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Arcserve Product References

This document references the following Arcserve products:

- Arcserve® Replication
- Arcserve® High Availability (HA)
- Arcserve® Assured Recovery®
- Arcserve® Content Distribution

Contact Arcserve

The Arcserve Support team offers a rich set of resources for resolving your technical issues and provides easy access to important product information.

https://www.arcserve.com/support

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- You can get in direct touch with the same library of information that is shared internally by our Arcserve Support experts. This site provides you with access to our knowledge-base (KB) documents. From here you easily search for and find the product-related KB articles which contain field-tested solutions for many top issues and common problems.

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- You can open a support ticket. By opening a support ticket online, you can expect a callback from one of our experts in the product area you are inquiring about.

You can access other helpful resources appropriate for your Arcserve product.
Documentation Changes

The following documentation updates have been made since the last release of this documentation:

- Updated to include user feedback, enhancements, corrections, and other minor changes to help improve the usability and understanding of the product or the documentation itself.
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Chapter 1: Getting Started

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- **About This Guide** (see page 9)
- **Related Documentation** (see page 9)
- **Understanding Arcserve RHA PowerShell Commands** (see page 10)
- **PowerShell Concepts** (see page 11)
- **Install Arcserve RHA PowerShell** (see page 12)
- **Run Arcserve RHA PowerShell** (see page 13)
- **Using Help** (see page 15)
- **Formatting Command Output** (see page 16)

**About This Guide**

This Guide contains all of the necessary information for running and using Arcserve RHA PowerShell commands. It provides a brief overview of Windows PowerShell, describes each Arcserve RHA PowerShell command, and gives instructions and examples on how to use these commands for controlling, editing and monitoring the DR and HA processes.

**Related Documentation**

Use this Guide along with the following Guides:

- **Arcserve RHA Installation Guide**
- **Arcserve RHA Administration Guide**

For more information about using Windows PowerShell, refer to the documentation pack that comes with PowerShell installation package, or download it from Microsoft Download Center.
Understanding Arcserve RHA PowerShell Commands

Arcserve RHA PowerShell is offered to users as an alternative or a supplement to managing the replication process using the Arcserve RHA Manager’s graphic user interface (GUI). It enlarges and facilities the capabilities of the WS CLI that was provided in previous versions, and it supports both DR and HA operations.

Windows PowerShell™ is a new Windows command-line shell and scripting environment designed especially for system administrators. The shell includes an interactive prompt and a scripting environment that can be used independently or in combination. Unlike most shells, which accept and return text, Windows PowerShell is built on top of the .NET common language runtime (CLR) and the .NET Framework, and accepts and returns .NET objects.

Windows PowerShell™ comes with a large set of built-in commands with a consistent interface. Arcserve RHA PowerShell is based on the standard Windows PowerShell™, while adding to it a number of scenario-related commands, called snap-ins. These snap-ins, which allow you to configure a replication scenario and control and monitor the replication and switchover processes, are described in this Guide. All the scenarios that are managed by Arcserve RHA PowerShell commands look and operate exactly as the ones that are managed by the Arcserve RHA Manager, and they are automatically saved in the same default location: INSTALL_DIR/ws_scenarios
PowerShell Concepts

PowerShell Cmdlets

Windows PowerShell introduces the concept of a cmdlet ("command-let"). A cmdlet is a simple, single-function command-line tool built into the shell, whose aim is to manipulate objects. You can recognize cmdlets by their name format: a verb and noun separated by a dash (-), such as Get-Help, Get-State and Run-Scenario. The verbs express specific actions in Windows PowerShell, while the nouns describe specific types of objects.

In Windows PowerShell, most cmdlets are very simple, and they are designed to be used in combination with other cmdlets. For example, the "get" cmdlets only retrieve data, the "set" cmdlets only establish or change data, the "format" cmdlets only format data, and the "out" cmdlets only direct the output to a specified destination.

PowerShell cmdlets have common parameters, which are not described in this Guide. To get more information about the common parameters, enter:

```
get-help about_commonparameters
```

PowerShell cmdlets can have mandatory and optional parameters. If a mandatory parameter is missing, you will be prompted to enter it. If an optional parameter is missing, PowerShell uses the default value.
Object Pipelines

Windows PowerShell provides a new interactive model that is based on objects, rather than text. One major advantage of using objects is that it makes it much easier to pipeline commands, that is, to pass the output of one command to another command as an input.

The command that receives an object can act directly on its properties and methods without any conversion or manipulation. You can refer to properties and methods of the object by name, rather than calculating the position of the data in the output.

In the following example, the result of a Get-Scenario command is passed to a Get-Hosts command. The pipeline operator (|) sends the result of the command on its left to the command on its right, and the output is sent to a Format-Table command.

```
PS> Get-Scenario "File Server*" | Get-Hosts | FT -AUTO

Scenario      Name          Role   Parent         State   IP            Port
------------- -------- -------------- -------- -------- -------------- --------
File Server   192.168.1.152 Master -- Running 192.168.1.152 25000
File Server   192.168.1.152 Master -- Stopped 192.168.1.152 25000
```

Install Arcserve RHA PowerShell

To use Arcserve RHA PowerShell, you need to install Windows PowerShell and Arcserve RHA snap-ins.

For detailed information about the requirements and installation of Windows PowerShell and Arcserve RHA snap-ins, refer to Arcserve RHA Installation Guide.

**Important!** The Arcserve RHA PowerShell and the Arcserve RHA Control Service to which it is connected must have the same version.
Run Arcserve RHA PowerShell

After the installation of Windows PowerShell and Arcserve RHA snap-ins, you can run Arcserve RHA PowerShell from two places:

- Arcserve RHA PowerShell shortcut - when using this option, you can immediately start working with Arcserve RHA PowerShell snap-ins.
- Windows PowerShell shortcut - when using this option, you need to manually add Arcserve RHA PowerShell snap-ins to Windows PowerShell. (See below.)

Important! When running some commands in PowerShell, a system error occurs if you set different passwords on the Master, Replica and Control Service hosts and some operations may fail to run or complete. Use the same administrator password on all hosts to avoid this issue.

To run Arcserve RHA PowerShell from Arcserve RHA PowerShell shortcut:

1. Open Arcserve RHA PowerShell by selecting Start, Programs, arcserve RHA, PowerShell.

Once you open Arcserve RHA PowerShell, the following window is displayed, listing all Arcserve RHA PowerShell snap-ins:

Now, you need to connect to the Control Service that manages your Arcserve RHA operations. To perform this, use the Connect-XO command (see page 18).
To run Arcserve RHA PowerShell from Windows PowerShell shortcut:

   The Windows PowerShell window is displayed.

2. Enter the following command to change the working directory to your Arcserve RHA PowerShell Snapin INSTALLDIR:
   
   CD 'INSTALLDIR\Powershell Snapin'
   The directory changes.

3. Enter the following command to install Arcserve RHA PowerShell snap-ins:
   
   \xo.ps1
   The Arcserve RHA PowerShell snap-ins are installed, and you can start using them to connect to the Control Service that manages your Arcserve RHA operations.
Using Help

There are several ways to get help and additional information in PowerShell:

Help for a specific command

- The Help parameter - when you specify the -? parameter to any command, the command is not executed. Instead, Windows PowerShell displays help for the command. The syntax is:
  
  `<command_name>-?`

- To display the type and syntax of a command, enter:

  `get-command <command_name>`

- Each command has a detailed help file. To access the help file, enter:

  `get-help <command_name> -detailed`

  The detailed view of the command help file includes a description of the command, the command syntax, descriptions of the parameters, and example that demonstrate the use of the command.

- To display help for a parameter in a command, after the parameter prompt enter !?:

  `<parameter_name>!:?`

List of available commands

- To display a list of available Windows PowerShell commands, enter:

  `get-command`

- To display a list of available Arcserve RHA PowerShell snap-in commands, enter:

  `get-command | where {$_-DLL -match "XO"} | format-table`

- To display a list of all aliases defined for XO commands, type:

  `alias xo*`

Arcserve RHA PowerShell commands verification

- To verify the installation of Arcserve RHA PowerShell snap-ins, enter the following command and look for Arcserve RHA PowerShell snap-ins:

  `get-pssnapin`
In Windows PowerShell, there are several commands that enable you to change the output view:

- Format-List
- Format-Custom
- Format-Table
- Format-Wide

To change the format of the output from any command, use the pipeline operator (|) to send the output of the command to a Format command.

