

# **Dell RecoverPoint for Virtual Machines 6.0.3**

## CLI Reference Guide

## Notes, cautions, and warnings

 **NOTE:** A NOTE indicates important information that helps you make better use of your product.

 **CAUTION:** A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

 **WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.

# Contents

<b>Tables.....</b>	<b>7</b>
<b>Preface.....</b>	<b>8</b>
<b>Chapter 1: Introduction.....</b>	<b>10</b>
Functions available only in the CLI.....	10
Managing the system.....	11
Getting Started with the CLI.....	11
Connecting to the CLI.....	11
Working with the CLI in CLI mode.....	13
CLI modes.....	16
<b>Chapter 2: List of Commands.....</b>	<b>20</b>
Commands.....	20
<b>Chapter 3: Splitters.....</b>	<b>26</b>
get_splitter_states.....	26
rescan_san.....	27
<b>Chapter 4: VRPAs.....</b>	<b>28</b>
config_cluster_ids.....	28
get_clusters_topology.....	29
get_cluster_traffic_statistics.....	30
hijack_cluster.....	31
get_internal_cluster_name.....	31
get_internal_cluster_uids.....	32
get_local_cluster.....	32
get_rpa_settings.....	33
get_rpa_states.....	33
get_rpa_statistics.....	34
sleep.....	35
<b>Chapter 5: Storage.....</b>	<b>36</b>
get_storage.....	36
register_storage.....	36
unregister_storage.....	38
update_storage_registration.....	38
<b>Chapter 6: Volumes.....</b>	<b>40</b>
get_group_volumes.....	40
get_volume_info.....	40
get_volume_states.....	41
rename_replication_set.....	42

<b>Chapter 7: Consistency Groups.....</b>	<b>44</b>
balance_load.....	44
bookmark_image.....	45
config_copy_policy.....	47
config_group_policy.....	48
config_group_set_settings.....	49
config_link_policy.....	50
clear_markers.....	54
create_copy_policy_template.....	54
create_group_set.....	56
create_link_policy_template.....	57
disable_copy.....	61
disable_group.....	61
disable_image_access.....	62
enable_copy.....	63
enable_group.....	63
get_group_settings.....	64
get_group_state.....	66
get_group_statistics.....	67
get_groups_by_priority.....	69
get_images.....	70
get_policy_template.....	71
pause_transfer.....	71
reduce_production_journal.....	72
remove_copy_policy_template.....	72
remove_group_set.....	73
remove_link_policy_template.....	73
rename_copy.....	74
rename_group.....	74
set_image_access_mode.....	75
set_markers.....	76
set_single_snapshot_consolidation_policy.....	76
start_transfer.....	78
undo_writes.....	78
update_copy_policy_template.....	79
update_link_policy_template.....	81
<b>Chapter 8: System.....</b>	<b>86</b>
clear_persistent_statistics.....	86
clear_security_settings.....	87
config_automatic_snapshot_consolidation.....	87
config_io_throttling.....	88
config_system_reports.....	89
get_groups.....	90
get_raw_statistics.....	91
get_registration_params.....	91
get_security_settings.....	92
get_system_report.....	92

get_system_report_settings.....	93
get_system_settings.....	93
get_system_state.....	94
get_system_status.....	95
get_version.....	96
get_versions.....	96
set_advanced_action_regulation.....	97
set_env_param.....	98
set_registration_params.....	98
set_smtp_server.....	99
stop_snapshot_consolidation.....	100
unregulate_all_copies.....	100
<b>Chapter 9: Maintenance.....</b>	<b>102</b>
enable_advanced_support_commands.....	102
disable_advanced_support_commands.....	102
finish_maintenance_mode.....	102
resume_group.....	103
start_maintenance_mode.....	103
suspend_group.....	104
<b>Chapter 10: Virtual Machine.....</b>	<b>105</b>
get_vcenter_server_credentials.....	105
update_vcenter_server_registration.....	105
<b>Chapter 11: Events.....</b>	<b>107</b>
add_email_users.....	107
add_snmp_user.....	108
config_email.....	109
clear_events_log.....	109
config_snmp_global.....	110
config_snmp_trap_dest.....	110
config_syslogs_global.....	111
config_syslogs_target_host.....	112
create_event_filter.....	112
disable_email.....	113
disable_snmp.....	114
disable_syslogs.....	114
edit_event_filter.....	115
enable_email.....	116
enable_snmp.....	116
enable_syslogs.....	117
get_call_home_events.....	117
get_email_users_settings.....	118
get_event_filter_settings.....	119
get_events_log.....	119
get_group_sets.....	121
get_monitored_parameters.....	122
get_snmp_settings.....	122

get_syslog_settings.....	123
remove_email_users.....	124
remove_event_filter.....	124
remove_snmp_user.....	125
set_snmp_community.....	125
test_email.....	126
test_snmp.....	126
test_syr_connectivity.....	127
test_syslogs.....	127
<b>Chapter 12: Users.....</b>	<b>129</b>
add_role.....	129
add_ssh_key.....	130
add_user.....	131
clear_ldap_configuration.....	132
config_ldap.....	132
config_user_account.....	133
exchange_ssh_keys.....	134
get_account_settings.....	134
get_ldap_configuration.....	135
get_ssh_keys.....	136
get_users.....	136
modify_role.....	137
regenerate_encryption_keys.....	138
remove_role.....	139
remove_ssh_key.....	139
remove_user.....	140
get_roles.....	140
set_password.....	141
set_security_level.....	142
set_user.....	142
test_ldap_connection.....	143
unlock_user.....	144
<b>Chapter 13: General.....</b>	<b>145</b>
get_current_time.....	145
get_return_code.....	145
help.....	146
quit.....	147
set_time_display.....	148

# Tables

1	Style conventions.....	8
2	Functions available only in the CLI.....	10
3	Function of keyboard keys in CLI mode.....	14
4	Function of special characters in CLI mode.....	15
5	Accepted forms for units of measurement.....	16
6	Help output conventions.....	16
7	Useful command line flags in Interactive mode.....	17
8	Useful command line flags in expert mode.....	19
9	List of CLI Commands.....	20

As part of an effort to improve product lines, we periodically release revisions of software and hardware. Therefore, some functions described in this document might not be supported by all versions of the software or hardware currently in use. The product release notes provide the most up-to-date information on product features.

Contact your technical support professional if a product does not function properly or does not function as described in this document.

 **NOTE:** This document was accurate at publication time. Go to Online Support ([Dell Support](#)) to ensure that you are using the latest version of this document.

## Purpose

This document describes the RecoverPoint for VMs CLI commands. It also describes how to manage the system in CLI mode.

## Audience

This document is intended for use by storage administrators who are responsible for administering the RecoverPoint for VMs system.

## Related documentation

The following publications provide additional information:

- [Dell RecoverPoint for Virtual Machines Release Notes](#)
- [Dell RecoverPoint for Virtual Machines Quick Start Installation Poster](#)
- [Dell RecoverPoint for Virtual Machines Installation and Deployment Guide](#)
- [Dell RecoverPoint for Virtual Machines Scale and Performance Guide](#)
- [Dell RecoverPoint for Virtual Machines Product Guide](#)
- [Dell RecoverPoint for Virtual Machines HTML5 Plugin Administrator's Guide](#)
- [Dell RecoverPoint for Virtual Machines CLI Reference Guide](#)
- [Dell RecoverPoint for Virtual Machines Security Configuration Guide](#)
- [Dell RecoverPoint for Virtual Machines RESTful API at Explore APIs](#)

In addition to the core documents, we also provide white papers, technical notes, and demos.

## Typographical conventions

This document uses the following style conventions:

**Table 1. Style conventions**

Formatting	Description
<b>Bold</b>	Used for names of interface elements, such as names of windows, dialog boxes, buttons, fields, tab names, key names, and menu paths (what the user specifically selects or clicks).
<i>Italic</i>	Used for full titles of publications referenced in text
Monospace	Used for: <ul style="list-style-type: none"><li>● System code</li></ul>

**Table 1. Style conventions (continued)**

Formatting	Description
	<ul style="list-style-type: none"><li>• System output, such as an error message or script</li><li>• Pathnames, filenames, prompts, and syntax</li><li>• Commands and options</li></ul>
<i>Monospace italic</i>	Used for variables
<b>Monospace bold</b>	Used for user input
[ ]	Square brackets enclose optional values.
	Vertical bar indicates alternate selections - the bar means "or"
{ }	Braces enclose content that the user must specify, such as x or y or z.
...	Ellipses indicate nonessential information that is omitted from the example.

## Product documentation

- For release notes and user guides, go to **Online Support** at [Dell Support](#).
- For API documentation, see [Dell Developer Portal](#).

## Product information

For documentation, release notes, software updates, or information about products, go to **Online Support** at [Dell Support](#).

## Where to get help

Go to **Online Support** at [Dell Support](#) and click **Contact Support**. To open a service request, you must have a valid support agreement. Contact your sales representative for details about obtaining a valid support agreement or with questions about your account.

## Where to find the support matrix

Consult the **Simple Support Matrix** for RecoverPoint for Virtual Machines at [E-Lab Navigator](#).

## Your comments

Your suggestions help Dell Technologies continue to improve the accuracy, organization, and overall quality of the user publications. Send your opinions of this document to [Content Feedback Platform](#).

# Introduction

This chapter includes the following topics:

**Topics:**

- Functions available only in the CLI
- Managing the system
- Getting Started with the CLI
- Connecting to the CLI
- Working with the CLI in CLI mode

## Functions available only in the CLI

The functions available through the CLI commands are also available in the UI. However, some functions are available only in the CLI.

**Table 2. Functions available only in the CLI**

CLI command or parameter	Notes
add_ssh_key	
balance_load	
bandwidth_limit parameter within: • config_link_policy	This capability does not exist in the UI.
bookmark_image	
clear_markers	
clear_security_settings	
config_cluster_ids	
finish_maintenance_mode	
get_internal_cluster_uids	
get_internal_cluster_name	
get_ssh_keys	
hijack_cluster	
regenerate_encryption_keys	
remove_ssh_key	
set_advanced_action_regulation	
set_markers	
set_password	
set_security_level	
start_maintenance_mode	
stop_snapshot_consolidation	
unlock_user	

**Table 2. Functions available only in the CLI (continued)**

CLI command or parameter	Notes
unregulate_all_copies	

## Managing the system

The Command Line Interface (CLI) is an interface through which all functions of the system can be managed.

### Command Line Interface

The Command Line Interface is used to communicate with all vRPA in the environment.

Use the Command Line Interface to:

- Display all of the commands, and the help for each command in Help mode.
- Run CLI commands in Expert mode.
- Run CLI commands interactively in Interactive mode.

## Getting Started with the CLI

This section describes how to communicate with the Command Line Interface. To communicate with the CLI, establish a secure connection to the CLI using an RS232 port or an SSH connection.

Get started by verifying that you have the tools necessary to connect to a CLI session in both CLI work modes.

These modes are the main modes of work in a CLI session:

- CLI mode — for getting help and generally interacting with the system using CLI commands. CLI mode includes:
  - Help mode — used to retrieve information regarding each CLI command, its parameters, and usage.
  - Interactive mode — used to guide the user when running single commands, allowing them to view each command parameter and its possible values while running the command.
  - Expert mode — used to input multiple parameters and their values for a single command.

### What you need for Linux or Solaris OS

Ensure you have the following tools, if you are working in Linux or Solaris:

- To communicate with the CLI in CLI mode, download, install, and use the free SSH connection utility PuTTY for Linux or UNIX, to connect from the PuTTY interface.

### What you need in Windows operating systems

Ensure you have the following tools, if you are working in Microsoft Windows:

- To communicate with the CLI in CLI mode, download, install, and use the free SSH connection utility PuTTY for Windows, to connect from the Microsoft Windows GUI.

## Connecting to the CLI

This section describes how to connect to the CLI through a secure RS232 port or SSH connection.

If you are connecting for the first time, log in with user admin and its password. The administrator role is assigned to the admin user, which is permitted to run all the commands, including commands that modify the system settings.

**i** **NOTE:** The <cluster management IP> is a floating IP address that is assigned to the vRPA that is active at the specified vRPA cluster. If this vRPA fails, the floating IP address dynamically switches to the vRPA that assumes operation at the specified cluster, which is either vRPA1 or vRPA2.

## Logging in to the CLI in CLI mode

To run commands in CLI mode from Microsoft Windows, Solaris or Linux, use PuTTY.

**i** **NOTE:** Scripts cannot be run in this manner.

In the PuTTY Configuration dialog box, enter the following details:

- Hostname: <cluster management IP>
- Connection type: SSH
- Port: 22

A login screen is displayed.

In the Login screen, enter the following details:

- User: **admin**
- Password: Set during deployment

**i** **NOTE:** The default password is admin, but you were required to change that password during deployment.

A connection is established with the primary vRPA and starts the Installation Manager:

```
Initializing Installation Manager... done
Installation Manager - RecoverPoint RP4VMs Version 6.0(m.316) Cluster Prod_Cluster_1 RPA
1

** Main Menu **
[1] Installation
[2] Setup
[3] Diagnostics
[4] Cluster operations
[5] Shutdown / Reboot operations
[6] System management CLI
[Q] Quit
Prod_Cluster_1 RPA 1:
```

Select the System management CLI option by typing **6**. The CLI prompt appears.

Every time you log in to the CLI, monitored system limitations that have reached major or critical severity are displayed at the CLI prompt.

## From Linux or Solaris

From a Linux or Solaris (UNIX) command prompt, open a CLI session with a vRPA using the following SSH login:

```
$ ssh <cluster management IP> -l user
```

For example:

```
$ ssh 10.10.10.70 -l admin
```

A connection is established with the primary vRPA and the CLI prompt is displayed as `RPA cluster>`.

## From Microsoft Windows command prompt

From a Microsoft Windows command prompt, open a CLI session with a vRPA using the following SSH login:

```
c:\> plink -ssh <cluster management IP> -l user -pw user
```

For example:

```
c:\> plink -ssh 10.10.10.70 -l admin -pw admin_password
```

A connection is established with the primary vRPA and the CLI prompt is displayed as *RPA cluster>*.

## Using SSH keys

It is recommended to run `add_ssh_key` to add a public SSH key to the profile. The public key, which is used along with the private key (held by the computer on which the user is working), enables you to carry out a secure dialog using SSH with the system.

After adding the public key, enter a username to open an SSH session with the CLI. A password is not required.

Before running `add_ssh_key`, use an SSH-keygen to generate a key pair (private and public). The SSH-keygen facility writes the public key to a file. When you run `add_ssh_key`, type the public key at the key prompt.

# Working with the CLI in CLI mode

This section describes how to work in CLI mode of the Command Line Interface. The features, input, and output of CLI mode are discussed in detail.

## Introduction

CLI mode is used to display system help information, and type commands into the Command Line Interface interactively as well as non-interactively.

## Command prompts

Throughout this guide, the command prompts of the different operating environments, are represented as:

*RPA cluster>* – a CLI session prompt (CLI mode)

## CLI mode input

The following input options are available in CLI mode.

## Autocomplete

The CLI provides an autocomplete feature—activated with the **Tab** key—that effectively speeds up interaction with the vRPA.

Press **Tab** after typing the first letters of a command or parameter. If there are a number of possible commands or parameters, autocomplete displays all possible completions to what has previously been typed.

Additionally, when typing commands with only one parameter, after typing the command, press the **Tab** key to bring up the possible parameter values.

In the following example, the user entries are in bold type:

1. *RPA cluster>*
2. *RPA cluster> remove\_g* and press **Tab**.

```
remove_group    remove_group_set  
RPA cluster> remove_group
```

3. *RPA cluster> remove\_group* and press **ENTER**.

```
Enter consistency group name  
z
```

4. Press **Tab**.

```
cg_1 cg_2 groupx  
z
```

5. **c** and press **Tab**.

```
cg_1 cg_2  
cg_
```

6. **cg\_1** and press **ENTER**.

The auto-completion feature can also be used with single-parameter commands, as shown in the following example:

1. *RPA cluster> get\_group\_se* and press **Tab**.

```
get_group_sets get_group_settings  
RPA cluster> get_group_settings
```

2. *RPA cluster>get\_group\_settings* and press **Tab**.

```
cg_1 cg_2 groupx  
RPA cluster> get_group_settings
```

3. *RPA cluster> get\_group\_settings g* and press **Tab**.

```
RPA cluster> get_group_settings groupx
```

4. *RPA cluster> get\_group\_settings groupx* and press **ENTER**.

## Case sensitivity

The CLI is case-sensitive:

- CLI command and parameter names must be typed exactly as they appear in the CLI command and parameter list of help mode.
- User specified command and parameter names must be typed accurately with regard to uppercase and lowercase letters.
- Parameter values are not case sensitive, unless the user defines the value. For example, the system makes no distinction between a parameter value of "lag," "LAG," "Lag," or "IAG."

## Keyboard keys

The following keyboard keys perform special functions in CLI mode.

**Table 3. Function of keyboard keys in CLI mode**

Keyboard key	Function
<b>Enter</b>	<ul style="list-style-type: none"><li>• Submits commands</li><li>• Scrolls down one line</li></ul>
<b>Spacebar</b>	Scrolls down one page
Up and Down arrows	<ul style="list-style-type: none"><li>• When used at the prompt, scroll through previously entered commands.</li><li>• Within a command, scroll through previously entered parameter values.</li></ul>
<b>Tab</b>	Activates the Autocomplete feature. <ul style="list-style-type: none"><li>• When entering a command.</li><li>• When entering a parameter value for which there is a limited set of possible values, and where the options are not presented in a sequentially numbered list.</li></ul>
<b>CTRL-C</b>	Aborts the current command.
<b>CTRL-A</b>	Moves to the first character in the line.

**Table 3. Function of keyboard keys in CLI mode (continued)**

Keyboard key	Function
CTRL-E	Moves to the end of the line.
CTRL-U	Deletes the current line.
CTRL-D	Deletes the character following the cursor's current position.
CTRL-K	Deletes text from the cursor's position to the end of the line.
CTRL-W	Deletes text from the cursor's position to the beginning of the line.

## Special characters

The following characters perform special functions for commands that are issued at the CLI prompt.

**Table 4. Function of special characters in CLI mode**

Character	Function
" or '	Use quotation marks (single or double) to separate multi-word parameter values.
,	Use a comma to separate multiple values of a parameter.
;	Use a semicolon to separate commands when there are multiple commands in a single command line.
?	When a command followed by a question mark (?) is typed, and <b>Enter</b> is pressed, the system returns a description of the command and the syntax that is required for its usage. The same information is returned when <b>help</b> is typed before a command (for example, <code>help create_replica_copy</code> ).

## Parameter values containing spaces

If a value is entered for a parameter that includes spaces—such as a bookmark name, or a timeout value and unit—the entire expression must be surrounded with quotation marks. Alternatively, you can eliminate the space.

For example:

A bookmark name for `bookmark_image` could be either:

```
bookmark=121216production
```

or

```
timeout="121216 production"
```

It is good practice to use quotation marks for all values, even with those values that do not contain a space. As such, quotation marks are not valid characters in parameter values.

## Units of measurement

The CLI is flexible in its recognition of units of measurement that are entered along with parameter values.

There is no case-sensitivity for measurement units—the units can be entered in uppercase, lowercase, or any mix of the two.

If there is a space between the value and its unit, you must surround the value and unit with quotation marks.

**i | NOTE:** In all cases, 1 KB is equal to 1024 bytes.

The following table shows the acceptable forms for entering various units of measurement in the CLI.

**Table 5. Accepted forms for units of measurement**

<b>Unit</b>	<b>Accepted forms</b>
Gigabyte	gb, gbyte, gbytes, gigabyte, gigabytes
Megabyte	mb, mbyte, mbytes, megabyte, megabytes
Kilobyte	kb, kbyte, kbytes, kilobyte, kilobytes
Byte	b, byte, bytes
Week	wk, wks, week, weeks
Day	d, day, days
Hour	h, hr, hrs, hour, hours
Minute	min, mins, minute, minutes
Second	s, sec, secs, second, seconds

## CLI modes

The following are the main modes of work in CLI mode:

- Help mode — used to display the full list of CLI commands in the system, and the system help information for each CLI command.
- Interactive mode — used to guide the user when running single commands, allowing the user to view each command parameter and its possible values, while running the command.
- Expert mode — used to input multiple parameters and values for a single command.

### Help mode

Help mode is a CLI mode that is accessed from the CLI session prompt `RPA cluster>`.

In help mode, users can display the full list of CLI commands in the system, and the system help information for each CLI command.

In help mode:

- Display a listing of all CLI commands by pressing:  
`<Tab>`
- Display a list of all of the CLI commands, together with a brief description of each command by typing:  
`help <Enter>`
- Display the required syntax and usage for a particular command by typing:  
`help <command> <Enter>`  
or  
`<command> ? <Enter>`

### Help mode output

The CLI help output uses the following conventions:

**Table 6. Help output conventions**

<b>Output</b>	<b>Example</b>	<b>Indicate</b>
parameter= <code>&lt;value&gt;</code>	<code>copy=&lt;copy name&gt;</code>	Mandatory parameter and value. Parameters that are NOT enclosed in square brackets are mandatory. If a value is not specified for a mandatory parameter, the system issues an error message.
[...]	<code>[product=&lt;...&gt;]</code>	Optional parameter and value.

**Table 6. Help output conventions (continued)**

<b>Output</b>	<b>Example</b>	<b>Indicate</b>
<> <num> <...>	copy=<copy name> port=<integer>  rpa=RPA<n>  splitter=<...> bookmark=<...>	Parameter values. The contents of the angle brackets indicate the type to which the parameter value should conform. For example: <ul style="list-style-type: none"><li>• &lt;copy name&gt; must be the name of an existing copy</li><li>• &lt;integer&gt; must be an integral value</li><li>• &lt;...&gt; indicates that any string or free text is accepted</li></ul>
	type=replication   journal priority=high   normal   low	Parameter value separator - alternate options.

## Interactive mode

Interactive mode is a CLI mode that is accessed from the CLI session prompt RPA cluster>.

Interactive mode is used to guide the user when running single commands.

In interactive mode, users are presented with each command's parameters, syntax, and possible values, as the system requests them.

In interactive mode:

- Type the command, and press **<Enter>**. The system prompts you for the first parameter value, if any.
- For mandatory parameters: If you press **<Enter>** without entering a value, the system displays an error message, and prompt you again to type a value. If you fail to type a value a second time, the system exits the command.
- For optional parameters: If you press **<Enter>** without entering a value, the system accepts the default value for the parameter.
- CLI flags can be included in the command line.

To display the system help information for a particular command.

## Useful flags

The following flags are useful for inclusion in the command line in interactive mode.

**Table 7. Useful command line flags in Interactive mode**

<b>Flag</b>	<b>Example</b>	<b>Description</b>
Interactive flag	-n	Instructs system to use the default value for every parameter. If the command includes mandatory parameters that are not specified, an error is displayed.
XML flag	-xml	Instructs system to formulate output in XML and issue a return codes.

The following is an example of a command that is run in *interactive mode*:

```
RPA cluster> pause_transfer <Enter>
Enter consistency group name
group_1 <Enter>
Enter copy name, or press 'ENTER' for all copies of group
copy_1 <Enter>
Request to pause group data transfer registered successfully.
```

The following is an example of the same command with two mandatory parameters and a force flag that is run in expert mode:

```
RPA cluster> pause_transfer group=group_1 copy=copy_1 -f  
Request to pause group data transfer registered successfully.
```

## Expert mode

CLI expert mode is a CLI mode that is accessed from the CLI session command prompt `RPA cluster>`.

Expert mode is used to quickly input multiple parameters and their values for a single command, simultaneously. Commands with more than one parameter can be run in expert mode to speed up input efficiency, as you become more familiar with the CLI.

Expert mode is also used to quickly input CLI commands with only one mandatory parameter.

In expert mode:

- Type all mandatory and optional command parameters in a single statement following the CLI prompt.
- The command must start with the command name, followed by relevant parameters. Each parameter must have the format `<parameter name>=value`.
- For commands with only one parameter, it is not necessary to include the parameter name. You can type the parameter value after the command name.

For example:

```
config_io_throttling unlimited
```

- All mandatory parameters must be specified or the command does not run.
- There is no required order in which the parameters must appear in the command line, and it is permissible to mix between the locations of mandatory and optional parameters.
- When running a command that includes multiple-word parameter values, it is mandatory to surround the command and the multiple-word value with double and single quotes, respectively.

For example:

```
"get_rpa_states RPA cluster='New York"
```

- CLI flags can be included in the command line.
- Display the system help information for a particular command by using the Help mode.

## Relevant commands

It is common to run the following commands in expert mode, after becoming more familiar with their syntax.

## Commands with multiple mandatory parameters

CLI commands with multiple mandatory parameters are good candidates for running in expert mode.

## Commands with one mandatory parameter

It is also common to run commands with only one parameter in expert mode. This is because for commands with only one parameter, it is not necessary to include the parameter name. You can just enter the parameter value after the command name.

For example:

```
start_transfer group1
```

 **NOTE:** All CLI commands that can be run in expert mode can also be run in interactive mode. However, CLI commands with no parameters can only be run in interactive mode.

## Useful flags

The following CLI flags are useful for inclusion in the command line in expert mode:

**Table 8. Useful command line flags in expert mode**

Flag	Example	Description
Force flag	<b>-f</b>	Instructs system to suppress user confirmation prompts and any other warnings or interactive queries related to the command.
XML flag	<b>-xml</b>	Instructs system to formulate output in XML and issue a return code.

The following is an example of a command run in expert mode with two mandatory parameters and a force flag:

```
RPA cluster> pause_transfer group=group_1 copy=copy_1 -f  
Request to pause group data transfer registered successfully.
```

# List of Commands

This chapter includes the following topics:

## Topics:

- Commands

## Commands

**Table 9. List of CLI Commands**

Command name	Description
add_email_users	Assign filters to email group.
add_role	Defines a new management role in the system, and sets the permissions for that role.
add_snmp_user	Authorizes the specified user to perform SNMPv3 get requests.
add_ssh_key	Adds a public key to the profile of the current management user, allowing the user to open secure SSH sessions with the CLI, without specifying a password.
add_user	Defines a new management user in the system, and sets the permissions and password for that user.
balance_load	Assigns preferred vRPAs to the specified consistency groups, to enable a balanced distribution of writes across all vRPAs.
bookmark_image	Creates a bookmark for the snapshot at the current point-in-time, and sets its consolidation policy.
clear_events_log	Clears the events log.
clear_ldap_configuration	Removes all LDAP configurations
clear_markers	Clears markers from the journal volume, for a specified copy of a specified group.
clear_persistent_statistics	Clears the database statistics.
clear_security_settings	Removes all users, roles from the system. Clears LDAP settings and security level.
config_automatic_snapshot_consolidation	Configures automatic snapshot consolidation for the specified group, at the specified copy.
config_cluster_ids	Defines the software serial ID and location ID of a specified cluster for the system reports mechanism (SyR).
config_copy_policy	Configures the replication policy for the specified copy of the specified consistency group.
config_email	Configures the system alert mechanism settings.
config_group_policy	Configures the replication policy for the specified consistency group.
config_group_set_settings	Modifies the settings of the specified group set.

