CA XOsoftHA® r12
Microsoft Exchange

Operation Guide

Edition no. 2

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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.

CA XOsoftHA 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 CA XOsoftHA. 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 *CA XOsoft r12 Installation Guide* and *CA XOsoft r12 User Guide*.

Requirements

To implement High Availability procedures using CA XOsoftHA 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 Mailbox role installed. If the Master and Replica servers are located on different sites, and there is only one Exchange server on the Replica site, both servers (Master and Replica) 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.

HA Log On Account

The CA XOsoftHA Engine 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, contact Technical 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 CA XOsoftHA 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 *IP Redirection* page 39, and to *CA XOsoft User Guide*.

About Clusters

With CA XOsoftHA, 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, CA XOsoftHA supports LCR deployments. No additional configurations are required.

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

Installing CA XOsoftHA

Note: For detailed information about installing and upgrading CA XOsoftHA, refer to *CA XOsoft r12 Installation Guide*.

Installing CA XOsoft components for the first time is very straightforward. The installation package, which is downloaded from the CA XOsoft Web site, contains an installation file called Setup.exe. This Setup.exe runs a standard installation wizard that guides you through the installation.

- This installation does not require a reboot or application shutdown.
- During installation and configuration of CA XOsoftHA, Exchange Server on the Master (production) server can continue working without any interruption.

Standard prompts facilitate the installation. Your only major decision is on which servers to install the different components:

- Install CA XOsoft Control Service on a computer that is used to monitor and manage all CA XOsoft scenarios.
- Install CA XOsoft Engine on both the Master and Replica servers.

The user who installs CA XOsoft components must have Local Administrative privileges or be a member of Local Administrators Group. In addition:

- A Windows user account running the CA XOsoft Control Service requires Read-Write permission to the installation directory.
- The service log on account for the CA XOsoft Engine requires Read-Write permission to the installation directory.

The default installation directory is: *[INSTALLDIR]\component_names.*

Logging In to the Management Center

CA XOsoft Management Center and Manager do not require any component or application installed in advance. It is based on a one-click-installation procedure that can be performed from any workstation that has a network connection and a Web browser. To log in, you will need your:

- Hostname/IP Address and Port Number of the server where the Control Service is installed.
- User Name, Password and Domain

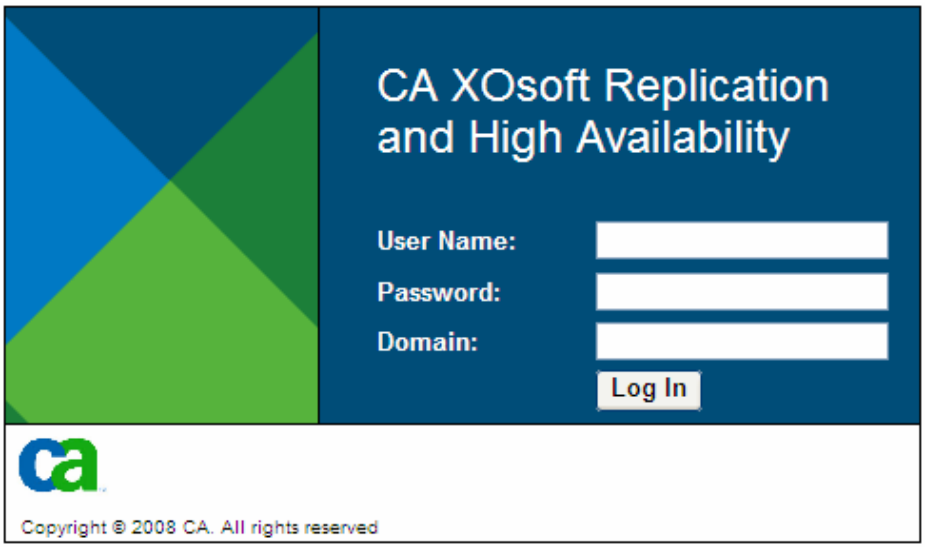
To open CA XOsoft Manager:

1. Open Internet Explorer. On the Address box, enter the Control Service Host Name/IP Address and Port Number as follows:
   http://host_name:port_no/start_page.aspx

   Notes:

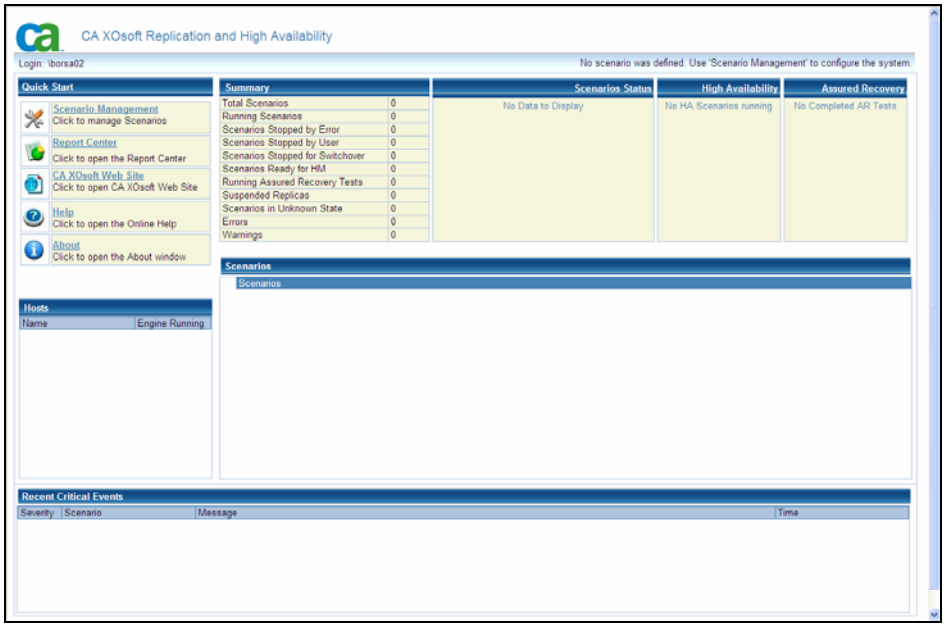
   - If you are opening the Management Center from the machine where the Control Service is installed, you can use the default parameters:
     http://localhost:8088/start_page.aspx
   - If you selected the **SSL Configuration** option during the installation of the Control Service**,** when you open the Overview page, you need to use 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 **Login** dialog appears:



2. Enter your User Name, Password and Domain and click **Log In**.

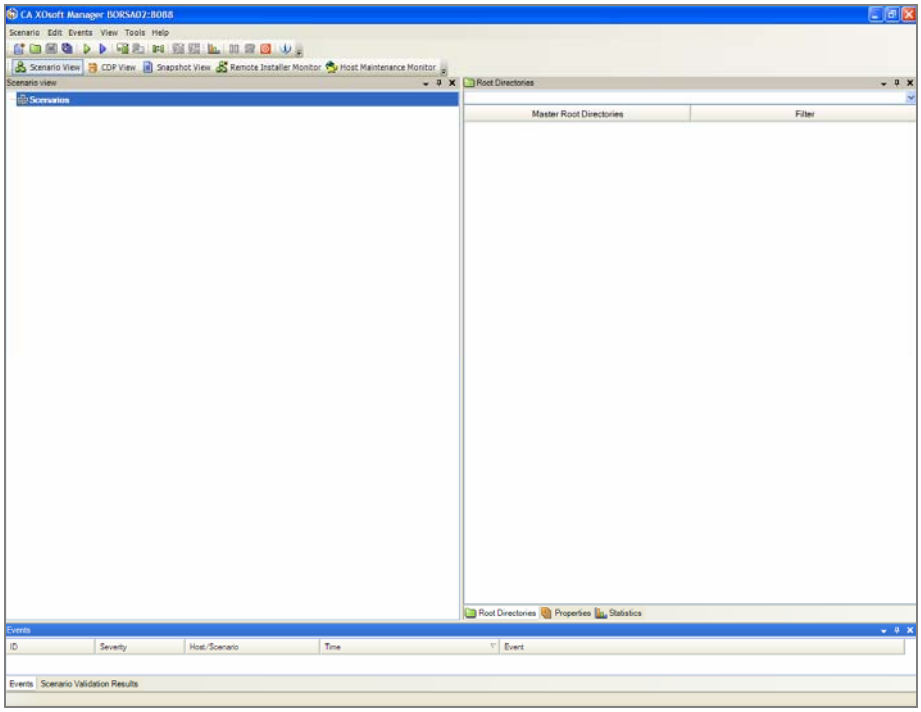
   The **Overview page** appears:



3. On the **Quick Start** toolbar on left, click the **Scenario Management** option.

   A progress bar appears, indicating that the Manager component is currently installed on the local machine.

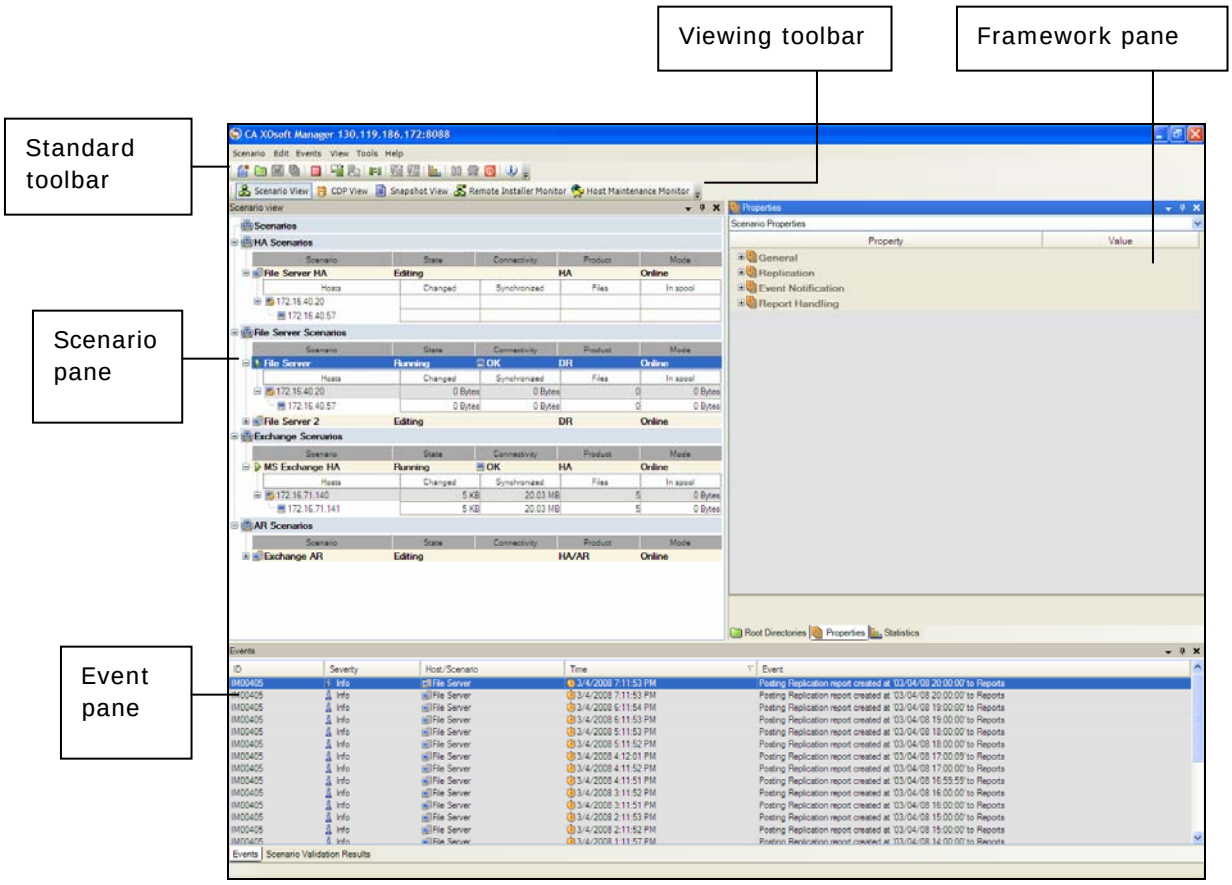
4. Once the Manager installation is completed, the Manager appears:



Exploring CA XOsoft Manager Screen

After logging in to the application, CA XOsoft Manager is displayed, enabling you to access all the Manager menus, toolbar functions and panes.

