Hitachi Virtual Storage Platform E Series

Hitachi Virtual Storage Platform G130, G/F350, G/F370, G/F700, G/F900

SVOS RF 9.6

Audit Log User Guide

The Audit Log feature enables you to track users' operations, which helps you investigate problems on your storage systems.

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Preface

The Audit Log feature enables you to track users' operations, which helps you investigate problems on your storage systems.

Please read this document carefully to understand how to use these products, and maintain a copy for reference purposes.

Intended audience

This document is intended for system administrators, Hitachi Vantara representatives, and authorized service providers who install, configure, and operate VSP E series or VSP G130, G/F350, G/F370, G/F700, G/F900.

Readers of this document should have at least the following knowledge and experience:

- You should have a background in data processing and understand RAID storage systems and their basic functions.
- You should be familiar with the Device Manager - Storage Navigator software for VSP E series and VSP G130, G/F350, G/F370, G/F700, G/F900, and have read the *System Administrator Guide*.
- You should be familiar with the operating system and web browser software on the system hosting the Device Manager - Storage Navigator software.

Product version

This document revision applies to the following product versions:

- VSP E series: 93-04-01 or later
- VSP G130, G/F350, G/F370, G/F700, G/F900: firmware 88-08-01 or later
- SVOS RF 9.6 or later

Release notes

Read the release notes before installing and using this product. They may contain requirements or restrictions that are not fully described in this document or updates or corrections to this document. Release notes are available on Hitachi Vantara Support Connect: https://knowledge.hitachivantara.com/Documents.

Changes in this revision

- Added IO Preference Mode to example logs for Paircreate(RemoteCopy) and Pairresync(RemoteCopy) commands.
- Added Safety Check to example logs for Add External Group and Add Path commands.

Document conventions

This document uses the following typographic conventions:

Convention	Description
Bold	▪ Indicates text in a window, including window titles, menus, menu options, buttons, fields, and labels. Example: Click **OK**. ▪ Indicates emphasized words in list items.
Italic	▪ Indicates a document title or emphasized words in text. ▪ Indicates a variable, which is a placeholder for actual text provided by the user or for output by the system. Example: `pairdisplay -g group` (For exceptions to this convention for variables, see the entry for angle brackets.)
`Monospace`	Indicates text that is displayed on screen or entered by the user. Example: `pairdisplay -g oradb`
< > angle brackets	Indicates variables in the following scenarios: ▪ Variables are not clearly separated from the surrounding text or from other variables. Example: `Status-<report-name><file-version>.csv` ▪ Variables in headings.
[ ] square brackets	Indicates optional values. Example: [a | b] indicates that you can choose a, b, or nothing.
{ } braces	Indicates required or expected values. Example: { a | b } indicates that you must choose either a or b.
| vertical bar	Indicates that you have a choice between two or more options or arguments. Examples:

Convention	Description
	[a | b] indicates that you can choose a, b, or nothing. { a | b } indicates that you must choose either a or b.

This document uses the following icons to draw attention to information:

Icon	Label	Description
	Note	Calls attention to important or additional information.
	Tip	Provides helpful information, guidelines, or suggestions for performing tasks more effectively.
	Caution	Warns the user of adverse conditions and/or consequences (for example, disruptive operations, data loss, or a system crash).
	WARNING	Warns the user of a hazardous situation which, if not avoided, could result in death or serious injury.

Conventions for storage capacity values

Physical storage capacity values (for example, disk drive capacity) are calculated based on the following values:

Physical capacity unit	Value
1 kilobyte (KB)	1,000 (10^3) bytes
1 megabyte (MB)	1,000 KB or $1{,}000^2$ bytes
1 gigabyte (GB)	1,000 MB or $1{,}000^3$ bytes
1 terabyte (TB)	1,000 GB or $1{,}000^4$ bytes
1 petabyte (PB)	1,000 TB or $1{,}000^5$ bytes
1 exabyte (EB)	1,000 PB or $1{,}000^6$ bytes

Logical capacity values (for example, logical device capacity, cache memory capacity) are calculated based on the following values:

Logical capacity unit	Value
1 block	512 bytes
1 cylinder	Mainframe: 870 KB Open-systems: ▪ OPEN-V: 960 KB ▪ Others: 720 KB
1 KB	1,024 (2^{10}) bytes
1 MB	1,024 KB or $1{,}024^2$ bytes
1 GB	1,024 MB or $1{,}024^3$ bytes
1 TB	1,024 GB or $1{,}024^4$ bytes
1 PB	1,024 TB or $1{,}024^5$ bytes
1 EB	1,024 PB or $1{,}024^6$ bytes

Accessing product documentation

Product user documentation is available on Hitachi Vantara Support Connect: https://knowledge.hitachivantara.com/Documents. Check this site for the most current documentation, including important updates that may have been made after the release of the product.

Getting help

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Thank you!

Chapter 1: Introduction to audit logs

Audit log files can be used to monitor the security of your storage system. Because the audit log file records when and who has done what operation, it can be used for investigation when illegal settings are applied or failures occur on the storage system.

Overview

A log file provides historical data on user operations performed on the storage system as well as program behaviors resulted from the operations. It reveals who did what to the storage system and it can be a helpful tool for investigating problems or conducting non-technical departmental audits.

Depending on the types of logs, collected logs are stored in either the SVP or the storage system. In order to access the collected logs, the storage system must be configured to transfer logs to syslog servers. Once configured, logs are automatically transferred to the syslog servers from the storage system or the SVP.

Note: The SVP's log storage capacity is limited. When the stored logs reaches the maximum capacity, the SVP overwrites the oldest data with the newest data. It is recommended to transfer audit logs to syslog servers.

The stored audit logs can be transferred to a syslog server.

Log accumulation in the storage system

When the storage system stops transferring logs tosyslogservers due to problems, such as a network failure, the logs get accumulated in the storage system or theSVPas non-transferred logs as a result. This is flagged as a warning on the management interface andSIMis sent, prompting actions by the administrator. In contrast, whensyslogservers are not in use logs also accumulate in the storage system, but this does not generate any flags as it is a normal system behavior.

The following table provides the upper limitations for accumulated non-transferred logs in each storage component.

When audit logs are not transferred

If audit logs are not transferred to syslog servers due to a LAN failure etc., the logs are accumulated as a non-transferred log. Once non-transferred logs are accumulated, the icon showing the accumulated status in the window changes or a SIM is generated.

When syslog servers are not used, logs are accumulated as a non-transferred log, but the icon showing the accumulated status in the window does not change or a SIM is not generated.

Maximum number of lines[1]	Log status on Device Manager - Storage Navigator	SIM
SVP: 250,000 lines	The icon shown in the upper right of the main window changes. ▪ : The number of accumulated logs is below the threshold[2]. ▪ : The number of accumulated logs reaches the threshold. ▪ : Some audit logs are overwritten and a part of the data is lost because the file is full. For details about how to handle these problems, see SIM codes (on page 26).	▪ The SIM code 7d03xx[3] is generated when the number of accumulated logs reaches the threshold [4]. ▪ The SIM code 7d04xx[3] is generated when some audit logs are overwritten and some data are lost because the file is full.
Storage system (GUM): 1,000 lines	A SIM is generated. For details, see SIM codes (on page 26).	
Storage system (DKC): ▪ VSP E series: 300,000 lines ▪ VSP F350, F370, F700, F900: 300,000 lines ▪ VSP G350, G370, G700, G900: 300,000 lines		
Notes: **1.** The number of lines is an estimate, depending on the type of the log information.		

Maximum number of lines[1]	Log status on Device Manager - Storage Navigator	SIM
2. The threshold is 70% of the maximum stored capacity of the audit logs. When the audit log file reaches the maximum capacity, the oldest data is lost as it is overwritten by the newest data (wrap around). **3.** xx=00: Indicates an event occurred on the CTL1 sidexx=01: Indicates an event occurred on the CTL2 side **4.** The threshold is 70% of the maximum stored capacity of the audit logs. When the audit log file reaches the maximum capacity, the oldest data is lost as it is overwritten by the newest data (wrap around).		

SIM codes

The following table shows the SIM codes that were issued and how to handle when not transferred logs were accumulated.

If audit logs are not transferred to syslog servers due to a LAN failure etc., the logs are accumulated as a non-transferred log. Once non-transferred logs are accumulated, the icon showing the accumulated status in the window changes or a SIM is generated.

When syslog servers are not used, logs are accumulated as a non-transferred log, but the icon showing the accumulated status in the window does not change or a SIM is not generated.

SIM code	Event
7d03*xx*[1]	The number of accumulated logs reaches the threshold [2].
7d04*xx*[1]	Some audit logs are overwritten and some data are lost because the file is full.

Notes:

1. *xx*=00: Indicates an event occurred on the CTL1 side

   xx=01: Indicates an event occurred on the CTL2 side

2. The threshold is 70% of the maximum stored capacity of the audit logs. When the audit log file reaches the maximum capacity, the oldest data is lost as it is overwritten by the newest data (wrap around).

Perform the following when non-transferred logs are accumulated.

- Export non-transferred logs.

  All stored audit logs including transferred logs are exported in this operation.
- Which operation window to be used depends on where the audit logs are stored.

Type/contents of audit log	Stored place	Exporting operation window
▪ Logs of operations set by the management client (Except operations in the maintenance utility menu) ▪ Operation logs of encryption keys for encrypting stored data ▪ Execution logs of Remote Maintenance API	SVP	Audit Log Properties window
▪ Operation logs of maintenance utility ▪ Maintenance operation logs of Maintenance PC ▪ Event logs of encryption keys for encrypting stored data ▪ Command logs received from a host or computers using CCI the storage system	Storage system (GUM and DKC)	Audit Log Settings window

- Eliminate the cause of the transfer failure to the syslog server, and then conduct a test transfer of syslogs to confirm that the transmission is recovered.

  Note: Even if the transmission is recovered, audit logs generated during the transfer failure are not retransferred.

For more information about descriptions on audit log settings and exporting audit logs, see *System Administrator Guide*.

Chapter 2: Audit log file format

The audit log file is a text file in the syslog format. The audit log file has two types of formats: RFC3164-compliant and RFC5424-compliant. Select either one of them when setting for transferring audit log files to syslog servers or exporting audit log files. An audit log file consists of the following fields: Audit log header, Audit log information (Basic Information), and Audit log information (Detailed Information), whose formats are respectively described in the following topics.

If an audit log file is to be transferred to the syslog server, syslog header information is included before the audit log header, which is described in this chapter. For details about the format of audit log files when audit log files are transferred to the syslog server, see Format of audit log files when audit log files are transferred to the syslog server (on page 43).

Audit log header format (RFC3164-compliant)

```
<142> Jan 12 01:39:39 GUM Storage: CELFSS,1.1,53,,
  1          2         3      4       5     6  7  8
2018-01-12T01:39:39.8Z,Storage,GUM,ConfigurationAccess,
           9              10     11         12
Success,uid=maintenance,HM850:402650,,
  13      14               15        16
Japan-Tokyo,,,,from=xxxxxxxxxxxxx,,,,20,BasicLog,,,
   17      18-20     21          22-24 25  26    27-28

RMI AP,180111-DeleteMirrors,[Remote Replication],
Delete Pairs,,Normal end,Seq.=0000000020

<142> Jan 12 01:39:39 GUM Storage: CELFSS,1.1,54,,
2018-01-12T01:39:39.8Z,Storage,GUM,ConfigurationAccess,
Success,uid=maintenance,HM850:402650,,Japan-Tokyo,,,,
from=xxxxxxxxxxxxx,,,,DetailLog,,,
+Copy type=UR

<142> Jan 12 01:39:39 GUM Storage: CELFSS,1.1,55,,
2018-01-12T01:39:39.8Z,Storage,GUM,ConfigurationAccess,
Success,uid=maintenance,HM850:402650,,Japan-Tokyo,,,,
from=xxxxxxxxxxxxx,,,,DetailLog,,,
++{P-VOL(Port-G-ID-LUN),S-VOL(Port-G-ID-LUN),MirrorID,
S/N,CTRLID,Type,Range,Delete Mode,Result}
=[{4C-0x00-0,4A-0x00-0,0x00,467676,18,P-VOL,LU,Normal,
Normal end}],Num.of Pairs=1
```

No.	Item	Description
1	Priority	The priority value given by the following formula is output, enclosed by < >. Priority value = 8 x Facility + Severity Facility is 17 (Fixed value). Severity takes the following values, depending on the type of the log information: ▪ 4: Error (Abnormal end) or Warning (The operation partly ended abnormally or was aborted.) ▪ 6: Informational (Normal end)

No.	Item	Description
		For example, if Severity is Error, <140> is output for the priority value.
2	Date, time[1]	The date and time are output in the format of MMM DD HH:MM:SS. (MMM: month, DD: day, HH: hour, MM: minute, SS: second) The abbreviation of months (Jan to Dec) is output to MMM. For the first to ninth day of a month, a space followed by the day is output to DD. For example, if it is the first day of a month, the output is " 1".
3	Detected location	"GUM" is output for a host name.
4	Program name	"Storage" is output for the detection entity identifier.
5	Unified specification identification	"CELFSS" is output for the unified specification identifier.
6		"1.1" is output for the revision number of the unified specification.
7	Message identification	The serial number of the syslog header information is output.
8		Message ID (No output because it is unused.)
9	Date, time#2[1]	The date, time, and the time difference from UTC (Universal Time Coordinated) are output in the format of YYYY-MMDDThh:mm:ss.s ±hh:mm. (YYYY: year, MM: month, DD: day, hh: hour, mm: minute, ss.s: second, hh: hour of the time difference, mm: minute of the time difference). However, if there is no time difference from UTC, "Z" is output for "±hh:mm" such as 2016-12-T23:06:58.0Z. "ss.s" (Output format of second) means the first decimal point is output.
10	Detection entity	"Storage" is output for the detection entity identifier.
11	Detected location	"GUM" is output as a host name.
12	Type of audit event	The category name of the audit event is output. The actual category names and examples of the events are as follows: ▪ **Authentication**: Authentication etc. to RMI ▪ **ConfigurationAccess**: Configuration from Device Manager - Storage Navigator, Maintenance PC, hosts or CCI ▪ **Maintenance**: Configuration on Maintenance PC ▪ **ExternalService**: Remote maintenance operation

No.	Item	Description
13	Result of audit event	The result of the audit event is output as follows. ▪ Success: Normal end (The operation ended normally.) ▪ Failed: Error (xxxx-yyyy) (The operation ended abnormally.) ▪ Failed: Warning (xxxx-yyyy) (The operation partly ended abnormally or was aborted.) "xxxx-yyyyy" shows an error code. This error code is not shown in the result of the audit event if the operation is performed from Maintenance PC or by the command from a host.
14	Subject identification	The user name is output in the format of "uid=user name". ▪ "DKCMaintenance" is output for the operation from Maintenance PC. ▪ "Host" is output for the command from a host.
15	Hardware identification	The ID that identifies the model name of the product ("HM850", or "VSP E series" for VSP E series) and the serial number (six digit number: 400001 to 499999) are punctuated with a colon (:) and output. For example, "HM850:431234" (or "VSP E series:431234" for VSP E series) is output if the serial number is 431234.
16	Generated location	No output because it is unused.
17	Related information	The location identification name configured in the Set Up Syslog Server for Audit Logs window is output.
18		FQDN (No output because it is unused.)
19		Redundancy identification information (No output because it is unused.)
20	Agent information	No output because it is unused.
21	Host identification	The identification information of a host sending requests is output as follows. ▪ Operations of Device Manager - Storage Navigator: IP address (IPv4 or IPv6)[2, 3] ▪ Operations of RMI AP IP address (IPv4 or IPv6) : When an IP address is specified by external application. host name: When a host name is specified by external application.

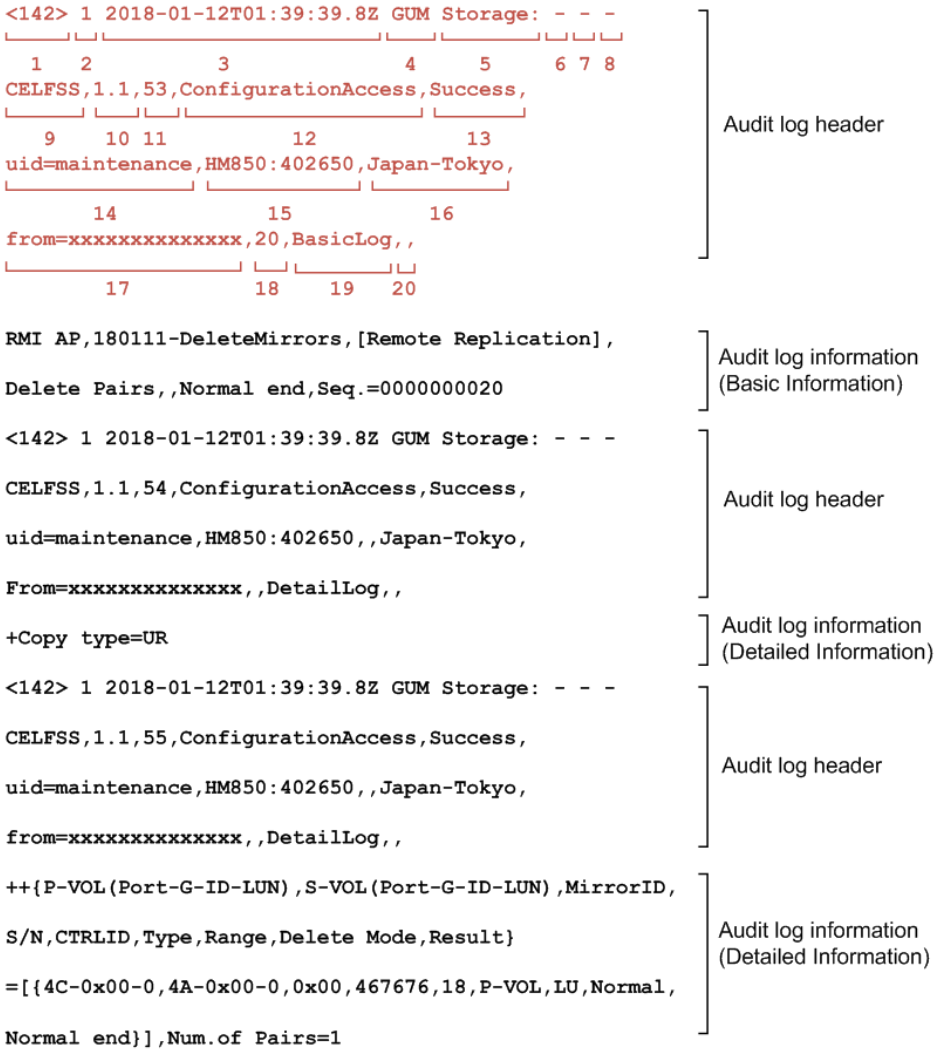
No.	Item	Description
		▪ CCI operation A host name is output for authenticated hosts. A WWN is output for unauthenticated hosts. IP addresses of GUM are output if operations are performed from CCI of the embedded CLI. ▪ An IP address is output for the CHAP authentication. ▪ No output for operation logs of RM AP and GUM AP. ▪ No output for event logs on the encryption keys.
22	Request information	The port that sends requests (No output because it is unused.)
23		The host that receives requests (No output because it is unused.)
24		The port that receives requests (No output because it is unused.)
25	Collective operation identifier	The collective operation identifier is a serial number with which the operation is recognized as one operation even if it outputs multiple lines. The identifier is output only when the log identification information is "BasicLog."
26	Log type information	The log type information is output as follows: ▪ BasicLog: Basic information ▪ DetailLog: Detailed information
27	Application identification	When commands are received from a host, the following are output. ▪ ID that the host and storage system use internally ▪ 0x0000: When receiving commands from other storage systems. ▪ No output for events on CHAP, Computers using CCI, or encryption keys.
28	Reserve	Reserve #2 (No output because it is unused.)

Notes:

1. If a LAN failure etc. occurs on the storage system, the date and time might be the accumulated time since January 1, 1970.
2. The IP address might indicate that of a proxy server, router, or remote desktop client, depending on the connected network configuration.

No.	Item	Description
3.	When IPv4 and IPv6 are available for communication from the management client to the SVP or management client, even if an IPv6 address of the SVP or management client is designated by the browser of the management client, IPv4 is used for communication by operations from the sub window of Device Manager - Storage Navigator, and an IPv4 address is output to the audit log.	

Audit log header format (RFC5424-compliant)



No.	Item	Description
1	Priority	The priority value given by the following formula is output, enclosed by < >.

No.	Item	Description
		Priority value = 8 x Facility + Severity Facility is 17 (Fixed value). Severity takes the following values, depending on the type of the log information: ▪ 4: Error (Abnormal end) or Warning (The operation partly ended abnormally or was aborted.) ▪ 6: Informational (Normal end) For example, if Severity is Error, <140> is output for the priority value.
2	Version	"1" is output for the version number.
3	Date, time[1]	The date, time, and the time difference from UTC (Universal Time Coordinated) are output in the format of YYYY-MMDDThh:mm:ss.s ±hh:mm. (YYYY: year, MM: month, DD: day, hh: time, mm: minute, ss.s: second, hh: hour of the time difference, mm: minute of the time difference). However, if there is no time difference from UTC, "Z" is output for "±hh:mm" such as 2016-12-T23:06:58.0Z. "ss.s" (Output format of second) means the first decimal point is output.
4	Detected location	"GUM" is output for a host name.
5	Program name	"Storage" is output for the detection entity identifier.
6	Process name	A hyphen (-) is output for the process name.
7	Message ID	A hyphen (-) is output for the message ID.
8	Structured data	A hyphen (-) is output for the structured data.
9	Unified specification identification	"CELFSS" is output for the unified specification identifier.
10		"1.1" is output for the revision number of the unified specification.
11	Message identification	The serial number of the syslog header information is output.
12	Type of audit event	The category name of the audit event is output. The actual category names and examples of the events are as follows: ▪ **Authentication**: Authentication etc. to RMI ▪ **ConfigurationAccess**: Configuration from Device Manager - Storage Navigator, Maintenance PC, hosts or CCI

No.	Item	Description
		▪ **Maintenance**: Configuration on Maintenance PC ▪ **ExternalService**: Remote maintenance operation
13	Result of audit event	The result of the audit event is output as follows. ▪ Success: Normal end (The operation ended normally.) ▪ Failed: Error (xxxx-yyyy) (The operation ended abnormally.) ▪ Failed: Warning (xxxx-yyyy) (The operation partly ended abnormally or was aborted.) "xxxx-yyyyy" shows an error code. This error code is not shown in the result of the audit event if the operation is performed from Maintenance PC or by the command from a host.
14	Account identification	A user name is output in the format of "uid=user name". ▪ "DKCMaintenance" is output for the operation from Maintenance PC. ▪ "Host" is output for the commands from a host.
15	Hardware identification	The ID that identifies the model name of the product ("HM850", or "VSP E series" for VSP E series) and the serial number (six digit number: 400001 to 499999) are punctuated with a colon (:) and output. For example, "HM850:431234" (or "VSP E series:431234" for VSP E series) is output if the serial number is 431234.
16	Related information	The location identification name configured in the Set Up Syslog Server for Audit Logs window is output.
17	Host identification	The identification information of a host sending requests is output as follows. ▪ Operations of Device Manager - Storage Navigator: IP address (IPv4 or IPv6)[2, 3] ▪ Operations of RMI AP IP address (IPv4 or IPv6) : When an IP address is specified by external application. host name: When a host name is specified by external application. ▪ CCI operation A host name is output for authenticated hosts. A WWN is output for unauthenticated hosts. IP addresses of GUM are output if operations are performed from CCI of the embedded CLI.

No.	Item	Description
		▪ An IP address is output for the CHAP authentication. ▪ No output for operation logs of RM AP and GUM AP. ▪ No output for event logs on the encryption keys.
18	Collective operation identifier	The collective operation identifier is a serial number with which the operation is recognized as one operation even if it outputs multiple lines. The identifier is output only when the log identification information is "BasicLog."
19	Log type information	The log type information is output as follows: ▪ BasicLog: Basic information ▪ DetailLog: Detailed information
20	Application identification	When commands are received from a host, the following are output. ▪ ID that the host and storage system use internally ▪ 0x0000: When receiving commands from other storage systems. ▪ No output for events on CHAP, Computers using CCI, or encryption keys.

Notes:

1. If a LAN failure etc. occurs on the storage system, the date and time might be the accumulated time since January 1, 1970.
2. The IP address might indicate that of a proxy server, router, or remote desktop client, depending on the connected network configuration.
3. When IPv4 and IPv6 are available for communication from the management client to the SVP or management client, even if an IPv6 address of the SVP or management client is designated by the browser of the management client, IPv4 is used for communication by operations from the sub window of Device Manager - Storage Navigator, and an IPv4 address is output to the audit log.

Audit log information format (Basic information)

The same format of the audit log information (Basic information) is used by RFC3164-compliant and RFC5424-compliant. Output values of audit log information (basic information) differ by the type of the history.

Note* The audit log header format is compliant to RFC3164.

Type of history	Patten of output value
Operations configured by the management client or Maintenance PC	Pattern 1
Execution logs of remote maintenance API	
Operations on encryption keys for encrypting stored data	
Commands that the storage system received from hosts or computers using CCI	Pattern 2
Events on encryption keys for encrypting stored data	

Mark	Item	Pattern 1	Pattern 2
A	External interface name	▪ RMI AP: Logs of Remote Method Invocation Application (RMI AP) ▪ MPC: Logs of Maintenance PC ▪ GUM: Logs of Maintenance Utility ▪ RM AP: Logs of Remote Maintenance Application (RM AP) ▪ GUM AP: Logs of Maintenance Utility Application (GUM AP) ▪ No output for Create File (Event name) of AuditLog (Function name).	▪ In-band OPEN: Host ▪ Out-of-band: Computer using CCI ▪ No output for events on encryption keys
B	Task name	▪ The task name is output to an operation log that is registered in the Device Manager - Storage Navigator tasks. ▪ No task name is output to an operations log that is not registered in the Device Manager - Storage Navigator tasks.	No output.
C	Function name	The abbreviation of the name of the function performed during the setting operation from Device Manager - Storage Navigator, RMI AP or RM AP is output. The name of the maintenance window is output for the setting operation by Maintenance PC. For the relation between the function and the abbreviation of the output function name, see Device Manager - Storage Navigator and Maintenance PC operation (on page 46).	Commands received from the host are output as follows. ▪ User Auth: User authentication command ▪ Config Command: Configuration change command ▪ CHAP: Device authentication command "ENC" is output for events on encryption keys.
D	Operation name or event name	The operation name or event name that is unique to each function is output.	When the function name is "User Auth", the received command is output as follows. ▪ Login: Receipt of the login command ▪ Logout: Receipt of the logout command

Mark	Item	Pattern 1	Pattern 2
		For the relation between the GUI operation of each program product and the operation name output to audit logs, see Using Actions menu (on page 493) and the following sections. For the relation between the operation on Maintenance PC and the operation name output to audit logs, see Using Maintenance button (on page 526) and the following sections. For details of the event names, seeReproducing/losing Audit log (on page 65).	No output when commands, except for login or logout, are received. When the function name is "ENC", the event name is output.
E	Parameter	When the configuration operation includes a parameter setting, the operation parameter is output. No detailed information is output to the parameter part of the basic information.	No output.
F	Result of operation or receiving commands	The results of the operations are output as follows. ▪ Normal end: The operation ended normally. ▪ Warning (xxxx-yyyyy): The operation partly ended abnormally or was aborted. ▪ Error (xxxx-yyyyy): The operation ended abnormally. "xxxxx-yyyyyy" shows an error code. See *Hitachi Device Manager - Storage Navigator Messages* for the error codes. No error code is added to the result of the operation that is not a Device Manager - Storage Navigator operation.	The results of receiving commands are output as follows. ▪ Normal end: User authentication or CHAP authentication ended normally, or the event on encryption keys occurs. ▪ Error: User authentication or CHAP authentication ended abnormally. ▪ Accept: Commands from a host are received. ▪ Reject: Commands from a host are rejected.
G	Serial number	The serial number of stored log information is output. The serial number ranges from 0000000000 to 4294967295. When the log information reaches 4,294,967,295 counts, the serial number is reset to 0000000000.	

Audit log information format (Detailed information)

The same format of audit log information (Detailed information) is used by RFC3164-compliant and RFC5424-compliant.

The indexes and setting values that indicates the set items are output to the detailed information. There are two types of the detailed information format.

Detailed information format 1

Symbol	Definition
+ and -	'+' or '-' displays at the beginning of a line. ▪ '+' means the beginning of the index. The number of occurrences of '+' represents the number of indents. ▪ '-' means that the line continues from the previous one.
=	Connects an index and a setting value.
[ ]	When there is more than one setting value for an index, the setting values are enclosed by [ ], and separated by a comma (,). **Example:** CU:LDEV=[0x00:0x00,0x00:0x01,0x00:0x02]
{ }	Details are enclosed by {}. **Example:** {Port,Fabric,Connection}=[{1E,ON,FC-AL},{3E,OFF,P-to-P}]
( )	Supplementary and additional information for setting values is enclosed by ( ). **Example:** {VOL(CU:LDEV),Result}={0x00:0x01,Error(xxxx-yyyy)}

Note: If there is an item that is not specified when entering commands or performing operations, a hyphen (-) is output for its setting value, no setting value is output, or the index itself is not output.

Detailed information format 2

Note: Line feeds are added to make the example easy to see, while no line feed is added to the actual logs.

Symbol	Definition
+ and -	'+' or '-' displays at the beginning of a line. ▪ '+' means the beginning of the index. The number of occurrences of '+' represents the number of indents. ▪ '-' means that the line continues from the previous one.

Symbol	Definition
{ }	The tiering relation is indicated by the following format. *Parent setting item*{*Child setting item 1*, *Child setting item 2*{*Grandchild setting item 2-1*, *Grand child setting item 2-2*,...},...}
=	Connects an index and a setting value.
[*x*]	For the log output by the command or operation in which multiple resources or items of the same type can be set at one time, the resource or item of the same type is indicated as follows. *Setting item*[*x*] (where *x* is a number: 0, 1, 2,...)

Note: If there is an item that is not specified when entering commands or performing operations, "null" is output for its setting value, or the index itself is not output.

Example:

```
+Copy Type=UR
++{P-VOL(Port-G-ID-LUN),S-VOL(Port-G-ID-LUN),MirrorID,
S/N,CTRLID,Type,Range,Delete Mode,Result}
=[{4C-0x00-0,4A-0x00-0,0x00,467676,18,P-VOL,LU,Normal,
Normal end}],Num. of Pairs=1
```

Example:

```
+{iScsiPort[0]{
Port=1A,
iScsiTarget[0]{
  Id=0,Name="Name",Alias="Alias",UserAuthSwitch=Enable,
  Result=Normal end}}}
```

Description of log examples in this manual

The log examples in this manual contain only the basic information and detailed information of audit log information.

An audit log header appears before the basic information and each detailed information respectively.

For Detailed information format 2 above, line feeds are added to make it easy to see, while no line feed is added to the actual logs.

Detailed information format 1

A log actually output

```
<142> Jan 12 01:39:39 GUM Storage: CELFSS,1.1,53,,
2018-01-12T01:39:39.8Z,Storage,GUM,ConfigurationAccess,
Success,uid=maintenance,HM850:402650,,
Japan-Tokyo,,,,from=xxxxxxxxxxxxx,,,,20,BasicLog,,,
RMI AP,180111-DeleteMirrors,[Remote Replication],
Delete Pairs,,Normal end,Seq.=0000000020
<142> Jan 12 01:39:39 GUM Storage: CELFSS,1.1,54,,
2018-01-12T01:39:39.8Z,Storage,GUM,ConfigurationAccess,
Success,uid=maintenance,HM850:402650,,
Japan-Tokyo,,,,from=xxxxxxxxxxxxx,,,,,DetailLog,,,
+Copy type=UR
<142> Jan 12 01:39:39 GUM Storage: CELFSS,1.1,55,,
2018-01-12T01:39:39.8Z,Storage,GUM,ConfigurationAccess,
Success,uid=maintenance,HM850:402650,,
Japan-Tokyo,,,,from=xxxxxxxxxxxxx,,,,,DetailLog,,,
++{P-VOL(Port-G-ID-LUN),S-VOL(Port-G-ID-LUN),MirrorID,
S/N,CTRLID,Type,Range,Delete Mode,Result}=[{4C-0x00-0,
4A-0x00-0,0x00,467676,18,P-VOL,LU,Normal,Normal end}],
Num.of Pairs=1
```

Audit log header
Audit log information (Basic Information)
Audit log header
Audit log information (Detailed Information)
Audit log header
Audit log information (Detailed Information)

Description of the log example in this manual

```
RMI AP,180111-DeleteMirrors,[Remote Replication],
Delete Pairs,,Normal end,Seq.=0000000020
+Copy type=UR
++{P-VOL(Port-G-ID-LUN),S-VOL(Port-G-ID-LUN),MirrorID,
S/N,CTRLID,Type,Range,Delete Mode,Result}
=[{4C-0x00-0,4A-0x00-0,0x00,467676,18,P-VOL,LU,Normal,
Normal end}],Num.of Pairs=1
```

Detailed information format 2

A log actually output

```
<142> Jan 12 01:39:39 GUM Storage: CELFSS,1.1,53,,
2018-01-12T01:39:39.8Z,Storage,GUM,ConfigurationAccess,
Success,uid=maintenance,HM850:402650,,
Japan-Tokyo,,,,from=xxxxxxxxxxxxx,,,,20,BasicLog,,,
RMI AP,,[PROV],DeleteiScsiTarget,,Normal end,
Seq.=0000000020
<142> Jan 12 01:39:39 GUM Storage: CELFSS,1.1,54,,
2018-01-12T01:39:39.8Z,Storage,GUM,ConfigurationAccess,
Success,uid=maintenance,HM850:402650,,
Japan-Tokyo,,,,from=xxxxxxxxxxxxx,,,,,DetailLog,,,
+{iScsiPort[0]{Port=1A,iScsiTarget[0]{Id=0,
Result=Normal end}}}
```

Audit log header
Audit log information (Basic Information)
Audit log header
Audit log information (Detailed Information)

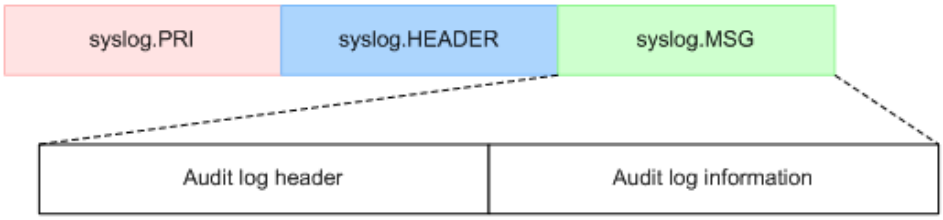
Description of the log example in this manual

```
RMI AP,,[PROV],DeleteiScsiTarget,,Normal end,
Seq.=0000000020
+{iScsiPort[0]{
  Port=1A,
  iScsiTarget[0]{
    Id=0,Result=Normal end}}}
```

Format of audit log files when audit log files are transferred to the syslog server

If an audit log file is to be transferred to the syslog server, syslog header information is included in the audit log file.

The following figure shows the format of audit log files when audit log files are transferred to the syslog server.



Part		Description
syslog.PRI		The same priority is set for syslog.PRI and for the audit log header.
syslog.HEADER		The syslog.HEADER includes the date and time when the syslog data was sent.
syslog.MSG	Audit log header*	See Audit log header format (RFC3164-compliant) (on page 29) or Audit log header format (RFC5424-compliant) (on page 33) . The audit log header includes the date and time when the audit event occurred.
	Audit log information	See Audit log information format (Basic information) (on page 36) and Audit log information format (Detailed information) (on page 40) .

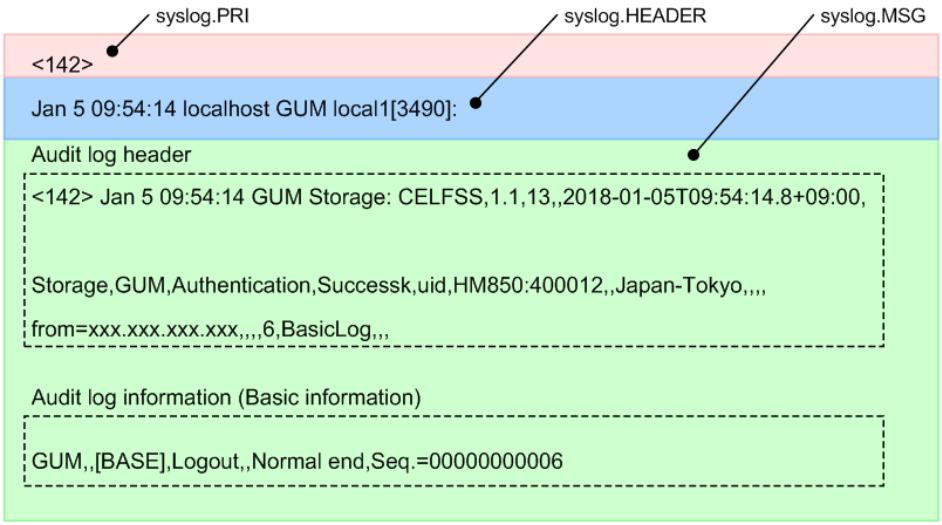
*

If the format of the audit log header is RFC3164-compliant, syslog.PRI, syslog.HEADER, and syslog.MSG will be sent in an RFC3164-compliant format.

If the format of the audit log header is RFC5424-compliant, syslog.PRI, syslog.HEADER, and syslog.MSG will be sent in an RFC5424-compliant format.

The following figure shows an example of data when an audit log file is transferred the syslog server.

Format of audit log files when audit log files are transferred to the syslog server



Chapter 3: Audit logs quick reference

The event names and operation names output to audit log files by the operations of the management client or Maintenance PC are described.

Audit Log functions

The following table lists the functions used in audit logging and provides their meanings.

Function name	Description
ACM	Audit log functions used for account management
AuditLog	Audit log functions used during audit logging
BASE	Audit log functions used during initial setup
Information	Audit log functions used during log related operations on Maintenance PC
Install	Audit log functions used during software or firmware installation
Local Replications	Audit Log functions used during local replication operations
Maintenance	Audit log functions used during general maintenance
Monitor	Audit log functions used to monitor process
PFM	Audit log functions used to monitor performance
PROV	Audit log functions used to provision the system
Remote Maintenance	Audit log functions used for Remote Maintenance application
Remote Replications	Audit log functions used during remote replication operations
SPM	Audit log functions used during Server Priority Manager operations
UVM	Audit log functions used during Universal Volume Manager operations
VM	Audit log functions used during Volume Migration operations
VPM	Audit log functions used during Virtual Partition Manager operations

Function name	Description
VS	Audit log functions used during volume shredding operations

Device Manager - Storage Navigator and Maintenance PC operation

The storage system logs operations performed from management client or Maintenance PC. The following table lists the function/operation names as well as GUI operations that trigger logging. Functions are listed in alphabetical order.

Function Name	Operation Name	Corresponding GUI Operation
AuditLog	Send Test Message	Sending a test log to a Syslog server on the Audit Log Settings window
AuditLog	Set Up Syslog Serv	Configuring syslog servers in the Set Up Syslog Server for Audit Logs window
ACM	AddUsersToUserGroup	Adding users to a user group
ACM	CreateUser	Creating a new user account
ACM	CreateUserGroup	Creating a new user group
ACM	DeleteUsers	Deleting user accounts
ACM	DeleteUserGroups	Deleting user groups
ACM	DisableUsers	Disabling users
ACM	EnableUsers	Enabling users
ACM	RemoveUsersFromUserGroup	Removing users from a user group
ACM	Set Login Message	Setting login message
ACM	UpdatePassword	Changing a password
ACM	UpdateUserAuthentication	Changing a user authentication mode
ACM	UpdateUserGroupAllResourceGrp	Changing assignment of all resource groups of a user group
ACM	UpdateUserGroupName	Changing a user group name
ACM	UpdateUserGroupResourceGrpBmp	Changing assignment of resource groups of a user group

Function Name	Operation Name	Corresponding GUI Operation
ACM	UpdateUserGroupRole	Assigning roles to a user group or releasing assignment of roles
BASE	Advanced Settings	Editing advanced system settings
BASE	Automatic LDAP Password change	Changing, through the REST API, the user ID and password that are used for search or the password only
BASE	Create Conf Report	Creating configuration reports
BASE	Delete CVAE Info	Changing information from Hitachi Command Suite
BASE	Delete Reports	Deleting configuration reports
BASE	Delete Tasks	Deleting tasks
BASE	Disable Auto Delete	Disabling Task Auto Delete
BASE	Edit Storage System	Editing storage system information
BASE	Enable Auto Delete	Enabling Task Auto Delete
BASE	Entry Tasks	Registering tasks to the storage system
BASE	HCSSO Authentication	Launching Device Manager - Storage Navigator from Hitachi Command Suite
BASE	HCSSO SetOneTimeKey	Issuing OneTimeKey from Hitachi Command Suite
BASE	Login	Logging in to Device Manager - Storage Navigator or Maintenance PC
BASE	Logout	Logging out from Device Manager - Storage Navigator or Maintenance PC
BASE	Resume Tasks	Resuming tasks
BASE	Set CVAE Info	Changing information from Hitachi Command Suite
BASE	Start Maintenance	Logging in to Maintenance PC
BASE	Suspend Tasks	Suspending tasks
BASE	Unlock Forcibly	Forcible unlocking
Information	Delete Log	Log-related operations on Maintenance PC
Information	ORM Value	Log-related operations on Maintenance PC

Function Name	Operation Name	Corresponding GUI Operation
Information	Threshold Value	Log-related operations on Maintenance PC
Install	All Config	Maintenance on Maintenance PC
Install	Backup Config	Maintenance on Maintenance PC
Install	FlashDrive ORM Value	Maintenance on Maintenance PC
Install	Initialize ORM Value	Maintenance on Maintenance PC
Install	Machine Install Date	Maintenance on Maintenance PC
Install	NEW Installation	Maintenance on Maintenance PC
Install	System Option	Maintenance on Maintenance PC
Install	System Tuning	Maintenance on Maintenance PC
Local Replication	Assign S-VOLs	Assigning secondary volumes of Thin Image pairs
Local Replication	Create Pairs	Creating pairs of ShadowImage or Thin Image
Local Replication	Delete Pairs	Deleting pairs of ShadowImage or Thin Image
Local Replication	Edit Options	Setting options for ShadowImage
Local Replication	Initialize	Initializing pairs of ShadowImage or Thin Image
Local Replication	Remove S-VOLs	Removing secondary volumes of Thin Image pairs
Local Replication	Resync Pairs	Resynchronizing pairs of ShadowImage or Thin Image
Local Replication	Split Pairs	Splitting pairs of ShadowImage or Thin Image
Local Replication	Suspend Pairs	Suspending ShadowImage pairs
Maintenance	Block	Maintenance from the Maintenance Utility menu
Maintenance	Block(Remove)	Maintenance from the Maintenance Utility menu

Function Name	Operation Name	Corresponding GUI Operation
Maintenance	Block(Type Change)	Maintenance from the Maintenance Utility menu
Maintenance	Blockade	Maintenance on Maintenance PC
Maintenance	Boot System SafeMode	Maintenance from the Maintenance Utility menu
Maintenance	Change SFP Type	Maintenance from the Maintenance Utility menu
Maintenance	Check Remove	Maintenance from the Maintenance Utility menu
Maintenance	Correction Copy	Maintenance on Maintenance PC
Maintenance	Create User	Maintenance from the Maintenance Utility menu
Maintenance	Create User Group	Maintenance using the Maintenance Utility applications (GUM AP) such as NAS Manager
Maintenance	Delete Users	Maintenance from the Maintenance Utility menu
Maintenance	Delete User Group	Maintenance using the Maintenance Utility applications (GUM AP) such as NAS Manager
Maintenance	Disable Licenses	Maintenance from the Maintenance Utility menu
Maintenance	Edit Hypervisor Mode	Maintenance from the Maintenance Utility menu
Maintenance	Edit Login Message	Maintenance from the Maintenance Utility menu
Maintenance	Edit ReplacingNotice	Maintenance from the Maintenance Utility menu
Maintenance	Edit System Param	Maintenance from the Maintenance Utility menu
Maintenance	Edit UPS Mode	Maintenance from the Maintenance Utility menu
Maintenance	Edit User	Maintenance from the Maintenance Utility menu

Function Name	Operation Name	Corresponding GUI Operation
Maintenance	Edit User Group	Maintenance using the Maintenance Utility applications (GUM AP) such as NAS Manager
Maintenance	Enable Licenses	Maintenance from the Maintenance Utility menu
Maintenance	Force Rls SysLock	Maintenance from the Maintenance Utility menu
Maintenance	Install	Maintenance from the Maintenance Utility menu
Maintenance	Install NAS Firm	Maintenance from the Maintenance Utility menu
Maintenance	License Key Install	Maintenance from the Maintenance Utility menu
Maintenance	License Key Remove	Maintenance from the Maintenance Utility menu
Maintenance	MP Restore	Maintenance on Maintenance PC
Maintenance	Power Off Storage	Maintenance from the Maintenance Utility menu
Maintenance	Power On Storage	Maintenance from the Maintenance Utility menu
Maintenance	Reboot GUM	Maintenance from the Maintenance Utility menu
Maintenance	Remove	Maintenance from the Maintenance Utility menu
Maintenance	Remove NAS Firm	Maintenance from the Maintenance Utility menu
Maintenance	Reset DurationOfUse	Maintenance from the Maintenance Utility menu
Maintenance	Reset HUB	Maintenance from the Maintenance Utility menu
Maintenance	Reset Hypervisor	Maintenance from the Maintenance Utility menu
Maintenance	Reset Hypervisor NW	Maintenance from the Maintenance Utility menu

Function Name	Operation Name	Corresponding GUI Operation
Maintenance	Reset NASFW	Maintenance from the Maintenance Utility menu
Maintenance	Restore	Maintenance from the Maintenance Utility menu or maintenance on Maintenance PC
Maintenance	Restore(Remoeve)	Maintenance from the Maintenance Utility menu or maintenance on Maintenance PC
Maintenance	Restore(Type Change)	Maintenance from the Maintenance Utility menu
Maintenance	Restore Data	Maintenance on Maintenance PC
Maintenance	Select Cipher Suite	Maintenance from the Maintenance Utility menu
Maintenance	Select Login Window	Maintenance from the Maintenance Utility menu
Maintenance	Set Up Alert	Maintenance from the Maintenance Utility menu
Maintenance	Set Up Date & Time	Maintenance from the Maintenance Utility menu
Maintenance	Set Up Email	Maintenance using the Maintenance Utility applications (GUM AP) such as NAS Manager
Maintenance	Set Up Network Perm	Maintenance from the Maintenance Utility menu
Maintenance	Set Up Network Set	Maintenance from the Maintenance Utility menu
Maintenance	Set Up SNMP	Maintenance using the Maintenance Utility applications (GUM AP) such as NAS Manager
Maintenance	Set Up Syslog	Maintenance using the Maintenance Utility applications (GUM AP) such as NAS Manager
Maintenance	Set Up System Info	Maintenance from the Maintenance Utility menu
Maintenance	Stop Copy	Maintenance from the Maintenance Utility menu
Maintenance	Turn Off Locate LEDs	Maintenance from the Maintenance Utility menu

Function Name	Operation Name	Corresponding GUI Operation
Maintenance	Turn On Locate LEDs	Maintenance from the Maintenance Utility menu
Maintenance	Update Cert Files	Maintenance from the Maintenance Utility menu
Maintenance	Update Firmware	Maintenance from the Maintenance Utility menu
Maintenance	UserAccount Backup	Maintenance from the Maintenance Utility menu
Maintenance	UserAccount Restore	Maintenance from the Maintenance Utility menu
PFM	Delete Unused WWNs	Performance Monitor
PFM	Edit CU Monitor Mode	Performance Monitor
PFM	Edit Monitoring SW	Performance Monitor
PFM	Edit WWN	Performance Monitor
PFM	Edit WWN MonitorMode	Performance Monitor
PROV	Add Hosts	▪ Adding hosts to specified host groups ▪ Adding specified hosts to host groups
PROV	Add LUN Paths	▪ Mapping LU paths ▪ Creating alternate LUN paths ▪ Setting the same path as a selected LUN
PROV	Assign MP Unit	Assigning MP units
PROV	Block LDEVs	Blocking LDEVs
PROV	CalculateTieringMonitorData	Recalculating tier monitoring data from Hitachi Command Suite
PROV	Create Host Groups	Creating host groups
PROV	Create LDEVs	Creating new LDEVs
PROV	Create Resource Grps	Creating resource groups
PROV	Create VDKC-Box	Creating a VDKC-Box from Hitachi Command Suite
PROV	Create/Expand Pools	▪ Creating new pools ▪ Increasing pool capacity

Function Name	Operation Name	Corresponding GUI Operation
PROV	CreateAlus	Creating an LDEV with the ALU attribute
PROV	CreateiScsiName	Adding hosts to selected iSCSI targets
PROV	CreateiScsiPath	▪ Adding iSCSI paths to external storage systems ▪ Adding connections to remote storage systems
PROV	CreateiScsiTarget	Creating iSCSI targets
PROV	CreateLdev	Creating new internal or external volumes
PROV	CreateParityGroups	Creating parity groups
PROV	CreateRemoteChapUser	Adding CHAP users to selected iSCSI targets
PROV	CreateSlus	Creating an LDEV with the SLU attribute from Hitachi Command Suite
PROV	CreateThinProvisioningVolumes	Creating a Dynamic Provisioning virtual volume from Hitachi Command Suite
PROV	CreateTiPairsWithSlu	Creating Thin Image pairs using LDEVs with the SLU attribute from Hitachi Command Suite
PROV	CreateTiVolumes	Creating a secondary volume for Thin Image from Hitachi Command Suite
PROV	Delete Host Groups	Deleting host groups
PROV	Delete LDEVs	Deleting LDEVs
PROV	Delete Login WWNs	Deleting unnecessary WWNs
PROV	Delete LUN Paths	Removing LUN paths from LDEVs
PROV	Delete Resource Grps	Deleting resource groups
PROV	Delete VDKC-Box	Deleting a VDKC-Box from Hitachi Command Suite
PROV	DeleteAlus	Deleting an LDEV with the ALU attribute
PROV	DeleteiScsiInitiatorUser	Deleting the setting information of users with CHAP authentication on ports
PROV	DeleteiScsiName	Removing hosts from selected iSCSI targets

Function Name	Operation Name	Corresponding GUI Operation
PROV	DeleteiScsiPath	▪ Deleting iSCSI paths to external storage systems ▪ Deleting iSCSI paths when connections cannot be added to remote storage systems
PROV	DeleteiScsiTarget	Deleting iSCSI targets
PROV	DeleteLdev	Deleting internal or external volumes
PROV	DeleteLoginiScsiName	Deleting unnecessary iSCSI names
PROV	DeleteParityGroups	Deleting parity groups
PROV	DeleteRemoteChapUser	Removing CHAP users from selected iSCSI targets
PROV	DeleteSlus	Deleting an LDEV with the SLU attribute from Hitachi Command Suite
PROV	DeleteTargetChapUser	Removing CHAP users assigned to iSCSI targets
PROV	DeleteTiVolumes	Deleting a secondary volume for Thin Image from Hitachi Command Suite
PROV	DRU Expiration Lock	Data Retention Utility
PROV	Edit Cmd Dev(Auth)	Editing command device settings
PROV	Edit Cmd Dev(DevGrp)	Editing command device settings
PROV	Edit Cmd Dev(Sec)	Editing command device settings
PROV	Edit Command Devices	Editing command device settings
PROV	Edit DRU Attribute	Data Retention Utility
PROV	Edit Full Allocation	Enabling or disabling the Full Allocation setting
PROV	Edit Host	Editing host settings
PROV	Edit Host Grps(Mode)	Editing host group settings
PROV	Edit Host Grps(Name)	Editing host group settings
PROV	Edit LDEVs(tier)	Editing LDEV settings
PROV	Edit External LDEV Tier Rank	Editing the external LDEV tier ranks of pool volumes assigned to a pool
PROV	Edit MP Units	Editing MP unit settings

Function Name	Operation Name	Corresponding GUI Operation
PROV	Edit Ports(Address)	Editing port settings
PROV	Edit Ports(Security)	Editing port settings
PROV	Edit Ports(Speed)	Editing port settings
PROV	Edit Ports(Topology)	Editing port settings
PROV	Edit Resource Grp	Editing resource groups
PROV	Edit Tiering Policy	Editing the tiering policy
PROV	Edit V-VOL Option	▪ Creating new LDEVs ▪ Editing LDEV settings
PROV	Edit/Delete Pools	▪ Deleting pools ▪ Editing pool settings
PROV	Edit/Delete UUIDs	▪ Changing UUIDs ▪ Deleting UUIDs
PROV	EditiScsiInitiatorUser	Editing the setting information of users with CHAP authentication on ports
PROV	EditiScsiName	Editing host settings
PROV	EditiScsiNickName	Editing host settings
PROV	EditiScsiTarget	Editing iSCSI target settings
PROV	EditiSNS	Editing port settings
PROV	EditPortInfo	Editing port settings
PROV	EditRemoteChapUser	Editing CHAP user settings
PROV	EditRemoteTargetUser	Editing iSCSI targets
PROV	EditT10piMode	Editing T10 PI mode settings on ports
PROV	EditTargetChapUser	Editing settings of CHAP users assigned to iSCSI targets
PROV	ExecBindingOperation	Binding or unbinding an LDEV with the SLU attribute to or from the LDEV with the ALU attribute
PROV	Expand V-VOLs	Increasing virtual volume capacity
PROV	ExpandSlus	Increasing capacity of an LDEV with the SLU attribute from Hitachi Command Suite

Function Name	Operation Name	Corresponding GUI Operation
PROV	Format LDEVs	▪ Formatting LDEVs ▪ Creating new LDEVs
PROV	Format LDEVs(Q)	▪ Quick formatting LDEVs ▪ Creating new LDEVs
PROV	Initialize Pools	Initializing pools
PROV	LDEV Name	▪ Creating new LDEVs ▪ Editing LDEVs
PROV	LdevForceRestore	Forcible restoration of LDEVs
PROV	MapSecondaryVolumeWithSlu	Mapping LDEVs with the SLU attribute to the secondary volumes of Thin Image pairs from Hitachi Command Suite
PROV	Monitor Pools	Starting the performance monitoring of a pool
PROV	Move Resources	▪ Adding resources to resource groups ▪ Removing resources from resource groups
PROV	OperateSiPairsWithSlu	Operating ShadowImage pairs using LDEVs with the SLU attribute from Hitachi Command Suite
PROV	OperateTiPairsWithSlu	Operating Thin Image pairs using LDEVs with the SLU attribute from Hitachi Command Suite
PROV	Pool Name	▪ Setting pool names ▪ Deleting pool names
PROV	Reclaim Zero Pages	Releasing pages in virtual volumes
PROV	Release HostReserved	Releasing Host-Reserved LUNs
PROV	Relocate Pool	Starting the tier relocation of a pool
PROV	Remove Hosts	Removing hosts from host groups
PROV	Restore LDEVs	Restoring LDEVs
PROV	Restore Pools	Restoring pools
PROV	RevertTiPairsWithSlu	Reverting Thin Image pairs using LDEVs with the SLU attribute from Hitachi Command Suite
PROV	Set PageTieringLevel	Setting the tiering policy per page

Function Name	Operation Name	Corresponding GUI Operation
PROV	Set Virtual LDEV	▪ Editing virtualization management settings ▪ Setting or releasing the GAD reserve attribute on a volume for the secondary volume of a global-active device pair
PROV	Shrink Pool	Decreasing pool capacity
PROV	StartParityGroupsFormat	Formatting parity groups
PROV	StartVerify	Verifying LDEVs
PROV	Stop Monitoring	Stopping the performance monitoring of a pool
PROV	Stop Reclm ZeroPages	Stopping releasing pages in virtual volumes
PROV	Stop Relocating	Stopping the tier relocation of a pool
PROV	Stop Shrinking Pool	Stopping decreasing pool capacity
PROV	StopFormat	Stopping formatting parity groups
PROV	StopVerify	Stopping verifying LDEVs
PROV	UnmapSecondaryVolume WithSlu	Unmapping the secondary volumes of Thin Image pairs using LDEVs with the SLU attribute from Hitachi Command Suite
PROV	UpdateAluaMode	▪ Editing an LDEV ▪ Creating pairs for global-active device ▪ Resynchronizing pairs for TrueCopy, Universal Replicator, and global-active device ▪ Resynchronizing pairs for global-active device by the consistency group
PROV	UpdateAsymmetricAccess StatePerHG	Editing Asymmetric Access States settings
PROV	UpdateCopybackMode	Enabling or disabling copy-back mode
PROV	UpdateParityGroupSettings	Enabling or disabling accelerated compression
PROV	UpdateSpareDrives	Assigning as a spare drive or releasing a spare drive setting
Remote Replication	Add Path	Adding paths to remote storage systems

Function Name	Operation Name	Corresponding GUI Operation
Remote Replication	Add Quorum Disk ID	Adding quorum disk IDs used by global-active device
Remote Replication	Add RCU	Adding connections to remote storage systems
Remote Replication	Change JNL Option	Changing the journal option for Universal Replicator
Remote Replication	Change Mirror Option	Changing the mirror option for Universal Replicator
Remote Replication	Change RCU Option	Changing the remote storage system options
Remote Replication	Create Pairs	Creating pairs of TrueCopy, Universal Replicator, and global-active device
Remote Replication	Delete Pairs	Deleting pairs of TrueCopy, Universal Replicator, and global-active device
Remote Replication	Delete Path	Removing paths from remote storage systems
Remote Replication	Del Quorum Disk ID	Deleting quorum disk IDs used by global-active device
Remote Replication	Delete RCU	Removing connections to remote storage systems
Remote Replication	Edit Options	Setting the remote replica options
Remote Replication	Edit Pair Options	Setting the pair options for TrueCopy or Universal Replicator
Remote Replication	Journal Owner	Setting the journal ownership for Universal Replicator
Remote Replication	Journal Vol	Creating or deleting journals or assigning journal volumes of Universal Replicator
Remote Replication	R-Cmd.Dev.	Setting remote command devices of Universal Replicator
Remote Replication	Resync Pairs	Resynchronizing pairs of TrueCopy, Universal Replicator, and global-active device
Remote Replication	Split Pairs	Splitting pairs of TrueCopy or Universal Replicator

Function Name	Operation Name	Corresponding GUI Operation
Remote Replication	Suspend Pairs	Suspending pairs for global-active device
Remote Replication	UpdateQuorumDisks	Editing the value of Read Response Guaranteed Time When Quorum monitoring has stopped for global-active device.
SPM	Change SPMGrp	Server Priority Manager
SPM	Clear SPM Info	Server Priority Manager
SPM	Default Set	Server Priority Manager
SPM	Set All Prio Port	Server Priority Manager
SPM	Set All Prio WWN	Server Priority Manager
SPM	Set Ctrl Kind	Server Priority Manager
SPM	Set Prio Port	Server Priority Manager
SPM	Set Prio WWN	Server Priority Manager
SPM	SPMGrp Del/Chg	Server Priority Manager
SPM	Update Port WWN	Server Priority Manager
SPM	Update SPMGrp	Server Priority Manager
SPM	Update WWN	Server Priority Manager
UVM	Add External Volumes	Mapping external volumes
UVM	Assign MP Unit	Assigning MP units for external volumes
UVM	Delete ES VOLs	Releasing external volume mapping
UVM	Disconnect ES Paths	Disconnecting external paths
UVM	Disconnect ES VOLs	▪ Disconnecting external storage systems ▪ Disconnecting external volumes
UVM	Edit ES Path Config	▪ Adding paths to external path groups ▪ Deleting paths from external path groups ▪ Changing priority among external paths
UVM	Edit ES VOLs	Editing external volume settings
UVM	Edit External WWNs / iSCSI Targets	▪ Editing external WWN parameters ▪ Editing external iSCSI target parameters

Function Name	Operation Name	Corresponding GUI Operation
UVM	Reconnect ES Paths	Reconnecting external paths
UVM	Reconnect ES VOLs	▪ Reconnecting external storage systems ▪ Reconnecting external volumes
VM	Del Migration Plans	Volume Migration
VM	Migrate Volumes	Volume Migration
VPM	Edit CLPR	Creating, adding, deleting, or editing CLPR Migrating parity groups to a different CLPR
VS	Abort Shredding	Stopping shredding LDEVs
VS	End Shredding	Ending shredding LDEVs
VS	Shred LDEVs	Shredding LDEVs

Encryption Key operations

The following tables show the function names, operation names and event names related to encryption keys for data encryption, and each item is listed in alphabetical order.

Function Name and Operation Name

Function Name	Operation Name	Corresponding GUI Operation
ENC	Add keys to DKC	▪ Creating encryption keys ▪ Configuring encryption environment settings
	Backup Keys	Backing up encryption keys on the key management server or backing up encryption keys as a file on the management client
	Backup Keys to File	Backing up encryption keys as a file on the management client
	Backup Keys to Serv	Backing up encryption keys on the key management server
	Backup Keys to Serv(Auto)	Automated backing up encryption keys on the key management server

Function Name	Operation Name	Corresponding GUI Operation
	Create KEK Dynamic	▪ Configuring encryption environment settings ▪ Updating key encryption keys
	Create Keys	▪ Creating encryption keys ▪ Configuring encryption environment settings
	Create Keys On Serv	▪ Creating encryption keys ▪ Backing up encryption keys on the key management server ▪ Configuring encryption environment settings
	DEK assign SpareDisk	Configuring encryption environment settings
	DEK delete	Configuring encryption environment settings
	Delete and Create Keys	▪ Deleting unused encryption keys ▪ Creating unused encryption keys
	Delete KEK Dynamic	▪ Configuring encryption environment settings ▪ Updating key encryption keys
	Delete Keys	Deleting encryption keys
	Delete Keys on Serv	Deleting encryption keys backed up on the key management server
	Delete Keys on Serv(Auto)	Deleting encryption keys backed up automatically on the key management server
	Disable Enhancement Of Encryption	Disabling the settings used in the enhancement of encryption
	Edit Encryption	Enabling/disabling the encryption in a parity group level
	Edit ENC Settings	Configuring encryption environment settings
	Edit Password Policy	Editing password policies for backing up encryption keys
	Register KEK Dynamic	▪ Configuring encryption environment settings ▪ Updating key encryption keys
	Regular Backup Keys to Serv	Backing up encryption keys on the key management server

Function Name	Operation Name	Corresponding GUI Operation
	Regular Delete Keys on Serv	Request reception of deletion of the encryption key of the key management server
	Rekey CEK	▪ Configuring encryption environment settings ▪ Updating certificate encryption keys
	Rekey KEK Dynamic	▪ Updating key encryption keys ▪ Configuring encryption environment settings
	Restore Keys	Restoring encryption keys from back up copies on the key management server or the management client
	Restore Keys fr File	Restoring encryption keys from back up copies on the management client
	Restore Keys fr File(Forcibly)	Restoring encryption keys forcibly from back up copies on the management client
	Restore Keys fr Serv	Restoring encryption keys from back up copies on the key management server
	Restore Keys fr Serv(Forcibly)	Restoring encryption keys forcibly from back up copies on the key management server
	Retry KEK Dynamic	Reacquisition of key encryption keys
	Set Up Key Mng Serv	Configuring encryption environment settings
	Succeeded Backup to Serv	Setting of succeeded backup flag
KEK Acquisition	Acquisition Key	Reacquisition of key encryption keys
	Set Key	
Key Recovery	Restore Keys fr Serv(Boot)	Restoration of encryption keys
	Set Key Blob	

Function Name and Event Name

Function Name	Event Name	Output Trigger
ENC	Backup Keys	When the encryption key is manually backed up as a file.
	Change CEK Status	▪ When the encryption environment is configured from the initial setting. ▪ When the certificate encryption key is updated. ▪ When the encryption disk board is deleted or replaced.
	Change DEK Status	▪ When the encryption environment is configured from the initial setting. ▪ When the encryption environment setting is initialized. ▪ When the data encryption is enabled/disabled. ▪ When Dynamic sparing, Correction copy or Copy back is performed. ▪ When the drive (Hard disk drive, SSD or FMD) is added, deleted or replaced after the encryption environmental setting is configured.
	Clear Keys	When the encryption environment setting is initialized.
	Create Keys	When the encryption key is created.
	Create Keys on DKC	▪ When the encryption environment is configured. ▪ When the unused encryption key is created.
	Delete CEK	When the encryption environment setting is initialized.
	Delete DEK	When the encryption environment setting is initialized.
	Delete Keys	When the encryption key is deleted.
	Delete Spedified Key	When the unused encryption key is deleted.
	Restore Keys	When the encryption key is restored.
	Set CEK	▪ When the encryption environment is configured. ▪ When the encryption key is restored.

Function Name	Event Name	Output Trigger
	Set DEK	▪ When the encryption environment is configured. ▪ When the encryption key is restored.
	Use Keys for CEK/KEK	▪ When the encryption environment setting is configured from the initial setting. ▪ When the certificate encryption key is updated. ▪ When the encryption disk board is added or replaced.

Command received from hosts

The following table shows the function name output to audit log files when receiving commands from hosts.

Function Name	Description
Config Command	Indicates that a configuration command is received. Not indicate the completion of the operation.
User Auth	Indicates that a user authentication command is received. Not indicate the completion of the operation.
CHAP	Indicates that the CHAP authentication is completed.

PIN Deletion Tool operation

The following table shows the function name and the operation name related to PIN Deletion Tool.

Function Name	Operation Name	Corresponding GUI Operation
PINDeletion	Delete	PIN deletion operations by PIN deletion tool

Reproducing/losing Audit log

The following table shows the function name, event name, and triggering events that are output when the audit log file is reproduced or lost. The event name, "Create File", is output only once when the audit log file is reproduced automatically.

Function Name	Event Name	Output Trigger
AuditLog	Create File	When abnormal files in the audit log are reproduced automatically.
AuditLog	DKCAuditLog was lost	When the audit log created by commands received from hosts is lost.

Chapter 4: Audit log examples

This topic provides examples and descriptions of the audit logs produced by each function and operation that can be performed with Device Manager - Storage Navigator and Maintenance PC. The descriptions are listed alphabetically by function name and operation name.

Audit Log Descriptions

[AuditLog] Create File

Basic Information

Parameter	Description
SVP	Indicates that the following audit log files are regenerated. ▪ Operations set by the management client ▪ Operations on encryption keys for encrypting stored data ▪ Execution logs of Remote Maintenance API
DKC	Indicates that the following audit log files are regenerated. ▪ Commands that the storage system received from the host or computers using CCI ▪ Events on encryption keys for encrypting stored data

Example

```
,,[AuditLog],Create File,SVP,Warning,Seq.=xxxxxxxxxx
```

[AuditLog] DKCAuditLog was lost

Example

```
MPC,,[AuditLog],DKCAuditLog was lost,,Error,Seq.=xxxxxxxxxx
```

[AuditLog] Send Test Message

This information appears in the syslog server only.

Example

```
GUM,,[AuditLog],This is a test message,,Normal end,Seq.=xxxxxxxxxx
```

[AuditLog] Set Up Syslog Serv

Detailed Information

Item	Description
Syslog Transfer Protocol	The protocol to transfer audit log information to syslog servers (TLS1.2/RFC5424 or UDP/RFC3164).
Syslog Server	The server used to transfer audit log information to syslog servers. Primary: Primary server, Secondary: Secondary server
Server Enable	Indicates whether the syslog server setting is enabled or disabled. Enable: The setting is enabled. Disable: The setting is disabled.
Type	The type of the IP address of the syslog server (Identifier(Domain), IPv4, or IPv6). A hyphen (-) is displayed if the setting of transferring audit logs to syslog servers is disabled.
Name	The host name or IP address of the syslog server. A hyphen (-) is displayed if the setting of transferring audit logs to syslog servers is disabled.
Port Number	The port number to transfer audit logs to syslog servers. A hyphen (-) is displayed if the setting of transferring audit logs to syslog servers is disabled.
Client Certificate File Name	The name of the client certificate file used to transfer audit logs to syslog servers. A hyphen (-) is displayed, if the setting of transferring audit logs to syslog servers is disabled, or if UDP/RFC3164 is used as a transfer protocol.
Root Certificate File Name	The name of the root certificate file used to transfer audit logs to syslog servers.

Item	Description
	A hyphen (-) is displayed, if the setting of transferring audit logs to syslog servers is disabled, or if UDP/RFC3164 is used as a transfer protocol.
Location Identification Name	The name to identify a storage system when transferring audit logs to syslog servers.
Retry	Indicates whether to retry transferring if communication with syslog servers failed. Enable: Transfer is retried. Disable: Transfer is not retried. A hyphen (-) is displayed if UDP/RFC3164 is used as a transfer protocol.
Retry Interval	The interval of the retries of transferring. A hyphen (-) is displayed, if the setting of the retry is disabled or if UDP/RFC3164 is used as a transfer protocol.
Detail	Indicates whether the detailed information of audit logs is transferred to syslog servers. Enable: The information is transferred. Disable: The information is not transferred.

