CA XOsoft® r12
Microsoft Exchange

Operation Guide

Edition no. 1

Contents

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 XOsoft Exchange is a Microsoft Exchange Disaster Recovery solution, based on asynchronous real-time Replication over LAN or WAN from a production server to one or more local or geographically distant Replica servers. 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 Disaster Recovery solution for Microsoft Exchange Server using CA XOsoft. 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 Disaster Recover procedures using CA XOsoft 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 the Master host.

Log On Account

The CA XOsoft Engine service logon account must meet all the following account conditions:

- Must be an Exchange View Only Administrator.
- Must be a member of the Administrators Group on 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.

About Clusters

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

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

Installing CA XOsoft

Note: For detailed information about installing and upgrading CA XOsoft, 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 XOsoft, 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

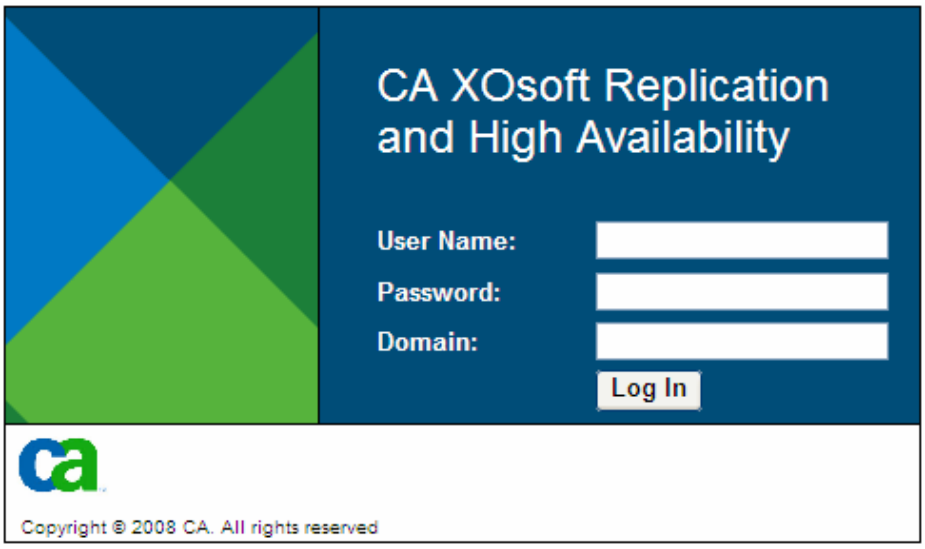
To open CA XOsoft Manager:

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:

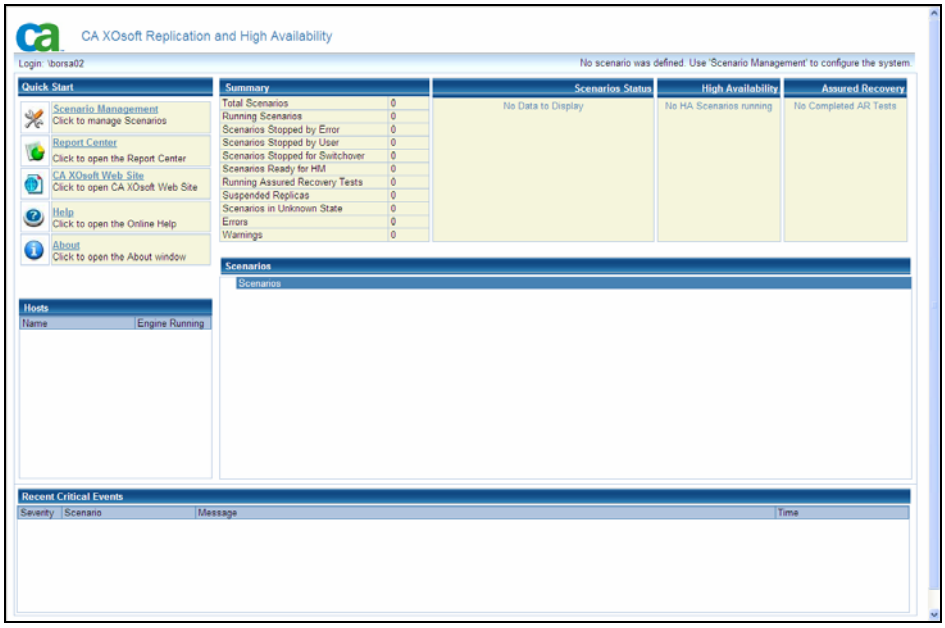
   - If you are opening the Management Center from the machine where the Control Service is installed, you can use the default parameters:
     http://localhost:8088/start_page.aspx
   - If you selected the **SSL Configuration** option during the installation of the Control Service**,** when you open the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

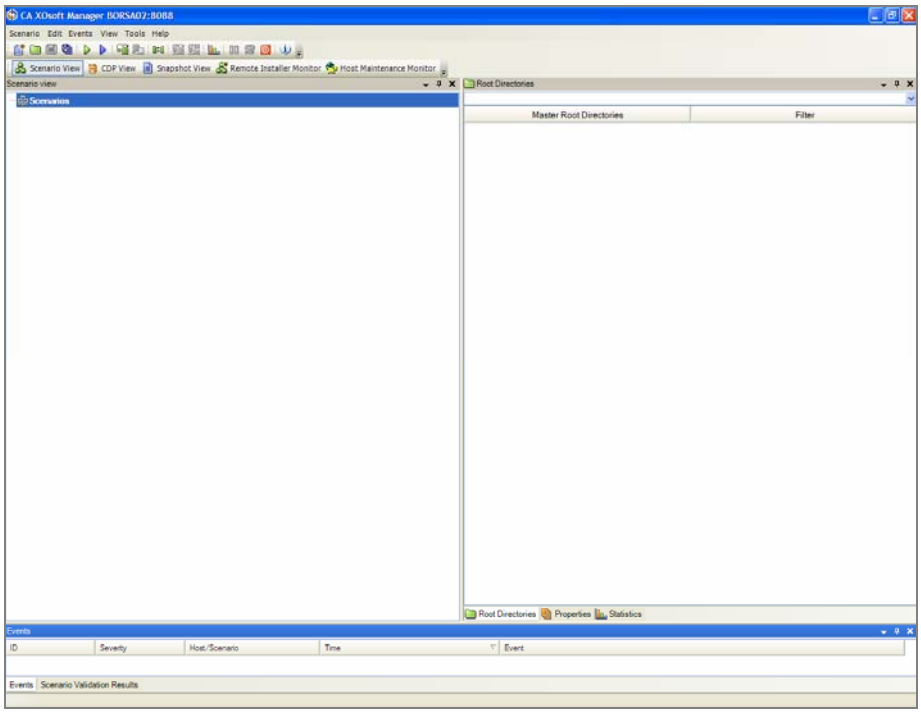
   The **Overview page** appears:



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.

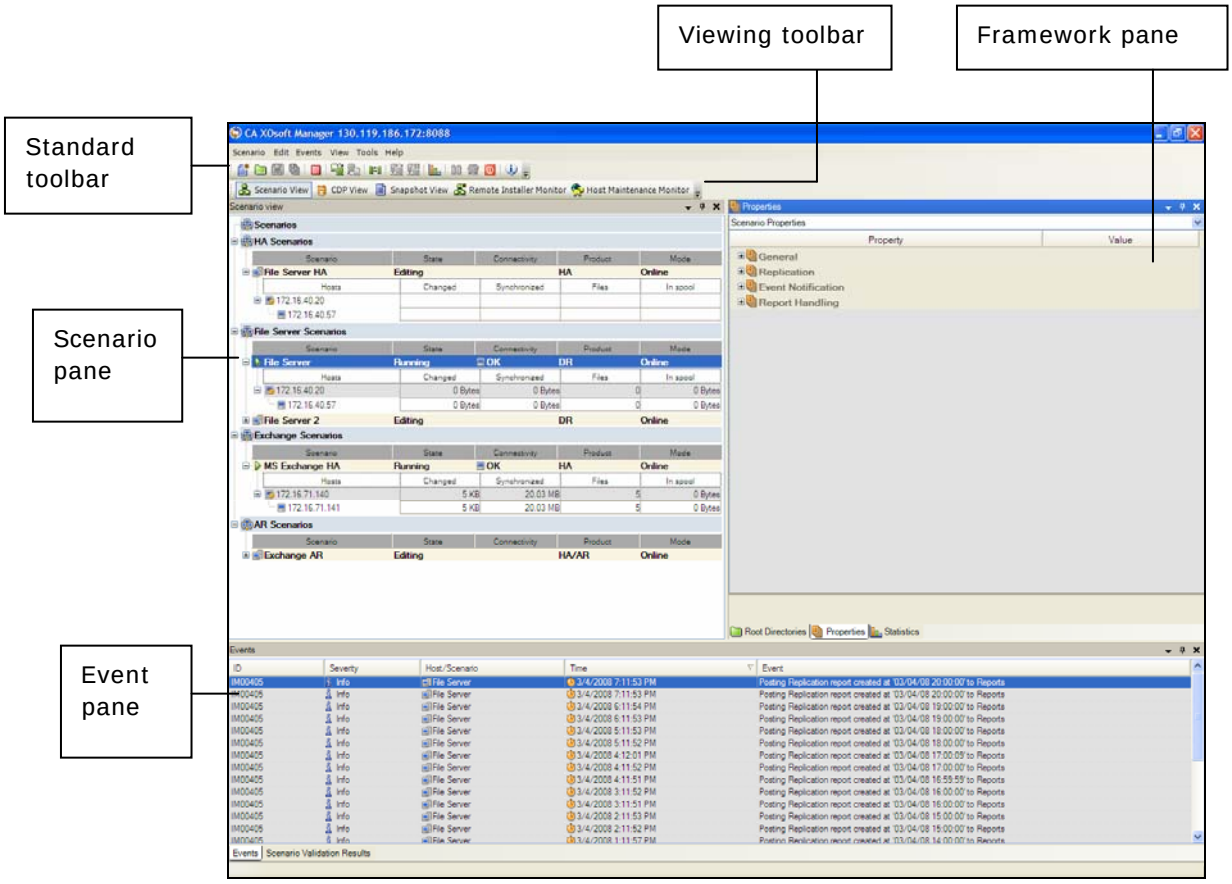
4. Once the Manager installation is completed, the Manager appears:



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 a Replication Scenario

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

Create a New Scenario

CA XOsoft creates and maintains replications in the context of user-defined scenarios. A scenario is the basic unit of the CA XOsoft operation, and it defines a replication tree that set the flow of information from the Master server to any number of designated Replicas. A scenario also establishes the data recovery procedure. You can configure, add or remove servers from a scenario and select or modify directories. This enables easy, complete control of the replication process over any network, large or small. Each scenario is saved as an XML file.