Unless a scenario exists, most of the user areas are blank. The following screen displays a Manager with active scenarios in it:



Note: Some of the panes and options are visible and enabled only with the appropriate product license.

Chapter 2: Creating and Using High Availability Scenario

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

Create a New HA Scenario

A High Availability scenario incorporates all the functionality and workflow of a Disaster Recovery replication scenario, but it adds three important new elements: pre-run verification, monitoring of the Master and the application running on it, and the switchover process itself.

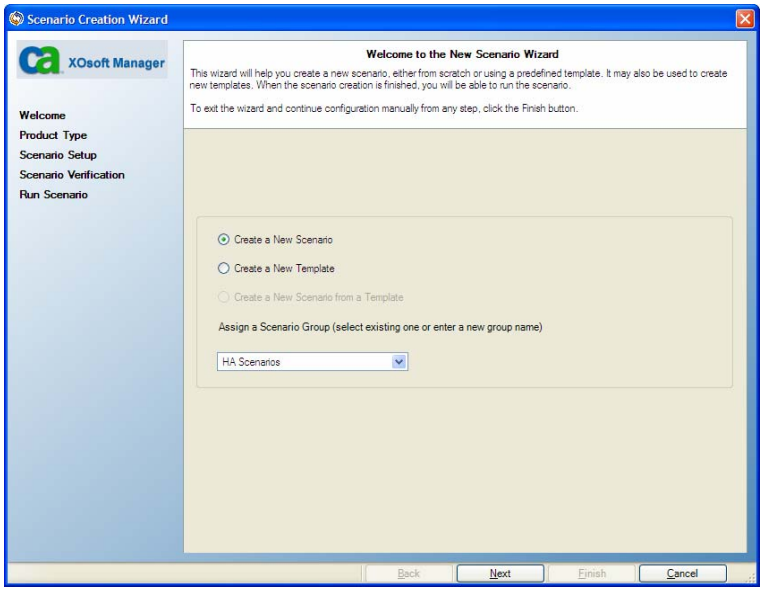
The High Availability scenario is created and configured using a step-by-step wizard. Each wizard page either shows you the process that CA XOsoft will perform, or asks you to define your required configuration.

Note: There are many properties – of the scenario, Master, Replica and switchover - that you can configure through the wizard, or after you close it. These properties are not discussed at length in this Operation Guide. If you want to change the default settings of these properties, refer to *CA XOsoft r12 User Guide*.

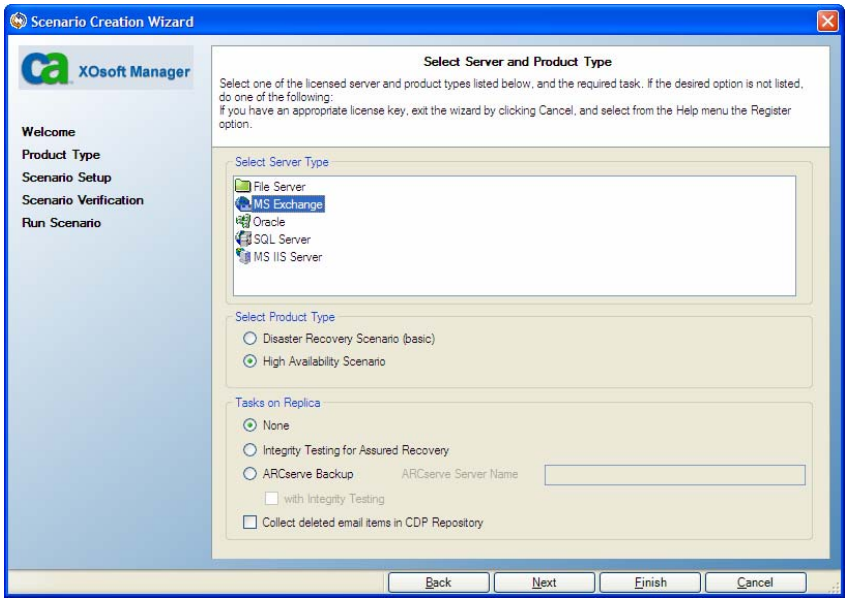
To create a new HA scenario

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

   The **Scenario Creation Wizard** appears:



2. Select the required scenario options, as follows:
   - Select the **Create a New Scenario** option button.
   - From the **Group** drop-down list, select 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** page appears:



A list of available applications and scenario types are presented.

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

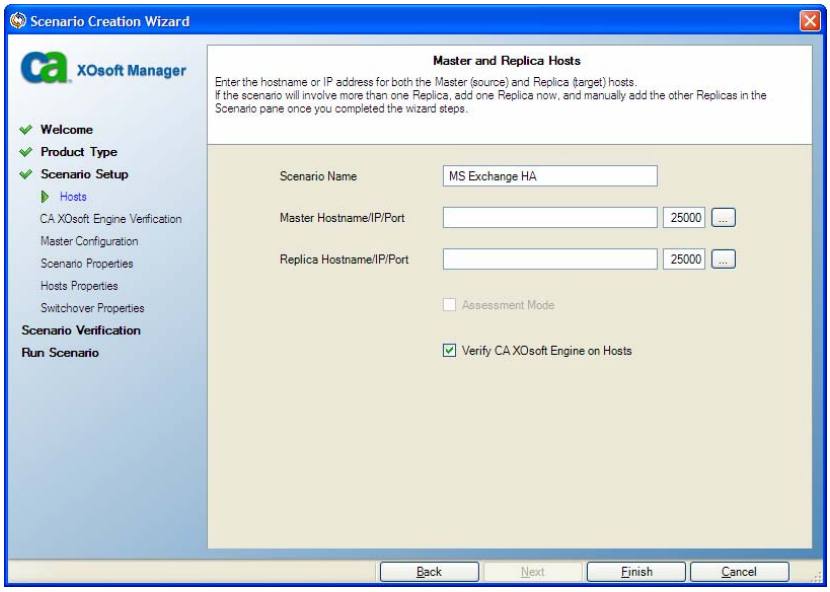
Select the required scenario options, as follows:

- From the **Select Server Type** list, select **MS Exchange**.
- From the **Select Product Type** options, select **High Availability Scenario**.
- [Optional - a license is needed] From the **Tasks on Replica** options, select the tasks you want to implement in this scenario.

Notes:

- To learn more about Integrity Testing for Assured Recovery and about the CDP Repository, see *CA XOsoft r12 User Guide*.
- To learn more about ARCserve Backup and CA XOsoft r12 integration see the *CA ARCserve Backup for Windows CA XOsoft Integration Guide.*

4. Click **Next**. The **Master and Replica Hosts** page is displayed:



5. Enter the following information:

   - In the **Scenario Name** box – accept the default name or enter a new name for the scenario. When entering a name, choose a unique name, since you cannot use the same name for more than one scenario.
   - In the **Master** and **Replica Hostname/IP** boxes - enter the hostname or IP address of the Master (source) and Replica (target) servers, or use the **Browse** buttons to find them.

   Important! The Replica server you enter here is the only Replica server that can participate in the switchover process. Even if you will later add to the scenario additional Replica servers, they will not be able to become the active server after a switchover.

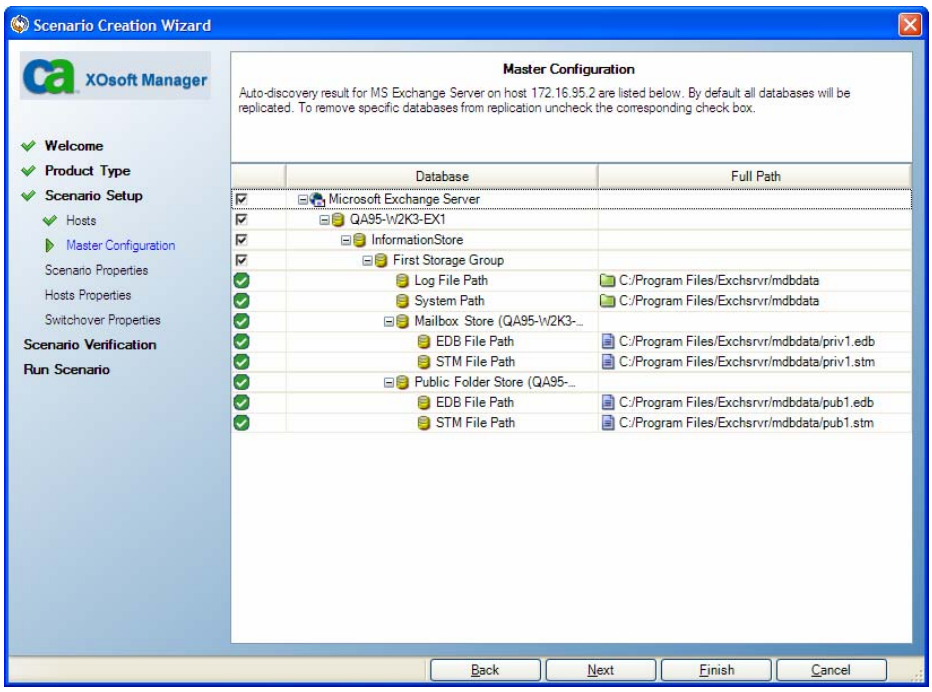
   Notes:

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

   – If you want to include more than one Replica in the scenario, after you finish the scenario creation, manually enter the other Replicas in the Scenario pane.

   - In the **Port** boxes - accept the default port number or enter a new number.
   - The **Verify CA XOsoft Engine on Hosts** check box - 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 page. If Engines are not installed on the selected hosts, you can use this option to remotely install the Engines on one or both hosts. For more information about the **Host Verification** page, see *CA XOsoft r12 User Guide*.

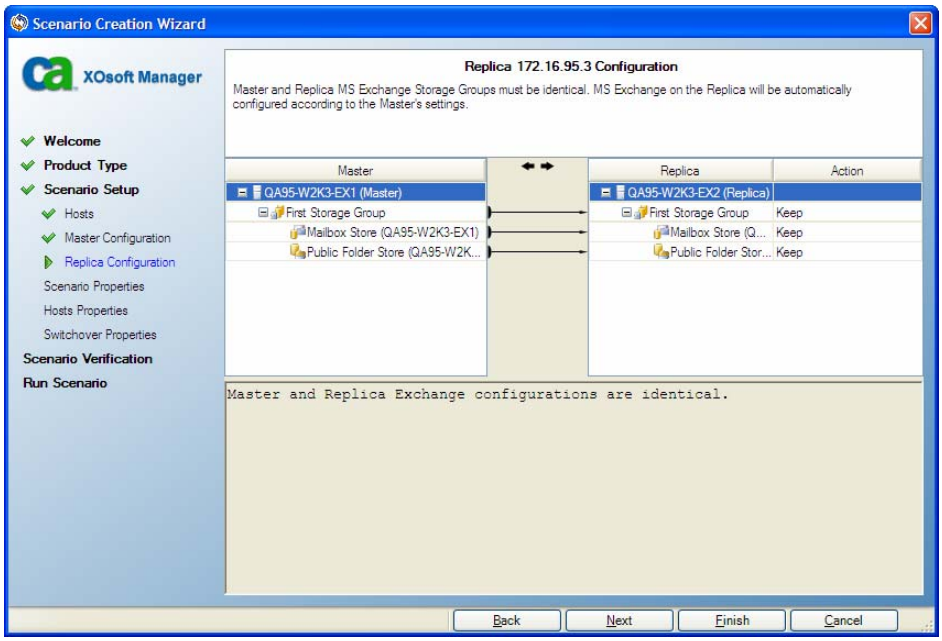
6. Click **Next**. The **Master Configuration** page appears:



The CA XOsoft 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 selected and all will be replicated. You can exclude any of these storage groups from replication by clearing their check boxes.

