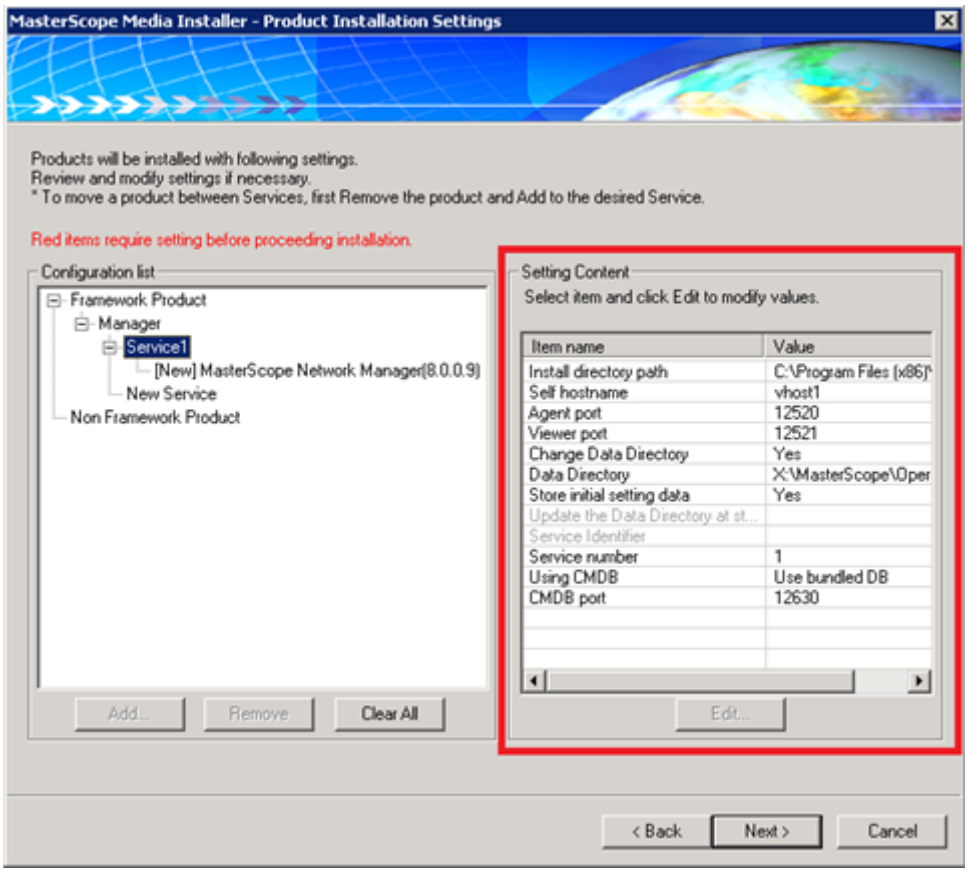

Figure 4-3 Installation configuration screen

- Set the virtual host name of the manager to Self hostname.
- When installing the manager function in the active host, set **Change Data Directory** to Yes and **Store initial setting data** to Yes. When installing in the standby host, set **Change Data Directory** to Yes and **Store initial setting data** to No.
- For other parameters, specify the same value on both the active host and standby host.

After changing the installation parameters, click **Next** to proceed.

5. Confirm the installation settings

   The installation confirmation screen is displayed. Verify the settings and click Start to start installation.

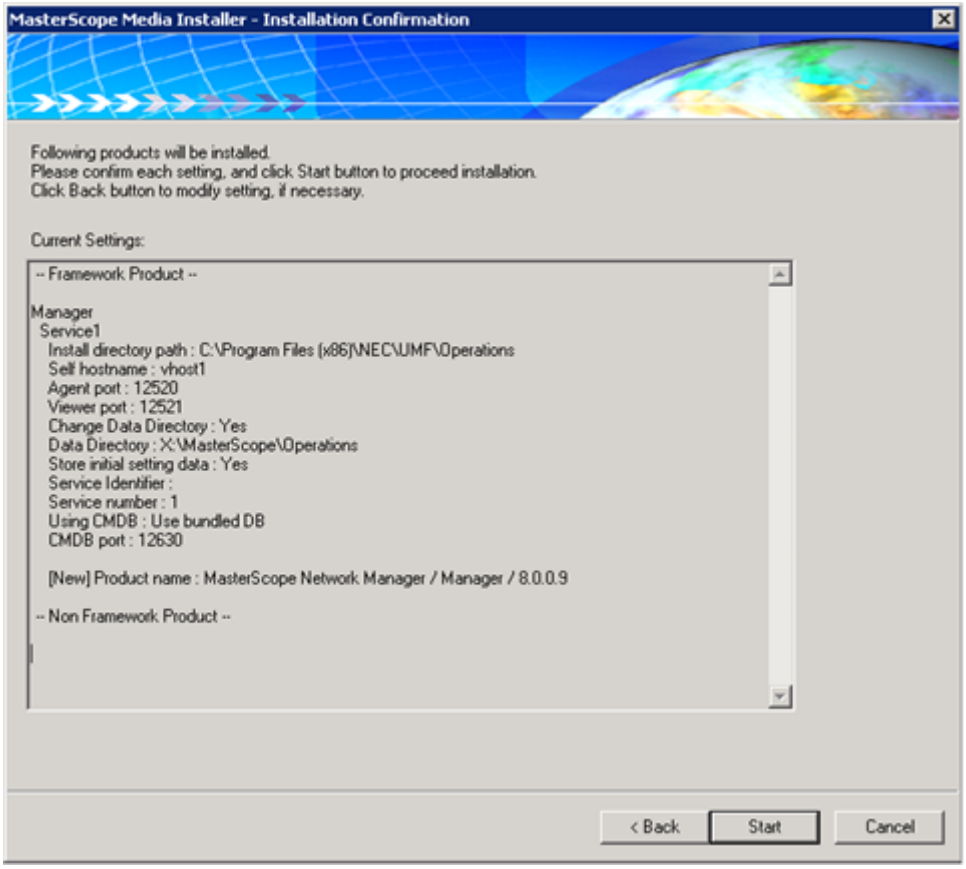

Figure 4-4 Installation confirmation screen

Verify the settings and click **Start** to start installation.

Caution

You cannot cancel once the installation **starts** .

If "Use bundled DB" is selected in **Use CMDB** parameter, Microsoft Visual C++ 2005 Redistributable Package (x86) will be installed during the installation process. Read the license agreement, and click **Yes** button if you agree. If you click **No** button or do nothing more than 30 minutes, Network Manager installation will fail.

6. Confirm the completion of installation

   When the installation completes, the Finish screen is displayed. Confirm that Failed is 0 and click **Finish** to close the window.

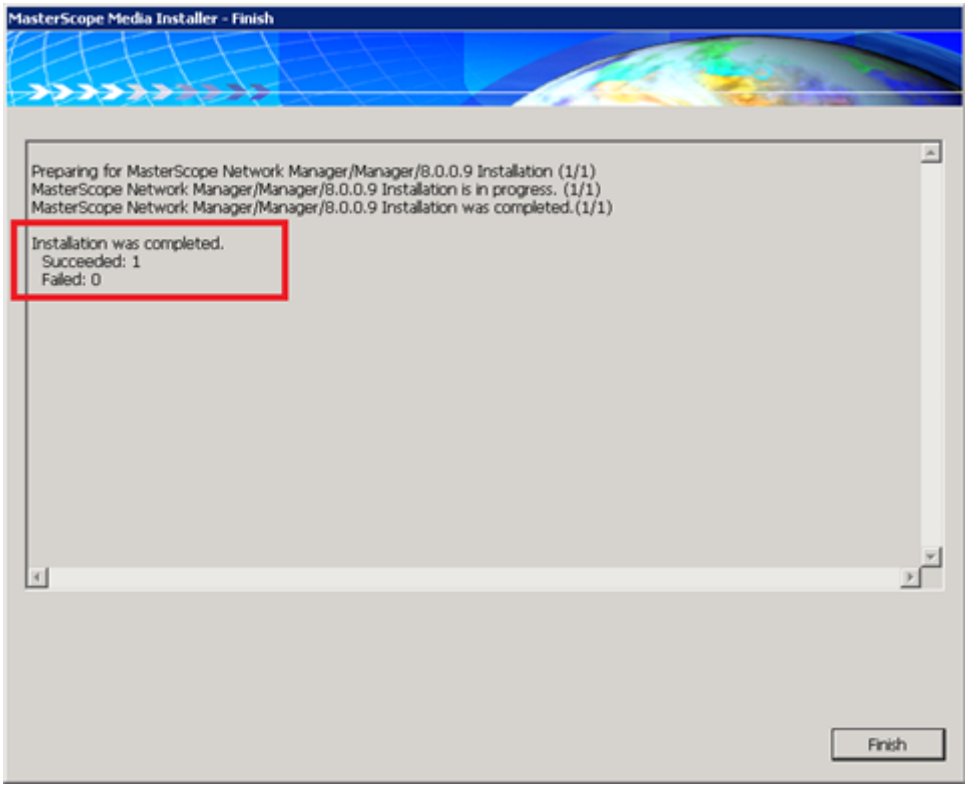

Figure 4-5 Installation finish screen

If Failed is not 0, refer to the troubleshooting "12.2 Failed to Install or Uninstall (page 69)" to solve the problem and install the manager function again.

This completes the installation of the manager function.

If using external databases, the database setup is needed. Refer the following sections and set up the external databases.

- "A.1 Installing SQL Server (page 74)"
- "A.2 Configuring the Databases (page 78)"
- "A.3 Clustering the Databases (page 86)"

After setting up external databases, or if not using external databases, proceeded to "4.4 Configuring the Network Manager Services for Cluster Environment (page 26)"

4.3 Updating the configuration file

This section describes updating the configuration file after installing manager function.

When the manager function is installed, the following configuration file is created.

The configuration file: `%NVP_SHARE_PATH%\Manager\sg\NvPRO\NvPROIms.ini`

Update the contents of NvPROIms.ini according to whether the Web Console is used or not.

When using the Web Console

It is necessary to set up to connect with the IMS component.

Tip

Refer to *"MasterScope Network Management Web Console Getting Started Guide"* for the IMS component setup.

Update the following parameters in the configuration file (NvPROIms.ini), overwrite it and save.

```
[NOMS]
InstanceID=<manager id>
MessageQueueIP=<ims ip address>
MessageQueuePort=<port number>
[EVENT]
sendEvent=<1|0>
```

<manager id>

Specify the ID so that the IMS component can identify the Network Manager to be connected.

This parameter must match the value of the configuration file (ims-conf.ini) on the IMS component.

<ims ip address>

Specify the IPv4 address of the server where the IMS component is installed.

If the IMS component is installed on the cluster system, specify the floating IP address of the cluster system.

<port number>

Specify the communication port number to be used for communication with the Message Queue of the IMS component.

This parameter is required to be updated when changing the default communication port number.

<1|0>

Specify as follows whether to notify the IMS component of alert information detected by the Network Manager.

- 1 : Notify alert information. Normally, specify *"1"*.
- 0 : Does not notify alert information.

Example:

```
InstanceID=nvpro01
MessageQueueIP=192.168.1.200
MessageQueuePort=28110
[EVENT]
sendEvent=1
```

Caution

- Updated contents of the configuration file (NvPROIms.ini) are reflected when the Network Manager services start up.
- When using the Web Console, in addition to the above configuration, it is necessary to configure to enable the Web API from the monitoring terminal. For details, refer to *"MasterScope Network Management Web Console Getting Started Guide"*

When not using the Web Console

To stop processing required only when using the Web Console, update the following two parameters of the configuration file (NvPROIms.ini).

```
[NOMS]
InstanceID=
```

Delete the value of **InstanceID**.

```
[EVENT]
sendEvent=0
```

Update the value of **sendEvent** to *"0"*.

⚠ Caution

Updated contents of the configuration file (NvPROIms.ini) are reflected when the Network Manager services start up.

4.4 Configuring the Network Manager Services for Cluster Environment

Register the Network Manager services as EXPRESSCLUSTER X service resources to start these services properly when the hosts are switched.

Perform the following steps.

1. Register the service resources

   Register the following Network Manager services as EXPRESSCLUSTER X service resources.

   - Wfdb_wfdb*n* *3 *4
   - Wfdb_nvalertdb*n* *3 *4
   - Wfdb_nvsflowdb*n* *3 *4
   - NvPRO Performance Database
   - FTBase service
   - NvPRO Base Manager
   - MasterScope UMF Operations Manager_*n* *3
   - NvPRO ResourceManagerAPI Service
   - NvPRO Topology Adapter
   - NvPRO Performance Manager

   Change "Starting Type" of Network Manager services to "Manual" on both the active host and standby host, respectively so that these services do not start automatically when OS starts. Stop if any of the service is running.

*3 *n* is a service number larger than 1.

*4 These services do not exist when using external databases. There is no need to register.

Tip

Each service can be started by using "net start" command in the script resource. In this case, start services so as to satisfy the dependency as shown in "Table 4-1 Resource dependencies (page 28)"

2. Add commands that are for the internal databases into the script.

For the internal databases, it is recommended to delete the following files before starting the Network Manager services, in order to ensure that the database processes start.

- *%NVP_SHARE_PATH%*\Manager\sg\database\wfdb\dbms1\data\postmaster.pid
- *%NVP_SHARE_PATH%*\Manager\sg\database\nvalertdb\dbms1\data\postmaster.pid
- *%NVP_SHARE_PATH%*\Manager\sg\database\nvsflowdb\dbms1\data\postmaster.pid
- *%NVP_SHARE_PATH%*\Manager\sg\database\NvPROPerfDB\postmaster.pid note

Note

Even if you choose to use the external database, the NvPRO Performance Database is created as the internal database.

The following is an example to delete the files in the start script (start.bat). For details regarding the script resource, refer to the EXPRESSCLUSTER X documents.

```
set NVP_DB_BASE_PATH=X:\MasterScope\Operations\Manager\sg\database

rem ************************************
rem Process for normal quitting program
rem ************************************
:NORMAL

rem Check Disk
IF "%CLP_DISK%" == "FAILURE" GOTO ERROR_DISK

del %NVP_DB_BASE_PATH%\wfdb\dbms1\data\postmaster.pid 2>NUL
del %NVP_DB_BASE_PATH%\nvalertdb\dbms1\data\postmaster.pid 2>NUL
del %NVP_DB_BASE_PATH%\nvsflowdb\dbms1\data\postmaster.pid 2>NUL
del %NVP_DB_BASE_PATH%\NvPROPerfDB\postmaster.pid 2>NUL

(An omission)

rem ************************************
rem Process for failover
rem ************************************
:FAILOVER

rem Check Disk
IF "%CLP_DISK%" == "FAILURE" GOTO ERROR_DISK

del %NVP_DB_BASE_PATH%\wfdb\dbms1\data\postmaster.pid 2>NUL
del %NVP_DB_BASE_PATH%\nvalertdb\dbms1\data\postmaster.pid 2>NUL
del %NVP_DB_BASE_PATH%\nvsflowdb\dbms1\data\postmaster.pid 2>NUL
del %NVP_DB_BASE_PATH%\NvPROPerfDB\postmaster.pid 2>NUL

(An omission)
```

3. Configure the resource dependency

   By setting dependency on each registered resource, set up to start or stop in the correct order.

   When registering each service in resources, set resources so as to satisfy the dependency as shown in "Table 4-1 Resource dependencies (page 28)" . Uncheck "Follow the default dependence" in the dependency setting and add the dependent resources.

Table 4-1 Resource dependencies

Resource Name	Dependent Resources
Script	Floating IP resource Disk resource (or Mirror disk resource)
Wfdb_wfdb*n* *4	Script resource
Wfdb_nvalertdb*n* *4	Script resource
Wfdb_nvsflowdb*n* *4	Script resource
NvPRO Performance Database	Script resource
FTBase service	Floating IP resource Disk resource (or Mirror disk resource)
NvPRO Base Manager	Script resource Wfdb_wfdb*n* service resource *4, Wfdb_nvalertdb*n* service resource *4, Wfdb_nvsflowdb*n* service resource *4 NvPRO Performance Database service resource
MasterScope UMF Operations Manager_*n*	FTBase service resource NvPRO Base Manager service resource
NvPRO ResourceManagerAPI Service	MasterScope UMF Operations Manager_*n* service resource
NvPRO Topology Adapter	NvPRO Base Manager service resource
NvPRO Performance Manager	NvPRO Base Manager service resource

This completes the clustering configuration of the Network Manager related services.

Chapter 5.
Monitoring Terminal Function Setup

This chapter describes how to install the monitoring terminal function of Network Manager.

Caution

To perform the overwrite installation for upgrading the monitoring terminal, the monitoring terminal processes (SysMonSvc.exe) need to be stopped before installation.

1. Start the installer

   Double-click `\NvPRO\Windows\Setup.exe` on the DVD-ROM drive.

   ### Tip

   To install using MasterScope Media, operate with the following path.

   Path of the installer: `\Windows\Setup.exe`

   If the dialog box is displayed which says "the initialization failed", refer to "12.1 Failed to Start the Installer (page 69)" and install again.

2. Start installation

   When the Welcome screen is displayed. Select **Install** and click **Next** .

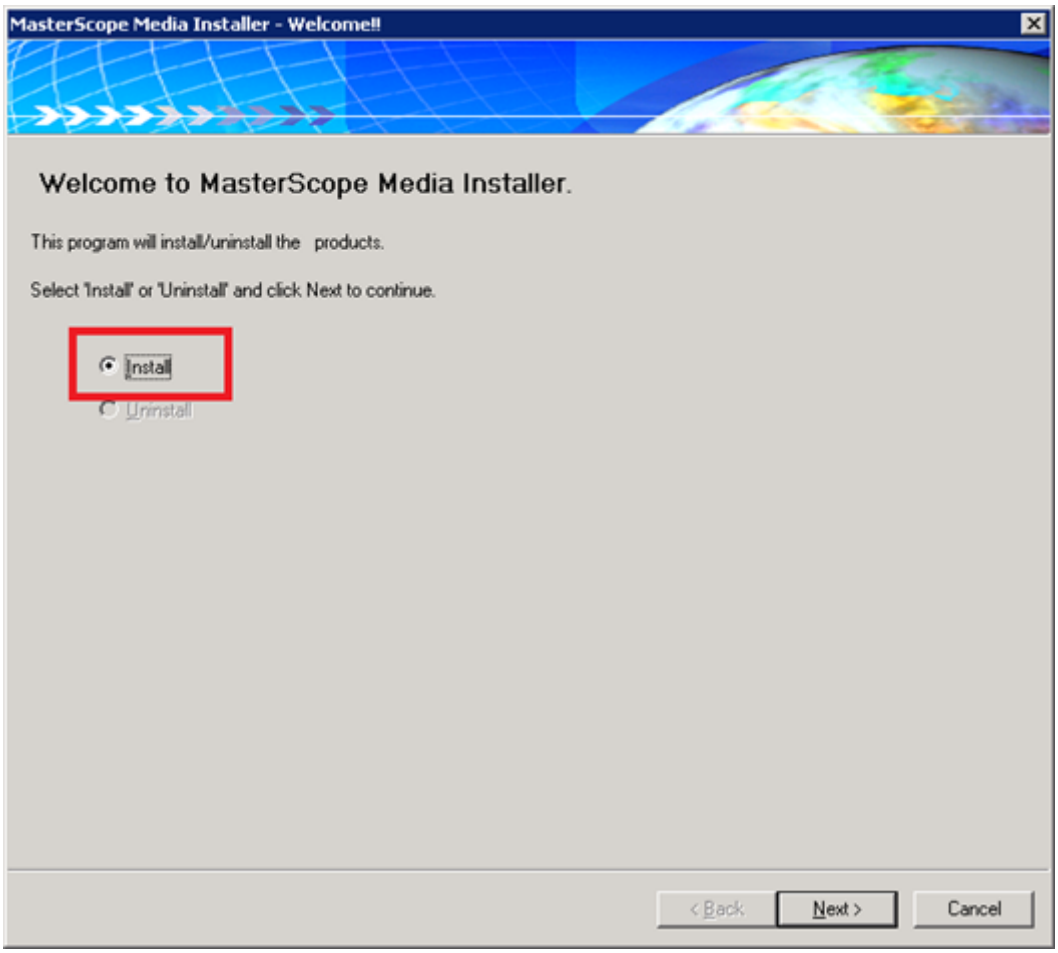

Figure 5-1 Welcome screen (installation start window)

3. Select the products to install

   The products that can be installed are listed. Check of "**MasterScope Network Manager** (View)" as shown in Selection screen of the products to install screen and click **Next**.

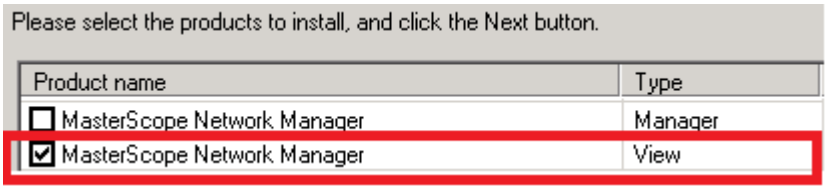

Figure 5-2 Selection screen of the products to install

4. Configure the install parameters

   The products to be installed are listed in the Contents list. Configure the settings using the parameters prepared in "3.2.2 Monitoring terminal function setup parameters (page 16)"

Tip

The virtual host name of the manager must be set in **Manager hostname** column even if the installation is performed using the default value. This is because initial value of this column is blank.

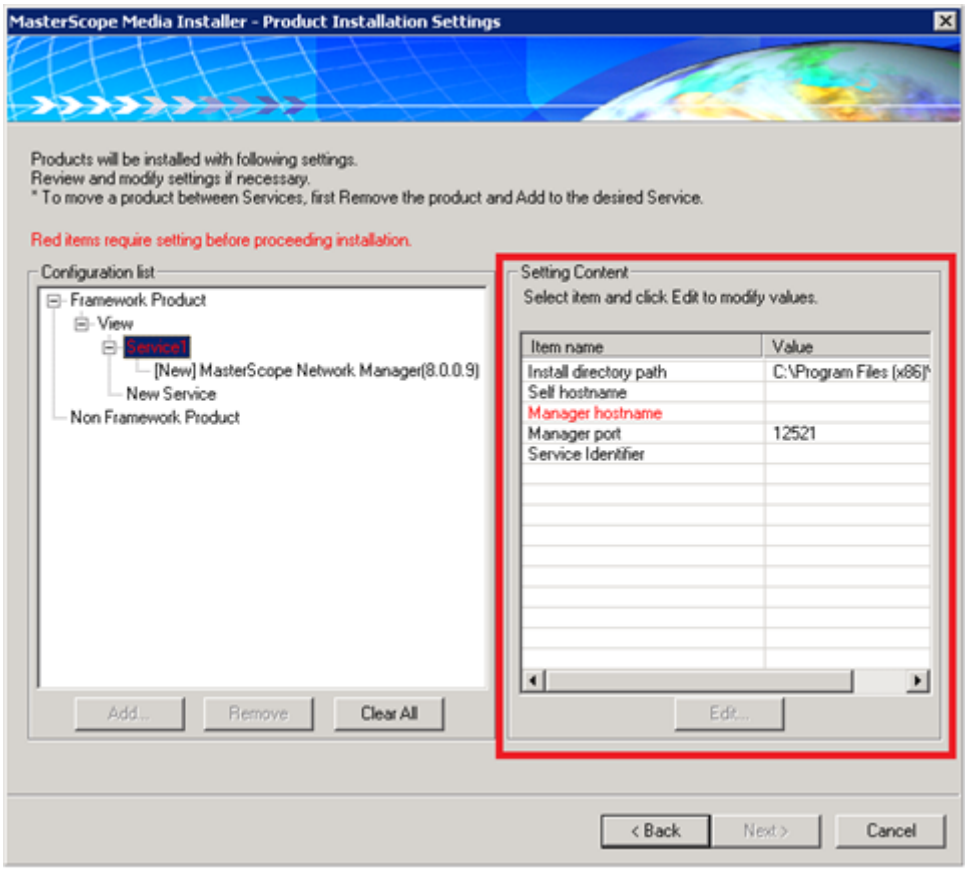

Figure 5-3 Installation configuration screen

After changing the installation parameters, click **Next** to proceed.

5. Confirm the installation settings

   The installation confirmation screen is displayed.

