MasterScope MISSION CRITICAL OPERATIONS
OperationCmd
Batch Registration of Action Definitions
Operation Manual

Revision History

Edition	Chapter/Section	Description of Revision
1st edition	-	-

Contents

1. Functional description

1.1. Functional outline

The MasterScope MISSION CRITICAL OPERATIONS operation control function prevents operation errors by stylizing command entry to the agent and the manager.

This document describes the following operation control function.
- Function to import action definitions by using a command

This function is optional. To use this function, purchase an operation control function license.

1.2. Function to import action definitions by using a command

This function can be used to import group and action definition information by using a command on the manager.

Procedure for applying group and action definition information
1. Create an import definition file by using an editor or other application.
2. Convert the import definition file into an SG object file by executing the SG conversion command for operation control.
3. Apply the SG object file by executing the action definition import command for operation control.

Updating and deleting existing definitions
When you import group and action definition information into an environment in which a group and action are already defined, the import function updates the existing definition information if the group and action defined in the import file have the same level and the same group and actions name as the already defined group and action. Definition information (action and command histories) of groups and actions not defined in the import file is deleted.

* If the same group and/or action names are defined multiple times on the same level in the operation control view, the definition information of the group and action added last is updated and the definition information (action and command histories) of the groups and actions with the same names is deleted.

Restrictions during importing
If you apply SG by using the action definition import function on the command line, operation control is not available from the console until importing is complete.
All actions are temporarily disabled during importing. Therefore, even if a message- or time-triggered action receives an event, that action is not executed. If an action is defined as enabled in the import file, the action is enabled when importing completes.

After importing completes, all the operation control screens displayed before importing are closed. The command list displayed in the command execution result dialog box and the message list displayed on the operation control message tab in the information view are initialized. When you start and log in to the console during importing, the group and action tree is not displayed in the operation control view until importing completes.

While command-based importing is in progress, another command cannot be used to start importing. You cannot execute command-based importing in the following cases.
- An action is being executed, waiting to be checked, or on hold.
- A user is logged in in definition mode.

Rollback if importing fails
In response to an import request from the command, the manager executes importing as follows:
1. Acquires the definition mode from the command
2. Backs up action definition information
3. Disables all actions
4. Imports all actions
5. Imports all schedules
6. Enables the actions specified in the import definition
7. Cancels definition mode
8. Sending a tree notification to the console after importing

If processing fails due to an error in step "4. Imports all actions," the backed up action definition information is used to roll back to the state before importing started.
However, rollback is not performed if processing fails at step "5. Imports all schedules" or later.
Even if importing schedules fails, an action definition that uses a schedule that was not imported is imported as is without interrupting the import process. However, that action cannot be enabled because it failed to import the schedule that its action definition uses. It is therefore important to back up SG before starting importing. If importing fails, restore the backed up SG, resolve the failure according to the details of the error output by the command, and try importing again.

Command termination while the import in progress
If you end the command process while executing command-based importing, the manager continues the import process under execution.

2. Setting items in the import definition file

This section describes the definition file for the action definition import function.
The import definition file includes the definition of the hierarchical structure of groups and actions and action definitions.

The entire configuration of the import definition file is described below.
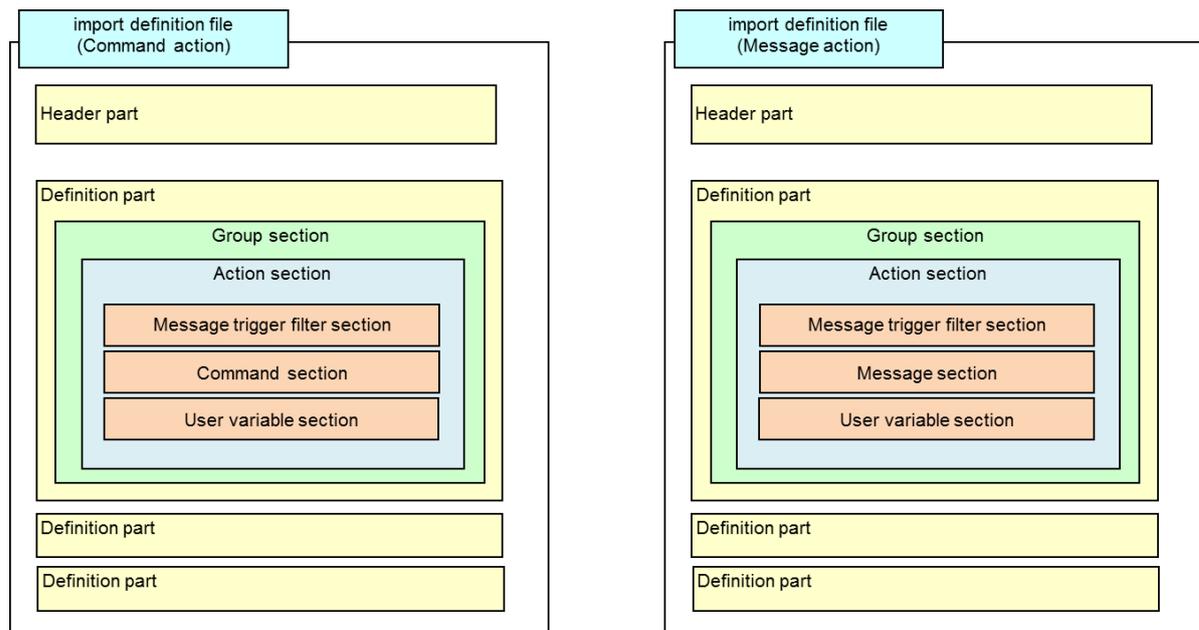
* The character encoding of the import definition file is Unicode (UTF-16 LE) in Windows and UTF-8 in HP-UX or Linux.
* Indents are added in the file description examples in this document to improve readability, however deleting indents does not cause any problems. To add an indent, the tab character and one-byte spaces can be used.
* The file is composed of a header part and a definition part. On the header part, product name and the function name are described while on the definition part, the descriptions of the definition are described in section units. You can define only the header part. When you import this definition, the definitions (action and command histories) of all the groups and actions on the manager are deleted.
* The action section cannot be omitted unless you define only the header part.
* For items where **[Required]** is described in the description of the "Value", the Key=Value line must be described when creating the hierarchy definition file. For items where no **[Required]** is described, they can be omitted. To omit the item, a whole line including the item must be omitted (Value only cannot be omitted when Key only is described).
* To include a comment in the file, prefix the line with # or //. You cannot add a comment by using # or // in the middle of the line.
* For the calendar and schedule definitions, refer to the calendar and scheduler procedure manual (Calendar_Schedule_Import .pdf).

