

# HP XP P9000 Replication Manager 7.4.0-00 Release Notes

HP Part Number: TB584-96062  
Published: December 2012  
Edition: First





**Version**

7.4.0-00

## Description

This is the initial release of HP XP P9000 Replication Manager Software Edition 7.4.0. For details, see “Enhancements” (page 3).

For previous behaviors resolved in this release, see “Fixes” (page 4).

**Update recommendation**

Routine

**Superseded version**

7.3.1-00

## Product models

HP XP P9000 Replication Manager Software

## Devices supported

HP XP P9500 Storage  
HP XP24000 Disk Array  
HP XP20000 Disk Array  
HP 200 Storage Virtualization System  
HP XP12000 Disk Array  
HP XP10000 Disk Array  
HP XP1024 Disk Array  
HP XP128 Disk Array

## Operating systems

For the supported operating systems, see the Replication Manager system configurations and requirements chapter of the *HP XP P9000 Replication Manager Software Configuration Guide*. This guide is on the HP XP P9000 Command View Advanced Edition Software manuals page:

<http://www.hp.com/support/cvae/manuals/>.

## Enhancements

### Enhancements for 7.4.0-00

- Replication Manager can now manage Fast Snap copy pairs of HP XP P9500 Storage.
- Replication Manager can now create a remote path for open systems Continuous Access Journal by specifying a path group ID.
- Replication Manager can now manage mainframe systems copy pairs by using XP P9000 RAID Manager. This function is available for Continuous Access Synchronous or Continuous Access Journal copy pair on HP XP P9500.
- Replication Manager now supports a CLI command on a management server that can export the C/T delta history to a CSV file.

- Replication Manager now supports the following virtual platform on a management server and an Application Agent host:
  - VMware ESXi 5.1
- Replication Manager now supports Internet Explorer 10 on the following operating systems:
  - Windows Server 2012, no SP (x64)
  - Windows 8, no SP (x86/x64)
- Replication Manager now supports the following operating system on an Application Agent host:
  - Windows Server 2012, no SP (x64)

## Fixes

### Fixes for 7.4.0-00

The following issues were resolved:

- When a local Device Manager server manages a large number of hosts, displaying the list of tasks and subsequent refresh task operations might take a while.
- A VSS backup or replica creation for Exchange Server database no longer completes with an error (source: ESE, event ID: 519) logged in the Windows application event log on a backup server.
- A task that deletes or operates a copy group containing both Simplex and non-Simplex copy pairs no longer generates the KAVN00463-E, KAVN02822-E, KAVN02825-E, or KAVN02830-E error.
- Create Pool Wizard can now display as candidate pool volumes HP XP P9500 volumes that are being quick-formatted.
- The list of configuration definition files in Pair Configurations view no longer displays a wrong file status even when the list includes a file in an unsupported status.
- Refresh Configuration information no longer generates the RPM-00822 error even when managing an environment having a large number of copy pairs.
- Selecting a configuration definition file of a copy pair with a primary or secondary volume in the Simplex status in the Pair Configuration view no longer generates the RPM-00590 error.
- While the Refresh Configuration task is being executed for a remote Device Manager, if Refresh Storage Systems is also executed for the storage system managed by that local Device Manager instance, the Replication Manager will correctly display the open nodes or storage system nodes in the storage system tree.
- When multiple information sources are registered, if Refresh Configuration is executed after pair deletion, the copy group that contained the deleted pair is now correctly displayed.
- The CTG column of JNLGs for mainframes in the Storage Systems view no longer displays a value in decimal notation. It is now displayed in hexadecimal notation.
- A task defined using the Pair Configuration Wizard that includes copy pairs in a multi-target configuration with 65 or more generations fails and no longer generates a wrong message.