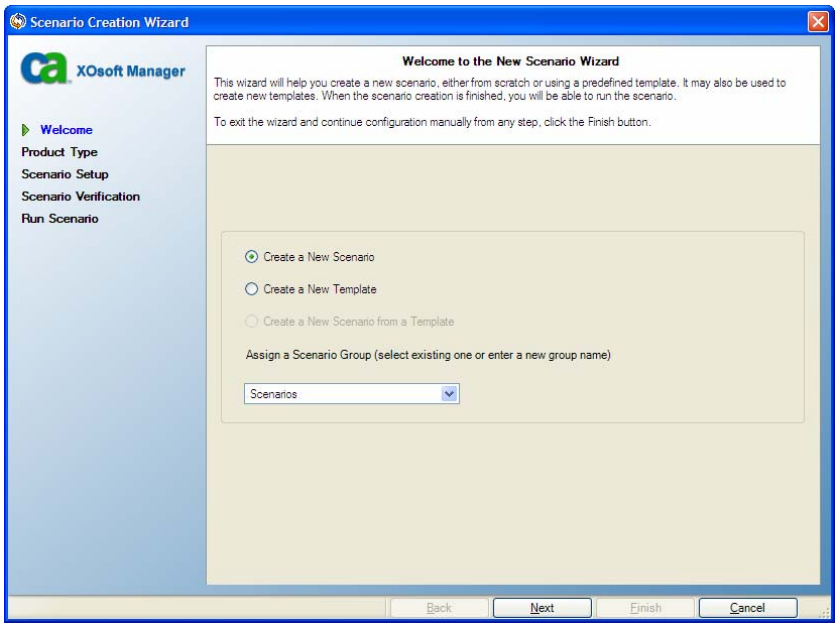
A Disaster Recovery scenario can be created and configured using a step-by-step wizard. Each wizard page either shows you the process that CA XOsoft will perform, or asks you to define your required configuration.

Note: There are many properties – of the scenario, Master, and Replica - 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*.

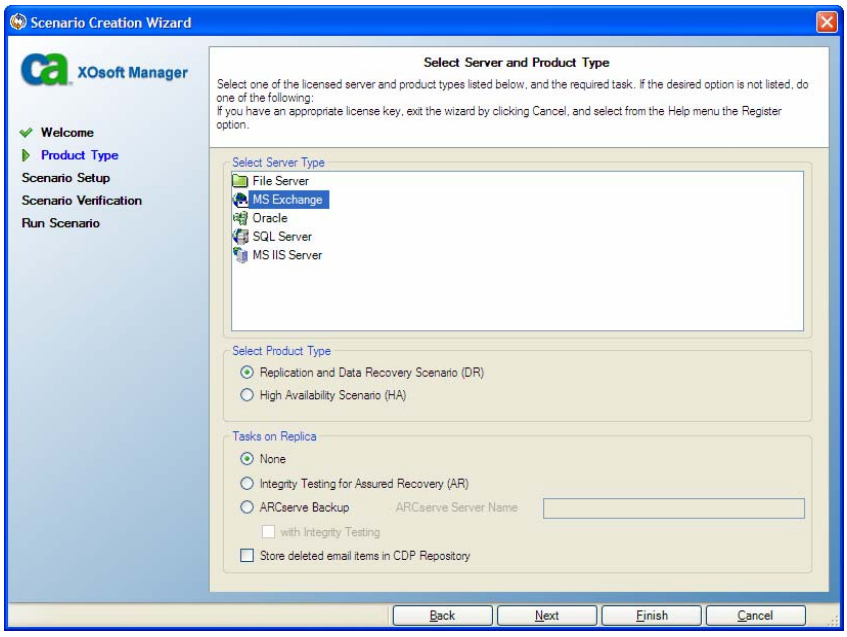
To create a new scenario

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 is displayed:



   A list of available applications and scenario types are presented.

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

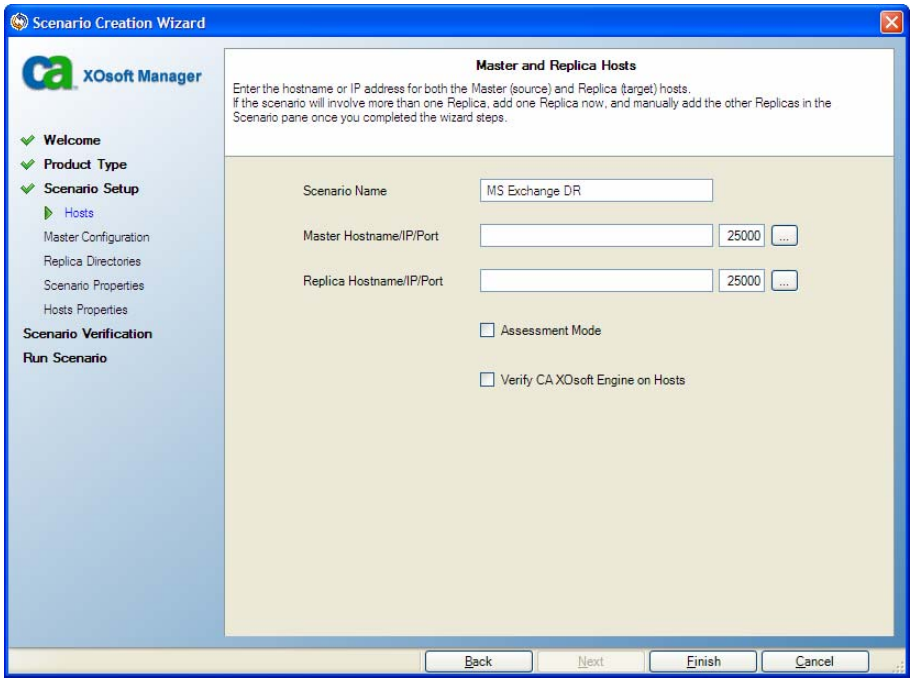
Select the required scenario options, as follows:

- From the **Select Server Type** list, select **MS Exchange**.
- From the **Select Product Type** options, select **Replication and Data Recovery Scenario**.
- [Optional – as 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.

Notes:

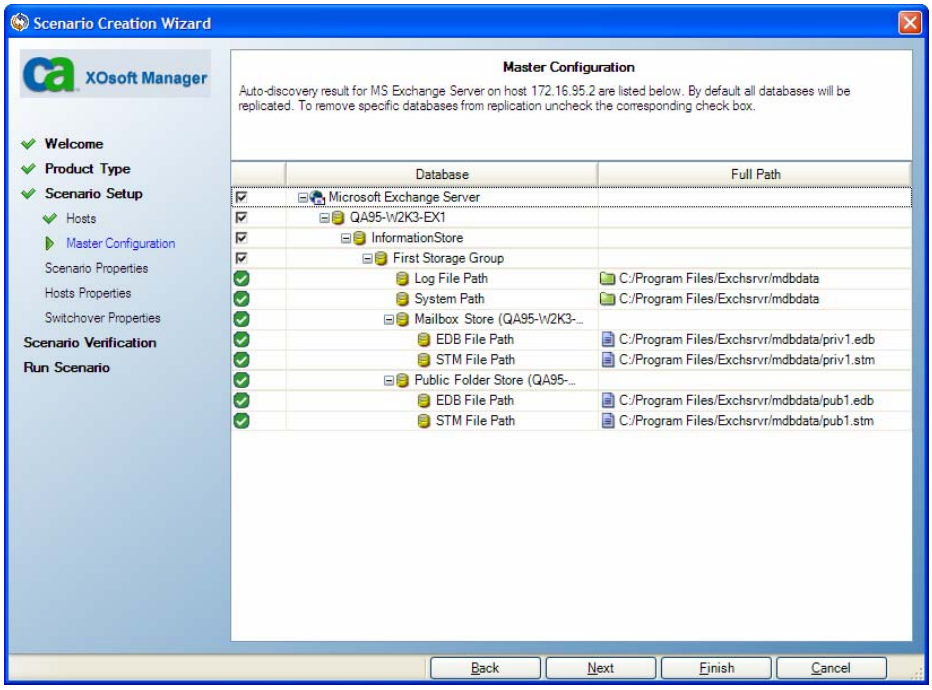
– If either server is a MSCS cluster, enter the Exchange Virtual Server Name or IP address as the Master and/or Replica name (instead of the physical node's name/IP).

