

App Orchestration 2.0

Configure SQL database mirroring

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Version: 4.0

Last Updated: December 12, 2013

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Overview

Database mirroring maintains two copies of a single database that must reside on different server instances of SQL Server Database Engine. The *principal* server instance serves the database to clients. The other *mirror* server instance acts as a hot or warm standby server. When a database mirroring session is synchronized, database mirroring provides a hot standby server that supports rapid failover without a loss of data from committed transactions.

The principal and mirror servers communicate as partners performing complementary roles in a database mirroring session. At any time, one partner performs the principal role, and the other partner performs the mirror role.

High-safety mode with automatic failover requires a third SQL server known as a *witness*. Unlike the two partners, the witness does not serve the database. The witness supports automatic failover by verifying whether the principal server is up and functioning. The mirror server initiates automatic failover only if the mirror and the witness remain connected to each other after both have been disconnected from the principal server. If the mirror server loses its connection to the principal server but the witness is still connected to the principal server, the mirror server does not initiate a failover.

Configure database mirroring for an App Orchestration deployment

A typical App Orchestration deployment includes databases that are used by the following components:

- App Orchestration configuration server
- Delivery Sites and Session Machines running XenDesktop 7.1
- Delivery Sites and Session Machines running XenApp 6.5 Feature Pack 2

You can configure database mirroring on all three sets of the databases after these databases are configured for use on App Orchestration, XenDesktop, and XenApp.

For a database used by the App Orchestration configuration server with XenDesktop, you can configure the database mirroring *before* the App Orchestration configuration server and XenDesktop are installed.

This document describes how to prepare (or pre-mirror) App Orchestration configuration server and XenDesktop databases *before* installation.

Prepare databases

Here are the general steps for preparing the App Orchestration data base and XenDesktop Site databases.

1. Create empty databases.
2. Configure the empty database to enable database mirroring.
3. Configure the principal database. The configuration wizards detect the mirrored database and configure it accordingly.
 - Install the App Orchestration configuration server and run the App Orchestration configuration server wizard.
 - Run the Create a New Delivery Site wizard from the App Orchestration web console.

Configure the database for an App Orchestration configuration server

Create two empty databases used for App Orchestration configuration server on the principal database server.

The App Orchestration configuration server uses two databases:

- App Orchestration configuration database
- App Orchestration logging database

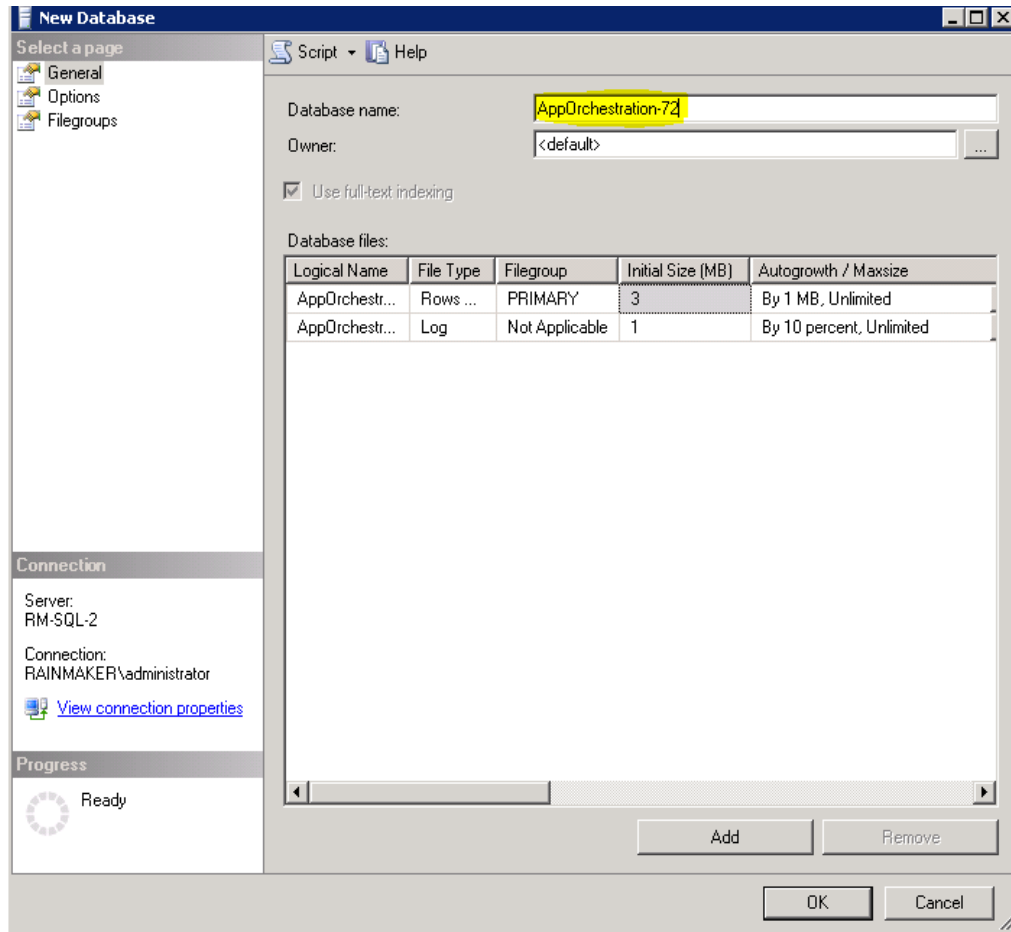
Using the Microsoft SQL Server Management Studio, perform the following steps on each database.

Note:

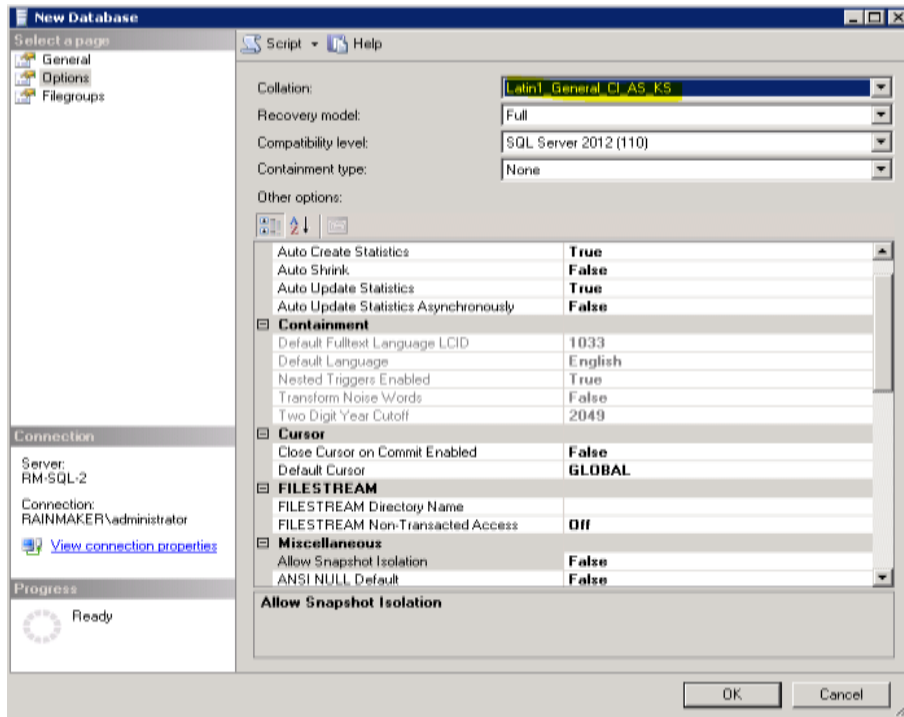
The App Orchestration logging database is reserved for a future release. However, it is required for App Orchestration 2.0 Server to properly operate.

