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# EPM (Emergency Platemaking) and Hot Standby with Double-Take for Prinergy 9.5 Installation Guide

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# 1 EPM and Hot Standby system requirements

This section covers the system requirements for using Emergency Platemaking (EPM) software and Hot Standby with Carbonite's Double-Take 8.4 software.

## 1.1 About Double-Take Software

Double-Take is the third party software application that is used to implement the hot standby functionality in Prinerger. It was originally create by a company called Vision Solutions. It was since been sold to Carbonite.

On Windows Server 2016 and Windows 2019, Double-Take 8.4 Carbonite Replication Console is used. Double-Take 8.4 is officially qualified with Prinerger 9.5 and above.

This document it will refer to it using the simplified "Double-Take Console" due to the historical product name and convention.

## 1.2 EPM system requirements

- Prinerger version 9.5 or later.
- The secondary server that is used for EPM must have sufficient RAM to function as a primary server. The drive letter layout on the failover server must match that of the primary server. For best results, the Prinerger path and Oracle path should be the same on both servers.
- The EPM server requires an available Araxi job volume (that is, a disk volume that is accessible by the Mac OS and the Microsoft Windows operating system) with sufficient space to accommodate several full-size Prinerger jobs. The disk space required depends on the space that the customer's jobs need to run successfully, although more is better. If the server runs out of disk space while the system is operating in EPM mode, Prinerger processing on the EPM server might fail and the Prinerger system might stop.
- The EPM server must have the same operating system and Prinerger versions installed as the primary server.
- EPM server minimum hardware requirements:
  - 12 GB of RAM
  - A 36-GB job volume

## 1.3 Hot Standby system requirements

Hot Standby software has the following system requirements.

- Prinerger version 9.5 or later
- Windows 2016 or 2019 operating system for Prinerger primary server and Hot Standby failover server  
**Note:** The Hot Standby failover server must have the same operating system and Prinerger versions installed as the primary server.
- Windows 2016 or 2019 operating system for tertiary server
- Static IP address

Hot Standby has two sets of system requirements, depending on which failover scheme you select. Ensure you fully understand each scheme's system requirements before selecting one.

- [Prinerger primary failover only\(see page 5\)](#)
- [Prinerger primary failover with job volume replication\(see page 5\)](#)

### 1.3.1 Prinerger primary failover only

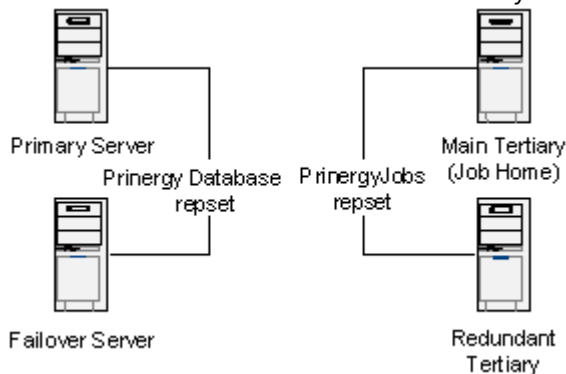
- (see page 5) **Primary server:**  
The Prinerger primary server must not store any Prinerger jobs that need to be accessed during failover. This is a firm requirement of Hot Standby. Jobs must be stored on the failover server, a tertiary server, or a secondary server. Jobs may be stored on more than one of these servers.  
The primary and Hot Standby servers must have static IP addresses. The Prinerger program path and Oracle paths must be identical on both servers.
- **Hot Standby failover server (secondary server or render station with Hot Standby software installed):**  
The failover server must have the same operating system as the primary server. It must be powerful enough to take over the primary server tasks, in addition to performing its own tasks. For best performance, the failover server hardware should be functionally equivalent to the primary server, such as the same amount of RAM and disk space, and the same type and speed of CPU. If the failover server is also a render station, Hot Standby runs with less RAM and disk space, but performance suffers proportionally.  
The failover server must have the same drive letter layout and the same paths to Prinerger and the database as the primary server. For example, if the primary server has C and J drives, the failover server must also have C and J drives. Drive size matters only in that there must be sufficient space on the failover server to store the replicated database from the primary server. The easiest way to guarantee this is to match the configuration drive-for-drive with the primary server. You can use internal or external disks.
- **Job home server:**  
The job home can be on the Hot Standby failover server. For best results, you should have a third server as a job home server. This third server can be configured either as a tertiary server (jobs only) or a secondary server (jobs and additional JTPs). Using a render station as job home is not recommended.

