User Guide

Arcserve[®] Live Migration



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Chapter 1: Introduction

Arcserve Live Migration simplifies the process of migrating data, applications and workloads. It allows you to move virtually any type of data or workload to cloud, onpremises or remote locations, such as the edge, with support for virtual, cloud and physical systems. An assured validation of the migrated workload completes the process enabling customers to continue operations without risks of losing data.

You can easily migrate:

From	То
On-premises	Cloud
Cloud	Cloud
Cloud	On-premises
Physical	Physical
Physical	Virtual
Virtual	Virtual

Live migration offers the following:

- Unlimited use of the Arcserve Live Migration technology enhanced by Arcserve Continuity Suite.
- Every source that you plan to migrate requires 1 license.
- On expiry, new scenarios cannot be started, but the existing ones will continue.
- Seamless access to the entitled software for a period of 90-days.
- For each license, Live Migration provides technical assistance for two incidents free of cost.

Notes:

- Currently, Arcserve does not provide professional services to help you with implementation, deployment, and any other migration services.
- For any assistance regarding migration issues during the 90-day period, contact our Technical support.

Overview

Arcserve Live Migration automatically synchronizes files, databases, and applications on Windows and Linux systems with a second physical or virtual environment located on-premises, at a remote location, or in the cloud. After synchronization, changes are replicated in real time to ensure the source and target are in sync prior to the migration.

Encryption enables secure data transfers between local systems and remote locations without the need for a VPN, and automated network redirection makes the switchover process seamless with push-button cutover to ensure availability to the new production environment.



A quick overview of this Live Migration document is as follows:

- Install Control Service: This section provides information about how to install the Control Service.
- <u>Configure Virtualization Platform and Cloud</u>: This section provides information about how to configure the Virtualization Platform and Cloud.
- Deploy Virtual Appliance (VA) on EC2/Azure/Hypervisor VM: This section provides information about how to deploy the Virtual Appliance (VA) server on EC2/Azure/Hypervisor.
- Install Engine on Source: This section provides information about how to install the Engine on source.

- <u>Create Full System Scenario</u>: This section provides information about how to create full system scenario.
- <u>Run Scenario and wait for Full Sync</u>: This section provides information about running a scenario.
- <u>Perform Assured Recovery Testing</u>: This section provides information about how to perform Assured Recovery testing.
- <u>Perform Cut off/Switchover</u>: This section provides information about how to perform cut off/switchover.

Terminologies

This document uses the following terminologies:

 Virtual Appliance: This is a virtual machine that acts as the Replica proxy server (the Arcserve Continuity Suite Engine should be installed here). If you are using a Hyper-V virtual platform, the field Virtual Platform Hostname/IP does not apply and is disabled (appears dim).

Note: If the Master is Windows 2008 or a later version, we recommend using Windows 2012 R2 as the virtual appliance.

- Control Service: Control Service is a management component of Arcserve Continuity Suite, and Windows based service that must be deployed first. It hosts Web based info portal and rich Management UI which is used for creating and monitoring migration scenarios.
- Engine: Replication Engine is a background service which moves data from source to destination during migration. Engines should be installed on any source that you plan to migrate. You may use Remote Installer feature to mass deploy Engines.
- **FSHA:** FSHA is a scenario type that allows replication and fail-over of full server.
- Management UI: A UI that you use for creating and managing replication/migration scenarios. Management UI is hosted by Control Server and can be started after you log into the Management Portal.
- Master (Source): A host/computer which you migrate as whole (using full system migration scenario) or a host containing application that you are planning to migrate.
- PowerShell: Arcserve provides PowerShell Command Line Interface as an alternative to managing via UI. The PowerShell is offered as an alternative if you do not want to manage the replication process using the Manager graphic user interface. It enlarges and facilitates the capabilities of the CLI provided in previous versions, and it supports Continuous Availability operations.
- Replica (Target): In case of full system migration, VA (replication proxy) serves as a Replica. Upon completion, VA spins off new VM containing replicated disks or data. For application-based scenarios, Replica hosts and runs replicated application and data.

- Scenario: Scenario is a configuration unit which you create and migrate using rich management GUI or PowerShell CLI. Scenarios contain key information about replication/migration jobs to be performed.
- **Switchover:** The cutover to the newly migrated workload from where the operations can begin.
- Synchronization: The process of making the set of files identical on the Master and Replica servers. It is usually necessary to synchronize the Master and Replica as the initial step of a replication scenario.
- Virtual Platform Host: This is the machine that hosts the Appliance VM acting as Replica server.

Requirements

Before you migrate, make sure to meet the following requirements:

 Arcserve Live Migration supports both Windows and Linux operating systems for Full System migration scenarios. If source host is Windows, then the Virtual Appliance (VA) must be Windows; if source host is Linux, then the VA must be Linux as well.

Note: Before deploying Arcserve Live Migration scenarios, refer to <u>Lim-itations</u> in Release Notes.

• For Windows or Linux migration to Azure or AWS, register to the Cloud account with Arcserve Live Migration GUI before creating FSHA scenarios.

Software Compatibility

For more information about compatibility, see the <u>Compatibility Matrix</u>.

Related Documentation

For information related to migration and replication, use this guide along with the following:

- <u>Arcserve Continuous Availability Administration Guide</u>
- <u>Arcserve Continuous Availability Installation Guide</u>
- <u>Arcserve Continuous Availability for Virtualized Server Environments Oper-</u> ation Guide

Chapter 2: Perform Live Migration

The following flowchart provides the Live Migration process given in this document:



Install Control Service

This section describes how to install the Arcserve Continuity Suite Control Service.

Control Service Installation Considerations

You need to install either one Control Service or two Control Services, depending on the type of procedure you want to perform on the Control Service itself:

For standard Arcserve Live Migration, you need to install only one Control Service. This Control Service functions as the single-point-of-control for all Arcserve Live Migration operations. If you want to replicate the Control Service data WITHOUT performing switchover between two Control Services, you can also install only one Control Service.

Note: To replicate the Control Service data, create Replication Control Service scenario using the Manager, after the installation of all the Arcserve Live Migration components is completed.

For replicating the Control Service data and switching roles between the original Control Service and a standby Control Service, you need to install two Control Services. One of the installed Control Services functions as the active Control Service, while the other functions as the standby Control Service. For installing two Control Services, repeat the installation process twice, since you can only install one Control Service at a time.

Notes:

- To apply HA solution on the Control Service, create HA Control Service scenario using the Manager, after the installation of all Arcserve Live Migration components is completed.
- You do NOT need an HA license to apply HA solution on the Control Service. However, you do need to register in Arcserve Live Migration before creating a scenario for the Control Service.
- For more information about creating Control Service scenarios, see <u>Arc</u>serve Continuous Availability Administration Guide.

Installing Control Service for a Standard Operation

To install the Arcserve Continuity Suite Control Service, follow these steps:

1. Double-click the **Setup.exe** installation file.

The Arcserve Continuous Availability Installation wizard appears.

2. Click the Install option.

The Install Components page appears.

- Click the Install Arcserve Continuity Suite Control Service option.
 The Choose Setup Language dialog appears.
- 4. From the drop-down list, select the language you prefer, and then click **OK**.

A progress bar appears. Once the initial process is completed, the **Welcome** page appears.

5. Click Next.

The License Agreement page appears.

6. Select the I accept check box, and then click Next.

The **Customer Information** page appears.

7. Verify that the details in the fields are correct, or change them accordingly, and then click **Next**.

The **Destination Folder** page appears.

8. To select the Control Service installation location, use the **Change** button, or leave it at the default location, and then click **Next**.

Note: The default installation directory is: *C:\Program Files (x86)\Arc-serve\RHA\Manager.* All executables, DLLs and configuration files are located within the INSTALLDIR.

The SSL Configuration page appears.

9. The **SSL Configuration** page allows you to use SSL certificate to secure communication with the Control Service.

If in your IT environment, the software is deployed on a local network and security is not a concern, you can clear the **Use SSL Configuration** check box. Then, the communication with the Control Service will be over HTTP.

If you want to use SSL configuration, select the **Use SSL Configuration** check box. In this case, the communication with the Control Service will be over HTTPS. After you select this option, you need to enter a port number in the **SSL Port** box, and to enter a certificate file in one of the available certificate type boxes.

Notes:

- While selecting the SSL Configuration option, by default, the SSL Port number is 443. However, if this port number is in use in your IT environment, use a different port.
- If you have selected the SSL Configuration option, when you open the Overview page, you need to enter the hostname of the Control Service machine (instead of its IP Address). Enter the Control Service Host Name and Port No. as follows:

https://host_name:port_no/start_page.aspx

- The .CER and .PEX certificates are Internet security files provided by a third-party certificate authorities. These certificates are installed on a Web server, to authenticate the validity of a certain website hosted on the server. They are represented by a lock icon near the edge of a browser window when accessing a secure site (beginning with "https://"). After you enter the path and name of a .CER of .PEX certificate in the SSL Configuration page, the Arcserve Continuity Suite Control Service Install Shield Wizard installs the certificate and adds SSL certificate meta-information to the Web server. Such meta-information is maintained by the HTTP API in a metastore, and is used to locate certificates for certificate exchange in HTTPS sessions.
- If at present you do not have an authorized SSL certificate, you can use the Self-signed Certificate. After you select the Self-signed Certificate option, when you try to access the Overview page from a remote machine, you need to install the certificate. For more information, see Installing SSL Self-Signed Certificate.
- 10. Click Next.

The Service Logon Information page appears.

11. Select and enter the required information. You can either use Local System Account privileges or provide a username and a password in the form of Domain/Username.

Note: Running the Control Service in a Domain Account with administrative rights across several machines allows remote deployment and connection to the Engine, without being prompted for authentication on each individual server.

12. Click Next.

The **Control Service Role** page appears.

Note: Select the Allow the Control Service check box, and then define whether the currently installed Control Service assumes the role of the Active or Standby Control Service, only if you want to install two Control Services for role switching.

13. For a typical Control Service installation, click Next.

The Ready to Install the Program page appears.

Note: Click the **Back** button to return to the previous pages and change your configuration.

14. Click the Install button to install the Control Service.

The Installing Control Service page appears.

- 15. Once the installation is completed, click **Next**.
- 16. Click Finish to close the wizard.

The Control Service is now installed on your selected location.

Installing two Control Services for Control Service Role Switching

The installation of two Control Services for role switching is very similar to the standard installation. There are only two main differences:

- You need to repeat the installation procedure twice to install two Control Services.
- You need to define during the installation procedure whether the Control Service you are installing functions as the active Control Service or as the standby Control Service.

To install Control Service for role switching, follow these steps:

1. Double-click the **Setup.exe** installation file.

The Arcserve Continuous Availability Installation wizard appears.

2. Click the Install option.

The Install Components page appears.

3. Click the Install Control Service option.

The Choose Setup Language dialog appears.

4. Select from the drop-down list the Installation wizard language you prefer, and then click **OK**.

A progress bar appears. Once the initial process is completed, the **Welcome** page appears.

5. Click Next.

The License Agreement page appears.

6. Select the I accept check box, and then click Next.

The **Customer Information** page appears.

7. Verify that the details in the fields are correct, or change them accordingly, and then click **Next**.

The s.

8. To select the Control Service installation location, use the **Change** button, or leave it at the default location, and then click **Next**.

Note: The default installation directory (INSTALLDIR) is: *C*:*Program Files* (*x86*)*Arcserve**RHA**Manager*. All executables, DLLs and configuration files are located within the INSTALLDIR.

The **SSL Configuration** page appears.

- 9. The **SSL Configuration** page allows you to use SSL certificate to secure communication with the Control Service.
 - To use the SSL Configuration option, refer to Install a Control Service for a Standard Operation.
 - To use SSL self-signed certificate, refer to <u>Installing SSL Self-Signed Cer-tificate</u>.
- 10. After you have selected the communication configuration, click Next.

The Service Logon Information page appears.

Select and enter the required information. You can either use Local System Account privileges or provide a username and a password in the form of Domain/Username.

Note: Running the Control Service in a Domain Account with administrative rights across several machines allows remote deployment and connection to the Engine, without being prompted for authentication on each individual server.

11. Click Next.

The **Control Service Role** page appears.

To install the Control Service for role switching, select the **Allow the Control Service** check box. Then, define whether the currently installed Control Service will assume the role of the **Active** or **Standby** Control Service.

12. Click Next.

The Ready to Install the Program page appears.

Note: Click the **Back** button to return to the previous pages and change your configuration.

13. Click the **Install** button to install the Arcserve Continuity Suite Control Service.

The **Installing Arcserve Continuity Suite Control Service** page appears, displaying the progress of the installation.

14. Once the installation is completed, click **Next**.

The Install Shield Wizard completed page appears.

15. Click **Finish** to close the wizard. The Control Service is now installed on your selected location.

- 16. Repeat this installation process for the second (Active or Standby) Control service.
- 17. <u>Install the Arcserve Continuity Suite Engine</u> on the destination servers of both Control Services.

Installing Control Service using the CLI

You can install the Arcserve Continuity Suite Control Service using the Command Line Interface.

To install the Arcserve Continuity Suite Control Service using the CLI

• Open the CLI and enter the following:

RHAManager.exe /S "/v/qn LOCALACCOUNT=No XOLOGIN="[Domain/UserName]" XOPASSWORD="[Password]" XOLANG="[Language]"

Parameters

RHAManager.exe

The setup file of the Arcserve Continuity Suite Control Service

S, V, QN

Silent installation parameters

Domain/UserName, Password

Enter the required information according to the platform you use and the solution you implement. For more information, see <u>Supported Applications</u> and <u>Database Servers</u>. If you don't enter the log on account details, the default is Local System.