A description example is shown below.

```
FILE:MCOperations
DESCRIPTION:Operation control definition
FUNCTION:OperationCmd
VERSION:2.0                              ↑Header part

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
[GROUP]
        GROUPNAME=group1                 ↓Definition part
        ICONPATH=C:\group.ico
        [ACTION]
                ACTIONNAME=action1_command
                ICONPATH=C:\action.ico
                ACTIONENABLE=1
                TRIGGERID=1
                SCHEDULEFILENAME=SchImport.txt
                ACTIONTYPE=0
                EXECUTIONORDER=1
                TARGETNAME=ServerA
                TARGETNAME=ServerB
                [COMMAND]
                        COMMANDENABLE=1
                        COMMANDEXPLANATION=Information-collection-command-1
                        COMMANDNAME=C:\action1\action.exe
                        WORKINGDIR=
                        COMMANDOPTION=-f D:\tmp\data.cab
                        NORMALTERMINATIONCODE=0
                        ABNORMALTERMINATIONCODE=
                        RESULTACQUISITION=1
                [END_COMMAND]
                [COMMAND]
                        COMMANDENABLE=1
                        COMMANDEXPLANATION=Information-collection-command-2
                        COMMANDNAME=C:\action1\action.exe
                        WORKINGDIR=
                        COMMANDOPTION=-f D:\tmp\data2.cab
                        NORMALTERMINATIONCODE=0
                        ABNORMALTERMINATIONCODE=
                        RESULTACQUISITION=1
                [END_COMMAND]
        [END_ACTION]
[END_GROUP]
```

2.1. <u>Header part</u>

The character strings in the header part are described as below:

FILE:MCOperations	... Product name (fixed) **[Required]**
DESCRIPTION:Operation definition	... Description (optional)
FUNCTION:OperationCmd	... Function name (fixed) **[Required]**
VERSION:2.0	... File version (fixed) **[Required]**

The product name and function name are not case sensitive. You can use either upper-case or lower-case characters for definitions.

2.2. <u>Definition part</u>

The definition part consists of sections and definitions.
A section begins with [XXX] and ends with [END_XXX].
Use the Key=Value format to make a definition.

You can include sections and definitions in each section. You must specify all the definitions (Key=Value) before specifying other sections for the same item.
The following is an example of an incorrect definition.

```
FILE:MCOperations
DESCRIPTION: Operation definition
FUNCTION:OperationCmd
VERSION:2.0

[GROUP]
        [ACTION]
                ACTIONNAME=Action-1
                TRIGGERID=0
        [END_ACTION]
        GROUPNAME=Group-1
[END_GROUP]
```

You must specify GROUPNAME=Group-1 before (above) the [ACTION] section.

2.2.1. <u>Group section</u>

■[GROUP] to [END_GROUP]
In this section, the group definition is described.
For [GROUP], multiple definitions can be described (for the number of groups). However, the same group name cannot be defined on the same level.

Key	Value
GROUPNAME	<u>Group name</u> Describe the group name by using up to 64 characters. **[Required]** The name specified here is displayed in the operation control view tree.
ICONPATH	<u>Icon file name to be used</u> Describe a path that is used as a group icon by using up to 256 characters. The icon to be specified must be registered in the console in advance.

2.2.2. <u>Action section</u>

■[ACTION] to [END_ACTION]
In this section, the action definition is described.
For [ACTION], multiple definitions can be described (for the number of actions). However, the same action name cannot be defined on the same level.
The keys that can be specified differ depending on the action type.
The keys that can be specified when the action type is command or message are described below.
A command or message action must always be defined.

2.2.2.1. Command action

Define a command action when the action type is "command."
The command section is required when you define the command action.

Key	Value
ACTIONNAME	<u>Action name</u> Describe the action name by using up to 64 characters. **[Required]** The name specified here is displayed in the operation control view tree. The same action name cannot be specified on the same level.
ICONPATH	<u>Icon file name to be used</u> Describe a path that is used as an action icon by using up to 256 characters. The icon to be specified must be registered in the console in advance.

ACTIONENABLE	Action enabled status
	Specify whether the action is enabled or disabled.
	0: Disabled *Default
	1: Enabled
TRIGGERID	Action execution condition
	Specify the action execution condition.
	0: Manually executed *Default
	1: Time-triggered
	2: Message-triggered
	For a time-triggered action, the schedule file name is required.
	For a message-triggered action, you must define the message trigger filter section.
ENABLEDSCHEDULE	Specification of the validity period for manual execution or a message trigger
	Specify whether the validity period is enabled or disabled.
	If you specify to enable this item, the schedule file name is required.
	This key is ignored if the action is time-triggered.
	0: Disabled *Default
	1: Enabled
SCHEDULEFILENAME	Schedule file name
	Specify the file name of the schedule definition used by the time trigger or validity period specification without the path. Describe an absolute path of the schedule definition file by using up to 256 characters.
	Schedule definition check and importing are executed if TRIGGERID=1 (time-triggered) or if ENABLEDSCHEDULE is disabled when TRIGGERID=0 (manually executed) or TRIGGERID=2 (message-triggered).
	When using a time trigger, specify "time schedule" as the schedule definition mode.
	When using the validity period specification, specify "period schedule" as the schedule definition mode.
EVENTPROCESS	Event process
	Specify the operation if the events triggering a (time- or message-triggered) action consecutively occur when the action is not manually executed.
	0: First event only
	If execution triggers consecutively occur, the action is not executed by the second and subsequent triggers.
	Cautions:
	Even if only the first event is specified, the state is reset by the following operations.
	• Disabling the action and then enabling it again
	• Restarting the manager

