MasterScope

MISSION CRITICAL OPERATIONS

-SigmaSystemCenterLinker-

Manual

Contents

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1 Preface

This manual describes the linker used to link MasterScope MISSION CRITICAL
OPERATIONS (called *MCO* below) and SigmaSystemCenter (called *SSC* below) to each
other.

SigmaSystemCenterLinker

MasterScope MISSION CRITICAL OPERATIONS Base Manager Provisioning Option for
Windows (called *this option* below) links MCO and SSC to each other to automatically obtain
information about changes to the configuration of the system managed using SSC and help
you visualize the system status.

This function is optional. To use this function, purchase a license for it. This option has the
feature below. For details such as how to set up the environment, see chapter 3.

- Integrated operation management of provisioning environments
  This option achieves integrated operation management by linking MCO and SSC.

2 Operating environments

2.1 SSCLinker operating environment

This option runs in the following environment:

Software Requirements	
MISSION CRITICAL OPERATIONS management server	Supported OS: Windows Server 2003 Required software: .NET Framework 3.0 or later Database 　　Microsoft SQL Server 2008 + Service Pack 1 　　or Microsoft SQL Server 2008 　　or Microsoft SQL Server 2005 + Service Pack 2
SigmaSystemCenter management server	SigmaSystemCenter 2.0, 2.1, 2.1u1, 2.1u2 Supported OS: See the SigmaSystemCenter manual. Required software: See the SigmaSystemCenter manual.
Management target server *1	For details, see the MasterScope MISSION CRITICAL OPERATIONS SigmaSystemCenterLinker Release Notes.
Virtual environment infrastructure product	Virtual environment infrastructure product for each SigmaSystemCenter version: − SSC 2.0: VMware VirtualCenter 2.0.1 (ESX Server 3.0) − SSC 2.1, 2.1u1, 2.1u2: VMware VirtualCenter 2.5 (ESX Server 3.0) 　　　　　　　　　Citrix XenServer Enterprise Edition 5.5 　　　　　　　　　Windows Server 2008 Hyper-V

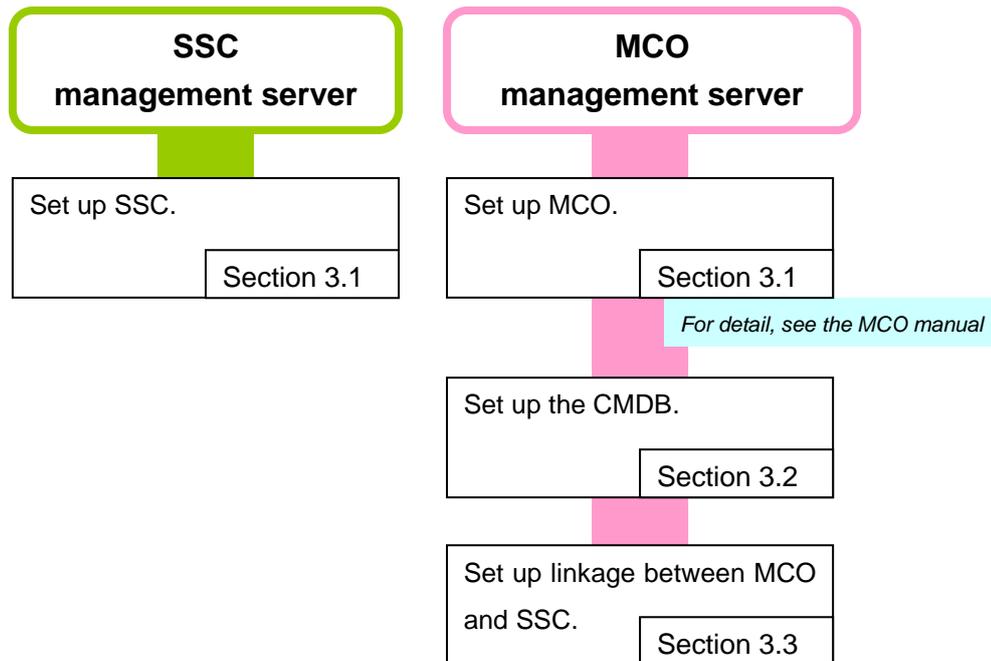*1. The management target server must be linked with SigmaSystemCenter.

Hardware Requirements	
Management server	For details, see each product manual.
Management target server	

5

3 Setting up the SSCLinker

This chapter describes how to install each component of this option for the first time.

The following figure shows the flow of setting up the SSCLinker:

Note: Do not install the MCO agent on the management target server before finishing the procedure in "3.2 Setting up the CMDB". If the agent is installed first, the system might operate incorrectly.

3.1 New installation

3.1.1 Installing the SSC manager

1. Set up the SSC manager on the SSC management server by following the new setup procedure for the manager. For details, see the SSC Installation Guide.
2. If using MasterScope Network Manager, MasterScope iStorageManager, or VMware VirtualCenter, set up linkage with SSC. For details, see the SSC Installation Guide.

3.1.2 Installing MCO

Perform the following installation on the MCO management server:

1. Set up the MCO manager as described in the MCO Release Notes.

2. If the MCO management server and SSC management server differ, install the MCO agent on the SSC management server. Set up the agent by following the installation procedure in the MCO Release Notes. Specify the host name of the MCO management server for [Manager hostname].

3. Set up the MCO console as described in the MCO Release Notes. Specify the host name of the MCO management server for [Manager hostname].

4. Install the SSCLinker option license.

5. Replace the libraries for the SSCLinker as follows:

    1) Stop the MasterScope MISSION CRITICAL OPERATIONS manager service.

       Open the [Start] menu, [Administrative Tools], and then [Services]. Next, stop the "UMF Operations Manager_n" service. (Here, n is a number that differs according to the installation environment.)

    2) Replace the libraries.

       Copy the files as described below.

       (%MCO_INSDIR% represents the MCO installation directory.)

       - Copy source

         - To link with SSC 2.0:   %MCO_INSDIR%\Manager\bin\SSC2.0

         - To link with SSC 2.1 to SSC 2.1u2: %MCO_INSDIR%\Manager\bin\SSC2.1

         In both cases, copy the following three files:

           ✓ UC_Client.dll

           ✓ UC_Client.cfg

           ✓ SysMonMgr.exe.config

       - Copy destination

         %MCO_INSDIR%\Manager\bin

    3) Start up the MasterScope MISSION CRITICAL OPERATIONS manager service.

