

# **CA XOsoft™ Replication for Windows**

**VMware vCenter Server Operation Guide**  
**r12.5**



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## CA Product References

This document references the following CA products:

- CA XOssoft™ Replication
- CA XOssoft™ High Availability (HA)
- CA XOssoft™ Assured Recovery
- CA XOssoft Continuous Data Protection (CDP)

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**Note:** CA XOssoft is sold in Japan under the names, CA ARCserve Replication and CA ARCserve High Availability.



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# Chapter 1: Introduction

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This document outlines a disaster recovery solution for vCenter, based on replication to a local or remote replica server. In case of a critical failure where it is not possible to simply make the vCenter data available again immediately (due to server crash, or worse - total site disaster), it is possible to recover from the backup server or to switch your users to the replica (backup) vCenter server and resume operation in minimum time.

The goal is to provide a step-by-step guide to the procedures that must be carried out before and after failure, in order to achieve successful disaster recovery of your vCenter server.

**Important!** CA XOsoft provides reliable vCenter disaster recovery. However, since recovery is a manual process, you must follow the steps in this guide exactly to be successful. You should customize the steps listed in this guide only if:

1. You are very familiar with CA XOsoft and fully understand the potential impact.
2. You have fully tested the steps in a lab environment before implementing in a production environment.

For a fully automated solution, please review the *CA XOsoft HA for vCenter Operation Guide*.

This section contains the following topics:

[About This Guide](#) (see page 7)

[Related Documentation](#) (see page 8)

[Server Requirements](#) (see page 8)

[vCenter Server Replica Configuration](#) (see page 12)

## About This Guide

This document describes how to implement a Disaster Recovery solution for vCenter 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 the *CA XOsoft Installation Guide* and the *CA XOsoft User Guide*.

## Server Requirements

To implement CA XOsoft or CA XOsoft HA, refer to the appropriate list of requirements, depending on the server type you selected. These components are licensed separately. If you do not have the license required to access support for a specific server type, please contact Tech Support.

## vCenter Server Configuration Requirements

- Install the same vCenter Server components on the Master to the Replica. Install the CA XOsoft Engine on every vCenter Server.
  - Both servers should reside in the same Active Directory forest and be members of the same domain or trusted domains.
  - Because Database Server deployment can be distributed, perform one of the following:
    - If Database Server is installed on the same machine as the Master, configure vCenter Server on the Replica to connect to the Database Server on the Replica so that vCenter Server can still use Database Server in the event of a switchover. When the database is installed locally, CA XOsoft HA depends upon the database HA scenario for a successful implementation. Please follow the requirements in the Oracle or Microsoft SQL Operation Guides to ensure database protection.
    - If Database Server is installed on a different machine than Master (distributed deployment), configure vCenter Server on the Replica to connect to the same Database Server to which the Master is connected, so that after a switchover, vCenter Server is still using the original Database Server.
- Note:** For distributed database deployment, use CA XOsoft HA for SQL or Oracle to protect it. See the appropriate Operation Guide for more details.
- Because License Server deployment can be distributed, perform one of the following:
    - If License Server (A) is installed on Master, install another instance of License Server (B) on the Replica and specify the B instance as the License Server for the vCenter Server on the Replica.
    - If License Server (A) is installed on a different machine than Master, specify the first instance (A) as License Server for the vCenter Server running on the Replica.

Note: For distributed License Server deployment, the License Server cannot be protected in CA XOsoft HA scenarios.

## Log On Account Conditions

The CA XOsoft Replication and CA XOsoft HA Engine service must satisfy certain account conditions for successful communication with other components. If these requirements are not met, scenarios may not run. If you lack the permissions required, contact your local IS team.

- It is a member of the Domain Admins group. If the Domain Admins group is not a member of the built-in domain local group Administrators you must use an account that is.
- It is a member of the local machine Administrators Group. If the Domain Admins group is not a member, add the account manually.
- For servers in a workgroup, use the Local System account.
- Master and Replica servers must reside in the same Active Directory forest.

## License Registration

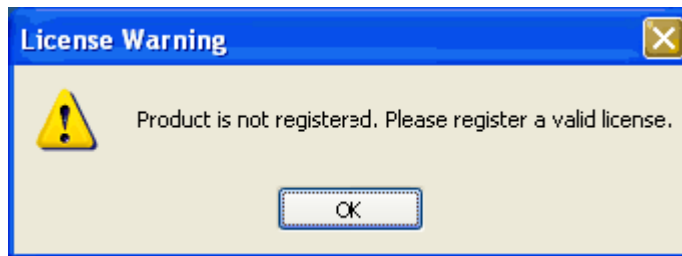
CA XOsoft licensing policy is based on a combination of several parameters, which include: the operating systems involved, the required solution, the supported application and database servers, the number of participating hosts, and the additional modules - Assured Recovery and CDP Repository. The license key that is generated for you is therefore tailored to your exact needs.

After logging in for the first time, or if your old license has expired, you need to register CA XOsoft product using your license key. To register the product, you need to open CA XOsoft Manager, which does not depend on the existence of a valid registration key. Once the Manager opens, a License Warning message appears, prompting you to register the product. A License Warning message also appears when your license is about to expire during the next 14 days.