8. Click **Next**. The **Replica Configuration** page appears:



CA XOsoft 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, CA XOsoft will perform the required actions, including: deleting storage groups, public folders 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.

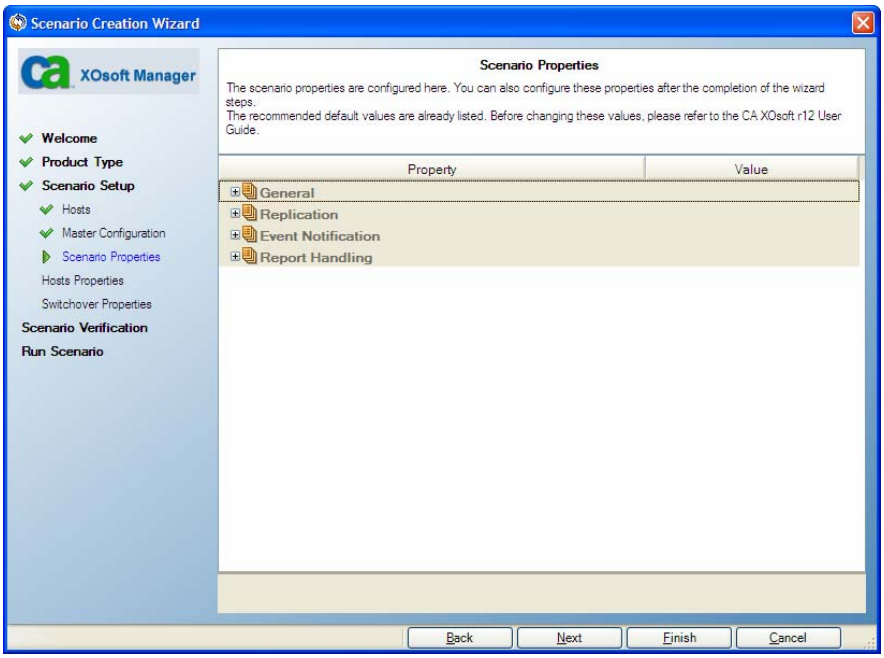
Note: The actions that can be performed in the auto-configuration process are as follows:

- **Create** - a new, storage group, public folder or mailbox store will be created.
- **Keep** - the existing storage items will remain the same.
- **Remove** - the existing storage items store will be deleted.
- **Update** - the existing storage items 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 item since it does not have an automatic backup. If you want to save it in a different location before deletion, click the **Finish** button to exit the wizard.

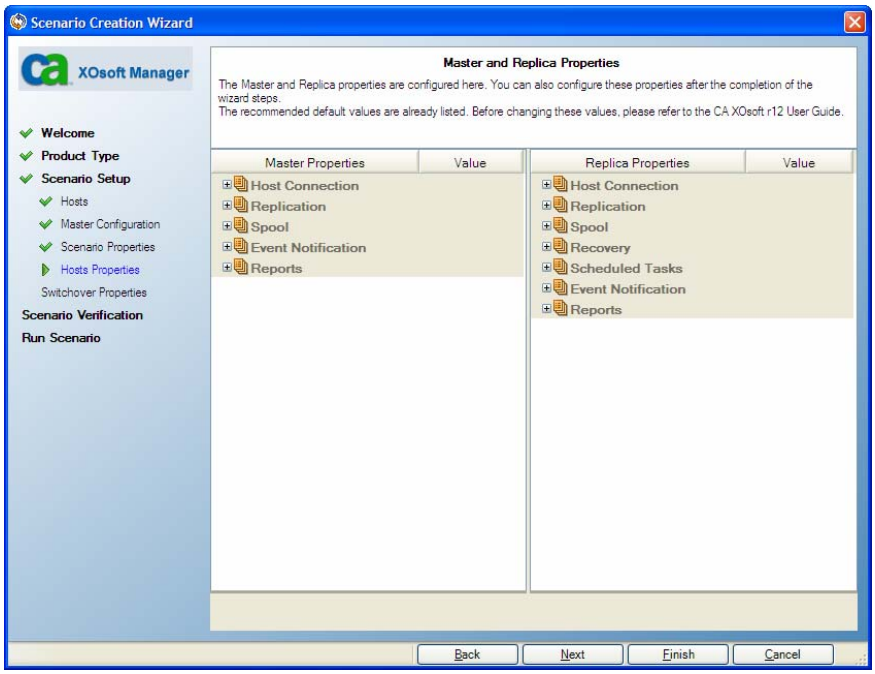
10. Click **Next** to start the Replica configuration process. The **Scenario Properties** page appears:



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

Note: You can modify all settings in this pane after the scenario is created, using the Properties tab in the Framework pane.

11. Click **Next**. The **Master and Replica Properties** page appears:



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

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

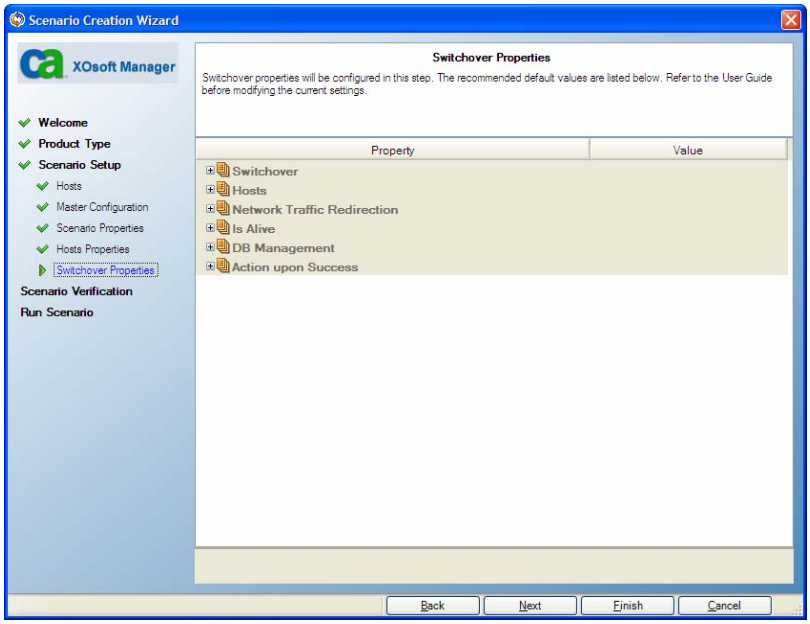
- **Spool Settings**

  The CA XOsoft 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 Scenario Creation 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! We advise you against configuring the spool directory on an Exchange database or log file drive. Using a dedicated volume for the spool folder can increase performance under high load. If you change the spool location, remember to remove the new path from file level antivirus scans: both scheduled and real time.

12. Once you are satisfied with the Master and Replica properties, click **Next**.

    The **Switchover Properties** page appears:

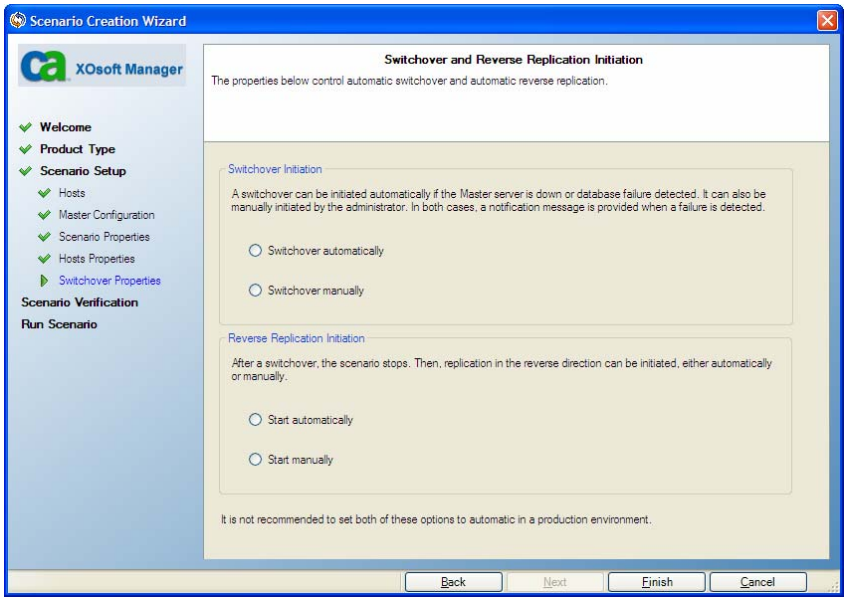


    The **Switchover Properties** page allows you to modify switchover parameters. As with the prior steps, no changes are required.

    Notes:

    - You can modify all settings in this pane after the scenario is created, using the High Availability Properties tab in the Framework pane.
    - If you plan to use automatic switchover, note that the **Is alive timeout** (sec) setting controls how long to wait after a failure is detected before triggering a switchover.

13. Click **Next**. The **Switchover and Reverse Replication Initiation** page appears:



The **Switchover and Reverse Replication Initiation** page enables you to define how the switchover and the reverse (backward) replication scenario will be initiated: either automatically by CA XOsoftHA, or manually by you once a failure is detected and reported.

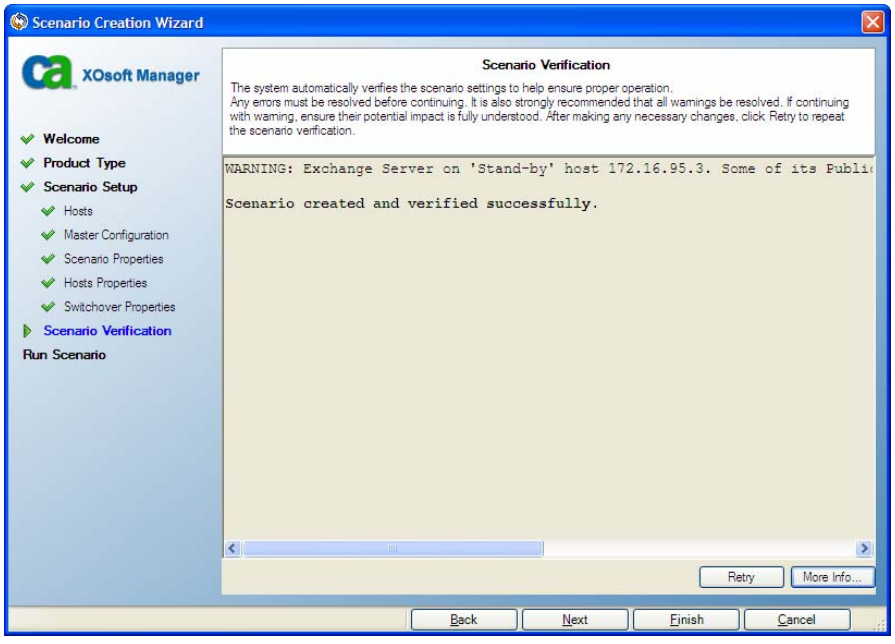
Note: Automatic Switchover and Reverse Replication Scenario

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 by an administrator who manually initiates the switchover. Server ping response, application service status and database connectivity are routinely tested. The timeout parameters are configurable.

When **Reverse Replication Initiation** is set to **Start automatically**, CA XOsoftHA will automatically run a reverse scenario during switchover – thus saving the need for a resynchronization when running the "backward" scenario. Note that the reverse scenario can only run automatically if the Master server was online during switchover.