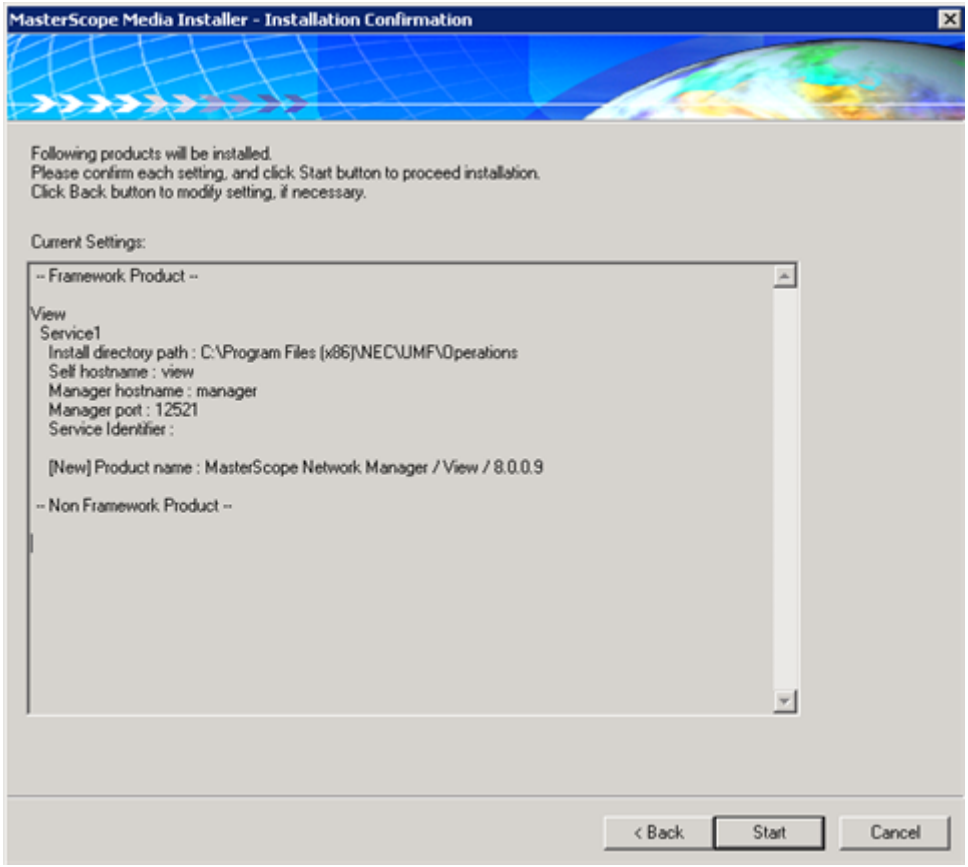

Figure 5-4 Installation confirmation screen

Verify the settings and click **Start** to start installation.

Caution

You cannot cancel once the installation **starts** .

6. Confirm the completion of installation

   When the installation completes, the Finish screen is displayed. Confirm that Failed is 0 and click **Finish** to close the window.

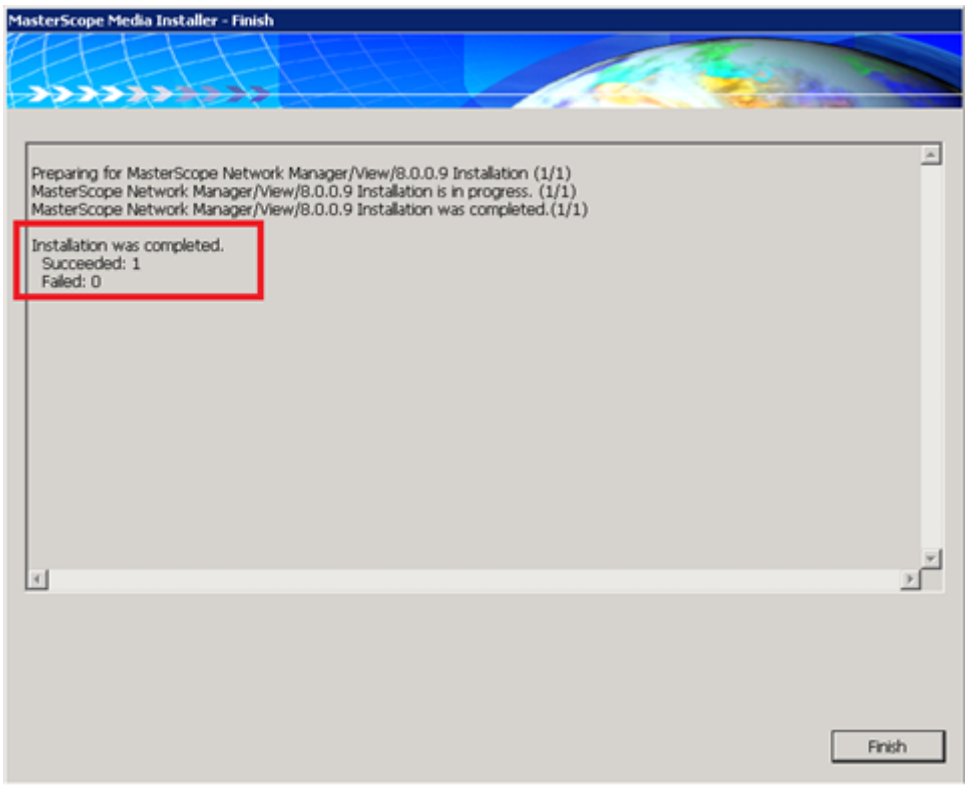

Figure 5-5 Installation finish screen

If Failed is not 0, refer to the troubleshooting "12.2 Failed to Install or Uninstall (page 69)" to solve the problem and install the manager function again.

This completes the installation of the monitoring terminal function.

Chapter 6. Configuring the Firewall

Network Manager uses several network ports shown in Table.

Network Manager uses several network ports shown in "Table 6-1 List of network ports used in Network Manager (page 33)". Change the firewall configuration so that Network Manager can use the necessary port numbers. The firewall configuration is needed for the active host and standby host respectively.

Table 6-1 List of network ports used in Network Manager

Manager function <=> Monitoring Terminal function [1]			
Manager	Direction	Monitoring Terminal	Description
12521/TCP [2]	<-	(auto-assign)	MasterScope framework service
12537/TCP	<-	(auto-assign)	Network Manager base service
12539/TCP	<-	(auto-assign)	Remote Login service
4135/TCP	<-	(auto-assign)	File Transfer service
8080/TCP [2]	<-	(auto-assign)	Used when starting Web Monitoring View
Manager function <=> Monitored Devices			
Manager	Direction	Monitored Devices	Description
20/TCP	-> [3]	(auto-assign)	FTP DATA (Manager is a server) [4]
21/TCP	<- [3]	(auto-assign)	FTP(Manager is a server)
69/UDP	<- [3]	(auto-assign)	TFTP [5]
162/UDP	<-	(auto-assign)	SNMP Trap reception
514/UDP	<-	(auto-assign)	SYSLOG reception
6343/UDP	<-	(auto-assign)	sFlow reception
ICMP ECHO REQUEST	->	-	Autodiscover, State Monitoring (Alive monitoring)
-	<-	ICMP ECHO REPLY	
(auto-assign)	->	22/TCP	SSH
(auto-assign)	->	23/TCP	TELNET
(auto-assign)	->	161/UDP	SNMP
Manager internal communication			
Manager	Direction	Manager	Description
12630/TCP [2]	<-	(auto-assign)	Internal database (CMDB)
12600/TCP	<-	(auto-assign)	Internal database (AlertDB)
12610/TCP	<-	(auto-assign)	Internal database (sFlowDB)
Manager function <=> MasterScope Service Governor (SG)			
Manager	Direction	SG	Description
20100/TCP [2]	<-	(auto-assign)	WebAPI
Manager function <=> Integrated Management Server (IMS)			

Manager	Direction	IMS	Description
28100/TCP	<-	(auto-assign)	Performance Database
28110/TCP 2)	->	28110/TCP 2)	Message Queue
Manager function <=> Mail Server			
Manager	Direction	Mail Server	Description
(auto-assign)	->	25/TCP	SMTP
Manager function <=> Patlite (LAN type)			
Manager	Direction	Patlite	Description
(auto-assign) 6)	->	514/TCP	RSH
(auto-assign) 6)	<-	(auto-assign) 6)	RSH
Manager function <=> SigmaSystemCenter (SSC)			
Manager	Direction	SSC	Description
52727/TCP	<-	(auto-assign)	Network Provisioning service

Note

1. Web Monitoring View function uses the same network ports while operating.
2. If it is changed from the default value, configure the firewall in accordance with the changed value.
3. If the device side operates as an FTP/TFTP server, the direction of communication is reversed. For details of the file transfer protocol used in supported devices of Resource Manager function, refer to MasterScope Network Manager User's Manual "Supported Devices in Resource Manager Function".
4. If FTP passive mode is enabled, the auto-assigned port is used instead of 20/TCP and the direction of communication is reversed.
5. TFTP protocol uses additional port that is assigned to automatically for data transfer.
6. The available port in the range of 512/TCP to 1023/TCP is used.
7. It is set to allow connections from any external IP address. To restrict the connections from the external IP addresses, use the Windows Firewall function and configure to allow only connections from the IMS component.

Caution

1. When the Windows Firewall is enabled, add the following programs to the exception list of the Windows Firewall in addition to the settings shown in "Table 6-1 List of network ports used in Network Manager (page 33)".
   - Manager function
     - *%NVP_INSTALL_PATH%*\Manager\bin\NvPROBaseMgr.exe
     - *%NVP_INSTALL_PATH%*\Manager\bin\SysMonMgr.exe
     - *%NVP_INSTALL_PATH%*\Manager\bin\NvPROrmapisrv.exe
     - *%NVP_INSTALL_PATH%*\Manager\bin\NvPROTopologyAdapter.exe
     - *%NVP_INSTALL_PATH%*\Manager\bin\nrsh.exe
     - *%FTB_INSTALL_PATH%*\FTBase\ftbs.exe
   - Monitoring Terminal function
     - *%NVP_INSTALL_PATH%*\Svc\bin\SysMonSvc.exe
     - *%NVP_INSTALL_PATH%*\Svc\bin\NvPROrlogin.exe
     - *%FTB_INSTALL_PATH%*\FTBase\ftbs.exe

Tip

- *%FTB_INSTALL_PATH%* indicates the install directory path of the file transfer function service. It is same as the upper directory from the installation path of Network Manager.

2. When antivirus software is installed on the manager or the monitoring terminal, the communication using the network ports shown in "Table 6-1 List of network ports used in Network Manager (page 33)" might be blocked. In these cases, refer to the manuals of the installed antivirus software and configure the communication authorization settings.

Chapter 7. Starting Network Manager

To verify that the Network Manager is set up properly, start the manager function and the monitoring terminal function and check whether the monitoring terminal can be connected to the manager function.

Contents

7.1 Starting the Manager Function

Verify if the following Network Manager services start on both the active host and standby host by switching between the active host and standby host.

⚠ Caution

In the operation of starting the services manually, if some services have already been started, stop all services before starting.

- Wfdb_wfdb*n* *1 *2
- Wfdb_nvalertdb*n* *1 *2
- Wfdb_nvsflowdb*n* *1 *2
- NvPRO Performance Database
- FTBase service
- NvPRO Base Manager
- MasterScope UMF Operations Manager_*n* *1
- NvPRO ResourceManagerAPI Service
- NvPRO Topology Adapter
- NvPRO Performance Manager

Starting services manually:

1. Open the Control Panel window and search "Administrative Tools".
2. In the Administrative Tools window, open the **Services**.
3. Select the services to start from the service list on Services window and click **Start Service**.

⚠ Caution

If staring services was failed, check "12.3.1 Failed to start the manager function (page 71)" to solve the problem and start the manager services again.

When you confirm that the manager services start properly, the setting up environment confirmation of the manager function is completed.

7.2 Starting the Monitoring Terminal Function

Check whether the monitoring terminal function starts properly according to the following steps.

⚠ Caution

When starting and operating the monitoring terminal functions, you must log on to Windows as a user with Administrator rights.

1. Start Network Manager monitoring terminal

   Double-click "MasterScope Network Manager Console" icon on the desktop.

*1 *n* is a service number larger than 1.

*2 These services do not exist when using external databases.

Tip

You can start from **Start** menu or Start window of Windows.

Select **MasterScope Network Manager Manager**>**MasterScope Network Manager Console** to start.

2. Login

The initial login name is "Administrator", and the initial password is "websam". The login name and password are case sensitive. Make sure to enter correct login name and password.

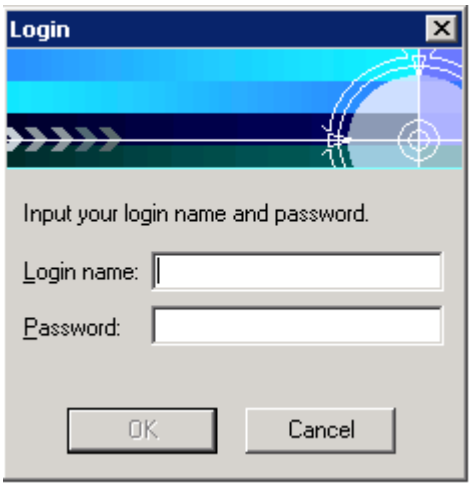

Figure 7-1 Login window

When the Login window is not displayed and the Error dialog box as shown in Figure is displayed, check "12.3.2 Failed to start the monitoring terminal function (page 72)" to solve the problem. Then start the monitoring terminal function again.

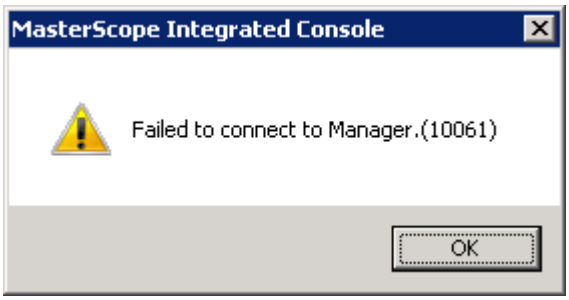

Figure 7-2 Error dialog box when starting the monitoring terminal

The monitoring terminal window opens after you have logged on successfully, and NetworkManagement and Alert Management icon are displayed under NetworkView icon .

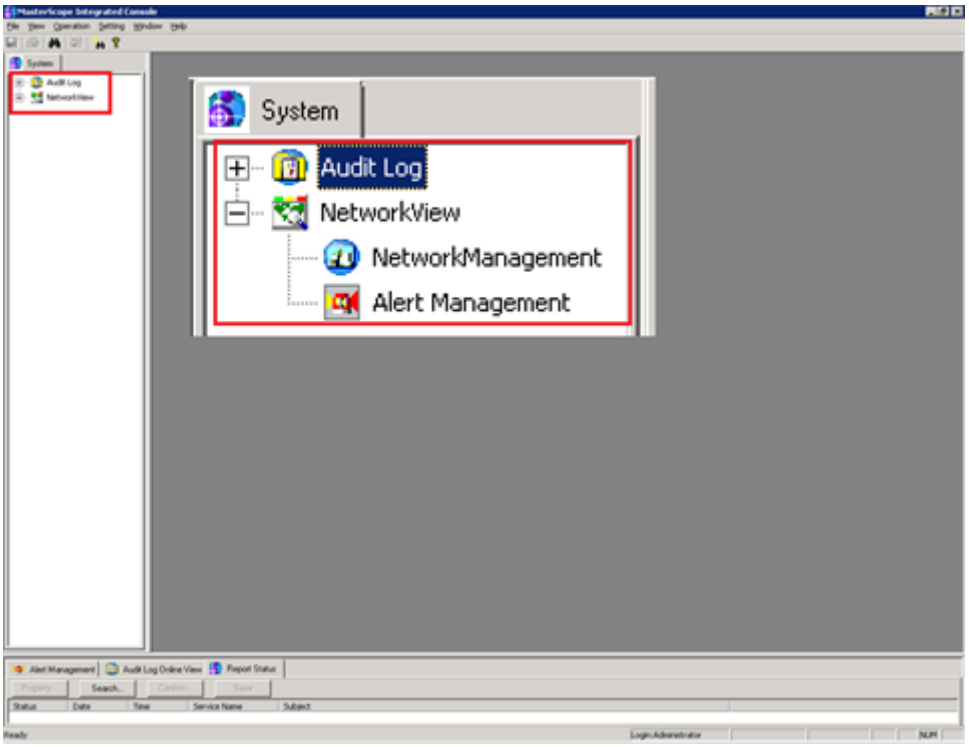

Figure 7-3 Monitoring terminal window

Tip

It may take several seconds to a few minutes to display Network Management depending on the environment. If it is not displayed, please wait for a moment.

In the case that the error dialog box is displayed although the monitoring terminal window is displayed, refer to "12.3.2 Failed to start the monitoring terminal function (page 72)" to solve the problems and start the monitoring terminal function again.

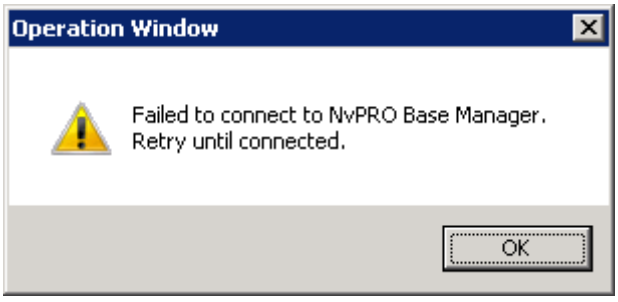

Figure 7-4 Error dialog box after monitoring terminal was started up

When you confirm that the monitoring terminal window starts properly, the setting up environment confirmation is completed.

Caution

After installation, the trial license is valid. The trial license is valid for three months after installation, and all the functions of Network Manager including the advanced function can be used. Refer to "8.2 Activating the License (page 41)" and activate the licenses before the end of the three months.

Chapter 8. Configuring from Monitoring Terminal Function

This chapter describes the configurations from the Monitoring Terminal Function.

Contents

8.1 Enable WebAPI communication

When using the Web Console, it is necessary to enable WebAPI communication for control from the IMS component.

Tip

When no using the Web Console, this configuration is not necessary.

Execute the following steps.

1. Start Network Manager Monitoring Terminal.

   Double-click *" Console"* icon on the desktop.

2. Change the Configuration Mode.

   In the main menu, select **Setting**>**Configuration Mode** to change to the Configuration Mode.

3. Open the Option Setting dialog box.

   In the main menu, select **Setting**>**Option**.

   The Option Setting dialog box will be displayed.

4. Click the **Web Monitoring View** tab.

5. Enable the WebAPI communication.

   Check the **Use Web API Function** checkbox. By checking this checkbox, the WebAPI communication is enabled.

6. Change the values of the parameters related to the WebAPI.

   When changing the default value, specify values that match the contents of the IMS component configuration file (ims-conf.ini).

   - **Port**

     Specify the communication port number of the WebAPI.

   - **Use HTTPS cryptogram** checkbox
     - Check : Use HTTPS.
     - Not check : Do not use HTTPS, use HTTP.

7. Save the configurations.

   Click **OK** button.

8.2 Activating the License

This chapter describes how to activate the license.

In Network Manager, usage permissions are verified through the license management feature. You can use the software with the trial license for three months after installation, however, you must activate the license before the end of the three months.

8.2.1 Precaution about the License

Read the precautions below before activating the license.

1. The trial license is valid for three months after installation. Activate the license before the end of the three months. If the trial license expired, you cannot use Network Manager functions until activating the license.
2. 2.The trial license becomes invalid when the license key has been registered. Before registering the license key, confirm that the number of registered nodes and the number of nodes assigned advanced function licenses do not exceed the limits of the licenses that are to be registered.
3. 3.Register a codeword within one month after registering the license key. If you have not registered a codeword within one month, you cannot use Network Manager functions until registering the codeword.
4. Keep the license key written on the codeword request from in a safe place.
5. When you enter the license key, write the codeword request code in the codeword request form, or register the codeword, make sure not to confuse the below characters similar in appearance.
   - I (capital letter for i), l (lower case letter for L), the number 1 (one) and / (slash).
   - O (capital letter for o) and the number 0 (zero).
   - g (lower case letter for G), q (lower case letter for Q) and the number 9 (nine).
   - t (lower case letter for T) and + (plus).
   - The alphabet of which appearance is similar between the capital letter and the lower case letter (such as S and s).
6. After registering a codeword, you need to delete the trial license key. If the trial license is not deleted, a warning message of the trial license expiration will be displayed.
7. In the cluster environment, it is necessary to register and activate the license according to the number of the managed nodes and the advanced function on both the active host and standby host.

Tip

You do not need to re-register the license key when upgrading the software.

8.2.2 Procedures for Activating the License

The following describes how to activate the license.

In the cluster environment, it is necessary to register and activate the license on both the active host and standby host respectively so as to satisfy the number of managed nodes and the advanced function.

1. Obtain the codeword request code [active]

   Obtain the codeword request code on the active host by following the steps listed below.

   a. Start the monitoring terminal window.

   b. Select **Setting**>**Configuration Mode** to change to the configuration mode.

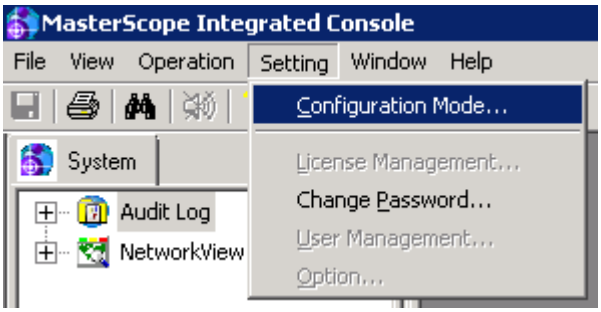

Figure 8-1 Configuration Mode menu

c. Select **Setting**>**License Management** on the main menu, and select License Management to open License Management dialog box.

d. In the License Management dialog box, **Add** .

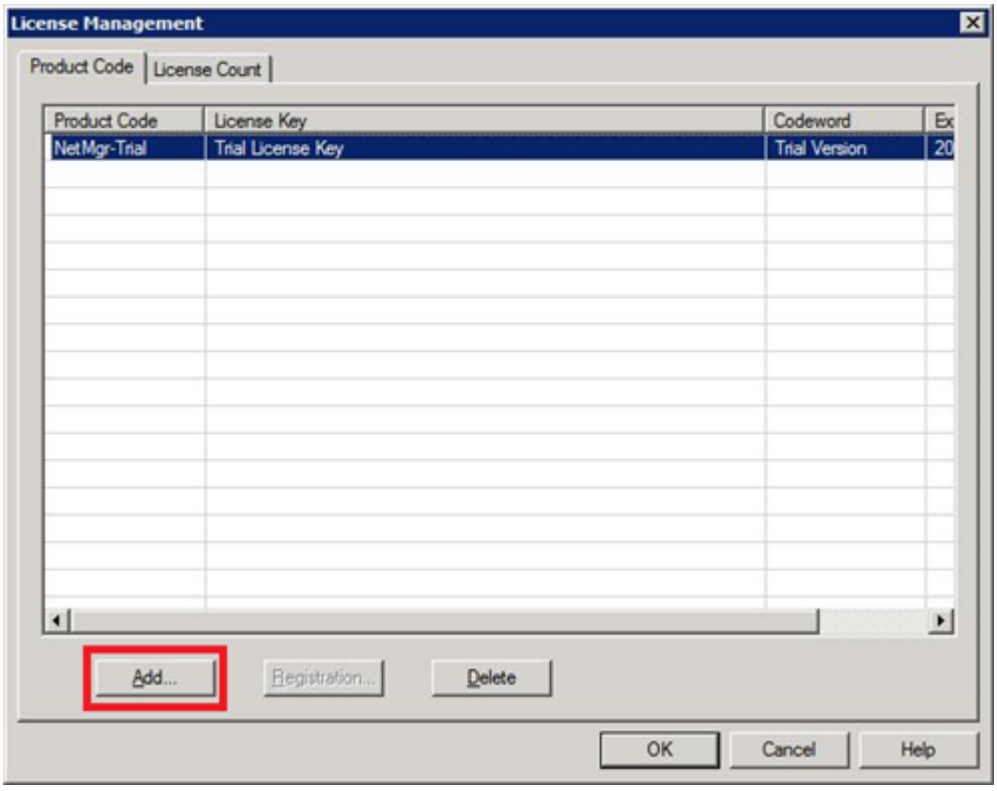

Figure 8-2 License Management dialog box

e. When the License Key Registration dialog box is displayed, enter the product code and license key written on the codeword request form .

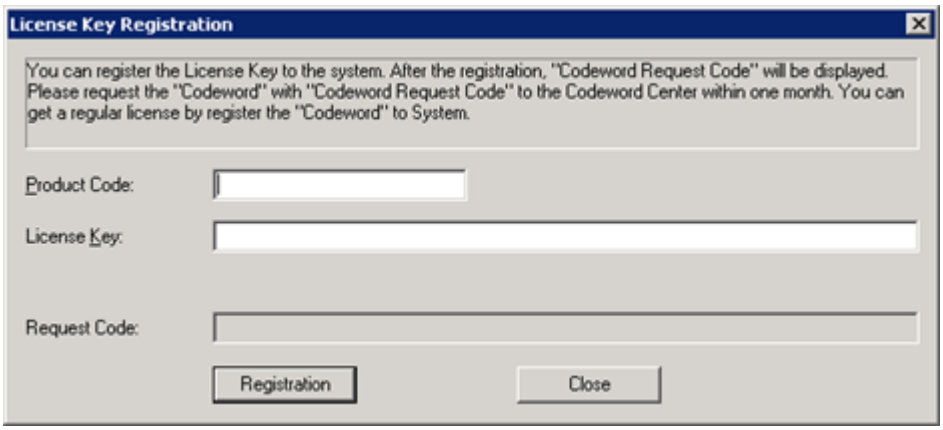

Figure 8-3 License Key Registration dialog box

Click **Registration** to obtain the codeword request code.

f. Fill exactly the displayed codeword request code in Codeword Request Code column of the codeword request form.

2. Obtain the codeword request code [standby]

Obtain the codeword request code on the standby host by following the steps listed below.

a. Execute LicenseCmd ADD command.

Change directory to *%NVP_INSTALL_PATH%*\Manager\bin, execute command.