	1: All events *Default If execution triggers consecutively occur, the action is executed by all the triggers.
CLEARSTATUS	Re-acceptance after termination of action Specify whether to re-accept another event after the event-triggered action terminates if the event (time notification, message notification) processing is specified only for the first event when the action is not manually executed. 0: Do not accept *Default 1: Accept
ACTIONTYPE	Action type Specify the action type. 0: Command execution *Default 1: Message Specify "0: Command execution" for the command action.
USERCONFIRM	User verification Specify whether to verify the user during manual execution. 0: Do not check *Default 1: Check
SHOWCOMMANDRESULT	Display of the command execution result dialog box when executing a command Specify whether to automatically display the command execution result dialog box after the action is executed. 0: Do not display *Default 1: Display
EXECUTIONORDER	Waiting for termination of command Specify whether to wait for termination of the previous command before executing the next command if multiple commands are specified. 0: Wait for termination of command (sequential execution). 1: Do not wait for termination of command (parallel execution). *Default
ABNORMALCONTINUE	Continuation at abnormal termination Specify whether to continue execution of subsequent commands if a command is terminated abnormally when you specify to wait for command termination. 0: Do not continue *Default 1: Continue
TIMEOUTSET	Timeout Specify whether to specify the timeout of the previous command when you specify to wait for command termination. 0: Do not specify *Default 1: Specify
TIMEOUTVALUE	Timeout time Specify the timeout time (in seconds) when you specify to wait for command termination and timeout. Specify a value within the range from 1 to 86400 (default: 60).

TIMEOUTSTATUS	Processing at timeout Specify the processing (abnormal or normal termination) if the command times out when you specify to wait for command termination and timeout. 1: Abnormal termination *Default 2: Normal termination
EXECTYPE	Waiting for user judgment Specify whether to wait for an execution check by the operator when the action is not manually executed. 0: Wait for an execution check by the operator (manual execution). 0: Do not wait for an execution check by the operator (automatic execution). *Default
MULTIEXECUTION	Restriction of parallel execution Specify whether to restrict parallel execution of the same action. When you restrict parallel execution, multiple sessions of the same action cannot be executed in parallel. 0: Do not restrict (permit) parallel execution. *Default 1: Restrict parallel execution.
ACTIONCOMMENT	Description of the action Describe the action description by using up to 64 characters. The description specified here is displayed in the [Action Definition] tab when executing an action.
TARGETNAME	Receiver Describe the name of the host to which the command is sent by using up to 256 characters. **[Required]** When the command is sent to multiple hosts, multiple definitions can be made. (There is no upper limit to the number of definitions.) TARGETNAME=Agent1 TARGETNAME=Agent2 You can specify the following special hosts as the destination. $MANAGER$: Executes a command on the manager. $NODE$:　　Replaced with the node name in the message if the action is triggered by a message before execution.
CONFIRMATIONMESSA GE	Confirmation message Describe the confirmation message to be displayed when executing an action by using up to 500 characters. Specify <CR> for the line feed. When the message contains <CR>, <CR> is converted into "\r\n" and counted as two characters. Note that the message can contain up to 500 characters including line feeds. The description specified here is displayed in the [Action Definition] tab when executing an action.

NORMALTERMINATION CONDITION	Successful action completion condition Specify the successful action completion condition. 0: All the commands are completed successfully on all the destination hosts. *Default 1: All the commands are completed successfully on one destination host.
NORMALTERMINATION SENDMSG	Message transmission at successful completion Specify whether to send a message when the action is completed successfully. 0: Do not send *Default 1: Send
NORMALMSGCATEGORY	Category of message sent at successful completion Specify the category of the message sent when the action is completed successfully by using up to 32 characters. Default: Unified Management Framework
NORMALMSGSEVERITY	Importance of message sent at successful completion Specify the importance ID of the message sent when the action is completed successfully. Default: 264 (Normal) For details about the severity ID, see "Appendix: Severity ID list".
NORMALMSGNODE	Node of message sent at successful completion Describe the node that sends a message when the action finishes successfully by using up to 256 characters. Default: localhost
NORMALMSGAPPLICATION	Application of message sent at successful completion Describe the application to be used to send a message when the action finishes successfully by using up to 32 characters. Default: Unified Management Framework
NORMALMSGOBJECT	Object of message sent at successful completion Describe the object of the message to be sent when the action finishes successfully by using up to 32 characters. Default: Operation
NORMALMSGMESSAGE ID	Message ID of message sent at successful completion Describe the ID of the message to be sent when the action finishes successfully by using up to 32 characters. Default: 01070003
NORMALMSGMESSAGE TEXT	Text of message sent at successful completion Describe the content of the message to be sent when the action finishes successfully by using up to 1024 characters. Specify <CR> for the line feed. When the message contains <CR>, <CR> is converted into "\r\n" and counted as two characters. Note that the message can contain up to 1024 characters including line feeds. Default: The action is completed successfully (ACTION=$ACTION$).
ABNORMALTERMINATIO NSENDMSG	Message transmission at abnormal termination Specify whether to send a message when the action is