       Open the [Start] menu, [Administrative Tools], and then [Services]. Next, start up the "UMF Operations Manager_n" service. (Here, n is a number that differs according to the installation environment.)

3.2 Setting up the CMDB

  The following is an explanation of how to configure the configuration management
database (called CMDB below). The installation directory for MCO is represented
by %INSDIR%.

1. Stop the MasterScope MISSION CRITICAL OPERATIONS manager service.
    Open the [Start] menu, [Administrative Tools], and then [Services]. Next stop the
    "UMF Operations Manager_n" service. (Here, *n* is a number that differs according to
    the installation environment.)

2. Change to the %INSDIR%\Manager\sql\sqlserver directory and execute the CMDB
    creation script (WfdbCmdbSetup.bat). You can use the command line parameters to
    specify the name of database to be created, the name of server where the database
    is created, the instance name, and the database driver name.

    ```
    > cd %INSDIR%\Manager\sql\sqlserver
    > WfdbCmdbSetup.bat <database name> <server name> <instance name> <database
    driver name>
    ```

      The following is an explanation of the default value of the parameters. To change
    the default values, specify a value for each parameter and run them.

        database name   : wfdb
        server name   : localhost
        instance name *1   : SQLEXPRESS
        database driver name   : SQL Server

      *1. If the instance name of SQL Server was not specified when it was installed (the
      default instance was used), specify "\" (backslash) for the instance name.

    Example:
    ```
    > cd "C:\Program Files\NEC\UMF\Operations\Manager\sql\sqlserver"
    > WfdbCmdbSetup.bat wfdb localhost SQLEXPRESS "SQL Server"
    ```

3. After executing the script, check the execution log output to the execution directory to
    ensure that no error has occurred.

4. The specified database configuration file is created.

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

5. Start up the MasterScope MISSION CRITICAL OPERATIONS manager service.
   Open the [Start] menu, [Administrative Tools], and then [Services]. Next, start up the "UMF Operations Manager_n" service. (Here *n* is a number that differs according to the installation environment.)

3.3 Setting up linkage between MCO and SSC

This section describes how to set up linkage between MCO and SSC. Perform the operations below from the console.

3.3.1 Specifying the acquisition destination SSC information

Enter the configuration mode before performing this operation.

To add definitions for connecting to SSC, right-click [SSCTopology] in the tree view, and then select [Add Management Server]. When the [New Management Server] dialog box is displayed, enter each item, and then click the [OK] button.
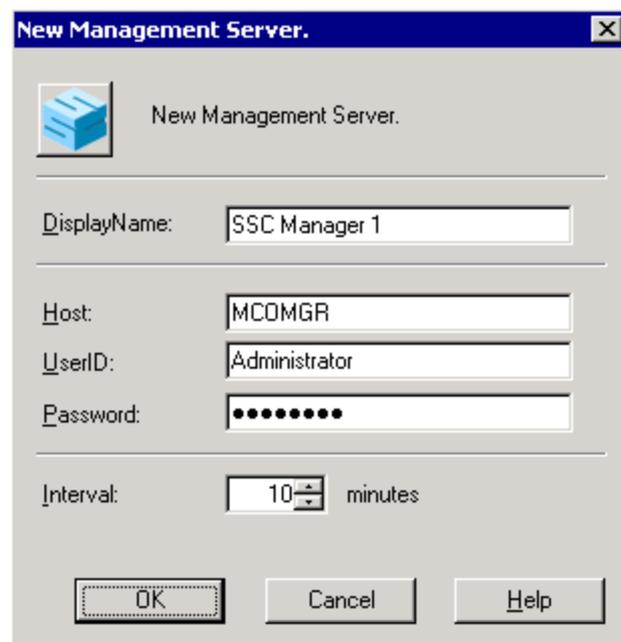
[D i s p l a y N a m e]: This must be entered. Enter the name displayed in the tree. Use up

to 64 characters.

[H o s t]: This must be entered. Enter the host name or IP address used to run SSC. Use up to 64 characters.

[U s e r I D]: This must be entered. Enter the user name for logging in as described in the notes below. Use up to 64 characters.

[P a s s w o r d]: This must be entered. Enter the password for the above user. Use up to 64 characters.

[I n t e r v a l]: Specify the polling interval for acquiring information in minutes. The default is 10 minutes.

Note that, when performing provisioning by using a spare VM server, it takes several minutes less to perform provisioning such as adding servers, so it is recommended to set [Interval] to one minute.

According to the SSC notes, the following actions must be taken:

1) Use Windows authentication to log in.

    Use the same account and password specified for the OS on the SSC management server to register a user to SSC. Next, when setting up the SSCLinker for MCO, specify the same user name and password.

2) If the specified information collection interval is 10 minutes or longer, SSC communication must be customized. Customize the communication as described in"3.7 Changing the information collection interval".

3) If the management server is redundant, specify a floating IP address for the host name.

Judge whether components are connected by using the color in the tree.

Unconnected: The color indicating "CRITICAL" severity level is used.

Connected: The color indicating "NORMAL" severity level is used.

Connected   Unconnected
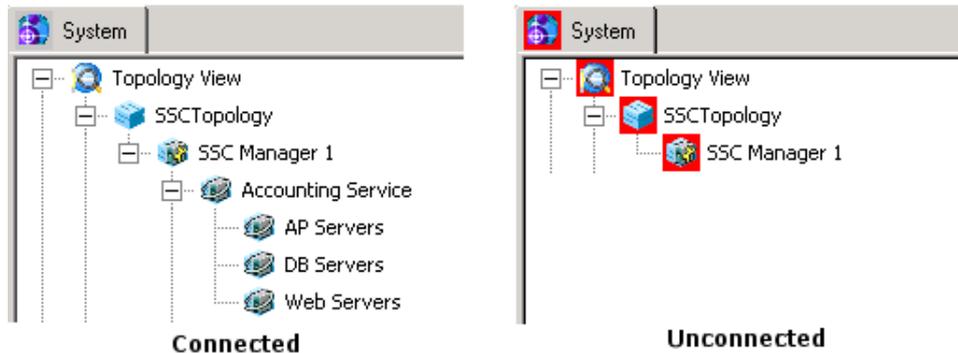
Note that no messages are issued due to the severity level changing.