For details regarding LicenseCmd command, refer to MasterScope Network Manager User's Manual "Commands for License Registration (LicenseCmd)".

- LicenseCmd ADD command syntax:

```
LicenseCmd.exe ADD <Product Code> <License Key>
```

Product Code

Code of the product of which license is to be registered

License Key

License key to be registered

Example:

```
> cd "C:\Program Files (x86)\NEC\UMF\Operations\Manager\bin"
> LicenseCmd.exe ADD ULxxxx-xxx ABCD1234567890
Successfully registered the License Key.
Request Code is generated.
xxxxxxxxxx
```

(Do not place any carriage returns within the command line.)

b. Fill exactly the displayed codeword request code in Codeword Request Code column of the codeword request form.

Tip

The codeword request code for the license key registered with LicenseCmd ADD command can be displayed with LicenseCmd List command.

- Example:

```
> cd "C:\Program Files (x86)\NEC\UMF\Operations\Manager\bin"
> LicenseCmd.exe LIST

ProductCode : NetMgr-Trial
LicenseKey : Trial License Key
RequestCode : Trial Version

ProductCode : ULxxxx-xxx
LicenseKey : ABCD1234567890
RequestCode : xxxxxxxxxx
Codeword :
```

(Do not place any carriage returns within the command line.)

3. Request the codeword

   Verify the codeword request code filled in the Codeword Request Code column of the codeword request form. Fill other necessary information in the codeword request form and send the form as directed in the codeword request form.

⚠ Caution

You will receive a codeword from the codeword center in a few days.

4. Register the codeword [active]

   Register the obtained codeword on the active host by following the steps listed below.

   a. Start the monitoring terminal window.

   b. Select **Setting**>**Configuration Mode** to change to the configuration mode.

   c. Select **Setting**>**License Management** on the main menu, and select License Management to open License Management dialog box.

   d. Select the license for which you requested for a codeword, then click **Registration** .

   e. When the Codeword Registration dialog box is displayed, enter exactly the obtained codeword in the Codeword field and click **Registration** .

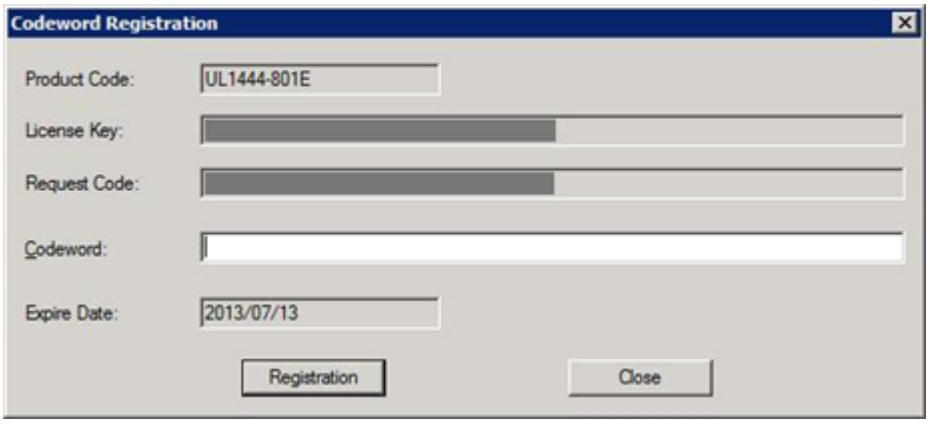

Figure 8-4 Codeword Registration dialog box

   f. To reflect the license information, restart all Network Manager services, or right click **NetworkView** icon and select **NetMgr License Management** and then click **Reload** in the NetMgr License Manager dialog box.

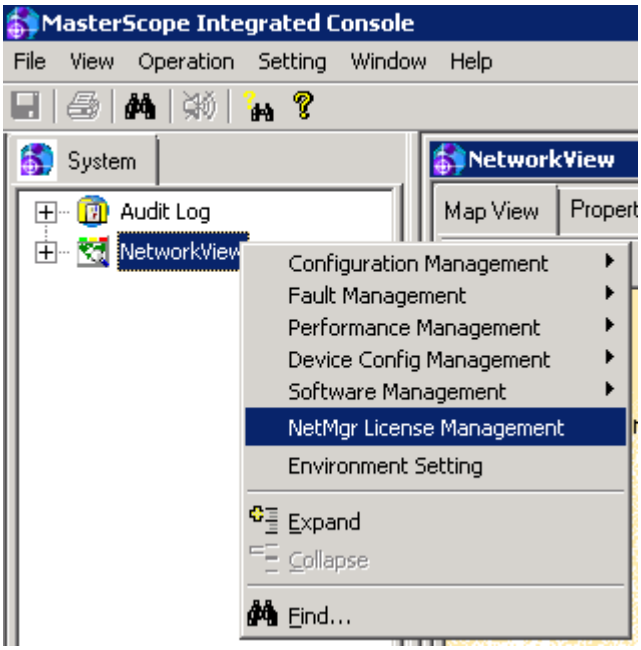

Figure 8-5 NetMgr License Management menu

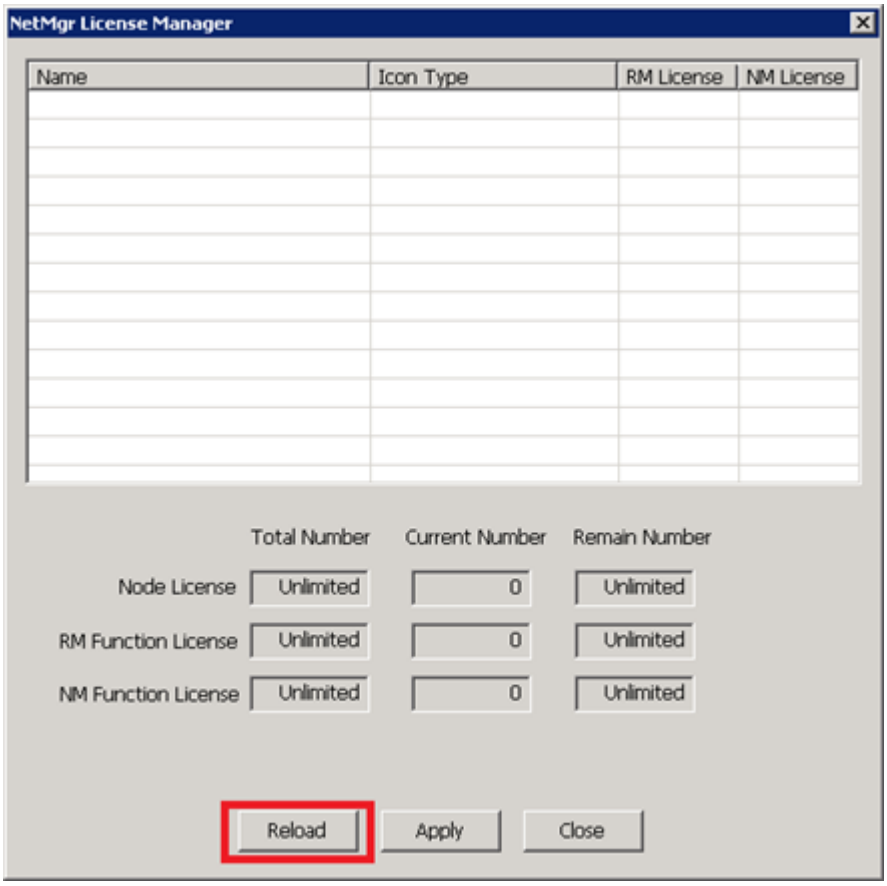

Figure 8-6 NetMgr License Manager dialog box

5. Register the codeword [standby]

   Register the obtained codeword on the standby host by following the steps listed below.

   a. Execute LicenseCmd REGISTER command.

      Change to *%NVP_INSTALL_PATH%*\Manager\bin directory and execute command.

For details regarding LicenseCmd command, refer to MasterScope Network Manager User's Manual "Commands for License Registration (LicenseCmd)".

- LicenseCmd REGISTER command syntax:

```
LicenseCmd.exe REGISTER <License Key> <Codeword>
```

License Key

Registered license key

Codeword

Obtained codeword

Example:

```
> cd "C:\Program Files (x86)\NEC\UMF\Operations\Manager\bin"
> LicenseCmd.exe REGISTER ABCD1234567890 xxxxxxxxxx
Successfully registered the Codeword.
```

(Do not place any carriage returns within the command line.)

b. The codeword request code for the license key registered with LicenseCmd ADD command can be displayed with LicenseCmd List command.

Example:

```
> cd "C:\Program Files (x86)\NEC\UMF\Operations\Manager\bin"
> LicenseCmd.exe LIST

ProductCode : NetMgr-Trial
LicenseKey : Trial License Key
RequestCode : Trial Version

ProductCode : ULxxxx-xxx
LicenseKey : ABCD1234567890
RequestCode : xxxxxxxxxx
Codeword : yyyyyyyyyy
```

(Do not place any carriage returns within the command line.)

6. Delete the trial license [active / standby]

After registering the obtained codeword, delete the trial license on both the active host and standby host by following the steps listed below.

a. Start the monitoring terminal window.

b. Select **Setting**>**Configuration Mode** to change to the configuration mode.

c. Select **Setting**>**License Management** on the main menu, and select License Management to open License Management dialog box.

d. In the License Management dialog box, select the trial license (NetMgr-Trial) and click **Delete** .

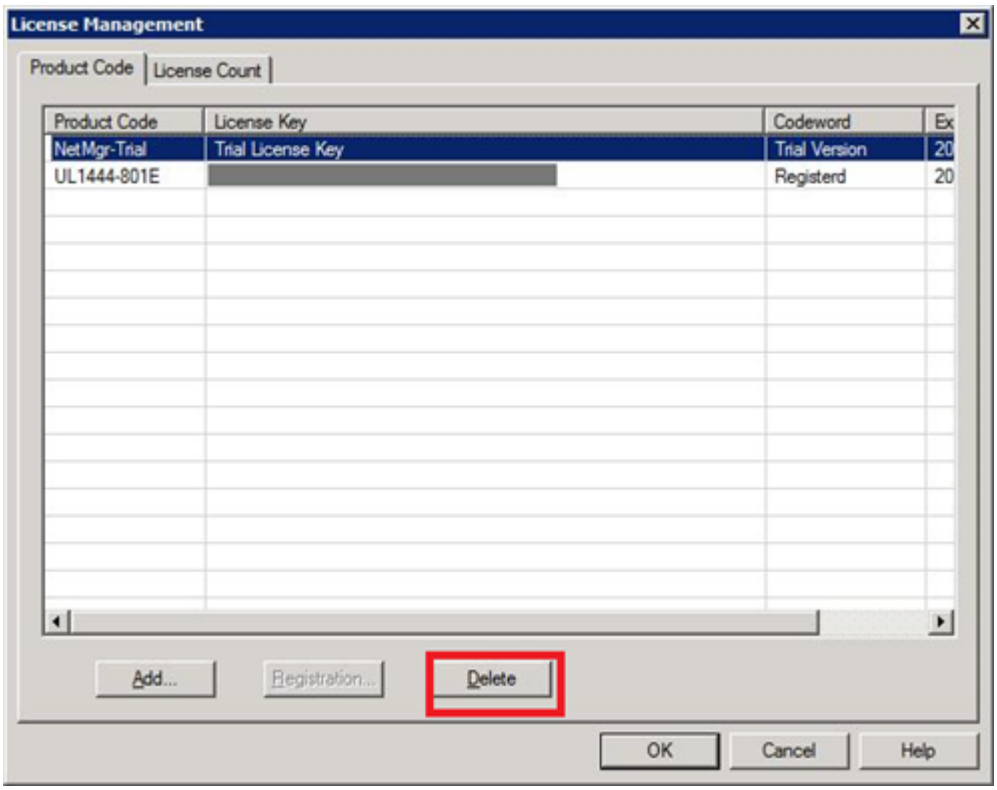

Figure 8-7 License Management dialog box

e. In the confirmation dialog box, click **OK** .

To delete licenses on the standby host, you need to switch from the active host to standby host. This completes the activation of the license.

Chapter 9. Uninstallation Procedure

Contents

9.1 Uninstallation Procedure Overview

This section describes a flow of the Network Manager uninstallation.

"Table 9-1 The flow of uninstallation (page 50)" shows the uninstallation flow when using internal databases. "Table 9-2 The flow of uninstallation (when using the external databases) (page 50)" shows the uninstallation flow when using external databases.

In the uninstallation of the manager function, [active] indicates the process at the active host, and [active / standby] indicates the process at both the active host and standby host.

Table 9-1 The flow of uninstallation

No	Operation	Description
1	Confirm precautions	"Confirm precautions (page 50)" Confirm the precautions of uninstallation.
2	Uninstall the manager function	[active / standby] "Uninstall the manager function (page 50)" Uninstall Network Manager manager function in both the active host and standby host.
3	Uninstall the monitoring terminal function	"install the monitoring terminal function (page 55)" Uninstall Network Manager monitoring terminal function.

Table 9-2 The flow of uninstallation (when using the external databases)

No	Operation	Description
1	Confirm precautions	"Confirm precautions (page 50)" Confirm the precautions of uninstallation.
2	Uninstall the manager function	[active] "A.4 Uninstalling the Databases (page 102)" Delete the databases used in Network Manager from the active host.
		[active / standby] "Uninstall the manager function (page 50)" Uninstall Network Manager manager function in both the active host and standby host.
3	Uninstall the monitoring terminal function	"Uninstall the monitoring terminal function (page 55)" Uninstall Network Manager monitoring terminal function.

9.2 Precautions of Uninstallation

Confirm the following precautions before starting the uninstallation.

1. Execute the uninstallation as an Administrator.
2. As a work area for uninstallation, 200 MB free space is required in the folder specified by the environmental valuables *%TMP%* or *%TEMP%*. Lack of disk free space will cause the failure in uninstallation. 200 MB or more free space is required in the system drive as a work area.

9.3 Manager Function Uninstallation

This section describes how to uninstall the manager function.

Uninstall Network Manager manager function in both the active host and standby host.

Caution

When using external databases, you must perform "A.4 Uninstalling the Databases (page 102)" before the manager function uninstallation.

1. Stop Network Manager services

   Stop any of the following Network Manager services.

   - NvPRO Performance Manager
   - NvPRO Topology Adapter
   - NvPRO ResourceManagerAPI Service
   - MasterScope UMF Operations Manager_*n* *1
   - NvPRO Base Manager
   - FTBase service
   - NvPRO Performance Database
   - Wfdb_wfdb*n* *1 *2
   - Wfdb_nvalertdb*n* *1 *2
   - Wfdb_nvsflowdb*n* *1 *2

   How to stop services:

   a. Open the Control Panel window and search "Administrative Tools",

   b. In the Administrative Tools window, open the **Services**.

   c. Select the services to stop from the Service window and click **Stop Service**.

   ### Caution

   a. If implementing the performance management by sFlow, confirm whether there is no NvPROSFlowCmd.exe process after above Network Manager services are stopped. If the process exists, perform the uninstallation after the process is finished.

      - How to confirm NvPROSFlowCmd.exe process:

        Press Ctrl + Shift + Esc keys at the same time to start Windows Task Manager. Select the **Process** tab and check if `NvPROSFlowCmd.exe` exists in **Image Name** column.

   b. If registering Network Provisioning function license, confirm whether there is no cimserver.exe process after above Network Manager services are stopped. If the process exists, perform the uninstallation after terminating the process.

      - How to confirm cimserver.exe process:

        Press Ctrl + Shift + Esc keys at the same time to start Windows Task Manager. Select the **Process** tab and check if `cimserver.exe` exists in **Image Name** column.

2. Start the installer

   Double-click `\NvPRO\Windows\Setup.exe` on the DVD-ROM drive.

   ### Tip

   To install using MasterScope Media, operate with the following path.

*1 *n* is a service number larger than 1.

*2 These services do not exist when using external databases.

Path of the installer: `\Windows\Setup.exe`

If the dialog box is displayed which says "the initialization failed", refer to the troubleshooting "12.1 Failed to Start the Installer (page 69)" and uninstall again.

3. Start uninstallation

   When the Welcome screen is displayed,**Uninstall** and click **Next**.

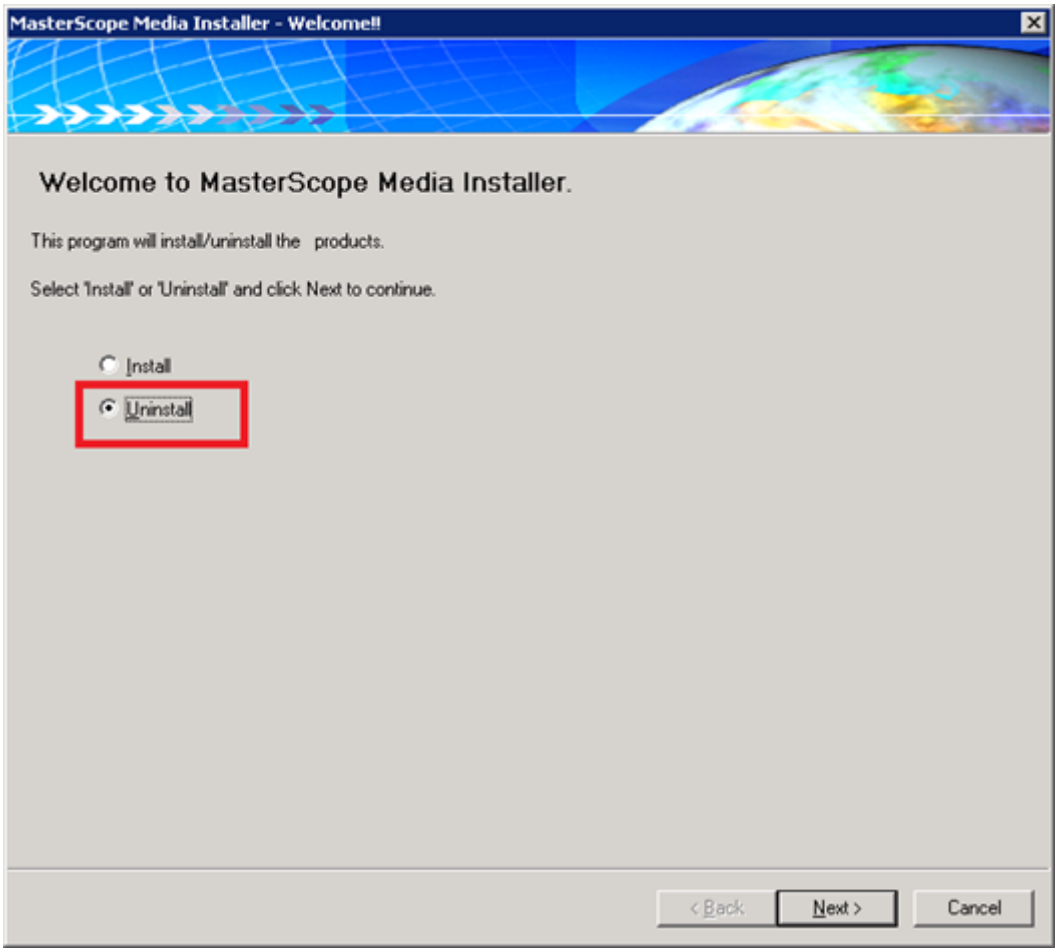

Figure 9-1 Welcome screen

4. Select the products to uninstall

   The installed products are listed . Select the "MasterScope Network Manager" under the Manager tree to uninstall and click **Next**.

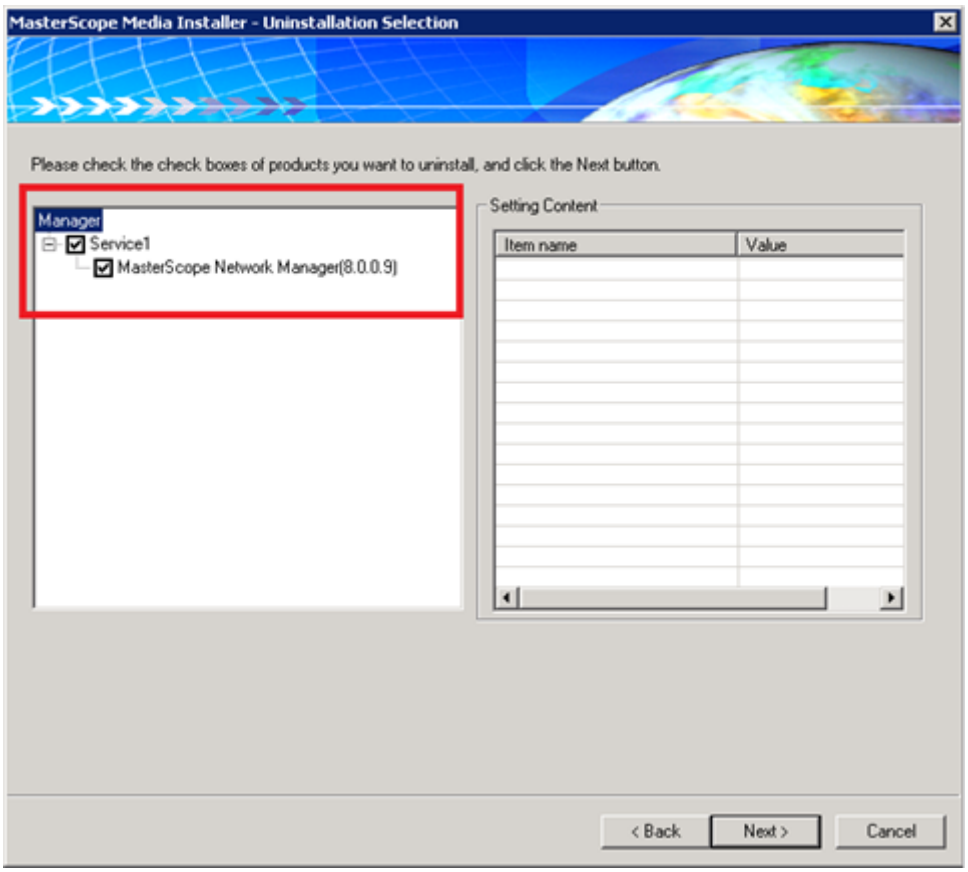

Figure 9-2 Selection screen of the products to uninstall

5. Confirm the products to be uninstalled

   The uninstallation confirmation screen is displayed. Verify the list and click **Start** to start uninstallation.

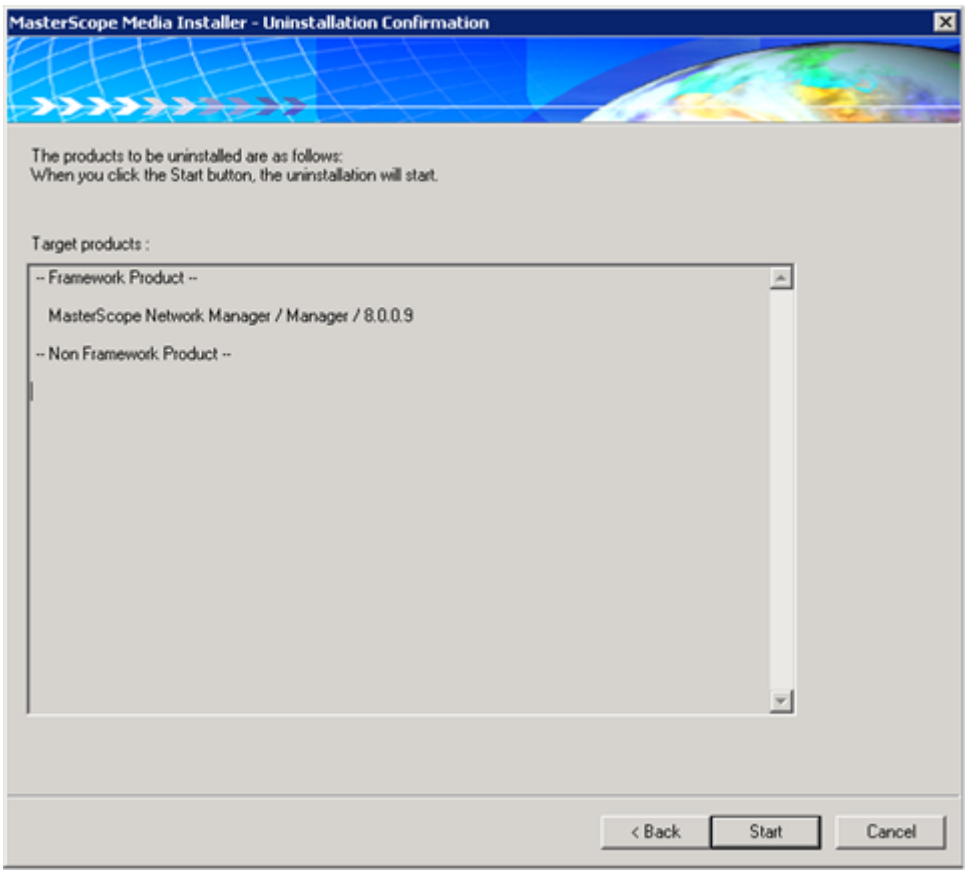

Figure 9-3 Uninstallation confirmation screen

Caution

You cannot cancel once the uninstallation **Start**.

6. Confirm the completion of uninstallation

   When the uninstallation completes, the Finish screen is displayed . Confirm that Failed is 0 and click **Finish** to close the window.