For example, the following command sends the output of a Get-Scenario command to the Format-Table command. As a result, the data is formatted as a table:

```
PS>get-scenario |Format-table
```

```
ID         Group     Name            Type       Master        State   Sync  AR
--         -----      -------         ------       ------        -----   ----  ----
1123633468 Scenarios File Server 1   FileServer 192.168.1.152 Running File  False
1123633497 Scenarios Exchange Server Exchange   192.168.1.152 Running Block True
1123633852 Scenarios File Server 3   FileServer               Unknown File  False
3848963840 Scenarios File Server     FileServer 192.168.1.152 Stopped File  False
3848982942 Scenarios File System 1   FileServer QA99-W2K3-EX8 Running File  False
```

For more details, use the following commands to read the help for the Format commands:

```
get-help format-list
get-help format-table
get-help format-wide
get-help format-custom
```
Chapter 2: Using Arcserve RHA PowerShell Commands

This chapter describes in detail how to use Arcserve RHA PowerShell commands to control, edit and monitor the Replication and HA processes. The commands are displayed in alphabetical order and they are divided into four groups: Connecting and Registration, Controlling, Editing and Monitoring.

This section contains the following topics:
- Connecting and Registration Commands (see page 17)
- Controlling Commands (see page 25)
- Editing Commands (see page 43)
- Monitoring commands (see page 67)
- User Management Commands (see page 77)

Connecting and Registration Commands

This section describes how to connect to the Control Service, how to disconnect from it, and how to enter your license key for Arcserve RHA registration.
Connect-XO - Connect PowerShell to a Control Service

In order to work with Arcserve RHA scenarios using PowerShell, the first thing you need to do is connect to the Control Service that acts as the point-of-control of the Arcserve RHA operation. The Connect-XO command enables you to connect PowerShell to a specific Control Service.

**Note:** Once you finished working with Arcserve RHA PowerShell, do not forget to disconnect from the Control Service using the Disconnect-XO command. (see page 19) Closing PowerShell window will also cause PowerShell to disconnect from the Control Service.

**Syntax**


**Parameters**

- **Host**
  
  The IP address or hostname of the machine where the Control service is running.

- **Credentials\PSCredentials**
  
  The Domain\User Name for the Control Service. These credentials must belong to a user who has Admin rights on the Control Service. After you enter the credentials, a **Windows PowerShell Credential Request** dialog appears, prompting you to enter your password.
  
  **Note:** To avoid the need to manually enter your credentials into the **PSCredentials** dialog, refer to Connect PowerShell to a Control Service using a Script.

- **Protocol**
  
  The protocol that is used for connecting to the Control Service. Enter one of the following: http or https.

- **Port (optional)**
  
  The TCP/IP port that is used for connecting to the Control Service. For http the default value is 8088; For https the default value is 443.

**Example: Connect to a Control Service**

```powershell
connect-xo 192.168.1.151 qa88-w3k3\administrator https
```

**Outcome**

A **Windows PowerShell Credential Request** dialog appears, prompting you to enter your password. Then, the following appears:

```
Connecting...
192.168.1.151 connected!
```
**Connect PowerShell to a Control Service using a Script**

You can avoid the need to manually enter your credentials into the PSCredentials dialog by encrypting your password and running it as an object.

**To encrypt your password and run it as an object**

Enter the following commands, using your password where indicated, and run it once:

```
read-host -assecurestring | convertfrom-securestring | out-file C:\ securestring.txt <password>
```

```
$pass = cat C:\securestring.txt | convertto-securestring
```

```
$mycred = new-object -typename System.Management.Automation.PSCredential -argumentlist <domain\user_name>, $pass
```

```
```

The outcome is the same as if you used a standard connection:

```
Connecting...

<IP Address> connected!
```

For more information, refer to the PowerShell documentation or search the internet.

**Disconnect-XO - Disconnect from a Running Control Service**

After you finished working with Arcserve RHA PowerShell, you need to disconnect from the running Control Service. The **Disconnect-XO** command enables you to disconnect PowerShell from the running Control Service.

**Note:** Closing the PowerShell window also causes PowerShell to disconnect from the Control Service.

**Syntax**

```
Disconnect-XO
```

**Note:** This command does not have parameters. It automatically disconnects the running Control Service.

**Example: Disconnect from a Control Service**

```
disconnect-xo
```

**Outcome:**

```
192.168.1.151 disconnected!
```
Get-License - Display your Arcserve RHA License

The Get-License command enables you to display your Arcserve RHA license details.

Syntax

get-license

Example: Display your Arcserve RHA license details

get-license

Outcome:

Key: TVC2LF24FTU7G3WJ2QAFMGLGXA5KLPCCY1XTJTWX2MOZFU5GL7EJ8OZFQND7V3G123456

Company:

License expires on: 11 2009
Maintenance till: 11 2009
Number of Assured Recovery nodes: 240
Number of CDP Repository nodes: 240

Product list:

- Application Server, Windows Cluster edition, 30 instances HA
- File server, Windows Enterprise edition, 130 instances HA
- Application Server, Windows Enterprise edition, 130 instances DR
- File server, Windows Enterprise edition, 30 instances DR
- Application Server, Virtual Machine, 100 instances DR
- Application Server, Virtual Machine, 100 instances HA
Set-License - Register Arcserve RHA

The Set-License command enables you to register Arcserve RHA using a license key. You need to have a valid registration key before using this command.

Syntax

set-license

Parameters

Key

A valid license key.

Example: Register Arcserve RHA using a license key

set-license
TVCC2LF24FTU7G3WJ2QAFMCLGXA5KLPCCYIXTWX2MOZFU5GL7EJ30YZQND7V3G123456

Outcome:

Key registered successfully
xo-import-credential

This command reads all credential records in the given XML file and adds them to the connected Control Service, via the command Add-Credential.

Syntax
xo-import-credential

Parameters
Specify the XML file name.

Input
None. No object is piped to xo-import-credential.

xo-convertto-securefile

This command converts a plain text CVS file to a secured XML file.

Syntax
xo-convertto-securefile

Parameters
Source file name and destination are specified.

The source should be a CSV file which has the following format:
hostname, username, password
host1, user1, pwd1
host2, user2, pwd2

Input
None. No object is piped.
xo-credential - Convert a String to a PSCredential Object

The xo-credential command lets you convert a username and password string to a secured credential object, for use within other commands that take PSCredential objects as command arguments.

Syntax

xo-credential <username> <password>

Example

xo-credential johnsmith mypassword

Add-Credential - Add Credentials to a Host

The Add-Credential command lets you add credentials to host.

Syntax

Add-Credential [-Credentials] <PSCredential> [-Host] <String> [[-Port] <UInt32>]

Parameters

Credentials

The PowerShell credential object of the host. You can create this credential object using xo-credential cmdlet.

Host

The host name or IP address of the host on which you want to apply the credentials to.

Port

The port number of the host.

Default: 25000.

Example:

$c = xo-credential "administrator" "Password";

Add-Credential $c "9.182.102.229" 25000
Set-HostUserCredential - Set the User Credentials Property for a Host

The Set-HostUserCredential command lets you set the user credentials property of a host.

**Syntax**

Set-HostUserCredential [-Name] <String> [-Host] <String> [-Credentials] <PSCredential>

**Parameters**

**Name**

The scenario name.

**Host**

The host name or IP address of the host for which you want to set the credentials.

**Credentials**

The PowerShell credential object of the specific host. You can set this credential object using xo-credential cmdlet.

**Example:**

```
$c = xo-credential "administrator" "Password";
Set-HostUserCredential -name "scenario 1" -host 9.182.102.229 -credential $c
```

**Output:**

Property updated successfully.
Set-ScenarioUserCredential - Set the User Credentials Property of a Scenario

The Set-ScenarioUserCredential command lets you set the user credentials property of a scenario.

Syntax

Set-ScenarioUserCredential [-Name] <String> [-Credentials] <PSCredential>

Parameters

Name
The scenario name.

Credentials
The PowerShell credential object of the host. You can create this credential object using xo-credential cmdlet.

Example:

$c = xo-credential "administrator" "Password";

Set-ScenarioUserCredential -name "scenario 1" -credential $c

Output:
Property updated successfully

Controlling Commands

This section describes Arcserve RHA PowerShell commands that enable you to control the Replication and HA processes.
Diff-Scenario - Generate a Difference Report

The **Diff-Scenario** command enables you to generate a Difference Report for a given scenario.

**Important!** We do not recommend initiating a Difference Report when data is being updated on the Master, since all updates that are not yet applied to the Replica will be shown as different.

**Syntax**

```
Diff-Scenario [-Name] <String> [-Mode] <String> [-Ignore] <Boolean>
```

**Parameters**

**Name**

The name of the scenario for which you want to generate the report. You can enter several scenario names by using the **Get-Scenario command.** (see page 73)

**Mode**

The synchronization mode. Enter one of the following:

B=Binary
F=File

**Ignore**

Ignore files of the same name and size during the data comparison. Enter one of the following:

1=Yes
0= No

**Note:** To view the Difference Report after its generation, open the Report Center from the Overview Page, and select the required report.