– 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 **Assessment Mode** check box – verify that it is NOT selected.
- 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. After you selected the desired options, click **Next**. The **Master Configuration** page appears:

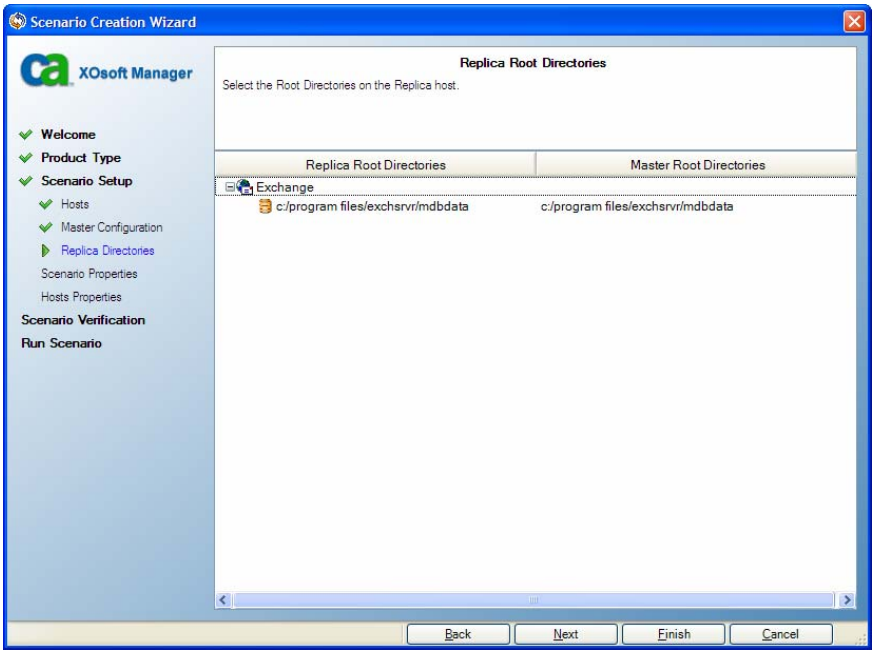
7. Click **Next**. The **Master Configuration** page appears:



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.

8. 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.

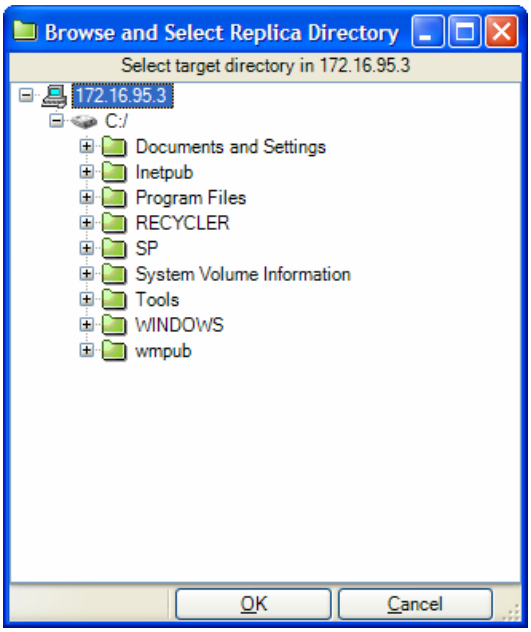
9. Click **Next**. The **Replica Root Directories** page appears:



In this page you select the directories on the Replica where the replicated data will be stored.

Important! The Scenario Creation Wizard automatically configures the Replica root directories to be the same as the Master root directories. If you want to keep this configuration, ensure that your Replica server has the same drive letters as the Master server, and that the selected directories on the Replica do not contain data you want to save. You can change the default configuration at a later stage, using the Root Directories tab in the Framework pane.

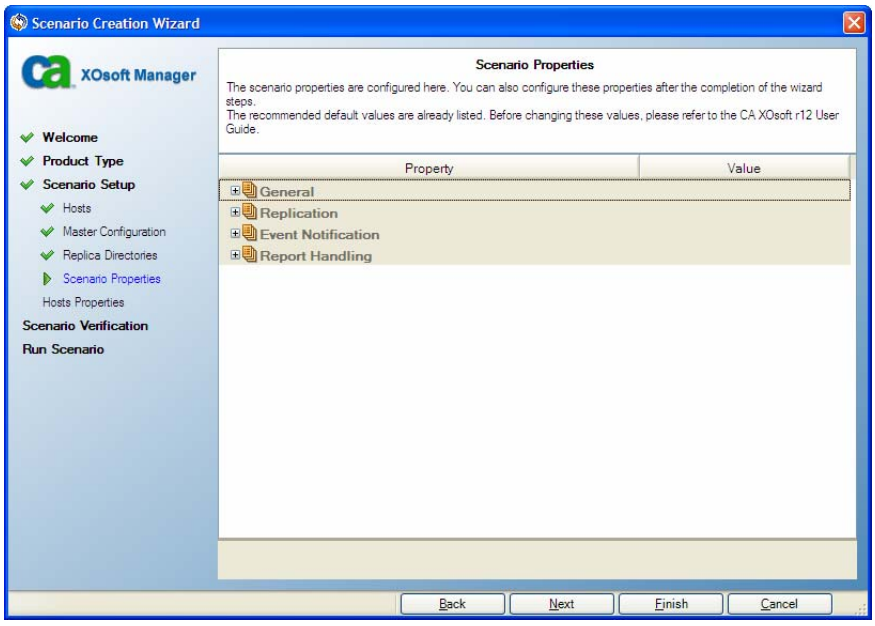
10. To change the Replica root directories, double-click the specified directories path. The **Browse and Select Replica Directory** appears:



11. Select the directory on the Replica in which the replicated data will be stored, and click **OK**.

You return to the **Replica Root Directories** page.

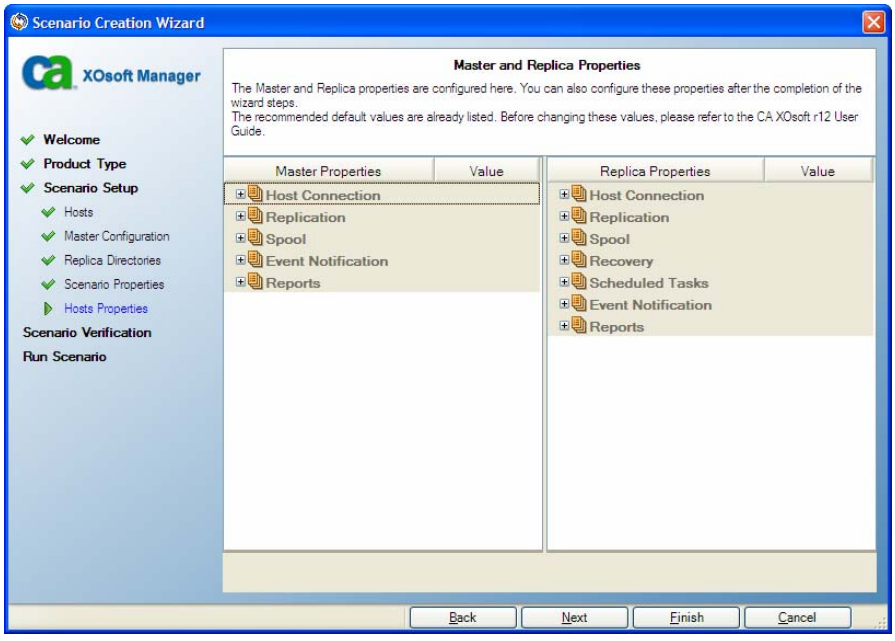
12. After defining the storage location of the replicated data, click **Next**. The **Scenario Properties** page appears:



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.

13. 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**

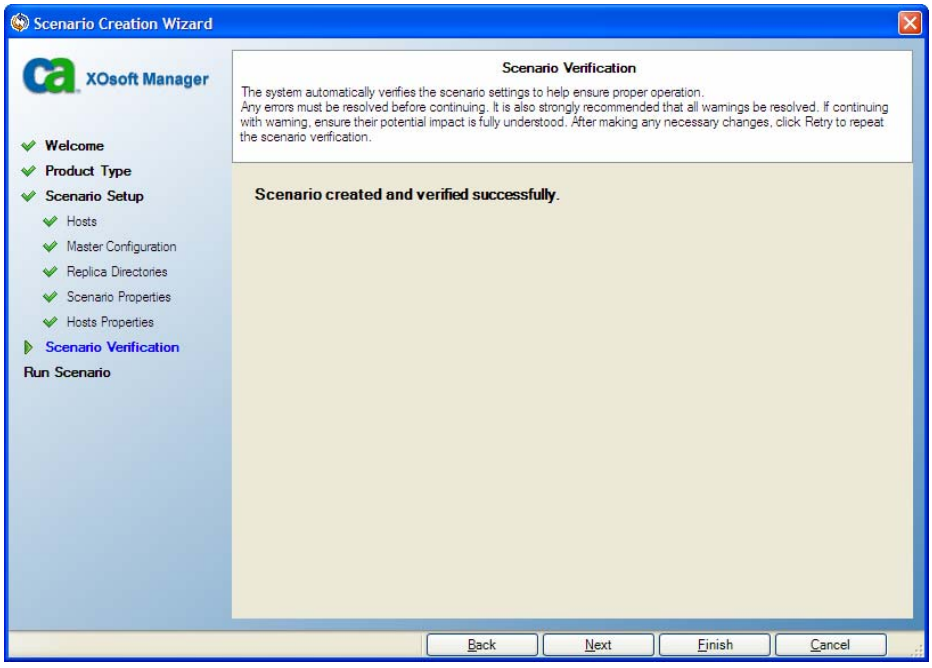
  The CA XOsoft spool is a folder on disk where data to be replicated is temporarily stored (that is, spooled). The spool parameters, located in the Properties tab (on both Master and Replica) or set with the Scenario Creation Wizard, determines how much disk space is available for the spool. In most cases 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.