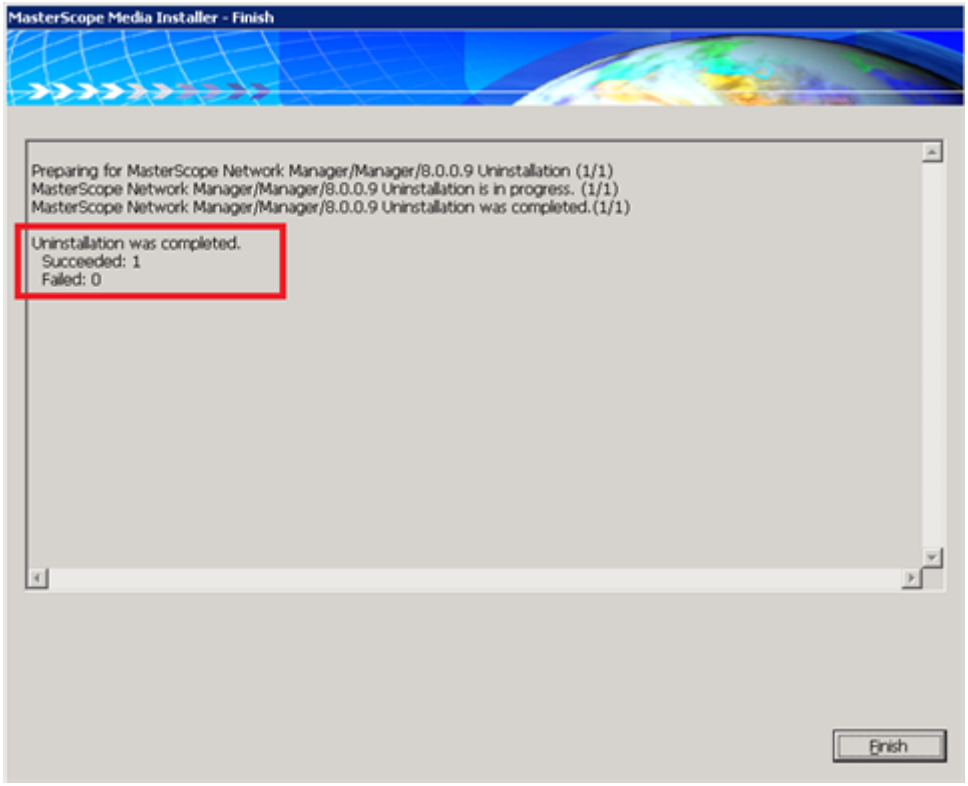

Figure 9-4 Uninstallation finish screen

If Failed is not 0, refer to the troubleshooting "12.2 Failed to Install or Uninstall (page 69)" to solve the problem and uninstall the manager function again.

7. Delete Network Manager shared data files

   Shared data files installed on the shared disk (data directory) are not uninstalled automatically. Delete these data files on the shared disk by hand.

   Caution

   If other products are still installed in the service where Network Manager was installed, you must not delete entire the shared data directory. If all files in the shared data directory are deleted, other products do not work correctly. In this case, delete "Manager\sg\NvPRO" directory in the shared data directory.

This completes the uninstallation of the manager function. Next, proceed to "9.4 Monitoring Terminal Function Uninstallation (page 55)".

9.4 Monitoring Terminal Function Uninstallation

This section describes how to uninstall the monitoring terminal function.

1. Start the installer

   Double-click `\NvPRO\Windows\Setup.exe` on the DVD-ROM drive.

   Tip

   To install using MasterScope Media, operate with the following path.

   Path of the installer: `\Windows\Setup.exe`

If the dialog box is displayed which says "the initialization failed", refer to the troubleshooting "12.1 Failed to Start the Installer (page 69)" and uninstall again.

2. Start uninstallation

   When the Welcome screen is displayed, select **Uninstall** and click **Next**.

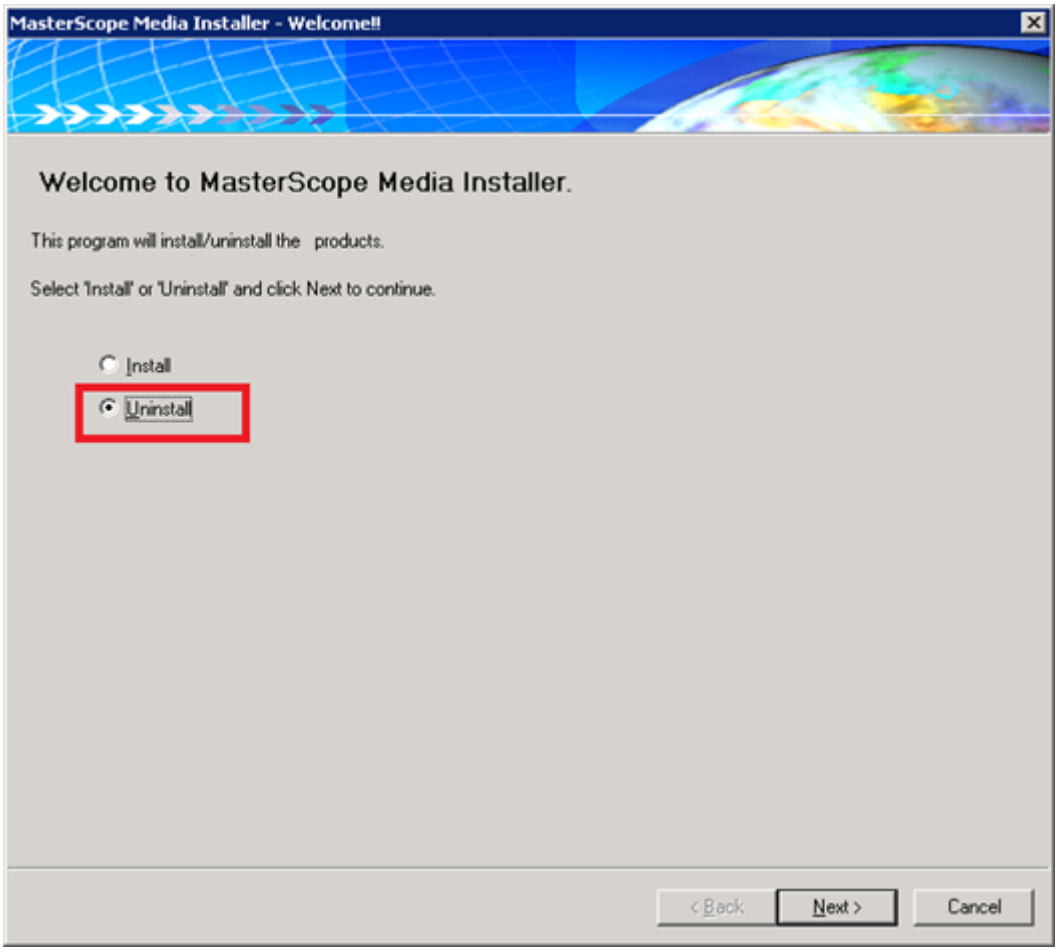

Figure 9-5 Welcome screen

3. Select the products to be uninstall

   The installed products are listed. Select the "MasterScope Network Manager" under the View tree to uninstall and click **Next**.

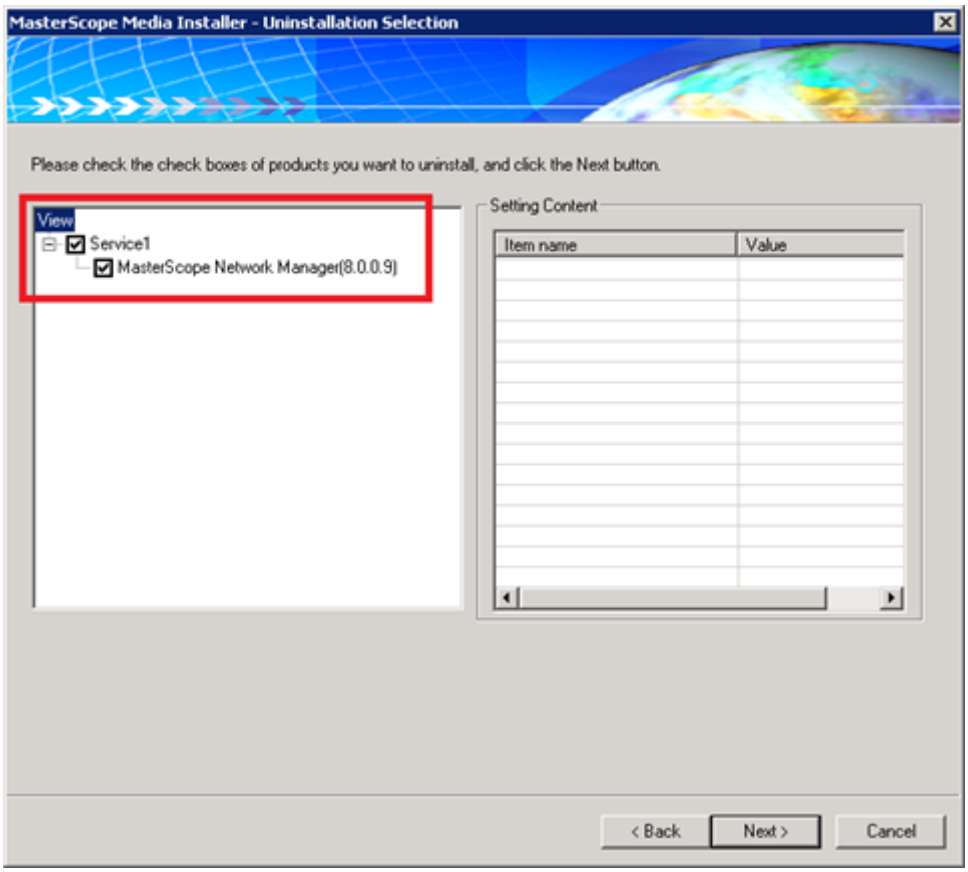

Figure 9-6 Selection screen of the products to uninstall

4. Confirm the products to be uninstall

   The uninstallation confirmation screen is displayed. Verify the list and click **Start** to start uninstallation.

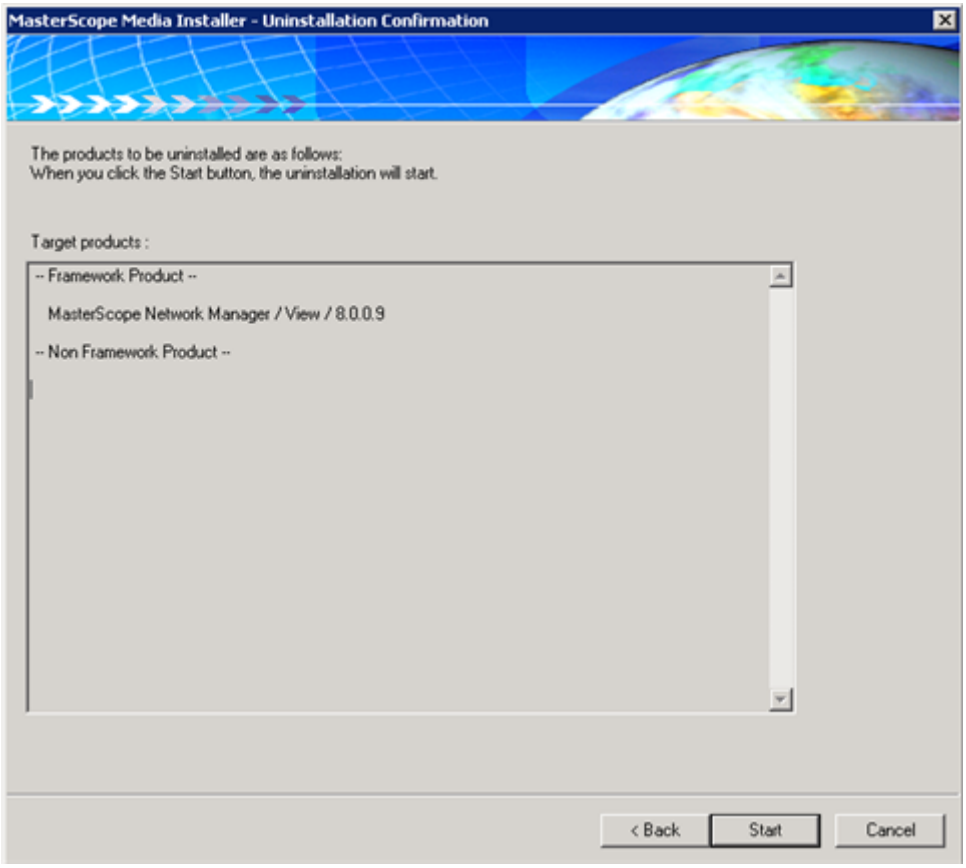

Figure 9-7 Uninstall confirmation screen

Caution

You cannot cancel once the uninstallation **Start**.

5. Confirm the completion of uninstallation

   When the uninstallation completes, the Finish screen is displayed. Confirm that Failed is 0 and click **Finish** to close the window.

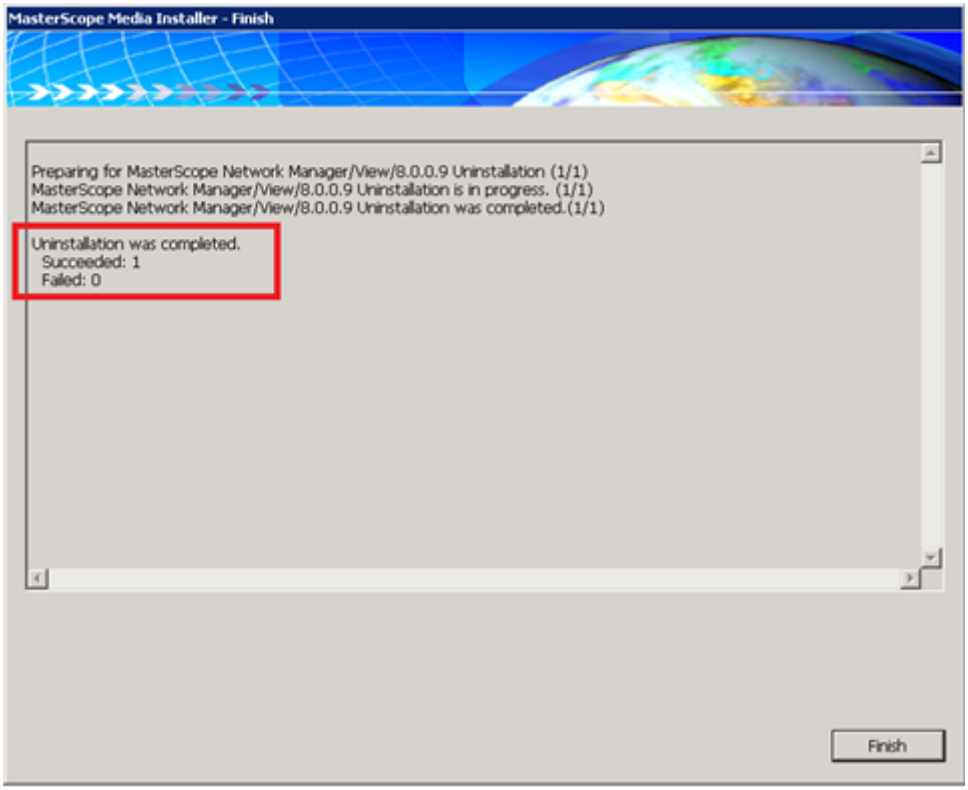

Figure 9-8 Uninstallation finish screen

If Failed is not 0, refer to the troubleshooting "12.2 Failed to Install or Uninstall (page 69)" to solve the problem and uninstall the manager function again. If multiple monitoring terminal functions have been installed to multiple terminals, perform the uninstallation procedure explained in this section at all the terminals.

This completes the uninstallation of the monitoring terminal function.

Chapter 10. Backup and Restore

This chapter describes how to backup all the configuration information, alert information, and all other data of the Network Manager and restore such data.

Contents

Caution

1. Restore the backup data on the same environment (same Network Manager version, same installation path, same hostname, and same IP address) where the backup copy was made. It is not compatible among the different environment.
2. When using the external databases, restore the database on the database software which is the same version and has the same installation path as the database software where the backup copy was made. Restoring may not be performed properly in the different environment.
3. Execute the procedures as a member of Administrators group.

10.1 List of Data to be Backed Up

The data to be backed up on the active host is shown in "Table 10-1 List of data to be backed up(active host) (page 61)". The data to be backed up on the standby host is shown in "Table 10-2 List of data to be backed up (standby host) (page 61)".

Table 10-1 List of data to be backed up(active host)

Data to be Backed Up	Details
Network Manager setting files	*%NVP_INSTALL_PATH%*\Manager\sg directory
Network Manager shared data files	*%NVP_SHARE_PATH%*\Manager\sg directory
Database data (Only when using the external database)	• Configuration management database (CMDB) • Alert management database • sFlow database (When implementing the performance management by sFlow.)

Table 10-2 List of data to be backed up (standby host)

Data to be Backed Up	Details
Network Manager setting files	*%NVP_INSTALL_PATH%*\Manager\sg directory

10.2 Backup Procedure

On the manager server, perform the backup procedure by following the steps listed below.

1. Stop Network Manager services[active]

   Stop the following Network Manager services below.

   If service monitoring is performed, stop the monitoring until the backup is finished.

   - NvPRO Performance Manager
   - NvPRO Topology Adapter
   - NvPRO ResourceManagerAPI Service
   - MasterScope UMF Operations Manager_*n* *1
   - NvPRO Base Manager
   - FTBase service
   - NvPRO Performance Database

*1 *n* is a service number larger than 1.

- Wfdb_wfdb*n* *1
- Wfdb_nvalertdb*n* *1 *2
- Wfdb_nvsflowdb*n* *1 *2

Stopping the services manually:

a. Open the Control Panel window and search "Administrative Tools".

b. In the Administrative Tools window, open the **Services**.

c. Select the services to stop from the Service window and click **Stop Service**.

Caution

If implementing the performance management by sFlow, confirm whether there is no NvPROSFlowCmd.exe process after above Network Manager services are stopped. If the process exists, perform the backup after the process is finished.

- How to confirm NvPROSFlowCmd.exe process:

  Press Ctrl + Shift + Esc keys at the same time to start Windows Task Manager. Select the **Process** tab and check if `NvPROSFlowCmd.exe` exists in **Image Name** column.

2. Back up the data files [active / standby]

Back up the data files shown in "Table 10-3 List of the data to be backed up (page 62)" on both the active host and standby host, respectively .

Table 10-3 List of the data to be backed up

Data File	Details
Network Manager setting files	*%NVP_INSTALL_PATH%*\Manager\sg directory

In addition, back up the shared data files shown in "Table 10-4 List of the data on the shared disk to be backed up (page 62)" on the active host connected to the shared disk.

Table 10-4 List of the data on the shared disk to be backed up

Data File	Details
Network Managershared data files	*%NVP_SHARE_PATH%*\Manager\sg directory

3. Back up the database data [active]

When using external databases, perform "A.5.1 Backup procedure (page 105)" to backup the database data on the active host.

Caution

When using external databases, you must backup the database data at this timing. The database backup, taken at the different time from "Table 10-3 List of the data to be backed up (page 62)" and "Table 10-4 List of the data on the shared disk to be backed up (page 62)" data, cannot be used for restoring.

4. Start Network Manager services [active]

Start the Network Manager services which have been stopped on the active host. The service monitoring can be resumed here if it has been stopped.

- Wfdb_wfdb*n* *1 *2

*2 These services do not exist when using external databases.

- Wfdb_nvalertdb*n* *1 *2
- Wfdb_nvsflowdb*n* *1 *2
- NvPRO Performance Database
- FTBase service
- NvPRO Base Manager
- MasterScope UMF Operations Manager_*n* *1
- NvPRO ResourceManagerAPI Service
- NvPRO Topology Adapter
- NvPRO Performance Manager

Starting the services manually:

a. Open the Control Panel window and search "Administrative Tools".

b. In the Administrative Tools window, open the **Services**.

c. Select the services to start from the service list on Services window and click **Start Service**.

This completes the backup procedure.

10.3 Restore Procedure

Perform the backup procedure by following the steps listed below to restore the data which is backed up in "10.2 Backup Procedure (page 61)".

1. Reinstall Network Manager[active / standby]

   Restore the backup data on the Network Manager in the initial condition. Delete the databases and uninstall the manager function of Network Manager according to the steps in "Chapter 9. Uninstallation Procedure (page 49)". Reinstall it according to "2.1 New Setup (page 6)".

   Note

   You must reinstall the Network Manager on a server with the same host name and IP address as the server where the backup copy was made.

2. Stop Network Manager services [active]

   Stop all the Network Manager services below.

   If service monitoring is performed, stop the monitoring until the restore is finished.

   - NvPRO Performance Manager
   - NvPRO Topology Adapter
   - NvPRO ResourceManagerAPI Service
   - MasterScope UMF Operations Manager_*n* *3
   - NvPRO Base Manager
   - FTBase service
   - NvPRO Performance Database

*3 *n* is a service number larger than 1.

- Wfdb_wfdb*n* *3 *4
- Wfdb_nvalertdb*n* *3 *4
- Wfdb_nvsflowdb*n* *3 *4

Stopping the services manually:

a. Open the Control Panel window and search "Administrative Tools".

b. In the Administrative Tools window, open the **Services**.

c. Select the services to stop from the Service window and click **Stop Service**.

3. Restore the data files [active / standby]

In both of the active host and standby host respectively, copy the files and directories shown in "Table 10-5 Overwriting data files (page 64)" from the backup data to overwrite the same files and directories.

Table 10-5 Overwriting data files

Data File	Overwriting Destination
Network Manager setting files	*%NVP_INSTALL_PATH%*\Manager\sg directory

In addition, copy the shared data files shown in "Table 10-6 Overwriting shared data files (in the data directory) (page 64)" from the backup data on the active host connected to the shared disk.

Table 10-6 Overwriting shared data files (in the data directory)

Data File	Overwriting Destination
Network Manager shared data files	*%NVP_SHARE_PATH%*\Manager\sg directory

4. Restore the databases [active / standby]

When using external databases, perform "A.5.2 Restore procedure (page 107)" to restore the database data.

Caution

When using external databases, you must restore the database data at this timing. If you do not, Network Manager will not work correctly.

5. Start Network Manager services

Start all the Network Manager services

- Wfdb_wfdb*n* *3 *4
- Wfdb_nvalertdb*n* *3 *4
- Wfdb_nvsflowdb*n* *3 *4
- NvPRO Performance Database
- FTBase service
- NvPRO Base Manager
- MasterScope UMF Operations Manager_*n* *3
- NvPRO ResourceManagerAPI Service

*4 These services do not exist when using external databases.

- NvPRO Topology Adapter
- NvPRO Performance Manager

Starting the services manually:

a. Open the Control Panel window and search "Administrative Tools".

b. In the Administrative Tools window, open the **Services**.

c. Select the services to stop from the Service window and click **Start Service**.

This completes the restore procedure.

Chapter 11. Limitations

Contents

11.1 Limitations when Using with Other Products

- Coexisting a product that has SNMP trap reception function

  Network Manager cannot coexist with a product that has SNMP trap reception function due to port number confliction (162/UDP).

  An application which uses the Windows SNMP Trap Service (example: Microsoft Systems Management Server) can be made to coexist with Network Manager. Refer to the MasterScope Network Manager User's Manual "Using the Windows SNMP Trap service" for how to change the software to use the Windows SNMP Trap Service.

  Caution

  1. NEC ESMPRO Manager has an SNMP trap reception function. However, this software can also use Windows SNMP Trap Service. To make Network Manager coexist with such an application, change both of software to use the Window SNMP Trap Service. Refer to the NEC ESMPRO Manager manual for how to change this software to use the Windows SNMP Trap Service.
  2. When using Windows SNMP Trap Service, SNMPv3 trap cannot be received because Windows SNMP Trap Service does not support SNMPv3 protocol.

- Coexisting a product that has SYSLOG reception function

  When Network Manager coexists with a product that has SYSLOG reception function, the port number of SYSLOG (514/UDP) will conflict.

  Uninstall the product that has SYSLOG reception function, or change the SYSLOG reception port number in Network Manager.

  Refer to the MasterScope Network Manager User's Manual "Sharing the SYSLOG port with other software" for how to change the SYSLOG reception port in Network Manager.

- Coexisting a product that has conflicting network ports

  Network Manager cannot coexist with a product that has conflicting network ports, except SNMP trap (162/UDP) and SYSLOG (514/UDP). For the list of ports used by Network Manager, refer to "Table 6-1 List of network ports used in Network Manager (page 33)".

11.2 Limitation about the Language Setting

If Language for non-Unicode programs (system locale) is set to Japanese, Network Manager does not work correctly.

Select the appropriate language other than Japanese in Language for non-Unicode programs. The setting of Language for non-Unicode programs can be found in the following place.

- Windows Server 2008 / Windows Server 2008 R2 / Windows 7 :

  Control Panel > **Regional and Language Options** > **Administrative** tab

- Windows Server 2016 / Windows Server 2012 / Windows Server 2012 R2 / Windows 8.1:

  Control Panel > **Clock, Language, and Region** > **Administrative** tab

Chapter 12. Troubleshooting

The followings are solutions for the errors occurred during setup. If an error occurs during setup, read this chapter and solve the problems.

Contents

12.1 Failed to Start the Installer

When starting the installer and the error dialog box shown in Figure is displayed, perform the solution shown in Table according to the code number displayed on the error dialog box.