	terminated abnormally. 0: Do not send *Default 1: Send
ABNORMALMSGCATEG ORY	Category of message sent at abnormal termination Describe the category of the message to be sent when the action fails by using up to 32 characters. Default: Unified Management Framework
ABNORMALMSGSEVERI TY	Importance of message sent at abnormal termination Describe the ID of the message to be sent when the action fails by using up to 32 characters. Default: 257 (Abnormal) For details about the severity ID, see "Appendix: Severity ID list".
ABNORMALMSGNODE	Node of message sent at abnormal termination Describe the node that sends a message when the action fails by using up to 256 characters. Default: localhost
ABNORMALMSGAPPLIC ATION	Application of message sent at abnormal termination Describe the application to be used to send a message when the action fails by using up to 32 characters. Default: Unified Management Framework
ABNORMALMSGOBJEC T	Object of message sent at abnormal termination Describe the object of the message to be sent when the action fails by using up to 32 characters. Default: Operation
ABNORMALMSGMESSA GEID	Message ID of message sent at abnormal termination Describe the ID of the message to be sent when the action fails by using up to 32 characters. Default: 01070004
ABNORMALMSGMESSA GETEXT	Text of message sent at abnormal termination Describe the content of the message to be sent when the action fails by using up to 1024 characters. Specify <CR> for the line feed. When the message contains <CR>, <CR> is converted into "\r\n" and counted as two characters. Note that the message can contain up to 1024 characters including line feeds. Default: The action is terminated abnormally (ACTION=$ACTION$).

2.2.2.2. Message action

Define the message action when the action type is "message."
The message section is required when you define a message action.

Key	Value
ACTIONNAME	Action name Describe the action name by using up to 64 characters.

	[Required]
	The name specified here is displayed in the operation control view tree.
	The same action name cannot be specified on the same level.
ICONPATH	Icon file name to be used
	Describe a path that is used as an action icon by using up to 256 characters.
	The icon to be specified must be registered in the console in advance.
ACTIONENABLE	Action enabled status
	Specify whether the action is enabled or disabled.
	0: Disabled *Default
	1: Enabled
TRIGGERID	Action execution condition
	Specify the action execution condition.
	0: Manually executed *Default
	1: Time-triggered
	2: Message-triggered
	For a time-triggered action, the schedule definition part must contain the schedule file name.
	For a message-triggered action, you must define the message trigger filter section.
ENABLEDSCHEDULE	Specification of the validity period for manual execution or a message trigger
	Specify whether the validity period is enabled or disabled.
	If you specify to enable this item, the schedule file name is required.
	This key is ignored if the action is time-triggered.
	0: Disabled *Default
	1: Enabled
SCHEDULEFILENAME	Schedule file name
	Specify the file name of the schedule definition used by the time trigger or validity period specification without the path. Describe an absolute path of the schedule definition file by using up to 256 characters.
	Schedule definition check and importing are executed if TRIGGERID=1 (time-triggered) or if ENABLEDSCHEDULE is disabled when TRIGGERID=0 (manually executed) or TRIGGERID=2 (message-triggered).
	When using a time trigger, specify "time schedule" as the schedule definition mode.
	When using the validity period specification, specify "period schedule" as the schedule definition mode.
EVENTPROCESS	Event process
	Specify the operation if the events triggering a (time- or

	message-triggered) action consecutively occur when the action is not manually executed. 0: First event only If execution triggers consecutively occur, the action is not executed by the second and subsequent triggers. **Cautions:** Even if only the first event is specified, the state is reset by the following operations. • Disabling the action and then enabling it again • Restarting the manager 1: All events *Default If execution triggers consecutively occur, the action is executed by all the triggers.
CLEARSTATUS	<u>Re-acceptance after termination of action</u> Specify whether to re-accept another event after the event-triggered action terminates if the event (time notification, message notification) processing is specified only for the first event when the action is not manually executed. 0: Do not accept *Default 1: Accept
ACTIONTYPE	<u>Action type</u> In this section, the action definition is described. 0: Command execution *Default 1: Message Specify "1: Message" for the message action.
USERCONFIRM	<u>User verification</u> Specify whether to verify the user during manual execution. 0: Do not check *Default 1: Check
EXECTYPE	<u>Waiting for user judgment</u> Specify whether to wait for an execution check by the operator when the action is not manually executed. 0: Wait for an execution check by the operator (manual execution). 0: Do not wait for an execution check by the operator (automatic execution). *Default
ACTIONCOMMENT	Description of the action Describe the action description by using up to 64 characters. The description specified here is displayed in the [Action Definition] tab when executing an action.
CONFIRMATIONMESSAGE	<u>Confirmation message</u> Describe the confirmation message to be displayed when executing an action by using up to 500 characters. Specify <CR> for the line feed. When the message contains <CR>, <CR> is converted into "\r\n" and counted as two characters. Note that the message can contain up to 500 characters including line feeds.

	What is specified here is displayed in the confirmation message field on the [Action Definition] tab when the action is executed.

2.2.3. <u>Message trigger filter section</u>

■[MESSAGEFILTER] to [END_MESSAGEFILTER]
Specify the definition of the message trigger filter for a message-triggered action in this section.
Define this section within the action section.
This section is required when the execution condition in the action section is message trigger.
When the execution condition in the action section is not message trigger, this section cannot be defined.
For [MESSAGEFILTER], multiple definitions can be described (for the number of filters). If you want to use multiple [MESSAGEFILTER]s, specify them in the execution order. (First specify the one you want to display at the top of the filter definition screen.)
"!" which indicates negation must be specified directly before "=" as in "Key!=Value". If space (s) is included, they are assumed as a part of the key.

Key	Value
MESSAGENAME	<u>Message overview of the [Filter Definition] tab</u> **[Required]** Describe the filter name by using up to 256 characters. **[Required]** (*1)
TYPE	<u>Type of the [Filter Definition] tab</u> Specify the filter type. 0: Store *Default 1: Delete
CATEGORY CATEGORY!	<u>Category of the [Filter Definition] tab</u> Describe the filter condition to the category by using up to 32 characters. Alternatively, select Application, Security, System, or Unified Management Framework. *1 Describe CATEGORY when [Negation] is OFF, and CATEGORY! when [Negation] is ON. Only one of CATEGORY and CATEGORY! can be described.
NODE NODE!	<u>Node of the [Filter Definition] tab</u> Describe the filter condition to the node name that outputs the message by using up to 256 characters in the regular expression format. *1, *2 Describe NODE when [Negation] is OFF, and NODE! when [Negation] is ON. Only one of NODE and NODE! can be described.
APPLICATION APPLICATION!	<u>Application of the [Filter Definition] tab</u> Describe the filter condition to the application that outputs the message by using up to 128 characters in the regular expression format. *1, *2 Describe APPLICATION when [Negation] is OFF, and APPLICATION! when [Negation] is ON. Only one of APPLICATION and APPLICATION! can be described.