## Important considerations

### Replacing secondary volumes of Continuous Access Synchronous or Continuous Access Journal in a 3DC multi-target configuration (open systems)

To replace all the secondary volumes included in a Continuous Access Synchronous or XP P9000/XP Continuous Access Journal copy pair, launch the Pair Configuration Wizard more than once to replace the secondary volumes using the following procedure:

1. Generate and execute the replacement tasks to replace half of the secondary volumes of the Continuous Access Synchronous or XP P9000/XP Continuous Access Journal copy pair.
2. Generate and execute the replacement tasks for the other half of the secondary volumes not replaced in step 1.

If you use Pair Configuration Wizard only once to generate and execute the replacement tasks for all of the secondary volumes in the Continuous Access Synchronous or XP P9000/XP Continuous Access Journal copy pair, task execution might not succeed.

### Site filter conditions in Pair Configuration Wizard

**Site** and **Storage System** drop-down lists are empty and you cannot select candidate volumes if all of the following conditions are met.

#### Conditions

1. In **Shared Views**, you create a site and then register a storage system in the site.
2. In the **2. Pair Association** page of the Pair Configuration Wizard, you perform the following operations in the following order:
  - a. You create a remote copy pair group.
  - b. In the **Volume Type** drop-down list, you select a secondary volume.
  - c. In the **Site** drop-down list, you select a site that contains an invalid storage system. The storage system is invalid because it cannot be used as a secondary volume for the specified combination of primary volume and copy type. For example, the license for the selected copy type is not registered.

#### Recovery procedure

On the Criteria tab of the Candidate List pane, perform these steps:

1. Click the **Clear** button to clear the filter condition.
2. Specify the filter conditions for the candidate volume you want to select.

### Adding command devices

When using the Add Command Devices Wizard, even though you cannot specify a pair volume as a command device, the Candidate Devices screen might show primary volumes of Snapshot copy pairs that are configured as V-VOLs without LUNs.

If you select such a volume and attempt to add a command device, an error occurs and the operation does not complete.

### Executing multiple tasks for the same copy pair

Some tasks may either remain in the `Executing` status in the GUI<sup>1</sup> or generate the `RPM-00506`, `KAVN00454-E`, or `KAVN00456-E` error, depending on the types and combinations of the tasks.

#### Conditions

This behavior might occur when both of the following conditions are met:

1. Multiple tasks for the same copy pair are executed simultaneously.
2. The tasks include a task that changes the copy pair status.<sup>2</sup>

### Recovery procedure

For tasks that froze in the `Executing` status:

- Restart the XP P9000 Command View AE Suite Common Component service to reset the tasks to the `Failure` status.
- Execute tasks again that you need to complete so that they are not executed simultaneously.

For tasks that generated an error:

- Execute tasks again that you need to complete after editing the failed tasks so that they are not executed simultaneously.

<sup>1</sup>Each task internally completes successfully or unsuccessfully, depending on the order of the execution.

<sup>2</sup>Multiple tasks that set the copy pair status do not cause this behavior because one of the tasks reserves the copy pair.

## Mainframe volume information of a remote copy pair

Mainframe volume information displayed in the LDEV list of the Storage System view might become incorrect if the following conditions are met.

### Conditions

1. Business Continuity Manager manages a remote copy pair.
2. One of the storage systems in the remote copy pair configuration in the first condition is managed by a local Device Manager and the other storage system is not managed by any Device Manager that is registered as an information source of Replication Manager.
3. The remote copy pair in the first condition is manipulated.

### Recovery procedure

- Update the information of both storage systems in the remote copy pair.

### Temporary solution

Register all storage systems in a remote copy pair configuration managed by Business Continuity Manager to Device Managers and register those Device Managers to Replication Manager as information sources.

## Pair relationships displayed for mainframe volumes in the Storage System view

The entry `n/a` might be displayed in the LDEV and Storage System columns of the Pair Relationship display in the Storage System view if the following conditions are met.