Example

```
GUM,,[AuditLog],Set Up Syslog Serv,,Normal end,Seq.=xxxxxxxxxx
+Syslog Transfer Protocol=xxxxxxx,
{Syslog Server,Server Enable,Type,Name,Port Number,
Client Certificate File Name,Root Certificate File Name,
Location Identification Name,Retry,Retry Interval}
=[{Primary,Enable,IPv4,xxxxx,65535,xxxx,xxxxx,xxxxx,Disable,xxx},
{Secondary,Enable,IPv4,xxxxx,65535,xxxx,xxxx,xxxx,Disable,xxx}],
Detail=Enable
```

ACM Descriptions

[ACM] AddUsersToUserGroup

Detailed Information

Item		Description
UserGroup		The information of the user group to which the user account is added
	Name	The user group name
User[x]		The information of the user account added to the user group
	Name	The user name
	Result	Result of the operation Normal end: normal end, Error(*xxxxx-yyyyyy*): Abnormal end *xxxxx*: part code, *yyyyyy*: error code

Example

```
RMI AP,,[ACM],AddUsersToUserGroup,,Normal end,Seq.=xxxxxxxxxx
+{UserGroup{
  Name="Group1"},
User[0]{
  Name="User1",Result=Normal end}}
```

[ACM] CreateUser

Detailed Information

Item			Description
User			The information of the created user account
	Name		The user name
	Authentication		The authentication method Local: Local authentication, External: External authentication
	UserGroup[x]		The information of the user group to which the user account belongs
		Name	The user group name

Item		Description
	AccountStatus	The setting status of the user account true: Enabled, false: Disabled

Example

```
RMI AP,,[ACM],CreateUser,,Normal end,Seq.=xxxxxxxxxx
+{User{
  Name="User1",Authentication=Local,
  UserGroup[0]{
    Name="Group1"},
  AccountStatus=true}}
```

[ACM] CreateUserGroup

Detailed Information

Item			Description
UserGroup			The information of the created user group
	Name		The user group name
	Role[x]		The information of the role assigned to the user group
		Name	The role name
	ResourceGroupBitmap		The resource group ID assigned to the user group
	AllResourceGroup		Indicates whether all of the resource groups are assigned to the user groups true: Assigned, false: Not assigned

Example

```
RMI AP,,[ACM],CreateUserGroup,,Normal end,Seq.=xxxxxxxxxx
+{UserGroup{
  Name="Group1",
  Role[0]{
    Name="Role1"},
  ResourceGroupBitmap={0},AllResourceGroup=true}}
```

[ACM] DeleteUsers

Detailed Information

Item		Description
User[x]		The information of the deleted user account
	Name	The user name
	Result	Result of the operation Normal end: normal end, Error(*xxxxx-yyyyyy*): Abnormal end *xxxxx*: part code, *yyyyyy*: error code

Example

```
RMI AP,,[ACM],DeleteUsers,,Normal end,Seq.=xxxxxxxxxx
+{User[0]{
  Name="User1",Result=Normal end}}
```

[ACM] DeleteUserGroups

Detailed Information

Item		Description
UserGroup[x]		The information of the deleted user group
	Name	The user group name
	Result	Result of the operation Normal end: normal end, Error(*xxxxx-yyyyyy*): Abnormal end *xxxxx*: part code, *yyyyyy*: error code

Example

```
RMI AP,,[ACM],DeleteUserGroups,,Normal end,Seq.=xxxxxxxxxx
+{UserGroup[0]{
  Name="Group1",Result=Normal end}}
```

[ACM] DisableUsers

Detailed Information

Item		Description
User[x]		The information of the disabled user account
	Name	The user name
	Result	Result of the operation Normal end: normal end, Error(*xxxxx-yyyyyy*): Abnormal end *xxxxx*: part code, *yyyyyy*: error code

Example

```
RMI AP,,[ACM],DisableUsers,,Normal end,Seq.=xxxxxxxxxx
+{User[0]{
  Name="User1",Result=Normal end}}
```

[ACM] EnableUsers

Detailed Information

Item		Description
User[x]		The information of the enabled user account
	Name	The user name
	Result	Result of the operation Normal end: normal end, Error(*xxxxx-yyyyyy*): Abnormal end *xxxxx*: part code, *yyyyyy*: error code

Example

```
RMI AP,,[ACM],EnableUsers,,Normal end,Seq.=xxxxxxxxxx
+{User[0]{
  Name="User1",Result=Normal end}}
```

[ACM] RemoveUsersFromUserGroup

Detailed Information

Item		Description
UserGroup		The information of the user group from which the user account is removed
	Name	The user group name
User[x]		The information of the user account
	Name	The user name
	Result	Result of the operation Normal end: normal end, Error(*xxxxx-yyyyyy*): Abnormal end *xxxxx*: part code, *yyyyyy*: error code

Example

```
RMI AP,,[ACM],RemoveUsersFromUserGroup,,Normal end,Seq.=xxxxxxxxxx
+{UserGroup{
  Name="Group1"},
User[0]{
  Name="User1",Result=Normal end}}
```

[ACM] Set Login Message

Detailed Information

Item	Description
LoginMessageSentence	Indicates the sentence displayed on the login window of Device Manager - Storage Navigator

Example

```
RMI AP,,[ACM],Set Login Message,,Normal end,Seq.=xxxxxxxxxx
+LoginMessageSentence=Login Message
```

[ACM] UpdatePassword

Detailed Information

Item		Description
User		The information of the user account whose password is changed
	Name	The user name

Example

```
RMI AP,,[ACM],UpdatePassword,,Normal end,Seq.=xxxxxxxxxx
+{User{
  Name="User1"}}
```

[ACM] UpdateUserAuthentication

Detailed Information

Item		Description
User		The information of the user account whose authentication method is changed
	Name	The user name
	Authentication	The authentication method Local: Local authentication, External: External authentication

Example

```
RMI AP,,[ACM],UpdateUserAuthentication,,Normal end,Seq.=xxxxxxxxxx
+{User{
  Name="User1",Authentication=Local}}
```

[ACM] UpdateUserGroupAllResourceGrp

Detailed Information

Item	Description
UserGroup	The information of the user group whose All Resource Groups Assigned setting is changed

Item		Description
	Name	The user group name
	AllResourceGroup	Indicates whether all of the resource groups are assigned to the user groups true: Assigned, false: Not assigned

Example

```
RMI AP,,[ACM],UpdateUserGroupAllResourceGrp,,Normal end,
Seq.=xxxxxxxxxx
+{UserGroup{
  Name="Group1",AllResourceGroup=true}}
```

[ACM] UpdateUserGroupName

Detailed Information

Item		Description
UserGroup		The information of the user group
	Name	The user group name before change
	NewName	The user group name after change

Example

```
RMI AP,,[ACM],UpdateUserGroupName,,Normal end,Seq.=xxxxxxxxxx
+{UserGroup{
  Name="Group1",NewName="Group2"}}
```

[ACM] UpdateUserGroupResourceGrpBmp

Detailed Information

Item		Description
UserGroup		The information of the user group whose resource group assignment is changed
	Name	The user group name

Item	Description
ResourceGroupBitmap	The resource group ID assigned to the user group

Example

```
RMI AP,,[ACM],UpdateUserGroupResourceGrpBmp,,Normal end,
Seq.=xxxxxxxxxx
+{UserGroup{
  Name="Group1",ResourceGroupBitmap={0}}}
```

[ACM] UpdateUserGroupRole

Detailed Information

Item	Description
UserGroup	The information of the user group whose role assignment is changed
Name	The user group name
Role[x]	The information of the role
Name	The role name

Example

```
RMI AP,,[ACM],UpdateUserGroupRole,,Normal end,Seq.=xxxxxxxxxx
+{UserGroup{
  Name="Group1",
  Role[0]{
    Name="Role1"}}}
```

BASE Descriptions

[BASE] Advanced Settings

Detailed Information

Item	Description
Option	Indicates the specified option Advanced System Setting: Advanced system setting of Device Manager - Storage Navigator
Option Bit	Indicates the specified option in hexadecimal
Num. of Modes	The number of modes

Example

```
RMI AP,Task Name,[BASE],Advanced Settings,,Normal end,
Seq.=xxxxxxxxxx
+{Option, Option Bit}
=[{Advanced System Setting, F000000000000000000000000000
000000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000000000000000000}],
Num. of Modes=1024
```

[BASE] Automatic LDAP Password change

Example

```
RMI AP,,[BASE],Automatic LDAP Password change,,Normal end,Seq.=xxxxxxxxxx
```

[BASE] Create Conf Report

Detailed Information

Item	Description
ReportName	Name of the created configuration report
UserName	Name of the user who created the configuration report
FolderName	Folder name where the configuration report is output

Item	Description
StartTime	Starting date and time of the configuration report creation

Example

```
RMI AP,Task Name,[BASE],Create Conf Report,,Normal end,
Seq.=xxxxxxxxxx
++{ReportName,UserName,FolderName,StartTime}
={XXXXXXX,manager,YYYYYYYYYY,YYYYMMDDHHMMSS}
```

[BASE] Delete CVAE Info

Detailed Information

Item	Description
ID	ID (unique ID row by row) of the version information that was deleted
Num. of IDs	The number of IDs

Example

```
RMI AP,,[BASE],Delete CVAE Info,,Normal end,Seq.=xxxxxxxxxx
+{ID}={0,1,2,3},Num. of IDs=4
```

[BASE] Delete Reports

Detailed Information

Item	Description
FolderName	Folder name of the deleted configuration report.
Result	Result of the operation Normal end: normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: part code, *yyyyy*: error code
Num. of Reports	The number of deleted configuration reports

Example

```
RMI AP,Task Name,[BASE],Delete Reports,,Normal end,
Seq.=xxxxxxxxxx
```

```
+{FolderName,Result}=[{XXXXXXXXX,Normal end},
{XXXXXXXXX,Normal end},{XXXXXXXXX,Normal end},
-{XXXXXXXXX,Normal end}],Num. of Reports=4
```

[BASE] Delete Tasks

Detailed Information

Item	Description
Task Name	Name of the deleted task
Type	Type of the task
User Name	The user ID who deleted the task
Submission Time	Time when the task was registered
Result	Result of the operation Normal end: normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: part code, *yyyyy*: error code
Num. of Tasks	The number of deleted tasks

Example

```
RMI AP,,[BASE],Delete Tasks,,Normal end,Seq.=xxxxxxxxxx
+{Task Name,Type,User Name,Submission Time,Result}
=[{20100101-EditStorageSystem,Edit Storage System,User01,
YYYY/MM/DD HH:MM:SS,Normal end},{20100101-CreateLdev,
Create LDEV,User02,YYYY/MM/DD HH:MM:SS,Normal end}],
Num. of Tasks=2
```

[BASE] Disable Auto Delete

Detailed Information

Item	Description
Task Name	The task name that the disable auto delete operation was performed
Type	Type of the task
User Name	ID of the user who performed the operation
Submission Time	Time when the task was registered

Item	Description
Result	Result of the operation Normal end: normal end, Error(*xxxx-yyyyy*): Abnormal end: *xxxx*: part code, *yyyyy*: error code
Num. of Tasks	Number of the target tasks.

Example

```
RMI AP,,[BASE],Disable Auto Delete,,Normal end,
Seq.=xxxxxxxxxx
+{Task Name,Type,User Name,Submission Time,Result}
=[{20100101-EditStorageSystem,Edit Storage System,User01,
YYYY/MM/DD HH:MM:SS,Normal end},{20100101-CreateLdev,
Create LDEV,User02,YYYY/MM/DD HH:MM:SS,Normal end}],
Num. of Tasks=2
```

[BASE] Edit Storage System

Detailed Information

Item	Description
Name	Name of the storage system
Contact	Administrator of the storage system
Location	Location of the storage system
Num. of SystemInfos	Number of the edited storage systems

Example

```
RMI AP,Task Name,[BASE],Edit Storage System,,Normal end,
Seq.=xxxxxxxxxx
+{Name,Contact,Location}=[{XXXXX,XXXXX,XXXXX}],
Num. of SystemInfos=1
```

[BASE] Enable Auto Delete

Detailed Information

Item	Description
Task Name	The task name that the enable auto delete operation was performed.
Type	The type of task
User Name	ID of the user who performed the operation
Submission Time	Time when the task was registered
Result	Result of the operation Normal end: normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: part code, *yyyyy*: error code
Num. of Tasks	Number of the target tasks

Example

```
RMI AP,,[BASE],Enable Auto Delete,,Normal end,
Seq.=xxxxxxxxxx
+{Task Name,Type,User Name,Submission Time,Result}
=[{20100101-EditStorageSystem,Edit Storage System,User01,
YYYY/MM/DD HH:MM:SS,Normal end},{20100101-CreateLdev,
Create LDEV,User02,YYYY/MM/DD HH:MM:SS,Normal end}],
Num. of Tasks=2
```

[BASE] Entry Tasks

This log is output when each task on the Device Manager - Storage Navigator menu is performed.

Detailed Information

Item	Description
Action Name	The name of the performed action
Num. of Actions	The number of performed actions

Example

```
RMI AP,Task Name,[BASE],Entry Tasks,,Normal end,Seq.=xxxxxxxxxx
+{Action Name}=[{xxxxxxx},{xxxxxxx},{xxxxxxx},{xxxxxxx},
{xxxxxxx}],Num. of Actions=5
```

[BASE] HCSSO Authentication

Example 1: When SSO authentication is succeeded

```
RMI AP,,[BASE],HCSSO Authentication,,Normal end,
Seq.=xxxxxxxxxx
```

Example 2: When SSO authentication failed

```
RMI AP,,[BASE],HCSSO Authentication,,Error(xxxxx-yyyyyy),
Seq.=xxxxxxxxxx
```

[BASE] HCSSO SetOneTimeKey

Basic Information

Parameter	Description
Authentication	The authentication failed in the issuance of OneTimeKey.
OneTimeKey EntryOver	The number of OneTimeKeys exceeded the maximum.

Example 1: When authentication failed in issuance of OneTimeKey

```
RMI AP,,[BASE],HCSSO SetOneTimeKey,Authentication,
Error(xxxxx-yyyyyy),Seq.=xxxxxxxxxx
```

Example 2: When the number of registered OneTimeKeys exceeds the maximum

```
RMI AP,,[BASE],HCSSO SetOneTimeKey,OneTimeKey EntryOver,
Error(xxxxx-yyyyyy),Seq.=xxxxxxxxxx
```

[BASE] Login

Example

```
RMI AP,,[BASE],Login,,Normal end,Seq.=xxxxxxxxxx
```

[BASE] Logout

Example

```
RMI AP,,[BASE],Logout,,Normal end,Seq.=xxxxxxxxxx
```

[BASE] Resume Tasks

Detailed Information

Item	Description
Task Name	Name of the resumed task
Type	The type of task
User Name	The ID of the user who resumed the task
Submission Time	Time when the task was registered
Result	Result of the operation Normal end: normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: part code, *yyyyy*: error code
Num. of Tasks	The number of target tasks

Example

```
RMI AP,,[BASE],Resume Tasks,,Normal end,Seq.=xxxxxxxxxx
+{Task Name,Type,User Name,Submission Time,Result}
=[{20100101-EditStorageSystem,Edit Storage System,User01,
YYYY/MM/DD HH:MM:SS,Normal end},{20100101-CreateLdev,
Create LDEV,User02,YYYY/MM/DD HH:MM:SS,Normal end}],
Num. of Tasks=2
```

[BASE] Set CVAE Info

Detailed Information

Item	Description
ID	ID (unique ID row by row) of the version information that was deleted
ProductName	Product name (Hitachi Command Suite)
VersionInfo	Version Information

Item	Description
IPAddress	Network address information (IPv4, IPv6, and network name)
RegistryDate	Time stamp of initial registration
LastAccessDate	Time stamp of the final access
MemoRandom	Memo space information
Num. of CVAEInfos	The number of Hitachi Command Suite messages
LicenseInfo	License information
Num. of LicenseInfos	The number of license messages

Example

```
RMI AP,,[BASE],Set CVAE Info,,Normal end,Seq.=xxxxxxxxxx
+{ID,ProductName,VersionInfo,IPAddress,RegistryDate,
LastAccessDate,MemoRandom}
={1,DevMgr,6.0.0.-00,10.213.38.210,
01/23/2008 12:34:56,01/24/2008 16:54:02,MEMO SPACE},
Num. of CVAEInfos=1
+{LicenseInfo}={Core license,Full license,Expired},
Num. of LicenseInfos=3
```

[BASE] Start Maintenance

Example

```
MPC,,[BASE],Start Maintenance,,Normal end,Seq.=xxxxxxxxxx
```

[BASE] Suspend Tasks

Detailed Information

Item	Description
Task Name	Name of the suspended task
Type	The type of task
User Name	Name of the user who suspended the task
Submission Time	Time when the task was registered.

Item	Description
Result	Result of the operation Normal end: normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: part code, *yyyyy*: error code
Num. of Tasks	Number of the target tasks

Example

```
RMI AP,,[BASE],Suspend Tasks,,Normal end,Seq.=xxxxxxxxxx
+{Task Name,Type,User Name,Submission Time,Result}
=[{20100101-EditStorageSystem,Edit Storage System,User01,
YYYY/MM/DD HH:MM:SS,Normal end},{20100101-CreateLdev,
Create LDEV,User02,YYYY/MM/DD HH:MM:SS,Normal end}],
Num. of Tasks=2
```

[BASE] Unlock Forcibly

Example

```
RMI AP,,[BASE],Unlock Forcibly,,Normal end,Seq.=xxxxxxxxxx
```

Information Descriptions

[Information] Delete Log

Basic Information

Parameter	Description
SIM	Record of a deleted SIM log
SSB	Record of a deleted SSB log
Reset	Record of a deleted Reset log
Power Event	Record of a deleted Power Event log
Detail	Record of a deleted Detail log
Diagnosis	Record of a deleted Diagnosis log
Copy History	Record of a deleted Copy History log

Example

```
MPC,,[Information],Delete Log,SIM,Normal end,Seq.=xxxxxxxxxx
```

[Information] ORM Value

Basic Information

Parameter	Description
Alter	Change the threshold of ORM (Online Read Margin)
Error Reset	Indicates Error Reset

Detailed Information

Item	Description
Type	The period of time to acquire the result of threshold diagnosis using the read diagnosis function Today: Current day only, 7days: 7 days, Total: Every operating days
Read Err. (Unrecovered)	The threshold of the Read Error (Unrecovered)
Read Err. (Recovered)	The threshold of the Read Error (Recovered)
Seek Err. (Recovered)	The threshold of the Seek Error (Recovered)
Seek Err. (Unrecovered)	The threshold of the Seek Error (Unrecovered)
Not Ready	The threshold of the Not Ready status.
Other Errors	The threshold of Other Errors.
Total Defect Count	The threshold of the Total Defect Count
Used Endurance Indicator	The threshold of the Used Endurance Indicator
Reboot Error	The threshold of the Reboot Error
DMA Error	The threshold of the DMA Error
Memory Error	The threshold of the Memory Error

Item	Description
Uncorrected Error	The threshold of the Uncorrected Error
Capacitor Error	The threshold of the Capacitor Error
PDEV	The mounting location of the PDEV (physical device) that is the target of Alter or error reset
Num. of PDEVs	The number of PDEVs (physical devices)

Example 1: Changing the threshold of SAS

```
MPC,,[Information],ORM Value,Alter,Normal end,Seq.=xxxxxxxxxx
+Type=7days
+{Read Err.(Unrecovered),Read Err.(Recovered),
Seek Err.(Recovered),Seek Err.(Unrecovered),Not Ready,
Other Errors}={15,1.00e-008,100,10,10,10}
++PDEV=[HDD000-01,HDD000-02],Num. of PDEVs=2
```

Example 2: Changing the threshold of the SSD when drive type is other than SLxxx-MxxxSS

```
MPC,,[Information],ORM Value,Alter,Normal end,Seq.=xxxxxxxxxx
+Type=Total
+{Total Defect Count}={15}
++PDEV=[HDD000-01,HDD000-02],Num. of PDEVs=2
```

Example 3: Changing the threshold of the SSD when drive type is SLxxx-MxxxSS

```
MPC,,[Information],ORM Value,Alter,Normal end,Seq.=xxxxxxxxxx
+Type=Total
+{Total Defect Count,Used Endurance Indicator}={160000,(99,90)}
++PDEV=[HDD000-03],Num. of PDEVs=1
```

Example 4: Changing the threshold of the FMD when drive type is NFHxx-Qxxxxx

```
MPC,,[Information],ORM Value,Alter,Normal end,Seq.=xxxxxxxxxx
+Type=Today
+{Total Defect Count,Reboot Error,DMA Error,Memory Error,
Uncorrected Error,Used Endurance Indicator,Capacitor Error}=
{0,2,10,500,512,(0,0),1}
++PDEV=[HDD000-03],Num. of PDEVs=1
```

Example 5: Error Reset

```
MPC,,[Information],ORM Value,Error Reset,Normal end,
Seq.=xxxxxxxxxx
+PDEV=HDD000-01
```

[Information] Threshold Value

Basic Information

Parameter	Description
Alter	Change the threshold of failed PDEV (physical device).
Error Reset	Indicates Error Reset.

Detailed Information

Item	Description
Type	The period of time to acquire the result of threshold diagnosis using the read diagnosis function. 7days: 7 days, Total: Every operating days
Mechanical error (Recovered, Unrecd.)	The threshold of the Mechanical error
Media error (Recovered, Unrecd.)	The threshold of the Media error
Read/Write error (Recovered, Unrecd.)	The threshold of the Read/Write error
Drive I/F error (Recovered, Unrecd.)	The threshold of the Drive I/F error
Controller hardware error (Recovered, Unrecd.)	The threshold of the Controller hardware error
Drive response late	The threshold of the Drive response late

Item	Description
SAS I/F error Port 0 (Unrecd.)	The threshold of the SAS I/F error Port 0
SAS I/F error Port 1 (Unrecd.)	The threshold of the SAS I/F error Port 1
Port 0 error (Unrecd.)	The threshold of the Port 0 error
Port 1 error (Unrecd.)	The threshold of the Port 1 error
PDEV	The mounting location of PDEV (physical device) that is the target of Alter or error reset
Num. of PDEVs	The number of PDEVs (physical devices)

Example 1: Changing the threshold

```
MPC,,[Information],Threshold Value,Alter,Normal end,
Seq.=xxxxxxxxxx
+Type=7days
+{Mechanical error(Recovered,Unrecd.),Media error(Recovered,
Unrecd.),Read/Write error(Recovered,Unrecd.),
Drive I/F error(Recovered,Unrecd.),
Controller hardware error(Recovered,Unrecd.),
Drive response late,SAS I/F error Port 0(Unrecd.),
SAS I/F error Port 1(Unrecd.),Port 0 error(Unrecd.),
Port 1 error(Unrecd.)}
={(150,60),(0,15),(150,30),(150,6),(150,6),0,6,6,12,12}
++PDEV=[HDD000-01,HDD000-02],Num. of PDEVs=2
```

Example 2: Error Reset

```
MPC,,[Information],Threshold Value,Error Reset,Normal end,
Seq.=xxxxxxxxxx
+PDEV=HDD000-01
```

Install Descriptions

[Install] All Config

Detailed Information

Item	Description
New Ver.	The new version number.
Old Ver.	The old version number.

Example

```
MPC,,[Install],All Config,,Normal end,Seq.=xxxxxxxxxx
+{New Ver.,Old Ver.}={xx-xx-xx/xx,xx-xx-xx/xx}
```

[Install] Backup Config

Detailed Information

Item	Description
Ver.	The version number of the configuration information to be backed up.

Example

```
MPC,,[Install],Backup Config,,Normal end,Seq.=xxxxxxxxxx
+Ver.=xx-xx-xx/xx
```

[Install] FlashDrive ORM Value

Detailed Information

Item	Description
Flash Drive Collective Setting	Indicates whether the flash drive collective setting information is valid or invalid Valid: Valid, Invalid: Invalid
Dynamic Sparing	The Dynamic Sparing threshold of flash drive
Warning SIM	The warning SIM threshold of flash drive

Example

```
MPC,,[Install],FlashDrive ORM Value,,Normal end,
Seq.=xxxxxxxxxx
+{Flash Drive Collective setting,Dynamic Sparing,Warning SIM}
={Valid,99,95}
```

[Install] Initialize ORM Value

Example

```
MPC,,[Install],Initialize ORM Value,,Normal end,Seq.=xxxxxxxxxx
```

[Install] Machine Install Date

Detailed Information

Item	Description
Date	Indicates the date and the time of the setting in "YYYY/MM/DD HH:mm" format (YYYY: year, MM: month, DD: day, HH: hour, mm: minute).

Example

```
MPC,,[Install],Machine Install Date,,Normal end,Seq.=xxxxxxxxxx
+Date=YYYY/MM/DD HH:mm
```

[Install] NEW Installation

New Installation outputs operation logs in Example 1 and Example 2 when configuration information of the new version is installed by the Maintenance PC. However, the operation log in Example 2 is not output when operation is stopped before starting the installation process.

Detailed Information 1

Item	Description
New Ver.	New version number of the configuration information

Detailed Information 2

Item	Description
Mode	Type of the installation
Object	Type of the selected firmware

Example 1

```
MPC,,[Install],NEW Installation,,Normal end,Seq.=xxxxxxxxxx
+{New Ver.}={xx-xx-xx/xx}
```

Example 2

```
MPC,,[Install],NEW Installation,,Normal end,Seq.=xxxxxxxxxx
+Mode=Auto Define Configuration
+Object=All Firmwares,Configuration
```

[Install] System Option

Detailed Information

Item	Description
Spare Disk Recover	Indicates the setting status of Spare Disk Recover. Interleave: Give priority to the access from the host while executing copy process, Full speed: Give priority to the copy process.
Disk Copy Pace	Indicates the setting status of Disk Copy Pace. Slower: Low speed, Medium: Medium speed, Faster: High speed
Copy Operation (Correction Copy)	Indicates the setting status of Copy Operation (Correction Copy). ON: Execute Correction Copy, OFF: Do not execute Correction Copy
Copy Operation (Dynamic Sparing)	Indicates the setting status of Copy Operation (Dynamic Sparing). ON: Execute Dynamic Sparing, OFF: Do not execute Dynamic Sparing
Link Failure Threshold	The threshold to report link failure
LDKC:CU: LDEV	The LDKC number, the CU number, and the LDEV number
Destage	Indicates the setting status of Destage. ON: Execute write through operation (report the completion of the writing to the host after the writing to the disk drive has completed).

Item	Description
	OFF: Do not execute write through operation (report the completion of the writing to the host when the data is written in the cache memory).
Num. of LDEVs	The number of LDEVs
LPR	The LPR name
Cache Tuning	The level of Cache Tuning
Num. of LPRs	The number of LPRs
Command Control	Command Control
Mode	The local mode number
Set	The setting status. ON: Set, Off: Release
Num. of Modes	The number of local modes.
Debug Mode	Setting executed from the debug window (Set: fix).
Note: Only the changed items will be output.	

Example

```
MPC,,[Install],System Option,,Normal end,Seq.=xxxxxxxxxx
+Spare Disk Recover=Full Speed
+Disk Copy Pace=Slower
+Copy Operation(Correction Copy)=OFF
+Copy Operation(Dynamic Sparing)=OFF
+Link Failure Threshold=10
+{LDKC:CU:LDEV,Destage}=[{0x00:0x00:0x00,OFF}],
Num. of LDEVs=1
+{LPR,Cache Tuning}=[{System,Level5}],Num. of LPRs=1
+{LPR,Command Control}=[{System,10}],Num. of LPRs=1
+{LPR,Mode,Set}=[{System,0,ON}],Num. of Modes=1
+Debug Mode=Set
```

[Install] System Tuning

Detailed Information

Item	Description
Serial No.	Serial number of the storage system

Example

```
MPC,,[Install],System Tuning,,Normal end,Seq.=xxxxxxxxxx
+Serial No.=400001
```

Local Replication Descriptions

[Local Replication] Assign S-VOLs

Detailed Information

Item	Description
Copy Type	The program product name for this operation TI: Thin Image
P-VOL (LDKC:CU:LDEV)	The LDKC number, the CU number and the LDEV number of the primary volume
S-VOL (LDKC:CU:LDEV)	The LDKC number, the CU number and the LDEV number of the assigned secondary volume No output if a secondary volume is not specified during the assigning operation.
PoolID	The pool ID of the assigned secondary volume
MU	The mirror unit number of the assigned secondary volume No output if a mirror unit number is not specified during the assigning operation.
Snapshot Group	The snapshot group name
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code
Num. of Pairs	The number of pairs to which secondary volumes are assigned

Example

```
RMI AP,Task Name,[Local Replication],Assign S-VOLs,,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=TI
++{P-VOL(LDKC:CU:LDEV),S-VOL(LDKC:CU:LDEV),PoolID,MU,
Snapshot Group,Result}
=[{0xXX:0xAA:0xBB,0xYY:0xCC:0xDD,0,1,SnapshotSet1,Normal end},
```

```
{0xXX:0xAA:0xBB,0xYY:0xCC:0xDD,0,,SnapshotSet2,Error(xxxx-yyyy)}],
Num. of Pairs=2
```

[Local Replication] Create Pairs

Detailed Information

Item	Description
Copy Type	The program product name for this operation SI: ShadowImage, TI: Thin Image
Copy Pace	The copy speed Faster: High speed, Medium; Medium speed, Slower: Low speed This item is output only when the copy type is SI.
Split Type	The split type Non Split: Does not split the pair, Quick Split: Split the pair quickly, Steady Split: Split the pair when all the differential copies are completed This item is output only when the copy type is SI.
P-VOL (LDKC:CU:LDEV)	The LDKC number, the CU number and the LDEV number of the primary volume in the created pair
S-VOL (LDKC:CU:LDEV)	The LDKC number, the CU number and the LDEV number of the secondary volume in the created pair No output if Copy Type is TI, and a secondary volume is not specified during the pair creation operation.
PoolID	The pool ID of the secondary volume of the created pair This item is output only when the copy type is TI.
MU	The mirror unit number of the created pair When Copy Type is TI, the value of this item is not output if a mirror unit number is not specified while creating the pair.
Snapshot Group	The snapshot group name This item is output only when the copy type is TI.
Cascade	Indicates the cascade attribute of the created pair. Enable: Supported pair, Disable: Not supported pair This item is output only when the copy type is TI.
Pair Type	Indicates the clone attribute of the created pair. Clone: Cloned, Snapshot: Non-cloned

Item	Description
	This item is output only when the copy type is TI.
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code
Num. of Pairs	The number of created pairs

Example 1: Copy type is SI

```
RMI AP,Task Name,[Local Replication],Create Pairs,,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=SI,Copy Pace=Faster,Split Type=Non Split
++{P-VOL(LDKC:CU:LDEV),S-VOL(LDKC:CU:LDEV),MU,Result}
=[{0xXX:0xAA:0xBB,0xYY:0xCC:0xDD,0,Normal end},
{0xX:0xAA:0xBB,0xY:0xCC:0xDD,1,Error(xxxx-yyyyy)}],
Num. of Pairs=2
```

Example 2: Copy type is TI

```
RMI AP,Task Name,[Local Replication],Create Pairs,,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=TI
++{P-VOL(LDKC:CU:LDEV),S-VOL(LDKC:CU:LDEV),PoolID,MU,
Snapshot Group,Cascade,Pair Type,Result}
=[{0xXX:0xAA:0xBB,0xYY:0xCC:0xDD,0,1,SnapshotSet1,Disable,Snapshot,Normal
end},
{0xXX:0xAA:0xBB,0xYY:0xCC:0xDD,0,,SnapshotSet2,Enable,Clone,
Error(xxxx-yyyyy)}],
Num. of Pairs=2
```

[Local Replication] Delete Pairs

Detailed Information

Item	Description
Copy Type	The program product name for this operation SI: ShadowImage, TI: Thin Image
P-VOL (LDKC:CU:LDEV)	The LDKC number, the CU number and the LDEV number of the primary volume in the deleted pair

Item	Description
S-VOL (LDKC:CU:LDEV)	The LDKC number, the CU number and the LDEV number of the secondary volume in the deleted pair No output if Copy Type is TI, and a secondary volume is not specified during the pair deletion operation.
MU	The mirror unit number of the deleted pair The index and value of this item are output only when Copy Type is TI. However, the value of this item is not output if a mirror unit is not specified during the pair deletion operation.
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code
Num. of Pairs	The number of deleted pairs

Example 1: Copy type is SI

```
RMI AP,Task Name,[Local Replication],Delete Pairs,,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=SI
++{P-VOL(LDKC:CU:LDEV),S-VOL(LDKC:CU:LDEV),Result}
=[{0xXX:0xAA:0xBB,0xYY:0xCC:0xDD,Normal end},
{0xX:0xAA:0xBB,0xYY:0xCC:0xDD,Error(xxxx-yyyyy)}],
Num. of Pairs=2
```

Example 2: Copy type is TI

```
RMI AP,Task Name,[Local Replication],Delete Pairs,,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=TI
++{P-VOL(LDKC:CU:LDEV),S-VOL(LDKC:CU:LDEV),MU,Result}
=[{0xXX:0xAA:0xBB,0xYY:0xCC:0xDD,,Normal end},
{0xX:0xAA:0xBB,0xYY:0xCC:0xDD,,Error(xxxx-yyyyy)}],Num. of Pairs=2
```

[Local Replication] Edit Options

Detailed Information

Item	Description
Copy Type	The program product name for this operation SI: ShadowImage

Item	Description
Swap & Freeze	Indicates whether the Swap & Freeze option is enabled or disabled. Enable: Enabled, Disable: Disabled
Host I/O Performance	Indicates whether the Host I/O Performance option is enabled or disabled. Enable: Enabled, Disable: Disabled
Nondisruptive Migration Data Consistency	Indicates whether the Nondisruptive Migration Data Consistency option is enabled or disabled. Enable: Enabled, Disable: Disabled
Copy Pace Ext. Slower1	Indicates whether the Copy Pace Ext. Slower1 option is enabled or disabled. Enable: Enabled, Disable: Disabled
Copy Pace Ext. Slower2	Indicates whether the Copy Pace Ext. Slower2 option is enabled or disabled. Enable: Enabled, Disable: Disabled
Copy Pace Ext. None	Indicates whether the Copy Pace Ext. None option is enabled or disabled. Enable: Enabled, Disable: Disabled
Quick/Steady Split Multiplexing (ShadowImage)	Indicates whether the Quick/Steady Split Multiplexing (ShadowImage) option is enabled or disabled. Enable: Enabled, Disable: Disabled
Reverse Copy Multiplexing (ShadowImage)	Indicates whether the Reverse Copy Multiplexing (ShadowImage) option is enabled or disabled. Enable: Enabled, Disable: Disabled
Normal Resync Multiplexing (ShadowImage)	Indicates whether the Normal Resync Multiplexing (ShadowImage) option is enabled or disabled. Enable: Enabled, Disable: Disabled
Disable the alert notification of shared memory space warning	Indicates whether suppression of alert notification for SIM 603000 is enabled or disabled. Enable: Suppressed, Disable: Not suppressed
Reserve *X*	Reserved items X is a number: 03 to 15, 17 to 19, 23, 27 to 29 or 31 to 32.

Example

```
RMI AP,Task Name,[Local Replication],Edit Options,,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=SI
++Swap & Freeze=Enable,HOST I/O Performance=Enable,
Reserve03=Enable,(snip),
Nondisruptive Migration Data Consistency=Enable,(snip),
Copy Pace Ext. Slower1=Disable,Copy Pace Ext. Slower2=Disable,
Copy Pace Ext.None=Disable,Reserve23=Disable,
Quick/Steady Split Multiplexing (ShadowImage)=Enable,
Reverse Copy Multiplexing (ShadowImage)=Enable,(snip),
Reserve32=Disable
```

[Local Replication] Initialize

Example

```
RMI AP,Task Name,[Local Replication],Initialize,,Normal end,
Seq.=xxxxxxxxxx
```

[Local Replication] Remove S-VOLs

Detailed Information

Item	Description
Copy Type	The program product name for this operation TI: Thin Image
P-VOL (LDKC:CU:LDEV)	The LDKC number, the CU number and the LDEV number of the primary volume No output if a primary volume is not specified during the secondary volume removal operation.
S-VOL (LDKC:CU:LDEV)	The LDKC number, the CU number and the LDEV number of the removed secondary volume No output if a secondary volume is not specified during the secondary volume removal operation.
PoolID	The pool ID of the removed secondary volume
MU	The mirror unit number of the removed secondary volume No output if a mirror unit is not specified during the secondary volume removal operation.
Snapshot Group	The snapshot group name

Item	Description
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code
Num. of Pairs	The number of pairs whose secondary volumes are removed

Example

```
RMI AP,Task Name,[Local Replication],Remove S-VOLs,,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=TI
++{P-VOL(LDKC:CU:LDEV),S-VOL(LDKC:CU:LDEV),PoolID,MU,
Snapshot Group,Result}
=[{0xXX:0xAA:0xBB,0xYY:0xCC:0xDD,0,1,SnapshotSet1,Normal end},
{0xXX:0xAA:0xBB,0xYY:0xCC:0xDD,0,,SnapshotSet2,Error(xxxx-yyyy)}],
Num. of Pairs=2
```

[Local Replication] Resync Pairs

Detailed Information

Item	Description
Copy Type	The program product name for this operation SI: ShadowImage, TI: Thin Image
Copy Pace	The copy speed Faster: High speed, Medium; Medium speed, Slower: Low speed This item is output only when the copy type is SI.
Resync Type	The resynchronization type Normal Copy: Normal resynchronization, Quick Resync: High speed resynchronization, Reverse Copy: Reverse resynchronization, Quick Restore: High speed restore
P-VOL (LDKC:CU:LDEV)	The LDKC number, the CU number and the LDEV number of the primary volume in the resynchronized pair
S-VOL (LDKC:CU:LDEV)	The LDKC number, the CU number and the LDEV number of the secondary volume in the resynchronized pair When Copy Type is TI, the values of the secondary volume are not output if the value of MU is output.

Item	Description
MU	The mirror unit number of the resynchronized pair The index and value of this item are output only when Copy Type is TI. However, the value of this item is not output if those of the secondary volume are output.
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code
Num. of Pairs	The number of resynchronized pairs

Example 1: Copy type is SI

```
RMI AP,Task Name,[Local Replication],Resync Pairs,,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=SI,Copy Pace=Medium,Resync Type=Normal Copy
++{P-VOL(LDKC:CU:LDEV),S-VOL(LDKC:CU:LDEV),Result}
=[{0xXX:0xAA:0xBB,0xYY:0xCC:0xDD,Normal end},
{0xX:0xAA:0xBB,0xY:0xCC:0xDD,Error(xxxx-yyyyy)}],
Num. of Pairs=2
```

Example 2: Copy type is TI

```
RMI AP,Task Name,[Local Replication],Resync Pairs,,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=TI,Resync Type=Reverse Copy
++{P-VOL(LDKC:CU:LDEV),S-VOL(LDKC:CU:LDEV),MU,Result}
=[{0xXX:0xAA:0xBB,0xYY:0xCC:0xDD,,Normal end},
{0xX:0xAA:0xBB,0xYY:0xCC:0xDD,,Error(xxxx-yyyyy)}],Num. of Pairs=2
```

[Local Replication] Split Pairs

Detailed Information

Item	Description
Copy Type	The program product name for this operation SI: ShadowImage, TI: Thin Image
Copy Pace	The copy speed of the splited pair. Invalid: Disable, Slower: Low speed, Medium; Medium speed, Faster: High speed

Item	Description
Split Type	The split type Quick Split: Split the pair quickly, Steady Split: Split the pair when all the differential copies are completed This item is output only when the copy type is SI.
P-VOL (LDKC:CU:LDEV)	The LDKC number, the CU number and the LDEV number of the primary volume in the split pair
S-VOL (LDKC:CU:LDEV)	The LDKC number, the CU number and the LDEV number of the secondary volume in the split pair No output if Copy Type is TI, and a secondary volume is not specified during the pair splitting operation.
MU	The mirror unit number of the split pair The index and value of this item are output only when Copy Type is TI. However, the value of this item is not output if a mirror unit is not specified during the pair splitting operation.
Cascade	Indicates the cascade attribute of the created pair. Enable: Supported pair, Disable: Not supported pair This item is output only when the copy type is TI and pair type is Clone.
Pair Type	Indicates the clone attribute of the created pair. Clone: Cloned, Snapshot: Non-cloned This item is output only when the copy type is TI.
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code
Num. of Pairs	The number of split pairs

Example 1: Copy type is SI

```
RMI AP,Task Name,[Local Replication],Split Pairs,,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=SI,Copy Pace=Faster,Split Type=Steady Split
++{P-VOL(LDKC:CU:LDEV),S-VOL(LDKC:CU:LDEV),Result}
=[{0xXX:0xAA:0xBB,0xYY:0xCC:0xDD,Normal end},
{0xX:0xAA:0xBB,0xY:0xCC:0xDD,Error(xxxx-yyyyy)}],
Num. of Pairs=2
```

Example 2: Copy type is TI

```
RMI AP,Task Name,[Local Replication],Split Pairs,,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=TI,Copy Pace=Invalid
++{P-VOL(LDKC:CU:LDEV),S-VOL(LDKC:CU:LDEV),MU,Cascade,Pair Type,Copy Pace,
Result}
=[{0xXX:0xAA:0xBB,0xYY:0xCC:0xDD,Enable,Clone,Low,Normal end},
{0xXX:0xAA:0xBB,0xYY:0xCC:0xDD,Disable,Snapshot,Error(xxxx-yyyyy)}],Num.
of Pairs=2
```

[Local Replication] Suspend Pairs

Detailed Information

Item	Description
Copy Type	The program product name for this operation SI: ShadowImage
P-VOL (LDKC:CU:LDEV)	The LDKC number, the CU number and the LDEV number of the primary volume in the suspended pair
S-VOL (LDKC:CU:LDEV)	The LDKC number, the CU number and the LDEV number of the secondary volume in the suspended pair
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code
Num. of Pairs	The number of suspended pairs

Example

```
RMI AP,Task Name,[Local Replication],Suspend Pairs,,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=SI
++{P-VOL(LDKC:CU:LDEV),S-VOL(LDKC:CU:LDEV),Result}
=[{0xXX:0xAA:0xBB,0xYY:0xCC:0xDD,Normal end},
{0xX:0xAA:0xBB,0xY:0xCC:0xDD,Error(xxxx-yyyyy)}],
Num. of Pairs=2
```

Maintenance Descriptions

[Maintenance] Block

Detailed Information 1

Item	Description
Location	The mounted position of the CTL, ENC or CFM (CTLx, ENCxx-xx or CFM-xx) to be blocked. When replacing a FAN or CM, the mounting position of the CTL on which the FAN or CM is mounted is output to block the CTL.
Forcibly run without safety checks	Indicates whether the forcible replacement function without safety checks is enabled or disabled. However, a hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.

Detailed Information 2

Item	Description
Location	The mounted position of the BKMF* or BKM* (BKMF-xx or BKM-x) to be blocked
Forcibly run without safety checks	Indicates whether the forcible replacement function without safety checks is enabled or disabled. However, a hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.
* BKMF is the part name of VSP E990, VSP G700, VSP F700, VSP G900 and VSP F900. BKM is the part name of VSP E590, VSP E790, VSP G350, VSP G370, VSP F350 and VSP F370.	

Detailed Information 3

Item	Description
Location	Mounted position of the CHB or DKB to be blocked (CHB-xx or DKB-xx)
Forcibly block	Indicates whether the function to forcibly block the CHB or DKB is enabled or disabled*

Item	Description
Type	Type of the part of the CHB or DKB to be blocked
Forcibly run without safety checks	Indicates whether the forcible replacement function without safety checks is enabled or disabled*
* A hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.	

Detailed Information 4

Item	Description
Location	Mounted position of the PECB, SWPK, or PCP to be blocked (PECB-xx, SWPKx, or PCPx)
Forcibly block	Indicates whether the function to forcibly block the PECB, SWPK, or PCP is enabled or disabled*
Forcibly run without safety checks	Indicates whether the forcible replacement function without safety checks is enabled or disabled*
* A hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.	

Detailed Information 5

Item	Description
Location	Mounted position of the drive (HDDxx-xx) to be blocked
Spare Copy	Whether data is evacuated to a spare drive when replacing the drive
Forcibly run without safety checks	Indicates whether the forcible replacement function without safety checks is enabled or disabled*
Forcibly restore the drive after replaced	Indicates whether the function to forcibly restore drives after they are replaced is enabled or disabled*
Skip DKU Inline	Indicates whether the function to skip DKU Inline is enabled or disabled*
Skip firmware update of HDD	Indicates whether the function to skip the drive firmware update is enabled or disabled*

Item	Description
* A hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.	

Detailed Information 6

Item	Description
Location	Mounted position of the HFB (CHB-1A/1B/1C/1D or CHB-2A/2B/2C/2D) to be blocked
Forcibly block	Indicates whether the function to forcibly block the HFB is enabled or disabled.*
Forcibly run without safety checks	Indicates whether the forcible replacement function without safety checks is enabled or disabled.*
* A hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.	

Example 1: Blocking CTLs, ENCs or CFMs when replacing

```
GUM,,[Maintenance],Block,,Normal end,Seq.=xxxxxxxxxx
+Location=xxx,Forcibly run without safety checks=Enable
```

Example 2: Blocking of BKMFs or BKMs when replacing

```
GUM,,[Maintenance],Block,,Normal end,Seq.=xxxxxxxxxx
+Location=xxx,Forcibly run without safety checks=Enable
```

Example 3: Blocking CHBs or DKBs when replacing

```
GUM,,[Maintenance],Block,,Normal end,Seq.=xxxxxxxxxx
+Location=xxxxxx,Forcibly block=Disable,Type=xxxxxx,
Forcibly run without safety checks=Enable
```

Example 4: Blocking PECBs, SWPKs, or PCPs when replacing

```
GUM,,[Maintenance],Block,,Normal end,Seq.=xxxxxxxxxx
+Location=xxx,Forcibly block=Disable,
Forcibly run without safety checks=Enable
```

Example 5: Blocking drives when replacing

```
GUM,,[Maintenance],Block,,Normal end,Seq.=xxxxxxxxxx
+Location=xxx,Spare Copy=ON,
Forcibly run without safety checks=Enable,
Forcibly restore the drive after replaced=Enable,
Skip DKU Inline=Enable,Skip firmware update of HDD=Disable
```

Example 6: Blocking HFBs when replacing

```
GUM,,[Maintenance],Block,,Normal end,Seq.=xxxxxxxxxx
+Location=xxx,Forcibly block=Disable,
Forcibly run without safety checks=Enable
```

[Maintenance] Block(Remove)

Detailed Information

Item	Description
Cache Size	Cache size of the blocked cache memory
Forcibly run without safety checks	Indicates whether the function to forcibly change the type without safety checks is enabled or disabled. However, a hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.

Example

```
GUM,,[Maintenance],Block(Remove),,Normal end,Seq.=xxxxxxxxxx
+Cache Size=xxxxxxxx,Forcibly run without safety checks=Enable
```

[Maintenance] Block(Type Change)

Detailed Information 1

Item	Description
Location	Mounted position of the CTL (CTLx) to be blocked
Forcibly run without safety checks	Indicates whether the function to forcibly change the type without safety checks is enabled or disabled. However, a hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.

Detailed Information 2

Item	Description
Cache Size	Cache size of the blocked cache memory
Forcibly run without safety checks	Indicates whether the function to forcibly change the type without safety checks is enabled or disabled. However, a hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.

Detailed Information 3

Item	Description
Location	Mounted position of the DKB (DKB-xx) to be blocked
Forcibly block	Indicates whether the function to forcibly block the DKB is enabled or disabled*
Type	Type of the part of the DKB to be blocked
Forcibly run without safety checks	Indicates whether the function to forcibly change the type without safety checks is enabled or disabled*
* A hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.	

Detailed Information 4

Item	Description
Location	Mounted position of the CHB (CHB-xx) to be blocked
Forcibly block	Indicates whether the function to forcibly block the CHB is enabled or disabled*
Type	Type of the part of the CHB to be blocked
Forcibly run without safety checks	Indicates whether the function to forcibly change the type without safety checks is enabled or disabled*
* A hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.	

Example 1: Blocking CTLs along with CTL type change when replacing

```
GUM,,[Maintenance],Block(Type Change),,Normal end,Seq.=xxxxxxxxxx
+Location=xxx,Forcibly run without safety checks=Enable
```

Example 2: Blocking CMs along with CM type change when replacing

```
GUM,,[Maintenance],Block(Type Change),,Normal end,Seq.=xxxxxxxxxx
+Cache Size=xxxxxxxx,Forcibly run without safety checks=Enable
```

Example 3: Blocking DKBs along with DKB type change when replacing

```
GUM,,[Maintenance],Block(Type Change),,Normal end,Seq.=xxxxxxxxxx
+Location=xxx,Forcibly block=Disable,Type=xxxxxx,
Forcibly run without safety checks=Enable
```

Example 4: Blocking CHBs along with CHB type change when replacing

```
GUM,,[Maintenance],Block(Type Change),,Normal end,Seq.=xxxxxxxxxx
+Location=CHB-xx,Forcibly block=Disable,Type=xxxxxx,
Forcibly run without safety checks=Disable
```

[Maintenance] Blockade

Detailed Information

Item	Description
PCB	Mounted position of the PCB (CHB, DKB or CTL) to be blocked
Num. of PCBs	Number of the PCBs to be blocked

Example

```
MPC,,[Maintenance],Blockade,,Normal end,Seq.=xxxxxxxxxx
+PCB=[CHB-1A],Num. of PCBs=1
```

[Maintenance] Boot System SafeMode

Example

```
GUM,,[Maintenance],Boot System SafeMode,,Normal end,Seq.=xxxxxxxxxx
```

[Maintenance] Change SFP Type

Detailed Information

Parameter	Description
System	SFP type change of the system

Example

```
GUM,,[Maintenance],Change SFP Type,System,Normal end,Seq.=xxxxxxxxxx
```

[Maintenance] Check Remove

Detailed Information

Item	Description
Drives	The mounting position of the drive the removal of which is checked.
Num of Drives	The number of drives the removal of which is checked.

Example

```
GUM,,[Maintenance],Check Remove,,Normal end,Seq.=xxxxxxxxxx
+Drives=[HDDxx-xx,HDDxx-xx,HDDxx-xx],Num of Drives=3
```

[Maintenance] Correction Copy

Detailed Information

Item	Description
PDEV	The mounting location of the PDEV (physical device)

Example

```
MPC,,[Maintenance],Correction Copy,,Normal end,Seq.=xxxxxxxxxx
+PDEV=HDD00-00
```

[Maintenance] Create User

Detailed Information

Item	Description
User Name	The name of a created user.
User Groups	The name of the user group to which the user belongs.
Account Status	Indicates whether the user account is enabled or disabled. Enable: The user account is enabled. Disable: The user account is disabled.
Authentication	Indicates the authentication method. Local: Authentication by a local account in the storage system, External: External authentication

Example

```
GUM,,[Maintenance],Create User,,Normal end,Seq.=xxxxxxxxxx
+User Name=xxxx,User Groups=[xxx,xxx,xxx],Account Status=Disable,
Authentication=Local
```

[Maintenance] Create User Group

Detailed Information

Item	Description
Group ID	The name of a created user group.
Roles	The role name assigned to the user group.
ResourceBitMap	The resource group assigned to the user group.
AllResourceFlag	Indicates whether all the resource groups are assigned to a user group. Enable: Assigned, Disable: Not assigned

Example

```
GUM,,[Maintenance],Create UserGroup,,Normal end,Seq.=xxxxxxxxxx
+Group ID=xxx,Roles=[xxx,xxx,xxx],
ResourceBitMap=0xffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffff
ffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffff
ffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffff
```

```
ffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffff,
AllResourceFlag=Disable
```

[Maintenance] Delete User Group

Detailed Information

Item	Description
Group ID	The name of a deleted user group.
Num of Group ID	The number of deleted user groups.

Example

```
GUM,,[Maintenance],Delete User Group,,Normal end,Seq.=xxxxxxxxxx
+Group ID=[xxx],Num of Group ID=1
```

[Maintenance] Delete Users

Detailed Information

Item	Description
User	The name of a deleted user.
Num of Users	The number of deleted users.

Example

```
GUM,,[Maintenance],Delete Users,,Normal end,Seq.=xxxxxxxxxx
+User=[xxx,xxx,xxx],Num of Users=3
```

[Maintenance] Disable Licenses

Detailed Information

Item	Description
Program Product Name	The name of the target program product
Enable	Indicates whether the license of the program product is enabled or disabled.

Item	Description
	Enable: The license is enabled. Disable: The license is disabled.
Num of Licenses	The number of target program products

Example

```
GUM,,[Maintenance],Disable Licenses,,Normal end,Seq.=xxxxxxxxxx
+{Program Product Name,Enable}=
[{xxx,Disable},{xxx,Disable}],Num of Licenses=2
```

[Maintenance] Edit Hypervisor Mode

Detailed Information

Item	Description
Edit Unified Hypervisor Maintenance Mode	Indicates the status of the unified hypervisor maintenance mode Enable: The maintenance mode is enabled. Disable: The maintenance mode is disabled.

Example

```
GUM,,[Maintenance],Edit Hypervisor Mode,,Normal end,Seq.=xxxxxxxxxx
+Edit Unified Hypervisor Maintenance Mode=Enable
```

[Maintenance] Edit Login Message

Detailed Information

Item	Description
Login Message	Indicates the display status of the login message Enable: The login message is displayed. Disable: The login message is not displayed.

Example

```
GUM,,[Maintenance],Edit Login Message,,Normal end,Seq.=xxxxxxxxxx
+Login Message=Enable
```

[Maintenance] Edit ReplacingNotice

Detailed Information

Item	Description
Replacing Notice for Air Filter	Indicates whether the replacing notice for the air filter is enabled or disabled Enable: Replacing notice is enabled. Disable: Replacing notice is disabled.

Example

```
GUM,,[Maintenance],Edit ReplacingNotice,,Normal end,Seq.=xxxxxxxxxx
+Replacing Notice for Air Filter=xxx
```

[Maintenance] Edit System Param

Detailed Information

Item	Description
Auto Define Configuration Mode	Indicates whether the ADC (auto define configuration) mode is enabled or disabled Enable: ADC mode is enabled. Disable: ADC mode is disabled.
A jumper used for initial installation (CEMD)	Indicates whether CEMD (jumper settings for the initial installation) is enable or disabled Enable: CEMD is enabled. Disable: CEMD is disabled.
A jumper used for a storage system boot for initial IP address settings (CEDT)	Indicates whether CEDT (jumper settings for booting the storage system in the initial IP address setting) is enabled or disabled Enable: CEDT is enabled. Disable: CEDT is disabled.

Item	Description
A jumper used for cache memory volatilization (VOJP)	Indicates whether VOJP (jumper settings for volatilizing cache memory) is enabled or disabled Enable: VOJP is enabled. Disable: VOJP is disabled.

Example

```
GUM,,[Maintenance],Edit System Param,,Normal end,Seq.=xxxxxxxxxx
+Auto Define Configuration Mode=Disable,
A jumper used for initial installation (CEMD)=Enable,
A jumper used for a storage system boot for initial IP address settings
(CEDT)=Disable,
A jumper used for cache memory volatilization (VOJP)=Disable
```

[Maintenance] Edit UPS Mode

Detailed Information

Item	Description
UPS Mode	The UPS mode that is set. Standard Mode: Standard mode UPS Interlock Mode 1: UPS interlocking mode 1 UPS Interlock Mode 2: UPS interlocking mode 2 UPS Interlock Mode 3: UPS interlocking mode 3

Example

```
GUM,,[Maintenance],Edit UPS Mode,,Normal end,Seq.=xxxxxxxxxx
+UPS Mode=xxxx
```

[Maintenance] Edit User

Detailed Information

Item	Description
User Name	The user name for settings.

Item	Description
User Groups	The group name to which the user belongs.
Account Status	Indicates whether the user account is enabled or disabled. Enable: User account is enabled. Disable: User account is disabled.
Authentication	The authentication method. Local: Authentication by a local account in the storage system, External: External authentication

Example

```
GUM,,[Maintenance],Edit User,,Normal end,Seq.=xxxxxxxxxx
+User Name=xxx,User Groups=[xxx,xxx,xxx],Account Status=Disable,
Authentication=Local
```

[Maintenance] Edit User Group

Detailed Information

Item	Description
Group ID	The user group name for settings.
New Group ID	The updated user group name.
Roles	The role name assigned to the user group.
ResourceBitMap	The resource group assigned to the user group.
AllResourceFlag	Indicates whether all the resource groups are assigned to a user group. Enable: Assigned, Disable: Not assigned

Example

```
GUM,,[Maintenance],Edit UserGroup,,Normal end,Seq.=xxxxxxxxxx
+Group ID=xxx,New Group ID=xxx,Roles=[xxx,xxx,xxx],
ResourceBitMap=0xffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffff
ffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffff
ffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffff
ffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffffff,
-AllResourceFlag=Disable
```

[Maintenance] Enable Licenses

Detailed Information

Item	Description
Program Product Name	The name of the target program product
Enable	Indicates whether the license of the program product is enabled or disabled. Enable: The license is enabled. Disable: The license is disabled.
Num of Licenses	The number of target program products

Example

```
GUM,,[Maintenance],Enable Licenses,,Normal end,Seq.=xxxxxxxxxx
+{Program Product Name,Enable}
=[{xxx,Enable},{xxx,Enable}],Num of Licenses=2
```

[Maintenance] Force Rls SysLock

Example

```
GUM,,[Maintenance],Force Rls SysLock,,Normal end,Seq.=xxxxxxxxxx
```

[Maintenance] Install

Detailed Information 1

Item	Description
Shared Memory Function	Names of the shared memories (all the mounted shared memories including installed shared memories)

Detailed Information 2

Item	Description
Location	Mounted position of the installed CHB or DKB (CHB-xx or DKB-xx)
Type	Type of the part of the installed CHB or DKB

Item	Description
Forcibly run without safety checks	Indicates whether the forcible installation function without safety checks is enabled or disabled. However, a hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.

Detailed Information 3

Item	Description
Module Type	Type of the installed module Outputs Channel Board Box as a fixed parameter.
Location	Mounted position of the installed PECB (PECB-xx)
Num of PECBs	The number of the installed PECBs
Expansion Mode	The expansion mode (1:2)
Forcibly run without safety checks	Indicates whether the forcible installation function without safety checks is enabled or disabled. However, a hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.

Detailed Information 4

Item	Description
Location	Mounted position of the installed drive box (DB-xx or DB-xx&xx)
Type	Type of the part of the installed drive box
Num of Drive Boxes	Number of the installed drive boxes
Forcibly run without safety checks	Indicates whether the forcible installation function without safety checks is enabled or disabled. However, a hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.

Detailed Information 5

Item	Description
Drives	Mounted position of the installed drive
Num of Drives	Number of the installed drives
Forcibly run without safety checks	Indicates whether the forcible installation function without safety checks is enabled or disabled. However, a hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.

Detailed Information 6

Item	Description
Location	Mounted position of the installed HFB (CHB-1A/1B/1C/1D or CHB-2A/2B/2C/2D)
Forcibly run without safety checks	Indicates whether the forcible installation function without safety checks is enabled or disabled. However, a hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.

Example 1: Installing SMs

```
GUM,,[Maintenance],Install,,Normal end,Seq.=xxxxxxxxxx
+Shared Memory Function=[xxxxxxxx,xxxxxxxx]
```

Example 2: Installing CHBs or DKBs

```
GUM,,[Maintenance],Install,,Normal end,Seq.=xxxxxxxxxx
+Location=[xxx,xxx],Type=xxxx,
Forcibly run without safety checks=Enable
```

Example 3: Installing channel board boxes

```
GUM,,[Maintenance],Install,,Normal end,Seq.=xxxxxxxxxx
+Module Type=Channel Board Box,
Location=[PECB-xx,PECB-xx,PECB-xx,PECB-xx],
Num of PECBs=4,Expansion Mode=1:2,
Forcibly run without safety checks=Enable
```

Example 4: Installing drive boxes

```
GUM,,[Maintenance],Install,,Normal end,Seq.=xxxxxxxxxx
+{Location,Type}=[{DB-xx,xxx},{DB-xx,xxx},{DB-xx,xxx}],
Num of Drive Boxes=3,
Forcibly run without safety checks=Enable
```

Example 5: Installing drives

```
GUM,,[Maintenance],Install,,Normal end,Seq.=xxxxxxxxxx
+Drives=[HDDxx-xx,HDDxx-xx,HDDxx-xx],Num of Drives=3,
Forcibly run without safety checks=Enable
```

Example 6: Installing HFBs

```
GUM,,[Maintenance],Install,,Normal end,Seq.=xxxxxxxxxx
+Location=[CHB-1A/1B/1C/1D,CHB-2A/2B/2C/2D],
Forcibly run without safety checks=Enable
```

[Maintenance] Install NAS Firm

Detailed Information 1

Item	Description
Installation Type	The type of NAS unified firmware installation New Installation: The first installation
Parity Group ID	The parity group ID of NAS unified firmware
Selected Version	The installed version of NAS unified firmware
Forcibly run without safety checks	Indicates whether the forcible installation function without safety checks is enabled or disabled. However, a hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.

Detailed Information 2

Item	Description
Installation Type	The type of NAS unified firmware installation New Installation: The first installation
Pool ID	The pool ID of NAS unified firmware

Item	Description
Selected Version	The installed version of NAS unified firmware
Forcibly run without safety checks	Indicates whether the forcible installation function without safety checks is enabled or disabled. However, a hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.
Full Allocation	Indicates the setting status of the Full Allocation. Enable: Full Allocation is enabled. Disable: Full Allocation is disabled.

Detailed Information 3

Item	Description
Installation Type	The type of NAS unified firmware installation Re-installation: Not the first installation
Target Controller Board	The CTL on which NAS unified firmware is to be installed
Current Version	The current version of NAS unified firmware on the CTL before re-installation
Selected Version	The installed version of NAS unified firmware

Example 1: New installation to a parity group

```
GUM,,[Maintenance],Install NAS Firm,,Normal end,Seq.=xxxxxxxxxx
+Installation Type=New Installation,Parity Group ID=XXX,
Selected Version=XXX,Forcibly run without safety checks=Enable
```

Example 2: New installation to a pool

```
GUM,,[Maintenance],Install NAS Firm,,Normal end,Seq.=xxxxxxxxxx
+Installation Type=New Installation,Pool ID=XXX,
Selected Version=XXX,Forcibly run without safety checks=Enable,
Full Allocation=Enable
```

Example 3: Re-installation

```
GUM,,[Maintenance],Install NAS Firm,,Normal end,Seq.=xxxxxxxxxx
+Installation Type=Re-installation,Target Controller Board=XXX,
Current Version=XXX,Selected Version=XXX
```

[Maintenance] License Key Install

Detailed Information 1

Item	Description
License Key Code	The license key code entered when installing a program product.

Detailed Information 2

Item	Description
License Key File	The license key file name entered when installing program products.

Example 1: Specifying a key code

```
GUM,,[Maintenance],License Key Install,,Normal end,,Seq.=xxxxxxxxxx
+License Key Code=xxx
```

Example 2: Specifying a license key file

```
GUM,,[Maintenance],License Key Install,,Normal end,,Seq.=xxxxxxxxxx
+License Key File=xxx
```

[Maintenance] License Key Remove

Detailed Information

Item	Description
Program Product Name	The name of the uninstalled program product.
Num of License Keys	The number of uninstalled license keys.

Example

```
GUM,,[Maintenance],License Key Remove,,Normal end,,Seq.=xxxxxxxxxx
+Program Product Name=[xxxx,xxx,xxx],Num of License Keys=3
```

[Maintenance] MP Restore

Detailed Information

Item	Description
MP	The identity of the microprocessor
Num. of MPs	The number of microprocessors that were restored

Example

```
MPC,,[Maintenance],MP Restore,,Normal end,Seq.=xxxxxxxxxx
+MP=[MP08-2MC],Num. of MPs=1
```

[Maintenance] Power Off Storage

Detailed Information

Item	Description
PS Control	The storage system is powered off.

Example

```
GUM,,[Maintenance],Power Off Storage,,Normal end,Seq.=xxxxxxxxxx
+PS Control=OFF
```

[Maintenance] Power On Storage

Detailed Information

Item	Description
PS Control	The storage system is powered on.

Example

```
GUM,,[Maintenance],Power On Storage,,Normal end,Seq.=xxxxxxxxxx
+PS Control=ON
```

[Maintenance] Reboot GUM

Detailed Information

Item	Description
Forcibly run without safety checks	Indicates whether the setting for forcibly rebooting a GUM without safety checks is applied. However, a hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.

Example

```
GUM,,[Maintenance],Reboot GUM,,Normal end,Seq.=xxxxxxxxxx
+Forcibly run without safety checks=ON
```

[Maintenance] Remove

Detailed Information 1

Item	Description
Shared Memory Function	Names of the shared memories (all the mounted shared memories including removed shared memories)

Detailed Information 2

Item	Description
Location	Mounted position of the removed CHB or DKB (CHB-xx or DKB-xx)
Type	Type of the part of the removed CHB or DKB
Forcibly run without safety checks	Indicates whether the forcible removal function without safety checks is enabled or disabled.*
Forcibly block	Indicates whether the function to forcibly block the CHB or DKB is enabled or disabled.*

Item	Description
* A hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.	

Detailed Information 3

Item	Description
Module Type	Type of the removed module Outputs Channel Board Box as a fixed parameter
Location	Mounted position of the removed PECB (PECB-xx)
Num of PECBs	The number of the removed PECBs
Forcibly run without safety checks	Indicates whether the forcible removal function without safety checks is enabled or disabled. However, a hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.

Detailed Information 4

Item	Description
Location	Mounted position of the removed Drive Box (DB-xx or DB-xx&xx)
Type	Type of the part of the removed drive box
Num of Drive Boxes	Number of the removed drive boxes

Detailed Information 5

Item	Description
Drives	Mounted position of the removed drive
Num of Drives	Number of the removed drives
Forcibly run without safety checks	Indicates whether the forcible removal function without safety checks is enabled or disabled. However, a hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.

Detailed Information 6

Item	Description
Location	Mounted position of the removed HFB (CHB-1A/1B/1C/1D,CHB-2A/2B/2C/2D)
Forcibly block	Indicates whether the function to forcibly remove the HFB is enabled or disabled.*
Forcibly run without safety checks	Indicates whether the forcible removal function without safety checks is enabled or disabled.*
* A hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.	

Example 1: Removing SMs

```
GUM,,[Maintenance],Remove,,Normal end,Seq.=xxxxxxxxxx
+Shared Memory Function=[xxxxxxxx,xxxxxxxx]
```

Example 2: Removing CHBs or DKBs

```
GUM,,[Maintenance],Remove,,Normal end,Seq.=xxxxxxxxxx
+Location=[xxx,xxx],Type=xxxx,
Forcibly run without safety checks=Enable,Forcibly block=Enable
```

Example 3: Removing channel board boxes

```
GUM,,[Maintenance],Remove,,Normal end,Seq.=xxxxxxxxxx
Module Type=Channel Board Box,Location=[PECB-xx,PECB-xx],
Num of PECBs=2,Forcibly run without safety checks=Enable
```

Example 4: Removing drive boxes

```
GUM,,[Maintenance],Remove,,Normal end,Seq.=xxxxxxxxxx
+{Location,Type}=[{DB-xx, xxx},{DB-xx, xxx},{DB-xx, xxx}],
Num of Drive Boxes=3
```

Example 5: Removing drives

```
GUM,,[Maintenance],Remove,,Normal end,Seq.=xxxxxxxxxx
+Drives=[HDDxx-xx,HDDxx-xx,HDDxx-xx],Num of Drives=3,
Forcibly run without safety checks=Enable
```

Example 6: Removing HFBs

```
GUM,,[Maintenance],Remove,,Normal end,Seq.=xxxxxxxxxx
+Location=[CHB-1A/1B/1C/1D,CHB-2A/2B/2C/2D],Forcibly block=xxx,
Forcibly run without safety checks=Enable
```

[Maintenance] Remove NAS Firm

Example

```
GUM,,[Maintenance],Remove NAS Firm,,Normal end,Seq.=xxxxxxxxxx
```

[Maintenance] Reset DurationOfUse

Example

```
GUM,,[Maintenance],Reset DurationOfUse,,Normal end,Seq.=xxxxxxxxxx
```

[Maintenance] Reset HUB

Example

```
GUM,,[Maintenance],Reset HUB,,Normal end,Seq.=xxxxxxxxxx
```

[Maintenance] Reset Hypervisor

Detailed Information

Item	Description
Location	The CTL on which the unified hypervisor is reset
Forcibly run without safety checks	Indicates whether the forcible reset function of the unified hypervisor without safety checks is enabled or disabled. However, a hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.

Example

```
GUM,,[Maintenance],Reset Hypervisor,,Normal end,Seq.=xxxxxxxxxx
+Location=CTL1,Forcibly run without safety checks=Enable
```

[Maintenance] Reset Hypervisor NW

Detailed Information

Item	Description
Location	The CTL on which the hypervisor network module is reset
Forcibly run without safety checks	Indicates whether the forcible reset function of the hypervisor network module without safety checks is enabled or disabled. However, a hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.

Example

```
GUM,,[Maintenance],Reset Hypervisor NW,,Normal end,Seq.=xxxxxxxxxx
+Location=CTL1,Forcibly run without safety checks=Enable
```

[Maintenance] Reset NASFW

Detailed Information

Item	Description
Location	The CTL on which the NAS unified firmware is reset
Forcibly run without safety checks	Indicates whether the forcible reset function of the NAS unified firmware without safety checks is enabled or disabled. However, a hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.

Example

```
GUM,,[Maintenance],Reset NASFW,,Normal end,Seq.=xxxxxxxxxx
+Location=CTL1,Forcibly run without safety checks=Enable
```

[Maintenance] Restore

Detailed Information 1

Item	Description
PCB	The mounting position of the PCB to be restored (CHB, DKB or CTL).

Item	Description
Num. of PCBs	The number of the PCBs to be restored.

Detailed Information 2

Item	Description
Location	The mounting position of the CTL, ENC or CFM (CTLx, ENCxx-xx or CFM-xx) to be restored. When replacing a FAN or Cache Memory, the mounting position of the CTL on which the FAN or Cache Memory is mounted is output to restore the CTL.

Detailed Information 3

Item	Description
Cache Size	The cache size of the restored cache memory.
CFM Type for CFM10/20	The part type of the added CFM-10/20. A hyphen (-) is displayed if CFM-10/20 is not replaced or mounted.
CFM Type for CFM11/21	The part type of the added CFM-11/21. A hyphen (-) is displayed if CFM-11/21 is not replaced or mounted.

Detailed Information 4

Item	Description
Location	The mounting position of the CHB or DKB to be restored (CHB-xx or DKB-xx).
Type	The part type of the CHB or DKB to be restored.

Detailed Information 5

Item	Description
Location	The mounting position of the PECB, SWPK, or PCP to be restored (PECB-xx, SWPKx, or PCPx).

Detailed Information 6

Item	Description
Location	The mounting position of the HFB to be restored (CHB-1A/1B/1C/1D or CHB-2A/2B/2C/2D).

Example 1: Restoring PCBs

```
MPC,,[Maintenance],Restore,,Normal end,Seq.=xxxxxxxxxx
+PCB=[CHB-1A],Num. of PCBs=1
```

Example 2: Restoring CTL, ENC or CFM when replacing

```
GUM,,[Maintenance],Restore,,Normal end,Seq.=xxxxxxxxxx
+Location=xxx
```

Example 3: Restoring cache memories when replacing

```
GUM,,[Maintenance],Restore,,Normal end,Seq.=xxxxxxxxxx
+Cache Size=xxxxxxxx,CFM Type for CFM10/20=xxx,
CFM Type for CFM11/21=xxx
```

Example 4: Restoring CHBs or DKBs when replacing

```
GUM,,[Maintenance],Restore,,Normal end,Seq.=xxxxxxxxxx
+Location=xxx,Type=xxxxxx
```

Example 5: Restoring PECBs, SWPKs, or PCPs when replacing

```
GUM,,[Maintenance],Restore,,Normal end,Seq.=xxxxxxxxxx
+Location=xxx
```

Example 6: Restoring HFBs when replacing

```
GUM,,[Maintenance],Restore,,Normal end,Seq.=xxxxxxxxxx
+Location=xxx
```

[Maintenance] Restore(Remove)

Detailed Information

Item	Description
Cache Size	The cache size of the cache memory to be restored.

Item	Description
CFM Type for CFM10/20	The part type of the CFM-10/20 to be added. A hyphen (-) is displayed if CFM-10/20 is not replaced or mounted.
CFM Type for CFM11/21	The part type of the CFM-11/21 to be added. A hyphen (-) is displayed if CFM-11/21 is not replaced or mounted.

Example

```
GUM,,[Maintenance],Restore(Remove),,Normal end,Seq.=xxxxxxxxxx
+Cache Size=xxxxxxxx,CFM Type for CFM10/20=xxx,CFM Type for CFM11/21=xxx
```

[Maintenance] Restore(Type Change)

Detailed Information 1

Item	Description
Location	The mounting position of the CTL to be restored (CTLx).
Type	The part type of the CTL to be restored.

Detailed Information 2

Item	Description
Cache Size	The cache size of the cache memory to be restored.
CFM Type for CFM10/20	The part type of the CFM-10/20 to be added. A hyphen (-) is displayed if CFM-10/20 is not replaced or mounted.
CFM Type for CFM11/21	The part type of the CFM-11/21 to be added. A hyphen (-) is displayed if CFM-11/21 is not replaced or mounted.

Detailed Information 3

Item	Description
Location	The mounting position of the DKB to be restored (DKB-xx).
Type	The part type of the DKB to be restored.

Detailed Information 4

Item	Description
Location	The mounting position of the CHB to be restored (CHB-xx).
Type	The part type of the CHB to be restored.

Example 1: Restoring CTLs along with CTL type change when replacing

```
GUM,,[Maintenance],Restore(Type Change),,Normal end,Seq.=xxxxxxxxxx
+Location=xxx,Type=xxxxxx
```

Example 2: Restoring CMs along with CM type change when replacing

```
GUM,,[Maintenance],Restore(Type Change),,Normal end,Seq.=xxxxxxxxxx
+Cache Size=xxxxxxxx,CFM Type for CFM10/20=xxx,
CFM Type for CFM11/21=xxx
```

Example 3: Restoring DKBs along with DKB type change when replacing

```
GUM,,[Maintenance],Restore(Type Change),,Normal end,Seq.=xxxxxxxxxx
+Location=xxx,Type=xxxxxx
```

Example 4: Restoring CHBs along with CHB type change when replacing

```
GUM,,[Maintenance],Restore(Type Change),,Normal end,Seq.=xxxxxxxxxx
+Location=CHB-xx,Type=xxxxxx
```

[Maintenance] Restore Data

Detailed Information

Item	Description
PDEV	The mounting location of the PDEV

Example

```
MPC,,[Maintenance],Restore Data,,Normal end,Seq.=xxxxxxxxxx
+PDEV=HDD00-00
```

[Maintenance] Select Cipher Suite

Detailed Information

Item	Description
Cipher Suite	The name of the encryption suite used for the specified communication.

Example

```
GUM,,[Maintenance],Select Cipher Suite,,Normal end,Seq.=xxxxxxxxxx
+Cipher Suite=xxxx
```

[Maintenance] Select Login Window

Detailed information

Item	Description
Login Window	The login window that is set to be initially displayed Link Selection: The window to select which to log in to Maintenance Utility or NAS Manager Maintenance Utility: Maintenance Utility window NAS Manager: NAS Manager window

Example

```
GUM,,[Maintenance],Select Login Window,,Normal end,Seq.=xxxxxxxxxx
+Login Window=Link Selection
```

[Maintenance] Set Up Alert

Detailed Information 1

Item	Description
Notification Alert	The destination of the alert. All: All the hosts, Host Report: Only the hosts to which SIMs are set to be reported
Email Notice	Indicates whether notification by email is enabled.

Item	Description
	Enable: The notification is enabled. Disable: The notification is disabled.
Attribute	The attribute (To, Cc or Bcc) of the destination email address.
Email Address	The destination email addresses. A hyphen (-) is displayed if notification by email is disabled.
Email Address (From)	The sender email address. A hyphen (-) is displayed if notification by email is disabled.
Email Address (Reply To)	The email address to reply. A hyphen (-) is displayed if notification by email is disabled.
Description to Notify	The additional information at the top of the body of the error notification message by email. A hyphen (-) is displayed if notification by email is disabled or the Description to Notify is not set.
Mail Server Type	The type of Mail Server Name (Identifier(Domain), IPv4 or IPv6).
Mail Server Name	The host name or the IP address of the mail server.
SMTP Authentication	Indicates whether the SMTP authentication is enabled. Enable: The authentication is enabled. Disable: The authentication is disabled.
SMTP Authentication Account	The SMTP authentication account. A hyphen (-) is displayed if the SMTP authentication is disabled.
Syslog Transfer Protocol	The type of the syslog transfer protocol (TLS1.2/RFC5424 or UDP/RFC3164).
Syslog Server	The syslog server to be set. Primary: Primary syslog server, Secondary: Secondary syslog server
Server Enable	Indicates whether the syslog server is enabled. Enable: The syslog server is enabled. Disable: The syslog server is disabled.
Type	The type of the IP address of the syslog server (IPv4 or IPv6). A hyphen (-) is displayed if the syslog server is disabled.
Name	The IP address of the syslog server to which SIMs are sent. A hyphen (-) is displayed if the syslog server is disabled.

Item	Description
Port Number	The port number used to communicate with the syslog server. A hyphen (-) is displayed if the syslog server is disabled.
Client Certificate File Name	The name of the client certificate file. A hyphen (-) is displayed, if the syslog servers is disabled or if UDP/RFC3164 is used as a transfer protocol.
Root Certificate File Name	The name of the root certificate file. A hyphen (-) is displayed, if the syslog servers is disabled or if UDP/RFC3164 is used as a transfer protocol.
Location Identification Name	The location identification name entered during the setting operation.
Retry	Indicates whether to retry if transferring to syslog servers failed. Enable: Transfer is retried. Disable: Transfer is not retried. A hyphen (-) is displayed if UDP/RFC3164 is used as a transfer protocol.
Retry Interval	The interval of the retries of transferring. A hyphen (-) is displayed, if the setting of the retry is disabled or if UDP/RFC3164 is used as a transfer protocol.
SNMP Agent	The setting status of the SNMP agent. Enable: SNMP trap is notified. Disable: SNMP trap is not notified.
SNMP Version	The SNMP protocol version
Send Trap to Community Name	The community name to which SNMP traps are sent. A hyphen (-) is displayed if the SNMP trap is not notified.
IP Address	The IP address added to the community to which SNMP traps are sent. A hyphen (-) is displayed if the SNMP trap is not notified.
Request Authentication Setting Community Name	The community name added to the request authentication setting. A hyphen (-) is displayed if this item is not set in the request authentication setting.