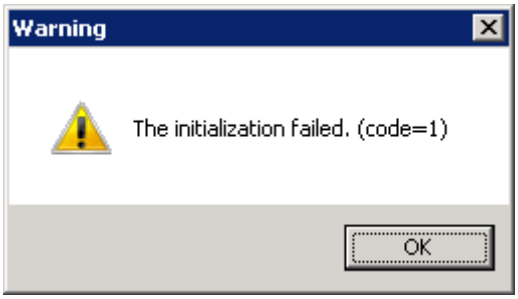

Figure 12-1 Error dialog box

Table 12-1 Solutions to error codes

code	Description	Cause and Solution
1	Failed to create or delete the temporary folder used by the installer.	The installer uses the temporary directory specified with the environment variable *%TMP%* or *%TEMP%*. Confirm a state of the temporary directory specified with the environmental variable %TMP% or %TEMP%:
10	Failed to allocate memory.	Insufficient system memory. Check the available memory, and whether there is a program consuming a considerable amount of memory or not.
14 16	Installation media read error.	Failed to read the configuration file form the installation media. Confirm the installation media is correct and not broken.
15	Other initializing errors.	There is an inconsistency in the MasterScope product installation information. Confirm that the system files of MasterScope products were not moved or removed by mistake.

12.2 Failed to Install or Uninstall

If an error is listed when the installation or uninstallation of Network Manager is completed, perform the solution shown in "Solutions when the installation or uninstallation fails" according to the code.

Table 12-2 Solutions when the installation or uninstallation fails

code	Description	Cause and Solution
51	No administrative right	The user dose not have the administrative right. Execute the installer as an Administrator.
52	Running two or more installers	Two or more instances of the installer are running simultaneously. Confirm that the other installer is not running.
55	Access error to the temporary directory	Cannot access to the temporary directory. Confirm that there is the directory specified with the environmental variable *%TMP%* or *%TEMP%* and is writable.

code	Description	Cause and Solution
56	Access error to the installation destination directory	Cannot access to the installation destination directory. Confirm the installation destination directory is writable.
57	Failed to expand files	Failed to expand files. Confirm the directory specified with the environmental variable *%TMP%* or *%TEMP%* has enough space.
59	Product installation path is incorrect	The installation destination path is incorrect. Confirm the right directory is specified.
61	Older version error	The newer version of the product has been installed. Confirm the installation status of the product.
63	Service stop error	Failed to stop the services. Execute after the manager services are stopped. -> Refer to the solution details 1.
65	Failed to copy files to installation directory (file busy)	The installation destination directory is in busy state. Execute after all the manager services and the monitoring terminals are stopped. -> Refer to the solution details 1 and 2.
66	Failed to copy files to temporary directory (insufficient disk space)	Insufficient temporary directory space. Insufficient temporary directory space. Confirm the directory specified with the environmental variable *%TMP%* or *%TEMP%* has enough space.
67	Failed to copy files to installation directory (insufficient disk space)	Insufficient space of the installation destination directory. Confirm the installation destination directory has enough space.
68	Failed to copy files to temporary directory	Insufficient temporary directory space, or cannot access to this directory. Confirm that the directory specified with the environmental variable *%TMP%* or *%TEMP%* has enough space and is writable.
69	Failed to copy files to installation directory	Insufficient space of the installation destination directory, or cannot access to this directory. Confirm that the installation destination directory has enough space and is writable.
Others	Unknown error	An unknown error has occurred. -> Refer to the solution details 3. If the problem does not solve, write down the error code displayed and contact our support center.

solution details 1

The Network Manager services below may not be stopped. Confirm all the Network Manager services are stopped.

- NvPRO Performance Manager
- NvPRO Topology Adapter
- NvPRO ResourceManagerAPI Service
- MasterScope UMF Operations Manager_*n* *1

*1 *n* is a service number larger than 1.

- NvPRO Base Manager
- FTBase service
- NvPRO Performance Database
- Wfdb_wfdb*n* *1 *2
- Wfdb_nvalertdb*n* *1 *2
- Wfdb_nvsflowdb*n* *1 *2

Stopping the service:

1. Open the Control Panel window and search "Administrative Tools".
2. In the Administrative Tools window, open the **Services**.
3. Select the services to stop from the Service window and click **Stop Service**.

solution details 2

The monitoring terminal function may not stop properly. Confirm the monitoring terminal process SysMonSvc.exe is stopped.

- Checking and stopping the process:

  Press Ctrl + Shift + Esc keys at the same time to start Windows Task Manager. Select the **Process** tab and check if `SysMonSvc.exe` exists in **Image Name**. Select the SysMonSvc.exe row and click **End Process** button if exists.

solution details 3

At the manager function installation, if all the following conditions are met, the installation process will fail or not complete even waiting 30 minutes or more.

- Perform installation with internal databases.
- The network ports used by internal databases are already used by other applications.

When such a problem occurs, check Manager internal communication in "Table 6-1 List of network ports used in Network Manager (page 33)" and confirm whether the network ports for internal databases are not used by other applications. If these network ports have been used, perform the following steps and install again.

- Stop the applications that use these network ports.
- If there is WfdbDBInstall.exe process, stop it forcibly.
  - Checking and stopping the process:

    Press Ctrl + Shift + Esc keys at the same time to start Windows Task Manager. Select the **Process** tab and check if `SysMonSvc.exe` exists in **Image Name**. Select the SysMonSvc.exe row and click **End Process** button if exists.

12.3 Failed to Start Network Manager

12.3.1 Failed to start the manager function

*2 These services do not exist when using external databases.

When the manager function services failed to start, check the following items.

1. There is a possibility that the services cannot be started because it takes time to start the database service and connect database due to the update status of the database and the server load. Wait for about 5 minutes after the database service is started, and then verify whether the service can be started again.

When using external databases, check the following items additionally.

1. Check if all the database settings have been configured ("A.2 Configuring the Databases (page 78)", "A.3 Clustering the Databases (page 86)")
   - Are CMDB settings configured?
   - Are AlertDB settings configured?
   - Are sFlowDB settings configured if using sFlow performance management?
   - Are there any errors when checking the database setting contents?
   - Is the setting file of CMDB copied to the standby host?
   - Is the setting file of AlertDB copied to the standby host?
   - Is the setting file of sFlowDB is copied to the shared disk?
2. Check the setting configuration when installing the SQL Server ("A.1 Installing SQL Server (page 74)") and after the installation.
   - Is Mixed Mode selected in Authentication Mode?
   - Are TCP/IP and Named Pipes enabled in the protocol settings?
   - Is SQL Server Browser service running?

12.3.2 Failed to start the monitoring terminal function

When the monitoring terminal function failed to start, or errors occurred after starting, check the following items.

1. If the Login window is not displayed and an error dialog box is displayed:

   When an error dialog box is displayed as shown in Figure, the connection between the monitoring terminal and the manager may not be established properly.

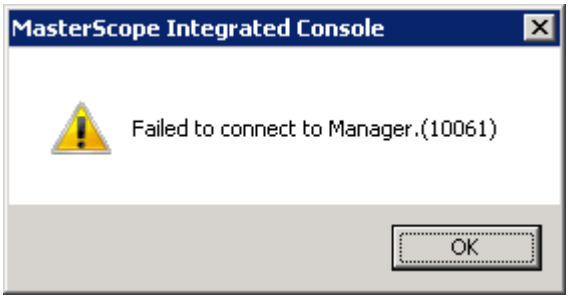

Figure 12-2 Error dialog when starting the monitoring terminal

   Check the following items.

   - Is the Manager hostname ("3.2.2 Monitoring terminal function setup parameters (page 16)") specified at the installation of the monitoring terminal function correct? Connection is made by performing a name resolution based on this hostname. Check the environment including whether the name resolution is performed properly.

- Is the firewall configured properly? ("Chapter 6. Configuring the Firewall (page 33)") Confirm whether the connection is blocked by the firewall.
- Are the Network Manager services running properly? Confirm the Network Manager services start properly again according to "7.1 Starting the Manager Function (page 37)".

2. If an error dialog box is displayed when the monitoring terminal window starts:

   When the error dialog box, which indicates that the connection to the NvPRO Base Manager service fails, is displayed, the connection between the monitoring terminal and NvPRO Base Manager service (Network Manager base service) may not be made properly.

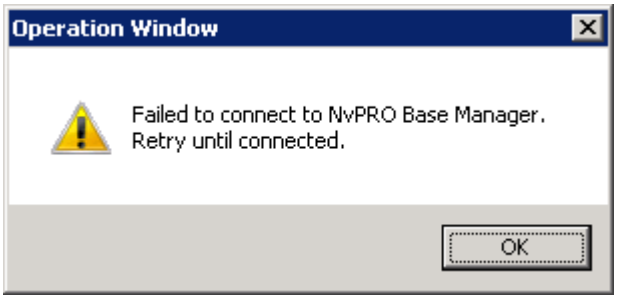

Figure 12-3 Connection to the service fails

Check the following items.

- Are the Network Manager services running properly? Confirm the Network Manager services start properly again according to "7.1 Starting the Manager Function (page 37)".
- Is the firewall configured properly? ("Chapter 6. Configuring the Firewall (page 33)") Confirm whether the connection between the Network Manager services and the monitoring terminal is blocked by the firewall.
- Do you log on to Windows as an Administrator? The user who is not an Administrator might start the monitoring terminal window. Check whether the user has the administrative right.

Appendix A. Using External Database (SQL Server)

Network Manager can use the external databases (SQL Server) to store various information such as configurations, failure events, and performance data (sFlow).

The following database software is available:

- Microsoft SQL Server 2014
- Microsoft SQL Server 2012

When using external databases, set up the databases along with the manager function according to this appendix.

Caution

Some database software requires other software to be able to run. Check the database software manual, and obtain and install other software if needed.

A.1 Installing SQL Server

This section describes the settings of Microsoft SQL Server installation required for Network Manager. Install the SQL Server instance according to this section.

For the installation of the Microsoft SQL Server, refer to the documentation supplied with the Microsoft SQL Server.

Caution

When the performance management by sFlow is implemented, create the database instance which is different from the instance used by the configuration management database (CMDB) and the alert management database.

Tip

Install Microsoft SQL Server 2014 by following the steps below.

1. Confirm the software required for SQL Server

   Refer to the manuals of Microsoft SQL Server to confirm whether the software required for SQL Server is installed. If the required software it not installed, install it in advance.

2. Install SQL Server

   Install Microsoft SQL Server as directed in the documentation supplied with the database software. While installing SQL Server, perform the following settings. Prepare the parameters you decided in "Setup parameters for the databases(SQL Server)" of "3.2.1 Manager function setup parameters (page 13)".

   a. In the screen to specify the instance name, specify instance name prepared.

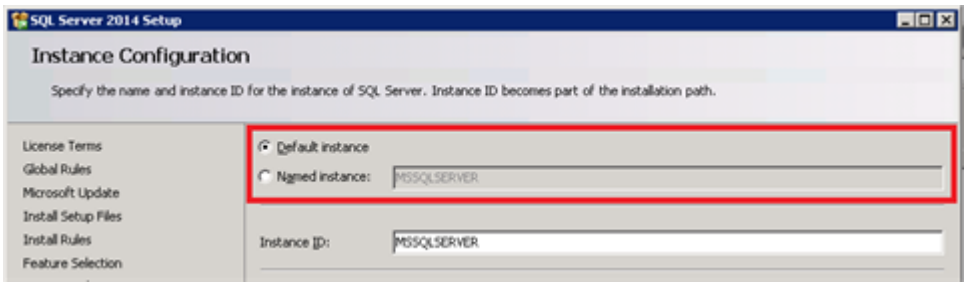

Figure A-1 Instance Configuration

b. Specify the authentication settings as follows.

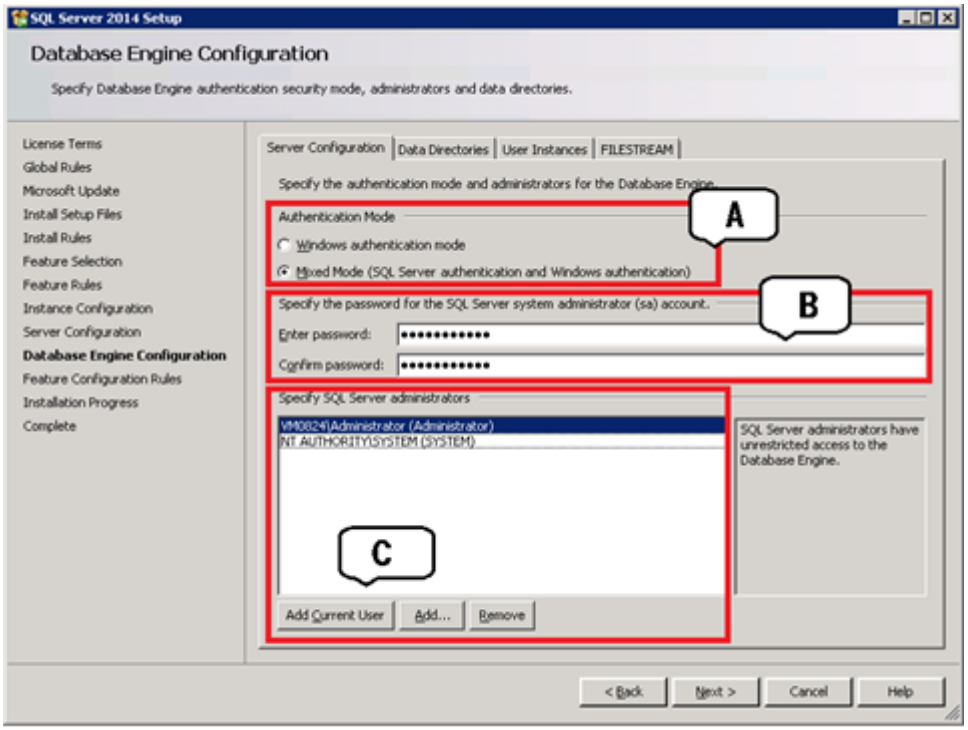

Figure A-2 Authentication mode selection screen

- (A) In the authentication mode selection

  select Mixed Mode (SQL Server authentication and Windows authentication).

- (B) In the screen to specify the password of built-in SQL Server system administrator account (sa logon account)

  Specify the password of built-in 'SQL Server system administrator account (sa logon account)'.

- (C) Specify SQL Server administrator

  Click **Add Current User** in 'Specify SQL Server administrators' to add the user installing SQL Server. Click **Add**, add SYSTEM user.

3. Configure protocol status

   After installation of SQL Server, start SQL Server Configuration Manager from Start menu. Enable the status of network configuration protocols which are used when Network Manager accesses the database.

   - Enable "Named Pipes" protocol

     Enable **Named Pipes** protocol in the installed instance

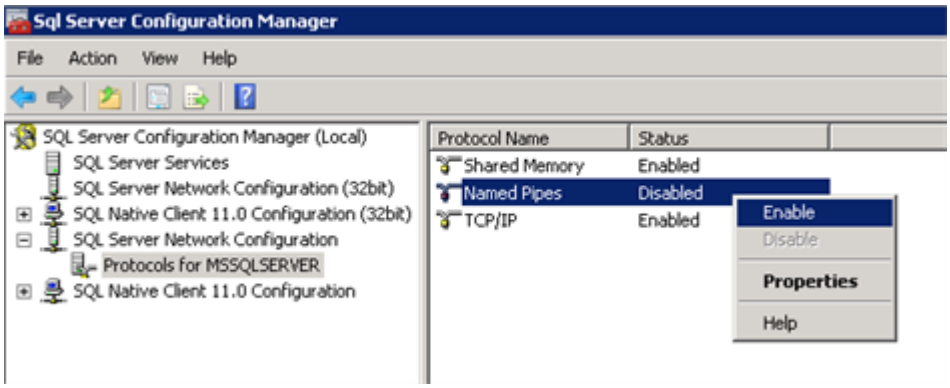

Figure A-3 Enable "Named Pipes" protocol

- Enable "TCP/IP" protocol

  Enable **TCP/IP** protocol in the instlaled instance

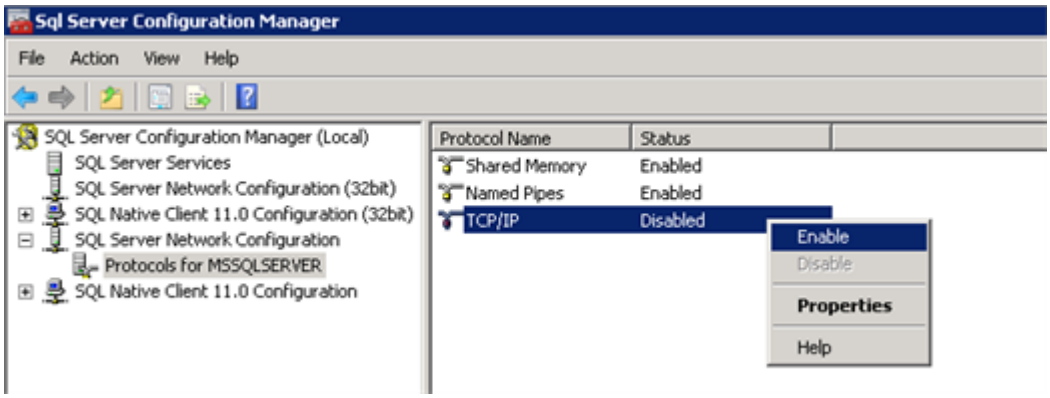

Figure A-4 Enable "TCP/IP" protocol

Caution

After setting, restart the service of the installed instance to enable these settings.

4. Configure SQL Server Browser service to start automatically

   a. Change the **Start Mode** of the SQL Service Blowser service to Automatic.

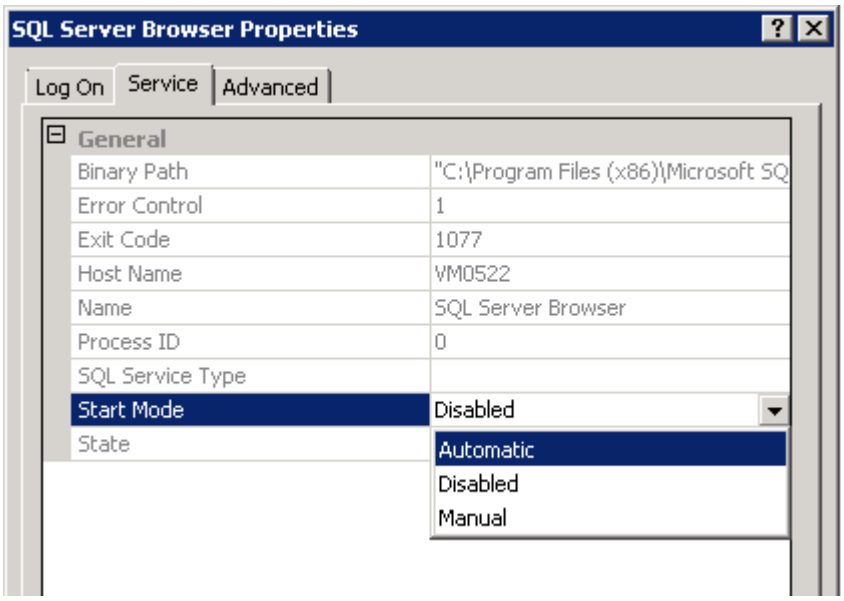

Figure A-5 Change the Start Mode of SQL Server Browser

b. Start the service

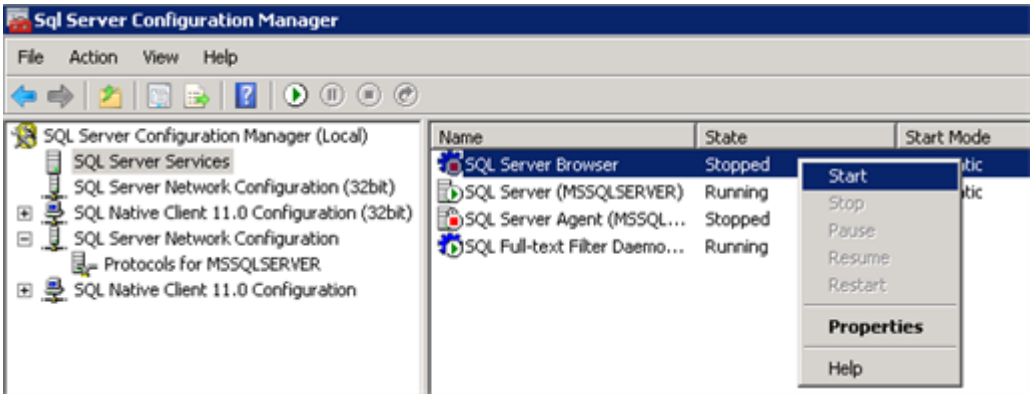

Figure A-6 Start SQL Server Browser service

5. Confirm the osql command

   When creating the database used in Network Manager ("A.2 Configuring the Databases (page 78)", "A.3 Clustering the Databases (page 86)"), the osql command provided by SQL Server is used. Confirm whether the command can be used by the following steps.

   How to confirm osql command:

   Enter the following command in the command prompt and confirm the command reference is displayed.

   ```
   osql -?
   ```

   If the following message is displayed, the osql command is not enabled. Restart OS and confirm whether the osql command can be used again.

   ```
   'osql' is not recognized as an internal or external command,
   operable program or batch file.
   ```

6. Disable the expiration date of the SQL Server system administrator (sa) account.

   In the database instances used in Network Manager, the SQL Server system administrator (sa) account is used during cluster group failover.

If the password of the system administrator account expires, the failover will fail. Disable password expiration check in the SQL authentication mode.

For details of the password expiration in the SQL authentication mode, refer to the Microsoft SQL Server documents.

Example: When using the default instance.

```
> osql -E -S localhost -Q "ALTER LOGIN sa WITH CHECK_EXPIRATION=OFF"
```

This completes installation of the database (SQL Server). Next, proceed to "A.2 Configuring the Databases (page 78)".

A.2 Configuring the Databases

This section describes how to configure the databases used by Network Manager (CMDB, AlertDB, and sFlowDB).

Execute the following steps explained in this section on the active host.

⚠ Caution

The following steps must be executed by a user who has installed SQL Server.

A.2.1 Preparation before database configuration

Before the database configuration, execute the following steps.

1. Stop the Network Manager services

   Stop the following Network Manager services.

   - NvPRO Performance Manager
   - NvPRO Topology Adapter
   - NvPRO ResourceManagerAPI Service
   - MasterScope UMF Operations Manager_*n* *1
   - NvPRO Base Manager
   - FTBase service
   - NvPRO Performance Database

   How to stop services:

   a. Open the Control Panel window and search "Administrative Tools".

   b. In the Administrative Tools window, open the **Services**.

   c. Select the services to stop from the Service window and click **Stop Service**.

2. Start SQL Server

   Confirm that the instance service of SQL Server and SQL Server Browser service used in Network Manager are running.

   a. Open the Control Panel window and search "Administrative Tools".

   b. In the Administrative Tools window, open the **Services**.

*1 *n* is a service number larger than 1.

c. Confirm whether the SQL Server service and SQL Service Browser service are Running in service list on the Services window.

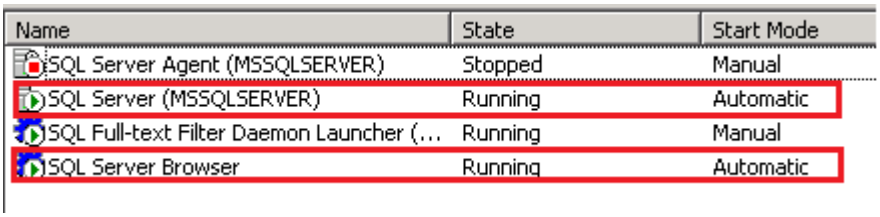

Figure A-7 SQL Server service status confirmation

Caution

When upgrading, it is necessary to execute `ACT.sql` and `ACT2.sql` that have been created in "A. 3.2 Clustering CMDB and AlertDB (page 87)" after SQL Server service starts in order to keep the files of each database attached.If you execute EXPRESSCLUSTER X start script (`start.bat`), `ACT.sql` and `ACT2.sql` will be executed. If you start the service manually, execute `ACT.sql` and `ACT2.sql` manually.

When using sFlow function, execute `SFLOWACT.sql` and `SFLOWACT2.sql` in order to keep the files of each sFlow database attached, like as `ACT.sql` and `ACT2.sql`.

A.2.2 Configuration management database (CMDB) settings

The following is an explanation of how to configure the configuration management database (CMDB).

1. Run the creation script of the configuration management database

   Start the command prompt.

   Change to the *%NVP_INSTALL_PATH%*`\Manager\sql\sqlserver` directory, and execute the configuration management database creation script WfdbCmdbSetup.bat.