**Table 9. List of CLI Commands (continued)**

<b>Command name</b>	<b>Description</b>
config_io_throttling	Sets the maximum storage read-rate and storage-awareness, per cluster in a RecoverPoint for VMs configuration.
config_ldap	Defines the LDAP configurations.
config_link_policy	Configures the protection policy for the specified link of the specified consistency group.
config_snmp_global	Configures the SNMP event trap global mechanism.
config_snmp_trap_dest	Configures the SNMP trap destination for the specified cluster.
config_syslogs_global	Configures the global syslog settings.
config_syslogs_target_host	Configures the syslog settings.
config_system_reports	Defines the configuration of system notifications that are sent to the system report mechanism (SyR).
config_user_account	Defines the specified company name and contact email in the user account settings.
create_copy_policy_template	Creates group-copy policy template.
create_event_filter	Creates event filter for use with email/snmp/syslog.
create_group_set	Adds the specified set of groups to a group set with the specified name, and enables or disables parallel bookmarking for the specified group set.
create_link_policy_template	Creates group link policy template.
disable_advanced_support_commands	Disables advanced support commands.
disable_copy	Disables the specified copy for RecoverPoint for VMs activity.
disable_email	Disables the sending of system alerts through email, according to the specified alert rules.
disable_group	Disables the specified copy of the specified group for RecoverPoint for VMs activity.
disable_image_access	Disables access to the replica image for which access is enabled in the specified copy.
disable_snmp	Disables the SNMP agent.
disable_syslogs	Disables the syslog mechanism.
edit_event_filter	Edits the specified event filter.
enable_advanced_support_commands	Enables advanced support commands.
enable_copy	Enables the specified copy of the specified group for RecoverPoint for VMs activity.
enable_email	Enables the sending of system alerts by email.
enable_group	Enables the specified copy of the specified group for RecoverPoint for VMs activity.
enable_snmp	Enables the SNMP agent.
enable_syslogs	Enables the syslog mechanism.
exchange_ssh_keys	Exchanges SSH keys for the local vRPA cluster.
finish_maintenance_mode	Finish the current mode of upgrade.

**Table 9. List of CLI Commands (continued)**

<b>Command name</b>	<b>Description</b>
get_account_settings	Displays the account settings of the user, for use in technical support situations.
get_call_home_events	Displays all user-defined and system-defined call home events in the system.
get_cluster_traffic_statistics	Displays the traffic statistics of the specified vRPA cluster(s).
get_clusters_topology	Displays the connectivity topology between the clusters of the environment.
get_current_time	Displays the current system date and timestamp, as used by the vRPAs.
get_email_users_settings	Get all email messages to filter references.
get_event_filter_settings	Get event filters settings.
get_events_log	Displays the event logs.
get_group_sets	Displays the group sets defined in the system.
get_group_settings	Displays the current settings of the specified group.
get_group_state	Displays the current state of the specified group, its copies, and its links, in the RecoverPoint for VMs system.
get_group_statistics	Displays the current performance statistics of the specified group, its copies, and its links.
get_group_volumes	Displays the current volume configuration of the specified group.
get_groups	Displays a list of all the groups in the system, and the copies of each group.
get_groups_by_priority	Displays the groups that are categorized by priority.
get_images	Displays information about the snapshots of the specified copy.
get_internal_cluster_name	Get the internal name of the specified cluster.
get_internal_cluster_uids	Displays the unique identifier of the specified vRPA clusters.
get_ldap_configuration	Displays the LDAP configurations.
get_local_cluster	Displays the local cluster name.
get_monitored_parameters	Display monitored parameters whose value exceeds the specified minimum severity.
get_policy_template	Displays policy template.
get_raw_statistics	Displays unprocessed system statistics, for use in support situations.
get_registration_params	Displays list of registration parameters for a cluster.
get_return_code	Displays the code that is returned by the system in response to the previously run command.
get_roles	Displays the list of all management roles and their permissions, as defined in the system.
get_rpa_settings	Displays the settings for the specified vRPAs at the specified clusters.
get_rpa_states	Displays the state of communication between the vRPAs at a specified cluster, and other components of the system.

**Table 9. List of CLI Commands (continued)**

<b>Command name</b>	<b>Description</b>
get_rpa_statistics	Displays the performance statistics of the vRPAs at the specified vRPA cluster.
get_security_settings	Displays the current vRPA communication security level.
get_snmp_settings	Prints the SNMP settings.
get_splitter_states	Displays the current state of splitters in the system.
get_ssh_keys	Displays the names of the public keys that are defined for the current management users profile, allowing this user to open secure SSH sessions with the CLI, without specifying a password.
get_storage	Displays all the arrays and vCenter servers that have been registered at the specified vRPA cluster.
get_syslog_settings	Prints the syslog settingRecoverPoint for VMs.
get_system_report	Displays the current system report and sends it to the specified email address.
get_system_report_settings	Displays the current system notification settings.
get_system_settings	Displays the settings of all the clusters in the system.
get_system_state	Prints the internal system state.
get_system_status	Displays the current problems in the system, by category, for the specified vRPA cluster.
get_users	Displays the list of all management users and their permissions, as defined in the system.
get_vcenter_server_credentials	Displays basic information about registered vCenter Servers.
get_version	Displays the version of RecoverPoint for VMs running on the vRPA from which the command is run.
get_versions	Displays the versions of RecoverPoint for VMs running on each cluster of the environment.
get_volume_states	Displays the current state of vRPA access to all replication volumes in the specified group.
help	Displays the required syntax and input options for the specified CLI command, and any relevant notes on its usage.
hijack_cluster	Hijacks a specified cluster by a given internal cluster name. Removes all splitter volumes from a specified cluster. In virtual environments, this command supports an automated hijack procedure that is user-activated.
modify_role	Modifies an existing management role in the system. Can modify role name and permissions.
pause_transfer	Pauses data transfer to the specified copy of the specified group.
quit	Quits the CLI.
reduce_production_journal	Reduces production journal to a minimum.
regenerate_encryption_keys	Regenerates the keys that are used to encrypt and decrypt confidential data.
register_storage	Registers the specified arrays or vCenter servers on the specified vRPA cluster.
rescan_san	Refreshes the information in the volume discovery cache.

**Table 9. List of CLI Commands (continued)**

<b>Command name</b>	<b>Description</b>
remove_copy_policy_template	Removes the specified copy policy template.
remove_email_users	Removes specified email users.
remove_event_filter	Removes selected event filter.
remove_group_set	Removes the specified group set from the system.
remove_link_policy_template	Removes the specified link policy template.
remove_role	Removes a management role from the system.
remove_snmp_user	Removes an SNMPv3 user.
remove_ssh_key	Removes a public key from the authorized keys of the user.
remove_user	Removes a management user from the system.
rename_copy	Renames the specified copy of the specified group.
rename_group	Renames the specified group to the specified name.
rename_replication_set	Renames the specified replication set of the specified group.
rescan_san	Refreshes the info in the volume discovery cache.
resume_group	Resume group after moving to another vRPA.
set_advanced_action_regulation	Overrides the copy regulation setting that is defined for the system.
set_env_param	Sets a CLI environment parameter.
set_image_access_mode	Changes the access mode of the currently accessed image at the specified copy.
set_markers	Creates markers in the journal volume, for the specified replication set in the specified copy and group.
set_password	Resets the password of the currently logged-in user.
set_registration_params	Configures registration parameters.
set_security_level	Defines the security level for the currently logged-in management user.
set_single_snapshot_consolidation_policy	Sets the consolidation policy for the specified snapshot.
set_smtp_server	Defines the server through which system email notifications, such as system alerts and system reports, are sent.
set_snmp_community	Defines the SNMPv1 community string.
set_time_display	Sets whether to display times in local time or GMT.
set_user	Resets the password and permissions of an existing management user.
sleep	Sets the number of seconds for the CLI session to sleep.
start_maintenance_mode	Switch to upgrade mode.
start_transfer	Starts data transfer to the specified copy of an enabled group.
stop_snapshot_consolidation	Stops any snapshot consolidation processes, whether manual or automatic, that are in progress at the time this command is run.
suspend_group	Suspend group replication before moving to new cluster.
test_email	Sends a test mail item to the specified email address.

**Table 9. List of CLI Commands (continued)**

<b>Command name</b>	<b>Description</b>
<code>test_ldap_connection</code>	Tests the LDAP configurations.
<code>test_snmp</code>	Tests whether SNMP traps can be sent.
<code>test_syr_connectivity</code>	Tests the connectivity of the system report mechanism (SyR) and opens a Service Request with Customer Support Services.
<code>test_syslogs</code>	Tests the syslog mechanism.
<code>undo_writes</code>	Undoes all production writes saved in the image access log of the specified copy journal since image access was enabled, without disabling image access.
<code>unlock_user</code>	Unlocks system users that have been locked out of the system after three failed tries to log in.
<code>unregister_storage</code>	Registers the specified external platform from the specified vRPA cluster.
<code>unregulate_all_copies</code>	Releases all copies from regulation.
<code>update_copy_policy_template</code>	Updates the specified copy policy template.
<code>update_link_policy_template</code>	Updates the specified link policy template.
<code>update_storage_registration</code>	Updates the registration information for the specified storage at the specified cluster.
<code>update_vcenter_server_registration</code>	Update the registration details for the specified vCenter Server at the specified vRPA cluster.

# Splitters

This chapter includes the following topics:

## Topics:

- [get\\_splitter\\_states](#)
- [rescan\\_san](#)

## get\_splitter\_states

Displays the current state of splitters in the system.

### Permission

Read Only.

### Parameters

```
[cluster=<cluster name>]
[splitter=<splitter name>]
```

### Descriptions

**cluster (optional)** Name of the vRPA cluster at which the splitter is located.  
Default is all vRPA clusters.

**splitter (optional)**

- Name of a specific splitter for which to obtain state information.
- Default is all splitters.

### Notes

If no cluster is specified, the states of all splitters at all clusters are displayed. If no splitter is specified, the states of all splitters at the specified cluster are displayed.

Multiple vRPA clusters can share a midrange storage splitter. The Number of attached RPA clusters field indicates how many vRPA clusters are sharing a splitter.

If a volume is masked to more than one vRPA cluster sharing midrange storage splitter, it can be attached to more than one vRPA cluster. However, only the first vRPA cluster to which the volume is attached can use the volume. It is in an error state for all other vRPA clusters, indicated by the Attached to other RPA cluster(s) state in the Volume Access field. Use the detach\_splitter command to detach the faulted volume from the vRPA cluster.

**(i) NOTE:** A volume should be masked to a single vRPA cluster to avoid this problem. A volume that is masked for one vRPA cluster should not be masked for another vRPA cluster.

# rescan\_san

Refreshes the information in the volume discovery cache.

## Permission

Read Only.

## Parameters

```
[cluster=<cluster names>]  
[volumes=full | basic | none] (Default: basic)
```

## Descriptions

**cluster (optional)** Name of the vRPA cluster to be rescanned. The default value is all vRPA clusters.

**volumes (optional)**

- Whether to scan the environment at the specified vRPA clusters for virtual disks.
- Possible values are full, basic, and none.
- Default is basic.

## Notes

If no cluster is specified, all clusters are rescanned.

The volumes and splitters parameters specify whether to rescan the volumes and splitters in the SAN respectively.

The basic volumes rescan detects new volumes, but not changes to existing volumes.

The full volumes rescan includes changes to existing volumes, and so can take several minutes.

If any error is encountered, the command exits with return code 2 (Operation failed).

# VRPAs

This chapter includes the following topics:

## Topics:

- [config\\_cluster\\_ids](#)
- [get\\_clusters\\_topology](#)
- [get\\_cluster\\_traffic\\_statistics](#)
- [hijack\\_cluster](#)
- [get\\_internal\\_cluster\\_name](#)
- [get\\_internal\\_cluster\\_uids](#)
- [get\\_local\\_cluster](#)
- [get\\_rpa\\_settings](#)
- [get\\_rpa\\_states](#)
- [get\\_rpa\\_statistics](#)
- [sleep](#)

## config\_cluster\_ids

Defines the software serial ID and location ID of a specified cluster for the system reports mechanism (SyR).

### Permission

System Configuration

### Parameters

```
cluster=<cluster name>
[software_serial_id=<...>]
[location_id=<...>]
```

### Descriptions

<b>cluster</b>	Name of the vRPA cluster in the system whose software serial ID or location ID you want to set.
<b>software_serial_id (optional)</b>	<ul style="list-style-type: none"> <li>• The Software Serial ID (SSID) is the unique identifier of an vRPA cluster in the system. The SSID is the identification that the install base uses to support equipment that is installed at customer sites, through the system reporting and Secure Remote Services mechanisms. The SSID is in the format &lt;SN&gt;EID&lt;RPA cluster ID&gt;.</li> <li>• The format and function of the SSID has changed from previous versions.</li> <li>• The SSID: <ul style="list-style-type: none"> <li>◦ Is generated for each vRPA cluster when the first license that is related to the vRPA cluster is added to the system. When additional licenses are added to the system, the SSID of the vRPA cluster does not change. If no license was added for an vRPA cluster, the SSID of that vRPA cluster is empty.</li> <li>◦ Can be displayed by running the <code>get_system_settings</code> CLI command, and only Customer Support can modify it.</li> </ul> </li> </ul>

- Does not change with upgrades. When you upgrade from previous RecoverPoint for Virtual Machines versions, the SSID value is taken from the value of the SSIDs in the previous version.
- Does not change even if the SN from which it was generated no longer exists in any of the installed licenses.

**location\_id  
(optional)**

Name of the geographical location at which the RecoverPoint for Virtual Machines system is installed. Usually, this ID is the address of the company, as designated in the sales order. The `location_id` is the Site ID used in various global processes. The location ID:

- Is obtained from the value of the `Site_Info` parameter in the license file. The first installed license for an vRPA cluster sets its value. If no license was installed for an vRPA cluster, the Location ID of that vRPA cluster is empty.
- Can be displayed by running the `get_system_settings` CLI command, and only Customer Support can modify it.
- Does not change even if the `Site_Info` from which it was generated no longer exists in any of the installed licenses.

## Notes

Do not modify this setting. This setting is for use only by Customer Support.

## get\_clusters\_topology

Displays the connectivity topology between the environment's clusters.

## Permission

Read Only

## Parameters

None

## Notes

None

## Example

To display the connectivity topology between vRPA clusters:

```
RPA cluster> get_clusters_topology
Clusters topology:
  New York -- London: IP
```

# get\_cluster\_traffic\_statistics

Displays the traffic statistics of the specified vRPA cluster(s).

## Permission

Read Only

## Parameters

```
[cluster=<cluster names>]
```

## Descriptions

- cluster (optional)**
- Name of an existing vRPA cluster.
  - Default is all vRPA clusters.

## Notes

Displays the traffic statistics for the specified cluster(s), including:

- Application throughput in the SAN
- Application throughput in the WAN
- Application incoming writes
- Compression ratio

In the output, the WAN field shows all outgoing connections (either WAN or Fibre Channel).

## Example

```
RPA cluster> get_cluster_traffic_statistics
Enter cluster name, or press 'ENTER' for all clusters:
Clusters traffic statistics:
  London:
    Application throughput:
      SAN: 0 bps
      WAN: None
    Application incoming writes: 0
    Compression ratio: None
  New York:
    Application throughput:
      SAN: 143 Mbps
      WAN:
        London: 20 Mbps
        New York: 0 bps
    Application incoming writes: 4068
    Compression ratio:
      London: 7.01826
      New York: 0
```

# **hijack\_cluster**

Hijacks a specified cluster by a given internal cluster name. Removes all splitter volumes from a specified cluster. In virtual environments, this command supports an automated hijack procedure that is user-activated.

## Permission

Admin

## Parameters

```
cluster=<cluster name>
internal_cluster_name=<...>
```

## Descriptions

### **cluster**

Name of the vRPA cluster in the system.

### **internal\_cluster\_name**

Internal name of the vRPA cluster.

## Notes

This command is used when the internal cluster name was changed and the attached splitters still have attached volumes to the old cluster, thus preventing the new cluster from attaching volumes.

In virtual environments, this command supports an automated hijack procedure that is user-activated. In this use case, the hijack includes:

- Removing license VM count
- Removing the cluster single sign-on token from the VC fields
- Cleaning the VMs
- Deleting the JIRAF hierarchy tree for the specified cluster from every accessible datastore

This automated procedure is useful for cases in which a user incorrectly deletes a cluster.

# **get\_internal\_cluster\_name**

Get the internal name of the specified cluster.

## Permission

Upgrade

## Parameters

```
[cluster=<cluster names>]
```

## Descriptions

- cluster (optional)**
- Name of an existing vRPA cluster.
  - Default is all vRPA clusters.

## Notes

None

## get\_internal\_cluster\_uids

Displays the unique identifiers of the specified vRPA cluster.

## Permission

Read Only.

## Parameters

```
[cluster=<cluster names>]
```

## Descriptions

- cluster (optional)**
- Name of an existing vRPA cluster.
  - Default is all vRPA clusters.

## Notes

Multiple vRPA cluster names can be entered. Separate multiple cluster names with a comma.

## get\_local\_cluster

Displays the local cluster name

## Permission

Failover

## Parameters

```
None
```

## Notes

None

## Example

```
RPA cluster> get_local_cluster  
Local Cluster Name: New York
```

## get\_rpa\_settings

Displays the settings for the specified vRPA at the specified cluster.

### Permission

Read Only.

### Parameters

```
[cluster=<cluster name>]  
[rpa=RPA<n>]
```

### Descriptions

- |                           |  |
|---------------------------|--|
| <b>cluster (optional)</b> | <ul style="list-style-type: none"><li>• Name of an existing vRPA cluster.</li><li>• Default is all vRPA clusters.</li></ul>                |
| <b>rpa (optional)</b>     | <ul style="list-style-type: none"><li>• Number of an existing vRPA at the specified vRPA cluster.</li><li>• Default is all vRPA.</li></ul> |

### Notes

If a cluster is specified and no vRPA are specified, all vRPA at the cluster are presented.

If no cluster is specified, vRPA cannot be specified. In such case, all vRPA at all clusters are presented.

## get\_rpa\_states

Displays the state of communication between the vRPAs at a specified cluster, and other components of the system.

### Permission

Read Only.

### Parameters

```
[cluster=<cluster name>]
```

### Descriptions

- |                           |   |
|---------------------------|---|
| <b>cluster (optional)</b> | <ul style="list-style-type: none"><li>• Name of an existing vRPA cluster.</li></ul> |
|---------------------------|---|

- Default is all vRPAs.

## Notes

Displays the state of communication between the vRPAs at the specified cluster, and:

- The repository volume
- Other vRPAs
- The replication and journal volumes

If no cluster is specified, the state of the vRPAs at all clusters is displayed.

## get\_rpa\_statistics

Displays the performance statistics of the vRPAs at the specified vRPA cluster.

## Permission

Read Only

## Parameters

```
[cluster=<cluster names>]
[rpa=RPA<n>]
```

## Descriptions

- |                           |  |
|---------------------------|--|
| <b>cluster (optional)</b> | <ul style="list-style-type: none"> <li>• Name of an existing vRPA cluster.</li> <li>• Default is all vRPAs.</li> </ul>                         |
| <b>rpa (optional)</b>     | <ul style="list-style-type: none"> <li>• Number of an existing vRPA in the specified vRPA cluster.</li> <li>• Default is all vRPAs.</li> </ul> |

## Notes

If an vRPA cluster is specified but no vRPAs are specified, the statistics of all vRPAs at the cluster are displayed. If no vRPA cluster is specified, vRPAs cannot be specified. In such a case, the statistics of all vRPAs at all clusters are displayed.

For each vRPA, the following information is displayed:

- SAN traffic that the cluster or vRPA handles.
- WAN/FC traffic that the cluster or vRPA generates.
- Compression ratio between the input and output for the cluster or vRPA
- vRPA CPU usage
- WAN latency to the peer vRPA
- Packet loss that is experienced over the WAN to the peer vRPA

**i | NOTE:** The WAN field in the output shows all outgoing connections (either WAN or Fibre Channel).

## Example

```
RPA cluster> get_rpa_statistics
Enter cluster name, or press 'ENTER' for all clusters:
```

```

All RPAs:
London:
Cluster's RPAs:
RPA 1:
Traffic:
Application throughput:
SAN: 0 bps
WAN: None
Application incoming writes: 0
Compression ratio: None
Compression CPU usage: 20.00%
Computed connection:
New York:
Latency (ms): 0
Packet loss: 9.28%
RPA 2:
Traffic:
Application throughput:
SAN: 0 bps
WAN: None
Application incoming writes: 0
Compression ratio: None
Compression CPU usage: 19.10%
Computed connection:
New York:
Latency (ms): 0
Packet loss: 9.28%
RPA 3:
Traffic:
Application throughput:
SAN: 0 bps
WAN: None
Application incoming writes: 0
Compression ratio: None
Compression CPU usage: 20.26%
Computed connection:
New York:
Latency (ms): 0

```

Packet loss: 9.90%

## sleep

Sets the number of seconds for the CLI session to sleep.

### Permission

Read Only

### Parameters

```
seconds<=integer> (Default: 3)
```

### Descriptions

**seconds** Enter the number of seconds during which the CLI session will be in sleep mode.

### Notes

This command can be run only non-interactively.

# Storage

This chapter includes the following topics:

## Topics:

- [get\\_storage](#)
- [register\\_storage](#)
- [unregister\\_storage](#)
- [update\\_storage\\_registration](#)

## get\_storage

Displays all of the arrays and vCenter servers that have been registered at the specified vRPA cluster.

### Permission

Storage Management

### Parameters

```
cluster=<cluster name>
```

### Descriptions

**cluster** The name of an existing vRPA cluster.

### Notes

None

## register\_storage

Registers the specified arrays or vCenter servers on the specified vRPA cluster.

### Permission

Storage Management

### Parameters

```
cluster=<cluster name>
name=<...>
type=<storage type>
```

```
[storage_unit=<...>]
[serial_number=<...>]
[primary_ip=<...>]
[secondary_ip=<...>]
[use_fc=yes | no] (Default: no)
[database_protocol=https | http] (Default: https)
[database_name=<...>] (Default: Statistics)
[port=<...>]
[authentication_scope=Local | Global | LDAP]
[username=<...>]
[password=<...>]
[access_key_id=<...>]
[secret_access_key=<...>]
[array_mgmt_provider=<array provider name>]
```

## Descriptions

<b>cluster</b>	The name of the vRPA cluster where the array or vCenter Server is located.
<b>name</b>	The name that you want to give the array or vCenter Server in RecoverPoint for Virtual Machines (do not exceed 42 characters).
<b>type</b>	<ul style="list-style-type: none"> <li>The type of the storage. vCenter Server is the only valid storage type.</li> </ul>
<b>storage unit (optional)</b>	Not applicable
<b>serial number (optional)</b>	Serial number of the vCenter Server.
<b>ip list (not supported)</b>	<ul style="list-style-type: none"> <li><b>i</b> <b>NOTE:</b> RecoverPoint for Virtual Machines no longer supports ScaleIO environments.</li> <li>For ScaleIO environments only. This list is a comma-separated list of one to eight IP addresses of ScaleIO storage.</li> </ul>
<b>primary_IP</b>	Not applicable.
<b>secondary_IP (optional)</b>	Midrange storage only. In midrange storage environments, this address is the IP address of SP A. This parameter is not relevant for all other arrays and vCenter Servers.
<b>use_fc=yes   no (optional)</b>	Specify whether to use Fibre Channel for Data Domain arrays. Default is yes.
<b>database_protocol</b>	Specify the protocol.
<b>database_name</b>	Specify a name for the database or use the default name.
<b>port (optional)</b>	When you register a vCenter Server, this number is the TCP port number of the vCenter Server.
<b>authentication_scope (optional)</b>	Midrange storage only. Possible values are Global, Local, and LDAP.
<b>username</b>	Login name of the user to the array or vCenter Server. In midrange storage environments, this name is the Unisphere/Navisphere username. In VPLEX, this name is the platform username.
<b>password</b>	Password of the user to the array or vCenter Server. In midrange storage environments, this password is the Unisphere password. In VPLEX, this password is the platform password.
<b>array_mgmt_provider (optional)</b>	Name of the storage array provider.

## Notes

The parameters `secondary_ip` and `authentication_scope` are only relevant for midrange storage.

The `port` parameter is only relevant for vCenter Servers.

# unregister\_storage

Unregisters the specified external platform from the specified vRPA cluster.

## Permission

Storage Management

## Parameters

```
cluster=<cluster name>
name=<registered storage name>
```

## Descriptions

- cluster** Name of an existing vRPA cluster in the RecoverPoint for Virtual Machines system.
- name** The name of an array or vCenter Server that has been registered for RecoverPoint for Virtual Machines management.

## Notes

None

# update\_storage\_registration

Updates the registration information for the specified storage at the specified cluster.

## Permission

Storage Management

## Parameters

```
cluster=<cluster name>
name=<registered storage name>
[new_name=<...>]
[storage_unit=<...>]
[serial_number=<...>]
[primary_ip=<...>]
[secondary_ip=<...>]
[use_fc=yes | no] (Default: yes)
[port=<...>]
[authentication_scope=Local | Global | LDAP]
[username=<...>]
[password=<...>]
[access_key_id=<...>]
[secret_access_key=<...>]
[validate_credentials=yes | no] (Default: yes)
```

## Descriptions

<b>cluster</b>	The name of the RecoverPoint for Virtual Machines cluster where the array or vCenter Server is located.
<b>name</b>	The current name of the array or vCenter Server in RecoverPoint for Virtual Machines.
<b>new_name (optional)</b>	The new name that you want to give the array or vCenter Server in RecoverPoint for Virtual Machines.
<b>storage unit (optional)</b>	Name of the Data Domain storage unit.
<b>serial number (optional)</b>	Serial number of the XtremIO array.
<b>ip list (not supported)</b>	<ul style="list-style-type: none"><li>• <b>i   NOTE:</b> RecoverPoint for Virtual Machines no longer supports ScaleIO environments.</li><li>• For ScaleIO environments only. This list is a comma-separated list of one to eight IP addresses of ScaleIO storage.</li></ul>
<b>primary_IP (optional)</b>	In midrange storage environments, this address is the IP address of SP A. For all other arrays, this address is the IP address of the array. For vCenter Servers, this address is the IP address of the vCenter Server.
<b>secondary_IP (optional)</b>	Midrange storage only. In midrange storage environments, this address is the IP address of SP A. This parameter is not relevant for all other arrays and vCenter Servers.
<b>use_fc=yes   no (optional)</b>	Specify whether to use Fibre Channel for Data Domain arrays. Default is yes.
<b>port (optional)</b>	When you register a vCenter Server, this number is the TCP port number of the vCenter Server.
<b>authentication_scope (optional)</b>	Midrange storage only. Possible values are Global, Local, and LDAP.
<b>username (optional)</b>	Login name of the user to the array or vCenter Server. In midrange storage environments, this name is the Unisphere username. In VPLEX, this name is the platform username.
<b>password (optional)</b>	Password of the user to the array or vCenter Server. In midrange storage environments, this password is the Unisphere password. In VPLEX, this password is the platform password.
<b>access_key_id</b>	Used to support Amazon Web Services (AWS) registration.
<b>secret_access_key</b>	Used to support Amazon Web Services (AWS) registration.
<b>validate_credentials (optional)</b>	Whether to validate credentials. Default is yes.