When you are creating a scenario, some of the options might be disabled following the terms of your license. However, you can create as many scenarios as you wish, since the validity of your license key is first checked when you try to run a specific scenario. Only when you click the **Run** button, the system checks whether you are allowed to run the selected scenario according to your license key. If the system determines that you do not have the required license for running this scenario, the scenario will not run and a message will appear on the Event pane informing you of the type of license you need.

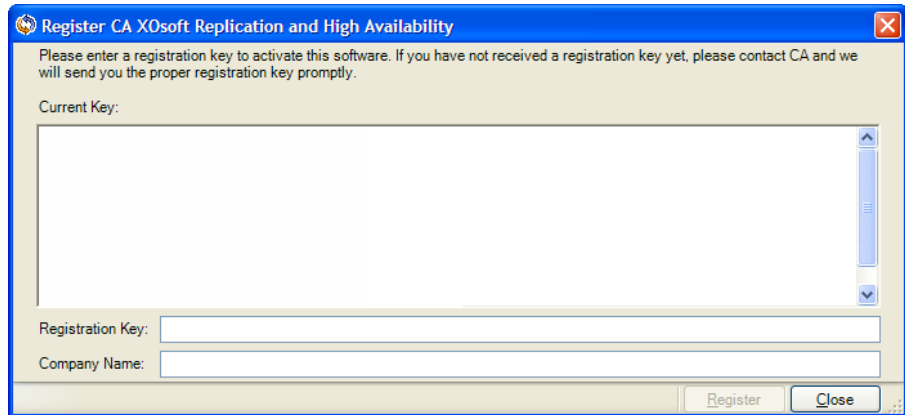
### To register CA XOsoft using the license key

1. Open the Manager. The **Welcome** message appears. Then, a **License Warning** message appears informing you that your product is not registered and prompting you to register it.



2. Click **OK** to close the message. Then, open the **Help** menu and select the **Register** option.

The **Register CA XOsoft Replication and High Availability** dialog opens.



3. Enter the following information:
    - In the **Registration Key box** - enter your registration key.
    - [Optional] **Company Name box** - enter your company name
  4. Click the **Register** button to register the product and close the dialog.
- Now you can start working with the CA XOsoft Manager according to your license permissions.

## vCenter Server Replica Configuration

### For vCenter Server:

- Install vCenter components identically on Master and Replica servers.
- If you are using distributed database deployment, configure vCenter server on the Replica to connect to the same Database Server configured for Master. If you are using local database deployment, configure vCenter server on the Replica to connect to the Database Server configured on the Replica.
- Configure vCenter server on Replica to connect to License Server: If License Server is installed locally to the Master server, you must install another instance of License Server on the Replica and specify this instance in VirtualCenter on the Replica. If the License Server is installed remotely to the Master, specify that instance in vCenter on the Replica.
- Install the CA XOsoft Engine on every vCenter server.

**Note:** For distributed database deployment, protect the database using CA XOsoft for SQL Server or Oracle, as appropriate. Refer to the Operation Guide for more information. For distributed License Server deployment, the License Server cannot be protected in CA XOsoft scenarios.

# Chapter 2: Creating and Using Scenarios

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This section describes how to create and use disaster recovery scenarios.

This section contains the following topics:

[Create New vCenter Replication Scenario](#) (see page 14)

[Run a Scenario from Outside the Wizard](#) (see page 16)

[View a Report](#) (see page 17)

[Stop a Disaster Recovery Scenario](#) (see page 20)

## Create New vCenter Replication Scenario

vCenter application data is file-based and is auto-discovered during CA XOssoft scenario creation.

### To create a new vCenter disaster recovery scenario

1. Open CA XOssoft Manager and choose Scenario, New or click the New Scenario button to launch the Scenario Creation wizard.

The Welcome dialog opens.

2. Choose Create a New Scenario, select a Group Name and click Next.

The Select Server and Product Type dialog opens.

3. Select vCenter, Replication and Disaster Recovery Scenario (DR) and click Next.

**Note:** If you wish to specify Tasks on Replica, see the CA XOssoft User Guide for more information.

The Master and Replica Hosts dialog opens.

4. Type a Scenario Name, enter the Hostname or IP Address and Port number for both Master and Replica servers, enable the Verify CA XOssoft Engine on Hosts option and then click Next.

Wait for Engine Verification to complete.

5. Click Install to upgrade the Engine service on one or both servers, if necessary, and then click Next.

The Master Configuration dialog opens.

6. If your vCenter database is SQL Server, discovery results are shown in the DB tree. If your vCenter database is Oracle, you are prompted for Database Connection credentials. Provide the required information and click OK.

Clear or check components for disaster recovery, as desired, and then click Next.

The Scenario Properties dialog opens.

7. Set the desired properties as described in the CA XOssoft User Guide and click Next.

The Master and Replica Properties dialog opens.

8. Set the desired properties and click Next.

Wait for Scenario Verification to complete.

9. Resolve any warnings or errors reported at Verification and then click Next.

The Scenario Run dialog opens.


10. Click Run Now to initiate replication and activate the scenario or click Finish to run the scenario later.

## Run a Scenario from Outside the Wizard

After you create a scenario, you need to run it to start the replication process. Normally, before changes to data on the Master can 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, 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.