3.3.2 Changing the acquisition destination SSC information

To change definitions for connecting to SSC, right-click the SSC connection destination tree view, and then select [Update Management Server] from the displayed pop-up menu.

3.3.3 Deleting acquisition destination SSC information

To delete definitions for connecting to SSC, right-click the SSC connection destination tree view, and then select [Delete Management Server] from the displayed pop-up menu.

3.4 Setting up golden image distribution (for a physical server)

If the management target server is set up on a physical server, set up golden image distribution by performing the procedure below. Before doing this, the MCO agent must be installed. For details about the installation method, see the MCO manual.

3.4.1 Creating a golden image

Create the golden image for provisioning. For details about how to do so, see the DPM manual.

1   Be sure to perform the following operations for the MCO agent before obtaining the golden image:

● Stop the MCO agent service (UMF Operations Agent_n (*)).

(*) *n* is a number that differs according to the installation environment.

● Set the service startup setting for the MCO agent service to [Manual].

● Set the execution privilege for the MCO agent service to [Administrator].

● Execute the following command:

```
<InstallDIR>\Agent\bin\wfdbnodeidfiledel.exe
```

2　For the server on which golden image acquisition finishes, set the MCO agent service startup setting to [Automatic].

3　Based on the golden image created above, use the instance of DPM on the management server to create a restoration scenario. For details about the creation method, see the DPM manual.

3.4.2　Setting up distribution and registering servers to SSC

Specify settings so that servers can be added from SSC.

1. On the management server, select the [Package registration/modification] menu in DPM Image Builder, and then create a package of following Windows batch file included in the installation CD:

```
tools\MCO\pvagentsetup\pvagentsetup.bat
```

   *: If the target system is 64-bit or the installation directory for the MCO agent has been changed from the default, appropriately revise pvagentsetup.bat.

2. Create the distribution scenario for this package in DPM. For details about how to do so, see the DPM manual.

3. Next, add the distribution software to SSC. Add the above Windows package distribution scenario and the restore scenario of the golden image for each tier server created in section 3.4 to SSC as distribution software by using the SSC operation management tool on the management server. For details, see the SSC User's Guide.

4. Register the distribution software to each server group as a pattern. Distribute the golden image for each server group, execute pvagentsetup.bat, and then specify that two pieces of software be distributed during server operation. For details, see the SSC User's Guide.

5. Register at least one server to the pool for each server group. For details, see the SSC User's Guide.

3.5 Setting up template distribution (for VMware)

If the management target server is set up on a VM server, set up template distribution by performing the procedure below. Before doing this, the MCO agent must be installed. For details about the installation method, see the MCO manual.

3.5.1 Creating the VM template

Create the template for provisioning. For details about how to do so, see the SigmaSystemCenter manual.

1. Be sure to perform the following operations for the MCO agent before creating the template:

   ● Stop the MCO agent service (UMF Operations Agent_n (*)).

   (*) *n* is a number that differs according to the installation environment.
   ● Set the service startup setting for the MCO agent service to [Manual].
   ● Set the execution privilege for the MCO agent service to [Administrator].
   ● Execute the following command:

   ```
   <InstallDIR>\Agent\bin\wfdbnodeidfiledel.exe
   ```

2. For the server on which template creation finishes, set the MCO agent service startup setting to [Automatic].

3.5.2 Setting up distribution and registering servers to SSC

Specify settings so that servers can be added from SSC.

1. On the management server, select the [Package registration/modification] menu in DPM Image Builder, and then create a package of the following Windows batch file included in the installation CD if there is a Windows management target server:

   ```
   tools\MCO\pvagentsetup\pvagentsetup.bat
   ```

   *: If the target system is 64-bit or the installation directory for the MCO agent has been changed from the default, appropriately revise pvagentsetup.bat.

2. Create the distribution scenario for this package in DPM. For details about how to do so, see the DPM manual.

3. Next, add the distribution software to SSC. Add the above package distribution scenario to SSC as distribution software by using the SSC operation management tool on the management server. At this time, change the name of the distribution software to add to "PVAgentSetup". For details, see the SSC User's Guide.

4. Register the corresponding template to each server group. For details, see the SSC User's Guide.

3.6 Specifying the server group monitoring settings and making them a policy

Specify the monitoring settings for each server group, and register them as a policy. Set up monitoring for the MCO agents in the SSC topology as described in the MCO manual.

1. Specify the settings for one agent per server group.

2. Export the agent monitoring settings.

3. Import the exported information for the server groups.

[Note]

When importing the information in step 3, be sure to perform the import operation for a server group.

Specifying monitoring items in batch

The monitoring settings stored in groups are automatically applied to the agents in the SSC topology. The application method is described below.

[Note]

If an agent in a group is deleted, the monitoring settings for the agent are discarded. Therefore, unless monitoring settings are imported for groups in batch, monitoring is not performed just by adding a deleted agent to the same group.

To specify monitoring settings in batch, you must have configuration mode privileges.

Overall flow

The following shows the overall flow for specifying monitoring settings in batch:

Specify the main monitoring settings for one management target agent.

↓

Export the monitoring settings from the above agent.
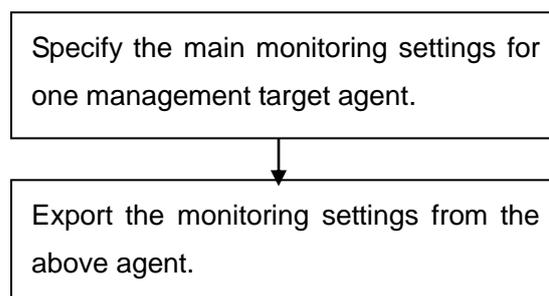
```
                              ↓
        ┌─────────────────────────────────────┐
        │ Import the monitoring settings to the │
        │ lowest level group in the SSC topology │
        │ (the group with hosts under it).       │
        └─────────────────────────────────────┘
```

Window screenshots and details

Window screenshots and details are provided below in the order of "Overall flow".