## Notes

The following parameters are relevant only for midrange storage:

- Type the IP of SP B as the `secondary_ip`
- Define an `authentication_scope`

The `serial_number` parameter is relevant only for XtremIO storage.

# Volumes

This chapter includes the following topics:

## Topics:

- [get\\_group\\_volumes](#)
- [get\\_volume\\_info](#)
- [get\\_volume\\_states](#)
- [rename\\_replication\\_set](#)

## get\_group\_volumes

Displays the current volume configuration of the specified group.

### Permission

Read Only.

### Parameters

```
[group=<group name>]
```

### Descriptions

- group (optional)**
- Name of an existing consistency group.
  - Default is all existing consistency groups.

### Notes

If no group is specified, the volume configurations of all groups are displayed.

## get\_volume\_info

Displays the SAN information for the specified volume at the specified cluster.

### Permission

Read Only.

## Parameters

```
cluster=<cluster name>
[uid=<...>]
[uid_hash=<...>]
```

## Descriptions

<b>cluster</b>	<ul style="list-style-type: none"><li>• Name of an existing vRPA cluster.</li><li>• Default is all vRPA clusters.</li></ul>
<b>uid (optional)</b>	Unique identifier for the storage volume. RecoverPoint for Virtual Machines assigns the UID, and the UID is independent of SAN configuration attributes, such as WWN and LUN.
<b>uid_hash (optional)</b>	A hashed, 64 bit, 16 character, hexadecimal code version of the UID of the volume (see <code>uid</code> parameter).

## Notes

None

## get\_volume\_states

Displays the current state of vRPA access to all replication volumes in the specified group.

## Permission

Read Only.

## Parameters

```
[group=<group name>]
```

## Descriptions

<b>group (optional)</b>	<ul style="list-style-type: none"><li>• Name of an existing consistency group.</li><li>• Default is all.</li></ul>
-------------------------	--

## Notes

If no group is specified, the volume states of all volumes of all groups are displayed.

## Example

```
RPA cluster> get_volume_states
Enter the group name, or press 'ENTER' for all groups:
Group:
  cg1:
Copy:
  copy1:
```

```

Volume:
  Vplex lun # 0012:
    RPA access: OK
  Vplex lun # 0017:
    Replication set: RSet0
    RPA access: OK
copy2:
  Volume:
    Vplex lun # 0010:
      Replication set: RSet0
      RPA access: OK
    Vplex lun # 0018:
      RPA access: OK
prod:
  Volume:
    Vplex lun # 0001:
      Replication set: RSet0
      RPA access: OK
    Vplex lun # 0025:
      RPA access: OK
cg2:
  Copy:
    copy1:
      Volume:
        Vplex lun # 0010:
          Replication set: RSet0
          RPA access: OK
        Vplex lun # 0028:
          RPA access: OK
  prod:
    Volume:
      Vplex lun # 0008:
        Replication set: RSet0
        RPA access: OK
      Vplex lun # 0011:
        RPA access: OK

```

## rename\_replication\_set

Renames the specified replication set of the specified group.

### Permission

Group Configuration

### Parameters

```

group=<group name>
current_name=<replication set name>
new_name=<...>

```

### Descriptions

<b>group</b>	Name of an existing consistency group.
<b>current_name</b>	Current name of the replication set.
<b>new_name</b>	New name you want to give the replication set.

## Notes

None

# Consistency Groups

This chapter includes the following topics:

## Topics:

- [balance\\_load](#)
- [bookmark\\_image](#)
- [config\\_copy\\_policy](#)
- [config\\_group\\_policy](#)
- [config\\_group\\_set\\_settings](#)
- [config\\_link\\_policy](#)
- [clear\\_markers](#)
- [create\\_copy\\_policy\\_template](#)
- [create\\_group\\_set](#)
- [create\\_link\\_policy\\_template](#)
- [disable\\_copy](#)
- [disable\\_group](#)
- [disable\\_image\\_access](#)
- [enable\\_copy](#)
- [enable\\_group](#)
- [get\\_group\\_settings](#)
- [get\\_group\\_state](#)
- [get\\_group\\_statistics](#)
- [get\\_groups\\_by\\_priority](#)
- [get\\_images](#)
- [get\\_policy\\_template](#)
- [pause\\_transfer](#)
- [reduce\\_production\\_journal](#)
- [remove\\_copy\\_policy\\_template](#)
- [remove\\_group\\_set](#)
- [remove\\_link\\_policy\\_template](#)
- [rename\\_copy](#)
- [rename\\_group](#)
- [set\\_image\\_access\\_mode](#)
- [set\\_markers](#)
- [set\\_single\\_snapshot\\_consolidation\\_policy](#)
- [start\\_transfer](#)
- [undo\\_writes](#)
- [update\\_copy\\_policy\\_template](#)
- [update\\_link\\_policy\\_template](#)

## balance\_load

Assigns preferred vRPAs to the specified consistency groups, to enable a balanced distribution of writes across all RPAs.

### Permission

Group Configuration

## Parameters

```
[exclude_groups=<group names>]  
[apply_recommendation=yes | no] (Default: no)
```

## Descriptions

**exclude\_groups (optional)** The consistency groups to exclude from the recommendation.

**apply\_recommendation (optional)** • Whether (yes) or not (no) to apply the load-balancing suggestion.  
• Default is no.

## Notes

This process can take several minutes.

When `exclude_groups` is specified, although groups are excluded from the recommendation, they are included in the analysis.

Enter multiple group names in the form of a comma-separated list (For example: GroupA, GroupB, GroupC).

When `apply_recommendation` is set to yes, every group whose preferred vRPA is modified as a result of the process is initialized.

## bookmark\_image

Creates a bookmark for the snapshot at the current point-in-time, and sets its consolidation policy.

## Permission

Group Configuration

## Parameters

```
[protection_entity=group | group_set] (Default: group)  
groups=<group names>  
[group_set=<group set name>]  
bookmark=<...>  
[consolidation_policy=never | survive_daily | survive_weekly | survive_monthly | always]  
(Default: always)  
[retention_time=<num>months | <num>weeks | <num>days | <num>hrs | forever | none]  
(Default: forever)  
[kvm=<...>]  
[consistency_type=application_consistent | crash_consistent] (Default: crash_consistent)
```

## Descriptions

**protection\_entity** • The RecoverPoint for Virtual Machines-protected entity that you want to bookmark. Valid values are *group* or *group\_set*.  
• Default is *group*.

**groups** The name of one or more existing group in RecoverPoint for Virtual Machines.

**group\_set (optional)** The name of an existing group set in RecoverPoint for Virtual Machines.

<b>bookmark</b>	Bookmark name string.
	<b>① NOTE:</b> The word 'latest' cannot be used as a bookmark name.
<b>consolidation_policy</b> <b>(optional)</b>	<ul style="list-style-type: none"> <li>Consolidation policy to apply. Valid values are:           <ul style="list-style-type: none"> <li>never — Snapshot is never consolidated.</li> <li>survive_daily — Snapshot remains after daily consolidations, but is consolidated in weekly, monthly, and manual consolidations.</li> <li>survive_weekly — Snapshot remains after daily and weekly consolidations, but is consolidated in monthly and manual consolidations.</li> <li>survive_monthly — Snapshot remains after daily, weekly, and monthly consolidations, but is consolidated in manual consolidations.</li> <li>always — Snapshot is consolidated in every consolidation process, whether manual or automatic.</li> </ul> </li> <li>The default policy is always. If the <code>consolidation_policy</code> parameter is not specified, the snapshot is consolidated in both automatic and manual consolidation processes.</li> </ul>
<b>retention_time</b> <b>(optional)</b>	<ul style="list-style-type: none"> <li>Only for Data Domain groups. Retention time to apply to this snapshot. Valid values are:           <ul style="list-style-type: none"> <li>&lt;num&gt;months — Number of months to retain the snapshot.</li> <li>&lt;num&gt;weeks — Number of weeks to retain the snapshot.</li> <li>&lt;num&gt;days — Number of days to retain the snapshot.</li> <li>&lt;num&gt;hrs — Number of hours to retain the snapshot.</li> </ul> </li> <li>Default is forever.</li> </ul>
<b>kvm (optional)</b>	Key-Value Metadata. Only for Data Domain groups. Enter key value pairs using the key:value format. Separate multiple key-value pairs with commas. For example: <code>key1:value1,key2:value2</code> .
<b>consistency_type</b> <b>(optional)</b>	<p>A tag used to identify RecoverPoint for Virtual Machines snapshots as either crash-consistent or application-consistent. Valid values are:</p> <ul style="list-style-type: none"> <li>application_consistent — Snapshot has been marked as application-consistent by the user or by KVSS. Marking a snapshot as application-consistent does not create an application-consistent snapshot.</li> <li>crash_consistent — Snapshot is known to be crash-consistent. All RecoverPoint for Virtual Machines snapshots are crash-consistent.</li> <li>Default is crash_consistent.</li> </ul>

## Notes

This command enables the same point-in-time to be identified at the other cluster.

This command is available whenever data transfer for the specified group is active.

'latest' is a reserved word and cannot be used as a bookmark name. The `consolidation_policy` parameter sets the snapshot consolidation policy.

Valid values are:

- never - The snapshot is never be consolidated. Any consolidation process that includes a snapshot with a consolidation policy of 'never' fails.
- survive\_daily - The snapshot will remain after automatic daily consolidations, but can be consolidated during automatic weekly and monthly consolidations, or manual consolidations.
- survive\_weekly - The snapshot will remain after daily or weekly automatic consolidation, but can be consolidated during automatic monthly consolidations, or manual consolidations.
- survive\_monthly - The snapshot will remain after daily, weekly, or monthly consolidation, but can be consolidated in any manual consolidation.
- always - The snapshot is consolidated in every consolidation process, whether manual or automatic.

The default snapshot consolidation policy is *always*.

This command allows you to bookmark an image for single group, multiple groups, or a group-set.

The parameters `groups` and `group_set` cannot be set together.

The parameters `retention_time` and `kvm` are relevant only for Data Domain groups; in this case `consolidation_policy` is not relevant.

# config\_copy\_policy

Configures the replication policy for the specified copy of the specified consistency group.

## Permission

Group Configuration

## Parameters

```
group=<group name>
copy=<copy name>
[protection_window=<num>months | <num>weeks | <num>days | <num>hrs | none]
[max_journal_lag=<num>bytes | <num>KB | <num>MB | <num>GB | <num>TB | unlimited]
[journal_compression=high | medium | none]
[image_access_log_size=<number>]
[allow_long_resync=yes | no]
[allow_replication_with_self_mirroring=yes | no]
[hosts_os=AIX | HPUX | Linux 2.4 | Linux 2.6 | Solaris | VMware ESX | VMware ESX Windows
| Windows | Other/Mixed] (Default: Other/Mixed)
[max_number_of_snapshots=<number>]
[enable_cleanup=yes | no]
```

## Descriptions

<b>group</b>	Name of an existing consistency group.
<b>copy (optional)</b>	Name of an existing copy.
<b>protection_window (optional)</b>	<ul style="list-style-type: none"><li>The consistency group protection window policy setting indicates the required protection window (how far in time the copy image can be rolled back). RecoverPoint for Virtual Machines uses this setting to trigger event alerts if the requirement cannot be obtained. The events table in the <i>RecoverPoint for Virtual Machines Administrator's Guide</i> lists the events that are triggered. Possible values are &lt;num&gt;months, &lt;num&gt;weeks, &lt;num&gt;days, &lt;num&gt;hrs, or none.</li><li>Default is none.</li><li>The protection window setting must be greater than 24 hours for the predicted protection window feature to function and generate events.</li></ul>
<b>max_journal_lag (optional)</b>	<ul style="list-style-type: none"><li>The maximum lag that is allowed in distributing replication data that the journal receives. When this limit is reached, the system accelerates distribution of data to copy storage. Any snapshots, however, that are distributed in this accelerated mode (or that were distributed before entering this accelerated mode) are not available for rollback.</li><li>To prevent the system from entering the accelerated distribution mode, set this parameter to unlimited. Otherwise, type one of the following values, including a number and a unit: bytes, kb, mb, or gb (with minimum granularity of 512 bytes—a SCSI block).</li><li>Initial default is unlimited.</li></ul>
<b>journal_compression (optional)</b>	<ul style="list-style-type: none"><li>The level of compression that is applied to the journal at the copy.</li><li>Possible values are high, medium, or none.</li><li>To change the value, one of the following states should exist for the group: The group is disabled, both the production and the copy vRPA clusters are active, or there is no access to the copy image (while distributing).</li><li>Initial default is none.</li></ul>
<b>image_access_log_size (optional)</b>	<ul style="list-style-type: none"><li>Percentage of the available journal capacity at the copy that is allocated for use by the target-side log.</li><li>Possible values are between 20 and 80.</li><li>To change the value, one of the following states should exist for the group: The group is disabled, both sides are active, or there is no access to the copy image (while distributing).</li><li>Initial default is 20.</li></ul>

<b>allow_long_resync (optional)</b>	<ul style="list-style-type: none"> <li>Instructs the system how to continue in the case that a snapshot is too large to be contained in the journal. Possible values are yes and no.</li> <li>When yes, the system starts writing the data of the snapshot to the copy storage while the copy journal is still receiving the additional data of the same snapshot. In this case, if a disaster were to occur at the production site before the complete image was transferred to the copy storage, it would not be possible to fail over to the copy.</li> <li>When no, the system automatically pauses transfer when the last complete image is about to be removed from the copy. This action provides the opportunity to increase the capacity of the journal, and then reenable transfer, or prepare a backup and then reenable this policy.</li> <li>Initial default is yes.</li> </ul>
<b>allow_replication_with_self_mirroring (optional)</b>	<ul style="list-style-type: none"> <li>Only relevant with Symmetrix splitter.</li> <li>If yes, and only one vRPA is available, if that vRPA fails, the system begins a full sweep. If no, and only one vRPA is available, the splitter goes into marking mode. Replication resumes when a second vRPA in the cluster is available.</li> <li>Do not change the default value unless instructed to do so by Customer Support.</li> </ul>
<b>hosts_os (optional)</b>	Defines the Operating System (OS) of the host system from which the data is saved and copied. Possible values are AIX, HP-UX, Linux 2.4, Linux 2.6, Solaris, VMware ESX, Windows, or Other/Mixed.
<b>max_number_of_snapshots</b>	<ul style="list-style-type: none"> <li>Only relevant for nonproduction copies in XtremIO.</li> <li>Specify the maximum number of XtremIO snapshots to preserve at the copy (2–500).</li> </ul>
<b>enable_cleanup</b>	Specifies whether to enable cleanup. Possible values are yes and no.

## Notes

None

## config\_group\_policy

Configures the replication policy for the specified consistency group.

## Permission

Group Configuration

## Parameters

```
group=<group name>
[priority=critical | high | normal | low | idle]
[transfer_by_non_preferred=yes | no]
[allow_read_only=yes | no]
```

## Descriptions

<b>group</b>	Name of an existing consistency group.
<b>priority (optional)</b>	<ul style="list-style-type: none"> <li>The priority that is assigned to the specified consistency group, in relation to other consistency groups, regarding allocation of available bandwidth resources for a designated vRPA. The parameter values are translated into a percentage of the resources. Only relevant for remote replication over the WAN or Fibre Channel, when two or more consistency groups are using the same Primary vRPA. Possible values are critical, high, normal, low, and idle.</li> <li>Default is normal.</li> </ul>
<b>transfer_by_non_preferred (optional)</b>	<ul style="list-style-type: none"> <li>Determines whether data transfers happen (yes) or not (no) when replication is switched to another vRPA, that is, when the preferred vRPA is not handling replication for the group.</li> </ul>

- Default is yes.
- allow\_read\_only  
(optional)**
- Allows the user to change the accessibility mode of XtremIO and VNX volumes.
  - Set `allow_read_only = yes` to set volume accessibility to Read-Only for the XtremIO and VNX volumes in the consistency group.
  - Set `allow_read_only = no` to set volume accessibility to No Access for the XtremIO and VNX volumes in the consistency group.

## Notes

The value of `priority` is in relation to other consistency groups. Groups with a priority of critical are provided ten times the priority of normal groups. Groups with a priority of high are provided three times the priority of normal groups. Groups with a priority of low are provided 50% of the priority of normal groups. Groups with a priority of idle are provided 1% of the priority of normal groups.

The priority influences the allocation of available bandwidth only in asynchronous replication.

## config\_group\_set\_settings

Modifies the settings of the specified group set.

### Permission

Group Configuration

### Parameters

```
group_set=<group set name>
[new_name=<...>]
[enable_parallel_bookmarks=yes | no]
[groups=<group names>]
[parallel_bookmark_frequency=<num>months | <num>weeks | <num>days | <num>hrs | <num>mins
| <num>secs]
```

### Descriptions

- group\_set** Name of an existing group set.
- new\_name  
(optional)** The new name that you want to apply to the group set.
- enable\_parallel\_bookmarks  
(optional)** Whether (yes) or not (no) to enable the creation of parallel bookmarks for the specified group set.
- groups  
(optional)** The groups that you want to constitute the group set. The entered set of groups will replace any previous set of groups.
- parallel\_bookmark\_frequency  
(optional)** Frequency (in hrs/mins/secs) at which a parallel bookmark is to be applied to the groups in the specified group set.

## Notes

Before running this command, verify:

- The source cluster is the same for all of the groups in the group set.
- Transfer is active for all of the groups in the group set.

The parameter `parallel_bookmark_frequency` is only relevant if `enable_parallel_bookmarks` is set to yes. Parallel bookmarks include the name of the group set, followed by an incremental ID number.

## config\_link\_policy

Configures the protection policy for the specified link of the specified consistency group.

### Permission

Group Configuration

### Parameters

```
group=<group name>
copy_1=<copy name>
copy_2=<copy name>
[mode=sync | async]
[snap_based_replication=on_highload | continuous | periodic | manual | disabled]
[periodic_snap_based_replication_interval=<number>]
[dynamic_by_latency=yes | no]
[start_async_above_latency=<integer>]
[resume_sync_below_latency=<integer>]
[dynamic_by_throughput=yes | no]
[start_async_above_throughput=<integer>]
[resume_sync_below_throughput=<integer>]
[rpo=<num>hrs | <num>mins | <num>secs | <num>bytes | <num>KB | <num>MB | <num>GB |
<num>TB | <num>writes | ]
[regulate_application=yes | no]
[minimize=lag | bandwidth]
[measure_lag_to_rpa=yes | no]
[snapshot_granularity=dynamic | fixed_per_second | fixed_per_write]
[fast_first_init=yes | no]
[compression=none | low | medium | high]
[deduplication=yes | no]
[bandwidth_limit=<number> | unlimited]
```

### Descriptions

<b>group</b>	Name of an existing consistency group.
<b>copy_1</b>	Name of the first copy that serves as the endpoint of the link.
<b>copy_2</b>	Name of the second copy that serves as the endpoint of the link.
<b>mode</b>	Mode in which to replicate consistency group data between <code>copy_1</code> and <code>copy_2</code> of the link. Possible values are sync or async. Default is async.
<b>snapshot_based_replication (optional)</b>	<ul style="list-style-type: none"><li>Mode in which to replicate array snaps between <code>copy_1</code> and <code>copy_2</code>. Possible values are disabled, on_highload, periodic, continuous, or manual.</li><li>Default is disabled.</li></ul>
<b>periodic_snap_based_replication_interval (optional)</b>	<ul style="list-style-type: none"><li>When <code>snap_based_replication</code> is set to periodic, this parameter sets the interval between snaps.</li><li>Default is 30 min.</li></ul>
<b>dynamic_by_latency (optional)</b>	<ul style="list-style-type: none"><li>Whether to alternate between synchronous and asynchronous replication modes according to latency conditions. These conditions define the number of milliseconds between the time that the production data is written to the source vRPA cluster and the time that it is written to the vRPA or journal at the target vRPA cluster. When enabled, RecoverPoint for Virtual Machines adheres to the limits specified for <code>start_async_above_latency</code> and <code>resume_sync_below_latency</code>.</li><li>Default is no.</li></ul>

<b>start_async_above_latency (optional)</b>	<ul style="list-style-type: none"> <li>Only relevant when dynamic_by_latency=yes.</li> <li>The threshold (in milliseconds) at which to allow asynchronous replication. When the specified limit is reached, the system automatically starts replicating in asynchronous replication mode until the limit defined in resume_sync_below_latency is reached.</li> </ul>
<b>resume_sync_below_latency (optional)</b>	<ul style="list-style-type: none"> <li>Only relevant when dynamic_by_latency=yes.</li> <li>The threshold (in milliseconds) at which to allow synchronous replication. When the specified limit is reached, the system automatically goes back to replicating in synchronous replication mode.</li> </ul>
<b>dynamic_by_throughput (optional)</b>	<ul style="list-style-type: none"> <li>Whether (yes) or not (no) to alternate between synchronous and asynchronous replication modes, as necessary, according to throughput conditions. When enabled, RecoverPoint for Virtual Machines adheres to the limits specified for start_async_above_throughput and resume_sync_below_throughput.</li> <li>Default is no.</li> </ul>
<b>start_async_above_throughput (optional)</b>	<ul style="list-style-type: none"> <li>Only relevant when dynamic_by_throughput=yes.</li> <li>The threshold at which to allow the asynchronous replication. When the specified limit is reached, the system automatically starts replicating in asynchronous replication mode until the limit defined in resume_sync_below_throughput is reached.</li> </ul>
<b>resume_sync_below_throughput (optional)</b>	<ul style="list-style-type: none"> <li>Only relevant when dynamic_by_throughput=yes.</li> <li>The threshold at which to allow synchronous replication. When the specified limit is reached, the system automatically goes back to replicating in synchronous replication mode.</li> </ul>
<b>rpo (optional)</b>	<p>The link recovery point objective (RPO) defines the lag of the consistency group link, expressed in terms of time, quantity of data, or number of writes. In RecoverPoint for Virtual Machines, lag starts being measured when a write that is made by the production host reaches the local vRPA, and stops being measured when the write reaches either the target vRPA or the target journal. Possible values are: hrs, mins, secs, bytes, KB, MB, GB, TB, and writes. If any other solution is needed, contact Customer Support. Default is 25 sec.</p>
<b>regulate_application (optional)</b>	<ul style="list-style-type: none"> <li>When set to yes, the system slows or stops operation of the host applications on approaching a policy boundary.</li> <li>Initial default is no.</li> </ul>
<b>minimize (optional)</b>	<ul style="list-style-type: none"> <li>Possible values are lag or bandwidth.</li> <li>When set to lag, the system uses more bandwidth as possible to keep the lag to a minimum. When set to bandwidth, the system expends additional bandwidth only as necessary to keep the lag under its maximum allowable value.</li> <li>Initial default is lag.</li> </ul>
<p> <b>NOTE:</b> This parameter is not applicable for local replication.</p>	
<b>measure_lag_to_rpa (optional)</b>	<ul style="list-style-type: none"> <li>Only relevant for remote replication over the WAN or Fibre Channel. Possible values are yes and no.</li> <li>Whether to measure lag and generate ACKs when writes reach the remote vRPA (yes) or when they reach the remote journal (no).</li> <li>When enabled, this policy provides faster performance in both synchronous and asynchronous replication modes, by reducing both latency and lag. When regulate_application is set to yes, and lag is reduced, so is the potential requirement to regulate the host applications. In synchronous replication mode, write performance is substantially higher with this policy enabled. However, when this policy is enabled, RecoverPoint for Virtual Machines does provide a slightly lower level of data security in the rare case of a simultaneous local and remote vRPA disaster.</li> <li>Initial default is yes. The best practice is to leave this setting as is.</li> <li>This parameter is not relevant for local replication.</li> </ul>
<b>snapshot_granularity (optional)</b>	<ul style="list-style-type: none"> <li>When set to dynamic, the system determines the snapshot granularity of the specified link according to available resources. When set to fixed_per_second, one snapshot is created per second for the specified link. When set to fixed_per_write, a snapshot is created for every write operation for the specified link. Possible values are dynamic, fixed_per_second, and fixed_per_write.</li> <li>Default is fixed_per_second.</li> </ul>
<b>fast_first_init (optional)</b>	<ul style="list-style-type: none"> <li>Only relevant for initializations that occur for the first time, for the specified link. Possible values are yes and no.</li> </ul>

	<ul style="list-style-type: none"> <li>When set to yes, RecoverPoint for Virtual Machines transfers data directly to the copy storage. The data is not stored in the journal first, and therefore, the initialization process is substantially shorter. In this case, the nonproduction copy is not consistent with production until the transfer of the whole image to the copy storage is complete. Therefore, if a disaster were to occur at the production cluster before the transfer of the image was complete, it would not be possible to fail over to the nonproduction copy.</li> <li>When set to no, RecoverPoint for Virtual Machines transfers data to the copy journal, and only then from the copy journal to the copy storage. Disabling this policy is useful, for example, when disabling and then enabling an existing consistency group, causing the group to be initialized. In this case, RecoverPoint for Virtual Machines may be able to use the existing data at the nonproduction cluster (journal and storage) to construct a complete image, which is required for failover purposes.</li> <li>To enable failover during initialization, it is recommended to disable both this policy and the <code>allow_long_resync</code> policy parameter in the <code>config_copy_policy</code> command. Possible values are yes and no.</li> <li>Default is yes.</li> </ul>
<b>compression (optional)</b>	<ul style="list-style-type: none"> <li>The level of compression that is applied to replication data of the specified link before the transfer of the data to a remote cluster. Can reduce transfer time considerably. Both the enabling and disabling of compression causes a short pause in transfer and a short initialization. Compression decreases transfer time, but increases the source vRPA CPU utilization. Possible values are none, low, medium, and high. When set to no, compression is disabled.</li> <li>Default is low if the license supports compression, or none if the license does not support compression.</li> <li>This parameter is only applicable for remote replication, in asynchronous replication mode.</li> </ul>
<b>deduplication (optional)</b>	<ul style="list-style-type: none"> <li>Whether repetitive data of the specified link should be eliminated before transfer of the data to a remote cluster. Can reduce transfer time considerably. Compression must be enabled before deduplication can be enabled. Both the enabling and disabling of deduplication causes a short pause in transfer and a short initialization. Deduplication decreases transfer time, but increases the source vRPA CPU utilization.</li> <li>Possible values are: Yes (enabled) or no (disabled). Default is yes if the license supports compression, or no if the license does not support compression.</li> <li>This parameter is only applicable for remote replication, in asynchronous replication mode.</li> </ul>
<b>bandwidth_limit (optional)</b>	<p>The maximum bandwidth available in Mbps for use by the specified link. Possible values are a <i>number</i> or unlimited. If there is no effective limit in available bandwidth, enter <b>unlimited</b>. Otherwise, type a number value. Default is unlimited. Read <a href="#">Bandwidth limit</a> to understand important limitations of this parameter.</p>

## Notes

### Asynchronous and dynamic synchronous modes

The following parameters are relevant only for asynchronous and dynamic synchronous mode:

- `rpo`
- `regulate_application`
- `minimize`

Any change to the values of these parameters causes transfer for the group to be briefly paused.