If you want to activate the Data rewind option, so you can later recover lost data from the Replica by using rewind points (for further details see *Data Rewind, page 31*), on the **Replica Properties** list, under the **Recovery** group, set the **Data Rewind** option to On.

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

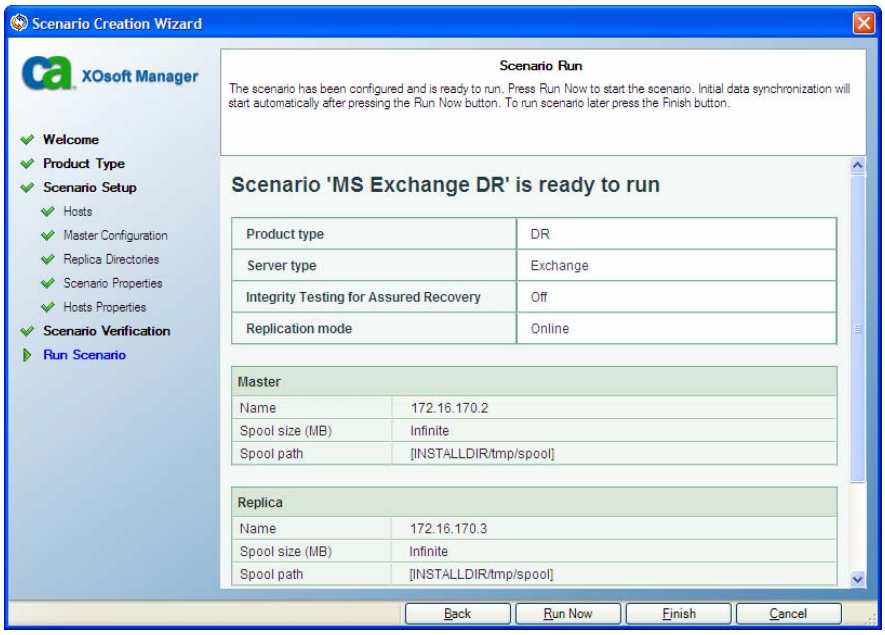
    CA XOsoft verifies the validity of the new scenario and checks many different parameters between the Master and Replica servers to ensure a successful Disaster Recovery. Once the verification is completed, the **Scenario Verification** page appears:



Note: Although the software 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.

15. If the scenario is verified successfully, click **Next**.

    The **Scenario Run** page appears:

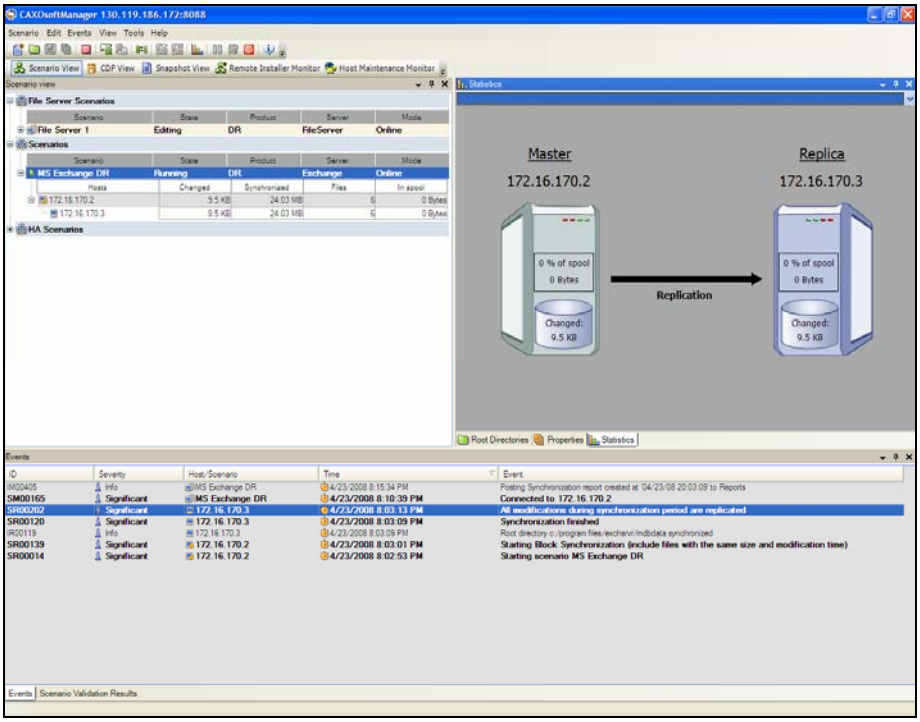


16. After the scenario is verified, you are prompted to run it. Running the scenario starts the data synchronization process.

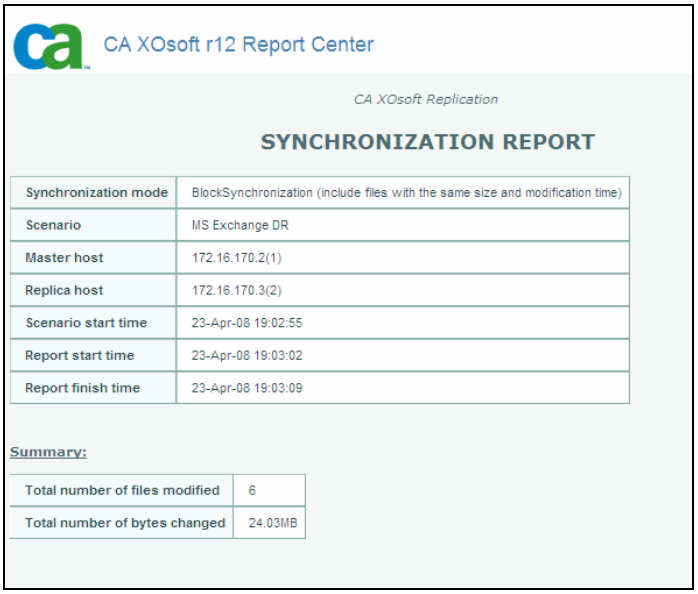
    - To finish the scenario creation and run it later, select **Finish**.
    - To run the scenario now, click **Run Now**.

      The synchronization process starts.

17. 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 period are replicated**. At this point, real-time replication is operational and the Disaster Recovery solution is installed and active:



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



CA XOsoft r12 Report Center

CA XOsoft Replication

SYNCHRONIZATION REPORT

Synchronization mode	BlockSynchronization (include files with the same size and modification time)
Scenario	MS Exchange DR
Master host	172.16.170.2(1)
Replica host	172.16.170.3(2)
Scenario start time	23-Apr-08 19:02:55
Report start time	23-Apr-08 19:03:02
Report finish time	23-Apr-08 19:03:09

Summary:

Total number of files modified	6
Total number of bytes changed	24.03MB

Note: For more information about viewing reports, see *Viewing a Report* page 24.

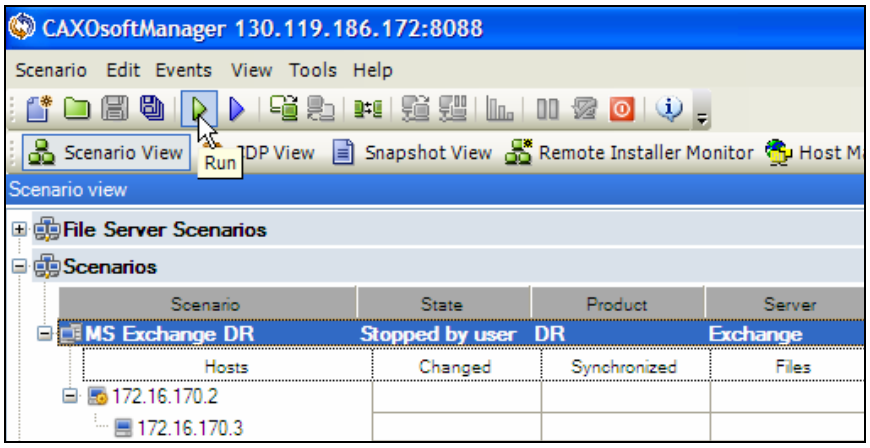
Start a Scenario

After you create a scenario, you need to run it to start the replication process. 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.

Note: In order for the replication process to succeed, verify that the user under which the CA XOsoft Engine is running has Read permission on the Master, and Read and Write permissions on each replication root directory and included files, and on all participating Replica hosts.

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:



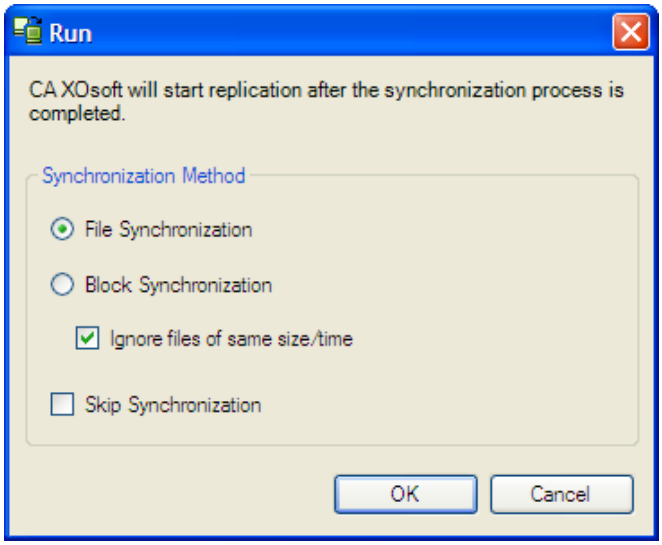
CA XOsoft verifies the scenario before running it.