**Example: Generate a Difference Report**

```
diff-scenario "File Server 1" F 1
```

Outcome:

Differences report is running for scenario File Server 1...

Done!
Export-Scenario - Export a Scenario to a Specified Location

The **Export-Scenario** command enables you to export scenarios to other locations in order to reuse them. The scenario is exported as an XMC file, and you can specify its location.

**Syntax**

Export-Scenario [-Name] <String> [[-File] [<String>]]

**Parameters**

- **Name**
  
  The scenario name.

- **File (optional)**
  
  The full path of the exported file. If you do not specify a path, the file is exported to the current directory and carries the name of the scenario with an .xmc extension.

**Example: Export a scenario to a specified location**

```
export-scenario "File Server 1" C:\Scenarios\Scenario_exp_file_1
```

**Outcome:**

Scenario File Server 1 exported successfully to C:\Scenarios\Scenario_exp_file_1
Expose-Snapshot - Expose a Snapshot

The Expose-Snapshot command enables you to expose a snapshot. You can either expose the snapshot as a local read-only folder by mounting it on an unused folder, or expose it as a local read-only volume by mounting it on an unused drive letter.

Notes:

- An exposed snapshot remains exposed through subsequent boots. Dismounting an exposed snapshot releases it without losing the snapshot itself.
- The Expose and Mount actions produce the same result - mounting a snapshot to a certain path. The difference between them is that when you want to mount a snapshot for the first time, you cannot use the Mount action directly; you must use the Expose action. The Expose action both exposes and mounts the snapshot. Then, you can use the Unmount and Mount actions.

Syntax

Expose-Snapshot [-Name] <String> [-Index] <Int32> [-Path] <String> [-Port] <String>

Parameters

Name
The name of the host whose snapshot you want to expose.

Index
The index no. of the snapshot, as returned by the Get-Snapshot command (see page 74).

Path
The path under which you want to expose the snapshot. The path can be either a drive letter or a full folder path.

Port (Optional)
The port that is used for connecting to the given host. The default port is 25000.

Example: Expose a snapshot as a local read-only volume

Expose-Snapshot 192.168.1.153 0 E: 25000

Outcome:

Snapshot {97127d0b-f1c9-4dbb-943d-96c39b772e6} mounted as E:
**Import-Scenario - Import a Scenario to the Manager**

The **Import-Scenario** command enables you to import a scenario, in the form of an XMC file, from a specified location. Use this option if you want to relocate scenarios from one Control Service to another, or if you want to use older scenarios that were kept on your system.

**Syntax**

Import-Scenario [-File] <String>

**Parameters**

- **File**
  
  The full path of the imported scenario file.

**Notes:**

- If a scenario with the same name already exists, the imported scenario will be renamed.
- All imported scenarios are stored in the default Scenarios group.

**Example: Import a scenario from a specified location to your Manager**

```
import-scenario c:\scenarios
```

**Outcome:**

Scenario File Server 2 imported successfully from c:\scenarios
Mount-Snapshot - Mount a Snapshot

The Mount-Snapshot command enables you to mount an exposed snapshot. You can either mount the snapshot as a local read-only folder on an unused folder, or mount it as a local read-only volume on an unused drive letter.

Syntax


Parameters

Name

The name of the host whose snapshot you want to mount.

Index

The index number of the snapshot, as returned by the Get-Snapshot command (see page 74).

Path

The path under which you want to expose the snapshot. The path can be either a drive letter or a full folder path.

Port (Optional)

The port that is used for connecting to the given host. The default port is 25000.

Example: Mount a snapshot as a local read-only volume

mount-snapshot 192.168.1.153 0 F:

Outcome:

Snapshot {745d6ce9-d880-40bf-a0cb-d4f0114bb0f8} mounted as F:
Prepare-Reboot - Prepare a Host for Maintenance

The Prepare-Reboot command enables you to perform maintenance procedures, such as rebooting a host or moving groups between Microsoft Cluster nodes, without performing re-synchronization once these processes are completed.

The hosts that can be prepared for maintenance need to participate in running scenarios. The preparation is done on one host at a time, but this host can participate in multiple scenarios. In these scenarios, the host can function as both the Master and the Replica. When a host participates in a scenario that is not running, the preparation that relates to this scenario does not occur.

After you receive the message informing you that the host is preparing for reboot, you can reboot your host or switch groups between cluster nodes. Once you completed your maintenance procedures, the replication process automatically resumes, without performing re-synchronization.

**Note:** If after preparing the host for maintenance, you decided not to reboot it and continue running its scenarios, you need to stop the scenarios and re-run them.

**Syntax**

`Prepare-Reboot [-Name] <String>`

**Parameters**

*Name*

The host name.

**Example: Prepare a Replica host for reboot**

Prepare-Reboot QA95-W2K3-EX2

Outcome:

Host QA95-W2K3-EX2 Preparing for reboot
**Recover-Scenario - Recover Lost Data from the Replica to the Master**

The **Recover-Scenario** command enables you to recover data that was lost on the Master by transferring it from any of the Replica hosts that participate in a scenario. This is done by activating a synchronization process in the reverse direction: from a Replica to the Master. When you activate the **Recover-Scenario** command, you need to define from which Replica host you want to recover the data, and whether to delete data already on the Master but not on the Replica during the recovery process.

**Important!** You must stop replication in order to initiate recovery.

To verify that the recovery process is completed, use the **Get-Events command** (see page 69). After you get a message informing you that the "Recovery process has finished", you can restart the replication process from the Master to the Replica by using the **Run-Scenario command** (see page 35).

**Syntax**

```
```

**Parameters**

- **Name**
  The scenario name.

- **Host**
  The Replica host from which you want to recover data.

- **Mode**
  The synchronization mode. Enter one of the following:
  - B = Binary
  - F = File

- **Ignore**
  Ignore files of the same name and size during the data comparison. Enter one of the following:
  - 1 = Yes
  - 0 = No

- **RemoveMasterFiles**
  Whether to delete files that exist only on the Master during the recovery process. Enter one of the following:
  - 1 = Yes, delete files that exist only on the Master
  - 0 = No, keep files that exist only on the Master

- **RecoveryMode**
The data type to recover. Enter one of the following:

- **A** = Application data
- **S** = System State data (only if the **System State Protection** option is active)
- **B** = Both types of data

The default value is **A**.

**RebootAfterRecovery**

Whether to reboot the Master host once the recovery process is completed. Enter one of the following:

- **1** = Yes, reboot the Master
- **2** = No, do not reboot the Master

**Example: Recover lost data**

```powershell
Recover-Scenario "File Server 1" 192.168.1.153 F 1 0 A 2
```

Outcome:

```
Recover application data process started
```

**Resume-IsAliveCheck - Resume IsAlive Checking of a Running Scenario**

The **Resume-IsAliveCheck** command lets you manually resume IsAlive checking for a given running HA scenario.

**Syntax**

```powershell
Resume-IsAliveCheck [-ScenarioName] <String>
```

**Parameters**

- **ScenarioName**

  The target scenario name.

**Example: Resume IsAlive checking of SQLscenario**

```powershell
Resume-IsAliveCheck SQLscenario
```

Outcome:

```
Resumes periodic is-alive checking of SQLscenario.
```
Resume-Scenario - Resume Replication on a Suspended Replica

The Resume-Scenario command enables you to resume the replication process on a suspended Replica host. After the replication resumes, the accumulated changes are transferred and applied to the Replica without any need to perform a full re-synchronization of the data.

Syntax
Resume-Scenario [-Name <String>] [-Host <String>]

Parameters
Name
The scenario name.

Host
The name of the suspended Replica host that you want to resume.

Example: Resume the replication process on a suspended Replica

resume-scenario "File Server 1" 192.168.1.153

Outcome:
Scenario File Server 1 resumed on 192.168.1.153
Run-Scenario - Start a Scenario

The Run-Scenario command enables you to start one or several scenarios.

Syntax

Run-Scenario [-Name] <String> [-Mode] <String> [-Ignore] <Boolean>

Parameters

Name
The scenario name. You can enter several scenario names by using the Get-Scenario command (see page 73).

Mode
The synchronization mode. Enter one of the following:

B=Binary
F=File
V=Volume

Ignore
Ignore files of the same name and size during the data comparison. Enter one of the following:

1=Yes
0= No

Notes:

■ To check if the operation is completed successfully, use the Get-Scenario (see page 73) and Get-Events (see page 69) commands.