1. Specify the monitoring settings for an agent. The operation is the same as for a conventional MCO agent.
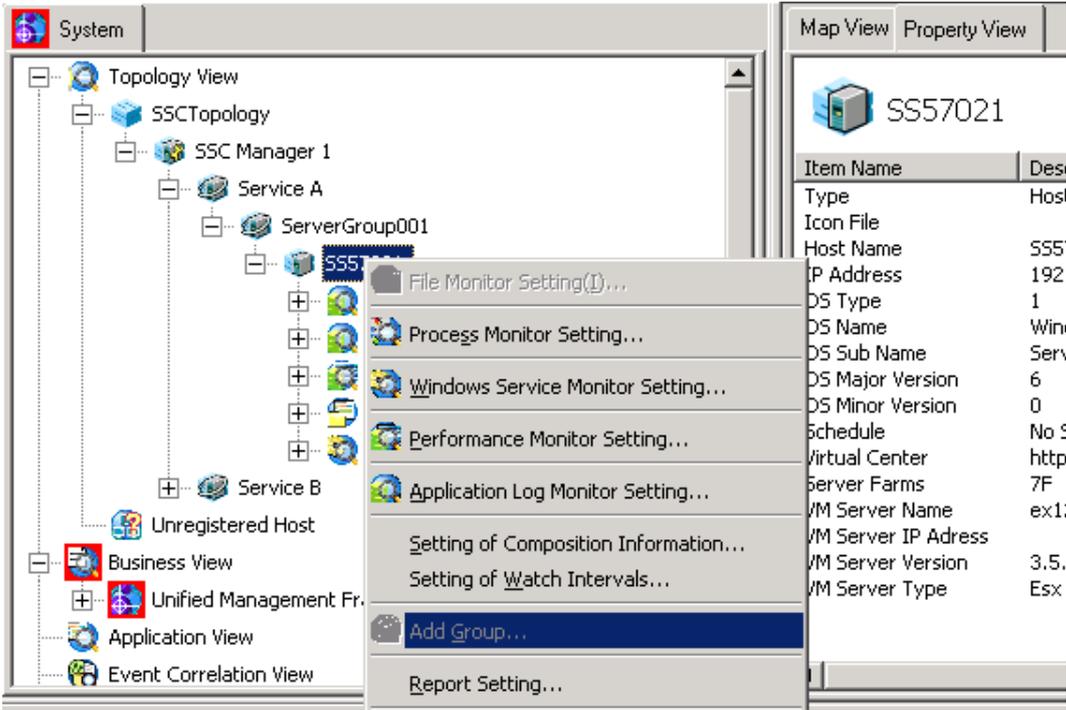
2. Export the monitoring settings from the agent in step 1. This is an existing feature of conventional MCO agents. The settings are saved on the console at this time.
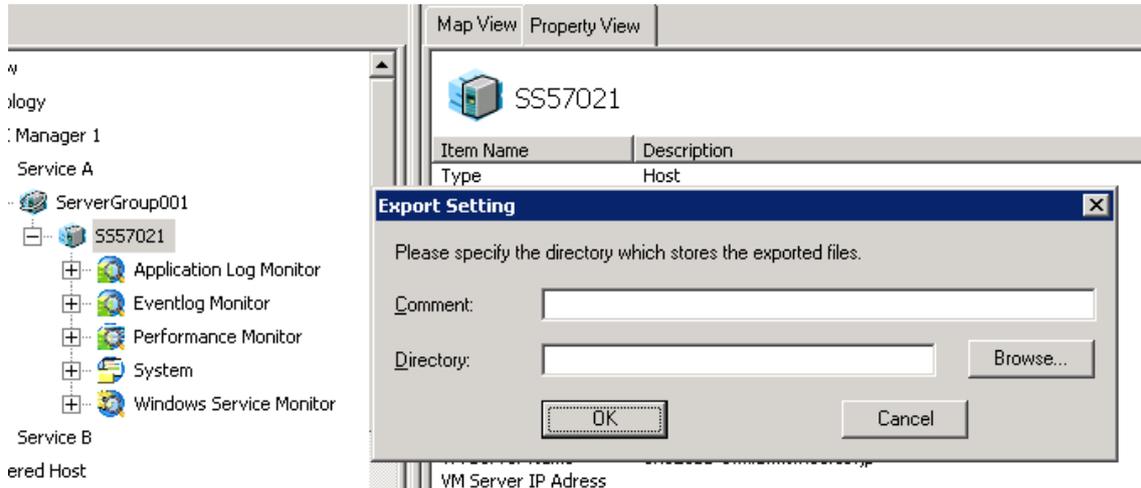
3. Right-click the lowest group in the SSC topology, and then select [Import] from the displayed pop-up menu to display the [Import] dialog box.
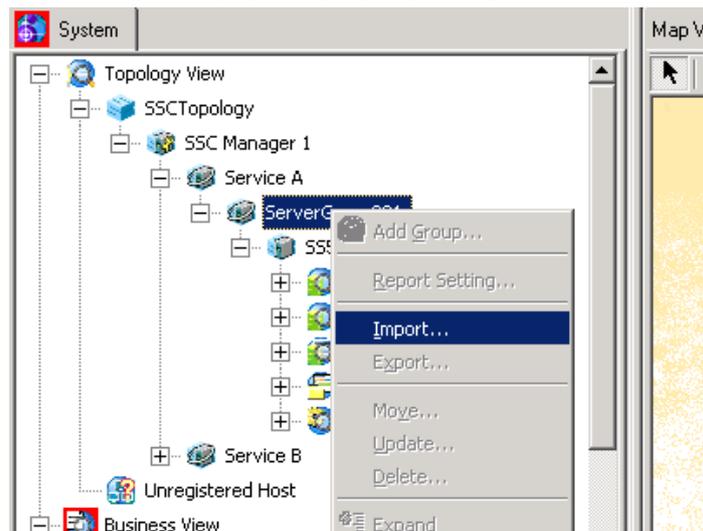
*: For a group for which monitoring settings have already been imported, the following warning message is displayed, and then the [Import] dialog box is displayed when [OK] is clicked.