## Remote links

The following parameters are relevant only for remote links:

- `minimize`
- `compression`
- `deduplication`
- `bandwidth_limit`

## Measure lag to vRPA

For any link, it is highly recommended that `measure_lag_to_rpa` be set to yes in both replication modes. Specifically, in synchronous replication, setting `measure_lag_to_rpa` to no causes substantially higher latency for the writes of the production application.

## Snap-based replication

Before setting the `snap_based_replication` parameter to anything other than disabled, ensure that you have registered the vCenter server of the specified group by running the `register_vcenter_server` command.

The parameter `periodic_snap_based_replication_interval` is only relevant when setting `snap_replication` to periodic. The interval value must be 1 minute to 1440 minutes (1 day). When setting an interval, the RPO setting must be specified in time, and the specified interval value must be less than half of the specified RPO value.

Snap-based replication cannot be enabled if:

- One or more of the vRPA clusters in the specified group are running a RecoverPoint for Virtual Machines version that does not support snap-based replication.
- The replication mode is set to synchronous.
- The array or vCenter Server on which the production volumes of this group are located does not support storage awareness.
- The array or vCenter server on which the production copy resides does not support snaps. In this case, RecoverPoint for Virtual Machines asynchronous replication mode is used instead.

 **NOTE:** The application regulation is disabled when the link is configured with snap-based replication.

In XtremIO and VMAX3/AF environments, the `snap_based_replication` parameter cannot be set to `on_highload`.

## Bandwidth limit

The bandwidth limitation applies to a specific vRPA on a specific global link (a global link is defined as all the group links between two clusters). The limitation is the sum of the group-link limitations of all enabled groups that run on this vRPA for the specified global link. The group-link limitation defines the contribution of the specified group to the overall limitation of the vRPA that replicates this group.

The specified limit is enforced only if each of the CG links on the vRPA is set to a specific value (other than default).

For example, an vRPA has three CG links running on it, and you set a bandwidth limit on each of the CG links as follows:

- CG1 link > `bandwidth_limit` = 30 Mbps
- CG2 link > `bandwidth_limit` = 50 Mbps
- CG3 link > `bandwidth_limit` = 20 Mbps

In this case, the overall bandwidth limit on the vRPA is 100 Mbps. If CG2 and CG3 are consuming less than their allocated amounts, CG1 may consume more than 30 Mbps .

The next example shows CG1 and CG2 links set to specific bandwidth limits, but the CG3 link is not set and defaults to unlimited:

- CG1 link > `bandwidth_limit` = 30 Mbps
- CG2 link > `bandwidth_limit` = 50 Mbps
- CG3 link > `bandwidth_limit` = unlimited

In this case, although CG links 1 and 2 are set to specific values, those values are not enforced, and there is no bandwidth limitation on those links or on the vRPA.

## Latency and throughput

When both `dynamic_by_latency` and `dynamic_by_throughput` are enabled, the system starts replicating asynchronously if EITHER of the values that are specified for `start_async_above_latency` or `start_async_above_throughput` are true. However, after the group starts replicating asynchronously, BOTH `resume_sync_below_latency` and `resume_sync_below_throughput` must be true before the group automatically reverts to synchronous replication mode.

The parameters `start_async_above_throughput` and `resume_sync_below_throughput` are only relevant when `dynamic_by_throughput` is set to YES. The parameters `start_async_above_latency` and `resume_sync_below_latency` are only relevant when `dynamic_by_latency` is set to YES.

The system issues an error in the following cases:

- If the value of `resume_sync_below_latency` is not lower than the value of `start_async_above_latency`.
- If the value of `resume_sync_below_throughput` is not lower than the value of `start_async_above_throughput`.
- If the value of `resume_sync_below_throughput` or `resume_sync_below_latency` equals zero.

## clear\_markers

Clears markers from the journal volume, for a specified copy of a specified group.

### Permission

Data Transfer

### Parameters

```
group=<group name>
[copy=<copy name>]
```

### Descriptions

<b>group</b>	Name of an existing consistency group.
<b>copy (optional)</b>	Name of an existing copy.

### Notes

Before using this command, ensure that transfer is paused and the consistency group is enabled.

If no copy is specified, the markers for all copies are cleared.

Use this command only when you are certain that the source and target replication volumes are identical (for example, when initializing from tape). If the volumes are not identical, they will become and will remain inconsistent when transfer resumes. All cleared markers are unrecoverable.

## create\_copy\_policy\_template

Create group-copy policy template.

### Permission

Group Configuration

### Parameters

```
name=<...>
[protection_window=<num>months | <num>weeks | <num>days | <num>hrs | none]
[max_journal_lag=<num>bytes | <num>KB | <num>MB | <num>GB | <num>TB | unlimited]
[journal_compression=high | medium | none]
```

```
[image_access_log_size=<number>]
[allow_long_resync=yes | no]
[allow_replication_with_self_mirroring=yes | no]
[hosts_os=AIX | HPUX | Linux 2.4 | Linux 2.6 | Solaris | VMware ESX | VMware ESX Windows
| Windows | Other/Mixed] (Default: Other/Mixed)
[max_number_of_snapshots=<integer>]
[enable_consolidation_policy=yes | no]
[unconsolidated_duration=<num>months | <num>weeks | <num>days | <num>hrs]
[daily consolidations=<integer> | ALL]
[weekly consolidations=<integer> | ALL]
```

## Descriptions

<b>name</b>	Name to give to the copy policy template in RecoverPoint for Virtual Machines.
<b>protection_window (optional)</b>	<ul style="list-style-type: none"> <li>The consistency group protection window policy setting indicates the required protection window (how far in time the copy image can be rolled back). RecoverPoint for Virtual Machines uses this setting to trigger event alerts if the requirement cannot be obtained. The events table in the <i>RecoverPoint for Virtual Machines Administrator's Guide</i> lists the events that are triggered. Possible values are &lt;num&gt;months, &lt;num&gt;weeks, &lt;num&gt;days, &lt;num&gt;hrs, or none.</li> <li>Default is none.</li> <li>The protection window setting must be greater than 24 hours for the predicted protection window feature to function and generate events.</li> </ul>
<b>max_journal_lag (optional)</b>	<ul style="list-style-type: none"> <li>The maximum lag that is allowed in distributing replication data that the journal receives. When this limit is reached, the system accelerates distribution of data to copy storage. Any snapshots, however, that are distributed in this accelerated mode (or that were distributed before entering this accelerated mode) are not available for rollback.</li> <li>To prevent the system from entering the accelerated distribution mode, set this parameter to unlimited. Otherwise, type one of the following values, including a number and a unit: bytes, kb, mb, or gb (with minimum granularity of 512 bytes—a SCSI block).</li> <li>Initial default is unlimited.</li> </ul>
<b>journal_compression (optional)</b>	<ul style="list-style-type: none"> <li>The level of compression that is applied to the journal at the copy.</li> <li>Possible values are high, medium, or none.</li> <li>To change the value, one of the following states should exist for the group: The group is disabled, both the production and the copy vRPA clusters are active, or there is no access to the copy image (while distributing).</li> <li>Initial default is none.</li> </ul>
<b>image_access_log_size (optional)</b>	<ul style="list-style-type: none"> <li>Percentage of the available journal capacity at the copy that is allocated for use by the target-side log.</li> <li>Possible values are between 20 and 80.</li> <li>To change the value, one of the following states should exist for the group: The group is disabled, both sides are active, or there is no access to the copy image (while distributing).</li> <li>Initial default is 20.</li> </ul>
<b>allow_long_resync (optional)</b>	<ul style="list-style-type: none"> <li>Instructs the system how to continue in the case that a snapshot is too large to be contained in the journal. Possible values are yes and no.</li> <li>When yes, the system starts writing the data of the snapshot to the copy storage while the copy journal is still receiving the additional data of the same snapshot. In this case, if a disaster were to occur at the production site before the complete image was transferred to the copy storage, it would not be possible to fail over to the copy.</li> <li>When no, the system automatically pauses transfer when the last complete image is about to be removed from the copy. This action provides the opportunity to increase the capacity of the journal, and then reenable transfer, or prepare a backup and then reenable this policy.</li> <li>Initial default is yes.</li> </ul>
<b>allow_replication_with_self_mirroring (optional)</b>	<ul style="list-style-type: none"> <li>Only relevant with Symmetrix splitter.</li> <li>If yes, and only one vRPA is available, if that vRPA fails, the system begins a full sweep. If no, and only one vRPA is available, the splitter goes into marking mode. Replication resumes when a second vRPA in the cluster is available.</li> <li>Do not change the default value unless instructed to do so by Customer Support.</li> </ul>

<b>hosts_os (optional)</b>	Defines the Operating System (OS) of the host system from which the data is saved and copied. Possible values are AIX, HP-UX, Linux 2.4, Linux 2.6, Solaris, VMware ESX, Windows, or Other/Mixed.
<b>max_number_of_sna pshots</b>	Defines the maximum number of snapshots (for XtremIO copy). Default is N/A.
<b>enable_consolidatio n_policy (optional)</b>	<ul style="list-style-type: none"> <li>Whether automatic snapshot consolidation for the specified group at the specified copy is to be enabled (yes) or disabled (no).</li> <li>Default is initially no, and then current value.</li> <li>When automatic snapshot consolidation is enabled, the predicted protection window is not calculated.</li> </ul>
<b>unconsolidated_dura tion (optional)</b>	<ul style="list-style-type: none"> <li>The time period for which data should not be consolidated.</li> <li>The start time of period is always today, and the end time of the period is expressed in &lt;n&gt; hours/days/weeks, with a 12-hour minimum.</li> <li>Default is 2 days, and then current value.</li> </ul>
<b>daily_consolidations (optional)</b>	<ul style="list-style-type: none"> <li>The number of days in which to consolidate snapshots on a daily basis. Daily consolidations happen every 24 hours, give, or take a couple of hours. Possible values are &lt;n&gt; days or all.</li> <li>Default is 5, and then current value.</li> </ul>
<b>weekly_consolidatio ns (optional)</b>	<ul style="list-style-type: none"> <li>The number of weeks in which to consolidate images on a weekly basis. Weekly consolidations happen every 168 hours, give, or take a couple of hours. Possible values are &lt;n&gt; weeks or all.</li> <li>Default is 4, and then current value.</li> </ul>

## Notes

None

## create\_group\_set

Adds the specified set of groups to a group set with the specified name, and enables or disables parallel bookmarking for the specified group set.

## Permission

Group Configuration

## Parameters

```
name=<...>
groups=<group names>
[enable_parallel_bookmarks=yes | no] (Default: no)
[parallel_bookmark_frequency=<num>months | <num>weeks | <num>days | <num>hrs | <num>mins
 | <num>secs]
```

## Descriptions

<b>name</b>	Name of the group set to be created.
<b>groups</b>	<ul style="list-style-type: none"> <li>Name of existing consistency groups that are to be included in the group set.</li> <li>A consistency group cannot belong to more than one group set.</li> </ul>
<b>enable_parallel_bo okmarks (optional)</b>	Whether (yes) or not (no) to enable parallel bookmarking across all groups in the group set.
<b>parallel_bookmark_f requency (optional)</b>	Frequency (in secs/mins/hrs) at which a parallel bookmark is to be applied to the groups specified in the group set.

## Notes

Before running this command, verify:

- The source cluster is the same for all the groups in the group set.
- Transfer is active for all the groups in the group set.

The parameter `parallel_bookmark_frequency` is only relevant if `enable_parallel_bookmarks` is set to yes.

Parallel bookmarks include the name of the group set, followed by an incremental ID number.

## create\_link\_policy\_template

Create group-link policy template.

## Permission

Group Configuration

## Parameters

```
name=<...>
[mode=sync | async]
[snap_based_replication=on_highload | continuous | periodic | manual | disabled]
[periodic_snap_based_replication_interval=<number>]
[dynamic_by_latency=yes | no]
[start_async_above_latency=<integer>]
[resume_sync_below_latency=<integer>]
[dynamic_by_throughput=yes | no]
[start_async_above_throughput=<integer>]
[resume_sync_below_throughput=<integer>]
[rpo=<num>hrs | <num>mins | <num>secs | <num>bytes | <num>KB | <num>MB | <num>GB | <num>TB | <num>writes | ]
[regulate_application=yes | no]
[minimize=lag | bandwidth]
[measure_lag_to_rpa=yes | no]
[snapshot_granularity=dynamic | fixed_per_second | fixed_per_write]
[fast_first_init=yes | no]
[compression=none | low | medium | high]
[deduplication=yes | no]
[bandwidth_limit=<number> | unlimited]
```

## Descriptions

<b>name</b>	Name of the new link policy template.
<b>mode</b>	Mode in which to replicate consistency group data between <code>copy_1</code> and <code>copy_2</code> of the link. Possible values are sync or async. Default is async.
<b>snap_based_replication (optional)</b>	<ul style="list-style-type: none"><li>• Mode in which to replicate array snaps between <code>copy_1</code> and <code>copy_1</code>. Possible values are disabled, on_highload, periodic, continuous, or manual.</li><li>• Default is disabled.</li></ul>
<b>periodic_snap_based_replication_interval (optional)</b>	<ul style="list-style-type: none"><li>• When <code>snap_based_replication</code> is set to periodic, this parameter sets the interval between snaps.</li><li>• Default is 30 min.</li></ul>
<b>dynamic_by_latency (optional)</b>	<ul style="list-style-type: none"><li>• Whether to alternate between synchronous and asynchronous replication modes, as necessary, according to latency conditions. These conditions define the number of milliseconds between the time that the production data is written to the source vRPA cluster and the time that it is written to the vRPA or journal at the target vRPA cluster. When enabled, RecoverPoint</li></ul>

	<p>for Virtual Machines adheres to the limits specified for <code>start_async_above_latency</code> and <code>resume_sync_below_latency</code>.</p> <ul style="list-style-type: none"> <li>• Default is no.</li> </ul>
<b><code>start_async_above_latency (optional)</code></b>	<ul style="list-style-type: none"> <li>• Only relevant when <code>dynamic_by_latency=yes</code>.</li> <li>• The threshold (in milliseconds) at which to allow asynchronous replication. When the specified limit is reached, the system automatically starts replicating in asynchronous replication mode until the limit defined in <code>resume_sync_below_latency</code> is reached.</li> </ul>
<b><code>resume_sync_below_latency (optional)</code></b>	<ul style="list-style-type: none"> <li>• Only relevant when <code>dynamic_by_latency=yes</code>.</li> <li>• The threshold (in milliseconds) at which to allow synchronous replication. When the specified limit is reached, the system automatically goes back to replicating in synchronous replication mode.</li> </ul>
<b><code>dynamic_by_throughput (optional)</code></b>	<ul style="list-style-type: none"> <li>• Whether (yes) or not (no) to alternate between synchronous and asynchronous replication modes, as necessary, according to throughput conditions. When enabled, RecoverPoint for Virtual Machines adheres to the limits specified for <code>start_async_above_throughput</code> and <code>resume_sync_below_throughput</code>.</li> <li>• Default is no.</li> </ul>
<b><code>start_async_above_throughput (optional)</code></b>	<ul style="list-style-type: none"> <li>• Only relevant when <code>dynamic_by_throughput=yes</code>.</li> <li>• The threshold at which to allow asynchronous replication. When the specified limit is reached, the system automatically starts replicating in asynchronous replication mode until the limit defined in <code>resume_sync_below_throughput</code> is reached.</li> </ul>
<b><code>resume_sync_below_throughput (optional)</code></b>	<ul style="list-style-type: none"> <li>• Only relevant when <code>dynamic_by_throughput=yes</code>.</li> <li>• The threshold at which to allow synchronous replication. When the specified limit is reached, the system automatically goes back to replicating in synchronous replication mode.</li> </ul>
<b><code>rpo (optional)</code></b>	<p>The link recovery point objective (RPO) defines the lag of the consistency group link, expressed in terms of time, quantity of data, or number of writes. In RecoverPoint for Virtual Machines, lag starts being measured when a write that is made by the production host reaches the local vRPA, and stops being measured when the write reaches either the target vRPA or the target journal. Possible values are: hrs, mins, secs, bytes, KB, MB, GB, TB, and writes. If any other solution is needed, contact Customer Support. Default is 25 sec.</p>
<b><code>regulate_application (optional)</code></b>	<ul style="list-style-type: none"> <li>• When set to yes, the system slows or stops operation of the host applications on approaching a policy boundary.</li> <li>• Initial default is no.</li> </ul>
<b><code>minimize (optional)</code></b>	<ul style="list-style-type: none"> <li>• Possible values are lag or bandwidth.</li> <li>• When set to lag, the system uses more bandwidth as possible to keep the lag to a minimum. When set to bandwidth, the system expends additional bandwidth only as necessary to keep the lag under its maximum allowable value.</li> <li>• Initial default is lag.</li> </ul>
<p> <b>NOTE:</b> This parameter is not applicable for local replication.</p>	
<b><code>measure_lag_to_rpa (optional)</code></b>	<ul style="list-style-type: none"> <li>• Only relevant for remote replication over the WAN or Fibre Channel. Possible values are yes and no.</li> <li>• Whether to measure lag and generate ACKs when writes reach the remote vRPA (yes) or when they reach the remote journal (no).</li> <li>• When enabled, this policy provides faster performance in both synchronous and asynchronous replication modes, by reducing both latency and lag. When <code>regulate_application</code> is set to yes, and lag is reduced, so is the potential requirement to regulate the host applications. In synchronous replication mode, write performance is substantially higher with this policy enabled. However, when this policy is enabled, RecoverPoint for Virtual Machines does provide a slightly lower level of data security in the rare case of a simultaneous local and remote vRPA disaster.</li> <li>• Initial default is yes. Best practice is to leave this setting as is.</li> <li>• This parameter is not relevant for local replication.</li> </ul>
<b><code>snapshot_granularity (optional)</code></b>	<ul style="list-style-type: none"> <li>• When set to dynamic, the system determines the snapshot granularity of the specified link according to available resources. When set to <code>fixed_per_second</code>, one snapshot is created per second for the specified link. When set to <code>fixed_per_write</code>, a snapshot is created for every write operation for the specified link. Possible values are dynamic, <code>fixed_per_second</code>, and <code>fixed_per_write</code>.</li> </ul>

	<ul style="list-style-type: none"> <li>• Default is fixed_per_second.</li> </ul>
<b>fast_first_init (optional)</b>	<ul style="list-style-type: none"> <li>• Only relevant for initializations that occur for the first time, for the specified link. Possible values are yes and no.</li> <li>• When set to yes, RecoverPoint for Virtual Machines transfers data directly to the copy storage. The data is not stored in the journal first, and therefore, the initialization process is substantially shorter. In this case, the nonproduction copy is not consistent with production until the transfer of the whole image to the copy storage is complete. Therefore, if a disaster were to occur at the production cluster before the transfer of the image was complete, it would not be possible to fail over to the nonproduction copy.</li> <li>• When set to no, RecoverPoint for Virtual Machines transfers data to the copy journal, and only then from the copy journal to the copy storage. Disabling this policy is useful, for example, when disabling and then enabling an existing consistency group, causing the group to be initialized. In this case, RecoverPoint for Virtual Machines may be able to use the existing data at the nonproduction cluster (journal and storage) to construct a complete image, which is required for failover purposes.</li> <li>• To enable failover during initialization, it is recommended to disable both this policy and the <code>allow_long_resync</code> policy parameter in the <code>config_copy_policy</code> command. Possible values are yes and no.</li> <li>• Default is yes.</li> </ul>
<b>compression (optional)</b>	<ul style="list-style-type: none"> <li>• The level of compression that is applied to replication data of the specified link before the transfer of the data to a remote cluster. Can reduce transfer time considerably. Both the enabling and disabling of compression causes a short pause in transfer and a short initialization. Compression decreases transfer time, but increases the source vRPA CPU utilization. Possible values are none, low, medium, and high. When set to no, compression is disabled.</li> <li>• Default is low if the license supports compression, or none if the license does not support compression.</li> <li>• This parameter is only applicable for remote replication, in asynchronous replication mode.</li> </ul>
<b>deduplication (optional)</b>	<ul style="list-style-type: none"> <li>• Whether repetitive data of the specified link should be eliminated before the transfer of the data to a remote cluster. Can reduce transfer time considerably. Compression must be enabled before deduplication can be enabled. Both the enabling and disabling of deduplication causes a short pause in transfer and a short initialization. Deduplication decreases transfer time, but increases the source vRPA CPU utilization.</li> <li>• Possible values are: yes (enabled) or no (disabled). Default is yes if the license supports compression, or no if the license does not support compression.</li> <li>• This parameter is only applicable for remote replication, in asynchronous replication mode.</li> </ul>
<b>bandwidth_limit (optional)</b>	<p>The maximum bandwidth available in Mbps for use by the specified link. Possible values are a <i>number</i> or <b>unlimited</b>. If there is no effective limit in available bandwidth, type <b>unlimited</b>. Otherwise, type a number value. Default is unlimited. To understand important limitations of this parameter, read <a href="#">Bandwidth limit</a>.</p>

## Notes

### Asynchronous and dynamic synchronous modes

The following parameters are relevant only for asynchronous and dynamic synchronous mode:

- `rpo`
- `regulate_application`
- `minimize`

Any change to the values of these parameters causes transfer for the group to be briefly paused.

### Remote links

The following parameters are relevant only for remote links:

- `minimize`

- compression
- deduplication
- bandwidth\_limit

## Measure lag to vRPA

For any link, it is highly recommended that `measure_lag_to_rpa` be set to yes in both replication modes. Specifically, in synchronous replication, setting `measure_lag_to_rpa` to no causes substantially higher latency for the writes of the production application.

## Snap-based replication

Before setting the `snap_based_replication` parameter to anything other than disabled, ensure that you have registered the vCenter server of the specified group by running the `register_vcenter_server` command.

The parameter `periodic_snap_based_replication_interval` is only relevant when setting `snap_replication` to periodic. The interval value must be 1 minute to 1440 minutes (1 day). When setting an interval, the RPO setting must be specified in time, and the specified interval value must be less than half of the specified RPO value.

Snap-based replication cannot be enabled if:

- One or more of the vRPA clusters in the specified group are running a RecoverPoint for Virtual Machines version that does not support snap-based replication.
- The replication mode is set to synchronous.
- The array or vCenter Server on which the production volumes of this group are located does not support storage awareness.
- The array or vCenter server on which the production copy resides does not support snaps. In this case, RecoverPoint for Virtual Machines asynchronous replication mode is used instead.

**(i) NOTE:** The application regulation is disabled when the link is configured with snap-based replication.

In XtremIO environments, the `snap_based_replication` parameter cannot be set to `on_highload`.

## Bandwidth limit

The bandwidth limitation applies to a specific vRPA on a specific global link (a global link is defined as all the group links between two clusters). The limitation is the sum of the group-link limitations of all enabled groups that run on this vRPA for the specified global link. The group-link limitation defines the contribution of the specified group to the overall limitation of the vRPA that replicates this group.

The specified limit is enforced only if each of the CG links on the vRPA is set to a specific value (other than default).

For example, an vRPA has three CG links running on it, and you set a bandwidth limit on each of the CG links as follows:

- CG1 link > `bandwidth_limit` = 30 Mbps
- CG2 link > `bandwidth_limit` = 50 Mbps
- CG3 link > `bandwidth_limit` = 20 Mbps

In this case, the overall bandwidth limit on the vRPA is 100 Mbps. CG1 may consume more than 30 Mbps if CG2 and CG3 are consuming less than their allocated amounts.

The next example shows CG1 and CG2 links set to specific bandwidth limits, but the user has not set the CG3 link and defaults to unlimited:

- CG1 link > `bandwidth_limit` = 30 Mbps
- CG2 link > `bandwidth_limit` = 50 Mbps
- CG3 link > `bandwidth_limit` = unlimited

In this case, although CG links 1 and 2 are set to specific values, those values are not enforced, and there is no bandwidth limitation on those links or on the vRPA.

## Latency and throughput

When both `dynamic_by_latency` and `dynamic_by_throughput` are enabled, the system starts replicating asynchronously if EITHER of the values that are specified for `start_async_above_latency` or `start_async_above_throughput` are true. However, after the group starts replicating asynchronously, BOTH `resume_sync_below_latency` and `resume_sync_below_throughput` must be true before the group automatically reverts to synchronous replication mode.

The parameters `start_async_above_throughput` and `resume_sync_below_throughput` are only relevant when `dynamic_by_throughput` is set to YES. The parameters `start_async_above_latency` and `resume_sync_below_latency` are only relevant when `dynamic_by_latency` is set to YES.

The system issues an error in the following cases:

- If the value of `resume_sync_below_latency` is not lower than the value of `start_async_above_latency`.
- If the value of `resume_sync_below_throughput` is not lower than the value of `start_async_above_throughput`.
- If the value of `resume_sync_below_throughput` or `resume_sync_below_latency` equals zero.

## disable\_copy

Disables the specified copy for RecoverPoint for Virtual Machines activity.

### Permission

Data Transfer

### Parameters

```
group=<group name>
copy=<target copy name>
```

### Descriptions

<b>group</b>	Name of an existing consistency group.
<b>copy (optional)</b>	<ul style="list-style-type: none"><li>• Name of an existing copy.</li><li>• The production copy cannot be disabled.</li></ul>

### Notes

None

## disable\_group

Disables the specified copy of the specified group for RecoverPoint for Virtual Machines activity.

### Permission

Data Transfer

## Parameters

```
group=<group name>
[copy=<copy name>]
```

## Descriptions

- group** Name of an existing consistency group.
- copy (optional)**
- Name of an existing copy.
  - The production copy cannot be disabled.

## Notes

If no copy is specified, all copies in the group are disabled for RecoverPoint for Virtual Machines activity.

Before using this command, stop the host applications. Otherwise, disabling the group necessitates a full-sweep resynchronization when the group is enabled and transfer is restarted.

## disable\_image\_access

Disables access to the currently accessed image of the specified copy and resumes distribution.

## Permissions

Target Image

## Parameters

```
[protection_entity=group | group_set] (Default: group)
[group=<group name>]
[group_set=<group set name>]
[cluster=<cluster name>]
[copy=<target copy name>]
[start_transfer=yes | no] (Default: yes)
```

## Descriptions

- protection\_entity**
- The RecoverPoint for Virtual Machines-protected entity that you want to disable image access for. Valid values are group or group\_set.
  - Default is group.
- group** Name of an existing consistency group.
- group\_set (optional)** Name of an existing group set.
- cluster (optional)** When you select a group set, this parameter defines the vRPA cluster at which you want to disable image access. Image access is disabled for all accessed copies at this vRPA cluster in the specified group set.
- copy (optional)** When you select a group, this parameter defines the copy for which you want to disable image access.
- start\_transfer (optional)**
- Whether (yes) or not (no) to start replication for the specified groups or group set after image access is disabled.
  - Default is yes.