3. If the scenario was not set up correctly or problems occurred in the participating hosts, errors are reported on the Event pane.

Notes:

- If any errors are displayed, you cannot run the scenario. These errors must be corrected before you can start the replication process.
- 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.

4. When no error is reported, the **Run** dialog appears:



The **Run** dialog contains the synchronization options.

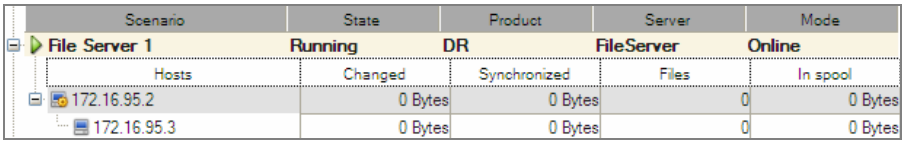
Note: In general, the default values are the most appropriate choice.

5. For Exchange Server, we recommend you to select **Block Synchronization** as the synchronization method, and to 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.

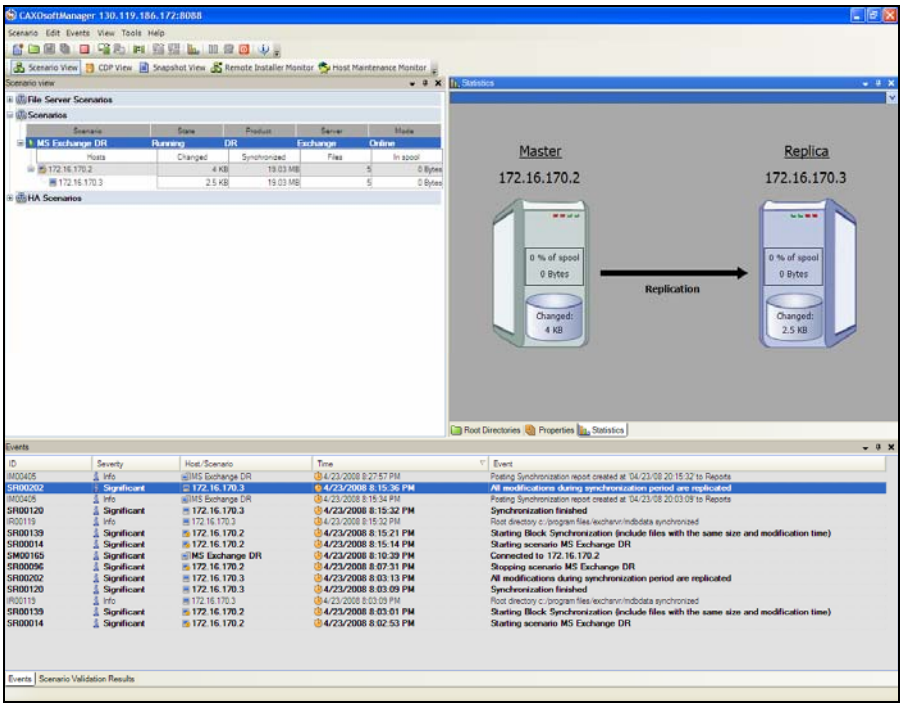
Note: If the user credentials you used to log in to the Manager are different than the ones required for working with the Engine on the Replica, a **User credentials** dialog appears, asking you to enter log on account details for the selected Replica.

The Manager now indicates that the scenario is running via the green play symbol to the left of the scenario, and via the scenario's state which turns into **Running**:



Scenario	State	Product	Server	Mode
File Server 1	Running	DR	FileServer	Online
Hosts	Changed	Synchronized	Files	In spool
172.16.95.2	0 Bytes	0 Bytes	0	0 Bytes
172.16.95.3	0 Bytes	0 Bytes	0	0 Bytes

6. Once a scenario is running, a Statistics tab appears at the bottom of the Framework pane, displaying a graphical view of the replication:



7. By default, once synchronization occurs, a Synchronization Report is generated. To view the report, refer to *Viewing a Report*, page 24.

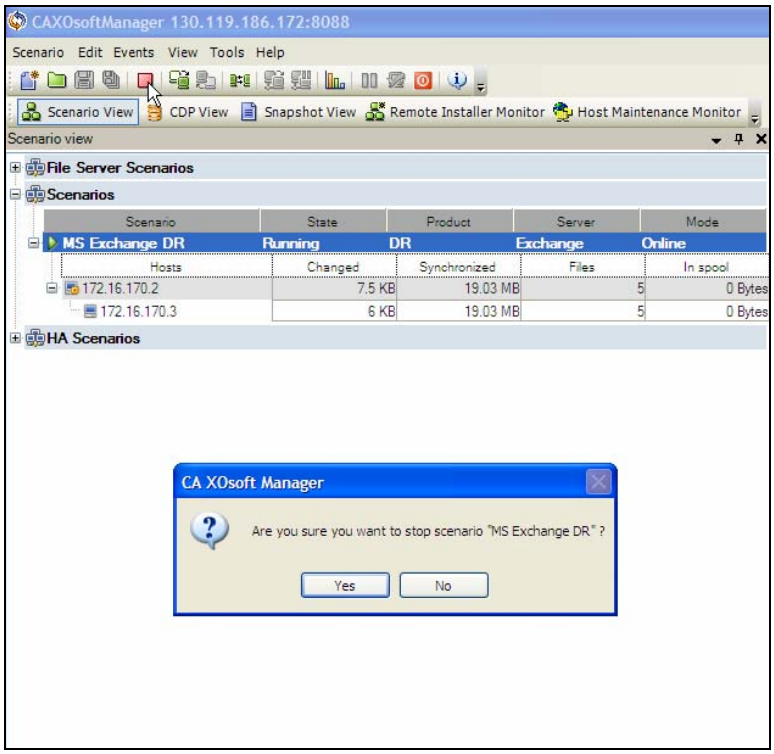
   Note: You can also generate a Replication Report on a regular basis to monitor the replication process on each participating server. For more information, see *CA XOsoft r12 User Guide.*

Stop a Scenario

To stop a scenario

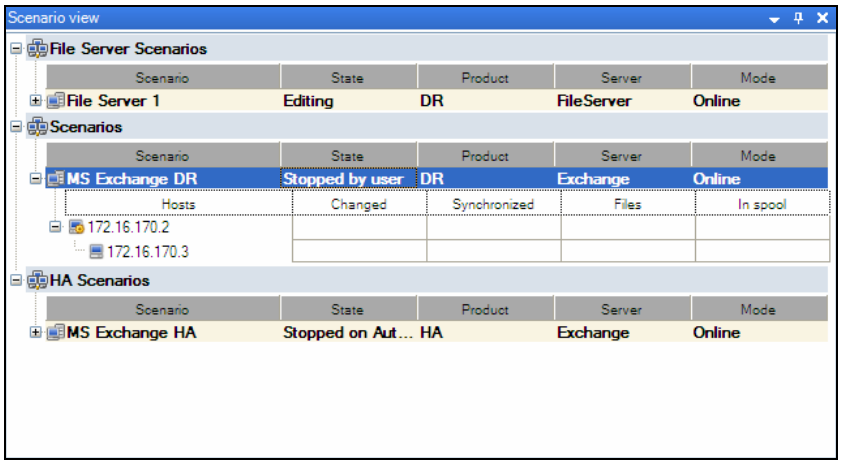
1. From the Scenario pane, select the scenario you want to stop.
2. To stop the scenario, click the **Stop** button on the Standard toolbar.

   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*

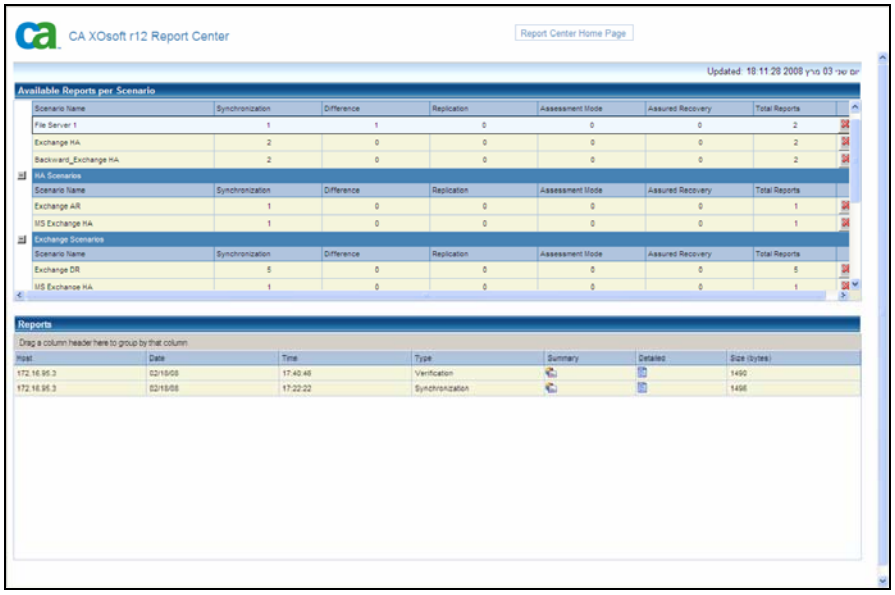
To view a report

4. 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**.

