

WANSyncHA[®] Microsoft Exchange Server[™]

Operations Guide



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Chapter 1: Getting Started

Microsoft Exchange Server is the leading messaging platform for enterprises. Due to its high scalability and performance, Exchange Server has been widely deployed as a mission-critical system supporting thousands of users.

WANSyncHA Exchange is a Microsoft Exchange high availability solution, based on asynchronous real-time replication and automated application switchover and switchback. It is aimed at providing cost-effective business continuity for Microsoft Exchange on 32 and 64 bit Windows servers, as well as Microsoft clusters.

About This Guide

This document describes how to implement a high availability solution for Microsoft Exchange Server using WANSyncHA. Please review each procedure before starting, to ensure you have the appropriate resources and permissions to carry it out.

Related Documentation

Use this guide along with the [WANSync User Guide](#).

Requirements

To implement high availability procedures using WANSyncHA Exchange Server, you need to have the following configurations:

Exchange Server Configuration

- Two servers running Windows Server 2000 or 2003.
- An instance of Microsoft Exchange Server installed on each server. Both instances should have the same Exchange edition and version.
- Both servers should have identical service packs and hot fixes.
- [For Exchange 2007 only] Both servers should have identical Exchange Server roles.
- [For Exchange 2007 only] Both servers should have identical PowerShell version.
- Both servers should reside in the same Active Directory forest.

- [For Exchange 2000/2003] Both servers should have the same Exchange Administrative Group.
- No participating server can be a domain controller or DNS server.

Log On Account

The WANSyncHA service logon account must meet all the following account conditions:

- Must be a member of the Domain Admins group.
- Must be an Exchange Administrator.
- Must be a member of the Administrators Group on the Local machine.

Important! If your company's security policy requires more granular permissions than described, please contact CA XOssoft support to receive detailed instructions on the permissions required.

Redirection Method

You should decide in advance which redirection method will be used when a switchover is performed. The preferred method is **DNS redirection** and it will work in all network configurations (LAN and WAN). In DNS redirection, upon failure of the Master server, the WANSyncHA running on the Replica server modifies the appropriate DNS A-records, so that references to the named Exchange Server will resolve to the Replica rather than the Master.

Note: There is another redirection method available – Move IP – which can be applied only when both servers are on the same IP subnet. For more information about this method, refer to *WANSync User Guide*.

About Clusters

With WANSyncHA, working with clusters is nearly identical to working with stand-alone servers. Simply enter the "Exchange Virtual Server Name" as the Master or Replica server name where appropriate.

On Exchange 2007, WANSyncHA supports LCR deployments. No additional configurations are required.

Note: On Exchange 2007, CCR deployments are not supported.

Chapter 2: Installing WANSyncHA

This chapter describes the most common setup for WANSyncHA for Exchange Servers.

During installation and configuration of WANSyncHA, Exchange Server on the Master (production) server can continue working without any interruption.

Installing WANSync Manager and Remote Installer

Installing WANSync components for the first time on your Windows platform is very straightforward. The installation package contains a file called setup.exe that runs a standard MSI wizard. Once initiated, standard prompts guide you through the installation. This (soft) installation does not require reboot or application shutdown.

Install WANSync Manager on any Windows 2000, 2003, or XP computer that has network access to the machines that you intend to manage.

You should install WANSync Manager component onto the machine from which the WANSyncHA scenario will be configured. Frequently, the Manager is installed on an administrative workstation.

To install WANSync Manager and Remote Installer

1. Double-click the setup.exe installation file. A progress bar appears. Once the initial process is completed, the Welcome page appears:



2. Click Next. The License Agreement page appears:



3. Select the I accept check box, and click Next. The Customer Information page appears:

XOsoft WANSync - CA XOsoft Installation Wizard

Customer Information
Please enter your information.

User Name:
borsa02

Organization:
xosoft

Install this application for:

☒ Anyone who uses this computer (all users)
☐ Only for me (borsa02)

InstallShield

< Back Next > Cancel

4. Verify that the details in the fields are correct, or change them according to your needs. Then, click Next. The Custom Setup page appears:

XOsoft WANSync - CA XOsoft Installation Wizard

Custom Setup
Select the program features you want installed.

Click on an icon in the list below to change how a feature is installed.

Feature	Feature Description
XOsoft Engine	XOsoft Engine service. This feature should be installed on every production server. This feature requires 12MB on your hard drive.
WANSync Manager	
XOsoft Remote Installer	

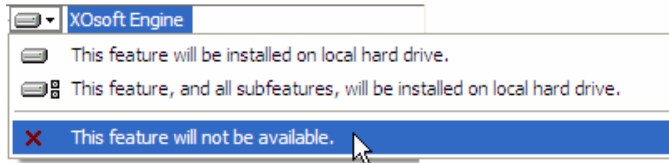
Install to:
C:\Program Files\XOsoft\WANSync\

Change...

InstallShield

Help Space < Back Next > Cancel

- Decide which WANSync components you want to install at this stage on the specified location. Remove the unnecessary components, using the drop-down list on the left:



Note: If the Manager is installed directly on either the Master or Replica servers, ensure that the XOsoft Engine is also installed.

If you intend to use the XOsoft Remote Installer (recommended), the machine on which you are running the Remote Installer must have the .Net framework 2.0 installed. The framework is required only on the machine running the Remote Installer wizard (GUI); the target servers do not have this requirement.

- After selecting the WANSync component(s) to be installed, choose the location of the installation using the Change button, or leave it at the default location.

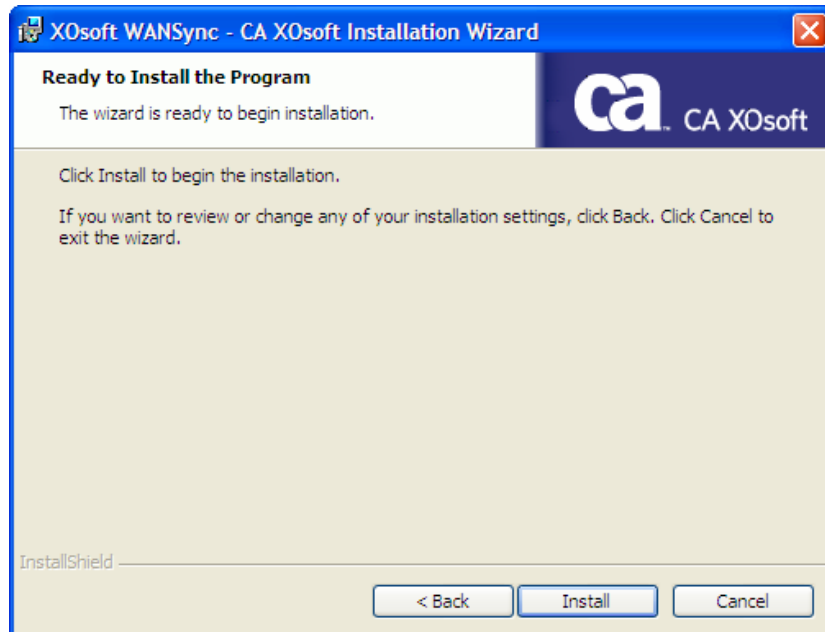
Note: The default installation directory (INSTALLDIR) is: \Program Files\XOsoft\WANSync. All executables, DLLs and configuration files are located in INSTALLDIR.

- Click Next. The Service Logon Information page appears:

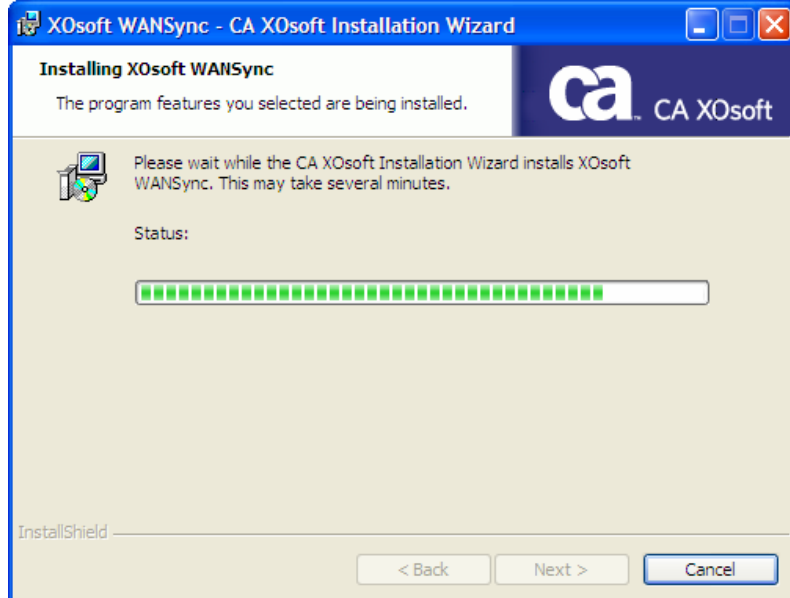


Select and enter the required information. If you're installing the XOsoft Engine at this stage, follow the guideline described on *Log On Account*, page 4.