### 1.3.2 Prinerger primary failover with job volume replication

This scheme has a more flexible configuration but the system requirements are also more rigid. Not every scenario works well. Kodak supports two scenarios:

**Scenario 1:** Two tertiary servers.

This is the best method in terms of redundancy and performance.



Scenario 1 requires four Double-Take software licenses, one for each node: primary, failover, and two tertiary servers. All four servers must use the same operating system.

**Primary server.** See the primary server requirements in [Hot Standby system requirements\(see page 4\)](#).

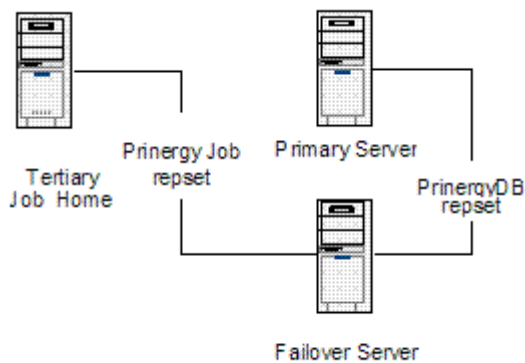
**Hot Standby failover server.** The Oracle database is replicated here to be used when the system is in failover mode. See the Hot Standby failover server requirements in [Hot Standby system requirements\(see page 4\)](#).

**Main tertiary server.** This is the main job storage location. All jobs are homed here and are replicated in real time to the redundant tertiary server. For best results, use a gigabit network card and a minimum of 1 GB of RAM, in addition to the requirements in [Hot Standby system requirements](#)(see page 4). No JTPs (other than archive/purge) can be homed on the tertiary server.

**Redundant tertiary server.** This server is the same as the main tertiary server and is equipped with a drive array of equal or greater space and approximately equal performance capabilities. This server must use the same operating system as the main tertiary server. The requirements are the same as the main tertiary server.

**Scenario 2:** One tertiary server—job data and the Prinerger database are replicated to the failover server.

This scenario is a good compromise of cost vs. reliability.



Scenario 2 requires three Double-Take software licenses, one for each node: primary, failover, and tertiary server. All three servers must use the same operating system.

**Primary server.** No jobs may be homed here. See the primary server requirements in [Hot Standby system requirements](#)(see page 4).

**Hot Standby failover server.** The Oracle database is replicated here to be used when the system is in failover mode. Jobs are also replicated here from the tertiary server. See [Hot Standby system requirements](#)(see page 4).

**Tertiary server.** This is the main job storage location. All jobs are homed here and are replicated in real time to the failover server. For best results, use a gigabit network card and a minimum of 1 GB of RAM. No JTPs (other than archive/purge) can be homed on the tertiary server.

## 1.4 How EPM works

Emergency Platemaking (EPM) allows you to maintain job throughput in the event of a Prinerger primary server failure.

If the primary server fails, EPM mode enables the system to continue processing jobs and producing plates. EPM does not provide complete system redundancy. EPM uses a secondary server as a primary server until the original primary server is restored.

The reconfiguration required for switching to and from EPM mode is simple. The user can be up and running again minutes after detecting a failure on the primary server.

The EPM option involves installing all of the primary server's Prinerger software components onto a failover server. These components include all Prinerger executables, libraries, and configuration files, and an independent installation of the Oracle database.