Language

Select the language, by using one of the following language codes:

- "1033" English
- "1036" French
- "1041" Japanese
- "2052" Chinese (Simplified)
- "1028" Chinese (Traditional)
- "1031" German
- "1034" Spanish
- "1040" Italian
- "1046" Portuguese (Brazilian)

Example: Install the Control Service using the CLI

RHAManager.exe /S "/v/qn LOCALACCOUNT=No XOLOGIN="domain/administrator" XOPASSWORD="abcd" XOLANG="1033"

Note: The value "No" in "LOCALACCOUNT=No" is case-sensitive.

Configure Virtualization Platform and Cloud

This section describes configuration of the following Virtualization Platform and Cloud:

Configure ESXi

No special configuration is needed on ESXi.

On VA Linux VM, run the following command to verify if *virsh* can connect to target ESXi server:

[root@testva~]# virsh -c esx://root@esxi_IP?no_verify=1 pool-list

The following output indicates successful configuration:

Name	State	Autostart
RHA_datastore1	active	yes

Configure Hyper-V

To configure Hyper-V, follow these steps:

1. On the Hyper-V server, run the following command:

winrm set winrm/config/service/auth @{Basic="true"}

winrm set winrm/config/service @{AllowUnencrypted="true"}

2. On VA Linux VM, run the following command to verify if *virsh* can connect to the target Hyper-V server:

[root@testva]# virsh -c hyperv://administrator@Hyper-V_IP/?transport=http pool-list

The following output indicates successful configuration:

Name	State	Autostart
F:\HyperVVM\	active	yes

Configure XenServer

No special configuration is needed on XenServer.

Configure KVM

Arcserve Live Migration supports three protocols for VA to communicate with the KVM server: SSH, SSL, and None. Following is an example procedure for configuring SSH protocol. For configuring other protocols, refer to the corresponding KVM documentation.

Use the *root* account to configure the Arcserve Live Migration on a Linux VA, which allows you to use the SSH protocol.

Follow these steps:

1. Run the following command in shell to create the ssh key pair:

ssh-keygen -t rsa

You can view two files: *id_rsa* and *id_rsa.pub*.

2. Run the following command in shell to transfer the public key to KVM server.

ssh-copy-id -i ~/.ssh/id_rsa.pub root@kvm-server

Type the password to continue.

3. Use the following command to connect to the KVM server from VA using ssh without entering a password:

Ssh root@kvm-server

4. Run the following command in shell:

virsh -c qemu+ssh://kvm-server/system pool-lis

The following output indicates successful configuration:

Name	State	Autostart
Default	active	yes
kvm-datastore1	active	yes

Configure Microsoft Azure

Arcserve Replication and High Availability needs some of the Azure properties for Full System scenario to work with Azure. To configure for Microsoft Azure, you need to add an Azure Cloud Account in the Continuity Suite Manager. The Azure Cloud account must have the following information:

- E-mail Address
- Subscription ID
- Tenant ID (Directory ID)
- Application ID
- Client Key

First, prepare the Azure cloud account and then add the account in Continuity Suite Manager.

To prepare Azure Cloud account, follow these steps:

- 1. Perform the following steps to register an Azure Active Directory application:
 - a. Log into the Azure portal.
 - b. From the left pane, select **Azure Active Directory**, and then click **App** registrations.

The Arcserve- App registrations page appears.



c. Click New registration.

The **Register an application** page appears.

Register an applica	ation	\searrow
* Name		
The user-facing display na	me for this ap	plication (this can be changed later).
		✓
Supported account ty	/pes	
Who can use this applicati	on or access th	nis API?
 Accounts in this organ 	nizational direc	tory only (Arcserve only - Single tenant)
Accounts in any organ	nizational direc	ctory (Any Azure AD directory - Multitenant)
Accounts in any organ	nizational direo	tory (Any Azure AD directory - Multitenant) and personal Microsoft accounts (e.g. Skype, Xbox)
Help me choose		
Redirect URI (optiona	l)	
We'll return the authentica changed later, but a value	ition response is required for	to this URI after successfully authenticating the user. Providing this now is optional and it can be most authentication scenarios.
Web	~	e.g. https://myapp.com/auth
By proceeding, you agree Register	to the Microso	ft Platform Policies 급 ⁷

- d. On the **Register an application** page, do the following, and then click **Register**:
 - Name: Type a name for the application.
 - Supported account types: Select a supported account type, which determines who can use the application.
 - Redirect URI (optional): Select Web or Public client (mobile & desktop) for the type of application you are creating, and then enter the redirect URI for your application.
- e. Go to Subscriptions, select your subscription, and then click Access control (IAM).
- From the respective drop-down lists of Add permissions on the right pane, select the Contributor role and your application, and then click Save.

The registration of an Azure Active Directory application is complete. Now, you can perform the next steps using the registered application to get required IDs and Key.

2. Perform the following steps to get the Subscription ID¹:

¹The Subscription ID refers to a GUID (Globally Unique Identifier) that uniquely identifies your subscription to use Azure services.

a. From the left navigation pane of Azure portal, click **Subscriptions**.

The list of your subscriptions is displayed along with the subscription ID.

Subscriptions							Docu
Arcserve							
+ Add							
Showing subscriptions in Arcserv	e. Don't	see a subscription? Switch dir	ectories				
My role 🕕				Status 🕕			
8 selected			V	3 selected			
Apply		0	1. 10.10	1) Data			1.
	e l	only subscriptions selected in	the global subsc	riptions filter (
Showing 1 of 1 subscriptions	Show	· · ·					
Showing 1 of 1 subscriptions	Show	<u> </u>			2		
Showing 1 of 1 subscriptions Search to filter items Subscription name	Show ↑	Subscription ID	^↓	My role	↑↓	Current cost	Status

- b. Copy the subscription ID to use while adding the account in Continuity Suite Manager.
- 3. Perform the following steps to get the Tenant ID¹ and Application ID²:
 - a. Navigate to Azure Active Directory > App registrations > Owned applications.

¹Tenant ID refers to the ID of the Azure Active Directory where you created the application registration. Tenant ID is called Directory ID inside Azure Active Directory Properties.

²An Application ID refers to a GUID that uniquely identifies the app's registration in the Azure Active Directory tenant. Sometimes, it is also referred as Client ID.



b. Select your application from drill-down pane to view Tenant and Application ID's.

🔟 Delete 🌐 Endpoints	
Got a second? We would love your feedb	back on Microsoft identity platform (previously Azure AD for developer). $ ightarrow$
Display name	Supported account types My organization only
Application (client) ID	Redirect URIs Add a Redirect URI
Directory (tenant) ID he ibe an in 200 million and in a company that	Application ID URI Add an Application ID URI
Object ID Constraints and the first of the f	Managed application in local directory

- Perform the following steps to generate an authentication key and get the Client secret¹:
 - a. Select the application, and then navigate to Certificates & secrets.
 Click New client secret to add a client secret.

The Add a client secret page appears.

¹Client secret is referred as an authentication key in Azure.

Add a client secret	
Description	
Expires	
O In 1 year	
 In 2 years 	
O Never	
Add Cancel	

b. Enter the description, select the desired expiry interval and then click **Add**.

- Certificates & secrets Copy the new client secret value. You won't be able to retrieve it after you perform another operation or leave this blade. , Search (Ctrl+/) Credentials enable applications to identify themselves to the authentication service when receiving tokens at a web addressable local B Overview higher level of assurance, we recommend using a certificate (instead of a client secret) as a credential. Certificates Manage Certificates can be used as secrets to prove the application's identity when requesting a token. Also can be referred to as public keys 🗧 Branding Upload certificate Authentication No certificates have been added for this application. Certificates & secrets Token configuration (preview) Thumbprint Start Date Expires API permissions Expose an API Client secrets Owners A secret string that the application uses to prove its identity when requesting a token. Also can be referred to as application passwo Roles and administrators (Pr... + New client secret Manifest Description Expires Value Support + Troubleshooting Sini Appendied 1/9/2022

The value of client key is displayed.

c. Copy and use this value while adding the account in the Continuity Suite Manager.

Note: Copy and save this value as you cannot retrieve it later.

Preparation of Azure Cloud Account is complete. Now, add details in the Continuity Suite Manager.

Add an Azure Cloud Account in Continuity Suite Manager

 From the Continuity Suite Manager, navigate to Cloud > Manage Cloud Accounts and then click Add.

The Add Cloud Account screen appears.

Add Cloud Account	×
Cloud Provider:	Microsoft Azure ~
Cloud Account:	
Subscription ID:	
Tenant ID:	
Application ID:	
Client Key:	1
	Use proxy to connect to the cloud service
	<u>OK</u> <u>C</u> ancel

- 2. Enter the following details in the required fields, and then click OK.
 - Cloud Account Provide the cloud account, which is a user name you have defined. For more information, see
 - Subscription ID Provide the Subscription ID. For information about how to get a Subscription ID, see step 2 of the previous
 - Tenant ID Provide the Tenant ID. For more information about how to get the Tenant ID, see step 3 of the previous
 - Application ID Provide the Application ID. For more information about how to get the Tenant ID, see
 - Client Key Provide the Client Key. For more information about how to get the Tenant ID, see

The Azure account for Live Migration is now configured.

Configure Amazon EC2

Arcserve Replication and High Availability VA virtual machine resides in VPC (default or customized), and Master servers are replicated to that VPC.

Note: Refer to the Amazon online help to set up VPC, subnets, IP gateway, and so on according to your DR network requirements.

Considerations before deploying EC2-based Full System scenarios are as follows:

- Arcserve Replication and High Availability needs the Access Key ID and Secret Access Key of Amazon EC2 account to work with EC2. You can get required information from your administrator.
- The Amazon EC2 user in Arcserve Replication and High Availability should have required permissions. For details, refer to the Arcserve KB <u>article</u>.
- If you want Arcserve Replication and High Availability to start the DR VM with a specific public IP address, pre-allocate such Elastic IPs in the Amazon EC2 web portal. Later in the Network Mapping dialog of Continuity Suite Scenario, you can pick one public IP from existing Elastic IP addresses for the DR VM.
Deploy VA on EC2/Azure/Hypervisor VM

The Continuity Suite Virtual Appliance (VA) is a VM running on the virtualization platform or cloud where you want to replicate the Master servers. The VA acts as Replica in a Continuity Suite Full System scenario. The Master server is replicated to this virtualization platform or cloud, and the Disaster Recovery VM of Master starts and runs on this virtualization platform or cloud for multiple reasons, such as Assured Recovery testing, Switchover, and Start VM.

Note: For Windows Full System scenario replicating to Hyper-V, no additional VA virtual machine is required. The Disaster Recovery Hyper-V server takes the role of VA as well as virtualization platform.

Hardware Configuration for Virtual Appliance (VA)

Following are minimal hardware configuration settings recommended for VA VM:

CPU	2 cores				
Memory	8 GB				
Spool Space	Approximately 15% - 30% of master data size of free space should be con- sidered for volume where Continuity Suite spool directory is set, depending on total data size and data change rate on the master server. When multiple master servers replicate to the same VA, the required spool space on VA needs to add up to avoid possible spool exceeding that in turn causes scen- ario to stop.				

Considerations for VA Running on Cloud and Local Environments

Note: For cloud, log into Microsoft Azure or Amazon EC2 portal and create a virtual machine to work as Arcserve Replication and High Availability VA.

Important! Do not manually delete the virtual machine, its configuration, and virtual disk files, otherwise, the scenario can fail.

The following are the considerations for Virtual Appliance VM:

• For Xen platforms, install XenServer Tools on the Appliance VM.

Note: If your virtual platform is Citrix Xen 6.0, install the .NET 4.0 Framework on the protected master. The .NET 4.0 Framework is required for installing the Xen tool on the virtual machine that the appliance created.

- For ESXi and vCenter platforms, install VMware Tools on the Appliance VM.
- Install the Continuity Suite Engine on the Appliance VM.
- For Amazon EC2, ensure that the date and time are correct and synchronized to your system, and the network can access AWS.
- For Azure, from Disks configuration screen, select Use managed disks. Arcserve Replication and High Availability does not support unmanaged disks on Azure.
- Continuity Suite Engine port (TCP 25000 by default) is allowed for incoming connections.
- Assign a public Static (for Azure) or Elastic (for EC2) IP address to VA so that the IP address does not change after restart.
- For Linux Virtual Appliance VM running on Azure or EC2, you must enable *PasswordAuthentication* in */etc/ssh/sshd_config*.
- After the Continuity Suite Engine is installed on VA, verify that Continuity Suite Master and Control Service can reach Arcserve Replication and High Availability VA by running the following command separately on Master and Control Service:

telnet <VA-public-IP> 25000

Press Space bar to get Continuity Suite Engine version information.

Continuity Suite Engine for Virtual Appliance (VA) Installation

Configure Continuity Suite Engine on Windows and Linux.

OS	Platforms Supported as VA
Windows	Windows 2012 R2, Windows 2016, Windows 2019
Linux	CentOS 7.5 and 7.6, Red Hat Enterprise Linux (RHEL) 7.5 and 7.6

Configure Continuity Suite Engine for Virtual Appliance (VA) Installation in Windows

Configure the Continuity Suite Engine on Windows. For more information, see <u>Compatibility Matrix</u>.