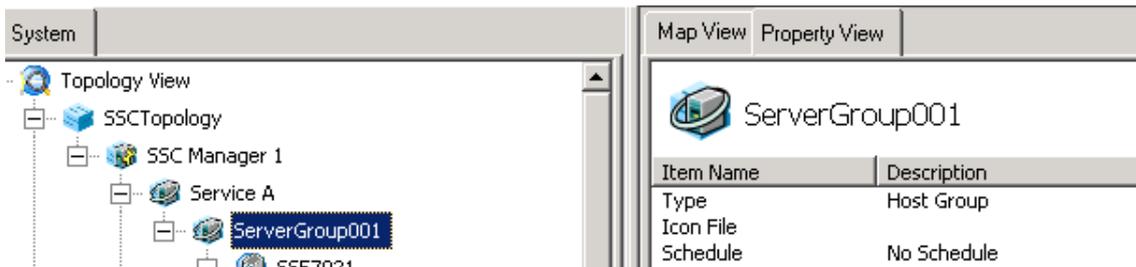4. Select the file exported in step 2, and then import it.
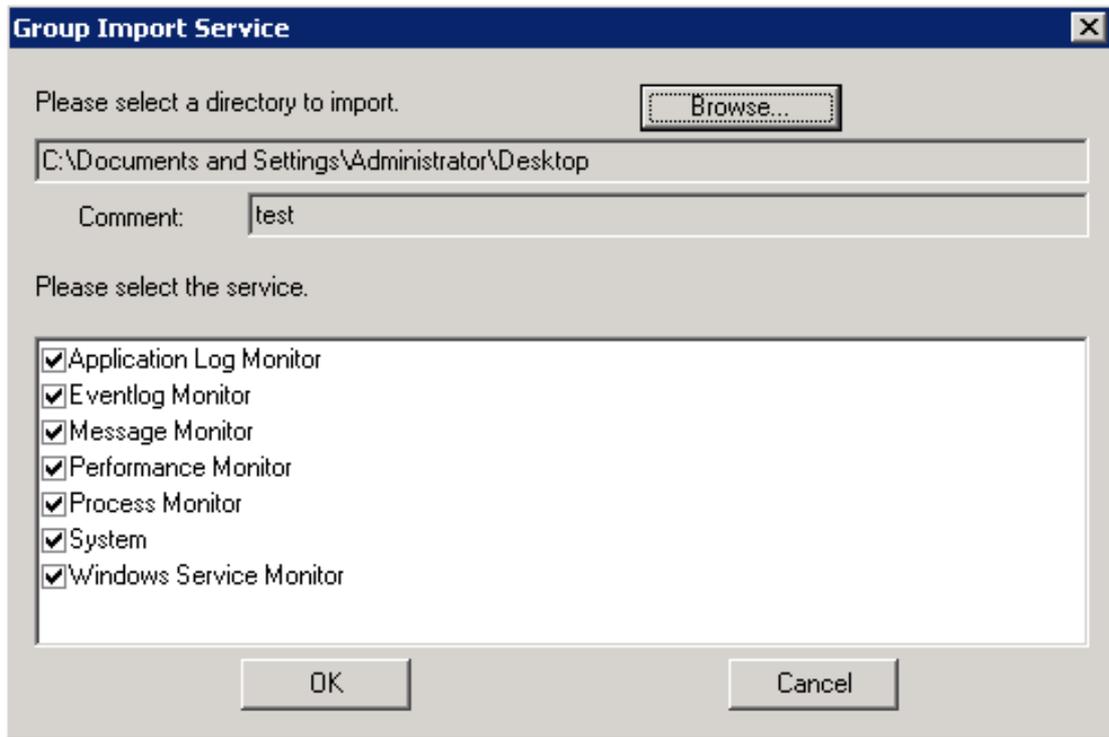
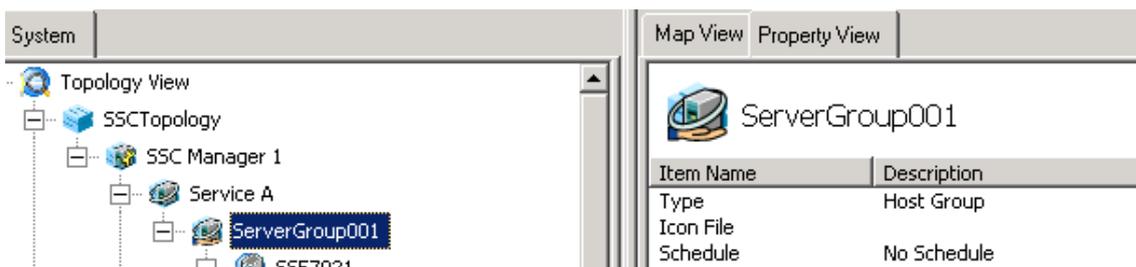5. The icon of the group for which the monitoring settings were imported changes.
[Note]
　Make sure that the group icon changed to the icon indicating import completion.
・Icon before importing

・Icon after importing

3.7 Changing the information collection interval

If the information collection interval is set to 10 minutes or longer, SSC 2.0 communication settings must be changed. Revise the file below.

In this section, %MCO_INSDIR% represents the MCO installation directory.

○　C:\Program Files\NEC\PVM\bin\PVMServiceProc.exe.config

(**:** The above is the installation directory if SSC is installed in C:\Program Files\NEC\PVM.)