■ To run several scenarios at once, use the Get-Scenario command (see page 73):

Get-Scenario |Run-Scenario

Example: Start a scenario

run-scenario "File Server 1" F 1

Outcome:

Scenario File Server 1 Starting...
Run-Assessment - Run a Scenario in Assessment Mode

The **Run-Assessment** command enables you to assess the accurate bandwidth usage and compression ratio benchmarking that is needed for replication, without actually replicating data. When you run this command, no replication occurs but statistics are gathered. A report is provided once the assessment process is stopped.

**Important!** Do not forget to stop the scenario that runs in Assessment Mode after the period you wanted to assess has passed, by using the **Stop-Scenario command** (see page 38).

**Note:** To view the Assessment Report after its generation, open the Report Center from the Overview Page, and select the required report.

**Syntax**

```
Run-Assessment [-Name] <String>
```

**Parameters**

- **Name**
  
The scenario name.

**Example: Run a scenario in Assessment Mode**

```
run-assessment "File Server 1"
```

**Outcome:**

```
Scenario File Server 1 executed successfully
```
Set-Bookmark - Set a Rewind Bookmark

A bookmark is a checkpoint that is manually set to mark a state that you may want to rewind back to. The Set-Bookmark enables you to set a bookmark for a given scenario. Bookmarks are set in real-time, and not for past events. We recommend setting a bookmark just before any activity that may cause data to become unstable.

Notes:
- You can use this option only if you set the Replica Properties list the Recovery - Data Rewind option to On.
- You cannot set bookmarks during the synchronization process.

Syntax
Set-Bookmark [-Name] <String> [[-Message] <String>]

Parameters
- Name
  The name of the scenario.

- Message (Optional)
  The name of the bookmark. The default name includes the date and time of the bookmark setting.
  
  Note: We recommend giving a meaningful name to the bookmark that will later help you recognize it.

Example: Set a rewind bookmark

set-bookmark "File Server 1" Backup1

Outcome:

Scenario File Server 1: Rewind bookmark set successfully
Stop-Scenario - Stop a Scenario

The **Stop-Scenario** command enables you to stop one or several scenarios.

**Note:** To check if the operation was completed successfully, use the **Get-Scenario** (see page 73) and **Get-Events** (see page 69) commands.

**Syntax**

Stop-Scenario [-Name] <String>

**Parameters**

**Name**

The name of the scenario you want to stop. You can enter several scenario names by using the **Get-Scenario command** (see page 73).

**Example: Stop a scenario**

```powershell
stop-scenario "File Server 1"
```

**Outcome:**

Scenario File Server 1 stopped

Suspend-IsAliveCheck - Suspend IsAlive Checking of a Running Scenario

The **Suspend-IsAliveCheck** command lets you manually suspend IsAlive checking for a given running HA scenario.

**Syntax**

Suspend-IsAliveCheck [-ScenarioName] <String>

**Parameters**

**ScenarioName**

The scenario name.

**Example: Suspend IsAlive checking of SQLscenario**

```powershell
Suspend-IsAliveCheck SQLscenario
```

**Outcome:**

Suspends periodic is-alive checking of SQLscenario.
Suspend-Scenario - Suspend Updates on a Replica

The **Suspend-Scenario** command enables you to temporarily cease delivering changes to a suspended Replica. During the suspension, changes are accumulated in a spool until replication is resumed so that re-synchronization is not required.

**Important!** It is imperative that during suspension, you do nothing on the Replica that causes the data to change in any way, including starting an application such as Exchange Server, SQL Server, or Oracle. If you need to start programs that will change data on the Replica, you may use the **Assured Recovery option** (see page 42).

**Notes:**

- You cannot suspend replication during synchronization. You can suspend replication only temporarily, since changes are accumulated in the spool directory of the Master or upstream Replica. Make sure that sufficient disk space is available for the spool to hold the changes during the time the Replica is suspended.

- To end the suspension, use the **Resume-Scenario command** (see page 34).

**Syntax**

```
Suspend-Scenario [-Name] <String> [-Host] <String>
```

**Parameters**

- **Name**
  The scenario name.

- **Host**
  The Replica host that you want to suspend.

**Example: Suspend updates on a Replica**

```
suspend-scenario "File Server 1" 192.168.1.153
```

**Outcome:**

Scenario File Server 1 Suspended on 192.168.1.153
Switchover-Scenario - Perform a Switchover

The Switchover-Scenario command enables you to start the switchover process for a given HA scenario. To switch back the roles between the Master and the Replica, use the Switchover-Scenario command again.

Syntax

Parameters

Name
The scenario name.

WaitJournal
Whether to wait for journals.

0: Do not wait for journals. You cannot run the reverse scenario if you choose 0.
1: Wait for journals.

Run_reverse_scenario
Specifies whether to automatically run the reverse scenario.

Value 1 or True automatically runs the reverse scenario.
Value 0 or False do not automatically run the reverse scenario.

Example: Perform switchover
Switchover-Scenario "SQL Server 1" 1

Outcome
Scenario SQL Server 1 switching over to <Hostname>.
Done!
Sync-Scenario - Initiate a Synchronization

The **Sync-Scenario** command enables you to synchronize the Master and the Replica of a given scenario. The synchronization process can be manually activated at any time, whether replication is running or not.

**Syntax**

```
Sync-Scenario [-Name] <String> [-Mode] <String> [-Ignore] <Boolean>
```

**Parameters**

- **Name**
  - The scenario name. You can enter several scenario names by using the `Get-Scenario` command (see page 73).

- **Mode**
  - The synchronization mode. Enter one of the following:
    - B=Binary
    - F=File
    - V=Volume

- **Ignore**
  - Ignore files of the same name and size during the data comparison. Enter one of the following:
    - 1=Yes
    - 0= No

**Example: Initiate a synchronization**

```
sync-scenario "File Server 1" F 1
```

**Outcome:**

Synchronization is running for scenario FS 1...

**Done!**
Test-Integrity - Perform Integrity Test for Assured Recovery

The **Test-Integrity** command enables you to activate an automatic integrity test on a Replica host for assured recovery.

**Notes:**
- To activate the **Test Integrity** command, it is necessary to use a scenario with the **Integrity Testing for Assured Recovery** option turned to On.
- The Assured Recovery option supports both Replication and HA solutions. However, it is best suited for HA since the Replica server contains the actual database servers on which the test is performed, and not only data. If you are using AR test as a part of Replication scenario, you must verify that the root directories path is the same on the Master and the Replica. In addition, the Replica should have the database application installed, or share files if you test a File Server, and they need to be configured on the Master and the Replica in exactly the same way. Otherwise, the AR test will not produce meaningful results.
- The scenario needs to run before you start the test.

**Syntax**

```
```

**Parameters**

- **Name**
  The name of the scenario.

- **Host**
  The IP address or hostname of the Replica host you want to test.

- **Mode**
  Specifies whether to run the test integrity mode in the manual or auto mode.
  Type m, M, manual, or Manual to choose the manual mode. The default is the auto mode.

- **WaitJournal**
  Start testing when all journals are applied for P2V scenario.
  
  0: Do not wait for journals
  1: Wait for journals

**Example: Perform Integrity Test for Assured Recovery**

```
Test-Integrity "Exchange Server 1" 192.168.1.153
```

**Outcome**

```
Integrity testing for assured recovery started on 192.168.1.153
Done!
```
Integrity testing for assured recovery completed on 192.168.1.153

Unmount-Snapshot - Unmount a Snapshot

The Unmount-Snapshot command enables you to release an exposed snapshot without losing the snapshot itself. The snapshot is still exposed but it does not use a mount point.

Syntax


Parameters

Name
The name of the host whose snapshot you want to expose.

Index
The index no. of the snapshot, as returned by the Get-Snapshot command (see page 74).

Port (Optional)
The port that is used for connecting to the given host. The default port is 25000.

Example: Unmount a snapshot

Unmount-Snapshot 97127d0b-f1c9-4db5-943d-96c39b712fe6 1

Outcome

Snapshot 97127d0b-f1c9-4db5-943d-96c39b712fe6 unmounted

Editing Commands

This section describes Arcserve RHA PowerShell commands that enable you to edit scenarios and scenario groups.
Add-Appliance - Specify an Appliance for a Full System Scenario

The **Add-Appliance** command enables you to add an appliance for a Full System scenario.

**Syntax**

```
```

**Parameters**

**Name**

The name of the new scenario.

**Host**

The name of the replica host.

**Parent**

The parent host, we support 1:m:n.

**Type**

The platform type.

- **E** or **e** - ESX
- **H** or **h** - Hyper-V
- **X** or **x** - Xen
- **V** or **v** - VCenter
- **Others** - warning message

**Platform**

The IP of the virtual platform. Not applicable in case of Hyper-V.

**Credentials (Optional)**

The credentials of the virtual platform.

**ResourcePool**

The resource pool name. If you do not select this field, the default is selected.

**Storage**

The storage name, if you do not set this field, the default is selected.