To install Engine component on virtual appliance, see <u>Install Engine</u>. Usually no additional configuration is required.

The following platforms are supported as VA on Windows:

- Windows 2012 R2
- Windows 2016
- Windows 2019

Configure Continuity Suite Engine for Virtual Appliance (VA) Installation in Linux

The following platforms are supported as VA on Linux:

- CentOS 7.5 and 7.6
- Red Hat Enterprise Linux (RHEL) 7.5 and 7.6

To install Virtual Appliance (VA) server on Linux, follow these steps:

- 1. Mount **ContinuitySuite.iso** to the VA server, double-click *.iso to open the Unix_Linux directory, and then enter into the Unix_Linux directory.
- 2. Run the following commands to extract the Unix_Linux directory, and then change directory to the extracted directory:

tar xvf arcserverha.tar

tar xzf arcserverha-xxxx.rhel7.tgz

cd arcserverha

- 3. Run installation script in one of the following modes:
 - Interactive mode:
 - a. Run the following command:

./install.sh

b. Type **q** and then press **Enter** to accept EULA and continue.

Do you accept Arcserve End User License Agreement? [YES]

Install Arcserve RHA version xxxx?[YES]

Install packages needed to act as Virtual Appliance for Full System HA?[NO]y

- c. Type **y** to install VA module. The installation wizard is ready for use.
- **Silent mode**: Run the following command to install Continuity Suite Engine and VA module silently:

./install.sh -y -v y

4. To verify the installed **qemu-guest-agent** packages for Linux VA, run the following command: # yum list qemu-guest-agent

Installed Packages

qemu-guest-agent.x86_64 10:2.12.0-3.el7 @base

By default, this package gets installed on CentOS/RHEL 7. If it does not get installed, then use the following command:

yum install qemu-guest-agent

Install Engine on Source

This section describes how to install the Arcserve Continuity Suite Engine.

Use the following ways to install the Arcserve Continuity Suite Engine:

- Using the Setup.exe file install the Engine on one host at a time. This installation method automatically detects an Engine from a previous version and enables you to remove it during the installation of the new Engine. The installation steps are similar to the Control Service installation steps, as described on Installing the <u>Arcserve Continuity Suite Control Service</u>.
- Using the Scenario Creation Wizard remotely install the Engine on the Master and Replica hosts, during the creation of a new scenario.
- Using the Remote Installer remotely install the Engine on one or more hosts at the same time.
- Using the Command Line Interface (CLI)- install the Arcserve Continuity Suite Engine on the Master and Replica servers using the Command Line Interface.

Note: Before you install the Continuity Suite engine on a Windows 2008 R2 Server Core, register the ieproxy.dll and install the Visual C++ 2005 redistributable package.

To install the Arcserve Continuity Suite Engine on a Windows Server 2008 R2 Server Core, follow these steps:

- 1. Navigate to the %programfiles%\Internet Explorer folder on a Windows Server 2008 R2 (non Server Core installation).
- Locate the ieproxy.dll file and copy it to the following location on the Server Core: %systemRoot%\system32
- To register, enter the following command at the command prompt: regsvr32 %systemRoot%\system32\ieproxy.dll
- 4. Install the Microsoft Visual C++ 2005 Redistributable Package (x64). Download the Redistributable Package from www.microsoft.com.

Installing Engine Using the Setup.exe Installation File

To install Arcserve Continuity Suite Engine using the Setup.exe file, follow these steps:

1. Double-click the **Setup.exe** installation file.

The Arcserve Live Migration Installation wizard appears.

Important! On Windows 2008, you may get digital signature error during installation and then the installation rolls back. You need to update the Windows root certificate to avoid this error. Download and install the update from the Microsoft website.

2. Click the Install option.

The Install Components page appears.

3. Click the Install Arcserve Continuity Suite Engine option.

The Choose Setup Language dialog appears.

4. Select from the drop-down list the Installation wizard language you prefer, and then click **OK**.

A progress bar appears. Once the initial process is completed, the Welcome page appears.

5. Click Next.

The License Agreement page appears.

Note: If an Engine from a previous version exists on your server, the Information about previous version page appears, providing you the option to uninstall the Engine.

 On the License Agreement page select the I accept check box, and then click Next.

The Destination Folder page appears.

7. Verify that the details in the fields are correct, or change them accordingly, and then click **Next**.

The Custom Setup page appears.

Note: When you select the **Engine** option, the **Space** button is enabled. To see the disk space required for the installation of the selected feature, click the **Space** button.

8. Click Next.

The Service Logon Information page appears.

9. Enter the required information according to the platform you use and the solution you implement. For more information, see <u>Supported Applications</u> and <u>Database Servers</u>.

For File Server, use the following guidelines:

- For Replication scenarios it is sufficient to use the Local System Account.
- For clusters (Replication scenarios) you need to run under the same account as the Cluster Service or under equivalent permissions.
- + For High Availability scenarios (including clusters) -
 - You need to run under an account with the Domain Administrative privileges. If the Domain Admins group is not a member of the built-in domain local group Administrators, you must use an account that is.
 - The account also needs to be a member of the local machine Administrators Group. If the Domain Admins group is not a member, add the account manually. For servers in a workgroup, use the Local System account.

10. Click Next.

The Ready to Install the Program page appears.

11. Click Install.

The Installing Arcserve Continuity Suite Engine page appears.

12. Once the installation is completed, click Next.

The Install Shield Wizard Completed page appears.

13. Click **Finish** to finish the installation.

Installing Engine Using the Scenario Creation Wizard

To install the Engine using the Scenario Creation Wizard, follow these steps:

1. Open the Manager, select Scenario, **New** or click the **New Scenario** button to launch the wizard.

The Welcome screen opens.

2. Select Create a New Scenario, select a Group from the list, and then click Next

The Select Server and Product Type page appears.

- 3. Select the required scenario options, as follows:
 - Select Server Type: Select the type of server that is used in the scenario.
 - Select Product Type: Select Replication and Data Recovery Scenario (DR) or High Availability Scenario (HA) according to your license.
- 4. Click Next.

The Master and Replica Hosts page appears.

- 5. On the Master and Replica Hosts page, do the following, and then click Next:
 - Scenario Name accept the default scenario name or enter a new name for the scenario.
 - Master Hostname/IP and Replica Hostname/IP enter the name or IP of the Master and Replica hosts, or use the *Browse* button to find the Master and Replica hosts.

Note: When creating an HA scenario, we recommend you enter the host IP address (and not the hostname).

 User credentials for hosts verification - enter user credentials that enable you to access the remote hosts on which the Engines gets installed.

The Engine Verification page appears.

6. The system verifies the connectivity of the Master and Replica hosts you have selected in the previous page. Once the connections are verified, the system checks whether an Engine is installed on each host.

Note: An Error message indicates that a connection could not be established to the specified host. If any errors are reported, you cannot continue until they are resolved.

Check whether an Engine is installed on the selected hosts using the **Server Status** column:

- If all the hosts have an **Installed** version, you can move to the next page.
- If any of the hosts have **Not Installed** under the Current Version column, then you need to install the Engine on these hosts.
- If an Engine is not installed on one or both hosts, and you click the Next button, the following message appears:

Arcserve C	ontinuity Suite Manager	\times
?	Arcserve Continuity Suite Engine is not installed on either the Master or Replica host.	
	Arcserve Continuity Suite Control Service version: 18.2.0.5670 Arcserve Continuity Suite Engine on Master: not installed Arcserve Continuity Suite Engine on Replica: 18.2.0.5670	
	 If the Engine is not installed on the Master, you will not be able to select data for replication on the next page. Either install the Engine now, or click Finish. If the Engine is not installed on the Replica, you can continue creating the scenario and install the Engine later. 	
	Do you want to continue to the next page?	
	Yes No	

Click **No** to return to the Engine Verification page and install the Engine.

7. On the Engine Verification page, click the **Install** button to remotely install the Engine on the selected host.

Note: You can install the Engine on both hosts at the same time. To perform this, select the check box of both the hosts, and then click the **Install** button.

Wait until the installation is complete. The version number of the Engine appears in the *Current Version* column.

8. Click Next.

The Master Root Directories page appears.

Follow the wizard instructions to complete the scenario creation. For more information about the creation of a new scenario, see <u>Arcserve Continuous</u> <u>Availability Administration Guide.</u>

Installing Engine Using the Remote Installer

You can use the Remote Installation Wizard to deploy the Engine to any number of servers, or cluster nodes, in one step.

If you are running a firewall on the machine where you plan to install the Engine, you must enable the Engine as an exception for Windows Management Instrumentation (WMI) in the Windows Firewall Exception List. If you are running Windows 2003 or Windows XP, please go the Microsoft MSDN website and search for the Connecting Through Windows Firewall document.

Note: In some setups, the remote WMI requests are disabled. This causes verification to fail while deploying the Arcserve Continuity Suite Engine using the Remote Installer. To resolve this issue, see <u>Troubleshooting Verification Failure</u> when Using the Remote Installer.

To install Engine using the Remote Installer, follow these steps:

1. On the Continuity Suite Manager, from the **Tools** menu, select **Launch Remote Installer**.

The Remote Installer view opens, and the Remote Installation Wizard appears, displaying the Host Selection page.

Notes:

- If you currently have scenarios on the Manager, the hosts that participate in these scenarios appear in the Selected Hosts pane. This enables you to easily update the Engine version that is installed on them.
- If you want to access other Manager features while you are using the Remote Installer, you can minimize the Remote Installation Wizard, and return to it later. The wizard is bound to the Remote Installer Monitor view. If you switch views, the wizard is automatically minimized.
- 2. On the Host Selection page, select the hosts where you want to install the Engine. You can select the hosts automatically and manually:
 - To automatically discover the existing hosts in your domain, click the Start Hosts Discovery button. The discovered hosts appear on the Discovered Hosts pane on the left. To select a host, double-click it. The host then appears on the Selected Hosts pane on the right.
 - To manually select a host, enter its hostname or IP address in the Host Name/IP Address field, and then click Add. The host you have entered appears on the Selected Hosts pane.

Note: When using clusters, you need to install the Engine on all physical nodes and select a physical node instead of a cluster name.

3. Repeat the selection as many times as needed. The Engine gets installed only on the servers that appear on the **Selected Hosts** pane.

Note: To remove hosts from the **Selected Hosts** pane, select the host, and then click the **Remove** button.

4. After you select the host, click **Next**.

The User Credentials page appears.

5. Set the user account that is used to access each target host. You need Local Administrator credentials for all selected hosts.

Notes:

- You must enter the same **User Credentials** you used for logging into the remote host.
- If you do not need to provide a Domain value to the selected host, leave the Domain field empty, and enter ".\" before the Username.
- If you log in using the non-admin local account or domain account without the admin rights, the default setting changes from *Current User* to the *Following User*.

6. Click Next.

The **Preinstall Verification** page appears.

The Remote Installer automatically checks the existence, connectivity and configuration of the servers you have selected on the previous page. After the verification process is complete, the results are displayed.

Note: If a server's status is reported as an error, and you have verified that the server exists and is properly connected, select the server, and then click the **Verify Again** button. The Remote Installer repeats the verification process.

7. After the status of all servers has reported **Not Installed**, click **Next**.

Note: If an older Engine version is reported as **Installed**, to uninstall it, click the **Uninstall** button. After you uninstall, click **Next**.

The Installation Settings page appears.

8. On the **Service Logon Information** section, select the account type to set the service logon information.

Local System Account

Specifies to use Windows Local system account.

Current User

Specifies to use the user account you logged in with.

This Account

Specifies to use a different user by typing the username, password and domain.

Note: Select the **Use the service log on account for existing installations** check box, if you want to upgrade an existing Engine and you want Arcserve Live Migration to use the log on account details under which the Engine is installed.

9. Click Next.

The **Ready to Install** page appears.

- 10. Verify that all desired servers are listed, and then click the **Install** button to install the Engine on these servers. A confirmation message appears.
- 11. Click **Yes** to install the Engine. The **Remote Installer** status pane appears. Wait until the **Server Status** is reported as **Installed**.
- 12. Close the **Remote Installer** status pane. On the Remote Installer view, the installation status is reported as *Installation complete*.

The Engine is now installed on all selected servers or cluster nodes.

Installing Engine using the CLI

You can install the Arcserve Continuity Suite Engine on the Master and Replica servers using the Command Line Interface.

To install Arcserve Continuity Suite Engine using the CLI

• Open the CLI and enter the following:

RHAEngine.exe /S "/v/qn LOCALACCOUNT=No XOLOGIN="[Domain/UserName]" XOPASSWORD="[Password]" XOPORT="[Port]" XOLANG="[Language]"

Parameters

RHAEngine.exe

The setup file of the Arcserve Continuity Suite Engine

S, V, QN

Silent installation parameters

Domain/UserName, Password

Enter the required information according to the platform you use and the solution you implement. For more information, see <u>Supported Applications</u> and <u>Database Servers</u>. If you don't enter the log on account details, the default is Local System.

Port

Enter the port number. The default port value is 25000.

Language

Select the language, by using one of the following language codes:

- "1033" English
- "1036" French
- "1041" Japanese
- "2052" Chinese (Simplified)
- "1028" Chinese (Traditional)
- "1031" German
- "1034" Spanish
- "1040" Italian
- "1046" Portuguese (Brazilian)

Example: Install the Engine using the CLI

RHAEngine.exe /S "/v/qn LOCALACCOUNT=No XOLOGIN="domain/administrator" XOPASSWORD="abcd" XOPORT="25000" XOLANG="1033"

Note: The value "No" in "LOCALACCOUNT=No" is case-sensitive.