Add the bold text below.

```
〈system.serviceModel〉
〈services〉
〈service name="UniversalConnectorServer"
behaviorConfiguration="UniversalConnectorServiceConfig"〉
〈host〉
〈baseAddresses〉
〈add baseAddress="http://localhost:26150/UniversalConnectorServer" /〉
〈add baseAddress="net.tcp://localhost:26102/UniversalConnectorServer" /〉
〈/baseAddresses〉
〈/host〉
〈endpoint
bindingNamespace="Nec.SystemProvisioning.UniversalConnector"
contract="Nec.SystemProvisioning.UniversalConnector.IUniversalConnectorServer"
binding="wsHttpBinding"
address="" /〉
〈endpoint
bindingNamespace="Nec.SystemProvisioning.UniversalConnector"
contract="Nec.SystemProvisioning.UniversalConnector.IUniversalConnectorServer"
binding="netTcpBinding"
            bindingConfiguration="NetTcpBinding_IUniversalConnectorServer"
address="" /〉
〈/service〉
〈/services〉
  〈bindings〉
    〈netTcpBinding〉
  〈binding name="NetTcpBinding_IUniversalConnectorServer" receiveTimeout="00:30:00"〉
      〈/binding〉
    〈/netTcpBinding〉
  〈/bindings〉
〈behaviors〉
〈serviceBehaviors〉
〈behavior name="UniversalConnectorServiceConfig"〉
〈serviceMetadata httpGetEnabled="true" /〉
〈serviceThrottling maxConcurrentSessions="2147483647" maxConcurrentCalls="2147483647" /〉
〈dataContractSerializer maxItemsInObjectGraph="2147483647" /〉
〈/behavior〉
〈/serviceBehaviors〉
〈/behaviors〉
〈/system.serviceModel〉
〈/serviceBehaviors〉
〈/behaviors〉
〈/system.serviceModel〉
```

receiveTimeout="00:30:00" indicates the SSC 2.0 communication timeout time. The units are *hours*:*minutes*:*seconds*. In this example, 30 minutes is specified.

Specify a value greater than the information collection interval.

After making the above revisions, restart the PVM service.

Open the [Start] menu, [Administrative Tools], and then [Services]. Next, select and restart "PVMService".

○ %MCO_INSDIR%\Manager\bin\SysMonMgr.exe.config

Revise the bold text below.

```
  〈system.serviceModel〉
    〈bindings〉
      〈netTcpBinding〉
        〈binding name="NetTcpBinding_IUniversalConnectorServer"
closeTimeout="00:30:00"
            openTimeout="00:03:00" receiveTimeout="00:10:00"
sendTimeout="00:05:00"
            transactionFlow="false" transferMode="Buffered"
transactionProtocol="OleTransactions"
            hostNameComparisonMode="StrongWildcard"
listenBacklog="2147483647"
            maxBufferPoolSize="524288" maxBufferSize="65536000"
maxConnections="10"
            maxReceivedMessageSize="655360000">
          〈readerQuotas maxDepth="32" maxStringContentLength="8192000"
maxArrayLength="163840000"
              maxBytesPerRead="4096000" maxNameTableCharCount="163840000" />
          〈reliableSession ordered="true" inactivityTimeout="00:30:00"
              enabled="false" />
          〈security mode="Transport">
            〈transport clientCredentialType="Windows"
protectionLevel="EncryptAndSign" />
            〈message clientCredentialType="Windows" />
          〈/security〉
        〈/binding〉
      〈/netTcpBinding〉
    〈/bindings〉
```

inactivityTimeout="00:30:00" indicates the SSC 2.0 communication timeout time. The units are *hours*:*minutes*:*seconds*. In this example, 30 minutes is specified.

Specify a value greater than the information collection interval.

Specify the same value specified for receiveTimeout in PVMServiceProc.exe.config.

After making the above revision, restart the service.

Open the [Start] menu, [Administrative Tools], and then [Services]. Next, restart the "UMF Operations Manager_n" service. (Here, *n* is a number that differs according to the installation environment.)
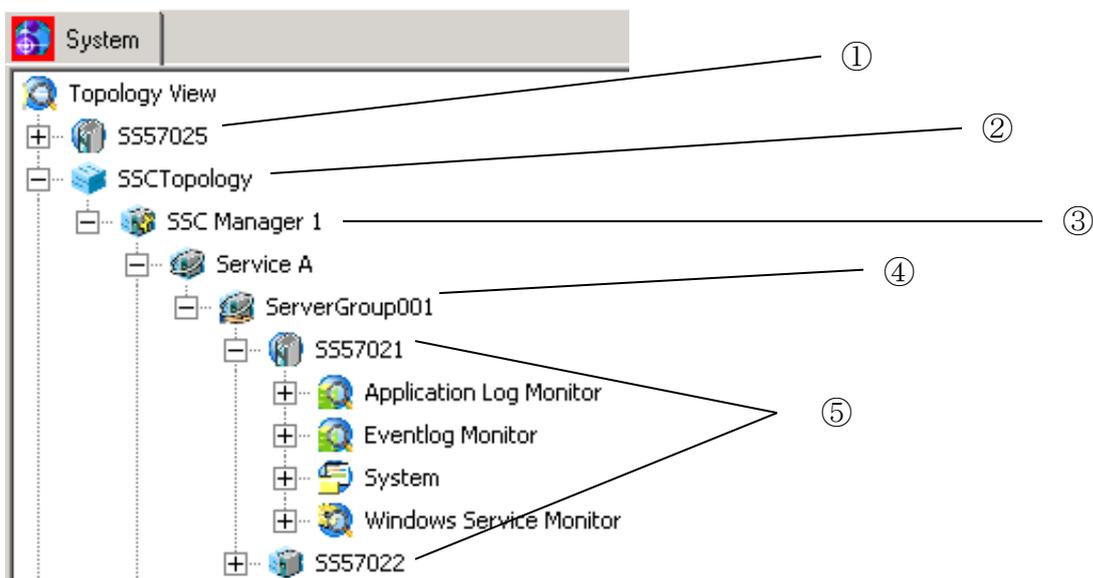
4 Description of windows

4.1 Topology view

For this product, SSC is linked to, and servers managed by SSC can be displayed in the MCO topology tree and ran as MCO agents.

■ **Server group tree display**

A screenshot of the tree and descriptions of each part are provided below.

① This is a normal MCO agent that is not managed by SSC. This is the same as the existing display.

② This is the root of the SSC topology. If not using the SSCLinker, no items are displayed under this node.

③ This is a SSC server that has been set up.

④ This is a server group represented in SSC. Logical servers exist under this node. If the monitoring settings for a group are imported in batch, the monitoring settings stored in the group are automatically applied to agents in the SSC topology. If the monitoring settings for a group are not imported in batch, no monitoring settings are applied to agents in the SSC topology. Details about how to specify settings in batch are provided below.

⑤ These are logical servers. Details are provided below.

■ Utility menu and command
Overview

The utility menu and command are provided for synchronizing information from SSC at any time.