During normal system operation, the EPM failover server functions as a secondary server or render station and uses only the Prinerger components that are required by a regular secondary server. All other non-secondary components, such as the Oracle database, are dormant and unused.

Every night, a number of primary server configuration files are copied from the primary server to the EPM failover server. These files include process plans, license key information, standard color entries, Preps templates, mark sets, and fonts. The copying process captures any configuration information from the original primary server that is required by the EPM failover server if it is switched to failover mode.

If the Prinerger primary server fails, the operator reconfigures the EPM failover server to operate in EPM mode. For more information about EPM operating procedures, see the EPM and Hot Standby user documentation.

**Note:** Archiving and Prinerger Backup are disabled when the system is in EPM mode, that is, when it is "failed over." The Oracle database on the EPM server is intended for emergency use only, and is not backed up nightly. Any jobs that must be saved from operation in failover mode must be exported and then imported into the original database. For this reason, as well as a lack of appropriate supporting hardware on the EPM server, archiving is also disabled when running in EPM mode.

## 1.5 How Hot Standby works

Hot Standby provides an almost fully redundant Prinerger primary server.

Hot Standby (formerly EPM+) is designed specifically for Prinerger. Hot Standby expands on EPM, combining the basic functionality of failover (allowing a Prinerger secondary server or render station to take over primary server functions if the primary server fails) with data replication. When the system fails over, the failover server has database and job access up to the time when the primary server went offline (within a few seconds), enabling a customer to pick up production from that point.

Hot Standby with Double-Take software has the job replication option, which is able to mirror a Prinerger job volume across a network, providing the ability to recover from tertiary server failures or outages. For more information about Hot Standby user procedures, see the *Hot Standby With Double-Take for Prinerger Systems User Guide*.

**Important:** Hot Standby does not replace the need for nightly or more frequent backups. You must still make regular backups. Failure to make regular backups can result in loss of data.

## 1.6 Reviewing Rules Based Automation dependencies on the primary server

If Rules Based Automation is in use, the automated workflow must be reviewed to ensure that any dependencies on the primary server are minimized, understood, and documented in the failover procedure.

Some examples are:

- If remote triggers are used between rule sets on the primary server, they will need to be redirected to the hot standby server during failover. A Global rule set variable should be used to store the primary server name to simplify the redirection process.
- Remote triggers coming from external systems must be easily redirectable to the hot standby server.
- Any funnel jobs used to submit files via a hot folder to RBA must not reside on the primary server.
- Any automatically created jobs must not be created on the primary server.

## 2 Installing EPM and Hot Standby

To install both EPM and Hot Standby, complete up to [Replicating Prinerger Configuration Information](#) (see page 11).

Continue with [Installing Double-Take software \(phase 2\)](#) (see page 12) only if you are installing Hot Standby.

If you are upgrading from Double-Take 8.2 to 8.4, proceed to section [Installing Double-Take software \(phase 2\)](#) (see page 12)

### Related topics

[Testing failover](#) (see page 19)

### 2.1 Prerequisites (EPM and Hot Standby with Double-Take for Prinerger)

**Note:** If the EPM or Hot Standby system was ordered from Kodak, some prerequisites might have been completed before the system was shipped.

#### Program path and drive letter requirements

The Prinerger and Oracle paths and drive letter layout on the failover server must match that of the primary server. For more information, see [EPM and Hot Standby system requirements](#) (see page 4).

#### Collecting required materials

Assemble everything that you need to complete the installation:

- Double-Take Installer appropriate for the OS and Prinerger version:

Windows Version	Prinerger Version	Double-Take Version	Installer Zip File Name
2012 R2	7.5 or later	7.1	DoubleTake7.1_Oracle12.2.zip
2016	8.3 through 8.4.1	8.2	DoubleTake8.2_Oracle12.2.zip
2016 & 2019	9.0 through 9.0.2	8.2	DoubleTake8.2_Oracle19.zip
2016 & 2019	9.5.0 or later	8.4	DoubleTake8.4_Oracle19.zip

- Server-specific Ghost Image DVD.
- A server in a customer's system that meets or exceeds the specifications listed in [Prinerger Server Installation for Factory and Field](#)<sup>1</sup>. If no existing server can be used, order a new server.
- A Prinerger license with EPM/Hot Standby option enabled. Contact your service representative to purchase this option if necessary.
- Double-Take license for each server that is involved in database or job data replication.