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.

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

3. From the Run screen, select the following and then click OK:
  - **Synchronization Method** -- For database applications, Block Synchronization is usually best but for File Servers or other applications with large numbers of small files, choose File Synchronization. See the CA XOsoft User Guide for more information.
  - **Ignore files of same size/time** -- Disable this option for database applications. Enable this option for File Server applications to speed up the comparison process and reduce overall synchronization time. See the CA XOsoft User Guide for more information.
  - **Skip Synchronization** -- Select this option only if you are certain that the data in the Master and Replica root directories is identical.

The Manager indicates that the scenario is running with a green play symbol to the left of the scenario, and with 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 sync
172.16.15.2	0 Bytes	0 Bytes	0	0 Bytes
172.16.15.3	0 Bytes	0 Bytes	0	0 Bytes

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

By default, once synchronization occurs, a Synchronization Report is generated. To view the report, refer to the topic, [Viewing a Report](#) (see page 17).

**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 XOssoft User Guide*.

## View a Report

CA XOssoft 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.

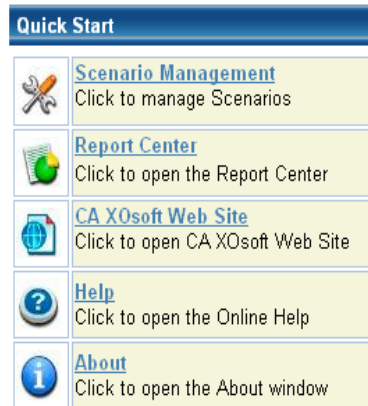
The default storage directory of the generated reports is:  
`[ProgramFilesFolder]\CA\XOssoft\Manager\reports`

## To view a report

**Note:** Though an Exchange report is shown for illustrative purposes, the steps and screens are similar regardless of scenario type.

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:



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

The Report Center opens in a new window:

The screenshot shows the 'CA XOssoft Report Center' window. At the top, it says 'Updated: Tuesday, December 09, 2008 1:32:09 PM'. Below this is a table titled 'Available Reports per Scenario'. The table has columns for Scenario Name, Synchronization, Difference, Replication, Assessment Mode, Assured Recovery, CDP, and Total Reports. It lists scenarios for SQL, Exchange, and FileServer. Below this table is another table titled 'Reports' with columns for Host, Changes, Date, Time, Type, Summary, Detailed, and Size (bytes).

Available Reports per Scenario							
<b>SQL</b>							
Scenario Name	Synchronization	Difference	Replication	Assessment Mode	Assured Recovery	CDP	Total Reports
SQL	1	0	0	0	0	0	1
Backward SQL	1	0	0	0	0	0	1
<b>Exchange</b>							
Scenario Name	Synchronization	Difference	Replication	Assessment Mode	Assured Recovery	CDP	Total Reports
Exchange-standalone	1	0	0	0	0	0	2
<b>FileServer</b>							
Scenario Name	Synchronization	Difference	Replication	Assessment Mode	Assured Recovery	CDP	Total Reports
FileServer	1	0	0	0	0	0	2

Reports							
Drag a column header here to group by that column							
Host	Changes	Date	Time	Type	Summary	Detailed	Size (bytes)

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.

3. 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:

Drag a column header here to group by that column							
Host	Changes	Date	Time	Type	Summary	Detailed	Size (bytes)
XORVEKCH2K7-1	Unknown	Today	03:29:37	Assured Recovery			811
XORVEKCH2K7-1	Changes found	12/07/08	22:29:48	Synchronization			28415

**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:


CA XOssoft Report Center
[Report Center Home Page](#)

CA XOssoft High Availability

## SYNCHRONIZATION REPORT

Synchronization mode	BlockSynchronization (include files with the same size and modification time)
Scenario	Scenario001
Master host	XDRWSECN2K7-2(1)
Replica host	XDRWSECN2K7-1(2)
Scenario start time	07-Dec-08 22:23:31
Report start time	07-Dec-08 22:23:41
Report finish time	07-Dec-08 22:29:48

Summary:


Total number of files modified	154
Total number of bytes changed	171.7MB

# Stop a Disaster Recovery Scenario

Stopping a scenario stops replication. It may be necessary to stop a scenario to make configuration changes, or perform system maintenance. You can also suspend replication, which is the process of temporarily halting updates on the Replica server. See the CA XOssoft User Guide for more information on replication suspension.

**Note:** In the following example, a Hyper-V scenario is used, but the steps are the same regardless of scenario type.

## 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.
- 3. A confirmation message appears prompting you to approve the scenario stopping. Click **Yes** to clear 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:

HyperV XORWHYPERV1				
Scenario	State	Product	Server	Mode
XORWHypVM1	Editing	DR	HyperV	Online
XORWHypVM2	Editing	HA	HyperV	Online
XORWHypVM1 1	Stopped by user	DR	HyperV	Online
Hosts				
XORWHYPERV1	Changed	Synchronized	Files	In pool
XORWHYPERV2				

# Chapter 3: Recovering Data

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This section contains the following topics:

[The Data Recovery Process](#) (see page 21)

[How to Restore Data on vCenter Machines](#) (see page 32)

## 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 recover data in two ways:

- Recover lost data from the Replica to the Master -- this option is a synchronization process in the reverse direction and requires you to stop the scenario. (This option is not recommended for Oracle, SQL or Exchange scenarios.)
- Recover lost data from a certain event or point in time (Data Rewind) -- This option uses a process of stamped checkpoints and user-defined bookmarks to roll corrupt data on the Master back to a time before corruption occurred.