### Conditions

1. Business Continuity Manager is registered in Replication Manager as an information source.
2. The Business Continuity Manager in the first condition manages a volume of a storage system that is managed by a local Device Manager.
3. In the Storage System view, you select a volume in a copy pair that is not managed by the Business Continuity Manager in the first condition and then display pair relationships.

## Removing and re-registering a Device Manager server as information source

Do not re-register a Device Manager server as information source for at least 24 hours after its removal if there is a pair management server managed by the Device Manager server.

## Performing advanced operations per copy pair

When you have executed a takeover-recovery (recreate) operation to a copy group including copy pairs in simplex status per copy pair, update the storage system information after the task is complete. If you do not update the storage system information, you will be unable to perform any copy pair operation to copy pairs in simplex status in the target copy group in Change Pair Status Wizard.

If you execute a takeover-recovery (resync) operation per copy pair, the task might generate the KAVN02841-E (RPM-03351) error. If this error message appears, update the storage system information. Even if the task generates this error, the operation on the copy pair or copy group completes correctly.

## Performing advanced operations

If you perform an advanced operation to a copy group while updating a storage system containing a volume in the copy group using a Device Manager server or Refresh Configuration is being executed for a remote Device Manager, the copy group might not appear in the Replication Manager GUI when the operation is complete. If this happens, update the information of the storage system to which the advanced operation was performed.

## Performing task operations

Task operations might take a while when all of the following conditions are met:

1. The local Device Manager server manages a large number of hosts.<sup>1</sup>
2. You select tasks and perform any of the following operations in Tasks view:
  - Edit tasks
  - Delete tasks
  - Cancel tasks

<sup>1</sup>The amount of time required depends on the number of hosts managed by Device Manager, the number of tasks selected for the operation, and the performance of the Replication Manager server machine.

If the number of hosts managed by Device Manager and the number of tasks selected for the operation is around 20,000, it takes about several tens of seconds to several minutes.

## Creating a 4x4 Continuous Access Journal copy group for a mainframe system

When creating a 4x4 Continuous Access Journal copy group for a mainframe system, in certain configurations there are conditions for the specifiable EXCTG ID.

If you create a 4x4 Continuous Access Journal copy group for a mainframe system using Replication Manager, Replication Manager does not check the specified EXCTG ID.

For details about the conditions for the specifiable EXCTG ID, see the *HP XP P9000 for Business Continuity Manager Release Notes*.

## Maintaining copy group consistency

For copy groups with consistency maintained between open systems and mainframe systems, you cannot perform the following copy pair status change operations:

- Operations on the open system:
  - takeover
  - swap

- takeover-recovery (resync)
- takeover-recovery (recreate)
- Operations on the mainframe system:
  - restore

Regarding copy groups maintaining their consistency, if you use a tool other than Replication Manager to perform a swap operation or takeover (Reverse Resync) operation for either only the copy group on the open system or only the copy group on the mainframe system, you cannot use Replication Manager to manage the relevant copy group.

## InPrivate Browsing in Internet Explorer 9.0

During InPrivate Browsing Mode, the browsing history might remain in the browser.

## VMware ESXi 5.0

The following configuration is not supported:

A configuration using a software FCoE adapter and FCoE to connect primary or secondary volumes to a database server, backup server, and pair management server on a guest OS running in VMware ESXi 5.0.

## Setting up resource groups

Before using the Change Pair Status Wizard, add the user to both of the following resource groups.

Also, before using Pair Configuration Wizard, add the user to both of the following resource groups for all the copy groups included in the copy topology that is the target of the operation.

- Resource groups set up for all the storage systems configured with the copy groups that are the target of the operation.
- Resource groups set up for all the pair management servers managing the copy groups that are the target of the operation.

## XP P9000 RAID Manager installation path for database servers and backup servers

If XP P9000 RAID Manager is installed on a non-system drive, you must change the `INSTALL_PATH` parameter in the XP P9000 RAID Manager linkage definition file (`DEFAULT.dat`) or change the XP P9000 RAID Manager Installation Path setting in the Application Agent Settings window.