14. For each switchover property, select one of the available options:
    - **Switchover**: either automatically or manually.
    - **Reverse Replication**: either automatically or manually.

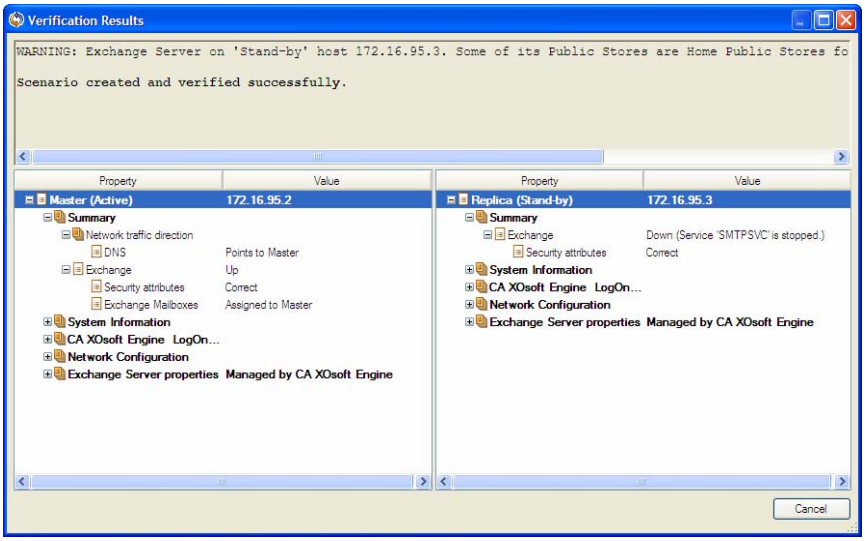
    Important! We advise you against setting both of these options to automatic in a production environment. While these options are individually beneficial, it is best practice to set only one of these options to automatic.
15. Click **Next.** A notification message appears informing you that CA XOsoftHA verifies the validity of the new scenario and checks many different parameters between the Master and Replica servers to ensure a successful switchover.
16. Once the verification is completed, the **Scenario Verification** page appears:



If the scenario was not set up correctly, or problems occurred in the participating hosts or the connection between the CA XOsoft components, the **Scenario Verification** page lists all the errors and warnings detected.

- If any errors are displayed, you cannot run the scenario. These errors must be corrected before you can start the synchronization, replication and HA processes.
- If only warnings are displayed, you can run the scenario by clicking the **Run** button. However, it is important that you consider the warning carefully since they indicate conditions that are known to potentially cause problems with replication or switchover.

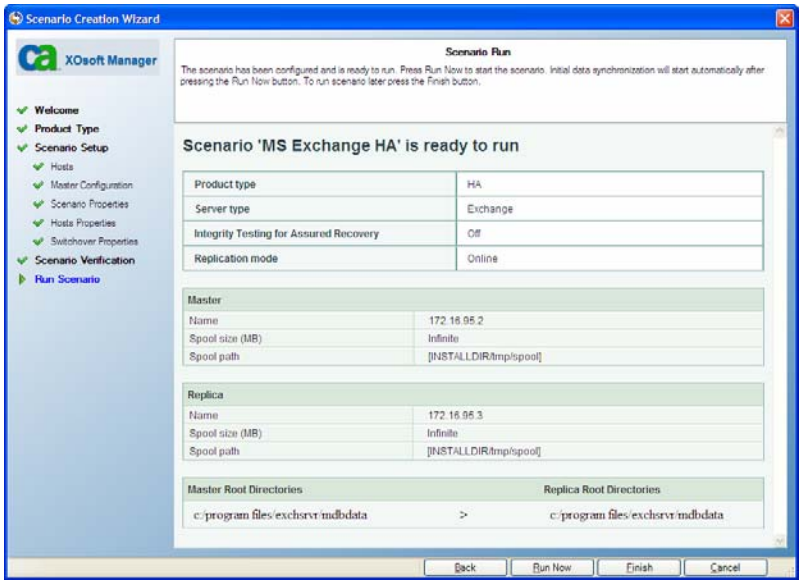
17. If errors or warnings are displayed, two additional buttons appear on the page:
    - **Retry** – click this button to repeat the verification process.
    - **More Info** – click this button to open the **Verification Results** dialog, which provides you additional information about the participating hosts:



    The **Verification Results** dialog is intended to help you resolve any issues encountered in running the product. You can also contact Technical Support for further assistance.

18. When the scenario is verified successfully, click **Next** to continue.

The **Scenario Run** page appears:

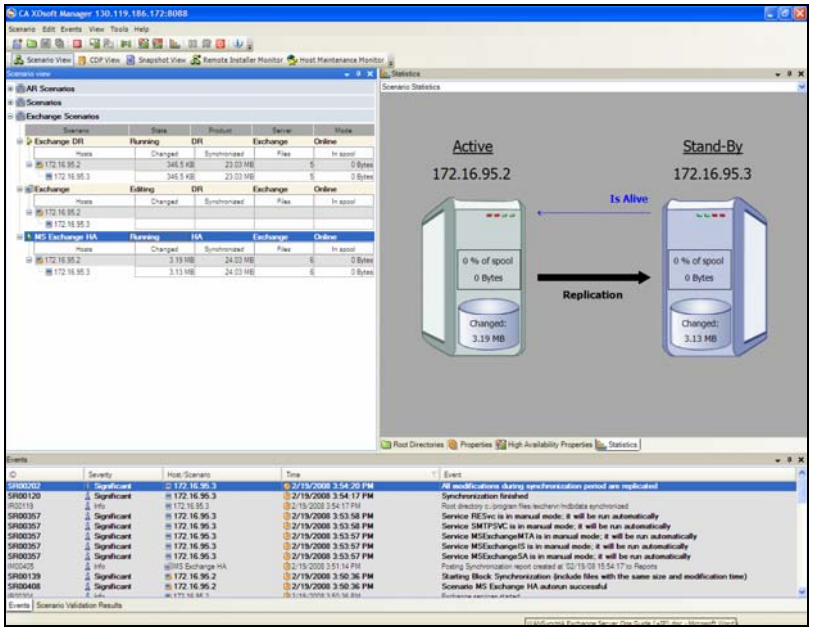


19. The scenario configuration is now completed and you are prompted to run it. Running the scenario starts the data synchronization process, following by replication and Is Alive checks.

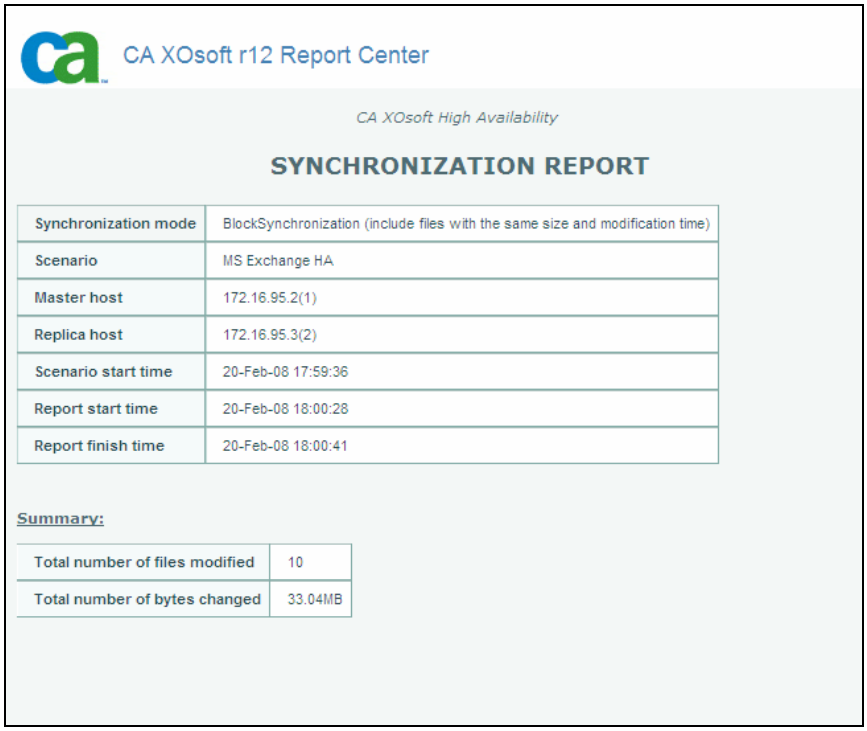
    - To finish the scenario creation and run it later, select **Finish**.
    - To run the scenario now, click **Run Now**.

20. 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**.

    From this point, real-time replication occurs and the High Availability solution is active:



21. By default, once a synchronization occurs a Synchronization Report is generated:



CA XOsoft r12 Report Center

CA XOsoft High Availability

SYNCHRONIZATION REPORT

Synchronization mode	BlockSynchronization (include files with the same size and modification time)
Scenario	MS Exchange HA
Master host	172.16.95.2(1)
Replica host	172.16.95.3(2)
Scenario start time	20-Feb-08 17:59:36
Report start time	20-Feb-08 18:00:28
Report finish time	20-Feb-08 18:00:41

Summary:

Total number of files modified	10
Total number of bytes changed	33.04MB

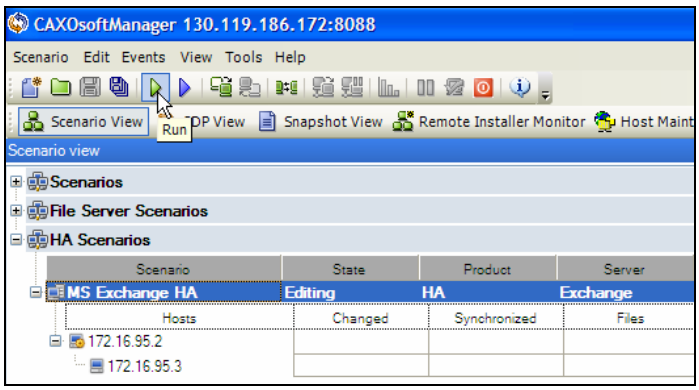
Note: For more information about viewing reports, refer to *Viewing a Report*, page 26.

Start a Scenario

After you create a scenario, you need to run it to start the replication process and activate the High Availability solution. Normally, before data changes on the Master will begin to be replicated on the Replica, the Master and the Replica need to be synchronized. Therefore, the first step in initiating a replication is synchronizing the Master and Replica servers. After the servers have been synchronized, an online replication starts automatically, continuously updating the Replica with all of the changes that occur on the Master, and Is Alive checks are regularly performed.

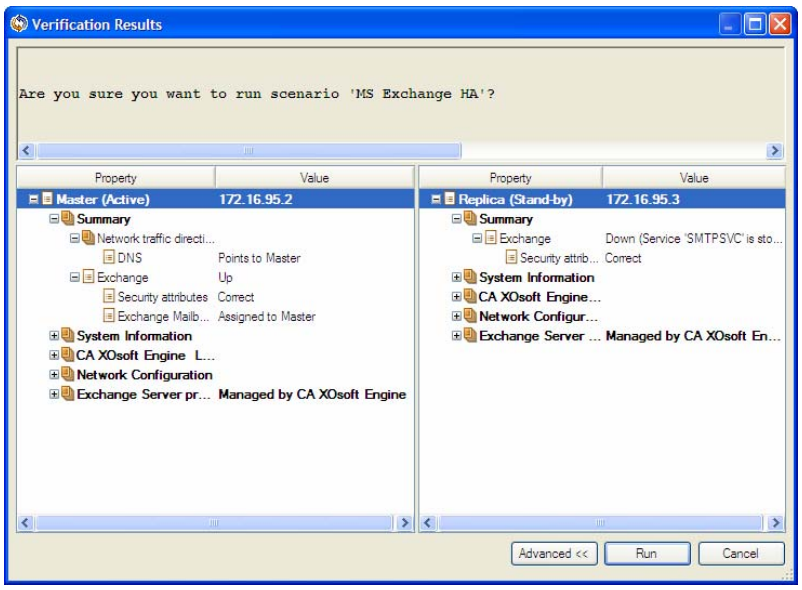
To start a scenario

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



A notification message appears informing you that CA XOsoftHA verifies the validity of the scenario before running it, to ensure a successful switchover.