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

## Recover Lost Data from Replica

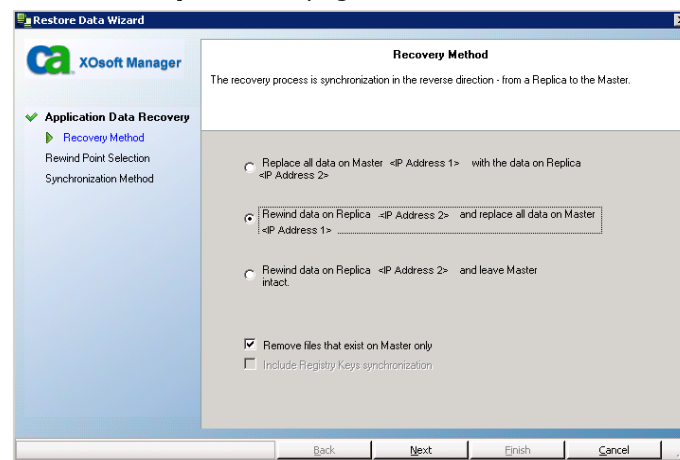
The following procedure is the same for all server types.

### To recover all lost data from a Replica

1. On the Manager, select the desired scenario from the Scenario pane and stop it.
2. (For database applications only) Stop the database services on the Master host.
3. On the Manager, select the Replica host from the scenario folder. If multiple Replicas participate in a scenario, select the one from which you wish to recover data. The Restore Data option is now enabled.
4. From the Tools menu, select Restore Data or click the Restore data from the Standard toolbar.

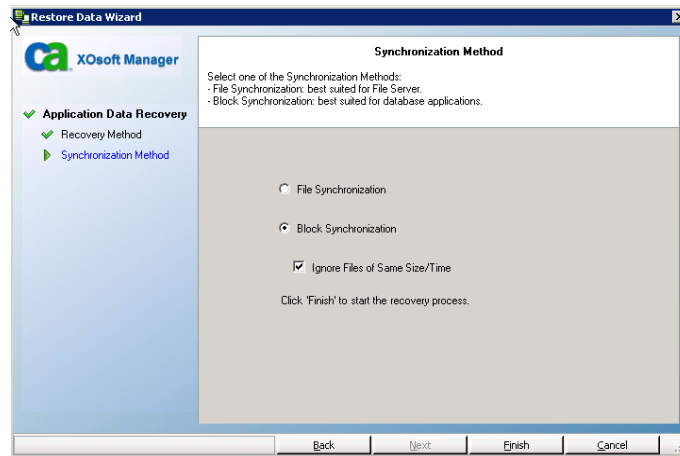
Note: If the user credentials you used to log in to the Manager are different than the ones required for working with the Engine on the Replica, a User Credentials dialog opens, asking you to enter logon account details for the selected Replica.

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. In this case, select the first option - **Replace all data on Master with the data on Replica**. This option simply restores data without a rewind.

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



6. Make sure that the appropriate Synchronization method is selected. For more details, see the CA XOSoft User Guide. Click **Finish**.

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: **Synchronization finished**.

**Note:** If an error occurred during the temporary Recovery scenario run, the Recovery scenario may stop and remain in the Scenario pane. In this case, you should remove it by right-clicking it and selecting the **Remove** option from the pop-up menu. After the Recovery scenario is removed, the original scenario re-appears in the Scenario pane. Then, you can restart the original scenario, and repeat the recovery process if necessary.

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

 CA XOssoft Report Center

Report Center Home Page

CA XOssoft High Availability

### SYNCHRONIZATION REPORT

Synchronization mode	BlockSynchronization (include files with the same size and modification time)
Scenario	Scenario001
Master host	XDRWSECN2K7-2(1)
Replica host	XDRWSECN2K7-1(2)
Scenario start time	07-Dec-08 22:23:31
Report start time	07-Dec-08 22:23:41
Report finish time	07-Dec-08 22:29:48

Summary:

Total number of files modified	154
Total number of bytes changed	171.7MB

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.

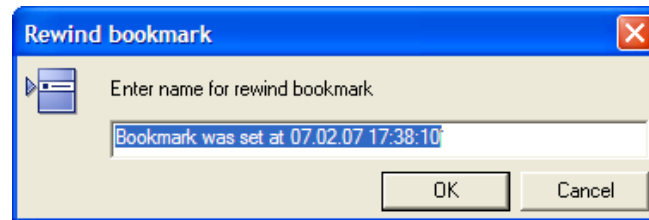
### Notes:

- You can use this option only if you set the **Recovery - Data Rewind** option to **On** (default setting is Off).
- You cannot set bookmarks during the synchronization process.

### To set a bookmark

1. When the required scenario is running, on the Scenario pane select the Replica host from which you want to rewind data.
2. From the **Tools** menu, select the **Set Rewind Bookmark** option.

The **Rewind bookmark** dialog opens.