1. On the General Page, create a database in the principal database server.

App Orchestration 2.0: Configure SQL Database mirroring

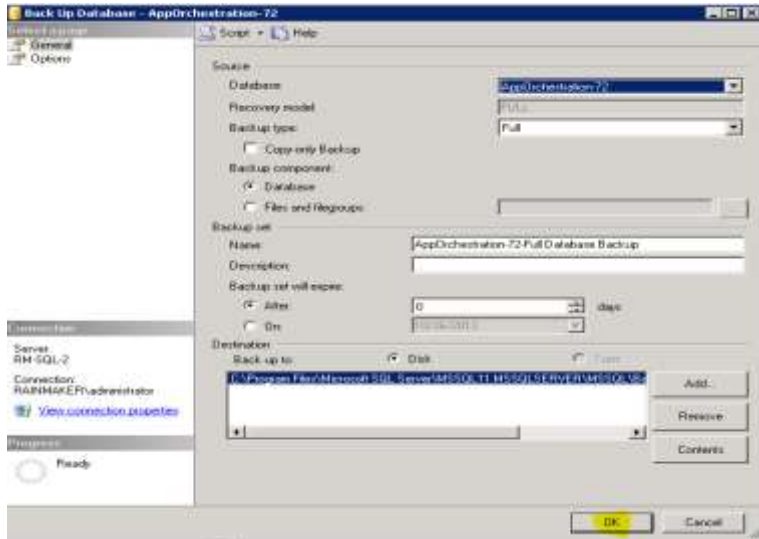
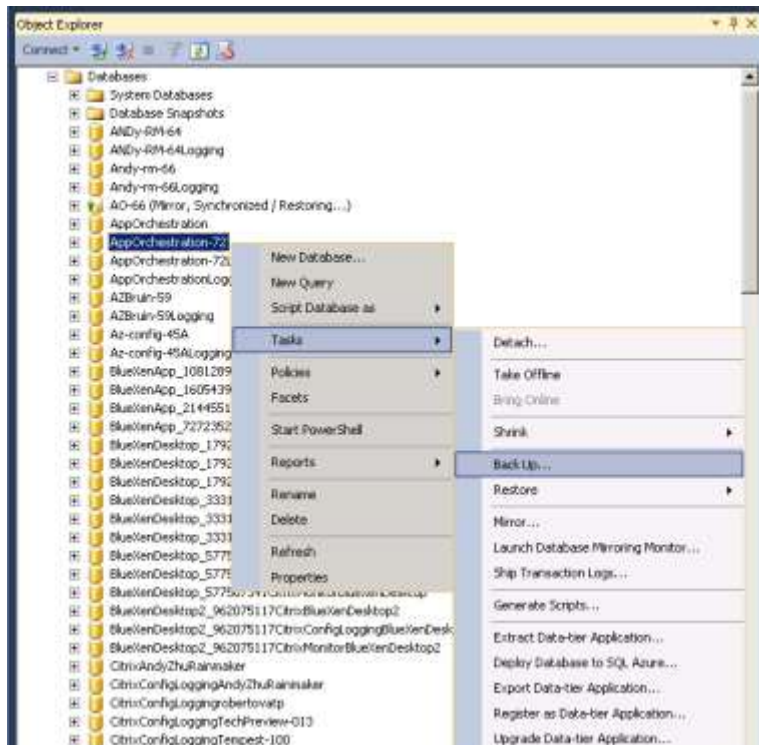


- On the Options Page, make sure that the Collation Sequence for this database is **Latin1_General_CI_AS_KS**. If the wrong collation is specified during database creation, then the mirroring does not correctly function.



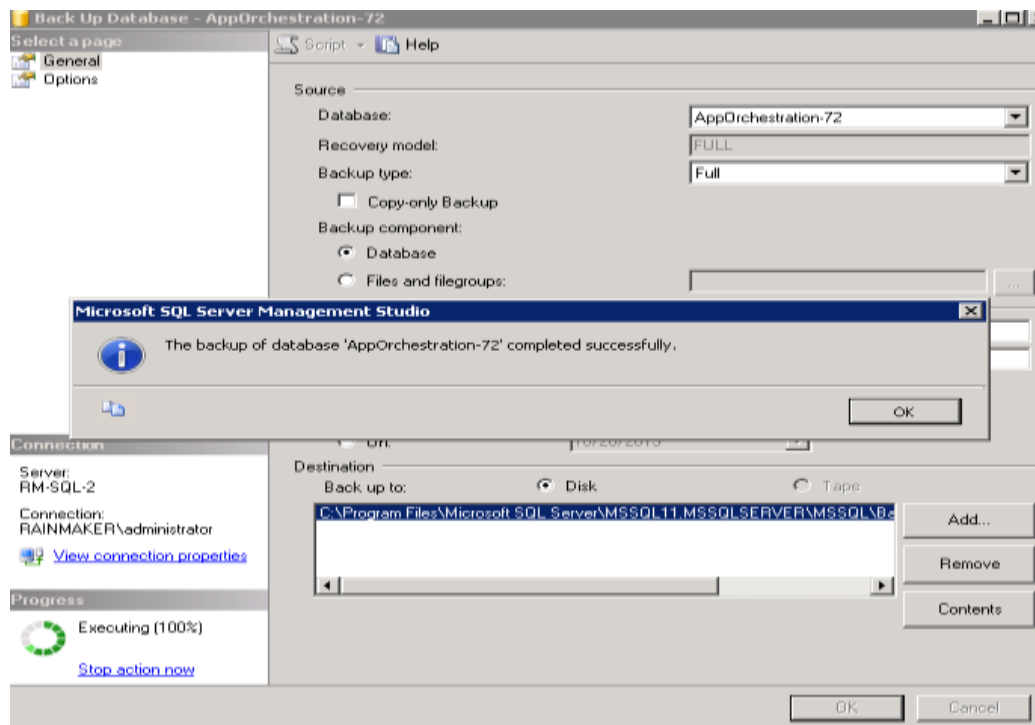
- Activate the new empty database by selecting **OK**.
- Back up the new database created on the principal server to a Full database backup.
 - Right-click the database, select **Tasks**, and then click **Back Up** to display the Backup Database dialog box. Accept the defaults.
 - Make sure that the Backup type is **Full**.

App Orchestration 2.0: Configure SQL Database mirroring



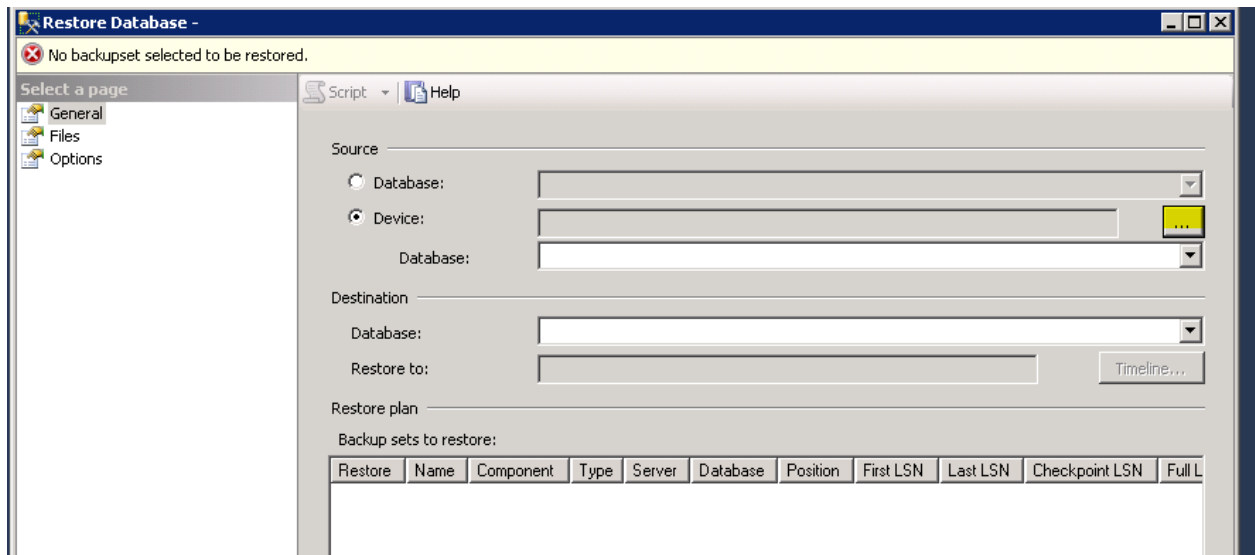
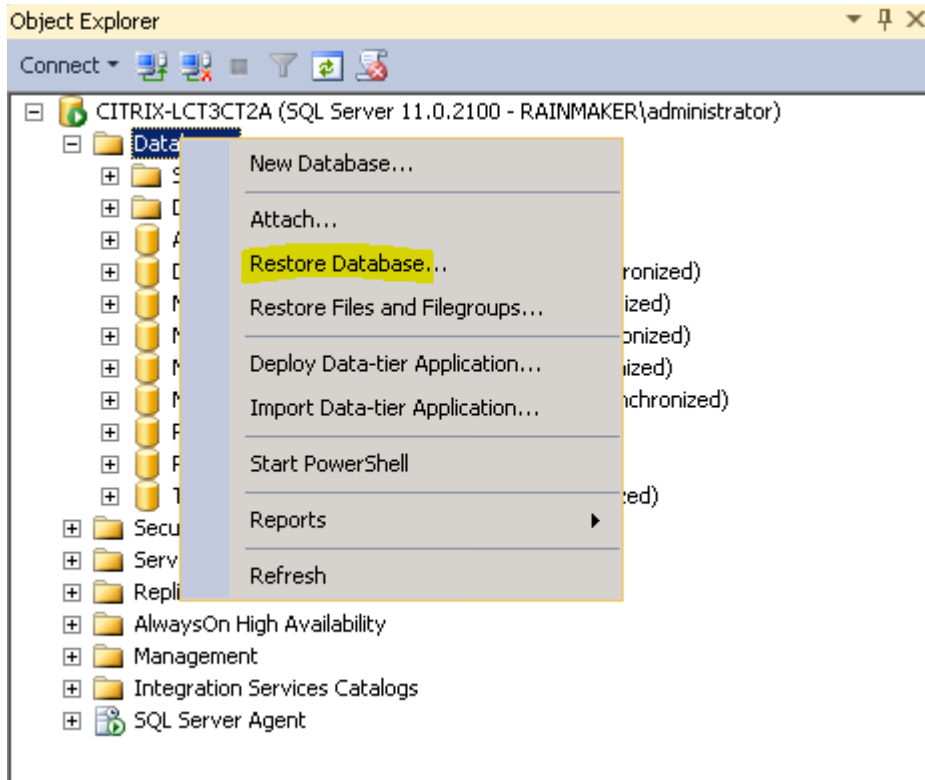
5. Click **OK** to create the .bak file for the database in the destination location.