Create Full System Scenario

This section provides instructions on the Arcserve Live Migration process.

Creating Live Migration Scenarios

Arcserve Live Migration protects servers in the context of user-defined scenarios. Scenario is a configuration unit which you create and migrate using rich management GUI or PowerShell CLI, and consists of a definition set that includes:

- The type of application or database server to be protected.
- The type of data protection solution.
- Special tasks, such as Integrity Testing for Assured Recovery.
- The connection details of the Master and Replica hosts.
- The directories, sub-directories, databases and files that gets replicated, and their location on the Master and the Replica.
- Configurable properties of the scenario and the Master and Replica hosts, which affect different settings and operations, such as, synchronization method, replication mode, spool size, report and event handling rules, and more.
- Recovery and Switchover/Failover parameters.

Each scenario defines a replication tree that sets the flow of information from the Master server to any number of designated Replicas. It establishes the data recovery procedure, and, if applicable, the switchover parameters. You can configure, add or remove servers from a scenario and select or modify directories. This enables easy, complete control of the migration process over any network, large or small. Each scenario is saved as an XML file.

Migrating Full System Scenarios to Virtualization Platforms and Cloud

Arcserve Replication and High Availability supports both Windows and Linux for Full System scenario. If source server is Windows, then the Virtual Appliance (VA) must be Windows. If source server is Linux, then the VA must be Linux as well.

Full system scenarios require three hosts instead of two:

- Master server The host that you want to protect. This host can be physical or virtual. For more information about configuring the Master server, see <u>Configure Master Server</u>.
- Virtual Appliance A VM where you installed the Arcserve Continuity Suite Engine. For more information about configuring Virtual Appliance, see Deploy VA on EC2/Azure/Hypervisor VM.
- Virtual Platform Host The server where the Appliance VM is running. For more information about configuring Virtual Platform Host, see <u>Configure Vir</u>tualization Platform and Cloud.

Consider the following when planning Full System scenario:

Engine Service Account: For Windows, Local System account is recommended for Continuity Suite Engine Service Log On account for both Master and Replica/VA. You can also use Domain administrator or local administrator account. Make sure that such an account has Full Control permission on all protected volumes, spool directories, and virtual disks mount points on Replica/VA, which is Engine *<installation dir>\vm* by default.

For Linux, Continuity Suite Engine runs with root account after installation, and cannot be changed.

 Engine package dependencies on Linux: Continuity Suite Engine installation on Linux requires dependent packages pre-installed, or a proper yum repository is configured. If you want to manually install packages required by Continuity Suite Engine, run the following command to get the list of required packages:

rpm -qpR arcserverha_rhel7_x86_64.rpm

Migrating Full System Scenarios for Hypervisors

The following procedure applies to vCenter, ESXi, Hyper-V, XEN, and KVM Full System scenarios.

To migrate full system scenarios for all platforms except Hyper-V, follow these steps:

1. Open the Manager, select Scenario, **New** or click the **New Scenario** button to launch the wizard.

The Welcome screen opens.

2. Select **Create a New Scenario**, select a Group from the list, and then click **Next**.

Ô	Scenario Creation Wizard
 ✓ Welcome ▶ Product Type Scenario Setup 	Select Server and Product Type Select a licensed server type, product type and a required task below. If the desired option is not listed, please do one of the following: If you have an appropriate license key, exit the wizard by clicking Cancel and then click. Heip, Register. If you do not have an appropriate license key and you are interested in obtaining one, please contact your software provider.
Scenario Verification Run Scenario	Select Server Type File Server Korcooft Exchange Server Korcooft SQL Server Korcooft SQL Server Korcooft SQL Server Korcooft Hyper-V Korcooft Hyper-V Korcooft Hyper-V Korcooft Hyper-V Korcooft SurePoint Server Korcooft Hyper-V Korcooft Hyper-V Korcooft Hyper-V
	Select Product Type Replication and Data Recovery Scenario (DR) High Availability Scenario (HA) Content Distribution Scenario(CD) Integrity Testing for Assured Recovery (AR) Integration Options None Arcserve Backup
	Back Next Einish Cancel

The Select Server and Product Type screen opens.

3. Select Full System, select HA or DR and the desired tasks on Replica, and then click **Next**.

The Master and Replica Hosts screen opens.

0	Scenario Creation Wizard
 Welcome Product Type Scenario Setup Scenario Verification Run Scenario 	Master and Replica Hosts Enter the hostname or IP address for Master (source) host. Enter the hostname or IP address for the Master (source) host which hosts vitual machines. (Not applicable for Hyper-V scenarios) Enter the hostname or IP address for the Appleance host which hosts vitual machines hosted by Vitual Platform and with Accerve Continuity Suite Engine installed. Master Setting Scenario Name FSHA-L to Hypervisor Master Hostname/IP Port Server Type ESX Server Virtual Platform Hostname/IP Port Port Appliance Hostname/IP Port Port
	Verify Arcserve Continuity Suite Engine on Hosts
	<u>B</u> ack <u>N</u> ext <u>Finish</u> <u>C</u> ancel

- 4. On the Master and Replica Hosts screen, do the following, and then click **Next**:
 - Scenario Name: Type a Scenario Name. The default value is the scenario type, for example, Full System.
 - Master Hostname/IP and Port: Specify the physical machine you wish to protect or browse to select the Master server.
 - Master OS Type: Specify Windows or Linux as the Master OS Type.

Note: For Windows, enter IP address or hostname of the Windows server to be migrated.

- Server Type: Select the virtual platform of the machine that will host the VM, for example, ESXi Server.
- Virtual Platform Hostname/IP and Port: Specify the physical machine running the virtual machine platform you have selected in Server Type or browse to select the virtual machine.
- Appliance Hostname/IP and Port: Specify the virtual machine hostname or IP address of the VM to act as the Replica server in this scenario. If the server type is Hyper-V, this field is not available.
- Verify Arcserve Continuity Suite Engine on Hosts: Enable this option to confirm the latest version of the Engine is installed on all servers specified in the scenario.

Enter the appropriate credentials for the specified machines, if prompted.

Wait for the verification to complete. If desired, you may install the Arcserve Continuity Suite Engine on any server. If errors occur, click **Verify Again** to resolve the errors. Contact your security administrator if any RPC Services errors occur.

5. Click **Next** when the Engine is verified on hosts.

The Volume Setting screen opens. Arcserve Continuity Suite auto-discovers the volumes on the specified Master server.

6	Scenario Cre	ation Wizard			_ D X
 Welcome Product Type Scenario Setup 	Please select one or more volumes for the physic the sub folders and files in the excluded folder wi	Volume S al machine you want p I be excluded as well.	Setting rotected. To see more de	tailed information, c	slok on a volume. All
 Host Engine Verification Volume Setting Resource Pool Selection Storage Selection Scenario Properties Hosts Properties Switchover Properties Scenario Verification Run Scenario 	Volumes to be protected		Property File System T. Mount Point Boot Volume LVM Volume Total Size Free Size	Value xfs /boot Yes No 1024 MB 844 MB	
	Enable exclude directory and files		Volume Setting	Fles	
		<u>B</u> ack	Next	Einish	<u>C</u> ancel

- 6. Specify the volumes you want to protect. (Optional) Enable the option, Enable exclude directory and files. This option filters pagefile.sys, hiberfil.sys, System Volume Information, Recycler, and Recycled files and folders by default.
- 7. Click Next.

You may be prompted to enter credentials for the server.

The Resource Pool Selection screen opens.

8. Click Next.

The Storage Selection screen opens.

6		Scenario Creation	Wizard			_ D X
 ✓ Welcome ✓ Product Type ✓ Scenario Setup 	Select the location where	to store the virtual machine.	Storage S	election		
 ✓ Host ✓ Engine Verification ✓ Volume Setting ✓ Resource Pool Selection ♦ Storage Selection Scenario Properties Hosts Properties Switchover Properties Scenario Verification Run Scenario 	Name [datastore1 (1)] [datastore2] C Disk Provisioning Allocated and	Type VMFS VMFS commit space on demand	(Using Dyna	Capacity 1.8 TIB 127 TIB 127 TIB	Free 1.5 TiB 8.2 TiB	
			Back	Next	Finish	Cancel

9. Specify where the virtual machine must be stored. Enable the option, Allocate and commit space on demand, if desired and then click **Next**.

The Scenario Properties screen opens.

10. Change properties, as desired and click **Next**. For more information, see <u>Arc</u>serve Continuous Availability Administration Guide.

- 0 X Scenario Creation Wizard Master and Replica Properties V Welcome The Master and Repice properties are configured here. You can also configure these properties after the completion of the vicand steps. The recommended default values are already lated. Before changing these values, please refer to the Arcserve Continuity Suite Administration Guide Y Product Type ✓ Scenario Setup 🗸 Host Master Properties Value **Replica** Properties Value E Host Connection ✓ Engine Verification Virtual Platform 10 60 18 63 ✓ Volume Setting Replication Port 443 ✓ Resource Pool Selec 🗷 🍓 Spool SSL Connection ✓ Storage Selection Revent Notification H Storage Idatastore2 E Reports Using Dynamic Disk 👻 Scenario Properties On Res Hosts Properties E Virtual Machine Setting Switchover Properties CPU cores 2 Scenario Verification Memory size (MB) 4096 Run Scenario Virtual Machine Name 10.60.18.158_2691655627_2 Network Adapter Type E1000 Assured Recovery Network Adapter Mapping Click to edit physical network mappings. High Availability Network Adapter Mapping Network m pping assigned Spool Recovery Volume Snapshots Management Propertie Scheduled Tasks Event Notification Ш. Back Next Enish Cancel

The Master and Replica Properties screen opens.

11. Change properties, as desired, and then click **Next**.

The following information is acquired:

- CPU number
- Memory size on VM
- Adapter information on the physical Master
- Network Mapping List

You may also change these settings outside of the scenario creation wizard. For more information, see <u>Arcserve Continuous Availability Administration</u> <u>Guide</u>.

Wait until Arcserve Continuity Suite retrieves Switchover Properties.

12. When the Switchover Properties screen opens, expand the Network Traffic Redirection properties. The Network Adapter Mapping dialog opens. On this dialog, modify the physical network mappings.

Note: If there is only one virtual network adapter in both the Master and Replica servers, they are mapped automatically.

a. Click the drop-down menu in the Replica Network Adapter column and select the adapter you wish to map to the adapter listed in the Master Network Adapter column.

Scenario Edit Events View Cloud	Please set network mappings between master a	dapter and replica adapter.			x	
Scenario View Sonario Sonario Yew Sonario Yew Sonario Yew Sonario Ye SSHAL to Hypervisor Y S	Master Network Adapt ena 192 virbr0	ler	Replica Network Adapte (Empty adapter) VM Network Accearve RHA internal for AR (Empty adapter)	Å		Value
B 10 60 18 192 → → → → → → → → → →	Master Adapter Information en 112 DHCP Enabled Yes Pr Address Subnet Mask Gateways DNS Server 1082	Replica adapter setting Pease select the nethols to Typu customed the multi- the setthourer VM.	method method table on the matter and used a different subnet, the information formation Mask Subnet Mask	in verify the node table of Add		
Verte Message ID Sequenci Fuerte Guaranto Validation Ramate Londat	10 55 .1	Gateways Gateway Gateway		Add		-

- b. For Replica adapter setting method, do the following:
 - Apply master adapter information (default) Select this option if the Master Adapter is in DHCP mode.

- Customize adapter information Select this option to enable the IP Settings and DNS&WINS tabs.
- IP Settings You can add or remove IP Addresses, Subnet Masks and Gateways.
- DNS&WINS You can add or remove DNS IP Addresses, Primary or Secondary WINS.
- 13. Click **OK** to close the Network Adapter Mappings dialog, and then click **Next** to continue.

The Switchover Initiation screen opens.

9	Scenario Creation Wizard 📃 🖉 🗶
✓ Welcome	Switchover Initiation The poperies below control automatic antchover.
 Product Type 	
✓ Scenario Setup	
✓ Host	
✓ Engine Verification	owithover insiston
✓ Volume Setting	
V Resource Pool Selection	
✓ Storage Selection	
✓ Scenario Properties	A switchover can be initiated automatically if the Master server is down or database tailure detected. It can also be manually initiated by the administrator. In both cases, a notification message is provided when a failure is detected.
✓ Hosts Properties	
Switchover Properties	
Scenario Verification	
Run Scenario	
	O Switchover gutomatically O Switchover manually
	Book Next Enish Cancel

14. Specify if switchover must be started automatically or manually, and then click **Next**. Reverse Replication cannot be specified in this scenario.

Note: If Scenario Verification lists any errors, you must resolve them to continue. If any warnings are listed, you should also resolve them to successfully continue. After making changes, click **Retry** to repeat verification.

The Scenario Verification screen opens.



The scenario verification runs automatically, and the configurations are now complete.

15. Click Next.

The Scenario Run screen opens.