   Command syntax:

```
WfdbCmdbSetup.bat <database name> <server name> <instance name>
```

   - As arguments of WfdbCmdbSetup.bat, specify the parameters of the configuration management database prepared in "3.2.1 Manager function setup parameters (page 13)" .
   - When the configuration management database is set with the default value, all arguments can be omitted.
   - Arguments of WfdbCmdbSetup.bat cannot be partially omitted.
   - When the default instance is used, specify "\" (backslash) as the instance name of argument.
   - If an argument contains spaces, use double quotation marks (") to specify it.
   - When upgrading, specify the same arguments that were set in the previous version. You can check arguments that were specified in the previous version in the following files
     - *%NVP_INSTALL_PATH%*\Manager\sg\wfdbmgr\WFDB.INI

```
[SystemSvr]
USE_DATABASE=SQL_SERVER
CMDB_USER=<database name>
CMDB_PASSWD=<database name>@Password
SERVER_NAME=<server name>
DATABASE_DRIVER=SQL Server
SQL_INSTANCE_NAME=<instance name>
                  (omitted if default instance)
DATABASE_NAME=SQL Server
SQL_CERTIFY=SQL
```

Example: When using the default instance.

```
> cd "C:\Program Files (x86)\NEC\UMF\Operations\sql\sqlserver"
> WfdbCmdbSetup.bat wfdb localhost \
```

2. Check the result

After executing WfdbCmdbSetup.bat, the execution logs shown in Table are stored in the execution directory. Make sure that the results are the same as the successful termination results shown in Table.

If an error has occurred, refer to troubleshooting "A.2.6 When failing to configure the databases (page 85)" for solving the problem, and execute WfdbCmdbSetup.bat again.

Table A-1 Execution logs of WfdbCmdbSetup.bat

Log File Name	Result of the Successful Termination
wfdbCreateDB.log	The file size is zero and nothing is stored. Note that when upgrading, the following message is stored. The setting process has no problem. "Database 'wfdb' already exists."
wfdbCreateLogin.log	The file size is zero and nothing is stored. Note that when upgrading, the following message is stored. The setting process has no problem. "The server principal 'wfdb' already exists."
wfdbCreateUser.log	The file size is zero and nothing is stored. Note that when upgrading, the following message is stored. The setting process has no problem. "User, group, or role 'wfdb' already exists in the current database."
wfdbAddRole.log	The file size is zero and nothing is stored.
wfdb_CR_TBL.log	The message indicating the process contents is stored. The following warning message is sometimes stored depending on the environment. The setting process has no problem. "Warning! The maximum key length is 900 bytes." (omit)
wfdb_UP_TBL*nnn*.log *2	The message indicating the process contents is stored. The following warning message is sometimes stored depending on the environment. The setting process has no problem. "Warning! The maximum key length is 900 bytes." (omit)

The log file names shown in Table are the names when the <*database name*> is specified as default (wfdb). If <*database name*> is changed from the default, "wfdb" appears as the database name you have specified.

*2 *n* is a service number larger than 1.

3. Copy the setting file to the standby host

   The settings of the configuration management database (CMDB) are stored in the following file.

   `%NVP_INSTALL_PATH%\Manager\sg\wfdbmgr\WFDB.INI`

   Copy this file in the same directory on the standby host.

4. Copy the setting file for other MasterScope products

   To share the configuration management database among other MasterScope products, copy the setting file of the configuration management database into the installation directory of other products. Copy the following file into the same directory of other products.

   `%NVP_INSTALL_PATH%\Manager\sg\wfdbmgr\WFDB.INI`

5. Change the recovery model of SQL Server database

   As necessary, change the recovery model of SQL Server database. For Network Manager databases, Simple recovery model is recommended in order to avoid compression of the free space on the disk. For details regarding the recovery model of SQL Server database, refer to refer to the manual of Microsoft SQL Server.

   Example: When using the default instance for all parameters and changing to Simple mode.

```
> osql -E -S localhost -Q "ALTER DATABASE wfdb
 SET RECOVERY SIMPLE"
```

This completes the setting of the configuration management database. Next, proceed to "A.2.3 Alert management database settings (page 81)".

A.2.3 Alert management database settings

The following is an explanation of how to configure the alert management database

1. Run the creation script of the alert management database

   Start the command prompt.

   Change to the `%NVP_INSTALL_PATH%\Manager\sql\sqlserver` directory, and execute the alert management database creation script NvPRODBSetup.bat.

   Command syntax:

```
NvPRODBSetup.bat <database name> <server name> <instance name>
```

   - As arguments of `NvPRODBSetup.bat` specify the parameters of the alert management database prepared in "3.2.1 Manager function setup parameters (page 13)".
   - When the alert management database is set with the default value, all arguments can be omitted.
   - Arguments of `NvPRODBSetup.bat` cannot be partially omitted.
   - When the default instance is used, specify "\" (backslash) as the instance name of argument.
   - When upgrading, specify the same arguments that were set in the previous version. You can check arguments that were specified in the previous version in the following files.
     - `%NVP_INSTALL_PATH%\Manager\sg\NvPRO\NvPROBaseMgr.ini`

```
[NVBASE_AlertSvr]
NVBASE_USER=<database name>
NVBASE_PASSWD=<database name>@Password
SERVER_NAME=<server name>
SQL_INSTANCE_NAME=<instance name>(omitted if default instance)
DATABASE_NAME=<database name>
```

Example: When using the default instance.

```
> cd "C:\Program Files (x86)\NEC\UMF\Operations\Manager\sql\sqlserver"
> NvPRODBSetup.bat nvprodb localhost \
```

2. Check the result

After executing NvPRODBSetup.bat, the execution logs shown in Table are stored in the execution directory. Make sure that the results are the same as the successful termination results shown in Table. If an error has occurred, refer to troubleshooting "A.2.6 When failing to configure the databases (page 85)" for solving the problem, and execute NvPRODBSetup.bat again.

Table A-2 Execution logs of NvPRODBSetup.bat

Execution Log File Name	Result of the Successful Termination
nvprodbCreateDB.log	The file size is zero and nothing is stored. This file is not updated when upgrading.
nvprodb_CreateLogin.log	The file size is zero and nothing is stored. This file is not updated when upgrading.
nvprodb_CreateUser.log	The file size is zero and nothing is stored.
nvprodb_AddRole.log	The file size is zero and nothing is stored.
nvprodb_CR_AlertTable.log	The file size is zero and nothing is stored. This file is not updated when upgrading.
nvprodb_CR_AlterTableAddField.log	The file size is zero and nothing is stored.
nvprodb_CR_AlterTableIndex.log	The file size is zero and nothing is stored.
nvprodb_CR_AlterTableIndex2.log	The file size is zero and nothing is stored.

The log file names shown in Table are the names when the <*database name*> is specified as default (nvprodb). <*database name*> is changed from the default, "nvprodb" appears as the database name you have specified.

3. Copy the setting file to the standby host

The settings of the alert management database are stored in the following file.

```
%NVP_INSTALL_PATH%\Manager\sg\NvPRO\NvPROBaseMgr.ini
```

Copy this file in the same directory on the standby host.

4. Change the recovery model of database

As necessary, change the recovery model of SQL Server database.

For Network Manager databases, Simple recovery model is recommended in order to avoid compression of the free space on the disk. For details regarding the recovery model of SQL Server database, refer to refer to the manual of Microsoft SQL Server.

Example: When using the default values for all parameters and changing to Simple mode.

```
> osql -E -S localhost -Q "ALTER DATABASE nvprodb
 SET RECOVERY SIMPLE"
```

This completes the settings of the alert management database.

To implement performance management by using sFlow, proceed to "A.2.4 sFlow database settings (page 83)" If the performance management by using sFlow is not implemented, check whether the database is configured properly in "A.2.5 Confirming the database settings (page 84)".

A.2.4 sFlow database settings

The following is an explanation of how to configure the sFlow database. Only when performance management is implemented by using sFlow, configure the sFlow database by following the below steps.

⚠ Caution

- The sFlow database is placed in the database instance different from the configuration management database and the alert management database. If the database instance for the sFlow database is not created, create (install) the database instance by following "A.1 Installing SQL Server (page 74)".
- When upgrading and sFlow database has been set up in previous version, the following procedures are not needed.

1. Run the creation script of the sFlow database

   Start the command prompt.

   Change to the *%NVP_INSTALL_PATH%*\Manager\sql\sqlserver directory, and execute the sFlow database creation script NvPROSFLOWSetup.bat.

   Command syntax:

   ```
   NvPROSFLOWSetup.bat <database name> <user name>
   <password> <server name> <instance name>
   ```

   - As arguments of NvPROSFLOWSetup.bat, specify the parameters of the sFlow database prepared in Setup parameters for the databases "3.2.1 Manager function setup parameters (page 13)".
   - When the sFlow database is set with the default value, all arguments can be omitted.
   - Arguments of NvPROSFLOWSetup.bat cannot be partially omitted.
   - When the default instance is used, specify "\" (backslash) as the instance name of argument.
   - If an argument contains spaces, use double quotation marks (") to specify it.

   Example: When using the default values for all parameters.

   ```
   > cd "C:\Program Files (x86)\NEC\UMF\Operations\Manager\sql\sqlserver"
   > NvPROSFLOWSetup.bat
   ```

2. Check the result

   After executing NvPROSFLOWSetup.bat, the execution logs shown in Table are stored in the execution directory. Make sure that the results are the same as the successful termination results shown in Table.

   If an error has occurred, refer to troubleshooting "A.2.6 When failing to configure the databases (page 85)" for solving the problem, and execute NvPROSFLOWSetup.bat again.

Table A-3 Execution logs of NvPROSFLOWSetup.bat

Execution Log File Name	Result of the Successful Termination
sflowdbCreateDB.log	The file size is zero and nothing is stored. Note that when upgrading, the following message is stored. The setting process has no problem. "Database 'sflowdb' already exists."
sflowdbCreateLogin.log	The file size is zero and nothing is stored. Note that when upgrading, the following message is stored. The setting process has no problem. "The server principal 'SFLOW' already exists."
sflowdbCreateUser.log	The file size is zero and nothing is stored. Note that when upgrading, the following message is stored. The setting process has no problem. "User, group, or role 'SFLOW' already exists in the current database."
sflowdbAddRole.log	The file size is zero and nothing is stored.
sflowdb_CR_TBL.log	The file size is zero and nothing is stored. Note that when upgrading, the error messages are stored because the database table "NvPRO_flowinfo" already exists. The setting process has no problem.

The log file names shown in Table are the names when the <*database name*> is specified as default (sflowdb). If <*database name*> is changed from the default, "sflowdb" appears as the database name you have specified.

3. Copy the setting file to the shared disk

   Execute `NvPROSFLOWSetup.bat`, the setting contents of the sFlow database are stored in the following file.

   `%NVP_INSTALL_PATH%\Manager\sg\NvPRO\NvPROSFLOWDB.ini`

   Copy this file in the same directory on the standby host.

4. Change the recovery model of database

   As necessary, change the recovery model of SQL Server database. For Network Manager databases, Simple recovery model is recommended in order to avoid compression of the free space on the disk. For details regarding the recovery model of SQL Server database, refer to refer to the manual of Microsoft SQL Server.

   Example: When using the default values for all parameters and changing to Simple mode.

```
> osql -E -S localhost\SFLOW -Q "ALTER DATABASE sflowdb
 SET RECOVERY SIMPLE"
```

This completes the settings of the sFlow database. Next, proceed to "A.2.5 Confirming the database settings (page 84)".

A.2.5 Confirming the database settings

This section describes the procedure to confirm if the settings of the configuration management database and the alert management database are configured properly.

1. Run the database settings confirmation script

Start the command prompt.

Change to the *%NVP_INSTALL_PATH%*\Manager\sql\sqlserver directory, and execute the database settings confirmation script(NvPROChkDBSetup.bat).

Command syntax:

```
NvPROChkDBSetup.bat
```

Example:

```
> cd "C:\Program Files (x86)\NEC\UMF\Operations\Manager\sql\sqlserver"
> NvPROChkDBSetup.bat
```

2. Check the result

The result is shown in the command prompt. Check if the result is the same as the following message.

Message shown when the setting is correct:

```
NvPROChkDBSetup:  [OK]
```

If the error message is shown, check Table to solve the problem.

Table A-4 Error solutions

code	Description	Solution
10	[!] CMDB setting file does not exist. (code=10)	Indicates CMDB might not be configured. Perform the procedures in "A.2.2 Configuration management database (CMDB) settings (page 79)".
20	[!] NetvisorProDB setting file does not exist.(code=20)	Indicates AlertDB might not be configured. Perform the procedures in "A.2.3 Alert management database settings (page 81)".
40	[!] Failed to login to CMDB.(code=40)	Ensure that SQL Server and SQL Server Browser service are running and execute the confirmation script again. If an error occurs again, check the log files when CMDB is created and refer to the troubleshooting "A.2.6 When failing to configure the databases (page 85)", and take necessary measures.
50	[!] Failed to login to NetvisorProDB. (code=50)	Check the log files when AlertDB is created and refer to the troubleshooting "A.2.6 When failing to configure the databases (page 85)", and take necessary measures.
60	[!] NetvisorProDB is not updated. (code=60)	When upgrading, the upgrading of AlertDB is not carried out properly. Follow the procedures in "A.2.3 Alert management database settings (page 81)".

This completes the database configuration.

In the case of new setup, proceed to "A.3 Clustering the Databases (page 86)".

A.2.6 When failing to configure the databases

In each database configuration, if the log files (a file with the .log extension) contain the messages that indicate an error, perform the following solutions according to the message contents.

1. Error message example (1)

```
[SQL Server Native Client 11.0]SQL Server Network Interfaces: Error
Locating Server/Instance Specified [xFFFFFFFF].
[SQL Server Native Client 11.0]Login timeout expired
[SQL Server Native Client 11.0]A network-related or instance-specific
error has occurred while establishing a connection to SQL Server.
Server is not found or not accessible. Check if instance name is
correct and if SQL Server is configured to allow remote connections.
For more information see SQL Server Books Online.
```

- Cause:

  Cannot connect to SQL Server. The following causes may be suspected.

  - The SQL Server service is not running.
  - SQL Server is configured incorrectly.
  - The database configuration script argument is wrong.

- Solution:

  Resolve the cause and retry executing the database configuration script.

  - Start the SQL Server service.
  - Check the SQL Server configurations in "A.1 Installing SQL Server (page 74)"
  - Check the database configuration script arguments and retry.

2. Error message example (2)

```
Message 5170, level 16, status 4, server NVPSERVER, line 1
Cannot create file 'C:\Program Files\Microsoft SQL Server\
MSSQL12.SFLOW\MSSQL\DATA\sflowdb.mdf'
because it already exists.
Change the file path or the file name, and retry the
operation.
Message 1802, level 16, status 4, server NVPSERVER, line 1
CREATE DATABASE failed. Some of the listed files could not
be created. Check for related error.
```

- Causes:

  The database does not exist on SQL Server. However, remains of the physical files of the database still exist. This error occurs when SQL Server was uninstalled and reinstalled without deleting the database ("A.4 Uninstalling the Databases (page 102)").

- Solution:

  Delete the database file and log file shown in the error message using Explorer. Then, configure the database ("A.2 Configuring the Databases (page 78)").

  - Example: database file

    ```
    C:\Program Files (x86)\Microsoft SQL Server\MSSQL12.MSSQLSERVE
    R\MSSQL\DATA\wfdb.mdf
    ```

  - Example: log file

    ```
    C:\Program Files (x86)\Microsoft SQL Server\MSSQL12.MSSQLSERVE
    R\MSSQL\DATA\wfdb_log.ldf
    ```

A.3 Clustering the Databases

This section describes how to configure each database created in "A.2 Configuring the Databases (page 78)" for the cluster environment.

A.3.1 Preparation before clustering the databases

Before configuring the databases for the cluster environment, perform the following process.

1. Stop the Network Manager services[active / standby]

   On both the active host and standby host, make sure that all the following Network Manager services are stopped. If they are running, stop any of the services.

   - NvPRO Performance Manager
   - NvPRO Topology Adapter
   - NvPRO ResourceManagerAPI Service
   - MasterScope UMF Operations Manager_*n* *3
   - NvPRO Base Manager
   - FTBase service
   - NvPRO Performance Database

   How to stop services:

   a. Open the Control Panel window and search "Administrative Tools".

   b. In the Administrative Tools window, open the **Services**.

   c. Select the services to stop from the Service window and click **Stop Service**.

2. Start SQL Server [active / standby]

   Make sure that SQL Server instance and SQL Server Browser service used in Network Manager are running on both the active host and standby host, respectively.

   a. Open the Control Panel window and search "Administrative Tools".

   b. In the Administrative Tools window, open the **Services**.

   c. Ensure that SQL Server services indicating the registered instance and SQL Server Browser have Started in the service list on Services window.

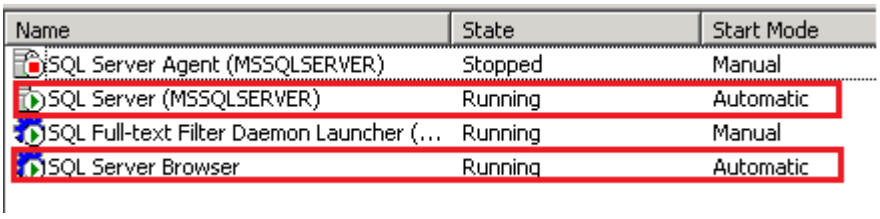

Figure A-8 SQL Server service status confirmation

A.3.2 Clustering CMDB and AlertDB

The following is an explanation of how to configure the configuration management database and the alert management database for the cluster environment.

1. Change Starting Type of SQL Server service [active / standby]

*3 *n* is a service number larger than 1.

Set Starting Type of the SQL Server service to "Manual" on both the active host and standby host.

2. Create the SQL scripts [active]

Create SQL scripts shown in Table necessary to cluster the databases. Locate these SQL scripts in the same directory on both the active host and standby host. As an example herein, scripts are located in `C:\MSSQL`, and database files are stored in `X:\MSSQL\Data` on the shared disk.

Table A-5 List of SQL scripts to be created

	Script	Description
1	`C:\MSSQL\DEACT.sql`	For detaching database files
2	`C:\MSSQL\ACT.sql`	For attaching database files
3	`C:\MSSQL\ACT2.sql`	For re-creating user accounts
4	`C:\MSSQL\SELECT.sql`	For acquiring SID of the configuration management database
5	`C:\MSSQL\RECRTUSR.sql`	For re-creating the configuration management database user
6	`C:\MSSQL\NVSELECT.sql`	For acquiring SID of the alert management database user.
7	`C:\MSSQL\NVRECRTUSR.sql`	For re-creating the failure management user.

The details of above SQL scripts are described below.

a. DEACT.sql

```
ALTER DATABASE <WFDB> SET OFFLINE WITH ROLLBACK IMMEDIATE
EXEC sp_detach_db '<WFDB>', TRUE

ALTER DATABASE <AlertDB> SET OFFLINE WITH ROLLBACK IMMEDIATE
EXEC sp_detach_db '<AlertDB>', TRUE
```

Example: When the names of CMDB and AlertDB are "wfdb" and "nvprodb", respectively.

```
ALTER DATABASE wfdb SET OFFLINE WITH ROLLBACK IMMEDIATE
EXEC sp_detach_db 'wfdb', TRUE

ALTER DATABASE nvprodb SET OFFLINE WITH ROLLBACK IMMEDIATE
EXEC sp_detach_db 'nvprodb', TRUE
```

b. ACT.sql

```
EXEC sp_attach_db '<WFDB>',
    @filename1 = 'X:\MSSQL\Data\<WFDB>.mdf',
    @filename2 = 'X:\MSSQL\Data\<WFDB>_log.ldf'

EXEC ap_attach_db '<AlertDB>',
    @filename1 = 'X:\MSSQL\Data\<AlertDB>.mdf',
    @filename2 = 'X:\MSSQL\Data\<AlertDB>_log.ldf'
```

Example: When the names of CMDB and AlertDB are "wfdb" and "nvprodb", respectively.

```
EXEC sp_attach_db 'wfdb',
    @filename1 = 'X:\MSSQL\Data\wfdb.mdf',
    @filename2 = 'X:\MSSQL\Data\wfdb_log.ldf'

EXEC sp_attach_db 'nvprodb',
    @filename1 = 'X:\MSSQL\Data\nvprodb.mdf',
    @filename2 = 'X:\MSSQL\Data\nvprodb_log.ldf'
```

c. ACT2.sql

```
use <WFDB>
EXEC sp_change_users_login 'Auto_Fix',
    '<WFDB>', NULL, '<WFDB>@Password'
EXEC sp_password NULL, '<WFDB>@Password', '<WFDB>'

use <AlertDB>
EXEC sp_change_users_login 'Auto_Fix',
    '<AlertDB>', NULL, '<AlertDB>@Password'
EXEC sp_password NULL, '<AlertDB>@Password', '<AlertDB>'
```

Example: When the names of CMDB and AlertDB are "wfdb" and "nvprodb", respectively.

```
use wfdb
EXEC sp_change_users_login 'Auto_Fix',
    'wfdb', NULL, 'wfdb@Password'
EXEC sp_password NULL, 'wfdb@Password', 'wfdb'

use nvprodb
EXEC sp_change_users_login 'Auto_Fix',
    'nvprodb', NULL, 'nvprodb@Password'
EXEC sp_password NULL, 'nvprodb@Password', 'nvprodb'
```

d. SELECT.sql

```
SELECT SUSER_SID('<WFDB>')
```

Example: When the name of CMDB is "wfdb".

```
SELECT SUSER_SID('wfdb')
```

e. RECRTUSR.sql

```
ALTER DATABASE <WFDB> SET OFFLINE WITH ROLLBACK IMMEDIATE
EXEC sp_detach_db '<WFDB>', TRUE
EXEC sp_droplogin @loginame = N'<WFDB>'
EXEC sp_attach_db '<WFDB>',
    @filename1 = 'X:\MSSQL\Data\<WFDB>.mdf',
    @filename2 = 'X:\MSSQL\Data\<WFDB>_log.ldf'
CREATE LOGIN <WFDB> WITH
    PASSWORD = '<WFDB>@Password',
    DEFAULT_DATABASE = <WFDB>,
    SID = 0x?,
    CHECK_POLICY = OFF
```

Example: When the name of CMDB is "wfdb".

```
ALTER DATABASE wfdb SET OFFLINE WITH ROLLBACK IMMEDIATE
EXEC sp_detach_db 'wfdb', TRUE
EXEC sp_droplogin @loginame = N'wfdb'
EXEC sp_attach_db 'wfdb',
    @filename1 = 'X:\MSSQL\Data\wfdb.mdf',
    @filename2 = 'X:\MSSQL\Data\wfdb_log.ldf'
CREATE LOGIN wfdb WITH
    PASSWORD = 'wfdb@Password',
    DEFAULT_DATABASE = wfdb,
    SID = 0x?,
    CHECK_POLICY = OFF
```

f. NVSELECT.sql

```
SELECT SUSER_SID('<AlertDB>')
```

Example: When the names of CMDB and AlertDB are "wfdb" and "nvprodb", respectively.

```
SELECT SUSER_SID('nvprodb')
```

g. NVRECRTUSR.sql

```
ALTER DATABASE <AlertDB> SET OFFLINE WITH ROLLBACK IMMEDIATE
EXEC sp_detach_db '<AlertDB>', TRUE
EXEC sp_droplogin @loginame = N'<AlertDB>'
EXEC sp_attach_db '<AlertDB>',
    @filename1 = 'X:\MSSQL\Data\<AlertDB>.mdf',
    @filename2 = 'X:\MSSQL\Data\<AlertDB>_log.ldf'
CREATE LOGIN <AlertDB> WITH
    PASSWORD = '<AlertDB>@Password',
    DEFAULT_DATABASE = <AlertDB>,
    SID = 0x?,
    CHECK_POLICY = OFF
```

Example: When the name of AlertDB is "nvprodb".

```
ALTER DATABASE nvprodb SET OFFLINE WITH ROLLBACK IMMEDIATE
EXEC sp_detach_db 'nvprodb', TRUE
EXEC sp_droplogin @loginame = N'nvprodb'
EXEC sp_attach_db 'nvprodb',
    @filename1 = 'X:\MSSQL\Data\nvprodb.mdf',
    @filename2 = 'X:\MSSQL\Data\nvprodb_log.ldf'
CREATE LOGIN nvprodb WITH
    PASSWORD = 'nvprodb@Password',
    DEFAULT_DATABASE = nvprodb,
    SID = 0x?,
    CHECK_POLICY = OFF
```

3. Detach the database files [active]

In order to move database files to the shared disk, execute DEACT.sql on the active host. Click Start and select Command Prompt, and enter the following command.

```
osql -U sa -P <sa password> -S localhost\<CMDB> -i C:\MSSQL\DEACT.sql
```

sa password

Password for sa logon account (built-in SQL Server administrator).

CMDB

Instance name of the configuration management database. Specify "localhost" to -S option when using the default instance.

Example: When using the default instance.

```
> osql -U sa -P sa@Password -S localhost -i C:\MSSQL\DEACT.sql
```

After executing the command, confirm that no error message has been output to C:\MSSQL \DEACT.log.

4. Move the database files [active]

On the active host, move data files of the configuration management database (CMDB) and the alert management database (AlertDB) shown in Table to the shared disk (for example: `X:\MSSQL\Data`).

Table A-6 List of database files to be moved

	File Name	Example of Destination
CMDB data files	<*Name of CMDB*>.mdf	`X:\MSSQL\Data\wfdb.mdf`
	<*Name of CMDB*>_log.ldf	`X:\MSSQL\Data\wfdb_log.ldf`
AlertDB data files	<*Name of AlertDB*>.mdf	`X:\MSSQL\Data\nvprodb.mdf`
	<*Name of AlertDB*>_log.ldf	`X:\MSSQL\Data\nvprodb_log.ldf`

Caution

Configure the permissions of the files listed in the table so that the SQL Server services in both of the active and standby host can write data into the files.