The text that appears in the **Rewind bookmark** dialog will appear in the **Rewind Points Selection** dialog as the bookmark's name. The default name includes date and time.

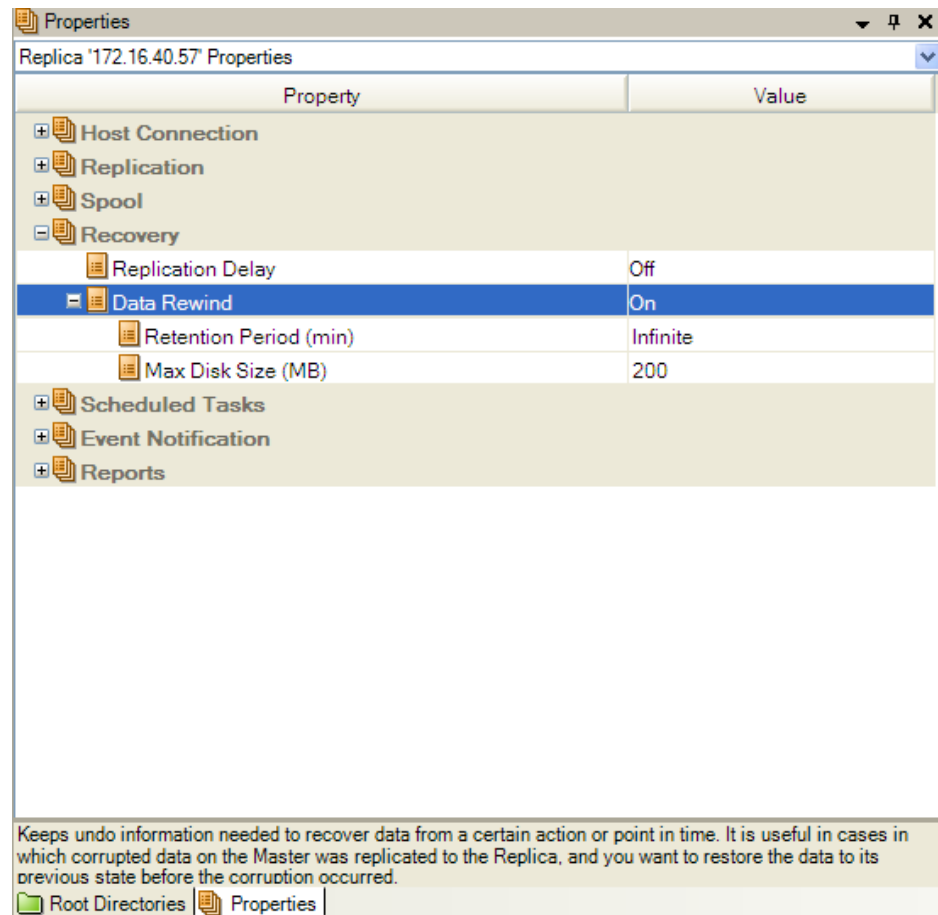
3. Accept the default name, or enter a new name for the bookmark. It is recommended to give a meaningful name that will later help you recognize the required bookmark. Then, click **OK**.

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**.



If this option is set to Off, the system will not register data rewind points. For more information about Data Rewind parameters (Retention Period, Max Disk Size), see the *CA XOsoft User Guide*.

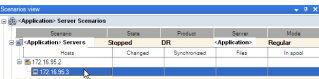
**Important!** The data rewind process operates in one way only - there is no replay forward. After rewind, all data subsequent to the rewind point will be lost, since data after the rewind point will be overwritten with new data.


**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 cannot manually set bookmarks during synchronization. In the following example, a File Server scenario is used, but the steps are the same for all scenario types.

**To recover lost data using rewind points**

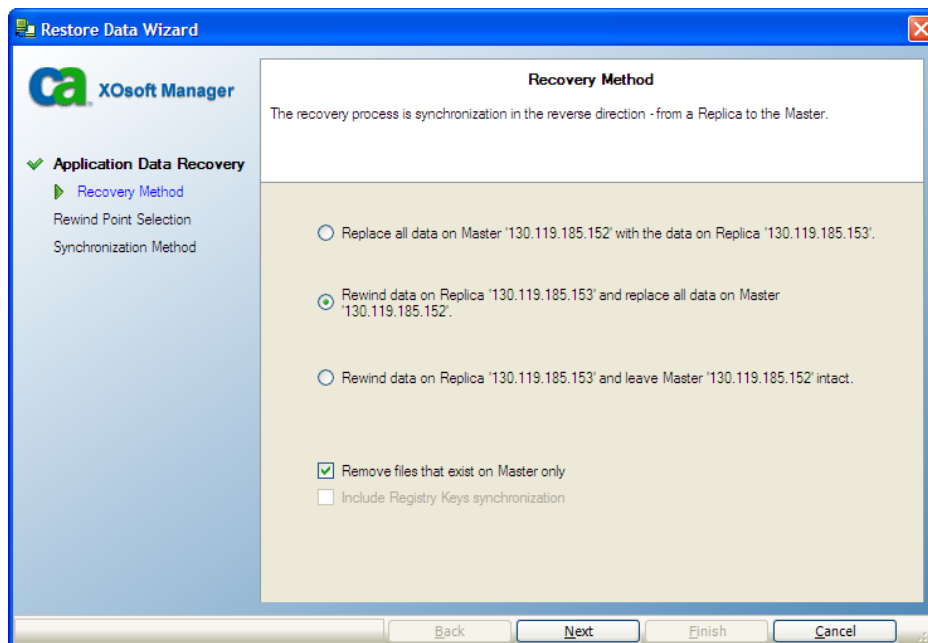
- 1. On the Manager, from the Scenario pane select the desired scenario and stop it.
- 2. [For database applications only] stop the database services on the Master host.
- 3. On the Manager, from the scenario folder select the Replica host:

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



4. From the **Tools** menu, select **Restore Data**, or click the **Restore Data**  button. If you are prompted for user credentials, enter the appropriate information and click OK.

The **Recovery Method** page of the Restore Data Wizard opens.



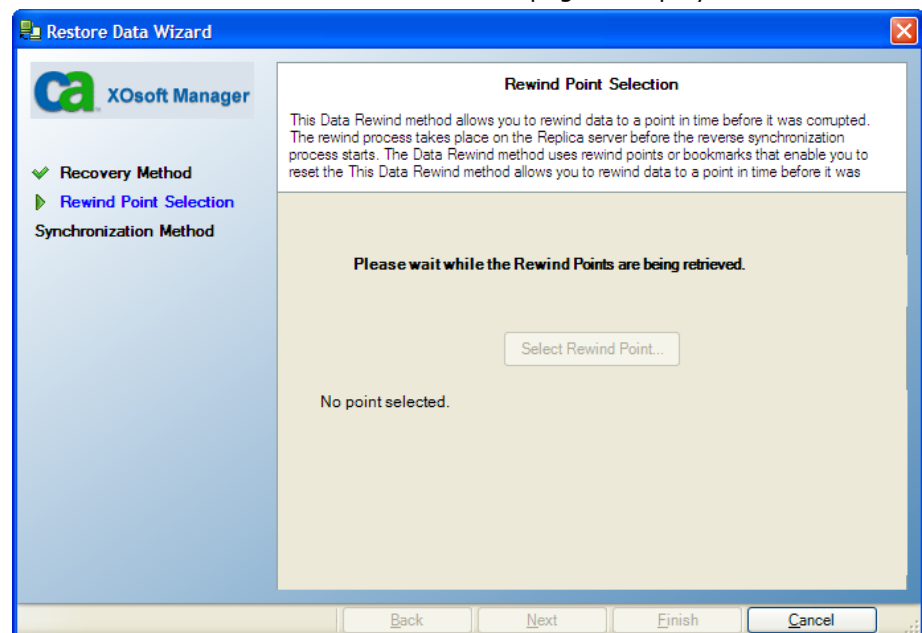
5. Select one of the Rewind data options, depending on whether you want the rewind data synchronized back to the Master (option 2) or left on the Replica only (option 3).

**Notes:**

- 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 **Include Registry Keys synchronization** checkbox is enabled, only if you activated this option before starting the scenario. If the checkbox is enabled, you can select it to include the synchronized Registry Keys in the recovery process.

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 opens.

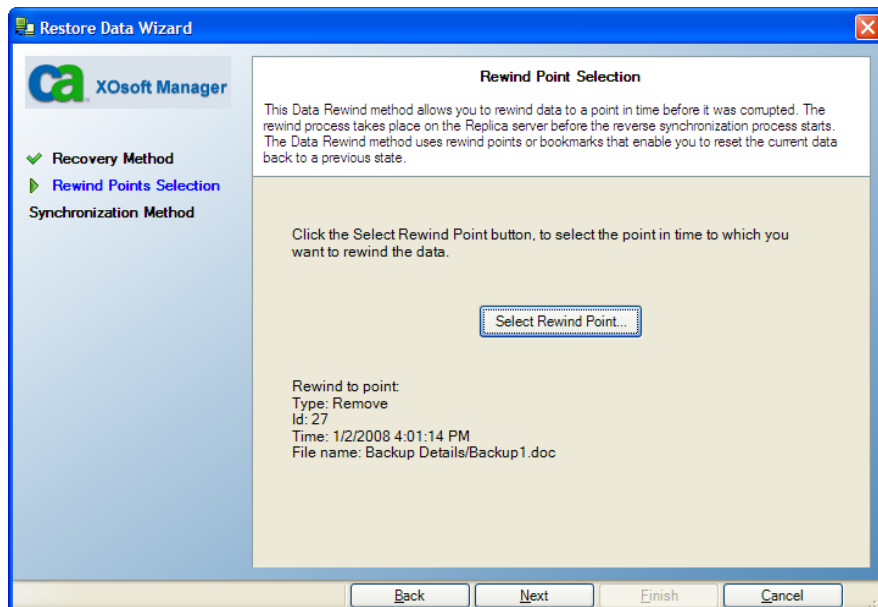
The **Select Rewind Point** dialog displays a list of all rewind points appropriate to the application you are protecting. These include modifications of folders and files that were automatically registered by the system and user-defined bookmarks.