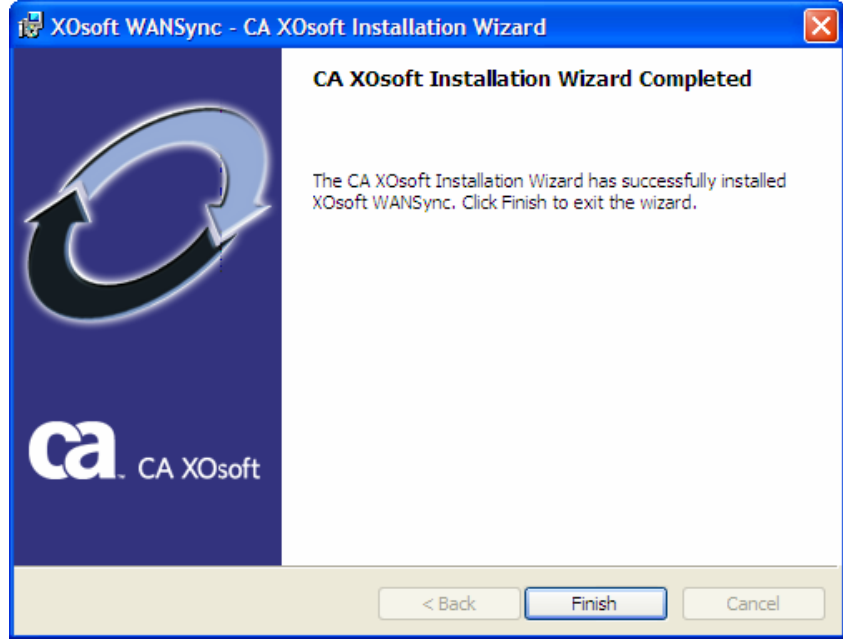
8. Click Next. The Ready to Install page appears:



- Click the Back button to return to the previous pages and change your configuration.
- Click the Install button to install WANSync component(s). The Installing XOsoft WANSync page appears:



9. Once the installation is completed, click Next. The following page appears:



10. Click Finish to finish the installation.

Installing XOsoft Engine on Master and Replica Servers

The following subsections describe how to install XOsoft Engine on the Master and Replica servers using the Remote Installer.

Note: You can install the XOsoft Engine manually as well. To perform manual Engine installation, run the setup.exe file from the server on which you want to install the Engine, and follow the steps described in the section *Installing WANSync Manager and Remote Installer* above.

To install WANSync using the Remote Installer:

1. To launch the Remote Installer, you can do one of the following:

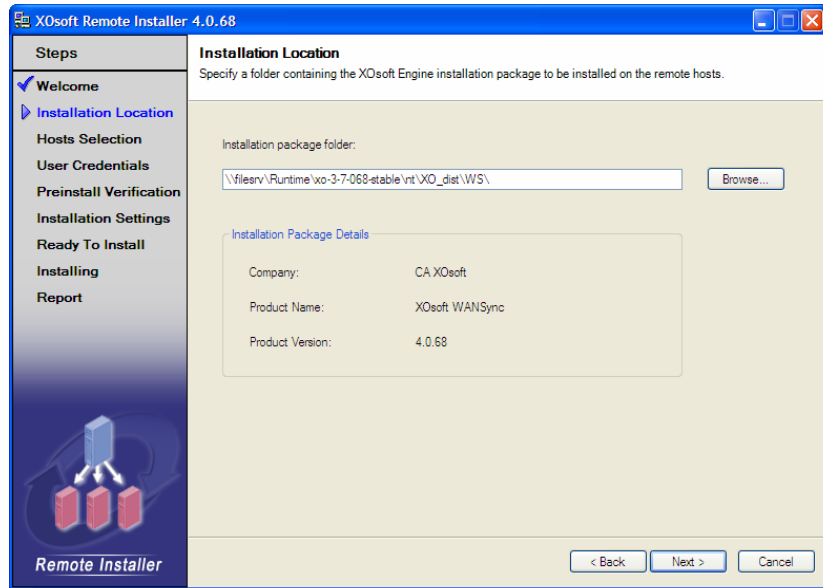
- Select Start, Programs, XOsoft, XOsoft Remote Installer
 - or -
- On the WANSync Manager, from the Tools menu, select Launch Remote Installer.

Note: When you launch the Remote Installer from the WANSync Manager, all hosts participating in existing scenarios will be pre-selected by the Remote Installer for the remote installation (see step 4 below). Therefore, it is recommended to launch the Remote Installer from the Manager if you already installed and used some version of WANSync.

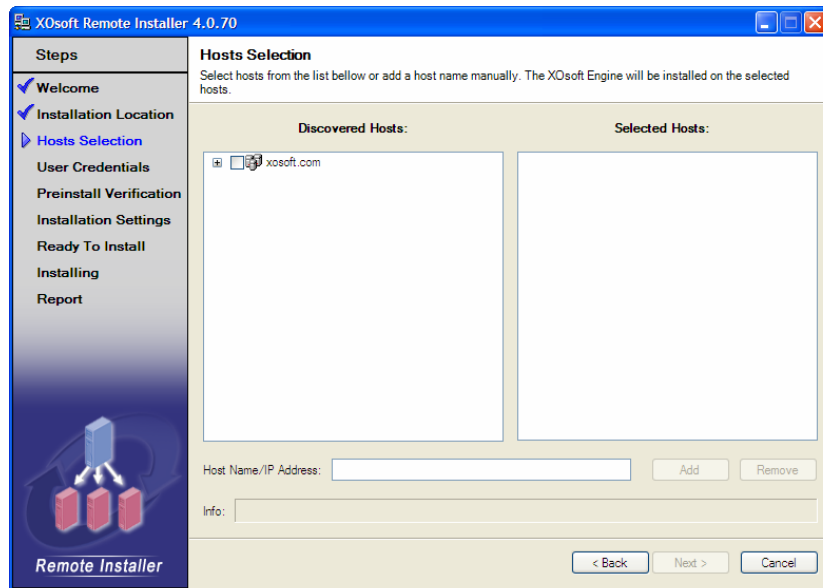
The Remote Installer Wizard appears:



- Click Next. The Installation Location page appears:

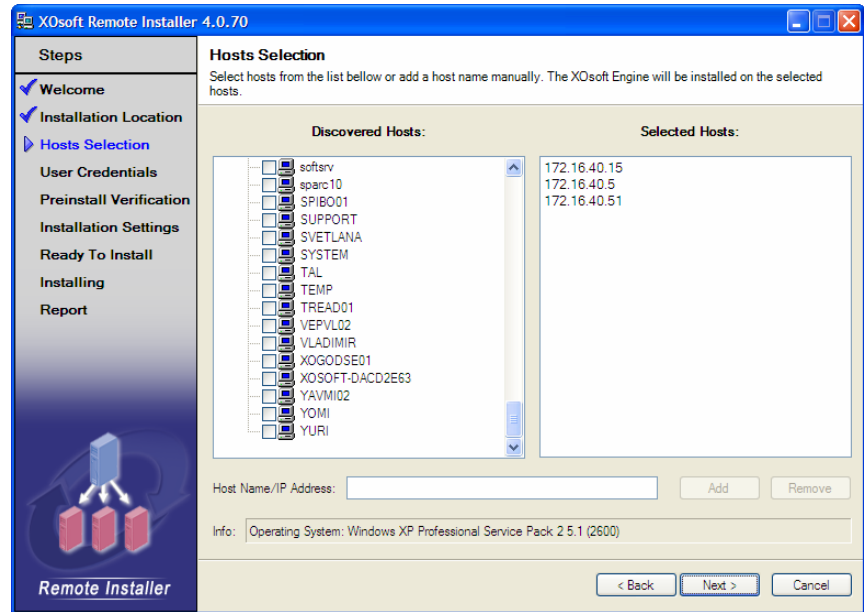


- On the Installation package folder field, verify that the displayed path is correct and contains a valid WANSync setup package. If not, use the Browse button to select the correct setup package.
- Click Next. The Hosts Selection page appears:

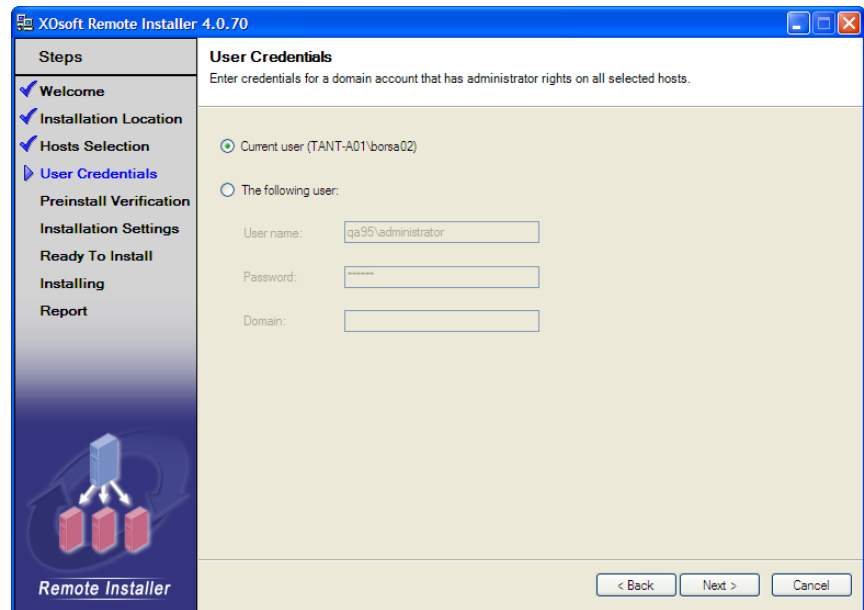


5. On the Hosts selection page, select from the Discovered Hosts list the check boxes of the servers (or cluster nodes) to which you want to deploy the XOsoft Engine. You can add servers manually by using the Host Name/IP Address box and clicking the Add button. The Engine will be installed only on the servers that will appear on the Selected Hosts list:

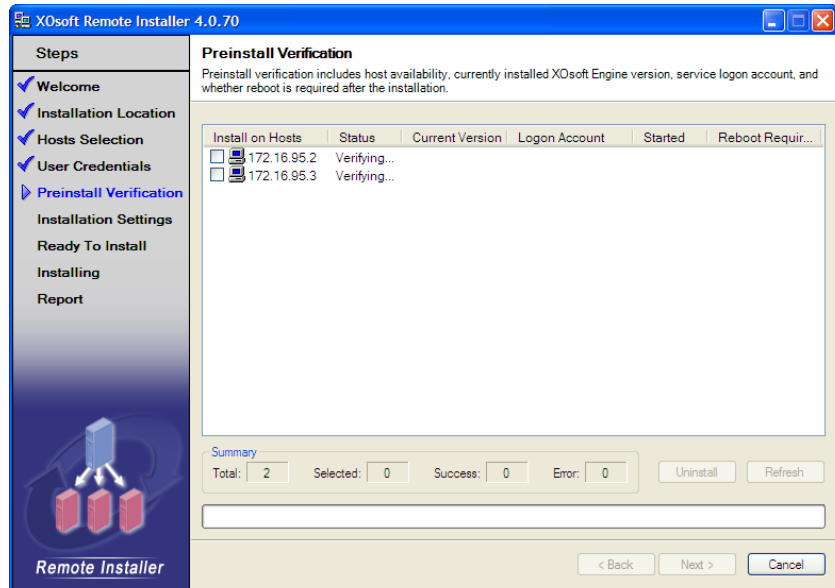
Note: When using clusters, you need to install XOsoft Engine on both physical nodes.