5. Attach the database files [active]

After moving files, run ACT.sql on the active host in order to attach the databases. Enter the following command from the command prompt.

```
osql -U sa -P <sa password> -S localhost\<CMDB> -i C:\MSSQL\ACT.sql
```

sa password

Password for sa logon account (built-in SQL Server administrator).

CMDB

Instance name of the configuration management database. Specify "localhost" to -S option when using the default instance.

Example: When using the default instance.

```
> osql -U sa -P sa@Password -S localhost -i C:\MSSQL\ACT.sql
```

After executing the command, confirm that no error message has been output to C:\MSSQL \ACT.log.

6. Re-create the database users [active]

In order to re-create the database users, run ACT2.sql on the active host. Enter the following command from the command prompt.

```
osql -U sa -P <sa password> -S localhost\<CMDB> -i C:\MSSQL\ACT2.sql
```

sa password

Password for sa logon account (built-in SQL Server administrator).

CMDB

Instance name of the configuration management database. Specify "localhost" to -S option when using the default instance.

Example: When using the default instance.

```
> osql -U sa -P sa@Password -S localhost -i C:\MSSQL\ACT2.sql
```

After executing the command, confirm that no error message has been output to C:\MSSQL\ACT2.log.

7. Edit RECRTUSR.sql [active]

Acquire SID of the configuration management database user, and edit RECRTUSR.sql on the active host. Enter the following command from the command prompt to acquire SID.

```
osql -U sa -P <sa password> -S localhost\<CMDB> -i C:\MSSQL\SELECT.sql
```

sa password

Password for sa logon account (built-in SQL Server administrator).

CMDB

Instance name of the configuration management database. Specify "localhost" to -S option when using the default instance.

Example: When using the default instance.

```
> osql -U sa -P sa@Password -S localhost -i C:\MSSQL\SELECT.sql
```

After executing the command, check the SID output to C:\MSSQL\SELECT.log. SID is 32 characters starting from 0x and given in hexadecimal. Replace the value "0x?" of argument SID of "CREATE LOGIN" in RECRTUSR.sql with the checked "SID".

8. Edit NVRECRTUSR.sql [active]

Acquire SID of the alert management database user, and edit NVRECRTUSR.sql on the active host. Enter the following command from the command prompt to acquire SID.

```
osql -U sa -P <sa password> -S localhost\<CMDB>
 -i C:\MSSQL\NVSELECT.sql
```

sa password

Password for sa logon account (built-in SQL Server administrator).

CMDB

Instance name of the configuration management database. Specify "localhost" to -S option when using the default instance.

Example: When using the default instance.

```
> osql -U sa -P sa@Password -S localhost -i C:\MSSQL\NVSELECT.sql
```

After executing the command, check the SID output to C:\MSSQL\NVSELECT.log. SID is 32 characters starting from 0x and given in hexadecimal. Replace the value "0x?" of argument SID of "CREATE LOGIN" in NVRECRTUSR.sql with the checked "SID".

9. Copy the SQL scripts to the standby host [standby]

Copy the seven SQL scripts created as described above to the same directory on the standby host.

10. Edit the start script and stop script of EXPRESSCLUSTER X [active]

    Edit the start script (start.bat) and stop script (stop.bat) of script resource and add start/stop processes of the SQL Server instance service.

    Add the following to start processes.

    - Starting the SQL Server instance for the configuration management database
    - Executing ACT.sql
    - Executing ACT2.sql

    Example of the start script (Add the underline part)

```
rem ************************************
rem Normal Startup process
rem ************************************
:NORMAL

rem Check Disk
IF "%CLP_DISK%" == "FAILURE" GOTO ERROR_DISK

net start MSSQLServer
ARMSLEEP 10
osql -U sa -P sa@Password -S localhost -i C:\MSSQL\ACT.sql
  -o C:\MSSQL\ACT.log
osql -U sa -P sa@Password -S localhost -i C:\MSSQL\ACT2.sql
  -o C:\MSSQL\ACT2.log

(An omission)

rem ************************************
rem Process for failover
rem ************************************
:FAILOVER

rem Check Disk
IF "%CLP_DISK%" == "FAILURE" GOTO ERROR_DISK

net start MSSQLServer
ARMSLEEP 10
osql -U sa -P sa@Password -S localhost -i C:\MSSQL\ACT.sql
  -o C:\MSSQL\ACT.log
osql -U sa -P sa@Password -S localhost -i C:\MSSQL\ACT2.sql
  -o C:\MSSQL\ACT2.log
```

    (Do not place any carriage returns within the command line.)

    Add the following to stop processes.

    - Executing DEACT.sql
    - Stopping the SQL Server instance for the configuration management database

    Example of the stop script (Add the underline part)

```
rem ************************************
rem Process for normal quitting program
rem  ************************************
:NORMAL

rem Check Disk
IF "%CLP_DISK%" == "FAILURE" GOTO ERROR_DISK

osql -U sa -P sa@Password -S localhost -i C:\MSSQL\DEACT.sql
  -o C:\MSSQL\DEACT.log
net stop MSSQLServer
ARMSLEEP 30

(An omission)

rem ************************************
rem Process for failover
rem ************************************
:FAILOVER

rem Check Disk
IF "%CLP_DISK%" == "FAILURE" GOTO ERROR_DISK

osql -U sa -P sa@Password -S localhost -i C:\MSSQL\DEACT.sql
  -o C:\MSSQL\DEACT.log
net stop MSSQLServer
ARMSLEEP 30
```

(Do not place any carriage returns within the command line.)

After editing the scripts, apply the cluster configuration file from EXPRESSCLUSTER X Builder.

11. Switch from the active host to standby host [active -> standby]

    Switch from the active host to standby host to start the SQL Server on the standby host.

Tip

When the failover group is switched to the standby host for the first time, the error message might be output in ACT2.log as follows. This output has no problem.

```
Msg 15116,Level 16,State 1,Server host02,Line 1
Password validation failed. The password does not meet Windows policy
requirements because it is not complex enough.
Msg 15497,Level 16,State 1,Server host02,
Procedure sp_change_users_login,Line 223
Could not add login using sp_addlogin (user = wfdb).
Terminating this procedure.
Msg 15007,Level 16,State 1,Server host02,
Procedure sp_password,Line 29
'wfdb' is not a valid login or you do not have permission.
Msg 15118,Level 16,State 1,Server host02,Line 1
Password validation failed. The password does not meet Windows policy
requirements because it is not complex enough.
Msg 15497,Level 16,State 1,Server host02,
Procedure sp_change_users_login,Line 223
Could not add login using sp_addlogin (user = nvprodb).
Terminating this procedure.
Msg 15007,Level 16,State 1,Server host02,
Procedure sp_password,Line 29
'nvprodb' is not a valid login or you do not have permission.
```

12. Create the database host user on the standby host [standby]

    Create the same user as that of the active host. Enter the following command from the command prompt.

```
osql -U sa -P <sa password> -S localhost\<CMDB>
 -i C:\MSSQL\RECRTUSR.sql
osql -U sa -P <sa password> -S localhost\<CMDB>
 -i C:\MSSQL\NVRECRTUSR.sql
```

    sa password

    Password for sa logon account (built-in SQL Server administrator).

    CMDB

    Instance name of the configuration management database. Specify "localhost" to -S option when using the default instance.

    Example: When using the default instance.

```
> osql -U sa -P sa@Password -S localhost -i C:\MSSQL\RECRTUSR.sql
> osql -U sa -P sa@Password -S localhost -i C:\MSSQL\NVRECRTUSR.sql
```

Tip

When RECRTUSR.sql and NVRECRTUSR.sql are executed for the first time on the standby host, the following messages might be output in RECRTUSR.log and NVRECRTUSR.log. This output has no problem.

```
Msg 15007,Level 16,State 1,Server host02,Procedure sp_droplogin,
Line 26 'wfdb' is not a valid login or you do not have permission.
```

```
Msg 15007,Level 16,State 1,Server host02,Procedure sp_droplogin,
Line 26 'nvprodb' is not a valid login or you do not have permission.
```

13. Switch to the active host [standby -> active]

    After the abovementioned procedures are completed, switch to the active host to be operated.

This completes clustering the configuration management database and the alert management database.

To implement performance management by using sFlow, proceed to "A.3.3 Clustering sFlowDB (page 96)".

A.3.3 Clustering sFlowDB

The following is an explanation of how to configure the sFlow database for the cluster environment.

1. Change Starting Type of SQL Server service [active / standby]

   Set Starting Type of the SQL Server service where the sFlow database is placed to "Manual" on both the active host and standby host.

2. Create the SQL scripts [active]

   Create SQL scripts shown in Table necessary to cluster the sFlow database. Locate these SQL scripts in the same directory on both the active host and standby host. As an example herein, scripts are located in `C:\MSSQL`, and database files are stored in `X:\MSSQL\Data` on the shared disk.

Table A-7 List of SQL scripts to be created

	Script	Description
1	`C:\MSSQL\SFLOWDEACT.sql`	For detaching database files
2	`C:\MSSQL\SFLOWACT.sql`	For attaching database files
3	`C:\MSSQL\SFLOWACT2.sql`	For re-creating user accounts
4	`C:\MSSQL\SFLOWSELECT.sql`	For acquiring SID of the sFlow database
5	`C:\MSSQL\SFLOWRECRTUSR.sql`	For re-creating the sFlow database user

The details of above SQL scripts are described below.

a. SFLOWDEACT.sql

```
ALTER DATABASE <sFlowDB> SET OFFLINE WITH ROLLBACK IMMEDIATE
EXEC sp_detach_db '<sFlowDB>', TRUE
```

Example: When the name of sFlowDB is "sflowdb".

```
ALTER DATABASE sflowdb SET OFFLINE WITH ROLLBACK IMMEDIATE
EXEC sp_detach_db 'sflowdb', TRUE
```

b. SFLOWACT.sql

```
EXEC sp_attach_db '<sFlowDB>',
    @filename1 = 'X:\MSSQL\Data\<sFlowDB>.mdf',
    @filename2 = 'X:\MSSQL\Data\<sFlowDB>_log.ldf'
```

Example: When the name of sFlowDB is "sflowdb".

```
EXEC sp_attach_db 'sflowdb',
    @filename1 = 'X:\MSSQL\Data\sflowdb.mdf',
    @filename2 = 'X:\MSSQL\Data\sflowdb_log.ldf'
```

c. SFLOWACT2.sql

```
use <sFlowDB>
EXEC sp_change_users_login 'Auto_Fix',
    '<sFlow user name>', NULL, '<sFlow user password>'
EXEC sp_password NULL,
    '<sFlow user password>', '<sFlow user name>'
```

Example: When the sFlow database was created with default parameter values.

```
use sflowdb
EXEC sp_change_users_login 'Auto_Fix',
    'SFLOW', NULL, 'NVPROSFLOW'
EXEC sp_password NULL, 'NVPROSFLOW', 'SFLOW'
```

d. SFLOWSELECT.sql

```
SELECT SUSER_SID('<sFlow user name>')
```

Example: When the name of sFlowDB user is "SFLOW".

```
SELECT SUSER_SID('SFLOW')
```

e. SFLOWRECRTUSR.sql

```
ALTER DATABASE <sFlowDB> SET OFFLINE WITH ROLLBACK IMMEDIATE
EXEC sp_detach_db '<sFlowDB>', TRUE
EXEC sp_droplogin @loginame = N'<sFlow user name>'
EXEC sp_attach_db '<sFlowDB>',
    @filename1 = 'X:\MSSQL\Data\<sFlowDB>.mdf',
    @filename2 = 'X:\MSSQL\Data\<sFlowDB>_log.ldf'
CREATE LOGIN <sFlow user name> WITH
    PASSWORD = '<sFlow user password>',
    DEFAULT_DATABASE = <sFlowDB>,
    SID = 0x?,
    CHECK_POLICY = OFF
```

Example: When the sFlow database was created with default parameter values.

```
ALTER DATABASE sflowdb SET OFFLINE WITH ROLLBACK IMMEDIATE
EXEC sp_detach_db 'sflowdb', TRUE
EXEC sp_droplogin @loginame = N'SFLOW'
EXEC sp_attach_db 'sflowdb',
    @filename1 = 'X:\MSSQL\Data\sflowdb.mdf',
    @filename2 = 'X:\MSSQL\Data\sflowdb_log.ldf'
CREATE LOGIN SFLOW WITH
    PASSWORD = 'NVPROSFLOW',
    DEFAULT_DATABASE = sflowdb,
    SID = 0x?,
    CHECK_POLICY = OFF
```

3. Detach the database files [active]

In order to move sFlow database files to the shared disk, execute DEACT.sql on the active host. Click Start and select All Programs, Accessories, and then Command Prompt, and enter the following command.

```
osql -U sa -P sa@Password -S localhost\<SFLOW>
 -i C:\MSSQL\SFLOWDEACT.sql
```

sa password

Password for sa logon account (built-in SQL Server administrator).

SFLOW

Instance name of the sFlow database. Specify "localhost" to -S option when using the default instance.

Example: When using the instance named "SFLOW".

```
> osql -U sa -P sa@Password -S localhost\SFLOW
 -i C:\MSSQL\SFLOWDEACT.sql
```

(Do not place any carriage returns within the command line.)

After executing the command, confirm that no error message has been output to C:\MSSQL \SFLOWDEACT.log.

4. Move the database files [active]

On the active host, move data files of the sFlow database (sFlowDB) shown in Table to the shared disk (for example, `X:\MSSQL\Data`).

Table A-8 List of database files to be moved

	File Name	Example of Destination
sFlowDB data files	<*Name of sFlowDB*>.mdf	`X:\MSSQL\Data\sflowdb.mdf`
	<*Name of sFlowDB*>_log.ldf	`X:\MSSQL\Data\sflowdb_log.ldf`

⚠ Caution

Configure the permissions of the files listed in the table so that the SQL Server services in both of the active and standby host can write data into the files.

5. Attach the database files [active]

After moving files, run ACT.sql on the active host in order to attach the databases. Enter the following command from the command prompt.

```
osql -U sa -P sa@Password -S localhost\<SFLOW>
 -i C:\MSSQL\SFLOWACT.sql
```

sa password

Password for sa logon account (built-in SQL Server administrator).

SFLOW

Instance name of the sFlow database. Specify "localhost" to -S option when using the default instance.

Example: When using the instance named "SFLOW".

```
> osql -U sa -P sa@Password -S localhost\SFLOW
 -i C:\MSSQL\SFLOWACT.sql
```

(Do not place any carriage returns within the command line.)

After executing the command, confirm that no error message has been output to C:\MSSQL \SFLOWACT.log.

6. Re-create the database user [active]

In order to re-create the database user, run SFLOWACT2.sql on the active host. Enter the following command from the command prompt.

```
osql -U sa -P <sa password> -S localhost\<SFLOW>
-i C:\MSSQL\SFLOWACT2.sql
```

sa password

Password for sa logon account (built-in SQL Server administrator).

SFLOW

Instance name of the sFlow database. Specify "localhost" to -S option when using the default instance.

Example: When using the instance named "SFLOW".

```
> osql -U sa -P sa@Password -S localhost\SFLOW
 -i C:\MSSQL\SFLOWACT2.sql
```

(Do not place any carriage returns within the command line.)

After executing the command, confirm that no error message has been output to C:\MSSQL \SFLOWACT2.log.

7. Edit SFLOWRECRTUSR.sql [active]

Acquire SID of the sFlow database user, and edit RECRTUSR.sql on the active host. Enter the following command from the command prompt to acquire SID.

```
osql -U sa -P <sa password> -S localhost\<SFLOW>
 -i C:\MSSQL\SFLOWSELECT.sql
```

sa password

Password for sa logon account (built-in SQL Server administrator).

SFLOW

Instance name of the sFlow database. Specify "localhost" to -S option when using the default instance.

Example: When using the instance named "SFLOW".

```
> osql -U sa -P sa@Password -S localhost\SFLOW
 -i C:\MSSQL\SFLOWSELECT.sql
```

(Do not place any carriage returns within the command line.)

After executing the command, check the SID output to C:\MSSQL\SFLOWSELECT.log. SID is 32 characters starting from 0x and given in hexadecimal. Replace the value "0x?" of argument SID of "CREATE LOGIN" in SFLOWRECRTUSR.sql with the checked "SID".

8. Copy the SQL scripts to the standby host [standby]

Copy the file SQL scripts created as described above to the same directory on the standby host.

9. Edit the start script and stop script of EXPRESSCLUSTER X [active]

Edit the start script (start.bat) and stop script (stop.bat) of script resource and add start/stop processes of the SQL Server instance service.

Add the following to start processes.

- Starting the SQL Server instance for sFlow database
- Executing SFLOWACT.sql
- Executing SFLOWACT2.sql

Example of the start script (Add the underline part)

```
rem ************************************
rem Normal Startup process
rem ************************************
:NORMAL

rem Check Disk
IF "%CLP_DISK%" == "FAILURE" GOTO ERROR_DISK

net start MSSQLServer
ARMSLEEP 10
osql -U sa -P sa@Password -S localhost -i C:\MSSQL\ACT.sql
 -o C:\MSSQL\ACT.log
osql -U sa -P sa@Password -S localhost -i C:\MSSQL\ACT2.sql
 -o C:\MSSQL\ACT2.log

net start MSSQL$SFLOW
ARMSLEEP 10
osql -U sa -P sa@Password -S localhost\SFLOW -i C:\MSSQL\SFLOWACT.sql
 -o C:\MSSQL\SFLOWACT.log
osql -U sa -P sa@Password -S localhost\SFLOW -i C:\MSSQL\SFLOWACT2.sql
 -o C:\MSSQL\SFLOWACT2.log

(An omission)

rem ************************************
rem Process for failover
rem ************************************
:FAILOVER

rem Check Disk
IF "%CLP_DISK%" == "FAILURE" GOTO ERROR_DISK

net start MSSQLServer
ARMSLEEP 10
osql -U sa -P sa@Password -S localhost -i C:\MSSQL\ACT.sql
 -o C:\MSSQL\ACT.log
osql -U sa -P sa@Password -S localhost -i C:\MSSQL\ACT2.sql
 -o C:\MSSQL\ACT2.log

net start MSSQL$SFLOW
ARMSLEEP 10
osql -U sa -P sa@Password -S localhost\SFLOW -i C:\MSSQL\SFLOWACT.sql
 -o C:\MSSQL\SFLOWACT.log
osql -U sa -P sa@Password -S localhost\SFLOW -i C:\MSSQL\SFLOWACT2.sql
 -o C:\MSSQL\SFLOWACT2.log
```

(Do not place any carriage returns within the command line.)

Add the following to stop processes.

- Executing SFLOWDEACT.sql
- Stopping the SQL Server instance for the sFlow database

Example of the stop script (Add the underline part)

```
rem ************************************
rem Process for normal quitting program
rem  ************************************
:NORMAL

rem Check Disk
IF "%CLP_DISK%" == "FAILURE" GOTO ERROR_DISK

osql -U sa -P sa@Password -S localhost -i C:\MSSQL\DEACT.sql
 -o C:\MSSQL\DEACT.log
net stop MSSQLServer
ARMSLEEP 30

osql -U sa -P sa@Password -S localhost\SFLOW
 -i C:\MSSQL\SFLOWDEACT.sql -o C:\MSSQL\SFLOWDEACT.log
net stop MSSQL$SFLOW
ARMSLEEP 30

(An omission)

rem ************************************
rem Process for failover
rem ************************************
:FAILOVER

rem Check Disk
IF "%CLP_DISK%" == "FAILURE" GOTO ERROR_DISK

osql -U sa -P sa@Password -S localhost -i C:\MSSQL\DEACT.sql
 -o C:\MSSQL\DEACT.log
net stop MSSQLServer
ARMSLEEP 30

osql -U sa -P sa@Password -S localhost\SFLOW
 -i C:\MSSQL\SFLOWDEACT.sql -o C:\MSSQL\SFLOWDEACT.log
net stop MSSQL$SFLOW
ARMSLEEP 30
```

(Do not place any carriage returns within the command line.)

After editing the scripts, apply the cluster configuration file from EXPRESSCLUSTER X Builder (**File**>**Apply the Configuration File**).

10. Switch from the active host to standby host [active -> standby]

    Switch from the active host to standby host to start the SQL Server on the standby host.

Tip

When the failover group is switched to the standby host for the first time, the error message might be output in SFLOWACT2.log as follows. This output has no problem.

```
Msg 15118, Level 16, State 1, Server host02\SFLOW,
Line 1 Password validation failed. The password does not meet Windows
policy requirements because it is not complex enough.
Msg 15497, Level 16, State 1, Server HOST2\SFLOW,
Procedure sp_change_users_login,
Line 223 Could not add login using sp_addlogin (user = SFLOW).
Terminating this procedure.
Msg 15007, Level 16, State 1, Server host02\SFLOW,
Procedure sp_password, Line 29 'SFLOW' is not a valid login
or you do not have permission.
```

11. Create the database host user on the standby host [standby]

    Create the same user as that of the active host. Enter the following command from the command prompt.

```
osql -U sa -P <sa password> -S localhost\<SFLOW>
 -i C:\MSSQL\SFLOWRECRTUSR.sql
```

    sa password

    Password for sa logon account (built-in SQL Server administrator).

    SFLOW

    Instance name of the sFlow database. Specify "localhost" to -S option when using the default instance.

    Example: When using the instance named "SFLOW".

```
> osql -U sa -P sa@Password -S localhost\SFLOW
 -i C:\MSSQL\SFLOWRECRTUSR.sql
```

    (Do not place any carriage returns within the command line.)

    Tip

    When SFLOWRECRTUSR.sql is executed for the first time on the standby host, the following messages might be output in SFLOWRECRTUSR.log. This output has no problem.

```
Msg 15007, Level 16, State 1, Server host02\SFLOW,
Procedure sp_droplogin,
Line 26 'SFLOW' is not a valid login or you do not have permission.
```

12. Switch to the active host [standby -> active]

    After the abovementioned procedures are completed, switch to the active host to be operated.

This completes clustering sFlow database.

A.4 Uninstalling the Databases

This section describes how to delete the database data used in Network Manager.

1. Stop the Network Manager services

   Stop the following Network Manager services.

   - NvPRO Performance Manager
   - NvPRO Topology Adapter
   - NvPRO ResourceManagerAPI Service

- MasterScope UMF Operations Manager_*n* [*4]
- NvPRO Base Manager
- FTBase service
- NvPRO Performance Database

How to stop services:

a. Open the Control Panel window and search "Administrative Tools".

b. In the Administrative Tools window, open the **Services**.

c. Select the services to stop from the Service window and click **Stop Service**.

Caution

If implementing the performance management by sFlow, confirm whether there is no NvPROSFlowCmd.exe process after above the Network Manager services are stopped. If the process exists, perform the uninstallation after the process is finished.

- How to confirm NvPROSFlowCmd.exe process:

  Press Ctrl + Shift + Esc keys at the same time to start Windows Task Manager. Select the **Process** tab and check if NvPROSFlowCmd.exe exists in **Image Name** column.

2. Delete the configuration management database (CMDB)

When the configuration management database (CMDB) is used in other products than Network Manager, run the script NvPROClearDB.bat which deletes the Network Manager related data only. If there is not any other product which uses the configuration management database, run the script WfdbDropDB.bat which deletes all the data in the configuration management database.

Decide which script to use according to the environment.

- Delete only Network Manager data (NvPROClearDB.bat)

  Start the command prompt.

  Change to `%NVP_INSTALL_PATH%\Manager\sql\sqlserver` directory and execute NvPROClearDB.bat.

  - NvPROClearDB.bat command syntax:

    ```
    NvPROClearDB.bat <database name> <server name> <instance name>
    ```

    * As an argument of NvPROClearDB.bat, specify the same parameters that were specified when executing WfdbCmdbSetup.bat in "A.2.2 Configuration management database (CMDB) settings (page 79)".
    * If the configuration management database was created with the default value, all arguments of NvPROClearDB.bat can be omitted.
    * Arguments of NvPROClearDB.bat cannot be partially omitted.
    * When the default instance is used, specify "\" (backslash) as the instance name of argument.

  - Example: When using the default instance.

*4 *n* is a service number larger than 1.

```
> cd "C:\Program Files (x86)\NEC\UMF\Operations\Manager\
 sql\sqlserver"
> NvPROClearDB.bat wfdb localhost \
```

(Do not insert a linefeed while inputting commands.)

- Delete all the data in the configuration management database (WfdbDropDB.bat)

  Start the command prompt. Change to *%NVP_INSTALL_PATH%*\Manager\sql\sqlserver directory and execute WfdbDropDB.bat.

  - WfdbDropDB.bat command syntax:

    ```
    WfdbDropDB.bat <database name> <server name> <instance name>
    ```

    * As an argument of WfdbDropDB.bat, specify the same parameters that were specified when executing WfdbCmdbSetup.bat in "A.2.2 Configuration management database (CMDB) settings (page 79)".
    * If the configuration management database was created with the default value, all arguments of WfdbDropDB.bat can be omitted.
    * Arguments of WfdbDropDB.bat cannot be partially omitted.
    * When the default instance is used, specify "\" (backslash) as the instance name of argument.

  - Example: When using the default instance.