Ø	Scenario Creation Wizard 📃 🗖				_ 8 X	
 ✓ Welcome ✓ Product Type ✓ Scenario Setuo 	The scenario has been configured and is ready to run. Press Run Now to start the scenario. Initial data	Scenario Run synchronization will start auto	matically after pressing	the Flun Now button.	To run scenario later p	ress the Finish button.
 Host Engine Verification Volume Setting 	Scenario 'FSHA-L to Hypervisor' is ready to run	1				^
V Resource Pool Selection	Product type	High Availability Scena	irio (HA)			
V Storage Selection	Server type	Full System				
 Scenario Properties Hosts Properties 	Integrity Testing for Assured Recovery	On				
V Switchover Properties	Replication mode	Online				
V Scenario Verification						
Run Scenario	Master					
	Name		10.60.18.158			
	Spool size (MB)		Unlimited			
	Spool path		[INSTALLDIR]/tm	p/spool		
	Replica					
	Name		10.60.18.192			
	Spool size (MB)		Unlimited			
	Spool path		[INSTALLDIR]/tmj	p/spool		
	Master Root Directories	Replica Root Dir	ectories			
	1 >	1				
						V
			<u>B</u> ack	Run Now	Einish	Cancel

16. Click **Run Now** if you wish to start synchronization immediately and activate the scenario. Click **Finish** to save current settings and run the scenario later.

Migrating FSHA to Microsoft Azure

This section provides instructions on how to migrate FSHA to Azure. Before you begin, make sure to register and create an account in Azure.

To migrate FSHA to Microsoft Azure, follow these steps:

1. Open the Manager, select Scenario, **New** or click the **New Scenario** button to launch the wizard.

The Welcome screen opens.

Ô	Scenario Creation Wizard
Walcome Product Type Scenario Setup Scenario Verification Run Scenario	Create a New Scenario Scenario Group (select existing one or enter a new group name) Scenario
	Back Next Einish Cancel .:

2. Select **Create a New Scenario**, select a Group from the list, and then click **Next**.

The Select Server and Product Type screen opens.

Ø	Scenario Creation Wizard
Welcome Product Type Scenario Setup	Select Server and Product Type Select a licensed server type, product type and a required task below. If the desired option is not listed, please do one of the following: If you have an appropriate license key, exit the witzerd by clicking Cancel and then click Help, Register. If you do not have an appropriate license key and you are interested in obtaining one, please contact your software provider.
ocenario Setup Scenario Verification Run Scenario	Select Server Type File Server Microsoft Exchange Server Microsoft Exchange Server Microsoft IIS Server Microsoft IIS Server Microsoft Hyper-V Microsoft SharePoint Server Full System
	Select Product Type O Replication and Data Recovery Scenario (DR) O High Availability Scenario (HA) C Content Distribution Scenario(CD) O Integrity Testing for Assured Recovery (AR) Integration Options
	None Arcserve Backup Back Next Einish Cancel

3. Select Full System, High Availability Scenario (HA), and desired tasks on Replica, and then click **Next**.

The Master and Replica Hosts screen opens.

Ô	Scenario Creation Wizard
 ✓ Welcome ✓ Product Type Scenario Setup 	Master and Replica Hosts Enter the hostname or IP address for the Master (source) host. Enter the hostname or IP address for Virtual Ratform host which hosts virtual machines. (Not applicable for Hyper-V scenarios) Enter the hostname or IP address for the Appliance host which is one of virtual machines hosted by Virtual Platform and with Arcserve Continuity Suite Engine installed.
Scenario Verification	Master Setting
Run Scenario	Scenario Name FullSystem Master HostnameIIP Master OS Type Server Type Microsoft Azure Virtual Platform HostnameIIP portal azure.com Port 443 O TLS SSH Appliance Hostname/IP
	Back Next Einish Cancel

- 4. On the Master and Replica Hosts screen, do the following, and then click **Next**:
 - Scenario Name: Type a Scenario Name. The default value is the scenario type, for example, Full System.

- Master Hostname/IP and Port: Specify the physical machine you wish to protect or browse to select Master server.
- Master OS Type: Specify Windows or Linux as the Master OS Type.

Note: For Windows, enter IP address or hostname of the Windows server to be migrated.

- Server Type: Specify Microsoft Azure as the Replica server.
- Appliance Hostname/IP and Port: Specify the virtual machine hostname or IP address of the VM to act as the Replica server in this scenario.

Note: Use the Verify Arcserve Continuity Suite Engine on Hosts to verify the connectivity between Master and Replica. It verifies that the engines are installed on the Master. To skip the verification, clear the check box.

The Cloud Instance Selection dialog opens.

	C	loud In	stance Sel	ection				X
Cloud Provider:	Microsoft Azure	V						
Cloud Account:	Azure tests	۷	Location:	japanv	vest	¥		
Resource ID		Name			IP		Resource Group	
/subscriptions/11	711a32-9214-4cdb-a232-2452955b18b	FSHA	vinVA1				FSHAWin-rsg1	
<								>

- Select the Azure account, cloud replica, and location, and then click OK.
- Wait for Engine Verification to complete and click Next. If required, click Install to upgrade the Engine on one or both servers and Verify Again.

The Volume Setting screen opens.

Ô	Scenario Creation Wizard		
 Welcome Product Type Scenario Setup Host 	Volume Set Please select one or more volumes for the physical machine you want protr the sub folders and files in the excluded folder will be excluded as well.	ting cted. To see more d	etailed information, click on a volume. All
 Engine Verification Volume Setting Scenario Properties Hosts Properties Switchover Properties Scenario Verification Run Scenario 	Volumes to be protected With Oct Protected Image: State of the state of th	Property File System T. Driver Letter System Volu Boot Volume Label Total Size Free Size Cluster Size	Value NTFS C/ No Yes 39.7 GB 26.1 GB 4096
	<u>B</u> ack	Next	<u>F</u> inish <u>C</u> ancel

6. Select one or more volumes for the physical machine you want to protect and click **Next**.

The Scenario Properties screen opens.

7. Accept the default values or set new values as required and click Next.

Note: Scenario properties control the entire scenario. These properties can also be configured outside of the Wizard. For more information, see <u>Configure Scenario Properties</u>.

The Master and Replica Properties screen opens.

Ð			Scenario Creation Wizard	
 ✓ Welcome ✓ Product Type ✓ Scenario Setup 	The Master and Replica properti The recommended default value	es are configure s are already list	Master and Replica Properties drive. You can also configure these properties after the completion of the witzed at ed. Before changing these values, please refer to the Accenve Continuity Suite Admin	ps. Institution Guide.
🛩 Host	Master Properties	Value	Replica Properties	Value
 Engine Verification Volume Setting 	Host Connection Replication		Host Connection Replication	
 Scenario Properties 	Spool		Virtual Machine	
P Hosts Properties	Event Notification		Virtual Platform Setting	Marganith Invite
Switchover Properties	2 Manepons		Virtual Platform	nortal azure com
Scenario Verification			Port	443
Run Scenario			SSL Connection	1
			E Virtual Machine Setting	
			Virtual Machine Name	WIN-0SV4HNAC4CN_2917200266_2
			VM Size	Standard_DS2_v2
			Resource Group	RHA
			Storage Account Type	Premium SSD
			Assured Recovery Network Adapter Mapping	Click to edit physical network mappings
			High Availability Network Adapter Mapping	Network mapping assigned
			<	>

8. In the network mapping dialog launched automatically from Master and Replica properties screen, set the mapping between the Master's NICs and subnets on Microsoft Azure, security groups, and IP addresses and then click **OK** to save and close the network mapping dialog.

0	A	High Availability Network Adapter Mapping
 Welcome Product Type Scenario Setup Host Engine Verification Volume Seting Scenario Properties Hosts Properties Switchver Properties Scenario Verification Run Scenario 	Please set network mappings between ma Choose virtual network [FSHAlvin-rag1-v FSHAlvin-	High Availability Network Adapter Mapping Image: Comparison of the submet of the submeto submeto submet of the submeto submeto submeto submeto submeto s
		Peleger make sure the invalue of address is in the range of the subnet IP addresses and is an available address. Enable public IP Address Create a new public IP address Use an existed public IP address

Master and Replica properties apply only to host servers.

9. Accept the default values or modify values and click Next.

The Switchover Properties screen opens.

© Scenario Creation Wizard		- 0	Х
 ✓ Welcome ✓ Product Type 	Switchover Properties Switchover properties will be configured in this step. The recommended default values are listed below. Refer to settings.	the Administration Guide before modifying the current	
V Scenario Setup			
🛩 Host	Property	Value	^
Volume Setting	Switchover		
V Scenario Properties	Switchover Hostname	34.229.237.	
✓ Hosts Properties	BUHosts		
Switchover Properties	Master Fully Qualified Name	ray-appliance	
Scenario Verification	Replica Fully Qualified Name	WIN-TFRR2GMGCN7	
Run Scenario	Retwork Traffic Redirection		- 1
	E Redirect DNS	Ön	
	DNS Servers IPs		
	DNS IP	168.63.129.	_
	DNS IP	10.1.0.2	- 1
	DNS IP	Click here to add new IP.	- 1
	DNS TTL (sec)	60	- 1
	Active Directory Integrated	On	
	Set Master IPs in DNS		~
	<		>
	During the switchover, the Master's A-record will be updated. This redirection option is applicable when the subnets or on the same one.	Master and the Replica are located on different IP	
	Back	<u>N</u> ext <u>F</u> inish <u>C</u> ancel	

- 10. Expand the *Switchover* property and enter the Switchover Hostname.
- 11. Expand the *Hosts* property and enter the Master Fully Qualified Name and Replica Fully Qualified Name.
- 12. Expand the *Network Traffic Redirection* property and specify redirection options, including Redirect DNS, DNS Servers IPs, and Master IPs in DNS.

Note: When you set the Redirect DNS option to *Off*, you can also specify a value for the Virtual Machine IPs on Replica server in DNS option. If the Redirect DNS property value is *On*, then the Virtual Machine IPs on Replica server in DNS option will not display in the list.

13. Set the switchover properties and click **Next**.

The Switchover Initiation screen opens.

©	Scenario Creation Wizard				_ D X
 ✓ Welcome ✓ Product Type ✓ Scenario Setup 	Switchover Initiation The properties below control automatic switchover.				
 Host Engine Verification Volume Setting Scenario Properties Hosts Properties Switchover Properties Securatio Verification Run Scenario 	Switchover Initiation A switchover can be initiated automatically if the Master server is down or database failure detected. It can notification message is provided when a failure is detected.	also be manu	ally initiated by the	administrator. In bo	th cases, a
	O Switchover gutomatically				
	O Switchover <u>m</u> anually				

14. Specify if switchover must be started automatically or manually, and then click **Next**.

The Scenario Verification screen opens.

0	Scenario Creation Wizard
 Welcome Product Type Scenario Setup 	Scenario Verification The system automatically verifies the scenario settings to help ensure proper operation. Any errors must be resolved before continuing. It is also strongly recommended that all warnings should be resolved. If continuing with warning, ensure their potential impact is fully understood. After making any necessary changes, click Retry to repeat the scenario verification.
 Host Engine Verification Volume Setting Cluster nodes Scenario Properties Hosts Properties Switchover Properties Scenario Verification Run Scenario 	Scenario created and verified successfully.
	Back Next Einish Go-Gancelstern in G

The scenario verification runs automatically, and the configurations are now complete.

15. Click Next.

The Scenario Run dialog opens.

Welcome Product Type Scenario Setup	The scenario has been configured and is ready to run. Press Run Now to sta button.	Scenario Run at the scenario. Initial data synchronization w	III start automatically after pressing the Run Now button. To run scenario later	press the Finish
 ✓ Host ✓ Engine Verification ✓ Volume Setting 	Scenario 'Full System' is ready to run			
Cluster nodes	Product type	High Availabil	ity Scenario (HA)	
V Scenario Properties	Server type	Full System		
 Hosts Properties 	Integrity Testing for Assured Recovery	On		
Switchover Properties Seconario Verification	Replication mode	Online		
Run Scenario				
	Master			
	Name		10.60.18.96	
	Spool size (MB)		Unlimited	
	Spool path		[INSTALLDIR]/tmp/spool	
	Replica			
	Name		10.55.14.133	
	Spool size (MB)		Unlimited	
	Spool path		[INSTALLDIR]/tmp/spool	

16. Click **Run Now** if you wish to start synchronization immediately and activate the scenario. Click **Finish** to save and run the scenario later.