Item	Description
Requests Permitted IP Address	The IP address added to the community to permit requests. A hyphen (-) is displayed if this item is not set in the request authentication setting.
Storage System Name	The storage system name entered during the setting operation. A hyphen (-) is displayed if the SNMP trap is not notified.
Contact	The contact information entered during the setting operation. A hyphen (-) is displayed if the SNMP trap is not notified.
Location	The installation location of the storage system entered during the setting operation. A hyphen (-) is displayed if the SNMP trap is not notified.

Detailed Information 2

Item	Description
Notification Alert	The destination of the alert. All: All the hosts, Host Report: Only the hosts to which SIMs are set to be reported
Email Notice	Indicates whether notification by email is enabled. Enable: The notification is enabled. Disable: The notification is disabled.
Attribute	The attribute (To, Cc or Bcc) of the destination email address.
Email Address	The destination email addresses. A hyphen (-) is displayed if notification by email is disabled.
Email Address (From)	The sender email address. A hyphen (-) is displayed if notification by email is disabled.
Email Address (Reply To)	The email address to reply. A hyphen (-) is displayed if notification by email is disabled.
Description to Notify	The additional information at the top of the body of the error notification message by email. A hyphen (-) is displayed if notification by email is disabled or the Description to Notify is not set.
Mail Server Type	The type of Mail Server Name (Identifier(Domain), IPv4 or IPv6).

Item	Description
Mail Server Name	The host name or the IP address of the mail server.
SMTP Authentication	Indicates whether the SMTP authentication is enabled. Enable: The authentication is enabled. Disable: The authentication is disabled.
SMTP Authentication Account	The SMTP authentication account. A hyphen (-) is displayed if the SMTP authentication is disabled.
Syslog Transfer Protocol	The type of the syslog transfer protocol (TLS1.2/RFC5424 or UDP/RFC3164).
Syslog Server	The syslog server to be set. Primary: Primary syslog server, Secondary: Secondary syslog server
Server Enable	Indicates whether the syslog server is enabled. Enable: The syslog server is enabled. Disable: The syslog server is disabled.
Type	The type of the IP address of the syslog server (Identifier(Domain), IPv4, or IPv6). A hyphen (-) is displayed if the syslog server is disabled.
Name	The host name or IP address of the syslog server to which SIMs are sent. A hyphen (-) is displayed if the syslog server is disabled.
Port Number	The port number used to communicate with the syslog server. A hyphen (-) is displayed if the syslog server is disabled.
Client Certificate File Name	The name of the client certificate file. A hyphen (-) is displayed, if the syslog servers is disabled or if UDP/RFC3164 is used as a transfer protocol.
Root Certificate File Name	The name of the root certificate file. A hyphen (-) is displayed, if the syslog servers is disabled or if UDP/RFC3164 is used as a transfer protocol.
Location Identification Name	The location identification name entered during the setting operation.
Retry	Indicates whether to retry if transferring to syslog servers failed. Enable: Transfer is retried.

Item	Description
	Disable: Transfer is not retried. A hyphen (-) is displayed if UDP/RFC3164 is used as a transfer protocol.
Retry Interval	The interval of the retries of transferring. A hyphen (-) is displayed, if the setting of the retry is disabled or if UDP/RFC3164 is used as a transfer protocol.
SNMP Agent	The setting status of the SNMP agent. Enable: SNMP trap is notified. Disable: SNMP trap is not notified.
SNMP Version	The SNMP protocol version
Send Trap to IP Address	The IP address to which traps are sent. A hyphen (-) is displayed if the SNMP trap is not notified.
User Name	The user name set to the SNMP trap destination. A hyphen (-) is displayed if the SNMP trap is not notified.
Authentication Mode	The authentication mode status set to the SNMP trap destination. Enable: Authentication mode is enabled. Disable: Authentication mode is disabled. A hyphen (-) is displayed if the SNMP trap is not notified.
Authentication Protocol	The authentication protocol set to the SNMP trap destination: SHA or MD5 A hyphen (-) is displayed if SNMP traps are not notified or if the authentication mode of the SNMP trap destination is disabled.
Encryption Mode	The encryption mode status set to the SNMP trap destination. Enable: Encryption mode is enabled. Disable: Encryption mode is disabled. A hyphen (-) is displayed if the SNMP trap is not notified.
Encryption Protocol	The encryption protocol set to the SNMP trap destination: AES or DES A hyphen (-) is displayed if SNMP traps are not notified or if the encryption mode of the SNMP trap destination is disabled.
Request Authentication Setting User Name	The user name set to the request authentication setting. A hyphen (-) is displayed if the request authentication is not set.

Item	Description
Authentication Mode	The authentication mode status of the user set to the request authentication. Enable: Authentication mode is enabled. Disable: Authentication mode is disabled. A hyphen (-) is displayed if this item is not set in the request authentication setting.
Authentication Protocol	The authentication protocol of the user set to the request authentication: SHA or MD5 A hyphen (-) is displayed if this item is not set or if the authentication mode is disabled in the request authentication setting.
Encryption Mode	The encryption mode status of the user set to the request authentication. Enable: Encryption mode is enabled. Disable: Encryption mode is disabled. A hyphen (-) is displayed if this item is not set in the request authentication setting.
Encryption Protocol	The encryption protocol of the user set to the request authentication: AES or DES A hyphen (-) is displayed if this item is not set or if the encryption mode is disabled in the request authentication setting.
Storage System Name	The storage system name entered during the setting operation. A hyphen (-) is displayed if the SNMP trap is not notified.
Contact	The contact information entered during the setting operation. A hyphen (-) is displayed if the SNMP trap is not notified.
Location	The installation location of the storage system entered during the setting operation. A hyphen (-) is displayed if the SNMP trap is not notified.

Detailed Information 3

Item	Description
Notification Alert	The destination of the alert. All: All the hosts, Host Report: Only the hosts to which SIMs are set to be reported

Item	Description
Email Notice	Indicates whether notification by email is enabled. Enable: The notification is enabled. Disable: The notification is disabled.
Attribute	The attribute (To, Cc or Bcc) of the destination email address.
Email Address	The destination email addresses. A hyphen (-) is displayed if notification by email is disabled.
Email Address (From)	The sender email address. A hyphen (-) is displayed if notification by email is disabled.
Email Address (Reply To)	The email address to reply. A hyphen (-) is displayed if notification by email is disabled.
Description to Notify	The additional information at the top of the body of the error notification message by email. A hyphen (-) is displayed if notification by email is disabled or the Description to Notify is not set.
Mail Server Type	The type of Mail Server Name (Identifier(Domain), IPv4 or IPv6).
Mail Server Name	The host name or the IP address of the mail server.
SMTP Authentication	Indicates whether the SMTP authentication is enabled. Enable: The authentication is enabled. Disable: The authentication is disabled.
SMTP Authentication Account	The SMTP authentication account. A hyphen (-) is displayed if the SMTP authentication is disabled.
Syslog Transfer Protocol	The type of the syslog transfer protocol (TLS1.2/RFC5424 or UDP/RFC3164).
Syslog Server	The syslog server to be set. Primary: Primary syslog server, Secondary: Secondary syslog server
Server Enable	Indicates whether the syslog server is enabled. Enable: The syslog server is enabled. Disable: The syslog server is disabled.
Type	The type of the IP address of the syslog server (Identifier(Domain), IPv4, or IPv6). A hyphen (-) is displayed if the syslog server is disabled.

Item	Description
Name	The host name or IP address of the syslog server to which SIMs are sent. A hyphen (-) is displayed if the syslog server is disabled.
Port Number	The port number used to communicate with the syslog server. A hyphen (-) is displayed if the syslog server is disabled.
Client Certificate File Name	The name of the client certificate file. A hyphen (-) is displayed, if the syslog servers is disabled or if UDP/RFC3164 is used as a transfer protocol.
Root Certificate File Name	The name of the root certificate file. A hyphen (-) is displayed, if the syslog servers is disabled or if UDP/RFC3164 is used as a transfer protocol.
Location Identification Name	The location identification name entered during the setting operation.
Retry	Indicates whether to retry if transferring to syslog servers failed. Enable: Transfer is retried. Disable: Transfer is not retried. A hyphen (-) is displayed if UDP/RFC3164 is used as a transfer protocol.
Retry Interval	The interval of the retries of transferring A hyphen (-) is displayed, if the setting of the retry is disabled or if UDP/RFC3164 is used as a transfer protocol.
SNMP Community Name	The name of the community of the SNMP trap destination. A hyphen (-) is displayed if the SNMP trap is not notified.
IP Address	The IP address added to the community to which SNMP traps are sent. A hyphen (-) is displayed if the SNMP trap is not notified.
SNMP Agent	The setting status of the SNMP agent. Enable: SNMP trap is notified. Disable: SNMP trap is not notified.
SNMP Manager	The IP address of the SNMP manager. A hyphen (-) is displayed if the SNMP trap is not notified.

Item	Description
Storage System Name	The storage system name entered during the setting operation. A hyphen (-) is displayed if the SNMP trap is not notified.
Contact	The contact information entered during the setting operation. A hyphen (-) is displayed if the SNMP trap is not notified.
Location	The installation location of the storage system entered during the setting operation. A hyphen (-) is displayed if the SNMP trap is not notified.

Example 1: SNMP v1 or SNMP v2c

```
GUM,,[Maintenance],Set Up Alert,,Normal end,Seq.=xxxxxxxxxx
+Notification Alert=Host Report,Email Notice=Enable,
{Attribute,Email Address}
=[{To,aaa@example.com},{Cc,bbb@example.com}],
Email Address (From)=yyy@example.com,
Email Address (Reply To)=zzz@example.com,
Description to Notify=XXXXXXXXXXXX,Mail Server Type=IPv4,
Mail Server Name=XXXXXXXXX,SMTP Authentication=Enable,
SMTP Authentication Account=XXXX,
Syslog Transfer Protocol=TLS1.2/RFC5452,
{Syslog Server,Server Enable,Type,Name,Port Number,
Client Certificate File Name,Root Certificate File Name,
Location Identification Name,Retry,Retry Interval}
=[{Primary,Enable,IPv4,xxxxx,65535,YYYYY,ZZZZ,ZZZZ,Disable,555},
{Secondary,Enable,IPv4,xxxxx,65535,YYYYY,ZZZZ,ZZZZ,Disable,555}],
SNMP Agent=Enable,SNMP Version=v1
+Send Trap to Community Name=AAA
++IP Address=[192.168.0.1,192.168.0.2]
+Send Trap to Community Name=BBB
++IP Address=[192.168.1.1,192.168.1.2]
+Request Authentication Setting Community Name=AAA
++Requests Permitted IP Address=[192.168.0.10,192.168.0.12]
+Request Authentication Setting Community Name=BBB
++Requests Permitted IP Address=[192.168.1.10,192.168.1.12],
Storage System Name=xxx,Contact=xxx,Location=xxx
```

Example 2: SNMP v3

```
GUM,,[Maintenance],Set Up Alert,,Normal end,Seq.=xxxxxxxxxx
+Notification Alert=Host Report,Email Notice=Enable,
{Attribute,Email Address}
=[{To,aaa@example.com},{Cc,bbb@example.com}],
Email Address (From)=yyy@example.com,
Email Address (Reply To)=zzz@example.com,
```

```
Description to Notify=XXXXXXXXXXXX,Mail Server Type=IPv4,
Mail Server Name=XXXXXXXXX,SMTP Authentication=Enable,
SMTP Authentication Account=XXXX,
Syslog Transfer Protocol=TLS1.2/RFC5452,
{Syslog Server,Server Enable,Type,Name,Port Number,
Client Certificate File Name,Root Certificate File Name,
Location Identification Name,Retry,Retry Interval}
=[{Primary,Enable,IPv4,xxxxx,65535,YYYYY,ZZZZ,ZZZZ,Disable,555},
{Secondary,Enable,IPv4,xxxxx,65535,YYYYY,ZZZZ,ZZZZ,Disable,555}],
SNMP Agent=Enable,SNMP Version=v3,
{Send Trap to IP Address,User Name,Authentication Mode,
Authentication Protocol,Encryption Mode,Encryption Protocol}
=[{192.168.0.1,AAA,Enable,SHA,Enable,AES},
{192.168.0.1,AAA,Enable,SHA,Enable,AES},
{192.168.0.1,AAA,Enable,SHA,Enable,AES}],
{Request Authentication Setting User Name,Authentication Mode,
Authentication Protocol,Encryption Mode,Encryption Protocol}
=[{BBB,Enable,SHA,Enable,AES},{CCC,Enable,SHA,Enable,AES},
{DDD,Enable,SHA,Enable,AES}],
Storage System Name=xxx,Contact=xxx,Location=xxx
```

Example 3: Alert notification setting from an application except Maintenance Utility

```
GUM,,[Maintenance],Set Up Alert,,Normal end,Seq.=xxxxxxxxxx
+Notification Alert=Host Report,Email Notice=Enable,
{Attribute,Email Address}
=[{To,aaa@example.com},{Cc,bbb@example.com}],
Email Address (From)=yyy@example.com,
Email Address (Reply To)=zzz@example.com,
Description to Notify=XXXXXXXXXXXX,Mail Server Type=IPv4,
Mail Server Name=XXXXXXXXX,SMTP Authentication=Enable,
SMTP Authentication Account=XXXX,
Syslog Transfer Protocol=TLS1.2/RFC5452,
{Syslog Server,Server Enable,Type,Name,Port Number,
Client Certificate File Name,Root Certificate File Name,
Location Identification Name,Retry,Retry Interval}
=[{Primary,Enable,IPv4,xxxxx,65535,YYYYY,ZZZZ,ZZZZ,Disable,555},
{Secondary,Enable,IPv4,xxxxx,65535,YYYYY,ZZZZ,ZZZZ,Disable,555}],
{SNMP Community Name,IP Address}
=[{AAA,192.168.0.1},{AAA,192.168.0.1},{AAA,192.168.0.1}],
SNMP Agent=Enable,SNMP Manager=[192.168.0.1,xxx],
Storage System Name=xxx,Contact=xxx,Location=xxx
```

[Maintenance] Set Up Date & Time

Detailed Information

Item	Description
Use NTP Server	Indicates whether to use the NTP server for the automatic time setting of the storage system. Yes: NTP server is used. No: NTP server is not used.
NTP Server	The IP address (IPv4 or IPv6) or host name of the NTP server. No value is output when NTP server is not used.
UTC Timezone	The timezone of the Coordinated Universal Time.
Date & Time	The date and time in the format of YYYY/MM/DD HH:MM. (YYYY: year, MM: month, DD: day, HH: hour, MM: minute)
SynchronizingTime	The execution time of the time correction function using NTP server. If NTP server is not used, the default value (00:00) is output.
Automatically adjust clock for daylight saving changes	The status of automatic adjustment for daylight saving time (DST) setting Enable: The clock is automatically adjusted to DST. Disable: The clock is not automatically adjusted to DST.
Update Now	The setting status of the time correction function using NTP server Enable: The clock is adjusted at the setting operation. Then, the clock is adjusted at the setting time every day. Disable: The clock is not adjusted at setting operation. This item is output only when it is set using Maintenance Utility applications (GUM AP) such as NAS Manager.

Example

```
GUM,,[Maintenance],Set Up Date & Time,,Normal end,Seq.=xxxxxxxxxx
+Use NTP Server=Yes,NTP Server=[xxxxxxx,xxxxxx],
UTC Timezone=Osaka/Sapporo/Tokyo,Date & Time=YYYY/MM/DD HH:MM,
SynchronizingTime=HH:MM,
Automatically adjust clock for daylight saving changes=Enable
```

[Maintenance] Set Up Email

Detailed Information

Item	Description
Email Notice	Indicates whether notification by email is enabled. Enable: The notification is enabled. Disable: The notification is disabled.
Attribute	The attribute (To, Cc or Bcc) of the destination email address A hyphen (-) is output if this item is not set.
Email Address	The destination email addresses A hyphen (-) is output if this item is not set.
Email Address (From)	The sender email address
Email Address (Reply To)	The email address to reply to
Description to Notify	The additional information at the top of the body of the error notification message by email The item is not output if this item is not set.
Mail Server Type	The type of Mail Server Name (Identifier(Domain), IPv4 or IPv6).
Mail Server Name	The host name or the IP address of the mail server.

Example

```
GUM AP,,[Maintenance],Set Up Email,,Normal end,Seq.=xxxxxxxxxx
+Email Notice=Enable,{Attribute,Email Address}=[{To,aaa@example.com},
{To,bbb@example.com}],Email Address (From)=yyy@example.com,
Email Address (Reply To)=zzz@example.com,
Description to Notify=XXXXXXXXXXXX,Mail ServerType=IPv4,
Mail Server Name=XXXXXXXXX
```

[Maintenance] Set Up GUM Option

Detailed Information

Item	Description
Option Name	The name otf GUM system option
Option Value	The value of GUM system option
Num. of Options	The number of options

Example

```
GUM AP,,[Maintenance],Set Up GUM Option,,Normal end,Seq.=xxxxxxxxxx
+{Option Name,Option Value}=[{SAESupportSiteUrl,http://xxx.com},
{SAEProvisioningEnable,0}, {CopyrightEnable,0}],Num. of Options=3
```

[Maintenance] Set Up Network Perm

Detailed Information

Item	Description
HTTP Blocking	Indicates the setting status of Block HTTP Port Enable: Enabled, Disable: Disabled
Block Command Control Interface Communication Port	Indicates the setting status of Block Command Control Interface Communication Port Enable: Enabled, Disable: Disabled
Block Command Control Interface Encrypted Communication Port	Indicates the setting status of Block Command Control Interface Encrypted Communication Port Enable: Enabled, Disable: Disabled

Example

```
GUM,,[Maintenance],Set Up Network Perm,,Normal end,Seq.=xxxxxxxxxx
+HTTP Blocking=Disable,
Block Command Control Interface Communication Port=Disable,
Block Command Control Interface Encrypted Communication Port=Disable
```

[Maintenance] Set Up Network Set

Detailed Information

Item	Description
Location	CTL to be operated (CTL1 or CTL2)
Configuration	Type of the IP address (IPv4 or IPv6)
Mode	Whether the IPv4 or the IPv6 configuration is enable or disable Enable: The configuration is enabled. Disable: The configuration is disabled.
Address	IP address
Subnet Mask	Subnet mask When the value of the Configuration is IPv6, a hyphen (-) is output.
Subnet Prefix Length	Length of the subnet prefix When the value of the Configuration is IPv4, a hyphen (-) is output.
Default Gateway	IP address of the default gateway
DNS Server 1	IP address of the DNS server 1
DNS Server 2	IP address of the DNS server 2
DNS Server 3	IP address of the DNS server 3
Network Connection Mode	Mode of the network connection
Maintenance Port Address	IP address of the maintenance port
Num. of Maintenance Port Addresses	The number of maintenance port IP addresses
Internal Network	IP address for the internal network
DNS Domain Name	Domain name that is set to GUM A hyphen (-) is output if this item is not set.
DNS Search Order	Domain suffixes that are set in the order of DNS search A hyphen (-) is output if this item is not set.
Num. of Orders	The number of domain suffixes that are set in the order of DNS search

Item	Description
Forcibly run without safety checks	Indicates whether the function to forcibly set up the network without safety checks is enabled or disabled. However, a hyphen (-) is output except when a user with the Support Personnel role operates from the MPC.

Example

```
GUM,,[Maintenance],Set Up Network Set,,Normal end,Seq.=xxxxxxxxxx
+{Location,Configuration,Mode,Address,Subnet Mask,
Subnet Prefix Length,Default Gateway,DNS Server 1,DNS Server 2,
DNS Server 3}=[{CTL1,IPv4,Enable,xxx.xxx.xxx.xxx,xxx.xxx.xxx.xxx,
-,xxx.xxx.xxx.xxx,xxx.xxx.xxx.xxx,xxx.xxx.xxx.xxx,xxx.xxx.xxx.xxx},
{CTL2,IPv4,Enable,xxx.xxx.xxx.xxx,xxx.xxx.xxx.xxx,-,
xxx.xxx.xxx.xxx,xxx.xxx.xxx.xxx,xxx.xxx.xxx.xxx,xxx.xxx.xxx.xxx},
-{CTL1,IPv6,Enable,xxxxxxxxxxx,-,64,
xxxxxxxxxxx,xxxxxxxxxxx,xxxxxxxxxxx,xxxxxxxxxxx},
{CTL2,IPv6,Enable,xxxxxxxxxxx,-,64,
xxxxxxxxxxx,xxxxxxxxxxx,xxxxxxxxxxx,xxxxxxxxxxx}],
-Network Connection Mode=Auto-Negotiation,
Maintenance Port Address=[xxx.xxx.xxx.xxx,xxx.xxx.xxx.xxx],
Num. of Maintenance Port Addresses=2,
Internal Network=[xxx.xxx.xxx.xxx,xxx.xxx.xxx.xxx],
DNS Domain Name=[xxx],DNS Search Order=[xxx,xxx,xxx,xxx,xxx,xxx],
Num. of Orders=6,
Forcibly run without safety checks=Enable
```

[Maintenance] Set Up Server

Detailed Information

Item	Description
Certification File	The file name of the certification
DNS Lookup	Indicates whether to search the LDAP directory server by the SRV records in the DNS server. Enable: Searches by the SRV records in the DNS server. Disable: Searches by the host name or port number.
Authentication Protocol	Indicates the LDAP protocol (LDAP over SSL/TLS or STARTTLS) to be used.
External User Group Mapping	Indicates whether to use the specified LDAP directory server also as the authorization server.

Item	Description
	Enable: Used, Disable: Not used
Primary Host Name	The host name or IP address of the LDAP directory server
Primary Port Number	The port number of the LDAP directory server
Domain Name	The domain name that is managed by the LDAP server
User Name Attribute	The attribute name for which the user ID value used for authentication is defined. If you enter the comma (,), then it will be indicate the space.
Base DN	The base DN for searching for users to authenticate. If you enter the comma (,), then it will be indicate the space.
Search User's DN	The DN of the user for searching If you enter the comma (,), then it will be indicate the space.
Timeout	Indicates time in seconds before detecting that timeout for connecting to the LDAP directory server.
Retry Interval	Indicates the retry interval in seconds when communication with the LDAP directory server fails.
Number of Retries	Indicates the number of retries when communication with the LDAP directory server fails.
Secondary Server	Indicates whether to use the secondary LDAP directory server. Enable: Used, Disable: Not used
Secondary Host Name	The host name of the secondary LDAP directory server
Secondary Port Number	The port number of the secondary LDAP directory server
Num. of Servers	The number of the configured authentication servers

Example 1: When the Disabling External Authentication is selected

```
GUM,,[Maintenance],Set Up Server,Disable,Normal end,Seq.=xxxxxxxxxx
```

Example 2: When the LDAP External Authentication is selected

```
GUM,,[Maintenance],Set Up Server,LDAP,Normal end,Seq.=xxxxxxxxxx
+{Certification File Name,DNS Lookup,Authentication Protocol,External
User Group Mapping,Primary Host Name,Primary Port Number,Domain
```

```
Name,User Name Attribute,Base DN,Search User's DN,Timeout,Retry
Interval,Number of Retries}={xxx,Disable,STARTTLS,Disable,example1.com,
389,example.com,sAMAccountName,dc=example dc=com,cn=example2 dc=example
dc=com,10,1,3}
++{Secondary Server,Secondary Host Name,Secondary Port
Number}={Enable,example3.com,389}
+Num. of Servers=1
```

[Maintenance] Set Up SNMP

Detailed Information 1

Item	Description
SNMP Agent	The setting status of the SNMP agent. Enable: SNMP trap is notified. Disable: SNMP trap is not notified.
SNMP Version	The SNMP protocol version
Send Trap to Community Name	The community name to which SNMP traps are sent.
IP Address	The IP address added to the community to which SNMP traps are sent.
Request Authentication Setting Community Name	The community name set to the request authentication setting.
Requests Permitted IP Address	The IP address added to the community to permit requests.
Storage System Name	The storage system name entered during the setting operation.
Contact	The contact information entered during the setting operation.
Location	The installation location of the storage system entered during the setting operation.

Detailed Information 2

Item	Description
SNMP Agent	The setting status of the SNMP agent. Enable: SNMP trap is notified.

Item	Description
	Disable: SNMP trap is not notified.
SNMP Version	The SNMP protocol version
Send Trap to IP Address	The IP address to which traps are sent.
User Name	The user name set to the SNMP trap destination.
Authentication Mode	The authentication mode status set to the SNMP trap destination. Enable: Authentication mode is enabled. Disable: Authentication mode is disabled.
Authentication Protocol	The authentication protocol set to the SNMP trap destination: SHA or MD5
Encryption Mode	The encryption mode status set to the SNMP trap destination. Enable: Encryption mode is enabled. Disable: Encryption mode is disabled.
Encryption Protocol	The encryption protocol set to the SNMP trap destination: AES or DES
Request Authentication Setting User Name	The user name set to the request authentication setting.
Authentication Mode	The authentication mode status of the user set to the request authentication. Enable: Authentication mode is enabled. Disable: Authentication mode is disabled.
Authentication Protocol	The authentication protocol of the user set to the request authentication: SHA or MD5
Encryption Mode	The encryption mode status of the user set to the request authentication. Enable: Encryption mode is enabled. Disable: Encryption mode is disabled.
Encryption Protocol	The encryption protocol of the user set to the request authentication: AES or DES
Storage System Name	The storage system name entered during the setting operation.
Contact	The contact information entered during the setting operation.

Item	Description
Location	The installation location of the storage system entered during the setting operation.

Example 1: SNMP v1 or SNMP v2c

```
GUM AP,,[Maintenance],Set Up SNMP,,Normal end,Seq.=xxxxxxxxxx
+SNMP Agent=Enable,SNMP Version=v1,
{Send Trap to Community Name,IP Address}
=[{AAA, 192.168.0.1,192.168.0.2},{BBB,192.168.1.1,192.168.1.2}],
{Request Authentication Setting Community Name,
Requests Permitted IP Address}=[{AAA,192.168.0.10,192.168.0.12},
{BBB, 192.168.1.10,192.168.1.12}],Storage System Name=xxx,
Contact=xxx,Location=xxx
```

Example 2: SNMP v3

```
GUM AP,,[Maintenance],Set Up SNMP,,Normal end,Seq.=xxxxxxxxxx
+SNMP Agent=Enable,SNMP Version=v3,
{Send Trap to IP Address,User Name,Authentication Mode,
Authentication Protocol,Encryption Mode,Encryption Protocol}
=[{192.168.0.1,AAA,Enable,SHA,Enable,AES},
{192.168.0.1,AAA,Enable,SHA,Enable,AES},
{192.168.0.1,AAA,Enable,SHA,Enable,AES}],
-{Request Authentication Setting User Name,Authentication Mode,
Authentication Protocol,Encryption Mode,Encryption Protocol}
=[{BBB,Enable,SHA,Enable,AES},{CCC,Enable,SHA,Enable,AES},
{DDD,Enable,SHA,Enable,AES}],Storage System Name=xxx,Contact=xxx,
Location=xxx
```

[Maintenance] Set Up Syslog

Detailed Information

Item	Description
Syslog Transfer Protocol	The type of the syslog transfer protocol (TLS1.2/RFC5424 or UDP/RFC3164).
Syslog Server	The syslog server to be set. Primary: Primary syslog server, Secondary: Secondary syslog server
Server Enable	Indicates whether the syslog server is enabled. Enable: The syslog server is enabled.

Item	Description
	Disable: The syslog server is disabled.
Type	The type of the IP address of the syslog server (Identifier(Domain), IPv4, or IPv6).
Name	The host name or IP address of the syslog server to which SIMs are sent.
Port Number	The port number used to communicate with the syslog server.
Client Certificate File Name	The name of the client certificate file.
Root Certificate File Name	The name of the root certificate file.
Location Identification Name	The location identification name entered during the setting operation.
Retry	Indicates whether to retry if transfer to syslog servers fails. Enable: Transfer is retried. Disable: Transfer is not retried.
Retry Interval	The retry interval in seconds if transfer to syslog servers fails

Example

```
GUM AP,,[Maintenance],Set Up Syslog,,Normal end,Seq.=xxxxxxxxxx
+Syslog Transfer Protocol=TLS1.2/RFC5452,
{Syslog Server,Server Enable,Type,Name,Port Number,
Client Certificate File Name,Root Certificate File Name,
Location Identification Name,Retry,Retry Interval}
=[{Primary,Enable,IPv4,xxxxx,65535,YYYYY,ZZZZ,ZZZZ,Enable,555},
{Secondary,Enable,IPv4,xxxxx,65535,YYYYY,ZZZZ,ZZZZ,Enable,555}]
```

[Maintenance] Set Up System Info

Detailed Information

Item	Description
Storage System Name	The storage system name entered during the setting operation.

Item	Description
Contact	The contact information entered during the setting operation.
Location	The installation location of the storage system entered during the setting operation.

Example

```
GUM,,[Maintenance],Set Up System Info,,Normal end,Seq.=xxxxxxxxxx
+Storage System Name=xxx,Contact=xxx,Location=xxx
```

[Maintenance] Stop Copy

Detailed Information

Item	Description
Location	The mounting position of the drive whose copying process is stopped

Example

```
GUM,,[Maintenance],Stop Copy,,Normal end,Seq.=xxxxxxxxxx
+Location=HDDxx-xx
```

[Maintenance] Turn Off Locate LEDs

Detailed Information

Item	Description
Mode	Indicates the locate LED is turned off.
Location	The mounting position of the drive box (DB-xx or DB-xx&xx) that is set to turn off the locate LED.
Num of Locations	The number of the drive boxes that are set to turn off the locate LED.

Example

```
GUM,,[Maintenance],Turn Off Locate LEDs,,Normal end,
Seq.=xxxxxxxxxx
+Mode=OFF,Locations=[DB-xx,DB-xx,DB-xx],Num of Locations=3
```

[Maintenance] Turn On Locate LEDs

Detailed Information

Item	Description
Mode	Indicates the locate LED is turned on.
Location	The mounting position of the drive box (DB-xx or DB-xx&xx) that is set to turn on the locate LED.
Num of Locations	The number of drive boxes that are set to turn on the locate LED.

Example

```
GUM,,[Maintenance],Turn On Locate LEDs,,Normal end,
Seq.=xxxxxxxxxx
+Mode=ON,Locations=[DB-xx,DB-xx,DB-xx],Num of Locations=3
```

[Maintenance] Update Cert Files

Detailed Information

Item	Description
Certificate	The certificate file (Web Server certificate or Connect to SVP certificate) to be updated.
File	The name of the updated certificate file

Example

```
GUM,,[Maintenance],Update Cert Files,,Normal end,
Seq.=xxxxxxxxxx
+Certificate=Web Server,File=XXXX
```

[Maintenance] Update Firmware

Detailed Information

Item	Description
Firmware File	Name of the firmware file used to update the firmware

Item	Description
Firmware Selection	Firmware to be updated All: Updates all firmware installed in the storage system GUM Only: Updates the GUM firmware only
Update Type	Whether the firmware is updated online or offline Online Update: updated online, Offline Update: updated offline
Reboot Pattern	Type of the reboot (how the MP units are rebooted when all firmware installed in the storage system is updated online) By 1/2: Reboots a 1/2 of the total at one time until everything is rebooted By 1/4: Reboots a 1/4 of the total at one time until everything is rebooted By 1/8: Reboots a 1/8 of the total at one time until everything is rebooted By One: Reboots everything at one time

Example

```
GUM,,[Maintenance],Update Firmware,,Normal end,Seq.=xxxxxxxxxx
+Firmware File=xxx,Firmware Selection=xxx,Update Type=xxxx,
Reboot Pattern=xxx
```

[Maintenance] UserAccount Backup

Example

```
GUM,,[Maintenance],UserAccount Backup,,Normal end,
Seq.=xxxxxxxxxx
```

[Maintenance] UserAccount Restore

Example

```
GUM,,[Maintenance],UserAccount Restore,,Normal end,
Seq.=xxxxxxxxxx
```

Performance Monitor Descriptions

[PFM] Delete Unused WWNs

Example

```
RMI AP,Task Name,[PFM],Delete Unused WWNs,,Normal end,
Seq.=xxxxxxxxxx
```

[PFM] Edit CU Monitor Mode

Basic Information

Parameter	Description
Enable	The monitored CU is enabled

Detailed Information

Item	Description
LDKC:CU	The ID of the monitored CU The logical DKC number and the CU number are separated by colons and arranged in this order.

Example

```
RMI AP,Task Name,[PFM],Edit CU Monitor Mode,Enable,Normal end,
Seq.=xxxxxxxxxx
+[LDKC:CU] = [0x00:0x00,0x00:0x01,0x00:0x02],Num. of CUs = 3
```

[PFM] Edit Monitoring SW

Basic Information

Parameter	Description
Enable XXsec	Monitoring is enabled and the gathering interval is set as XX sec
Disable	Monitoring is disabled

Example

```
RMI AP,Task Name,[PFM],Edit Monitoring SW,Enable 60sec,
Normal end,Seq.=xxxxxxxxxx
```

[PFM] Edit WWN

Detailed Information

Item	Description
Update Mode	The changing mode of WWN. Change HBA WWN: Change of HBA WWN, Change WWN Name: Change of WWN name.
HBA WWN	The name of HBA WWN.
Change WWN Name	The new WWN name (if changed)
Change HBA WWN	The name of changed HBA WWN.
Num. of WWNs	The number of changed WWNs.

Example

```
RMI AP,Task Name,[PFM],Edit WWN,,Normal end,Seq.=xxxxxxxxxx
+{Update Mode,HBA WWN,Change WWN Name,Change HBA WWN}
=[{Change HBA WWN,0xXXXXXXXXXXXXXXXX,,0xXXXXXXXXXXXXXXXX},
{Change WWN Name,0xXXXXXXXXXXXXXXXX,
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX,
}],Num. of WWNs=2
```

[PFM] Edit WWN MonitorMode

Detailed Information

Item	Description
Mode	The setting mode of WWN Add WWN: Addition of HBA WWN, Delete WWN: Deletion of HBA WWN
HBA WWN	The HBA WWN
WWN Name	The WWN name

Item	Description
Port	The name of a target port
Num. of Ports	The number of target ports for the added or deleted WWN
Num. of WWNs	The number of added or deleted WWNs

Example

```
RMI AP,Task Name,[PFM],Edit WWN MonitorMode,,Normal end,
Seq.=xxxxxxxxxx
+{Mode,HBA WWN,WWN Name}={Add WWN,0xXXXXXXXXXXXXXXXX,
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX},
++Port=[XX],Num. of Ports=1,
-Num. of WWNs=1
```

Provisioning Descriptions

[PROV] Add Hosts

Detailed Information

Item	Description
Port	The name of the port to which the host group belongs
HostGrpID	The host group number where the host is registered
WWN	Indicates WWN of the host bus adapter for the host registered in the host group. WWN is a 16-digit number in the hexadecimal format.
Nickname	The nickname of the host bus adapter for the host registered in the host group
Num. of WWNs	The number of registered hosts (WWN)

Example

```
RMI AP,Task Name,[PROV],Add Hosts,,Normal end,Seq.=xxxxxxxxxx
+{Port,HostGrpID,WWN,Nickname}
=[{XX,0xXXX,0xXXXXXXXXXXXXXXXX,XXXXXXXXXXXXXXXX},
{XX,0xXXX,0xXXXXXXXXXXXXXXXX,XXXXXXXXXXXXXXXX}],Num. of WWNs=2
```

[PROV] Add LUN Paths

Detailed Information

Item	Description
Port	The name of the port to which the host group belongs
HostGrpID	The host group number linked to the logical volume
LUN	Indicates LUN of the logical volume linked to the host group
LDKC:CU:LDEV	The LDKC, CU, and LDEV numbers of the logical volume linked to the host group
Num. of Paths	The number of LU paths set

Example

```
RMI AP,Task Name,[PROV],Add LUN Paths,,Normal end,Seq.=xxxxxxxxxx
+{Port,HostGrpID,LUN,LDKC:CU:LDEV}
=[{XX,0xXXX,XXXX,0xXX:0xXX:0xXX},
{XX,0xXXX,XXXX,0xXX:0xXX:0xXX},
{XX,0xXXX,XXXX,0xXX:0xXX:0xXX}],Num. of Paths=3
```

[PROV] Assign MP Unit

Detailed Information

Detailed Information

Item	Description
LDKC:CU:LDEV	The LDKC number, the CU number, and the LDEV number
MP Unit ID	The MP Unit ID of the migration target
Result	The result of operation Normal end: Normal end, Error(*xxxx*-*yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code
Num. of LDEVs	The number of specified logical volumes

Example

```
RMI AP,Task Name,[PROV],Assign MP Unit,,Normal end,
Seq.=xxxxxxxxxx
+{LDKC:CU:LDEV,MP Unit ID,Result}
```

```
=[{0xXX:0xXX:0xXX,XX,Normal end},
{0xXX:0xXX:0xXX,XX,Normal end}],Num. of LDEVs=2
```

[PROV] Block LDEVs

Detailed Information

Item	Description
LDKC:CU:LDEV	The LDKC number, the CU number, and the LDEV number
Num. of LDEVs	The number of LDEVs being blocked

Example

```
RMI AP,Task Name,[PROV],Block LDEVs,,Normal end,Seq.=xxxxxxxxxx
+LDKC:CU:LDEV=[0x00:0x00:0x01,0x00:0x00:0x02,0x00:0x00:0x03,
0x00:0x00:0x04,0x00:0x00:0x05,0x00:0x00:0x06,0x00:0x00:0x07,
0x00:0x00:0x08,0x00:0x00:0x09,0x00:0x00:0x0A],
Num. of LDEVs=10
```

[PROV] CalculateTieringMonitorData

Detailed Information

Item			Description
TieringMoniterDataOperation			The setting information for recalculating the tier relocation using the monitoring data
	RelocationOption		The setting information on the tier relocation option Disable: Tier relocation is not started. Enable: Tier relocation is immediately started. null: Tier relocation is not started.
	Pool		The pool information
		Id	The pool number

Example

```
RMI AP,,[PROV],CalculateTieringMonitorData,,Normal end,
Seq.=xxxxxxxxxx
+{TieringMoniterDataOperation{
  RelocationOption=Enable,
```

```
    Pool{
      Id=2}}}
```

[PROV] Create Host Groups

Detailed Information

Item	Description
Port	The name of the port where the host group has been added
HostGrpID	The host group number newly added
HostGrpName	The name of the host group newly added
Num. of Host Groups	The number of host groups added

Example

```
RMI AP,Task Name,[PROV],Create Host Groups,,Normal end,
Seq.=xxxxxxxxxx
+{Port,HostGrpID,HostGrpName}=[{XX,0xXXX,XXXXXXXXXXXXXXXX},
{XX,0xXXX,XXXXXXXXXXXXXXXX}],Num. of Host Groups=2
```

[PROV] Create LDEVs

Create LDEVs is output when volumes of Thin Image or DP-VOLs are created. CreateLdev is output when internal or external volumes are created.

Basic Information for Example 1 and 2

Item	Description
Snapshot	Operating for the Thin Image volumes.
Thin Provisioning	Operating for the Dynamic Provisioning virtual volumes.

Detailed Information for Example 1 and 2

Item	Description
Pool ID	The pool ID of a related pool volume For a Snapshot volume, a hyphen (-) is output, because you specify no setting about a related volume when you create V-Vols for Snapshot.

Item	Description
LDKC:CU:LDEV	The logical DKC, CU, and LDEV numbers of the created V-Vols These numbers are separated by colons and arranged in this order.
LDEVCapa (blocks)	The capacity of the created V-Vols in blocks
Emulation	Not output because this item is not used.
CLPR	The CLPR ID of the created V-Vol
SSID	Not output because this item is not used.
MP Unit ID	MP Unit ID specified for the V-Vol. When an MP Unit ID is specified automatically, "Auto" is output.
Attribute	Not output because this item is not used.
Full Allocation	Indicates the setting status of the Full Allocation Enable: Full Allocation is enabled. Disable: Full Allocation is disabled. This item is output for Dynamic Provisioning volumes only.
Data Direct Mapping	Indicates the setting status of Data Direct Mapping for the created V-Vol Enable: Data Direct Mapping is enabled. Disable: Data Direct Mapping is disabled. This item is output for Dynamic Provisioning volumes only.
Data Direct Mapped LDEV(LDKC:CU:LDEV)	Indicates the LDEV ID of the pool volume with Data Direct Mapping enabled that composes a pool associated with the created V-Vol A hyphen (-) is output if Data Direct Mapping is disabled on the created V-Vol. This item is output for Dynamic Provisioning volumes only.
T10 PI	Indicates the setting status of the T10 PI attribute Enable: T10 PI is enabled. Disable: T10 PI is disabled.
Capacity Saving	Indicates the setting status of Capacity Saving Compression: Compression Deduplication and Compression: Deduplication and Compression Disabled: Capacity Saving is disabled.

Item	Description
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code
Num. of LDEVs	The number of created V-Vols

Example 1: Creating Thin Image volumes

```
RMI AP,Task Name,[PROV],Create LDEVs,Snapshot,Normal end,
Seq.=xxxxxxxxxx
+{Pool ID,LDKC:CU:LDEV,LDEVCapa(blocks),Emulation,CLPR,SSID,
MP Unit ID,T10 PI,Result}
=[{-,0x00:0x00:0x00,96000,,0,,Auto,Enable,Normal end},
{-,0x00:0x01:0x00,96000,,0,,Auto,Enable,Normal end}],
Num. of LDEVs=2
```

Example 2: Creating DP-VOLs

```
RMI AP,Task Name,[PROV],Create LDEVs,Thin Provisioning,Normal end,
Seq.=xxxxxxxxxx
+{Pool ID,LDKC:CU:LDEV,LDEVCapa(blocks),Emulation,CLPR,SSID,
MP Unit ID,Attribute,Full Allocation,Data Direct Mapping,
Data Direct Mapped LDEV(LDKC:CU:LDEV),T10 PI,Capacity Saving,Result}
=[{1,0x00:0x00:0x00,96000,,0,,Auto,,Enable,Enable,
0x00:0x10:0x00,Enable,Compression,Normal end},
{1,0x00:0x01:0x00,96000,,0,,Auto,,Disable,Disable,
-,Disable,Disabled,Normal end}],Num. of LDEVs=2
```

[PROV] Create Resource Grps

Detailed Information

Item	Description
VDKC-Box ID	The number of the VDKC-Box to which the created resource group belongs. A hyphen (-) is output when the creating operation failed.
Resource Group ID	The number of the created resource group. A hyphen (-) is output when the creating operation failed
Resource Group Name	The resource group name of the created resource group
Result	The result of the operation

Item	Description
	Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code
Num. of Resource Groups	The number of created resource groups

Example

```
RMI AP,Task Name,[PROV],Create Resource Grps,,Normal end,
Seq.=xxxxxxxxxx
+{VDKC-Box ID,Resource Group ID,Resource Group Name,Result}
=[{0,1,RSG1,Normal end},{0,2,RSG2,Normal end}],
Num. of Resource Groups=2
```

[PROV] Create VDKC-Box

Detailed Information

Item	Description
VDKC-Box ID	The number of the created VDKC-Box. A hyphen (-) is output when the creating operation failed.
Model	The model of the created VDKC-Box
SerialNo	The serial number of the created VDKC-Box
Result	The result of the VDKC-Box operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code
VDKC-Box ID	The number of the VDKC-Box to which the created resource group belongs. A hyphen (-) is output when the creating operation failed.
Resource Group ID	The number of the created resource group. A hyphen (-) is output when the creating operation failed.
Resource Group Name	The resource group name of the created resource group
Result	The result of the resource group operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Item	Description
Num. of Resource Groups	The number of created resource groups

Example

```
RMI AP,Task Name,[PROV],Create VDKC-Box,,Normal end,Seq.=xxxxxxxxxx
+{VDKC-Box ID,Model,SerialNo,Result}={1,0x0400,28528,Normal end}
++{VDKC-Box ID,Resource Group ID,Resource Group Name,Result}
=[{1,1,RSG1,Normal end},{1,2,RSG2,Normal end}],Num. of Resource Groups=2
```

[PROV] Create/Expand Pools

Detailed Information

Item	Description
Pool ID	The pool ID of the created or expanded pool
Pool Type	The pool type. Dynamic Provisioning: Dynamic Provisioning, Thin Image: Thin Image
Multi Tier Pool	The setting status of the multi-tier mode and active flash function for the created or expanded pool Enable(Active Flash): Both Dynamic Tiering and active flash are enabled. Enable: Dynamic Tiering is enabled and active flash is disabled. Disable: Both Dynamic Tiering and active flash are disabled. If Pool Type is Thin Image, a hyphen (-) is output.
Warning Threshold(%)	The warning threshold of the usage rate of the created pool. The unit is indicated as a percentage. If Execute Command is Expand, a hyphen (-) is output.
Depletion Threshold(%)	The depletion threshold of the usage rate of the created pool. The unit is indicated as a percentage. If Pool Type is Thin Image, if the depletion threshold is not specified, or if Execute Command is Expand, a hyphen (-) is output.
Subscription Limit(%)	The reserve amount of the created pool. The unit is percent (%). If the reserve amount is not specified, it outputs "Unlimited".

Item	Description
	If Pool Type is Thin Image, or if Execute Command is Expand, a hyphen (-) is output.
Protect V-VOLs when I/O fails to Blocked Pool VOL	Indicates whether the setting of the protect access attribute on the virtual volume is enabled or disabled when the pool is blocked. Yes: Enabled, No: Disabled If Pool Type is not Dynamic Provisioning, or if Execute Command is Expand, a hyphen (-) is output.
Protect V-VOLs when I/O fails to Full Pool	Indicates whether the setting of the protect access attribute on the virtual volume is enabled or disabled when the pool is full. Yes: Enabled, No: Disabled If Pool Type is not Dynamic Provisioning, or if Execute Command is Expand, a hyphen (-) is output.
Tier Management	The auto control mode of the created or expanded pool Auto: Auto, Manual: Manual If Multi Tier Pool is not Enable, a hyphen (-) is output.
Cycle Time	The cycle of performance monitoring for the created pool 0.5: every thirty minutes, 1: every one hour, 2: every two hours, 4: every four hours, 8: every eight hours, 24: every twenty-four hours If Tier Management is not Auto, or if Execute Command is Expand, a hyphen (-) is output.
Monitoring Period	The monitoring period of the pool. Format: "H1:M1-H2:M2" H1: The time when the monitoring starts (hour) M1: The time when the monitoring starts (minute) H2: The time when the monitoring ends (hour) M2: The time when the monitoring ends (minute). If Cycle Time is not 24, or if Execute Command is Expand, a hyphen (-) is output.
Monitoring Mode	The monitoring mode Continuous Mode: Continuous mode, Period Mode: Period mode If Multi Tier Pool is not Enable, or if Execute Command is Expand, a hyphen (-) is output.
Relocation Speed	The relocation speed 1: Slowest, 2: Slower, 3: Normal, 4: Faster, 5: Fastest If Multi Tier Pool is not Enable, or if Execute Command is Expand, a hyphen (-) is output.

Item	Description
Data Direct Mapping	Indicates the setting status of Data Direct Mapping Enable: Data Direct Mapping is enabled. Disable: Data Direct Mapping is disabled. If Execute Command is Expand, a hyphen (-) is output.
Suspend TI pairs when depletion threshold is exceeded	Indicates the setting status of Suspend Thin Image pairs when depletion threshold is exceeded Yes: Suspend Thin Image pairs is enabled when the depletion threshold is exceeded. No: Suspend Thin Image pairs is disabled even if the depletion threshold is exceeded. If Execute Command is Expand, a hyphen (-) is output.
Pool Result	The result of pool creation or expansion Normal end: Normal end, Error(*xxxx*-*yyyyy*): Abnormal end, Not Execute: Not Executed *xxxx*: Part code, *yyyyy*: Error code
Execute Command	The executed operation Create: Pools are created. Expand: Pools are expanded. If Pool Result is not Normal end, a hyphen (-) is output.
Num. of Pools	The number of created or expanded pools
LDKC:CU:LDEV	The LDKC number, the CU number and the LDEV number of the pool volume assigned to the created or expanded pool
External LDEV Tier Rank	The external LDEV tier rank of the pool volume assigned to the created or expanded pool High: An external volume (High) Middle/Internal: An external volume (Middle) or an internal volume Low: An external volume (Low)
LDEV Result	The result of creating or expanding pools per pool volume Normal end: Normal end, Error(*xxxx*-*yyyy*): Abnormal end, Not Execute: Not Executed *xxxx*: Part code, *yyyy*: Error code
Num. of LDEVs	The number of created or expanded pool volume.

Example

```
RMI AP,Task Name,[PROV],Create/Expand Pools,,Normal end,
Seq.=xxxxxxxxxx
+{Pool ID,Pool Type,Multi Tier Pool,Warning Threshold(%),
Depletion Threshold(%),Subscription Limit(%),
Protect V-VOLs when I/O fails to Blocked Pool VOL,
Protect V-VOLs when I/O fails to Full Pool,
Tier Management,Cycle Time,Monitoring Period,Monitoring Mode,
Relocation Speed,Data Direct Mapping,Suspend TI pairs when depletion
threshold is exceeded,Pool Result,Execute Command}
=[{1,Dynamic Provisioning,Enable,20,70,100,Yes,Yes,Auto,24,
00:00-23:59,Continuous Mode,3,Disable,Yes,Normal end,Create}],
Num. of Pools=1
++{LDKC:CU:LDEV,External LDEV Tier Rank,LDEV Result}
=[{0x00:0x00:0x00,Middle/Internal,Normal end},
{0x00:0x00:0x01,Middle/Internal,Normal end},
{0x00:0x00:0x02,Middle/Internal,Normal end}],Num. of LDEVs=3
```

[PROV] CreateAlus

Detailed Information

Item		Description
Alus[x]		The setting information of the created LDEV with the ALU attribute
	LdevId	The LDEV ID
	Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, Not Execute: Not Executed *xxxx*: Part code, *yyyyy*: Error code
	MpUnitId	The MP Unit ID "Auto" indicates the auto assignment is enabled.
	Clpr	The CLPR setting information
	Id	The CLPR ID
	Id	The ALU ID

Example

```
RMI AP,Task Name,[PROV],CreateAlus,,Normal end,Seq.=xxxxxxxxxx
+{Alus[0]{
  LdevId=0x00:0x00:0xBC,Result=Normal end,MpUnitId=Auto,
```

```
  Clpr{
    Id=0},
  Id="60-06-0E-81-30-76-D9-30-76-D9-00-00-00-00-00-BC"}}
```

[PROV] CreateiScsiName

Detailed Information

Item			Description
iScsiPort[x]			The setting information of the port
	Port		The port ID to be set
	iScsiTarget[x]		The iSCSI target information
		Id	The iSCSI target ID
		RemoteiScsiName[x]	The information of the iSCSI name of the host bus adapter
		Name	The iSCSI name of the host bus adapter
		NickName	The host name (nick name) "null" is output if this item is not set or changed.
		Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],CreateiScsiName,,Normal end,Seq.=xxxxxxxxxx
+{iScsiPort[0]{
  Port=1A,
  iScsiTarget[0]{
    Id=0,
    RemoteiScsiName[0]{
      Name="Name",NickName="NickName",Result=Normal end}}}}
```

[PROV] CreateiScsiPath

Detailed Information

Item	Description
ConnectionTest	Indicates whether to perform the connection test after creating iSCSI paths

Item	Description
	true: Test is performed. false: Test is not performed.
iScsiPath[x]	The path information between the iSCSI port on the local storage system and the iSCSI target on the remote storage system
iScsiPort	The information of the iSCSI port on the local storage system
Port	The Port ID
RemoteiScsiPort	The information of the iSCSI port on the remote storage system
Function	Function that uses the created iSCSI path UVM: Universal Volume Manager RemoteReplication: Remote Replication
IpType	The type of the IP address IPv4: IPv4 address, IPv6: IPv6 address
IPv4Address	The IPv4 address*
IPv6Address	The IPv6 address*
TcpPortNumber	The TCP port number
RemoteiScsiTarget	The iSCSI target information
Name	The iSCSI name
iScsiUser	The user authentication information
AuthSwitch	Indicates whether the CHAP authentication method is enabled or disabled* None: CHAP is disabled. CHAP: CHAP is enabled.
AuthMode	Indicates the CHAP authentication mode* Unidirectional: CHAP is one-way. Mutual: CHAP is two-way.
UserId	The CHAP user name*
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end

Item	Description
	xxxx: Part code, *yyyyy*: Error code
* "null" is output if this item is not set or changed.	

Example

```
RMI AP,,[PROV],CreateiScsiPath,,Normal end,Seq.=xxxxxxxxxx
+{ConnectionTest=true,
iScsiPath[0]{
  iScsiPort{
    Port=1A},
  RemoteiScsiPort{
    Function=UVM,IpType=IPv4,Ipv4Address=192.168.0.101,
    Ipv6Address=0:0:0:0:0:0:0:0,TcpPortNumber=3260,
    RemoteiScsiTarget{
      Name="iqn.1994-04.jp.co.hitachi.h8m.t.00001.3a000",
      iScsiUser{
        AuthSwitch=None,AuthMode=Unidirectional,UserId="CHAPUser"}}},
  Result=Normal end}}
```

[PROV] CreateiScsiTarget

Detailed Information

Item	Description
iScsiPort[x]	The setting information of the port
Port	The port ID to be set
iScsiTarget[x]	The iSCSI target information
Id	The iSCSI target ID
Name	The iSCSI target name
Alias	The iSCSI target alias
UserAuthSwitch	The setting status of the CHAP user authentication Enable: Enabled, Disable: Disabled, UseHostSetting: Using host settings
AuthMode	The authentication mode. Unidirectional: One-way, Mutual: Two-way
Result	The result of the operation

Item	Description
	Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],CreateiScsiTarget,,Normal end,Seq.=xxxxxxxxxx
+{iScsiPort[0]{
  Port=1A,
  iScsiTarget[0]{
    Id=0,Name="Name",Alias="Alias",UserAuthSwitch=Enable,
    AuthMode=Unidirectional,Result=Normal end}}}
```

[PROV] CreateLdev

CreateLdev is output when internal or external volumes are created. Create LDEVs is output when volumes of Thin Image or DP-VOLs are created.

Detailed Information

Item	Description
LogicalDevice[x]	The setting information of the LDEV
ID	The LDEV ID
ParityGroupID	The parity group ID to which the LDEV belongs "null" is output if an external volume is created.
ExternalGroupID	The external volume group ID to which the LDEV belongs "null" is output if an internal volume is created.
Emulation	The emulation type
Capacity(Block)	The capacity
Position	The LDEV ID (Initial number)
MpUnitId	The MP unit ID assigned to the LDEV
T10pi	Indicates the setting status of the T10 PI attribute true: T10 PI is enabled. false: T10 PI is disabled.
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end

Item	Description
	xxxx: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],CreateLdev,,Normal end,Seq.=xxxxxxxxxx
+{LogicalDevice[0]{
  ID=0x00:0x00:0x00,ParityGroupID=1-1,ExternalGroupID=null,
  Emulation=OPEN-V,Capacity(Block)=96000,Position=0,
  MpUnitId=0,T10pi=true,Result=Normal end}}
```

[PROV] CreateParityGroups

Detailed Information 1

Item	Description
ParityGroup[x]	The setting information of the parity group
ID	The parity group ID
RAIDLevel	The RAID level
CachePartition	The CLPR information
CLPR	The CLPR ID
Encryption	The setting status of encryption true: Enabled, false: Disabled
Copy-backMode	The setting status of the copy-back mode true: Enabled, false: Disabled
Accelerated Compression	The setting status of the accelerated compression true: Enabled, false: Disabled
Emulation	The emulation type
Drive[x]	The information of the drive configuring the parity group
Location	The mounting position of the drive
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Detailed Information 2

Item	Description
ParityGroup[x]	The setting information of the parity group
ID	The parity group ID
RAIDLevel	The RAID level
CachePartition	The CLPR information
CLPR	The CLPR ID
Encryption	The setting status of encryption true: Enabled, false: Disabled
Copy-backMode	The setting status of the copy-back mode true: Enabled, false: Disabled
Accelerated Compression	The setting status of the accelerated compression true: Enabled, false: Disabled
Emulation	The emulation type
Drive[x]	The information of the drive configuring the parity group
Location	The mounting position of the drive
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code
Concatenate[x]	The information of the interleaved parity group
ParityGroup[x]	The information of the parity groups that make up the interleaved parity group
ID	The parity group ID

Example 1: Interleaved parity groups not being included

```
RMI AP,,[PROV],CreateParityGroups,,Normal end,Seq.=xxxxxxxxxx
+{ParityGroup[0]{
  ID=1-1,RAIDLevel=2D+2D,
  CachePartition{
    CLPR=0},
  Encryption=true,Copy-backMode=true,Accelerated Compression=true,
  Emulation=OPEN-V,
  Drive[0]{
```

```
    Location=HDD0-0},
  Result=Normal end}}
```

Example 2: Interleaved parity groups being included

```
RMI AP,,[PROV],CreateParityGroups,,Normal end,Seq.=xxxxxxxxxx
+{ParityGroup[0]{
  ID=1-1,RAIDLevel=2D+2D,
  CachePartition{
    CLPR=0},
  Encryption=true,Copy-backMode=true,Accelerated Compression=true,
  Emulation=OPEN-V,
  Drive[0]{
    Location=HDD0-0},
  Result=Normal end},
Concatenate[0]{
  ParityGroup[0]{
    ID=1-1},
  ParityGroup[1]{
    ID=1-2}}}
```

[PROV] CreateRemoteChapUser

Detailed Information

Item	Description
iScsiPort[x]	The setting information of the port
Port	The port ID to be set
iScsiTarget[x]	The iSCSI target information
Id	The iSCSI target ID
RemoteiScsiUser[x]	The user information of the CHAP authentication
ChapUserId	The user ID of the CHAP authentication
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],CreateRemoteChapUser,,Normal end,Seq.=xxxxxxxxxx
+{iScsiPort[0]{
  Port=1A,
  iScsiTarget[0]{
```

```
    Id=0,
    RemoteiScsiUser[0]{
      ChapUserId="ChapUserId",Result=Normal end}}}}
```

[PROV] CreateSlus

Detailed Information

Item		Description
Slus[x]		The setting information of the created LDEV with the SLU attribute
	LdevId	The LDEV ID
	Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, Not Execute: Not Executed *xxxx*: Part code, *yyyyy*: Error code
	Capacity	The capacity
	MpUnitId	The MP Unit ID "Auto" indicates the auto assignment is enabled.
	Clpr	The CLPR setting information
	Id	The CLPR ID
	Pool	The pool setting information
	Id	The pool number
	Id	The SLU ID
	FullAllocation	Indicates the setting status of the Full Allocation true: Full Allocation is enabled. false: Full Allocation is disabled.

Example

```
RMI AP,,[PROV],CreateSlus,,Normal end,Seq.=xxxxxxxxxx
+{Slus[0]{
  LdevId=0x00:0x00:0xBC,Result=Normal end,Capacity=8388608,
  MpUnitId=Auto,
  Clpr{
    Id=0},
  Pool{
    Id=9},
```

```
  Id="60-06-0E-81-30-76-D9-30-76-D9-00-00-00-00-00-BC",
  FullAllocation=false}}
```

[PROV] CreateThinProvisioningVolumes

Detailed Information

Item			Description
ThinProvisioningVolumes[x]			The setting information of the created Thin Image pair
	PoolId		The pool ID
	LdevId		The LDEV ID
	Result		The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code
	Capacity		The setting information of the secondary volume
	Ssid		The SSID
	MpBladeId		The MP unit ID "Auto" indicates that the auto assignment is enabled.
	Clpr		The CLPR setting information
		Id	The CLPR ID

Example

```
RMI AP,,[PROV],CreateTiVolumes,,Normal end,Seq.=xxxxxxxxxx
+{ThinProvisioningVolumes[0]{
  PoolId=1,
  LdevId=0x00:0x00:0xBC,Result=Normal end,Capacity=8388608,
  Ssid=0x0004,MpBladeId=Auto,
  Clpr{
    Id=0}}}
```

[PROV] CreateTiPairsWithSlu

Detailed Information

Item	Description
TiPairs[x]	The setting information of the created Thin Image pair
PrimaryVolume	The setting information of the primary volume
Slu	The SLU information
Id	The SLU ID
Ldev	The LDEV information
Id	The LDEV ID
SecondaryVolume	The setting information of the secondary volume
Slu	The SLU information
Id	The SLU ID
Ldev	The LDEV information
Id	The LDEV ID
Base Volume	The setting information of the diff compare volume
Slu	The SLU information
Id	The SLU ID
AccessAttribute	The access attribute FullAccess: Read/Write, ReadOnly: Read Only
FastClone	The setting status of the fast clone for the snapshot true: Enabled, false: Disabled
Cascade	The setting status of the cascade for the snapshot true: Enabled, false: Disabled
Clone	The setting status of the clone for the snapshot true: Enabled, false: Disabled
DiffClone	The setting status of the diff clone for the snapshot true: Enabled, false: Disabled
Pool	The pool information
Id	The pool number

Item			Description
	Result		The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, Not Execute: Not Executed *xxxx*: Part code, *yyyyy*: Error code
	MirrorUnit		The mirror unit number
	SnapshotSlu		The SLU information of the secondary volume
		Id	The SLU ID

Example

```
RMI AP,,[PROV],CreateTiPairsWithSlu,,Normal end,Seq.=xxxxxxxxxx
+{TiPairs[0]{
  PrimaryVolume{
    Slu{
      Id="60-06-0E-81-30-00-32-30-00-32-00-00-00-00-30-00"},
    Ldev{
      Id=0x00:0x30:0x00}},
  SecondaryVolume{
    Slu{
      Id=""60-06-0E-81-30-00-32-30-00-32-00-00-00-00-40-00""},
    Ldev{
      Id=0x00:0x40:0x00}},
  BaseVolume{
    Slu{
      Id=""60-06-0E-81-30-00-32-30-00-32-00-00-00-00-50-00""}},
  AccessAttribute=ReadOnly,FastClone=false,
  Cascade=false,Clone=false,DiffClone=false,
  Pool{
    Id=2},
  Result=Normal end,MirrorUnit=3,
  SnapshotSlu{
    Id="60-06-0E-81-30-00-32-30-00-32-00-00-80-00-00-00"}}}
```

[PROV] CreateTiVolumes

Detailed Information

Item	Description
TiVolumes[x]	The setting information of the created secondary volume for Thin Image

Item			Description
	LdevId		The LDEV ID
	Result		The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, Not Execute: Not Executed *xxxx*: Part code, *yyyyy*: Error code
	Capacity		The capacity
	MpUnitId		The MP Unit ID "Auto" indicates the auto assignment is enabled.
	Clpr		The CLPR setting information
		Id	The CLPR ID

Example

```
RMI AP,,[PROV],CreateTiVolumes,,Normal end,Seq.=xxxxxxxxxx
+{TiVolumes[0]{
  LdevId=0x00:0x00:0xBC,Result=Normal end,Capacity=8388608,
  MpUnitId=Auto,
  Clpr{
    Id=0}}}
```

[PROV] Delete Host Groups

Detailed Information

Item	Description
Port	The name of the port to which the deleted or initialized host group belonged
HostGrpID	The host group number deleted or initialized
Num. of Host Groups	The number of host groups deleted or initialized

Example

```
RMI AP,Task Name,[PROV],Delete Host Groups,,Normal end,
Seq.=xxxxxxxxxx
+{Port,HostGrpID}
=[{XX,0xXXX},{XX,0xXXX}],Num. of Host Groups=2
```

[PROV] Delete LDEVs

Delete LDEVs is output when volumes of Thin Image or DP-VOLs are deleted. DeleteLdev is output when internal or external volumes are deleted.

Basic Information for Example 1 and 2

Item	Description
Snapshot	Operating for the Thin Image volumes.
Thin Provisioning	Operating for the Dynamic Provisioning virtual volumes.

Detailed Information for Example 1 and 2

Item	Description
LDKC:CU:LDEV	The logical DKC, CU, and LDEV numbers of the deleted V-Vols These numbers are separated by colons and arranged in this order.
Result	The result of operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *where xxxx*: Part code, *yyyyy*: Error code
Num. of LDEVs	The number of deleted V-Vols

Example 1: Deleting Thin Image volumes

```
RMI AP,Task Name,[PROV],Delete LDEVs,Snapshot,Normal end,
Seq.=xxxxxxxxxx
+{LDKC:CU:LDEV, Result}=[{0x00: 0x00: 0x00, Normal end},
{0x00: 0x01: 0x00, Normal end},
{0x00: 0x02: 0x00, Normal end}],
Num. of LDEVs=3
```

Example 2: Deleting DP-VOLs

```
RMI AP,Task Name,[PROV],Delete LDEVs,Thin Provisioning,Normal end,
Seq.=xxxxxxxxxx
+{LDKC:CU:LDEV, Result}=[{0x00: 0x00: 0x00, Normal end},
{0x00: 0x01: 0x00, Normal end},
{0x00: 0x02: 0x00, Normal end}],
Num. of LDEVs=3
```

[PROV] Delete Login WWNs

Detailed Information

Item	Description
Port	The port name where the host of deleted WWN was connected
Delete WWN	The deleted WWN. WWN is a 16-digit number in the hexadecimal format.
Num. of WWNs	The number of WWNs deleted

Example

```
RMI AP,Task Name,[PROV],Delete Login WWNs,,Normal end,
Seq.=xxxxxxxxxx
+{Port,Delete WWN}
=[{XX,0xXXXXXXXXXXXXXXXX},{XX,0xXXXXXXXXXXXXXXXX}],
Num. of WWNs=2
```

[PROV] Delete LUN Paths

Detailed Information

Item	Description
Port	The name of the port to which the host group belongs
HostGrpID	The host group number where the LU path is deleted
LUN	Indicates LUN where the LU path assignment is cancelled
Num. of Paths	The number of LU paths deleted

Example

```
RMI AP,Task Name,[PROV],Delete LUN Paths,,Normal end,
Seq.=xxxxxxxxxx
+{Port,HostGrpID,LUN}
=[{XX,0xXXX,XXXX},{XX,0xXXX,XXXX},{XX,0xXXX,XXXX}],
Num. of Paths=3
```

[PROV] Delete Resource Grps

Detailed Information

Item	Description
VDKC-Box ID	The number of the VDKC-Box to which the deleted resource group belongs
Resource Group ID	The number of the deleted resource group
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code
Num. of Resource Groups	The number of deleted resource groups

Example

```
RMI AP,Task Name,[PROV],Delete Resource Grps,,Normal end,
Seq.=xxxxxxxxxx
+{VDKC-Box ID,Resource Group ID,Result}
=[{0,1,Normal end},{0,2,Normal end}],Num. of Resource Groups=2
```

[PROV] Delete VDKC-Box

Detailed Information

Item	Description
VDKC-Box ID	The number of the deleted VDKC-Box
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code
Num. of VDKC-Boxes	The number of deleted VDKC-Boxes

Example

```
RMI AP,,Task Name,[PROV],Delete VDKC-Box,,Normal end,Seq.=xxxxxxxxxx
+{VDKC-Box ID,Result}=[{1,Normal end}],Num. of VDKC-Boxes=1
```

[PROV] DeleteAlus

Detailed Information

Item		Description
Alus[x]		The setting information of the deleted LDEV with the ALU attribute
	Id	The ALU ID
	Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, Not Execute: Not Executed *xxxx*: Part code, *yyyyy*: Error code
	LdevId	The LDEV ID

Example

```
RMI AP,Task Name,[PROV],DeleteAlus,,Normal end,Seq.=xxxxxxxxxx
+{Alus[0]{
  Id="60-06-0E-81-30-76-D9-30-76-D9-00-00-00-00-00-49",
  Result=Normal end,LdevId=0x00:0x00:0x49}}
```

[PROV] DeleteDataSavingOfSlusAsync

This logged information indicates that this operation was only requested but not completed.

Detailed Information

Item		Description
Slus[x]		The setting information of an LDEV with the SLU attribute, whose setting of capacity saving is enabled.
	Id	The SLU ID
	Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, Not Execute: Not Executed *xxxx*: Part code, *yyyyy*: Error code
	LdevId	The LDEV ID

Example

```
RMI AP,Task Name,[PROV], DeleteDataSavingOfSlusAsync,,Normal end,
Seq.=xxxxxxxxxx
+{Slus[0]{
Id="60-06-0E-81-30-76-D9-30-76-D9-00-00-00-00-00-49",Result=Normal end,
LdevId=0x00:0x00:0x49}}
```

[PROV] DeleteDataSavingOfThinProvisioningVolumesAsync

This logged information indicates that this operation was only requested but not completed.

Detailed Information

Item		Description
ThinProvisioningVolumes[x]		The setting information of an LDEV, whose setting of capacity saving is enabled.
	Id	The LDEV ID
	Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, Not Execute: Not Executed *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,Task Name,[PROV], DeleteDataSavingOfThinProvisioningVolumesAsync,,
Normal end,Seq.=xxxxxxxxxx
+{ThinProvisioningVolumes [0]{
Id="0x00:0x00:0x49",Result=Normal end}}
```

[PROV] DeleteiScsiInitiatorUser

Detailed Information

Item		Description
iScsiPort[x]		The setting information of the port
	Port	The port ID to be set
	Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end

Item	Description
	xxxx: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],DeleteiScsiInitiatorUser,,Normal end,Seq.=xxxxxxxxxx
+{iScsiPort[0]{
  Port=1A,Result=Normal end}}
```

[PROV] DeleteiScsiName

Detailed Information

Item	Description
iScsiPort[x]	The setting information of the port
Port	The port ID to be set
iScsiTarget[x]	The iSCSI target information
Id	The iSCSI target ID
RemoteiScsiName[x]	The information of the iSCSI name of the host bus adapter
Name	The iSCSI name of the host bus adapter
Result	The result of the operation Normal end: Normal end, Error(*xxxx*-*yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],DeleteiScsiName,,Normal end,Seq.=xxxxxxxxxx
+{iScsiPort[0]{
  Port=1A,
  iScsiTarget[0]{
    Id=0,
    RemoteiScsiName[0]{
      Name="Name",Result=Normal end}}}}
```

[PROV] DeleteiScsiPath

Detailed Information

Item	Description
iScsiPath[x]	The path information between the iSCSI port on the local storage system and the iSCSI target on the remote storage system
iScsiPort	The information of the iSCSI port on the local storage system
Port	The port ID
RemoteiScsiPort	The information of the iSCSI port on the remote storage system
Function	Function that uses the iSCSI path UVM: Universal Volume Manager RemoteReplication: Remote Replication
IpType	The type of the IP address IPv4: IPv4 address, IPv6: IPv6 address
IPv4Address	The IPv4 address*
IPv6Address	The IPv6 address*
RemoteiScsiTarget	The iSCSI target information
Name	The iSCSI name
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code
* "null" is output if this item is not set.	

Example

```
RMI AP,,[PROV],DeleteiScsiPath,,Normal end,Seq.=xxxxxxxxxx
+{iScsiPath[0]{
  iScsiPort{
    Port=1A},
  RemoteiScsiPort{
    Function=UVM,IpType=IPv4,Ipv4Address=192.168.0.101,
    Ipv6Address=0:0:0:0:0:0:0:0,
    RemoteiScsiTarget{
```

```
      Name="iqn.1994-04.jp.co.hitachi.h8m.t.00001.3a000"}},
  Result=Normal end}}
```

[PROV] DeleteiScsiTarget

Detailed Information

Item			Description
iScsiPort[x]			The setting information of the port
	Port		The port ID to be set
	iScsiTarget[x]		The iSCSI target information
		Id	The iSCSI target ID
		Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],DeleteiScsiTarget,,Normal end,Seq.=xxxxxxxxxx
+{iScsiPort[0]{
  Port=1A,
  iScsiTarget[0]{
    Id=0,Result=Normal end}}}
```

[PROV] DeleteLdev

DeleteLdev is output when internal or external volumes are deleted. Delete LDEVs is output when volumes of Thin Image or DP-VOLs are deleted.