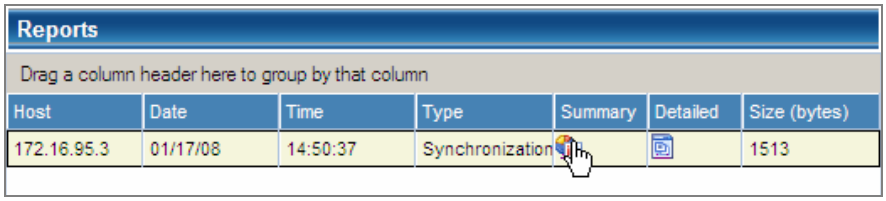
   The Report Center opens in a new window:



The Report Center consists of two tables:

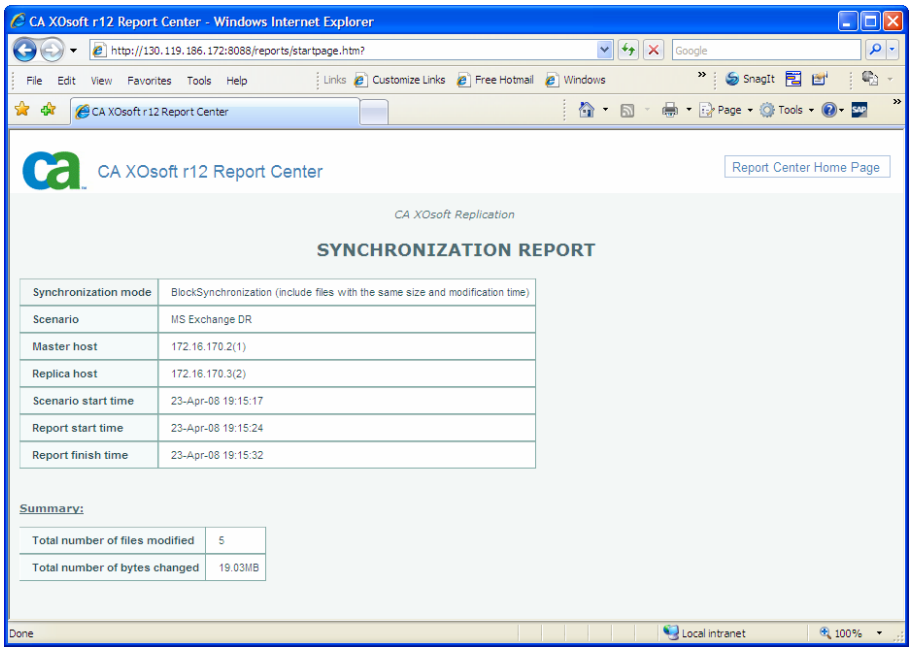
- The upper table - **Available Reports per Scenario** – contains a list of all scenarios that have reports, along with the type and number of available reports for each scenario.
- The lower table – **Reports** – contains a list of all the reports that are available for the scenario selected in the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

5. 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: Data Recovery

This chapter describes how to restore lost data using CA XOsoft Manager, how to set bookmarks and how to rewind data.

The Data Recovery Process

When an event causes loss of Master data, the data can be restored from any Replica. The recovery process is in fact a synchronization process in the reverse direction - from a Replica to the Master.

CA XOsoft enables you to either recover all lost data from the Replica to the Master, or to recover data only from a certain event or point in time to a previous valid state. The latter option, called Data Rewind, is similar to an undo action. It is useful in cases in which corrupted data on the Master was replicated to the Replica, and you want to restore the data to its previous state before the corruption occurred. The rewind process is done using time-stamped checkpoints and user-defined bookmarks.

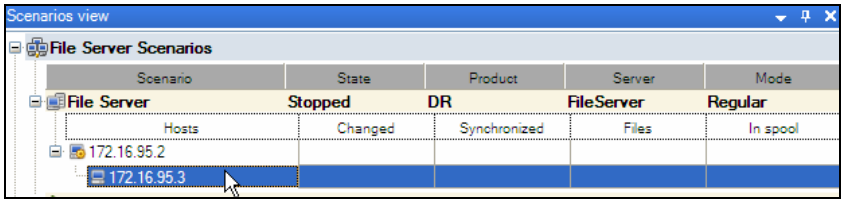
Important! You must stop replication in order to initiate recovery.

Recover Lost Data from Replica

Recover all lost data from a Replica

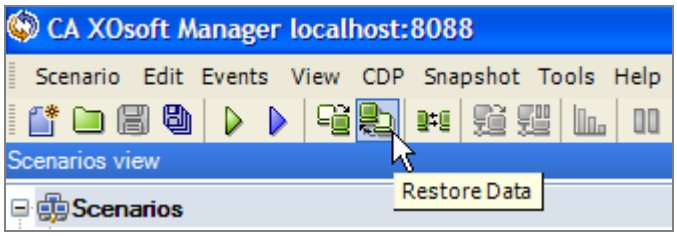
1. On the Manager, from the Scenario pane select the desired scenario and stop it.
2. On the Master host, stop the database services.
3. On the Manager, from the scenario folder select the Replica host:

   Note: If multiple Replica servers participate in the required scenario, select the Replica from which you want to recover data.

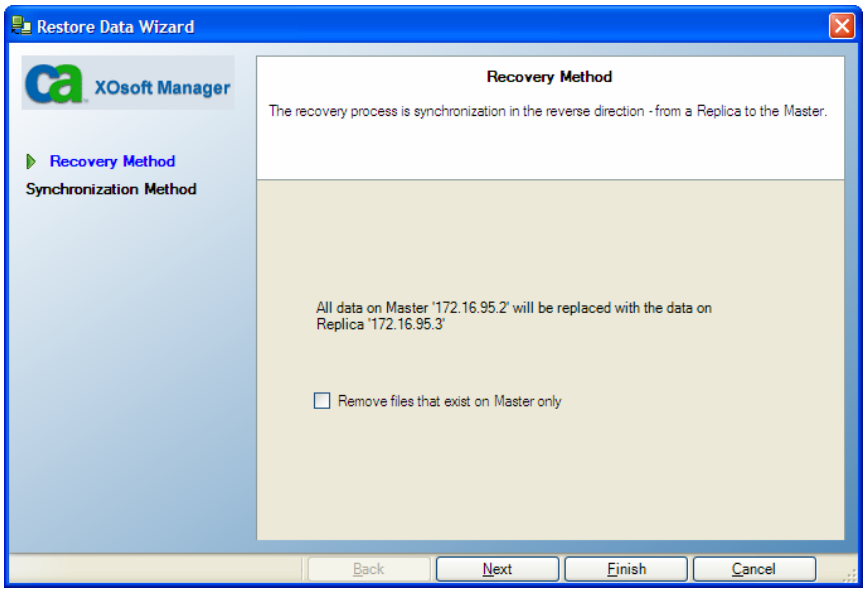


   The **Restore Data** option is enabled.

4. From the **Tools** menu, select **Restore Data**, or click the **Restore data** button on the Standard toolbar:

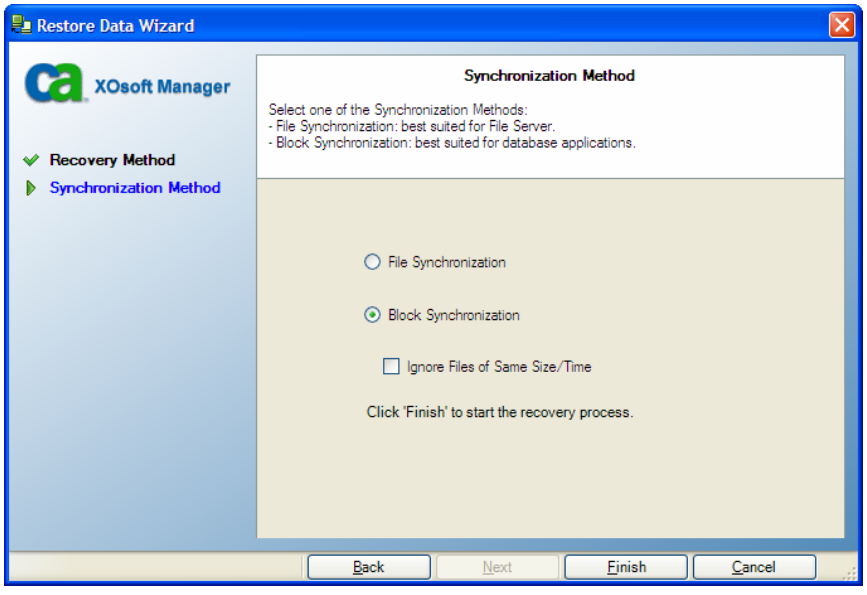


The **Recovery Method** page of the Restore Data wizard appears:



Note: If the Data Rewind property is set to On, another Restore Data dialog will appear (see step 4, page 32). In this case, select the first option – **Replace all data on Master with the data on Replica**.