App Orchestration 2.0: Configure SQL Database mirroring

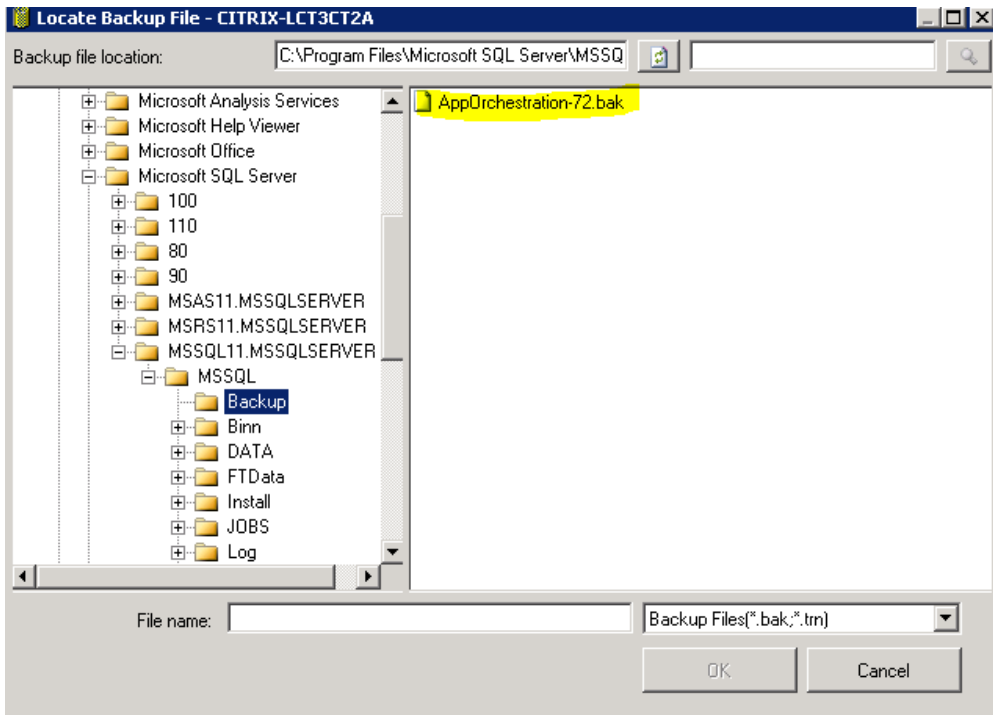
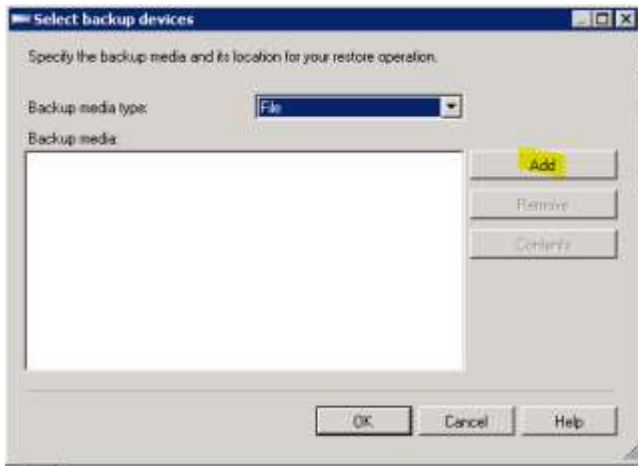


6. Copy the .bak file from the destination location and paste it to the same directory on the mirrored database server.

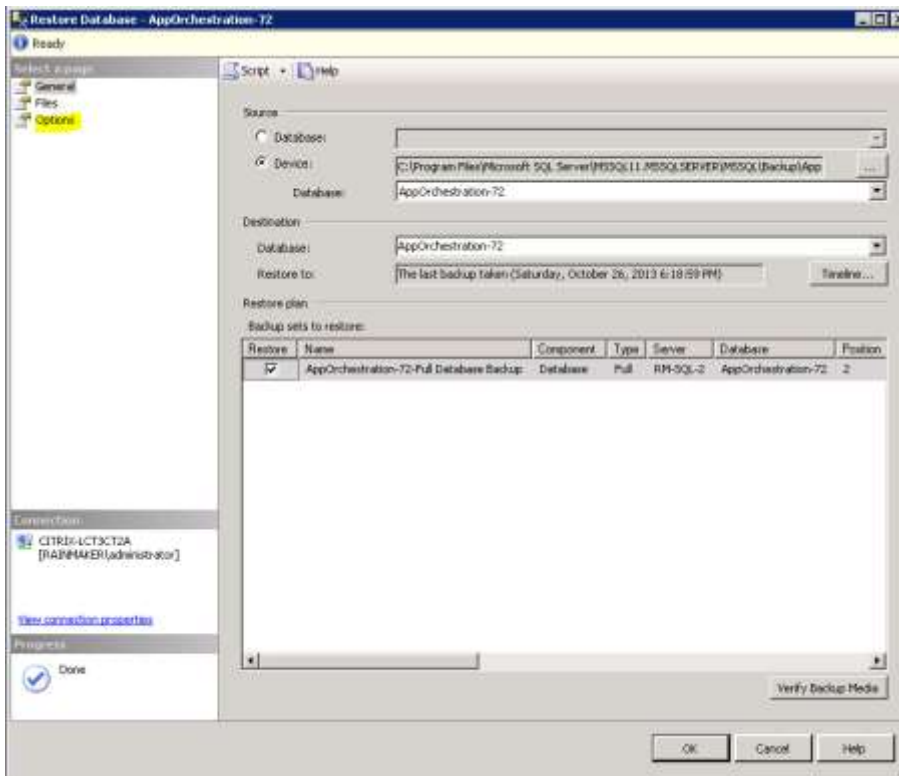
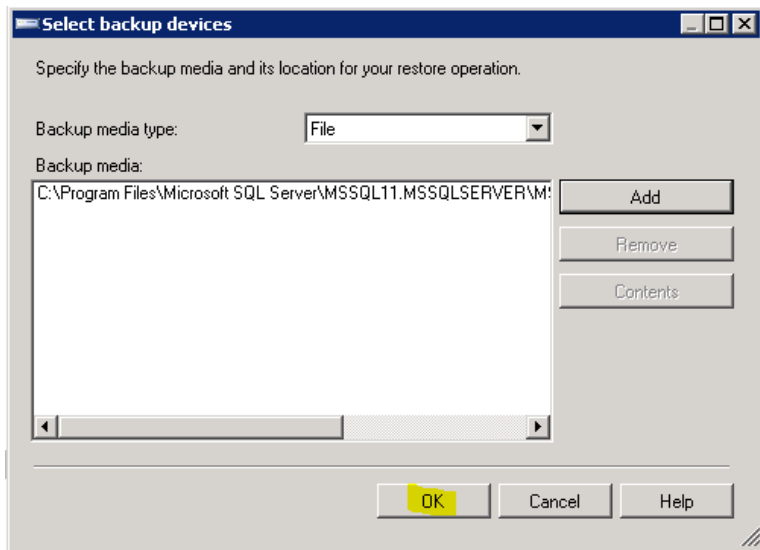
7. Access the SQL Server Management Studio on the mirrored database server. Right-click the **Databases** folder and then select **Restore Database**, as shown in the following examples.