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

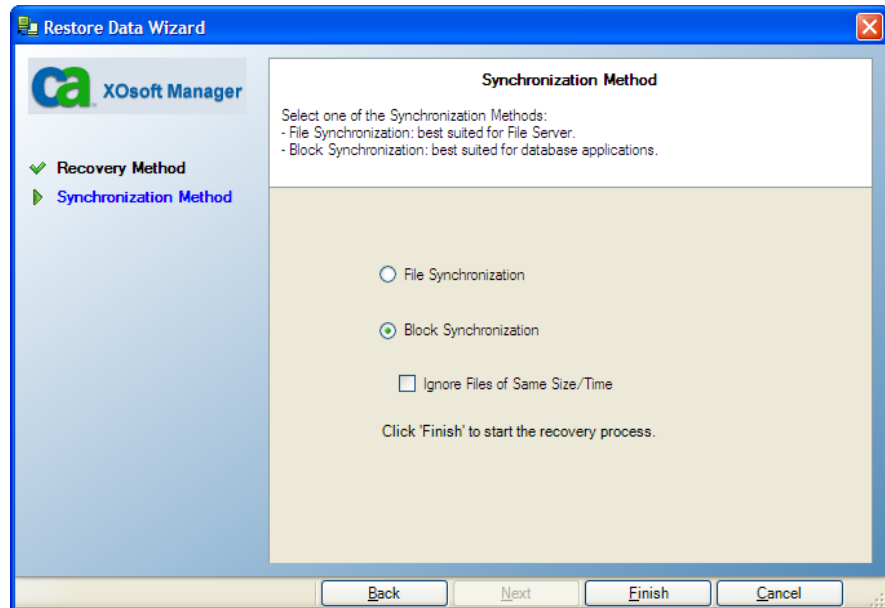
8. Select the required rewind point, and click **OK**.

**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 XOssoft 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 XOssoft 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.



CA XOssoft Replication	
<b>SYNCHRONIZATION REPORT</b>	
Synchronization mode	FileSynchronization (include files with the same size and modification time)
Scenario	Server 1
Master host	172.16.95.3(1)
Replica host	172.16.95.2(2)
Scenario start time	13-Mar-08 15:00:22
Report start time	13-Mar-08 15:29:40
Report finish time	13-Mar-08 15:29:54
<b>Summary:</b>	
Total number of files modified	1
Total number of bytes changed	143.27KB

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

## How to Restore Data on vCenter Machines

Using rewind points, vCenter Server has its own view on the Select Rewind Point dialog. Click the vCenter option to enable this view and then select a rewind point from the desired machine.

# Appendix A: Additional Information and Tips

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This chapter provides you with helpful information concerning the application.

- When a CA XOssoft 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.
- By default, the spool is located in the CA XOssoft 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-SQL 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 XOssoft supports bandwidth limitation and bandwidth limitation scheduling. If you require such features, please consult the *CA XOssoft User Guide*.

This section contains the following topics:

[Troubleshooting vCenter Server Scenarios](#) (see page 33)

## Troubleshooting vCenter Server Scenarios

The following information is provided to help you resolve any errors and warnings.

### **EM00589 License Servers configured on vCenter are not consistent**

#### **Reason:**

License Server deployment on the Master and Replica is not the same. One is locally installed and the other is remotely installed. These should be the same on Master and Replica.

#### **Action:**

Reconfigure the settings for the License Server on the Replica.

#### **EM00590 Databases configured on vCenter are not consistent**

**Reason:**

Either the deployment or the database type of the database server on the Master differs from the Replica and must be the same.

**Action:**

Reconfigure database settings on the Replica.

#### **EM00591 vCenter versions configured are not consistent**

**Reason:**

The vCenter version on the Master differs from that on the Replica and must be identical.

**Action:**

Re-install vCenter on the Replica.

#### **EM00592 Distributed databases configured on vCenter are not consistent**

**Reason:**

The Database Server hostname or instance name on the Master differs from that on the Replica and must be the same.

**Action:**

Reconfigure the database settings on the Replica.

#### **EM00594 Database usernames configured for vCenter are not identical**

**Reason:**

The account for vCenter used to access the Database Server on the Master differs from that on the Replica and should be identical.

**Action:**

Reconfigure the ODBC settings on the Replica.

**EM00596 Oracle server name configured on replica for vCenter is not localhost**

**Reason:**

This is a configuration error.

**Action:**

Change the ODBC setting using "localhost" as the hostname on the Replica.

**EM00597 SQL server name configured on replica for vCenter is not localhost**

**Reason:**

This is a configuration error.

**Action:**

Change the ODBC setting using "localhost" as the hostname on the Replica.

**EM00598 The vCenter database names configured are not consistent**

**Reason:**

This is a configuration problem.

**Action:**

Reconfigure the database settings on the Replica to match those on the Master.

**EM00599 The vCenter database on master <IP Address> is distributed deployed and AR isn't supported**

**Reason:**

If the vCenter Server database is on a remote machine, AR is not supported.

**Action:**

Restart CA XOsoft. AR options should be dimmed when CA XOsoft detects remote database deployment.

**ER00603 Unknown parameter. vCenter configurations can't be compared**

**Reason:**

This is due to an internal program error.

**Action:**

Retry.

**ER00604 vCenter HA information is not initialized**

**Reason:**

The Engine on the Master or Replica is having problems.