In addition, if you execute a VSS backup or manage a replica of Exchange Server, you must set the system environment variable `VSHTCRMENVF` on the backup server. For details, see the explanation about the settings necessary for using VSS in the *HP XP P9000 Replication Manager Software Application Agent CLI User Guide*.

## Editing the journal option settings

If the version of remote Device Manager is 7.2.0 to earlier than 7.3.1, editing the journal option settings of an HP XP P9500 journal group generates the following error messages:

```
An attempt to perform journal pool processing has failed. [KAVN00589-E]
```

```
An attempt to call the Device Manager server function has failed. (Device Manager server's error code: KAIC05000, Device Manager server's error message: An unidentified error has occurred.) [RPM-01004]
```

To edit the journal option settings, upgrade remote Device Manager to 7.3.1 or later.

## Using the GetCTDelta command

If XP P9000 Command View AE Common Component is not installed under the installation directory of XP P9000 Command View AE suite products, set the `HRPM_CLI_BASE_PATH` environment variable to the Common Component installation directory before executing the `GetCTDelta` command. Typical cases where this environment variable setting is necessary are:

- An XP P9000 Command View AE suite product is installed in an environment where Common Component has already been installed by some product other than Command View AE suite products.
- An XP P9000 Command View AE suite product is upgraded to 7.4 or later in an environment where Common Component has already been installed by some Command View AE suite product earlier than 7.0.

If the `HRPM_CLI_BASE_PATH` environment variable has not been set correctly, the `GetCTDelta` command will generate the `KAVN00189-E` error. When you have this error after executing the command, check the `HRPM_CLI_BASE_PATH` environment variable value.

## Prerequisites

### Superseded version

7.3.1-00

See the *HP XP P9000 Command View Advanced Edition Suite Software Installation and Configuration Guide* for complete product requirements.

## Installation instructions

For installation information, see the following manual sections:

Component	Manual
Management server	<i>HP XP P9000 Command View Advanced Edition Suite Software Installation and Configuration Guide</i>
Management client	<i>HP XP P9000 Replication Manager Software Configuration Guide</i>
Application Agent	<i>HP XP P9000 Command View Advanced Edition Suite Software Installation and Configuration Guide</i>

## Compatibility/interoperability

No issues.

## Revision information

For this release, software and documentation revision levels are as follows:

### Device Manager Software 7.4.0-00

- *HP XP P9000 Command View Advanced Edition Suite Software Installation and Configuration Guide* (TB581-96323) Version 7.4.0-00
- *HP XP P9000 Command View Advanced Edition Suite Software Administrator Guide* (TB581-96325) Version 7.4.0-00
- *HP XP P9000 Command View Advanced Edition Suite Software CLI Reference Guide* (TB581-96326) Version 7.4.0-00
- *HP XP P9000 Command View Advanced Edition Suite Software User Guide* (TB581-96328) Version 7.4.0-00

- *HP XP P9000 Command View Advanced Edition Suite Software Plug-in for Virtualization Server Provisioning User Guide (TB581-96307) Version 7.3.0-00*
- *HP XP P9000 Command View Advanced Edition Suite Software Mainframe Agent Installation and Configuration Guide (TB581-96078) Version 7.2.0-00*
- *HP XP P9000 Command View Advanced Edition Suite Release Notes (TB581-96329) Version 7.4.0-00*
- *HP XP P9000 Command View Advanced Edition Suite Software Mainframe Agent Release Notes (TB581-96331), Version 7.4.0-00*