3. Once the verification is completed, the **Verification Results** dialog appears:



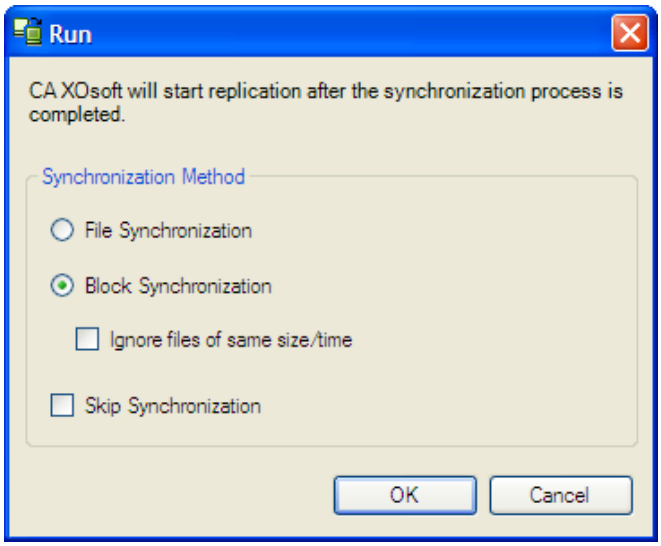
Note: The **Advanced** button opens an additional pane with detailed information about the hosts that participate in the scenario.

4. If the scenario was not set up correctly or problems occurred in the participating hosts, warnings and errors are reported on the **Verification Results** dialog.

   Notes:

   - If any errors are displayed, you cannot run the scenario. These errors must be corrected before you can start the replication process.
   - If only warnings are displayed, you can run the scenario by clicking the **Run** button. However, it is important that you consider the warning carefully since they indicate conditions that are known to potentially cause problems with replication or switchover.
   - Replication of mount points will succeed only if those were added to the Master before the Engine was started. If you included the mount points in the Master root directories when the Engine was already running, no error is reported but the replication does not start. In this case, you need to restart the Engine on the Master before initiating replication.

5. When no error is reported, click the **Run** button. The **Run** dialog appears:



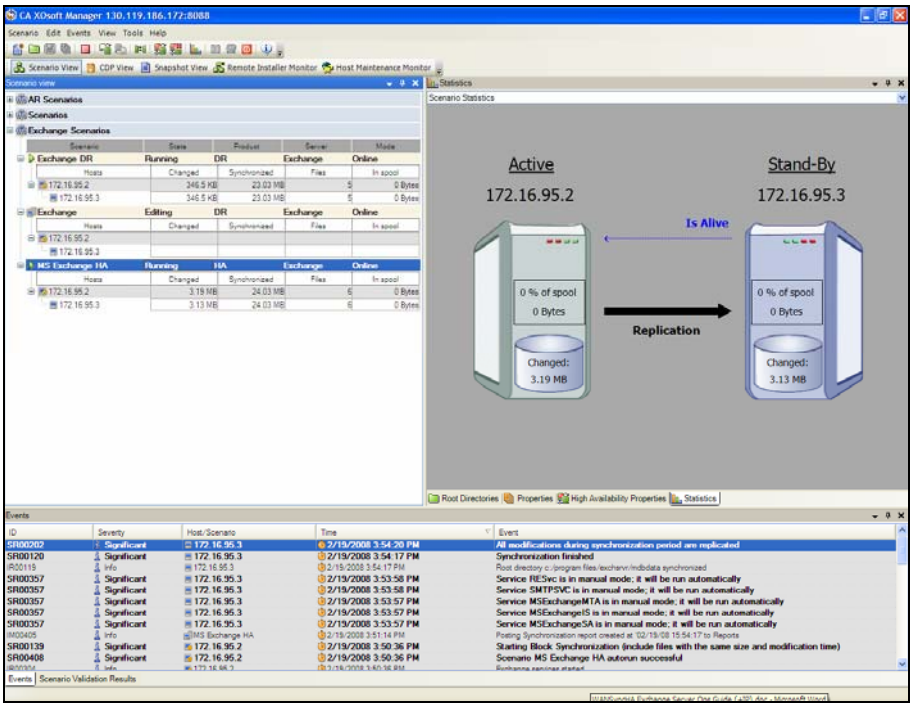
6. Select **Block Synchronization** as the synchronization method, and ensure that the **Ignore same size/time files** check box is not selected. Then, click **OK**.

   Important! Do not skip synchronization unless you are absolutely certain that the data in the Master and Replicas root directories is identical.

   Note: If the user credentials you used to log in to the Manager are different than the ones required for working with the Engine on the Replica, a **User credentials** dialog appears, asking you to enter log on account details for the selected Replica.

   From this point, real-time replication occurs and the High Availability solution is active.

   The Manager now indicates that the scenario is running via the green play symbol to the left of the scenario, and the Statistics tab appears (on the bottom of the far right pane) displaying a graphical view of the replication and the Is Alive checks:



   Note: The Is Alive checks start only after the synchronization process is completed and the replication begins.

   By default, once a synchronization occurs a Synchronization Report is generated.

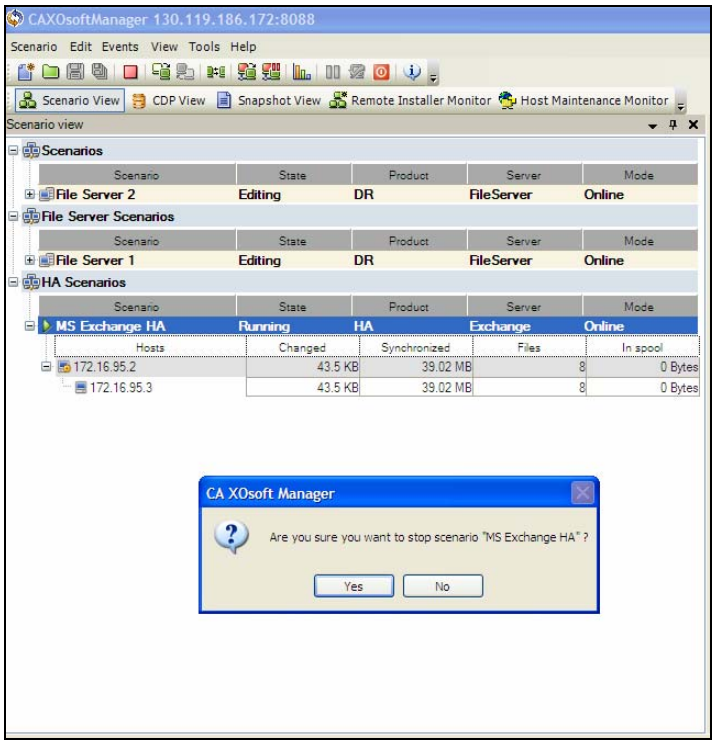
   Note: For more information about viewing reports, refer to *Viewing a Report*, page 26.

Stop a Scenario

To stop a scenario

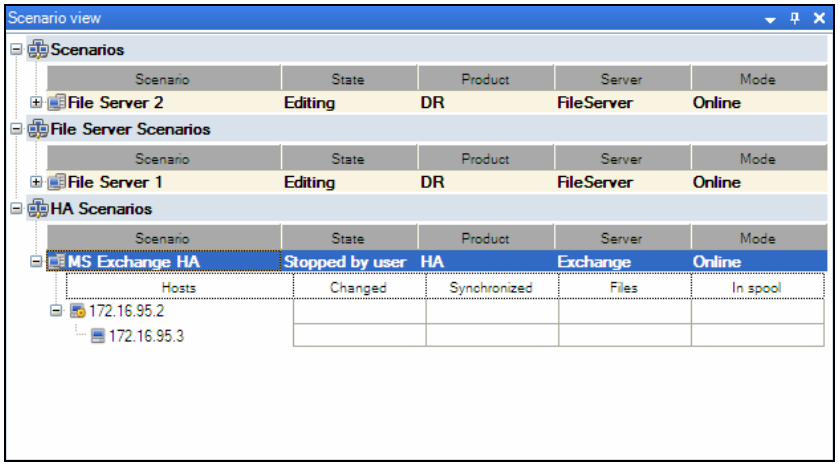
1. From the Scenario pane, select the scenario you want to stop.
2. To stop the scenario, click the **Stop** button on the Standard toolbar.

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



3. Click **Yes** in the confirmation message. The scenario stops.

   After stopping the scenario, the Manager no longer shows the green play symbol to the left of the scenario, the scenario's state turns into **Stopped by user**, and the Statistics tab is no longer available on the Framework pane:



Viewing a Report

CA XOsoft can generate reports on the replication and synchronization processes. These reports can be stored on your desired location, opened for view from the Report Center, sent by email to a specified address, or they can trigger script execution.

The default storage directory of the generated reports is:
[ProgramFilesFolder]\CA\XOsoft\Manager\reports

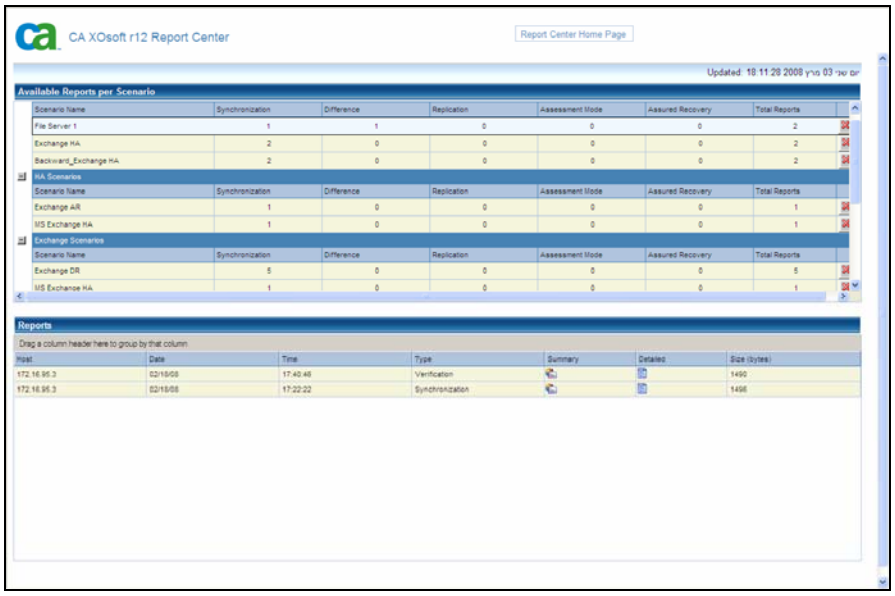
To view a report

1. To view a report, first you need to open the Report Center. There are two ways to open it:

   - On the Overview Page, click the **Report Center** link on the **Quick Start** pane on the left:

   - From the **Tools** menu, select the **Reports** option and then **Show Scenario Reports**.