Note: If you click Run Now, when the software is readying your cutover, the message *Synchronization in progress* appears.

and second life by	en la Satacha	View A Rem	ote Installer More	uhny 🔍 Host	Maintenance Mc	NTON -				
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Scenario								Scenario Statistica		
	Scenario		itate	Product	Serv		Hode			
Win FS	HA to Azure	Runnin	a 10	WAR	Full System	n Online		Active	Stand-B	x
	Hors	Changed	Sere Data	Sectiles	Received Data	Received Files	In speed			
8 10.00	19.18.4	73.06 MB	10.33 GB	32834			48.16 MB			-11
A00	10.104.145	0.00 Bytes			10.33 GB	32834	73.30 MB		=	
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								63.18	7330 HB	
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								Roz Directories 🐧 Properties 😭 High J	Analability Properties 🗽 Statistics	
a wore 10	Sequence	Śevety	Host/Sce	nario	Ine			Roo Directories 👰 Properties 😭 High /	Analability Properties 🗽 Statistics	
age 10 HO1	Sequence 11385	Severty	Host/Sce 52.17	nario 5.156.143	Time	/4/2019 3 32-12	PM	Rost Directories 👰 Properties 🎬 High J	Analability Properties	•
age (0 H01 101	Sequence 11385 11384	Severty Significant	Host/Sce 52.17 52.175	nato 5.156.143 156.143	Time (8) 10	/4/2019 3:32-12 4/2019 3:32-87 Pi	PM	Roc Directories Properties High A Event Resume In Alive checks The replacement is analy for use.	Availability Properties	•
Nage (0) 0401 001 145	Sequence 11385 11384 11383	Severty Segnificant Ho	Host/Sce 52.175 52.175 52.175	nario 5.156.143 156.143 156.143	Time (8) 10 (8) 10 (8) 10	/4/2019 3:32-12 4/2019 3:32-07 Pl 4/2019 3:31-52 Pl	PM	Rot Directories Properties Rot Birectories Rote checks The replicame/one-metric is analyforuse. Intelliging dirk	Availability Properties	•
ape 10 HO1 H05	Sequence 11385 11384 11383 11382	Severty Significant Ho Ho	Host/Sce 52.17 52.175 52.175	nario 5.156.143 156.143 156.143 156.143	Time (5) 14 (6) 10 (6) 10 (6) 10	/4/2019 3:32:12 4/2019 3:32:07 Pi 4/2019 3:31:52 Pi 4/2019 3:31:52 Pi	PM	Properties	Analability Properties Statistics	providers.
is sage (1) 6401 001 165 166	Sequence 11345 11354 11363 11383	Severty	Host/Sce = 52,175 = 52,175 = 52,175 = 52,175	nato 5.156.143 156.143 156.143 156.143 156.143	Time (8) 14 (8) 10 (8) 10 (8) 10	/ 4/2019 3 .32: 17 4/2019 3 .32: 07 4/2019 3 .31: 52 PI 4/2019 3 31: 52 PI	PH	Post Directories Post Directories Post Directories Post	Availability Properties Statistics Availability Properties Statistics	providers
ta sage (0) 0401 001 165 166	Segumoe 11385 11384 11383 11382 11381	Seventy Seventy Seventy Ho Ho Ho	Host/Sce = 52.17 = 52.17 = 52.17 = 52.17 = 52.17 = 52.17	nato 5.156.143 156.143 156.143 156.143 156.143 156.143	Time (6) 14 (6) 10 (6) 10	/4/2019 3 32: 17 4/2019 3 32:07 PI 4/2019 3 31:52 PI 4/2019 3 31:55 PI 4/2019 3 31:45 PI	PM	Post Directories Properties Program Proceedings of Properties Proceedings Proceedings of Properties Proceedings Proceedings of Proceedings Proceedings of Proceedings Proceed	Availability Properties Statistics	providers
fa mage (0 XX401 1001 1105 1106 1106 1104 XX502	Sequence 11385 11394 11383 11382 11381 11375	Seventy Seguilacant Ho Ho Ho Ho Seguilacant	Host/Sce 52.17 52.17 52.17 52.17 52.17 52.17 52.17 52.17 52.17	nato 5.156.143 156.143 156.143 156.143 156.143	Time (8) 14 (8) 10 (8)	/4/2019 3.32: 12 #2019 3.2017 P #2019 3.31:52 P #2019 3.31:45 Pf #2019 3.31:45 Pf #2019 3.31:45 Pf	PM	Properties Properties High A Properties Properties High A Properties Properties High A Properties	Availability Properties <u>Statistics</u> Availability Properties <u>Statistics</u> (24522559-18b-1/eescurs/Groups-FSH4Win-reg1) 24522559-18b-1/eescurs/Groups-FSH4Win-reg1) 2012-d1ability	providers. providers.

When the Azure instance is successfully created, the switchover completes. The Azure instance is now ready for use.

Migrating FSHA to Amazon EC2

This section provides instructions on how to migrate FSHA to Amazon EC2.



To migrate FSHA to Amazon EC2, follow these steps:

1. Open the Manager, select Scenario, **New** or click the **New Scenario** button to launch the wizard.

The Welcome screen opens.

2. Select **Create a New Scenario**, select a Group from the list, and then click **Next**.

The Select Server and Product Type screen opens.

Ô	Scenario Creation Wizard
Welcome Product Type Scenario Setup Scenario Verification	Select Server and Product Type Select a licensed server type, product type and a required task below. If the desired option is not listed, please do one of the following: If you have an appropriate license key, exit the wizard by clicking Cancel and then click Help. Register. If you do not have an appropriate license key and you are interested in obtaining one, please contact your software provider.
Scenario Run Scenario	Select Server Type File Server Oracle Database Microsoft SQL Server Microsoft SQL Server Microsoft SQL Server Microsoft Sarver Full System Select Product Type Replication and Data Recovery Scenario (DR) High Availability Scenario (HA)
	Context Distribution Context (CC) Integration Options None Arcserve Backup
	Back Next Einish Cancel

3. Select Full System, High Availability Scenario (HA), and desired tasks on Replica, and then click **Next**.
| ø | Scenario Creation Wizard |
|---|---|
| ✓ Welcome ✓ Product Type Scenario Setup | Master and Replica Hosts
Enter the hostname or IP address for the Master (source) host.
Enter the hostname or IP address for Vinual Platform host which hosts virtual machines. (Not applicable for Hyper-V scenarios)
Enter the hostname or IP address for the Appliance host which is one of virtual machines hosted by Virtual Platform and with Arcserve
Continuity Suite Engine installed. |
| Scenario Verification | Master Setting |
| Run Scenario | Scenario Name FullSystem 1 Master Hostname/IP Master OS Type Linux Replica Setting Server Type Amazon EC2 Virtual Platform Hostname/IP ec2amazonaws.com Pot 443 TLS SSH TCP Appliance Hostname/IP Pot 25000 Pot 25000 |
| | Assessment Mode ✓ Verify Arcserve Continuity Suite Engine on Hosts |
| | Back Next Einish Cancel |

The Master and Replica Hosts screen opens.

- 4. On the Master and Replica Hosts screen, do the following, and then click Next:
 - Scenario Name: Type a Scenario Name. The default value is the scenario type, for example, Full System.
 - Master Hostname/IP and Port: Specify the physical machine you wish to protect or browse to select the Master server.
 - Master OS Type: Specify Linux as the Master OS Type.
 - Server Type: Specify Amazon EC2 as the Replica server.
 - Appliance Hostname/IP and Port: Specify the virtual machine hostname or IP address of the VM to act as the Replica server in this scenario.

Note: Use the Verify Arcserve Continuity Suite Engine on Hosts to verify the connectivity between Master and Replica. It verifies that the engines are installed on the Master. To skip the verification, clear the check box.

The Cloud Instance Selection dialog opens.

Cloud Provider: Amazon EC2 Cloud Account: fra@tha.com Pegion: US West (Oregon) D Name IP Available Zone -02579355/35805261 Frank-Uulke-rha-auto-DD52.11.89.180, 52.11.89.180 us-west-Zb -0410052act0556cc2 Frank-Uulke-rha-auto-DD35.162.254.131, 35.162.2 us-west-Za -0502522225817556 FRANKWHOREUT/POD44.221.01.192 us-west-Za	the model of the	ction								>
Cloud Account: Ina@tha.com Region: US West (Oregon) D Name IP Available Zone -02579355353055261 Frank-Uuke-rha-auto-DO52.11.89.180, 52.11.89.180 us-west-2b -0410052acR0556c2 Frank-Uuke-rha-auto-DO55.162.25.13.35.162.2. us-west-2b -003092323238317656 FRANK/WHITELT/FAD>34.02.11.193 us-west-2a	Cloud Provider:	Amazon	602	v						
D Name IP Available Zone -0257935b263a05261 Frank-Luke-rha-auto-DD 52.11.83.180.52.11.83.180 vis-west-2b -04100b2act0b56cc2 Frank-Luke-rha-auto-DD 35.162.25.131.35.162.2 us-west-2a -0303222228b317256 FRANKWARRED7ADO 34.221.10.153 us-west-2a	Goud Account:	ha@ha	com	¥	Region:	U\$W	lest (Oregon) 🔍			
-025793553/3a05261 Frank-Luke-rha-auto-DO52.11.89.180_52.11.89.180_us-west-2b -0410052acf0556c2 Frank-Luke-rha-auto-DO35.162.254.131_35.162.2. us-west-2a -093c92323e317a5e FRANK-VA-RHEL77-DO34.221.10.159 us-west-2a	D		Name	IP			Available Zone			
-093c92223e3a17a5e FRANK-VA-FHEL77-DO34.221.10.159 Us-west-Za	i-0257935b3f3a052 i-04100b2acf0b56c	61 c2	Frank-Liuke-rha-auto-DO Frank-Liuke-rha-auto-DO	52.11.85	180, 52,11 254,131, 35	89.180 162.2	us-west-2b us-west-2a			
	i-093c92323e3a17	ste -	FRANK-VA-RHEL77-DO	34.221.1	10.159		us-west-2a			
Refresh OF Carcal							Refeath		06	Cancel

- Select the AWS account, cloud replica (appliance), and region and then click **OK**.
- 5. Wait for Engine Verification to complete and click **Next**. If required, click Install to upgrade the Engine on one or both servers and Verify Again.

The Volume Setting screen opens.

6. Select one or more volumes for the physical machine you want to protect, and then click **Next**.

The Scenario Properties screen opens.

7. Accept the default values or set new values as required and click **Next**.

Note: Scenario properties control the entire scenario. These properties can also be configured outside of the Wizard.

The Master and Replica Properties screen opens.

Scenario Creation Wizard				- 0	×
 ✓ Welcome ✓ Product Type 	The Master and Replica properties are configured in The recommended default values are already listed	Master ar here. You can also configur 1, Before changing these va	d Replica Properties these properties after the completion of the wizard st lues, please refer to the Arcserve RHA Administration (eps. Suide.	
Scenario Setup			0		
ed Mahama Satting	Master Properties	Value	Replica Properties	Value	1^
Voune Searcy	Host Connection		Virtual Machine		
Soenano Propenses	B Replication		Virtual Platform Setting		
P Hosts Properties	E Spool		Urtual Platform Type	Amazon EC2	
Switchover Properties	Event Notification		Urtual Platform	ec2.amazonaws.com	
Scenario Verification	E C Reports		E Port	443	
Run Scenario			SSL Connection	1	
			Virtual Machine Setting		
			EG2 Instance Type	m3.medium	
			Virtual Machine Name	40.121.0.05_1902700	
			EBS Volume Type	General Purpose (SS	
			Eles volume Encryption	Maharat manaing and	
			Secol	er Inework mapping assi	
			Cloud		
			Cioda		~

8. In the network mapping dialog launched automatically from Master and Replica properties screen, set the mapping between the Master's NICs and subnets on AWS, security groups, and IP addresses and then click **OK** to save and close the network mapping dialog.

lease set network mappings between mas	ster adapter and replica adapter.									
Choose VPC vpc-14862; vpc-new2	~									
Master Network /	Adapter		Replica Network Adapter			_				
Ethernet 2:Microsoft Hyper-V Network	Adapter #2	subnet-f4d533ad	Public subnet 10.1.0.0/24 (su	bnet-f4d	(533ad)	~				
Master Adapter Information	Replica adapter setting m	ethod								
Ethernet 2:Microsoft Hyper-V Net Adapter #2	work Please select the method t if you customized the routi the switchover VM.	Please select the method to set the target adapter configuration. If you customized the routing table on the master and used a different subnet, then verify the route table of the switchover VM.								
DHCP Enabled	 Apply master adapter in 	Apply master adapter information								
Yes IP Address	 Custornize adapter info 	O Customize adapter information								
10.0.0 Subnet Mask	IP Settings DNS&WINS	IP Settings DNS&WINS EC2								
255.255.251 Sateways	Note: If the subnet is more	Note: If the subnet is modified, the existing instance is terminated and a new instance is launched.								
10.0.0		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1								
168.63.129	Security Group	land build all								
	Security Group	Jaunch-wizard-214								
	IP Address									
	Assign static privat	Assign static private IP Address 0. 0. 0. 0								
	Please make sure the available address. If	Please make sure the private IP address is in the range of the subnet IP addresses and is an available address. If the instance is created, you cannot modify the private IP address.								
	Enable public IP A	ddress								
	Create a new publi	Create a new public IP address								
	Use an existed put	olic IP address	54.201.102			~				

Master and Replica properties apply only to host servers.

9. Accept the default values or modify values, and then click **Next**.

The Switchover Properties screen opens.

Welcome	Switchover Pro	perties	
Product Tune	Switchover properties will be configured in this step. The recommended default values are settings.	listed below. Refer to the Administration Guide before modifying the cu	urrent
Froduct Type			
 Scenano Setup 			
V Host	Property	Value	
Volume Setting	Switchover		
 Scenario Properties 	Switchover Hostname	34.229.237.	
 Hosts Properties 	Hosts		
Switchover Properties	Master Fully Qualified Name	ray-appliance	
cenario Verification	Replica Fully Qualified Name	WIN-TFRR2GMGCN7	
un Scenario	B Network Traffic Redirection		
	E direct DNS	On	
	DNS Servers IPs		
	🗐 DNS IP	168.63.129.	
	I DNS IP	10.1.0.2	
	I DNS IP	Click here to add new IP.	
	DNS TTL (sec)	60	
	Active Directory Integrated	On	
	Master IPs in DNS		
	C		>

- 10. Expand the *Switchover* property and enter the Switchover Hostname.
- 11. Expand the *Hosts* property and enter the Master Fully Qualified Name and Replica Fully Qualified Name.
- 12. Expand the *Network Traffic Redirection* property and specify redirection options, including Redirect DNS, DNS Servers IPs, and Master IPs in DNS.