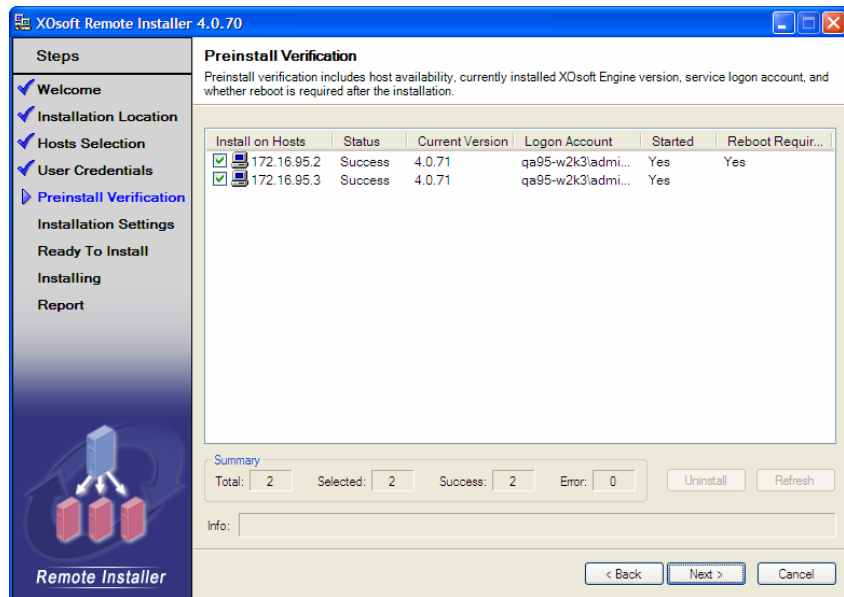
6. Click Next. The User Credentials page appears:



7. On the User Credentials page, you set the user account that is used to access each target server. You need local administrator credentials for all selected servers.
8. Click Next. The Preinstall Verification page appears:

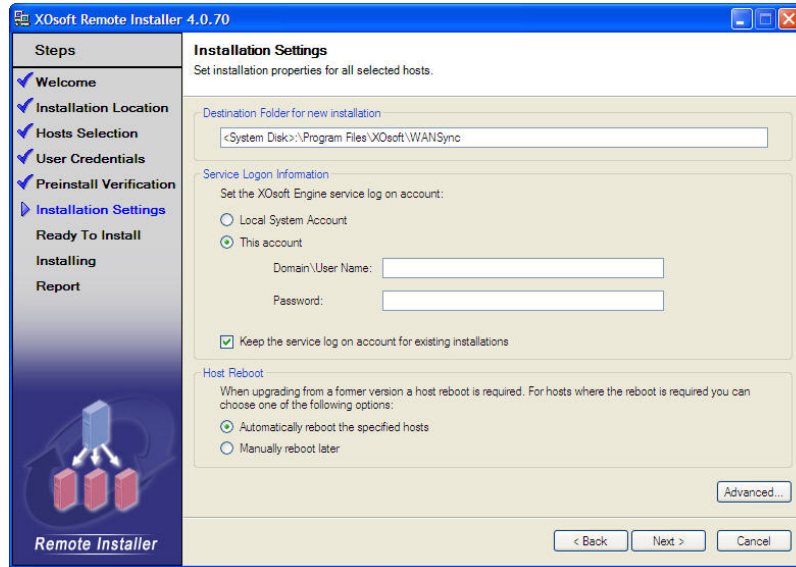


9. The Remote Installer automatically checks the existence, connectivity and configuration of the servers you selected in the previous page. Once the verification process is completed, the results are displayed:



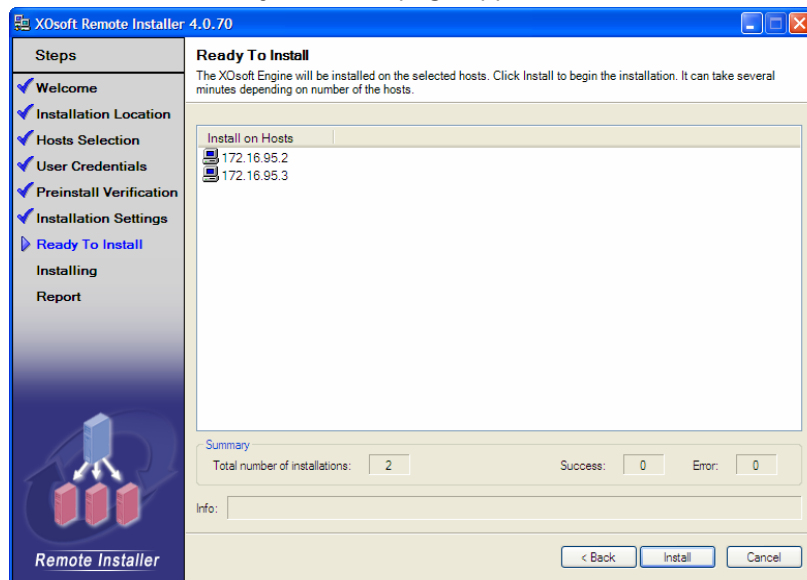
Note: If a server's status is reported as Error, and you verified that the server exists and is properly connected, you can select it and click the Refresh button. The Remote Installer will repeat the verification process.

10. After the status of all servers has reported Success, click Next. The Installation Settings page appears:

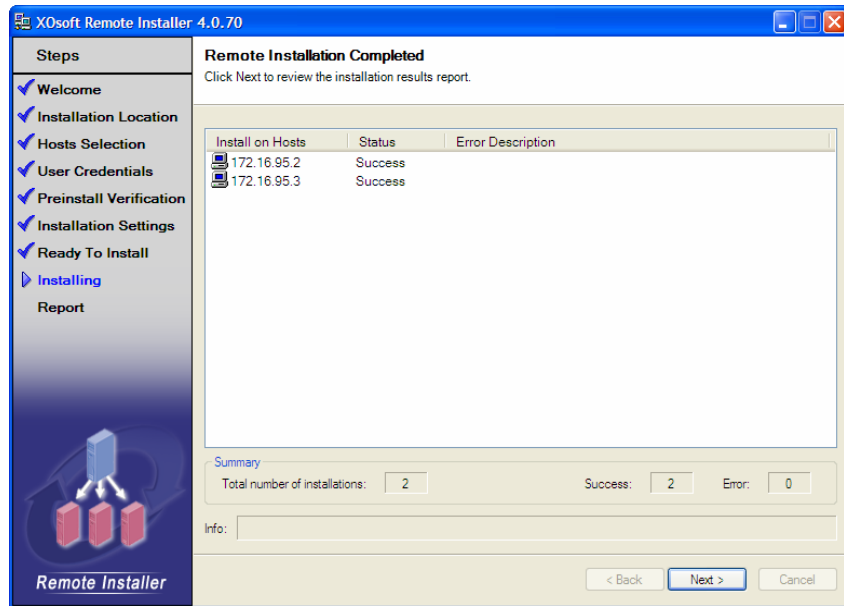


On the Installation settings page, select This Account and enter Domain\Username and Password to set the Log On account for the XOsoft Engine service. Enter the required information according to the guidelines described on *Log On Account, page 5*.

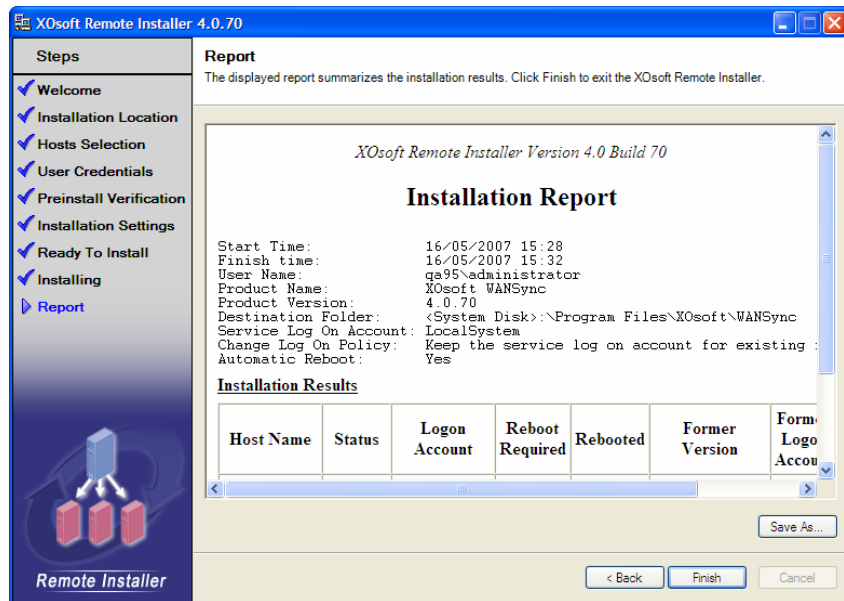
11. Click Next. The Ready to Install page appears:



12. Verify that all desired servers are listed. Then, click the Install button to install XOsoft Engine on these servers. Wait until the installation status is reported as Success:



13. After the installation on all servers is completed, click Next. The Report page appears:



14. The Installation Report summarized the installation information. You can save this information in HTML format by using the Save As button.
15. To finish the installation and exit the wizard, click the Finish button. XOsoft Engine is now installed on all selected servers or cluster nodes.