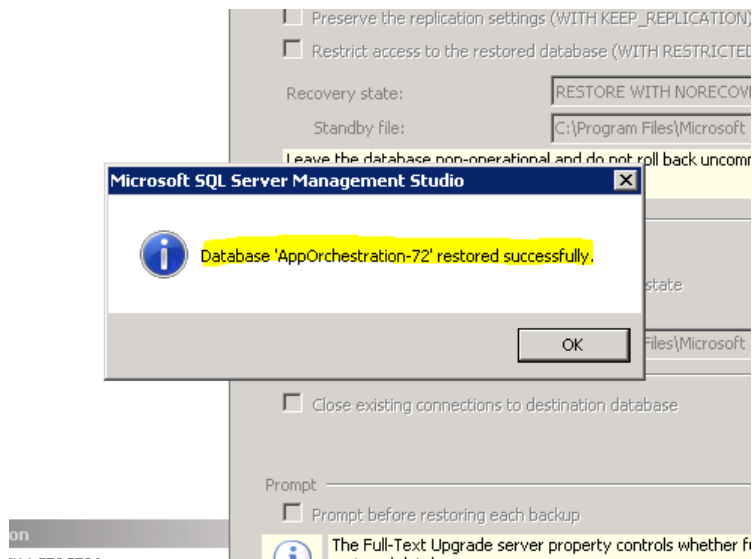
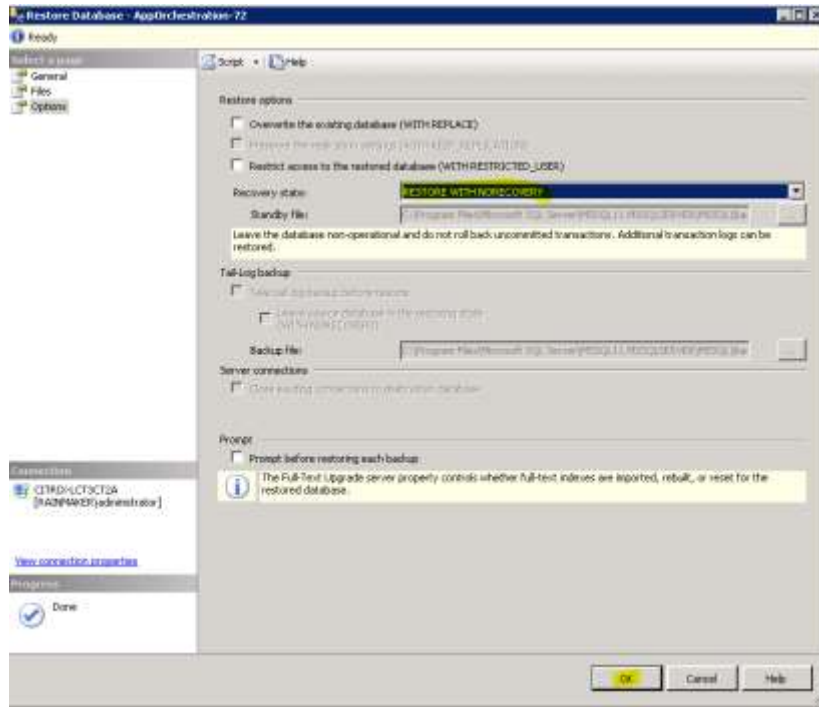
App Orchestration 2.0: Configure SQL Database mirroring



App Orchestration 2.0: Configure SQL Database mirroring

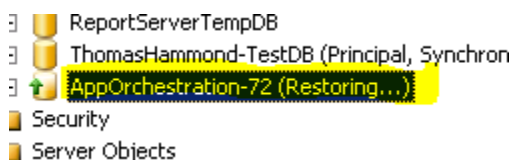


App Orchestration 2.0: Configure SQL Database mirroring



Note:

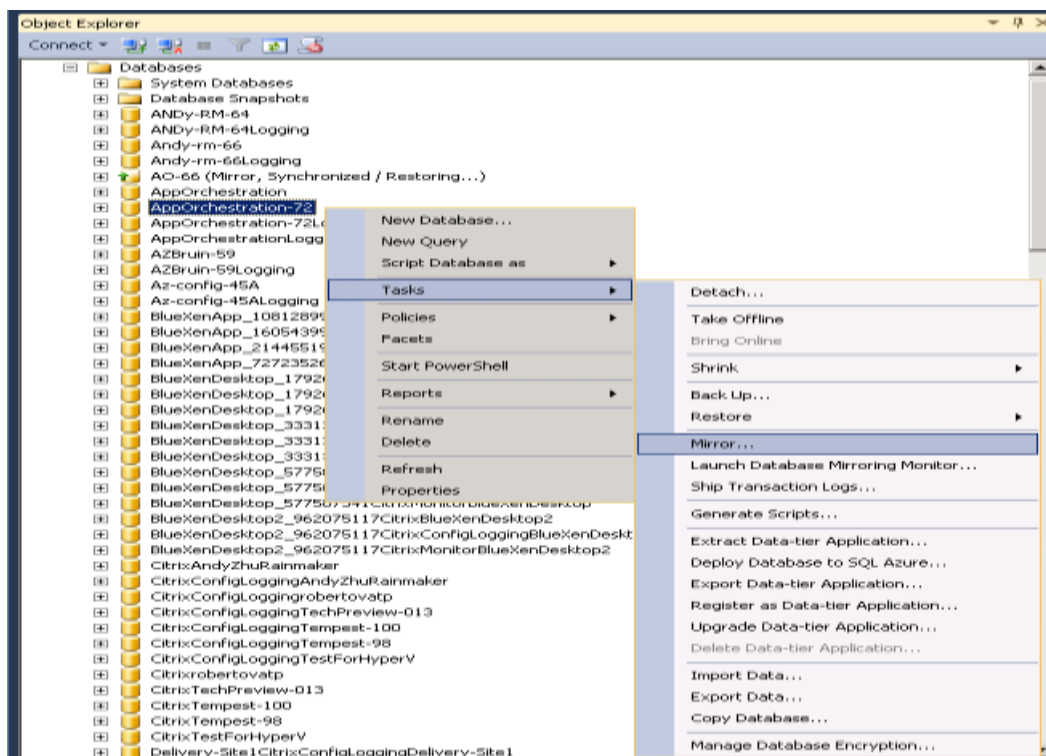
Microsoft SQL Server management Studio displays a message indicating when the database has been successfully restored, as shown in the following example:



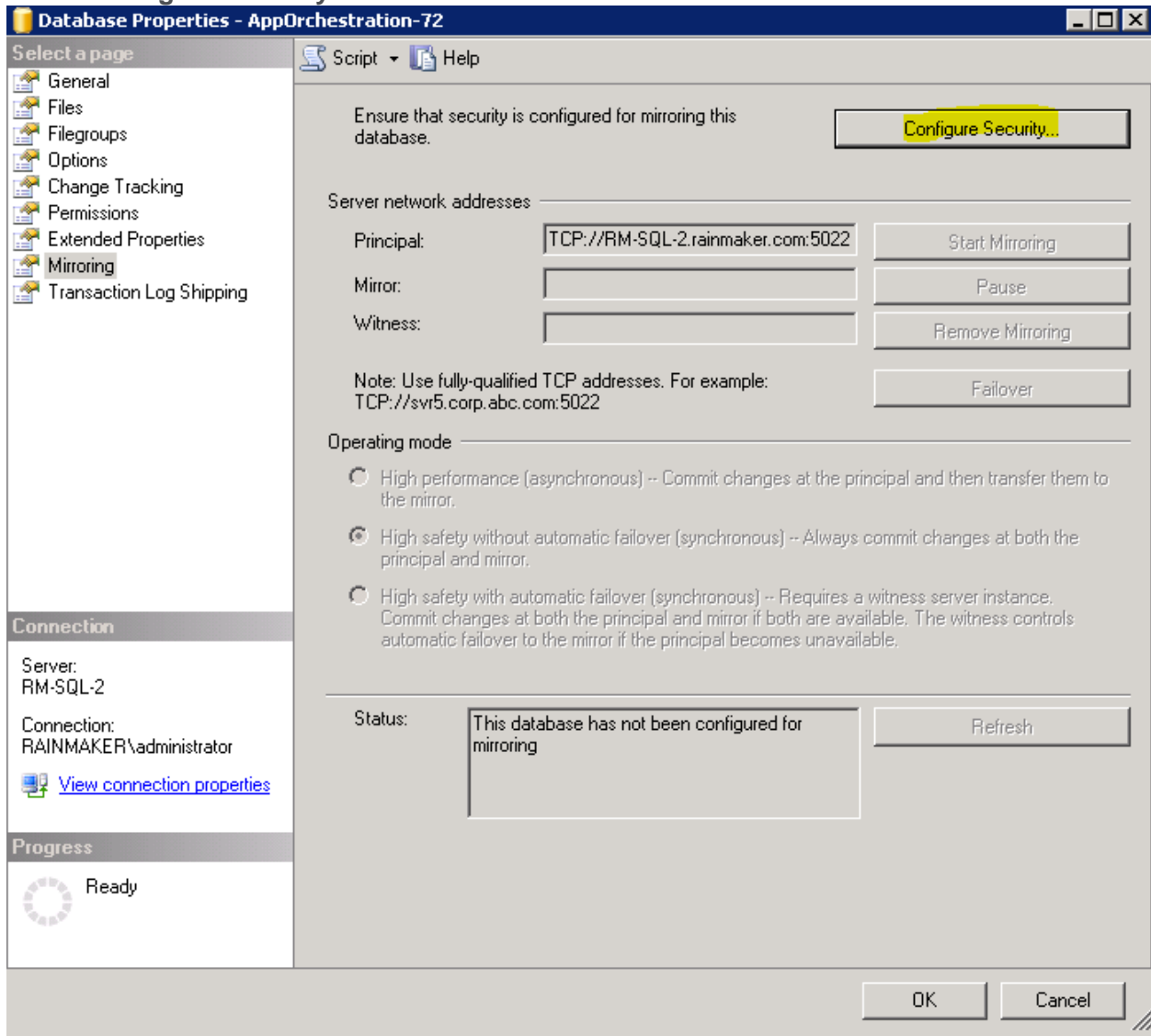
Mirror the database

When mirroring a database, Citrix recommends that you include a witness server instance in the Include Witness Server dialog box described in Step 4. The Witness server instance is similar to the principal and the mirrored server instances in the same domain. You do not need to copy the database backup file to the Witness server.