<sup>1</sup> [https://services.knowledge.en.kodak.com/app/answers/detail/a\\_id/75319](https://services.knowledge.en.kodak.com/app/answers/detail/a_id/75319)



If you do not already have these licenses, contact [uws.license.key@kodak.com](mailto:uws.license.key@kodak.com)<sup>2</sup> and ask them for the appropriate number of Double-Take licenses. For Windows 2016 and Windows 2019, Double-Take 8.4 licenses will be required.

### Collecting reference documents

You need these documents:

- *Using Windows PE (WinPE) Guide* (answer 73745<sup>3</sup> in the Kodak Services Knowledge Vault)
- [Prinerger Server Installation for Factory and Field](#)<sup>4</sup> (Prinerger version specific)
- *Prinerger Upgrade Guide* (Prinerger version specific)
- Dell Server Setup Guide (hardware version specific)
- *Prinerger Emergency Platemaking User Guide*
- *Hot Standby with Double-Take for Prinerger Systems User Guide*

### Updating the license key on the primary server

In Prinerger Administrator on the primary server, add the Prinerger license key to enable **Emergency Platemaking** (for both EPM and Hot Standby) and **Emergency Platemaking With Double-Take** (for Hot Standby only).

### Archiving jobs homed on the EPM server

As a precaution, if you plan to use an existing secondary as a failover server, use Prinerger Workshop to archive any job that is homed on that secondary server.

### Backing up the server to be used as the failover server

If necessary, back up the system drive on the failover server. You can use NTBackup. If the site has the Prinerger Backup option, verify that the last server backup was successful.

## 2.2 Installation overview

Installation has several phases, depending on the state of the system.

**Note:** If a Prinerger server will be repurposed as a failover server and there are configurations for printers, shares, and so on that the customer wants to keep, record the information. All these settings are lost during the installation.

**Note:** You must log onto the Prinerger server using an account with administrator privileges and shut down Prinerger before installing EPM or Hot Standby.

**Note:** If you are upgrading from Double-Take 8.2 to 8.4, proceed to section [Installing Double-Take software \(phase 2\)](#)(see page 12)

### Installation phases

The installation phase depends on the state of the system:

- **Phase 1:** Configure the failover server. (Start at Phase 1 for a new installation of EPM or Hot Standby.) This includes:
  - a. Re-cloning a secondary server.
  - b. Installing Prinerger as a primary server on the secondary server.
  - c. Running the ConfigEPServer.cmd script to change the appropriate registry settings and enable Prinerger failover mode.
- **Phase 2:** Install Double-Take software.
- **Phase 3:** Configure Double-Take software.

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<sup>2</sup> <mailto:uws.license.key@kodak.com>

<sup>3</sup> [https://services.knowledge.en.kodak.com/app/answers/detail/a\\_id/73745](https://services.knowledge.en.kodak.com/app/answers/detail/a_id/73745)

<sup>4</sup> [https://services.knowledge.en.kodak.com/app/answers/detail/a\\_id/75319](https://services.knowledge.en.kodak.com/app/answers/detail/a_id/75319)

**Examples of current state vs. required phases**

Depending on the current state of the system and what you want to install, complete only the required installation phases. See this table for examples.

System state	EPM and Hot Standby	Hot Standby only	
	Phase 1	Phase 2	Phase 3
In Prinerger production, configure a new system.	X	X	X
In the field, configure an existing Prinerger system without EPM or Hot Standby.	X	X	X
In the field, upgrade an existing EPM system to Hot Standby.		X	X

## 2.3 Configuring the failover server (phase 1)

If you are upgrading a system with EPM or Hot Standby (EPM+), skip this section and go to [Installing Double-Take software \(phase 2\)](#) (see page 12).