OBJECT OBJECT!	Object of the [Filter Definition] tab Describe the filter condition to the object name that issues the message by using up to 128 characters in the regular expression format. *1, *2 Describe OBJECT when [Negation] is OFF, and OBJECT! when [Negation] is ON. Only one of OBJECT and OBJECT! can be described.
MESSAGEID MESSAGEID!	Message ID of the [Filter Definition] tab Describe the filter condition to the message ID by using up to 128 characters in the regular expression format. *1, *2 Describe MESSAGEID when [Negation] is OFF, and MESSAGEID! when [Negation] is ON. Only one of MESSAGEID and MESSAGEID! can be described.
MESSAGETEXT MESSAGETEXT!	Message text of the [Filter Definition] tab Describe the filter condition to the message text by using up to 1024 characters in the regular expression format. *1, *2 Describe MESSAGETEXT when [Negation] is OFF, and MESSAGETEXT! when [Negation] is ON. Only one of MESSAGETEXT and MESSAGETEXT! can be described.
SELPOS SELPOS!	Position specification of the [Filter Definition] tab Specify the search conditions using the position specification in the message text. *1 Describe SELPOS when [Negation] is OFF, and SELPOS! when [Negation] is ON. Up to 8 items can be specified in total for both SELPOS and SELPOS!. A value is specified in the format of (<Position>, "<Comparison value>", <Condition>). <Position> Specify the target of comparison from what number of the characters in the message text, or describe within the range from 1 to 1024. to<Comparison value> Describe the value to be compared by using up to 64 characters. The regular expression format cannot be used for the comparison value. <Condition> Any of the =, <>, >=, >, <=, < shall be described for the comparison value.
SELKEY SELKEY!	Key specification of the [Filter Definition] tab Specify the search conditions using the key specification in the log content. *1

	Describe SELKEY when [Negation] is OFF, and SELKEY! when [Negation] is ON. Up to 8 items can be specified in total for both SELKEY and SELKEY!. A value is specified in the format of (<Key value>, "<Comparison value>", <Condition>). <Key value> Describe the key in the message text by using up to 64 characters. <Comparison value> Describe the value to be compared by using up to 64 characters. When [=] is specified for <Condition>, specify <Comparison value> using a regular expression. *2 <Condition> Any of the =, <>, >=, >, <=, < shall be described for the comparison condition. When [=] is specified for the comparison condition, a regular expression is applied as a comparison value. When a condition other than [=] is specified, a binary comparison with the character string specified for the comparison value is performed. [Key value] and [Comparison value] used for [Key specification] must be enclosed in separators in the message. Recognizable separators are one-byte space, double-byte space, (,), [,], {, }, < and >.
SEVERITY SEVERITY!	Importance of the [Filter Definition] tab Describe the ID of severity. For details about the severity ID, see " Appendix: Severity ID list". Describe SEVERITY when [Negation] is OFF, and SEVERITY when [Negation] is ON. Only one of SEVERITY and SEVERITY! can be described.

*1   For details, see the following chapters in the manual or in Help of MISSION CRITICAL OPERATIONS.

    [Using Operation Control]
      -[How to define an action]
        -[Defining action reporting]
          -[Defining an extraction condition for the message that triggers execution]

*2   For details, see the following chapters in the manual or in Help of MISSION CRITICAL OPERATIONS.

    [Using Operation Control]
      -[How to define an action]
        -[Defining action reporting]
          -[Defining an extraction condition for the message that triggers execution]
            -[Specification example of regular expression]

2.2.4. <u>Command section</u>

■[COMMAND] to [END_COMMAND]
In this section, the definition of the command to be executed by the corresponding action is described.
Define this section within the action section.
This section is required when the action type (ACTIONTYPE) in the action section is Command execution (0) (for the command action).
For [COMMAND], multiple definitions can be described (for the number of commands to be executed).
When you want to use multiple [COMMAND]s, specify them in the execution order. (First specify the one you want to display at the top of the action definition command list.)

Key	Value
COMMANDENABLE	<u>Command enabled status</u> Specify whether the command is enabled or disabled. **[Required]** 0: Disabled 1: Enabled
COMMANDEXPLANATION	<u>Command description</u> Specify the command description by using up to 64 characters. When the action is message-triggered, you can specify the replacement character string.*1
COMMANDNAME	<u>Command name</u> Describe the command to be executed by using up to 256 characters. **[Required]** When the action is message-triggered, you can specify the replacement character string.*1
WORKINGDIR	<u>Work directory</u> Specify the working directory for executing the command by using up to 256 characters. When the action is message-triggered, you can specify the replacement character string.*1
COMMANDOPTION	<u>Option</u> Specify the parameter for starting the application by using up to 256 characters. When the action is message-triggered, you can specify the replacement character string.*1
NORMALTERMINATION CODE	<u>Normal end code</u> Specify the range of values that are assumed as a normal end of the command execution result (return value) by using up to 64 characters. *2 Specify the value by using one-byte numbers. To specify multiple values, separate each numerical value with a one-byte comma. To specify a range, concatenate the first numerical value and the last numerical value of the range with a one-byte hyphen.