## Notes

If the host is directly accessing the storage, run this command and set `start_transfer` to yes to disable direct access and resume replication.

The following parameters are relevant only for group:

- `group`
- `copy`

The following parameters are relevant only for group-set:

- `group_set`
- `cluster`

## enable\_copy

Enables the specified copy of the specified group for RecoverPoint for Virtual Machines activity.

### Permission

Data Transfer

### Parameters

```
group=<group name>
copy=<target copy name>
[start_transfer=yes | no] (Default: yes)
```

### Descriptions

<b>group</b>	Name of an existing consistency group.
<b>copy</b>	Name of an existing copy.
<b>start_transfer (optional)</b>	<ul style="list-style-type: none"><li>• Whether (yes) or not (no) to start replicating (no) to the specified copy, after the copy is enabled.</li><li>• Default is yes.</li></ul>

### Notes

Replication and journal volumes must be added to the group before the copy can be enabled.

## enable\_group

Enables the specified copy of the specified group for RecoverPoint for Virtual Machines activity.

### Permission

Data Transfer

## Parameters

```
group=<group name>
[copy=<copy name>]
[start_transfer=yes | no] (Default: yes)
```

## Descriptions

<b>group</b>	Name of an existing consistency group.
<b>copy (optional)</b>	<ul style="list-style-type: none"><li>• Name of an existing copy.</li><li>• You cannot specify the source copy to be enabled.</li></ul>
<b>start_transfer (optional)</b>	<ul style="list-style-type: none"><li>• Whether to start transfer (yes) or not start transfer (no) to the specified copy, after image access has been enabled in direct_access mode.</li><li>• Default is yes.</li></ul>

## Notes

Replication and journal volumes must be added to the group before the group can be enabled.

If no copy is specified, all copies in the group are enabled for RecoverPoint for Virtual Machines activity.

## get\_group\_settings

Displays the current settings of the specified group.

## Permission

Read Only.

## Parameters

```
[output_entity=group | copy | link | replication_set] (Default: group)
[group=<group name>]
[copy=<copy name>]
[copy_2=<copy name>]
[replication_set=<replication set name>]
```

## Descriptions

<b>output_entity (optional)</b>	<ul style="list-style-type: none"><li>• Name of the entity (of the specified group) whose settings you want to display. Possible values are group, copy, link, and replication set. If the value of output_entity is group, you must also define a value for group. If the value of output_entity is copy, you must also define the values of group and copy. If the value of output_entity is link, you must also define the values of group, copy, and copy_2. If the value of output_entity is replication_set, you must also define the values of group and replication_set.</li><li>• Default is group.</li></ul>
<b>group (optional)</b>	<ul style="list-style-type: none"><li>• Name of an existing consistency group. When the group is specified is a MetroPoint group, the settings for both the active and standby productions are displayed, and the preferred MetroPoint cluster.</li><li>• Default is all existing consistency groups.</li></ul>

- |                                   |  |
|-----------------------------------|--|
| <b>copy (optional)</b>            | <ul style="list-style-type: none"> <li>• Name of an existing copy in the specified consistency group. This parameter is only valid when the value of output_entity is copy.</li> <li>• Default is all existing copies in the specified consistency group.</li> </ul>                                 |
| <b>copy_2 (optional)</b>          | <ul style="list-style-type: none"> <li>• Name of an existing copy in the specified consistency group. This parameter is only valid when the value of output_entity is link.</li> <li>• Default is all existing links in the specified consistency group.</li> </ul>                                  |
| <b>replication_set (optional)</b> | <ul style="list-style-type: none"> <li>• Name of an existing replication set in the specified consistency group. This parameter is only valid when the value of output_entity is replication_set.</li> <li>• Default is all existing replication sets in the specified consistency group.</li> </ul> |

## Notes

If no group is specified, the current settings of all groups are displayed.

## Example

```
RPA cluster> get_group_settings
Enter the output entity:
1) group
2) copy
3) link
4) replication_set
Select, or press 'ENTER'
Enter a consistency group name, or press 'ENTER' for all groups:
Groups:
cg:
  Enable: YES
  Production Copy: P1
  Preferred primary RPA: RPA 2
  Distributed group: NO
  Reservation support: YES
  Fail all production: NO
  Policy:
    Priority: NORMAL
    Advanced Policies:
      Non-preferred RPA transfer: YES
      Allow read only: NO
  External mgmt:N/A
  Copies:
    L1:
      Cluster: London
      Role: REMOTE COPY
      Enable: YES
      Hosts OS: Other/Mixed
      Data transfer: YES
      Image Access:
        Enable access: NO
      Policy:
        Journal compression: NONE
        Automatic snapshot consolidation:
          Enabled: NO
          Unconsolidated duration: 2 days
          Daily consolidations: 5
          Weekly consolidations: 4
          Monthly consolidations: ALL
        Required protection window:N/A
        Advanced policies:
          Max Journal lag: UNLIMITED
          Allow long resync: YES
          Logged writes proportion: 20.00%
          Reservations policy: Auto
    P1:
      Cluster: Paris
      Role: PRODUCTION
      Enable: YES
```

```

Hosts OS: Other/Mixed
Policy:
  Journal compression: NONE
  Automatic snapshot consolidation:
    Enabled: NO
    Unconsolidated duration: 2 days
    Daily consolidations: 5
    Weekly consolidations: 4
    Monthly consolidations: ALL
  Required protection window:N/A
Advanced policies:
  Max Journal lag: UNLIMITED
  Allow long resync: YES
  Logged writes proportion: 20.00%
  Reservations policy: Auto
Replication sets:
  RSet0:
    Size: 6.00 GB
  RSet1:
    Size: 5.00 GB
Links:
  P1->L1:
    Copy 1: P1
    Copy 2: L1
  Protection settings:
    Active: YES
    Mode: ASYNC
    Regulate application: NO
    Minimize: LAG
    RPO: 25 sec
  Snapshot granularity: DYNAMIC
  Fast first-time init: YES
  Measure lag to RPA: YES
  Compression: low
  Deduplication: NO
  Bandwidth limit: UNLIMITED
  Snap-based replication:N/A
  Integrity validation policy: DISABLE

```

## get\_group\_state

Displays the current state of the specified group, its copies, and its links, in the RecoverPoint for Virtual Machines system.

### Permission

Read Only.

### Parameters

```
[output_entity=group | copy | link] (Default: group)
[group=<group name>]
[copy=<copy name>]
[copy_2=<copy name>]
```

### Descriptions

<b>output_entity (optional)</b>	Name of the entity (of the specified group).
<b>group (optional)</b>	<ul style="list-style-type: none"> <li>• Name of an existing consistency group.</li> <li>• Default is all existing consistency groups.</li> </ul>

<b>copy (optional)</b>	Name of an existing copy in the specified consistency group. This parameter is only valid when the value of <code>output_entity</code> is <code>copy</code> .
<b>copy_2 (optional)</b>	Name of an existing copy in the specified consistency group. This parameter is only valid when the value of <code>output_entity</code> is <code>link</code> .

## Notes

If no group is specified, the state of all consistency groups is displayed.

## Example

```
RPA Cluster> get_group_state
Enter the consistency group name, or press 'ENTER' for all groups:
Group:
cg1:
  Enabled: YES
  Transfer source: prod
  Copy:
    copy1:
      Enabled: YES
      Active primary RPA: RPA 3
      Journal: DISTRIBUTING IMAGES TO STORAGE
      Storage access: NO ACCESS
    copy2:
      Enabled: YES
      Active primary RPA: RPA 3
      Journal: DISTRIBUTING IMAGES TO STORAGE
      Storage access: NO ACCESS
  prod:
    Enabled: YES
    Active primary RPA: RPA 3
    Storage access: DIRECT ACCESS (marking data)
Link:
  prod->copy1:
    Data Transfer: ACTIVE
    Sync mode: NO
  prod->copy2:
    Data Transfer: ACTIVE
    Sync mode: NO
```

## get\_group\_statistics

Displays the current performance statistics of the specified group, its copies, and its links.

## Permission

Read Only.

## Parameters

```
[group=<group name>]
```

## Descriptions

<b>group (optional)</b>	<ul style="list-style-type: none"> <li>• Name of an existing consistency group.</li> </ul>
-------------------------	--

- Default is all.

## Notes

If no group is specified, the performance statistics of all groups are displayed.

## Example

```
RPA cluster> get_group_statistics
Enter the group name, or press 'ENTER' to display the statistics of all consistency
groups:
Group:
cg1:
Copy stats:
copy1:
Journal:
Usage: 154.07GB
Total: 204.10GB
Latest image: Thu Aug  1 07:33:40.732718 2013
Journal lag: 1.81GB
Protection window:
  Current:
    Value: 5 min 43 sec
    Status:N/A
  Predicted:
    Value:N/A
    Status:N/A
Average journal compression ratio:N/A
Mode: Normal
copy2:
Journal:
Usage: 225.40GB
Total: 298.30GB
Latest image: Thu Aug  1 07:33:40.730288 2013
Journal lag: 1.91GB
Protection window:
  Current:
    Value: 5 min 43 sec
    Status:N/A
  Predicted:
    Value:N/A
    Status:N/A
Average journal compression ratio:N/A
Mode: Normal
prod:
SAN traffic:
  Current throughput: 72 Mbps
  Average throughput: 72 Mbps
  Current write IOPS: 2050
  Average write IOPS: 0
Link stats:
prod->copy1:
Replication:
  Lag:N/A
  WAN traffic:N/A
  Current bandwidth reduction ratio:N/A
  Average bandwidth reduction ratio:N/A
  Current deduplication ratio:N/A
  Average deduplication ratio:N/A
prod->copy2:
Replication:
  Lag:
    Time: 5 sec
    Data: 49.70MB
    Writes: 13170
  WAN traffic: 10 Mbps
  Current bandwidth reduction ratio: 7.24282
  Average bandwidth reduction ratio:N/A
```

```

        Current deduplication ratio:N/A
        Average deduplication ratio:N/A
cg2:
Copy stats:
copy1:
Journal:
Usage: 334.73GB
Total: 455.30GB
Latest image: Thu Aug  1 07:33:40.735128 2013
Journal lag: 1.91GB
Protection window:
Current:
Value: 30 sec
Status:N/A
Predicted:
Value:N/A
Status:N/A
Average journal compression ratio:N/A
Mode: Normal
prod:
SAN traffic:
Current throughput: 71 Mbps
Average throughput: 71 Mbps
Current write IOPS: 2033
Average write IOPS: 0
Link stats:
prod->copy1:
Replication:
Lag:
Time: 6 sec
Data: 54.53MB
Writes: 14484
WAN traffic: 9 Mbps
Current bandwidth reduction ratio: 6.75498
Average bandwidth reduction ratio:N/A
Current deduplication ratio:N/A
Average deduplication ratio:N/A

```

## get\_groups\_by\_priority

Display the groups categorized by priority.

### Permission

Read Only.

### Parameters

```
[priority=critical | high | normal | low | idle]
```

### Descriptions

- |                            |  |
|----------------------------|--|
| <b>priority (optional)</b> | <ul style="list-style-type: none"> <li>The priority value that you want to display. Displays a list of all consistency groups whose priority is of the specified value. Priority is set through <a href="#">config_group_policy</a> and is in relation to other consistency groups. Possible values are critical, high, normal, low, and idle. <ul style="list-style-type: none"> <li>Groups with a priority of critical are provided ten times the priority of normal groups.</li> <li>Groups with a priority of high are provided three times the priority of normal groups.</li> <li>Groups with a priority of low are provided 50% of the priority of normal groups.</li> <li>Groups with a priority of idle are provided 1% of the priority of normal groups.</li> </ul> </li> <li>Default is all.</li> </ul> |
|----------------------------|--|

## Notes

If no priority is specified, groups from all priorities are displayed.

## get\_images

Displays information about the snapshots of the specified copy.

## Permission

Read Only.

## Parameters

```
group=<group name>
[copy=<copy name>]
[from=HH:MM[:SS[:MICROS]] [DD/MM/YYYY]]
[to=HH:MM[:SS[:MICROS]] [DD/MM/YYYY]]
[bookmark=<...>]
```

## Descriptions

<b>group</b>	Name of an existing consistency group.
<b>copy (optional)</b>	Name of an existing copy.
<b>from (optional)</b>	<ul style="list-style-type: none"><li>Start time.</li><li>Default date is no earliest bound. Default time is no earliest bound.</li></ul>
<b>to (optional)</b>	<ul style="list-style-type: none"><li>End time.</li><li>Default date is today.</li><li>Default time is the present time.</li></ul>
<b>bookmark (optional)</b>	<ul style="list-style-type: none"><li>Name of a specific snapshot bookmark.</li><li>Default is all.</li></ul>

## Notes

Up to 1000 snapshots are displayed. Use the optional parameters to filter the results.

If the `copy` parameter is not specified, the snapshot information of all copies in the group is displayed.

The `from` and `to` parameters can also take the format wks|days|hrs|mins ago. For example: 5 minutes ago. MICROS is a six-digit value for microseconds.

If the `bookmark` parameter is specified, only images matching the bookmark are displayed.

## get\_policy\_template

Displays policy template

### Permission

Read Only

### Parameters

```
template_type=copy | link  
[template_name=<...>]
```

### Descriptions

**template\_type** The type of the template whose policy you want to display. Valid types are copy and link.

**template\_name** The RecoverPoint for Virtual Machines name of an existing template.

### Notes

None

## pause\_transfer

Pauses data transfer to the specified copy of the specified group.

### Permission

Data Transfer

### Parameters

```
[protection_entity=group | group_set] (Default: group)  
[group=<group name>]  
[group_set=<group set name>]  
[copy=<target copy name>]
```

### Descriptions

**protection\_entity** • The RecoverPoint for Virtual Machines-protected entity that you want to stop replicating to. Valid values are group or group\_set.  
• Default is group.

**group** Name of an existing consistency group.

**group\_set (optional)** Name of an existing group set.

**copy (optional)** • Name of the existing copy to stop replicating to.  
• Default is all.

## Notes

If no copy is specified, data transfer is paused to all copies in the group.

When data transfer is paused, the transfer of replication data stops. However, the host application continues to write data to storage, and the vRPA continues to write markers regarding the data to the repository volume.

## reduce\_production\_journal

Reduces production journal to a minimum.

### Permission

Group configuration

### Parameters

```
group=<group name>
```

### Descriptions

**group** Name of an existing consistency group.

## remove\_copy\_policy\_template

Remove the specified copy policy template.

### Permission

Group Configuration

### Parameters

```
name=<copy policy template name>
```

### Descriptions

**name** Name of an existing copy policy template.

## Notes

None

## **remove\_group\_set**

Removes the specified group set from the system.

### Permission

Group Configuration

### Parameters

```
group_set=<group set name>
```

### Descriptions

**group\_set** Name of the existing group set that you want to remove.

### Notes

None

## **remove\_link\_policy\_template**

Remove the specified link policy template.

### Permission

Group Configuration

### Parameters

```
name=<link policy template name>
```

### Descriptions

**name** Name of an existing link policy template.

### Notes

None

## rename\_copy

Renames the specified copy of the specified group.

### Permission

Group Configuration

### Parameters

```
group=<group name>
current_name=<copy name>
new_name=<...>
```

### Descriptions

<b>group</b>	Name of an existing consistency group.
<b>current_name</b>	Current name of the copy.
<b>new_name</b>	New name you want to give to the copy.

### Notes

None

## rename\_group

Renames the specified group to the specified name.

### Permission

Group Configuration

### Parameters

```
current_name=<group name>
new_name=<...>
```

### Descriptions

<b>current_name</b>	Current name of the consistency group.
<b>new_name</b>	New name you want to give to the consistency group.

### Notes

None

# set\_image\_access\_mode

Changes the access mode of the currently accessed image at the specified copy.

## Permission

Target Image

## Parameters

```
[protection_entity=group | group_set] (Default: group)
[group=<group name>]
[group_set=<group set name>]
[cluster=<cluster name>]
[copy=<target copy name>]
mode=virtual_with_roll | direct
```

## Descriptions

<b>protection_entity</b>	<ul style="list-style-type: none"><li>The protected entity that you want to set the image access mode for. Valid values are group or group_set.</li><li>Default is group.</li></ul>
<b>group</b>	Name of an existing consistency group.
<b>group_set (optional)</b>	Name of an existing group set.
<b>cluster (optional)</b>	When you select a group set, this parameter defines the vRPA cluster at which you want to set the image access mode. The image access mode is set for all accessed copies at this vRPA cluster in the specified group set.
<b>copy (optional)</b>	When you select a group, this parameter defines the copy at which you want to set the image access mode.
<b>start_transfer (optional)</b>	<ul style="list-style-type: none"><li>After setting the image access, whether to start replication (yes) or not (no) for the specified group or group set.</li><li>Default is yes.</li></ul>
<b>mode</b>	The way the copy accesses the image.

## Notes

Before using this command, ensure that the image access is enabled or a request to enable image access is pending.

The following parameters are relevant only for group:

- group
- copy

The following parameters are relevant only for group-set:

- group\_set
- cluster

# set\_markers

Creates markers in the journal volume, for the specified replication set in the specified copy and group.

## Permission

Data Transfer

## Parameters

```
group=<group name>
[copy=<copy name>]
[replication_sets=<replication set names>]
```

## Descriptions

<b>group</b>	Name of an existing consistency group.
<b>copy (optional)</b>	Name of an existing copy. Default is all.
<b>replication_sets (optional)</b>	Name of an existing replication set. Default is all.

## Notes

Before using this command, ensure that transfer is paused and the consistency group is enabled.

If no copy is specified, markers are created for all copies of all replication sets in the specified group.

If no replication sets are specified, markers are created for all replication sets in the specified copy of the group.

Create markers for multiple replication sets by providing multiple values in the `replication_sets` parameter, separated by commas.

# set\_single\_snapshot\_consolidation\_policy

Sets the consolidation policy for the specified snapshot.

## Permission

Group Configuration

## Parameters

```
group=<group name>
copy=<copy name>
[new_consolidation_policy=never | survive_daily | survive_weekly | survive_monthly | always]
[retention_time=<num>months | <num>weeks | <num>days | <num>hrs | forever | none]
(Default: forever)
[kvm=<...>]
[consistency_type=application_consistent | crash_consistent]
```

## Descriptions

<b>group</b>	Name of an existing consistency group.
<b>copy</b>	Name of an existing copy.
<b>new_consolidation_policy (optional)</b>	<ul style="list-style-type: none"><li>Consolidation policy to apply to this snapshot. Valid values are:<ul style="list-style-type: none"><li>never — Snapshot is never consolidated.</li><li>survive_daily — Snapshot remains after daily consolidations, but is consolidated in weekly, monthly, and manual consolidations.</li><li>survive_weekly — Snapshot remains after daily and weekly consolidations, but is consolidated in monthly and manual consolidations.</li><li>survive_monthly — Snapshot remains after daily, weekly, and monthly consolidations, but is consolidated in manual consolidations.</li><li>always — Snapshot is consolidated in every consolidation process, whether manual or automatic.</li></ul></li><li>If the new_consolidation_policy parameter is not specified, the snapshot is consolidated in both automatic and manual consolidation processes.</li></ul>
<b>retention_time (optional)</b>	<ul style="list-style-type: none"><li>(Only for PowerProtect DD and XtremIO copies.) Retention time to apply to this snapshot. When the specified retention time is reached, the snapshot is prioritized for deletion with the same rules as all other snapshots. Valid values are:<ul style="list-style-type: none"><li>&lt;num&gt;months — Number of months to retain the snapshot.</li><li>&lt;num&gt;weeks — Number of weeks to retain the snapshot.</li><li>&lt;num&gt;days — Number of days to retain the snapshot.</li><li>&lt;num&gt;hrs — Number of hours to retain the snapshot.</li><li>none — No retention time.</li></ul></li><li>Default is forever.</li></ul>
<b>kvm (optional)</b>	Only for DataDomain. Key-Value Metadata. Enter key value pairs using the key:value format. Separate multiple key-value pairs with commas. For example: key1:value1,key2:value2.
<b>consistency_type (optional)</b>	Consistency type to apply to this snapshot. Valid values are: <ul style="list-style-type: none"><li>application_consistent — Application consistent snapshot.</li><li>crash_consistent — Crash consistent snapshot.</li></ul>

## Notes

This command can only be run interactively. When prompted, select a snapshot from the list and set a new consolidation policy for the selected snapshot.

The new\_consolidation\_policy parameter sets the snapshot consolidation policy.

Valid values are:

- never - The snapshot is never consolidated. Any consolidation process that includes a snapshot with a consolidation policy of 'never' fails.
- survive\_daily - The snapshot will remain after automatic daily consolidations, but can be consolidated during automatic weekly and monthly consolidations, or manual consolidations.
- survive\_weekly - The snapshot will remain after daily or weekly automatic consolidation, but can be consolidated during automatic monthly consolidations, or manual consolidations.
- survive\_monthly - The snapshot will remain after daily, weekly, or monthly consolidation, but can be consolidated in any manual consolidation.
- always - The snapshot is consolidated in every consolidation process, whether manual or automatic.

# start\_transfer

Starts data transfer to the specified copy of an enabled group.

## Permission

Data Transfer

## Parameters

```
[protection_entity=group | group_set] (Default: group)
[group=<group name>]
[group_set=<group set name>]
[copy=<target copy name>]
```

## Descriptions

- protection\_entity**     • The protected entity that you want to start replication for. Valid values are group or group\_set.  
                          • Default is group.
- group**                Name of an existing consistency group.
- group\_set (optional)** Name of an existing group set.
- copy (optional)**      Defines the copy to which you want to start replicating.

## Notes

If no copy is specified, data transfer is started to all copies in the group.

The following parameters are relevant only for group:

- group
- copy

The following parameters are relevant only for group set:

- group\_set
- cluster

# undo\_writes

Undoes all production writes saved in the image access log of the specified copy journal since image access was enabled, without disabling image access.

## Permission

Target Image

## Parameters

```
[protection_entity=group | group_set] (Default: group)
[group=<group name>]
[group_set=<group set name>]
```

```
[cluster=<cluster name>]  
[copy=<target copy name>]
```

## Descriptions

<b>protection_entity</b>	<ul style="list-style-type: none"><li>The protected entity that you want to undo writes for. Valid values are group or group_set.</li><li>Default is group.</li></ul>
<b>group</b>	Name of an existing consistency group.
<b>group_set (optional)</b>	Name of an existing group set.
<b>cluster (optional)</b>	When you select a group set, this parameter defines the vRPA cluster at which you want to undo writes. The writes are undone for all accessed copies at this vRPA cluster in the specified group set.
<b>copy (optional)</b>	When you select a group, this parameter defines the copy at which you want to undo writes.

## Notes

Before using this command, at the host, shut down all applications and unmount all volumes belonging to the specified consistency group.

The following parameters are relevant only for group:

- group
- copy

The following parameters are relevant only for group set:

- group\_set
- cluster

## update\_copy\_policy\_template

Update the specified copy policy template.

## Permission

Group Configuration

## Parameters

```
name=<copy policy template name>  
[new_name=<...>]  
[protection_window=<num>months | <num>weeks | <num>days | <num>hrs | none]  
[max_journal_lag=<num>bytes | <num>KB | <num>MB | <num>GB | <num>TB | unlimited]  
[journal_size_limit=<integer>]  
[journal_compression=high | medium | none]  
[image_access_log_size=<number>]  
[allow_long_resync=yes | no]  
[allow_replication_with_self_mirroring=yes | no]  
[hosts_os=AIX | HPUX | Linux 2.4 | Linux 2.6 | Solaris | VMware ESX | VMware ESX Windows  
| Windows | Other/Mixed] (Default: Other/Mixed)  
[enable_consolidation_policy=yes | no]  
[unconsolidated_duration=<num>months | <num>weeks | <num>days | <num>hrs]  
[daily_consolidations=<integer> | ALL]  
[weekly_consolidations=<integer> | ALL]
```

## Descriptions

<b>name</b>	The current name of the copy policy template that you want to update in RecoverPoint for Virtual Machines.
<b>new_name (optional)</b>	The new name to give to the copy policy template in RecoverPoint for Virtual Machines.
<b>protection_window (optional)</b>	<ul style="list-style-type: none"><li>The consistency group protection window policy setting indicates the required protection window (how far in time the copy image can be rolled back). RecoverPoint for Virtual Machines uses this setting to trigger event alerts if the requirement cannot be obtained. The events table in the <i>RecoverPoint for Virtual Machines Administrator's Guide</i> lists the events that are triggered. Possible values are &lt;num&gt;months, &lt;num&gt;weeks, &lt;num&gt;days, &lt;num&gt;hrs, or none.</li><li>Default is none.</li><li>The protection window setting must be greater than 24 hours for the predicted protection window feature to function and generate events.</li></ul>
<b>max_journal_lag (optional)</b>	<ul style="list-style-type: none"><li>The maximum lag that is allowed in distributing replication data that the journal receives. When this limit is reached, the system accelerates distribution of data to copy storage. Any snapshots, however, that are distributed in this accelerated mode (or that were distributed before entering this accelerated mode) are not available for rollback.</li><li>To prevent the system from entering the accelerated distribution mode, set this parameter to unlimited. Otherwise, type one of the following values, including a number and a unit: bytes, kb, mb, or gb (with minimum granularity of 512 bytes—a SCSI block).</li><li>Initial default is unlimited.</li></ul>
<b>journal_size_limit (optional)</b>	The maximum size in GB for the journal on each side of a consistency group.
<b>journal_compression (optional)</b>	<ul style="list-style-type: none"><li>The level of compression that is applied to the journal at the copy.</li><li>Possible values are high, medium, or none.</li><li>To change the value, one of the following states should exist for the group: the group is disabled, both the production and the copy vRPA clusters are active, or there is no access to the copy image (while distributing).</li><li>Initial default is none.</li></ul>
<b>image_access_log_size (optional)</b>	<ul style="list-style-type: none"><li>Percentage of the available journal capacity at the copy that is allocated for use by the target-side log.</li><li>Possible values are between 20 and 80.</li><li>To change the value, one of the following states should exist for the group: the group is disabled, both sides are active, or there is no access to the copy image (while distributing).</li><li>Initial default is 20.</li></ul>
<b>allow_long_resync (optional)</b>	<ul style="list-style-type: none"><li>Instructs the system how to continue in the case that a snapshot is too large to be contained in the journal. Possible values are yes and no.</li><li>When yes, the system starts writing the data of the snapshot to the copy storage while the copy journal is still receiving the additional data of the same snapshot. In this case, if a disaster were to occur at the production site before the complete image was transferred to the copy storage, it would not be possible to fail over to the copy.</li><li>When no, the system automatically pauses transfer when the last complete image is about to be removed from the copy. This action provides the opportunity to increase the capacity of journal, and then reenable transfer, or prepare a backup and then reenable this policy.</li><li>Initial default is yes.</li></ul>
<b>allow_replication_with_self_mirroring (optional)</b>	<ul style="list-style-type: none"><li>Only relevant with Symmetrix splitter.</li><li>If yes, and only one vRPA is available, if that vRPA fails, the system begins a full sweep. If no, and only one vRPA is available, the splitter goes into marking mode. Replication resumes when a second vRPA in the cluster is available.</li><li>Do not change the default value unless instructed to do so by Customer Support.</li></ul>
<b>hosts_os (optional)</b>	Defines the Operating System (OS) of the host system from which the data is saved and copied. Possible values are AIX, HP-UX, Linux 2.4, Linux 2.6, Solaris, VMware ESX, Windows, or Other/Mixed.
<b>enable_consolidation_policy (optional)</b>	<ul style="list-style-type: none"><li>Whether automatic snapshot consolidation for the specified group at the specified copy is to be enabled (yes) or disabled (no).</li></ul>

- Default is initially no, and then current value.
- When automatic snapshot consolidation is enabled, the predicted protection window is not calculated.