16. After the installation is completed, check if an Anti-Virus is installed. If Anti-Virus is installed, exclude the XOssoft Engine installation directory from Anti-Virus protection.

Chapter 3: Creating and Using a Replication Scenario

This chapter describes how to create and configure HA scenario for Exchange Server and how to run and stop it.

Create a New Scenario

High availability scenario can be created and configured using a step-by-step wizard. Each wizard page either shows you the process that WANSync will perform or asks you to define your required configuration.

Notes:

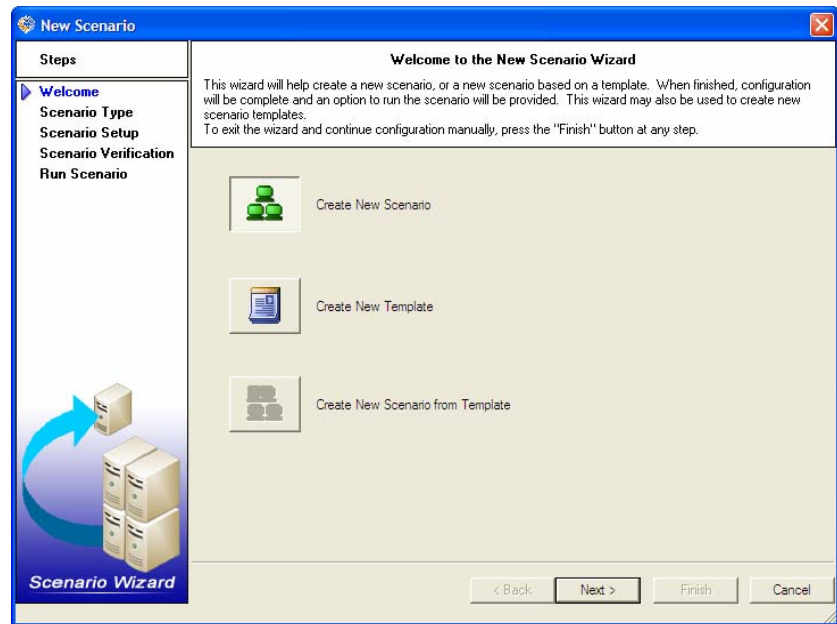
- The instructions below describe how to create a scenario using the built-in wizard. If you want to manually create and configure a scenario, refer to *WANSync User Guide*.
- There are many scenario and switchover properties that you can configure through the wizard. These properties are not discussed at length in this operations guide. If you want to change the default settings of these properties, refer to *WANSync User Guide*.

To create a scenario using the GUI :

1. Open the WANSync Manager and select from the Scenario menu the New option:

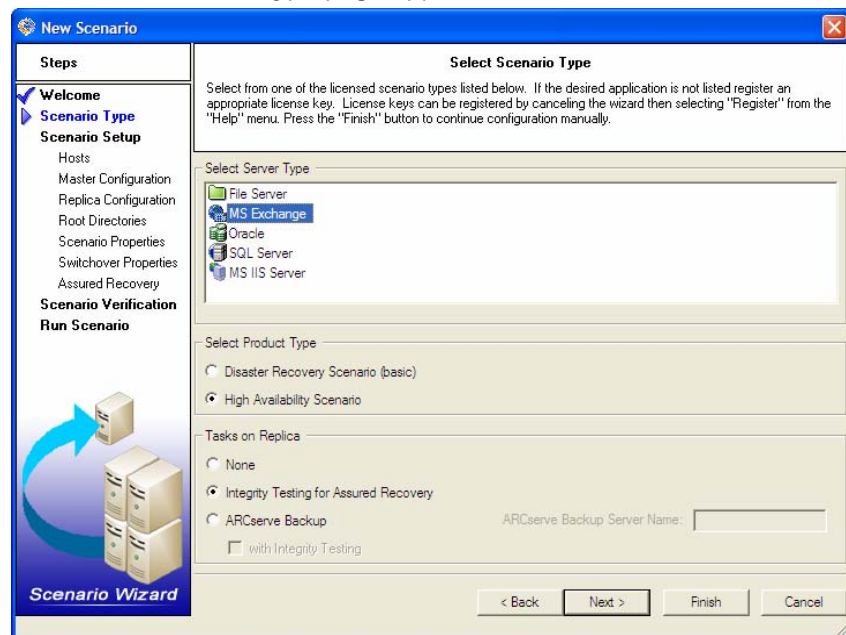


The New Scenario Wizard appears:



2. Click the Create New Scenario button, and click Next.

The Select Scenario Type page appears:



3. Select the required scenario options, as follows:
 - From the Select Server Type list, select Type MS Exchange.
 - From the Select Product Type options, select High Availability Scenario.
 - [Optional – a license is needed] From the Tasks on Replica options, select Integrity Testing for Assured Recovery or ARCserve Backup.

Notes:

- To learn more about Assured Recovery and how it can help ensure success through automatic testing. Please visit the Products menu at www.caxosoft.com or review the *WANSync User Guide* for more information.
 - To learn more about ARCserve Backup and WANSync integration see *CA XOssoft WANSync/BrightStor ARCserve Backup and Restore Integration*.
4. Click Next. The Master and Replica hosts page appears:

New Scenario

Steps

- ✓ Welcome
- ✓ Scenario Type
- ✓ Scenario Setup
 - ▶ Hosts
 - Master Configuration
 - Replica Configuration
 - Root Directories
 - Scenario Properties
 - Switchover Properties
 - Assured Recovery
- Scenario Verification
- Run Scenario

Master and Replica hosts

Enter the hostname or IP address for both the Master and Replica hosts. Master refers to the production server and Replica refers to the standby server. If the scenario will involve more than one replica, press the "Finish" button to continue configuration manually.

Scenario name:

Master Hostname/IP: ...

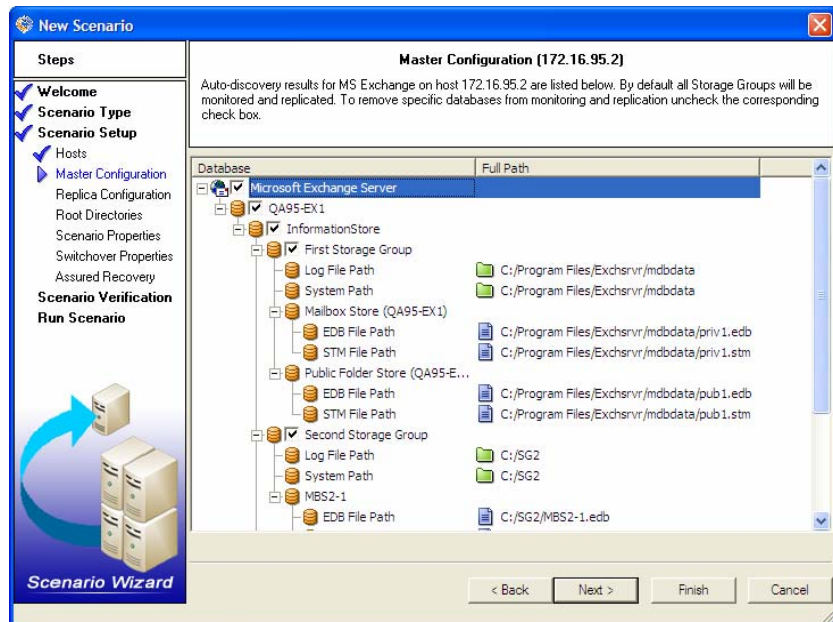
Replica Hostname/IP: ...

< Back Next > Finish Cancel

5. Enter the following information:
 - Scenario name – accept the system's 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 it.

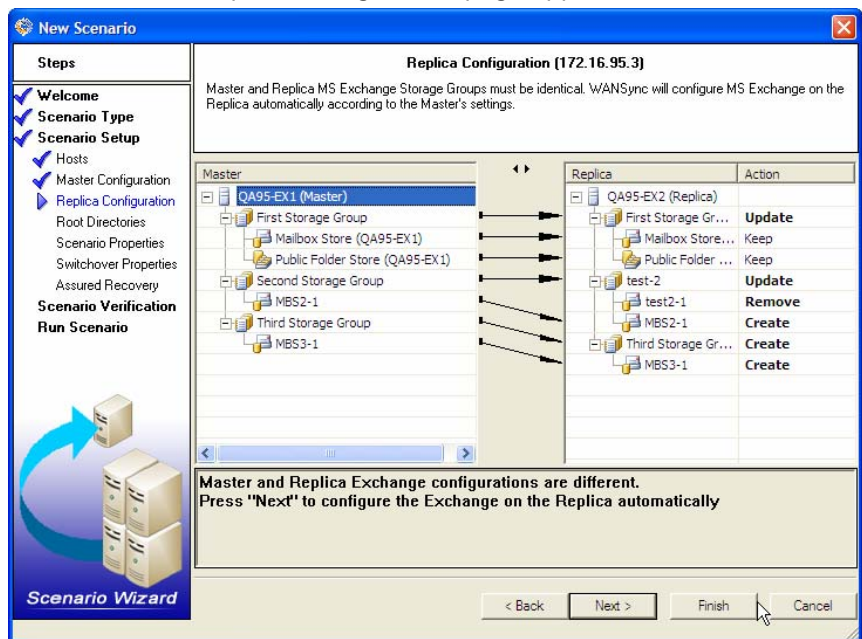
Note: If either server is a MSCS cluster,, enter the Exchange Virtual Server Name as the Master and/or Replica name(instead of the physical node's name).