Note: When you set the Redirect DNS option to *Off*, you can also specify a value for the Virtual Machine IPs on Replica server in DNS option. If the Redirect DNS property value is *On*, then the Virtual Machine IPs on Replica server in DNS option will not display in the list.

13. Set the switchover properties and click Next.

The Switchover Initiation screen opens.

Scenario Creation Wizard		- 0	Х
 ✓ Welcome ✓ Product Type ✓ Scenario Setup 	Switchover Initiation The properties below control automatic switchover.		
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- 14. Specify if switchover must be started automatically or manually, and then click **Next**.
- 15. Scenario verification runs automatically, and configurations are now complete.
- 16. Configure NAT. For more information, see <u>Configuring the Continuous Avail-</u> ability NAT Utility for Various Network Setups.
- 17. Create a New EC2 Data Replication Scenario. For more information, see Create a New EC2 Data Replication Scenario.
- 18. Run the scenario and monitor events in the management center.

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19. After replication of the data, check if the switchover is complete. On successful switchover, the following message is displayed:

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The replica environment is ready for use.

20. When the software is readying your cutover, it displays the "Starting switchover procedure..." message.



When the EC2 instance is successfully created, the switchover completes. The EC2 instance is now ready for use.

Run Scenario and Wait for Full Sync

When you start a Full System scenario, Arcserve Replication and High Availability first validates the scenario configuration with a verification check. During synchronization, the data in protected volumes on the Master is replicated to a virtual disk file on the Replica. During replication, the software replicates all file system changes that occur on the Master to the Replica and applies those changes to the data on the virtual disk.

Consider the following when running a Full System scenario:

- For Linux Full System scenario, Volume and Offline synchronization methods are not supported.
- Selecting Windows as Choosing synchronization method:
 - For initial synchronization, the Volume synchronization is recommended because it usually gives better synchronization performance over LAN or WAN.
 - For subsequent synchronizations, the File or Block level synchronization is recommended since they offer a significant load reduction. File or Block synchronization compares data on the Master and Replica and sends only the difference, while the Volume synchronization sends all data from the Master to the Replica. For resynchronization, Block synchronization is used by default.
- Selecting Linux as Choosing synchronization method:
 - For initial synchronization, the File synchronization is recommended because it takes less time to complete data comparison and start sending data. Make sure to select the check box of **Ignore same size/time files**.
 - For subsequent synchronizations, make sure to clear the check box of **Ignore same size/time files** to ensure data integrity.
- If data transfer happens across WAN, use Multiple Streams to improve synchronization/replication performance. Select scenario -> Replication -> Optional Settings -> Number of Streams, test 5 or 10 which works better for your network environment.

Perform Assured Recovery Testing

This section describes about Assured Recovery testing, and how to do the following:

- How to create AR scenario
- How to perform AR test in a scheduled and non-scheduled mode
- How to configure the AR properties
- How to set up VSS snapshot creation
- How to manage snapshots

About Assured Recovery

The Assured Recovery option enables you to perform a full transparent test of the recoverability of your data on the Replica server. The Replica server is the one that takes over the production server if it gets down. The Assured Recovery option is a true test of the actual server, applications and actions that are required when the Replica server needs to switch, become the Active server, and carry out its functions.

This Assured Recovery test is executed by starting up database services and performing the operations required to verify the integrity of the data. All this is done without performing the resynchronization, and without impacting the availability of the production server, or the safety that the Replication and HA systems are designed to provide.

During the test, the data changes that continue to take place on the Master are sent to the Replica, but they are not immediately applied. Instead, these changes are accumulated and stored in a spool, and only when the testing is completed, they are applied to the Replica data. Since the spooling occurs on the Replica, if something happens to the Master during the testing process, none of the accumulated changes are lost.

Once the testing is finished, the Assured Recovery option stops the application services it started on the Replica. Then, the Replica server automatically rewinds back to the state that existed when the replication was paused and the test has started. This way, the accumulated changes in the spool can be applied as if no testing has occurred. From this point on, the Replication or HA scenario continues normally. In case of an HA scenario, if the Master server fails during the testing, the switchover begins.

The Assured Recovery test can be fully automated and performed on a scheduled basis as often as needed. Upon completion, appropriate personnel can be alerted with the status of the test, and additional actions can be triggered on success, for example, taking a VSS snapshot of the Replica data or creating a backup. You can also perform AR testing in a non-scheduled mode.

The Assured Recovery testing is tailored to all supported application and database servers. However, since the Assured Recovery option tests database services, it is less applicable for File and IIS Servers. You can still use the Assured Recovery option with these servers for special tasks. For example, you can automatically suspend replication on a regular basis during several hours each day, week or month, and run scripts in this interval, or you can use this suspension to take VSS snapshots on the Replica. Since there is no *application* per se, testing of the data with File and IIS Servers scenarios requires additional custom scripts.

The Assured Recovery option supports both Replication and HA scenarios, except for Control Service scenarios. However, it is best suited for HA scenarios since in this case, the Replica server contains the actual database servers, on which the test is performed, and not only data.

Note: The Assured Recovery option is not available for Control Service scenarios.

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 must have 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 the same way. Otherwise, the AR test does not produce meaningful results.

Creating Assured Recovery Testing Scenarios

The Assured Recovery testing feature must be enabled during the creation of the scenario. For this reason, you cannot perform testing within a Replication or HA scenario that is already running, and was not configured to use the Assured Recovery option. To use Assured Recovery, it is necessary to create a new scenario with the **Integrity Testing for Assured Recovery** option turned to On.

Note: This section demonstrates the creation of an Assured Recovery testing scenario for Exchange Server HA. The procedure is similar for all application types.

To set Assured Recovery testing scenario, follow these steps:

1. Open the Manager, select from the Scenario menu the **New** option, or click the **New** button on the Standard toolbar.

The Scenario Creation Wizard opens.

- 2. Select the required scenario options as follows:
 - Select Create a New Scenario option.
 - Select from the Group drop-down list, the group to which you want to assign the new scenario, or enter a name for a new scenario group.
- 3. Click Next.

The Select Server and Product Type screen opens.

4. A list of available applications and scenario types is presented.

Note: The list of available applications depends on the licenses applied.

Select the required scenario options, as follows:

- Select Server Type select the type of server for which you want to create the AR scenario.
- Select Product Type select either Replication and Disaster Recovery or High Availability Scenario.

Note: The Assured Recovery test is best suited for HA scenarios. If you select the Replication option, you must verify that the root directories path is the same on the Master and the Replica. In addition, the Replica must have database application installed, or share files if you test a File Server. Otherwise, the AR test does NOT give meaningful results.

- Select the Integrity Testing for Assured Recovery option.
- 5. Click Next.

The Master and Replica Hosts screen opens.

- 6. Enter the following information:
 - In the Scenario Name box accept the default name or enter a new name for the scenario.
 - In the Master and Replica Hostname/IP boxes enter the hostname or IP address of the Master (active) and Replica (standby) servers, or use the Browse buttons to find the Master and Replica Servers.

Important! Only one Replica can be configured for AR testing in a single scenario. If you add more than one Replica to the scenario and try to configure it for the AR test, the following message appears: Only one scheduled task per scenario can be set. Replica integrity testing for Assured Recovery for host [Replica_name] is already switched on. Do you want to turn this option off now? To switch the test to the second Replica, click Yes.

Note: If either server is a MSCS cluster, enter the Virtual Server Name or IP address as the Master and/or Replica name (instead of name/IP of the physical node).

- In the Port boxes: accept the default port no. (25000) or enter a new port number for the Master and Replica.
- The Verify Engine on Hosts option select this check box if you want the system to verify whether Engines are installed and running on the Master and Replica hosts you specified in this screen. If Engines are not installed on the selected hosts, use this option to remotely install the Engines on one or both hosts.
- 7. After you have entered or selected the desired options, click Next.

The Databases for Replication screen opens.

The auto-discovery component automatically displays the Exchange databases that are on the Master server. These are the databases that can be replicated and protected.

 By default, all the discovered databases are selected and get replicated. Clear the check boxes to exclude any of these storage groups from the replication, and then click Next.

The Replica Configuration screen opens.

9. The auto-configuration component verifies that the Exchange Server configuration on the Master and Replica servers is identical during the replication procedure. This means that if there are discrepancies, the Arcserve Replication and High Availability performs the required actions, such as, deletes the storage groups, public folders or mailbox stores from the Replica, creates new ones and makes modifications to the existing ones. The actions that are performed during the configuration process are indicated in the Action column on the right.

10. Review the changes that occur during the automatic configuration on the Replica server, and make sure that you want them to be performed.

Note: If a Remove action is indicated, make sure that you are ready to delete the specified storage item from the Replica server, since it does not have an automatic backup. If you want to save it in a different location before you delete, click the Finish button to exit the wizard.

Important! You cannot use UNC paths as root directories on the Replica host for Assured Recovery scenario.

11. Click Next to start the Replica configuration process.

The Scenario Properties screen opens.

The **Scenario Properties** screen enables you to configure the scenario properties that affect the entire scenario. Typically, the default values are sufficient.

If you want to configure the scenario properties at this stage, see <u>Under</u>-<u>standing Scenario Properties</u>. To configure the scenario properties at a later stage, see <u>Configuring Scenario Properties</u>.

12. Click Next.

The Master and Replica Properties screen opens.

The Master and Replica Properties screen enables you to configure the properties that are related to the Master or the Replica host. Typically, the default values are sufficient.

13. To verify that the Assured Recovery option is active, under the Replica Properties list on the right, open the Scheduled Tasks group and ensure that the Replica Integrity Testing for Assured Recovery property is set to On. You can leave the default values of the other related properties and change them later if needed. For more information about AR properties, see <u>Specify</u> Assured Recovery Properties.

If you want to configure the Master and Replica properties at this stage, see <u>Setting Master and Replica Properties</u>. To configure the Master and Replica properties at a later stage, see <u>Configuring Master or Replica Server Properties</u>.

Note: You can modify all the settings in this pane after the scenario is created. However, before changing any Spool properties (which can be configured here), review the <u>Spool information</u> for configuration details.

- 14. Click Next. If you have selected HA, the Switchover Properties screen opens.
- 15. From this stage, set up the scenario as you would normally following the instructions in the usual manner. For more information, see the appropriate Operation Guide. After the scenario creation is completed, run the scenario.

Once the initial synchronization is completed and the replication process is active, the AR test can be performed.

Configure Assured Recovery Properties

To configure Assured Recovery properties, the scenario must be stopped.

Note: The Properties pane and its tabs (Root Directories, Properties, Statistics) are context sensitive, and change whenever you select a different node from a scenario folder.

To set Assured Recovery scenario properties, follow these steps:

- 1. On the Scenario pane, select the Replica that you want to test and whose properties you want to configure.
- 2. On the Framework pane, select the Properties tab.

The Replica Properties list opens.

Note: A running scenario has a gray background, and scenarios that are not running have a white background.

- 3. If the scenario is running, click the **Stop** button on the toolbar. The scenario stops.
- 4. On the Replica Properties list, open the Scheduled Tasks group to display the Replica Integrity testing for Assured Recovery properties.
- 5. From the list, select the required property, and select or enter the appropriate values. Some values can be selected from a combo box while other values can be manually entered in an edit box field.
- 6. Click the **Save** button on the Standard toolbar to save and apply your changes.

Specify Assured Recovery Properties

This section lists the Assured Recovery properties, corresponding values, and provides an explanation of each property.

Note: On Windows x64 systems, you cannot run scripts that activate applications with a graphical user interface.

Scheduler

The Scheduler enables you to automatically run Assured Recovery tests according to a pre-defined schedule, for example, every few hours, once in a day, or several times a month. To set the scheduler, see <u>Performing Assured Recovery</u> <u>Test in a Scheduled Mode</u>.

Start DB

This property defines the first step in the AR test: starting the database services on the Replica.

Automatic

By default, this property is set to On. To use script to replace the automatic initiation of database services, set this option to Off.

User-Defined Script

You can specify a script to augment or replace the standard step to start the database services.

To replace the standard step, set **Automatic** to Off and set **User-Defined Script** to On. Then, specify the full path name of the script to be executed in the **Script Name** box.

To execute the script following the standard step, leave Automatic set to On.

Script Name (full path)

Enter the name and full path of the script that is invoked following the starting of database services or instead of it.

Arguments

Additional arguments to be passed to the script are specified in the previous property. Arguments entered here are static values.

DB Testing of Replica

This property defines the second step in the Assured Recovery test: verifying that all application services have started properly and that all databases or information stores have mounted successfully and are in a valid state.

Automatic

By default, this property is set to On. To use script to replace the automatic actions performed during this database validation stage, set this option to Off.

User-Defined Script

You can specify a script to augment or replace the actions performed during this database validation stage.

To replace the standard step, set **Automatic** to Off and set **User-Defined Script** to On. Then, specify the full path name of the script to be executed in the Script Name box.

To execute the script following the standard step, leave Automatic set to On.

Script Name (full path) -- Enter the name and full path of the script that is invoked following the database validation step or instead of it.

Arguments -- Additional arguments to be passed to the script are specified in the previous property. Arguments entered here are static values.