<b>unconsolidated_duration (optional)</b>	<ul style="list-style-type: none"> <li>• The time period for which data should not be consolidated.</li> <li>• The start time of the period is always today, and the end time of the period is expressed in <math>n</math> hours/days/weeks, with a 12-hour minimum.</li> <li>• Default is 2 days, and then current value.</li> </ul>
<b>daily consolidations (optional)</b>	<ul style="list-style-type: none"> <li>• The number of days in which to consolidate snapshots on a daily basis. Daily consolidations happen every 24 hours, give, or take a couple of hours. Possible values are <math>n</math> days or all.</li> <li>• Default is 5, and then current value.</li> </ul>
<b>weekly consolidations (optional)</b>	<ul style="list-style-type: none"> <li>• The number of weeks in which to consolidate images on a weekly basis. Weekly consolidations happen every 168 hours, give, or take a couple of hours. Possible values are <math>n</math> weeks or all.</li> <li>• Default is 4, and then current value.</li> </ul>

## Notes

None

## update\_link\_policy\_template

Update the specified link policy template.

## Permission

Group Configuration

## Parameters

```
name=<link policy template name>
[new_name=<...>]
[mode=sync | async]
[snap_based_replication=on_highload | continuous | periodic | manual | disabled]
[periodic_snap_based_replication_interval=<number>]
[dynamic_by_latency=yes | no]
[start_async_above_latency=<integer>]
[resume_sync_below_latency=<integer>]
[dynamic_by_throughput=yes | no]
[start_async_above_throughput=<integer>]
[resume_sync_below_throughput=<integer>]
[rpo=<num>hrs | <num>mins | <num>secs | <num>bytes | <num>KB | <num>MB | <num>GB | <num>TB | <num>writes | ]
[regulate_application=yes | no]
[minimize=lag | bandwidth]
[measure_lag_to_rpa=yes | no]
[snapshot_granularity=dynamic | fixed_per_second | fixed_per_write]
[fast_first_init=yes | no]
[compression=none | low | medium | high]
[deduplication=yes | no]
[bandwidth_limit=<number> | unlimited]
```

## Descriptions

**name** Name of the current link policy template.

**new\_name** The new name that you want to apply to the link policy template.

<b>mode (optional)</b>	<ul style="list-style-type: none"> <li>Mode in which to replicate consistency group data between copy_1 and copy_2 of the link. Possible values are sync or async.</li> <li>Default is async.</li> </ul>
<b>snap_based_replication (optional)</b>	<ul style="list-style-type: none"> <li>Mode in which to replicate array snaps between copy_1 and copy_2 . Possible values are disabled, on_highload, periodic, continuous, or manual.</li> <li>Default is disabled.</li> </ul>
<b>periodic_snap_base_d_replication_interval (optional)</b>	<ul style="list-style-type: none"> <li>When snap_based_replication is set to periodic, this parameter sets the interval between snaps.</li> <li>Default is 30 min.</li> <li>When snap_based_replication is set to periodic, this parameter sets the interval between snaps.</li> </ul>
<b>dynamic_by_latency (optional)</b>	<ul style="list-style-type: none"> <li>Whether to alternate between synchronous and asynchronous replication modes, as necessary, according to latency conditions. These conditions define the number of milliseconds between the time that the production data is written to the source vRPA cluster and the time that it is written to the vRPA or journal at the target vRPA cluster. When enabled, RecoverPoint for Virtual Machines adheres to the limits specified for start_async_above_latency and resume_sync_below_latency.</li> <li>Default is no.</li> </ul>
<b>start_async_above_latency (optional)</b>	<ul style="list-style-type: none"> <li>Only relevant when dynamic_by_latency=yes.</li> <li>The threshold (in milliseconds) at which to allow asynchronous replication. When the specified limit is reached, the system automatically starts replicating in asynchronous replication mode until the limit defined in resume_sync_below_latency is reached.</li> </ul>
<b>resume_sync_below_latency (optional)</b>	<ul style="list-style-type: none"> <li>Only relevant when dynamic_by_latency=yes.</li> <li>The threshold (in milliseconds) at which to allow synchronous replication. When the specified limit is reached, the system automatically goes back to replicating in synchronous replication mode.</li> </ul>
<b>rpo (optional)</b>	<ul style="list-style-type: none"> <li>The recovery point objective (RPO) defines the lag of the consistency group link, expressed in terms of time, quantity of data, or number of writes. In RecoverPoint for Virtual Machines, lag starts being measured when a write that is made by the production host reaches the local vRPA, and stops being measured when the write reaches either the target vRPA or the target journal. Possible values are: hrs, mins, secs, bytes, KB, MB, GB, TB, and writes. If any other solution is needed, contact Customer Support.</li> <li>Default is 25 sec.</li> </ul>
<b>regulate_application (optional)</b>	<ul style="list-style-type: none"> <li>When set to yes, the system slows or stops operation of the host applications on approaching a policy boundary.</li> <li>Initial default is no.</li> </ul>
<b>minimize (optional)</b>	<ul style="list-style-type: none"> <li>Possible values are lag or bandwidth.</li> <li>When set to lag, the system uses more bandwidth as possible to keep the lag to a minimum. When set to bandwidth, the system expends additional bandwidth only as necessary to keep the lag under its maximum allowable value.</li> <li>Initial default is lag.</li> <li>This parameter is not applicable for local replication.</li> </ul>
<b>measure_lag_to_rpa (optional)</b>	<ul style="list-style-type: none"> <li>Only relevant for remote replication over the WAN or Fibre Channel. Possible values are yes and no.</li> <li>Whether to measure lag and generate ACKs when writes reach the remote vRPA (yes) or when they reach the remote journal (no).</li> <li>When enabled, this policy provides faster performance in both synchronous and asynchronous replication modes, by reducing both latency and lag. When regulate_application is set to yes, and lag is reduced, so is the potential requirement to regulate the host applications. In synchronous replication mode, write performance is substantially higher with this policy enabled. However, when this policy is enabled, RecoverPoint for Virtual Machines does provide a slightly lower level of data security in the rare case of a simultaneous local and remote vRPA disaster.</li> <li>Initial default is yes. The best practice is to leave this setting as is.</li> <li>This parameter is not relevant for local replication.</li> </ul>
<b>snapshot_granularity (optional)</b>	<ul style="list-style-type: none"> <li>When set to dynamic, the system determines the snapshot granularity of the specified link according to available resources. When set to fixed_per_second, one snapshot is created per second for the specified link. When set to fixed_per_write, a snapshot is created for ever</li> </ul>

	<p>write operation for the specified link. Possible values are dynamic, fixed_per_second, and fixed_per_write.</p> <ul style="list-style-type: none"> <li>• Default is fixed_per_second.</li> </ul>
<b>fast_first_init (optional)</b>	<ul style="list-style-type: none"> <li>• Only relevant for initializations that occur for the first time, for the specified link. Possible values are yes and no.</li> <li>• When yes, RecoverPoint for Virtual Machines transfers data directly to the copy storage. The data is not stored in the journal first, and therefore, the initialization process is substantially shorter. In this case, the nonproduction copy is not consistent with production until the transfer of the whole image to the copy storage is complete. Therefore, if a disaster were to occur at the production cluster before the transfer of the image was complete, it would not be possible to fail over to the nonproduction copy.</li> <li>• When no, RecoverPoint for Virtual Machines transfers data to the copy journal, and only then from the copy journal to the copy storage. Disabling this policy is useful, for example, when disabling and then enabling an existing consistency group, causing the group to be initialized. In this case, RecoverPoint for Virtual Machines may be able to use the existing data at the nonproduction cluster (journal and storage) to construct a complete image, which is required for failover purposes.</li> <li>• To enable failover during initialization, it is recommended to disable both this policy and the <code>allow_long_resync</code> policy parameter in the <code>config_copy_policy</code> command.</li> <li>• Possible values are yes and no.</li> <li>• Default is yes.</li> </ul>
<b>compression (optional)</b>	<ul style="list-style-type: none"> <li>• The level of compression that is applied to replication data of the specified link before the transfer of the data to a remote cluster. Can reduce transfer time considerably. Both the enabling and disabling of compression causes a short pause in transfer and a short initialization. Compression decreases transfer time, but increases the source vRPA CPU utilization. Possible values are none, low, medium, and high. When set to no, compression is disabled.</li> <li>• Default is low if the license supports compression, or none if the license does not support compression.</li> <li>• This parameter is only applicable for remote replication, in asynchronous replication mode.</li> </ul>
<b>deduplication (optional)</b>	<ul style="list-style-type: none"> <li>• Whether repetitive data of the specified link should be eliminated before the transfer of the data to a remote cluster. Can reduce transfer time considerably. Compression must be enabled before deduplication can be enabled. Both the enabling and disabling of deduplication causes a short pause in transfer and a short initialization. Deduplication decreases transfer time, but increases the source vRPA CPU utilization.</li> <li>• Possible values are: yes (enabled) or no (disabled).</li> <li>• Default is yes if the license supports compression, or no if the license does not support compression.</li> <li>• This parameter is only applicable for remote replication, in asynchronous replication mode.</li> </ul>
<b>bandwidth_limit (optional)</b>	<ul style="list-style-type: none"> <li>• The maximum bandwidth available in Mbps for use by the specified link. Possible values are a number or unlimited. If there is no effective limit in available bandwidth, type unlimited. Otherwise, type a number value. Default is unlimited. To understand the limitations of this parameter, see <a href="#">Bandwidth limit</a> section.</li> <li>• This parameter is not applicable for local replication.</li> </ul>

## Notes

### Asynchronous and dynamic synchronous modes

The following parameters are relevant only for asynchronous and dynamic synchronous mode:

- `rpo`
- `regulate_application`
- `minimize`

Any change to the values of these parameters causes transfer for the group to briefly pause.

## Remote links

The following parameters are relevant only for remote links:

- minimize
- compression
- deduplication
- bandwidth\_limit

## Measure lag to vRPA

For any link, it is highly recommended that `measure_lag_to_rpa` be set to yes in both replication modes. Specifically, in synchronous replication, setting `measure_lag_to_rpa` to no causes substantially higher latency for the writes of the production application.

## Snap-based replication

Before setting the `snap_based_replication` parameter to anything other than disabled, ensure that you have registered the vCenter server of the specified group by running the `register_vcenter_server` command.

The parameter `periodic_snap_based_replication_interval` is only relevant when setting `snap_replication` to periodic. The interval value must be 1 minute to 1440 minutes (1 day). When setting an interval, the RPO setting must be specified in time, and the specified interval value must be less than half of the specified RPO value.

Snap-based replication cannot be enabled if:

- One or more of the vRPA clusters in the specified group are running a RecoverPoint for Virtual Machines version that does not support snap-based replication.
- The replication mode is set to synchronous.
- The array or vCenter Server on which the production volumes of this group are located does not support storage awareness.
- The array or vCenter server on which the production copy resides does not support snaps. In this case, asynchronous replication mode is used instead.

**i | NOTE:** The application regulation is disabled when the link is configured with snap-based replication.

In XtremIO environments, the `snap_based_replication` parameter cannot be set to `on_highload`.

## Bandwidth limit

The bandwidth limitation applies to a specific vRPA on a specific global link (a global link is defined as all the group links between two clusters). The limitation is the sum of the group-link limitations of all enabled groups that run on this vRPA for the specified global link. The group-link limitation defines the contribution of the specified group to the overall limitation of the vRPAs that replicate this group.

The specified limit is enforced only if each of the CG links on the vRPA is set to a specific value (other than default).

For example, an vRPA has three CG links running on it, and you set a bandwidth limit on each of the CG links as follows:

- CG1 link > `bandwidth_limit` = 30 Mbps
- CG2 link > `bandwidth_limit` = 50 Mbps
- CG3 link > `bandwidth_limit` = 20 Mbps

In this case, the overall bandwidth limit on the vRPA is 100 Mbps. If CG2 and CG3 are consuming less than their allocated amounts, CG1 may consume more than 30 Mbps.

The next example shows CG1 and CG2 links set to specific bandwidth limits, but the user does not specify the CG3 link and it defaults to unlimited:

- CG1 link > `bandwidth_limit` = 30 Mbps
- CG2 link > `bandwidth_limit` = 50 Mbps
- CG3 link > `bandwidth_limit` = unlimited

In this case, although CG links 1 and 2 are set to specific values, those values are not enforced, and there is no bandwidth limitation on those links or on the vRPA.

## Latency and throughput

When both `dynamic_by_latency` and `dynamic_by_throughput` are enabled, the system starts replicating asynchronously if either of the values that are specified for `start_async_above_latency` or `start_async_above_throughput` are true. However, after the group starts replicating asynchronously, BOTH `resume_sync_below_latency` and `resume_sync_below_throughput` must be true before the group automatically reverts to synchronous replication mode.

The parameters `start_async_above_throughput` and `resume_sync_below_throughput` are only relevant when `dynamic_by_throughput` is set to YES. The parameters `start_async_above_latency` and `resume_sync_below_latency` are only relevant when `dynamic_by_latency` is set to YES.

The system issues an error in the following cases:

- If the value of `resume_sync_below_latency` is not lower than the value of `start_async_above_latency`.
- If the value of `resume_sync_below_throughput` is not lower than the value of `start_async_above_throughput`.
- If the value of `resume_sync_below_throughput` or `resume_sync_below_latency` equals zero.

# System

This chapter includes the following topics:

## Topics:

- [clear\\_persistent\\_statistics](#)
- [clear\\_security\\_settings](#)
- [config\\_automatic\\_snapshot\\_consolidation](#)
- [config\\_io\\_throttling](#)
- [config\\_system\\_reports](#)
- [get\\_groups](#)
- [get\\_raw\\_statistics](#)
- [get\\_registration\\_params](#)
- [get\\_security\\_settings](#)
- [get\\_system\\_report](#)
- [get\\_system\\_report\\_settings](#)
- [get\\_system\\_settings](#)
- [get\\_system\\_state](#)
- [get\\_system\\_status](#)
- [get\\_version](#)
- [get\\_versions](#)
- [set\\_advanced\\_action\\_regulation](#)
- [set\\_env\\_param](#)
- [set\\_registration\\_params](#)
- [set\\_smtp\\_server](#)
- [stop\\_snapshot\\_consolidation](#)
- [unregulate\\_all\\_copies](#)

## clear\_persistent\_statistics

Clears the database statistics.

### Permission

Read Only

### Parameters

None.

### Description

Clears the database statistics.

# clear\_security\_settings

Removes all users, roles from the system. Clears LDAP settings and security level.

## Permission

Security

## Parameters

None

## Descriptions

None

## Notes

**⚠️ WARNING:** This command removes all external users. You cannot run this command if you are not local user.

## Example

To clear all users and roles currently defined in the system:

```
RPA cluster> clear_security_settings  
Are you sure you want to clear all security settings(y/n)? Y  
Security settings cleared successfully.
```

# config\_automatic\_snapshot\_consolidation

Configures automatic snapshot consolidation for the specified group, at the specified copy.

## Permission

Group Configuration

## Parameters

```
group=<group name>  
copy=<copy name>  
[enable=yes | no]  
[unconsolidated_duration=<num>months | <num>weeks | <num>days | <num>hrs]  
[daily_consolidations=<integer> | ALL]  
[weekly_consolidations=<integer> | ALL]
```

## Descriptions

**group** Name of an existing consistency group.

<b>copy</b>	Name of an existing copy.
<b>enable (optional)</b>	<ul style="list-style-type: none"> <li>Whether automatic snapshot consolidation for the specified group at the specified copy is to be enabled (yes) or disabled (no).</li> <li>Default is initially no, and then current value.</li> </ul>
	<span style="color: #0070C0; font-size: 1.5em;">(i)</span> <b>NOTE:</b> When automatic snapshot consolidation is enabled, the predicted protection window is not calculated.
<b>unconsolidated_duration (optional)</b>	<ul style="list-style-type: none"> <li>The time period for which data should not be consolidated.</li> <li>The start time of the period is always today, and the end time of the period is expressed in <i>n</i> hours/days/weeks, with a 12-hour minimum.</li> <li>Default is 2 days, and then current value.</li> </ul>
<b>daily consolidations (optional)</b>	<ul style="list-style-type: none"> <li>The number of days in which to consolidate snapshots on a daily basis. Daily consolidations happen every 24 hours, give, or take a couple of hours. Possible values are <i>n</i> days or all.</li> <li>Default is 5, and then current value.</li> </ul>
<b>weekly consolidations (optional)</b>	<ul style="list-style-type: none"> <li>The number of weeks in which to consolidate images on a weekly basis. Weekly consolidations happen every 168 hours, give, or take a couple of hours. Possible values are <i>n</i> weeks or all.</li> <li>Default is 4, and then current value.</li> </ul>

## Notes

For automatic snapshot consolidation to occur, the specified group cannot be part of a group set.

For the `unconsolidated_duration` parameter, enter a value of 12 hours or more.

After the total time period specified by the `unconsolidated_duration`, `daily consolidations` or `weekly consolidations` parameters has passed, all consolidations will be done on a monthly, unless:

- The value of the `daily consolidations` parameter is set to ALL, in which case weekly consolidations are not allowed, and the remaining snapshots are consolidated daily.
- The value of the `weekly consolidations` parameter is set to ALL, in which case the remaining snapshots are consolidated weekly.

## config\_io\_throttling

Sets the maximum storage read-rate, per array in the SANView.

## Permission

Data Transfer

## Parameters

```
cluster=<cluster name>
[array_serial_number=<...>]
[throttling=low | high | custom | none]
[custom_value=<integer>]
```

## Descriptions

<b>cluster (optional)</b>	Name of the vRPA cluster for which you want to configure throttling. If no value is entered, the specified throttling level is applied at all vRPA clusters.
---------------------------	--

<b>array_serial_number</b>	The serial number of the array whose I/Os to throttle to the specified throttling level or custom value. <b>(optional)</b>
<b>throttling</b> <b>(optional)</b>	<ul style="list-style-type: none"> <li>The maximum rate that the specified array or vRPA cluster can read from a storage device during initialization.</li> <li>Possible values are low, high, custom, and none: <ul style="list-style-type: none"> <li>When set to high, the read-rate of the specified arrays or vRPAs in your RecoverPoint for Virtual Machines cluster is limited to 50 MBps. For an vRPA cluster, this means that the read-rate of a single vRPA is limited to 50 MBps divided by the number of vRPA in the RecoverPoint for Virtual Machines cluster, per array.</li> <li>When set to low, the read-rate of the specified arrays or all vRPAs in your RecoverPoint for Virtual Machines cluster is limited to 200 MBps. For an vRPA cluster, this means that the read-rate of a single vRPA is limited to 200 MBps divided by the number of vRPA in the RecoverPoint for Virtual Machines cluster, per array.</li> <li>When set to custom, use the <i>custom_value</i> parameter to enter the read-rate.</li> <li>If no value is entered, the current value is displayed, per vRPA cluster.</li> <li>Initial default value is none and then keep current value.</li> </ul> </li> </ul>
<b>custom_value</b> <b>(optional)</b>	When throttling is set to custom, a custom value can be entered in MBps.

## Notes

When setting the throttling level, remember that the higher the throttling level, the longer initializations take. Ensure that a low throttling level is insufficient before setting the throttling level to high.

## config\_system\_reports

Defines the configuration of system notifications that are sent to the system report mechanism (SyR).

## Permission

System Configuration

## Parameters

```
[enable=reports_and_alerts | reports_only | none]
[compression=yes | no]
[encryption=yes | no]
[transfer_method=ESRS | SMTP | FTPS]
[server_address=<...>]
[sender_email=<...>]
```

## Descriptions

<b>enable</b> <b>(optional)</b>	<ul style="list-style-type: none"> <li>Enables or disables reports and alerts.</li> <li>Possible values are reports_and_alerts, reports_only, and none.</li> <li>Default is reports_and_alerts.</li> </ul>
<b>compression</b> <b>(optional)</b>	<ul style="list-style-type: none"> <li>Whether to compress the output (yes) or not (no).</li> <li>Default is yes, and then current value.</li> </ul>
<b>encryption</b> <b>(optional)</b>	<ul style="list-style-type: none"> <li>Whether to encrypt the output of the system report with RSA encryption using a 256-bit key before sending (yes) or not (no).</li> <li>Default is yes, and then current value.</li> </ul>

<b>transfer_method</b> <b>(optional)</b>	The means by which to send system reports. Possible options are FTPS (to send reports through the RecoverPoint for Virtual Machines integrated FTPS server), Secure Remote Services (to send reports through a Secure Remote Services gateway, which requires the specification of an IP address in the <code>server_address</code> parameter), or SMTP (to send reports through email, which requires the specification of an SMTP server through <code>set_smtp_server</code> ). Default is SMTP, and then current value.
<b>server_address</b> <b>(optional)</b>	Only valid when the <code>transfer_method</code> parameter value is Secure Remote Services. Enter an IP address in IPv4 format. Default is disabled, and then current value.
<b>sender_email</b> <b>(optional)</b>	Defines the email address that appears as the email of the sender for alerts and reports.

## Notes

To use an email (SMTP) server to send system notifications, before you begin, run `set_smtp_server` to define your email server. The `server_address` parameter is only relevant when `transfer_method` is set to Secure Remote Services. The value of `server_address` should be entered in IPv4 format only.

## get\_groups

Displays a list of all of the groups in the system, and the copies of each group.

### Permission

Read Only

### Parameters

None

### Descriptions

None

## Notes

None

## Example

To display the groups defined in the system, and their copies:

```
RPA cluster> get_groups
Groups:
 Group1:
  Copies:
   Local Site: Group1 Prod, Group2 Copy
 Group2:
  Copies:
   Local Site: Production
   Remote Site: Remote Copy
 Group3:
  Copies:
```

```
Local Site: Remote copy  
Remote Site: Production, Local copy
```

## get\_raw\_statistics

Displays unprocessed system statistics, for use in support situations.

### Permission

Read Only

### Parameters

```
[cluster=<cluster name>]  
[rpa=RPA<n>]  
[group=<group name>]  
[categories=<...>]  
[accumulators=<accumulator name>]
```

### Descriptions

<b>cluster (optional)</b>	Name of an existing vRPA cluster.
<b>rpa (optional)</b>	The vRPA number of the vRPA that handles replication for the consistency group. Possible values are RPAn, where n is the number of the vRPA at the vRPA cluster.
<b>group (optional)</b>	Name of an existing consistency group.
<b>categories (optional)</b>	Possible values are global, lag, dataflow, diskManager, acker, pinger, ponger, snapshot, deltaMarker, application, compression, distributor, highload, and ctrl.
<b>accumulators (optional)</b>	One or more accumulator names.

### Notes

Customer Support can instruct you about how to use the optional parameters to filter the information that is returned by the command.

The categories and accumulators parameters are space-separated lists containing one or more items.

Possible values for categories are: global, lag, dataflow, diskManager, acker, pinger, ponger, snapshot, deltaMarker, application, compression, distributor, highLoad, and ctrl.

## get\_registration\_params

### Permission

System Configuration

### Parameters

```
cluster=<cluster name>
```

## Descriptions

**cluster (optional)** Name of an existing RPA cluster.

## Notes

None

# get\_security\_settings

Displays security level of local user and vRPA communications security level.

## Permission

Security

## Parameters

None

## Notes

vRPA communication security level can be changed in the Admin CLI.

# get\_system\_report

Displays the current system report and sends it to the specified email address.

## Permission

Read Only

## Parameters

[address=<...>]

## Descriptions

**address (optional)** A valid email address in the format *user@company.com*.

## Notes

If you want to send the current system report to a specified email address, before you begin, run [set\\_smtp\\_server](#) to define your email server.

To send the current system report to an email address right now, enter a valid email address in the address field, in the format `user@company.com`. If no address is specified, the system report is only displayed on the screen.

The system report is sent to the specified email address in XML format.

## get\_system\_report\_settings

Displays the current system notification settings.

### Permission

Read Only

### Parameters

None

### Descriptions

None

### Notes

To define the system notification settings, run [config\\_system\\_reports](#).

### Example

To display the system report settings:

```
RPA cluster> get_system_report_settings
Enabled: Reports and alerts
Compressed: YES
Encrypted: YES
Transfer method: SMTP
Server address:
Sender email:
```

## get\_system\_settings

Displays the settings of all of the clusters in the RecoverPoint for Virtual Machines system.

### Permission

Read Only

### Parameters

None

## Descriptions

None

## Notes

None

## Example

To display all of the system settings:

```
RPA cluster> get_system_settings
Clusters:
London:
  Software serial ID:N/A
  Location ID:N/A
  Cluster management IPv4: 12.34.56.86
  Repository volume:
    Type: VNX
    UID: 60,b6,01,6a,c4,a1,1e,80,05,c1,e6,1d,ba,d7,dc,1c,f6
    Vendor: DGC
    Product: CX
    Model: CX3-40
    Size: 300.00GB
    Name: VOL ID: 0000
    Array Serial: Ser#100
    RPA To volume paths map: None
vCenter Server settings:
  vCenter Servers: None
IO throttling:
  Throttling level: none
  Enabled storage awareness: YES
New York:
  Software serial ID:N/A
  Location ID:N/A
  Cluster management IPv4: 12.34.56.78
  Repository volume:
    Type: VNX
    UID: 60,b6,01,6a,c4,a1,1e,80,05,c1,e6,1d,ba,d7,dc,1c,f6
    Vendor: DGC
    Product: CX
    Model: CX3-40
    Size: 300.00GB
    Name: VOL ID: 0000
    Array Serial: Ser#100
    RPA To volume paths map: None
vCenter Server settings:
  vCenter Servers: None
IO throttling:
  Throttling level: none
  Enabled storage awareness: YES
```

## get\_system\_state

Prints the internal system state.

## Permission

SE

## Parameters

None

## get\_system\_status

Displays the current problems in the system, by category, for the specified vRPA cluster.

## Permission

Read Only.