Detailed Information

Item		Description
LogicalDevice[x]		The setting information of the LDEV
	ID	The LDEV ID
	ParityGroupID	The parity group ID to which the LDEV belongs "null" is output if an external volume is deleted.
	ExternalGroupID	The external volume group ID to which the LDEV belongs

Item		Description
		"null" is output if an internal volume is deleted.
	Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],DeleteLdev,,Normal end,Seq.=xxxxxxxxxx
+{LogicalDevice[0]{
  ID=0x00:0x00:0x00,ParityGroupID=1-1,ExternalGroupID=null,
  Result=Normal end}}
```

[PROV] DeleteLoginiScsiName

Detailed Information

Item		Description
iScsiPort[x]		The setting information of the port
	Port	The port ID to be set
	Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],DeleteLoginiScsiName,,Normal end,Seq.=xxxxxxxxxx
+{iScsiPort[0]{
  Port=1A,Result=Normal end}}
```

[PROV] DeleteParityGroups

Detailed Information

Item	Description
ParityGroup[x]	The setting information of the parity group

Item		Description
	ID	The parity group ID
	Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],DeleteParityGroups,,Normal end,Seq.=xxxxxxxxxx
+{ParityGroup[0]{
  ID=1-1,Result=Normal end}}
```

[PROV] DeleteRemoteChapUser

Detailed Information

Item				Description
iScsiPort[x]				The setting information of the port
	Port			The port ID to be set
	iScsiTarget[x]			The iSCSI target information
		Id		The iSCSI target ID
		RemoteiScsiUser[x]		The user information of the CHAP authentication
			ChapUserId	The user ID of the CHAP authentication
			Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],DeleteRemoteChapUser,,Normal end,Seq.=xxxxxxxxxx
+{iScsiPort[0]{
  Port=1A,
  iScsiTarget[0]{
    Id=0,
    RemoteiScsiUser[0]{
      ChapUserId="ChapUserId",Result=Normal end}}}}
```

[PROV] DeleteSlus

Detailed Information

Item			Description
Slus[x]			The setting information of the deleted LDEV with the SLU attribute
	Id		The SLU ID
	Result		The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, Not Execute: Not Executed *xxxx*: Part code, *yyyyy*: Error code
	LdevId		The LDEV ID

Example

```
RMI AP,,[PROV],DeleteSlus,,Normal end,Seq.=xxxxxxxxxx
+{Slus[0]{
  Id="60-06-0E-81-30-76-D9-30-76-D9-00-00-00-00-00-49",
  Result=Normal end,LdevId=0x00:0x00:0x49}}
```

[PROV] DeleteTargetChapUser

Detailed Information

Item			Description
iScsiPort[x]			The setting information of the port
	Port		The port ID to be set
	iScsiTarget[x]		The iSCSI target information
		Id	The iSCSI target ID
		ChapUserId	The user ID of the CHAP authentication
		Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],DeleteTargetChapUser,,Normal end,Seq.=xxxxxxxxxx
+{iScsiPort[0]{
  Port=1A,
  iScsiTarget[0]{
    Id=0,ChapUserId="ChapUserId",Result=Normal end}}}
```

[PROV] DeleteTiVolumes

Detailed Information

Item		Description
TiVolumes[x]		The setting information of the deleted secondary volume for Thin Image
	LdevId	The LDEV ID
	Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, Not Execute: Not Executed *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],DeleteTiVolumes,,Normal end,Seq.=xxxxxxxxxx
+{TiVolumes[0]{
  LdevId=0x00:0x10:0x00,Result=Normal end}}
```

[PROV] DRU Expiration Lock

Detailed Information

Parameter	Description
SYSTEM:Enable	The expiration-lock setting is enabled in the storage system
SYSTEM:Disable	The expiration-lock setting is disabled in the storage system

Example

```
RMI AP,,[PROV],DRU Expiration Lock,SYSTEM:Enable,Normal end,
Seq.=xxxxxxxxxx
```

[PROV] Edit Cmd Dev(Auth)

Detailed Information

Item	Description
LDKC:CU:LDEV	The LDKC, CU, and LDEV numbers of the logical volume where the command device authentication setting is changed
UserAuth	Indicates whether the command device authentication setting is enabled or disabled. Disable or Enable will appear.
Num. of LDEVs	The number of logical volumes where the command device authentication setting is changed

Example

```
RMI AP,Task Name,[PROV],Edit Cmd Dev(Auth),,Normal end,
Seq.=xxxxxxxxxx
+{LDKC:CU:LDEV,UserAuth}=[{0xXX:0xXX:0xXX,Disable},
{0xXX:0xXX:0xXX,Enable}],Num. of LDEVs=2
```

[PROV] Edit Cmd Dev(DevGrp)

Detailed Information

Item	Description
LDKC:CU:LDEV	The LDKC, CU, and LDEV numbers of the logical volume where the device groups setting is changed
DevGrpDef	Indicates whether the device groups setting is enabled or disabled. Disable or Enable will appear
Num. of LDEVs	The number of logical volumes where the device groups setting is changed

Example

```
RMI AP,Task Name,[PROV],Edit Cmd Dev(DevGrp),,Normal end,
Seq.=xxxxxxxxxx
+{LDKC:CU:LDEV,DevGrpDef}
=[{0xXX:0xXX:0xXX,Disable},{0xXX:0xXX:0xXX,Enable}],
Num. of LDEVs=2
```

[PROV] Edit Cmd Dev(Sec)

Detailed Information

Item	Description
LDKC:CU:LDEV	The LDKC, CU, and LDEV numbers of the logical volume where the command device security setting is changed
CommandDevSec	Indicates whether the command device security setting is enabled or disabled. Disable or Enable will appear.
Num. of LDEVs	The number of logical volumes that the command device security setting is changed

Example

```
RMI AP,Task Name,[PROV],Edit Cmd Dev(Sec),,Normal end,
Seq.=xxxxxxxxxx
+{LDKC:CU:LDEV,CommandDevSec}
=[{0xXX:0xXX:0xXX,Disable},{0xXX:0xXX:0xXX,Enable}],
Num. of LDEVs=2
```

[PROV] Edit Command Devices

Detailed Information

Item	Description
LDKC:CU:LDEV	The LDKC, CU, and LDEV numbers of the logical volume where the command device setting is changed
CommandDev	Indicates whether the command device setting is enabled or disabled. Disable or Enable will appear.
Num. of LDEVs	The number of logical volumes where the command device setting is changed

Example

```
RMI AP,Task Name,[PROV],Edit Command Devices,,Normal end,
Seq.=xxxxxxxxxx
+{LDKC:CU:LDEV,CommandDev}=[{0xXX:0xXX:0xXX,Disable},
{0xXX:0xXX:0xXX,Enable}],Num. of LDEVs=2
```

[PROV] Edit DRU Attribute

Detailed Information

Item	Description
LDKC:CU:LDEV	The LDKC, CU, and LDEV numbers of the logical volume where the attribute is set
Attribute	The set attribute in hexadecimal. Each bit (0–7) of 1 byte corresponds to the setting item. 1 is assigned to each bit when the setting is enabled and 0 (zero) is assigned to each bit when the setting is disabled. Each bit represents the following attributes: ▪ Bit 0: Mounting of LDEV (fixed to 1) ▪ Bit 1: Setting of S-VOL Disable ▪ Bit 2: Setting of Zero Read Cap mode ▪ Bit 3: Setting of Invisible mode ▪ Bit 4: Setting of reserve ▪ Bit 5: Fixed to 0 (zero)* ▪ Bit 6: Setting of Read Only attribute* ▪ Bit 7: Setting of Protect attribute* When 0x88 is output to the attribute, for example, Read/Write attribute is set to the logical volume to show that the reserve setting has been enabled. A hyphen (-) is output when a setting is not changed.
RT	The number of days set in Retention Term. A hyphen (-) is output when setting is not changed.
Result	The result of operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of LDEVs	The number of logical volumes where the attribute has been set
*When bit 5, 6, and 7 are all 0 (zero), Read/Write has been set.	

Example

```
RMI AP,,[PROV],Edit DRU Attribute,,Normal end,Seq.=xxxxxxxxxx
+{LDKC:CU:LDEV,Attribute,RT,Result}
=[{0x00:0x00:0x01,0x80,100,Normal end},
{0x00:0x00:0x02,0x82,Unlimited,Error(9605-8122)},
```

```
{0x00:0x00:0x03,0x81,200,Normal end},
{0x00:0x00:0x03,0x81,xxxx,Normal end}],
Num. of LDEVs=XXX
```

[PROV] Edit Full Allocation

Detailed Information

Item	Description
Pool ID	The pool ID associated with the virtual volume of Dynamic Provisioning
LDKC:CU:LDEV	The LDEV ID of the virtual volume of Dynamic Provisioning
Full Allocation	Indicates the setting status of the Full Allocation Enable: Full Allocation is enabled. Disable: Full Allocation is disabled.
Result	The result of operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of VOLs	The number of virtual volumes of Dynamic Provisioning whose page reservation settings were changed

Example

```
RMI AP,Task Name,[PROV],Edit Full Allocation,,Normal end,
Seq.=xxxxxxxxxx
+{Pool ID,LDKC:CU:LDEV,Full Allocation,Result}
=[{0,0x00:0x00:0x00,Enable,Normal end}],Num. of VOLs=1
```

[PROV] Edit Host

Detailed Information

Item	Description
Port	The name of the port where the host is connected
HostGrpID	The host group number on which the host with WWN or nickname of the host bus adapter being changed is registered

Item	Description
WWN	Indicates WWN of the host bus adapter before change. WWN is represented in hexadecimal
Change WWN	Indicates WWN of the host bus adapter after change
Change Nickname	The nickname of the host bus adapter after change
Num. of WWNs	The number of host bus adapters (WWN) where the settings have been changed

Example

```
RMI AP,Task Name,[PROV],Edit Host,,Normal end,Seq.=xxxxxxxxxx
+{Port,HostGrpID,WWN,Change WWN,Change Nickname}
=[{XX,0xXXX,0xXXXXXXXXXXXXXXXX,0xXXXXXXXXXXXXXXXX,
XXXXXXXXXXXXXXXX}],
Num. of WWNs=1
```

[PROV] Edit Host Grps(Mode)

Detailed Information 1: When VSP E series is used

Item	Description
Port	The name of the port to which the host group belongs.
HostGrpID	The host group number where the host group names have been changed.
Mode	The specified host mode. See the *Provisioning Guide* for the meaning of the host mode number.
Option[0:31] Option[32:63] Option[64:95] Option[96:127] Option[128:159] Option[160:191] Option[192:223] Option[224:255]	The specified host mode option. 256 host mode options from 0 to 255 are output in groups of 32 options. The following tables show the output values corresponding to the host mode options. See the *Provisioning Guide* for the meaning of the host mode options.

Item	Description
Num. of Host Groups	The number of host groups that the host mode setting is changed.

Example 1

```
RMI AP,Task Name,[PROV],Edit Host Grps(Mode),,Normal end,
Seq.=xxxxxxxxxx
+{Port,HostGrpID,Mode,Option[0:31],Option[32:63],Option[64:95],
Option[96:127],Option[128:159],Option[160:191],Option[192:223],
Option[224:255]}=
[{XX,0xXXX,0x00,0x20000000,0x00000000,0x00000000,0x00000000,0x00080000,
0x00000000,0x00000000,0x00000000},
{XX,0xXXX,0x09,0x00080000,0x00000000,0x00000000,0x00000000,0x00080000,
0x00000000,0x00000000,0x00000000}],
Num. of Host Groups=2
```

Detailed Information 2: When VSP G130, G/F350, G/F370, G/F700, G/F900 is used

Item	Description
Port	The name of the port to which the host group belongs.
HostGrpID	The host group number where the host group names have been changed.
Mode	The specified host mode. See the *Provisioning Guide* for the meaning of the host mode number.
Option[0:31] Option[32:63] Option[64:95] Option[96:127]	The specified host mode option. 128 host mode options from 0 to 127 are output in groups of 32 options. The following tables show the output values corresponding to the host mode options. See the *Provisioning Guide* for the meaning of the host mode options.
Num. of Host Groups	The number of host groups that the host mode setting is changed.

Example 2:

```
RMI AP,Task Name,[PROV],Edit Host Grps(Mode),,Normal end,
Seq.=xxxxxxxxxx
+{Port,HostGrpID,Mode,Option[0:31],Option[32:63],Option[64:95],
Option[96:127]}
=[{XX,0xXXX,0x00,0x20000000,0x00000000,0x00000000,0x00000000},
```

```
{XX,0xXXX,0x09,0x00080000,0x00000000,0x00000000,0x00000000}],
Num. of Host Groups=2
```

Host mode option and output contents of Option

Host mode option 0 to 31 and output contents of Option[0:31]

Host mode option	Value of Option[0:31]	Host mode option	Value of Option[0:31]
0	0x80000000	16	0x00008000
1	0x40000000	17	0x00004000
2	0x20000000	18	0x00002000
3	0x10000000	19	0x00001000
4	0x08000000	20	0x00000800
5	0x04000000	21	0x00000400
6	0x02000000	22	0x00000200
7	0x01000000	23	0x00000100
8	0x00800000	24	0x00000080
9	0x00400000	25	0x00000040
10	0x00200000	26	0x00000020
11	0x00100000	27	0x00000010
12	0x00080000	28	0x00000008
13	0x00040000	29	0x00000004
14	0x00020000	30	0x00000002
15	0x00010000	31	0x00000001

Host mode option 32 to 63 and output contents of Option[32:63]

Host mode option	Value of Option[32:63]	Host mode option	Value of Option[32:63]
32	0x80000000	48	0x00008000
33	0x40000000	49	0x00004000
34	0x20000000	50	0x00002000

Host mode option	Value of Option[32:63]	Host mode option	Value of Option[32:63]
35	0x10000000	51	0x00001000
36	0x08000000	52	0x00000800
37	0x04000000	53	0x00000400
38	0x02000000	54	0x00000200
39	0x01000000	55	0x00000100
40	0x00800000	56	0x00000080
41	0x00400000	57	0x00000040
42	0x00200000	58	0x00000020
43	0x00100000	59	0x00000010
44	0x00080000	60	0x00000008
45	0x00040000	61	0x00000004
46	0x00020000	62	0x00000002
47	0x00010000	63	0x00000001

Host mode option 64 to 95 and output contents of Option[64:95]

Host mode option	Value of Option[64:95]	Host mode option	Value of Option[64:95]
64	0x80000000	80	0x00008000
65	0x40000000	81	0x00004000
66	0x20000000	82	0x00002000
67	0x10000000	83	0x00001000
68	0x08000000	84	0x00000800
69	0x04000000	85	0x00000400
70	0x02000000	86	0x00000200
71	0x01000000	87	0x00000100
72	0x00800000	88	0x00000080
73	0x00400000	89	0x00000040

Host mode option	Value of Option[64:95]	Host mode option	Value of Option[64:95]
74	0x00200000	90	0x00000020
75	0x00100000	91	0x00000010
76	0x00080000	92	0x00000008
77	0x00040000	93	0x00000004
78	0x00020000	94	0x00000002
79	0x00010000	95	0x00000001

Host mode option 96 to 127 and output contents of Option[96:127]

Host mode option	Value of Option[96:127]	Host mode option	Value of Option[96:127]
96	0x80000000	112	0x00008000
97	0x40000000	113	0x00004000
98	0x20000000	114	0x00002000
99	0x10000000	115	0x00001000
100	0x08000000	116	0x00000800
101	0x04000000	117	0x00000400
102	0x02000000	118	0x00000200
103	0x01000000	119	0x00000100
104	0x00800000	120	0x00000080
105	0x00400000	121	0x00000040
106	0x00200000	122	0x00000020
107	0x00100000	123	0x00000010
108	0x00080000	124	0x00000008
109	0x00040000	125	0x00000004
110	0x00020000	126	0x00000002
111	0x00010000	127	0x00000001

Host mode option 128 to 159 and output contents of Option[128:159] (for VSP E series only)

Host mode option	Value of Option[128:159]	Host mode option	Value of Option[128:159]
128	0x80000000	144	0x00008000
129	0x40000000	145	0x00004000
130	0x20000000	146	0x00002000
131	0x10000000	147	0x00001000
132	0x08000000	148	0x00000800
133	0x04000000	149	0x00000400
134	0x02000000	150	0x00000200
135	0x01000000	151	0x00000100
136	0x00800000	152	0x00000080
137	0x00400000	153	0x00000040
138	0x00200000	154	0x00000020
139	0x00100000	155	0x00000010
140	0x00080000	156	0x00000008
141	0x00040000	157	0x00000004
142	0x00020000	158	0x00000002
143	0x00010000	159	0x00000001

Host mode option 160 to 191 and output contents of Option[160:191] (for VSP E series only)

Host mode option	Value of Option[160:191]	Host mode option	Value of Option[160:191]
160	0x80000000	176	0x00008000
161	0x40000000	177	0x00004000
162	0x20000000	178	0x00002000
163	0x10000000	179	0x00001000
164	0x08000000	180	0x00000800

Host mode option	Value of Option[160:191]	Host mode option	Value of Option[160:191]
165	0x04000000	181	0x00000400
166	0x02000000	182	0x00000200
167	0x01000000	183	0x00000100
168	0x00800000	184	0x00000080
169	0x00400000	185	0x00000040
170	0x00200000	186	0x00000020
171	0x00100000	187	0x00000010
172	0x00080000	188	0x00000008
173	0x00040000	189	0x00000004
174	0x00020000	190	0x00000002
175	0x00010000	191	0x00000001

Host mode option 192 to 223 and output contents of Option[192:223] (for VSP E series only)

Host mode option	Value of Option[192:223]	Host mode option	Value of Option[192:223]
192	0x80000000	208	0x00008000
193	0x40000000	209	0x00004000
194	0x20000000	210	0x00002000
195	0x10000000	211	0x00001000
196	0x08000000	212	0x00000800
197	0x04000000	213	0x00000400
198	0x02000000	214	0x00000200
199	0x01000000	215	0x00000100
200	0x00800000	216	0x00000080
201	0x00400000	217	0x00000040
202	0x00200000	218	0x00000020
203	0x00100000	219	0x00000010

Host mode option	Value of Option[192:223]	Host mode option	Value of Option[192:223]
204	0x00080000	220	0x00000008
205	0x00040000	221	0x00000004
206	0x00020000	222	0x00000002
207	0x00010000	223	0x00000001

Host mode option 224 to 255 and output contents of Option[224:255] (for VSP E series only)

Host mode option	Value of Option[224:255]	Host mode option	Value of Option[224:255]
224	0x80000000	240	0x00008000
225	0x40000000	241	0x00004000
226	0x20000000	242	0x00002000
227	0x10000000	243	0x00001000
228	0x08000000	244	0x00000800
229	0x04000000	245	0x00000400
230	0x02000000	246	0x00000200
231	0x01000000	247	0x00000100
232	0x00800000	248	0x00000080
233	0x00400000	249	0x00000040
234	0x00200000	250	0x00000020
235	0x00100000	251	0x00000010
236	0x00080000	252	0x00000008
237	0x00040000	253	0x00000004
238	0x00020000	254	0x00000002
239	0x00010000	255	0x00000001

When more than one option is set, a logical sum of their values is output. For example, if 0x200C0000 is output to Option[0:31], it means the host mode options [2], [12], and [13] are set.

[PROV] Edit Host Grps(Name)

Detailed Information

Item	Description
Port	The name of the port to which the host group belongs
HostGrpID	The host group number where the host group names have been changed
HostGrpName	The name of the host group. If the name is changed, the name after change is indicated
Num. of Host Groups	The number of host groups where the settings have been changed

Example

```
RMI AP,Task Name,[PROV],Edit Host Grps(Name),,Normal end,
Seq.=xxxxxxxxxx
+{Port,HostGrpID,HostGrpName}
=[{XX,0xXXX,XXXXXXXXXXXXXXXX},{XX,0xXXX,XXXXXXXXXXXXXXXX}],
Num. of Host Groups=2
```

[PROV] Edit LDEVs(tier)

Detailed Information

Item	Description
Pool ID	The pool number of the edited LDEV
LDKC:CU:LDEV	The LDKC number, CU number and the LDEV number of the edited volume
Tier Relocation	Indicates whether the tier relocation is enabled or disabled. Enable: Enabled, Disable: Disabled
Num. of LDEVs	The number of edited LDEVs

Example

```
RMI AP,Task Name,[PROV],Edit LDEVs(tier),,Normal end,
Seq.=xxxxxxxxxx
+{Pool ID,LDKC:CU:LDEV,Tier Relocation}
=[{1,0x00:0x01:0x0F,Disable}],Num. of LDEVs = 1
```

[PROV] Edit External LDEV Tier Rank

Detailed Information

Item	Description
Pool ID	The number of the pool where the edited pool volumes are assigned
Pool Result	The result of editing pool volumes per pool Normal end: Normal end Error(*xxxx-yyyyy*): Abnormal end Not Execute: Not executed where *xxxx*: Part code, *yyyyy*: Error code
Num. of Pools	The number of pools whose pool volumes are edited
LDKC:CU:LDEV	The LDKC, CU, and LDEV numbers of the edited pool volume
External LDEV Tier Rank	The external LDEV tier rank of the edited pool volume High: An external volume (High) Middle/Internal: An external volume (Middle) or an internal volume Low: An external volume (Low)
LDEV Result	The result of editing pool volumes per pool volume Normal end: Normal end Error(*xxxx-yyyyy*): Abnormal end Not Execute: Not executed where *xxxx*: Part code, *yyyyy*: Error code
Num. of LDEVs	The number of edited pool volumes

Example

```
RMI AP,Task Name,[PROV],Edit External LDEV Tier Rank,,Normal end,
Seq.=xxxxxxxxxx
+{Pool ID,Pool Result}=[{1,Normal end}],Num. of Pools=1
++{LDKC:CU:LDEV,External LDEV Tier Rank,LDEV Result}
=[{0x00:0x00:0x00,Middle/Internal,Normal end},
{0x00:0x00:0x01,Middle/Internal,Normal end},
{0x00:0x00:0x02,Middle/Internal,Normal end}],Num. of LDEVs=3
```

[PROV] Edit MP Units

Detailed Information

Item	Description
DKC	The DKC number
MP Unit ID	The MP Unit number in the DKC module
Auto Assignment	Indicates whether the auto assignment setting is enabled or disabled. Enable or Disable will appear
Result	The result of operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of MP Units	The number of specified MP Units

Example

```
RMI AP,Task Name,[PROV],Edit MP Units,,Normal end,
Seq.=xxxxxxxxxx
+{DKC,MP Unit ID,Auto Assignment,Result}
=[{0,00,Enable,Normal end}],Num. of MP Units=1
```

[PROV] Edit Ports(Address)

Detailed Information

Item	Description
Port	The name of the port that the address has been changed
Fibre Addr.	The address of Fibre Channel port after change using the number from 1 to 126. See the following table for relation of number and Fibre Channel port address.
Num. of Ports	The number of ports where address has been changed

Addresses of Fibre Channel Port

Value	Address*	Value	Address*	Value	Address*	Value	Address*
1	EF (0)	33	B2 (32)	65	72 (64)	97	3A (96)
2	E8 (1)	34	B1 (33)	66	71 (65)	98	39 (97)
3	E4 (2)	35	AE (34)	67	6E (66)	99	36 (98)
4	E2 (3)	36	AD (35)	68	6D (67)	100	35 (99)
5	E1 (4)	37	AC (36)	69	6C (68)	101	34 (100)
6	E0 (5)	38	AB (37)	70	6B (69)	102	33 (101)
7	DC (6)	39	AA (38)	71	6A (70)	103	32 (102)
8	DA (7)	40	A9 (39)	72	69 (71)	104	31 (103)
9	D9 (8)	41	A7 (40)	73	67 (72)	105	2E (104)
10	D6 (9)	42	A6 (41)	74	66 (73)	106	2D (105)
11	D5 (10)	43	A5 (42)	75	65 (74)	107	2C (106)
12	D4 (11)	44	A3 (43)	76	63 (75)	108	2B (107)
13	D3 (12)	45	9F (44)	77	5C (76)	109	2A (108)
14	D2 (13)	46	9E (45)	78	5A (77)	110	29 (109)
15	D1 (14)	47	9D (46)	79	59 (78)	111	27 (110)
16	CE (15)	48	9B (47)	80	56 (79)	112	26 (111)
17	CD (16)	49	98 (48)	81	55 (80)	113	25 (112)
18	CC (17)	50	97 (49)	82	54 (81)	114	23 (113)
19	CB (18)	51	90 (50)	83	53 (82)	115	1F (114)
20	CA (19)	52	8F (51)	84	52 (83)	116	1E (115)
21	C9 (20)	53	88 (52)	85	51 (84)	117	1D (116)
22	C7 (21)	54	84 (53)	86	4E (85)	118	1B (117)
23	C6 (22)	55	82 (54)	87	4D (86)	119	18 (118)
24	C5 (23)	56	81 (55)	88	4C (87)	120	17 (119)
25	C3 (24)	57	80 (56)	89	4B (88)	121	10 (120)
26	BC (25)	58	7C (57)	90	4A (89)	122	0F (121)
27	BA (26)	59	7A (58)	91	49 (90)	123	08 (122)

Value	Address*	Value	Address*	Value	Address*	Value	Address*
28	B9 (27)	60	79 (59)	92	47 (91)	124	04 (123)
29	B6 (28)	61	76 (60)	93	46 (92)	125	02 (124)
30	B5 (29)	62	75 (61)	94	45 (93)	126	01 (125)
31	B4 (30)	63	74 (62)	95	43 (94)	-	-
32	B3 (31)	64	73 (63)	96	3C (95)	-	-
* Addresses outside parentheses indicate arbitrated-loop physical address (AL-PA). Addresses in parentheses indicate loop IDs.							

Example

```
RMI AP,Task Name,[PROV],Edit Ports(Address),,Normal end,
Seq.=xxxxxxxxxx
+{Port,Fibre Addr.}=[{XX,1},{XX,126}],Num. of Ports=2
```

[PROV] Edit Ports(Security)

Detailed Information

Item	Description
Port	The name of the port where the LUN security setting is changed
Switch	Indicates whether the LUN security setting is enabled or disabled. Disable or Enable is output
Num. of Ports	The number of ports where the LUN security setting is changed

Example

```
RMI AP,Task Name,[PROV],Edit Ports(Security),,Normal end,
Seq.=xxxxxxxxxx
+{Port,Switch}=[{XX,Disable},{XX,Enable}],Num. of Ports=2
```

[PROV] Edit Ports(Speed)

Detailed Information

Item	Description
Port	The name of the port that the channel speed is set
Speed(Gbps)	The channel speed set 1: 1 Gbps, 2: 2 Gbps, 4: 4 Gbps, 8: 8 Gbps, Auto: Auto mode
Num. of Ports	The number of ports where the channel speed is set

Example

```
RMI AP,Task Name,[PROV],Edit Ports(Speed),,Normal end,
Seq.=xxxxxxxxxx
+{Port,Speed(Gbps)}=[{XX,1},{XX,2},{XX,Auto},{XX,4}],
Num. of Ports=4
```

[PROV] Edit Ports(Topology)

Detailed Information

Item	Description
Port	The name of the port where the topology of Fibre Channel is changed.
Fabric	Indicates whether the Fabric switch is enabled or disabled. Disable or Enable is output.
Connection	The connecting mode of the Fabric switch selected. FC-AL: FC-AL is selected, P-to-P: P-to-P is selected
Num. of Ports	The number of ports where the topology of Fibre Channel is changed

Example

```
RMI AP,Task Name,[PROV],Edit Ports(Topology),,Normal end,
Seq.=xxxxxxxxxx
+{Port,Fabric,Connection}=[{XX,Enable,FC-AL},{XX,Disable,FC-AL},
{XX,Enable,P-to-P},{XX,Disable,P-to-P}],Num. of Ports=4
```

[PROV] Edit Resource Grp

Detailed Information

Item	Description
VDKC-Box ID	The number of the VDKC-Box to which the configured resource group belongs
Resource Group ID	The number of the configured resource group
Resource Group Name	The contents of the setting for the changed resource group name
Result	The result of operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Resource Groups	The number of resource groups that operated the setting

Example

```
RMI AP,Task Name,[PROV],Edit Resource Grp,,Normal end,
Seq.=xxxxxxxxxx
+{VDKC-Box ID,Resource Group ID,Resource Group Name,Result}
=[{0,1,RSG1,Normal end}],Num. of Resource Groups=1
```

[PROV] Edit Tiering Policy

Detailed Information

Item	Description
Tiering Policy ID	The tiering policy ID
Tiering Policy Name	The tiering policy name This is output when a tiering policy name is set.
Tier1 Max(%)	The upper limit threshold value for the Tier1 The threshold value is displayed in the range 0 to 100. The unit is percent (%). This is output when an upper limit threshold value for the Tier1 is set.

Item	Description
Tier1 Min(%)	The lower limit threshold value for the Tier1 The threshold value is displayed in the range 0 to 100. The unit is percent (%). This is output when a lower limit threshold value for the Tier1 is set.
Tier3 Max(%)	The upper limit threshold value for the Tier3 The threshold value is displayed in the range 0 to 100. The unit is percent (%). This is output when an upper limit threshold value for the Tier3 is set.
Tier3 Min(%)	The lower limit threshold value for the Tier3 The threshold value is displayed in the range 0 to 100. The unit is percent (%). This is output when a lower limit threshold value for the Tier3 is set.
Result	The result of operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, Not Execute: Not Executed where *xxxx*: Part code, *yyyyy*: Error code
Num. of Policies	The number of tiering policies that was set

Example

```
RMI AP,Task Name,[PROV],Edit Tiering Policy,,Normal end,
Seq.=xxxxxxxxxx
+{Tiering Policy ID,Tiering Policy Name,Tier1 Max(%),
Tier1 Min(%),Tier3 Max(%),Tier3 Min(%),Result}
=[{6,SamplePolicy,90,10,90,10,Normal end}],Num. of Policies=1
```

[PROV] Edit V-VOL Option

Detailed Information

Item	Description
Pool ID	The pool ID of a pool associated with the V-VOL for Dynamic Provisioning to which Tiering policy is set

Item	Description
LDKC:CU:LDEV	The LDKC number, CU number, and LDEV number of the V-VOL for Dynamic Provisioning
Tiering Policy ID	The Tiering Policy ID This is output when the tiering policy is set.
New Page Assignment Tier	The new page assignment tier Middle: A middle performance tier, High: A high performance tier, Low: A low performance tier This is output when the new page assignment tier is set.
Relocation Priority	The relocation priority information Default: Normal, Prioritize: Prioritized This is output when the relocation priority information is set.
Result	The result of the operation. Normal end: Normal end, Error(*xxxx*-*yyyyy*): Abnormal end, Not Execute: Not Executed *xxxx*: Part code, *yyyyy*: Error code
Num. of VOLs	The number of operated V-VOLs for Dynamic Provisioning

Example

```
RMI AP,Task Name,[PROV],Edit V-VOL Option,,Normal end,
Seq.=xxxxxxxxxx
+{Pool ID,LDKC:CU:LDEV,Tiering Policy ID,
New Page Assignment Tier,Relocation Priority,Result}
=[{0,0x00:0x00:0x00,1,Middle,Default,Normal end}],
Num. of VOLs=1
```

[PROV] Edit/Delete Pools

Detailed Information

Item	Description
Command	The operation on the pool Change: Changing pool information about the threshold and the subscription limit Change Tier: Changing information about Dynamic Tiering

Item	Description
	Delete: Delete pool
Pool ID	The pool ID of the pool where the settings have been changed or the number of the pool that have been deleted
Pool Type	The pool type Dynamic Provisioning: Dynamic Provisioning, Thin Image: Thin Image
Multi Tier Pool	The setting status of the multi-tier mode and active flash function for the pool Enable(Active Flash): Both Dynamic Tiering and active flash are enabled. Enable: Dynamic Tiering is enabled and active flash is disabled. Disable: Both Dynamic Tiering and active flash are disabled. This item is output only when "Command" is "Change Tier". If Pool Type is Thin Image, a hyphen (-) is output.
Warning Threshold(%)	The warning threshold of the usage rate of the pool in percent (%). This item is output only when "Command" is "Change".
Depletion Threshold(%)	The depletion threshold of the usage rate of the pool in percent (%). If the depletion threshold is not specified, this percentage is not output. This item is output only when "Command" is "Change". If Pool Type is Thin Image, or if the depletion threshold is not specified, a hyphen (-) is output.
Subscription Limit(%)	The reserve amount of the pool where the setting was changed. The unit is percent (%). If the reserve amount is not specified, it outputs "Unlimited". This item is output only when "Command" is "Change". If Pool Type is Thin Image, a hyphen (-) is output.
Protect V-VOLs when I/O fails to Blocked Pool VOL	Indicates whether the setting of the protect access attribute on the virtual volume is enabled or disabled when the pool is blocked. Yes: Enabled, No: Disabled This item is output only when "Command" is "Change". If the pool type is not Dynamic Provisioning, a hyphen (-) is output.
Protect V-VOLs when I/O fails to Full Pool	Indicates whether the setting of the protect access attribute on the virtual volume is enabled or disabled when the pool is full. Yes: Enabled, No: Disabled

Item	Description
	This item is output only when "Command" is "Change". If the pool type is not Dynamic Provisioning, a hyphen (-) is output.
Tier Management	The auto control mode of the created or expanded pool. Auto: Auto, Manual: Manual This item is output only when "Command" is "Change Tier". If Multi Tier Pool is anything other than Enable, a hyphen (-) is output.
Cycle Time	The cycle of performance monitoring for the pool. 0.5: every thirty minutes, 1: every one hour, 2: every two hours, 4: every four hours, 8: every eight hours, 24: every twenty-four hours This item is output only when "Command" is "Change Tier". If Tier Management is anything other than Auto, a hyphen (-) is output.
Monitoring Period	The monitoring period of the pool. Format: "H1:M1-H2:M2" H1: The time when the monitoring starts (hour) M1: The time when the monitoring starts (minute) H2: The time when the monitoring ends (hour) M2: The time when the monitoring ends (minute). This item is output only when "Command" is "Change Tier". If Cycle Time is anything other than 24, a hyphen (-) is output.
Monitoring Mode	The monitoring mode Continuous Mode: Continuous mode, Period Mode: Period mode This item is output only when "Command" is "Change Tier". If Multi Tier Pool is anything other than Enable, a hyphen (-) is output.
Data Direct Mapping	Indicates the setting status of Data Direct Mapping Enable: Data Direct Mapping is enabled. Disable: Data Direct Mapping is disabled. This item is output only when "Command" is "Change".
Suspend TI pairs when depletion threshold is exceeded	Indicates the setting status of Suspend Thin Image pairs when depletion threshold is exceeded Yes: Suspend Thin Image pairs is enabled when the depletion threshold is exceeded. No: Suspend Thin Image pairs is disabled even if the depletion threshold is exceeded. This item is output only when "Command" is "Change".

Item	Description
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, Not Execute: Not Executed *xxxx*: Part code, *yyyyy*: Error code
Num. of Pools	The number of pools where the settings have been changed or the number of pools that have been deleted
Tier	The tier number This item is output only when the "Command" is "Change Tier".
Buffer Space for New page assignment(%)	The capacity rate of buffer space for new page assignment The unit is percent (%) This item is output only when the "Command" is "Change Tier".
Buffer Space for Tier relocation(%)	The capacity rate of buffer space for Tier relocation The unit is percent (%) This item is output only when the "Command" is "Change Tier".
Tier Result	The result of Tier operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, Not Execute: Not Executed where *xxxx*: Part code, *yyyyy*: Error code This item is output only when the "Command" is "Change Tier".
Num. of Tiers	The number of Tiers for the created pools This item is output only when the "Command" is "Change Tier".

Example

```
RMI AP,Task Name,[PROV],Edit/Delete Pools,,Normal end,
Seq.=xxxxxxxxxx
+{Command,Pool ID,Pool Type,Multi Tier Pool,Tier Management,
Cycle Time,Monitoring Period,Monitoring Mode,Result}
=[{Change Tier,1,Dynamic Provisioning,Enable,Auto,24,
10:00-11:00,Continuous Mode,Normal End}],Num. of Pool=1
++{Tier,Buffer Space for New page assignment(%),
Buffer Space for Tier relocation(%),Tier Result}
=[{1,10,10,Normal end},{2,20,20,Normal end}],Num. of Tiers=2
```

[PROV] Edit/Delete UUIDs

Detailed Information

Item	Description
LDKC:CU:LDEV	The LDKC number, CU number, and LDEV number
UUID	The configured UUID. There is no output if the UUID was deleted.
Num. of UUIDs	The number of UUIDs configured

Example

```
RMI AP,Task Name,[PROV],Edit/Delete UUIDs,,Normal end,
Seq.=xxxxxxxxxx
+{LDKC:CU:LDEV,UUID}
=[{0xXX:0xXX:0xXX,abcdefg},{0xXX:0xXX:0xXX,12345},
{0xXX:0xXX:0xXX,}],Num. of UUIDs=3
```

[PROV] EditiScsiInitiatorUser

Detailed Information

Item			Description
iScsiPort[x]			The setting information of the port
	Port		The port ID
	iScsiInitiator		The iSCSI initiator information
		iScsiUser	The authentication information
		UserId	The CHAP user name "null" is output if this item is not set or changed.
	Result		The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],EditiScsiInitiatorUser,,Normal end,Seq.=xxxxxxxxxx
+{iScsiPort[0]{
  Port=1A,
  iScsiInitiator{
```

```
    iScsiUser{
      UserId="CHAPUser"}},
  Result=Normal end}}
```

[PROV] EditiScsiName

Detailed Information

Item			Description
iScsiPort[x]			The setting information of the port
	Port		The port ID to be set
	RemoteiScsiName[x]		The information of the iSCSI name of the host bus adapter
		Name	The iSCSI name of the host bus adapter before change
		ChangeName	The iSCSI name of the host bus adapter after change
		Result	The result of the operation. Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],EditiScsiName,,Normal end,Seq.=xxxxxxxxxx
+{iScsiPort[0]{
  Port=1A,
  RemoteiScsiName[0]{
    Name="Name",ChangeName="ChangeName",Result=Normal end}}}
```

[PROV] EditiScsiNickName

Detailed Information

Item			Description
iScsiPort[x]			The setting information of the port
	Port		The port ID to be set
	RemoteiScsiName[x]		The information of the iSCSI name of the host bus adapter
		Name	The iSCSI name of the host bus adapter
		NickName	The host name (nick name) after change

Item	Description
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],EditiScsiNickName,,Normal end,Seq.=xxxxxxxxxx
+{iScsiPort[0]{
  Port=1A,
  RemoteiScsiName[0]{
    Name="iScsiName",NickName="NickName",Result=Normal end}}}
```

[PROV] EditiScsiTarget

Detailed Information

Item	Description
iScsiPort[x]	The setting information of the port
Port	The port ID to be set
iScsiTarget[x]	The iSCSI target information
Id	The iSCSI target ID
Name	The iSCSI target name*
Alias	The iSCSI target alias*
UserAuthSwitch	The setting status of the CHAP user authentication* Enable: Enabled, Disable: Disabled, UseHostSetting: Using host settings
AuthMode	The authentication mode* Unidirectional: One-way, Mutual: Two-way
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code
* "null" is output if this item is not set or changed.	

Example

```
RMI AP,,[PROV],EditiScsiTarget,,Normal end,Seq.=xxxxxxxxxx
+{iScsiPort[0]{
  Port=1A,
  iScsiTarget[0]{
    Id=0,Name="Name",Alias="Alias",UserAuthSwitch=Enable,
    AuthMode=Unidirectional,Result=Normal end}}}
```

[PROV] EditiSNS

Detailed Information

Item			Description
iScsiPort[x]			The setting information of the port
	Port		The port ID to be set
	iSnsServer		The iSNS server information
		Enabled	Indicates whether the iSNS server is used. true: iSNS server is used. false: iSNS server is not used.
		IpType	The IP type (IPv4 or IPv6) of the iSNS server*
		IPv4Address	The IPv4 address of the iSNS server*
		IPv6Address	The IPv6 address of the iSNS server*
		TcpPortNumber	The TCP port number*
	Result		The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code
* "null" is output if this item is not set or changed.			

Example

```
RMI AP,,[PROV],EditiSNS,,Normal end,Seq.=xxxxxxxxxx
+{iScsiPort[0]{
  Port=1A,
  iSnsServer{
    Enabled=true,IpType=IPv4,IPv4Address=192.168.10.2,
    IPv6Address=null,TcpPortNumber=3205},
  Result=Normal end}}
```

[PROV] EditPortInfo

Detailed Information

Item	Description
iScsiPort[x]	The setting information of the port
Port	The port ID to be set
IPv4	The setting information of IPv4
IpAddress	The IP address of IPv4*
SubNetMask	The subnet mask of IPv4*
DefaultGateway	The IP address of the default gateway of IPv4*
IPv6	The setting information of IPv6
Available	The setting status of IPv6 Mode* true: Enabled, false: Disabled
LinkLocalAddress	The setting information of the local link address of IPv6
AutoMode	The setting status of the local link address of IPv6* true: Automatic, false: Manual
ManualAddress	The local link address set manually*
GlobalAddress	The setting information of the global address and the global address 2 of IPv6
AutoMode	The setting status of the global address and the global address 2 of IPv6* true: Automatic, false: Manual
ManualAddress	The global address set manually*
GlobalAddress2	The setting information of the global address 2 of IPv6
ManualAddress	The global address 2 set manually*
DefaultGateway	The setting information of the default gateway of IPv6
AssignedAddress	The address of the default gateway of IPv6*
TcpPortNumber	The TCP port number*
SelectiveAck	The setting status of the selective ACK* true: Enabled, false: Disabled
DelayedAck	The setting status of the delayed ACK*

Item			Description
			true: Enabled, false: Disabled
	TcpWindowSize(KB)		The window size of TCP*
	EthernetMtuSize		The information of the Ethernet MTU (Maximum Transmission Unit)
		Mtu(byte)	The size of the Ethernet MTU*
	Vlan		The information of the VLAN
		AvailableTagging	The setting status of the VLAN tagging mode* true: Enabled, false: Disabled
		RemovalId	The removed VLAN ID*
		AdditionId	The added VLAN ID*
KeepAliveTimer(second)			The setting value of the Keep Alive timer*
Result			The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code
* "null" is output if this item is not set or changed.			

Example

```
RMI AP,,[PROV],EditPortInfo,,Normal end,Seq.=xxxxxxxxxx
+{iScsiPort[0]{
  Port=1A,
  IPv4{
    IpAddress=192.168.0.100,SubNetMask=255.255.255.0,
    DefaultGateway=0.0.0.0},
  IPv6{
    Available=true,
    LinkLocalAddress{
      AutoMode=true,ManualAddress=FE80:0:0:0:0:0:0:0},
    GlobalAddress{
      AutoMode=true,ManualAddress=0:0:0:0:0:0:0:0},
    GlobalAddress2{
```

```
      ManualAddress=0:0:0:0:0:0:0:0},
    DefaultGateway{
      AssignedAddress=0:0:0:0:0:0:0:0}},
  TcpPortNumber=3260,SelectiveAck=true,DelayedAck=true,
  TcpWindowSize(KB)=64,
  EthernetMtuSize{
    Mtu(byte)=1500},
  Vlan{
    AvailableTagging=true,RemovalId=1,AdditionId=2},
  KeepAliveTimer(second)=60,Result=Normal end}}
```

[PROV] EditRemoteChapUser

Detailed Information

Item			Description
iScsiPort[x]			The setting information of the port
	Port		The port ID to be set
	RemoteiScsiUser[x]		The user information of the CHAP authentication
		ChapUserId	The user ID of the CHAP authentication before change
		ChangeChapUserId	The user ID of the CHAP authentication after change "null" is output if this item is not set or changed.
		Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],EditRemoteChapUser,,Normal end,Seq.=xxxxxxxxxx
+{iScsiPort[0]{
  Port=1A,
  RemoteiScsiUser[0]{
    ChapUserId="ChapUserId",ChangeChapUserId="ChangeChapUserId",
    Result=Normal end}}}
```

[PROV] EditRemoteTargetUser

Item	Description
ConnectionTest	Indicates whether to perform the connection test after editing iSCSI paths true: Test is performed. false: Test is not performed.
iScsiPath[x]	The path information between the iSCSI port on the local storage system and the iSCSI target on the remote storage system
iScsiPort	The information of the iSCSI port on the local storage system
Port	The Port ID
RemoteiScsiPort	The information of the iSCSI port on the remote storage system
IpType	The type of the IP address IPv4: IPv4 address, IPv6: IPv6 address
IPv4Address	The IPv4 address*
IPv6Address	The IPv6 address*
TcpPortNumber	The TCP port number
RemoteiScsiTarget	The iSCSI target information
Name	The iSCSI name
iScsiUser	The authentication information
AuthSwitch	Indicates whether the CHAP authentication method is enabled or disabled* None: CHAP is disabled. CHAP: CHAP is enabled.
AuthMode	Indicates the CHAP authentication mode* Unidirectional: CHAP is one-way. Mutual: CHAP is two-way.
UserId	The CHAP user name*
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end

Item		Description
		xxxx: Part code, *yyyyy*: Error code
* "null" is output if this item is not set or changed.		

Example

```
RMI AP,,[PROV],EditRemoteTargetUser,,Normal end,Seq.=xxxxxxxxxx
+{ConnectionTest=true,
iScsiPath[0]{
  iScsiPort{
    Port=1A},
  RemoteiScsiPort{
    IpType=IPv4,Ipv4Address=192.168.0.101,
    Ipv6Address=0:0:0:0:0:0:0:0,TcpPortNumber=3260,
    RemoteiScsiTarget{
      Name="iqn.1994-04.jp.co.hitachi.h8m.t.00001.3a000",
      iScsiUser{
        AuthSwitch=None,AuthMode=Unidirectional,UserId="CHAPUser"}}},
  Result=Normal end}}
```

[PROV] EditT10piMode

Detailed Information

Item		Description
Port[x]		The setting information of the T10 PI mode on the port
	Port	The ID of a port representing ports that share the T10 PI mode
	T10pi	The setting status of the T10 PI mode true: Enabled, false: Disabled "null" is output if this item is not set or changed.
	Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,Task Name,[PROV],EditT10piMode,,Normal end,Seq.=xxxxxxxxxx
+{Port[0]{
  Port=1A,T10pi=true,Result=Normal end}}
```

[PROV] EditTargetChapUser

Detailed Information

Item			Description
iScsiPort[x]			The setting information of the port
	Port		The port ID to be set
	iScsiTarget[x]		The iSCSI target information
		Id	The iSCSI target ID
		ChapUserId	The user ID of the CHAP authentication
		Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],EditTargetChapUser,,Normal end,Seq.=xxxxxxxxxx
+{iScsiPort[0]{
  Port=1A,
  iScsiTarget[0]{
    Id=0,ChapUserId="ChapUserId",Result=Normal end}}}
```

[PROV] ExecBindingOperation

Detailed Information

Item		Description
BindingOperations[x]		The setting information when an LDEV with the SLU attribute is bound to the LDEV with the ALU attribute or when an LDEV with the SLU attribute is unbounded from the LDEV with the ALU attribute Binding can be operated from hosts associated with vSphere. Unbinding can be operated from hosts associated with vSphere or Device Manager - Storage Navigator.
	Operation	Type of operations Bind: Bind mode, Unbind: Unbind mode
	Port	The port number of the LUN path set to the LDEV with the ALU attribute

Item	Description
HostGroup	The host group number of the LUN path set to the LDEV with the ALU attribute
Lun	The LUN ID of the LUN path set to the LDEV with the ALU attribute
Alu	The setting information of the LDEV with the ALU attribute
Id	The ALU ID
Ldev	The setting information of the LDEV
Id	The LDEV ID
Slu	The setting information of the LDEV with the SLU attribute
Id	The SLU ID
Ldev	The setting information of the LDEV
Id	The LDEV ID
SecondaryId	The secondary ID
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, Not Execute: Not Executed *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],ExecBindingOperation,,Normal end,
Seq.=xxxxxxxxxx
+{BindingOperations[0]{
  Operation=Bind,Port=1A,HostGroup=0,Lun=0,
  Alu{
    Id="60-06-0E-81-30-00-32-30-00-32-00-00-00-00-00-01",
    Ldev{
      Id=0x00:0x00:0x01}},
  Slu{
    Id="60-06-0E-81-30-00-32-30-00-32-00-00-00-00-00-02",
    Ldev{
      Id=0x00:0x00:0x02},
    SecondaryId="E2-00-00-00-02-00"},
  Result=Normal end}}
```

[PROV] Expand V-VOLs

Detailed Information

Item	Description
LDKC:CU:LDEV	The LDKC number, the CU number, and the LDEV number of the V-VOL
Pool ID	The pool ID of the pool corresponding to the expanded V-VOL
Capacity	The capacity of the V-VOL after expanding in LBAs
Num. of VOLs	The number of expanded V-VOLs

Example

```
RMI AP,Task Name,[PROV],Expand V-VOLs,,Normal end,
Seq.=xxxxxxxxxx
+{LDKC:CU:LDEV,Pool ID,Capacity}
=[{0x00:0x00:0x00,0,80},{0x00:0x00:0x01,1,90},
{0x00:0x00:0x02,2,100}],Num. of VOLs = 3
```

[PROV] ExpandSlus

Detailed Information

Item		Description
Slus[x]		The setting information of the LDEV with the SLU attribute whose capacity is increased
	Id	The SLU ID
	PoolId	The number of an associated pool
	Capacity	The capacity after it is increased
	Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, Not Execute: Not Executed *xxxx*: Part code, *yyyyy*: Error code
	LdevId	The LDEV ID

Example

```
RMI AP,,[PROV],ExpandSlus,,Normal end,Seq.=xxxxxxxxxx
+{Slus[0]{
  Id="60-06-0E-81-30-76-D9-30-76-D9-00-00-00-00-15-01",PoolId=2,
  Capacity=96158,Result=Normal end,LdevId=0x00:0x15:0x01}}
```

[PROV] Format LDEVs

The logged information indicates that the Format operation was only requested but not completed.

Detailed Information

Item	Description
LDKC:CU:LDEV	The LDKC number, the CU number, and the LDEV number
Num. of LDEVs	The number of LDEVs to be formatted.

Example

```
RMI AP,Task Name,[PROV],Format LDEVs,,Normal end,
Seq.=xxxxxxxxxx
+LDKC:CU:LDEV=[0x00:0x00:0x01,0x00:0x00:0x02,0x00:0x00:0x03,
0x00:0x00:0x04,0x00:0x00:0x05,0x00:0x00:0x06,0x00:0x00:0x07,
0x00:0x00:0x08,0x00:0x00:0x09,0x00:0x00:0x0A],
Num. of LDEVs=10
```

[PROV] Format LDEVs(Q)

The logged information indicates that the Quick Format operation was only requested but not completed.

Detailed Information

Item	Description
LDKC:CU:LDEV	The LDKC number, the CU number, and the LDEV number
Num. of LDEVs	The number of LDEVs to be formatted

Example

```
RMI AP,Task Name,[PROV],Format LDEVs(Q),,Normal end,
Seq.=xxxxxxxxxx
+LDKC:CU:LDEV=[0x00:0x00:0x01,0x00:0x00:0x02,
```

```
0x00:0x00:0x03,0x00:0x00:0x04,0x00:0x00:0x05,
0x00:0x00:0x06,0x00:0x00:0x07,0x00:0x00:0x08,
0x00:0x00:0x09,0x00:0x00:0x0A],Num. of LDEVs=10
```

[PROV] InitializeDuplicatedData

Detailed Information

Item		Description
Pool		Indicates the information of the pool that initialized duplicated data
	ID	The pool number

Example

```
RMI AP,,[PROV], InitializeDuplicatedData,,Normal end,Seq.=xxxxxxxxxx
+{Pool{Id=0}}
```

[PROV] Initialize Pools

Example

```
RMI AP,Task Name,[PROV],Initialize Pools,,Normal end,
Seq.=xxxxxxxxxx
```

[PROV] LDEV Name

Detailed Information

Item	Description
LDKC:CU:LDEV	The LDKC number, the CU number, and the LDEV number
Name	The character string of a LDEV nickname
Result	The result of operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, Not Execute: Not Executed where *xxxx*: Part code, *yyyyy*: Error code
Num. of LDEVs	The number of specified LDEVs

Example

```
RMI AP,Task Name,[PROV],LDEV Name,,Normal end,
Seq.=xxxxxxxxxx
+{LDKC:CU:LDEV,Name,Result}
=[{0x00:0x00:0x00,nickname_0000,Normal end},
{0x00:0x80:0xFF,$%0x0080,Normal end}],Num. of LDEVs=2
```

[PROV] LdevForceRestore

Detailed Information

Item	Description
LogicalDevice[x]	The information of the LDEV that is forcibly restored
ID	The ID of the LDEV

Example

```
RMI AP,,[PROV],LdevForceRestore,,Normal end,Seq.=xxxxxxxxxx
+{LogicalDevice[0]{
  ID=0x00:0x00:0x00}}
```

[PROV] MapSecondaryVolumeWithSlu

Detailed Information

Item	Description
TiPairs[x]	The setting information of Thin Image pairs whose secondary volume is mapped
SnapshotSlu	The SLU information
Id	The SLU ID
SecondaryVolume	The information of the secondary volume
Ldev	The LDEV information
Id	The LDEV ID
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],MapSecondaryVolumeWithSlu,,Normal end,
Seq.=xxxxxxxxxx
+{TiPairs[0]{
  SnapshotSlu{
    Id="60-06-0E-81-30-00-32-30-00-32-00-00-80-00-00-00"},
  SecondaryVolume{
    Ldev{
      Id=0x00:0x00:0x06}},
  Result=Normal end}}
```

[PROV] Monitor Pools

This log information does not indicate the completion of performance monitoring processing of pools but the completion of performance monitoring operation of pools.

Detailed Information

Item	Description
Pool ID	The pool ID of a pool where the performance monitoring started
Result	The result of starting the performance monitoring of pools Normal end: Normal end, Error(*xxxx-yyyyy*):Abnormal end, Not Execute: Not executed where *xxxx*: Part code, *yyyyy*: Error code
Num. of Pools	The number of pools where the performance monitoring started

Example

```
RMI AP,,[PROV],Monitor Pools,,Normal end,Seq.=xxxxxxxxxx
+{Pool ID,Result}=[{1,Normal end}],Num. of Pools = 1
```

[PROV] Move Resources

Detailed Information

Item	Description
Resource Group ID(From)	The source resource group ID to which the resource belongs

Item	Description
Resource Group ID(To)	The target resource group ID
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, *xxxx*: Part code, *yyyyy*: Error code
LDKC:CU:LDEV	The logical DKC, CU, and LDEV numbers of the moved LDEV.
LDEVResult	The result of the LDEV Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, *xxxx*: Part code, *yyyyy*: Error code
Num. of LDEVs	The number of moved LDEVs
PG	The number of a moved parity group E1-1: In the case of an external volume V1-1: In the case of a virtual volume X1-1: In the case of a Dynamic Provisioning volume
PGResult	The result of the parity group Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, where *xxxx*: Part code, *yyyyy*: Error code
Num. of PGs	The number of moved parity groups
Port	The name of a moved port
PortResult	The result of the port Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, where *xxxx*: Part code, *yyyyy*: Error code
Num. of Ports	The number of moved ports
Port(HostGrp)	The port name of a moved host group
HostGrpID	The host group ID of the moved host group
HostGrpResult	The result of the host group Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end,

Item	Description
	where *xxxx*: Part code, *yyyyy*: Error code
Num. of Host Groups	The number of moved host groups
Num. of Resource Groups	The number of resource groups that operated the setting

Example

```
RMI AP,Task Name,[PROV],Move Resources,,Normal end,
Seq.=xxxxxxxxxx
+{Resource Group ID(From),Resource Group ID(To),Result}
={1,0,Normal end}
++{LDKC:CU:LDEV,LDEVResult}=[{0x00:0x00:0x00,Normal end},
{0x00:0x00:0x01,Normal end}],Num. of LDEVs=2
++{PG,PGResult}=[{E1-1,Normal end},{E1-2,Normal end}],
Num. of PGs=2
++{Port,PortResult}=[{1A,Normal end},{2A,Normal end}],
Num. of Ports=2
++{Port(HostGrp),HostGrpID,HostGrpResult}
=[{1A,0x01,Normal end},{1A,0x02,Normal end}],Num. of Host Groups=2
+Num. of Resource Groups=1
```

[PROV] OperateSiPairsWithSlu

Detailed Information

Item	Description
OperationCode	The ShadowImage pair operation PairCreate: Create pairs, PairDelete: Delete pairs, CreateAndQuickSplit: Create and split pairs, QuickResync: Resynchronize pairs
SiPairs[x]	The setting information of ShadowImage pairs
PrimaryVolume	The primary volume information
Slu	The SLU information
Id	The SLU ID
Ldev	The LDEV information
Id	The LDEV ID

Item			Description
	SecondaryVolume		The secondary volume information
		Slu	The SLU information
			Id	The SLU ID
		Ldev	The LDEV information
			Id	The LDEV ID
	MirrorUnit		The mirror unit number
	Result		The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],OperateSiPairsWithSlu,,Normal end,
Seq.=xxxxxxxxxx
+{OperationCode=PairCreate,
SiPairs[0]{
  PrimaryVolume{
    Slu{
      Id="60-06-0E-81-30-00-32-30-00-32-00-00-00-00-30-00"},
    Ldev{
      Id=0x00:0x30:0x00}},
  SecondaryVolume{
    Slu{
      Id="60-06-0E-81-30-00-32-30-00-32-00-00-00-00-30-01"},
    Ldev{
      Id=0x00:0x30:0x01}},
  MirrorUnit=2,
  Result=Normal end}}
```

[PROV] OperateTiPairsWithSlu

Detailed Information

Item	Description
OperationCode	The Thin Image pair operation

Item	Description
	PairSplit: Split pairs, PairDelete: Delete pairs, PairResync: Resynchronize pairs
TiPairs[x]	The setting information of Thin Image pairs
PrimaryVolume	The setting information of the primary volume
Slu	The SLU information
Id	The SLU ID
SnapshotSlu	The SLU information of the secondary volume
Id	The SLU ID
Clone	The setting status of the clone for the snapshot true: Enabled, false: Disabled
DiffClone	The setting status of the diff clone for the snapshot true: Enabled, false: Disabled
CopyPace	The copy pace for the snapshot data Invalid: Disabled, Low: Low pace, Medium: Standard pace, Fast: Fast pace
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],OperateTiPairsWithSlu,,Normal end,Seq.=xxxxxxxxxx
+{OperationCode=PairSplit,
TiPairs[0]{
   PrimaryVolume{
     Slu{
       Id="60-06-0E-81-30-00-32-30-00-32-00-00-80-00-10-00"}},
  SnapshotSlu{
    Id="60-06-0E-81-30-00-32-30-00-32-00-00-80-00-00-00"},
    Clone=false,DiffClone=false,CopyPace=medium,
  Result=Normal end}}
```

[PROV] Pool Name

Detailed Information

Item	Description
Pool ID	The pool group number
Name	The character string of a pool name
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*):Abnormal end, where *xxxx*: Part code, *yyyyy*: Error code
Num. of Pools	The number of specified pool groups

Example

```
RMI AP,Task Name,[PROV],Pool Name,,Normal end,
Seq.=xxxxxxxxxx
+{Pool ID,Name,Result}
=[{0,poolname_0000,Normal end},{127,,Normal end}],
Num. of Pools=2
```

[PROV] Reclaim Zero Pages

This log information does not indicate the completion of zero pages reclaiming processing but the completion of zero pages reclaiming operation.

Detailed Information

Item	Description
LDKC:CU:LDEV	The LDKC number, the CU number, and the LDEV number of the LDEV where zero pages are reclaimed
Num. of VOLs	The number of LDEVs where zero pages are reclaimed

Example

```
RMI AP,Task Name,[PROV],Reclaim Zero Pages,,Normal end,
Seq.=xxxxxxxxxx
+{LDKC:CU:LDEV}
=[{0x00:0x00:0x00},{0x00:0x00:0x01},{0x00:0x00:0x02}],
Num. of VOLs = 3
```

[PROV] Release HostReserved

Detailed Information

Item	Description
Port	The name of the port to which the host group belongs
HostGrpID	The host group number
LUN	The LUN where Release HostReserved is forcefully executed
Result	The result of the operation: Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, Not Execute: Not Executed where *xxxx*: Part code, *yyyyy*: Error code
Num. of LUNs	The number of LUNs for which Release HostReserved is forcefully executed

Example

```
RMI AP,Task Name,[PROV],Release HostReserved,,Normal end,
Seq.=xxxxxxxxxx
+{Port,HostGrpID,LUN,Result}=[{XXX,0xXXX,XXXX,Normal end},
{XXX,0xXXX,XXXX,Error(xxxx-yyyyy)}],Num. of LUNs=2
```

[PROV] Relocate Pool

This log information does not indicate the completion of Tier relocation processing of pools but the completion of Tier relocation operation of pools.

Detailed Information

Item	Description
Pool ID	The pool ID of a pool where the tier relocation was performed
Result	The result of relocating the tier of pools Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, Not Execute: Not Executed where *xxxx*: Part code, *yyyyy*: Error code

Item	Description
Num. of Pools	The number of pools where the tier relocation was performed

Example

```
RMI AP,,[PROV],Relocate Pool,,Normal end,Seq.=xxxxxxxxxx
+{Pool ID,Result}=[{1,Normal end}],Num. of Pools = 1
```

[PROV] Remove Hosts

Detailed Information

Item	Description
Port	The name of the port where the host deleted from host group was connected
HostGrpID	The host group number where the host is deleted
WWN	Indicates WWN of the host deleted from the host group
Num. of WWNs	The number of hosts (WWN) deleted from the host group

Example

```
RMI AP,Task Name,[PROV],Remove Hosts,,Normal end,
Seq.=xxxxxxxxxx
+{Port,HostGrpID,WWN}=[{XX,0xXXX,0xXXXXXXXXXXXXXXXX},
{XX,0xXXX,0xXXXXXXXXXXXXXXXX}],Num. of WWNs=2
```

[PROV] Restore LDEVs

Detailed Information

Item	Description
LDKC:CU:LDEV	The LDKC number, the CU number, and the LDEV number
Num. of LDEVs	The number of LDEVs being restored

Example

```
RMI AP,Task Name,[PROV],Restore LDEVs,,Normal end,
Seq.=xxxxxxxxxx
```

```
+LDKC:CU:LDEV=[0x00:0x00:0x01,0x00:0x00:0x02,0x00:0x00:0x03,
0x00:0x00:0x04,0x00:0x00:0x05,0x00:0x00:0x06,0x00:0x00:0x07,
0x00:0x00:0x08,0x00:0x00:0x09,0x00:0x00:0x0A],
Num. of LDEVs=10
```

[PROV] Restore Pools

Detailed Information

Item	Description
Pool ID	The restored pool ID
Result	The result of the operation: Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, Not Execute: Not Executed where *xxxx*: Part code, *yyyyy*: Error code
Num. of Pools	The number of restored pools

Example

```
RMI AP,Task Name,[PROV],Restore Pools,,Normal end,
Seq.=xxxxxxxxxx
+{Pool ID,Result}
=[{1,Normal end},{2,Normal end},{128,Normal end}],
Num. of Pools=3
```

[PROV] RevertTiPairsWithSlu

Detailed Information

Item	Description
TiPairs[x]	The volume information of the reverted Thin Image pairs
PrimaryVolume	The setting information of the primary volume
Slu	The SLU information
Id	The SLU ID
SnapshotSlu	The setting information of the secondary volume
Id	The SLU ID

Item		Description
	Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],RevertTiPairsWithSlu,,Normal end,
Seq.=xxxxxxxxxx
+{TiPairs[0]{
  PrimaryVolume{
    Slu{
      Id="60-06-0E-81-30-00-32-30-00-32-00-00-00-00-30-00"}},
  SnapshotSlu{
    Id="60-06-0E-81-30-00-32-30-00-32-00-00-80-00-00-00"},
  Result=Normal end}}
```

[PROV] Set PageTieringLevel

Detailed Information

Item	Description
LDKC:CU:LDEV	The LDKC, CU, and LDEV numbers of the volume where the tiering policy is set
Result	The result of setting the tiering policy to the volume Normal end: Normal end Warning(xxxx-yyyyy): End with warning Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Start Page	The beginning page number of page ranges
Page Length	The length of page ranges
Page Tiering Level	The level of the tiering policy that is set to the page ranges If you unset the tiering policy, a hyphen (-) is output.
Page Range Result	The result of setting the tiering policy in page ranges Normal end: Normal end Warning(xxxx-yyyyy): End with warning

Item	Description
	Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Page Ranges	The specified number of page ranges
Num. of VOLs	The number of volumes where the tiering policy is set

Example

```
RMI AP,,[PROV],Set PageTieringLevel,,Normal end,
Seq.=xxxxxxxxxx
+{LDKC:CU:LDEV,Result}=[{0x00:0x00:0x00,Normal end}]
++{Start Page,Page Length,Page Tiering Level,Page Range Result}
=[{10,5, Level1,Normal end},{100,10, Level1,Normal end}],
Num. of Page Ranges=2
+Num. of VOLs=1
```

[PROV] Set Virtual LDEV

Detailed Information

Item	Description
Operation	Indicates the performed operations Set H-UVM ON Set H-UVM OFF Set Virtual Ldev ID Delete Virtual Ldev ID Set Virtual Ldev Information Delete Virtual Ldev Information Set Virtual Ldev ID and Virtual Ldev Information Delete Virtual Ldev ID and Virtual Ldev Information Set Property Normal Set Property Migration Set Property Migration and Virtual Ldev ID and Virtual Ldev Information Set Property GAD S-Vol

Item	Description
LDKC:CU:LDEV	The LDEV ID of an LDEV that is mapped the virtual information
Virtual LDKC:CU:LDEV	The LDEV ID of the virtual LDEV
Virtual Emulation	The emulation type of the virtual LDEV
Virtual SSID	The SSID of the virtual LDEV
Virtual LUSE	The number of LUSE volumes of the virtual LDEV
Virtual Attribute	The attribute of the virtual LDEV CVS: CVS attribute, -: No attribute
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*):Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of LDEVs	The number of LDEVs that is mapped the virtual information

Example

```
RMI AP,Task Name,[PROV],Set Virtual LDEV,,Normal end,Seq.=xxxxxxxxxx
+{Operation}={Set H-UVM ON}
++{LDKC:CU:LDEV,Virtual LDKC:CU:LDEV,Virtual Emulation,
Virtual SSID,Virtual LUSE,Virtual Attribute,Result}=
[{0x00:0x00:0x00,0x00:0x01:0x00,OPEN-V,0x0004,0,-,Normal end}],
Num. of LDEVs=1
```

[PROV] Shrink Pool

This log information does not indicate the completion of shrinking processing but the completion of shrinking operation.

Detailed Information

Item	Description
Pool ID	The pool ID of a shrinking pool
Result	The result of the shrinking operation Normal end: Normal end Not Execute: Not executed

Item	Description
	Error(*xxxxx-xxxxxxx*): Abnormal end where *xxxxx-xxxxxxx* indicates error codes.
Num. of Pools	The number of shrinking pools
LDKC:CU:LDEV	The LDKC number, the CU number, and the LDEV number of the shrinking LDEV
LDEV Result	The result of shrinking individual LDEVs Normal end: Normal end Error(*xxxx-yyyyy*): Abnormal end Not Execute: Not executed where *xxxx*: Part Code, *yyyyy*: Error Code
Num. of LDEVs	The number of shrinking LDEVs

Example

```
RMI AP,Task Name,[PROV],Shrink Pool,,Normal end,
Seq.=xxxxxxxxxx
+{Pool ID,Result}=[{1,Normal end},{2,Normal end}],
Num. of Pools = 2
++{LDKC:CU:LDEV,LDEV Result}
=[{0x00:0x00:0x02,Normal end},
{0x00:0x00:0x03,Normal end},{0x00:0x02:0x01,Normal end}],
Num. of LDEVs = 3
```

[PROV] StartParityGroupsFormat

StartParityGroupsFormat merely means that the operation of the parity group formatting has been performed, and does not necessarily means that the parity group formatting process is complete.

Detailed Information

Item		Description
ParityGroup[x]		The setting information of the parity group
	ID	The parity group ID

Example

```
RMI AP,,[PROV],StartParityGroupsFormat,,Normal end,Seq.=xxxxxxxxxx
+{ParityGroup[0]{
  ID=1-1}}
```

[PROV] StartVerify

StartVerify merely means that the operation for verification has been performed, and does not necessarily mean that the verification process is complete.

Detailed Information

Item	Description
AutoCorrectMode	Indicates the setting status of the automatic correction mode (where errors detected by the verification are corrected automatically) true: Enabled, false: Disabled
ErrorStopCount	The setting value of the number of errors. The verification will be stopped when the number of detected errors reaches this value.
LogicalDevice[x]	The setting information of the LDEV
ID	The LDEV ID

Example

```
RMI AP,,[PROV],StartVerify,,Normal end,Seq.=xxxxxxxxxx
+{AutoCorrectMode=true,ErrorStopCount=16,
LogicalDevice[0]{
  ID=0x00:0x00:0x00}}
```

[PROV] Stop Monitoring

Detailed Information

Item	Description
Pool ID	The pool ID of a pool where the performance monitoring stopped
Result	The result of stopping the tier relocating of pools Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, Not Execute: Not Executed where *xxxx*:Part code, *yyyyy*: Error code

Item	Description
Num. of Pools	The number of pools where the performance monitoring stopped

Example

```
RMI AP,,[PROV],Stop Monitoring,,Normal end,
Seq.=xxxxxxxxxx
+{Pool ID,Result}=[{1,Normal end}],Num. of Pools = 1
```

[PROV] Stop Reclm ZeroPages

Detailed Information

Item	Description
LDKC:CU:LDEV	The LDKC number, the CU number, and the LDEV number of the LDEV where reclaiming of zero pages is stopped
Num. of VOLs	The number of LDEVs where reclaiming of zero pages is stopped

Example

```
RMI AP,Task Name,[PROV],Stop Reclm ZeroPages,,Normal end,
Seq.=xxxxxxxxxx
+{LDKC:CU:LDEV}
=[{0x00:0x00:0x00},{0x00:0x00:0x01},{0x00:0x00:0x02}],
Num. of VOLs = 3
```

[PROV] Stop Relocating

Detailed Information

Item	Description
Pool ID	The pool ID of a pool where the tier relocation was stopped
Result	The result of stop relocating the tier of pools Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, Not Execute: Not executed where *xxxx*: Part code, *yyyyy*: Error code
Num. of Pools	The number of pools where the tier relocation was stopped

Example

```
RMI AP,,[PROV],Stop Relocating,,Normal end,
Seq.=xxxxxxxxxx
+{Pool ID,Result}=[{1,Normal end}],Num. of Pools=1
```

[PROV] Stop Shrinking Pool

Detailed Information

Item	Description
Pool ID	The pool ID of the pool where shrinking is stopped
Result	The result of the stopping shrinking operation Normal end: Normal end Not Execute: Not executed Error(*xxxxx-xxxxxxx*): Abnormal end where *xxxxx-xxxxxxx* indicates error codes.
Num. of Pools	The number of pools where shrinking is stopped

Example

```
RMI AP,Task Name,[PROV],Stop Shrinking Pool,,Normal end,
Seq.=xxxxxxxxxx
+{Pool ID,Result}=[{1,Normal end},{2,Normal end}],
Num. of Pools = 2
```

[PROV] StopFormat

Example

```
RMI AP,,[PROV],StopFormat,,Normal end,Seq.=xxxxxxxxxx
```

[PROV] StopVerify

Example

```
RMI AP,,[PROV],StopVerify,,Normal end,Seq.=xxxxxxxxxx
```

[PROV] UnmapSecondaryVolumeWithSlu

Detailed Information

Item	Description
TiPairs[x]	The setting information of Thin Image pairs whose secondary volume is unmapped
SnapshotSlu	The SLU information of the secondary volume
Id	The SLU ID
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*):Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
SecondaryVolume	The unmapped secondary volume information
Ldev	The LDEV information
Id	The LDEV ID

Example

```
RMI AP,,[PROV],UnmapSecondaryVolumeWithSlu,,Normal end,
Seq.=xxxxxxxxxx
+{TiPairs[0]{
  SnapshotSlu{
    Id="60-06-0E-81-30-00-32-30-00-32-00-00-80-00-00-00"},
  Result=Normal end,
  SecondaryVolume{
    Ldev{
      Id=0x00:0x00:0x06}}}}
```

[PROV] UpdateAluaMode

Detailed Information

Item	Description
Ldev[x]	The setting information of ALUA mode of the LDEV
Id	The LDEV ID
AluaMode	The setting status of ALUA mode

Item	Description
	true: Enabled, false: Disabled
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,Task Name,[PROV],UpdateAluaMode,,Normal end,
Seq.=xxxxxxxxxx
+{Ldev[0]{
  Id=0x00:0x00:0x01,AluaMode=true,Result=Normal end}}
```

[PROV] UpdateAsymmetricAccessStatePerHG

Detailed Information

Item	Description
AsymmetricAccessStateSettingOperation[x]	The setting information of Asymmetric Access States
AsymmetricAccessState	The setting status of Asymmetric Access States ActiveOptimized: Prioritized, ActiveNonOptimized: Non-prioritized
Port	The setting information of the port
Id	The port ID
HostGroup	The setting information of the host group
Id	The host group ID
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,Task Name,[PROV],UpdateAsymmetricAccessStatePerHG,,
Normal end,Seq.=xxxxxxxxxx
+{AsymmetricAccessStateSettingOperation[0]{
  AsymmetricAccessState=ActiveOptimized,
```

```
  Port{
    Id=1A,
    HostGroup{
      Id=0}},
  Result=Normal end}}
```

[PROV] UpdateCopybackMode

Detailed Information

Item		Description
ParityGroup[x]		The setting information of the parity group
	ID	The parity group ID
	Copy-backMode	The setting status of the copy-back mode true: Enabled, false: Disabled
	Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],UpdateCopybackMode,,Normal end,Seq.=xxxxxxxxxx
+{ParityGroup[0]{
  ID=1-1,Copy-backMode=true,Result=Normal end}}
```

[PROV] UpdateDataSavingOptions

Detailed Information

Item		Description
ThinProvisioningVolumes[x]		The setting information of Capacity Saving of the edited Dynamic Provisioning volume
	Id	The ID of the Dynamic Provisioning volume
	Result	The result of operation Normal end: Normal end, Error(*xxxxx-xxxxxxx*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code

Item		Description
	CapacitySaving	The setting status of Capacity Saving Disabled: Capacity Saving is disabled, Compression: Compression is enabled, Deduplication and Compression: Deduplication and compression are enabled

Example

```
RMI AP,,[PROV], VVOLupdateDataSavingOptions,,Normal end,Seq.=xxxxxxxxxx
+{ThinProvisioningVolumes[0]{Id=0x00:0x00:0x00,Result=Normal end,
CapacitySaving=Compression }}
```

[PROV] UpdateParityGroupSettings

Detailed Information

Item		Description
ParityGroup[x]		The setting information of the parity group
	ID	The parity group ID
	Accelerated Compression	The setting status of the accelerated compression true: Enabled, false: Disabled
	Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],UpdateParityGroupSettings,,Normal end,Seq.=xxxxxxxxxx
+{ParityGroup[0]{
  ID=1-1,Accelerated Compression=true,Result=Normal end}}
```

[PROV] UpdateSpareDrives

Detailed Information

Item		Description
Drive[x]		The information of the drive
	Location	The mounting position of the drive
	Spare	The assignment status of the spare drive true: Assigning as a spare drive, false: Releasing spare drive setting
	Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code

Example

```
RMI AP,,[PROV],UpdateSpareDrives,,Normal end,Seq.=xxxxxxxxxx
+{Drive[0]{
  Location=HDD0-0,Spare=true,Result=Normal end}}
```

Remote Replication Descriptions

[Remote Replication] Add Path

Detailed Information

Item	Description
S/N	The serial number of the RCU
MCU LDKC	The LDKC number of the connected LDKC
RCU LDKC	The LDKC number of the paired LDKC
Path Gr.ID	The path group ID. When the path group ID is default setting, "Default" is output.
Controller ID	The controller ID of the RCU 7: VSP G1000/G1500 and VSP F1500, 8: VSP 5000 series, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM

Item	Description
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
MCU Port	The port number of MCU
RCU Port	The port number of RCU
Num. of Port Pairs	Number of pairs of the port to be operated
Num. of RCUs	The number of RCUs set

Example