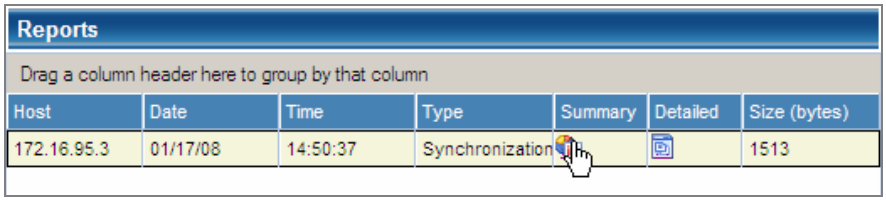
   The Report Center opens in a new window:



The Report Center consists of two tables:

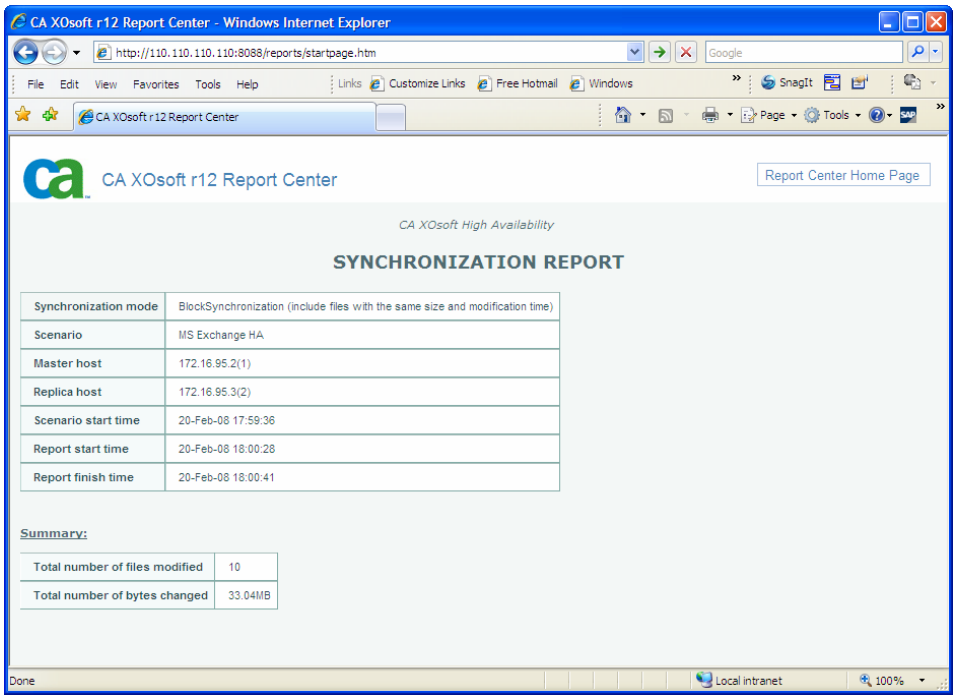
- The upper table - **Available Reports per Scenario** – contains a list of all scenarios that have reports, along with the type and number of available reports for each scenario.
- The lower table – **Reports** – contains a list of all the reports that are available for the scenario selected in the upper table.

2. To view a specific report, select from the **Available Reports per Scenario** table the scenario that this report represents. Then, from the **Reports** table below, click the report you want to open:



Note: Depending on your settings, for Synchronization and Replication reports a **Detailed** report can be generated in addition to the **Summary** report. Both reports represent the same process, but the **Detailed** report also provides a list of the files that participated in the process.

The report you selected appears in a new window:



Chapter 3: 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

After the HA scenario starts running and the synchronization process is completed, the Replica checks the Master on a regular basis, by default every 30 seconds, to see if it is alive. There are three types of monitoring checks – a ping request that is sent to the Master in order to verify that the Master is up and responding; a database check that verifies that the appropriate services are running and that all databases are mounted; a user-defined check that can be tailored to monitor specific applications.

If an error occurs with any part of the set, the entire check is considered to have failed. If all checks fail throughout a configured timeout period (by default 5 minutes), the Master server is considered to be down. Then depending on the HA scenario configuration, CA XOsoftHA sends you an alert or automatically initiates a switchover.

Switchover is the process of changing roles between the Master and Replica, meaning making the Master server the standby server, and the Replica server the active server. Switchover can be triggered automatically by CA XOsoftHA when it detects that the Master is unavailable. Alternatively, CA XOsoftHA can simply alert you to the problem, and then you can manually initiate switchover from the CA XOsoft Manager.

During the creation of HA scenario, you define how you want the switchover to be initiated. If you selected in the **Switchover and Reverse Replication Initiation** page the **Initiate Switchover manually** option (see page 18), you need to perform a manual switchover. However, if you selected the **Initiate Switchover automatically** option, you can still perform a manual switchover, even if the Master is alive. You can initiate switchover when, for example, you want to test your system, or you want to use the Replica server to continue the application service while some form of maintenance is performed on the Master server.

If you choose to initiate switchover automatically, after the Master is considered to be down, CA XOsoftHA automatically tries to restore the services and databases on it to their active state. First, CA XOsoftHA tries to restart the Exchange services that it previously checked. If the services are running, it then tries to mount the databases. If all attempts failed, CA XOsoftHA initiates a switchover. These attempts to restore the services and databases are not performed if the switchover is initiated manually.

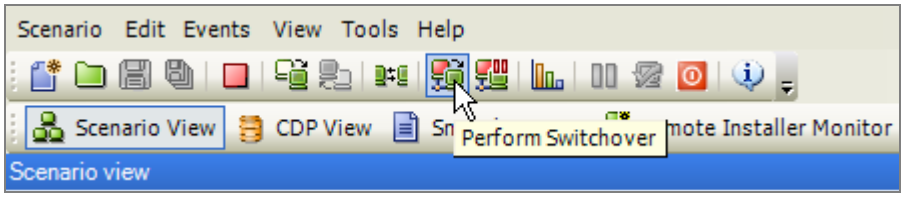
Note: The Exchange services that are checked and managed by CA XOsoft are as follows -

- Exchange 2003:
  - Microsoft Exchange System Attendant
  - Microsoft Exchange Information Store
  - Microsoft Exchange MTA Stacks
  - Simple Mail Transport Protocol (SMTP)
  - Microsoft Exchange Routing Engine
  - The following services are managed only if they are in automatic startup mode before the scenario is initiated:
    - Microsoft Exchange POP3
    - Microsoft Exchange IMAP4
    - Microsoft Exchange Management
    - Microsoft Exchange Site Replication Service
- Exchange 2007:
  - Microsoft Exchange Information Store
  - Microsoft Exchange Search Indexer

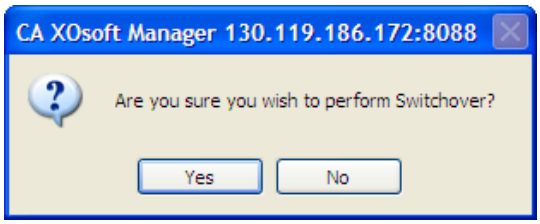
Once triggered, whether manually or automatically, the switchover process itself is fully automated.

To initiate switchover

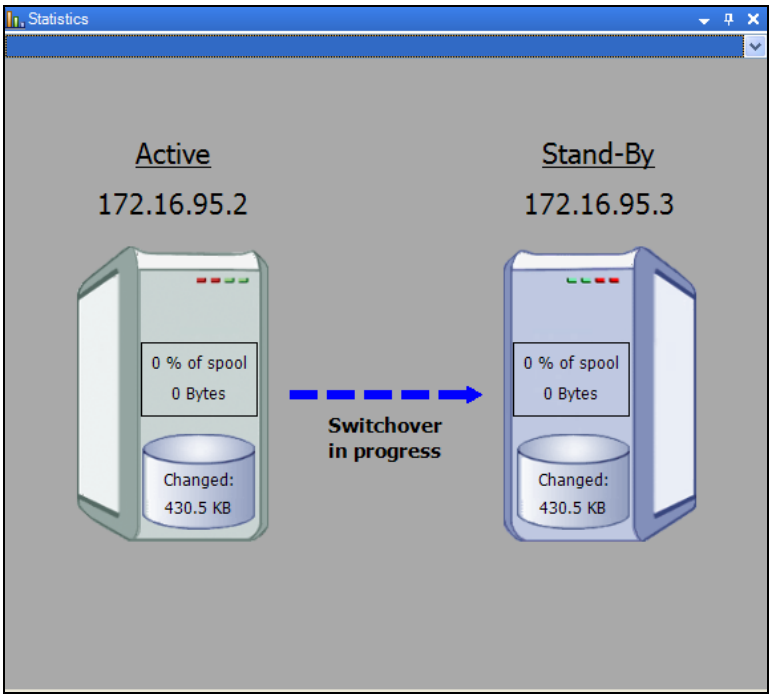
1. Open the Manager and select the desired scenario from the Scenario pane. Verify it is running.
2. Click on the **Perform Switchover** button, or select from the **Tools** menu the **Perform Switchover** option:



A confirmation message appears:

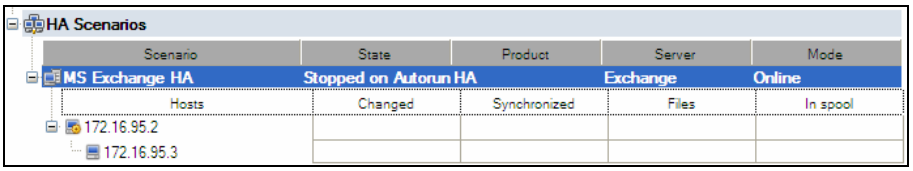


3. Click **OK** on the **Perform Switchover** confirmation message. This procedure initiates a switchover from the Master server to the Replica server:



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

4. After the switchover is completed, the scenario stops:



Note: The scenario will continue to run after switchover when the **Reverse Replication Initiation** option is defined as **Start automatically**. For more information, see page 18.

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

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

Switchback

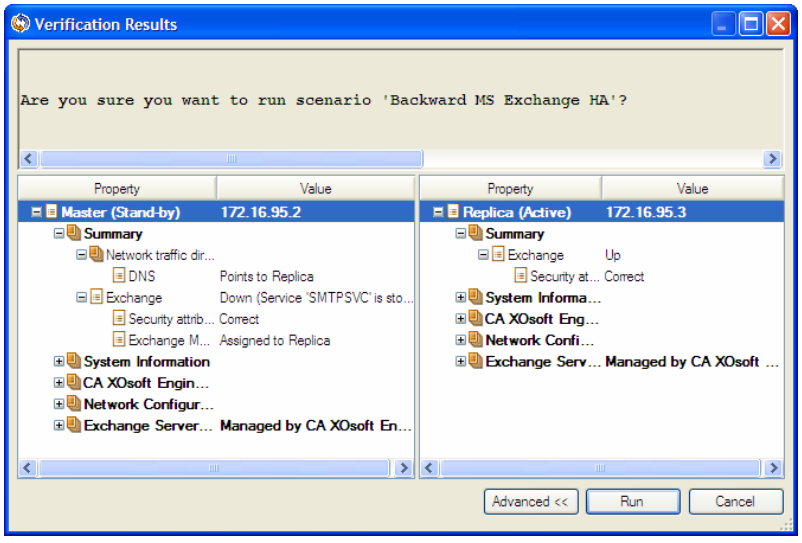
After a switchover was initiated, whether manually or automatically, at some point you will want to reverse back the server roles, and make the original Master the active server again and the Replica the standby server. Before you switch back the roles between them, if you want the data on the active server, meaning the original Replica, to overwrite the data on the standby server, you need to run a reverse scenario (also called "backward scenario").

During the creation of the HA scenario, you defined how you want the reverse scenario to be initiated. If you selected in the **Switchover and Reverse Replication Initiation** page the **Initiate Reverse Replication automatically** option (see page 18), replication in the reverse direction (from Replica to Master) will automatically begin after a switchover, once the original Master will become available. However, if you selected the **Initiate Reverse Replication manually** option, you need to perform a manual switchback. If the manual option is selected and you will not initiate a manual switchback, a resynchronization of the data from Replica to Master will have to be performed, even after a test of clean switchover without an actual Master failure.

To initiate switchback

1. Ensure that both Master and Replica servers are available on the network and that the CA XOsoft Engine is running.
2. Open the Manager and select the desired scenario from the Scenario pane.
3. [Skip this step if the backward scenario is already running, and move to step 7, page 34.]