## Parameters

```
[category=system | splitters | RPAs | volumes | WANs | groups | all]
[cluster=<cluster name>]
[summary=yes | no] (Default: no)
```

## Descriptions

- category (optional)**
- Component of the system for which you are requesting status information. Possible values are vRPAs, volumes, splitters, WAN, and system.
  - Default is all categories.
- cluster (optional)**
- Name of the vRPA cluster for which you are requesting status information.
  - Default is all vRPA clusters.
- summary (optional)**
- Whether the output consists of a tally of the problems for each category at each vRPA cluster (yes) or specific information is displayed for each problem (no).
  - Default is no.

## Notes

A summary of the current issues in the system is displayed automatically upon logging into the CLI.

Use **category** to filter the displayed issues by system, splitters, vRPAs, volumes, WANs, or groups.

## Example

```
RPA cluster> get_system_status
Select the category of issues to display: (default is all categories)
1) system
2) splitters
3) RPAs
4) volumes
5) WANs
6) groups
7) all
Select, or press 'ENTER':
Enter the RPA cluster name, or press 'ENTER' for all RPA clusters:
Display summarized output? (Default: no)
1) yes
2) no
Select, or press 'ENTER':
System problems: OK
Clusters problems:
```

```
London:  
    RPAs: OK  
    Volumes: OK  
    Splitters:  
        WARNING: Splitter FNM00104100108 doesn't have login credentials. To minimize user configuration errors, provide splitter login credentials.  
        WARNING: Splitter FNM00104100107 doesn't have login credentials. To minimize user configuration errors, provide splitter login credentials.  
New York:  
    RPAs: OK  
    Volumes: OK  
    Splitters:  
        WARNING: Splitter FNM00104100108 doesn't have login credentials. To minimize user configuration errors, provide splitter login credentials.  
        WARNING: Splitter FNM00104100107 doesn't have login credentials. To minimize user configuration errors, provide splitter login credentials.  
WANs problems: OK  
Groups problems: OK
```

## get\_version

Displays the version of RecoverPoint for Virtual Machines running on the vRPA from which the command is run.

### Permission

Read Only.

### Parameters

None

### Descriptions

None

### Example

To display the current RecoverPoint for Virtual Machines version:

```
Prod_Cluster_1> get_version  
Version: 6.0(m.316)
```

## get\_versions

Displays the versions of RecoverPoint for Virtual Machines running on each cluster of the environment.

### Permission

Read Only

## Parameters

None

## Descriptions

None

## Notes

N/A will appear when there is no communication with the cluster or when the vRPAs in the cluster are running different versions (during upgrade).

## Example

To display the RecoverPoint for Virtual Machines version:

```
Prod_Cluster1> get_versions
Versions:
  Prod_Cluster_1: 6.0 (m.316)
  Remote_Cluster_1: 6.0 (m.316)
```

# set\_advanced\_action\_regulation

Overrides the copy regulation setting defined for the system.

## Permission

Group Configuration

## Parameters

```
[enable=yes | no]
```

## Descriptions

**enable (optional)**      Whether to regulate all groups at all copies (yes) or not (no).

## Notes

Do not run this command unless specifically instructed to do so by the Customer Support.

## set\_env\_param

Sets a CLI environment parameter.

### Permission

Read Only

### Parameters

```
break_on_error=yes | no  
[echo=yes | no] (Default: no)
```

### Descriptions

- break\_on\_error** Whether CLI scripts break if an error is encountered (yes), or ignore the error and continue processing (no).
- echo (optional)**
- Whether scripts are written to screen as they are running (yes), or not (no).
  - Default is no.

### Notes

None

## set\_registration\_params

### Permission

System Configuration

### Parameters

```
[cluster=<cluster name>]  
[activity_type=new_install | software_upgrade | hardware_upgrade | re_install |  
general_update]  
[site_party_id=<...>]  
[sales_order_number=<...>]  
[location=<...>]  
[installation_performing_resource=customer | emc_employee | emc_partner]  
[vce=yes | no]  
[company_name=<...>]  
[connect_software_in_method=ESRS | WebEx | customer_refused | not_configured]  
[connect_hardware_in_method=ESRS | WebEx | not_allowed]
```

### Descriptions

- cluster (optional)** Name of an existing RPA cluster.
- activity\_type (optional)** The type of postdeployment activity that you are performing.

<b>site_party_id (optional)</b>	The site ID.
<b>sales_order_number (optional)</b>	The sales order number to which this activity is tied.
<b>location (optional)</b>	The city, state, and country or region where you are located.
<b>installation_performing_resource (optional)</b>	Whether the person who installs the application is a customer, an employee, or a partner.
<b>vce (optional)</b>	Whether (yes) or not (no) this implementation is operating within a VCE (Vblock) environment.
<b>company_name (optional)</b>	The name of the company.
<b>connect_software_in_method (optional)</b>	<ul style="list-style-type: none"> <li>• The software method that is used to allow remote connectivity to the environment. Enabling this feature is recommended as it allows secure access to the environment to gather logs and resolve issues as expeditiously as possible. Possible values are Secure Remote Services, WebEx, customer_refused, and not_configured.</li> <li>• If you already have a Secure Remote Services Gateway servicing other products, use the Secure Remote Services Config Tool to add the devices (or have the gateway administrator do it for you) to the list of Secure Remote Services monitored environments. See the <i>Secure Remote Support Gateway Operation Guide</i> for further instructions on Config Tool usage. Once the device is added, click the request update button to send the new device information and contact the local customer engineer to approve the update. If you do not have a Secure Remote Services Gateway at your site, contact the account manager to find out more about the benefits of Secure Remote Services.</li> </ul>
<b>connect_hardware_in_method (optional)</b>	<ul style="list-style-type: none"> <li>• The software method that is used to allow remote connectivity to the environment. Enabling this feature is recommended as it allows secure access to the environment to gather logs and resolve issues as expeditiously as possible. Possible values are Secure Remote Services, WebEx, customer_refused, and not_configured.</li> <li>• If you already have a Secure Remote Services Gateway servicing other products, use the Secure Remote Services Config Tool to add the devices (or have the gateway administrator do it for you) to the list of Secure Remote Services monitored environments. See the <i>Secure Remote Support Gateway Operation Guide</i> for further instructions on Config Tool usage. Once the device is added, click the request update button to send the new device information and contact the local customer engineer to approve the update. If you do not have a Secure Remote Services Gateway at your site, contact the account manager to find out more about the benefits of Secure Remote Services.</li> </ul>

## Notes

None

## set\_smtp\_server

Defines the server through which system email notifications, such as email alerts and system reports, are sent.

## Permission

System Configuration

## Parameters

```
[server_address=<...>]
```

## Descriptions

**server\_address (optional)** The IP address or DNS name of a dedicated SMTP server.

## Notes

The `server_address` value must be defined to enable the sending of email notifications. Enter the server address in the form of an IP address or DNS name. Enter an empty value for `server_address` to display the current SMTP server IP address or DNS name.

## stop\_snapshot\_consolidation

Stops any snapshot consolidation processes, whether manual or automatic, that are in progress at the time this command is run.

## Permission

Group Configuration

## Parameters

```
group=<group name>
copy=<copy name>
```

## Descriptions

**group** Name of an existing consistency group.

**copy** Name of an existing copy.

## Notes

When run, this command stops any consolidation processes that are in progress, only after they complete consolidating the snapshot being processed at the time this command is run. Stopping a running consolidation process returns the specified copy journal to the state that it was in before consolidation began.

## unregulate\_all\_copies

Releases all copies from regulation.

## Permission

Group Configuration

## Parameters

```
None
```

## Descriptions

None

## Notes

Do not run this command unless specifically instructed to do so by the Customer Support.

# Maintenance

This chapter includes the following topics:

## Topics:

- `enable_advanced_support_commands`
- `disable_advanced_support_commands`
- `finish_maintenance_mode`
- `resume_group`
- `start_maintenance_mode`
- `suspend_group`

## **enable\_advanced\_support\_commands**

Enable advanced support commands.

 **NOTE:** This command is for internal use only and should not be used.

### Permission

SE

### Parameters

None

## **disable\_advanced\_support\_commands**

Disable advanced support commands.

 **NOTE:** This command is for internal use only and should not be used.

### Permission

SE

### Parameters

None

## **finish\_maintenance\_mode**

Finish the current mode of upgrade.

 **NOTE:** This command is for internal use only and should not be used.

## Permission

Upgrade

## Parameters

[cluster=<cluster names>]

## Descriptions

**cluster (optional)** Name of an existing vRPA cluster.

## Notes

This command is for internal use only and should not be modified.

# resume\_group

Resume group after moving to another vRPA.

**i|NOTE:** This command is for internal use only and should not be used.

## Permission

Upgrade

## Parameters

group=<group name>

## Descriptions

**group** Name of an existing consistency group.

## Notes

This command is for internal use only and should not be modified.

# start\_maintenance\_mode

Switch to upgrade mode.

**i|NOTE:** This command is for internal use only and should not be used.

## Permission

Upgrade

## Parameters

```
mode=major_upgrade | minor_upgrade | rpa_addition | rpa_replacement | rpse_conversion |
system_modification | user_initiated | connect_cluster | migrate_repository
```

cluster=<cluster name>

## Descriptions

### **mode**

- Type of upgrade.
- Possible values are major\_upgrade, minor\_upgrade, rpa\_addition, rpa\_replacement, rpse\_conversion, system\_modification, user\_initiated, connect\_cluster, and migrate\_repository.

### **cluster**

Name of an existing vRPA cluster.

## Notes

This command is for internal use only and should not be modified.

## suspend\_group

Suspend group replication before moving to new cluster.

**(i) NOTE:** This command is for internal use only and should not be used.

## Permission

Upgrade

## Parameters

```
group=<group name>
```

## Descriptions

### **group**

Name of the consistency group.

## Notes

This command is for internal use only and should not be modified.

# Virtual Machine

This chapter includes the following topics:

## Topics:

- [get\\_vcenter\\_server\\_credentials](#)
- [update\\_vcenter\\_server\\_registration](#)

## get\_vcenter\_server\_credentials

Displays basic information about registered vCenter Servers.

### Permission

Splitter Configuration

### Parameters

```
cluster=<cluster name>
[ip=<...>]
```

### Descriptions

**cluster** The vRPA cluster where the vCenter Server is located.

**ip (optional)** IP address of the vCenter Server. Leave blank to display all vCenter Servers at the vRPA cluster.

### Notes

To display basic information about registered vCenter Servers.

## update\_vcenter\_server\_registration

Updates the registration details for the specified vCenter Server at the specified vRPA cluster.

### Permission

Splitter Configuration

### Parameters

```
cluster=<cluster name>
name=<vCenter name>
[new_name=<...>]
```

```
[new_ip=<...>]  
[new_port=<number>]  
[new_user_name=<...>]  
[password=<...>]  
[new_certificate=<...>]  
[validate_credentials=yes | no] (Default: yes)
```

## Descriptions

<b>cluster</b>	The vRPA cluster where the vCenter Server is located.
<b>name</b>	The name of the vCenter Server.
<b>new_ip (optional)</b>	If the IP address of the vCenter Server has changed, enter the new IP address.
<b>new_port (optional)</b>	If the TCP port number of the vCenter Server has changed, enter the new port number.
<b>new_user_name (optional)</b>	If the vCenter Server username has changed, enter the new username.
<b>password (optional)</b>	The password of the vCenter Server.
<b>new_certificate (optional)</b>	If the vCenter Server certificate has changed, paste the new vCenter Server certificate at the command line, then press <b>Enter</b> , enter one period (.), and press Enter again. Paste the entire vCenter Server certificate at the command line, then press <b>Enter</b> , enter one period (.), and press <b>Enter</b> again.
<b>validate_credentials (optional)</b>	Whether or not to validate vCenter Server credentials.

## Notes

None

# Events

This chapter includes the following topics:

## Topics:

- [add\\_email\\_users](#)
- [add\\_snmp\\_user](#)
- [config\\_email](#)
- [clear\\_events\\_log](#)
- [config\\_snmp\\_global](#)
- [config\\_snmp\\_trap\\_dest](#)
- [config\\_syslogs\\_global](#)
- [config\\_syslogs\\_target\\_host](#)
- [create\\_event\\_filter](#)
- [disable\\_email](#)
- [disable\\_snmp](#)
- [disable\\_syslogs](#)
- [edit\\_event\\_filter](#)
- [enable\\_email](#)
- [enable\\_snmp](#)
- [enable\\_syslogs](#)
- [get\\_call\\_home\\_events](#)
- [get\\_email\\_users\\_settings](#)
- [get\\_event\\_filter\\_settings](#)
- [get\\_events\\_log](#)
- [get\\_group\\_sets](#)
- [get\\_monitored\\_parameters](#)
- [get\\_snmp\\_settings](#)
- [get\\_syslog\\_settings](#)
- [remove\\_email\\_users](#)
- [remove\\_event\\_filter](#)
- [remove\\_snmp\\_user](#)
- [set\\_snmp\\_community](#)
- [test\\_email](#)
- [test\\_snmp](#)
- [test\\_syr\\_connectivity](#)
- [test\\_syslogs](#)

## add\_email\_users

Assign filters to emails group.

### Permission

System Configuration

## Parameters

```
emails=<...>
type=immediate | daily
event_filters=<event filter names>
```

## Descriptions

<b>emails</b>	Set of email addresses that are to receive event notifications subject to the settings for the <code>type</code> and <code>event_filters</code> parameters.
<b>type</b>	The alert frequency. Possible values are immediate or daily.
<b>event_filters</b>	<ul style="list-style-type: none"><li>Defines the set of events that are to be sent to this email group.</li><li>There is no default value for this parameter.</li></ul>

## Notes

None

## add\_snmp\_user

Authorizes the specified user to perform SNMPv3 get requests.

## Permission

System Configuration

## Parameters

```
user=<...>
password=<...>
confirm_password=<...>
[certificate=<...>]
```

## Descriptions

<b>user</b>	Name of the SNMP user.
<b>password</b>	SNMP user's password.
<b>confirm_password</b>	Enter the password again.
<b>certificate (optional)</b>	Specify a certificate file.

## Notes

This command can only be run interactively.

Either a password or a certificate must be entered, or both.

The value for `password` must include at least eight characters.

# config\_email

Configures the system alert mechanism settings.

## Permission

System Configuration

## Parameters

```
[sender=<...>]  
[system_info_support_daily=yes | no]
```

## Descriptions

**sender (optional)** Email address from which system alerts and reports originate.

**system\_info\_support\_daily (optional)** • Whether to send a daily report of system information to the System Report Database for monitoring and preemptive support (yes) or not (no).  
• Initial default is no.

## Notes

Before you begin, to enable the sending of email messages, run to enable the email mechanism. Then, run and type the SMTP server IP or DNS name as the server\_address.

To display a specific email address in the from field of email alerts, type a valid email address in the format *user@company.com* as the *sender* value. The SMTP server may require additional configuration to forward messages for the specified sender.

Customers that have signed a remote maintenance agreement can configure *system\_info\_support\_daily* to send alert messages regarding RecoverPoint for Virtual Machines operations to the Customer Support on a daily basis.

To disable the sending of email messages, run `disable_email`.

# clear\_events\_log

Clears the events log.

## Permission

Security

## Parameters

None

## Descriptions

None

## Notes

None

## Example

To clear the events log:

```
RPA cluster> clear_events_log  
Are you sure you want to clear all of the events from the event log (y/n)? y  
Event log cleared successfully.
```

## config\_snmp\_global

Configures the SNMP event trap global mechanism.

## Permission

System Configuration

## Parameters

```
[enabled=yes | no]  
[event_filters=<event filter names>]  
[enable_secure_transport=yes | no]
```

## Descriptions

- |  |   |
|--|---|
| <b>enabled (optional)</b>                            | <ul style="list-style-type: none"><li>• Whether RecoverPoint for Virtual Machines events generate SNMP traps (yes) or do not generate SNMP traps (no).</li><li>• Default is no.</li></ul>   |
| <b>event_filters (optional)</b>                      | <ul style="list-style-type: none"><li>• Defines the set of events that can generate SNMP traps.</li><li>• There is no default value for this parameter.</li></ul>   |
| <b>enable_secure_trans</b><br><b>port (optional)</b> | <ul style="list-style-type: none"><li>• If enabled, port 10161 is available for Transport Layer Security on TCP. Use of community strings and port 161 are disabled.</li><li>• If disabled, port 161 is available and community strings are accepted.</li></ul> |

## Notes

When enabled, a trap destination must be specified for at least single cluster. Use [config\\_snmp\\_trap\\_dest](#) for such configuration.

## config\_snmp\_trap\_dest

Configures the SNMP trap destination for the specified cluster.

## Permission

System Configuration

## Parameters

```
cluster=<cluster name>
trap_dest=<...>
```

## Descriptions

**cluster** Name of an existing vRPA cluster.

**trap\_dest** The Internet address (IP address or DNS) of a host at the specified vRPA cluster to which to send SNMP traps.

## Notes

The value of `trap_dest` is the Internet address (IP address or DNS) of a host at that specified cluster, to which to send SNMP traps.

When enabled, a value must be specified for the `cluster` and `trap_dest` parameters.

## config\_syslogs\_global

Configures the global syslog settings.

## Permission

System Configuration

## Parameters

```
[facility=auth | authpriv | cron | daemon | ftp | kern | local0 | local1 | local2 |
local3 | local4 | local5 | local6 | local7 | lpr | mail | news | syslog | user | uucp]
[event_filters=<event filter names>]
```

## Descriptions

- facility (optional)**
- Specifies the type of program that is logging the message.
  - Possible values are according to the syslog standard list, including: auth, authpriv, cron, daemon, ftp, kern, local0, local1, local2, local3, local4, local5, local6, local7, lpr, mail, news, syslog, user, and uucp.
  - Default is local6.
- event\_filters (optional)**
- Defines the set of events to be sent to the syslog servers.
  - There is no default value for this parameter.

## Notes

None

# config\_syslogs\_target\_host

Configures the syslog settings.

## Permission

System Configuration

## Parameters

```
cluster=<cluster name>
target_host=<...>
```

## Descriptions

**cluster** Name of an existing vRPA cluster.

**target\_host** The IP address of the intended receiver of the log at the specified vRPA cluster.

## Notes

target\_host is the name of the host to which to forward the syslogs in the specified cluster.

# create\_event\_filter

Creates event filter for use with email/snmp/syslog.

## Permission

System Configuration

## Parameters

```
name=<...>
[topic=all | management | cluster | rpa | group | splitter | array] (Default: all)
level=info | warning | error
[scope=normal | detailed | advanced] (Default: normal)
[excluded_events=<...>]
[groups=<group names>]
```

## Descriptions

**name** Name of the event filter to be created.

**topic (optional)**

- The general area of the problem within the RecoverPoint for Virtual Machines system.
- Possible unique values are management, cluster, vRPA, group, splitter, and array.
- Default is all topics.

**level**

- The severity of the event.

- Possible values, in rising order of severity, are info, warning, and error. Recipients receive alerts of all events on the specified level, and any events of greater severity.
  - There is no default value for this parameter.
- scope (optional)**
- The required level of detail of the alert output. Possible values, in rising order of elaboration are normal, detailed, or advanced.
  - Default is normal.
- excluded\_events (optional)**
- IDs of events that are not subject to this filter.
  - There is no default value for this parameter.
- groups (optional)**
- The set of groups that are subject to this filter.
  - There is no default value for this parameter. When `topic` is all or group, it is mandatory to designate one or more groups on which the filter is to be applied. For other topics, this parameter is not relevant.

## Notes

The group parameter is relevant only when topic is all or group.

## Example

In the following example, a filter is created to send notifications regarding the specified groups of all normal and detailed warning and error events, regardless of topic, except for the events specified.

To create an event filter:

```
RPA cluster> create_event_filter filter1 level=warning scope=detailed
excluded_events=8240,12222,14222,16222,18222 groups=exchange1,exchange2
Filter created successfully.
```

## disable\_email

Disables the sending of system alerts through email, according to the specified alert rules.

## Permission

System Configuration

## Parameters

None

## Descriptions

None

## Notes

None

## Example

To disable the sending of e-mail alerts:

```
RPA cluster> disable_email  
Are you sure you want to disable email alert? (y/n)y  
Email alerts disabled successfully.
```

## disable\_snmp

Disables the SNMP agent.

### Permission

System Configuration

### Parameters

None

### Descriptions

None

### Notes

This command can only be run interactively.

## Example

To disable the SNMP agent:

```
RPA cluster> disable_snmp  
Are you sure you want to disable the SNMP agent? (y/n)y  
SNMP agent disabled successfully.
```

## disable\_syslogs

Disables the syslog mechanism.

### Permission

System Configuration

### Parameters

None

## Descriptions

None

## Notes

None

## Example

To disable the syslog mechanism:

```
RPA cluster> disable_syslogs  
Are you sure you want to disable the syslog mechanism? (y/n)y  
Syslog mechanism disabled successfully.
```

# edit\_event\_filter

Edits the specified event filter.

## Permission

System Configuration

## Parameters

```
event_filter=<event filter name>  
[name=<...>]  
[topic=all | management | cluster | rpa | group | splitter | array]  
[level=info | warning | error]  
[scope=normal | detailed | advanced] (Default: normal)  
[excluded_events=<...>]  
[groups=<group names>]
```

## Descriptions

<b>event_filter</b>	Name of an existing event filter.
<b>name (optional)</b>	New name for the event filter.
<b>topic (optional)</b>	<ul style="list-style-type: none"><li>The general area of the problem within the RecoverPoint for Virtual Machines system.</li><li>Possible unique values are management, cluster, vRPA, group, splitter, and array.</li></ul>
<b>level (optional)</b>	<ul style="list-style-type: none"><li>The severity of the event.</li><li>Possible values, in rising order of severity, are info, warning, and error. Recipients receive alerts of all events on the specified level, and any events of greater severity.</li></ul>
<b>scope (optional)</b>	The required level of detail of the alert output. Possible values, in rising order of elaboration are normal, detailed, or advanced.
<b>excluded_events (optional)</b>	IDs of events that are not subject to this filter.
<b>groups (optional)</b>	<ul style="list-style-type: none"><li>The set of groups that are subject to this filter.</li><li>When topic is all or group, it is mandatory to designate one or more groups on which the filter is to be applied. For other topics, this parameter is not relevant.</li></ul>

## Notes

None

## enable\_email

Enables the sending of system alerts by email.

### Permission

System Configuration

### Parameters

None

### Descriptions

None

## Notes

To enable the sending of email alerts through email, before you begin, run `set_smtp_server` to define your email server.

To disable the sending of email alerts through email, run `disable_email`.

## Example

To enable alerts:

```
RPA cluster> enable_email  
Email alerts enabled successfully.
```

## enable\_snmp

Enables the SNMP agent.

### Permission

System Configuration

### Parameters

None

### Descriptions

None

## Notes

None

## Example

To enable the SNMP agent:

```
RPA cluster> enable_snmp  
SNMP agent enabled successfully.
```

# enable\_syslogs

Enables the syslog mechanism.

## Permission

System Configuration

## Parameters

None

## Descriptions

None

## Notes

None

## Example

To enable the syslog mechanism:

```
RPA cluster> enable_syslogs  
Syslog mechanism enabled successfully.
```

# get\_call\_home\_events

Displays all user-defined and system-defined call home events in the system.

## Permission

Read Only.

## Parameters

```
[ID=<Call home event ID>]  
[display_scripts=yes | no] (Default: no)
```

## Descriptions

- ID (optional)** The ID of an existing call home event. If no ID is specified, all the call home events are displayed.
- display\_scripts (optional)**
- Whether (yes) or not (no) to display the logic contained in the event script in the output.
  - Default is no.

## Notes

The system automatically prefixes a first digit to the rule ID. System-defined call home events are prefixed with a 3, and user-defined events are prefixed with a 4.

# get\_email\_users\_settings

Get all emails to filter references.

## Permission

Read Only

## Parameters

None

## Descriptions

None

## Notes

None

## Example

To display the current e-mail user settings:

```
RPA cluster> get_email_users_settings  
Enabled: YES  
SMTP Server: mail.company.com  
Sender Address: user@company.com  
EMC Support:  
    Daily System Info: YES  
Alert Rules:  
    Enabled: YES  
    Event Topic: Group  
    Event Level: INFO  
    Event Scope: NORMAL
```

```
Target Address: user@company.com
Alert Type: DAILY
```

## get\_event\_filter\_settings

Get event filters settings.

### Permission

Read Only

### Parameters

None

### Descriptions

None

### Notes

None

## get\_events\_log

Displays the event logs.

### Permission

Read Only.

### Parameters

```
[from=HH:MM[:SS[:MICROS]] [DD/MM/YYYY]]
[to=HH:MM[:SS[:MICROS]] [DD/MM/YYYY]]
[topic=management | cluster | rpa | group | splitter | array]
[level=info | warning | error] (Default: info)
[scope=normal | detailed | advanced]
[excluded_events=<...>]
[search_text=<...>]
[terse=yes | no] (Default: no)
[gmt_override=yes | no] (Default: no)
```

### Descriptions

#### **from (optional)**

- Start time for filtering the events logs in *hh:mm[:ss[:micros]] [dd/mm/yyyy]* format, where the date, if not specified, is today. Alternatively, it can be expressed in *n* hours ago format.
- Default is 24 hours ago.

<b>to (optional)</b>	<ul style="list-style-type: none"> <li>End time for filtering the events logs either in <i>hh:mm[:ss[:micros]] [dd/mm/yyyy]</i> format, where the date, if not specified, is today. Alternatively, it can be expressed in <i>n</i> hours ago format.</li> <li>Default is the present time (0 hours ago).</li> </ul>
<b>topic (optional)</b>	<ul style="list-style-type: none"> <li>Possible values are management, cluster, vRPA, group, splitter, and topic.</li> <li>Default is all topics.</li> </ul>
<b>level (optional)</b>	<ul style="list-style-type: none"> <li>Possible values, in ascending order of severity, are info, warning, and error. Each value includes all those logs that have more severe levels.</li> <li>Default is info.</li> </ul>
<b>scope (optional)</b>	<ul style="list-style-type: none"> <li>The required level of detail in the log output. Possible values, in ascending order of elaboration are normal, detailed, and advanced.</li> <li>Default is normal.</li> </ul>
<b>excluded_events (optional)</b>	<ul style="list-style-type: none"> <li>IDs of events that are not to be displayed.</li> <li>There is no default value for this parameter.</li> </ul>
<b>search_text (optional)</b>	<ul style="list-style-type: none"> <li>Text strings to match with contents of event summary. The match should be exact, including case. Multiple strings can be entered, separated by commas.</li> <li>Default is no text.</li> </ul>
<b>terse (optional)</b>	<ul style="list-style-type: none"> <li>Whether to display one event per line (yes) or to use multiple lines per event (no).</li> <li>Default is no.</li> </ul>
<b>gmt_override (optional)</b>	Whether to override (yes) or use the system gmt settings (no). Default is no.

## Notes

The optional filter parameters can be used to narrow the results.