```
RMI AP,,[Remote Replication],Add Path,,Normal end,
Seq.=xxxxxxxxxx
+{S/N,MCU LDKC,RCU LDKC,Path Gr.ID,Controller ID,Result}
={411111,0x00,0x00,Default,18,Normal end}
++{MCU Port,RCU Port}
=[{1E,3E},{5E,7E},{1F,3F},{5F,7F},{1G,3G},{5G,7G},{1H,3H}],
Num. of Port Pairs=7
(Snip)
+{S/N,MCU LDKC,RCU LDKC,Path Gr.ID,Controller ID,Result}
={422222,0x00,0x00,Default,18,Normal end}
++{MCU Port,RCU Port}
=[{1E,3E},{5E,7E},{1F,3F},{5F,7F},{1G,3G},{5G,7G},{1H,3H}],
Num. of Port Pairs=7
+Num. of RCUs=xx
```

[Remote Replication] Add Quorum Disk ID

Detailed Information

Item	Description
Quorum Disk ID	The added quorum disk ID used by global-active device
Paired S/N	The serial number of the remote storage system
Controller ID	The controller ID of the remote storage system 7: VSP G1000/G1500 and VSP F1500, 8: VSP 5000 series, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM

Item	Description
Quorum Disk(LDKC:CU:LDEV)	The LDKC, CU, and LDEV numbers of the added quorum disk used by global-active device
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of IDs	The number of added quorum disk IDs used by global-active device

Example

```
RMI AP,,[Remote Replication],Add Quorum Disk ID,,Normal end,
Seq.=xxxxxxxxxx
+{Quorum Disk ID,Paired S/N,Controller ID,Quorum Disk(LDKC:CU:LDEV),
Result}=[{0x01,464024,18,0x00:0x01:0x01,Normal end},
{0x02,464024,18,0x00:0x02:0x02,Normal end},(Snip),
{0x7F,464024,18,0x00:0x03:0x03,Error(xxxx-yyyyy)}]
-,Num. of IDs=xx
```

[Remote Replication] Add RCU

Detailed Information

Item	Description
S/N	The serial number of the registered RCU
MCU LDKC	The LDKC number of the connected LDKC
RCU LDKC	The LDKC number of the paired LDKC
Path Gr.ID	The path group ID of the registered RCU. When the path group ID is default setting, "Default" is output.
Controller ID	The controller ID of the registered RCU 7: VSP G1000/G1500 and VSP F1500, 8: VSP 5000 series, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM
Min.Path	The number of set minimum paths

Item	Description
MIH Time(s)	The value of set RIO MIH (Remote I/O Missing Interrupt Handler) timer (wait time until data copy from MCU to RCU is complete). The unit is second.
Round Trip Time(ms)	The round-trip response time set (delay time for round-trip remote I/O). The unit is millisecond. This value is output when TrueCopy is used.
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
MCU Port	The port number of MCU
RCU Port	The port number of the registered RCU
Num. of Port Pairs	The number of port pairs set
Num. of RCUs	The number of RCUs set

Example

```
RMI AP,,[Remote Replication],Add RCU,,Normal end,
Seq.=xxxxxxxxxx
+{S/N,MCU LDKC,RCU LDKC,Path Gr.ID,Controller ID,Min.Path,
MIH Time(s),Round Trip Time(ms),Result}
={422222,0x00,0x00,Default,18,08,015,001,Normal end}
++{MCU Port,RCU Port}
=[{1E,3E},{5E,7E},{1F,3F},{5F,7F},{1G,3G},{5G,7G},{1H,3H},
{5H,7H}],Num. of Port Pairs=8
(Snip)
+{S/N,MCU LDKC,RCU LDKC,Path Gr.ID,Controller ID,Min.Path,
MIH Time(s),Round Trip Time(ms),Result}
={411111,0x00,0x00,Default,18,08,015,001,Normal end}
++{MCU Port,RCU Port}
=[{1E,3E},{5E,7E},{1F,3F},{5F,7F},{1G,3G},{5G,7G},{1H,3H},
{5H,7H}],Num. of Port Pairs=8
+Num. of RCUs=xx
```

[Remote Replication] Change JNL Option

Detailed Information

Item	Description
Copy Type	The program product name for this operation UR: Universal Replicator
LDKC	The LDKC number to which the journal belongs
JNL	The journal number
Data Overflow Watch(s)	The overflow watch time of the meta data or journal data (in seconds)
Inflow Control	The inflow control of the journal volume Yes: The flow of the updated I/O data to the journal volume is restricted No: The flow of the updated I/O data to the journal volume is not restricted
Use of Cache	Whether to store the journal data in the restore journal in cache. Use: Store the journal data in cache, Not Use: Store the journal data in journal volume
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of JNLs	The number of journals

Example

```
RMI AP,,[Remote Replication],Change JNL Option,,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=UR
+{LDKC,JNL,Data Overflow Watch(s),Inflow Control,
Use of Cache,Result}
=[{0x00,0x001,20,Yes,Not Use,Normal end},
{0x00,0x002,20,No,Use,Normal end}],Num. of JNLs=2
```

[Remote Replication] Change Mirror Option

Detailed Information

Item	Description
Copy Type	The program product name for this operation UR: Universal Replicator
LDKC	The LDKC number to which the journal belongs
JNL	The journal number
MirrorID	The mirror ID
Copy Pace	The speed of initial copy Low: Low speed, Medium: Medium speed, High: High speed
Path Watch Times	Path block watch time (observation time from the path block till the mirror split <suspended>) The units are minutes, hours or days. If it is set to 30 minutes, it will be 30(min.).
Forward Path Watch Time	Indicates whether to transfer the path blockade watch period of the master journal to the restore journal. Yes: Transfer, No: Do Not Transfer
Transfer Speed(Mbps)	The transfer speed of the communication line. The unit is megabits per second (Mbps).
Delta resync Failure	Indicates the behavior when Delta resync operation has failed. Entire: Copy the entire data of the primary volume to the secondary volume. None: Do not copy the primary volume data to the secondary volume.
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Mirrors	The number of mirrors

Example

```
RMI AP,,[Remote Replication],Change Mirror Option,,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=UR
+{LDKC,JNL,MirrorID,Copy Pace,Path Watch Time,
```

```
Forward Path Watch Time,Transfer Speed(Mbps),
Delta resync Failure,Result}
=[{0x00,0x001,0x00,Medium,12(hour),Yes,100,Entire,Normal end},
{0x00,0x002,0x00,Low,1(day),No,10,None,Normal end}],
Num. of Mirrors=2
```

[Remote Replication] Change RCU Option

Detailed Information

Item	Description
S/N	The serial number of the RCU on which the RCU option is changed
MCU LDKC	The LDKC number of the connected LDKC
RCU LDKC	The LDKC number of the paired LDKC
Path Gr.ID	The path group ID of the RCU on which the RCU option is changed. When the path group ID is default setting, "Default" is output.
Controller ID	The controller ID of the RCU on which the RCU option is changed 7: VSP G1000/G1500 and VSP F1500, 8: VSP 5000 series, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM
Min.Path	The number of minimum paths after the change
MIH Time(s)	The value of RIO MIH (Remote I/O Missing Interrupt Handler) timer after the change (wait time until data copy from MCU to RCU is complete). The unit is second.
Round Trip Time(ms)	The round-trip response time after the change (delay time for round-trip remote I/O). The unit is millisecond. This value is output when TrueCopy is used.
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of RCUs	The number of RCUs set

Example

```
RMI AP,,[Remote Replication],Change RCU Option,,Normal end,
Seq.=xxxxxxxxxx
+{S/N,MCU LDKC,RCU LDKC,Path Gr.ID,Controller ID,Min.Path,
MIH Time(s),Round Trip Time(ms),Result}
```

```
={422222,0x00,0x00,Default,18,08,015,001,Normal end}
(Snip)
+{S/N,MCU LDKC,RCU LDKC,Path Gr.ID,Controller ID,Min.Path,
MIH Time(s),Round Trip Time(ms),Result}
={411111,0x00,0x00,Default,18,08,015,001,Normal end}
+Num. of RCUs=xx
```

[Remote Replication] Create Pairs

Detailed Information 1

Item	Description
Copy Type	The program product name for this operation TC: TrueCopy
P-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the volume specified to the primary volume
S-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the volume specified to the secondary volume
S/N	The serial number of the RCU
LDKC	The LDKC number of the RCU
ID	The path group ID When the path group ID is default setting, "Default" is output.
Controller ID	The controller ID of the RCU 7: VSP G1000/G1500 and VSP F1500, 8: VSP 5000 series, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM
Type	Type of the update copy operation Outputs Sync (synchronization mode) as a fixed parameter.
Initial Copy	Type of the pair creation operation Entire: Creates pairs and copies data from the primary volume to the secondary volume. None: Creates pairs but does not copy data from the primary volume to the secondary volume.
Fence Level	Configured fence level (conditions where the local storage system rejects write operations to the primary volume) Never: Can write to the primary volume even the pair is split. Data: Cannot write to the primary volume when update copying fails.

Item	Description
	Status: Cannot write to the primary volume, only when the storage system of the primary site cannot change the pair status of the secondary volume to PSUE.
Copy Pace	The initial copy speed setting (the number of tracks you can copy at one time)
Priority	The priority of the set initial copy operation (scheduling order).
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Pairs	The number of create pairs

Detailed Information 2

Item	Description
Copy Type	The program product name for this operation UR: Universal Replicator
P-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the primary data volume
S-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the secondary data volume
MirrorID	The mirror ID
S/N	The serial number of the RCU
CTRLID	The controller ID of the RCU 7: VSP G1000/G1500 and VSP F1500, 8: VSP 5000 series, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM
Priority	The priority of the set initial copy operation (scheduling order).
CTG	The consistency group ID
Initial Copy	Type of the pair creation operation Entire: Creates pairs and copies data from the primary volume to the secondary volume.

Item	Description
	None: Creates pairs but does not copy data from the primary volume to the secondary volume. Delta: Creates delta resynchronization pairs.
M-JNL	The master journal number
R-JNL	The restore journal number
Path Gr. ID	The path group ID specified for the storage system When the path group ID is default setting, "Default" is output.
Error Level	Range of the pair split at failure occurrence Mirror: When a pair fails, all the pairs are split that exist in the same mirror as the pair. LU: When a pair fails, only the pair is split.
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Pairs	The number of created pairs

Detailed Information 3

Item	Description
Copy Type	The program product name for this operation GAD: global-active device
P-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the primary volume
S-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the secondary volume
S/N_P	The serial number of the local storage system
S/N_S	The serial number of the remote storage system
Path Gr.ID	Path group ID used in a global-active device pair
Controller ID	The controller ID of the remote storage system

Item	Description
	7: VSP G1000/G1500 and VSP F1500, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM
SSID	The SSID
Copy Pace	The setting of the initial copy speed (the number of tracks that can be copied at a time)
Quorum Disk ID	The quorum disk ID used by global-active device
MirrorID	The mirror ID
CTG	The consistency group ID A hyphen (-) is displayed if the consistency group is not specified.
Initial Copy	Type of the pair creation operation Entire: Creates pairs and copies data from the primary volume to the secondary volume. None: Creates pairs but does not copy data from the primary volume to the secondary volume.
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Pairs	The number of created pairs

Example 1: Copy type is TC

```
RMI AP,,[Remote Replication],Create Pairs,,Normal end,Seq.=xxxxxxxxxx
+Copy Type=TC,{P-VOL(Port-G-ID-LUN),S-VOL(Port-G-ID-LUN),
S/N,LDKC,ID,Controller ID,Type,Initial Copy,Fence Level,Copy Pace,
Priority,Result}
=[{1A-0x00-0,GR-0xFE-1023,411111,0x00,Default,18,
Sync,Entire,Never,15,032,Normal end},(Snip)-(Snip)],
Num. of Pairs=xx
```

Example 2: when the copy type is UR

```
RMI AP,,[Remote Replication],Create Pairs,,Normal end,Seq.=xxxxxxxxxx
+Copy Type=UR
+{P-VOL(Port-G-ID-LUN),S-VOL(Port-G-ID-LUN),MirrorID,
S/N,CTRLID,Priority,CTG,Initial Copy,M-JNL,R-JNL,
Path Gr. ID,Error Level,Result}
=[{4C-0x00-0,4A-0x00-0,0x00,467676,18,32,0x000,Entire,
```

```
0x001,0x001,Default,Mirror,Normal end},
{4C-0x00-1,4A-0x00-1,0x00,467676,18,32,0x000,Entire,
0x001,0x001,Default,Mirror,Normal end}],Num. of Pairs=2
```

Example 3: when the copy type is GAD

```
RMI AP,,[Remote Replication],Create Pairs,,Normal end,Seq.=xxxxxxxxxx
+Copy Type=GAD,{P-VOL(Port-G-ID-LUN),S-VOL(Port-G-ID-LUN),
S/N_P,S/N_S,Path Gr.ID,Controller ID,SSID,Copy Pace,Quorum Disk ID,
MirrorID,CTG,Initial Copy,Result}=
[{1A-0x00-0,1C-0x02-3,411111,422222,0x00,18,0x0004,15,0x15, 0,
0x00,None,Normal end},(Snip)-(Snip)],Num. of Pairs=xx
```

[Remote Replication] Delete Pairs

Detailed Information 1

Item	Description
Copy Type	The program product name for this operation TC: TrueCopy
P-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the volume specified to the primary volume
S-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the volume specified to the secondary volume
Type	Volume type of the local storage system P-VOL: Primary volume, S-VOL: Secondary volume
Force	Conditions to delete pairs forcibly Yes: Deletes pairs, also when the local storage system cannot communicate with the remote storage system. No: Deletes pairs, only when the local storage system can change the pair to simplex volumes.
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Pairs	The number of delete pairs

Detailed Information 2

Item	Description
Copy Type	The program product name for this operation UR: Universal Replicator
P-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the primary data volume
S-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the secondary data volume
MirrorID	The mirror ID
S/N	The serial number of the RCU
CTRLID	The controller ID of the RCU 7: VSP G1000/G1500 and VSP F1500, 8: VSP 5000 series, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM
Type	The volume type of the deleted volume P-VOL: Primary volume, S-VOL: Secondary volume
Range	The delete range Mirror: All the pairs are delete that exist in the same mirror as the pair. LU: Only the pair is delete.
Delete Mode	Type of the pair deletion operation Normal: Deletes pairs, Force: Deletes pairs forcibly.
Result	The result of the operation Normal end: Normal end, Error(*xxxx*-*yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Requests	The number of deleted mirrors when Range is Mirror The number of deleted pairs when Range is LU

Detailed Information 3

Item	Description
Copy Type	The program product name for this operation GAD: global-active device

Item	Description
P-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the primary volume
S-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the secondary volume
S/N_P	The serial number of the local storage system
S/N_S	The serial number of the remote storage system
Type	Volume type of the local storage system SMPL: simplex, P-VOL: Primary volume, S-VOL: Secondary volume
SSID_P	The SSID of the primary volume
SSID_S	The SSID of the secondary volume
CTG	The consistency group ID A hyphen (-) is displayed when Range is Volume.
Range	The applicable range of pair deletion Volume: Only this volume, Group: All volumes in the consistency group to which this volume belongs
Force	Conditions to delete pairs forcibly Yes: Deletes pairs, also when the local storage system cannot communicate with the remote storage system. No: Deletes pairs, only when the local storage system can change the pair to simplex volumes.
MirrorID	The mirror ID
Invisible	Indicates whether the host can access volumes after deleting pairs. Enable: Deletes the virtual LDEV ID of the volume of the local storage system so that no hosts can access the volume. Disable: Keeps the virtual LDEV ID of the volume of the local storage system so that hosts can access the volume.
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Requests	The number of requests to delete pairs

Example 1: Copy type is TC

```
RMI AP,,[Remote Replication],Delete Pairs,,Normal end,Seq.=xxxxxxxxxx
+Copy Type=TC,{P-VOL(Port-G-ID-LUN),S-VOL(Port-G-ID-LUN),
Type,Force,Result}
=[{1A-0x00-0,1B-0x00-0,P-VOL,No,Normal end},
{1A-0x00-1,1B-0x00-1,P-VOL,No,Normal end},
{1A-0x00-2,1B-0x00-2,P-VOL,No,Normal end},(Snip)-(Snip)],
Num. of Pairs=xx
```

Example 2: when the copy type is UR

```
RMI AP,,[Remote Replication],Delete Pairs,,Normal end,Seq.=xxxxxxxxxx
+Copy Type=UR
+{P-VOL(Port-G-ID-LUN),S-VOL(Port-G-ID-LUN),MirrorID,
S/N,CTRLID,Type,Range,Delete Mode,Result}
=[{4C-0x00-0,4A-0x00-0,0x00,467676,18,P-VOL,LU,Normal,Normal end},
{4C-0x00-1,4A-0x00-1,0x00,467676,18,P-VOL,LU,Normal,Normal end}],
Num. of Requests=2
```

Example 3: when the copy type is GAD

```
RMI AP,,[Remote Replication],Delete Pairs,,Normal end,Seq.=xxxxxxxxxx
+Copy Type=GAD,{P-VOL(Port-G-ID-LUN),S-VOL(Port-G-ID-LUN),
S/N_P,S/N_S,Type,SSID_P,SSID_S,CTG,Range,Force,MirrorID,
Invisible,Result}=
[{1A-0x00-0,1B-0x01-1,411111,422222,P-VOL,0x0004,0x0004,-,
Volume,Yes,0,Disable,Normal end},(Snip)-(Snip)],Num. of Requests=xx
```

[Remote Replication] Delete Path

Detailed Information

Item	Description
S/N	The serial number of the RCU on which a path is deleted
MCU LDKC	The LDKC number of the connected LDKC
RCU LDKC	The LDKC number of the paired LDKC
Path Gr.ID	The path group ID of the deleted path. When the path group ID is default setting, "Default" is output.
Controller ID	The controller ID of the RCU on which a path is deleted 7: VSP G1000/G1500 and VSP F1500, 8: VSP 5000 series, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM

Item	Description
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
MCU Port	The port number of MCU
RCU Port	The port number of RCU
Num. of Port Pairs	Number of pairs of the port to be operated
Num. of RCUs	The number of RCUs set

Example

```
RMI AP,,[Remote Replication],Delete Path,,Normal end,
Seq.=xxxxxxxxxx
+{S/N,MCU LDKC,RCU LDKC,Path Gr.ID,Controller ID,Result}
={411111,0x00,0x00,Default,18,Normal end}
++{MCU Port,RCU Port}
=[{1E,3E},{5E,7E},{1F,3F},{5F,7F},{1G,3G},{5G,7G},{1H,3H}],
Num. of Port Pairs=7
(Snip)
+{S/N,MCU LDKC,RCU LDKC,Path Gr.ID,Controller ID,Result}
={422222,0x00,0x00,Default,18,Normal end}
++{MCU Port,RCU Port}
=[{1E,3E},{5E,7E},{1F,3F},{5F,7F},{1G,3G},{5G,7G},{1H,3H}],
Num. of Port Pairs=7
+Num. of RCUs=xx
```

[Remote Replication] Del Quorum Disk ID

Detailed Information

Item	Description
Quorum Disk ID	The deleted quorum disk ID used by global-active device
Paired S/N	The serial number of the remote storage system
Controller ID	The controller ID of the remote storage system 7: VSP G1000/G1500 and VSP F1500, 8: VSP 5000 series, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM

Item	Description
Quorum Disk(LDKC:CU:LDEV)	The LDKC, CU, and LDEV numbers of the deleted quorum disk used by global-active device
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of IDs	The number of deleted quorum disk IDs used by global-active device

Example

```
RMI AP,,[Remote Replication],Del Quorum Disk ID,,Normal end,
Seq.=xxxxxxxxxx
+{Quorum Disk ID,Paired S/N,Controller ID,Quorum Disk(LDKC:CU:LDEV),
Result}=[{0x01,464024,18,0x00:0x01:0x01,Normal end},
{0x02,464024,18,0x00:0x02:0x02,Normal end},(Snip),
{0x7F,464024,18,0x00:0x03:0x03,Error(xxxx-yyyyy)}]
-,Num. of IDs=xx
```

[Remote Replication] Delete RCU

Detailed Information

Item	Description
S/N	The serial number of the deleted RCU
MCU LDKC	The LDKC number of the connected LDKC
RCU LDKC	The LDKC number of the paired LDKC
Path Gr.ID	The path group ID of the deleted RCU. When the path group ID is default setting, "Default" is output.
Controller ID	The controller ID of the deleted RCU 7: VSP G1000/G1500 and VSP F1500, 8: VSP 5000 series, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end

Item	Description
	where *xxxx*: Part code, *yyyyy*: Error code
Num. of RCUs	The number of deleted RCUs

Example

```
RMI AP,,[Remote Replication],Delete RCU,,Normal end,
Seq.=xxxxxxxxxx
+{S/N,MCU LDKC,RCU LDKC,Path Gr.ID,Controller ID,Result}
={411111,0x00,0x00,Default,18,Normal end}
(Snip)
+{S/N,MCU LDKC,RCU LDKC,Path Gr.ID,Controller ID,Result}
={422222,0x00,0x00,Default,18,Normal end}
+Num. of RCUs=xx
```

[Remote Replication] Edit Options

Detailed Information for Example 1- 4

Item	Description
Copy Type	The program product name for this operation TC: TrueCopy
Max Initial Copy	The maximum number of initial copy operations set If this is not a subject to change, a hyphen (-) is displayed. If any one of Max Initial Copy, CU Activity, Path Blockade Watch(s), and Path Blockade SIM Watch(s) is changed, this will be the subject to change.
CU Activity	Indicates whether the parallel operation of initial copy by the control unit is enabled or not. Enable or Disable will appear. If this is not a subject to change, a hyphen (-) is displayed. If any one of Max Initial Copy, CU Activity, Path Blockade Watch(s, and Path Blockade SIM Watch(s) is changed, this will be the subject to change.
Path Blockade Watch(s)	The path blockade watch period setting (in seconds). If this is not a subject to change, a hyphen (-) is displayed. If any one of Max Initial Copy, CU Activity, Path Blockade Watch(s, and Path Blockade SIM Watch(s) is changed, this will be the subject to change.
Path Blockade SIM Watch(s)	The path blockade SIM watch period setting (in seconds).

Item	Description
	If this is not a subject to change, a hyphen (-) is displayed. If any one of Max Initial Copy, CU Activity, Path Blockade Watch(s, and Path Blockade SIM Watch(s) is changed, this will be the subject to change.
Switch	Indicates the ON/OFF information of each bit of the function switch that is allocated in the 64 bit format; the first digit corresponds to the bit 0 while the last one corresponds to the bit 63. 0: OFF, 1: ON If this is not a subject to change, a hyphen (-) is displayed.
LDKC	The LDKC number
CU	The CU number of the connected CU
Max Initial Copy	The number of parallel operation of initial copy by CU. If this is not a subject to change, a hyphen (-) is displayed.
Num. of CUs	The number of CUs set

Detailed Information 5

Item	Description
Copy Type	The program product name for this operation UR: Universal Replicator
Max Initial Copy	The maximum number of initial copy operations set

Detailed Information 6

Item	Description
Copy Type	The program product name for this operation GAD: global-active device
Max Initial Copy	The setting of the maximum number of initial copy operations
Path Blockade Watch(s)	The path blockade watch period setting (in seconds).
Path Blockade SIM Watch(s)	The path blockade SIM watch period setting (in seconds).
Service SIM	Indicates whether the remote replication related SIM is reported.

Item	Description
	Report: Reported, Not Report: Not reported
Switch	Indicates the ON/OFF information of each bit of the function switch that is allocated in the 64 bit format; the first digit corresponds to the bit 0 while the last one corresponds to the bit 63. 0: OFF, 1: ON If this is not a subject to change, a hyphen (-) is displayed.
Max Initial Copy HA	The setting of the number of initial copy operations of GAD

Example 1: Editing storage system options when the copy type is TC

```
RMI AP,,[Remote Replication],Edit Options,,Normal end,Seq.=xxxxxxxxxx
+Copy Type=TC,
{Max Initial Copy,CU Activity,Path Blockade Watch(s),
Path Blockade SIM Watch(s),Switch}
={128,Enable,45,070,-}
```

Example 2: Editing CU options when the copy type is TC

```
RMI AP,,[Remote Replication],Edit Options,,Normal end,Seq.=xxxxxxxxxx
+Copy Type=TC,{LDKC,CU,Max Initial Copy}
=[{0x00,0x00,04},{0x00,0x01,04},
{0x00,0x02,04},{0x00,0x03,04},
{0x00,0x04,04},(Snip)-(Snip)],Num. of CUs=255
```

Example 3: Editing both storage system options and CU options when the copy type is TC

```
RMI AP,,[Remote Replication],Edit Options,,Normal end,Seq.=xxxxxxxxxx
+Copy Type=TC,
{Max Initial Copy,CU Activity,Path Blockade Watch(s),
Path Blockade SIM Watch(s),Switch}
={128,Enable,45,070,-}
+{LDKC,CU,Max Initial Copy}
=[{0x00,0x00,04},{0x00,0x01,04},
{0x00,0x02,04},{0x00,0x03,04},
{0x00,0x04,04},(Snip)-(Snip)],Num. of CUs=255
```

Example 4: Editing remote replication function switch when the copy type is TC

```
RMI AP,,[Remote Replication],Edit Options,,Normal end,Seq.=xxxxxxxxxx
+Copy Type=TC,
{Max Initial Copy,CU Activity,Path Blockade Watch(s),
Path Blockade SIM Watch(s),Switch}
```

```
={-,-,-,-,1000 0000 0000 0000 0100 0000 0000 0000 0000
0000 0000 0000 0000 0000 0000 0000}
```

Example 5: Copy type is UR

```
RMI AP,,[Remote Replication],Edit Options,,Normal end,Seq.=xxxxxxxxxx
+Copy Type=UR
+Max Initial Copy=64
```

Example 6: when the copy type is GAD

```
RMI AP,,[Remote Replication],Edit Options,,Normal end,Seq.=xxxxxxxxxx
+Copy Type=GAD,{Max Initial Copy,Path Blockade Watch(s),
Path Blockade SIM Watch(s),Service SIM,Switch,Max Initial Copy HA}=
{128,45,70,Not Report,0000 0000 0000 0000 0000 0000 0000 0000 0000
0000 0000 0000 0000 0000 0000 0000,50}
```

[Remote Replication] Edit Pair Options

Detailed Information 1

Item	Description
Copy Type	The program product name for this operation TC: TrueCopy
P-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the primary volume
Fence Level	The changed fence level setting (the condition that MCU rejects the write operation to the primary volume). Never: Can write to the primary volume even when the pair is split. Data: Cannot write to the primary volume when update copying fails. Status: Cannot write to the primary volume, only when the storage system of the primary site cannot change the pair status of the secondary volume to PSUE.
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Pairs	The number of pairs on which the setting is changed

Detailed Information 2

Item	Description
Copy Type	The program product name for this operation UR: Universal Replicator
P-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the primary data volume
S-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the secondary data volume
MirrorID	The mirror ID
M-JNL	The master journal number
R-JNL	The restore journal number
Error Level	Range of the pair split at failure occurrence Mirror: When a pair fails, all the pairs are split that exist in the same mirror as the pair. LU: When a pair fails, only the pair is split.
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Pairs	The number of pairs on which the setting is changed

Example 1: Copy type is TC

```
RMI AP,,[Remote Replication],Edit Pair Options,,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=TC,{P-VOL(Port-G-ID-LUN),Fence Level,Result}
=[{1A-0x00-0,Never,Normal end},{1A-0x00-1,Never,Normal end},
{1A-0x00-2,Never,Normal end},(Snip)-(Snip)],
Num. of Pairs=xx
```

Example 2: when the copy type is UR

```
RMI AP,,[Remote Replication],Edit Pair Options,,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=UR
+{P-VOL(Port-G-ID-LUN),S-VOL(Port-G-ID-LUN),MirrorID,
M-JNL,R-JNL,Error Level,Result}
=[{4C-0x00-0,4A-0x00-0,0x00,0x001,0x001,Mirror,Normal end},
```

```
{4C-0x00-1,4A-0x00-1,0x00,0x001,0x001,Mirror,Normal end}],
Num. of Pairs=2
```

[Remote Replication] Journal Owner

Detailed Information

Item	Description
JNL	The journal number
Owner	The ownership to which the journal belongs
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end
Num. of JNLs	The number of journals

Example

```
RMI AP,,[Remote Replication],Journal Owner,,Normal end,
Seq.=xxxxxxxxxx
+{JNL,Owner,Result}={0x000,0x00,Normal end},
{0x001,0x00,Normal end},
Num. of JNLs=2
```

[Remote Replication] Journal Vol

Basic Information (Adding or deleting journal volumes)

Parameter	Description
Add	Indicates the addition of journal volumes
Delete	Indicates the deletion of journal volumes

Detailed Information (Adding or deleting journal volumes)

Item	Description
Copy Type	The program product name for this operation UR: Universal Replicator

Item	Description
LDKC	The LDKC number to which the journal belongs
JNL	The journal number
Owner	The ownership to which the journal belongs This information is output when the parameter is Add.
LDKC:CU:LDEV	The LDKC, CU, and LDEV numbers of the volume
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of LDEVs	The number of LDEVs set for the journal
Num. of JNLs	The number of journals

Basic Information

Parameter	Description
Delete JNL	Indicates the deletion of journals

Detailed Information

Item	Description
Copy Type	The program product name for this operation UR: Universal Replicator
LDKC	The LDKC number to which the journal belongs
JNL	The journal number
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of JNLs	The number of journals

Example 1: Adding journal volumes

```
RMI AP,,[Remote Replication],Journal Vol,Add,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=UR
+{LDKC,JNL,Owner}={0x00,0x001,0x00}
++{LDKC:CU:LDEV,Result}
=[{0x00:0xD7:0x01,Normal end}],Num. of LDEVs=1
+{LDKC,JNL,Owner}={0x00,0x002,0x00}
++{LDKC:CU:LDEV,Result}
=[{0x00:0xD8:0x21,Normal end}],Num. of LDEVs=1
+Num. of JNLs=2
```

Example 2: Deleting journal volumes

```
RMI AP,,[Remote Replication],Journal Vol,Delete,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=UR
+{LDKC,JNL}={0x00,0x001}
++{LDKC:CU:LDEV,Result}
=[{0x00:0xD7:0x01,Normal end}],Num. of LDEVs=1
+{LDKC,JNL}={0x00,0x002}
++{LDKC:CU:LDEV,Result}
=[{0x00:0xD8:0x21,Normal end}],Num. of LDEVs=1
+Num. of JNLs=2
```

Example 3: Deleting journals

```
RMI AP,,[Remote Replication],Journal Vol,Delete JNL,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=UR
+{LDKC,JNL,Result}
=[{0x00,0x001,Normal end},{0x00,0x003,Normal end},
{0x00,0x005,Normal end}],Num. of JNLs=3
```

[Remote Replication] R-Cmd.Dev.

Basic Information

Parameter	Description
Assign	The remote command device is assigned.
Release	The remote command device is released.

Detailed Information

Item	Description
Copy Type	The program product name for this operation UR: Universal Replicator
LDKC	The LDKC number to which the journal belongs
JNL	The journal number
MirrorID	The mirror ID
R-Cmd.Dev. (LDKC:CU:LDEV)	The LDKC, CU, and LDEV numbers of the remote command device. The hyphen (-) indicates ▪ When assigning a remote command device without specifying a remote command device as a parameter. ▪ When releasing a remote command device.
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Mirrors	The number of mirrors on which the setting is changed

Example

```
RMI AP,,[Remote Replication],R-Cmd.Dev.,Assign,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=UR
+{LDKC,JNL,MirrorID,R-Cmd.Dev.(LDKC:CU:LDEV),Result}
=[{0x00,0x001,0x01,0x00:0x12:0x34,Normal end},
{0x00,0x010,0x02,0x00:0x56:0x78,Normal end}],
Num. of Mirrors=2
```

[Remote Replication] Resync Pairs

Detailed Information 1

Item	Description
Copy Type	The program product name for this operation TC: TrueCopy

Item	Description
P-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the primary volume
S-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the secondary volume
Fence Level	Configured fence level (conditions where the local storage system rejects write operations to the primary volume) Never: Can write to the primary volume even the pair is split. Data: Cannot write to the primary volume when update copying fails. Status: Cannot write to the primary volume, only when the storage system of the primary site cannot change the pair status of the secondary volume to PSUE.
Copy Pace	The initial copy speed set (the number of tracks you can copy at a time)
Priority	The priority of resynchronizing operation set (scheduling order)
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Pairs	The number of resynchronized pairs

Detailed Information 2

Item	Description
Copy Type	The program product name for this operation UR: Universal Replicator
P-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the primary data volume
S-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the secondary data volume
MirrorID	The mirror ID
S/N	The serial number of the RCU
CTRLID	The controller ID of the RCU

Item	Description
	7: VSP G1000/G1500 and VSP F1500, 8: VSP 5000 series, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM
Priority	The priority of resynchronizing operation set (scheduling order)
CTG	The consistency group ID
Range	The applicable range of resynchronization Mirror: All the pairs are resync that exist in the same mirror as the pair. LU: Only the pair is resync.
M-JNL	The master journal number
R-JNL	The restore journal number
Error Level	Range of the pair split at failure occurrence Mirror: When a pair fails, all the pairs are split that exist in the same mirror as the pair. LU: When a pair fails, only the pair is split.
Resync Mode	Type of the pair resynchronization operation Normal: normal resync, Delta: delta resync, Return to standby: return to standby status
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Requests	The number of resynchronized mirrors when Range is Mirror The number of resynchronized pairs when Range is LU

Detailed Information 3

Item	Description
Copy Type	The program product name for this operation GAD: global-active device
P-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the primary volume

Item	Description
S-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the secondary volume
S/N_P	The serial number of the local storage system
S/N_S	The serial number of the remote storage system
Type	The volume type of the volume on the local storage system P-VOL: Primary volume, S-VOL: Secondary volume
Path Gr.ID	Path group ID used in a global-active device pair
Controller ID	The controller ID of the remote storage system 7: VSP G1000/G1500 and VSP F1500, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM
SSID_P	The SSID of the primary volume
SSID_S	The SSID of the secondary volume
Copy Pace	The setting of the initial copy speed (the number of tracks that can be copied at a time)
Quorum Disk ID	The quorum disk ID used by global-active device
MirrorID	The mirror ID
Swap	Indicates whether the attributes of the primary and secondary volumes are swapped. No: Not swapped, Yes: Swapped
Range	The applicable range of resynchronization Volume: Only this volume, Group: All volumes in the consistency group to which this volume belongs
CTG	The consistency group ID A hyphen (-) is displayed when the volume does not belong to a consistency group.
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Requests	The number of requests to resynchronize pairs

Example 1: Copy type is TC

```
RMI AP,,[Remote Replication],Resync Pairs,,Normal end,Seq.=xxxxxxxxxx
+Copy Type=TC,{P-VOL(Port-G-ID-LUN),S-VOL(Port-G-ID-LUN),
Fence Level,Copy Pace,Priority,Result}
=[{1A-0x00-0,1B-0x00-0,Never,15,256,Normal end},
{1A-0x00-1,1B-0x00-1,Never,15,256,Normal end},(Snip)-(Snip)],
Num. of Pairs=xx
```

Example 2: when the copy type is UR

```
RMI AP,,[Remote Replication],Resync Pairs,,Normal end,Seq.=xxxxxxxxxx
+Copy Type=UR
+{P-VOL(Port-G-ID-LUN),S-VOL(Port-G-ID-LUN),MirrorID,
S/N,CTRLID,Priority,CTG,Range,M-JNL,R-JNL,Error Level,
Resync Mode,Result}
=[{4C-0x00-0,4A-0x00-0,0x00,467676,18,32,0x000,LU,0x001,0x001,
Mirror,Normal,Normal end},
{4C-0x00-1,4A-0x00-1,0x00,467676,18,32,0x000,LU,0x001,0x001,
Mirror,Normal,Normal end}],Num. of Requests=2
```

Example 3: when the copy type is GAD

```
RMI AP,,[Remote Replication],Resync Pairs,,Normal end,Seq.=xxxxxxxxxx
+Copy Type=GAD,{P-VOL(Port-G-ID-LUN),S-VOL(Port-G-ID-LUN),
S/N_P,S/N_S,Type,Path Gr.ID,Controller ID,SSID_P,SSID_S,
Copy Pace,Quorum Disk ID,MirrorID,Swap,Range,CTG,Result}=
-[{1A-0x00-0,1B-0x01-1,411111,422222,P-VOL,0x00,18,0x0004,0x0004,15,
0x00,1,Yes,Group,0x000,Normal end},(Snip)-(Snip)],Num. of Requests=xx
```

[Remote Replication] Split Pairs

Detailed Information 1

Item	Description
Copy Type	The program product name for this operation TC: TrueCopy
P-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the primary volume
S-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the secondary volume
Type	The volume type of the volume on the primary site P-VOL: Primary volume, S-VOL: Secondary volume

Item	Description
S-VOL Write	Indicates whether the writing to the secondary volume is enabled Enable: Writing is enabled, Disable: Writing is disabled
Kind	Indicates whether the primary volume is writable after splitting a pair. P-VOL Failure: Not writable S-VOL: Writable
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Pairs	The number of split pairs

Detailed Information 2

Item	Description
Copy Type	The program product name for this operation UR: Universal Replicator
P-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the primary data volume
S-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the secondary data volume
MirrorID	The mirror ID
S/N	The serial number of the RCU
CTRLID	The controller ID of the RCU 7: VSP G1000/G1500 and VSP F1500, 8: VSP 5000 series, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM
Type	Indicates whether the split data volume is a primary or secondary data volume P-VOL: Primary, S-VOL: Secondary
S-VOL Write	Indicates whether the writing to the secondary volume is enabled Disable: Disabled, Enable: Enabled
Range	The split range

Item	Description
	Mirror: All the pairs are split that exist in the same mirror as the pair. LU: Only the pair is split.
Suspend Mode	Indicates how to handle updated data that is not reflected in the secondary volume. Flush: The updated data is reflected when splitting a pair. Flush: The updated data is reflected when splitting a pair. Purge: The updated data is not reflected when splitting a pair. However, the updated data is reflected when the pair is resynchronized later.
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Requests	The number of split mirrors when Range is Mirror The number of split pairs when Range is LU

Example 1: Copy type is TC

```
RMI AP,,[Remote Replication],Split Pairs,,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=TC,{P-VOL(Port-G-ID-LUN),S-VOL(Port-G-ID-LUN),
Type,S-VOL Write,Kind,Result}
=[{1A-0x00-0,1B-0x00-0,P-VOL,Disable,S-VOL,Normal end},
{1A-0x00-1,1B-0x00-1,P-VOL,Disable,S-VOL,Normal end},
(Snip)-(Snip)],Num. of Pairs=xx
```

Example 2: when the copy type is UR

```
RMI AP,,[Remote Replication],Split Pairs,,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=UR
+{P-VOL(Port-G-ID-LUN),S-VOL(Port-G-ID-LUN),MirrorID,
S/N,CTRLID,Type,S-VOL Write,Range,Suspend Mode,Result}
=[{4C-0x00-0,4A-0x00-0,0x00,467676,18,P-VOL,Disable,LU,
Flush,Normal end},
{4C-0x00-1,4A-0x00-1,0x00,467676,18,P-VOL,Disable,LU,
Flush,Normal end}],Num. of Requests=2
```

[Remote Replication] Suspend Pairs

Detailed Information

Item	Description
Copy Type	The program product name for this operation GAD: global-active device
P-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the primary volume
S-VOL(Port-G-ID-LUN)	The port number, host group number, and LUN of the secondary volume
S/N_P	The serial number of the local storage system
S/N_S	The serial number of the remote storage system
Type	The volume type of the volume on the local storage system P-VOL: Primary volume, S-VOL: Secondary volume
SSID_P	The SSID of the primary volume
SSID_S	The SSID of the secondary volume
Kind	Indicates whether the primary volume is writable after suspending a pair. P-VOL Failure: Not writable S-VOL: Writable
CTG	The consistency group ID A hyphen (-) is displayed when Range is Volume.
Range	The applicable range of suspension Volume: Only this volume, Group: All volumes in the consistency group to which this volume belongs
Swap	Indicates whether the attributes of the primary and secondary volumes are swapped. No: Not swapped, Yes: Swapped, Rollback: Returning the pair status of the secondary volume to PSUS from SSWS
MirrorID	The mirror ID
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end

Item	Description
	where *xxxx*: Part code, *yyyyy*: Error code
Num. of Requests	The number of requests to suspend pairs

Example

```
RMI AP,,[Remote Replication],Suspend Pairs,,Normal end,
Seq.=xxxxxxxxxx
+Copy Type=GAD,{P-VOL(Port-G-ID-LUN),S-VOL(Port-G-ID-LUN),
S/N_P,S/N_S,Type,SSID_P,SSID_S,Kind,CTG,Range,Swap,MirrorID,Result}
=[{1A-0x00-0,1B-0x01-01,411111,422222,P-VOL,0x0008,0x000C,S-VOL,
-,Volume,No,0,Normal end},
{1A-0x00-1,1B-0x01-1,411111,422222,P-VOL,0x0009,0x000C,S-VOL,
-,Volume,No,0,Normal end},(Snip)-(Snip)],Num. of Requests=xx
```

[Remote Replication] UpdateQuorumDisks

Detailed Information

Item		Description
QuorumDisks		The setting information of quorum disks.
	Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
	Id	Indicates the ID of a global-active device quorum disk whose Read Response Guaranteed Time When Quorum monitoring has stopped value will be updated.
	ReadResponseGuaranteedTime	Indicates the updated value of Read Response Guaranteed Time When Quorum monitoring has stopped for global-active device in seconds.

Example

```
08xx,YYYY/MM/DD,HH:MM:SS.xxx, 00:00,RMI AP,uid=user-name,1,,
[Remote Replication], UpdateQuorumDisks,,Normal end,
from=xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx,,Seq.=xxxxxxxxxx
+{QuorumDisks[0]{
  Result=Normal end,Id=31,ReadResponseGuaranteedTime=40}}
```

Server Priority Manager Descriptions

[SPM] Change SPMGrp

Detailed Information

Item	Description
SPM Group	AnSPM group name
Priority	An attribute specified to an HBA (host bus adapter) in the SPM group after the change Prio: a prioritized WWN Non-Prio: a non-prioritized WWN
Upper Limit	An upper limit when you specify Non-Prio When you specify Prio, this information is not output.
Mode	The type of rate when you specify an upper limit. IOPS: the I/O rate KB/s: the transfer rate When you specify Prio, this information is not output.
Num. of SPM Groups	The number of SPM groups whose settings are changed

Note:

- When the attribute of the host bus adapter in the SPM group changes from a prioritized WWN to a non-prioritized WWN, "Non-Prio" is output to Priority and "0" is output to Upper limit respectively.
- If multiple changes in settings such as Priority and Upper limit are made in succession and then Apply is clicked at the end of the operation, these set values are output one by one in the order they were configured.

Example

```
RMI AP,,[SPM],Change SPMGrp,,Normal end,
Seq.=xxxxxxxxxx
+{SPM Group,Priority,UpperLimit,Mode}
=[{XXXXXXXXXXXXXXXX,Non-Prio,XXXXXXXX,IOPS}],Num. of SPM Groups=1
```

[SPM] Clear SPM Info

Example

```
RMI AP,,[SPM],Clear SPM Info,,Normal end,
Seq.=xxxxxxxxxx
```

[SPM] Default Set

Basic Information

Parameter	Description
Kind=Port	Indicates that settings in the Port tab are initialized.
Kind=WWN	Indicates that settings in the WWN tab are initialized.

Example

```
RMI AP,,[SPM],Default Set,Kind=WWN,Normal end,
Seq.=xxxxxxxxxx
```

[SPM] Set All Prio Port

Detailed Information

Item	Description
AllPriority	Settings in the All Thresholds field in the Port tab Enable: All Thresholds is configured. Disable: Settings in the All Thresholds field are canceled.
Threshold	A configured value in the All Thresholds field. This information is output only when All Thresholds is configured.
Mode	The type of rate for All Thresholds IOPS: the I/O rate KB/s: the transfer rate This information is output only when All Thresholds is configured.

Example

```
RMI AP,,[SPM],Set All Prio Port,,Normal end,
Seq.=xxxxxxxxxx
+{AllPriority,Threshold,Mode}={Enable,XXXXXXXX,IOPS}
```

[SPM] Set All Prio WWN

Detailed Information

Item	Description
AllPriority	Settings in the All Thresholds field in the WWN tab Enable: All Thresholds is configured. Disable: Settings in the All Thresholds field are canceled.
Threshold	A configured value in the All Thresholds field. This information is output only when All Thresholds is configured.
Mode	The type of rate for All Thresholds IOPS: the I/O rate KB/s: the transfer rate This information is output only when All Thresholds is configured.

Example

```
RMI AP,,[SPM],Set All Prio WWN,,Normal end,
Seq.=xxxxxxxxxx
+{AllPriority,Threshold,Mode}={Enable,XXXXXXXX,IOPS}
```

[SPM] Set Ctrl Kind

Basic Information

Parameter	Description
Kind=Port	Indicates that you switched a definition of the server priority by a port without configuring All Thresholds.
Kind=All Port	Indicates that you switched a definition of the server priority by a port with configuring All Thresholds.
Kind=WWN	Indicates that you switched a definition of the server priority by a WWN.

Parameter	Description
	This information is output whichever All Thresholds is configured or not.

Example

```
RMI AP,,[SPM],Set Ctrl Kind,Kind=WWN,Normal end,
Seq.=xxxxxxxxxx
```

[SPM] Set Prio Port

Detailed Information

Item	Description
Port	A name of the port
Priority	An attribute specified to the port Prio: a prioritized port Non-Prio: a non-prioritized port
Use	When the port is a prioritized port, this information indicates whether a threshold is specified or not. When the port is a non-prioritized port, this information indicates whether an upper limit is specified or not. Enable: specified Disable: not specified
Threshold/Upper Limit	When the port is a prioritized port, this information indicates the threshold. When the port is a non-prioritized port, this information indicates the upper limit. This information is output only when a threshold or an upper limit is specified.
Mode	The type of rate for the threshold or the upper limit IOPS: the I/O rate KB/s: the transfer rate This information is output only when a threshold or an upper limit is specified.
Num. of Ports	The number of ports whose settings are changed

Example

```
RMI AP,,[SPM],Set Prio Port,,Normal end,
Seq.=xxxxxxxxxx
+{Port,Priority,Use,Threshold/Upper Limit,Mode}
=[{1A,Non-Prio,Enable,XXXXXXXX,IOPS}],Num. of Ports=1
```

[SPM] Set Prio WWN

Detailed Information

Item	Description
WWN	A WWN of an HBA A WWN is a 16-digit number in the hexadecimal format.
Priority	An attribute specified to the HBA Prio: a prioritized WWN Non-Prio: a non-prioritized WWN
Upper Limit	When the WWN is a non-prioritized WWN, this information indicates the upper limit. When the WWN is a prioritized WWN, this information is not output.
Mode	The type of rate for the upper limit IOPS: the I/O rate KB/s: the transfer rate This information is not output when the WWN is a prioritized WWN.
Num. of WWNs	The number of WWNs of HBAs whose settings are changed

Note:

- When the attribute of the host bus adapter changes from a prioritized WWN to a non-prioritized WWN, "Non-Prio" is output to Priority and "0" is output to Upper limit respectively.
- If multiple changes in settings such as Priority and Upper limit are made in succession and then Apply is clicked at the end of the operation, these set values are output one by one in the order they were configured.

Example

```
RMI AP,,[SPM],Set Prio WWN,,Normal end,
Seq.=xxxxxxxxxx
+{WWN,Priority,Upper Limit,Mode}
=[{0xXXXXXXXXXXXXXXXX,Non-Prio,XXXXXXXX,IOPS}],Num. of WWNs=1
```

[SPM] SPMGrp Del/Chg

Detailed Information

Item	Description
Mode	An executed operation Delete: Deleted anSPM group. Update: Changed anSPM name.
SPM Group	AnSPM group name where the operation is executed
Change Name	AnSPM group name after the change This information is output only when anSPM group name is changed.
Num. of SPM Groups	The number of SPM groups that are deleted or whose names are changed

Example

```
RMI AP,,[SPM],SPMGrp Del/Chg,,Normal end,
Seq.=xxxxxxxxxx
+{Mode,SPM Group,Change Name}
=[{Update,XXXXXXXXXXXXXXXX,XXXXXXXXXXXXXXXX}],
Num. of SPM Groups=1
```

[SPM] Update Port WWN

Detailed Information

Item	Description
Mode	An executed operation Add WWN: Added a WWN (an HBA is monitored). Delete WWN: Deleted a WWN (an HBA is not monitored).
WWN	An added or deleted WWN A WWN is a 16-digit number in the hexadecimal format.
SPM Name	AnSPM name for an added or deleted HBA
Priority	An attribute specified to the HBA Prio: a prioritized WWN Non-Prio: a non-prioritized WWN

Item	Description
	This information is output only when a WWN (HBA) is added.
Port	A name of the port where the HBA is added
Num. of Ports	The number of ports where the HBA is added
Num. of WWNs	The number of added or deleted WWNs

Example

```
RMI AP,,[SPM],Update Port WWN,,Normal end,
Seq.=xxxxxxxxxx
+{Mode,WWN,SPM Name,Priority}
={Add WWN,0xXXXXXXXXXXXXXXXX,XXXXXXXXXXXXXXXX,Non-Prio},
++Port=[1A,3A],Num. of Ports=2,
-Num. of WWNs=1
```

[SPM] Update SPMGrp

Detailed Information

Item	Description
UpdateMode	An executed operation Add New Group: Added a new SPM group. Add WWN: Added an HBA to the SPM group Delete WWN: Deleted an HBA from the SPM group
SPM Group	AnSPM group name
Priority	An attribute specified to the HBA Prio: a prioritized WWN Non-Prio: a non-prioritized WWN This attribute is applied to all HBAs in the SPM group. This information is output only when you add a new SPM group.
Upper Limit	When an attribute specified to the SPM group is Non-Prio, this information indicates an upper limit of the HBAs in the SPM group. This information is output only when you add a new SPM group.
Mode	The type of rate when you specify an upper limit. IOPS: the I/O rate

Item	Description
	KB/s: the transfer rate This information is output only when you add a new SPM group.
WWN	WWNs of HBAs in the SPM group A WWN is a 16-digit number in the hexadecimal format. All WWNs are output for this item. You can add up to 32 WWNs to an SPM group.
Num. of WWNs	The number of WWNs of added or deleted HBAs
Num. of SPM Group	The number of SPM groups whose settings are changed

Example

```
RMI AP,,[SPM],Update SPMGrp,,Normal end,
Seq.=xxxxxxxxxx
+{UpdateMode,SPM Group,Priority,Upper Limit,Mode}
=[{Add New Group,XXXXXXXXXXXXXXXX,Non-Prio,XXXXXXXX,IOPS},
++WWN=[0xXXXXXXXXXXXXXXXX,0xXXXXXXXXXXXXXXXX],Num. of WWNs=2],
+Num. of SPM Group=1
```

[SPM] Update WWN

Detailed Information

Item	Description
Update Mode	An executed operation Change WWN: Changed an HBA. Change Nickname: Changed anSPM name for a WWN
WWN	A WWN of the HBA A WWN is a 16-digit number in the hexadecimal format. When you changed an HBA, the WWN before the change is output.
Change SPM Name	AnSPM name for the HBA When you changed anSPM name for the HBA, the SPM name after the change is output.
Change WWN	An WWN of the HBA after the change This information is output only when an HBA is changed.

Item	Description
Num. of WWNs	The number of HBAs whose settings are changed

Example

```
RMI AP,,[SPM],Update WWN,,Normal end,
Seq.=xxxxxxxxxx
+{Update Mode,WWN,Change SPM Name,Change WWN}
={Change WWN,0xXXXXXXXXXXXXXXXX,,0xXXXXXXXXXXXXXXXX},
Num. of WWNs=1
```

Universal Volume Manager Descriptions

[UVM] Add External Volumes

Detailed Information

Item	Description
Vendor	The name of the vendor of the external storage system that the mapped external volume exists
Product	The product name of the external storage system that the mapped external volume exists
Serial	The serial number the external storage system that the mapped external volume exists
VolumeID1	The volume properties of the mapped external volume
VolumeID2	The device ID of the mapped external volume
Device	The device name that the mapped external volume notifies to the host
Capa(blocks)	The capacity of the mapped external volume indicated by blocks
ExGroup	The number of the external volume group and the reference number assigned to the external volume of the mapped external volume. The number on the left of a dash (-) is the external volume number and the number on the right of the dash (-) is the reference number of the group.
PathGroup	The path group number of the mapped external volume
CLPR	The CLPR ID of the mapped external volume

Item	Description
Emulation	Not output because this item is not used.
Cache	The cache mode of the mapped external volume Enable: Enabled, Disable: Disabled
Inflow	The inflow control setting of the cache of the mapped external volume. Enable: Enabled, Disable: Disabled
MP Unit ID	MP Unit ID specified for the external volume When an MP Unit ID is specified automatically, "Auto" is output.
LoadBalanceMode	The load balance mode of the mapped external volume Normal Round-robin, Extended Round-robin, or Disable will appear.
ALUA Permitted	The ALUA permitted of the mapped external volume Enable: Enabled, Disable: Disabled
Data Direct Mapping	Indicates the setting status of Data Direct Mapping Enable: Data Direct Mapping is enabled. Disable: Data Direct Mapping is disabled.
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Port	The port name of the local storage system
WWN	For connection through the fibre channel port, the WWN of the target port on the external storage system is indicated. For connection through the iSCSI port, a hyphen (-) is output.
IP Address	For connection through the iSCSI port, the IP address of the iSCSI port on the external storage system is indicated. For connection through the fibre channel port, a hyphen (-) is output.
iSCSI Target Name	For connection through the iSCSI port, the iSCSI target name on the external storage system is indicated. For connection through the fibre channel port, a hyphen (-) is output.
LUN	The LUN of the external volume
Num. of Paths	The number of mapping path (Port-WWN-LUN) configured
PathResult	The result of attempting to create an external path.

Item	Description
	If the path is created normally, the audit log includes the following: PathResult: Normal end If the path is not created, the audit log includes this: PathResult: Error(xxxx-yyyyy): Abnormal end where xxxx is the Part code and yyyyy is the Error code
LDKC:CU:LDEV	The LDKC number, CU, and LDEV number of the LDEVs in the mapped external volume. The number on the left of the colon is an LDKC number, the number between the colons is a CU number, and the number on the right of the colon is an LDEV number
LDEVCapa(blocks)	The capacity of LDEVs in the mapped external volumes indicated by blocks
SSID	Not output because this item is not used.
LDEV MP Unit ID	MP Unit ID specified for the LDEV. When an MP Unit ID is specified automatically, "Auto" is output.
LDEVResult	The result of attempting to create an external path. If the LDEV is created normally, the audit log includes the following: LDEVResult: Normal end If the LDEV is not created, the audit log includes this: LDEVResult: Error(xxxx-yyyyy): Abnormal end where xxxx is the Part code and yyyyy is the Error code
Num. of LDEVs	The number of LDEVs in the mapped external volumes
Num. of Volumes	The number of mapped external volumes

Example

```
RMI AP,Task Name,[UVM],Add External Volumes,,Normal end,
Seq.=xxxxxxxxxx
+{Vendor,Product,Serial,VolumeID1,VolumeID2,Device,
Capa(blocks),ExGroup,PathGroup,CLPR,Emulation,Cache,Inflow,
MP Unit ID,LoadBalanceMode,ALUA Permitted,Data Direct Mapping,
Result}={HITACHI,9500V,28528,0001,
00000000000000000000000000000000000000000000000000000000000000000000,
DF600F,4294967296,E1-1,1,0,,Enable,Disable,Auto,
Extended Round-robin,Enable,Enable,Normal end}
++{Port,WWN,IP Address,iSCSI Target Name,LUN,PathResult}
=[{1A,50560E8000C3E211,-,-,1,Normal end},
{2A,-,192.168.0.136,
iqn.1994-04.jp.co.hitachi.h8m.t.00001.2b000,1,Normal end},
```

```
{3A,-,FE80:0:0:0:0:0:0:1,
iqn.1994-04.jp.co.hitachi.h8m.t.00001.3b000,1,Normal end},
{4A,-,0:0:0:0:0:FFFF:192.168.0.137,
iqn.1994-04.jp.co.hitachi.h8m.t.00001.4b000,1,Normal end}],
Num. of Paths=4
++{LDKC:CU:LDEV,LDEVCapa(blocks),SSID,LDEV MP Unit ID,LDEVResult}
=[{0x00:0x00:0x00,96000,,Auto,Normal end},
{0x00:0x00:0x01,96000,,Auto,Normal end}],Num. of LDEVs=2
+{Vendor,Product,Serial,VolumeID1,VolumeID2,Device,
Capa(blocks),ExGroup,PathGroup,CLPR,Emulation,Cache,Inflow,
MP Unit ID,LoadBalanceMode,ALUA Permitted,Data Direct Mapping,
Result}={HITACHI,9500V,28528,0001,
00000000000000000000000000000000000000000000000000000000000000000000,
DF600F,4294967296,E1-1,1,0,,Enable,Disable,Auto,
Extended Round-robin,Enable,Disable,Normal end}
++{Port,WWN,IP Address,iSCSI Target Name,LUN,PathResult}
=[{1A,50560E8000C3E211,-,-,2,Normal end},
{2A,-,192.168.0.136,
iqn.1994-04.jp.co.hitachi.h8m.t.00001.2b000,2,Normal end},
{3A,-,FE80:0:0:0:0:0:0:1,
iqn.1994-04.jp.co.hitachi.h8m.t.00001.3b000,2,Normal end},
{4A,-,0:0:0:0:0:FFFF:192.168.0.137,
iqn.1994-04.jp.co.hitachi.h8m.t.00001.4b000,2,Normal end}],
Num. of Paths=4
++{LDKC:CU:LDEV,LDEVCapa(blocks),SSID,LDEV MP Unit ID,LDEVResult}
=[{0x00:0x01:0x00,4294967296,,Auto,Normal end}],Num. of LDEVs=1
+Num. of Volumes=2
```

[UVM] Assign MP Unit

Detailed Information

Item	Description
Group	The external volume number for the configured external volumes
MP Unit ID	The MP Unit ID assigned to the external volume
Result	The result of operation Normal end: Normal end, Error(*xxxx*-*yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Groups	The number of groups of configured external volumes

Example

```
RMI AP,Task Name,[UVM],Assign MP Unit,,Normal end,
Seq.=xxxxxxxxxx
+{Group,MP Unit ID,Result}=[{E1-1,10,Normal end},
{E1-2,11,Normal end},{E1-3,20,Normal end}],Num. of Groups=3
```

[UVM] Delete ES VOLs

Detailed Information

Item	Description
ExGroup	The number of the external volume group and the reference number assigned to the external volume of the external volume that the mapping has been released. The number on the left of a dash (-) is the external volume number and the number on the right of the dash (-) is the reference number of the group.
Mode	The mode of execution when mapping was released Normal: normal execution. Force: forcible execution
Result	The result of operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Volumes	The number of volumes in the external volumes that mapping has been released

Example

```
RMI AP,Task Name,[UVM],Delete ES VOLs,,Normal end,
Seq.=xxxxxxxxxx
+{ExGroup,Mode,Result}=[{E1-1,Force,Normal end},{E1-2,Force,
Normal end},{E1-3,Normal,Normal end}],Num. of Volumes=3
```

[UVM] Disconnect ES Paths

This logged information indicates that this Disconnect External Paths operation was only requested but not completed.

Detailed Information

Item	Description
Port	The port name of the local storage system
WWN	For connection through the fibre channel port, the WWN of the target port on the external storage system is indicated. For connection through the iSCSI port, a hyphen (-) is output.
IP Address	For connection through the iSCSI port, the IP address of the iSCSI port on the external storage system is indicated. For connection through the fibre channel port, a hyphen (-) is output.
iSCSI Target Name	For connection through the iSCSI port, the iSCSI target name on the external storage system is indicated. For connection through the fibre channel port, a hyphen (-) is output.
Result	The result of operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Paths	The number of mapping paths that has been disconnected.

Example

```
RMI AP,Task Name,[UVM],Disconnect ES Paths,,Normal end,
Seq.=xxxxxxxxxx
+{Port,WWN,IP Address,iSCSI Target Name,Result}
=[{1A,50560E8000C3E211,-,-,Normal end},
{2A,-,192.168.0.136,
iqn.1994-04.jp.co.hitachi.h8m.t.00001.2b000,Normal end},
{3A,-,FE80:0:0:0:0:0:0:1,
iqn.1994-04.jp.co.hitachi.h8m.t.00001.3b000,Normal end}],
Num. of Paths=3
```

[UVM] Disconnect ES VOLs

If this operation is performed from Device Manager - Storage Navigator, this logged information indicates that the Disconnect External Volumes operation was only requested but not completed.

Detailed Information

Item	Description
Group	The group number of the disconnected external volume
Result	The result of operation Normal end: Normal end, Error(*xxxx*-*yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code
Num. of Groups	The number of external volume groups that contain the disconnected external volume

Example

```
RMI AP,Task Name,[UVM],Disconnect ES VOLs,,Normal end,
Seq.=xxxxxxxxxx
+{Group,Result}=[{E1-1,Normal end},{E1-2,Normal end},
{E1-3,Normal end},{E1-4,Normal end}],Num. of Groups=4
```

[UVM] Edit ES Path Config

Detailed Information

Item	Description
ExGroup	The number of the external volume group and the reference number assigned to the external volume of the external volume that the mapping path configuration has been changed. The number on the left of a dash (-) is the external volume number and the number on the right of the dash (-) is the reference number of the group.
PathGroup	The path group number of the external volume that the mapping path configuration has been changed
Result	The result of the operation Normal end: Normal end, Error(*xxxx*-*yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code
Port	The port name of the local storage system
WWN	For connection through the fibre channel port, the WWN of the target port on the external storage system is indicated. For connection through the iSCSI port, a hyphen (-) is output.
IP Address	For connection through the iSCSI port, the IP address of the iSCSI port on the external storage system is indicated.

Item	Description
	For connection through the fibre channel port, a hyphen (-) is output.
iSCSI Target Name	For connection through the iSCSI port, the iSCSI target name on the external storage system is indicated. For connection through the fibre channel port, a hyphen (-) is output.
LUN	The LUN of the external volume
PathResult	The result of editing the path Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Paths	The number of mapping path (Port-WWN-LUN) set
Num. of Volumes	The number of external volumes that the mapping path configuration has been changed

Example

```
RMI AP,Task Name,[UVM],Edit ES Path Config,,Normal end,
Seq.=xxxxxxxxxx
+{ExGroup,PathGroup,Result}={E1-1,1,Normal end}
++{Port,WWN,IP Address,iSCSI Target Name,LUN,PathResult}
=[{1A,50560E8000C3E211,-,-,1,Normal end},
{2A,-,192.168,0,136,
iqn.1994-04.jp.co.hitachi.h8m.t.00001.2b000,1,Normal end},
{3A,-,FE80:0:0:0:0:0:0:1,
iqn.1994-04.jp.co.hitachi.h8m.t.00001.3b000,1,Normal end},
{4A,-,0:0:0:0:0:FFFF:192.168.0.137,
iqn.1994-04.jp.co.hitachi.h8m.t.00001.4b000,1,Normal end}],
Num. of Paths=4
+{ExGroup,PathGroup,Result}={E1-2,1,Normal end}
++{Port,WWN,IP Address,iSCSI Target Name,LUN,PathResult}
=[{1A,50560E8000C3E211,-,-,2,Normal end},
{2A,-,192.168,0,136,
iqn.1994-04.jp.co.hitachi.h8m.t.00001.2b000,2,Normal end},
{3A,- FE80:0:0:0:0:0:0:1,
iqn.1994-04.jp.co.hitachi.h8m.t.00001.3b000,2,Normal end},
{4A,-,0:0:0:0:0:FFFF:192.168.0.137,
iqn.1994-04.jp.co.hitachi.h8m.t.00001.4b000,2,Normal end}],
Num. of Paths=4
+Num. of Volumes=2
```

[UVM] Edit ES VOLs

Basic Information for Example 1 and 2

Parameter	Description
CacheMode	The cache mode is changed.
InflowControl	The cache inflow control is set.

Detailed Information for Example 1 and 2

Item	Description
Group	External volume group number for the executed setting operation
Mode	Whether the setting is enabled or disabled Enable: Enabled, Disable: Disabled
Result	The result of operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Groups	The number of external volumes groups configured

Basic Information for Example 3

Parameter	Description
LoadBalanceMode	The load balance mode is changed.

Detailed Information for Example 3

Item	Description
Group	External volume group number for the executed setting operation
Mode	The load balance mode after the change Normal Round-robin, Extended Round-robin, or Disable will appear.
Result	The result of operation

Item	Description
	Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Groups	The number of external volumes groups configured

Basic Information for Example 4

Parameter	Description
ALUA Permitted	The ALUA Permitted is changed.

Detailed Information for Example 4

Item	Description
Group	The external volume group number of the external volume on which the setting is performed
ALUA Permitted	The ALUA permitted after the change Enable: enable, Disable: disable
Result	The result of operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of Groups	The number of external volume groups on which the setting is performed

Example 1: Change the cache mode

```
RMI AP,Task Name,[UVM],Edit ES VOLs,CacheMode,Normal end,
Seq.=xxxxxxxxxx
+{Group,Result}
=[{E1-1,Enable,Normal end},{E1-2,Enable,Normal end},
{E1-3,Enable,Normal end},{E1-4,Enable,Normal end}],
Num. of Groups=4
```

Example 2: Set the cache inflow control

```
RMI AP,Task Name,[UVM],Edit ES VOLs, InflowControl,
Normal end,Seq.=xxxxxxxxxx
+{Group,Mode,Result}=[{E1-1,Enable,Normal end},
{E1-2,Enable,Normal end},{E1-3, Enable,Normal end},
{E1-4, Enable,Normal end}],Num. of Groups=4
```

Example 3: Changing a load balance mode

```
RMI AP,Task Name,[UVM],Edit ES VOLs,LoadBalanceMode,
Normal end,Seq.=xxxxxxxxxx
+{Group,Mode,Result}=[{E1-1,Normal Round-robin,Normal end},
{E1-2,Normal Round-robin,Normal end}],Num. of Groups=2
```

Example 4: Changing ALUA Permitted

```
RMI AP,Task Name,[UVM],Edit ES VOLs,ALUA Permitted,
Normal end,Seq.=xxxxxxxxxx
+{Group,ALUA Permitted,Result}=[{E1-1,Enable,Normal end},
{E1-2,Enable,Normal end}],Num. of Groups=2
```

[UVM] Edit External WWNs / iSCSI Targets

Detailed Information

Item	Description
WWN	For connection through the fibre channel port, the WWN of the target port on the external storage system is indicated. For connection through the iSCSI port, a hyphen (-) is output.
IP Address	For connection through the iSCSI port, the IP address of the iSCSI port on the external storage system is indicated. For connection through the fibre channel port, a hyphen (-) is output.
iSCSI Target Name	For connection through the iSCSI port, the iSCSI target name on the external storage system is indicated. For connection through the fibre channel port, a hyphen (-) is output.
I/O-TOV	The I/O time over value setting
Quedepth	The Quedepth value (the number of commands issuable)
LinkDown	The Blocked Path Monitoring value
Result	The result of operation Normal end: Normal end,

Item	Description
	Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code
Num. of WWNs	The number of WWNs setting of the external storage system

Example

```
RMI AP,Task Name,[UVM],Edit External WWNs / iSCSI Targets,,
Normal end,Seq.=xxxxxxxxxx
+{WWN,IP Address,iSCSI Target Name,I/O-TOV,Quedepth,LinkDown,Result}
=[{50060E8000C3E214,-,-,15,8,180,Normal end},
{-,192.168.0.136,iqn.1994-04.jp.co.hitachi.h8m.t.00001.2b000,
15,8,180,Normal end},
{-,FE80:0:0:0:0:0:0:1,iqn.1994-04.jp.co.hitachi.h8m.t.00001.3b000,
15,8,180,Normal end}],Num. of WWNs=3
```

[UVM] Reconnect ES Paths

This logged information indicates that this Reconnect External Paths operation was only requested but not completed.

Detailed Information

Item	Description
Port	The port name of the local storage system
WWN	For connection through the fibre channel port, the WWN of the target port on the external storage system is indicated. For connection through the iSCSI port, a hyphen (-) is output.
IP Address	For connection through the iSCSI port, the IP address of the iSCSI port on the external storage system is indicated. For connection through the fibre channel port, a hyphen (-) is output.
iSCSI Target Name	For connection through the iSCSI port, the iSCSI target name on the external storage system is indicated. For connection through the fibre channel port, a hyphen (-) is output.
Result	The result of operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end where *xxxx*: Part code, *yyyyy*: Error code

Item	Description
Num. of Paths	The number of mapping paths that path status has been checked.

Example

```
RMI AP,Task Name,[UVM],Reconnect ES Paths,,Normal end,
Seq.=xxxxxxxxxx
+{Port,WWN,IP Address,iSCSI Target Name,Result}
=[{1A,50060E8000C3E214,-,-,Normal end},
{2A,-,192.168,0,136,
iqn.1994-04.jp.co.hitachi.h8m.t.00001.2b000,Normal end},
{3A,-,FE80:0:0:0:0:0:0:1,
iqn.1994-04.jp.co.hitachi.h8m.t.00001.3b000,Normal end}],
Num. of Paths=3
```

[UVM] Reconnect ES VOLs

If this operation is performed from Device Manager - Storage Navigator, this logged information indicates that the Reconnect External Volumes operation was only requested but not completed.

Detailed Information

Item	Description
Group	The group number of the external volume resumed
Result	The result of operation Normal end: Normal end, Error(*xxxx*-*yyyyy*): Abnormal end *xxxx*: Part code, *yyyyy*: Error code
Num. of Groups	The number of external volumes resumed

Example

```
RMI AP,Task Name,[UVM],Reconnect ES VOLs,,Normal end,
Seq.=xxxxxxxxxx
+{Group,Result}=[{E1-1,Normal end},{E1-2,Normal end},
{E1-3,Normal end},{E1-4,Normal end}],Num. of Groups=4
```

Volume Migration Descriptions

For information on using Volume Migration, contact the Hitachi Vantara Support Center.

[VM] Del Migration Plans

Detailed Information

Item	Description
SourceVolume	The logical volume ID of the migration source. The number on the left of the colon is an LDKC number, the number between the colons is a CU number, and the number on the right of the colon is an LDEV number.
TargetVolume	The logical volume ID of the migration target. The number on the left of the colon is an LDKC number, the number between the colons is a CU number, and the number on the right of the colon is an LDEV number.
OwnerID	The application by which a migration plans to be deleted is set. 0x00: Device Manager - Storage Navigator 0x01: Command Control Interface 0xFF: Tiered Storage Manager A hyphen (-) is output, no matter which application is used for a migration plan to be set, if the plan is deleted from the Volume Migration window.
Result	The result of operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, Not Execute: Not executed where *xxxx*: Part code, *yyyyy*: Error code
Num. of Plans	The number of migration plans deleted.

Example

```
RMI AP,,[VM],Del Migration Plans,,Normal end,
Seq.=xxxxxxxxxx
+{SourceVolume,TargetVolume,OwnerID,Result}
=[{0x00:0x00:0x00,0x00:0x00:0x01,0xFF,Normal end},
{0x00:0x00:0x02,0x00:0x00:0x03,0xFF,Error(xxxx-yyyyy)},
{0x00:0x00:0x04,0x00:0x00:0x05,-,Normal end},
{0x00:0x00:0x06,0x00:0x00:0x07,-,Error(xxxx-yyyyy)}],
Num. of Plans=4
```

[VM] Migrate Volumes

This logged information indicates that the migration was only requested but not completed.

Detailed Information

Item	Description
SourceVolume	The logical volume ID of the migration source. The number on the left of the colon is an LDKC number, the number between the colons is a CU number, and the number on the right of the colon is an LDEV number.
TargetVolume	The logical volume ID of the migration target. The number on the left of the colon is an LDKC number, the number between the colons is a CU number, and the number on the right of the colon is an LDEV number. This value is output only when the migration plan is set.
OwnerID	The application by which a migration plans is set. 0x00: Device Manager - Storage Navigator 0x01: Command Control Interface 0xFF: Tiered Storage Manager
Migration Type	The migration type of the migration plan. nondisruptive migration: nondisruptive migration Normal: Normal
Result	The result of operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end, Not Execute: Not executed where *xxxx*: Part code, *yyyyy*: Error code
Num. of VOLs	The number of migration volumes.

Example

```
RMI AP,,[VM],Migrate Volumes,,Normal end,
Seq.=xxxxxxxxxx
+{SourceVolume,TargetVolume,OwnerID,Migration Type,Result}
=[{0x00:0x00:0x00,0x00:0x00:0x01,0x00,Normal,Normal end},
{0x00:0x00:0x02,0x00:0x00:0x03,0xFF,Normal,Error(xxxx-yyyyy)},
{0x00:0x00:0x04,0x00:0x00:0x05,0x00,Normal,Normal end},
{0x00:0x00:0x06,0x00:0x00:0x07,0xFF,Normal,
Error(xxxx-yyyyy)}],Num. of VOLs=4
```

Virtual Partition Manager Descriptions

[VPM] Edit CLPR

Detailed Information

Item	Description
CLPR	The CLPR ID and the CLPR name
Total Cache Size	The cache capacity setting. The unit is megabyte (MB).
PG	The parity group number assigned to CLPR E1-1: In the case of an external volume V1-1: In the case of a virtual volume X1-1: In the case of a Dynamic Provisioning volume
Num. of PGs	The number of parity groups assigned to CLPR
Num. of CLPRs	The number of CLPRs configured

Example