    ```
    > cd "C:\Program Files (x86)\NEC\UMF\Operations\Manager\
     sql\sqlserver"
    > WfdbDropDB.bat wfdb localhost \
    ```

    (Do not insert a linefeed while inputting commands.)

3. Delete the alert management database (AlertDB)

   Start the command prompt.

   Change to *%NVP_INSTALL_PATH%*\Manager\sql\sqlserver directory and execute NvPRODropDB.bat.

   - NvPRODropDB.bat command syntax:

     ```
     NvPRODropDB.bat <database name> <server name> <instance name>
     ```

     - As an argument of NvPRODropDB.bat, specify the same parameters that were specified when executing NvPRODBSetup.bat in "A.2.3 Alert management database settings (page 81)".
     - If the alert management database was created with the default value, all arguments of NvPRODropDB.bat can be omitted.
     - Arguments of NvPRODropDB.bat cannot be partially omitted.
     - When the default instance is used, specify "\" (backslash) as the instance name of argument.

   - Example: When using the default instance.

     ```
     > cd "C:\Program Files (x86)\NEC\UMF\Operations\Manager\
      sql\sqlserver"
     > NvPRODropDB.bat nvprodb localhost \
     ```

     (Do not insert a linefeed while inputting commands.)

4. Delete the sFlow database (sFlowDB)

   If implementing performance management by using sFlow, delete the sFlow database as follows.

   Start the command prompt.

   Change to `%NVP_INSTALL_PATH%\Manager\sql\sqlserver` directory and execute NvPRODropSFLOW.bat.

   - NvPRODropSFLOW.bat command syntax:

     ```
     NvPRODropSFLOW.bat <database name> <user name> <password>
      <server name\instance name>
     ```

     - As an argument of NvPRODropSFLOW.bat, specify the same parameters that were specified when executing `NvPROSFLOWSetup.bat` in "A.2.4 sFlow database settings (page 83)".
     - If the sFlow database was created with the default value, all arguments of NvPRODropSFLOW.bat can be omitted.
     - Arguments of NvPRODropSFLOW.bat cannot be partially omitted.
     - When the default instance is used, omit "\<server name\instance name>" part in the arguments.

   - Example: When using the default values for all parameters.

     ```
     > cd "C:\Program Files (x86)\NEC\UMF\Operations\Manager\
      sql\sqlserver"
     > NvPRODropSFLOW.bat
     ```

     (Do not insert a linefeed while inputting commands.)

This completes the database deletion.

A.5 Backup and Restore the Databases

A.5.1 Backup procedure

This section describes how to backup the database data when using external databases.

Backup sFlow database only if the performance management by sFlow is implemented.

⚠ Caution

You must back up the data of external database at the same time as "10.2 Backup Procedure (page 61)" The database backup taken at the different time cannot be restored.

Execute the following steps on the active host.

1. Stop the Network Manager services

   Confirm the following Network Manager services have been stopped.

   - NvPRO Performance Manager
   - NvPRO Topology Adapter
   - NvPRO ResourceManagerAPI Service
   - MasterScope UMF Operations Manager_*n* [*5]

- NvPRO Base Manager
- FTBase service
- NvPRO Performance Database

2. Stop the products that use the configuration management database (CMDB)

   If other products also use the configuration management database, stop these products in order to prevent them from accessing to the database.

3. Start SQL Server [active]

   Confirm that the instance service of SQL Server and SQL Server Browser service used in Network Manager are running.

   a. Open the Control Panel window and search "Administrative Tools".

   b. In the Administrative Tools window, open the **Services**.

   c. Confirm whether the SQL Server service and SQL Service Browser service are Running in service list on the Services window.

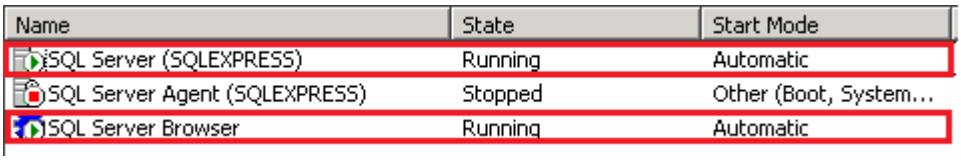

Figure A-9 SQL Server service status confirmation

4. Back up the database data

   Run the SQL Server backup command (BACKUP) on the active host to back up the data of the configuration management database (CMDB), the alert management database (AlertDB), and the sFlow database (sFlowDB). Back up sFlow database only if the performance management by sFlow is implemented.

Tip

For details regarding BACKUP command, refer to the Microsoft SQL Server manual. Check the setting parameter of each database in the operation environment before back up.

Examples: Backup in `C:\bak` (Do not place any carriage returns within the command line.)

- Configuration management database (CMDB)

```
> osql -S localhost -U sa -P sa@Password -Q
 "BACKUP DATABASE [wfdb] TO DISK = N'C:\bak\wfdb.bak'
 WITH NOFORMAT, NOINIT, NAME = N'wfdb-Full Database Backup',
 SKIP, NOREWIND, NOUNLOAD, STATS = 10" -o wfdb_Backup.log
```

- Alert management database

```
> osql -S localhost -U sa -P sa@Password -Q
 "BACKUP DATABASE [nvprodb] TO DISK = N'C:\bak\nvprodb.bak'
 WITH NOFORMAT, NOINIT, NAME = N'nvprodb-Full Database Backup',
 SKIP, NOREWIND, NOUNLOAD, STATS = 10" -o nvprodb_Backup.log
```

- sFlow database

*5 *n* is a service number larger than 1.

```
> osql -S localhost\SFLOW -U sa -P sa@Password -Q
 "BACKUP DATABASE [sflowdb] TO DISK = N'C:\bak\sflowdb.bak'
 WITH NOFORMAT, NOINIT, NAME = N'sflowdb-Full Database Backup',
 SKIP, NOREWIND, NOUNLOAD, STATS = 10" -o sflowdb_Backup.log
```

Caution

a. The backup set files "wfdb.bak", "nvprodb.bak", and "sflowdb.bak" exist on the path which specified "TO DISK =", the backup is added to the existing backup set. Be careful when restoring. For details, refer to the manual or Microsoft SQL Server.

b. The file specified by "TO DISK =" must be writable for the log on account of SQL Server service.

Confirm the log on account of the SQL Server service as follows:s

i. Open the Control Panel window and search "Administrative Tools".

ii. In the Administrative Tools window, open the **Services**.

iii. In the Service window, open the properties of the SQL Server service and confirm the contents of the **Log On** tab.

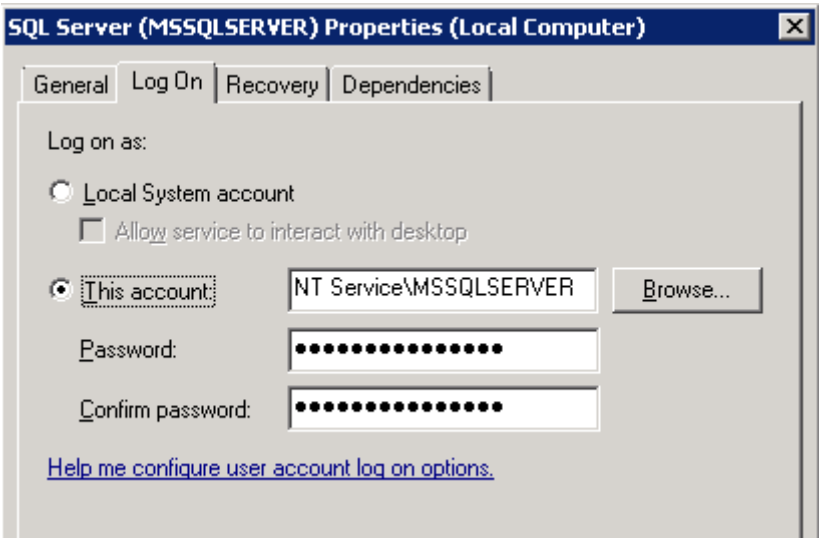

Figure A-10 Confirmation of SQL Server account

This completes the backup procedure for the external database.

A.5.2 Restore procedure

This section describes how to restore the database data that was backed up in "A.5.1 Backup procedure (page 105)".

Caution

1. Restore the database on the database software which is the same version and has the same installation path as the database software where the backup copy was made. Restoring may not be performed properly in the different environment. For details of restore conditions, refer to the database software documents.
2. You must restore the data of external database at the same time as "10.3 Restore Procedure (page 63)". If you only restore either of data, Network Manager will not work.

The followings is the restore procedure of the configuration management database (CMDB), alert management databases, and sFlow database. Restore sFlow database only if the performance management by sFlow is implemented.

Perform the restore procedures as an Administrator.

1. Stop the Network Manager services [active]

   Confirm the following Network Manager services have been stopped.

   - NvPRO Performance Manager
   - NvPRO Topology Adapter
   - NvPRO ResourceManagerAPI Service
   - MasterScope UMF Operations Manager_*n* *6
   - NvPRO Base Manager
   - FTBase service
   - NvPRO Performance Database

2. Stop the products that use the configuration management database (CMDB) [active]

   If other products also use the configuration management database, stop these products in order to prevent them from accessing to the database.

3. Delete the databases [active]

   Delete each database by running the database deleting scripts shown in Table. For details of each script, refer to "A.4 Uninstalling the Databases (page 102)".

Table A-9 Database deleting scripts

Database	Database Deleting Script
CMDB	Path: `%NVP_INSTALL_PATH%\Manager\sql\sqlserver` WfdbDropDB.bat <*database name*> <*server name*> <*instance name*>
AlertDB	Path: `%NVP_INSTALL_PATH%\Manager\sql\sqlserver` NvPRODropDB.bat <*database name*> <*server name*> <*instance name*>
sFlow DB	Path: `%NVP_INSTALL_PATH%\Manager\sql\sqlserver` NvPRODropSFLOW.bat <*database name*> <*user name*> <*password*> <server name\instance name>

4. Restore the database data (RESTORE) [active]

   Run the SQL Server restore command (RESTORE) to restore each database data from the backup data. For details regarding RESTORE command, refer to the manual of Microsoft SQL Server.

   Examples: Restore from data in `C:\bak` (Do not place any carriage returns within the command line.)

   - Configuration management database (CMDB)

```
> osql -S localhost -U sa -P sa@Password -Q
 "RESTORE DATABASE [wfdb] FROM DISK = N'C:\bak\wfdb.bak'
 WITH FILE = 1, NOUNLOAD, STATS = 10"
```

   - Alert management database

```
> osql -S localhost -U sa -P sa@Password -Q
 "RESTORE DATABASE [nvprodb] FROM DISK = N'C:\bak\nvprodb.bak'
 WITH FILE = 1, NOUNLOAD, STATS = 10"
```

*6 *n* is a service number larger than 1.

- sFlow database (sFlowDB)

```
> osql -S localhost\SFLOW -U sa -P sa@Password -Q
 "RESTORE DATABASE [sflowdb] FROM DISK = N'C:\bak\sflowdb.bak'
 WITH FILE = 1, NOUNLOAD, STATS = 10"
```

Caution

Above commands restore the database from the oldest (FILE=1) backup in the backup set in "wfdb.bak", "nvprodb.bak" and "sflowdb.bak". If multiple backups exist in the backup set, specify a backup number after "FILE =".

Example: When there are three backups in the backup set file and you want to restore the latest backup, specify "FILE = 3".

Tip

When upgrading the SQL Server, you may be able to restore to a different installation path from one when backup by using MOVE clause. For details, refer to the Microsoft SQL Server documents.

Examples: Restore using MOVE clause (Do not place any carriage returns within the command line.)

- Configuration management database (CMDB)

```
> osql -S localhost -E -Q "RESTORE DATABASE [wfdb]
 FROM DISK = N'C:bak\wfdb.bak' WITH FILE = 1,
 MOVE N'wfdb' TO
 N'C:\Program Files\Microsoft SQL Server\MSSQL12.MSSQLSERVER\MSSQL\
 DATA\wfdb.mdf', MOVE N'wfdb_log' TO
 N'C:\Program Files \Microsoft SQL Server\MSSQL12.MSSQLSERVER\MSSQL\
 DATA\wfdb_log.ldf', NOUNLOAD, STATS = 10"
```

- Alert management database

```
> osql -S localhost -E -Q "RESTORE DATABASE [nvprodb]
 FROM DISK = N'C:bak\nvprodb.bak' WITH FILE = 1,
 MOVE N'nvprodb' TO
 N'C:\Program Files\Microsoft SQL Server\MSSQL12.MSSQLSERVER\MSSQL\
 DATA\nvprodb.mdf', MOVE N'nvprodb_log' TO
 N'C:\Program Files\Microsoft SQL Server\MSSQL12.MSSQLSERVER\MSSQL\
 DATA\nvprodb_log.ldf', NOUNLOAD, STATS = 10"
```

- sFlow database

```
> osql -S localhost -E -Q "RESTORE DATABASE [sflowdb]
 FROM DISK = N'C:bak\sflowdb.bak' WITH FILE = 1,
 MOVE N'sflowdb' TO
 N'C:\Program Files\Microsoft SQL Server\MSSQL12.MSSQLSERVER\MSSQL\
 DATA\sflowdb.mdf', MOVE N'sflowdb_log' TO
 N'C:\Program Files\Microsoft SQL Server\MSSQL12.MSSQLSERVER\MSSQL\
 DATA\sflowdb_log.ldf', NOUNLOAD, STATS = 10"
```

Specify all files to be restored in MOVE clause. The files to be restored can be confirmed by RESTORE FILELISTONLY command.

Examples: Confirm for configuration management database (CMDB)

```
> osql -S localhost\SQLEXPRESS -E -Q "RESTORE FILELISTONLY
 FROM DISK = N'C:\bak\wfdb.bak' WITH FILE = 1"
```

5. Delete the database users (sp_revokedbaccess) [active]

   Delete the database user by sp_revokedbaccess command. For details regarding sp_revokedbaccess command, refer to the Microsoft SQL Server manual.

Examples: Database user deletion command (Do not place any carriage returns within the command line.)

- Configuration management database (CMDB)

```
> osql -S localhost -U sa -P sa@Password -n -d wfdb
 -Q "EXEC sp_revokedbaccess 'wfdb'"
```

- Alert management database

```
> osql -S localhost -U sa -P sa@Password -n -d nvprodb
 -Q "EXEC sp_revokedbaccess 'nvprodb'"
```

- sFlow database

```
> osql -S localhost\SFLOW -U sa -P sa@Password -n -d sflowdb
 -Q "EXEC sp_revokedbaccess 'SFLOW'"
```

6. Create the database login users (CREATE LOGIN) [active]

   Create the database login users by CREATE LOGIN command. For details regarding CREATE LOGIN command, refer to the Microsoft SQL Server manual.

   Examples: Login user creation command (Do not place any carriage returns within the command line.)

   - Configuration management database (CMDB)

```
> osql -S localhost -U sa -P sa@Password -n -Q
 "CREATE LOGIN wfdb WITH PASSWORD='wfdb@Password',
 DEFAULT_DATABASE=wfdb, CHECK_POLICY=OFF"
```

   - Alert management database

```
> osql -S localhost -U sa -P sa@Password -n -Q
 "CREATE LOGIN nvprodb WITH PASSWORD='nvprodb@Password',
 DEFAULT_DATABASE=nvprodb, CHECK_POLICY=OFF"
```

   - sFlow database

```
> osql -S localhost\SFLOW -U sa -P sa@Password -n -Q
 "CREATE LOGIN SFLOW WITH PASSWORD='NVPROSFLOW',
 DEFAULT_DATABASE=sflowdb, CHECK_POLICY=OFF"
```

7. Create the database users (sp_grantdbaccess) [active]

   Create the database users by sp_grantdbaccess command. For details regarding sp_grantdbaccess command, refer to the Microsoft SQL Server manual.

   Examples: Database user creation command (Do not place any carriage returns within the command line.)

   - Configuration management database (CMDB)

```
> osql -S localhost -U sa -P sa@Password -n -d wfdb
 -Q "EXEC sp_grantdbaccess @loginame = 'wfdb', @name_in_db =
 'wfdb'"
```

   - Alert management database

```
> osql -S localhost -U sa -P sa@Password -n -d nvprodb
 -Q "EXEC sp_grantdbaccess @loginame = 'nvprodb', @name_in_db =
 'nvprodb'"
```

- sFlow database

```
> osql -S localhost\SFLOW -U sa -P sa@Password -n -d sflowdb
 -Q "EXEC sp_grantdbaccess @loginame = 'SFLOW', @name_in_db =
 'SFLOW'"
```

8. Set the role of the database users (sp_addrolemember) [active]

   Set the role of the database users by sp_addrolemember command. For details regarding sp_addrolemember command, refer to the Microsoft SQL Server manual.

   Examples: Role setting command (Do not place any carriage returns within the command line.)

   - Configuration management database (CMDB)

```
> osql -S localhost -U sa -P sa@Password -n -d wfdb
 -Q "EXEC sp_addrolemember 'db_owner', 'wfdb'"
```

   - Alert management database

```
> osql -S localhost -U sa -P sa@Password -n -d nvprodb
 -Q "EXEC sp_addrolemember 'db_owner', 'nvprodb'"
```

   - sFlow database

```
> osql -S localhost\SFLOW -U sa -P sa@Password -n -d sflowdb
 -Q "EXEC sp_addrolemember 'db_owner', 'SFLOW'"
```

9. Check SID of the new database user[active]

   Check SID of the new database user and edit SQL scripts by running SELECT.sql, NVSELECT.sql, and SFLOWSELECT.sql created in "A.3 Clustering the Databases (page 86)" again, and edit SID in RECRTUSR.sql, NVRECRTUSR.sql, and SFLOWRECRTUSR.sql based on the acquired SID.

   Caution

   Copy the edited RECRTUSR.sql, NVRECRTUSR.sql, and SFLOWRECRTUSR.sql in the same path on the standby host.

   Examples: SID ckeck (Do not place any carriage returns within the command line.)

   - Configuration management database (CMDB)

```
> osql -U sa -P sa@Password -S localhost -i C:\MSSQL\SELECT.sql
```

     Edit the SID assignment of "CREATE LOGIN" in RECRTUSR.sql based on the SID written in SELECT.log.

   - Alert management database

```
> osql -U sa -P sa@Password -S localhost -i C:\MSSQL\NVSELECT.sql
```

     Edit the SID assignment of "CREATE LOGIN" in NVRECRTUSR.sql based on the SID written in NVSELECT.log.

   - sFlow database

```
> osql -U sa -P sa@Password -S localhost\SFLOW
 -i C:\MSSQL\SFLOWSELECT.sql
```

     Edit the SID assignment of "CREATE LOGIN" in SFLOWRECRTUSR.sql based on the SID written in SFLOWSELECT.log.

10. Switch from the active host to standby host [active -> standby]

    Switch from the active host to standby host to run the edited SQL Server on the standby host.

    After switching, if the Network Manager services listed below are running on the standby host, stop all the services.

    - NvPRO Performance Manager
    - NvPRO Topology Adapter
    - NvPRO ResourceManagerAPI Service
    - MasterScope UMF Operations Manager_*n* [*6]
    - NvPRO Base Manager
    - FTBase service
    - NvPRO Performance Database

    Stopping the services manually:

    a. Open the Control Panel window and search "Administrative Tools".

    b. In the Administrative Tools window, open the **Services**.

    c. Select the services to stop from the Service window and click **Stop Service**.

11. Recreate the database login users [standby]

    Run RECRTUSR.sql, NVRECRTUSR.sql, and SFLOWRECRTUSR.sql edited in Step 9 in order to adjust the login users' SID between the active host and standby host.

    Examples: Login user recreation command (Do not place any carriage returns within the command line.)

    - Configuration management database (CMDB)

      ```
      > osql -U sa -P sa@Password -S localhost -i C:\MSSQL\RECRTUSR.sql
      ```

    - Alert management database

      ```
      > osql -U sa -P sa@Password -S localhost
       -i C:\MSSQL\NVRECRTUSR.sql
      ```

    - sFlow database

      ```
      > osql -U sa -P sa@Password -S localhost\SFLOW
       -i C:\MSSQL\SFLOWRECRTUSR.sql
      ```

This completes the restore procedure for the external databases.

Switch from the standby host to active host if needed.

Appendix B. Installing Monitoring Terminals as a Multi-Instance Configuration

When multiple manager functions of Network Manager exist, multiple monitoring terminal functions which are connected to each manager can be installed in the same terminal.

Tip

In this product, it is called Multi-Instance Configuration to install the multiple monitoring terminal functions in the same terminal

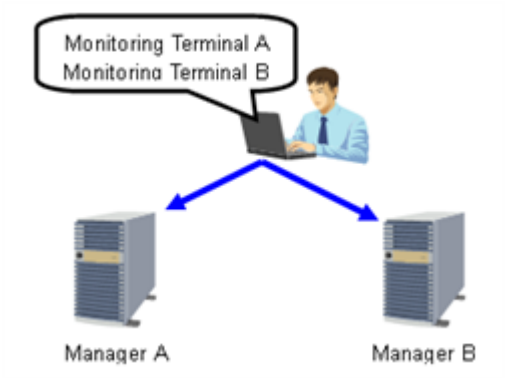

Figure B-1 Multi-instance configuration

If the multiple monitoring terminal functions are installed as the multi-instance configuration, add the following steps when the installation configuration screen ("Figure B-2 Installation configuration screen (page 114)") is displayed in the installation of the monitoring terminal function ("Chapter 5. Monitoring Terminal Function Setup (page 29)").

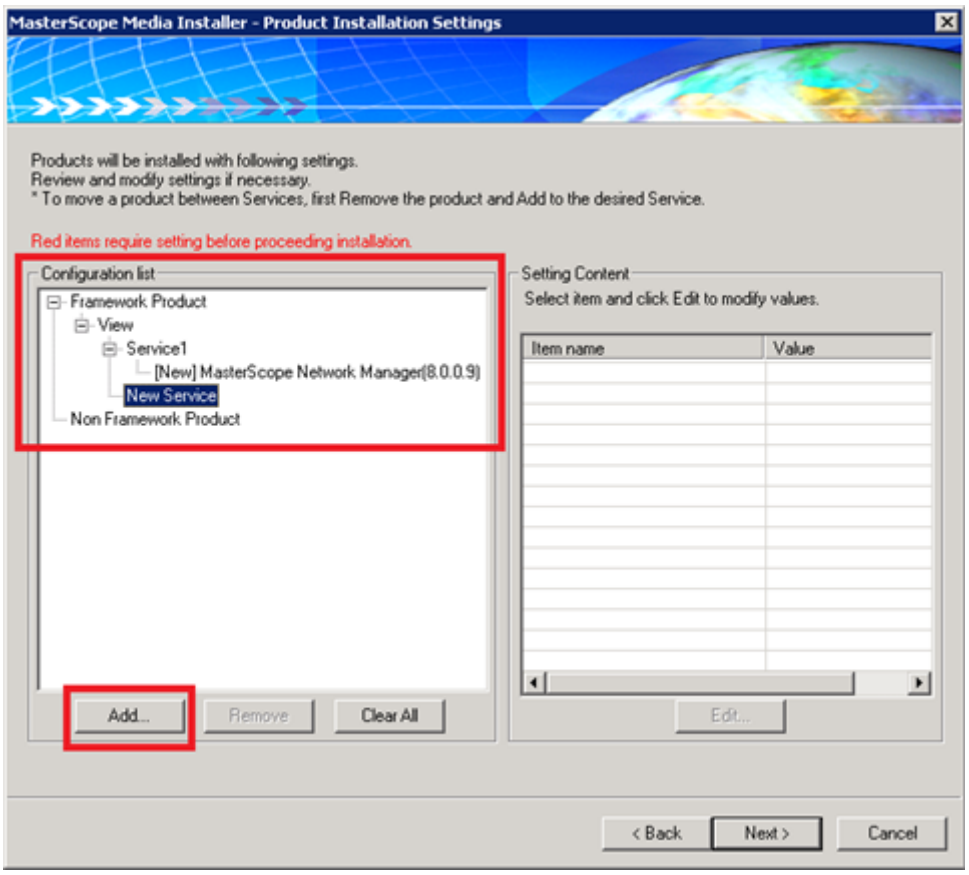

Figure B-2 Installation configuration screen

1. In the **Configuration list** in Figure "Figure B-2 Installation configuration screen (page 114)", select **New Service** under the View tree and click **Add** .
2. **Adding products selection** dialog box is displayed. Select "MasterScope Network Manager (View)" and click **OK**.

   Confirm the "MasterScope Network Manager (View)" is added to the new service which you have selected.

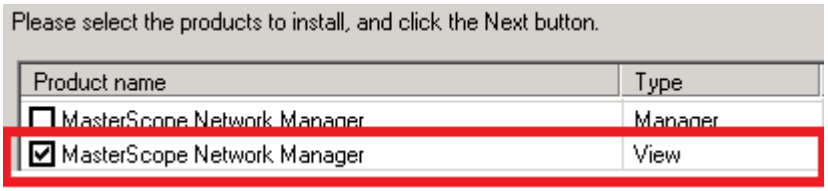

Figure B-3 Add Products dialog box

3. Select newly added service *n*[*1] and enter the installation parameters in **Setting Content** of this service.
4. Repeat the above-mentioned procedure until all the monitoring terminal functions are installed.

*1 n is a service number larger than 1.

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For Windows / EXPRESSCLUSTER X environment

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