	Example: -1,2,5,10,90-99
ABNORMALTERMINATIO NCODE	Abnormal end code Specify the range of values that are regarded as an abnormal termination in the command execution result (return value) by using up to 64 characters.*2 The specification method is the same as that for the normal termination code.
RESULTACQUISITION	Acquisition of command standard output result Specify whether to obtain the command standard output result. 0: Not obtain 1: Obtain *Default

*1   For details, see the following chapters in the manual or in Help of MISSION CRITICAL OPERATIONS.

   [Using Operation Control]
       -[How to define an action]
           -[Defining action reporting]
               -[Setting a command]

*2   The normal and abnormal termination codes operate as follows, depending on the details of the definition.

- If neither the normal termination code nor abnormal termination code are specified, all the results are regarded as successful completion.
- If no normal termination code is specified and the command execution result (return value) does not match the specification range of the abnormal termination code, the result is regarded as successful completion.
- If no abnormal termination code is specified and the command execution result (return value) does not match the specification range of the normal end code, the result is regarded as abnormal termination.
- If the command execution result (return value) does not match the ranges specified for the normal termination code and abnormal termination code, the result is regarded as successful completion.
- If the command execution result (return value) matches both of the ranges specified for the normal termination code and abnormal termination code, the result is regarded as successful completion.

2.2.5. Message section

■[MESSAGE] to [END_MESSAGE]
In this section, the messages to be sent by the corresponding action are described.
Multiple messages cannot be specified.
This section is required when the action type (ACTIONTYPE) in the action section is Message (1) (for a message action).

Key	Value
CATEGORY	Category of sent message Describe the category of the message to be sent by using up to 32 characters. Default: Unified Management Framework When the action is message-triggered, you can specify the replacement character string.*1
SEVERITY	Importance of sent message Describe the severity ID of the message to be sent. Default: 264 For details about the severity ID, see " Appendix: Severity ID list".
NODE	Node of sent message Describe the node of the message to be sent by using up to 256 characters. Default: localhost When the action is message-triggered, you can specify the replacement character string.*1
APPLICATION	Application of sent message Describe the application of the message to be sent by using up to 128 characters. Default: Unified Management Framework When the action is message-triggered, you can specify the replacement character string.*1
OBJECT	Object of sent message Describe the object of the message to be sent by using up to 128 characters. Default: Operation When the action is message-triggered, you can specify the

	replacement character string.*1
MESSAGEID	Message ID of sent message Describe the ID of the message to be sent by using up to 128 characters. Default: 01070011 When the action is message-triggered, you can specify the replacement character string.*1
MESSAGETEXT	Text of sent message **[Required]** Describe the content of the message to be sent by using up to 1024 characters. Specify <CR> for the line feed. When the message contains <CR>, <CR> is converted into "\r\n" and counted as two characters. Note that the message can contain up to 1024 characters including line feeds. A null character cannot be used. (That is, you cannot specify KEY without specifying VALUE.) When the action is message-triggered, you can specify the replacement character string.*1

*1   For details, see the following chapters in the manual or in Help of MISSION CRITICAL OPERATIONS.

    [Using Operation Control]
      -[How to define an action]
        -[Defining action reporting]
          -[Specifying an action definition (message transmission)]

2.2.6. <u>User variable section</u>

■[USERVARIABLE_X] to [END_USERVARIABLE_X]
Specify the replacement character string that is used in the command and message sections in this section.
This section can be specified when the action is message-triggered.
Define this section up to eight times within the action section. When making multiple definitions, use numerical values from 1 to 8 in X, such as [USERVARIABLE_1], [USERVARIABLE_2]...
You can skip numbers.
When the execution condition in the action section is not message trigger, this section cannot be defined.

Key	Value
NAME	<u>Variable name</u> Specify the replacement character string by using up to 32 characters. **[Required]** You can use the variable name defined here by enclosing it with $ as the replacement character string. Characters that can be used in the variable name • One-byte alphabetic characters (A to Z, a to z) • One-byte numerical value (0 to 9) • One-byte symbols excluding $, =, and space The following items cannot be specified as the variable name. ACTION APPLICATION CREATEDATE CREATETIME EVENTCATEGORY MESSAGEID MESSAGETEXT NODE OBJECT SEVERITY
RESOURCE	<u>Reference source</u> Specify the message item or action name that the replacement character string references. **[Required]** Select one of the following: $ACTION$ Displays the action name. $APPLICATION$ Displays the application name of a message. $CREATEDATE$ Displays the date of the generation of a message. $CREATETIME$ Displays the time of the generation of a message. $EVENTCATEGORY$ Displays the category of a message.

		$MESSAGEID$ Displays the ID of a message.
		$MESSAGETEXT$ Displays the message text.
		$NODE$ Displays the node of a message.
		$OBJECT$ Displays the object of a message.
		$SEVERITY$ Displays the severity of a message.
	TYPE	Processing of character string Specify how to process the characters extracted from the item specified as the reference source. **[Required]** 0: Specify the extraction range by position (position specification). 1: Specify the extraction range by key (key specification).
	SELSTARTPOS	Position for position specification Specify the position of the first character of the character string to be extracted in the range from 1 to 1024. **[Required when specifying the character string by position]**
	SELCHARNUM	Number of characters for position specification Specify the number of characters to be extracted in the range from 1 to 1024. **[Required when specifying the character string by position]**
	SELKEY	Key value for key specification Describe the key (character string) to be extracted by using up to 64 characters in the regular expression format. **[Required when specifying the character string by key]** The character string that starts with the character after the specified character string up to a space or line feed is extracted.

*1   For details, see the following chapters in the manual or in Help of MISSION CRITICAL OPERATIONS.

[Using Operation Control]
  -[How to define an action]
    -[Defining action reporting]
      -[Defining an extraction condition for the message that triggers execution]
        -[Specification example of regular expression]

3. Editing the OperationMgr.ini file

Specify basic settings for using the operation control function by creating or editing the OperationMgr.ini file. You do not have to create or edit the OperationMgr.ini file if you use the initial values as is.
The OperationMgr.ini file has the following path.