```
RMI AP,,[VPM],Edit CLPR,,Normal end,
Seq.=xxxxxxxxxx
+CLPR=0:CLPR0,Total Cache Size=15360
++PG=[1-1,1-2,1-3,1-4],Num. of PGs=4
+Num. of CLPRs=1
```

Volume Shredder Descriptions

[VS] Abort Shredding

Detailed Information

Item	Description
OwnerID	The owner ID 0: Indicates Device Manager - Storage Navigator 0xXX: Owner ID is expressed in two hexadecimal digits.

Example

```
RMI AP,Task Name,[VS],Abort Shredding,,Normal end,
Seq.=xxxxxxxxxx
+OwnerID=0
```

[VS] End Shredding

Detailed Information

Item	Description
Times	The order of the shredding processes. A number from 1 to 8 is displayed.
Result	The result of the shredding processes. Normal: Normal end. Failed: Abnormal end. Aborted: Operation aborted. Not executed: Not executed. Data transfer error: An error occurred while outputting the result to the file. Data verify error: The error occurred in verifying the data. No data assigned: No data.
Num. of Data	The number of shredding processes

Example

```
MPC,,[VS],End Shredding,,Normal end,,Seq.=xxxxxxxxxx
+{Times,Result}
=[{1,Normal},{2,Normal},{3,Normal}],Num. of Data=3
```

[VS] Shred LDEVs

This logged information indicates that the Shredding operation was only requested but not completed.

Detailed Information

Item	Description
OwnerID	The owner ID

Item	Description
	0: Indicates Device Manager - Storage Navigator 0xXX: Owner ID is expressed in two digits of the hexadecimal format
Data	The shredding data pattern Random: Random, 0xXXXX: Define
Output File	Whether the result of shredding is output to the file Disable: No output, Enable: Output
Num. of Data	The number of shredding data patterns
Output LDEV	Indicates LDEVs whose shredding results are output to the file
Num. of LDEVs	The number of target LDEVs of Data Output
Shred LDEV	The LDEV to be shredded
Num. of LDEVs	The number of LDEVs to be shredded

Example

```
RMI AP,Task Name,[VS],Shred LDEVs,,Normal end,
Seq.=xxxxxxxxxx
+OwnerID=0
+{Data, Output File}
=[{0xffff,Disable},{Random,Disable},{0x00,Enable}],
Num. of Data=3
+Output LDEV=[0x00:0x00:0x00,0x00:0x00:0x01,0x00:0x00:0x02],
Num. of LDEVs=3
+Shred LDEV=[0x00:0x00:0x00,0x00:0x00:0x01,0x00:0x00:0x02],
Num. of LDEVs=3
```

Chapter 5: Audit log examples for encryption key operations

This section provides examples and descriptions of the audit logs produced by data encryption operations. The descriptions are listed alphabetically by function name and operation name.

ENC Descriptions

[ENC] Add keys to DKC

Add keys to DKC is output when an encryption key created on the key management server is added to the storage system or when the key management server is enabled in the encryption environmental settings from the initial setting. The number of creating encryption keys are not output when external interface name is GUM.

Example 1: When external interface name is other than GUM

```
RMI AP,Task Name,[ENC],Add keys to DKC,,Normal end,
Seq.=xxxxxxxxxx
+{Num. of Keys}=[1]
```

Example 2: When external interface name is GUM

```
GUM,,[ENC],Add keys to DKC,,Normal end,seq.=xxxxxxxxxx
```

Detailed Information

Item	Description
Num. of Keys	The number of created encryption keys

[ENC] Backup Keys

Backup Keys is output when back up information of encryption keys is created in the storage system in order to externally back up. It does not necessarily mean that the back up information is backed up normally on the file or the key management server even if Normal End is displayed.

Example

```
RMI AP,Task Name,[ENC],Backup Keys,,Normal end,
Seq.=xxxxxxxxxx
```

[ENC] Backup Keys

Backup Keys is output asynchronously with the REST API operations.

Example

```
,,[ENC],Backup Keys,,Normal end,Seq.=xxxxxxxxxx
```

[ENC] Backup Keys to File

Backup Keys to File is output when encryption key information created in the storage system is written to the file. It does not necessarily mean that the encryption key information is backed up on the file normally even if Normal End is displayed.

Example

```
RMI AP,Task Name,[ENC], Backup Keys to File,,Normal end,
Seq.=xxxxxxxxxx
```

[ENC] Backup Keys to Serv

Backup Keys to Serv is output when encryption key information created in the storage system is backed up on the key management server. Even if Normal End is displayed, it merely means that the key management server received the request for backup and does not necessarily means that the encryption key information is backed up normally.

Example

```
RMI AP,Task Name,[ENC], Backup Keys to Serv,,Normal end,
Seq.=xxxxxxxxxx
+{UUID,Backup Date,Description,Result,Server_Reply}
=[{3E2332580B110E052D13C378866427A218EF1609881BC058FCBCF79FCD
7727C7,2013/07/06 09:20:37,BACK0706,Normal end,-}],
Num. of Keys=1
```

Detailed Information

Item	Description
UUID	The UUID of the encryption key to be backed up on the key management server

Item	Description
Backup Date	The date and time entered into the backup information when an encryption key is backed up on the key management server
Description	The description set in the backup information when an encryption key is backed up on the key management server
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end
Server_Reply	The return value from the key management server A hyphen (-) is displayed unless an error occurred while processing. For details on return values, see the manuals for each key management server.
Num. of Keys	The number of encryption keys to be backed up This value is fixed to "1" because all of the created encryption keys are backed up as one key.

[ENC] Backup Keys to Serv(Auto)

Backup Keys to Serv(Auto) is output when encryption key information created in the storage system is automatically backed up on the key management server. Even if Normal End is displayed, it merely means that the key management server received the request for backup and does not necessarily means that the encryption key information is backed up normally.

Example

```
RMI AP,Task Name,[ENC], Backup Keys to Serv(Auto),,Normal end,
from=xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx,,Seq.=xxxxxxxxxx
+{UUID,Backup Date,Description,Result,Server_Reply}=
[{3E2332580B110E052D13C378866427A218EF1609881BC058FCBCF79FCD7727C7,
2018/04/06 09:20:37,BACK0706,Normal end,-}],Num. of Keys=1
```

Detailed Information

Item	Description
UUID	The UUID of the encryption key to be backed up on the key management server
Backup Date	The date and time entered into the backup information when an encryption key is backed up on the key management server
Description	The description set in the backup information when an encryption key is backed up on the key management server

Item	Description
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end
Server_Reply	The return value from the key management server A hyphen (-) is displayed unless an error occurred while processing. For details on return values, see the manuals for each key management server.
Num. of Keys	The number of encryption keys to be backed up This value is fixed to "1" because all of the created encryption keys are backed up as one key.

[ENC] Change CEK Status

Change CEK Status is output asynchronously with the Device Manager - Storage Navigator operations.

Example

```
,,[ENC],Change CEK Status,,Normal end,,,Seq.=xxxxxxxxxx
```

[ENC] Change DEK Status

Change DEK Status is output asynchronously with the Device Manager - Storage Navigator operations.

Example

```
,,[ENC],Change DEK Status,,Normal end,Seq.=xxxxxxxxxx
```

[ENC] Clear Keys

Clear Keys is output asynchronously with the Device Manager - Storage Navigator operations.

Example

```
,,[ENC],Clear Keys,,Normal end,Seq.=xxxxxxxxxx
```

[ENC] Create KEK Dynamic

Create KEK Dynamic is output when a key encryption key is updated or when the key management server is enabled in the encryption environmental settings.

Example 1: Configuring encryption environment settings

```
RMI AP,Task Name,[ENC], Create KEK Dynamic,,Normal end,
Seq.=xxxxxxxxxx
+{UUID,Result,Server_Reply}
=[{C53F242C7DCC27CC9698A72413C1C4DC280A757FDF93CED8AEBDF8807A
79A06D,Normal end,-}],Num. of Keys=1
```

Detailed Information for Example 1

Item	Description
UUID	The UUID of the created encryption key
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end
Server_Reply	The return value from the key management server A hyphen (-) is displayed unless an error occurred while processing. For details on return values, see the manuals for each key management server.
Num. of Keys	The number of created encryption keys

Example 2: Creating or updating key encryption keys

```
RMI AP,Task Name,[ENC], Create KEK Dynamic,,Normal end,
Seq.=xxxxxxxxxx
+{UUID,Result,Server_Reply,KMS migration}=
[{C53F242C7DCC27CC9698A72413C1C4DC280A757FDF93CED8AEBDF8807A79A06D,
Normal end,-,true}],Num. of Keys=1
```

Detailed Information for Example 2

Item	Description
UUID	The UUID of the created encryption key
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end
Server_Reply	The return value from the key management server A hyphen (-) is displayed unless an error occurred while processing. For details on return values, see the manuals for each key management server.

Item	Description
KMS migration	Indicates whether Create a new key encryption key on the key management server is selected in the Rekey Key Encryption Key window. true：Create a new key encryption key on the key management server is selected. false：Create a new key encryption key on the key management server is not selected.
Num. of Keys	The number of created encryption keys

[ENC] Create Keys

Create Keys is output when an encryption key is created on the storage system or when the key management server is disabled in the encryption environmental settings from the initial setting.

Example

```
RMI AP,Task Name,[ENC],Create Keys,,Normal end,
Seq.=xxxxxxxxxx
+{Num. of Keys}=[1]
```

Detailed Information

Item	Description
Num. of Keys	The number of created encryption keys

[ENC] Create Keys

Create Keys is output asynchronously with the Device Manager - Storage Navigator operations.

Example

```
,,[ENC],Create Keys,,Normal end,Seq.=xxxxxxxxxx
```

[ENC] Creat Keys on DKC

Creat Keys on DKC is output asynchronously with the REST API operations.

Example

```
,,[ENC],Create Keys on DKC,,Normal end,Seq.= xxxxxxxxxx
+{Num. of Keys}=[1]
```

Detailed Information

Item	Description
Num. of Keys	The number of created encryption keys

[ENC] Create Keys On Serv

Create Keys On Serv is output when a key encryption key or an encryption key is created on the key management server or when the key management server is enabled in the encryption environmental settings from the initial setting.

Example 1: Creating encryption keys

```
RMI AP,Task Name,[ENC], Create Keys On Serv,,Normal end,
Seq.=xxxxxxxxxx
+{UUID,Tweak_UUID,Result,Server_Reply}
=[{30708B5A94F5BE54DA84E0CB55BD2CFE5ABEBECBD8309B02EB1B71F17F805617,
94DA26FE13EF6196EF15A3CCCD333CD63D6867E57CF5BD5EB3CB9DF2CDE7CE1A,
Normal end,-}],Num. of Keys=1
```

Detailed Information for Example 1

Item	Description
UUID	The UUID of the created encryption key on the key management server A hyphen (-) is displayed when an error occurred while processing.
Tweak_UUID	The UUID of the created encryption key for Tweak on the key management server A hyphen (-) is displayed when an error occurred while processing.
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end
Server_Reply	The return value from the key management server A hyphen (-) is displayed unless an error occurred while processing. For details on return values, see the manuals for each key management server.
Num. of Keys	The number of created encryption keys

Example 2: Creating key encryption keys

```
RMI AP,Task Name,[ENC], Create Keys On Serv,,Normal end,
Seq.=xxxxxxxxxx
+{Key Type,UUID,Result,Server_Reply}
=[{KEK,4365A0465C69FA96DF64C9BBB77122E9AB65D4D6A2E9BBDE5987EAB
86A0FE94E,Normal end,-}],Num. of Keys=1
```

Detailed Information for Example 2

Item	Description
Key Type	The purpose of the use of the created key KEK: key encryption keys (used as a key wrapping key)
UUID	The UUID of the created encryption key on the key management server A hyphen (-) is displayed when an error occurred while processing.
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end
Server_Reply	The return value from the key management server A hyphen (-) is displayed unless an error occurred while processing. For details on return values, see the manuals for each key management server.
Num. of Keys	The number of created keys

[ENC] DEK assign SpareDisk

DEK assign SpareDisk is output when encryption settings are edited in the encryption environmental settings from the initial setting.

Example

```
RMI AP,Task Name,[ENC],DEK assign SpareDisk,,Normal end,
Seq.=xxxxxxxxxx
```

[ENC] DEK delete

DEK delete is output when encryption environment settings are initialized.

Example

```
RMI AP,Task Name,[ENC],DEK delete,,Normal end,
Seq.=xxxxxxxxxx
```

[ENC] Delete and Create Keys

Delete and Create Keys is output when unused encryption keys are deleted or created, or both operations are performed.

Example

```
GUM,,[ENC],Delete and Create Keys,,Normal end,seq.=xxxxxxxxxx
+{Deleted Key ID}=[1,2],Num. of Deleted Keys=2,Num. of Created Keys=1
```

Detailed Information

Item	Description
Deleted Key ID	The ID of deleted encryption key
Num. of Deleted Keys	The number of deleted encryption keys
Num. of Created Keys	The number of created encryption keys

[ENC] Delete CEK

Delete CEK is output asynchronously with the REST API operations.

Example

```
,,[ENC],Delete CEK,,Normal end,Seq.= xxxxxxxxxx
```

[ENC] Delete DEK

Delete DEK is output asynchronously with the REST API operations.

Example

```
,,[ENC],Delete DEK,,Normal end,Seq.= xxxxxxxxxx
```

[ENC] Delete KEK Dynamic

Delete KEK Dynamic is output when a key encryption key is updated or when the key management server is changed from Enable to Disable in the encryption environmental settings.

Example

```
RMI AP,Task Name,[ENC], Delete KEK Dynamic,,Normal end,
Seq.=xxxxxxxxxx
+{UUID,Result,Server_Reply}=
```

```
[{C53F242C7DCC27CC9698A72413C1C4DC280A757FDF93CED8AEBDF8807A79A06D
,Normal end,-}],Num. of Keys=1
```

Detailed Information

Item	Description
UUID	The UUID of the deleted encryption key
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end
Server_Reply	The return value from the key management server A hyphen (-) is displayed unless an error occurred while processing. For details on return values, see the manuals for each key management server.
Num. of Keys	The number of deleted encryption keys

[ENC] Delete Keys

Delete Keys is output asynchronously with the Device Manager - Storage Navigator operations.

Example

```
,,[ENC],Delete Keys,,Normal end,Seq.=xxxxxxxxxx
```

[ENC] Delete Keys

Delete Keys is output when encryption keys are deleted.

Example

```
RMI AP,Task Name,[ENC],Delete Keys,,Normal end,
Seq.=xxxxxxxxxx
+{Key ID}=[1,2],Num. of Keys=2
```

Detailed Information

Item	Description
Key ID	A deleted encryption key number
Num. of Keys	The number of deleted encryption keys

[ENC] Delete Keys on Serv

Delete Keys on Serv is output when the key management server has received the request for deletion even if Normal End is displayed, which does not mean that encryption keys are deleted normally.

Example

```
RMI AP,Task Name,[ENC], Delete Keys on Serv,,Normal end,
Seq.=xxxxxxxxxx
+{UUID,Backup Date,Description,Result,Server_Reply}=
[{FBC095D54493A45CAC4BE80EECD1BE51D7E0D4023D377D37B0BFDE72B887CED9
,2013/07/06 09:13:18,BACK0706,Normal end,-}],Num. of Keys=1
```

Detailed Information

Item	Description
UUID	The UUID of the encryption key to be deleted
Backup Date	The date and time of the backup information for the encryption key to be deleted
Description	The description of the backup information for the encryption key to be deleted
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end
Server_Reply	The return value from the key management server A hyphen (-) is displayed unless an error occurred while processing. For details on return values, see the manuals for each key management server.
Num. of Keys	The number of encryption keys to be deleted

[ENC] Delete Keys on Serv(Auto)

Delete Keys on Serv(Auto) is output when the key management server has received the request for deletion even if Normal End is displayed, which does not mean that encryption keys are deleted normally.

Example

```
RMI AP,Task Name,[ENC], Delete Keys on Serv(Auto),,Normal end,
from=xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx,,Seq.=xxxxxxxxxx
+{UUID,Backup Date,Description,Result,Server_Reply}=
[{FBC095D54493A45CAC4BE80EECD1BE51D7E0D4023D377D37B0BFDE72B887CED9,
2018/04/06 09:13:18,BACK0706,Normal end,-}],Num. of Keys=1
```

Detailed Information

Item	Description
UUID	The UUID of the encryption key to be deleted
Backup Date	The date and time of the backup information for the encryption key to be deleted
Description	The description of the backup information for the encryption key to be deleted
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end
Server_Reply	The return value from the key management server A hyphen (-) is displayed unless an error occurred while processing. For details on return values, see the manuals for each key management server.
Num. of Keys	The number of encryption keys to be deleted
Note: A question mark (?) is displayed for UUID and Description if an error occured in deleting encryption key.	

[ENC] Delete Spedified Key

Delete Spedified Key is output asynchronously with the REST API operations.

Example

```
,,[ENC],Delete Specified Key,,Normal end,Seq.= xxxxxxxxxx
+{Key ID}=[4095],Num. of Keys =[1]
```

Item	Description
Key ID	The ID of deleted encryption keys
Num. of Keys	The number of deleted encryption keys

[ENC] Disable Enhancement Of Encryption

Disable Enhancement Of Encryption is output when you disable the settings used in the enhancement of encryption.

Example

```
MPC,[ENC],Disable Enhancement Of Encryption,,Normal end,
uid=<DKCMaintenance>,0,,from=xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx,,
```

[ENC] Edit Encryption

Edit Encryption is output when encryption settings for a parity group are edited or deleted.

Example

```
RMI AP,Task Name,[ENC],Edit Encryption,,Normal end,
Seq.=xxxxxxxxxx
+{PG,Encryption}=[{XX-XX,Enable},{XX-XX,Disable}],Num. of PGs=2
```

Detailed Information

Item	Description
PG	A parity group number
Encryption	The status of encryption Enable: Encryption is enabled Disable: Encryption is disabled
Num. of PGs	The number of parity groups

[ENC] Edit ENC Settings

Edit ENC Settings is output when the encryption environmental settings are edited.

Example 1: Setting the environment of managing encryption key

```
RMI AP,Task Name,[ENC],Edit ENC Settings,,Normal end,
Seq.=xxxxxxxxxx
+{KMS, Generate ENC Keys on KMS, Protect the KEK at the KMS}
=[No Set, No, No],Num. of Settings=1
```

Detailed Information 1

Item	Description
KMS	Indicates whether the key management server is used No Set: Not set Enable: The key management server is used

Item	Description
	Disable: The key management server is not used
Generate ENC Keys on KMS	Indicates where the encryption keys are created Yes: The keys are created on the key management server No: The keys are created on the storage system
Protect the KEK at the KMS	Indicates whether the key encryption keys created on the key management server are to be stored on the storage system Yes: The keys are stored on the storage system Yes (Disable Local Key Generation): The keys are stored but Local Key Generation is disabled No: The keys are not stored
Num. of Settings	The number of configured encryption environment settings

Example 2: Setting the encryption key option

```
RMI AP,Task Name,[ENC], Edit ENC Settings,,Normal end,
from=xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx,,Seq.=xxxxxxxxxx
+{Delete Internal Encryption Keys at PS OFF=true}
```

Detailed Information 2

Item	Description
Delete Internal Encryption Keys at PS OFF	Indicates whether the encryption key is deleted when the storage system is powered off. True: Delete option is valid False: Delete option is invalid

[ENC] Edit Password Policy

Edit Password Policy is output when the password policy for backing up encryption keys is edited.

Example

```
RMI AP,,[ENC],Edit Password Policy,,Normal end,
Seq.=xxxxxxxxxx
+{Numeric Characters (0-9)=1,Uppercase Characters (A-Z)=2,
Lowercase Characters (a-z)=3,Symbols=4,Total=10}
```

Detailed Information

Item	Description
Numeric Characters (0-9)	Indicates the minimum number of numeric characters used for the password
Uppercase Characters (A-Z)	Indicates the minimum number of uppercase characters used for the password
Lowercase Characters (a-z)	Indicates the minimum number of lowercase characters used for the password
Symbols	Indicates the minimum number of symbols used for the password
Total	Indicates the minimum number of total characters used for the password
Num. of Settings	The number of configured password policies

[ENC] Register KEK Dynamic

Register KEK Dynamic is output when a key encryption key is updated or when the key management server is enabled in the encryption environmental settings.

Example

```
RMI AP,Task Name,[ENC], Register KEK Dynamic,,Normal end,
Seq.=xxxxxxxxxx
+{UUID,Result,Server_Reply}=
[{B75E9D1699659C10B088E027798ACB082F1375AF2FF613229F15E9FE70D1EC4D
,Normal end,-}],Num. of Keys=1
```

Detailed Information

Item	Description
UUID	The UUID of the registered encryption key
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end
Server_Reply	The return value from the key management server A hyphen (-) is displayed unless an error occurred while processing. For details on return values, see the manuals for each key management server.
Num. of Keys	The number of registered encryption keys

[ENC] Regular Backup Keys to Serv

This logged information is output when encryption key information created in the storage system is backed up regularly on the key management server. Even if Normal End is displayed, it merely means that the key management server received the request for backup and does not necessarily means that the encryption key information is backed up normally.

Example

```
RMI AP,Task Name,[ENC], Regular Backup Keys to Serv,,Normal end,
Seq.=xxxxxxxxxx
+{UUID,Backup Date,Description,Result,Server_Reply}=
[{3E2332580B110E052D13C378866427A218EF1609881BC058FCBCF79FCD7727C7,
2013/07/06 09:20:37,BACK0706,Normal end,-}],Num. of Keys=1
```

Detailed Information

Item	Description
UUID	The UUID of the encryption key to be backed up on the key management server
Backup Date	The date and time entered into the backup information when an encryption key is backed up on the key management server
Description	The description set in the backup information when an encryption key is backed up on the key management server
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end
Server_Reply	The return value from the key management server A hyphen (-) is displayed unless an error occurred while processing. For details on return values, see the manuals for each key management server.
Num. of Keys	The number of encryption keys to be backed up This value is fixed to "1" because all of the created encryption keys are backed up as one key.

[ENC] Regular Delete Keys on Serv

Even if Normal End is displayed, it merely means that the key management server received the request for deletion and does not necessarily means that encryption keys are deleted normally.

Example

```
RMI AP,Task Name,[ENC], Regular Delete Keys on Serv,,Normal end,
Seq.=xxxxxxxxxx
+{UUID,Backup Date,Description,Result,Server_Reply}=
[{FBC095D54493A45CAC4BE80EECD1BE51D7E0D4023D377D37B0BFDE72B887CED9,
2013/07/06 09:13:18,BACK0706,Normal end,-}],Num. of Keys=1
```

Detailed Information

Item	Description
UUID	The UUID of the encryption key to be deleted
Backup Date	The date and time of the backup information for the encryption key to be deleted
Description	The description of the backup information for the encryption key to be deleted
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end
Server_Reply	The return value from the key management server A hyphen (-) is displayed unless an error occurred while processing. For details on return values, see the manuals for each key management server.
Num. of Keys	The number of encryption keys to be deleted

Note: A question mark (?) is displayed if an error occured in deleting encryption key.

[ENC] Rekey CEK

Rekey CEK is output when a certificate encryption key is updated, or when encryption settings are edited from the initial setting or initialized.

Example

```
RMI AP,Task Name,[ENC],Rekey CEK,,Normal end,
Seq.=xxxxxxxxxx
```

[ENC] Rekey KEK Dynamic

Rekey KEK Dynamic is output when a key encryption key is updated.

Example

```
RMI AP,Task Name,[ENC],Rekey KEK Dynamic,,Normal end,
Seq.=xxxxxxxxxx
```

[ENC] Restore Keys

Restore Keys is output when encryption key information in the storage system is restored with key information obtained externally.

Example

```
RMI AP,Task Name,[ENC],Restore Keys,,Normal end,
Seq.=xxxxxxxxxx
```

[ENC] Restore Keys

Restore Keys is output asynchronously with the REST API operations.

Example

```
,,[ENC],Restore Keys,,Normal end,Seq.=xxxxxxxxxx
```

[ENC] Restore Keys fr File

Restore Keys fr File is output when encryption key information is obtained from the backup file.

Example

```
RMI AP,Task Name,[ENC], Restore Keys fr File,,Normal end,
Seq.=xxxxxxxxxx
```

[ENC] Restore Keys fr File(Forcibly)

Restore Keys fr File(Forcibly) is output when encryption key information is obtained from the backup file.

Example

```
RMI AP,Task Name,[ENC], Restore Keys fr File(Forcibly),,Normal end,
from=xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx,,Seq.=xxxxxxxxxx
```

[ENC] Restore Keys fr Serv

Restore Keys fr Serv is output when the backup of encryption key information is obtained from the key management server.

Example

```
RMI AP,Task Name,[ENC], Restore Keys fr Serv,,Normal end,
Seq.=xxxxxxxxxx
+{UUID,Backup Date,Description,Result,Server_Reply}=
[{FBC095D54493A45CAC4BE80EECD1BE51D7E0D4023D377D37B0BFDE72B887CED9
,2013/07/06 09:13:18,BACK0706,Normal end,-}],Num. of Keys=1
```

Detailed Information

Item	Description
UUID	The UUID of the encryption key that is used for restoring on the key management server
Backup Date	The date and time entered into the backup information for the encryption key that is used for restoring
Description	The contents of Description in the backup information for the encryption key that is used for restoring
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end
Server_Reply	The return value from the key management server A hyphen (-) is displayed unless an error occurred while processing. For details on return values, see the manuals for each key management server.
Num. of Keys	The number of encryption keys that are used for restoring This value is fixed to "1" because all of the encryption keys that are used for restoring are backed up as one key.

[ENC] Restore Keys fr Serv(Forcibly)

Restore Keys fr Serv(Forcibly) is output when the backup of encryption key information is obtained from the key management server.

Example

```
RMI AP,Task Name,[ENC], Restore Keys fr Serv(Forcibly),,Normal end,
from=xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx,,Seq.=xxxxxxxxxx
+{UUID,Backup Date,Description,Result,Server_Reply}
=[{FBC095D54493A45CAC4BE80EECD1BE51D7E0D4023D377D37B0BFDE72B887CED9,
2018/04/06 09:13:18,BACK0706,Normal end,-}],Num. of Keys=1
```

Detailed Information

Item	Description
UUID	The UUID of the encryption key that is used for restoring on the key management server
Backup Date	The date and time entered into the backup information for the encryption key that is used for restoring
Description	The contents of Description in the backup information for the encryption key that is used for restoring
Result	The result of the operation Normal end: Normal end, Error(*xxxx-yyyyy*): Abnormal end
Server_Reply	The return value from the key management server A hyphen (-) is displayed unless an error occurred while processing. For details on return values, see the manuals for each key management server.
Num. of Keys	The number of encryption keys that are used for restoring This value is fixed to "1" because all of the encryption keys that are used for restoring are backed up as one key.

[ENC] Retry KEK Dynamic

Retry KEK Dynamic is output when a key encryption key is reacquired.

Example

```
RMI AP,Task Name,[ENC],Retry KEK Dynamic,,Normal end,
Seq.=xxxxxxxxxx
```

[ENC] Set CEK

Set CEK is output asynchronously with the REST API operations.

Example

```
,,[ENC],Set CEK,,Normal end,Seq.=xxxxxxxxxx
```

[ENC] Set DEK

Set DEK is output asynchronously with the REST API operations.

Example

```
,,[ENC],Set DEK,,Normal end,Seq.=xxxxxxxxxx
```

[ENC] Set Up Key Mng Serv

Set Up Key Mng Serv is output when encryption environmental settings are edited.

Example 1: Using a key management server

```
RMI AP,Task Name,[ENC], Set Up Key Mng Serv,,Normal end,
Seq.=xxxxxxxxxx
+{Server Type,Key Management Server,Host Name,Port Number,
Timeout,Retry Interval,Number of Retries,
Client Certificate File Name,Root Certificate File Name}
=[{Primary,Enable,10.213.75.37,5696,10,1,3,,},
{Secondary,Enable,10.213.75.37,5696,10,1,3,,}],
Num. of Servers=2
+{Encryption Key Regular Backup to Server,Regular Backup Time,Regular
Backup User Name}=
[{Yes,03:00_10:00-12:00_23:00,username}],Num. of Settings=1
```

Example 2: Not using a key management server

```
RMI AP,Task Name,[ENC], Set Up Key Mng Serv,,Normal end,
Seq.=xxxxxxxxxx
+{Server Type,Key Management Server}=
[{Primary,Disable},{Secondary,Disable}],Num. of Servers=2
+{Encryption Key Regular Backup to Server,Regular Backup Time,Regular
Backup User Name}=
[{,,}],Num. of Settings=1
```

Example 3: Initializing a encryption environmental settings

```
RMI AP,Task Name,[ENC], Set Up Key Mng Serv,,Normal end,
Seq.=xxxxxxxxxx
+{Server Type,Key Management Server}
=[{Primary,No Set},{Secondary,No Set}],Num. of Servers=2
+{Encryption Key Regular Backup to Server,Regular Backup Time,Regular
Backup User Name}=
[{,,}],Num. of Settings=1
```

Detailed Information

Item	Description
Server Type	The type of the key management server Primary: primary server, Secondary: secondary server

Item	Description
Key Management Server	Indicates whether the key management server is used Enable: The server is used Disable: The server is not used No Set: The encryption environmental settings are to be initialized
Host Name	The address of the key management server
Port Number	The port number of the key management server
Timeout	The communication timeout time to the key management server
Retry Interval	The retry interval to communicate with the key management server
Number of Retries	The number of retries to communicate with the key management server
Client Certificate File Name	The file name of the client certificate
Root Certificate File Name	The file name of the root certificate
Num. of Servers	The number of the configured key management servers
Encryption Key Regular Backup to Server	Indicates whether to back up encryption keys regularly. Yes: Backs up encryption keys regularly No: Does not back up encryption keys regularly
Regular Backup Time	Indicates the specified regular backup times. The specified regular backup times are displayed, separated by underscores (_). If any of the regular backup times are consecutive, they are output with a hyphen (-) between them.
Regular Backup User Name	Indicates the user name specified exclusively for regular backups.
Num. of Settings	Indicates the specified number of regular backups.

Note: When using the primary server, the values for Encryption Key Regular Backup to Server, Regular Backup Time and Regular Backup User Name are output.

[ENC] Succeeded Backup to Serv

Using Succeeded Backup to Serv, when the auto backup is succeeded, the succeeded backup flag is output, and when the backup UUID is set, the UUID is output.

Example

```
RMI AP,Task Name,[ENC], Succeeded Backup to Serv,,Normal end,
from=xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx,,Seq.=xxxxxxxxxx
+{BackupSuccessFlag=true,BackupUuid="2147483648"}
```

Detailed Information

Item	Description
BackupSuccess Flag	Indicates the success of backup or the failure of backup True: Backup was succeeded False: Backup was failed
BackupUuid	UUID when the backup was performed

[ENC] Use Keys for CEK/KEK

Use Keys for CEK/KEK is output asynchronously with the Device Manager - Storage Navigator operations.

Example

```
,,[ENC],Use Keys for CEK/KEK,,Normal end,Seq.=xxxxxxxxxx
```

KEK Acquisition Descriptions

[KEK Acquisition] Acquisition Key

Acquisition Key is output when the storage system obtains KEK Dynamic from the key management server after the power is turned on again with the Protect the Key Encryption Key at the Key Management Server is enabled.

Example

```
RMI AP,Task Name,[KEK Acquisition],Acquisition Key,,Normal end,
Seq.=xxxxxxxxxx
```

[KEK Acquisition] Set Key

Set Key is output when KEK Dynamic is configured for the storage system after the power is turned on again with the Protect the Key Encryption Key at the Key Management Server is enabled.

Example

```
RMI AP,Task Name,[KEK Acquisition],Set Key,,Normal end,
Seq.=xxxxxxxxxx
```

Key Recovery

[Key Recovery] Restore Keys fr Serv(Boot)

Restore Keys fr Serv(Boot) is output, when the key information of the stored data encryption in the storage system was restored after the power is turned on again with the Delete Internal Encryption Keys at PS OFF is enabled.

Example

```
MPC,Task Name,[Key Recovery],Restore Keys fr Serv(Boot),,Normal end,
Seq.=xxxxxxxxxx
```

[Key Recovery] Set Key Blob

Set Key Blob is output, when the result that the key information of the stored data encryption in the storage system was restored was set after the power is turned on again with the Delete Internal Encryption Keys at PS OFF is enabled.

Example

```
MPC,Task Name,[Key Recovery],Set Key Blob,,Normal end,
Seq.=xxxxxxxxxx
```

Chapter 6: Audit log examples of commands received by the storage system

This topic provides examples and descriptions of the audit logs when a storage system receives commands sent from hosts, or computers using Command Control Interface. The descriptions are listed alphabetically by function name and operation name.

Config Command

The following shows examples and descriptions of the audit logs when a storage system receives commands sent from hosts or computers using CCI.

Add CHAP User

Example 1: Adding the CHAP user name on the target side

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add CHAP User
++Port=1A,Target ID=0xBB,Target CHAP User=XXXXXX,
Virtual Storage Machine S/N=423456
```

Detailed Information 1

Item	Description
Command	The command name
Port	The name of a port to which an iSCSI target, to which a CHAP user is added, belongs
Target ID	The iSCSI target ID
Target CHAP User	The CHAP user name on the target side
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.

Example 2: Adding the CHAP user name on the initiator side

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add CHAP User
```

```
++Port=1A,Target ID=0xBB,Initiator CHAP User=XXXXXX,
Virtual Storage Machine S/N=423456
```

Detailed Information 2

Item	Description
Command	The command name
Port	The name of a port to which an iSCSI target, to which a CHAP user is added, belongs
Target ID	The iSCSI target ID
Initiator CHAP User	The CHAP user name on the initiator side
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.

Add CLPR

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add CLPR
++CLPR=31,CLPR Name=CLPR31,Cache Size=8192
```

Detailed Information

Item	Description
Command	The command name
CLPR	The CLPR ID
CLPR Name	The CLPR name
Cache Size	Cache capacity allocated to CLPRs

Add Copy Group

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Copy Group
++Copy Group=AAAAAAA
```

```
++Device Group={BBBBBB,CCCCCC},Num. of Device Groups=2,
MU={10,11},JNL={0x020,0x021}
```

Detailed Information

Item	Description
Command	The command name
Copy Group	The name of a copy group to be registered
Device Group	The name of a device group to be registered
Num. of DeviceGroups	The number of device groups to be registered
MU	The MU number to be registered
JNL	The journal number to be registered

Add Device Group

Add Device Group is an audit log generated when a command operation is performed with the DKCMAIN firmware version earlier than 83-04-0X-XX/XX.

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Device Group
++Device Group=AAAAAAAA
++LDEV(LDKC:CU:LDEV)={0x00:0xAA:0xBB,0x00:0xCC:0xDD,……,
0x00:0xEE:0xFF},Num. of LDEVs=X
```

Detailed Information

Item	Description
Command	The command name
Device Group	The name of a device group to be registered When an LDEV is added, the name of the device group to which the LDEV is added is output
LDEV(LDKC:CU:LDEV)	The LDEV IDs for LDEVs to be added to the device group
Num. of LDEVs	The number of LDEVs to be added to the device group

Add Device Group(Name)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Device Group(Name)
++Device Group=AAAAAAAA,,Device Name=XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
++LDEV(LDKC:CU:LDEV)={0x00:0xAA:0xBB,0x00:0xCC:0xDD,……,
0x00:0xEE:0xFF},Num. of LDEVs=X
```

Detailed Information

Item	Description
Command	The command name
Device Group	The name of a device group to be operated
Blank item	Nothing is output due to unused.
Device Name	The name of a device to be assigned to LDEVs
LDEV(LDKC:CU:LDEV)	The LDEV IDs for LDEVs to be added to the device group
Num. of LDEVs	The number of LDEVs to be added to the device group

Add DP Pool

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add DP Pool
++Pool ID=AA,Pool Name=AAAAAA,Warning Threshold(%)=85,
High water mark Threshold(%)=85
++LDEV(LDKC:CU:LDEV)={0x00:0xAA:0xBB,0x00:0xCC:0xDD,……,0x00:0xEE:0xFF},
Num. of LDEVs=X
++Suspend TI Pair=Yes
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The pool number of a pool for Dynamic Provisioning to be created
Pool Name	The pool name of a pool for Dynamic Provisioning to be created

Item	Description
Warning Threshold(%)	The warning threshold of the usage rate of a pool for Dynamic Provisioning to be created
High water mark Threshold(%)	The depletion threshold of a pool for Dynamic Provisioning to be created
LDEV(LDKC:CU:LDEV)	The LDEV IDs for LDEVs of a pool volume
Num. of LDEVs	The number of pool volumes
Suspend TI Pair	The setting status of Suspend TI Pair when the High water mark Threshold is exceeded. Yes: Thin Image pair is suspended. No: Thin Image pair is not suspended. A hyphen (-) is output if it is not specified at the command option

Add DP Pool(Drive)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add DP Pool(Drive)
++Pool ID=AA,Pool Name=XXXXX
++Drive Information(Type Code,Num. of Drives,RAID Level)=[{XXXXXX,2,RAID1},
{YYYYYY,4,RAID1}],Num. of Information=2
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The pool number When an Pool ID is specified automatically, "Auto" is output.
Pool Name	The pool name
Drive Information(Type Code,Num. of Drives,RAID Level)	The drive information (drive type code, number of drives, policy RAID level)
Num. of Information	The number of drive information

Add DP Pool(Parity Group)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add DP Pool(Parity Group)
++Pool ID=AA,Pool Name=AAAAAA,Warning Threshold(%)=85,High water mark
Threshold(%)=85
++PG={1-1},Num. of PGs=1
++Suspend  Pair=Yes,Resource Group ID=0
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The pool number When an Pool ID is specified automatically, "Auto" is output.
Pool Name	The pool name
Warning Threshold(%)	The warning threshold of the usage rate of a pool
High water mark Threshold(%)	The depletion threshold of the usage rate of a pool
PG	The parity group number
Num. of PGs	The number of parity groups
Suspend TI Pair	The setting status of Suspend TI Pair when the High water mark Threshold is exceeded. Yes: Thin Image pair is suspended. No: Thin Image pair is not suspended.
Resource Group ID	The resource group ID of pool volume

Add External Group

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add External Group
++PG=E1-1,Port=1A,WWN=AAAAAAAA,Path Group ID=A,LUN=A,
Emulation=xxxxxxxx,Migration=Enable,CLPR=3,
Data Direct Mapping=Enable,Command Device= Enable,
LDEV(LDKC:CU:LDEV)=0x00:0xFE:0xFF,0xFF,Add LDEV Mode=Enable,
Resource Group ID=0,Safety Check=Enable
```

Detailed Information

Item	Description
Command	The command name
PG	The external volume group number
Port	The port name of the storage system (connection source)
WWN	The WWN of the storage system (connection target)
Path Group ID	The path group ID
LUN	The LU number of the external volume
Emulation	The emulation type of the mapped external volume
Migration	The setting status of the nondisruptive migration function Enable: Enabled, Disable: Disabled
CLPR	The CLPR ID
Data Direct Mapping	The setting status of the data direct mapping attribute Enable: Enabled, Disable: Disabled
Command Device	The setting status of remote command device Enable: Enabled, Disable: Disabled
LDEV(LDKC:CU:LDEV)	Indicates the LDEV IDs of the remote command device This item is output only when Command Device is Enable.
Add LDEV Mode	Indicates the setting status of LDEVs to be added to the created external volume group. Enable: Enabled, Disable: Disabled
Resource Group ID	The resource group ID of LDEVs to be added No value is output when the Resource Group ID is not specified.
Safety Check	Indicates whether to suppress the processing that affects the connection status of the existing path being used between the external storage system and the local storage system. Enable: The processing is suppressed. Disable: The processing is not suppressed.

Add External iSCSI Name/Modify External CHAP User

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add External iSCSI Name/Modify External CHAP User
++Port=3B,iSCSI Name=iqn.1994-04.jp.co.hitachi:rsd.h8h.t.00001.4b000,
TCP Port=3260,IP Address=192.168.0.169,CHAP User=user1,
User Auth Switch=Enable,Auth Mode=Unidirectional,iSCSI Virtual Port ID=15
```

Detailed Information

Item	Description
Command	The command name
Port	The name of the port to which the iSCSI initiator belongs
iSCSI Name	The iSCSI name
TCP Port	The TCP port number If this item is not specified by the command option, the TCP port number of the iSCSI target on the port is output.
IP Address	The IP address of the port on the external system
CHAP User	The CHAP user name to be set for Secret When the iSCSI name of the external storage system is added, a hyphen (-) is output.
User Auth Switch	The setting status of CHAP authentication Enable: CHAP authentication is enabled. Disable: CHAP authentication is disabled. When the iSCSI name of the external storage system is changed, a hyphen (-) is output.
Auth Mode	The CHAP authentication mode Unidirectional: One-way CHAP authentication Mutual: Mutual-way CHAP authentication When the iSCSI name of the external storage system is changed, a hyphen (-) is output.
iSCSI Virtual Port ID	The iSCSI virtual port ID (0-15) No value is output when the option is not specified.

Add HBA iSCSI

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add HBA iSCSI
++Port=1A,Target ID=0xBB,iSCSI Name=ABCDEF,
Virtual Storage Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port to which iSCSI targets are added, or on which iSCSI targets are changed When a virtual storage machine is specified, the port name of the virtual storage machine is output
Target ID	The iSCSI target ID
iSCSI Name	The iSCSI name of the host bus adapter
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.

Add Host Group

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Host Group
++Port=1A,Host Group ID=0xXXX,Host Group Name=XXXXXX,
Virtual Storage Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port to which a host group is added When a virtual storage machine is specified, the port name of the virtual storage machine is output.
Host Group ID	The host group ID to be added

Item	Description
Host Group Name	The name of the host group to be added
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified

Add Host Group(iSCSI)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Host Group(iSCSI)
++Port=1A,Target Alias=XXXXXX,iSCSI Name=YYYYYYYY,Auth Mode=Chap,
Chap Mutual=Enable,Virtual Storage Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port to which the host group is added When a virtual storage machine is specified, the port name of the virtual storage machine is output.
Target Alias	The alias to be added
iSCSI Name	The iSCSI name to be added
Auth Mode	The setting status of the CHAP authentication mode Chap: CHAP authentication is enabled None: CHAP authentication is disabled Both: Connection is available both with and without CHAP authentication
Chap Mutual	CHAP authentication is unidirectional or bidirectional Enable: Set to bidirectional authentication mode Disable: Set to the unidirectional authentication mode
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.

Add Journal(Ldev)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Journal(Ldev)
++JNL=0x001,JNL Kind=Open,MP Blade ID=0,Timer Type=
++LDEV(LDKC:CU:LDEV)={0x00:0xAA:0xBB,0x00:0xCC:0xDD,……,
0x00:0xEE:0xFF},Num. of LDEVs=X
```

Detailed Information

Item	Description
Command	The command name
JNL	The journal number
JNL Kind	The journal kind of the system Open: Open system, MF: Mainframe system "MF" is output when Timer Type is specified
MP Blade ID	The MP unit ID When the MP unit ID is not specified, a hyphen (-) is output.
Timer Type	The clock type used for consistency time System: The system clock of the main frame host on the primary site Local: No system clock is used. None: The system clock of the main frame host on the primary site when data is copied from the storage system on the secondary site to the one on the primary site No value is output if JNL Kind is Open.
LDEV(LDKC:CU:LDEV)	The LDEV IDs of a journal volume to be created
Num. of LDEVs	The number of journal volumes to be created

Add Ldev

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Ldev
++PG=1-1,LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB,Emulation=OPEN-3,
Size=200 Capacity,Location=10000000,MP Blade ID=0,T10PI=Disable
```

Detailed Information

Item	Description
Command	The command name
PG	The parity group number to which an LDEV to be created belongs If the LDEV to be created is an external volume, "E" is added on the top of the external volume group number.
LDEV(LDKC:CU:LDEV)	The LDEV ID of the LDEV to be created "Auto" indicates that auto numbering is enabled.
Emulation	The type of emulation
Size	The capacity and method for specifying the capacity of an LDEV to be created **Specifying the capacity** ▪ Capacity: Specify a capacity by the byte or block. Units, byte or block, are not output. If a capacity is specified by the kilobyte, megabyte, gigabyte, or terabyte, the capacity is output on a byte basis. ▪ Offset-Capacity: Specify a capacity by the byte or block, and then the storage system corrects the capacity. Units, byte or block, are not output. If a capacity is specified by the kilobyte, megabyte, gigabyte, or terabyte, the capacity is output on a byte basis. ▪ Cylinder: Specify a capacity by the cylinder. ▪ ALL Capacity: All free space is assigned to the LDEV capacity. The capacity value is not output. For details, see the section describing CV size calculation in *Provisioning Guide*.
Location	The starting point of an LDEV to be created in the parity group or external volume group
MP Blade ID	The MP unit ID
T10PI	The setting status of T10 PI attribute Enable: Enabled, Disable: Disabled

Add Ldev(ALU)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Ldev(ALU)
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV to be created

Add Ldev(Dynamic Provisioning)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Ldev(Dynamic Provisioning)
++Pool ID=127,LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB,
Emulation=OPEN-V,Size=200 Capacity,MP Blade ID=0,CLPR=1,
TSE=Enable,Full Allocation=Enable,
Data Direct Mapping LDEV(LDKC:CU:LDEV)=,T10PI=Enable,
Capacity Saving=Deduplication Compression,
Capacity Saving Mode=Post Process,Nickname=AAAAAAAAAA,
Resource Group ID=1,LDEV ID Range Start(LDKC:CU:LDEV)=0x00:0xAA:0xBB,
LDEV ID Range End(LDKC:CU:LDEV)=0x00:0xCC:0xDD
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The pool number of a pool to which a virtual volume of Dynamic Provisioning to be created belongs No value is output when the data direct mapping attribute is enabled.
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV to be created. "Auto" indicates that auto numbering is enabled.
Emulation	The type of emulation

Item	Description
Size	The capacity and method for specifying the capacity of an LDEV to be created **Specifying the capacity** ▪ Capacity: Specify a capacity by the byte or block. Units, byte or block, are not output. If a capacity is specified by the kilobyte, megabyte, gigabyte, or terabyte, the capacity is output on a byte basis. ▪ Offset-Capacity: Specify a capacity by the byte or block, and then the storage system corrects the capacity. Units, byte or block, are not output. If a capacity is specified by the kilobyte, megabyte, gigabyte, or terabyte, the capacity is output on a byte basis. ▪ Cylinder: Specify a capacity by the cylinder. ▪ ALL Capacity: All free space is assigned to the LDEV capacity. The capacity value is not output. For details, see the section describing CV size calculation in *Provisioning Guide*.
MP Blade ID	The MP unit ID of an LDEV to be created
CLPR	The CLPR ID
TSE	The setting status of TSE attribute Enable: Enabled, Disable: Disabled
Full Allocation	The setting status of the full allocation Enable: Enabled, Disable: Disabled
Data Direct Mapping LDEV(LDKC:CU:LDEV)	The LDEV ID of a pool volume with the data direct mapping attribute when the data direct mapping attribute is enabled. No value is output when the data direct mapping attribute is disabled.
T10PI	The setting status of T10 PI attribute Enable: Enabled, Disable: Disabled
Capacity Saving	The setting status of capacity saving Disable: Capacity saving is disabled, Compression: Compression is enabled, Deduplication Compression: Deduplication and compression are enabled

Item	Description
Capacity Saving Mode	The status of the capacity saving setting mode Post Process: post process method, Inline: inline method If the option is not specified, a hyphen (-) is output.
Nickname	The name to be designated on the LDEV The value is output only when the name to be designated on the LDEV is specified.
Resource Group ID	The resource group ID of LDEVs to be added No value is output when the Resource Group ID is not specified.
LDEV ID Range Start(LDKC:CU:LDEV)	Indicates the search start LDEV ID of automatically numbered LDEV ID. No value is output when the range of automatically numbered LDEV ID is not specified.
LDEV ID Range End(LDKC:CU:LDEV)	Indicates the search end LDEV ID of automatically numbered LDEV ID. No value is output when the range of automatically numbered LDEV ID is not specified.

Add Ldev(SLU)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Ldev(SLU)
++Pool ID=127,LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB,Size=200 Capacity
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The pool number of a pool to which a virtual volume of Dynamic Provisioning to be created belongs
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV to be created
Size	The capacity and method for specifying the capacity of an LDEV to be created

Item	Description
	Specifying the capacity ▪ Capacity: Specify a capacity by the byte or block. Units, byte or block, are not output. If a capacity is specified by the kilobyte, megabyte, gigabyte, or terabyte, the capacity is output on a byte basis. ▪ Offset-Capacity: Specify a capacity by the byte or block, and then the storage system corrects the capacity. Units, byte or block, are not output. If a capacity is specified by the kilobyte, megabyte, gigabyte, or terabyte, the capacity is output on a byte basis. ▪ Cylinder: Specify a capacity by the cylinder. ▪ ALL Capacity: All free space is assigned to the LDEV capacity. The capacity value is not output. For details, see the section describing CV size calculation in *Provisioning Guide*.

Add Ldev(Snapshot)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Ldev(Snapshot)
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB,Emulation=OPEN-V,
Size=200 Capacity,MP Blade ID=0,CLPR=1,T10PI=Disable
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV to be created "Auto" indicates that auto numbering is enabled.
Emulation	The emulation type
Size	The capacity and method for specifying the capacity of an LDEV to be created

Item	Description
	Specifying the capacity ▪ Capacity: Specify a capacity by the byte or block. Units, byte or block, are not output. If a capacity is specified by the kilobyte, megabyte, gigabyte, or terabyte, the capacity is output on a byte basis. ▪ Offset-Capacity: Specify a capacity by the byte or block, and then the storage system corrects the capacity. Units, byte or block, are not output. If a capacity is specified by the kilobyte, megabyte, gigabyte, or terabyte, the capacity is output on a byte basis. ▪ Cylinder: Specify a capacity by the cylinder. ▪ ALL Capacity: All free space is assigned to the LDEV capacity. The capacity value is not output. For details, see the section describing CV size calculation in *Provisioning Guide*.
MP Blade ID	The MP unit ID of an LDEV to be created
CLPR	The CLPR ID
T10PI	The setting status of T10 PI attribute Enable: Enabled, Disable: Disabled

Add License

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add License
++Key Code=xxx
```

Detailed Information

Item	Description
Command	The command name
Key Code	The license key code

Add LUN

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add LUN
++Port=1A,Host Group ID=0x1AA,LUN=2,
LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB,
Virtual Storage Machine S/N=423456,Command Device=Enable
++Additional Port(Port,Host Group ID,LUN)
=[{1B,0x1AA,2},{1C,0x1AA,2}],Num. of Paths=2
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port to which an LU is added When a virtual storage machine is specified, the port name of the virtual storage machine is output.
Host Group ID	The ID of a host group to which an LU is added
LUN	The LU number to be added "Auto" is output when auto is specified instead of the LU number.
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV to be set as an LU.
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified
Command Device	The setting status of the command device attribute Enable: Enabled, Disable: Disabled A hyphen (-) is output for the value when LUN is "Auto".
Additional Port(Port,Host Group ID,LUN)	The port name, the host group ID, and the LU number for the LU path to be added If it is not specified by the command option, the item itself is not output. "Auto" is output for the LUN of this item when LUN is "Auto".
Num. of Paths	The number of LU paths to be added If it is not specified by the command option, the item itself is not output.

Add Parity Group

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Parity Group
++PG=1-1,Drive Location={0-0,0-1,0-2,0-3,0-4,0-5,0-6,0-7}
++PG=1-2,Drive Location={1-0,1-1,1-2,1-3,1-4,1-5,1-6,1-7}
++PG=1-3,Drive Location={2-0,2-1,2-2,2-3,2-4,2-5,2-6,2-7}
++PG=1-4,Drive Location={3-0,3-1,3-2,3-3,3-4,3-5,3-6,3-7}
++Num. of PGs=4
++RAID Level=7D+1P,CLPR=1,Encryption=Disable,Copy Back=Disable,Accelerated
Compression=Enable
```

Detailed Information

Item	Description
Command	The command name
PG	The parity group number
Drive Location	The drive location
PG	The parity group number 2 This item is not displayed if the number of the parity groups are less than 2.
Drive Location	The drive location 2 This item is not displayed if the number of the parity groups are less than 2.
PG	The parity group number 3 This item is not displayed if the number of the parity groups are less than 3.
Drive Location	The drive location 3 This item is not displayed if the number of the parity groups are less than 3.
PG	The parity group number 4 This item is not displayed if the number of the parity groups are less than 4.
Drive Location	The drive location 4 This item is not displayed if the number of the parity groups are less than 4.
Num. of PGs	Number of the parity groups

Item	Description
RAID Level	The RAID level
CLPR	The CLPR ID
Encryption	Indicates whether the encryption is enabled or disabled. Enable: The setting is enabled. Disable: The setting is disabled.
Copy Back	Indicates whether the copy back mode is enabled or disabled. Enable: The setting is enabled. Disable: The setting is disabled.
Accelerated Compression	Indicates whether the accelerated compression is enabled or disabled. Enable: The setting is enabled. Disable: The setting is disabled.

Add Path

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Path
++Port=1B,WWN=XXXXXXXXXXXXXXXX,Path Group ID=A,Safety Check=Enable
```

Detailed Information

Parameter	Description
Command	The command name
Port	The name of a port to be connected to the external storage system
WWN	The WWN of the external storage system
Path Group ID	The path group ID of the external volume
Safety Check	Indicates whether to suppress the processing that affects the connection status of the existing path being used between the external storage system and the local storage system. Enable: The processing is suppressed. Disable: The processing is not suppressed.

Add Quorum

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Quorum
++Quorum Disk ID=1,Controller ID=7,S/N=412345,
LDEV(LDKC:CU:LDEV)=0x00:0x01:0x02
```

Detailed Information

Item	Description
Command	The command name
Quorum Disk ID	The ID of the quorum disk used by global-active device to be set
Controller ID	The controller ID of the storage system that setting the quorum disk used by global-active device 7: VSP G1000/G1500 and VSP F1500, 8: VSP 5000 series, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800
S/N	The serial number of the storage system that setting the quorum disk used by global-active device
LDEV(LDKC:CU:LDEV)	The LDEV ID of the volume to be set as a quorum disk used by global-active device No value is output if the LDEV is not set to Quorum disk.

Add RCU

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add RCU
++S/N=423456,MCU=0xAAAA,RCU=0xBBBB,Controller ID=18,MCU Port=1A,RCU
Port=1B,Path Gr. ID=0
```

Detailed Information

Item	Description
Command	The command name
S/N	The serial number of the remote storage system

Item	Description
MCU	The CU number of the local storage system "Free" is output when CU Free is specified
RCU	The CU number of the remote storage system "Free" is output when CU Free is specified
Controller ID	The controller ID of the remote storage system 5: USP V/VM, 6: VSP, 7: VSP G1000/G1500 and VSP F1500, 8: VSP 5000 series, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM
MCU Port	The port name of the local storage system
RCU Port	The port name of the remote storage system
Path Gr. ID	The path group ID of the remote storage system No value is output when CU Free is not specified.

Add RCU iSCSI Port

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add RCU iSCSI Port
++S/N=400001,Controller ID=18,MCU Port=3B,RCU Port=4B,TCP Port=3260,
IP Address=192.168.0.169
```

Detailed Information

Item	Description
Command	The command name
S/N	The serial number of the remote storage system
Controller ID	The controller ID of the remote storage system 5: USP V/VM, 6: VSP, 7: VSP G1000/G1500 and VSP F1500, 8: VSP 5000 series, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM
MCU Port	The port name of the local storage system
RCU Port	The port name of the remote storage system

Item	Description
TCP Port	The TCP port number A hyphen (-) is displayed if the TCP port number is not specified.
IP Address	The IP address of the port on the remote storage system

Add RCU Path

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add RCU Path
++S/N=423456,MCU=0xAAAA,RCU=0xBBBB,MCU Port=1A,RCU Port=1B,
Controller ID=18,Path Gr. ID=0
```

Detailed Information

Item	Description
Command	The command name
S/N	The serial number of the remote storage system
MCU	The CU number of the local storage system "Free" is output when CU Free is specified
RCU	The CU number of the remote storage system "Free" is output when CU Free is specified
MCU Port	The port name of the local storage system to be added
RCU Port	The port name of the remote storage system to be added
Controller ID	The controller ID of the remote storage system 5: USP V/VM, 6: VSP, 7: VSP G1000/G1500 and VSP F1500, 8: VSP 5000 series, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM
Path Gr. ID	The path group ID of the remote storage system No value is output when CU Free is not specified.

Add Resource(Group)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Resource(Group)
++Resource Group=AAAAAAAA,Controller ID=18,S/N=423456
```

Detailed Information

Item	Description
Command	The command name
Resource Group	The name of a resource group to be created
Controller ID	The controller ID of the virtual storage machine 5: USP V/VM, 6: VSP, 7: VSP G1000/G1500 and VSP F1500, 19: HUS VM, 110: VSP G200, 111: VSP G400/VSP F400/VSP G600 and VSP F600, 112: VSP G800 and VSP F800, 129: VSP G350, 130: VSP G370, 131: VSP G700, 132: VSP G900, 133: VSP F350, 134: VSP F370, 135: VSP F700, 136: VSP F900, 137: VSP G130, 138: VSP 5100H and VSP 5500H, 139: VSP 5100 and VSP 5500, 140: VSP E990, 141: VSP E790, and 142: VSP E590 No output when a virtual storage machine is not specified
S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified

Add Resource(Resource Name)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Resource(Resource Name)
++Resource Group ID=123,Resource Group Name=XXXXXXXXX
```

Detailed Information

Item	Description
Command	The command name
Resource Group ID	The number of the resource group whose name is changed
Resource Group Name	The newly changed resource group name

Add Resource/Delete Resource

Example: when the resource of the operation target is LDEV

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Resource/Delete Resource
++Resource Group ID=AAAAAAAA,
LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB
```

Detailed Information

Item	Description
Command	The command name
Resource Group ID	The number of a resource group to be registered or deleted This item is always 0 when you delete a resource from the resource group
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV to be registered or deleted This item is output when the resource of the operation target is LDEV
PG	The number of a parity group to be registered or deleted This item is output when the resource of the operation target is the parity group or external volume group
Port	The name of a port to be registered or deleted This item is output when the resource of the operation target is Port or Host Group
Host Group ID	The ID of a host group to be registered or deleted This item is output when the resource of the operation target is Host Group

Add Server

Example 1: for VSP E series

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Server
++Request ID=1,Client=xxx, Nickname=xxxxx,Server Mode=xx,OS
Type=xx,Protocol=xx,OS
Option[0:31]=0x00000001,OS Option[32:63]=0x00000000,OS
Option[64:95]=0x00000000,OS
Option[96:127]=0x00000000,OS Option[128:159]=0x00000001,OS
```

```
Option[160:191]=0x00000000,OS
Option[192:223]=0x00000000,OS Option[224:255]=0x00000000
```

Example 2: for VSP G130, G/F350, G/F370, G/F700, G/F900

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Server
++Request ID=1, Client=xxx, Nickname=xxxxx, Server Mode=xx, OS Type=xx,
Protocol=xx,
OS Option[0:31]=0x00000001, OS Option[32:63]=0x00000000, OS
Option[64:95]=0x00000000, OS Option[96:127]=0x00000000
```

Detailed Information

Item	Description
Command	The command name
Request ID	The request ID
Client	The client type 0x00: Command Control Interface, 0x01: Storage Adviser Embedded
Nickname	The nickname to be assigned to the server
Server Mode	The server mode Normal: Normal operation mode, Reserve: Reserve mode
OS Type	The OS type to be assigned to the server The value is output in the hexadecimal format. A hyphen (-) is displayed if the server mode is Reserve.
Protocol	The transfer protocol FC: Fibre, iSCSI: iSCSI
OS Option[0:31]	The OS type options (from 0 to 31) to be set to the server, indicated as a 4 byte bitmap
OS Option[32:63]	The OS type options (from 32 to 63) to be set to the server, indicated as a 4 byte bitmap
OS Option[64:95]	The OS type options (from 64 to 95) to be set to the server, indicated as a 4 byte bitmap
OS Option[96:127]	The OS type options (from 96 to 127) to be set to the server, indicated as a 4 byte bitmap
OS Option[128:159]	The OS type options (from 128 to 159) to be set to the server, indicated as a 4 byte bitmap

Item	Description
(for VSP E series)	
OS Option[160:191] (for VSP E series)	The OS type options (from 160 to 191) to be set to the server, indicated as a 4 byte bitmap
OS Option[192:223] (for VSP E series)	The OS type options (from 192 to 223) to be set to the server, indicated as a 4 byte bitmap
OS Option[224:255] (for VSP E series)	The OS type options (from 224 to 225) to be set to the server, indicated as a 4 byte bitmap

Add Snap Pool

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Snap Pool
++Pool ID=AA,Pool Name=XXXXX,User Threshold(%)=85
++LDEV(LDKC:CU:LDEV)={0x00:0xAA:0xBB,0x00:0xCC:0xDD,……,
0x00:0xEE:0xFF},Num. of LDEVs=X
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The pool number of a pool for Thin Image to be created
Pool Name	The pool name of a pool for Thin Image to be created No value is output if the pool name is not specified
User Threshold(%)	The user defined threshold
LDEV(LDKC:CU:LDEV)	The LDEV IDs of a pool volume
Num. of LDEVs	The number of pool volumes

Add Snap Pool(Drive)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Snap Pool(Drive)
```

```
++Pool ID=AA,Pool Name=XXXXX
++Drive Information(Type Code,Num. of Drives,RAID Level)=[{XXXXXX,2,RAID1},
{YYYYYY,4,RAID1}],Num. of Information=2
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The pool number When an Pool ID is specified automatically, "Auto" is output.
Pool Name	The pool name
Drive Information(Type Code,Num. of Drives,RAID Level)	The drive information (drive type code, number of drives, policy RAID level)
Num. of Information	The number of drive information

Add Snap Pool(Parity Group)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Snap Pool(Parity Group)
++Pool ID=AA,Pool Name=AAAAAA,User Threshold(%)=85
++PG={1-1},Num. of PGs=1
++Resource Group ID=0
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The pool number When an Pool ID is specified automatically, "Auto" is output.
Pool Name	The pool name
User Threshold(%)	The user defined threshold
PG	The parity group number
Num. of PGs	The number of parity groups

Item	Description
Resource Group ID	The resource group ID of pool volume

Add Snapshot

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add Snapshot
++Snapshot Group=SSSSSSSS,Pool ID=A,
P-VOL(LDKC:CU:LDEV)=0x00:0xAA:0xBB,
S-VOL(LDKC:CU:LDEV)=0x00:0xCC:0xDD,
Virtual Storage Machine S/N=423456,
Range=Group,S-VOL Storage Machine S/N=412345,
S-VOL Actual Controller ID=18,Add Mode=Cascade
Add Mode Option=AutoSplit,S-VOL Create=No,S-VOL Nickname=,
Resource Group ID=1,S-VOL ID Range Start(LDKC:CU:LDEV)=0x00:0xAA:0xBB,
S-VOL ID Range End(LDKC:CU:LDEV)=0x00:0xCC:0xDD,MU=127,SLU=Enable
```

Detailed Information

Item	Description
Command	The command name
Snapshot Group	The name of a snapshot group
Pool ID	The pool ID of a pool to which a pair to be registered belongs
P-VOL(LDKC:CU:LDEV)	The LDEV ID of the primary volume of a pair to be registered When a virtual storage machine is specified, the volume number of the virtual storage machine is output.
S-VOL(LDKC:CU:LDEV)	The LDEV ID of the secondary volume of a pair to be registered No output when a secondary volume is not specified
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified
Range	The range for splitting pairs Volume: Only the pair is split. Group: All pairs in the group including the pair are split.
S-VOL Storage Machine S/N	The serial number of the actual storage system to which the secondary volume belongs

Item	Description
S-VOL Actual Controller ID	The controller ID of the actual storage system to which the secondary volume belongs 5: USP V/VM, 6: VSP, 7: VSP G1000/G1500 and VSP F1500, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM
Add Mode	The mode of the pair to be registered Cascade: cascade configuration, Clone: cloned pair You can configure the cascade configuration, also when the "Clone" is specified.
Add Mode Option	Perform the cloned pair or the pair split operation automatically. AutoClone: Perform the cloned pair automatically AutoSplit: Perform the pair split operation None: Not perform automatically
S-VOL Create	Create the secondary volume automatically or not Yes: Create the secondary volume automatically No: Not create the secondary volume automatically
S-VOL Nickname	The name to be designated on the secondary volume The value is output only when S-VOL Create is Yes.
Resource Group ID	The resource group ID of the secondary volume No value is output when the Resource Group ID is not specified.
S-VOL ID Range Start(LDKC:CU:LDEV)	Indicates the start LDEV ID for searching the secondary volume to be automatically numbered. No value is output when the LDEV ID range of the secondary volume is not specified.
S-VOL ID Range End(LDKC:CU:LDEV)	Indicates the end LDEV ID for searching the secondary volume to be automatically numbered. No value is output when the LDEV ID range of the secondary volume is not specified.
MU	The MU number No value is output when the MU number is not specified.
SLU	Indicates whether the SLU attribute is specified for the snapshot data. Enable: The SLU attribute is specified.

Item	Description
	This item is output only when the SLU attribute is specified.

Add SPM Group

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add SPM Group
++Port=1A,WWN=XXXXXXXXXXX,SPM Group=AAAAAAAAA,Nickname=
```

Detailed Information

Item	Description
Command	The command name
Port	The port name to which the SPM target WWN to be registered to the SPM group belongs
WWN	The SPM target WWN to be registered to the SPM group No value is output when the Nickname is output.
SPM Group	The name of the SPM group to which the SPM target WWN is registered
Nickname	The SPM name (nickname) for the WWN No value is output when the WWN value is output.

Add SPM Host Group

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add SPM Host Group
++Port=1A,SPM Group=XXXXXXXXXXX,Host Group Name=AAAAAAAAA
```

Detailed Information

Item	Description
Command	The command name

Item	Description
Port	The name of a port for the host group to which the WWN to be set to the SPM group is registered
SPM Group	The name of an SPM group to be set
Host Group Name	The name of a host group to which the WWN to be set to the SPM group is registered

Add SPM WWN

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add SPM WWN
++Port=1A,WWN=XXXXXXXXXXX,Nickname=AAAAAAAAA
```

Detailed Information

Item	Description
Command	The command name
Port	The port name to which the WWN belongs
WWN	The WWN
Nickname	The SPM name (nickname) for the WWN

Add WWN

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Add WWN
++Port=1A,Host Group ID=0x0FE,WWN=XXXXXXXXXXXXXXXX,
Virtual Storage Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port to which a WWN is set

Item	Description
	When a virtual storage machine is specified, the port name of the virtual storage machine is output.
Host Group ID	The ID of a host group to which the WWN is set
WWN	The WWN to be set
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified

Check External Storage Group

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Check External Storage Group
++PG=E1-1
```

Detailed Information

Item	Description
Command	The command name
PG	The external volume group number

Check External Storage Path

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Check External Storage Path
++Port=1B,WWN=XXXXXXXXXXXXXXXX,Path Group ID=A
```

Detailed Information

Item	Description
Command	The command name
Port	The name of the port to be connected to the external storage system
WWN	The WWN of the external storage system

Item	Description
Path Group ID	The path group ID of the external volume

CTQM

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=CTQM
++LDEV(CU:LDEV)=0x12:0x34,MU=5,
Virtual Storage Machine S/N=423456,
Suspend Status=Suspend,CTQM=EOM
```

Detailed Information

Item	Description
Command	The command name
LDEV(CU:LDEV)	The CU number and the LDEV number of the primary or secondary volume shared by a pair that is included in the consistency group for executing the command When a virtual storage machine is specified, the CU number and the LDEV number of the virtual storage machine is output.
MU	The MU number of the pair to which the LDEV belongs
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified
Suspend Status	The instruction to the journal in the suspend status Suspend: Suspended Full Suspend: Full and suspended Obstacle Suspend: Suspended due to an error
CTQM	The synchronization status in the suspend status CTQM: Synchronization is underway. EOM: Synchronization is complete.

Delete CHAP User

Example 1: Deleting the CHAP user name on the target side

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete CHAP User
++Port=1A,Target ID=0xBB,Target CHAP User=XXXXXX,
Virtual Storage Machine S/N=423456
```

Detailed Information 1

Item	Description
Command	The command name
Port	The name of a port to which an iSCSI target, from which CHAP users are deleted, belongs
Target ID	The iSCSI target ID
Target CHAP User	The CHAP user name on the target side
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.

Example 2: Deleting the CHAP user name on the initiator side

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete CHAP User
++Port=1A,Target ID=0xBB,Initiator CHAP User=XXXXXX,
Virtual Storage Machine S/N=423456
```

Detailed Information 2

Item	Description
Command	The command name
Port	The name of a port to which an iSCSI target, from which CHAP users are deleted, belongs
Target ID	The iSCSI target ID
Initiator CHAP User	The CHAP user name on the initiator side
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.

Delete CLPR

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete CLPR
++CLPR=31
```

Detailed Information

Item	Description
Command	The command name
CLPR	The CLPR ID

Delete Copy Group

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete Copy Group
++Copy Group=AAAAAAAA
```

Detailed Information

Item	Description
Command	The command name
Copy Group	The name of a copy group to be deleted

Delete Device Group

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete Device Group
++Device Group=AAAAAAAA
++LDEV(LDKC:CU:LDEV)={0x00:0xAA:0xBB,0x00:0xCC:0xDD,……,
0x00:0xEE:0xFF},Num. of LDEVs=X
```

Detailed Information

Item	Description
Command	The command name
Device Group	The name of a device group to be deleted
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV to be deleted from the device group
Num. of LDEVs	The number of LDEVs to be deleted from the device group

Delete External Group

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete External Group
++PG=E11111-1,Forcible=Disable
```

Detailed Information

Item	Description
Command	The command name
PG	The external volume group number
Forcible	Indicates whether the forcible mode is enabled or disabled. Enable: The setting is enabled. Disable: The setting is disabled.

Delete External iSCSI Name

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete External iSCSI Name
++Port=3B,iSCSI Name=iqn.1994-04.jp.co.hitachi:rsd.h8h.t.00001.4b000,
IP Address=192.168.0.169,iSCSI Virtual Port ID=15
```

Detailed Information

Item	Description
Command	The command name
Port	The name of the port to which the iSCSI initiator belongs
iSCSI Name	The iSCSI name
IP Address	The IP address of the port on the external storage system
iSCSI Virtual Port ID	The iSCSI virtual port ID (0-15) No value is output when the option is not specified.

Delete HBA iSCSI

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete HBA iSCSI
++Port=1A,Target ID=0xBB,iSCSI Name=ABCDEF,
Virtual Storage Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port from which iSCSI targets are deleted When a virtual storage machine is specified, the port name of the virtual storage machine is output
Target ID	The iSCSI target ID
iSCSI Name	The iSCSI name of the host bus adapter
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.

Delete Host Group

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete Host Group
```

```
++Port=1A,Host Group ID=0x000,,
Virtual Storage Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port from which a host group is deleted When a virtual storage machine is specified, the port name of the virtual storage machine is output.
Host Group ID	The ID of a host group to be deleted
Blank item	Nothing is output due to unused.
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified

Delete Journal

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete Journal
++JNL=0x001
```

Detailed Information

Item	Description
Command	The command name
JNL	The number of a journal to be deleted

Delete Journal(Ldev)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete Journal(Ldev)
++JNL=0x001
++LDEV(LDKC:CU:LDEV)={0x00:0xAA:0xBB,0x00:0xCC:0xDD,……,
0x00:0xEE:0xFF},Num. of LDEVs=X
```

Detailed Information

Item	Description
Command	The command name
JNL	The journal number of a journal from which journal volumes are deleted
LDEV(LDKC:CU:LDEV)	The LDEV ID of a journal volume to be deleted
Num. of LDEVs	The number of journal volumes to be deleted

Delete Ldev

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete Ldev
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB, ALU/SLU Delete Mode=Enable
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV to be deleted
ALU/SLU Delete Mode	Indicates whether the method of deleting an LDEV for Dynamic Provisioning, Dynamic Tiering, active flash, the ALU attribute, and the SLU attribute is enabled. Enable: Enabled, Disable: Disabled

Delete Ldev(Initialize Capacity Saving)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete Ldev(Initialize Capacity Saving)
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV to be deleted

Delete License

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete License
++Product Name=xxx
```

Detailed Information

Item	Description
Command	The command name
Product Name	The program product name

Delete LUN

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete LUN
++Port=1A,Host Group ID=0x100,LUN=3,
LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB,
Virtual Storage Machine S/N=423456
++Additional Port(Port,Host Group ID,LUN)
=[{1B,0x100,3},{1C,0x100,3}],Num. of Paths=2
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port from which an LU is deleted

Item	Description
	When a virtual storage machine is specified, the port name of the virtual storage machine is output.
Host Group ID	The ID of a host group from which an LU is deleted
LUN	The LU number to be deleted No value is output, if it is not specified by the command option.
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV to be deleted No value is output, if it is not specified by the command option.
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified
Additional Port(Port,Host Group ID,LUN)	The port name, the host group ID, and the LU number for the LU path to be deleted If an LDEV is specified but no LUN is specified by the command option, no LU number is output. If it is not specified by the command option, the item itself is not output.
Num. of Paths	The number of LU paths to be deleted If it is not specified by the command option, the item itself is not output.