1. In the Microsoft SQL Server management Studio, return to the principal database server and right-click the database you just restored. In the following example, you select **Connect > Databases > AppOrchestration-72 >Tasks > Mirror**.

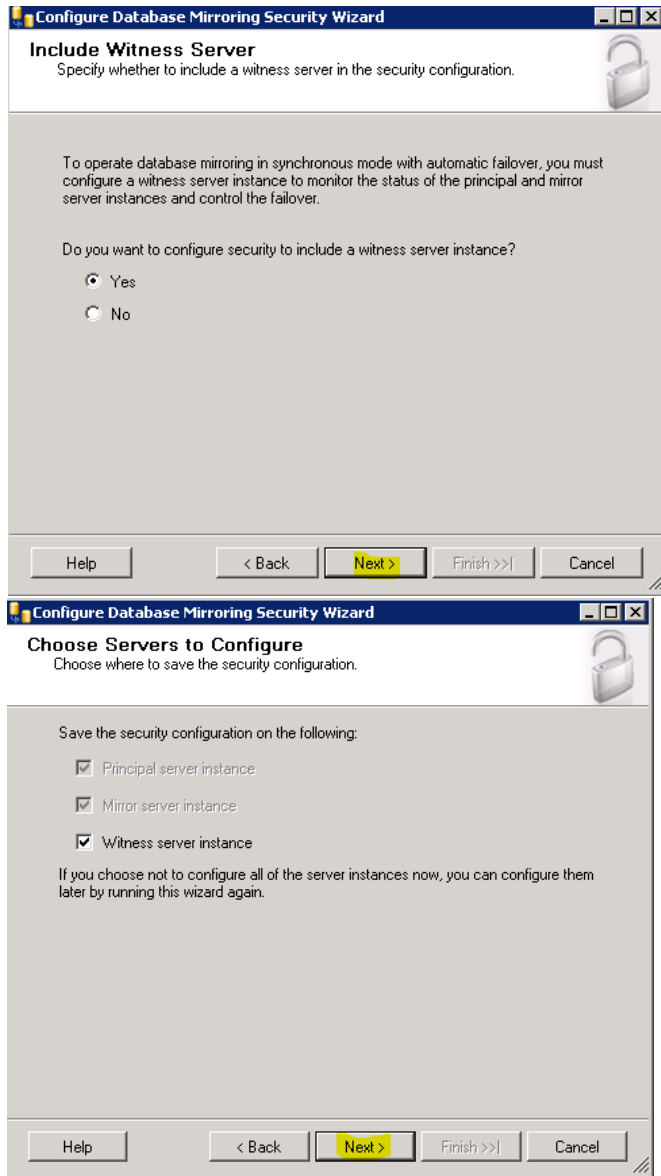


2. Select **Configure Security**.

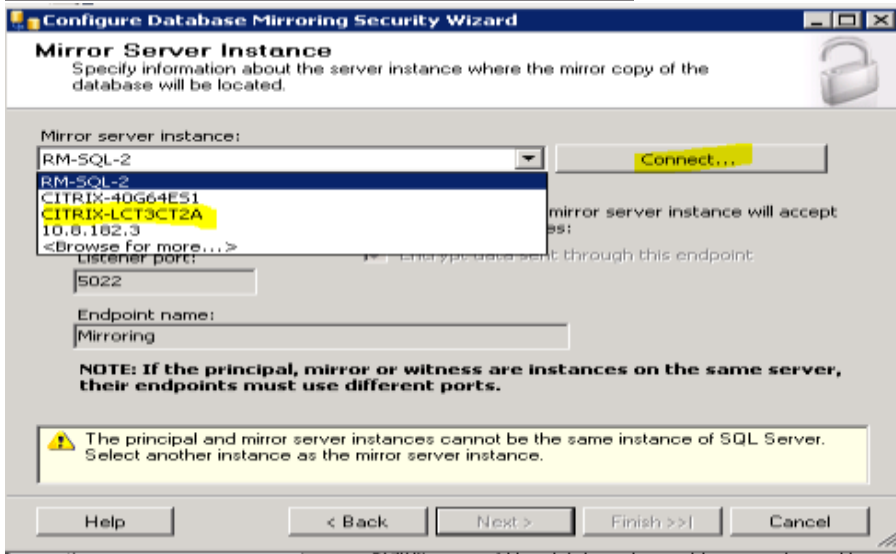
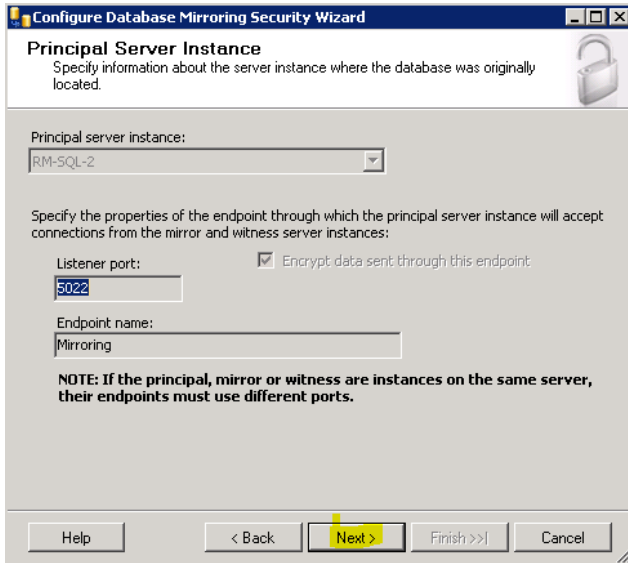


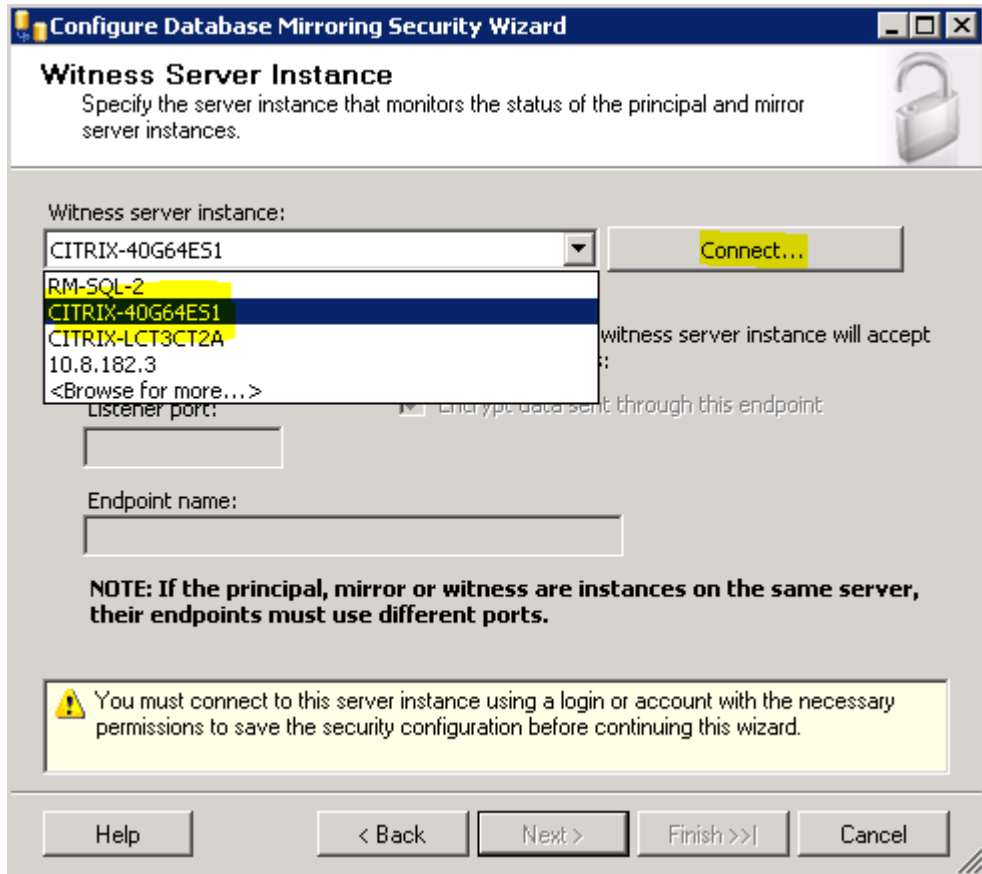
3. Enter the Server network addresses.