## Replication Manager Software 7.4.0-00

- *HP XP P9000 Replication Manager Software Application Agent CLI Reference Guide (TB584-96057) Version 7.4.0-00*
- *HP XP P9000 Replication Manager Software Configuration Guide (TB584-96058) Version 7.4.0-00*
- *HP XP P9000 Replication Manager Software User Guide (TB584-96059) Version 7.4.0-00*
- *HP XP P9000 Replication Manager Software Application Agent CLI User Guide (TB584-96061) Version 7.4.0-00*
- *HP XP P9000 Replication Manager Software Release Notes (TB584-96062) Version 7.4.0-00*

## Tiered Storage Manager Software 7.4.0-00

- *HP XP P9000 Tiered Storage Manager Software CLI Reference Guide (TB581-96027) Version 7.4.0-00*
- *HP XP P9000 Tiered Storage Manager Software Release Notes (TB585-96028) Version 7.4.0-00*

## Backup and restore management in a SQL Server 2012 AlwaysOn Availability Group configuration

### Functional overview

Replication Manager Application Agent 7.4.0 supports operations to back up, restore, and recover SQL Server databases in configurations using SQL Server AlwaysOn Availability Groups, by using the Application Agent CLI. Note, however, that only operations to back up and restore user databases on an active node in an AlwaysOn Availability Groups configuration are supported. The following operations are not supported in an AlwaysOn Availability Groups configuration: 1) backup and restoration of system databases and 2) backup and restoration of user databases on a passive node. The descriptions in this section assume that the primary database server is the active node.

This section describes the procedure for steps 1 through 3 to create a SQL Server 2012 AlwaysOn Availability Group configuration.

1. Build a database on the secondary database server by using a backup.  
This step includes the procedure for using a backup of the primary database server to build a database on the secondary database server, which is required for an AlwaysOn Availability Groups configuration.
2. Back up and restore the user database on the active node.  
This step includes the procedure for normal backup and restoration operations by using Application Agent, between the primary database server in the AlwaysOn Availability Groups configuration and a backup server.
3. Build a database on the secondary server by using a backup.  
This step includes the procedure for using a backup of the primary database server to build a database on the secondary server. The secondary server can be used as, for example, the primary database server in another AlwaysOn Availability Groups system.

## Requirements

To use the Application Agent CLI in an SQL Server AlwaysOn Availability Groups configuration, you must fulfill the requirements described in the Application Agent CLI manual in addition to the following requirements.

- The version of Application Agent is 7.3.0-00 or later.
- The database software is SQL Server 2012.
- The version of the operating system on each server is within the range supported by Application Agent.
- A SQL Server 2012 system database is installed on the primary database server, the secondary database server, and the secondary server.
- A copy group is being used for pair management between the primary database server and the backup server.
- A copy group is being used for pair management between the primary database server and the secondary database server.
- A copy group is being used for pair management between the primary database server and the secondary server.
- The `drmsqlinit` command has been executed on the primary database server, the secondary database server, and the secondary server to register SQL Server parameters.

## Operating procedure

This section describes the operating procedure for a SQL Server 2012 AlwaysOn Availability Group configuration. The description uses the following names:

SQL Server instance: `instA`

User database: `USER_A`

### Build a database on the secondary database server by using a backup

This section describes the procedure for restoring and recovering the data for a user database on the secondary database server. (This procedure corresponds to step 1.)

1. Refresh the dictionary map file on the primary database server.

```
PROMPT > drmsqldisplay -refresh
```

```
PROMPT >
```

2. Back up the user database to a secondary volume.

Back up the user database on the primary database server. On the primary database server, execute the `drmsqlbackup` command by using the `-target` option or `-f` option to specify the user database.

```
PROMPT > drmsqlbackup instA -target USER_A
PROMPT >
```

When this command is executed, backup information is registered in the backup catalog of the primary database server under a new backup ID (the next sequential unused ID number). In this example, the new backup ID is 0000000001.

3. Back up the transaction logs of the user database.

To back up the transaction logs, on the primary database server, execute the `drmsqllogbackup` command.

```
PROMPT > drmsqllogbackup instA
PROMPT >
```

After executing the `drmsqllogbackup` command, be sure to avoid updating the user database that was backed up.