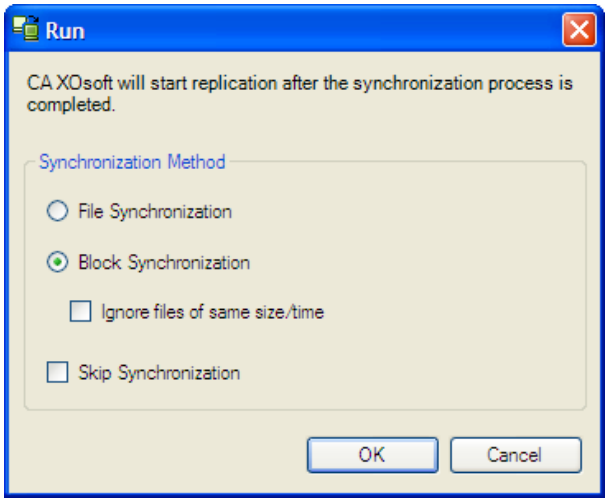
   If the backward scenario is not running, select the **Run** button on the Standard toolbar to start the scenario. CA XOsoftHA detects that a switchover has occurred and verifies its state and configuration. Once the verification is completed, the **Verification Results** dialog appears, listing existing errors and warnings if detected, and prompting you to approve the running of the backward scenario:



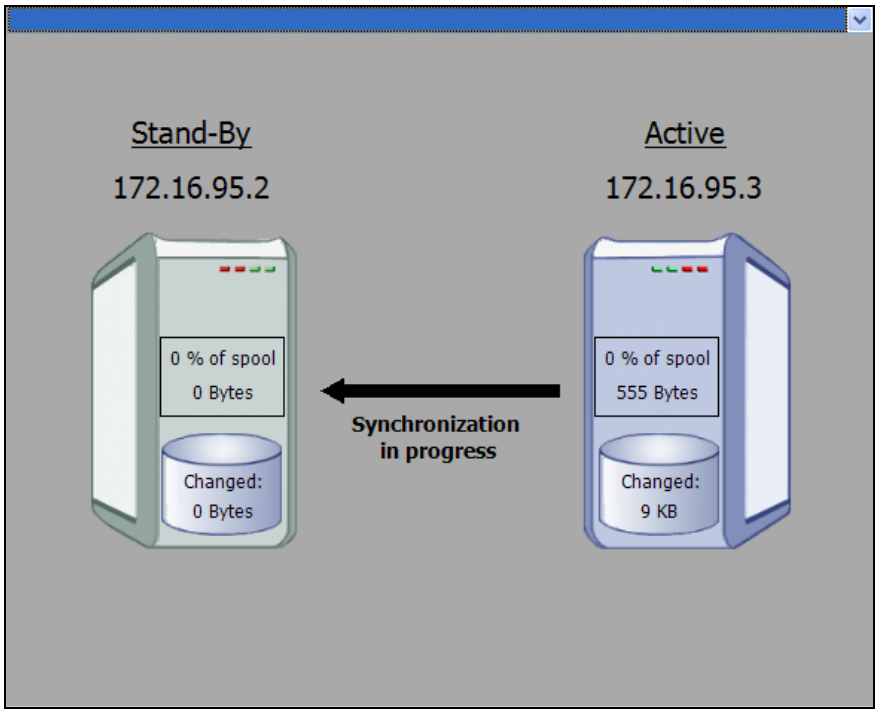
Note: The **Advanced** button opens an additional pane with detailed information about the hosts that participate in the scenario.

4. Click the **Run** button to start the backward scenario.

   The **Run** dialog appears:



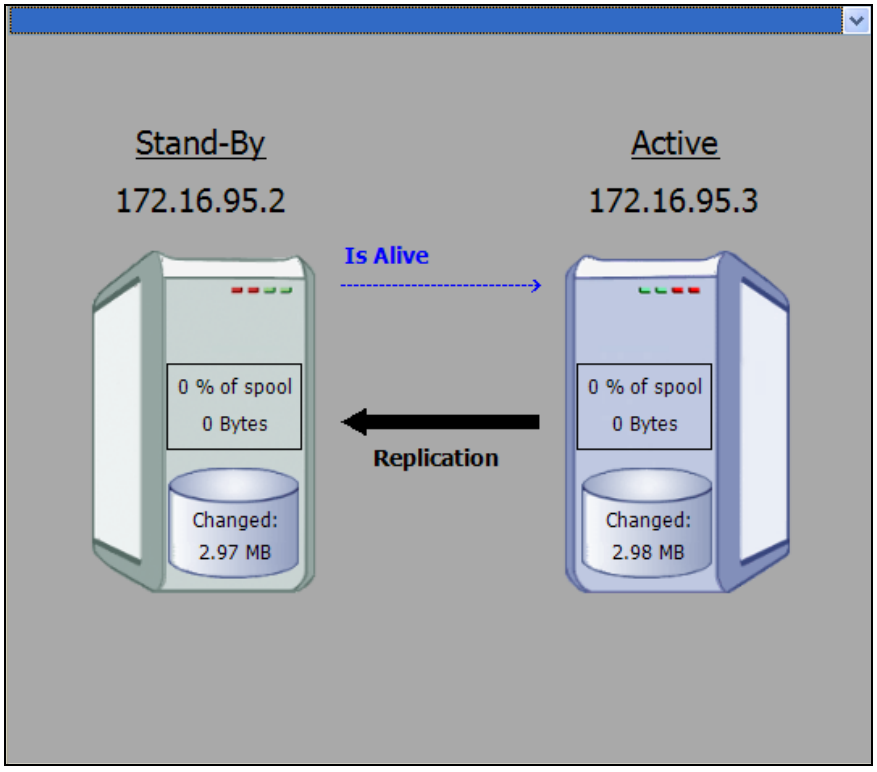
5. For MS Exchange, we recommend selecting **Block Synchronization.** Then, click **OK**. The resynchronization starts:



   Wait until the resynchronization is completed.

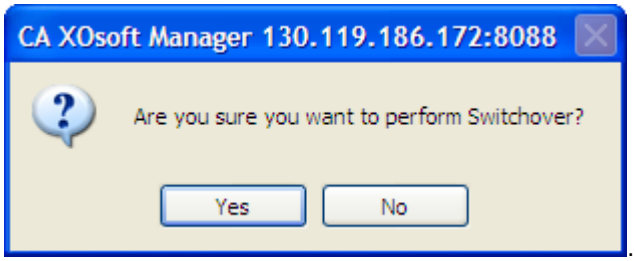
6. Once the resynchronization is completed, you receive the following message in the Event pane: **All modifications during synchronization are replicated**.

Then, replication from the active server to the standby server starts:



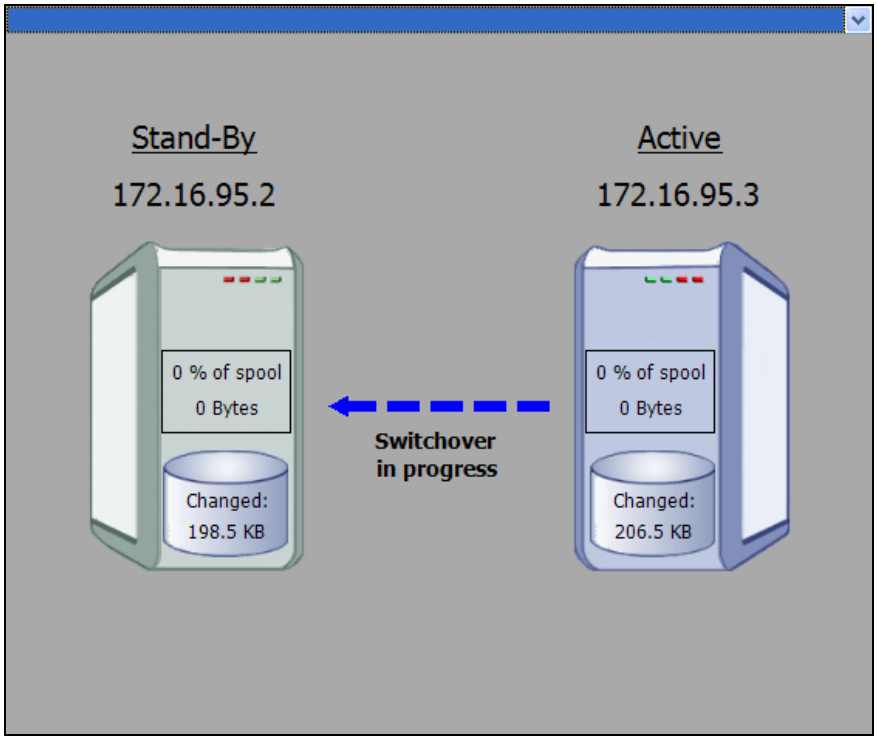
7. Now, you can reverse back the roles between the Master and Replica servers. To reverse the roles, while the backward scenario is running, click the **Perform Switchover** button or select the **Perform Switchover** option from the **Tools** menu.

   A confirmation message appears:

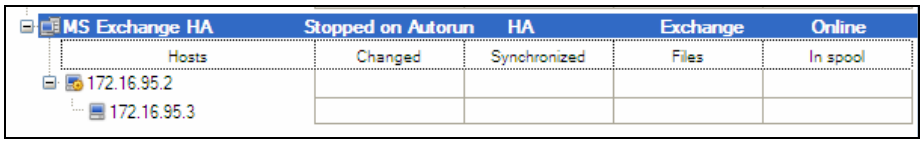


8. Click **Yes** on the **Perform Switchover** confirmation dialog.

This procedure initiates a switchback from the original Replica server to the Master server:



9. After the switchback is completed, and the server roles are reversed back, the scenario automatically stops:



Note: The scenario will continue to run after the switchback when the **Reverse Replication Initiation** option is defined as **Start automatically**. For more information, see page 18.

Now, you can run again the scenario in its original (forward) state.

Chapter 4: Additional information & Tips

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

- When a CA XOsoft scenario begins, the DNS Time-To-Live (TTL) parameter is modified according to the scenario configurable value **DNS TTL**. This property is found in the High Availability properties list under the **Network Traffic Redirection** – **Redirect DNS** group. 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 CA XOsoft installation /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.
- CA XOsoft supports bandwidth limitation and bandwidth limitation scheduling. If you require such features, please consult the *CA XOsoft r12 User Guide.*

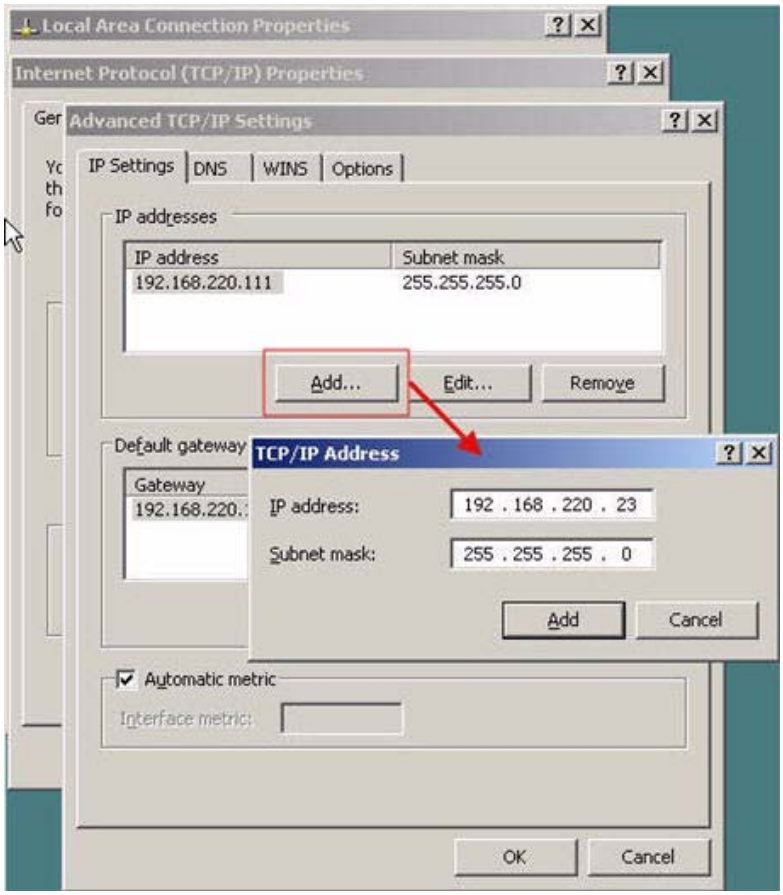
Appendix A: IP Redirection

This section describes the necessary steps for adding Move IP redirection to the High Availability scenario. Use this method only when both servers are on the same IP subnet.