App Orchestration 2.0: Configure SQL Database mirroring

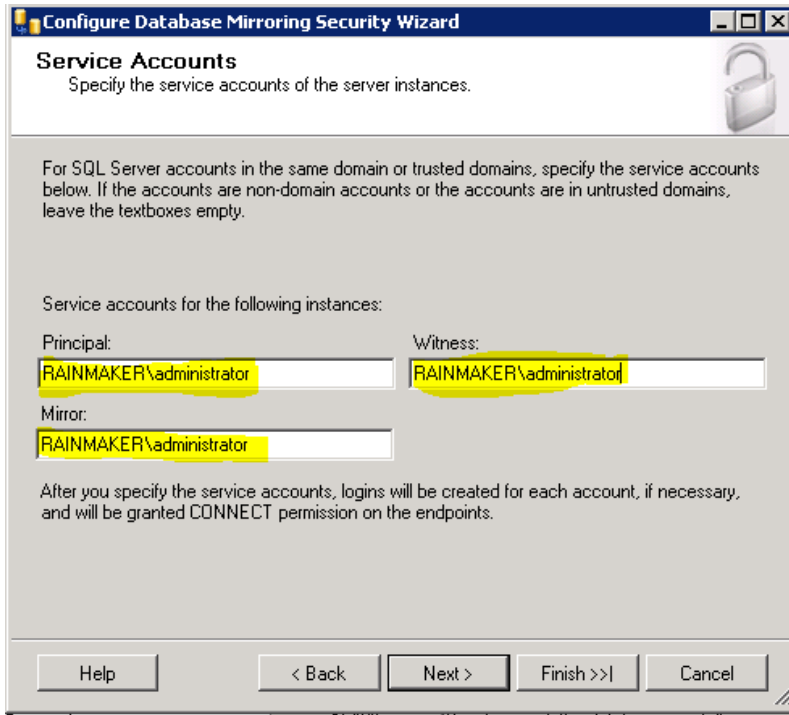


4. Configure the following servers:
- Principal server instance
 - Mirror server instance

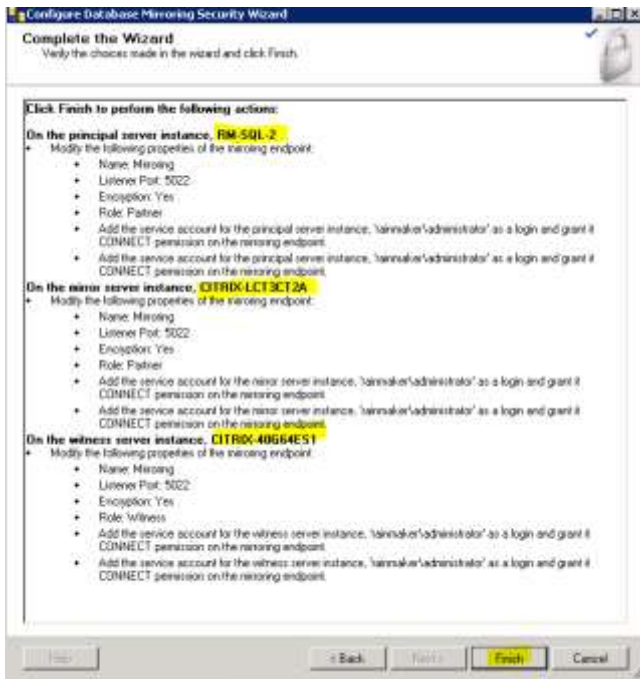




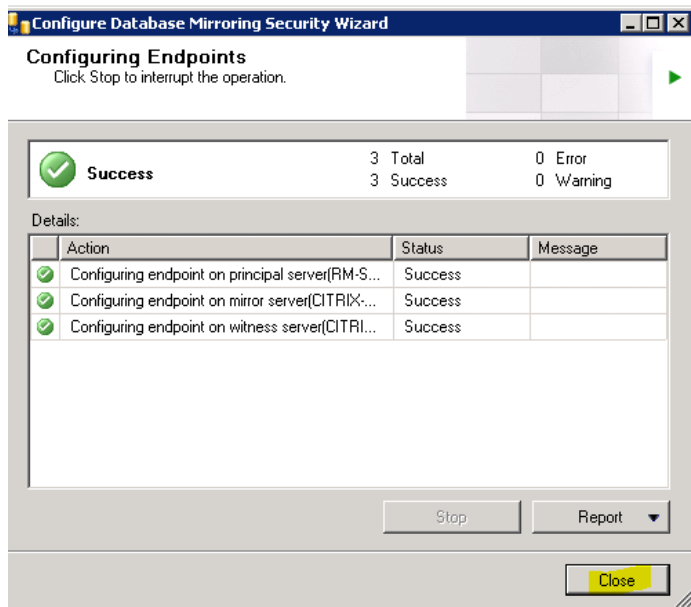
5. Enter the domain user credentials as shown in the following example, using the format *DOMAIN NAME\username*. The domain name must be upper case.



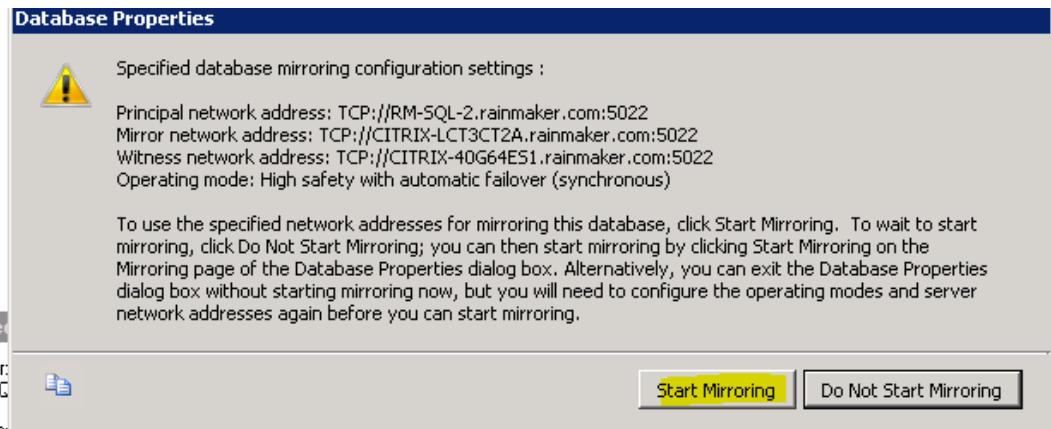
The following summary appears when you complete the mirroring procedure.



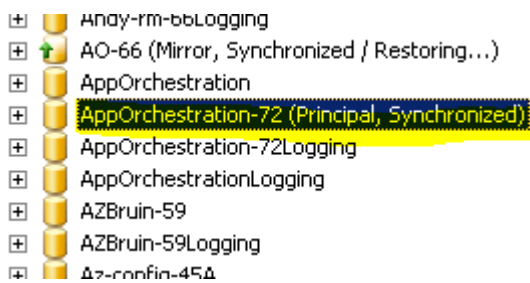
App Orchestration 2.0: Configure SQL Database mirroring



6. Select Start Mirroring.



When mirroring begins, the database status changes as shown in the following example:



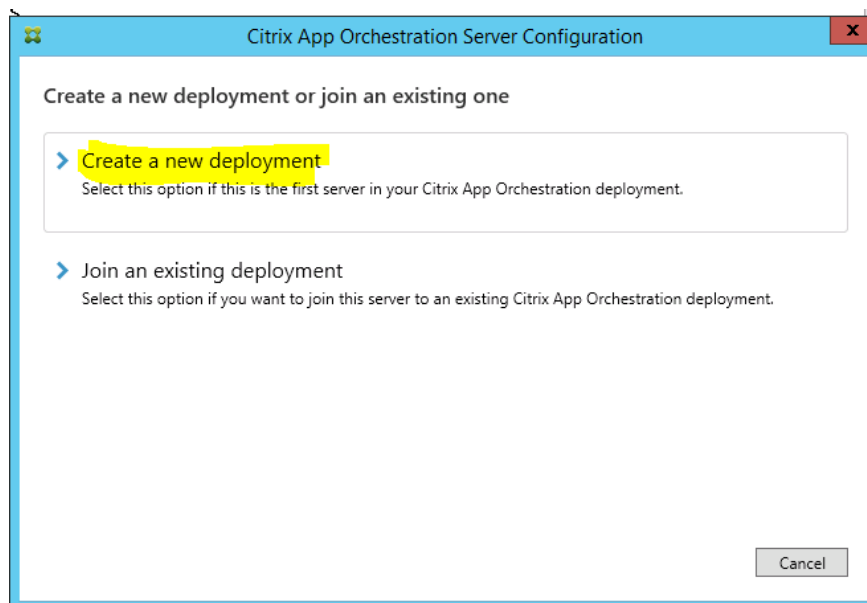
This designation indicates that it is the principal instance of the database and it is synchronized with the mirrored instance of the database.