If you are performing a new installation of EPM or Hot Standby, start here.

If Kodak Production supplied the failover server, some of these procedures might have already been completed.

1. Install Windows using a clone or ghost image. EPM and Hot Standby software require the Windows operating system on the failover server to be exactly the same build and patch level as on the primary server.
  - a. Install a fresh copy of Windows on the system drive on the failover server using the procedure in *Using Windows PE (WinPE) Guide* (answer 73745<sup>5</sup> in the Kodak Services Knowledge Vault).
  - b. Rename the server to the same name as the original secondary server (if reusing a secondary server), based on the procedure in the Windows installation document.
2. Install Windows service packs on the failover server to match the service pack level of the primary server. More recent versions of the clone images might already have the latest service pack applied. If this is the case, there is no need to reapply it.
3. Install Prinerger as a primary server on the failover server, using the document *Prinerger Server Installation for Factory and Field*. The version of Prinerger on the failover server must match the version of Prinerger on the rest of the system.

**Note:** Ensure that the ARAXI service password used for this installation is the same as the password on the existing servers.

4. Install Prinerger updates and upgrades on the EPM failover server so its update level is the same as the rest of the system. See the *Prinerger Upgrade Guide*.
5. Restore the original **Jobs** folder. If no shares or jobs were on the server before Prinerger was installed, this step is optional.
  - a. Start **Computer Management**.
  - b. If the default Mac share is not applicable, delete it. Jobs on *EPMServerName RAIDDriveLetter* drive. For example, Jobs on CWA662 J drive.
  - c. Add any necessary shares, users, printers, or other system configurations that existed before the system cloning.
6. Run the ConfigEPSServer script.

**Note:**

- Make sure the primary server is online.

<sup>5</sup> [https://services.knowledge.en.kodak.com/app/answers/detail/a\\_id/73745](https://services.knowledge.en.kodak.com/app/answers/detail/a_id/73745)

- Perform this step on the failover server.
  - Log on using the ARAXI account.
7. To connect the failover server to the Prinerger system as a secondary server, run this script from a command prompt: `ConfigEPServer.cmd -p NameOfPrimaryServer -l path to log file`  
**Example:** `ConfigEPServer.cmd -p epmplus-pri -l c:\`  
 The `-l` (lowercase L, not the number one) option is for a directory name only and not the name of the log file in the path. The name of the log file created in the directory is `ConfigEPServer.log`.
  8. After running the script, open the log file, and verify that all the steps in the procedure are completed successfully.  
**Note:** `ConfigEPServer.cmd` is located at `<%AraxiHome%>\CreoAraxi\Support\bin`. You can keep the log file in the same directory.
  9. Change the Backup service account on the failover server.
    - a. Start the Windows Services Console (`services.msc`).
    - b. To edit the service properties, right-click **AraxiSysStateBackup**, and change the account that the service runs under to be the same account as the Araxi service.
  10. Add the local login accounts used by Workshop operators.
    - a. On the failover server, start the Windows Computer Management Console (`compmgmt.msc`).
    - b. Locate **Local Users and Groups**.
    - c. Right-click **Users**, and select **New User**.
    - d. Type information in the required sections, and click **Create**.
  11. Create the standard share prefix. The default standard share prefix is **AraxiVolume**. If this is different in the Prinerger system that is being configured, a share with the correct prefix must be created on the failover secondary server.

## 2.4 Replicating Prinerger configuration information

The `AraxiFileReplicator` service on the primary server performs Prinerger configuration replication.

The `AraxiFileReplicator` service copies Prinerger-specific configuration data from the primary server to the failover server. The DoubleTake software cannot replicate this data because some data is in the registry and some data is changed during transfer. `AraxiFileReplicator` is completely independent from the Double-Take software.