5. Click **Next**. The **Synchronization Method** page appears:

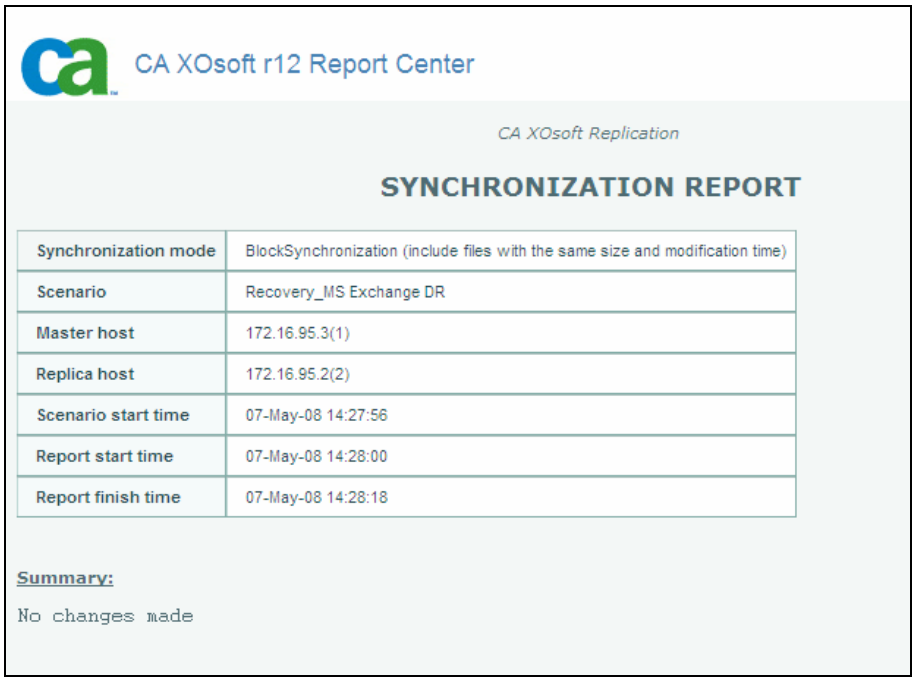


6. Make sure that the **Block Synchronization** method is selected, and click **Finish.**

   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.

   Once you finished initiating the recovery process, CA XOsoft builds a temporary reverse tree using the selected Replica as the root, and the Master as the terminating node. After the Master recovery process ends, the temporary scenario is deleted, and you receive the following message in the Event pane: **Recovery process has finished**.

7. By default, once a data recovery occurs a Synchronization Report is generated:



CA XOsoft r12 Report Center

CA XOsoft Replication

SYNCHRONIZATION REPORT

Synchronization mode	BlockSynchronization (include files with the same size and modification time)
Scenario	Recovery_MS Exchange DR
Master host	172.16.95.3(1)
Replica host	172.16.95.2(2)
Scenario start time	07-May-08 14:27:56
Report start time	07-May-08 14:28:00
Report finish time	07-May-08 14:28:18

Summary:

No changes made

   Now, the replication process can restart following the original scenario.

Setting Bookmarks

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

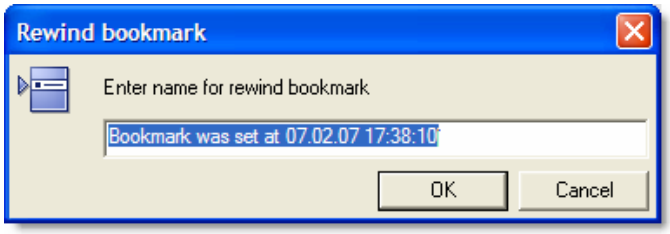
Notes:

- You can use this option only if you set in the Replica Properties list the **Recovery – Data Rewind** option to **On** (see page 16).
- You can not set bookmarks during the synchronization process.

To set a bookmark

1. When the required scenario is running, select from the **Tools** menu the **Set Rewind Bookmark** option.

   The **Rewind bookmark** dialog appears:

   The text that appears in the **Rewind bookmark** dialog will appear in the **Rewind Points Selection** dialog as the bookmark's name (see step 7, page 33). The default name includes date and time.

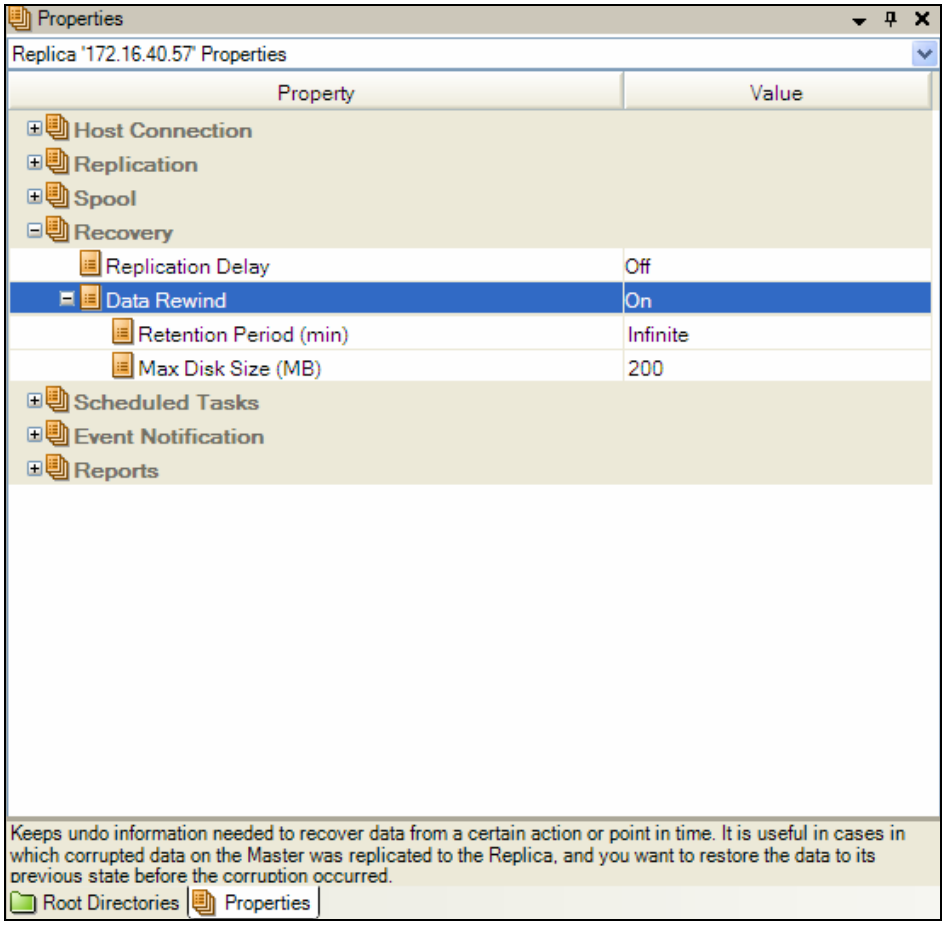
2. Accept the default name, or enter a new name for the bookmark. We recommend giving a meaningful name that will later help you recognize the required bookmark. Then, click **OK**.

   The bookmark is set.

Data Rewind

The Data Rewind recovery method allows you to rewind data to a point in time before it was corrupted. The rewind process takes place on the Replica server before the reverse synchronization process starts. The Data Rewind method uses rewind points or bookmarks that enable you to reset the current data back to a previous state.

You can use this option only if you set the **Recovery – Data Rewind** option to **On**:



Note: You can either configure the **Data Rewind** property during the scenario creation, as described on page 16, or at a later stage using the Properties tab on the Framework pane.

If this property is set to Off, the system will not register data rewind points.

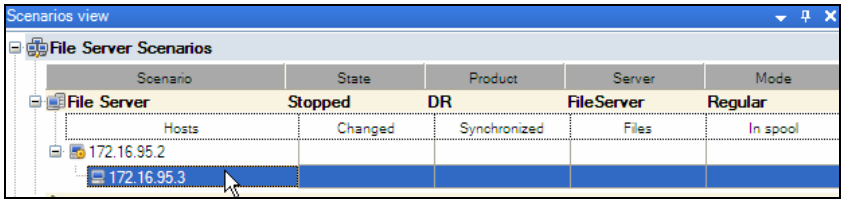
Important! The data rewind process operates in one way only – there is no replay forward. After rewind, all data subsequent to the rewind point will be lost, since data after the rewind point will be overwritten with new data.

Note: The automatic registration of the rewind points starts only after the synchronization process is completed, and the message **All modifications during synchronization period are replicated** appears on the Event pane. Similarly, you can not manually set bookmarks during synchronization.

Recovering lost data using rewind points

1. On the Manager, from the Scenario pane select the desired scenario and stop it.
2. On the Master host, stop the database services.
3. On the Manager, from the scenario folder select the Replica host:

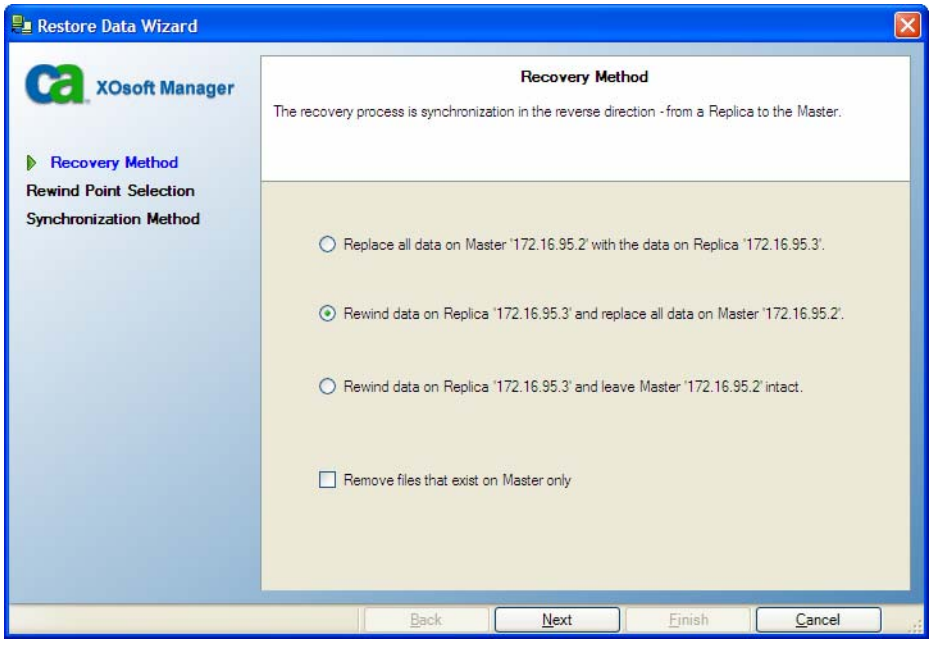
   Note: If multiple Replica servers participate in the required scenario, select the Replica from which you want to recover data.