Windows manager:
> <Install_Path>\Manager\sg\OperationMgr.ini

HP-UX manager:
> <Install_Path>/Manager/sg/OperationMgr.ini

∗   <Install_Path> indicates the installation path of the manager of MISSION CRITICAL OPERATIONS.
∗   When the manager is in the cluster environment, the file must be created and edited for both active and standby nodes.
∗   When you edit the OperationMgr.ini file, restart the manager to apply the changes.

Edit OperationMgr.ini file with a text editor.
Definition items of OperationMgr.ini file are shown below.

3.1. Items related to deletion of unused schedules

Definition concerning the deletion of schedules not used when the import command completes
[Import] section

Key	Valid range	Default value	Description
DeleteSchedule	Integer 0 or 1	0	Specify whether to delete unused schedules when the import command completes 0: Do not delete schedules. 1: Delete schedules. If you specify "1: Delete schedules," all the unused schedule definitions are deleted when the import command completes. At this time, only schedule definitions created on the operation control console or during command-based importing are deleted.

Setting example:

```
[Import]
DeleteSchedule=1
```

4. Command Reference

This chapter describes the SG conversion command and the action definition import command.
To execute the commands on the UNIX (HP-UX, Linux) manager, the following preparations are required.

- Library path setting
  Add the following to the environment variable LD_LIBRARY_PATH.
  /opt/UMF/Operations/Manager/bin

- Locale setting
  Specify UTF-8 for the locale of the execution environment.

4.1. SG conversion command

This command converts a definition file into an SG object file.
This command exists on the machine where the manager is installed.

Path
Windows manager:

        <Install_Path>\Manager\bin\OperationCmd.exe

HP-UX/Linux manager:

        <Install_Path>/Manager/bin/OperationCmd.exe

*   <Install_Path> indicates the installation path of the manager of MISSION CRITICAL OPERATIONS.

Specification method
OperationCmd.exe SU <ImportConfigFile> [SgObjectFile]

Description
This command creates an SG object file from the import definition file specified by the argument <Import ConfigFile> under the file name specified by [SgObjectFile].
The file specified for [SgObjectFile] is overwritten if it already exists.
If the argument is omitted, Help is displayed.

Parameters

ImportConfigFile	Specifies the name of the import definition file to be converted by using an absolute path. This parameter cannot be omitted. If including spaces in the file name, enclose the name in ""(double quotation marks). With respect to the character code, specify UTF-16 LE for Windows, and UTF-8 for UNIX (HP-UX/Linux).

	If you want to use time trigger or validity period, store the schedule definition file in the same directory as <ImportConfigFile>.
SgObjectFile	Specifies the name of the object file that is output by converting the import definition file by using an absolute path. If you omit this argument, the import definition file is output to the path specified by ImportConfigFile after the file extension is changed to "sgo." The schedule definition file stored in the same directory as <ImportConfigFile> is not output to the SG object output destination.

Return values

Return value	Message	Description
0	File Output Success [Output file path]	The command succeeded.
1	Displays the help.	The parameter is invalid. The help is displayed.
2	Initialize fail	Initialization failed.
3	Import file name is invalid.	Specification of the <ImportConfigFile> file is invalid.
4	File write failed.	Failed to write the [SgObjectFile] file.
5	Specified file format is incorrect. Detail:%ls Line:%ls, %ls	The import definition file format is incorrect. The error details (*1), format error line number, and contents at the relevant position are displayed.
6	SU failed.	Command failure (caused by a reason other than a format error)
7	Another OperationCmd is importing.	OperationCmd has already executed the import.
9	Failed in the communication with Manager.	Communication error with the manager.
14	Schedule import file not exist.(%ls)	The schedule import definition file does not exist. (The schedule file name is output.)
15	Specified schedule file is incorrect. Action name, Schedule file, Detail error code, Line, Key, Value %ls, %ls, %d, %d, %ls, %	The schedule definition file is invalid. The following information is displayed. Action name, schedule file name, error detail output (*2), error line number, key at the relevant position, value

*1 Output of error details

Message	Description
Specified character length is invalid.	The number of characters in Value specified in Key=Value is invalid.
It has already been defined.	Duplicate keys are defined.

Specified value range is invalid.	The value range in Value specified in Key=Value is invalid.
Specified section is invalid.	The specified section name is invalid.
Specified key is invalid.	The Key specified in Key=Value is invalid.
Specified value is invalid.	The Value specified in Key=Value is invalid.
There is no required item.	The key required in the section is not defined.
Format error.	Other format error.

*2   Output of error details during schedule definition check

The following error code, line number, key, and value are output if the schedule definition check fails. For the line number, key, or value, the error details are output only in case of errors for which "Display" is shown in the table. For other errors, a null character is output.

Error detail code	Description	Whether the error details are displayed		
		Line number	Key	Value
101	The specified file does not exist.			
102	The import file size exceeds the upper limit value.			
103	Opening the specified file failed.			
104	I/O error of specified file.			
105	The specified file is not the import file of a calendar/schedule definition. (Invalid header part)			
106	The specified file does not include the calendar section.			
107	The specified file does not include the calendar rule.			
108	The specified number of columns is invalid.	Display		
109	The specified calendar does not exist in either the import file or calendar management.	Display	Display	Display
110	The number of characters of the specified value is invalid.	Display	Display	Display
111	The specified value is out of the specification range.	Display	Display	Display
112	The specified value is invalid.	Display	Display	Display
113	The required item is not specified.	Display	Display	Display
201	The specified file does not include the schedule section.			
202	The specified file does not			

	include the schedule rule.			
203	A value other than the schedule mode that can be specified is specified.	Display	Display	Display

Help display

```
Usage:
Type1: OperationCmd.exe SU <ImportConfigFile> [SgObjectFile]


ImportConfigFile : Import configuration file name.
SgObjectFile     : Sg object file name
```

4.2. Action definition import command

This command is used to import an SG object file into the manager and update definition information. This command exists on the machine where the manager is installed.