**Port**

The port number of the virtual platform, if you do not set this field, the default is selected.

**SSL**
The switch of the SSL connection, the default value is true.

**Dynamic**

The switch of the "with provision" property, the default value is true.

**Example: Add an appliance for a Full System scenario**

Add-Appliance -Name FULL -Parent 9.181.130.110 -Host 9.181.130.64 -Type H

**Outcome**

Replica 9.181.130.64 added successfully
**Add-Dir - Add Root Directories to the Master and Replica Hosts**

The `Add-dir` command enables you to add root directories to the Master and Replica hosts. You can define the same root directory path for both the Master and Replica, or you can enter two different paths. If you do not enter a different path for the Replica, by default it is the same as the Master path.

**Syntax**

```
Add-Dir [-Name] <String> [-MasterPath] <String> [[-ReplicaPath] <-String>]
```

**Parameters**

- **Name**
  The scenario name.

- **MasterPath**
  The full path of the root directories on the Master.
  For a Full System scenario, enter both the driver letter and mount point. When you enter the driver letter, you can ignore ":", "/" or "\".
  For example, "e", "e:", "e:\", "e:/", "e:\\\", "e:////" are the same.
  **Note:** Be aware of the following points:
  - When you enter a mount point, use "\" or "/" as the separator.
  - When there is no root directory in the scenario, the default volume is also added, such as the boot volume and system volume.
  - When you enter all, all volumes are added.

- **ReplicaPath (Optional)**
  The full path of the root directories on the Replica. If no value is entered, the same path is used for the Master and Replica.
  **Note:** For a Full System scenario, ignore this parameter.

**Example: Add the same root directory to the Master and the Replica.**

```
add-dir "File Server 1" C:/Tools
```

**Outcome**

Root Directory: C:/Tools added successfully.
**Add-Group - Create a Scenario Group**

The **Add-Group** command enables you to create a new scenario group.

**Note:** When no scenario is assigned, empty scenario groups do not appear on the Overview Page.

**Syntax**

`Add-Group [-Name] <String>`

**Parameters**

**Name**

The name of the new scenario group.

**Note:** Enter a unique name, since you cannot use the same name for more than one scenario group. If you use an existing name for the new group, the system will change it automatically.

**Example: Create a new scenario group**

`add-group "File Server Scenarios"`

**Outcome**

Group File Server Scenarios added successfully
Add-Master - Add a Master Host to a Scenario

The Add-Master command enables you to add a Master host to a given scenario. When defining a Master host, you need to enter its hostname. In addition, you can also enter the Master IP address, but this parameter is not mandatory.

Notes:

- You can enter the IP address as the hostname.
- You can use this command for changing an existing Master as well.

Syntax

Add-Master [-Name] <String> [-Host] <String> [[-IP] <String>]

Parameters

Name

The name of the scenario.

Host

The hostname of the new Master.

IP (optional)

The IP address of the new Master. If no IP address is defined, by default the system seeks it by using the specified hostname, and uses the first IP address it finds. For this reason, if the host has multiple IP addresses, we recommend to enter here the IP address you want to use.

Example: Add a Master host to a scenario

add-master "File Server 1" 130.119.185.152

Outcome

Master 130.119.185.152 added successfully
Add-Replica - Add a Replica Host to a Scenario

The **Add-Replica** command enables you to add a Replica host to a given scenario. When defining a Replica host, you need to enter its hostname, and optionally, its IP address as well. Then, you need to enter its parent host, which can be either the Master or another Replica.

**Note:** You can enter the IP address as the hostname.

When using ACL security delegations, you need to enter the values of three additional parameters: UserName, Password, and DomainName.

**Syntax**


**Parameters**

**Name**

The name of the scenario.

**Host**

The hostname of the new Replica.

**IP (optional)**

The IP address of the new Replica. If no IP address is defined, by default the system seeks it by using the specified hostname, and uses the first IP address it finds. For this reason, if the host has multiple IP addresses, we recommend to enter here the IP address you want to use.

**Parent**

The parent host of the new Replica host. The parent can be either the Master or an upstream Replica, and you can use either its hostname or IP address.

**UserName; Password;DomainName (ACL only)**

The User Name, password and domain of a user, who has the right to add a new Replica host.

**Example: Add a Replica host to a scenario**

```
add-replica "File Server 1" 130.119.185.153 -parent 130.119.185.152
```

**Outcome**

```
Replica 130.119.185.153 added successfully
```
Add Replicas - Add Multiple Replica Hosts to a Scenario

The **Add-Replicas** command enables you to add multiple Replica hosts at once to a given scenario. To add multiple Replica hosts, you need to create a text file that contains the hostnames and IP addresses of the hosts. When you use the command, first define the scenario name and the parent host of all the Replica hosts you want to add. Then, specify the name and path of the file that contains the details of the new hosts.

**Syntax**

```
Add-Replicas [-ScenarioName] <String> [-ParentHost] <String> [-FileName] <String>
```

**Parameters**

- **ScenarioName**
  - The name of the scenario.

- **ParentHost**
  - The parent host of the new Replica host. The parent can be either the Master or an upstream Replica, and you can use either its hostname or IP address.

- **FileName**
  - A text file that contains the host names and their IP addresses. The text should be formatted as follows:
    
    ```
    #host name              IP address
    QA95-W2K3-SQL1         *130.119.185.155
    QA95-W2K3-EX2          *130.119.185.153
    ```

- **UserName; Password;DomainName (ACL only)**
  - The User Name, password and domain of a user, who has the right to add new Replica hosts.

**Example: Add multiple Replica hosts to a scenario**

```
add-replicas "Exchange Server" QA95-W2K3-EX1 D:\New_Replica_Hosts.txt
```

**Outcome**

```
130.119.185.151 QA95-W2K3-EX1
130.119.185.152 QA95-W2K3-EX2
2 replicas were added.
```
Add-Scenario - Create a New Scenario

The **Add-Scenario** command enables you to create a new scenario. When creating a new scenario, you need to define the following:

- The scenario name
- The scenario group to which this scenario will be assigned (optional)
- The type of application or database server to be protected
- The type of data protection solution
- Whether to enable the Integrity Testing option for Assured Recovery

The new scenario is created without hosts and root directories. You define these parameters at a later stage, using the **Add-Master** command (see page 48), **Add-Replica** command (see page 49) and **Add-Dir** command (see page 46) commands.

**Syntax**

```
```

**Parameters**

**Name**

The name of the new scenario.

*Note*: Enter a unique name, since you cannot use the same name for more than one scenario. If you will use an existing name for the new scenario, the system will change it automatically.

**Group (optional)**

The scenario group name that contains the new scenario.

*Notes:*

- If you do not enter a group name, the new scenario is assigned to the default **Scenarios** group.
- You can create here a new scenario group, by entering a new group name. You can also create a new scenario group by using the **Add-Group** command (see page 47).

**Application**

The type of server whose data will be replicated:

- **EX** - Exchange
- **SQL** - SQL server
- **ORA** - Oracle
- **IIS** - Internet Information Server
- **FS** - File Server
■ **P2V** - Full System

**Type**

The type of solution:

■ **DR** - Replication/Disaster Recovery

■ **HA** - High Availability

**AR**

Whether to perform an Assured Recovery test of the recoverability of the data on the Replica server:

■ **0** - No

■ **1** - Yes

**IntOpt**

The integration with other Arcserve products:

■ **BAB** - Integration with Arcserve Backup

■ **D2D** - Integration with Arcserve D2D

■ **HBBU** - Integration with Arcserve Central Host-Based VM Backup

**Example: Create a new scenario**

```
add-scenario "File Server 1" "File Server Scenarios" FS DR 0
```

**Outcome**

Scenario File Server 1 added successfully
Create-D2DSenario—Create the D2D Scenario

The `Create-D2DSenario` command enables you to create a D2D scenario.

**Syntax**

```powershell
create-D2DSenario [-ServerURL] <String> [-Credentials] <PSCredential> [-ReplicaHostName] <String> [-ScenarioName] <String>
```

**Parameters**

- **ServerURL**
  - Defines the URL of the D2D server.

- **Credentials**
  - Defines the credentials to log on to the D2D server.

- **ReplicaHostName**
  - Defines the name or the IP address of the replica.

- **ScenarioName**
  - Defines the name of the scenario.

**Example: Create a D2D integration scenario**

```powershell
Create-D2DSenario -ServerURL http://test01:8014 -Credentials testserv/testpass -ReplicaHostName test01 -ScenarioName testD2D
```
Create-HBBUScenario - Create the Arcserve Central Applications Integration Scenario

The Create-HBBUScenario command lets you create a scenario that connects to the Arcserve Central Applications server to get the policy and related backup destination as the master and auto discover all backup VM files.