The replication functionality is in a Python module (`<%AraxiHome%>\lib\python\com\creo\araxi\filerplicator\Prepliated.py`) that copies all process plans, workflow plans, the primary server's registry, and a number of other data files from the primary server to the failover secondary server.

The script creates the `<%AraxiHome%>\CreoAraxi\data\failover` directory on the primary server and the failover secondary server to store all the files that are needed to convert to failover mode. To ensure consistency between the servers, these files are updated nightly by the `AraxiFileReplicator` service.

The `AraxiFileReplicator` service runs only on the primary server, pushing Prinerger configuration data from the primary server to the failover server. The service is present on the failover server (because Prinerger was installed as a primary there before being configured to Hot Standby), but it does not do anything on that server.

After `AraxiFileReplicator` has run, examples of files that might be present in the failover server are:

- `<PRIMARY>_install.bat`
- `<PRIMARY>_per1_clone.vbs`
- `<PRIMARY>_per2_clone.vbs`
- `<PRIMARY>_prn_clone.vbs`
- `Primaryreg.ini`

## 2.4.1 Preparing the AraxiFileReplicator service to run automatically

Perform this procedure on the primary server.

Prinerger automatically installs the AraxiFileReplicator service on all primary servers. However, you must perform the following procedure to ensure that the service runs automatically:

1. On the primary server, start the Windows Services Console (`services.msc`).
2. In the **Services** area, edit the properties of the **AraxiFileReplicator** service.
3. Change the user name/password to be the same as the Araxi service.
4. Run `schtasks.exe | findstr /i /c:ARAXI` and ensure that there is a scheduled task that looks similar to the following:

```
StartAraxiFileReplicator      11/15/2018 10:00:00 PM Ready
```

If this scheduled task is not present, start Prinerger and it will be created, or add it manually using `schtasks.exe`.

5. Check that `<%AraxiHome%>\CreoAraxi\etc\Preplicated.ini` is configured correctly. Ensure there is a setting named `AraxiFileReplicatorOn` and that it is set to `Y`. If this setting is not present, add it to the configuration file: `AraxiFileReplicatorOn=Y`.

## 2.4.2 Running the AraxiFileReplicator service daily automatically

You must manually start the AraxiFileReplicator service at least once on the primary server before failover can function properly.

- The scheduled task launches the command `StartAraxiFileReplicator.cmd` daily at 10 PM local time.
- `StartAraxiFileReplicator.cmd` first checks to see if the `Preplicated.ini` file is configured to run the service. If `AraxiFileReplicatorOn=Y`, the command continues, otherwise, it exits without doing anything.
- If the service is configured to run, the command starts the service. The log file is `<%AraxiHome%>\CreoAraxi\system\log\araxifilereplicator\araxifilereplicator.log`.
- If the command detects any errors when it tries to start the service, a dialog box appears indicating that the service failed to start and that you should look at the log file for further information.

You must manually start the service at least once before initial testing. To start the service, from the primary server:

1. Start the Windows Services Console (`services.msc`).
2. From the **Services** menu, right-click **AraxiFileReplicator** and click **Start**.
3. Monitor whether the files are being replicated into the `<%Araxihome%>\CreoAraxi\Data\failover` folder on the failover server. When the replication is finished, the AraxiFileReplicator service stops automatically.

If you are setting up EPM only, proceed to [Testing failover](#) (see page 19). The following sections on Double-Take are for Hot Standby and Hot Standby with job replication only.

## 2.5 Installing Double-Take software (phase 2)

**Requirements:** Ensure you configure user and group accounts before installing the Double-Take software.

Make sure that you are using the appropriate version of Double-Take for the Windows and Prinerger version in use:

Windows Version	Prinerger Version	Double-Take Version	Installer Zip File Name
2012 R2	7.5 or later	7.1	DoubleTake7.1_Oracle12.2.zip
2016	8.3 through 8.4.1	8.2	DoubleTake8.2_Oracle12.2.zip
2016 & 2019	9.0 through 9.0.2	8.2	DoubleTake8.2_Oracle19.zip
2016 & 2019	9.5 or later	8.4	DoubleTake8.4_Oracle19.zip

Perform this procedure on the primary server, the failover server, and any tertiary servers that are involved in Hot Standby with job replication.