4. Export the backup information to a temporary file.

Information about backup operations from primary volumes to secondary volumes must be copied to the secondary database server. On the primary database server, execute the `drmdbexport` command to export information about backup operations to a temporary file. In this example, the name of the temporary file is `C:\temp\EX-FILE1.drm`.

```
PROMPT > drmdbexport 0000000001 -f C:\temp\EX-FILE1.drm
PROMPT >
```

5. Transfer data to the secondary database server.

Using a method of your choice, transfer the following files to the secondary database server:

- The exported temporary file
- VDI metafiles
- The backup files for the transaction logs

In this example, the exported temporary file is now `C:\temp\EX-FILE1.drm` on the secondary database server.

6. Start an instance of SQL Server on the secondary database server.

- Bring the secondary volume disk online.
- Mount the file system of the secondary volume.
- Start an instance of SQL Server.

7. Import the temporary file transferred from the primary database server into the backup catalog of the secondary database server.

Import the temporary file transferred from the primary database server (`C:\temp\EX-FILE1.drm`) into the backup catalog of the secondary database server. To import the temporary file, on the secondary database server, execute the `drmdbimport` command.

```
PROMPT > drmdbimport -f C:\temp\EX-FILE1.drm
PROMPT >
```

8. Verify that the file has been imported.

Verify that the import operation has finished normally. To do so, on the secondary database server, execute the `drmsqlcat` command.

```
PROMPT > drmsqlcat instA
```

```
PROMPT >
```

9. Restore the user database on the secondary database server.

To restore the user database, on the secondary database server, execute the `drmsqlrestore` command. When this command is executed, the status of the user database becomes `RESTORING`.

```
PROMPT > drmsqlrestore 0000000001 -no_resync -nochk_host -target USER_A
```

10. Recover the user database.

To recover the user database, on the secondary database server, execute the `drmsqlrecovertool` command. Doing so changes the status of the final user database to `RESTORING`.

```
PROMPT > drmsqlrecovertool instA
```

```
PROMPT >
```

When this command is executed, the `drmsqlrecovertool` dialog box appears. Click **Add**, and then select all transaction log backup files. Then, for **Recovery Mode**, select **Loading**, and for **Roll Forward**, select **Yes**.

11. Use SQL Server Management Studio to set up an AlwaysOn Availability Groups configuration consisting of the primary and secondary database servers.

## Back up and restore the user database on the active node

This section describes the procedure for backing up and restoring a user database. (This procedure corresponds to step 2.) In this example, the primary database server is the active node.

1. Back up the user database.

On the primary database server, perform an online backup of the user database. To back up the user database, execute the `drmsqlbackup` command by using the `-target` option or `-f` option to specify the user database.

```
PROMPT > drmsqlbackup instA -target USER_A
```

```
PROMPT >
```

2. Back up the transaction logs of the user database.

To back up the transaction logs, on the primary database server, execute the `drmsqllogbackup` command.

```
PROMPT > drmsqllogbackup instA
```

```
PROMPT >
```

3. Prepare for restoration.

In SQL Server Management Studio, select **AlwaysOn High Availability** and then **Availability Groups**. Then, from **Availability Replicas**, delete the primary database server.

4. Restore the user database.

To restore the user database, from the primary database server, execute the `drmsqlrestore` command.

```
PROMPT > drmsqlrestore <backupID> -resync -target USER_A
```

```
PROMPT >
```

5. Recover the SQL Server database.

To recover the database, from the primary database server, execute the `drmsqlrecover` command or the `drmsqlrecovertool` command.

```
PROMPT > drmsqlrecover instA
```

```
PROMPT >
```

```
PROMPT > drmsqlrecovertool instA
```

```
PROMPT >
```

6. Use SQL Server Management Studio to rebuild the AlwaysOn Availability Group.

## Build a database on the secondary server by using a backup

This section describes the procedure for using the database on the primary database server to build a database for the secondary server. (This procedure corresponds to step 3.)