Syntax


Parameters

ServerUrl

Defines the URL of the Arcserve Central Host-Based VM Backup server.

Credentials

Defines the credentials to log on to the Arcserve Central Applications server.

ScenarioName

Defines the name of the scenario.

MasterHostName

Defines the name or the IP address of the master server.

ReplicaHostName

Defines the name or the IP address of the replica.

FilterFileName

Defines the filter file name of the virtual machine

InstanceUUID

Defines the UUID of the virtual machine

Example: Create a Central Applications Integration scenario

Create-HBBUScenario -ServerURL http://test01:8015 -ScenarioName testHBBU -MasterHostName test02 -ReplicaHostName test_replica
**Get-D2DBackupDestination - Get the D2D Backup Destination**

The **Get-D2DBackupDestination** command gets the D2D backup destination details.

**Syntax**

```
get-D2DBackupDestination [-ServerUrl] <String> [-Credentials] <PSCredential>
```

**Parameters**

- **ServerURL**
  - Defines the URL of the D2D server.

- **Credentials**
  - Defines the credentials to log on to the D2D server.

**Example: Get the D2D backup destination**

```
Get-D2DBackupDestination -ServerURL http://test01:8014 Credentials admin/testpass
```

**Get-HBBUVM - Get VMs from the Arcserve Central Applications Server**

The **Get-HBBUVM** command gets the virtual machines that are assigned to the backup policy from the Arcserve Central Applications server.

**Syntax**

```
Get-HBBUVM [-ServerUrl] <String> [-Credentials] <PSCredential>
```

**Parameters**

- **ServerUrl**
  - Defines the URL of the Arcserve Central Host-Based VM Backup server.

- **Credentials**
  - Defines the credentials to log on to the Arcserve Central Applications server.

**Example: Get the virtual machine from the Central Applications server**

```
Get-HBBUVM http://test01:8015
```
Remove-Dir - Remove Root Directories from the Master and Replica

The **Remove-Dir** command enables you to remove root directories from the Master and Replica hosts.

**Note:** You cannot remove a root directory only from the Replica using this command. Once you remove the Master root directories, the corresponding Replica root directories are removed as well.

**Syntax**

```
Remove-Dir [-Name] <String> [-MasterPath] <String>
```

**Parameters**

- **Name**
  - The name of the scenario.

- **MasterPath**
  - The root directory path on the Master.
  - For a P2V scenario, enter both the driver letter and mount point. When you enter the driver letter, you can ignore ":", "/" or ":".
  - For example, "e", "e:", "e:\", "e:/", "e:\\\", "e:///" are the same.
  - **Note:** Be aware of the following points:
    - When you enter a mount point, use ":" or "/" as the separator.
    - Sometimes, the system volume does not have a driver letter or a mount point and you cannot add or remove it. This drive letter or mount point is added automatically. Do not try to remove such a volume.

**Example: Remove a root directory from the Master and Replica**

```
remove-dir "File Server 1" C:/Tools
```

**Outcome:**

Root Directory: C:/Tools removed
Remove-Group - Delete a Scenario Group

The `Remove-Group` command enables you to delete a given scenario group.

**Note:** You can only remove an empty scenario group. If you want to remove a group that contains scenarios, first you need to remove the scenarios.

**Syntax**

`Remove-Group [-Name] <String>`

**Parameters**

- **Name**
  The name of the scenario group you want to delete.

**Example: Delete a scenario group**

`remove-group "new group 1"`

**Outcome**

Group new group 1 removed

Remove-Replica - Remove a Replica Host from a Scenario

The `Remove-Replica` command enables you to remove a Replica host from a given scenario.

**Syntax**

`Remove-Replica [-Name] <String> [-Host] <String> [-Parent] <String>`

**Parameters**

- **Name**
  The name of the scenario.

- **Host**
  The name of the Replica host you want to remove.

- **Parent**
  The parent of the Replica host you want to remove in the replication tree. It can be either the Master or an upstream Replica.

**Example: Remove a Replica host from a scenario**

`remove-replica "FS 1" 130.119.185.153 -parent 130.119.185.152`

**Outcome**

Replica 130.119.185.153 removed
Remove-Scenario - Delete a Scenario

The **Remove-Scenario** command enables you to delete a given scenario. The command also deletes the related VM resources when the scenario is a Full System scenario.

**Note:** You cannot delete a running scenario.

**Syntax**

```
Remove-Scenario [-Name] <String> [[-DeleteVM] [<Boolean>]]
```

**Parameters**

- **Name**
  
  The name of the scenario you want to delete.

- **Delete_VM [<Boolean>]**
  
  Deletes all VM resources of a P2V scenario.
  
  - 1 - Delete **(Default)**
  
  - 0 - Do not delete

**Example: Remove a scenario**

```
remove-scenario "File Server 2"
```

**Outcome**

Scenario File Server 2 removed
**Rename-Group - Rename a Scenario Group**

The **Rename-Group** command enables you to change the name of a given scenario group.

**Syntax**

```
Rename-Group [-Name] <String> [-NewName] <String>
```

**Parameters**

- **Name**
  
The current name of the scenario group.

- **NewName**
  
The new name for the scenario group.

  **Note**: Enter a unique name, since you cannot use the same name for more than one scenario group. If you use an existing name for the scenario group, the system changes it automatically.

**Example: Rename a scenario group**

```
rename-group Server "Exchange Server Scenarios"
```

**Outcome**

Group Server renamed!
**Rename-Scenario - Change a Scenario Name**

The **Rename-Scenario** command enables you to change the name of a given scenario.

**Note:** You cannot rename a running scenario. To change its name, stop the scenario first.

**Syntax**

Rename-Scenario [Name] <String> [NewName] <String>

**Parameters**

- **Name**
  - The current name of the scenario.
- **New Name**
  - The new name for the scenario.

**Example:**

```
rename-scenario "File Server 1" "File Server"
```

**Outcome**

Scenario File Server 1 renamed!

**Commands for Changing Scenarios While Running**

You may now change certain scenario properties while a scenario is running. This section lists the syntax and examples for the commands that apply to editing a scenario while it is running.

- Apply-AllPendingRuntimeChangeableScenarioProperties
- Apply-PendingRuntimeChangeableScenarioProperties
- Discard-AllPendingRuntimeChangeableScenarioProperties
- Discard-RuntimeChangeableScenarioProperties
- Get-AllRuntimeChangeableScenarioProperties
- Get-RuntimeChangeableScenarioProperties
- Get-PendingRuntimeChangeableScenarioProperties
- Get-AllPendingRuntimeChangeableScenarioProperties
- Set-RuntimeChangeableScenarioProperty
- Test-RuntimeChangeableScenarioProperty
Apply-AllPendingRuntimeChangeableScenarioProperties

The `Apply-AllPendingRuntimeChangeableScenarioProperties` command lets you apply all changes to all changed scenarios at run time.

**Syntax**

```
Apply-AllPendingRuntimeChangeableScenarioProperties
```

**Parameters**

None

**Example**

Suppose you changed properties on several scenarios. Those changes are all pending. To apply them immediately use this command.

Apply-PendingRuntimeChangeableScenarioProperties

The `Apply-PendingRuntimeChangeableScenarioProperties` command lets you apply all changes to the specified running scenario.

**Syntax**

```
Apply-PendingRuntimeChangeableScenarioProperties [Name]
```

**Parameters**

- **Name** - The name of the running scenario you wish to change.

**Example**

The following command applies changes to the scenario called `FileServer`:

```
Apply-PendingRuntimeChangeableScenarioProperties FileServer
```

**Outcome**

The result is a list of properties and their values:

- `error_source`: `engine_verification_error`
- `error_level`: `Error`
- `host_index`: `2`
- `root_dir_index`: `0`
Discard-AllPendingRuntimeChangeableScenarioProperties

The Discard-AllPendingRuntimeChangeableScenarioProperties command cancels all the changes you configured for all scenarios.

Syntax

Discard-AllPendingRuntimeChangeableScenarioProperties

Parameters

None

Discard-RuntimeChangeableScenarioProperties

The Discard-RuntimeChangeableScenarioProperties command lets you cancel any changes made on the specified running scenario.

Syntax

Discard-RuntimeChangeableScenarioProperties [Name]

Parameters

Name - This is the name of the running scenario for which you wish to discard changes.

Example

If you have made numerous changes to a running scenario called FileServer and discover problems, use the following command to set the scenario back to all original values:

Discard-RuntimeChangeableScenarioProperties FileServer

Outcome

All changes made to the scenario called FileServer are reset back to their original values.