Delete Parity Group

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete Parity Group
++PG={1-1},Num. of PGs=1
```

Detailed Information

Item	Description
Command	The command name
PG	The parity group number
Num. of PGs	Number of the parity groups

Delete Path

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete Path
++Port=1B,WWN=XXXXXXXXXXXXXXXX,Path Group ID=A
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port to be connected to the external storage system
WWN	The WWN of the external storage system
Path Group ID	The path group ID of the external volume

Delete Pool

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete Pool
++Pool ID=AA,Target=-
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The pool number of a pool to be deleted
Target	The pool, pool volume, or parity group to be deleted Pool: The pool to be deleted Pool(Pool VOL): The pool and pool volume to be deleted Pool(PG): The pool, pool volume and parity group to be deleted A hyphen (-) is output for the value when Target is not specified.

Delete Pool(Ldev)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete Pool(Ldev)
++Pool ID=AA
++LDEV(LDLC:CU:LDEV)={0x00:0xAA:0xBB,0x00:0xCC:0xDD,……,
0x00:0xEE:0xFF},Num. of LDEVs=X
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The pool ID of a pool whose capacity is to be decreased
LDEV(LDKC:CU:LDEV)	The LDEV IDs of pool volumes to be deleted from the pool
Num. of LDEVs	The number of pool volumes to be deleted from the pool

Delete Quorum

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete Quorum
++ Quorum Disk ID=1
```

Detailed Information

Item	Description
Command	The command name
Quorum Disk ID	The quorum disk ID used by global-active device to be deleted

Delete RCU

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete RCU
++S/N=423456,MCU=0xAAAA,RCU=0xBBBB,Controller ID=18,
Path Gr. ID=0
```

Detailed Information

Item	Description
Command	The command name
S/N	The serial number of the remote storage system
MCU	The CU number of the local storage system "Free" is output when CU Free is specified
RCU	The CU number of the remote storage system "Free" is output when CU Free is specified
Controller ID	The controller ID of the remote storage system 5: USP V/VM, 6: VSP, 7: VSP G1000/G1500 and VSP F1500, 8: VSP 5000 series, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM
Path Gr. ID	The path group ID of the remote storage system No value is output when CU Free is not specified.

Delete RCU iSCSI Port

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete RCU iSCSI Port
++S/N=400001,Controller ID=18,MCU Port=3B,RCU Port=4B
```

Detailed Information

Item	Description
Command	The command name
S/N	The serial number of the remote storage system
Controller ID	The controller ID of the remote storage system 5: USP V/VM, 6: VSP, 7: VSP G1000/G1500 and VSP F1500, 8: VSP 5000 series, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM
MCU Port	The port name of the local storage system

Item	Description
RCU Port	The port name of the remote storage system

Delete RCU Path

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete RCU Path
++S/N=423456,MCU=0xAAAA,RCU=0xBBBB,MCU Port=CL1-A,RCU Port=CL1-B,
Controller ID=18,Path Gr. ID=0
```

Detailed Information

Item	Description
Command	The command name
S/N	The serial number of the remote storage system
MCU	The CU number of the local storage system "Free" is output when CU Free is specified
RCU	The CU number of the remote storage system "Free" is output when CU Free is specified
MCU Port	The port name of the local storage system to be deleted
RCU Port	The port name of the remote storage system to be deleted
Controller ID	The controller ID of the remote storage system 5: USP V/VM, 6: VSP, 7: VSP G1000/G1500 and VSP F1500, 8: VSP 5000 series, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM
Path Gr. ID	The path group ID of the remote storage system No value is output when CU Free is not specified.

Delete Resource(Group)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete Resource(Group)
++Resource Group ID=AAAAAAAA
```

Detailed Information

Item	Description
Command	The command name
Resource Group ID	The number of the resource group to be deleted

Delete Server

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete Server
++Request ID=1, Client=xxx, Nickname=xxxxx, Server ID=1, Export=True
```

Detailed Information

Item	Description
Command	The command name
Request ID	The request ID
Client	The client type 0x00: Command Control Interface, 0x01: Storage Adviser Embedded
Nickname	The nickname of the server to be deleted A hyphen (-) is output if the Server ID is specified.
Server ID	The server ID to be deleted A hyphen (-) is output if the Nickname is specified.
Export	The export processing are specified or not. (The export processing indicates that it deletes the server information and keeps the other configurations.)

Item	Description
	True: Export processing request exists (Perform Export processing), False: Export processing request does not exists (Not perform Export processing)

Delete Snapshot

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete Snapshot
++Snapshot Group=SSSSSSSS,P-VOL(LDKC:CU:LDEV)=0x00:0xAA:0xBB,MU=A,
Virtual Storage Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
Snapshot Group	The name of a snapshot group to be deleted
P-VOL(LDKC:CU:LDEV)	The LDEV ID of the primary volume of a pair to be deleted When a virtual storage machine is specified, the LDEV ID of the virtual storage machine is output.
MU	The MU number of the pair to be deleted
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified

Delete Snapshot(Tree)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete Snapshot(Tree)
++ROOT-VOL(LDKC:CU:LDEV)=0x00:0xAA:0xBB,
Virtual Storage Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
ROOT-VOL(LDKC:CU:LDEV)	The LDKC, CU, and LDEV numbers of the root volume to be deleted When a virtual storage machine is specified, the LDEV ID of the virtual storage machine is output.
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.

Delete SPM Group

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete SPM Group
++Port=1A,SPM Group=XXXXXXXXXXXX
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port to which the WWN to be deleted from the SPM group belongs
SPM Group	The name of an SPM group from which the WWN is deleted

Delete SPM Host Group

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete SPM Host Group
++Port=1A,Host Group Name=XXXXXXXXXXXX
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port to which the WWN to be deleted from the SPM group belongs
Host Group Name	The name of a host group to which the WWN to be deleted from the SPM group belongs

Delete SPM WWN

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete SPM WWN
++Port=1A,WWN=XXXXXXXXXXXX
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port to which the WWN to be deleted from the SPM target belongs
WWN	The WWN to be deleted from the SPM target

Delete SPM WWN(Nickname)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete SPM WWN(Nickname)
++Port=1A,Nickname=XXXXXXXXXXXX
```

Detailed Information

Item	Description
Command	The command name

Item	Description
Port	The name of a port to which the WWN to be deleted from the SPM target belongs
Nickname	The SPM name (nickname) of the WWN to be deleted from the SPM target

Delete WWN

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Delete WWN
++Port=1A,Host Group ID=0x0FE,WWN=XXXXXXXXXXXXXXXX,
Virtual Storage Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port from which a WWN is deleted When a virtual storage machine is specified, the port name of the virtual storage machine is output.
Host Group ID	The ID of a host group from which the WWN is deleted
WWN	The WWN to be deleted
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified

Disconnect External Group

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Disconnect External Group
++PG=E1-1
```

Detailed Information

Item	Description
Command	The command name
PG	The external volume group number

Disconnect Path

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Disconnect Path
++Port=1B,WWN=XXXXXXXXXXXXXXXX,Path Group ID=A
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port to be connected to the external storage system
WWN	The WWN of the external storage system
Path Group ID	The path group ID of the external volume

Extend Ldev

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Extend Ldev
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB,
Virtual Storage Machine S/N=423456,
Size=200 Capacity
```

Detailed Information

Item	Description
Command	The command name

Item	Description
LDEV(LDKC:CU:LDEV)	The LDEV ID of the virtual volume for Dynamic Provisioning to be extended When a virtual storage machine is specified, the LDEV ID of the virtual storage machine is output.
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified
Size	The capacity and method for specifying the capacity of an LDEV to be created **Specifying the capacity** ▪ Capacity: Specify a capacity by the byte or block. Units, byte or block, are not output. If a capacity is specified by the kilobyte, megabyte, gigabyte, or terabyte, the capacity is output on a byte basis. ▪ Offset-Capacity: Specify a capacity by the byte or block, and then the storage system corrects the capacity. Units, byte or block, are not output. If a capacity is specified by the kilobyte, megabyte, gigabyte, or terabyte, the capacity is output on a byte basis. ▪ Cylinder: Specify a capacity by the cylinder. For details, see the section describing CV size calculation in *Provisioning Guide*.

Extend Ldev(Asynchronous)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Extend Ldev(Asynchronous)
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB,
Virtual Storage Machine S/N=423456,
Size=200 Capacity
```

Detailed Information

Item	Description
Command	The command name

Item	Description
LDEV(LDKC:CU:LDEV)	The LDEV ID of the Dynamic Provisioning virtual volume to be extended asynchronously with the operation When a virtual storage machine is specified, the LDEV ID of the virtual storage machine is output.
Virtual Storage Machine S/N	The serial number of the virtual storage machine Output only when a virtual storage machine is specified
Size	The capacity of an LDEV to be created, and how the capacity is specified **How the capacity is specified** ▪ Capacity: The capacity is specified by the byte or block. The unit, byte or block, is not output. If the capacity is specified by the kilobyte, megabyte, gigabyte, or terabyte, the capacity is output on a byte basis. ▪ Offset-Capacity: The capacity is specified by the byte or block, and the storage system corrects the capacity. The unit, byte or block, is not output. If the capacity is specified by the kilobyte, megabyte, gigabyte, or terabyte, the capacity is output on a byte basis. ▪ Cylinder: The capacity is specified by the cylinder. For details, see the section describing CV size calculation in *Provisioning Guide*.

Initialize Ldev(Format)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Initialize Ldev(Format)
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB,Format Option=Normal
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV to be formatted

Item	Description
Format Option	The format options Normal: Normal format, Quick: Quick format

Initialize Ldev(Shredding)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Initialize Ldev(Shredding)
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB,Data=00-FF-00
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV whose data is to be deleted
Data	The data pattern used for deleting the data 00-FF-00: Default pattern Random: Random value 0xXXXXXXXX : User defined value

Initialize Ldev(Stop Shredding)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Initialize Ldev(Stop Shredding)
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV in which deletion of its data is to be stopped

Initialize Parity Group

Example1: When VSP E series is used

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Initialize Parity Group
++PG=1-5,Wait Time=1000
```

Detailed Information 1

Item	Description
Command	The command name
PG	The parity group number for a parity group to be initialized
Wait Time	The wait time for command execution (in seconds) This item is displayed for VSP E series only. This item is not displayed if the wait time for command execution is not specified.

Example 2: When VSP G130, G/F350, G/F370, G/F700, G/F900 is used

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Initialize Parity Group
++PG=1-5
```

Detailed Information 2

Item	Description
Command	The command name
PG	The parity group number for a parity group to be initialized

Initialize Pool

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Initialize Pool
++Pool ID=10,Operation=Initialize Deduplication
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The pool ID of the pool which will be initialized
Operation	The operation Initialize Deduplication: Initialize the deduplication system data volume and the volumes include the data which is deduplicated.

Initialize System

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Initialize System
++Operation=Initialize Pools,Password=Enable
```

Detailed Information

Item	Description
Command	The command name
Operation	The operation Initialize Local Replica Pairs: Initializing Local Replica Pairs Initialize Pools: Initializing pools
Password	The password for one time Enable: Specify the password This item is output only if the password for one time is specified.

Map Resource(LDEV)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Map Resource(LDEV)
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB,
Map LDEV(LDKC:CU:LDEV)=0x00:0xCC:0xDD,Emulation=AAAAAA
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of the actual volume
Map LDEV(LDKC:CU:LDEV)	The LDEV ID of the virtual volume assigned to the actual volume "Reserve" is output if the reservation attribute of global-active device is set on the LDEV ID of the volume used as a secondary volume of a global-active device pair.
Emulation	The emulation type of a virtual volume

Map Resource(Port)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Map Resource(Port)
++Port=1A,Map Port=1E
```

Detailed Information

Item	Description
Command	The command name
Port	The port name of the actual port
Map Port	The name of the virtual port assigned to the actual port

Map Snapshot

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Map Snapshot
++P-VOL(LDKC:CU:LDEV)=0x00:0xAA:0xBB,
S-VOL(LDKC:CU:LDEV)=0x00:0xCC:0xDD,MU=1,
Virtual Storage Machine S/N=423456,
S-VOL Storage Machine S/N=412345,S-VOL Actual Controller ID=18,S-VOL
Create=yes,S-VOL Nickname=Snapshot of ABCDEF ID:43707,
Resource Group ID=1,S-VOL ID Range Start(LDKC:CU:LDEV)=0x00:0xAA:0xBB,
S-VOL ID Range End(LDKC:CU:LDEV)=0x00:0xCC:0xDD
```

Detailed Information

Item	Description
Command	The command name
P-VOL(LDKC:CU:LDEV)	The LDEV ID of the primary volume When a virtual storage machine is specified, the LDEV ID of the virtual storage machine is output.
S-VOL(LDKC:CU:LDEV)	The LDEV ID of the secondary volume When a virtual storage machine is specified, the LDEV ID of the virtual storage machine is output.
MU	The MU number
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified
S-VOL Storage Machine S/N	The serial number of the actual storage system to which the secondary volume belongs
S-VOL Actual Controller ID	The controller ID of the actual storage system to which the secondary volume belongs 5: USP V/VM, 6: VSP, 7: VSP G1000/G1500 and VSP F1500, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM
S-VOL Create	Create the secondary volume automatically or not Yes: Create the secondary volume automatically No: Not create the secondary volume automatically
S-VOL Nickname	The name to be designated on the secondary volume The value is output only when S-VOL Create is Yes.
Resource Group ID	The resource group ID of the secondary volume No value is output when the Resource Group ID is not specified.
S-VOL ID Range Start(LDKC:CU:LDEV)	Indicates the start LDEV ID for searching the secondary volume to be automatically numbered. No value is output when the LDEV ID range of the secondary volume is not specified.
S-VOL ID Range End(LDKC:CU:LDEV)	Indicates the end LDEV ID for searching the secondary volume to be automatically numbered. No value is output when the LDEV ID range of the secondary volume is not specified.

Modify CLPR

Example 1

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify CLPR
++PG=1-1,CLPR=31,CLPR Name=,Cache Size=
```

Detailed Information 1

Item	Description
Command	The command name
PG	The number of a parity group for CLPR to be migrated The parity group number with "E" on the top of the name indicates that the parity group contains an external volume
CLPR	The following either CLPR ID ▪ Destination to which the CLPR ID is migrated ▪ CLPR ID whose name and cache size are modified
CLPR Name	The CLPR name
Cache Size	Cache capacity allocated to CLPRs

Example 2

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify CLPR
++PG=,CLPR=31,CLPR Name=CLPR31,Cache Size=8192
```

Detailed Information 2

Item	Description
Command	The command name
PG	The number of a parity group for CLPR to be migrated The parity group number with "E" on the top of the name indicates that the parity group contains an external volume
CLPR	The following either CLPR ID ▪ Destination to which the CLPR ID is migrated ▪ CLPR ID whose name and cache size are modified

Item	Description
CLPR Name	The CLPR name
Cache Size	Cache capacity allocated to CLPRs

Modify Drive

Example 1

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Drive
++Drive Location=0-1,Spare=Enable
++Drive Information(Type Code,Num. of Drives)=[], Num. of Information=
```

Detailed Information 1

Item	Description
Command	The command name
Drive Location	The mounting position of the drive No value is output when the Drive Information(Type Code,Num. of Drives) is specified.
Spare	The assignment status of the spare drive Enable: Assigning as a spare drive. Disable: Releasing spare drive setting.
Drive Information(Type Code,Num. of Drives)	The drive information (drive type code, number of drives, policy RAID level) No value is output when the Drive Location is specified.
Num. of Information	The number of drive information No value is output when the Drive Location is specified.

Example 2

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Drive
++Drive Location=,Spare=Enable
++Drive Information(Type Code,Num. of Drives)=[{XXXXXX,2},{YYYYYY,4}],
Num. of Information=2
```

Detailed Information 2

Item	Description
Command	The command name
Drive Location	The mounting position of the drive No value is output when the Drive Information(Type Code,Num. of Drives) is specified.
Spare	The assignment status of the spare drive Enable: Assigning as a spare drive. Disable: Releasing spare drive setting.
Drive Information(Type Code,Num. of Drives)	The drive information (drive type code, number of drives, policy RAID level) No value is output when the Drive Location is specified.
Num. of Information	The number of drive information No value is output when the Drive Location is specified.

Modify External Group(ALUA Switch)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify External Group(ALUA Switch)
++PG=E1-1,ALUA Switch=Enable
```

Detailed Information

Item	Description
Command	The command name
PG	The external volume group number
ALUA Switch	The setting status of the ALUA mode Enable: Enabled, Disable: Disabled

Modify External Group(Cache Inflow)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify External Group(Cache Inflow)
++PG=E1-1,Cache Inflow=Enable
```

Detailed Information

Item	Description
Command	The command name
PG	The external volume group number
Cache Inflow	The inflow control setting of the cache of the external volume. Enable: Enabled, Disable: Disabled

Modify External Group(Cache Mode)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify External Group(Cache Mode)
++PG=E1-1,Cache Mode=Enable
```

Detailed Information

Item	Description
Command	The command name
PG	The external volume group number
Cache Mode	The cache mode to be set Enable: The cache mode is enabled Disable: The cache mode is disabled Through: Cache through mode Write Sync: Write synchronous mode

Modify External Group(Load Balance Mode)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify External Group(Load Balance Mode)
++PG=E1-1,Load Balance Mode=Extend
```

Detailed Information

Item	Description
Command	The command name
PG	The external volume group number
Load Balance Mode	The load balance mode to be set Normal: Standard round robin Extend: Extended round robin Disable: Disabled

Modify External Group(MP Blade)

Modify External Group(MP Blade) is the command history of CCI. Since CCI is software common to Hitachi storage systems, "MP Blade" instead of "MP Unit" is output as the command name and the item in audit logs.

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify External Group(MP Blade)
++PG=E1-1,MP Blade ID=0
```

Detailed Information

Item	Description
Command	The command name
PG	The external volume group number
MP Blade ID	The MP unit ID to be allocated to a target volume

Modify Host Group(Host Mode)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Host Group(Host Mode)
++Port=1A,Host Group ID=0x0FE,Virtual Storage Machine S/N=423456,
Mode=0x0A,Auth Mode=Chap,Chap Mutual=Disable
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port to which a host group for the host mode to be set belongs When a virtual storage machine is specified, the port name of the virtual storage machine is output.
Host Group ID	The ID of a host group for which the host mode is set
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified
Mode	The host mode For details about the host mode, see *Provisioning Guide*.
Auth Mode	The authentication mode Chap: CHAP authentication is enabled None: CHAP authentication is disabled Both: Connection is available both with and without CHAP authentication
Chap Mutual	CHAP authentication is unidirectional or bidirectional Enable: Set to bidirectional authentication mode Disable: Set to the unidirectional authentication mode

Modify Host Group(Host Mode Option)

Example 1: for VSP E series

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Host Group(Host Mode Option)
++Port=1A,Host Group ID=0x0FE,Virtual Storage Machine S/N=423456,
Mode=0x0A,Option[0:31]=0x80000000,Option[32:63]=0x80000000,
Option[64:95]=0x80000000,Option[96:127]=0x80000000,
```

```
Option[128:159]=0x80000000,
Option[160:191]=0x80000000,Option[192:223]=0x80000000,
Option[224:255]=0x80000000,Auth Mode=Chap,
Chap Mutual=Disable
```

Example 2: for VSP G130, G/F350, G/F370, G/F700, G/F900

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Host Group(Host Mode Option)
++Port=1A,Host Group ID=0x0FE,Virtual Storage Machine S/N=423456,
Mode=0x0A,Option[0:31]=0x80000000,Option[32:63]=0x80000000,
Option[64:95]=0x80000000,Option[96:127]=0x80000000,Auth Mode=Chap,
Chap Mutual=Disable
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port on which the host mode option is changed When a virtual storage machine is specified, the port name of the virtual storage machine is output.
Host Group ID	The ID of a host group whose host mode option is changed
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified
Mode	The host mode For details about the host mode, see *Provisioning Guide*.
Option[0:31]	The host mode options (from 0 to 31) to be set to the host group, indicated as a 4 byte bitmap
Option[32:63]	The host mode options (from 32 to 63) to be set to the host group, indicated as a 4 byte bitmap
Option[64:95]	The host mode options (from 64 to 95) to be set to the host group, indicated as a 4 byte bitmap
Option[96:127]	The host mode options (from 96 to 127) to be set to the host group, indicated as a 4 byte bitmap
Option[128:159] (for VSP E series)	The host mode options (from 128 to 159) to be set to the host group, indicated as a 4 byte bitmap
Option[160:191] (for VSP E series)	The host mode options (from 160 to 191) to be set to the host group, indicated as a 4 byte bitmap

Item	Description
Option[192:223] (for VSP E series)	The host mode options (from 192 to 223) to be set to the host group, indicated as a 4 byte bitmap
Option[224:255] (for VSP E series)	The host mode options (from 224 to 255) to be set to the host group, indicated as a 4 byte bitmap
Auth Mode	The authentication mode Chap: CHAP authentication is enabled None: CHAP authentication is disable Both: Connection is available both with and without CHAP authentication
Chap Mutual	CHAP authentication is unidirectional or bidirectional Enable: Set to bidirectional authentication mode Disable: Set to the unidirectional authentication mode

Modify Initiator CHAP User

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Initiator CHAP User
++Port=2B,CHAP User=user1
```

Detailed Information

Item	Description
Command	The command name
Port	The name of the port to which the iSCSI initiator belongs
CHAP User	The CHAP user name to be set for Secret

Modify Journal

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Journal
++JNL=0x001,Timer Type=System,Use of Cache=Use,Inflow Control=Enable,
Data Over flow Watch(s)=600,MU=0,Copy Pace=Medium,Path blockade watch
```

```
timer Transfer=-,
Path blockade watch timer(m)=60,Entire Copy=-,Transfer Speed(Mbps)=-
```

Detailed Information

Item	Description
Command	The command name
JNL	The number of a journal whose options to be changed
Timer Type	The clock type used for consistency time System: The system clock of the main frame host on the primary site Local: No system clock is used. None: The system clock of the main frame host on the primary site when data is copied from the storage system on the secondary site to the one on the primary site
Use of Cache	Indicates whether journal data in the restore journal is stored in cache or not Not Use: Not stored in cache, Use: Stored in cache
Inflow Control	The setting status of data inflow Enable: Enabled, Disable: Disabled
Data Over flow Watch(s)	The time for data over flow to be watched: 0 to 600 seconds
MU	The MU number
Copy Pace	The data transfer speed for copy operation Low: Low speed, Medium: Medium speed, High: High speed
Path blockade watch timer Transfer	Indicates whether the path blockade watch timer of the master journal is transferred to the restore journal or not Enable: Transferred, Disable: Not transferred
Path blockade watch timer(m)	The path blockade watch time: 1 to 60 minutes If the value is 0, the path blockade watch timer is disabled.
Entire Copy	Indicates the behavior when Delta resync operation has failed Enable: Copy the entire data of the primary volume to the secondary volume, Disable: Not copy the primary volume data to the secondary volume
Transfer Speed(Mbps)	The transfer speed of the communication line

Item	Description
	The unit is megabits per second (Mbps).

Modify Journal(Command Device)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Journal(Command Device)
++JNL=0x001, MU=0,
Command Device= Enable, LDEV(LDKC:CU:LDEV)=0x00:0xFE:0xFF
```

Detailed Information

Item	Description
Command	The command name
JNL	The number of a journal to be modified
MU	The MU number
Command Device	The setting status of the remote command device attribute Enable: Enabled, Disable: Disabled
LDEV(LDKC:CU:LDEV)	The LDEV ID of the remote command device A hyphen (-) is output if the setting of the remote command device is Enable and LDEV ID is not specified. When the setting of the remote command device is Disable, this item is not output.

Modify Journal(MP Blade)

Modify Journal(MP Blade) is the command history of CCI. Since CCI is software common to Hitachi storage systems, "MP Blade" instead of "MP Unit" is output as the command name and the item in audit logs.

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Journal(MP Blade)
++JNL=0x001,MP Blade ID=A
```

Detailed Information

Item	Description
Command	The command name
JNL	The number of a journal to be modified
MP Blade ID	The MP Unit ID to be assigned to a target journal

Modify Ldev(ALUA)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Ldev(ALUA)
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB,ALUA=Enable
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The ID of the LDEV on which the ALUA mode is set or canceled
ALUA	The setting status of the ALUA mode Enable: Enabled, Disable: Disabled

Modify Ldev(Blocked)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Ldev(Blocked)
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV to be blocked

Modify Ldev(Capacity Saving)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Ldev(Capacity Saving)
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB,Capacity Saving=Deduplication
Compression
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of the LDEV to which the capacity saving is set
Capacity Saving	The setting status of capacity saving Disable: Capacity saving is disabled. Compression: Compression is enabled. Deduplication Compression: Deduplication and compression are enabled.

Modify Ldev(Capacity Saving Mode)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Ldev(Capacity Saving Mode)
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB,Capacity Saving Mode=Post Process
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of the LDEV for which capacity saving is to be set
Capacity Saving Mode	The status of the capacity saving setting Post Process: post process method, Inline: inline method

Modify Ldev(CLPR)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Ldev(CLPR)
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB,CLPR=0
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV in which the CLPR is changed
CLPR	The number of the CLPR ID to be changed

Modify Ldev(Command Device)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Ldev(Command Device)
++LDEV(LDKC:CU:LDEV)=0x00:0xFE:0xFF,Command Device=Disable,
Security=Disable,UserAuth=Disable,DeviceGroup=Disable
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV to be set
Command Device	The setting status of the command device attribute Enable: Enabled, Disable: Disabled
Security	The setting status of the command device security Enable: Enabled, Disable: Disabled
UserAuth	The setting status of the user authentication Enable: Enabled, Disable: Disabled
DeviceGroup	The setting status of the device group definition

Item	Description
	Enable: Enabled, Disable: Disabled

Modify Ldev(Discard Zero Page)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Ldev(Discard Zero Page)
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV from which the zero data page is discarded

Modify Ldev(Full Allocation)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Ldev(Full Allocation)
++LDEV(LDKC:CU:LDEV)=0x00,0x01,0x02,Full Allocation=Enable
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV for which Full Allocation is set to be enabled or disabled
Full Allocation	The setting status of Full Allocation Enable: Full Allocation is enabled. Disable: Full Allocation is disabled.

Modify Ldev(MP Blade)

Modify Ldev(MP Blade) is the command history of CCI. Since CCI is software common to Hitachi storage systems, "MP Blade" instead of "MP Unit" is output as the command name and the item in audit logs.

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Ldev(MP Blade)
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB,MP Blade ID=A
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV to which an MP Unit is assigned
MP Blade ID	The ID of the MP Unit to which the LDEV is assigned

Modify Ldev(Nickname)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Ldev(Nickname)
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB,Nickname=AAAAAAAAAA
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV on which a name is designated
Nickname	The name to be designated on the LDEV

Modify Ldev(QoS Alert)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Ldev(QoS Alert)
```

```
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB,Upper Alert Time=600,Lower Alert
Time=600,Response Alert Time=10
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID for which a QoS alert is to be set, changed, or deleted
Upper Alert Time	The threshold time (in seconds) used to determine whether to issue an alert indicating that the upper limit is reached If the threshold time is not specified, a hyphen (-) is output. If the threshold time is disabled, 0 is output.
Lower Alert Time	The threshold time (in seconds) used to determine whether to issue an alert indicating that the lower limit is not reached If the threshold time is not specified, a hyphen (-) is displayed. If the threshold time is disabled, 0 is output.
Response Alert Time	The threshold time (in seconds) used to determine whether to issue an alert indicating that the response is delayed If the threshold time is not specified, a hyphen (-) is output. If the threshold time is disabled, 0 is output.

Modify Ldev(QoS Parameters)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Ldev(QoS Parameters)
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB,Upper Throughput IO=2147483647,Upper
Data Trans MB=2097151,Lower Throughput IO=-,Lower Data Trans MB=-,Response
Priority=3
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV for which QoS parameters are to be set, changed, or deleted

Item	Description
Upper Throughput IO	The upper-limit value of the I/O rate (IOPS) If the upper-limit value is not specified, a hyphen (-) is output. If the upper-limit value is disabled, 0 is output.
Upper Data Trans MB	The upper-limit value of the transfer rate (MB/s) If the upper-limit value is not specified, a hyphen (-) is output. If the upper-limit value is disabled, 0 is output.
Lower Throughput IO	The lower-limit value of the I/O rate (IOPS) If the lower-limit value is not specified, a hyphen (-) is output. If the lower-limit value is disabled, 0 is output.
Lower Data Trans MB	The lower-limit value of the transfer rate (MB/s) If the lower-limit value is not specified, a hyphen (-) is output. If the lower-limit value is disabled, 0 is output.
Response Priority	The priority of the I/O processing If the priority is not specified, a hyphen (-) is output. If the priority is disabled, 0 is output.

Modify Ldev(Quorum Disable)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Ldev(Quorum Disable)
++LDEV(LDKC:CU:LDEV)=0x00:0x01:0x02
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of the volume whose setting as a quorum disk used by global-active device is released

Modify Ldev(Quorum Enable)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Ldev(Quorum Enable)
++LDEV(LDKC:CU:LDEV)=0x00:0x01:0x02,Quorum Disk ID=1,
Controller ID=18,S/N=412345
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of the volume to be set as a quorum disk used by global-active device
Quorum Disk ID	The ID of the quorum disk used by global-active device to be set
Controller ID	The controller ID of the storage system on which the quorum disk used by global-active device is set 5: USP V/VM, 6: VSP, 7: VSP G1000/G1500 and VSP F1500, 8: VSP 5000 series, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM
S/N	The serial number of the storage system on which the quorum disk used by global-active device is set

Modify Ldev(Restore)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Ldev(Restore)
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB,Forcible=Enable,Password=Enable
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV to be restored
Forcible	The setting status of force restore

Item	Description
	Enable: Enabled, Disable: Disabled
Password	Indicates whether an one time password is specified Enable: Specified This item is output only when Forcible is Enable.

Modify Ldev(Stop Discard Zero Page)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Ldev(Stop Discard Zero Page)
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	Indicates the ID of the LDEV that stops the zero page from being discarded

Modify Ldev(Tier)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Ldev(Tier)
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB,Tier Relocation=Enable,
Tiering Policy=Level1,New Page Assignment Tier=High
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV to which the Tier is relocated
Tier Relocation	The setting status of the tier relocation

Item	Description
	Enable: Relocated, Disable: Not relocated
Tiering Policy	The tiering policy ID is output in the format of "Level*ID*". All is output when all tiers are used at relocation. A hyphen (-) is output for the value when Tier Relocation is disabled.
New Page Assignment Tier	The tier when a new page is assigned High: High performance tier Middle: Medium performance tier Low: Low performance tier

Modify License(Disable)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify License(Disable)
++Product Name=xxx
```

Detailed Information

Item	Description
Command	The command name
Product Name	The program product name

Modify License(Enable)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify License(Enable)
++Product Name=xxx
```

Detailed Information

Item	Description
Command	The command name

Item	Description
Product Name	The program product name

Modify Local Replica Opt

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Local Replica Opt
++Option Type=Open,Option=Enable
++Option ID={1},Num. of IDs=1
```

Detailed Information

Item	Description
Command	The command name
Option Type	The local replica option type to be set Open: Local replica options for ShadowImage, Thin Image, Volume Migration, and nondisruptive migration MF: Local replica options for ShadowImage for Mainframe, Compatible FlashCopy® V2, Compatible FlashCopy® SE, and Volume Migration
Option	The setting status of the local replica option Enable: Enabled, Disable: Disabled
Option ID	The IDs of the specified local replica options For details of the local replica option ID, see *Hitachi ShadowImage® User Guide* and *Hitachi Thin Image User Guide*.
Num. of IDs	The number of IDs of the specified local replica options

Modify LUN(Asymmetric Access)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify LUN(Asymmetric Access)
++Port=1A,Host Group ID=0x001,Virtual Storage Machine S/N=423456,
Asymmetric Access State=Active Optimized
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port whose setting is modified When a virtual storage machine is specified, the port name of the virtual storage machine is output.
Host Group ID	The ID of a host group whose setting is modified When a virtual storage machine is specified, the host group ID of the virtual storage machine is output.
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.
Asymmetric Access State	The setting status of the asymmetric access states Active Optimized: Prioritized, Active Non Optimized: Not prioritized

Modify LUN(Reservation release)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify LUN(Reservation release)
++Port=1A,Host Group ID=0x001,LUN=2
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port whose reservation to be released
Host Group ID	The ID of a host group whose reservation to be released
LUN	The LU number whose reservation to be released The value is output only when the LU number is specified.

Modify Parity Group

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Parity Group
++PG=1-1,Accelerated Compression=Enable
```

Detailed Information

Item	Description
Command	The command name
PG	The parity group number
Accelerated Compression	The setting status of the accelerated compression Enable: Enabled, Disable: Disabled

Modify Path(Path Blocked Watch)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Path(Path Blocked Watch)
++WWN=XXXXXXXXXXXXXXXX,Path Blocked Watch=5
```

Detailed Information

Item	Description
Command	The command name
WWN	The WWN of the external storage system
Path Blocked Watch	The path blocked watch TOV(time over value) period setting (in seconds)

Modify Path(Que Depth)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Path(Que Depth)
++WWN=XXXXXXXXXXXXXXXX,Que Depth=2
```

Detailed Information

Item	Description
Command	The command name
WWN	The WWN of the external storage system
Que Depth	The Que Depth(the number of command ques) value

Modify Path(Timeout)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Path(Timeout)
++WWN=XXXXXXXXXXXXXXXX,Timeout=5
```

Detailed Information

Item	Description
Command	The command name
WWN	The WWN of the external storage system
Timeout	The I/O time over value setting(in seconds)

Modify Pool Attribute

Modify Pool Attribute is an audit log generated when a command operation is performed with the DKCMAIN firmware version earlier than 83-04-0X-XX/XX.

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Pool Attribute
++Pool ID=AA,Attribute=DP
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The pool ID of a pool whose attribute is to be changed

Item	Description
Attribute	The pool attribute after the change DP: Dynamic Provisioning DT: Dynamic Tiering

Modify Pool(Auto Add Pool Volume)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Pool(Auto Add Pool Volume)
++Pool ID=AA,Auto Add Pool Volume=Enable,Password=Enable
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The ID of the pool on which Auto Add Pool Volume is set
Auto Add Pool Volume	The setting status of Auto Add Pool Volume Enable: Auto Add Pool Volume is enabled. Disable: Auto Add Pool Volume is disabled.
Password	Indicates whether the password for one time is specified or not Enable: Specified This item is output only when the password for one time is specified.

Modify Pool(Data Direct Mapping)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Pool(Data Direct Mapping)
++Pool ID=AA,Data Direct Mapping=Enable
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The ID of the pool on which Data Direct Mapping is set
Data Direct Mapping	The setting status of Data Direct Mapping Enable: Data Direct Mapping is enabled. Disable: Data Direct Mapping is disabled.

Modify Pool(Deduplication)

Example (when the deduplication system data volume will be allocated)

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Pool(Deduplication)
++Pool ID=10,Deduplication=Yes
++LDEV(LDKC:CU:LDEV)={0x00:0xAA:0xBB},Num. of LDEVs=1
```

Example (when the deduplication system data volume will not be allocated)le

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Pool(Deduplication)
++Pool ID=10,Deduplication=No
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The ID of the pool to which the deduplication system data volume will be allocated
Deduplication	Will the deduplication system data volume be allocated Yes: The deduplication system data volume will be allocated. No: The deduplication system data volume will not be allocated.
LDEV(LDKC:CU:LDEV)	The LDEV IDs for LDEVs to be set as the deduplication system data volume When Deduplication is No, this item is not output.
Num. of LDEVs	The number of deduplication system data volumes to be created When Deduplication is No, this item is not output.

Modify Pool(Delete DSD Volumes)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Pool(Delete DSD Volumes)
++Pool ID=10
```

Detailed Information

Item	Description
Command	The command name
Pool ID	Indicates the ID of the pool to which the deduplication system data volume that is to be deleted is allocated

Modify Pool(Monitor Mode)

Modify Pool(Monitor Mode) is an audit log generated when a command operation is performed with the DKCMAIN firmware version earlier than 83-04-0X-XX/XX.

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Pool(Monitor Mode)
++Pool ID=AA
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The pool number of a pool whose monitor mode is set

Modify Pool(Restore)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Pool(Restore)
++Pool ID=AA
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The pool ID of a pool to be restored

Modify Pool(Stop Shrinking)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Pool(Stop Shrinking)
++Pool ID=AA
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The ID of the pool whose shrinking is to be stopped

Modify Pool(Suspend TI Pair)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Pool(Suspend TI Pair)
++Pool ID=10,Suspend TI Pair=Yes
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The pool ID of a pool to be suspended
Suspend TI Pair	The setting status of Suspend TI Pair when the High water mark Threshold is exceeded. Yes: Thin Image pair is interrupted. No: Thin Image pair is uninterrupted.

Modify Pool(Threshold)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Pool(Threshold)
++Pool ID=AA,Warning Threshold(%)=85,High water mark Threshold(%)=85,
Subscription(%)=65530,Monitor Mode=-,Blocking Mode=pool_full
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The pool ID of a pool whose threshold is to be changed
Warning Threshold(%)	The warning threshold of the usage rate of a pool
High water mark Threshold(%)	The depletion threshold of the usage rate of a pool
Subscription(%)	The maximum reserve rate of virtual volumes for the pool capacity Unlimited is output as a value when the reserve rate is unlimited.
Monitor Mode	The monitor mode period: Monitoring periodically continuous: Monitoring continuously realtime_tiering: The active flash function is enabled. non_realtime_tiering: The active flash function is disabled. A hyphen (-) is output for the value when Blocking Mode option is specified.
Blocking Mode	The blocking mode pool_full: Read and write to the virtual volume are not available when the pool is full. When the pool is blocked, read and write to the virtual volume are available. pool_vol_blockade: Read and write to the virtual volume are not available when the pool is blocked. When the pool is full, read and write to the virtual volume are available. full_or_blockade: Read and write to the virtual volume are not available when the pool is full or blocked.

Item	Description
	no_blocking: Read and write to the virtual volume are available even if the pool is full or blocked.

Modify Pool(TierOpt)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Pool(TierOpt)
++Pool ID=10,Tier=1,Tier Ratio(%)=2,Tier Buffer Rate(%)=40,Attribute=DP
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The ID of a pool to be modified
Tier	The tier to be modified
Tier Ratio(%)	The rate of space for new allocation per tier
Tier Buffer Rate(%)	The buffer rate for relocation per tier
Attribute	The pool attribute after the change DP: Dynamic Provisioning, DT: Dynamic Tiering, DT (Auto Default): Dynamic Tiering (Automatic default value setting mode)

Modify Port

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Port
++Port=1A,Speed(Gbps)=8,Fibre. Address=1,Fabric=Enable,
Connection=FC-AL,Switch=Enable,
Virtual Storage Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port whose setting is to be changed When a virtual storage machine is specified, the port name of the virtual storage machine is output.
Speed(Gbps)	The host speed of a port
Fibre. Address	The address of the Fibre Channel Port
Fabric	The setting status of the fabric switch Enable or Disable will appear
Connection	The topology of the Fabric switch FC-AL: FC-AL (Fibre Channel-Arbitrated Loop) is selected P-to-P: Point-to-Point is selected
Switch	The setting status of the LUN security Enable or Disable will appear
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified

Modify Port(Attribute)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Port(Attribute)
++Port=1A,Attribute=Target
```

Detailed Information

Item	Item
Command	The command name
Port	The name of a port whose attribute is to be changed
Attribute	The attribute after the change Target: Target port Initiator: Initiator port

Item	Item
	External: External port RCU Target: RCU Target port

Modify Port(iSCSI)

Example 1: Changing a physical port

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Port(iSCSI)
++Port=1A,Speed(Gbps)=8,Security Switch=Enable,Ethernet MTU(byte)=1500,
VLAN Tagging Mode=Enable,VLAN ID=100,New VLAN ID=200,
IPv4 Address=127.0.0.1,Subnet Mask=255.255.255.0,
Default Gateway=10.0.0.4,IPv6 Mode=Enable,
LinkLocal Addressing Mode=Enable,
IPv6 LinkLocal Address=fe80:0:0:0:199a:b948:fbc:a149,
Global Addressing Mode=Manual,
IPv6 Global Address=fe80:0:0:0:199a:b948:fbc:a149,
IPv6 Global Address 2=fe80:0:0:0:199a:b948:fbc:a149,
IPv6 Default Gateway=fe80:0:0:0:199a:b948:fbc:a149,
TCP Port=25,Selective ACK Mode=Enable,
Delayed ACK Mode=Disable,Window Scale(K)=128,Keep Alive Timer(s)=30,
iSNS Server=Disable,iSNS Server IP=127.0.0.1,iSNS Server TCP Port=26,
Virtual Storage Machine S/N=423456,
iSCSI Virtual Port ID=,iSCSI Virtual Port Operation=
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port whose settings are modified When a virtual storage machine is specified, the port name of the virtual storage machine is output.
Speed(Gbps)	The port host speed: Auto, 1, 2, 4, 8, 10, or 16
Security Switch	The setting status of the security switch Enable: Enabled, Disable: Disabled
Ethernet MTU(byte)	The value of Ethernet MTU (maximum transmission unit): 1500, 4500, or 9000 *
VLAN Tagging Mode	The VLAN tagging mode* Enable: Enabled, Disable: Disabled

Item	Description
	No value is output when VLAN ID is deleted.
VLAN ID	The VLAN ID before modification* No value is output when VLAN ID is added. For a VLAN ID to be deleted, the VLAN ID (1 to 4094) to be deleted is output. For a VLAN ID to be modified, the VLAN ID (1 to 4094) to be modified is output.
New VLAN ID	The VLAN ID after modification* For a VLAN ID to be added, the added VLAN ID (1 to 4094) is output. For a VLAN ID to be deleted, no value is output. For a VLAN ID to be modified, the modified VLAN ID (1 to 4094) is output.
IPv4 Address	The IPv4 address*
Subnet Mask	The subnet mask of the IPv4*
Default Gateway	The default gateway of the IPv4*
IPv6 Mode	The IPv6 setting status* Enable: Enabled, Disable: Disabled
LinkLocal Addressing Mode	The input mode of the link local address* Auto: Automatic input, Manual: Manual input No value is output when IPv6 Mode is disabled.
IPv6 LinkLocal Address	The IPv6 link local address* No value is output when IPv6 Mode is disabled or Link Local Addressing Mode is Auto.
Global Addressing Mode	The input mode of the global address and the global address 2* Auto: Automatic input, Manual: Manual input No value is output when IPv6 Mode is disabled.
IPv6 Global Address	The IPv6 global address* No value is output when IPv6 Mode is disabled or Link Local Addressing Mode is Auto.
IPv6 Global Address 2	The IPv6 global address 2* No value is output when IPv6 Mode is disabled or Link Local Addressing Mode is Auto.

Item	Description
IPv6 Default Gateway	The IPv6 default gateway* No value is output when IPv6 Mode is disabled.
TCP Port	The TCP port number*
Selective ACK Mode	The setting status of Selective ACK Mode* Enable: Enabled, Disable: Disabled
Delayed ACK Mode	The setting status of Delayed ACK Mode* Enable: Enabled, Disable: Disabled
Window Scale(K)	The TCP window size: 64, 128, 256, 512, or 1024*
Keep Alive Timer(s)	The setting status of Keep Alive Timer*
iSNS Server	The setting status of iSNS Server* Enable: Enabled, Disable: Disabled
iSNS Server IP	The IP address of the iSNS server*
iSNS Server TCP Port	The TCP port number of the iSNS server*
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.
iSCSI Virtual Port ID	The iSCSI virtual port ID (0-15) No value is output when changeing a physical port.
iSCSI Virtual Port Operation	The operation to the iSCSI virtual port Add: add, Modify: modify, Delete: delete No value is output when changing a physical port.
*For settings other than port attributes, the user setting values are output even if options are omitted.	

Example 2: Adding a virtual port

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Port(iSCSI)
++Port=1A,,,Ethernet MTU(byte)=1500,
VLAN Tagging Mode=Enable,VLAN ID=0,New VLAN ID=200,
IPv4 Address=127.0.0.1,Subnet Mask=255.255.255.0,
Default Gateway=10.0.0.4,IPv6 Mode=Enable,
LinkLocal Addressing Mode=Manual,
IPv6 LinkLocal Address=fe80:0:0:0:199a:b948:fbc:a149,
Global Addressing Mode=Manual,
IPv6 Global Address=fe80:0:0:0:199a:b948:fbc:a149,,
```

```
IPv6 Default Gateway=fe80:0:0:0:199a:b948:fbc:a149,
TCP Port=25,Selective ACK Mode=Enable,
Delayed ACK Mode=Disable,Window Scale(K)=128,Keep Alive Timer(s)=30,,,,,
iSCSI Virtual Port ID=15,iSCSI Virtual Port Operation=Add
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port whose settings are modified When a virtual storage machine is specified, the port name of the virtual storage machine is output.
Speed(Gbps)	This item is not output when adding a virtual port.
Security Switch	This item is not output when adding a virtual port.
Ethernet MTU(byte)	The value of Ethernet MTU (maximum transmission unit): 1500, 4500, or 9000 *
VLAN Tagging Mode	The VLAN tagging mode* Enable: Enabled, Disable: Disabled
VLAN ID	The VLAN ID before modification* No value is output when VLAN ID is added. For a VLAN ID to be deleted, the VLAN ID (1 to 4094) to be deleted is output. For a VLAN ID to be modified, the VLAN ID (1 to 4094) to be modified is output.
New VLAN ID	The VLAN ID after modification* For a VLAN ID to be added, the added VLAN ID (1 to 4094) is output. For a VLAN ID to be deleted, no value is output. For a VLAN ID to be modified, the modified VLAN ID (1 to 4094) is output.
IPv4 Address	The IPv4 address*
Subnet Mask	The subnet mask of the IPv4*
Default Gateway	The default gateway of the IPv4*
IPv6 Mode	The IPv6 setting status* Enable: Enabled, Disable: Disabled

Item	Description
LinkLocal Addressing Mode	The input mode of the link local address* Auto: Automatic input, Manual: Manual input No value is output when IPv6 Mode is disabled.
IPv6 LinkLocal Address	The IPv6 link local address*
Global Addressing Mode	The input mode of the global address* Auto: Automatic input, Manual: Manual input
IPv6 Global Address	The IPv6 global address*
IPv6 Global Address 2	This item is not output when adding a virtual port.
IPv6 Default Gateway	The IPv6 default gateway*
TCP Port	The TCP port number*
Selective ACK Mode	The setting status of Selective ACK Mode* Enable: Enabled, Disable: Disabled
Delayed ACK Mode	The setting status of Delayed ACK Mode* Enable: Enabled, Disable: Disabled
Window Scale(K)	The TCP window size: 64, 128, 256, 512, or 1024*
Keep Alive Timer(s)	The setting status of Keep Alive Timer*
iSNS Server	This item is not output when adding a virtual port.
iSNS Server IP	This item is not output when adding a virtual port.
iSNS Server TCP Port	This item is not output when adding a virtual port.
Virtual Storage Machine S/N	This item is not output when adding a virtual port.
iSCSI Virtual Port ID	The iSCSI virtual port ID (0-15)
iSCSI Virtual Port Operation	The operation to the iSCSI virtual port Add: add, Modify: modify, Delete: delete
*No value is output when the option is not specified.	

Example 3: Changing a virtual port

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Port(iSCSI)
++Port=1A,,,Ethernet MTU(byte)=1500,
```

```
VLAN Tagging Mode=Enable,VLAN ID=100,New VLAN ID=200,
IPv4 Address=127.0.0.1,Subnet Mask=255.255.255.0,
Default Gateway=10.0.0.4,IPv6 Mode=Enable,
LinkLocal Addressing Mode=Manual,
IPv6 LinkLocal Address=fe80:0:0:0:199a:b948:fbc:a149,
Global Addressing Mode=Manual,
IPv6 Global Address=fe80:0:0:0:199a:b948:fbc:a149,
IPv6 Global Address 2=fe80:0:0:0:199a:b948:fbc:a149,
IPv6 Default Gateway=fe80:0:0:0:199a:b948:fbc:a149,
TCP Port=25,Selective ACK Mode=Enable,
Delayed ACK Mode=Disable,Window Scale(K)=128,Keep Alive Timer(s)=30,,,,,
iSCSI Virtual Port ID=15,iSCSI Virtual Port Operation=Modify
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port whose settings are modified When a virtual storage machine is specified, the port name of the virtual storage machine is output.
Speed(Gbps)	This item is not output when changing a virtual port.
Security Switch	This item is not output when changing a virtual port.
Ethernet MTU(byte)	The value of Ethernet MTU (maximum transmission unit): 1500, 4500, or 9000 *
VLAN Tagging Mode	The VLAN tagging mode* Enable: Enabled, Disable: Disabled
VLAN ID	The VLAN ID before modification* No value is output when VLAN ID is added. For a VLAN ID to be deleted, the VLAN ID (1 to 4094) to be deleted is output. For a VLAN ID to be modified, the VLAN ID (1 to 4094) to be modified is output.
New VLAN ID	The VLAN ID after modification* For a VLAN ID to be added, the added VLAN ID (1 to 4094) is output. For a VLAN ID to be deleted, no value is output. For a VLAN ID to be modified, the modified VLAN ID (1 to 4094) is output.

Item	Description
IPv4 Address	The IPv4 address*
Subnet Mask	The subnet mask of the IPv4*
Default Gateway	The default gateway of the IPv4*
IPv6 Mode	The IPv6 setting status* Enable: Enabled, Disable: Disabled
LinkLocal Addressing Mode	The input mode of the link local address* Auto: Automatic input, Manual: Manual input No value is output when IPv6 Mode is disabled.
IPv6 LinkLocal Address	The IPv6 link local address*
Global Addressing Mode	The input mode of the global address and the global address 2* Auto: Automatic input, Manual: Manual input
IPv6 Global Address	The IPv6 global address*
IPv6 Global Address 2	The IPv6 global address 2*
IPv6 Default Gateway	The IPv6 default gateway*
TCP Port	The TCP port number*
Selective ACK Mode	The setting status of Selective ACK Mode* Enable: Enabled, Disable: Disabled
Delayed ACK Mode	The setting status of Delayed ACK Mode* Enable: Enabled, Disable: Disabled
Window Scale(K)	The TCP window size: 64, 128, 256, 512, or 1024*
Keep Alive Timer(s)	The setting status of Keep Alive Timer*
iSNS Server	This item is not output when changing a virtual port.
iSNS Server IP	This item is not output when changing a virtual port.
iSNS Server TCP Port	This item is not output when changing a virtual port.
Virtual Storage Machine S/N	This item is not output when changing a virtual port.
iSCSI Virtual Port ID	The iSCSI virtual port ID (0-15)
iSCSI Virtual Port Operation	The operation to the iSCSI virtual port Add: add, Modify: modify, Delete: delete

Item	Description
*No value is output when the option is not specified.	

Example 4: Deleting a virtual port

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Port(iSCSI)
++Port=1A,,,,,,,,,,,,,,,,,,,,,,,,iSCSI Virtual Port ID=15,iSCSI Virtual
Port Operation=Delete
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port whose settings are modified When a virtual storage machine is specified, the port name of the virtual storage machine is output.
Speed(Gbps)	This item is not output when deleting a virtual port.
Security Switch	This item is not output when deleting a virtual port.
Ethernet MTU(byte)	This item is not output when deleting a virtual port.
VLAN Tagging Mode	This item is not output when deleting a virtual port.
VLAN ID	This item is not output when deleting a virtual port.
New VLAN ID	This item is not output when deleting a virtual port.
IPv4 Address	This item is not output when deleting a virtual port.
Subnet Mask	This item is not output when deleting a virtual port.
Default Gateway	This item is not output when deleting a virtual port.
IPv6 Mode	This item is not output when deleting a virtual port.
LinkLocal Addressing Mode	This item is not output when deleting a virtual port.
IPv6 LinkLocal Address	This item is not output when deleting a virtual port.
Global Addressing Mode	This item is not output when deleting a virtual port.
IPv6 Global Address	This item is not output when deleting a virtual port.

Item	Description
IPv6 Global Address 2	This item is not output when deleting a virtual port.
IPv6 Default Gateway	This item is not output when deleting a virtual port.
TCP Port	This item is not output when deleting a virtual port.
Selective ACK Mode	This item is not output when deleting a virtual port.
Delayed ACK Mode	This item is not output when deleting a virtual port.
Window Scale(K)	This item is not output when deleting a virtual port.
Keep Alive Timer(s)	This item is not output when deleting a virtual port.
iSNS Server	This item is not output when deleting a virtual port.
iSNS Server IP	This item is not output when deleting a virtual port.
iSNS Server TCP Port	This item is not output when deleting a virtual port.
Virtual Storage Machine S/N	This item is not output when deleting a virtual port.
iSCSI Virtual Port ID	The iSCSI virtual port ID (0-15)
iSCSI Virtual Port Operation	The operation to the iSCSI virtual port Add: add, Modify: modify, Delete: delete

Modify Port(iSCSI Virtual Port Mode)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Port(iSCSI Virtual Port Mode)
++Port=1A,iSCSI Virtual Port Mode=Enable
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port for which iSCSI virtual port mode is set When a virtual storage machine is specified, the port name of the virtual storage machine is output.
iSCSI Virtual Port Mode	The setting status of the iSCSI virtual port mode

Item	Description
	Enable: Enabled; Disable: Disabled

Modify Port(T10PI)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Port(T10PI)
++Port=1A,T10PI=Enable
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port for which T10 PI mode is set When a virtual storage machine is specified, the port name of the virtual storage machine is output.
T10PI	The setting status of the T10 PI mode Enable: Enabled; Disable: Disabled

Modify Quorum

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Quorum
++Quorum Disk ID=1,Read Response Guaranteed Time=15
```

Detailed Information

Item	Description
Command	The command name
Quorum Disk ID	Indicates the ID of a global-active device quorum disk whose Read Response Guaranteed Time When Quorum monitoring has stopped value will be updated.

Item	Description
Read Response Guaranteed Time	Indicates the updated value of Read Response Guaranteed Time When Quorum monitoring has stopped for global-active device in seconds.

Modify RCU

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify RCU
++S/N=423456,MCU=0xAAAA,RCU=0xBBBB,Controller ID=18,
Path Gr. ID=0,Min.Path=1,Round Trip Time(ms)=30,RIO MIH(s)=3,
FREEZE=Enable
```

Detailed Information

Item	Description
Command	The command name
S/N	The serial number of the remote storage system
MCU	The CU number of the local storage system "Free" is output when CU Free is specified
RCU	The CU number of the remote storage system "Free" is output when CU Free is specified
Controller ID	The controller ID of the remote storage system 5: USP V/VM, 6: VSP, 7: VSP G1000/G1500 and VSP F1500, 8: VSP 5000 series, 18: VSP E series, VSP G130, G/F350, G/F370, G/F700, G/F900, VSP G200, G400, G600, G800, and VSP F400, F600, F800, 19: HUS VM No value is output when CU Free is not specified.
Path Gr. ID	The path group ID of the remote storage system No value is output when CU Free is not specified.
Min.Path	The minimum number of paths between the local storage system and remote storage system
Round Trip Time(ms)	The round trip time: the delayed time for the remote I/O round trip

Item	Description
RIO MIH(s)	The value of the RIO MTH (remote I/O missing interrupt handler) timer: The wait time for data copy from the local storage system to the remote storage system to be complete
FREEZE	The setting status of the CGROUP (FREEZE/RUN) PPRC TSO command Enable: Enabled, Disable: Disabled

Modify Remote Replica Opt(Copy Activity Setting)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Remote Replica Opt(Copy Activity Setting)
++Option Type=TC, Copy Activity Setting=System
```

Detailed Information

Item	Description
Command	The command name
Option Type	The type of remote replica option to be set TC: Remote replica option of TrueCopy UR: Remote replica option of Universal Replicator GAD: Remote replica option of global-active device
Copy Activity Setting	The managing unit of the maximum number of initial copy System: Manages the maximum number of initial copies in the system Cu: Manages the maximum number of initial copies in each CU

Modify Remote Replica Opt(Num. of Copy Activity)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Remote Replica Opt(Num. of Copy Activity)
++Option Type=TC, Num. of Copy Activity=4, CU=128
```

Detailed Information

Item	Description
Command	The command name
Option Type	The type of remote replica option to be set TC: Remote replica option of TrueCopy UR: Remote replica option of Universal Replicator GAD: Remote replica option of global-active device
Num. of Copy Activity	The maximun number of initial copy
CU	The CU number

Modify Remote Replica Opt(Path Blocked Watch)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Remote Replica Opt(Path Blocked Watch)
++Path Blocked Watch(s)=45
```

Detailed Information

Item	Description
Command	The command name
Path Blocked Watch(s)	The path blockade watch period setting (in seconds)

Modify Remote Replica Opt(Path Blocked Watch SIM)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Remote Replica Opt(Path Blocked Watch SIM)
++Path Blocked Watch SIM(s)=50
```

Detailed Information

Item	Description
Command	The command name

Item	Description
Path Blocked Watch SIM(s)	The path blocked SIM watch period setting (in seconds)

Modify Server(HBA)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Server(HBA)
++Request ID=1, Nickname=xxxxx, Server ID=1, HBA Name=xxxx, Operation
Option=xxx,
++Port ID={1A,3A...}, Num. of Ports=2
```

Detailed Information

Item	Description
Command	The command name
Request ID	The request ID
Nickname	The nickname of server whose setting to be modified A hyphen (-) is output if the Server ID is specified.
Server ID	The server ID whose setting to be modified A hyphen (-) is output if the Nickname is specified.
HBA Name	WWN or iSCSI Name of HBA to be modified
Operation Option	The operation option Add HBA: Add HBA to the server, Delete HBA: Delete HBA from the server, Add Port: Assign Port to the HBA to be modified, Delete Port: Delete Port from the HBA to be modified
Port ID	The port ID to be added to the HBA or to be deleted from the HBA The value is output as a list of IDs
Num. of Ports	The number of the port ID to be added to the HBA or to be deleted from the HBA

Modify Server(Host Group)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Server(Host Group)
++Request ID=1, Client=xxx, Nickname=xxxxx, Server ID=1, Operation
Option=xxx,
++Port ID=1A, Host Group ID=0xXXX
```

Detailed Information

Item	Description
Command	The command name
Request ID	The request ID
Client	The client type 0x00: Command Control Interface , 0x01: Storage Adviser Embedded
Nickname	The nickname of server whose setting to be modified A hyphen (-) is output if the Server ID is specified.
Server ID	The server ID whose setting to be modified A hyphen (-) is output if the Nickname is specified.
Operation Option	The operation option Add: Add the host group to the server, Delete: Delete the host group from the server
Port ID	The port ID to which the host group to be added belongs or the port ID to which the host group to be deleted belongs
Num. of Ports	The ID of the host group to be added or deleted

Modify Server(iSCSI Name)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Server(iSCSI Name)
++Request ID=1, Nickname=xxxxx, Server ID=1, CHAP Way=xxx, Port ID=1A, New
HBA Name=xxxxx
```

Detailed Information

Item	Description
Command	The command name
Request ID	The request ID
Nickname	The nichname of server whose setting to be modified A hyphen (-) is output if the Server ID is specified.
Server ID	The server ID whose setting to be modified A hyphen (-) is output if the Nickname is specified.
CHAP Way	The type of iSCSI Name to be changed incoming: iSCSI Target
Port ID	The port ID of iSCSI Initiator to be changed, or the port ID of iSCSI Initiator connected to the iSCSI Target to be changed
New HBA Name	The new iSCSI Name that was changed

Modify Server(Nickname)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Server(Nickname)
++Request ID=1, Nickname=xxxxx, Server ID=1, New Nickname=xxxxx,Host Group
Name Synchronization=Yes
```

Detailed Information

Item	Description
Command	The command name
Request ID	The request ID
Nickname	The nickname to be modified to the server A hyphen (-) is output if the Server ID is specified.
Server ID	The server ID whose nickname to be modified to the server A hyphen (-) is output if the Nickname is specified.
New Nickname	The new nickname

Item	Description
Host Group Name Synchronization	Indicates whether to synchronize the nickname to the host group name when changing the nickname. Yes: Synchronize the nickname to the host group name No: Does not synchronize the nickname to the host group name

Modify Server(Property)

Example 1: for VSP E series

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Server(Property)
++Request ID=1,Nickname=xxxxx,Server ID=1,OS Type=xx,OS
Option[0:31]=0x00000001,OS
Option[32:63]=0x00000000, OS Option[64:95]=0x00000000,OS
Option[96:127]=0x00000000,OS
Option[128:159]=0x00000001,OS Option[160:191]=0x00000000,OS
Option[192:223]=0x00000000,OS
Option[224:255]=0x00000000
```

Example 2: for VSP G130, G/F350, G/F370, G/F700, G/F900

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Server(Property)
++Request ID=1, Nickname=xxxxx, Server ID=1, OS Type=xx,
OS Option[0:31]=0x00000001, OS Option[32:63]=0x00000000, OS
Option[64:95]=0x00000000, OS Option[96:127]=0x00000000
```

Detailed Information

Item	Description
Command	The command name
Request ID	The request ID
Nickname	The nickname to be modified to the server A hyphen (-) is output if the Server ID is specified.
Server ID	The server ID whose nickname to be modified to the server A hyphen (-) is output if the Nickname is specified.
OS Type	The OS type to be assigned to the server A hyphen (-) is output if the OS type is not to be changed.

Item	Description
OS Option[0:31]	The OS type options (from 0 to 31) to be set to the server, indicated as a 4 byte bitmap
OS Option[32:63]	The OS type options (from 32 to 63) to be set to the server, indicated as a 4 byte bitmap
OS Option[64:95]	The OS type options (from 64 to 95) to be set to the server, indicated as a 4 byte bitmap
OS Option[96:127]	The OS type options (from 96 to 127) to be set to the server, indicated as a 4 byte bitmap
OS Option[128:159] (for VSP E series)	The OS type options (from 128 to 159) to be set to the server, indicated as a 4 byte bitmap
OS Option[160:191] (for VSP E series)	The OS type options (from 160 to 191) to be set to the server, indicated as a 4 byte bitmap
OS Option[192:223] (for VSP E series)	The OS type options (from 192 to 223) to be set to the server, indicated as a 4 byte bitmap
OS Option[224:255] (for VSP E series)	The OS type options (from 224 to 225) to be set to the server, indicated as a 4 byte bitmap

Modify Server(Volume)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Server(Volume)
++Request ID=1, Nickname=xxxxx, Server ID=1, Operation Option=xxx,
++Volume ID={1, 2}, Num. of Volumes=2
```

Detailed Information

Item	Description
Command	The command name
Request ID	The request ID
Nickname	The nichname of server whose setting to be modified A hyphen (-) is output if the Server ID is specified.
Server ID	The server ID whose setting to be modified to the server

Item	Description
	A hyphen (-) is output if the Nickname is specified.
Operation Option	The operation option Add: Add Volume to the server, Delete: Delete Volume from the server
Volume ID	The ID whose volume is to be added or to be deleted The value is output as a list of IDs in the decimal format.
Num. of Volumes	The number of volumes to be added or to be deleted

Modify Snapshot(Clone)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Snapshot(Clone)
++P-VOL(LDKC:CU:LDEV)=0x00:0xAA:0xBB,
MU=1,Copy Pace=Medium,Virtual Storage Machine S/N=423456,Range=Group
```

Detailed Information

Item	Description
Command	The command name
P-VOL(LDKC:CU:LDEV)	The LDEV ID of the primary volume shared by a pair to be cloned When a virtual storage machine is specified, the LDEV ID of the virtual storage machine is output.
MU	The MU number of the pair to be cloned
Copy Pace	The copy speed Faster: High speed, Medium: Medium speed, Slower: Low speed
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.
Range	The range for cloned pairs Volume: The pair to be cloned Group: All pairs in the group including the pair is cloned

Modify Snapshot(Rename)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Snapshot(Rename)
++Snapshot Group=oldSSGroup,New Snapshot Group=newSSGroup,Virtual Storage
Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
Snapshot Group	The name of a snapshot group before change
New Snapshot Group	The name of a snapshot group after change
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.

Modify Snapshot(Restore)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Snapshot(Restore)
++Snapshot Group=SSSSSSSS,P-VOL(LDKC:CU:LDEV)=0x00:0xAA:0xBB,MU=A,
Virtual Storage Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
Snapshot Group	The name of a snapshot group to be restred
P-VOL(LDKC:CU:LDEV)	The LDEV ID of the primary volume shared by a pair to be restored When a virtual storage machine is specified, the LDEV ID of the virtual storage machine is output.
MU	The MU number of the pair to be restored
Virtual Storage Machine S/N	The serial number of the virtual storage machine

Item	Description
	No output when a virtual storage machine is not specified

Modify Snapshot(Resync)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Snapshot(Resync)
++P-VOL(LDKC:CU:LDEV)=0x00:0xAA:0xBB,MU=A,
Virtual Storage Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
P-VOL(LDKC:CU:LDEV)	The LDEV ID of the primary volume shared by a pair to be resynchronized When a virtual storage machine is specified, the LDEV ID of the virtual storage machine is output.
MU	The MU number of the pair to be resynchronized
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified

Modify Snapshot(Revert)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Snapshot(Revert)
++P-VOL(LDKC:CU:LDEV)=0x00:0xAA:0xBB,MU=1,
Virtual Storage Machine S/N=XXXXXX
```

Detailed Information

Item	Description
Command	The command name

Item	Description
P-VOL(LDKC:CU:LDEV)	The LDEV ID of the primary volume shared by a split pair
MU	The MU number of the split pair
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified

Modify Snapshot(Split)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify Snapshot(Split)
++P-VOL(LDKC:CU:LDEV)=0x00:0xAA:0xBB,MU=A,
Virtual Storage Machine S/N=423456,Range=Group,ReadOnly=Enable
```

Detailed Information

Item	Description
Command	The command name
P-VOL(LDKC:CU:LDEV)	The LDEV ID of the primary volume shared by a pair to be split When a virtual storage machine is specified, the LDEV ID of the virtual storage machine is output.
MU	The MU number of the pair to be split
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified
Range	The range for splitting pairs Volume: The pair to be split Group: All pairs in the group including the pair is split
ReadOnly	Indicates whether to set the ReadOnly attribute for the snapshot data. This item is output only when the setting of the ReadOnly attribute is specified. Enable: The ReadOnly attribute is set to the snapshot data.

Modify SPM Group

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify SPM Group
++Port=1A,SPM Group=XXXXXXXXXXXX,Priority=Prio,Limit=100 IOPS
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port to which the SPM group, for which SPM information is set, belongs
SPM Group	The name of an SPM group for which SPM information is set
Priority	The attribute after the WWN is modified Prio: Prioritized WWN, Non-Prio: Not prioritized WWN
Limit	The threshold value for the WWN when Priority is Prio The upper limit value for the WWN when Priority is Non-Prio The unit is I/O rate (IOPS) or transfer rate (KB/s) If MB is specified at the command option, the value calculated on the basis of 1MB=1024KB is output.

Modify SPM Host Group

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify SPM Host Group
++Port=1A,Host Group Name=XXXXXXXXXXXX,Priority=Prio,Limit=100 IOPS
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port to which the SPM group, for which SPM information is set, belongs

Item	Description
Host Group Name	The name of a host group to which the SPM group, for which SPM information is set, belongs
Priority	The attribute after the WWN is modified Prio: Prioritized WWN, Non-Prio: Not prioritized WWN
Limit	The threshold value for the WWN when Priority is Prio The upper limit value for the WWN when Priority is Non-Prio The unit is I/O rate (IOPS) or transfer rate (KB/s) If MB is specified at the command option, the value calculated on the basis of 1MB=1024KB is output.

Modify SPM WWN

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify SPM WWN
++Port=1A, WWN=XXXXXXXXXXXX,Priority=Prio,Limit=100 IOPS
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port to which the WWN, for which the SPM information is set, belongs
WWN	The WWN for which the SPM information is set
Priority	The attribute after the WWN is modified Prio: Prioritized WWN, Non-Prio: Not prioritized WWN
Limit	The threshold value for the WWN when Priority is Prio The upper limit value for the WWN when Priority is Non-Prio The unit is I/O rate (IOPS) or transfer rate (KB/s) If MB is specified at the command option, the value calculated on the basis of 1MB=1024KB is output.

Modify SPM WWN(Nickname)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify SPM WWN(Nickname)
++Port=1A,Nickname=XXXXXXXXXXXX,Priority=Prio,Limit=100 IOPS
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port to which the WWN, for which SPM information is set, belongs
Nickname	The SPM name (nickname) of the WWN for which SPM information is set
Priority	The attribute after the WWN is modified Prio: Prioritized WWN, Non-Prio: Not prioritized WWN
Limit	The threshold value for the WWN when Priority is Prio The upper limit value for the WWN when Priority is Non-Prio The unit is I/O rate (IOPS) or transfer rate (KB/s) If MB is specified at the command option, the value calculated on the basis of 1MB=1024KB is output.

Modify System

This command is supported by VSP E series only.

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Modify System
++Description=This is a storage system
```

Detailed Information

Item	Description
Command	The command name
Description	The description of the storage system to be configured

Item	Description
	This value is null if the description of the storage system is deleted.

Monitor Pool

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Monitor Pool
++Pool ID=AA
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The pool number of a pool to be monitored

Paircreate

Paircreate is an audit log generated when a command operation is performed with the DKCMAIN firmware version earlier than 83-04-0X-XX/XX.

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Paircreate
++Copy Kind=Remote
++P-VOL(Port-LUN-LDEV)=1A-2047-0x1A,
S-VOL(Port-LUN-LDEV)=1B-3-0x3B,MCU S/N=412345,RCU S/N=422364,
Virtual Storage Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
Copy Kind	Indicates whether the copy kind is Local copy or Remote copy Local: Local copy, Remote: Remote copy

Item	Description
P-VOL(Port-LUN-LDEV)[*1]	The port number, the LU number, and the LDEV number of the primary volume The port number and the LU number show the expanded LU of Command Control Interface The LU number is the absolute LUN[*2] of Command Control Interface
S-VOL(Port-LUN-LDEV)[*1]	The port number, the LU number, and the LDEV number of the secondary volume The port number and the LU number show the expanded LU of Command Control Interface The LU number is the absolute LUN[*2] of Command Control Interface
MCU S/N[*1]	The serial number of the local storage system
RCU S/N[*1]	The serial number of the remote storage system For Local copy, the same value as that of MCU S/N is output.
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified
*1 When a virtual storage machine is specified, the value of the virtual storage machine is output. *2 For more information about the absolute LUN, see *Command Control Interface Installation and Configuration Guide*	

Paircreate(LocalCopy)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Paircreate(LocalCopy)
++Copy Kind=Local
++P-VOL(Port-LUN-LDEV)=1A-2047-0x1A,S-VOL(Port-LUN-LDEV)=1B-3-0x3B,
MCU S/N=412345,RCU S/N=412345,
Virtual Storage Machine S/N=423456,
Copy Pace(TRK)=1,Range=Group,CTG ID=100,
Split Mode=Normal,S-VOL Hidden Mode=Enable,Pool ID(TI)=10,
Device Option=Enable
```

Detailed Information

Item	Description
Command	The command name
Copy Kind	The local copy Local is output as the fixed value.
P-VOL(Port-LUN-LDEV)[*1]	The port number, the LU number, and the LDEV number of the primary volume The port number and the LU number show the expanded LU of Command Control Interface The LU number is the absolute LUN[*2] of Command Control Interface
S-VOL(Port-LUN-LDEV)[*1]	The port number, the LU number, and the LDEV number of the secondary volume The port number and the LU number show the expanded LU of Command Control Interface The LU number is the absolute LUN[*2] of Command Control Interface
MCU S/N[*1]	The serial number of the local storage system
RCU S/N[*1]	The same value as that of MCU S/N is output.
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.
Copy Pace(TRK)	The track size for copy
Range	Specifies a range of pairs to be created Device: Specifies by the device Group: Specifies by the consistency group
CTG ID	The consistency group ID 0 (zero) is output if the consistency group option (-m grp) is not specified.
Split Mode	The resynchronization mode when ShadowImage pairs are resynchronized Normal: The pair is resynchronized normally. Quick: The pair is resynchronized quickly. If it is not specified at the command option or the pair is other than ShadowImage one, a hyphen (-) is output.