   The **Restore Data** option is enabled.

4. From the **Tools** menu, select **Restore Data**, or click the **Restore Data** button.

   The **Recovery Method** page of the Restore Data Wizard appears:

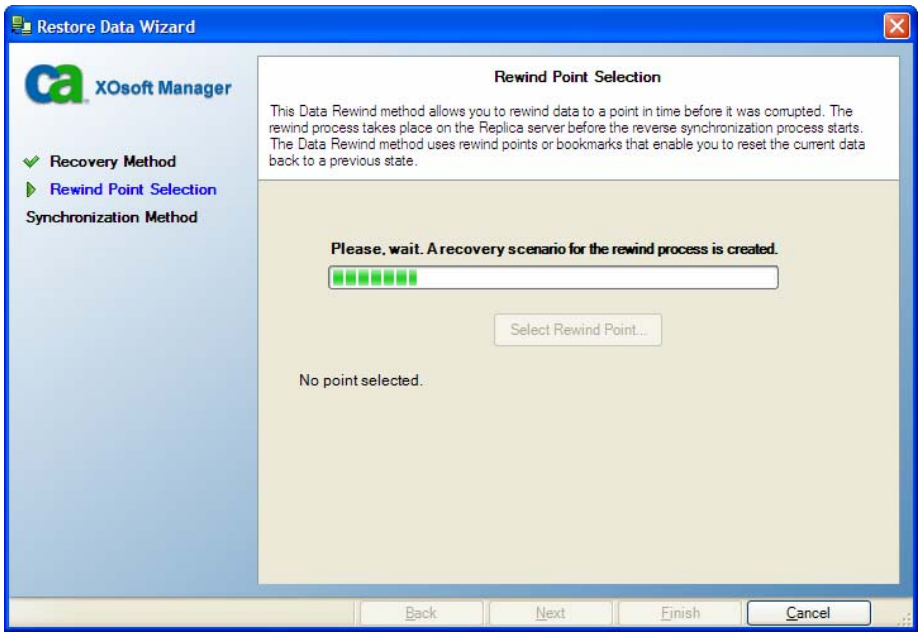


5. Select one of the Rewind data options, depending on whether you want the rewind data synchronized back to the Master (option 2) or left on the Replica only (option 3).

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.

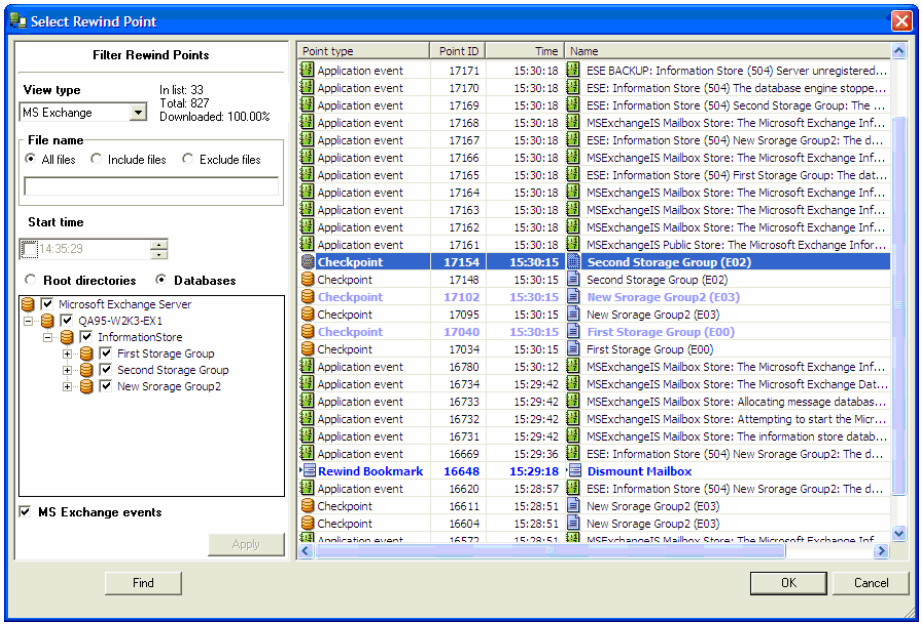
After you select a Rewind data option, a Recovery scenario is automatically created. This Recovery scenario will run until the end of the rewind process.

6. Click **Next**. The **Rewind Point Selection** page is displayed:



7. Wait until the **Select Rewind Point** button is enabled, and click it to view the existing rewind points.

The **Select Rewind Point** dialog appears:



The **Select Rewind Point** dialog displays a list of all rewind points. These include: storage group modifications, removals, events, etc.; events from the application log that are related to the selected scenario; bookmarks. The purple checkpoints indicate the last action that was preformed on a certain storage group.

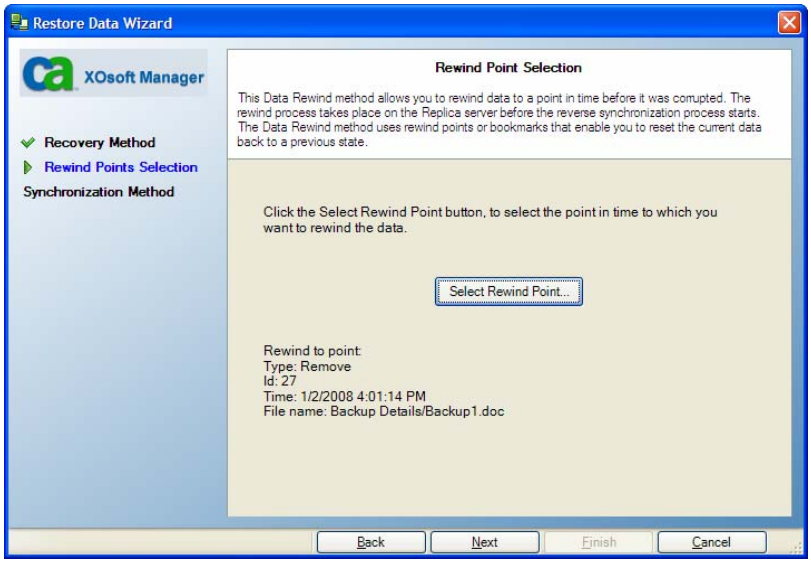
The list can be filtered according to the rewind point type or other criteria, using the **Filter Rewind Points** pane on the left.

Note: If the Select Rewind Points dialog is empty, make sure that the Data Rewind property is enabled. See page 31.

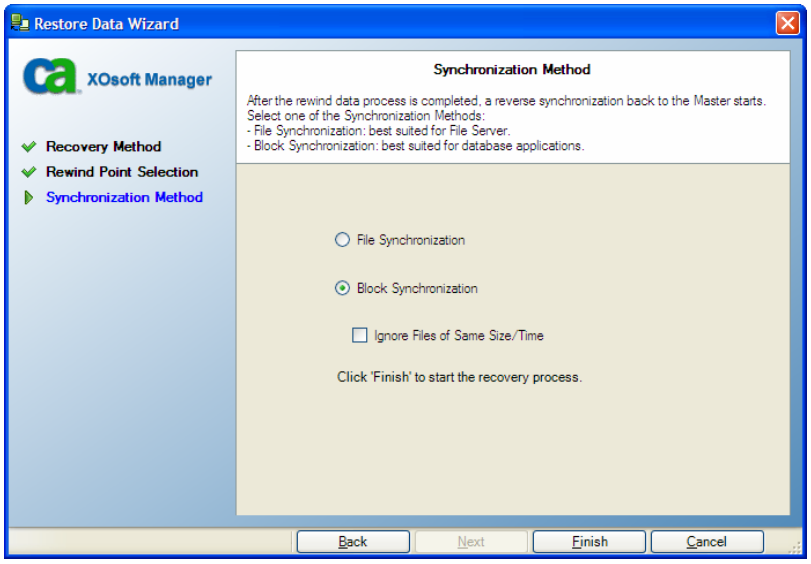
8. Select the required rewind point, and click **OK.**

Note: If you want to use a Bookmark as the rewind point, it is best practice to select the closest rewind point that indicates an actual event.

You return to the **Rewind Point Selection** page, now displaying information about the rewind point you selected:



9. Click **Next**. The **Synchronization Method** page is displayed:



10. Select the **Block Synchronization** method and click **Finish**.

    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.

    CA XOsoft rewinds the data to the point you selected. After the rewind process ends, you receive the following message in the Event pane: **Rewind process is completed successfully**.

    If you chose to replace the data on the Master with the data on the Replica, CA XOsoft starts a synchronization process from the Replica to the Master. Once the process ends, the temporary Recovery scenario is stopped and then deleted.

11. By default, once a data recovery occurs a Synchronization Report is generated.

    Now, the Replication process can restart on the original scenario.

Chapter 4: Additional information & Tips

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

- 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.*

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