If you wish to set only a specific property back to its original value, use the Set-RuntimeChangeableScenarioProperties command to change only the specified property for the running scenario. Note that when you have discarded changes, all records in the Get-AllPendingRuntimeChangeableScenarioProperties list are deleted. Running Apply-PendingRuntimeChangeableScenarioProperties results in a warning message that the specified scenario was not changed at run time.
Get-AllPendingRuntimeChangeableScenarioProperties

The Get-AllPendingRuntimeChangeableScenarioProperties command lists all the scenarios that were changed while running.

**Syntax**

Get-AllPendingRuntimeChangeableScenarioProperties

**Parameters**

None

**Example**

The following command lists all the scenarios changed while running.

```powershell
Get-AllPendingRuntimeChangeableScenarioProperties
```

**Outcome**

The result is a list of scenario names.

Get-AllRuntimeChangeableScenarioProperties

The Get-AllRuntimeChangeableScenarioProperties command enables you to list all the properties that can be changed while any scenario is running.

**Syntax**

get-AllRuntimeChangeableScenarioProperties

**Parameters**

None

**Example:**

The following code issues the command to list all editable properties and redirect the output to a text file.

```powershell
Get-AllRuntimeChangeableScenarioProperties > d:\1.txt
```

**Outcome**

The result is a set of the editable properties in Scenario/Master/Replica(PropertyName format.
Get-RuntimeChangeableScenarioProperties

The Get-RuntimeChangeableScenarioProperties command enables you to find all the properties you can edit while the specified scenario is running. The command returns a list of the properties you may change for that scenario. Combine with I/O redirection commands to format output to a text file.

Syntax

Get-RuntimeChangeableScenarioProperties [Name]

Parameters

Name - the name of the running scenario

Example:

The following command lists all the editable properties for the scenario called File Server Scenario 1:

Get-RuntimeChangeableScenarioProperties FileServerScenario1

Outcome

Property: False
Host: 10.0.0.0
Value: False
Index: 111
Category: Replica
Name: SpecificReplicaProps.Suspend.SuspendScript
Get-PendingRuntimeChangeableScenarioProperties

The Get-PendingRuntimeChangeableScenarioProperties command lets you list all the changes made to the specified running scenario.

Syntax

Get-PendingRuntimeChangeableScenarioProperties [Name]

Parameters

- **Name** - The name of the running scenario

Example:

The following example shows the list of all properties changed for the scenario called FileServer:

```
Get-PendingRuntimeChangeableScenarioProperties FileServer
```

Outcome

The result is a list of Properties, their Original Values and their New Values.
Set-RuntimeChangeableScenarioProperty

The Set-RuntimeChangeableScenarioProperty command enables you to update the value of the specified property in the named scenario while it is running.

**Syntax**

Set-RuntimeChangeableScenarioProperty [Name] [Index] [Value] [Host]

**Parameters**

- **Name** - The name of the running scenario whose properties you wish to change.
- **Index** - The index or name of the property you want to change. To determine correct names, use the Get-AllRuntimeChangeableScenarioProperties or the Get-RuntimeChangeableScenarioProperties commands. The index value is generated internally; for two scenarios even of the same type, the same property can have a different index. Ensure you obtain the correct indexes or names.
- **Value** - The new setting for the specified property.
- **Host** - (Optional) The host needs to be specified only for Master or Replica property changes. For generic or HA properties, this value is optional.

**Example:**

The following command updates the argument of the suspend script property based on its name:

```
Set-RuntimeChangeableScenarioProperty FileServer SpecificReplicaProps.Suspend.SuspendScript 456 -Host 10.0.0.1
```

**Outcome**

The result is a table showing the Property, its Original Value and the New Value.
Test-RuntimeChangeableScenarioProperty

The Test-RuntimeChangeableScenarioProperty command lets you confirm whether the specified property can still be edited while the scenario is running.

Syntax

Test-RuntimeChangeableScenarioProperty [Name] [Index] [Host]

Parameters

Name - The name of the running scenario
Index - The index or name of the property you wish to test
Host - Optional

Example

The following command tests the property whose index is 113 for a running scenario called FileServer.

Test-RuntimeChangeableScenarioProperty FileServer 113 -host 10.0.0.3

Outcome

The result is a true or false value for the index or property name specified.

Monitoring commands

This section describes Arcserve RHA PowerShell commands that enable you to monitor the DR and HA processes.
Get-Dirs - List all Root Directories of a Scenario

The **Get-Dirs** command enables you to list all root directories of a given scenario.

**Syntax**

```powershell
Get-Dirs [-Name] <String>
```

**Parameters**

- **Name**
  
  The scenario name.

**Example: List the root directories of a given scenario**

```powershell
get-dirs "File Server 1"
```

**Outcome**

```
ID       : 2721474912
Scenario : File Server 1
Master   : 192.168.1.152
Path     : C:/Tools
DB       : False
```
Get-Events - List all Events of a Scenario

The `Get-Events` command displays a list of replication events of a given scenario. The event list can include informational, warning and error events. The displayed information consists of the event ID, the event date and time, the scenario name, the event severity and the event message.

**Syntax**

Get-Events [-Name] <String>

**Parameters**

- **Name**
  
  The name of the scenario whose events you want to view.

**Example: List events of a given scenario in an auto-sized format table**

```powershell
get-events "File Server 1" | FT -auto
```

**Outcome**

<table>
<thead>
<tr>
<th>ID</th>
<th>Time</th>
<th>Scenario</th>
<th>Severity</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>SM00165</td>
<td>10/28/2008 6:02:52 PM</td>
<td>File Server 1</td>
<td>Significant</td>
<td>Connected to...</td>
</tr>
<tr>
<td>SR00014</td>
<td>10/30/2008 7:17:31 PM</td>
<td>File Server 1</td>
<td>Significant</td>
<td>Starting...</td>
</tr>
<tr>
<td>SR00139</td>
<td>10/30/2008 7:17:35 PM</td>
<td>File Server 1</td>
<td>Significant</td>
<td>Starting File...</td>
</tr>
<tr>
<td>IR00119</td>
<td>10/30/2008 7:18:16 PM</td>
<td>File Server 1</td>
<td>Info</td>
<td>Root directory...</td>
</tr>
<tr>
<td>SR00120</td>
<td>10/30/2008 7:18:16 PM</td>
<td>File Server 1</td>
<td>Significant</td>
<td>Synchronization...</td>
</tr>
<tr>
<td>IM00405</td>
<td>10/30/2008 7:15:06 PM</td>
<td>File Server 1</td>
<td>Info</td>
<td>Posting...</td>
</tr>
<tr>
<td>SR00202</td>
<td>10/30/2008 7:18:21 PM</td>
<td>File Server 1</td>
<td>Significant</td>
<td>All modifications...</td>
</tr>
<tr>
<td>SR00096</td>
<td>11/3/2008 6:47:40 PM</td>
<td>File Server 1</td>
<td>Significant</td>
<td>Stopping scenario...</td>
</tr>
</tbody>
</table>
Get-Group - List Groups that carry a Given Name

The **Get-Group** command enables you to list all scenario groups that carry a given name. To display this list, you need to enter the name you are searching for.

In addition, this command enables you to list all existing scenario groups. To list all scenario groups, just enter the command without a scenario name.

**Syntax**

```
Get-group [[GroupName] [String]]
```

**Parameters**

**Name**

The name of the scenario group.

**Note:** You can use the "*" or "?" wildcards as part of the scenario group name.

**Example: List all scenario groups that carry a given name**

```
get-group "Server"
```

**Outcome**

- File Server Scenarios 2
- File Server Scenarios 1
- Exchange Server Scenarios
- File Server Scenarios
Get-Hosts - List all Hosts of a Scenario

The **Get-Hosts** command enables you to list all hosts of a given scenario.

**Syntax**

Get-Hosts [-Name] <String>

**Parameters**

- **Name**
  The scenario name.

**Example: List the hosts of a given scenario in an auto-sized format table**

Get-Hosts "File Server 1" |FT -auto

**Outcome**

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Name</th>
<th>Role</th>
<th>Parent</th>
<th>State</th>
<th>IP</th>
<th>Port</th>
</tr>
</thead>
<tbody>
<tr>
<td>File Server 1</td>
<td>192.168.1.152</td>
<td>Master</td>
<td>--</td>
<td>Running</td>
<td>192.168.1.152</td>
<td>25000</td>
</tr>
</tbody>
</table>
Get-NetworkAdapters - Get Network Adapters of the Specified Host

The Get-NetworkAdapters command enables you to list all network adapters of a specified host.

Syntax

Get-NetworkAdapters [-Name] <string> [-Host] <string>

Parameters

Name
The scenario name.

Host
The host name in a Full System scenario.

Example: List all network adapters of a specified host of a Full System scenario

Get-NetworkAdapters FULL 9.181.130.64

Outcome: All network adapters are displayed.