6. Click Next. The Master Configuration page appears:



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

7. By default, all the discovered databases are marked and all will be replicated. You can exclude some of these storage groups from replication by deselecting their check boxes.
8. Click Next. The Replica Configuration page appears:



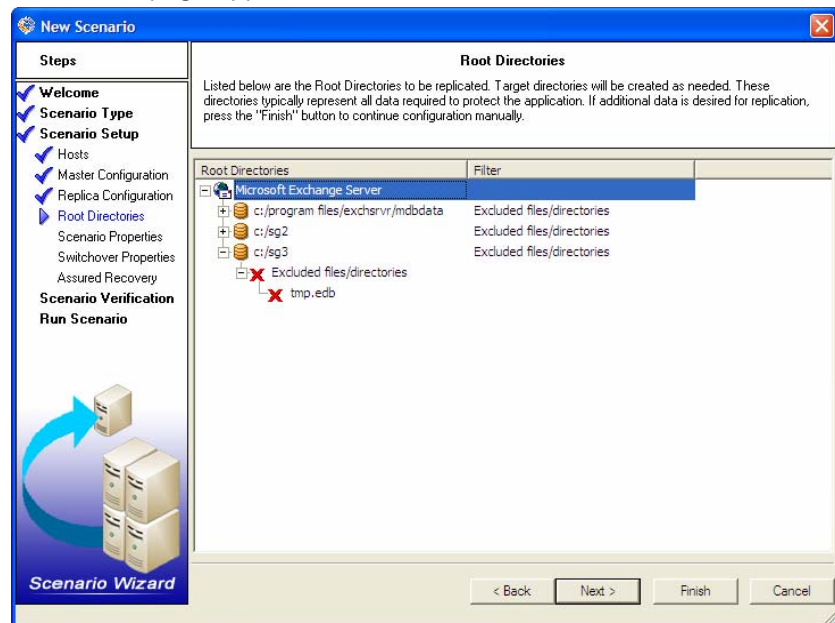
WANSync auto-configuration component verifies that the Exchange Server configuration on Master and Replica servers will be identical during the replication procedure. This means that if there are discrepancies, WANSync will perform the required actions, including: deleting storage groups and/or mailbox stores from the Replica, create new ones and make modifications to existing ones. The actions that will be performed during the configuration process are indicated in the Action column on the right.

Note: The actions that can be performed in the auto-configuration process are as follows:

- Create - a new storage group or mailbox store will be created.
 - Keep - the existing storage group or mailbox store will remain the same.
 - Remove - the existing – storage group or mailbox store will be deleted.
 - Update - the existing storage group or mailbox store will remain, but its location will be changed
9. Review the changes that will occur during the automatic configuration on the Replica Exchange Server, and make sure you want them to be performed.

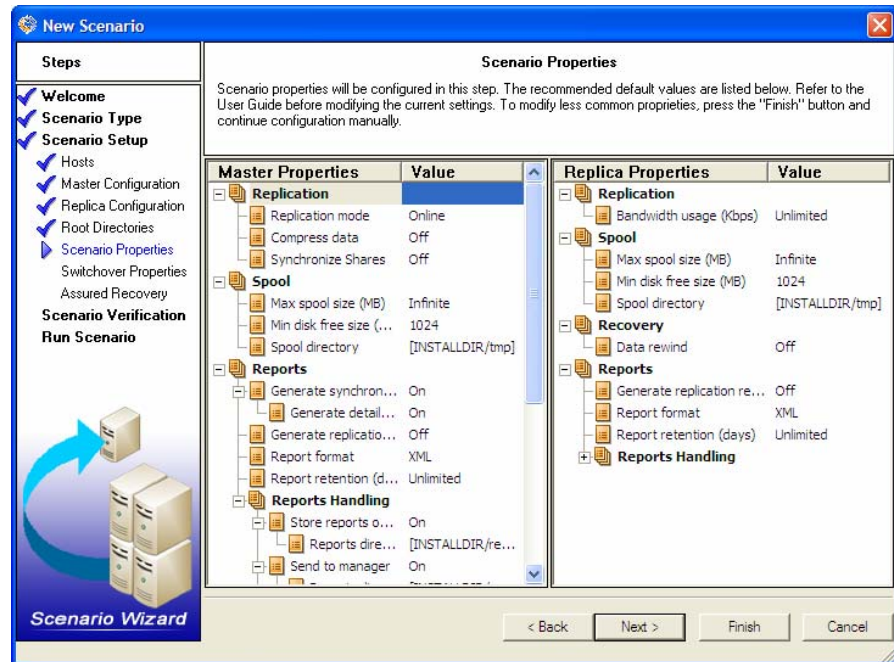
Note: If a Remove action – is indicated, make sure that you are ready to delete the specified storage group(s). If you want to save it in a different location before deletion, click the Finish button to exit the wizard.

10. Click Next to start the Replica configuration process. The Root Directories page appears:



The Root Directories page displays the directories of the data to be replicated. WANSync automatically aggregates data that has a common path into one directory, and exclude the files and directories on this path that are not supposed to be replicated.

11. Click Next. The Scenario Properties page appears:



The Scenario Properties page allows you to configure additional properties. No changes are required at this step.

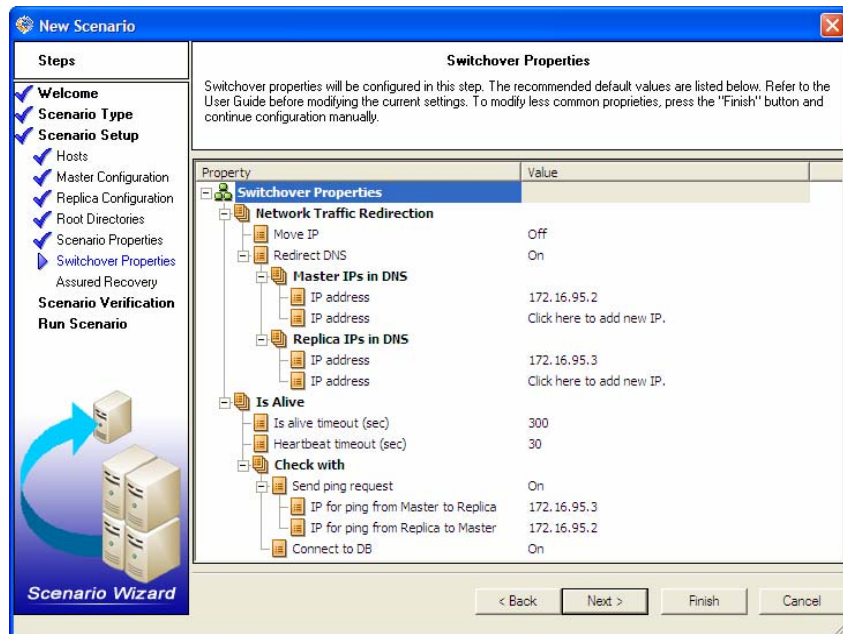
Note: You can modify all the settings in this pane after the scenario is created. However, before changing any Spool properties (which are configured here), please review the following *Spool Settings* info for configuration details.

■ Spool Settings

The WANSync spool is a folder on disk where data to be replicated is temporarily stored (that is, spooled). The spool parameters, located in the properties tab (on both Master and Replica) or set with the New Scenario Wizard, determines how much disk space is available for the spool. In most cases the default values are sufficient. However, if you choose to change this value, it should be at least 10% of the total dataset size.

Important! If you change the spool location, please remember to remove the new path from file level antivirus scans: both scheduled and real time.

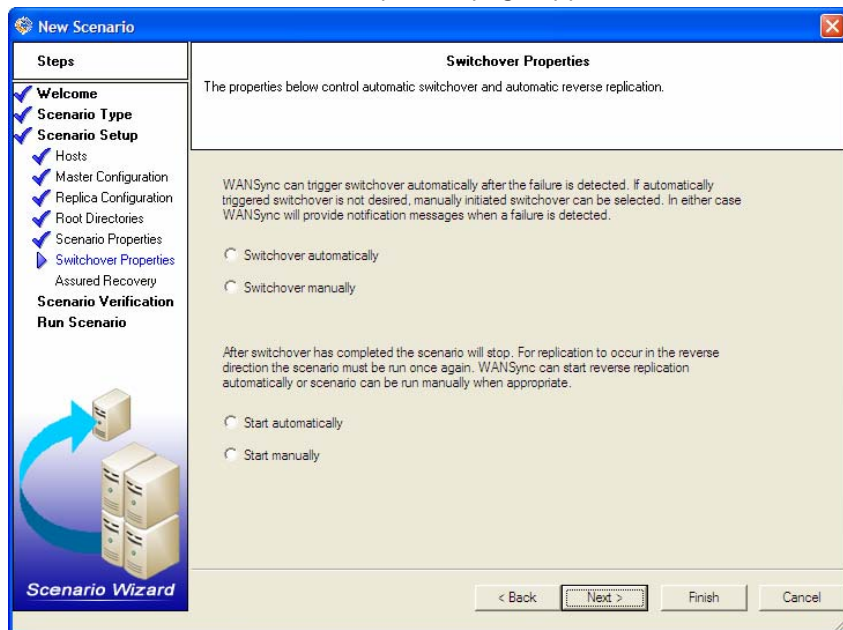
12. Click Next. The Switchover Properties page appears:



The Switchover Properties page allows you to modify switchover parameters. As with the prior step, no changes are required.

Note: For users planning to use automatic switchover, please note that the Is alive timeout (sec) setting controls how long to wait after a failure is detected before triggering switchover.

13. Click Next. The Switchover Properties page appears:



The Switchover Properties page enables you to define which steps are triggered automatically by WANSync or triggered manually by the Administrator once a failure is detected.