**Action:**

Verify the Engine is working and retry.

**EM00590 Databases configured on vCenter are not consistent**

**Reason:**

The Database server type on the Master differs from that on the Replica and must be the same.

**Action:**

Reconfigure the database server on the Replica.

**ER00605 Failed to configure DB Server**

**Reason:**

Something is wrong with the registry setting on the Replica:  
HKEY\_LOCAL\_MACHINE\_SOFTWARE\VMware, Inc.\VMware vCenter\DB

**Action:**

Confirm ODBC settings for vCenter are correct and check the registry key. If it does not exist, re-install vCenter on the Replica.

**ER00606 Failed to configure License Server**

**Reason:**

Something is wrong with the registry setting on the Replica:  
HKEY\_LOCAL\_MACHINE\_SOFTWARE\VMware, Inc.\VMware vCenter\vCenter

**Action:**

Check the registry key. If it does not exist, re-install vCenter on the Replica.

### **ER00607 Failed to configure Managed IP**

#### **Reason:**

Something is wrong with the registry setting on the Replica:  
HKEY\_LOCAL\_MACHINE\_SOFTWARE\VMware, Inc.\VMware vCenter\vCenter

#### **Action:**

Check the registry key. If it does not exist, re-install vCenter on the Replica.

### **ER00608 Failed to configure DB password**

#### **Reason:**

Something is wrong with the registry value "3" on the Replica:  
HKEY\_LOCAL\_MACHINE\_SOFTWARE\VMware, Inc.\VMware vCenter\DB

#### **Action:**

Check the registry key. If it does not exist, re-install vCenter on the Replica.

### **ER00609 Failed to configure Web Access Port**

#### **Reason:**

Something is wrong with the registry value "WebCenterPort" on the Replica:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\VMWare, Inc.\VMware vCenter

#### **Action:**

Check the registry key. If it does not exist, reinstall vCenter on the Replica.

### **WM00529 Distributed License Servers configured on vCenter are not consistent**

#### **Reason:**

The registry value "License Path" of key  
HKEY\_LOCAL\_MACHINE\SOFTWARE\VMware, Inc.\VMware vCenter on Replica  
should be the same as on Master.

#### **Action:**

Reconfigure the license server setting on the Replica.

**WM00531 License Servers configured on vCenter are not consistent**

**Reason:**

License Server deployment on the Master and Replica is not the same. One is locally installed and the other is remotely installed. These should be the same on Master and Replica.

**Action:**

Reconfigure the settings of the License Server on the Replica.

**WM00532 Databases configured on vCenter are not consistent**

**Reason:**

Either the deployment or the database type of the database server on the Master differs from the Replica and must be the same.

**Action:**

Reconfigure database settings on the Replica.

**WM00533 vCenter versions configured are not consistent**

**Reason:**

The vCenter version on the Master differs from that on the Replica and must be identical.

**Action:**

Re-install vCenter on the Replica.

**WM00534 Distributed databases configured on vCenter are not identical.**

**Reason:**

The Database Server hostname or instance name on the Master differs from that on the Replica and must be the same.

**Action:**

Reconfigure the database settings on the Replica.

**WM00535 Unable to receive vCenter information from <IP Address>**

**Reason:**

This is an internal program error, engine disconnect or timeout.

**Action:**

Wait and retry the request later.

**WM00536 Database usernames configured for vCenter are not identical**

**Reason:**

The account for vCenter used to access the Database Server on the Master differs from that on the Replica and should be identical.

**Action:**

Reconfigure the ODBC settings on the Replica.

**WM00537 WebCenter ports configured on vCenter are not identical**

**Reason:**

The WebCenter ports on the Master differ from those set on the Replica and should be identical.

**Action:**

Re-install vCenter on the Replica and ensure the WebCenter ports are the same as those on the Master.

**WM00538 The vCenter Managed IP <IP Address> isn't set in Move IP list**

**Reason:**

You have set a vCenter Managed IP but not added it to the Move IP properties located in the Switchover properties list.

**Action:**

Add the managed IP address to the Move IP list when setting switchover properties.

**WM00540 SQL server name configured on replica for vCenter is not localhost**

**Reason:**

This is a configuration error.

**Action:**

Change the ODBC setting using "localhost" as the hostname on the Replica.

**WM00541 License server name configured on replica for vCenter is not localhost**

**Reason:**

This is a configuration error.

**Action:**

Change the value "License Path" to "xxxx@localhost" style on Replica.

**WM00542 License server ports configured for vCenter are not consistent**

**Reason:**

This is a configuration error.

**Action:**

Re-install vCenter to reconfigure the license server on the Replica.

**WM00543 License files folders configured are not consistent**

**Reason:**

This is a configuration problem.

**Action:**

Reinstall vCenter to specify the correct folder for License files.

**WM00544 The vCenter database names configured are not consistent**

**Reason:**

This is a configuration problem.

**Action:**

Reconfigure the database settings on the Replica to match those on the Master.

**WM00588 Distributed License Servers configured on vCenter are not consistent**

The registry value "License Path" of key  
HKEY\_LOCAL\_MACHINE\SOFTWARE\VMware, Inc.\VMware vCenter on  
Replica should be the same as on Master.

**Action:**

Reconfigure the license server setting on the Replica.



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