Intel(R) 82579LM Gigabit Network Connection - Virtual Switch
Arcserve RHA internal for AR
Get-Scenario - List Scenarios that carry a Given Name

The Get-Scenario command enables you to list all scenarios that carry a given name. To display this list, enter the name you are searching for.

In addition, this command enables you to list all existing scenarios. To list all scenarios, enter the command without a scenario name.

Syntax

Get-Scenario [[-Name] [<String>]]

Parameters

Name

The scenario name.

Note: You can use the "*" or "?" wildcards as part of the scenario name.

Example: List all scenarios that carry a given name in an auto-sized format table.

get-scenario File* |FT-auto

Outcome

<table>
<thead>
<tr>
<th>ID</th>
<th>Group</th>
<th>Name</th>
<th>Type</th>
<th>Master</th>
<th>State</th>
<th>Sync AR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1123633852</td>
<td>Scenarios</td>
<td>FileServer</td>
<td>FileServer</td>
<td>Unknown</td>
<td>File</td>
<td>False</td>
</tr>
<tr>
<td>1123633468</td>
<td>Scenarios</td>
<td>File Server 1</td>
<td>FileServer</td>
<td>192.168.1.153</td>
<td>Stopped</td>
<td>False</td>
</tr>
</tbody>
</table>
Get-Snapshot - Display VSS Snapshots of a Replica Host

The `Get-Snapshot` command enables you to display all VSS snapshots of a given Replica Host.

**Syntax**

```
Get-Snapshot [-Name] <String> [[-Port] <String>]
```

**Parameters**

- **Name**
  
The name of the host as it appears in the scenario.

- **Port (optional)**
  
The connection port to the given host. The default port number is 25000.

**Example: Display all VSS snapshots of a given Replica host in an auto-sized format table**

```
Get-Snapshot 130.119.173.7 |FT -auto
```

**Outcome**

```
Index Snapshot        Created               Exposed Mounted     Drive Scenario
----- -------- ------- ------- ------- ------- -------
0     {4f2bb053-5f2d} 11/18/2008 4:03:09 PM False   Not Mounted C:/   FileServer
1     {bcbdda2b-6165} 11/18/2008 4:06:00 PM False   Not Mounted C:/   FileServer
2     {c1f206be-2ad0} 11/18/2008 4:07:17 PM False   Not Mounted C:/   FileServer
```
Get-State - List all Scenarios defined for a Given Host

The Get-State command enables you to list all the scenarios that are defined for a given host, along with their details and states.

Syntax

Get-State [-Name] <String>

Parameters

Name
The name of the host.

Example:

get-state 130.119.185.152

Outcome

ID : 2505374864
Group : FS Scenarios
Name : FS 1
Type : FileServer
Master : 130.119.185.152
State : Running
Sync : File
AR : False

ID : 2721467841
Group : File Server Scenarios
Name : File Server 1
Type : FileServer
Master : 130.119.185.152
State : Stopped
Sync : File
AR : False
Get-Stats - Display Replication Statistics of a Scenario

The Get-Stats command enables you to display scenario statistic per host during a run.

Syntax

Get-Stats [-Name] <String>

Parameters

Name

The name of the scenario.

Example: Display replication statistics of a given scenario during a run

get-stats "File Server 1"

Outcome

Scenario : File Server 1
Name : 192.168.1.152
Role : Master
Spool_Size : 0
Sync_Files : 345
Sync_MBytes : 86
Rep_MBytes : 0

Scenario : File Server 1
Name : 192.168.1.153
Role : Replica
Spool_Size : 0
Sync_Files : 345
Sync_MBytes : 86
Rep_MBytes : 0
User Management Commands

This section describes Arcserve RHA PowerShell commands that enable you to monitor and manage User Groups and Users for ACL-based Control Service.

Note: A special license is needed for using the ACL commands.

Clean-VMResource – Clean VM Resource on a Virtual Platform

The Clean-VMResource command enables you to clean virtual machine resources on a virtual platform. If you enter a replica host, the VM resources of the replica are cleaned. When you do not enter the Host parameter, all VM resources in a virtual platform are cleaned.

Syntax

Clean-VMResource – Clean vm resource on virtual platform

Parameters

Name

The name of the scenario.

Host

The replica host in the scenario.

Example: Clean all resources

Clean-VMResource FULL 9.181.130.64

Outcome

VM Resources deleted successfully.
**Edit-NetworkMapping – Map Network Adapters to the Master and Replica**

The Edit-NetworkMapping command lets you map the network adapters between the master and replica of a Full System scenario.

**Syntax**

```
Edit-NetworkMapping [-Name <string>] [-Host <string>] [-SourceAdapter <string>] [-TargetAdapter <string>] [[IP <string>]] [[DNS <string>]] [[gateway <string>]] [[PrimaryWins <string>]] [[SecondaryWins <string>]] [[Type <string>]]
```

**Parameters**

- **Name**
  
  The name of the scenario. Only the HA and P2V scenarios are supported.

- **Host**
  
  The host name or the IP address.

- **SourceAdapter**
  
  The name of the source adapter.

- **TargetAdapter**
  
  The name of the target adapter. User Null to specify an empty value.

- **IP**
  
  The array of the IP address. Use a ":" as a separator. For example, "192.168.1.1:255.255.252.0". 255.255.252.0 is a subnet mask.

- **DNS**
  
  The array of the DNS address.

- **Gateway**
  
  The array of the gateway address.

- **PrimaryWins**
  
  Primary WINS (Windows Internet Name Service) address.

- **SecondaryWins**
  
  Secondary WINS (Windows Internet Name Service) address.

- **Type**
  
  The AR or SW network. The default is the SW network. Type "ar" to set the AR network.

**Example**

```
Edit-NetworkMapping -Name FULL -Host 9.181.130.61 -SourceAdapter "Microsoft Network Adapter Multiplexor Driver" -TargetAdapter "Arcserve RHA internal for AR" -Type AR -IP 9.181.130.140:255.255.0.0
```

**Outcome**
Successfully edited the network mapping.

**Get-SuperUserGroup - Display the Super User Group Name**

The **Get-SuperUserGroup** command enables you to display the name of the Super User Group of the connected Control Service.

**Syntax**

Get-SuperUserGroup

**Note:** This command does not have parameters.

**Example: Display the name of the Super User Group**

Get-SuperUserGroup

**Outcome**

QA95-W2K3-SQL\<supergroup user name>

**Set-SuperUserGroup - Change the Super User Group**

The **Set-SuperUserGroup** command enables you to change the Super User Group.

**Syntax**

Set-SuperUserGroup [-GroupName] <String>

**Parameters**

- **GroupName**
  
  The name of the new Super User group.

**Example: Change the Super User Group**

Set-SuperUserGroup Administrators

**Outcome**

Set super user group successfully
Get-Users - List all Users of the Super User Group

The **Get-Users** command enables you to list all users that belong to the Super User Group.

**Syntax**

get-users

**Note:** This command does not have parameters.

**Example: List all users that belong to the Super User Group**

get-users

**Outcome**

QA95-W2K3\Administrator
QA95-W2K3-SQL\User2
QA95-W2K3-SQL\User1

Get-ScenarioUsers - List all Users with Rights on a Scenario

The **Get-ScenarioUsers** command enables you to list all users that have rights on a certain scenario.

**Syntax**

get-ScenarioUsers [-ScenarioName] <String>

**Parameters**

**ScenarioName**

The name of the scenario.

**Example: List all users that have rights on a given scenario**

Get-ScenarioUsers "File Server"

**Outcome**

name

----

QA95-W2K3-SQL\User2
QA95-W2K3-SQL\User1
Set-ScenarioUser - Assign User Rights on a Scenario

The `Set-ScenarioUser` command enables you to assign to a user certain rights on a specific scenario.

**Syntax**

```
Set-ScenarioUser [-Name] <String> [-User] <String> [-Right] <String>
```

**Parameters**

- **Name**
  - The name of the scenario.
- **User**
  - The full name of the user.
- **Right**
  - The type of rights the user will have on the scenario. Enter one of the following:
    - `A` = Admin
    - `C` = Control
    - `V` = View Only

**Example: Assign to a user Control rights on a given scenario**

```
Set-ScenarioUser "File Server" QA95-W2K3-SQL/User2 C
```

**Outcome**

Set user right successfully
Remove-ScenarioUser - Cancel User Rights on a Scenario

The Remove-ScenarioUser command enables you to cancel the rights of a user on a certain scenario.

**Syntax**

Remove-ScenarioUser [-Name] <String> [-User] <String>

**Parameters**

- **ScenarioName**
  - The name of the scenario.

- **UserName**
  - The name of the user.

**Example: Cancel the rights of a user on a given scenario**

Remove-ScenarioUser “File Server” QA95-W2K3-SQL\User2

**Outcome**

User removed successfully.
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