- Purpose

Normally, SSC information is synchronized at a certain polling interval that can be changed, but, due to load considerations, this interval is specified in minutes. Therefore, depending on the timing, the saved SSC information might not match the server information. Therefore, the utility menu and command are provided based on the assumption that you will sometimes want to immediately perform synchronization.

- Menu format

Right-click a management server item displayed in the tree, and then select [Synchronize Information...] from the displayed pop-up menu. This menu is also displayed in the normal mode.
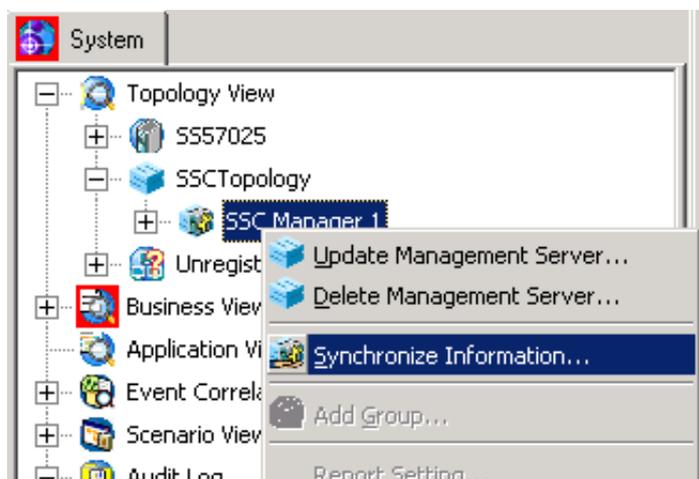
Because this processing is assumed to impose a heavy load, the information is synchronized only after displaying a confirmation message intended to prevent accidentally re-executing the operation.

- Command format
    SSCLinkerCmd SYNC [Host]

For the host name, specify the name of an SSC server (displayed in the tree).

When this command is executed, the SSCLinker manager synchronizes the SSC information. However, this command fails in environments to which the SSCLinker license has not been applied.

       Return values

          0: Success

          1: Failure

Messages generated when connecting or deleting an agent

When a server agent added using SSC is started up for the first time or when a server is deleted from SSC, the SSCLinker manager generates one of the following messages.

- Addition

Category	MCO
Message ID	00620001
Severity	Normal
Application	
Object	SSCLinker
Message text	A server has been added.(NODE=%s)(GROUP=%s)

- Deletion

Category	MCO
Message ID	00620002
Severity	Normal
Application	
Object	SSCLinker
Message text	A server has been deleted.(NODE=%s)(GROUP=%s)

4.1.1 System configuration view

The system configuration view displays the relationship between virtual machines, virtual machine servers, and physical hosts. This view can only be used if the SSCLinker option license has been registered.
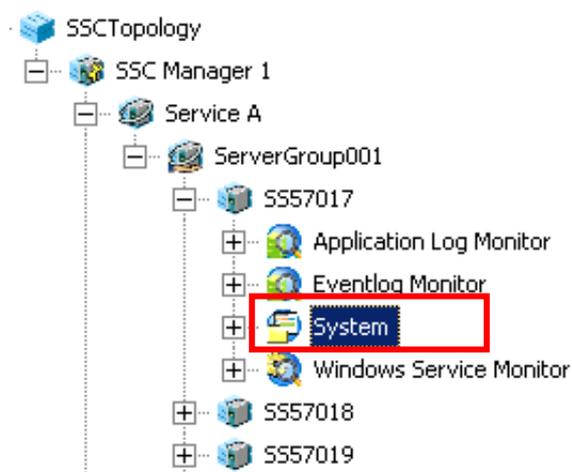
Display
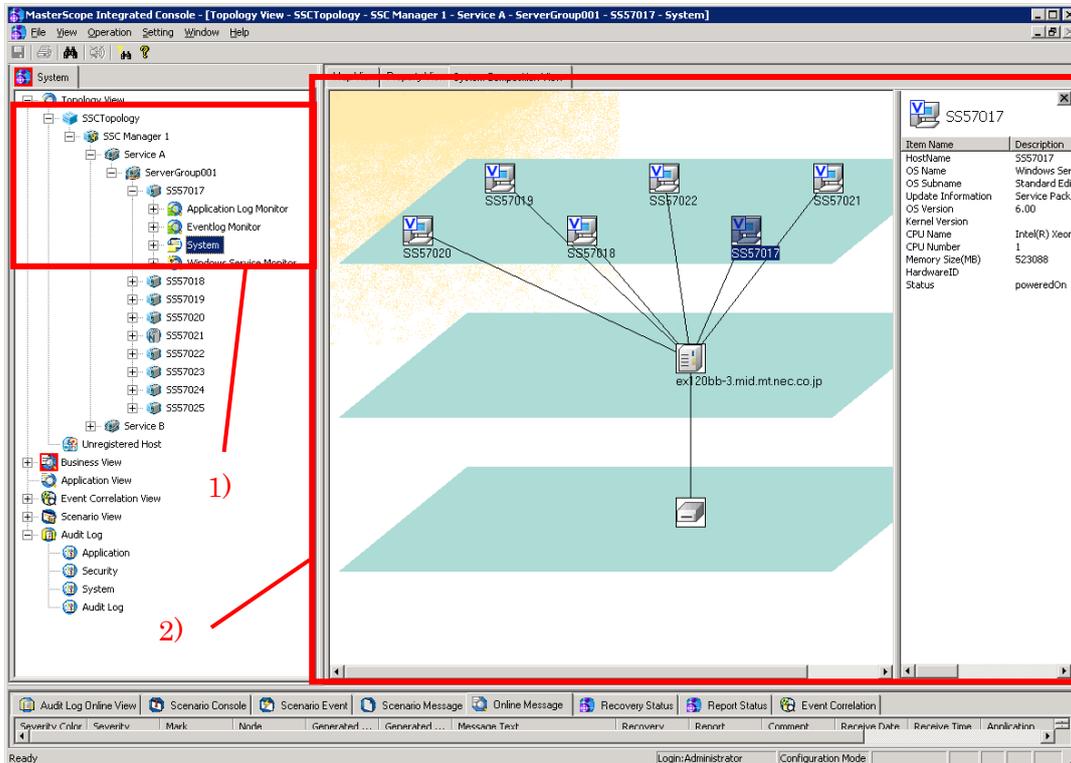
System Configuration View