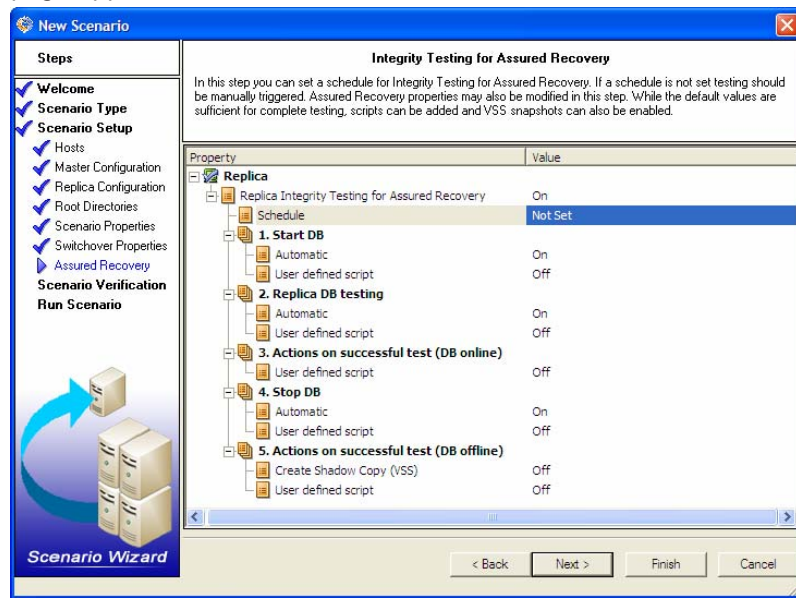
Note: Automatic Switchover and Run Reverse Replication Scenario

Automatic switchover is in all ways identical to manual switchover performed by the administrator. Automatic switchover is triggered by a resource failure on the Master server rather than an administrator manually initiating the switchover. Server ping response, application service status and database connectivity are routinely tested. The timeout parameters are configurable, and are more extensively covered in the *WANSync User Guide*.

When Run Reverse Replication Scenario after Switchover is set to On, WANSync will automatically create a reverse scenario during switchover, and immediately activate it – thus saving the need for a Re-Synchronization when running the "Backward" scenario. Note that the reverse scenario can only run automatically if the Master server was online during switchover.

It is not recommended to set both of these options to automatic in a production environment. While these options are individually beneficial it is best practice to set only one or the other to automatic.

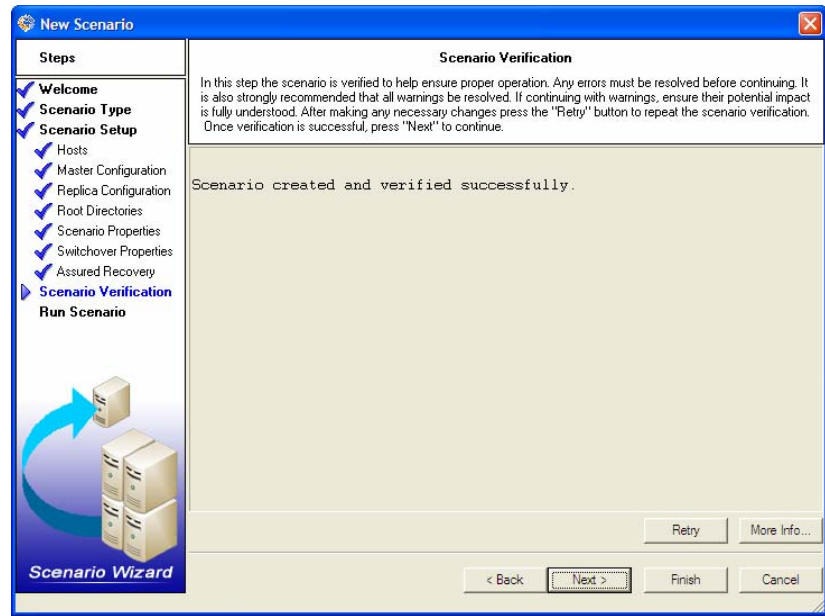
14. For each switchover property, select one of the available options:
 - Switchover: either automatically or manually
 - Reverse Replication: either automatically or manually
15. Click Next. [Optional] The Integrity Testing for Assured Recovery page appears:



The Assured Recovery step is presented only if you selected this option in the *Scenario Type*, step 3 above.

Note: If scheduled testing is desired, double-click on the value for Schedule: the Assured Recovery hours screen opens allowing you to set a schedule for testing.

16. Click Next. A notification message appears informing you that WANSync verifies the validity of the new scenario and checks many different parameters between the Master and Replica servers to ensure a successful switchover. Once the verification is completed, the Scenario Verification page appears:



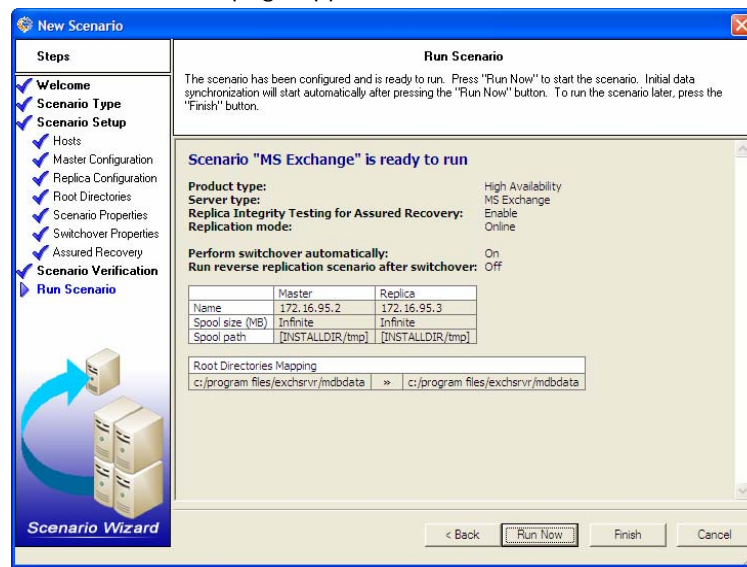
17. If any errors are reported, you cannot continue until they are resolved.

Note: Although WANSync allows you to continue with warnings, it is not recommended to do so. Resolve any warning situations before continuing to ensure proper operation of the application.

- To retry verification, click the Retry button.
- Once the scenario is verified successfully, click Next to continue.

Note: To export and save your Master and Replica configuration data, click the More Info button.

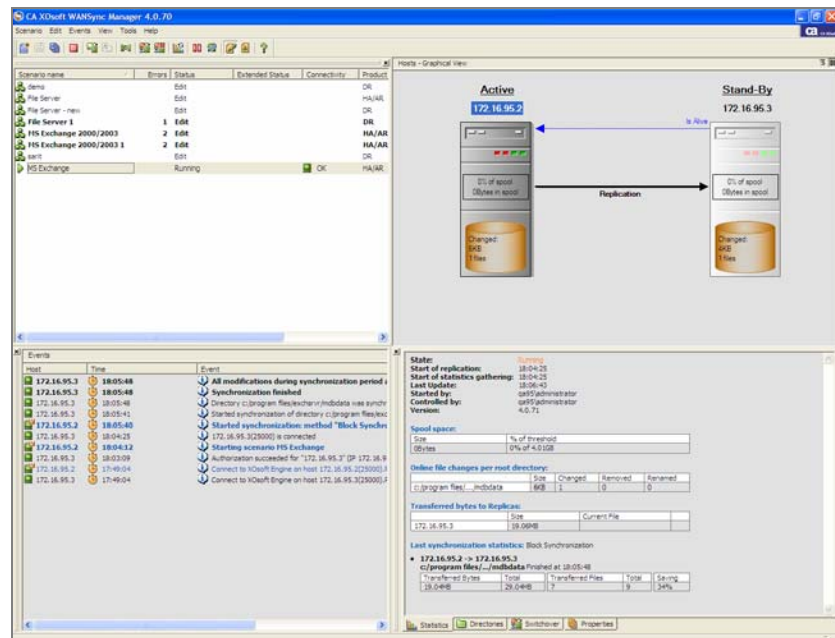
The Run Scenario page appears:



18. The scenario configuration is now completed and you are prompted to run it. Running the scenario starts the data synchronization process.

- To finish the scenario creation and run it later, select Finish.
- To run the scenario, click Run Now.