Actions upon Successful Test (DB Online)

After the Replica is successfully tested, the application data is in a known, valid state. You may want to make use of this fact, for example, to ensure that a backup is performed at this point on validated data. If the action you want to perform requires that the application is running and the databases or information stores are mounted, then the action must be registered through a script. To register the actions, specify the script details in the User-Defined Script boxes. This section has no default actions.

User-Defined Script

Script Name (full path) -- Enter the name and full path of the script that is invoked when the application is still running, and the databases or information stores are mounted.

Arguments -- Additional arguments to be passed to the script are specified in the previous property. Arguments entered here are static values.

Stop DB

This property defines the third and final step in a standard AR test: stopping the database services once the testing is complete.

Automatic

By default, this property is set to On. To use a script to replace the automatic stopping of database services, set this option to Off.

User-Defined Script

To stop the database services, specify a script to augment or replace the standard step.

To replace the standard step, set **Automatic** to Off and set **User-Defined Script** to On. Then, specify the full path name of the script to be executed in the **Script Name** box.

To execute the script following the standard step, leave Automatic set to On.

Script Name (full path) -- Enter the name and full path of the script that is invoked following the stopping of database services or instead of it.

Arguments -- Additional arguments to be passed to the script are specified in the previous property. Arguments entered here are static values.

Actions upon Successful Test (DB Off-line)

As noted in Actions upon Successful Test (DB Online), the application is in a known valid state at this stage. You may want to copy it or perform a backup or take a snapshot at this time. If the action does not require the application to be running, register this through a script here, by specifying the full path name of a script in the User-Defined Script field.

Note: On Windows Server 2008 and later systems, you can generate VSS snapshots automatically. For more information, see <u>Create VSS Snapshots Auto-</u><u>matically</u>.

User-Defined Script

Script Name (full path) -- Enter the name and full path of the script that is invoked after the Assured Recovery test is successfully completed.

Arguments -- Additional arguments to be passed to the script are specified in the Script Name property. Arguments entered here are static values.

Assured Recovery Testing Limitations

When performing Assured Recovery Testing with Oracle or SQL Server databases, the software does not verify whether the database is mounted. It verifies only that the service is running. Create a custom script to verify that both the services are running and the databases are mounted. Enable the appropriate user-defined script property. For more information, see <u>Understanding Assured Recovery Properties</u>.

Perform an Assured Recovery Test

The Assured Recovery test can be fully automated and performed on a scheduled basis as often as needed. Upon completion, appropriate personnel can be alerted with the status of the test, and additional actions can be triggered on success, for example, taking a VSS snapshot of the data or running a backup. Alternatively, you can perform AR testing in a non-scheduled mode, by automatically or manually initiating the test whenever required.

In both modes, the AR test is performed in steps, according to the AR configuration settings. Some of the steps are transparent and are executed automatically whenever an AR test is performed. Other steps are visible and can be configured as to whether and how they get performed.

The standard steps are as follows:

- 1. Initiate Assured Recovery test to initiate the AR test in a scheduled or non-scheduled mode, click **Replica Integrity Testing** on the toolbar.
- 2. Suspend application of data changes on the tested Replica this step is performed automatically at the beginning of each AR test.
- 3. Initiate a rewind component on the tested Replica this step is performed automatically. It is required to capture all the changes that are made to the Replica data during the test, so that they can be later rewind back to the point when the replication was suspended.
- 4. Start the database services by default, this step is performed automatically. However, it can be switched off, replaced, or followed by a user-defined script.
- 5. Test the database by default, the databases are verified using the same tests that are used to monitor the database in HA. These tests include verifying that all the services have correctly started and that all the databases have been successfully mounted. These tests can be switched off, replaced, or followed by a user-defined script.
- Perform actions upon successful test while the database services are running a user-defined script may be registered at this point to perform actions that are desired on a successful test, which also requires that the application must be running.
- Stop the database services by default, this step is performed automatically. However, it can be switched off, replaced, or followed by a user-defined script.
- 8. Perform additional actions upon successful test while the database services are stopped this step is optional, and may be used to perform actions that take advant-

age of the fact that the application passed validation tests and that it was stopped in a systematic order.

9. Rewind AR Replica data and resuming replication - this step is performed automatically at the end of each AR test, that restores the Replica data to the state it was before the test begun using the rewind technology and then resumes the replication.

Performing Assured Recovery Test in a Scheduled Mode

When you set the AR test to run in a scheduled mode, it means that an AR test is performed automatically on a regular basis. After you select this option, the following flexible scheduling capabilities are offered:

- Testing on selected days of the week and for specific hours in a 24-hour cycle.
- Testing over selected periods (e.g., once every 36 hours) in a 7-day cycle.
- Exclusion of specific dates.

The AR test schedule can be set when the scenario is created or at a later stage.

Note: You can define only one scheduled task per scenario. If you attempt to configure AR testing when you already have a scheduled Suspend operation configured, the following message appears:

Only one scheduled task per scenario can be set. Suspend for host [Replica_name] is already switched on. Do you want to turn this option off now?

To switch the schedule option to the AR test, click Yes.

To schedule the AR test, follow these steps:

- 1. On the Scenario pane, select the Replica you want to test.
- 2. On the Framework pane on the left, select the properties tab.

The Replica Properties list appears.

- 2. If the scenario is running, click the **Stop** button on the Standard toolbar to stop the scenario.
- 3. On the Replica properties list, open the Scheduled Tasks group. Under the **Replica Integrity Testing for Assured Recovery** group, select the Scheduler property, and then click the Not Set value.

The Assured Recovery hours dialog appears.

The Assured Recovery hours dialog is like the Schedule Setting dialog, which is used for scheduling automatic synchronization.

- 4. Set the schedule for automatic AR testing in the Assured Recovery hours dialog, and then click **OK** to save your schedule and close the dialog.
- 5. To activate the scheduler, click the **Save** button on the Standard toolbar and start the AR scenario.

The Replica you have selected for testing is tested on a regular basis according to the schedule you set.

Performing Assured Recovery Test in a Non-Scheduled Mode

In a non-scheduled mode, you can test Assured Recovery either automatically or manually. When you are using the automatic method, initiate the AR test by a click of a button. The Arcserve Replication and High Availability automatically performs all the test steps according to the AR configuration setting. After the test is complete, the regular replication is resumed. The only difference between scheduled mode and a non-scheduled mode is, in a non-scheduled automatic mode, you can initiate the test whenever you need, without using the Scheduler.

When you are using the manual method, you also need to initiate the AR test by a click of a button. However, unlike the automatic method, the Arcserve Replication and High Availability suspends the test after the first standard step - starting the database service. This occurs even when all the standard steps are configured as Automatic.

Note: If the Start DB property is set to Off, and there is no user-defined script that replaces it, the Arcserve Replication and High Availability suspends the application of changes to the Replica in preparation for the manual AR test.

After the replication is suspended, you can perform tests or actions directly on the Replica without resynchronizing the Master and Replica. You can use this option for manually testing applications or data on the Replica, or for performing tasks on the Replica instead of the Master, such as report generation, to reduce the Master workload.

When you finish the manual testing or operation, you need to manually stop the AR test suspension. This is done again by a click of a button. If other steps and actions were configured in the AR test, such as stopping the database services, they get performed after you click the button for stopping the test, and before the test gets declared as finished. When the test is considered finished, the replication resumes automatically.

Perform Assured Recovery Test Automatically

To perform Assured Recovery test automatically, follow these steps:

- 1. On the Manager, verify that the AR scenario is running.
- To start the AR testing, on the Scenario pane select the Replica you want to test. Click the **Replica Integrity Testing** button on the Standard toolbar, or right-click Replica and select **Replica Integrity Testing** from the shortcut menu.

The Replica Integrity Testing for Assured Recovery dialog opens, displaying the configuration you set for the AR test.

3. To start the automatic AR test using the existing configuration, click **OK**.

Note: To change the test configuration before running the test, click **Cancel**. For more information, see <u>Configure Assured Recovery Properties</u>.

- 4. After you initiate the AR testing, the Replica Integrity Testing for Assured dialog gets closed. Before the test begins to run, Arcserve Live Migration verifies that no synchronization, AR test or replication suspension tasks are currently in progress on any of the hosts that participate in the current scenario.
- 5. After the verification completes, the AR test begins.

The steps of the test are displayed as messages in the Event pane.

- 6. After the test is finished, the Replica is automatically restored to the same state it was when the replication was suspended, using the underlying rewind technology. Then, the changes that were accumulated in the spool gets applied, and the replication resumes and continues normally.
- 7. By default, after the AR test is performed, an Assured Recovery Report is generated.

Notes:

- If the Assured Recovery Report is not generated, on the Replica Properties list under the Reports group, check the value of the Generate Assured Recovery Report property.
- To view the report, see <u>View a Report</u>.

All the tasks that were performed during the AR test are listed in the AR Report, along with their activation time and status.

Perform Assured Recovery Test Manually

You can manually perform the AR testing without using the Scheduler.

To perform Assured Recovery test manually, follow these steps:

- 1. On the Manager, verify that the AR scenario is running.
- To start the AR testing, on the Scenario pane select the Replica you want to test. Click the **Replica Integrity Testing** button on the Standard toolbar, or right-click the Replica and select **Replica Integrity Testing** from the pop-up menu.

The **Replica Integrity Testing for Assured** dialog opens, displaying the configuration you set for the AR test.

3. To start the manual AR testing using the existing configuration, select the **Manual testing** check box. Once this check box is selected, the dialog changes to reflect only the actions that are performed in a manual mode.

Notes:

- To change the test configuration before running the test, click **Cancel**. For more information, see <u>Configure Assured Recovery Properties</u>.
- If Manual Testing is NOT selected, the VM still gets started, and stops automatically after the testing is successful.
- 4. Click **OK** to close the dialog and start the manual testing.
- 5. From this stage, the only automatic action that Arcserve Live Migration performs, unless other actions are configured as Automatic, is suspension of updates on the Replica.
- 6. After the replication is suspended, the message "*Replica is ready for Manual Integrity Testing*" appears in the Event pane.

Now, you can start performing any test you want directly on the Replica host, including making changes to the database.

Note: The changes made cannot be saved once the AR test is finished, due to the rewind process.

Important! Do not restart the tested Replica at this stage. If you do, all the changes that accumulated on the spool gets lost.

7. After you finish testing the Replica host, click again the **Replica Integrity Test**ing button to resume replication. **Important!** If you do not click the Replica Integrity Testing button a second time at the end of the test, the changes continue to spool up on the Replica host. Eventually, the spool on the Replica host overflows and the scenario is stopped.

A confirmation message opens.

- 8. Click **Yes** to stop the AR test. If other steps and actions were configured in the AR test, such as stopping the database services, they get performed before the test gets finished. When the test is finished, the replication resumes automatically.
- 9. After the test is finished, the Replica is automatically restored to the same state it was when the replication was suspended. Then, the changes that were accumulated in the spool gets applied, and the replication resumes and continues normally.
- 10. By default, after the AR test is performed, an Assured Recovery Report is generated.

Perform Cut off/Switchover

This section contains the following topics:

The Switchover Workflow

Switchover (or failover) is the process of changing roles between the Master and Replica, that is, making the Master server the standby server, and the Replica server the active server.

Switchover can be triggered automatically by Arcserve Live Migration when it detects that the Master is unavailable (failover). Alternatively, Arcserve Live Migration can simply alert you to the problem, and then you can manually initiate switchover from the Manager.

During the creation of HA scenario, you define how you want the switchover to be initiated. If you have selected in the **Switchover and Reverse Replication Ini-tiation** page, the **Initiate Switchover manually** option, you need to perform a manual switchover. However, if you have selected the **Initiate Switchover auto-matically** option, you can still perform a manual switchover, even if the Master is alive. You can initiate switchover when you want to test your system or use the Replica server to continue the application service while some form of maintenance is performed on the Master server.

If you have selected to initiate switchover automatically, after the Master is considered to be down, the Arcserve Live Migration automatically tries to restore the services and databases on it to their active state. First, the Arcserve Live Migration tries to restart services that it previously checked to be managed. If the services are running, it then tries to mount the databases. If all attempts fail, the Arcserve Live Migration initiates failover. These attempts to restore the services and databases are not performed if the switchover is initiated manually.

Once triggered, whether manually or automatically, the switchover process itself is fully automated.

Initiate Switchover

To initiate a switchover, follow these steps:

- 1. Open the Manager and select the desired scenario from the Scenario pane. Verify if it is running.
- 2. Click the **Perform Switchover** button, or select from the **Tools** menu the **Perform Switchover** option.

A confirmation message appears.

- 3. [Optional] Select the check box **Do not wait until all journals are applied** to immediately perform switchover even before all journals are applied. If you do not select this check box, the switchover process gets initiated only after all journals are applied.
- 4. Depending on your scenario configuration, the Run a Reverse Replication Scenario after the Switchover check box is either selected or cleared. Select or clear the check box to change the default configuration only for the switchover you are about to perform.
- 5. Click **Yes** on the **Perform a Switchover** confirmation message. This procedure initiates a switchover from the Master server to the Replica server.

During switchover, the **Events** pane gives detailed information about the switchover process.

6. After the switchover is complete, the scenario gets stopped.

Note: The only case in which the scenario may continue to run after switchover is when **automatic reverse replication** is defined as **Start automatically**.

In the Event pane a message appears, informing you that **Switchover com**pleted, and then that the **Scenario has stopped**.

Now, the original Master becomes the Replica and the original Replica becomes the Master.

Important! If the Master server crashes or is rebooted during a switchover, the process stops. If this happens, you may need to recover the active server.