The `from` and `to` parameters can also take the format wks/days/hrs/mins ago (for example, '5 mins ago').

The default value for the `from` parameter is 24 hrs ago.

The `topic` parameter can be a list of topics (separated by ','). The default is all topics.

The `search_text` parameter is a string (or a comma-separated list of strings) which can be the name of any of the system components, for example, cluster, vRPA, volume, host, group, user, or a specific string in the event summary.

The `gmt_override` parameter can be used to display event times in GMT, overriding the current configuration.

## Example

To display all events logged to the events log:

```
RPA cluster> get_events_log
Enter earliest time, or press 'ENTER' for 24hrs ago
(Format: HH:MM [DD/MM/YYYY] OR wks/days/hrs/mins ago)
Enter latest time, or press 'ENTER' for now
(Format: HH:MM [DD/MM/YYYY] OR wks/days/hrs/mins ago)
Topic: (default is all topics)
1) management
2) cluster
3) rpa
4) group
5) splitter
Select (separate with spaces if more than one), or press 'ENTER':
Level: (Default: info)
1) info
2) warning
3) error
Select, or press 'ENTER':
Scope: (default is normal)
1) normal
2) detailed
3) advanced
```

```
Select, or press 'ENTER':  
Enter a list of event ids to exclude  
Enter search text(s) to match, or press 'ENTER' (separate with commas if more than one)  
Terse display? (Default: no)  
1) yes  
2) no  
Select, or press 'ENTER':  
Display event times in GMT, overriding the current time display configuration? (Default:  
no)  
1) yes  
2) no  
Select, or press 'ENTER':  
System event logs:  
Time: Thu Aug 1 03:26:57 2013  
Topic: RPA  
Scope: NORMAL  
Level: CLEAR  
Event ID: 3000  
Cluster: London  
Global links: None  
RPA: RPA 8  
Summary: RPA is successfully communicating with its cluster.  
Service Request info:N/A  
Time: Thu Aug 1 03:26:57 2013  
Topic: RPA  
Scope: NORMAL  
Level: CLEAR  
Event ID: 3000  
Cluster: London  
Global links: None  
RPA: RPA 7  
Summary: RPA is successfully communicating with its cluster.  
Service Request info:N/A
```

## get\_group\_sets

Displays the group sets defined in the system.

### Permission

Read Only

### Parameters

None

### Descriptions

None

### Notes

None

## Example

To display all of the group sets currently defined in the system:

```
[Test mode] New York> get_group_sets
Group Sets:
GS2:
  Groups: g2
  Enable Parallel Bookmarks: YES
  Parallel Bookmark Frequency: 1 days
GS_1:
  Groups: g1, g3
  Enable Parallel Bookmarks: YES
  Parallel Bookmark Frequency: 20 sec
```

## get\_monitored\_parameters

Display monitored parameters whose value exceeds the specified minimum severity.

### Permission

Read Only.

### Parameters

```
[min_severity=ok | minor | major | critical] (Default: ok)
```

### Descriptions

- |                                    |   |
|------------------------------------|---|
| <b>min_severity<br/>(optional)</b> | <ul style="list-style-type: none"><li>• To display all monitored parameters that have at least the severity specified.</li><li>• Default is ok.</li></ul> |
|------------------------------------|---|

### Notes

None

## get\_snmp\_settings

Prints the SNMP settings.

### Permission

Read Only

### Parameters

None

## Descriptions

None

## Notes

None

## Example

```
RPA cluster> get_snmp_settings
Agent enabled: YES
Send event traps: YES
Event filters: filter1
Trap destination:
  <RPA cluster>: 192.168.1.21
  <RPA cluster>: 192.168.1.22
RO Community (SNMPv1): public
SNMPv3 Users: SnmpUser1
```

## get\_syslog\_settings

Prints the syslog settings.

## Permission

Read Only

## Parameters

None

## Descriptions

None

## Notes

None

## Example

To display the current system logging mechanism settings:

```
RPA cluster> get_syslog_settings
Enabled: NO
Facility: LOCAL6
Event filters: filter1
Target Hosts:
  Local:
  Remote:
```

## remove\_email\_users

### Permission

System Configuration

### Parameters

```
emails=<...>
```

### Descriptions

**emails** Email addresses that are to be removed from receiving email event notifications.

### Notes

None

## remove\_event\_filter

Remove selected event filter.

### Permission

System Configuration

### Parameters

```
event_filter=<event filter name>
```

### Descriptions

**event\_filter** Name of the existing event filter that is to be removed.

### Notes

None

## remove\_snmp\_user

Removes an SNMPv3 user.

### Permission

System Configuration

### Parameters

None

### Descriptions

None

### Notes

This command can only be run interactively.

### Example

To remove an SNMP user:

```
RPA cluster> remove_snmp_user
Select user to remove:
1) SnmpUser1
2) SnmpUser2
3) SnmpUser3
Select: 3
Are you sure you want to remove user SnmpUser3? (y/n)y
SNMP user removed successfully.
```

## set\_snmp\_community

Defines the SNMPv1 community string.

### Permission

System Configuration

### Parameters

```
enabled=yes | no
[community=<...>]
```

### Descriptions

#### **enabled**

Enables the use of an SNMPv1 community string. For optimum security, do not enable.

<b>community (optional)</b>	Community string of the specified user.
---------------------------------	---

## Notes

This command can only be run interactively.

## test\_email

Sends a test email to the specified email address.

### Permission

System Configuration

### Parameters

```
address=<...>
```

## Descriptions

<b>address</b>	Email address to which the test message will be sent.
----------------	---

## Notes

Enter a valid email address in the format *user@company.com* as the address. To verify that the alert system settings, as configured with the config\_email command, are defined successfully; a test email message will arrive at the specified address.

## test\_snmp

Tests whether SNMP traps can be sent.

### Permission

System Configuration

### Parameters

```
destination=<...>
```

## Descriptions

<b>destination</b>	Internet address (IP address or DNS) of a host to which to send the SNMP trap.
--------------------	--

## Notes

None

# test\_syr\_connectivity

Tests the connectivity of the system report mechanism (SyR) and opens a Service Request with Customer Support.

## Permission

System Configuration

## Parameters

```
[recipient_email=<...>]
```

## Descriptions

### **recipient\_email (optional)**

The email address to which Customer Support sends an email, verifying that the system reports mechanism (SyR) has been successfully configured. The connectivity test opens a service request containing call home event number 30999. It sends an email to the specified email address from Customer Support to verify that the system reports mechanism (SyR) has been successfully configured.

## Notes

Before running this command, define the email server by running , and specify a transfer method by running .

To open a Service Request with Customer Support, type a valid email address in the `recipient_email` field, in the format `user@company.com`.

After testing connectivity:

- Customer Support contacts you to verify that they received the Service Request and SyR has been correctly configured.
- Wait 10 minutes. Then, check the event logs to ensure that event 1020 Failed to send system report was not logged.

# test\_syslogs

Tests the syslog mechanism.

## Permission

System Configuration

## Parameters

```
[level=info | warning | error] (Default: info)
```

## Descriptions

### **level (optional)**

- The event level of the syslog notification message.
- Possible values are:
  - info - tests information, warning, and error logs.
  - warning - tests warning and error logs.
  - error - tests error logs.
- Default is info.

## Notes

None

# Users

This chapter includes the following topics:

## Topics:

- [add\\_role](#)
- [add\\_ssh\\_key](#)
- [add\\_user](#)
- [clear\\_ldap\\_configuration](#)
- [config\\_ldap](#)
- [config\\_user\\_account](#)
- [exchange\\_ssh\\_keys](#)
- [get\\_account\\_settings](#)
- [get\\_ldap\\_configuration](#)
- [get\\_ssh\\_keys](#)
- [get\\_users](#)
- [modify\\_role](#)
- [regenerate\\_encryption\\_keys](#)
- [remove\\_role](#)
- [remove\\_ssh\\_key](#)
- [remove\\_user](#)
- [get\\_roles](#)
- [set\\_password](#)
- [set\\_security\\_level](#)
- [set\\_user](#)
- [test\\_ldap\\_connection](#)
- [unlock\\_user](#)

## add\_role

Defines a new management role in the system, and sets the permissions for that role.

### Permission

Security

### Parameters

```
name=<...>
[permissions=Splitter Configuration | Group Configuration | Data Transfer | Target Image
 | Failover | System Configuration | Security | Upgrade | Storage Management ]
```

### Description

<b>name</b>	Name of the new management role.
<b>permissions (optional)</b>	<ul style="list-style-type: none"> <li>• Permission level granted to the newly defined role.</li> <li>• Default permission level is Read Only.</li> </ul>

## Notes

When prompted, enter the required role name, and permissions.

Management user permissions include:

- Splitter Configuration - User may add or remove splitters, and may attach or detach splitters to volumes.
- Group Configuration - User may create and remove groups, and may modify all group settings except the settings that are in the Data Transfer, Target Image, and Failover permissions, may bookmark images, and may resolve settings conflict.
- Data Transfer - User may enable and disable group, start and pause transfer, and clear and set markers.
- Target Image - User may enable and disable access to image, and undo writes to the target-side log.
- Failover - User may modify replication direction.
- System Configuration - User may configure and manage email alerts, SNMP, and syslog utilities.
- Security - User may add and remove users, modify passwords (for all users), modify permissions (for non-preconfigured users), install product activation code, set account ID, set contact info, add and remove SNMP users, set the SNMP community, and set number of streams.
- Upgrade - Used for system maintenance and upgrades. Commands with this permission are for internal use only. Storage Management- Used for array awareness.

Read Only - By default, each role includes this permission. User may view system information. You receive Read Only permission only, by pressing **Enter** without entering any permissions.

## add\_ssh\_key

Adds a public key to the current management user's profile, allowing him to open secure SSH sessions with the CLI, without specifying a password.

### Permission

Read Only

### Parameters

```
name=<...>
key=<...>
```

### Descriptions

**name** Name of the key to be added.

**key** Key generated by the ssh-keygen facility.

## Notes

Before running this command, generate a key pair (private and public) using the ssh-keygen facility. This command adds a public key of type RSA to the user's profile in the system. The type of key—RSA1 or RSA2—is determined by the –t flag in ssh-keygen. The public key, used in conjunction with the user's private key (held by the machine on which the user is working), enables the user of SSH to carry out a secure dialog with the system. After adding the public key, the user only needs to enter a username to open an SSH session with the CLI; a password is not required.

The ssh-keygen facility writes the public key to one of the following files:

- \$user/.ssh/identity (for RSA1)
- \$user/.ssh/id\_rsa.pub (for RSA2)

The file contains the key that you must enter (copy and paste) at the `Enter the key` prompt that is displayed when you run the `add_ssh_key` command.

# add\_user

Defines a new management user in the system, and sets the permissions and password for that user.

## Permission

Security

## Parameters

```
type=local user | LDAP user | LDAP group (Default: local user)
[name=<...>]
[password=<...>]
[role=<...>]
[groups=<group names>]
```

## Descriptions

<b>type</b>	Type of user to add.
<b>name (optional)</b>	Name of the new user or group.
<b>password (optional)</b>	Password to assign to the new user or group.
<b>role (optional)</b>	Role (permissions) to assign to the new user or group.
<b>groups (optional)</b>	Groups to which the new user or group belongs.

## Notes

This command can only be run interactively. When prompted, enter the required username, password, role, and groups. The required password format depends on the security level that is specified for the new management user. See help for `set_security_level` for more information.

Management user permissions include:

- Splitter Configuration - User may add or remove splitters, and may attach or detach splitters to volumes.
- Group Configuration - User may create and remove groups, and may modify all group settings except those that are included in the Data Transfer, Target Image, and Failover permissions, may bookmark images, and may resolve settings conflict.
- Data Transfer - User may enable and disable group, start and pause transfer, and clear and set markers.
- Target Image - User may enable and disable access to image, and undo writes to the target-side log.
- Failover - User may modify replication direction.
- System Configuration - User may configure and manage email alerts, SNMP, and syslog utilities.
- Security - User may add and remove users, modify passwords (for all users), modify permissions (for non-preconfigured users), install product activation code, set account ID, set contact info, add and remove SNMP users, set the SNMP community, and set number of streams.
- Upgrade - Used for system maintenance and upgrades. Commands with this permission are for internal use only. Storage Management- Used for array awareness.
- Read Only - By default, each role includes this permission. User may view system information.

You receive Read Only permission only, by pressing **Enter** without entering any permissions.

# clear\_ldap\_configuration

Removes all LDAP configurations

## Permission

Security

## Parameters

None

## Descriptions

None

## Notes

None

## Example

```
RPA1> clear_ldap_configuration
Are you sure you want to clear LDAP configuration(y/n)?y
LDAP configuration cleared successfully
```

# config\_ldap

Defines the LDAP configurations.

## Permission

Security

## Parameters

```
[enabled=yes | no]
[protocol_type=LDAP | LDAPS]
[primary_LDAP_Server=<...>]
[primary_LDAP_port=<integer>]
[secondary_LDAP_Server=<...>]
[secondary_LDAP_port=<integer>]
[base_dn=<...>]
[search_base_dn=<...>]
[bind_DN=<...>]
[password=<...>]
[certificate=<...>]
[search_time_limit=<integer>]
```

## Descriptions

<b>enabled (optional)</b>	Activates RecoverPoint for Virtual Machines authentication and authorization using an LDAP server.
<b>protocol_type (optional)</b>	<ul style="list-style-type: none"><li>• LDAP - To send LDAP queries over an unsecured port</li><li>• LDAPS - To send LDAP queries over a secure SSL port</li></ul>
<b>primary_LDAP_Server (optional)</b>	IP address of primary LDAP server
<b>primary_LDAP_port (optional)</b>	<ul style="list-style-type: none"><li>• Default secure port = 636</li><li>• Default non-secure port = 389</li></ul>
<b>secondary_LDAP_server (optional)</b>	IP address of secondary LDAP server
<b>secondary_LDAP_port (optional)</b>	<ul style="list-style-type: none"><li>• Default secure port = 636</li><li>• Default non-secure port = 389</li></ul>
<b>base_dn (optional)</b>	Base Distinguished Name: root of the LDAP directory tree.
<b>search_base_dn (optional)</b>	Search Base Distinguished Name: the root of the LDAP user search tree.
<b>bind_DN (optional)</b>	When using binding_type = simple, distinguished name to use for initial binding when querying the LDAP server.
<b>password (optional)</b>	When you use binding_type = simple, password of the bind distinguished name to use for initial binding when querying the LDAP server.
<b>certificate (optional)</b>	If protocol_type = LDAPS, path to the Active Directory certificate to use for secure communication with the LDAP server. RecoverPoint for Virtual Machines accepts LDAP certificates only in PEM format.
<b>search_time_limit (optional)</b>	To set a time limit for the search.

## Notes

None

## config\_user\_account

Defines the specified contact email in the user account settings.

## Permission

System Configuration

## Parameters

```
[company_name=<...>]  
[contact_info=<...>]
```

## Descriptions

<b>contact_info (optional)</b>	Email address of the primary contact person at the company for all matters that are related to the RecoverPoint for Virtual Machines system.
--------------------------------	--

## Notes

To display the currently configured account settings, run `get_account_settings`.

The specified email address appears in the account information that is displayed by running `get_account_settings`. This information is intended primarily to assist the vendor in providing efficient technical support to the user.

## exchange\_ssh\_keys

Exchanges SSH keys for the local vRPA cluster.

### Permission

Security

### Parameters

```
password=<...>
```

### Descriptions

**password** Root password.

## get\_account\_settings

Displays the user's account settings, for use in technical support situations.

### Permission

Read Only

### Parameters

None

### Descriptions

None

## Notes

Displays the System ID and RecoverPoint for Virtual Machines contact email that is associated with the user's account. To define the company's account settings, run `config_user_account`. Customer Support defines the System ID value.

## Example

To display the current account settings information:

```
RPA cluster> get_account_settings
System ID: 100707
Contact Info: user@company.com
```

## get\_ldap\_configuration

Displays the LDAP configurations.

### Permission

Read Only

### Parameters

None

### Descriptions

None

### Notes

None

## Example

```
RPA cluster> get_ldap_configuration
Active directory support enabled: YES
Primary server name: KLABD.COM
Primary server port: 389
Secondary server name: KLABD.COM
Secondary server port: 389
Base distinguish name: dc=KLABD,dc=COM
Search base distinguish name: cn=Users,dc=KLABD,dc=COM
Bind type: Simple
Bind distinguished name: cn=Administrator,cn=Users,dc=KLABD,dc=COM
Protocol type: LDAP
LDAP search scope: Sub tree
Search time limit: 30 seconds
Users object class: user
Username attribute name: sAMAccountName
Group attribute name: memberOf
```

## get\_ssh\_keys

Displays the names of the public keys that are defined for the current management users profile, allowing this user to open secure SSH sessions with the CLI, without specifying a password.

### Permission

Read Only

### Parameters

None

### Descriptions

None

### Notes

None

## get\_users

Displays the list of all management users and their permissions, as defined in the system.

### Permission

Read Only

### Parameters

None

### Descriptions

None

### Notes

None

### Example

To display all local and LDAP users and their roles as defined in the RecoverPoint for Virtual Machines system:

```
Users:  
  CLar2 (LDAP user):  
    Role: integration  
    CN=LDAP_test,CN=Users,DC=KLABD,DC=COM (LDAP group):
```

```
Role: security
Clar (LDAP user):
    Role: admin
LDAP_2 (LDAP group):
    Role: admin
Local-Ziv (local user):
    Role: admin
ZIV-LDAP (LDAP user):
    Role: admin
Ziv (LDAP user):
    Role: admin
admin (local user):
    Role: admin
boxmgmt (local user):
    Role: admin
group (LDAP group):
    Role: admin
pinokio (LDAP user):
    Role: integration
security-admin (local user):
    Role: security
user1 (LDAP user):
    Role: admin
```

## modify\_role

Modifies an existing management role in the system. Can modify role name and permissions.

### Permission

Security

### Parameters

None

### Descriptions

None

### Notes

You cannot remove preconfigured roles like administrator.

When prompted, enter the required role name, new role name, and permissions.

Management user permissions include:

- Splitter Configuration - User may add or remove splitters, and may attach or detach splitters to volumes.
- Group Configuration - User may create and remove groups, and may modify all group settings except those that are included in the Data Transfer, Target Image, and Failover permissions, may bookmark images, and may resolve settings conflict.
- Data Transfer - User may enable and disable group, start and pause transfer, and clear and set markers.
- Target Image - User may enable and disable access to image, and undo writes to the target-side log.
- Failover - User may modify replication direction.
- System Configuration - User may configure and manage email alerts, SNMP, and syslog utilities.
- Security - User may add and remove users, modify passwords (for all users), modify permissions (for non-preconfigured users), install product activation code, set account ID, set contact info, add and remove SNMP users, set the SNMP community, and set number of streams.
- Upgrade - Used for system maintenance and upgrades. Commands with this permission are for internal use only. Storage Management- Used for array awareness.

- Read Only - By default, each role includes this permission. User may view system information.

You receive Read Only permission only, by pressing **Enter** without entering any permissions.

## Example

```
RPA1> modify_role
Select role to modify:
1) role test
2) role_mgmt
Select: 1
Enter new role name, or press 'ENTER' for current name: changed_role
The current permissions for this role are:
View
Do you want to change these permissions? (y/n)y
Available permissions:
1: Splitter Configuration
2: Group Configuration
3: Data Transfer
4: Target Image
5: Failover
6: System Configuration
7: Security
8: Upgrade
Select (separate with spaces if more than one), or press 'ENTER': 1 8
Role modified successfully.
```

# regenerate\_encryption\_keys

Regenerates the cluster-level key(s) used to encrypt vRPA communication, array credentials, LDAP credentials, CHAP credentials, and vRPA-level SSH host keys for the specified cluster(s).

## Permission

Security

## Parameters

```
[cluster=<cluster name>]
```

## Descriptions

**cluster (optional)** Name of the cluster for which the encryption keys are regenerated.

## Notes

If no cluster is specified, all clusters will be considered.

## **remove\_role**

Removes a management role from the system.

### Permission

Security

### Parameters

None

### Descriptions

None

### Notes

You cannot remove preconfigured roles like administrator, and you cannot remove roles that are currently in use.

### Example

```
RPA1> remove_role
Select role to remove:
1) changed_role
2) role_mgmt
Select: 1
Remove role changed_role? (y/n) y
Role removed successfully.
```

## **remove\_ssh\_key**

Removes a public key from user's authorized keys.

### Permission

Read Only

### Parameters

```
name=<...>
```

### Descriptions

**name** Name of the user.

## Notes

None

## remove\_user

Removes a management user from the system.

### Permission

Security

### Parameters

None

### Descriptions

None

## Notes

This command can only be run interactively.

You cannot remove preconfigured users such as admin.

## Example

```
RPA cluster> remove_user
1) anna
2) frank
3) robert
Select: 1
Remove user anna? (y/n)y
User removed successfully.
```

## get\_roles

Displays the list of all management roles and their permissions, as defined in the system.

### Permission

Read Only.

### Parameters

None

## Descriptions

None

## Notes

None

## Example

```
RPA cluster> get_roles

Roles:
  administrator:
    Permissions: Array Configuration, Boxmgmt, Data Transfer, Failover, Group Clear
    Settings, Group Configuration, SE, Security, Splitter Configuration
    n, System Configuration, Target Image, Upgrade, View, Web Download
  boxmgmt:
    Permissions: Boxmgmt, Group Clear Settings, System Configuration, Upgrade
  monitor:
    Permissions: View
  security:
    Permissions: Security, View
  sysmgmt:
    Permissions: Array Configuration, Boxmgmt, Data Transfer, Failover, Group Clear
    Settings, Group Configuration, Security, Splitter Configuration, S
    ystem Configuration, Target Image, Upgrade, View
  webdownload:
    Permissions: Web Download
```

# set\_password

Resets the password of the currently logged-in user.

## Permission

Read Only

## Parameters

None

## Descriptions

None

## Notes

This command can only be run interactively.

## Example

To set a new password:

```
RPA cluster> set_password  
Enter old password:  
Enter password (min. 5 characters):  
Confirm:  
Password set successfully.
```

 **NOTE:** The passwords you type are not echoed on the screen.

## set\_security\_level

Defines the security level for the currently logged-in management user.

### Permission

Security

### Parameters

```
[level=basic | high]
```

### Descriptions

<b>level (optional)</b>	The system security level. Possible values are basic or high.
-------------------------	--

### Notes

The command can only be run interactively.

When you run the command, the current user's security level will be displayed.

Select whether to set it to basic or to high:

- basic - user passwords to access vRPA must have a minimum of five characters.
- high - user passwords to access the vRPA must have a minimum of eight characters; at least two must be lower case, at least two must be upper case, and at least two must be non-alphabetical (either digits or special characters).

All user passwords expire in 90 days. The same password cannot be reused until at least ten other passwords have been used.

## set\_user

Resets the password, changes the role, or limits the consistency groups of an existing management user.

### Permission

Security

## Parameters

```
name=<username>
[password=<...>]
[role=<role name>]
[groups=<group names>]
```

## Descriptions

**name** Name of the user whose password, role, or list of consistency groups you want to change.

## Notes

Specify the management user whose password or permissions you would like to reset. Then modify the password, role, or consistency groups for the specified management user.

## Example

```
set_user
Enter username:
basicuser
Do you want to change the password for the selected user? (y/n)y
Enter new password (min. 5 characters):
Confirm:
Enter role: (Default: current role for this user is 'test')

Enter group name(s), separated by ',' if more than one, or press 'ENTER' for all groups:
(Default: Not limited to specific groups.)

User modified successfully.
```

## test\_ldap\_connection

Tests the LDAP configurations

## Permission

Security

## Parameters

None

## Descriptions

None

## Notes

None

## Example

```
RPA1> test_ldap_connection  
LDAP settings are valid.
```

## unlock\_user

Unlocks system users that have been locked out of the system after three failed attempts to log in.

### Permission

Security

### Parameters

None

### Descriptions

None

### Notes

This command can only be run interactively.

The list of all users locked out by the system is displayed.

# General

This chapter includes the following topics:

## Topics:

- [get\\_current\\_time](#)
- [get\\_return\\_code](#)
- [help](#)
- [quit](#)
- [set\\_time\\_display](#)

## get\_current\_time

Displays the current system date and time stamp, as used by the vRPAs.

### Permission

Read Only

### Parameters

None

### Descriptions

None

### Notes

This command can only be run interactively.

### Example

To obtain the current local date and time:

```
RPA cluster> get_current_time  
Wed Nov 02 12:00:02 2008 (America/New_York)
```

## get\_return\_code

Displays the code returned by the system in response to the previously run command.

 **NOTE:** See [Flags and return codes](#), [Working with the CLI in CLI mode](#), and [General](#) for complete instructions on how to use return codes.

## Permission

Read Only

## Parameters

None

## Descriptions

None

## Notes

This command can only be run interactively. Primarily used in CLI scripting, for determining how to proceed from among several options.

## Example

To obtain the most recent return code:

```
RPA cluster> get_return_code  
0
```

# help

Displays the required syntax and input options for the specified CLI command, and any relevant notes on its usage.

## Permission

Read Only

## Parameters

None

## Descriptions

- |  |  |
|--|--|
| <b>&lt;command_name&gt;</b><br><b>(optional)</b> | <ul style="list-style-type: none"><li>• The CLI command for which you want to receive help.</li><li>• Default is all commands.</li></ul> |
|--|--|

## Notes

This command can only be run interactively.

Typing **help <command name>** displays the specific help for the specified CLI command. If no **<command name>** is specified, all CLI commands are displayed, along with a short description of each command. The same result is achieved by typing **<command name> ?**. For example, type: **pause\_transfer ?**.

## Example

To get the input syntax and parameters for a specific CLI command:

```
RPA cluster> get_rpa_settings ?
or
RPA cluster> help get_rpa_settings
DESCRIPTION: Displays the settings for the specified RPA(s) at the specified cluster(s).
PARAMETER(S):
[cluster=<cluster name>]
[rpa=RPA<n>]
NOTES ON USAGE:
If a cluster is specified and no RPAs are specified, all RPAs at the cluster will be
presented.
If no cluster is specified, RPAs cannot be specified. In such case, all RPAs at all
clusters will be presented.
```

To display a short description of all CLI commands:

```
RPA cluster> help
===== COMMANDS MENU =====
abort_group_edit ..... Aborts all changes to the specified group's settings since
the last 'edit_group_settings'.
add_email_users ..... Assign filters to emails group.
add_journal_volume ..... Adds a new journal volume to the specified group.
add_replication_volume ..... Adds a new replication volume to the specified group.
```

## quit

Quits the CLI.

## Permission

Read Only

## Parameters

None

## Descriptions

None

## Notes

None

## Example

To quit the CLI session:

```
RPA cluster> quit
```

# set\_time\_display

Sets whether to display times in local time or GMT.

## Permission

System Configuration

## Parameters

```
time=local | GMT
```

## Descriptions

- time**
- Preference for displaying system times.
  - Possible values are local and GMT.

## Notes

None