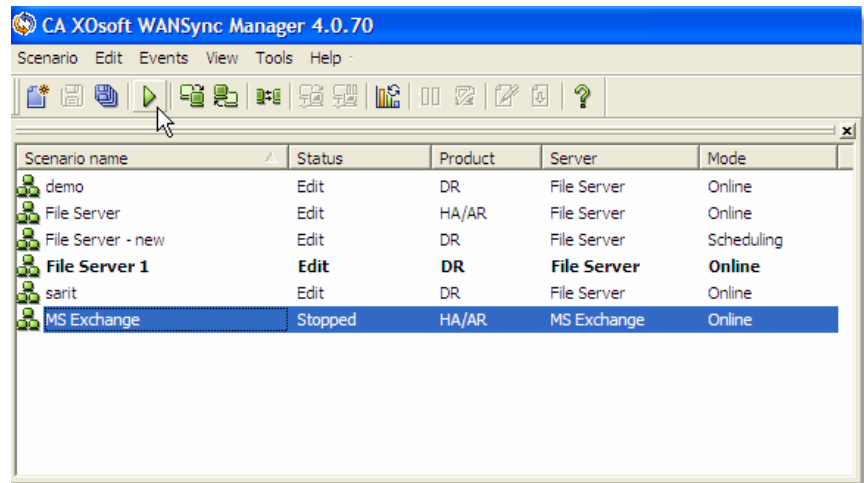
19. The synchronization process starts. Synchronization may take a while depending on database size and network bandwidth between the Master and Replica. You will receive the following message in the Event pane when synchronization is complete: *All modifications during synchronization are replicated.* At this point, real-time replication is occurring and the high availability solution is active:



Start a Scenario

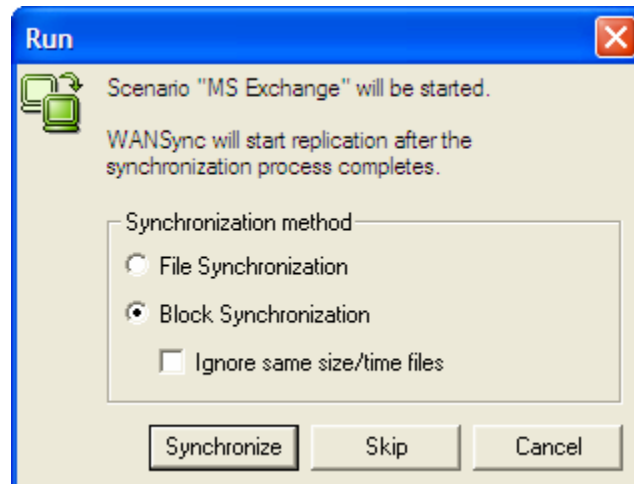
To start a scenario

1. From the Scenario pane, select the scenario you want to run.
2. To run the scenario, click the Run button on the tool bar:



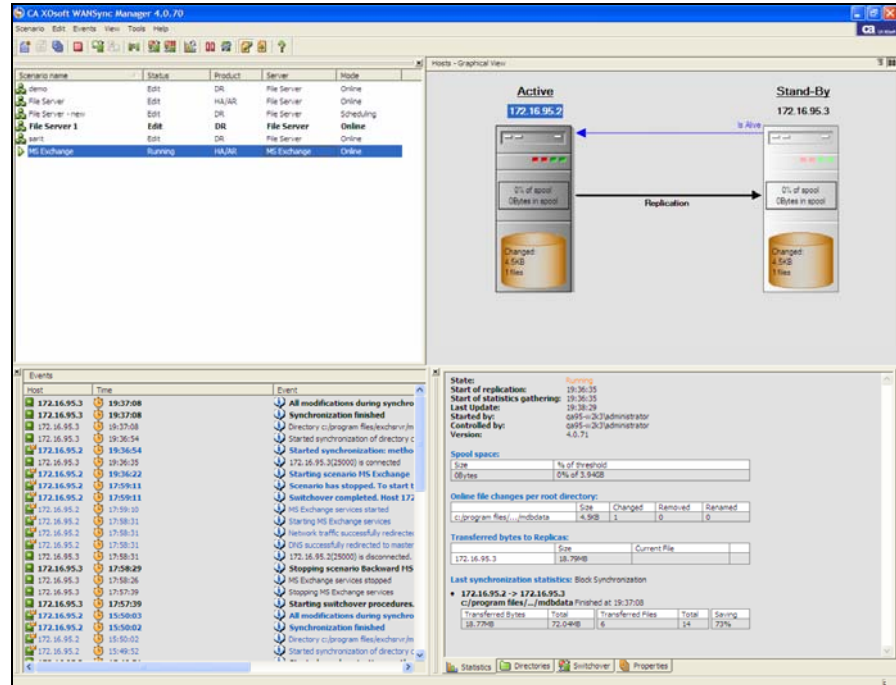
A confirmation message appears prompting you to approve the scenario running.

3. Click OK in the confirmation message. The Run dialog appears:

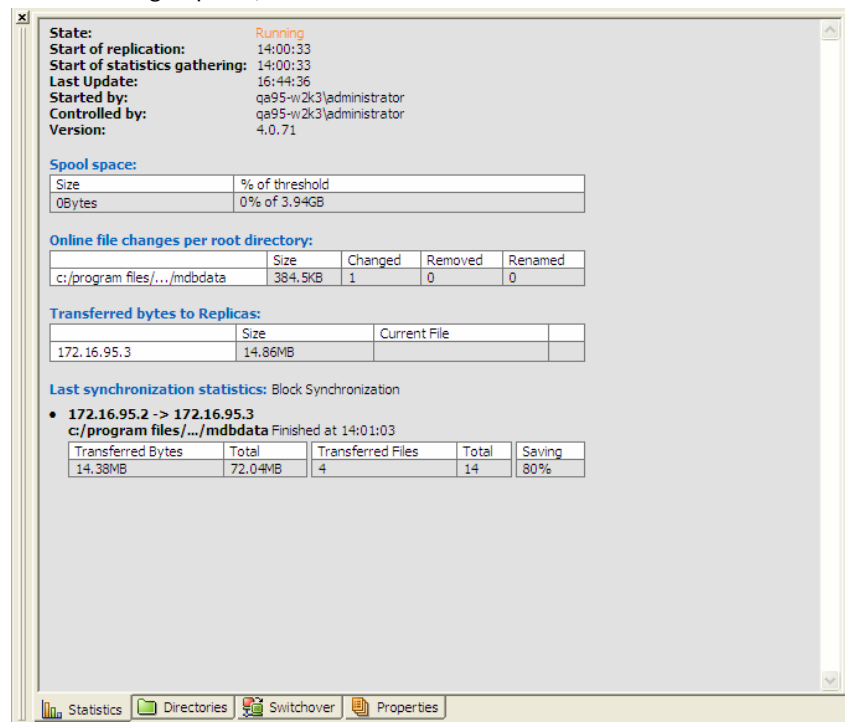


4. Select Block Synchronization as the synchronization method, and ensure that the Ignore same size/time files check box is not selected. Then, click the Synchronize button.

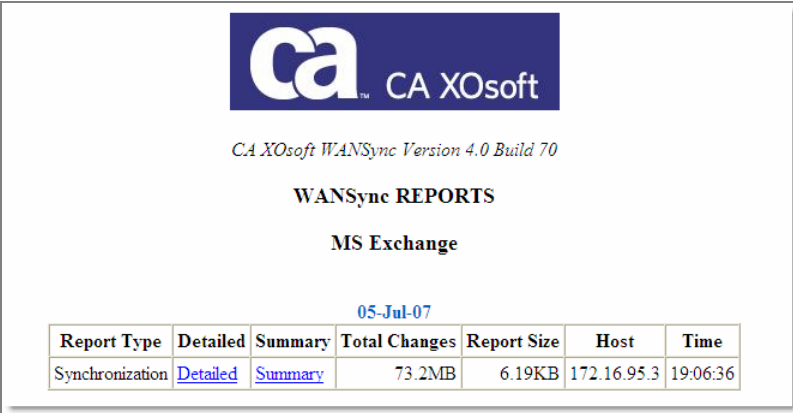
The Manager now indicates that the scenario is running via the green play symbol to the left of the scenario:



Once a scenario is running, a statistics tab appears (on the bottom of the far right pane):



In addition, by default once synchronization occurs a Report is generated:



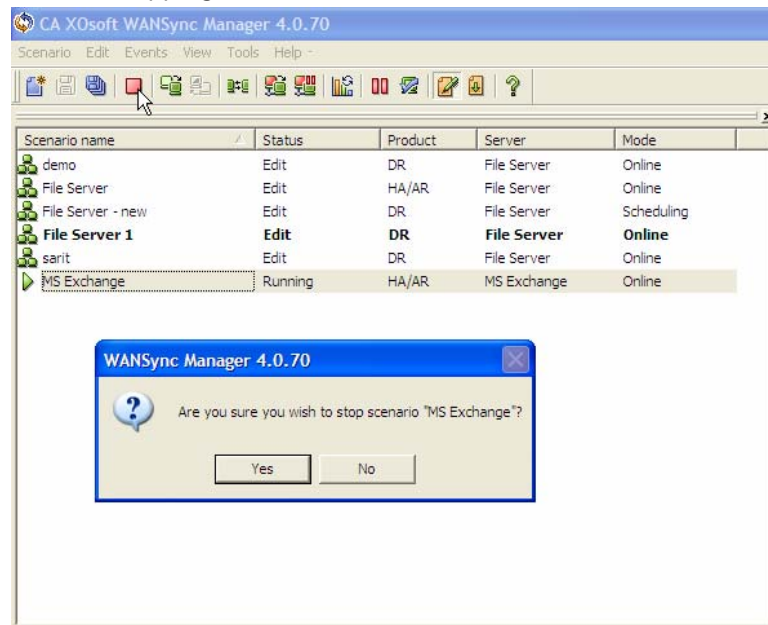
Report Type	Detailed	Summary	Total Changes	Report Size	Host	Time
Synchronization	Detailed	Summary	73.2MB	6.19KB	172.16.95.3	19:06:36

Stop a Scenario

To stop a scenario

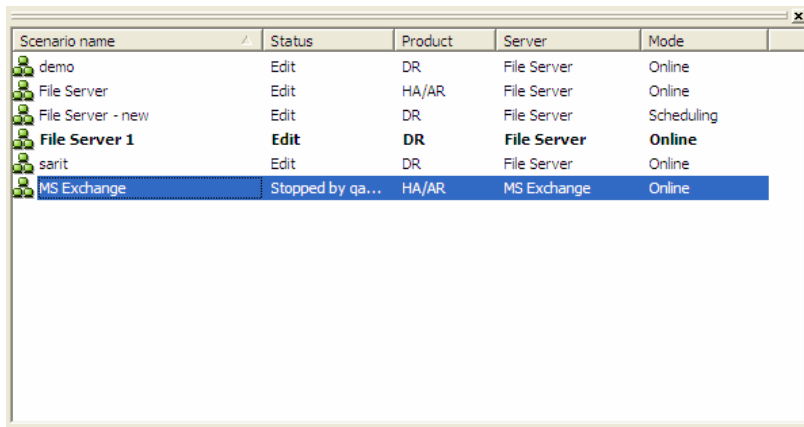
1. To stop a scenario using the WANSync Manager, click the Stop button on the tool bar.