1. Delete the secondary server from the AlwaysOn Availability Group (only if a secondary server has been registered).<sup>1</sup>

In SQL Server Management Studio, select **AlwaysOn High Availability** and then **Availability Groups**. Then, delete the secondary server that is registered under **Availability Replicas**.

<sup>1</sup>This step is required only for AlwaysOn Availability Groups configurations in which the secondary server acts as the primary database server.

2. If the user database of the secondary server (USER\_A) is attached, detach it.

3. Prepare

- Stop the instance of the SQL Server.
- Unmount the file system of the secondary volume.
- Take the secondary volume disk offline.

4. Refresh the dictionary map file on the primary database server.

```
PROMPT > drmsqldisplay -refresh
```

```
PROMPT >
```

5. Back up the user database to the secondary volume.

Back up the user database on the primary database server. On the primary database server, execute the `drmsqlbackup` command by using the `-target` option or `-f` option to specify the user database.

```
PROMPT > drmsqlbackup instA -target USER_A
```

```
PROMPT >
```

6. Back up the transaction logs of the user database.

To back up the transaction logs, on the primary database server, execute the `drmsqllogbackup` command.

```
PROMPT > drmsqllogbackup instA
```

```
PROMPT >
```

After executing the `drmsqllogbackup` command, be sure to avoid updating the user database that was backed up.

7. Export the backup information to a temporary file.

Information about backup operations from primary volumes to secondary volumes must be copied to the secondary server. On the primary database server, execute the `drmdbexport` command to export information about backup operations to a temporary file. In this example, the name of the temporary file is `C:\temp\EX-FILE1.drm`.

```
PROMPT > drmdbexport 000000001 -f C:\temp\EX-FILE1.drm
```

```
PROMPT >
```

8. Transfer data to the secondary server.

Using a method of your choice, transfer the following files to the secondary server:

- The exported temporary file
- VDI metafiles
- The backup files for the transaction logs

In this example, the exported temporary file is now `C:\temp\EX-FILE1.drm` on the secondary server.

9. Start an instance of SQL Server on the secondary server.

- Bring the secondary volume disk online.
- Mount the file system of the secondary volume.
- Start an instance of SQL Server.

10. Import the temporary file transferred from the primary database server into the backup catalog of the secondary server.

Import the temporary file transferred from the primary database server (`C:\temp\EX-FILE1.drm`) into the backup catalog of the secondary server. To import the temporary file, on the secondary server, execute the `drmdbimport` command.

```
PROMPT > drmdbimport -f C:\temp\EX-FILE1.drm
PROMPT >
```

11. Verify that the file has been imported.

Verify that the import operation has finished normally. To do so, on the secondary server, execute the `drmsqlcat` command.

```
PROMPT > drmsqlcat instA
PROMPT >
```

12. Restore the user database on the secondary server.

To restore the user database, on the secondary server, execute the `drmsqlrestore` command. When this command is executed, the status of the user database becomes `RESTORING`.

```
PROMPT > drmsqlrestore 0000000001 -no_resync -nochk_host -target USER_A
PROMPT >
```

13. Recover the user database.

To recover the user database, on the secondary server, execute the `drmsqlrevertool` command. Doing so changes the status of the final user database to `ONLINE`.

```
PROMPT > drmsqlrevertool instA
PROMPT >
```

When this command is executed, the `drmsqlrevertool` dialog box appears. Click **Add**, and then select all transaction log backup files. Then, for **Recovery Mode**, select **Online**, and for **Roll Forward**, select **Yes**.

14. Use SQL Server Management Studio to build an AlwaysOn Availability Groups configuration that includes the secondary server.<sup>1</sup>

<sup>1</sup>This step is required only for AlwaysOn Availability Groups configurations in which the secondary server acts as the primary database server.