Item	Description
S-VOL Hidden Mode	Indicates whether the secondary volume is hidden after a ShadowImage pair is created Enable: Hides the secondary volume Disable: Not hides the secondary volume Disable is output for pairs other than ShadowImage ones.
Pool ID(TI)	The pool ID of Thin Image pairs 0 (zero) is output for pairs other than Thin Image ones.
Device Option	Indicates whether the volume name defined in the configuration definition file is used Enable: Used, Disable: Not used
*1When a virtual storage machine is specified, the value of the virtual storage machine is output. *2 For more information about the absolute LUN, see *Command Control Interface Installation and Configuration Guide*	

Paircreate(RemoteCopy)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Paircreate(RemoteCopy)
++Copy Kind=Remote
++P-VOL(Port-LUN-LDEV)=1A-2047-0x1A,S-VOL(Port-LUN-LDEV)=1B-3-0x3B,
MCU S/N=412345,RCU S/N=422364,
Virtual Storage Machine S/N=423456,
Write Permission(Update Copy Error)=Enable,
Write Permission(RCU Suspend Failure)=Enable,
Initial Copy=None,Copy Pace(TRK)=1,JNL ID Option=Disable,CTG ID=100,
CTG Mode(Multi)=Disable,Paircreate Mode(Diff)=Normal,CTG Option=Enable,
CTO Option=Enable,Inflow Control=Disable,Offloading Timer(s)=,M-JNL=,
R-JNL=,Quorum Disk ID=,Device Option=Enable,IO Preference Mode=
```

Detailed Information

Item	Description
Command	The command name
Copy Kind	The remote copy

Item	Description
	Remote is output as the fixed value.
P-VOL(Port-LUN-LDEV)[*1]	The port number, the LU number, and the LDEV number of the primary volume The port number and the LU number show the expanded LU of Command Control Interface The LU number is the absolute LUN[*2] of Command Control Interface
S-VOL(Port-LUN-LDEV)[*1]	The port number, the LU number, and the LDEV number of the secondary volume The port number and the LU number show the expanded LU of Command Control Interface The LU number is the absolute LUN[*2] of Command Control Interface
MCU S/N[*1]	The serial number of the local storage system
RCU S/N[*1]	The serial number of the remote storage system
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.
Write Permission(Update Copy Error)	The setting status of write permission if an error occurs during update copy Enable: Enabled, Disable: Disabled
Write Permission(RCU Suspend Failure)	The setting status of permission to write to the local storage system if the suspension operation cannot be performed on the remote storage system Enable: Enabled, Disable: Disabled
Initial Copy	The type of pair creation Entire: Creates pairs and copies data from the primary volume to the secondary volume None: Creates pairs and does not copy data from the primary volume to the secondary volume
Copy Pace(TRK)	The track size for copy
JNL ID Option	Indicates whether an option (-jp or -js) is specified for a journal ID Enable: Specified, Disable: Not specified Disable is output for pairs other than Universal Replicator ones

Item	Description
CTG ID	The consistency group ID 0 (zero) is output if the consistency group option (-fg) is not specified.
CTG Mode(Multi)	Indicates whether pairs are specified for consistency groups across multiple storage systems Enable: Specified, Disable: Not specified Disable is output for pairs other than Universal Replicator ones
Paircreate Mode(Diff)	The pair creation mode Normal: Normal mode, Diff: Difference mode Normal is output for pairs other than Universal Replicator ones.
CTG Option	Indicates whether the consistency group option (-fg) is specified Enable: Specified, Disable: Not specified
CTO Option	Indicates whether the CTO option (-cto) is specified Enable: Specified, Disable: Not specified
Inflow Control	The setting status of the inflow control mode Enable: Enabled, Disable: Disabled No value is output when the CTO option is not specified.
Offloading Timer(s)	The time out value for the inflow control in seconds No value is output when the CTO option is not specified or the inflow control mode is disabled.
M-JNL	The master journal number No value is output for pairs other than Universal Replicator ones.
R-JNL	The restore journal number No value is output for pairs other than Universal Replicator ones.
Quorum Disk ID	The Quorum Disk ID No value is output for pairs other than global-active device ones.
Device Option	Indicates whether the volume name defined in the configuration definition file is used Enable: Used, Disable: Not used

Item	Description
IO Preference Mode	I/O preference mode for when a failure occurs on the remote path between the primary and secondary storage systems (I/O Preference Mode When Remote Path Failed). A value is displayed when I/O Preference Mode When Remote Path Failed is specified. P-VOL: Primary Volume (the mode in which the primary volume is given priority)
*1 When a virtual storage machine is specified, the value of the virtual storage machine is output. *2 For more information about the absolute LUN, see *Command Control Interface Installation and Configuration Guide*	

Pairresync

Pairresync is an audit log generated when a command operation is performed with the DKCMAIN firmware version earlier than 83-04-0X-XX/XX.

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Pairresync
++Copy Kind=Local
++P-VOL(Port-LUN-LDEV)=1A-2047-0x1A,
S-VOL(Port-LUN-LDEV)=1B-3-0x3B,
MCU S/N=412345,RCU S/N=412345,Resync Type=Reverse,
Virtual Storage Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
Copy Kind	Indicates whether the copy kind is Local copy or Remote copy Local: Local copy, Remote: Remote copy
P-VOL(Port-LUN-LDEV)*1	The port number, the LU number, and the LDEV number of the primary volume The port number and the LU number show the expanded LU of Command Control Interface No value is output when the pair operation is performed by Command Control Interface from the remote storage system

Item	Description
	The LU number is the absolute LUN[*2] of Command Control Interface
S-VOL(Port-LUN-LDEV)[*1]	The port number, the LU number, and the LDEV number of the secondary volume The port number and the LU number show the expanded LU of Command Control Interface The LU number is the absolute LUN[*2] of Command Control Interface
MCU S/N[*1]	The serial number of the local storage system No value is output when the pair operation is performed by Command Control Interface from the remote storage system
RCU S/N[*1]	The serial number of the remote storage system For Local copy, the same value as that of MCU S/N is output.
Resync Type	Indicates the direction of resynchronizing a pair Normal: Normal direction (Primary volume to secondary volume) Reverse: Reverse direction (Secondary volume to primary volume.) Normal is output when the Copy Kind is Remote.
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified
*1 When a virtual storage machine is specified, the value of the virtual storage machine is output. *2 For more information about the absolute LUN, see *Command Control Interface Installation and Configuration Guide*	

Pairresync(LocalCopy)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Pairresync(LocalCopy)
++Copy Kind=Local
++P-VOL(Port-LUN-LDEV)=1A-2047-0x1A,S-VOL(Port-LUN-LDEV)=1B-3-0x3B,
MCU S/N=412345,RCU S/N=412345,
Resync Type=Reverse,Virtual Storage Machine S/N=423456,
Copy Pace(TRK)=1,Pair Target Range=Device,
CTG ID=100,Split Mode=Normal,Device Option=Enable
```

Detailed Information

Item	Description
Command	The command name
Copy Kind	The local copy Local is output as the fixed value.
P-VOL(Port-LUN-LDEV)[*1]	The port number, the LU number, and the LDEV number of the primary volume The port number and the LU number show the expanded LU of Command Control Interface The LU number is the absolute LUN[*2] of Command Control Interface
S-VOL(Port-LUN-LDEV)[*1]	The port number, the LU number, and the LDEV number of the secondary volume The port number and the LU number show the expanded LU of Command Control Interface The LU number is the absolute LUN[*2] of Command Control Interface
MCU S/N[*1]	The serial number of the local storage system
RCU S/N[*1]	The same value as that of MCU S/N is output.
Resync Type	Indicates the direction of resynchronizing a pair Normal: Normal direction (Primary volume to secondary volume) Reverse: Reverse direction (Secondary volume to primary volume)
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.
Copy Pace(TRK)	The track size for copy
Pair Target Range	Specifies the range of pairs to be resynchronized Device: Specifies by the device Group: Specifies by the consistency group
CTG ID	The consistency group ID 0 (zero) is output if the consistency group option (-m grp) is not specified.
Split Mode	The resynchronization mode when pairs are resynchronized Normal: The pair is resynchronized normally

Item	Description
	Quick: The pair is resynchronized quickly If it is not specified at the command option, a hyphen (-) is output.
Device Option	Indicates whether the volume name defined in the configuration definition file is used Enable: Used, Disable: Not used
*1 When a virtual storage machine is specified, the value of the virtual storage machine is output. *2 For more information about the absolute LUN, see *Command Control Interface Installation and Configuration Guide*	

Pairresync(RemoteCopy)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Pairresync(RemoteCopy)
++Copy Kind=Remote
++P-VOL(Port-LUN-LDEV)=1A-2047-0x1A,S-VOL(Port-LUN-LDEV)=1B-3-0x3B,
MCU S/N=412345,RCU S/N=412345,
Virtual Storage Machine S/N=423456,
Write Permission(Update Copy Error)=Enable,
Write Permission(RCU Suspend Failure)=Enable,
Copy Pace(TRK)=1,JNL ID Option=Disable,CTG ID=100,Resync-SWAP=Disable,
CTG Mode(Multi)=Enable,CTG Option=Enable,CTO Option=Enable,
Inflow Control=Enable,Offloading Timer(s)=1,Device Option=Enable
,IO Preference Mode=
```

Detailed Information

Item	Description
Command	The command name
Copy Kind	The remote copy Remote is output as the fixed value.
P-VOL(Port-LUN-LDEV)*1	The port number, the LU number, and the LDEV number of the primary volume The port number and the LU number show the expanded LU of Command Control Interface

Item	Description
	The LU number is the absolute LUN[*2] of Command Control Interface
S-VOL(Port-LUN-LDEV)[*1]	The port number, the LU number, and the LDEV number of the secondary volume The port number and the LU number show the expanded LU of Command Control Interface No value is output when the option "-swaps" or "-swapp" is specified. The LU number is the absolute LUN[*2] of Command Control Interface
MCU S/N[*1]	The serial number of the local storage system
RCU S/N[*1]	The serial number of the remote storage system No value is output when the option "-swaps" or "-swapp" is specified.
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.
Write Permission(Update Copy Error)	The setting status of write permission if an error occurs during update copy Enable: Enabled, Disable: Disabled Enable is output when the option "-swaps" or "-swapp" is specified.
Write Permission(RCU Suspend Failure)	The setting status of permission to write to the local storage system if the suspension operation cannot be performed on the remote storage system Enable: Enabled, Disable: Disabled Enable is output when the option "-swaps" or "-swapp" is specified.
Copy Pace(TRK)	The track size for copy
JNL ID Option	Indicates whether an option (-jp or -js) is specified for a journal ID Enable: Specified, Disable: Not specified Disable is output for pairs other than Universal Replicator ones.
CTG ID	The consistency group ID No value is output when the option "-swaps" or "-swapp" is specified.
Resync-SWAP	Indicates whether an option (-swaps or -swapp) is specified

Item	Description
	Enable: Specified, Disable: Not specified
CTG Mode(Multi)	Indicates whether pairs are specified for consistency groups across multiple storage systems Enable: Specified, Disable: Not specified Disable is output for pairs other than Universal Replicator ones.
CTG Option	Indicates whether the consistency group option (-fg) is specified Enable: Specified, Disable: Not specified If the option "-swaps" or "-swapp" is specified, Disable is output for Universal Replicator pair.
CTO Option	Indicates whether the CTO option (-cto) is specified Enable: Specified, Disable: Not specified
Inflow Control	The setting status of the inflow control mode Enable: Enabled, Disable: Disabled No value is output when the CTO option is not specified.
Offloading Timer(s)	The time out value for the inflow control in seconds No value is output when the CTO option is not specified or the inflow control mode is disabled.
Device Option	Indicates whether the volume name defined in the configuration definition file is used Enable: Used, Disable: Not used
IO Preference Mode	I/O preference mode for when a failure occurs on the remote path between the primary and secondary storage systems (I/O Preference Mode When Remote Path Failed). A value is displayed when I/O Preference Mode When Remote Path Failed is specified. P-VOL: Primary Volume (the mode in which the primary volume is given priority) Disable: I/O Preference Mode When Remote Path Failed is disabled.
*1 When a virtual storage machine is specified, the value of the virtual storage machine is output. *2 For more information about the absolute LUN, see *Command Control Interface Installation and Configuration Guide*	

Pairsplit

Pairsplit is an audit log generated when a command operation is performed with the DKCMAIN firmware version earlier than 83-04-0X-XX/XX.

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Pairsplit
++Copy Kind=Remote
++P-VOL(Port-LUN-LDEV)=1A-2047-0x1A,
S-VOL(Port-LUN-LDEV)=1B-3-0x3B,
MCU S/N=412345,RCU S/N=422364,Range=LU,
Virtual Storage Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
Copy Kind	Indicates whether the copy kind is Local copy or Remote copy Local: Local copy, Remote: Remote copy
P-VOL(Port-LUN-LDEV)[*1]	The port number, the LU number, and the LDEV number of the primary volume The port number and the LU number show the expanded LU of Command Control Interface No value is output when the pair operation is performed by Command Control Interface from the remote storage system The LU number is the absolute LUN[*2] of Command Control Interface
S-VOL(Port-LUN-LDEV)[*1]	The port number, the LU number, and the LDEV number of the secondary volume The port number and the LU number show the expanded LU of Command Control Interface The LU number is the absolute LUN[*2] of Command Control Interface
MCU S/N[*1]	The serial number of the local storage system No value is output when the pair operation is performed by Command Control Interface from the remote storage system
RCU S/N[*1]	The serial number of the remote storage system The same value as that of MCU S/N is output for Local copy.

Item	Description
Range	The range of pair split Group: Split by the consistency group unit LU: Split by LU unit
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified
*1 When a virtual storage machine is specified, the value of the virtual storage machine is output. *2 For more information about the absolute LUN, see *Command Control Interface Installation and Configuration Guide*	

Pairsplit(LocalCopy)

Note:

When you perform the paircreate -split command using CCI, this log is output.

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Pairsplit(LocalCopy)
++Copy Kind=Local
++P-VOL(Port-LUN-LDEV)=1A-2047-0x1A,S-VOL(Port-LUN-LDEV)=1B-3-0x3B,
MCU S/N=412345,RCU S/N=412345,Range=LU,
Virtual Storage Machine S/N=423456,Suspend Mode=Normal,Split Mode=Normal,
Copy Pace(TRK)=1,S-VOL Hidden Mode=Enable,Pool ID(TI)=10
```

Detailed Information

Item	Description
Command	The command name
Copy Kind	The local copy Local is output as the fixed value.
P-VOL(Port-LUN-LDEV)*1	The port number, the LU number, and the LDEV number of the primary volume The port number and the LU number show the expanded LU of Command Control Interface

Item	Description
	The LU number is the absolute LUN[*2] of Command Control Interface
S-VOL(Port-LUN-LDEV)[*1]	The port number, the LU number, and the LDEV number of the secondary volume The port number and the LU number show the expanded LU of Command Control Interface The LU number is the absolute LUN[*2] of Command Control Interface
MCU S/N[*1]	The serial number of the local storage system
RCU S/N[*1]	The same value as that of MCU S/N is output.
Range	The range of pair split Group: Split by the consistency group unit LU: Split by the LU unit
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.
Suspend Mode	Indicates whether ShadowImage pairs are forcibly suspended at an error Normal: Not suspended, Force: Forcibly suspended If it is not specified at the command option or the pair is other than ShadowImage one, Normal is output.
Split Mode	The split mode when ShadowImage pairs are split Normal: The pair is split normally. Quick: The pair is split quickly. If it is not specified at the command option or the pair is other than ShadowImage one, a hyphen (-) is output.
Copy Pace(TRK)	The track size for copy
S-VOL Hidden Mode	Indicates whether the secondary volume is hidden after a ShadowImage pair is created Enable: Hides the secondary volume Disable: Not hides the secondary volume If it is not specified at the command option or the pair is other than ShadowImage one, a hyphen (-) is output.
Pool ID(TI)	The pool ID ofThin Image. If it is not paircreate –split operation, 0 (zero) is output.

Item	Description
*1 When a virtual storage machine is specified, the value of the virtual storage machine is output. *2 For more information about the absolute LUN, see *Command Control Interface Installation and Configuration Guide*	

Pairsplit(RemoteCopy)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Pairsplit(RemoteCopy)
++Copy Kind=Remote
++P-VOL(Port-LUN-LDEV)=1A-2047-0x1A,S-VOL(Port-LUN-LDEV)=1B-3-0x3B,
MCU S/N=412345,RCU S/N=422364,Range=LU,
Virtual Storage Machine S/N=423456,Suspend Status=P-VOL Failure,
S-VOL Write Permission (Suspend)=Disable,
P-VOL Write Permission (Force Suspend)=Disable,
Side File Liberation Kind=Flush,Rewind=Normal Suspend,CTG ID=100,
CTG Option=Disable
```

Detailed Information

Item	Description
Command	The command name
Copy Kind	The remote copy Remote is output as the fixed value.
P-VOL(Port-LUN-LDEV)[*1]	The port number, the LU number, and the LDEV number of the primary volume The port number and the LU number show the expanded LU of Command Control Interface No value is output when the option "-RS" is specified. The LU number is the absolute LUN[*2] of Command Control Interface
S-VOL(Port-LUN-LDEV)[*1]	The port number, the LU number, and the LDEV number of the secondary volume The port number and the LU number show the expanded LU of Command Control Interface

Item	Description
	The LU number is the absolute LUN[*2] of Command Control Interface
MCU S/N[*1]	The serial number of the local storage system No value is output when the option "-RS" is specified.
RCU S/N[*1]	The serial number of the remote storage system
Range	The range of pair split Group: Split by the consistency group unit LU: Split by the LU unit
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.
Suspend Status	Indicates whether the primary volume is writable after splitting a TrueCopy pair. P-VOL Failure: Not writable S-VOL Suspend: Writable S-VOL Suspend is output for pairs other than TrueCopy ones.
S-VOL Write Permission (Suspend)	Indicates whether the writing to the secondary volume is enabled in the suspend status Enable: Enabled, Disable: Disabled
P-VOL Write Permission (Force Suspend)	Indicates whether the writing to the primary volume is enabled in the forcible suspend status Enable: Enabled, Disable: Disabled
Side File Liberation Kind	The liberation kind of the side file Flush: Flush is specified. Purge: Purge is specified.
Rewind	Indicates whether the pair status is changed from SSWS to PSUS/PSUE or not Normal Suspend: Not changed from SSWS to PSUS/PSUE SSWS Rewind: Changed from SSWS to PSUS/PSUE
CTG ID	The consistency group ID No value is output when the consistency group option "-fg" is not specified.
CTG Option	Indicates whether the consistency group option (-fg) is specified

Item	Description
	Enable: Specified, Disable: Not specified
*1 When a virtual storage machine is specified, the value of the virtual storage machine is output. *2 For more information about the absolute LUN, see *Command Control Interface Installation and Configuration Guide*	

Pairsplit-S

Pairsplit-S is an audit log generated when a command operation is performed with the DKCMAIN firmware version earlier than 83-04-0X-XX/XX.

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Pairsplit-S
++Copy Kind=Remote
++P-VOL(Port-LUN-LDEV)=1A-2047-0x1A,
S-VOL(Port-LUN-LDEV)=1B-3-0x3B,
MCU S/N=412345,RCU S/N=422364,
Virtual Storage Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
Copy Kind	Indicates whether the copy kind is Local copy or Remote copy Local: Local copy, Remote: Remote copy
P-VOL(Port-LUN-LDEV)*1	The port number, the LU number, and the LDEV number of the primary volume The port number and the LU number show the expanded LU of Command Control Interface No value is output when the pair operation is performed by Command Control Interface from the remote storage system The LU number is the absolute LUN*2 of Command Control Interface
S-VOL(Port-LUN-LDEV)*1	The port number, the LU number, and the LDEV number of the secondary volume The port number and the LU number show the expanded LU of Command Control Interface

Item	Description
	The LU number is the absolute LUN[*2] of Command Control Interface
MCU S/N[*1]	The serial number of the local storage system No value is output when the pair operation is performed by Command Control Interface from the remote storage system
RCU S/N[*1]	The serial number of the remote storage system For Local copy, the same value as that of MCU S/N is output.
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified
*1 When a virtual storage machine is specified, the value of the virtual storage machine is output. *2 For more information about the absolute LUN, see *Command Control Interface Installation and Configuration Guide*	

Pairsplit-S(LocalCopy)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Pairsplit-S(LocalCopy)
++Copy Kind=Local
++P-VOL(Port-LUN-LDEV)=1A-2047-0x1A,S-VOL(Port-LUN-LDEV)=1B-3-0x3B,
MCU S/N=412345,RCU S/N=412345,
Virtual Storage Machine S/N=423456,Delete Range=LU
```

Detailed Information

Item	Description
Command	The command name
Copy Kind	The local copy Local is output as the fixed value.
P-VOL(Port-LUN-LDEV)[*1]	The port number, the LU number, and the LDEV number of the primary volume The port number and the LU number show the expanded LU of Command Control Interface

Item	Description
	The LU number is the absolute LUN*2 of Command Control Interface
S-VOL(Port-LUN-LDEV)*1	The port number, the LU number, and the LDEV number of the secondary volume The port number and the LU number show the expanded LU of Command Control Interface The LU number is the absolute LUN*2 of Command Control Interface
MCU S/N*1	The serial number of the local storage system
RCU S/N*1	The same value as that of MCU S/N is output.
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.
Delete Range	The range for deleting pairs Group: Deletes pairs by the consistency group LU: deletes pairs by the LU
*1 When a virtual storage machine is specified, the value of the virtual storage machine is output. *2 For more information about the absolute LUN, see *Command Control Interface Installation and Configuration Guide*	

Pairsplit-S(RemoteCopy)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Pairsplit-S(RemoteCopy)
++Copy Kind=Remote
++P-VOL(Port-LUN-LDEV)=1A-2047-0x1A,S-VOL(Port-LUN-LDEV)=1B-3-0x3B,
MCU S/N=412345,RCU S/N=422364,
Virtual Storage Machine S/N=423456,Delete Range=LU,
Force=Enable,Invisible=Enable,Type=P-VOL
```

Detailed Information

Item	Description
Command	The command name

Item	Description
Copy Kind	The remote copy Remote is output as the fixed value.
P-VOL(Port-LUN-LDEV)[*1]	The port number, the LU number, and the LDEV number of the primary volume The port number and the LU number show the expanded LU of Command Control Interface No value is output when the option "-R" is specified. The LU number is the absolute LUN[*2] of Command Control Interface
S-VOL(Port-LUN-LDEV)[*1]	The port number, the LU number, and the LDEV number of the secondary volume The port number and the LU number show the expanded LU of Command Control Interface The LU number is the absolute LUN[*2] of Command Control Interface
MCU S/N[*1]	The serial number of the local storage system No value is output when the option "-R" is specified.
RCU S/N[*1]	The serial number of the remote storage system
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.
Delete Range	The range for deleting pairs Group: Deletes pairs by the consistency group LU: deletes pairs by the LU
Force	Indicates whether the setting for deleting pairs forcibly is enabled Enable: Pairs are forcibly deleted. Disable: Pairs are not forcibly deleted.
Invisible	Indicates whether hosts can access the volume after pairs are deleted Enable: The virtual LDEV ID is deleted from the volume on the local storage system not to be accessed by hosts. Disable: The virtual LDEV ID is not deleted from the volume on the local storage system to be accessed by hosts.
Type	The type of volumes of pairs to be deleted P-VOL: Primary volume, S-VOL: Secondary volume

Item	Description
*1 When a virtual storage machine is specified, the value of the virtual storage machine is output. *2 For more information about the absolute LUN, see *Command Control Interface Installation and Configuration Guide*	

Raidvchkset(Data Retention Utility)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Raidvchkset(Data Retention Utility)
++Guard Type=inv svd,Retention Term=365,Virtual Storage Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
Guard Type	The guard type to be specified for volumes by using Data Retention Utility inv: Invisible mode to be set sz0: Zero Read Cap mode to be set rwd: Protection from reading/writing wtd: Protection from writing svd: Protection from copying program products - (hyphen): Released from all protection modes If svd is specified along with a different guard type, two values separated by a space are displayed.
Retention Term	The retention term (days) A hyphen (-) is output for the value if it is not specified by the command option.
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.

Reallocate Pool(Start)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Reallocate Pool(Start)
++Pool ID=AA
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The pool number of a pool in which the manual tier relocation is performed

Reallocate Pool(Stop)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Reallocate Pool(Stop)
++Pool ID=AA
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The pool number of a pool in which the manual tier relocation is interrupted

Rename Pool

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Rename Pool
++Pool ID=AA,Pool Name=XXXXXXX
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The pool number of a pool to be renamed
Pool Name	The pool name after the change

Replace Quorum

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command= Replace Quorum
++Quorum Disk ID=1,LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB
```

Detailed Information

Item	Description
Command	The command name
Quorum Disk ID	The quorum disk ID of a quorum disk to be replaced
LDEV(LDKC:CU:LDEV)	The LDEV ID of the LDEV to be a quorum disk

Replace Snapshot

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Replace Snapshot
++Snapshot Group=ABCDEF,S-VOL(LDKC:CU:LDEV)=0x00:0xCC:0xDD,MU=1,
Virtual Storage Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
Snapshot Group	The Snapshot Group name. The value is output only when Snapshot Group is specified.

Item	Description
S-VOL(LDKC:CU:LDEV)	The LDEV ID of the secondary volume When a virtual storage machine is specified, the LDEV ID of the virtual storage machine is output.
MU	The MU number. The value is output only when MU number is specified.
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified

Reset CHAP User

Example 1: Resetting the secret of the CHAP user on the target side

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Reset CHAP User
++Port=1A,Target ID=0xBB,Target CHAP User=XXXXXX,
Virtual Storage Machine S/N=423456
```

Detailed Information 1

Item	Description
Command	The command name
Port	The name of a port to which iSCSI targets belong
Target ID	The iSCSI target ID
Target CHAP User	The CHAP user name on the target side
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified

Example 2: Resetting the secret of the CHAP user on the initiator side

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Reset CHAP User
++Port=1A,Target ID=0xBB,Initiator CHAP User=XXXXXX,
Virtual Storage Machine S/N=423456
```

Detailed Information 2

Item	Description
Command	The command name
Port	The name of a port to which iSCSI targets belong
Target ID	The iSCSI target ID
Initiator CHAP User	The CHAP user name on the initiator side
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified

Reset Command Status

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Reset Command Status
```

Detailed Information

Item	Description
Command	The command name

Reset Ldev Priority

Example 1: Deleting the priority information from the combination of the LDEV and WWNs

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Re
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB
++WWN={AAAAAAAAA,BBBBBBBBB,……,DDDDDDDD},Num. of WWNs=X
++Priority Type=WWN
```

Detailed Information 1

Item	Description
Command	The command name

Item	Description
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV from which the priority information is to be deleted
WWN	The WWN from which the priority information is to be deleted
Num. of WWNs	The number of WWNs from which the priority information is to be deleted
Priority Type	Indicates targets from which the priority information is to be deleted WWN: The WWNs and LDEV

Example 2: Deleting the priority information from the combination of the LDEV and iSCSI names

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Reset Ldev Priority
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB
++iSCSI Name={iqn.z1,iqn.z2,……,iqn.zX},Num. of iSCSI Names=X
++Priority Type=iSCSI
```

Detailed Information 2

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV from which the priority information is to be deleted
iSCSI Name	The iSCSI names from which the priority information is to be deleted
Num. of iSCSI Names	The number of iSCSI names from which the priority information is to be deleted
Priority Type	Indicates targets from which the priority information is to be deleted iSCSI: The iSCSI names and LDEV

Reset WWN

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Reset WWN
```

```
++Port=1A,Host Group ID=0xXXX,WWN=XXXXXXXXXXXXXXXX,
Virtual Storage Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port to which a WWN, on which the nickname is deleted, belongs When a virtual storage machine is specified, the port name of the virtual storage machine is output.
Host Group ID	The ID of a host group to which a WWN, on which the nickname is deleted, belongs
WWN	The WWN on which the nickname is deleted
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified

Set CHAP User

Example 1: Setting the secret of the CHAP user on the target side

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Set CHAP User
++Port=1A,Target ID=0xBB,Target CHAP User=XXXXXX,
Virtual Storage Machine S/N=423456
```

Detailed Information 1

Item	Description
Command	The command name
Port	The name of a port to which iSCSI targets belong
Target ID	The iSCSI target ID
Target CHAP User	The CHAP user name on the target side
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.

Example 2: Setting the secret of the CHAP user on the initiator side

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Set CHAP User
++Port=1A,Target ID=0xBB,Initiator CHAP User=XXXXXX,
Virtual Storage Machine S/N=423456
```

Detailed Information 2

Item	Description
Command	The command name
Port	The name of a port to which iSCSI targets belong
Target ID	The iSCSI target ID
Initiator CHAP User	The CHAP user name on the initiator side
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.

Set HBA iSCSI

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Set HBA iSCSI
++Port=1A,Target ID=0xBB,iSCSI Name=ABCDEF,iSCSI Nickname=FFFFFF,
Virtual Storage Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port to which iSCSI targets belong
Target ID	The iSCSI target ID
iSCSI Name	The iSCSI name of a host bus adapter for which a nickname is set
iSCSI Nickname	The specified nickname No value is output when a nickname is deleted.
Virtual Storage Machine S/N	The serial number of the virtual storage machine No value is output when a virtual storage machine is not specified.

Set Ldev Priority

Example 1: Setting the priority information for the combination of the LDEV and WWNs

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Set Ldev Priority
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB
++{WWN,Priority,Limit}=[{123456789ABCDEF0,Non-Prio,10 IOPS}],
Num. of WWNs=1
++Priority Type=WWN
```

Detailed Information 1

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV for which the priority information is to be set
WWN	The WWN for which the priority information is to be set
Priority	Indicates the setting of the priority information Prio: Prioritized, Non-Prio: Not prioritized
Limit	The upper limit value of the WWN when Priority is Non-Prio The unit is I/O rate (IOPS) or transfer rate (MB/s)
Num. of WWNs	The number of WWNs for which the priority information is to be set
Priority Type	Indicates targets for which the priority information is to be set WWN: The WWNs and LDEV

Example 2: Setting the priority information for the combination of the LDEV and iSCSI names

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Set Ldev Priority
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB
++{iSCSI Name,Priority,Limit}=[{iqn.z1,Non-Prio,10 IOPS}],
Num. of iSCSI Names=1
++Priority Type=iSCSI
```

Detailed Information 2

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of an LDEV for which the priority information is to be set
iSCSI Name	The iSCSI names for which the priority information is to be set When Server Priority Manager is not installed, no value is output.
Priority	Indicates the setting of the priority information Prio: The priority is given, Non-Prio: The priority is not given
Limit	The upper limit value of the iSCSI name when Priority is Non-Prio The unit is I/O rate (IOPS) or transfer rate (MB/s)
Num. of iSCSI Names	The number of iSCSI names for which the priority information is to be set
Priority Type	Indicates targets for which the priority information is to be set iSCSI: The iSCSI names and LDEV

Set Monitor Option

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Set Monitor Option
++Monitoring Interval=5,
```

Detailed Information

Item	Description
Command	The command name
Monitoring Interval	The interval that the monitoring information is output to the CFM

Set WWN

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Set WWN
```

```
++Port=1A,Host Group ID=0xXXX,WWN=XXXXXXXXXXXXXXXX,
Nickname=AAAAAAA,Virtual Storage Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
Port	The name of a port to which a WWN, on which the nickname is set, belongs When a virtual storage machine is specified, the port name of the virtual storage machine is output.
Host Group ID	The ID of a host group to which a WWN, in which the nickname is set, belongs
WWN	The WWN on which the nickname is set
Nickname	The nickname to be set
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified

Stop Monitor Pool

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Stop Monitor Pool
++Pool ID=AA
```

Detailed Information

Item	Description
Command	The command name
Pool ID	The pool number of a pool, the monitoring of which is stopped

Switch Source Storage

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Switch Source Storage
++Source Storage S/N=75000018,{Port,IP Address}
```

```
=[{1A,192.168.1.1},{2A,192.168.1.2},{3A,192.168.1.3}],
Num. of Ports=3
```

Detailed Information

Item	Description
Command	The command name
Source Storage S/N	The serial number of the source external storage system
Port	The name of a port on the local storage system that is a destination to which the host I/O is switched
IP Address	The IP addresses to be set on ports on the source external storage system
Num. of Ports	The number of ports for operation

Switch Source Storage(Revert)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Switch Source Storage(Revert)
++Source Storage S/N=75000018
++{Port,IP Address}=[{1A,192.168.1.1},{2A,192.168.1.2},{3A,192.168.1.3}],
Num. of Ports=3
```

Detailed Information

Item	Description
Command	The command name
Source Storage S/N	The serial number of the source external storage system
Port	The name of a port on the local storage system that is a destination to which the host I/O is switched
IP Address	The IP addresses to be set on ports on the source external storage system
Num. of Ports	The number of ports for operation

System Option(Correction Copy)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=System Option(Correction Copy)
++Correction Copy=Enable
```

Detailed Information

Item	Description
Command	The command name
Correction Copy	The action in the case that the disk was blocked Enable: Perform the correction copy to the spare disk, Disable: Not perform the correction copy to the spare disk

System Option(Destage Mode)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=System Option(Destage Mode)
++Destage Mode=Enable,LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB
```

Detailed Information

Item	Description
Command	The command name
Destage Mode	The write through operation Enable: Execute the write through operation, Disable: Not execute the write through operation
LDEV(LDKC:CU:LDEV)	Indicates the LDEV ID that the write through operation is ON

System Option(Disk Copy Pace)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=System Option(Disk Copy Pace)
++Disk Copy Pace=Faster
```

Detailed Information

Item	Description
Command	The command name
Disk Copy Pace	Indicates the setting status of Disk Copy Pace when the execution density of the spare disk copy is set to give priority to the input or output. Faster: Give priority to Disk Copy, Medium: Optimized mode, Slower: Give priority to the host job

System Option(Dynamic Sparing)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=System Option(Dynamic Sparing)
++Dynamic Sparing=Enable
```

Detailed Information

Item	Description
Command	The command name
Dynamic Sparing	The action when the drive failure occurred exceeding the threshold Enable: Copy to the spare disk automatically, Disable: Not copy to the spare disk automatically

System Option(Link Failure Threshold)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=System Option(Link Failure Threshold)
++Link Failure Threshold=255
```

Detailed Information

Item	Description
Command	The command name

Item	Description
Link Failure Threshold	The threshold to report link failure

System Option(Mode)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=System Option(Mode)
++System Option Mode=System,CLPR=,Mode ID=2047,Mode=Enable,Cache Tuning=-,
Command Control=-,Password=Enable
```

Detailed Information

Item	Description
Command	The command name
System Option Mode	The system option mode setting key System: Specified by a system, CLPR: Specified by a CLPR
CLPR	The CLPR ID
Mode ID	The system option ID
Mode	The setting value of the system option Enable: Mode is on, Disable: Mode is off
Cache Tuning	The level of Cache Tuning
Command Control	The information for switching the read-ahead condition
Password	The password for one time Enable: Specify the password This item is output only when the password for one time is specified.

System Option(Spare Disk Recover)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=System Option(Spare Disk Recover)
++Spare Disk Recover=Interleave
```

Detailed Information

Item	Description
Command	The command name
Spare Disk Recover	Indicates the setting status of Spare Disk Recover. Interleave: Give priority to the access from the host while executing copy process, Full speed: Give priority to the copy process

Unmap Resource(LDEV)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Unmap Resource(LDEV)
++LDEV(LDKC:CU:LDEV)=0x00:0xAA:0xBB,
Map LDEV(LDKC:CU:LDEV)=0x00:0xCC:0xDD
```

Detailed Information

Item	Description
Command	The command name
LDEV(LDKC:CU:LDEV)	The LDEV ID of the actual volume
Map LDEV(LDKC:CU:LDEV)	The LDEV ID of the virtual volume to be unassigned from the actual volume "Reserve" is output if the reservation attribute of global-active device set on the LDEV ID of the volume that is used as a secondary volume of a global-active device pair is released.

Unmap Resource(Port)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Unmap Resource(Port)
++Port=1A,Map Port=1E
```

Detailed Information

Item	Description
Command	The command name
Port	The port name of the actual port
Map Port	The name of the virtual port whose assignment to the actual port is released

Unmap Snapshot

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=Unmap Snapshot
++P-VOL(LDKC:CU:LDEV)=0x00:0xAA:0xBB,
S-VOL(LDKC:CU:LDEV)=0x00:0xCC:0xDD,MU=1,
Virtual Storage Machine S/N=423456
```

Detailed Information

Item	Description
Command	The command name
P-VOL(LDKC:CU:LDEV)	The LDEV ID of the primary volume. The value is output only when the primary volume is specified. When a virtual storage machine is specified, the LDEV ID of the virtual storage machine is output.
S-VOL(LDKC:CU:LDEV)	The LDEV ID of the secondary volume. The value is output only when the secondary volume is specified. When a virtual storage machine is specified, the LDEV ID of the virtual storage machine is output.
MU	The MU number. The value is output only when the primary volume is specified.
Virtual Storage Machine S/N	The serial number of the virtual storage machine No output when a virtual storage machine is not specified

User System Option(Mode)

Example

```
Out-of-band,,[Config Command],,,Accept,Seq.=xxxxxxxxxx
+Command=User System Option(Mode)
++Mode ID=1023,Mode=Enable
```

Detailed Information

Item	Description
Command	The command name
Mode ID	The ID of the advanced system settings option
Mode	The set value for the advanced system settings option Enable: The advanced system settings option is On. Disable: The advanced system settings option is Off.

User Auth

```
In-band OPEN,195,[User Auth],Login,,Normal end,
Seq.=xxxxxxxxxx
In-band OPEN,195,[User Auth],Logout,,Normal end,
Seq.=xxxxxxxxxx
```

- In-band OPEN

  The host is an open-system host.

CHAP

```
In-band OPEN,,[CHAP],,,Normal end,Seq.=xxxxxxxxxx
```

- In-band OPEN

  The host is an open-system host.

Chapter 7: Audit log examples of PIN Deletion Tool operation

This topic provides examples and descriptions of the audit logs produced by the PIN Deletion Tool.

[PINDeletion] Delete

This log information indicates the completion of the PIN deletion operation, and does not indicate the completion of the PIN deletion processing.

Detailed Information

Item	Description
LDKC:CU:LDEV	The LDKC, CU, and LDEV numbers
Num. of LDEVs	The number of set LDEVs

Example

```
MPC,,[PINDeletion],Delete,,Normal end,
Seq.=xxxxxxxxxx
+LDEV=[0x00:0x00:0x00,0x00:0x00:0x01],Num. of LDEVs=2
```

Appendix A: Audit log user operations

Device Manager - Storage Navigator operations and corresponding operation names output to audit logs are described for each menu. The same log is output when a user perform an operation using each Device Manager - Storage Navigator menu, clicking a button on the main window, or using General Tasks.

Logging in or out

GUI operation	Audit Log Output		Notes
	Function Name	Operation Name	
Login	BASE	Login	--
Logout (Exit)		Logout	--
Session disconnected			Logged out by a server when a session is disconnected.

Using Maintenance menu

GUI operation		Audit Log Output	
Submenu	Description	Function Name	Operation Name
Maintenance Components (General)	Operations on Maintenance PC	For details, see Audit log Maintenance PC operations (on page 525).	
A menu displayed only on Maintenance PC.			

Using Actions menu

- Using Component submenu (on page 493)
- Using Logical Device submenu (on page 493)
- Using Port/Host Group submenu (on page 496)
- Using Pool submenu (on page 499)
- Using Parity Group submenu (on page 500)
- Using External Storage submenu (on page 501)
- Using Local Replication submenu (on page 502)
- Using Remote Replication submenu (on page 504)
- Using Journal submenu (on page 506)
- Using Remote Connection submenu (on page 507)
- Using Other function submenu (on page 508)

Using Component submenu

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Edit MP Units	Editing MP unit settings	PROV	Edit MP Units

Using Logical Device submenu

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Create LDEVs	Creating LDEVs	PROV	Create LDEVs[1] CreateLdev[2] CreateAlus Edit Full Allocation Edit V-VOL Option Format LDEVs Format LDEVs(Q)

GUI operation			Audit Log Output	
Submenu		**Description**	**Function Name**	**Operation Name**
				LDEV Name
Delete LDEVs		Deleting LDEVs	PROV	Delete LDEVs[1] DeleteLdev[2] DeleteAlus
Edit LDEVs		Editing LDEV settings	PROV	Edit Full Allocation Edit LDEVs(tier) Edit V-VOL Option LDEV Name UpdateAluaMode
Format LDEVs		Formatting LDEVs	PROV	Format LDEVs
		Quick formatting LDEVs	PROV	Format LDEVs(Q)
Interrupt Format Task		Stopping formatting LDEVs	PROV	StopFormat
Block LDEVs		Blocking LDEVs	PROV	Block LDEVs
Restore LDEVs		Restoring LDEVs	PROV	Restore LDEVs
Force Restore LDEVs[3]		Forcible restoration of LDEVs	PROV	LdevForceRestore
Shred LDEVs		Shredding LDEVs	Volume Shredder	Shred LDEVs End Shredding
Interrupt Shredding Task		Stopping shredding LDEVs	Volume Shredder	Abort Shredding[4]
Assign MP Unit		Assigning MP units	PROV	Assign MP Unit
Migration	Migrate Volumes	Directing volume migration	VM	Migrate Volumes
	View Migration Plans	Referring to migration plans	VM	Del Migration Plans
Add LUN Paths		Mapping LUN paths	PROV	Add LUN Paths
Delete LUN Paths		Removing LUN paths from LDEVs	PROV	Delete LUN Paths

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Edit UUIDs	Changing UUIDs	PROV	Edit/Delete UUIDs
Delete UUIDs	Deleting UUIDs		
Expand V-VOLs	Increasing virtual volume capacity	PROV	Expand V-VOLs
Reclaim Zero Pages	Releasing pages in virtual volumes	PROV	Reclaim Zero Pages
Stop Reclaiming Zero Pages	Stopping releasing pages in virtual volumes	PROV	Stop Reclm ZeroPages
Edit Command Devices	Editing Command Devices	PROV	Edit Cmd Dev(Auth) Edit Cmd Dev(DevGrp) Edit Cmd Dev(Sec) Edit Command Devices
Unbind SLUs	Unbinding an LDEV with the SLU attribute from the LDEV with the ALU attribute	PROV	ExecBindingOperation
Verify LDEVs[3]	Verifying LDEVs	PROV	StartVerify
Interrupt Verification Task[3]	Stopping verifying LDEVs	PROV	StopVerify

Notes:

1. The audit log of this operation is output when volumes of Thin Image or DP-VOLs are created or deleted.
2. The audit log of this operation is output when internal or external volumes are created or deleted.
3. A menu displayed only on Maintenance PC.
4. The audit log of this operation is output not only by performing an operation on the Interrupt Shredding Task submenu, but by stopping the shredding LDEVs task on the Task window.

Using Port/Host Group submenu

Port/Host Group > Fibre

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Create Host Groups	Creating host groups	PROV	Add Hosts Create Host Groups Edit Host Grps(Mode)
Delete Host Groups	Deleting host groups	PROV	Delete Host Groups
Edit Host Groups	Editing host group settings	PROV	Edit Host Grps(Mode) Edit Host Grps(Name)
Add Hosts	Adding hosts to selected host groups	PROV	Add Hosts
Add to Host Groups	Adding selected host to host groups		
Remove Hosts	Removing hosts from host groups	PROV	Remove Hosts
Delete Login WWNs	Deleting unnecessary WWNs	PROV	Delete Login WWNs
Edit Host	Editing host settings	PROV	Edit Host
Create Alternative LUN Paths	Creating alternative LUN paths	PROV	Add Hosts Add LUN Paths Create Host Groups Edit Host Grps(Mode)
Copy LUN Paths	Setting the same path as a selected LUN	PROV	Add LUN Paths
View Host-Reserved LUNs > Release Host-Reserved LUNs[1]	Releasing Host-Reserved LUNs	PROV	Release HostReserved
Edit Asymmetric Access States	Editing Asymmetric Access States settings	PROV	UpdateAsymmetricAccessStatePerHG
Edit Ports	Editing port settings	PROV	Edit Ports(Address)

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
			Edit Ports(Security) Edit Ports(Speed) Edit Ports(Topology)
Edit T10 PI Mode	Editing T10 PI mode settings on ports	PROV	EditT10piMode
Notes: **1.** To release host reserved LUNs, open the Release Host-Reserved LUNs window from the Host-Reserved LUNs window.			

Port/Host Group > iSCSI

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Create iSCSI Targets	Creating iSCSI targets	PROV	CreateiScsiTarget
	Editing CHAP users assigned to iSCSI targets	PROV	EditTargetChapUser
Delete iSCSI Targets	Deleting iSCSI targets	PROV	DeleteiScsiTarget
Edit iSCSI Targets	Editing iSCSI target settings	PROV	EditiScsiTarget
	Editing CHAP users assigned to iSCSI targets	PROV	EditTargetChapUser
Add Hosts	Adding hosts to selected iSCSI targets	PROV	CreateiScsiName
Remove Hosts	Removing hosts from selected iSCSI targets	PROV	DeleteiScsiName

GUI operation			Audit Log Output	
Submenu		**Description**	**Function Name**	**Operation Name**
Delete Login iSCSI Names		Deleting unnecessary iSCSI names	PROV	DeleteLoginiScsiName
Edit Host		Editing host settings	PROV	EditiScsiName EditiScsiNickName
Create Alternative LUN Paths		Creating an alternative LUN path	PROV	Add Hosts Add LUN Paths Create Host Groups Edit Host Grps(Mode)
Copy LUN Paths		Copying the selected LUN path	PROV	Add LUN Paths
View Host-Reserved LUNs > Release Host-Reserved LUNs*		Releasing Host-Reserved LUNs	PROV	Release HostReserved
Edit Ports		Editing port settings	PROV	Edit Ports(Security) Edit Ports(Speed) EditPortInfo EditiSNS
		Editing the setting information of users with CHAP authentication on ports	PROV	EditiScsiInitiatorUser
Authentication	Add CHAP Users	Adding CHAP users to selected iSCSI targets	PROV	CreateRemoteChapUser
	Remove CHAP Users	Removing CHAP users from selected iSCSI targets	PROV	DeleteRemoteChapUser
	Edit CHAP User	Editing CHAP user settings	PROV	EditRemoteChapUser

GUI operation			Audit Log Output	
Submenu		Description	Function Name	Operation Name
	Remove Target CHAP Users	Removing CHAP users assigned to iSCSI targets	PROV	DeleteTargetChapUser
	Remove Port CHAP Users	Deleting the setting information of users with CHAP authentication on ports	PROV	DeleteiScsiInitiatorUser
* Release Host-Reserved LUNs window opened from Host-Reserved LUNs window.				

Using Pool submenu

GUI operation		Audit Log Output	
Submenu	Description	Function Name	Operation Name
Create Pools	Creating pools	PROV	Create/Expand Pools Edit/Delete Pools Pool Name
Delete Pools	Deleting pools	PROV	Edit/Delete Pools Pool Name
Expand Pool	Increasing pool capacity	PROV	Create/Expand Pools
Shrink Pool	Decreasing pool capacity	PROV	Shrink Pool
Stop Shrinking Pools	Stopping decreasing pool capacity	PROV	Stop Shrinking Pool
Edit Pools	Editing pool settings	PROV	Edit/Delete Pools Pool Name

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Edit External LDEV Tier Rank	Editing external LDEV tier ranks of pool volumes that are assigned to pools	PROV	Edit External LDEV Tier Rank
Monitor Pools	Starting the performance monitoring of pools	PROV	Monitor Pools
Stop Monitoring Pools	Stopping the performance monitoring of pools	PROV	Stop Monitoring
Start Tier Relocation	Starting the tier relocation of pools	PROV	Relocate Pool
Stop Tier Relocation	Stopping the tier relocation of pools	PROV	Stop Relocating
Restore Pools	Restoring pools	PROV	Restore Pools
Initialize Pools*	Initializing pools	PROV	Initialize Pools
Edit Tiering Policies	Editing Tiering Policies	PROV	Edit Tiering Policy
* A menu displayed only on Maintenance PC.			

Using Parity Group submenu

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Create Parity Groups	Creating parity groups	PROV	CreateParityGroups
Delete Parity Groups	Deleting parity groups	PROV	DeleteParityGroups
Format Parity Groups	Formatting parity groups	PROV	StartParityGroupsFormat

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Interrupt Format Task*	Stopping formatting parity groups	PROV	StopFormat
Edit Encryption	Enabling/disabling data encryption	ENC	Edit Encryption
Edit Parity Groups	Enabling or disabling copy-back mode	PROV	UpdateCopybackMode
	Enabling or disabling accelerated compression	PROV	UpdateParityGroupSettings
Assign Spare Drives	Assigning as a spare drive or releasing the spare drive setting	PROV	UpdateSpareDrives
* A menu displayed only on Maintenance PC.			

Using External Storage submenu

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Add External Volumes	Mapping external volumes	UVM	Add External Volumes
Delete External Volumes	Releasing external volume mapping	UVM	Delete ES VOLs
Edit External Volumes	Editing external volume settings	UVM	Edit ES VOLs
Disconnect External Volumes	Disconnecting external volumes	UVM	Disconnect ES VOLs
Reconnect External Volumes	Reconnecting external volumes	UVM	Reconnect ES VOLs
Assign MP Unit	Assigning MP units for external volumes	UVM	Assign MP Unit

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Disconnect External Paths	Disconnecting external paths	UVM	Disconnect ES Paths
Reconnect External Paths	Reconnecting external paths	UVM	Reconnect ES Paths
Edit External WWNs	Editing external WWN parameters	UVM	Edit External WWNs / iSCSI Targets
Edit External iSCSI Targets	Editing external iSCSI target parameters		
Edit External Path Configuration	Adding paths to external path groups Deleting paths from external path groups Changing priority among external paths	UVM	Edit ES Path Config
Disconnect External Storage Systems	Disconnecting external storage systems	UVM	Disconnect ES VOLs
Reconnect External Storage Systems	Reconnecting external storage systems	UVM	Reconnect ES VOLs
Add iSCSI Paths	Adding iSCSI paths	PROV	CreateiScsiPath
Delete iSCSI Paths	Deleting iSCSI paths	PROV	DeleteiScsiPath
Edit iSCSI Targets	Editing iSCSI targets	PROV	EditRemoteTargetUser

Using Local Replication submenu

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Create SI Pairs	Creating ShadowImage pairs	Local Replication	Create Pairs

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Create TI Pairs	Creating Thin Image pairs	Local Replication	Create Pairs
Operate TI Pairs	Creating pairs, splitting pairs, resynchronizing pairs, and removing pairs for Thin Image Assigning and removing S-VOLs for Thin Image pairs	Local Replication	Create Pairs Split Pairs Resync Pairs Delete Pairs Assign S-VOLs Remove S-VOLs
Split Pairs	Splitting pairs of ShadowImage or Thin Image	Local Replication	Split Pairs
Resync Pairs	Resynchronizing pairs of ShadowImage or Thin Image	Local Replication	Resync Pairs
Suspend Pairs	Suspending pairs of ShadowImage or Thin Image	Local Replication	Suspend Pairs
Delete Pairs	Deleting pairs of ShadowImage or Thin Image	Local Replication	Delete Pairs
Initialize Local Replica Pairs*	Initializing pairs of ShadowImage or Thin Image	Local Replication	Initialize
Assign Secondary Volumes	Assigning secondary volumes of Thin Image pairs	Local Replication	Assign S-VOLs
Remove Secondary Volumes	Removing secondary volumes of Thin Image pairs	Local Replication	Remove S-VOLs
Edit Local Replica Options	Setting ShadowImage options	Local Replication	Edit Options
* A menu displayed only on Maintenance PC.			

Using Remote Replication submenu

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Create TC Pairs	Creating TrueCopy pairs	Remote Replication	Create Pairs[1]
Create UR Pairs	Creating Universal Replicator pairs	Remote Replication	Create Pairs[1]
Create GAD Pairs	Creating pairs for global-active device	Remote Replication	Create Pairs[1]
		PROV	UpdateAluaMode
Split Pairs	Splitting pairs of TrueCopy or Universal Replicator	Remote Replication	Split Pairs[1]
Resync Pairs	Resynchronizing pairs of TrueCopy, Universal Replicator, or global-active device	Remote Replication	Resync Pairs[1]
		PROV	UpdateAluaMode
Delete Pairs	Deleting pairs of TrueCopy, Universal Replicator, or global-active device	Remote Replication	Delete Pairs[1]
Suspend Pairs	Suspending pairs for global-active device	Remote Replication	Suspend Pairs[1]
Force Delete Pairs (TC Pairs)	Forcible deletion of TrueCopy pairs	Remote Replication	Delete Pairs[1]
Force Delete Pairs (UR Pairs)	Forcible deletion of Universal Replicator pairs	Remote Replication	Delete Pairs[1]
Force Delete Pairs (GAD Pairs)	Forcible deletion of global-active device pairs	Remote Replication	Delete Pairs[1]
Edit Pair Options	Editing pair options of TrueCopy or Universal Replicator	Remote Replication	Edit Pair Options[1]

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Resync Consistency Groups	Resynchronizing pairs for global-active device by the consistency group	PROV	UpdateAluaMode
Split Mirrors	Splitting mirrors of Universal Replicator	Remote Replication	Split Pairs[1]
Resync Mirrors	Resynchronizing mirrors of Universal Replicator	Remote Replication	Resync Pairs[1]
Delete Mirrors	Deleting mirrors of Universal Replicator	Remote Replication	Delete Pairs[1]
Edit Mirror Options	Editing mirror options of Universal Replicator	Remote Replication	Change Mirror Option[1]
Assign Remote Command Devices	Assigning remote command devices of Universal Replicator	Remote Replication	R-Cmd.Dev.
Release Remote Command Devices	Releasing remote command devices of Universal Replicator	Remote Replication	R-Cmd.Dev.
Edit Remote Replica Options	Editing system options of TrueCopy, Universal Replicator, or global-active device	Remote Replication	Edit Options
Edit Remote Replica Function Switch[2]	Editing system options of TrueCopy	Remote Replication	Edit Options
Assign GAD Reserves	Assigning the GAD reserve attribute to a volume for the secondary volume of a global-active device pair	PROV	Set Virtual LDEV

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Release GAD Reserved	Releasing the GAD reserve attribute from a volume for the secondary volume of a global-active device pair	PROV	Set Virtual LDEV
Notes: **1.** When multiple settings of the same type are applied at the same time, log information is output as one entry. **2.** A menu displayed only on Maintenance PC.			

Using Journal submenu

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Create Journals	Creating journal volumes of Universal Replicator	Remote Replication	Journal Vol
Delete Journals	Deleting journal volumes of Universal Replicator	Remote Replication	Journal Vol
Edit Journal Options	Editing journal options of Universal Replicator	Remote Replication	Change JNL Option
Assign MP Unit	Migrating journal ownership of Universal Replicator	Remote Replication	Journal Owner
Assign Journal Volumes	Assigning journal volumes of Universal Replicator	Remote Replication	Journal Vol
When multiple settings of the same type are applied at the same time, log information is output as one entry.			

Using Remote Connection submenu

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Add Remote Connection	Adding connections to remote storage systems	Remote Replication	Add RCU
		PROV	CreateiScsiPath
	Deleting iSCSI paths when connections cannot be added to remote storage systems	PROV	DeleteiScsiPath
Remove Remote Connections	Removing connections to remote storage systems	Remote Replication	Delete RCU
Edit Remote Connection Options	Editing connection options of remote storage systems	Remote Replication	Change RCU Option
Add Remote Paths	Adding paths to remote storage systems	Remote Replication	Add Path
Remove Remote Paths	Removing paths from remote storage systems	Remote Replication	Delete Path
Add Quorum Disks	Adding quorum disk IDs used by global-active device	Remote Replication	Add Quorum Disk ID
Remove Quorum Disks	Deleting quorum disk IDs used by global-active device	Remote Replication	Del Quorum Disk ID
Edit Quorum Disks	Editing the value of Read Response Guaranteed Time When Quorum monitoring has stopped for global-active device	Remote Replication	UpdateQuorumDisks
When multiple settings of the same type are applied at the same time, log information is output as one entry.			

Using Other function submenu

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Data Retention	Attribute / S-VOL / Reserved/ Mode Clear / Retention term	PROV	Edit DRU Attribute
	Expired lock	PROV	DRU Expiration Lock
When multiple settings of the same type are applied at the same time, log information is output as one entry.			

Using Reports menu

- Using Task Management submenu (on page 508)
- Using Configuration Report submenu (on page 509)
- Using Performance Monitor submenu (on page 509)

Using Task Management submenu

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Delete Tasks	Deleting tasks	BASE	Delete Tasks
Resume Tasks	Resuming tasks	BASE	Resume Tasks
Suspend Tasks	Suspending tasks	BASE	Suspend Tasks
Disable Auto Delete	Disabling the Task Auto Delete function	BASE	Disable Auto Delete
Enable Auto Delete	Enabling the Task Auto Delete function	BASE	Enable Auto Delete

Using Configuration Report submenu

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Create Configuration Report	Creating configuration reports	BASE	Create Conf Report
Delete Reports	Deleting configuration reports	BASE	Delete Reports

Using Performance Monitor submenu

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Edit Monitoring Switch	Starting/stopping monitoring	PFM	Edit Monitoring SW
Edit CU Monitor Mode	Setting target CUs for monitoring	PFM	Edit CU Monitor Mode
Edit WWN Monitor Mode	Setting target WWNs for monitoring	PFM	Edit WWN MonitorMode
Add New Monitored WWNs	Adding new WWNs for monitoring	PFM	Edit WWN MonitorMode
Edit WWN	Editing WWNs	PFM	Edit WWN
Delete Unused WWNs	Deleting WWNs from monitoring targets	PFM	Delete Unused WWNs
Add to Ports	Connecting target WWNs to ports	PFM	Edit WWN MonitorMode
Server Priority Manager (Port)	Comprehensive thresholds	SPM	Set All Prio Port[1, 2] Set Ctrl Kind
	Setting priority of ports (Attribute / Threshold / Upper limit)	SPM	Set All Prio Port Set Prio Port[1, 2]

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
	Initialization settings	SPM	Default Set[1, 2]
	Setting control status (Port control)	SPM	Set Ctrl Kind
	Clearing port settings due to removing port controllers	SPM	Clear SPM Info[2]
Server Priority Manager (WWN)	Comprehensive thresholds	SPM	Set All Prio WWN[1, 2]
	Setting priority of WWNs (Attribute / Upper limit)	SPM	Set All Prio WWN Set Prio WWN[1, 2]
	Changing WWNs and SPM names	SPM	Set All Prio WWN Update WWN[1, 2]
	Setting control status (WWN control)	SPM	Set Ctrl Kind[1, 2]
	Registering WWNs	SPM	Update Port WWN[1, 2]
	Deleting WWNs	SPM	Update Port WWN[1, 2]
	Initialization settings	SPM	Default Set[2]
	Adding WWNs (to SPM groups)	SPM	Update SPMGrp[1, 2]
	Deleting WWNs (from SPM groups)	SPM	Update SPMGrp[1, 2]
	Registering SPM groups and adding WWNs	SPM	Set All Prio WWN Update SPMGrp[1, 2]
	Deleting SPM groups	SPM	Set All Prio WWN SPMGrp Del/Chg Update SPMGrp[1, 2]
	Setting priority of SPM groups (Attribute / Upper limit)	SPM	Change SPMGrp[1, 2] Set All Prio WWN

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
	Changing SPM group names	SPM	SPMGrp Del/Chg[1, 2] Set All Prio WWN
	Clearing port settings due to removing port controllers	SPM	Clear SPM Info[2]

Notes:

1. When multiple settings of the same type are applied at the same time, log information is output as one entry.
2. **Error**, not **Warning**, is output as log information if one of multiple settings is applied abnormally.

Using Settings menu

- Using User Management submenu (on page 511)
- Using Resource Management submenu (on page 512)
- Using Security submenu (on page 513)
- Using Environmental Setting submenu (on page 516)

Using User Management submenu

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Create User	Creating a new user account	ACM	CreateUser
Add Uses	Adding users to a user group	ACM	AddUsersToUserGroup
Remove Users	Removing users from a user group	ACM	RemoveUsersFromUserGroup
Edit User	Changing a user authentication mode	ACM	UpdateUserAuthentication

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
	Enabling/disabling users	ACM	DisableUsers EnableUsers
Delete Users	Deleting user accounts	ACM	DeleteUsers
Change Password	Changing a password	ACM	UpdatePassword
Create User Group	Creating a new user group	ACM	CreateUserGroup
Edit User Group	Changing a user group name	ACM	UpdateUserGroupName
Delete User Groups	Deleting user groups	ACM	DeleteUserGroups
Edit Resource Group Assignment	Changing assignment of resource groups of a user group	ACM	UpdateUserGroupResourceGrpBmp
	Assigning roles to a user group or releasing assignment of roles	ACM	UpdateUserGroupRole
Edit Role Assignment	Changing assignment of all resource groups of a user group	ACM	UpdateUserGroupAllResourceGrp

Using Resource Management submenu

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Create Resource Groups	Creating resource groups	PROV	Create Resource Grps
	Adding resources		Move Resources
Edit Resource Group	Changing resource group names	PROV	Edit Resource Grp

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Delete Resource Groups	Deleting resource groups	PROV	Delete Resource Grps
Add Resources	Adding resources to resource groups	PROV	Move Resources
Remove Resources	Removing resources from resource groups	PROV	Move Resources
Create CLPRs	Creating CLPRs	VPM	Edit CLPR
Edit CLPR	Editing CLPRs		
Delete CLPRs	Deleting CLPRs		
Migrate CLPR Resources	Migrating parity groups to other CLPRs		
Edit Virtualization Management Settings	Editing Virtualization Management Settings	PROV	Set Virtual LDEV

Using Security submenu

GUI operation			Audit Log Output	
Submenu		**Description**	**Function Name**	**Operation Name**
Encryption Keys	Create Keys	Creating encryption keys	ENC	Add keys to DKC[1] Backup Keys to Serv(Auto)[10] Create Keys[2] Create Keys On Serv[1, 9] Delete Keys on Serv(Auto)[10] Succeeded backup to Serv[10]
	Delete Keys	Deleting encryption keys	ENC	Delete Keys

GUI operation			Audit Log Output	
Submenu		Description	Function Name	Operation Name
	Rekey Certificate Encryption Keys	Updating certificate encryption keys	ENC	Rekey CEK
	Rekey Key Encryption Key	Updating key encryption keys	ENC	Create KEK Dynamic[9] Delete KEK Dynamic[9] Register KEK Dynamic[9] Rekey KEK Dynamic
	Retry Key Encryption Key Acquisition	Reacquisition of key encryption keys	ENC	Retry KEK Dynamic
	Backup Keys to File	Backing up keys on the management client	ENC	Backup Keys Backup Keys to File
	Backup Keys to Server	Backing up encryption keys on the key management server	ENC	Backup Keys Backup Keys to Serv[9] Create Keys On Serv[9] Succeeded backup to Serv[9]
	Restore Keys from File	Restoring encryption keys from backup files on the management client	ENC	Restore Keys Restore Keys fr File
	Restore Keys from Server	Restoring encryption keys from backup keys on the key management server	ENC	Restore Keys Restore Keys fr Serv[9]
	Restore Keys forcibly from File	Restore encryption keys forcibly from backup files on the management client	ENC	Restore Keys Restore Keys fr File(Forcibly)[9]
	Restore Keys forcibly from Server	Restore encryption keys forcibly from backup files on the key management server	ENC	Restore Keys Restore Keys fr Serv(Forcibly)[9]

GUI operation			Audit Log Output	
Submenu		Description	Function Name	Operation Name
	View Backup Keys on Server	Deleting encryption keys backed up on the key management server	ENC	Delete Keys on Server[9]
	Edit Encryption Environmental Settings	Configuring encryption environment settings	ENC	Add keys to DKC[3] Backup Keys to Serv(Auto)[3, 11] Create KEK Dynamic[5, 9, 11] Create Keys[4] Create Keys On Serv[3, 9] DEK assign SpareDisk[6] DEK delete[7] Delete KEK Dynamic[8, 9] Delete Keys on Serv(Auto)[3] Edit ENC Settings Register KEK Dynamic[5, 9] Rekey CEK[6, 7] Rekey KEK Dynamic[11] Set Up Key Mng Serv Succeeded backup to Serv[3]
	Edit Password Policy (Backup Encryption Keys)	Editing password policies for backing up encryption keys	ENC	Edit Password Policy
Login Message		Setting login message	ACM	Set Login Message

Notes:

1. Output when an encryption key is created on the key management server
2. Output when an encryption key is created on the storage system

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
3. Output when the key management server is changed to be enabled from the initial setting **4.** Output when the key management server is changed to be disabled from the initial setting **5.** Output when the status of the key management server is changed from Disable to Enable **6.** Output when the encryption environment setting is configured from the initial setting **7.** Output when the encryption environment setting is initialized **8.** Output when the status of the key management server is changed from Enable to Disable **9.** Output because access to the key management server is performed, following the GUI operation **10.** Output when the key management server is Enable **11.** Output when the connection target for the key management server is changed.			

Using Environmental Setting submenu

GUI operation		Audit Log Output	
Submenu	**Description**	**Function Name**	**Operation Name**
Edit Storage System	Editing storage system information	BASE	Edit Storage System
Edit Advanced System Settings	Editing advanced system settings	BASE	Advanced Settings

Using Maintenance Utility

When a submenu in the Maintenance Utility menu is selected, the Maintenance Utility operation window opens as a different window. Related topics below for operations on the Maintenance Utility window and corresponding operation names output to audit logs.

Using Maintenance Utility window

Storage System GUI operation

GUI operation			Audit Log Output	
GUI Name	**Tab**	**Operation**	**Function Name**	**Operation Name**
Storage System	-	Set Up System Information	Maintenance	Set Up System Info
	-	NAS Module Status > Reset *	Maintenance	Reset Hypervisor Reset Hypervisor NW Reset NASFW
		NAS Module Status > Edit Unified Hypervisor Maintenance Mode*	Maintenance	Edit Hypervisor Mode
	Chassis	Install > Drive Box Install > Channel Board Box	Maintenance	Install
		Remove > Drive Box Remove > Channel Board Box	Maintenance	Remove
		Locate LED > Turn on	Maintenance	Turn On Locate LEDs
		Locate LED > Turn off	Maintenance	Turn Off Locate LEDs
		Air Filter > Reset Duration of Use for Air Filter	Maintenance	Reset DurationOfUse
		Air Filter > Edit Replacing Notice for Air Filter	Maintenance	Edit ReplacingNotice
	Drives	Install	Maintenance	Install

GUI operation			Audit Log Output	
GUI Name	**Tab**	**Operation**	**Function Name**	**Operation Name**
		Remove	Maintenance	Check Remove Remove
		Block	Maintenance	Block
		Stop Copy	Maintenance	Stop Copy
* This operation menu is displayed when NAS modules are installed.				

Operation from Hardware in navigation area on the left side of window

GUI operation			Audit Log Output	
GUI Name	**Tab**	**Operation**	**Function Name**	**Operation Name**
Controller Chassis	Drives[1, 5]	Install	Maintenance	Install
		Remove	Maintenance	Check Remove Remove
		Block	Maintenance	Block
		Stop Copy	Maintenance	Stop Copy
	CTLs	Replace > CTL*n*[3, 5]	Maintenance	Block Restore
		Replace > Cache Memory - CTL*n*[3, 5]	Maintenance	Block Restore
		Replace > CFM - CTL*n*[3, 5]	Maintenance	Block Restore
		Replace > Battery - CTL[3, 5]	Maintenance	Block Restore
		Replace > FAN - CTL*n*[1, 3, 5]	Maintenance	Block Restore

GUI operation			Audit Log Output	
GUI Name	**Tab**	**Operation**	**Function Name**	**Operation Name**
		Replace (Type Change) > Cache Memory - CTL*n*[2, 3]	Maintenance	Block(Type Change) Restore(Type Change)
		Replace (Type Change) > CTL*n*[1, 3]	Maintenance	Block(Type Change) Restore(Type Change)
		Install > Cache Memory - CTL*n*[3]	Maintenance	Block Restore
		Install > Shared Memory	Maintenance	Install
		Remove > Cache Memory - CTL*n*[3]	Maintenance	Block(Remove) Restore(Remove)
		Remove > Shared Memory	Maintenance	Remove
		Reset HUB > CTL*n*[1, 3, 5]	Maintenance	Reset HUB
	BKMFs / BKMs[4]	Block	Maintenance	Block
	CFMs	Replace	Maintenance	Block Restore
	CHBs	Replace	Maintenance	Block Restore
		Install > *Installed position*	Maintenance	Install
		Remove > *Installed position*	Maintenance	Remove
		Changing SFP type by clicking SFP Status	Maintenance	Change SFP Type
	PECBs[2]	Replace	Maintenance	Block Restore
	DKBs[2]	Replace	Maintenance	Block

GUI operation			Audit Log Output	
GUI Name	**Tab**	**Operation**	**Function Name**	**Operation Name**
				Restore
		Replace (Type Change)	Maintenance	Block(Type Change) Restore
		Install > *Installed position*	Maintenance	Install
		Remove > *Installed position*	Maintenance	Remove
	LANBs[2]	Reset HUB	Maintenance	Reset HUB
Channel Board Box[2]	CHBs	Replace	Maintenance	Block Restore
		Install > *Installed position*	Maintenance	Install
		Remove > *Installed position*	Maintenance	Remove
	SWPKs	Replace	Maintenance	Block Restore
	PCPs	Replace	Maintenance	Block Restore
Drive Box [1, 2, 5]	Drives	Install	Maintenance	Install
		Remove	Maintenance	Check Remove Remove
		Block	Maintenance	Block
		Stop Copy	Maintenance	Stop Copy
	ENCs	Replace	Maintenance	Block Restore

Notes:

1. This tab or operation is available for VSP E590, VSP E790, VSP G350, VSP F350, VSP G370, and VSP F370. However, the Drive Box tab does not appear for VSP E590 and VSP E790.
2. This tab or operation is available for VSP E series, VSP G700, VSP F700, VSP G900, and VSP F900.

GUI operation			Audit Log Output	
GUI Name	**Tab**	**Operation**	**Function Name**	**Operation Name**

3. "n" of CTRn can be 1 or 2.

4. BKMF is the part name of VSP E990, VSP G700, VSP F700, VSP G900, and VSP F900. BKM is the part name of VSP E590, VSP E790, VSP G350, VSP F350, VSP G370, and VSP F370.

5. This tab or operation is available for VSP G130.

Operation from Administration in navigation area on the left side of window

GUI operation			Audit Log Output	
GUI Name	**Tab**	**Operation**	**Function Name**	**Operation Name**
Firmware	-	Update	Maintenance	Update Firmware
Administration	-	UserAccount Information > Backup	Maintenance	UserAccount Backup
		UserAccount Information > Restore	Maintenance	UserAccount Restore
	User Group	Create User	Maintenance	Create User
	User	Create	Maintenance	Create User
		Edit	Maintenance	Edit User
		Delete	Maintenance	Delete Users
Alert Notifications	-	Set Up	Maintenance	Set Up Alert
Licenses	-	Install	Maintenance	License Key Install
		Enable	Maintenance	Enable Licenses
		Disable	Maintenance	Disable Licenses
		Remove	Maintenance	License Key Remove
Network Settings	-	Set Up Network Settings	Maintenance	Set Up Network Set
		Set Up Network Permissions	Maintenance	Set Up Network Perm

GUI operation			Audit Log Output	
GUI Name	**Tab**	**Operation**	**Function Name**	**Operation Name**
Date & Time	-	Set Up	Maintenance	Set Up Date & Time
Audit Log Settings	-	Set Up Syslog Server	AuditLog	Set Up Syslog Serv
		Send Test Message to Syslog Server	AuditLog	Send Test Message

Operation from Menu in navigation area on the left side of window

GUI operation		Audit Log Output	
Selection Item		**Function Name**	**Operation Name**
Initial Setup Wizard	-	Maintenance	Set Up System Info Set Up Date & Time Set Up Network Set
Power Management	Power on Storage System	Maintenance	Power On Storage
	Power off Storage System	Maintenance	Power Off Storage
	Edit UPS Mode	Maintenance	Edit UPS Mode
System Management	Change Password	Maintenance	Edit User
	Edit Login Message	Maintenance	Edit Login Message
	Select Cipher Suite	Maintenance	Select Cipher Suite
	Update Certificate Files	Maintenance	Update Cert Files
	Select Login Window[1]	Maintenance	Select Login Window[2]
	Edit System Parameters	Maintenance	Edit System Param
	Force Release System Lock	Maintenance	Force Rls SysLock
	Reboot GUM	Maintenance	Reboot GUM

GUI operation		Audit Log Output	
Selection Item		Function Name	Operation Name
	Install NAS Unified Firmware[3]	Maintenance	Install NAS Unified Firmware
	Remove NAS Unified Firmware[3]	Maintenance	Remove NAS Unified Firmware
	Boot System Safe Mode	Maintenance	Boot System SafeMode

Notes:

1. This operation menu is displayed when you log in to Maintenance Utility by specifying the CTL IP address on the web browser if NAS modules are installed.
2. A login selection window is displayed by specifying the CTL IP address on the web browser if NAS modules are installed. This audit log is also output when you specify a window for default login on the login selection window.
3. This operation menu is displayed when NAS modules are installed.

Other GUI operation

GUI operation	Audit Log Output	
Description	Function Name	Operation Name
Clicking System Locked on the upper right of the window	Maintenance	Force Rls SysLock

Operation Lock

The windows opened by clicking , on the top of a window and corresponding audit logs output by the window operations are described.

GUI operations		Audit Log Output	
GUI Name	Operation	Function Name	Operation Name
Operation Lock Properties	Unlock All	BASE	Unlock Forcibly

When executing single sign-on from Hitachi Command Suite

GUI operations	Audit Log Output	
	Function Name	**Operation Name**
Issuing OneTimeKey from Hitachi Command Suite	BASE	HCSSO SetOneTimeKey
Launching Device Manager - Storage Navigator from Hitachi Command Suite		HCSSO Authentication

Appendix B: Audit log Maintenance PC operations

Maintenance PC operations and corresponding operation names output to audit logs are described.

Logging in to or out from Maintenance PC

Maintenance PC Operations	Audit Log Output		Note
	Function Name	Operation Name	
Login	BASE	Login	No basic information parameters or detailed information
Logout	BASE	Logout	No parameters or detailed information
Rebooting Maintenance PC that is logged in	BASE	Logout	No parameters or detailed information
Powering off Maintenance PC that is logged in	BASE	Logout	No parameters or detailed information

Using Login button

MPC Operations		Audit Log Output	
Function	Operation	Function Name	Operation Name
-	Log into MPC	BASE	Start Maintenance

Using Maintenance button

MPC Operations		Audit Log Output	
Function	**Operation**	**Function Name**	**Operation Name**
Maintenance	Blockade	Maintenance	Blockade
Maintenance	Correction Copy	Maintenance	Correction Copy
Maintenance	Restore	Maintenance	Restore
Maintenance	Restore	Maintenance	MP Restore
Maintenance	Restore Data	Maintenance	Restore Data

Using Install button

MPC Operations		Audit Log Output	
Function	**Operation**	**Function Name**	**Operation Name**
NEW Installation	NEW Installation	Install	NEW Installation
Change Configuration	System Option	Install	System Option
Change Configuration	System Tuning	Install	System Tuning
Copy Config Files	All Configuration Files	Install	All Config
Copy Config Files	Create Configuration Backup	Install	Backup Config
Initialize ORM Value	Initialize ORM Value	Install	Initialize ORM Value
Set Machine Install Date	Set Machine Install Date	Install	Machine Install Date
Set Flash Drive ORM Value	Set Flash Drive ORM Value	Install	FlashDrive ORM Value

Using Information button

MPC Operations		Audit Log Output	
Function	**Operation**	**Function Name**	**Operation Name**
Log	Delete	Information	Delete Log
Threshold Value	▪ Alter ▪ Reset	Information	Threshold Value
Online Read Margin	▪ Alter ▪ Reset	Information	ORM Value

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