Path
Windows manager:
> <Install_Path>\Manager\bin\OperationCmd.exe

HP-UX/Linux manager:
> <Install_Path>/Manager/bin/OperationCmd.exe

<Install_Path> indicates the installation path of the manager of MISSION CRITICAL OPERATIONS.

Specification method
OperationCmd.exe IMPORT <SgObjectFile>

Description
This command imports all the tree structure and action definitions of the file specified by the argument <SgObjectFile> from the manager to the groups and actions under the control of the operation control view at once.
If importing is successful, all the tree structures and action definitions (including action and command histories) are deleted except for the groups and actions with the same name.
If the argument is omitted, Help is displayed.

Command execution fails in the following cases.
- When the manager is stopped when the command is executed
- The monitoring terminal in definition mode exists when the command is executed.
- A file other than the one created by using the SG conversion command is specified for <SgObjectFile>.
- An action is being executed, waiting to be checked, or on hold during command execution.

Parameters

SgObjectFile	Specify the full path of the SG object file.
	This parameter cannot be omitted.
	If including spaces in the file name, enclose the name in "" (double quotation marks).
	If you want to use time trigger or validity period, store the schedule definition file in the same directory as <SgObjectFile>.

Return values

Return value	Message	Remarks
0	Success	The command succeeded.
1	Displays the help.	The parameter is invalid. The help

			is displayed.
2	Initialize fail		Initialization failed.
3	Import file name is invalid.		Specification of the <SgObjectFile> file is invalid.
4	File write failed.		Failed to write the manager definition file.
7	Another OperationCmd is importing.		OperationCmd has already executed the import.
8	Other terminal in Configuration Mode		A console is in the definition mode.
9	Failed in the communication with Manager.		Communication error with the manager.
10	Action is running.		An action is being executed, waiting to be checked, or on hold.
11	Import failed		Importing failed.
14	Schedule import file not exist.(%ls)		The schedule import definition file does not exist. (The schedule file name is output.)
16	Schedule import failed. Action name, Schedule file, Detail error code ———————————————— %ls, %ls, %d		Importing a schedule failed. The following information is displayed. Action name, schedule file name, error detail output*1

*1   Output of error details during schedule importing

The following error code is output if schedule importing fails.

Error detail code	Description
101	The specified file does not exist.
103	Opening the specified file failed.
104	I/O error of specified file.

Help display

Usage: Type2: OperationCmd.exe IMPORT <SgObjectFile> SgObjectFile : Sg object file name.

Notes

- Importing is not canceled if you forcibly terminate the command during importing.
- It is recommended to perform a backup before importing.
- Use the same version of the console as the manager version.

5. Restrictions

5.1. Items that cannot be defined when importing

The following action definition is not subject to importing.

- "Report setting" definition for a message-triggered action

5.2. Rollback if importing fails

In the import process, all the actions are imported before all the schedules are imported. Rollback is not performed importing a schedule fails after all the actions are completely imported.
If importing a schedule definition fails, restore the backed up SG, resolve the failure according to the details of the error output by the command, and try importing again.

6. Notes

6.1. Function to import SG by using a command

- It is recommended to perform an SG backup before importing.
- A file exported from the console cannot be used as the import definition file for the function to import action definitions by using a command.
- Use the same version of the console as the manager version.
- When executed, the SG conversion command communicates with the manager for action definitions for which a schedule is set. Therefore, you must start the manager in advance.
- While a command is executing the import process, the definition check will fail if you execute the SG conversion command for definitions with time trigger and validity period settings (definitions that use a schedule) using another command.
- The SG conversion command will fail if you execute the import command while the SG conversion command is being executed for a definition file that contains an action section that uses a schedule.
- Online SG backup will fail if executed while the import command is being executed.
- Online SG restoration will fail if executed while the import command is being executed.

7. Appendix: Severity ID List

Severity name (default)	Internal name	Severity ID
[STOP]	SEV_STOP	256
[FATAL]	SEV_FATAL	257
[CRITICAL]	SEV_CRITICAL	258
[MAJOR]	SEV_MAJOR	259
[MINOR]	SEV_MINOR	260
[WARNING]	SEV_WARNING	261
[UNKNOWN]	SEV_UNKNOWN	262
[NOMESSAGE]	SEV_NOMESSAGE	263
[NORMAL]	SEV_NORMAL	264
[PROCESSSTOP]	SEV_PROCESSSTOP	265
[SERVICESTOP]	SEV_SERVICESTOP	266
[PERFUPERROR]	SEV_PERFUPERROR	267
[PERFLOWERROR]	SEV_PERFLOWERROR	268
[HOSTEMPTY]	SEV_HOSTEMPTY	269
[PERFUPWARNING]	SEV_PERFUPWARNING	270
[PERFLOWWARNING]	SEV_PERFLOWWARNING	271
[PROCESSUNKNOWN]	SEV_PROCESSUNKNOWN	272
[SERVICEUNKNOWN]	SEV_SERVICEUNKNOWN	273
[PERFUNKNOWN]	SEV_PERFUNKNOWN	274
[PROCESSRUN]	SEV_PROCESSRUN	275
[SERVICERUN]	SEV_SERVICERUN	276
[PERFNORMAL]	SEV_PERFNORMAL	277
[HOSTNORMAL]	SEV_HOSTNORMAL	278
[PROCESSUPERROR]	SEV_PROCESSUPERROR	279
[FORCEEND]	SEV_FORCEEND	280
[DELAY]	SEV_DELAY	281
[CONDSTOP]	SEV_CONDSTOP	282
[EXECUTING]	SEV_EXECUTING	283
[NOTEXEC]	SEV_NOTEXEC	284
[CONFIRMATION]	SEV_CONFIRMATION	285
[UNMANAGED]	SEV_UNMANAGED	286
(User severity *)	USER1	512
	...	...
	USER32	543

*   The importance ID of the user importance USERn is 511+n.