A confirmation message appears prompting you to approve the scenario stopping:



2. Click Yes in the confirmation message. The scenario stops.

After stopping the scenario, you'll see that the Manager no longer shows the green play symbol to the left of the scenario and the statistics tab is no longer available:



Scenario name	Status	Product	Server	Mode
demo	Edit	DR	File Server	Online
File Server	Edit	HA/AR	File Server	Online
File Server - new	Edit	DR	File Server	Scheduling
File Server 1	Edit	DR	File Server	Online
sarit	Edit	DR	File Server	Online
MS Exchange	Stopped by qa...	HA/AR	MS Exchange	Online

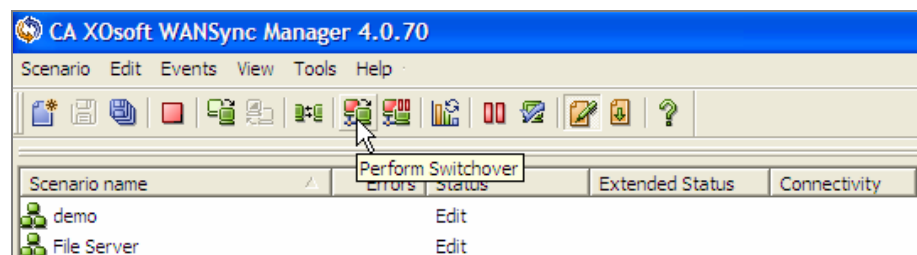
Chapter 4: Switching Over and Switching Back

This chapter describes the switchover and switchback processes. During these processes, the active and passive roles between the Master and Replica servers are switched following their current status.

Switchover

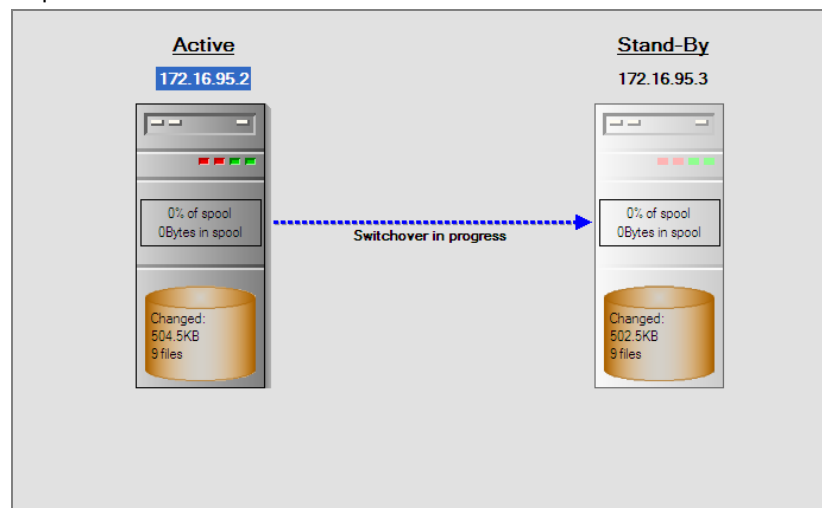
To initiate switchover

1. Open WANSync Manager and select the desired scenario from the Scenario pane.
2. Click on the Perform Switchover button or select Tools, Perform Switchover:



A confirmation message appears.

3. Click OK on the Perform Switchover confirmation dialog. This procedure initiates a switchover from the Master server to the Replica server:



Detailed information about the switchover processes is located in the Events pane during switchover.

Important! After the switchover is completed the scenario stops. The only case in which the scenario may continue to run after switchover is when **automatic reverse replication** is turned On. For more information, see page 25.

Switchback

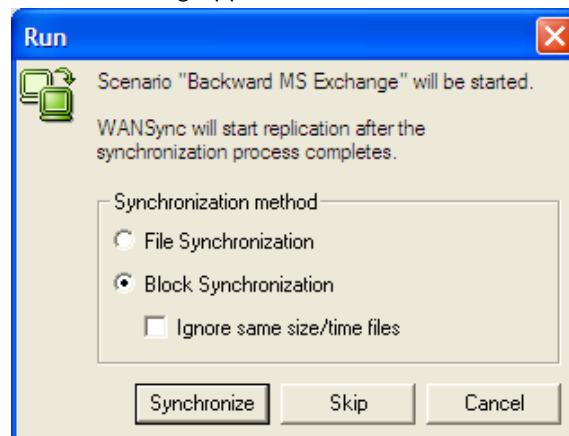
To initiate switchback

1. Ensure that both Master and Replica servers are available on the network and that the WANSync Engine is running.
2. From WANSync Manager, choose the desired scenario.
3. [Skip this step if the backward scenario is already running.]

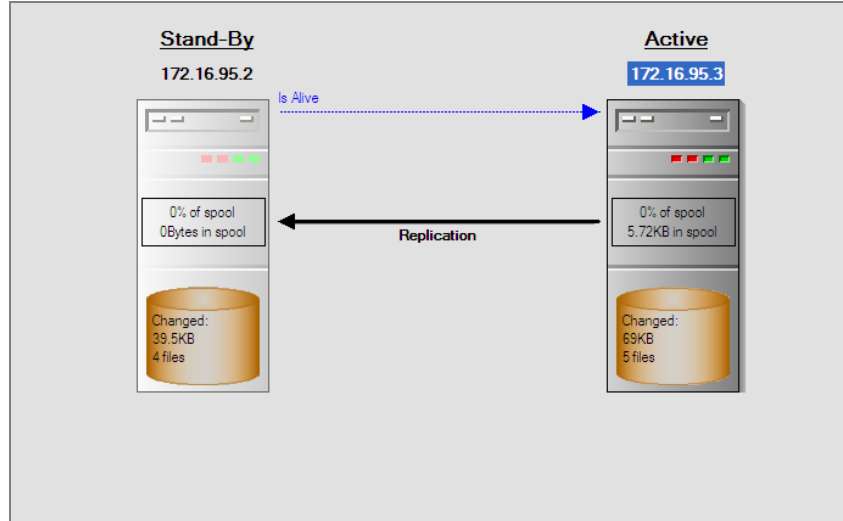
If the backward scenario is not running, select the Run button to start the scenario. WANSync detects that a switchover has occurred and prompts you to approve the running of a backward scenario.

4. Click OK to start the backward scenario.

The Run dialog appears:



5. Select Block Synchronization, and click the Synchronize button. The resynchronization starts:

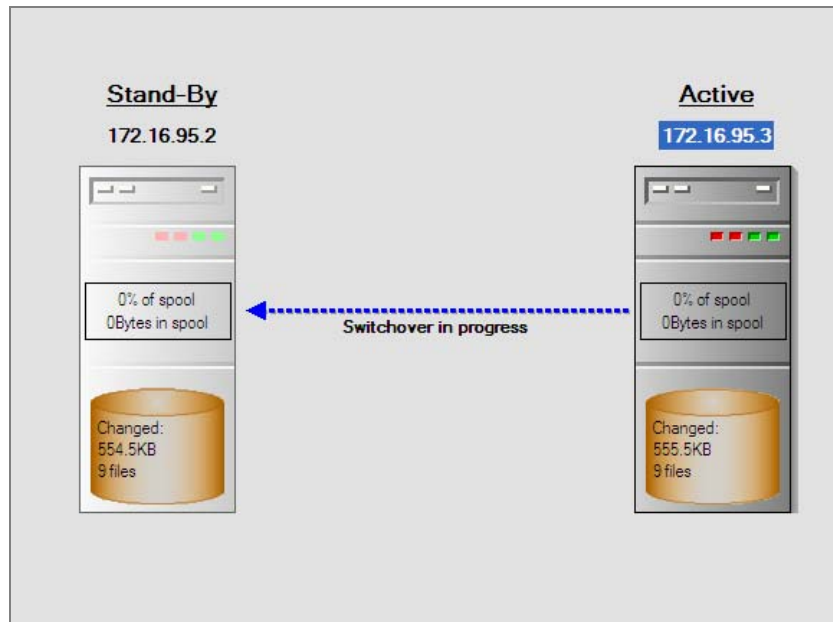


Wait until the resynchronization is completed.

6. Once the resynchronization is completed, you receive the following message in the Event window: *All modifications during synchronization are replicated.* Then, click the Perform Switchover button or select Tools, Perform Switchover.

A confirmation message appears.

7. Click Yes on the Perform Switchover confirmation dialog. This procedure initiates a switchover from the Replica server to the Master server:



After the switchback is completed, you can again run the scenario in its original (forward) state. In order to avoid resynchronization after a successful switchover, you can opt to use the Run Reverse Replication Scenario Automatically option (for further information, see page 26).

Additional information & Tips

This chapter provides you with helpful information concerning the application. This section mostly covers non-essential information and tips.

- When a WANSync scenario begins, the DNS time-to-live (ttl) parameter is modified according to the scenario configurable value "DNS TTL" found in Switchover properties under DNS redirection. The original ttl value, however, which may have been much longer, may still be cached on the clients since it is not updated until it expires.
- If Outlook profiles are updated after switchover has taken place, Outlook will modify its properties to connect to the Exchange name of the Replica server. Such profiles must be changed back to point to the Master server manually after switching back to the Master server. It is best to avoid updating Outlook profiles during the time that the Replica has taken over for the Master.
- By default, the spool is located in the WANSync's installation's /tmp directory. You can change the default location by modifying the pathname for spool directory. It is best to configure the spool on a non-Exchange database or log file drive. Using a dedicated volume for the spool folder can increase performance under high load. If you do change the spool location, please remember to remove the new path from the anti-virus scans, both scheduled and real-time.
- WANSync supports bandwidth limitation and bandwidth limitation scheduling. If you require such features, please consult the *WANSync User Guide*.

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