Configure the Configuration Logging database

Repeat the previous steps for App Orchestration App Orchestration logging database.

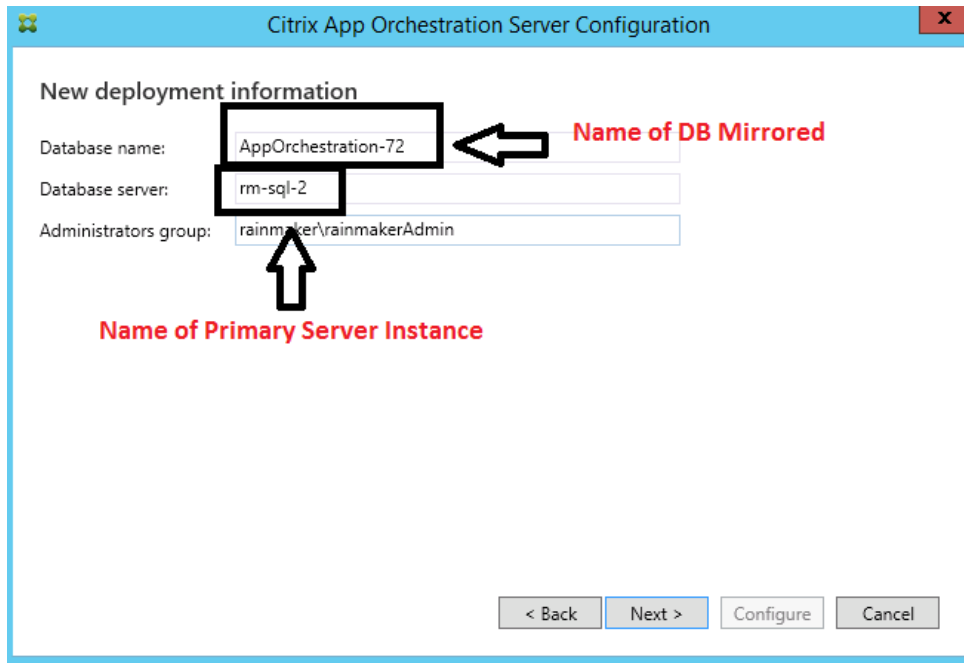
Configure the App Orchestration configuration server

1. Install the App Orchestration configuration server and run the App Orchestration Server Configuration wizard. When the database name is encountered in the wizard, the Configuration wizard detects whether the database is mirrored.
This document assumes that at this point, the administrator has already configured mirroring for the App Orchestration Configuration database and App Orchestration Logging database.
2. On the Server Configuration page, select **Create a new deployment**.



3. In the Deployment Information dialog box, enter the name of the database mirrored earlier and the address of the principal server instance.
4. Complete the remaining steps in the wizard. Note that the administrator does not need to perform any specific tasks through the App Orchestration console to configure mirroring.

App Orchestration 2.0: Configure SQL Database mirroring



The screenshot shows a window titled "Citrix App Orchestration Server Configuration" with a close button in the top right corner. The main content area is titled "New deployment information" and contains three text input fields:

- Database name:** The text "AppOrchestration-72" is entered. A black arrow points from the red text "Name of DB Mirrored" to this field.
- Database server:** The text "rm-sql-2" is entered. A black arrow points from the red text "Name of Primary Server Instance" to this field.
- Administrators group:** The text "rainmaker\rainmakerAdmin" is entered.

At the bottom of the window, there are four buttons: "< Back", "Next >", "Configure", and "Cancel".

5. Complete the remaining steps in the wizard. .

Note:

Although it is not required to enter the logging database name in this configuration, to make sure that App Orchestration properly functions, Citrix recommends that you configure mirroring for logging database.

Configuring a XenDesktop Site

XenDesktop Delivery Sites require the following databases:

- Site Database
- Logging Database
- Monitoring Database

App Orchestration requests each database separately. If a database is unreachable, the following results occur:

Unreachable database results

If this database is unreachable...	Then...
Site	XenDesktop Site does not function
Logging	The Site continues to function. Any operation that involves a configuration change, and therefore needs to be logged, fails, but users can continue to use the Site, such as establishing sessions
Monitoring	The Site continues to function, but no monitoring data is collected.

For proper functionality, make sure all these databases are mirrored and include them when configuring those names in the App Orchestration console. The remaining mirror configuration occurs through Delivery Site creation scripts in App Orchestration.

These following high level steps let you create mirrored databases for the XenDesktop Site.

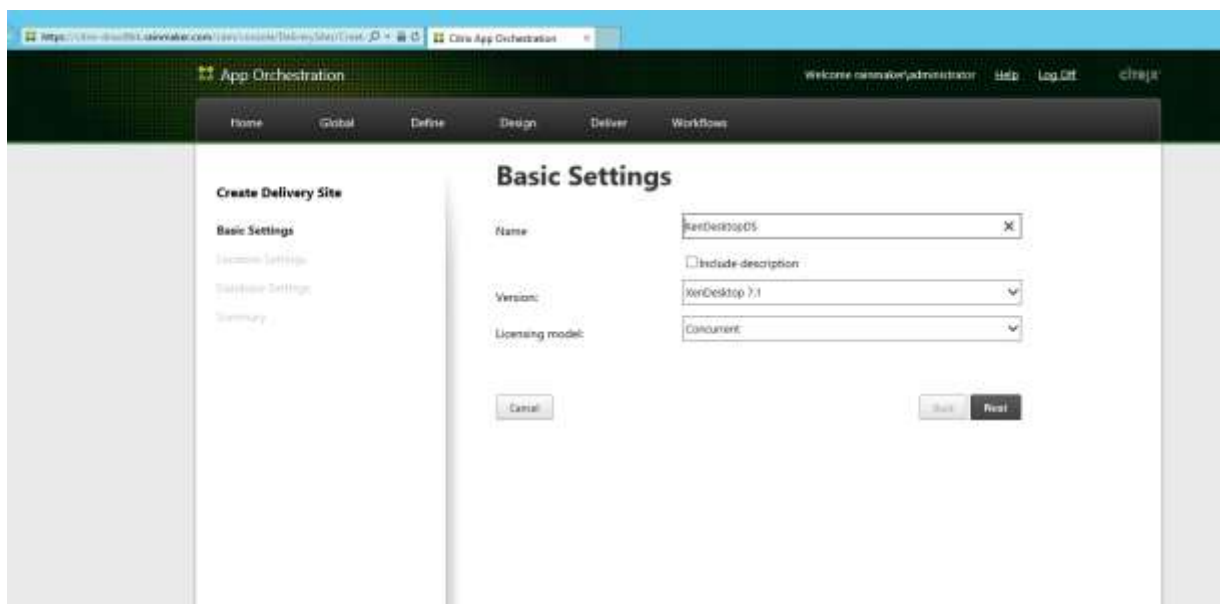
1. Create the following empty databases on the App Orchestration configuration server on the principal database server:
 - Site
 - Monitoring
 - Configuration logging
2. Enable the empty database to be mirrored as described in *Configure the database for an App Orchestration configuration server*.

App Orchestration 2.0: Configure SQL Database mirroring

3. In the App Orchestration web console, select **Design >Delivery Sites >Create a Delivery Site**.
4. In the database settings for the Delivery Site, enter the name of the principal database only. The wizard detects that the database is mirrored.
5. In the database settings for the Delivery Site, enter the names of the Configuration Logging and Monitoring databases you created in Step 1
6. Configure the mirrored databases as described in *Configure mirrored databases using the App Orchestration wizard*.

Configure mirrored databases using the App Orchestration wizard

1. On the Basic Settings page enter the name of the XenDesktop Delivery Site, XenDesktop version, and Licensing model.



The screenshot shows the 'App Orchestration' web console interface. The top navigation bar includes 'Home', 'Global', 'Define', 'Design', 'Deliver', and 'Workflows'. The main content area is titled 'Create Delivery Site' and is divided into two sections: 'Basic Settings' and 'Database Settings'. The 'Basic Settings' section is active and contains the following fields:

- Name:** A text input field containing 'RentDesktopOS' with a clear button (X).
- Include description:** A checkbox that is currently unchecked.
- Version:** A dropdown menu showing 'XenDesktop 7.1'.
- Licensing model:** A dropdown menu showing 'Concurrent'.

At the bottom of the form, there are three buttons: 'Cancel', 'Back', and 'Next'.