Move IP on the Master Server

Before configuring the scenario, add an additional IP address to the Master host, (which is denoted as *XO-IP* in the following steps). If you have already configured your scenario go ahead and add this IP address; special steps for this situation are listed below. This new IP address is used for CA XOsoft internal communication and replication. This is necessary since the current production IP address is not available on the Master after switchover -- it switches to the Replica server.

Note: In the following screenshot, the XO-IP IP address is 192.168.220.23 and the current production server IP address is 192.168.220.111.

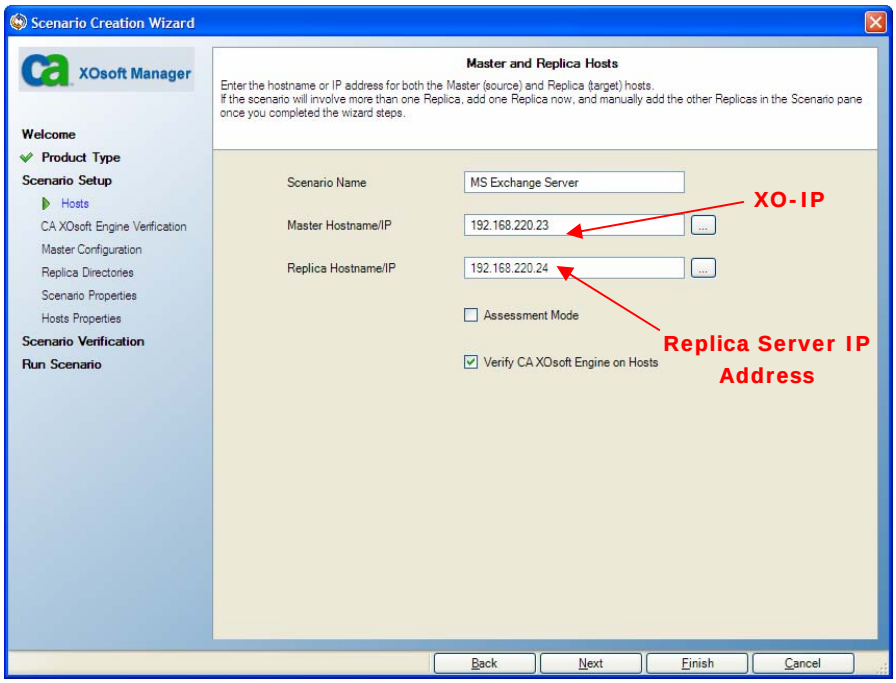


Move IP through the Manager

This section details Move IP redirection through the CA XOsoft Manager.

For New Scenarios

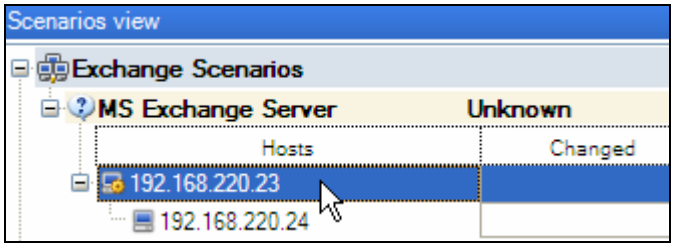
During the initial run of the Scenario Creation Wizard, enter the XO-IP and Replica IP addresses instead of the server names.



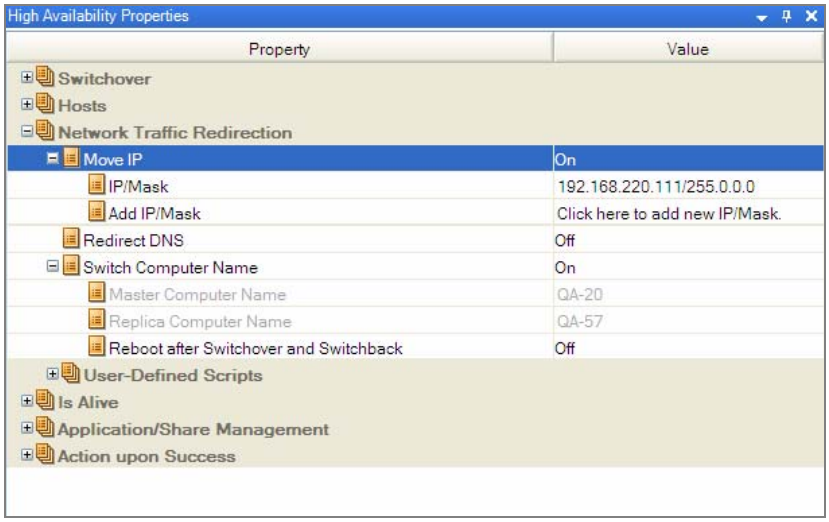
For Existing Scenarios

To use Move IP with existing scenarios:

1. On the Scenario pane, select the required Master host:



2. Right-click the Master and select **Rename** from the pop-up menu. Then, enter the XO-IP address.
3. On the Framework pane, select the **Switchover** tab and then select the Replica server as the switchover host.
4. Set the **Move IP** option to On. Ensure that the IP address under **Move IP**, **IP/Mask** matches the production server IP address: this is the IP address that will switch over. If you are moving more than one IP address you can add multiple production IP addresses by selecting *Click here to add new IP/Mask*.



Cluster Move IP

Using Move IP redirection with a clustered Master (MSCS with shared storage) requires you to add an additional IP resource to the Master Exchange resource group. This section describes how to configure this redirection method.

Note: If both Master *and* Replica are clusters there are special configuration issues involved in the Move IP redirection process that are not detailed in this Guide. For a cluster-cluster scenario, use Redirect DNS or contact technical support to receive detailed instructions and guidance.

Using the Master Cluster

To use Cluster Move IP through the Master cluster:

1. Open the Cluster Administrator.
2. In the Master Cluster Exchange Resource Group, create a new IP resource and name it ***XO-IP***.

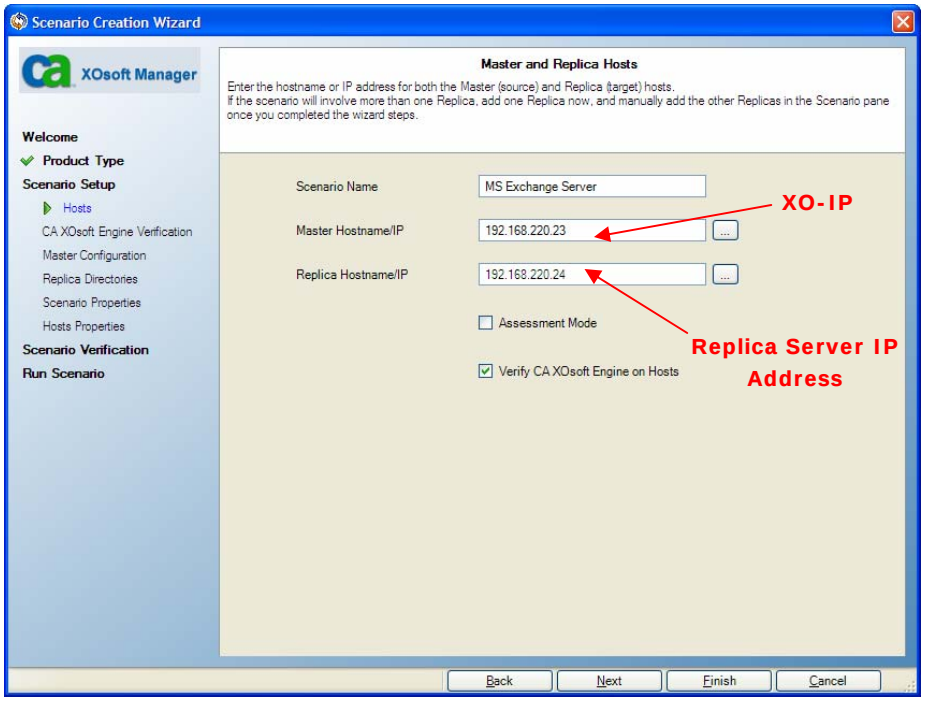
3. Bring this resource online and verify it is visible from the Replica via the ping command. This new IP address is used for CA XOsoftHA internal communication and replication. This is necessary since the current production IP address is not available on the Master cluster after switchover -- it switches to the Replica server.

Using the Manager

This section details Cluster Move IP redirection using the Manager.

For New Scenarios

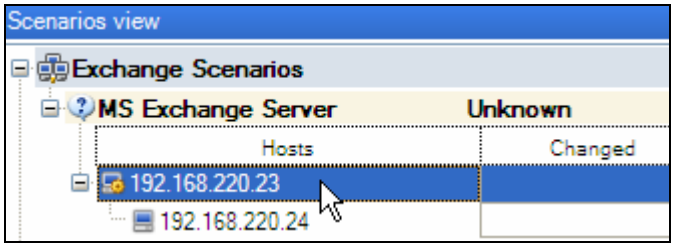
During the initial run of the Wizard, enter the XO-IP and Replica IP addresses instead of the cluster virtual server names.



For Existing Scenarios

To use Cluster Move IP with existing scenarios

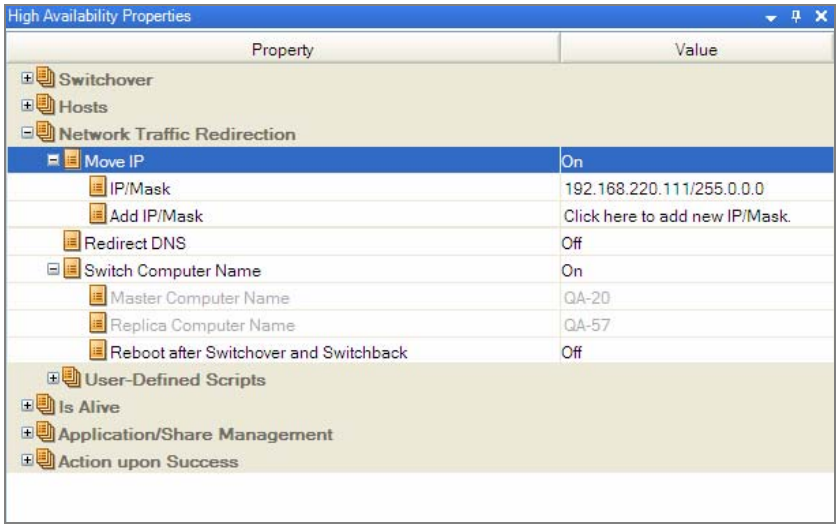
1. On the Scenario pane, select the required Master host:



2. Right-click the Master and select **Rename** from the pop-up menu. Then, enter the XO-IP address.

3. On the Framework pane, select the **Switchover** tab and then select the Replica server as the switchover host.

4. Set the **Move IP** option to On. Ensure that the IP address under **Move IP**, **IP/Mask** matches the production server IP address: this is the IP address that will switch over. If you are moving more than one IP address you can add multiple production IP addresses by selecting *Click here to add new IP/Mask*:



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