1) [System] node
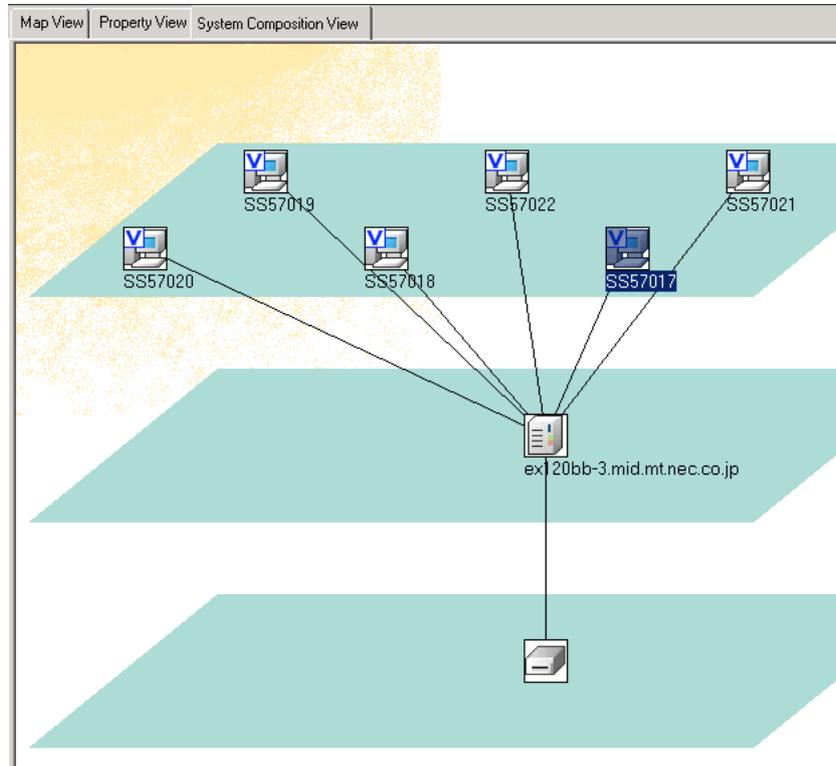
Clicking a system node under an agent node displays the system configuration view.

2) System configuration view

If the agent is a virtual machine, the relationship between the virtual machines, virtual

machine server, and physical machine is displayed.

Clicking icons in [System Composition View] displays properties in the right pane.

The items displayed for virtual machines, virtual machine servers, and physical machines differ.

Note that, depending on the installation conditions of products linked to SSC, items might not be displayed.

Clicking a virtual machine icon in [System Composition View] moves the topology focus to the clicked machine.

Abnormality detection

When SSC detects a failure, the icon color changes.
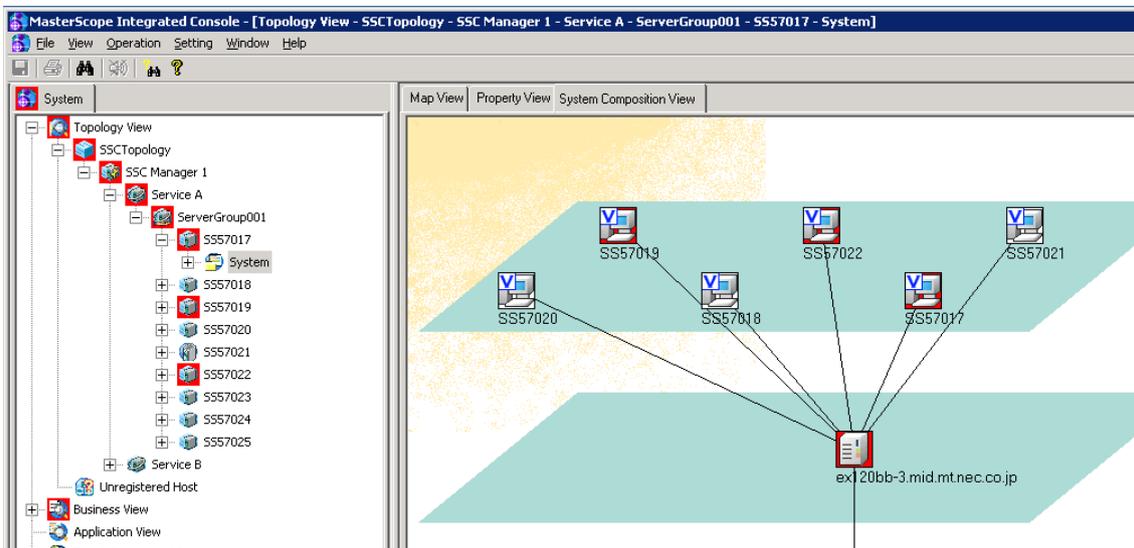
Virtual machine abnormalities occurring in multiple groups due to a virtual machine server abnormality can be checked in the tree view.

Which virtual machine server abnormality is causing a virtual machine abnormality occurring in multiple groups can be graphically checked.

5 Notes

1. If the interval for synchronizing logical information between SigmaSystemCenter and MasterScope MISSION CRITICAL OPERATIONS is longer than the provisioning execution time, SigmaSystemCenter management target agents are temporarily added to an [Unregistered Host] instead of [SSCTopology].
2. It is not possible to manually move, delete, or change the icons of groups or agents under [SSCTopology].
3. SigmaSystemCenter 1.3 and 2.0 cannot be managed at the same time.
4. For SigmaSystemCenter 1.3, the physical host information is not displayed in the system configuration view.
5. The icon color of the system configuration view is changed by linking to SigmaSystemCenter. Because synchronization is performed at the monitoring interval, there might be temporary mismatches between changes in the color of agent icons displayed in the topology view and those in the system configuration view.
6. If a logical server in a group is deleted, the monitoring settings for the server are discarded. Therefore, unless monitoring settings are imported for groups in batch, monitoring is not performed just by adding a deleted logical server to the same group. When monitoring settings are imported for groups in batch and a deleted logical server is added to the same group, the monitoring settings stored in the group are automatically applied, and then monitoring is performed.

6 Restrictions

None.