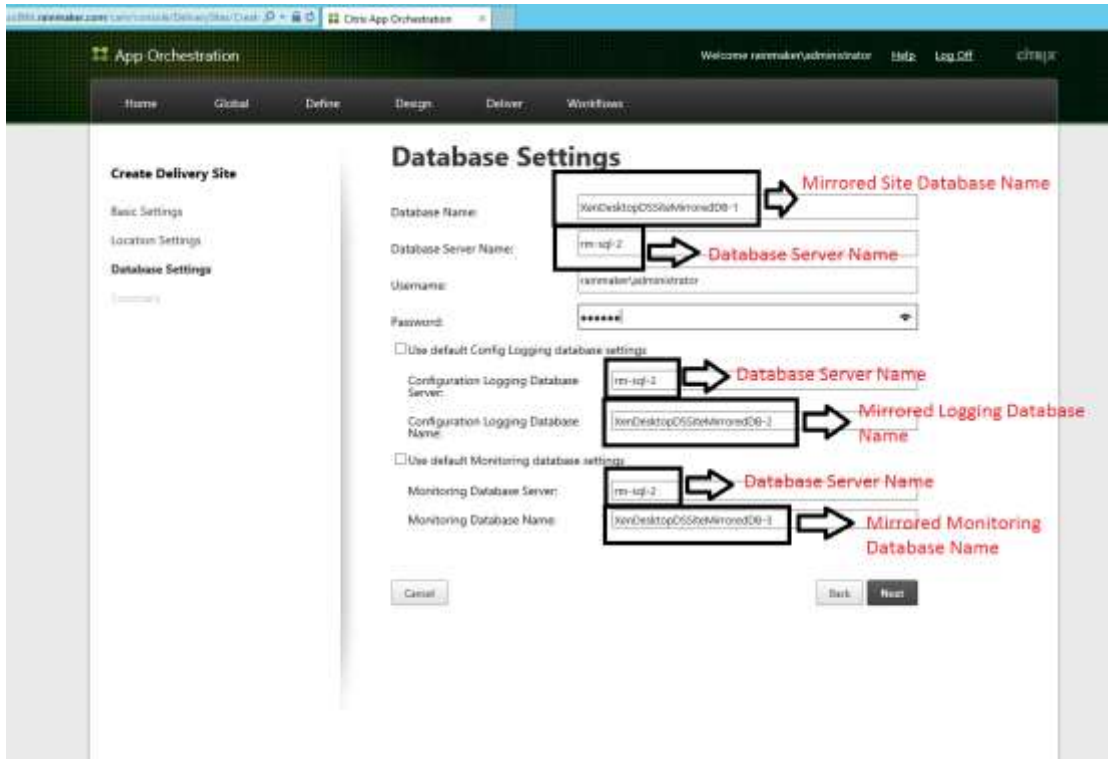
2. In the Location Settings page, enter the Delivery Controllers Machine Names and other Site information.

The screenshot shows the 'Location Settings' configuration page in the App Orchestration interface. The page is titled 'Location Settings' and is part of the 'Create Delivery Site' process. The left sidebar contains a navigation menu with 'Basic Settings', 'Location Settings' (selected), 'Database Settings', and 'Summary'. The main content area contains the following fields:

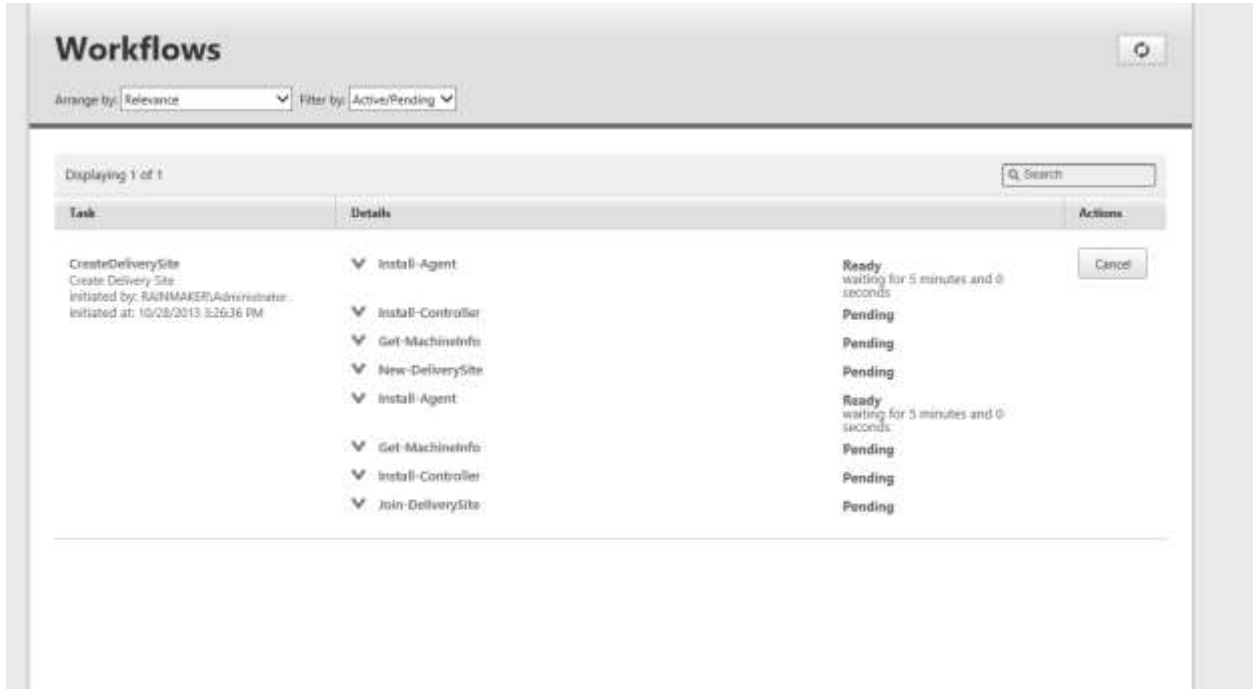
- Machine Name(s):** Two text input fields. The first contains 'CTXEX-6MGT05QJ' and the second contains 'CTXEX-0EVQ4Q8Q'. A small 'x' icon and a plus sign are to the right of the second field.
- Domain:** A text input field containing 'rainmaker.com'.
- Datacenter:** A dropdown menu with 'Default Data Center' selected.
- Delivery Site Admin Group:** A text input field containing 'rainmaker\rainmakerAdmin'.
- Username:** A text input field containing 'rainmakeradministrator'.
- Password:** A password input field with masked characters '*****'.

At the bottom of the form, there are three buttons: 'Cancel', 'Back', and 'Next'.

3. In the App Orchestration web console, enter the names of the three mirroring databases and then click **Next** as shown in the following example.



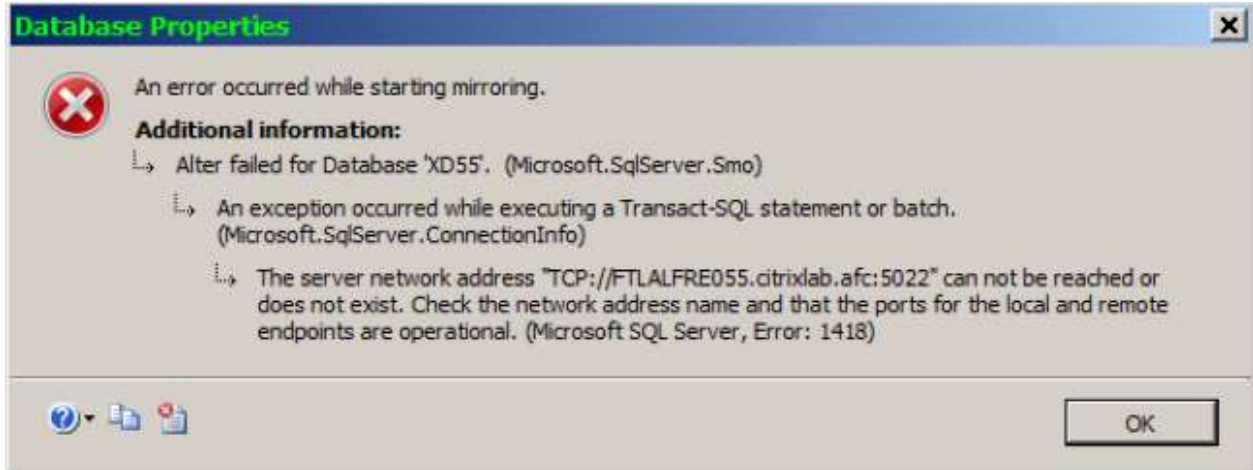
After the Database Settings entries are processed, it triggers a workflow to create a Delivery Site.



4. When this workflow successfully completes, the XenDesktop Site is correctly configured with the mirroring setup.

Possible errors

The following error indicates that the SQL Services for the principal, mirror, or witness server has a local account (Network Service or Local System) instead of an AD service account.



The following error results if you do not select the **NORECOVERY** option for the mirrored server database.