- From the root folder of the DT Installer, run the `DT_Configure.cmd` script.
- Type the drive letter of the database drive. Use the database drive (for primary and failover servers) or the **Jobs** drive (for tertiary servers). If no Oracle installation is detected, the script verifies whether the server is a tertiary server. The following menu appears (example only - versions numbers and file paths may be different):

```

Double-Take 7.1 Kodak Installer - Main Menu
Double-Take 7.1 will be installed in C:\Program Files\Vision Solutions\Double-Take
Please select the action you wish to perform:
[1] Install Double-Take 7.1
[2] Remove Double-Take 7.1
[3] Configure Replication Sets
[4] Prepare a Hot Standby Failover Server (do this after Double-Take 7.1
install)
[0] Do Nothing and Exit
Type in your selection and press ENTER:

```
- Type 1, and press **Enter** to install Double-Take.
- Type Y, and press **Enter** to confirm that you will install Double-Take and restart the computer afterwards.
- Type the activation code that is supplied with the Hot Standby order. An activation code is required to start Double-Take, and replication does not work without it. If you do not have an activation code, or if you enter a wrong code, you can correct it later from the Double-Take Console. (Double-Take does not offer a trial period.)
- If you have not installed 32-bit and 64-bit Visual C++ SP1 Runtimes on the server, you will receive a prompt to install this. Click **Install** to install the updates.
- When Double-Take installation is complete, restart the server.
- If it is not already a member, add the Admin account the Double-Take software has been installed under to the Double-Take Admin group.
- If the server does not have internet access, the Double-Take software must be activated manually. To do so, perform the following actions:
  - Go to an internet-connected computer, and in an internet browser, open <https://activate.doubletake.com/>.
  - Fill in the required information.
  - Follow the provided instructions to activate the software.

## 2.6 Configuring database and job data replication using Double-Take software (phase 3)

The replication sets are created using either DT\_Configure.cmd (DT Installer folder) or CreateRepset.cmd (system drive\Program Files\Vision Solutions\Double-Take\creo).

Use the Double-Take Console for further configuration and starting the replication jobs.

- [Creating an Oracle database replication set](#)(see page 14)
- [Configuring the main tertiary server for job replication](#)(see page 14)
- [Configuring the redundant tertiary server](#)(see page 15)
- [Adding the database and job replication related servers to Double-Take Console](#)(see page 16)
- [Configuring database replication in Double-Take Console](#)(see page 16)
- [Configuring job replication in Double-Take Console](#)(see page 17)
- [Preparing Oracle on the PrinergerDB failover server](#)(see page 17)
- [Starting replication](#)(see page 18)
- [Monitoring replication](#)(see page 18)

### 2.6.1 Creating an Oracle database replication set

Perform this task only from the primary server. If PrinergerDB replication set exists, you must delete it using the Double-Take Console before you perform this task.

1. Enable an unrestricted execution policy on the local machine:
  - a. Open a command prompt: right-click Windows > Command Prompt (Admin)
  - b. Copy and paste the following command: powershell Set-ExecutionPolicy unrestricted
  - c. Confirm it is possible to ping the hot standby failover server from the primary server by name.  
If it is not possible the failover server will need to be added to the hosts file.
  - d. Close the command prompt.
2. From the root folder of the DT Installer, run the DT\_Configure.cmd script.
3. Type the drive letter of the database drive.
4. From the main menu, type 3 (Configure Replication Sets), and press **Enter**.  
**Note:** Running the CreateRepset.cmd script opens this menu as well.
5. Type 1 (Create Oracle DB Replication Set), and press **Enter**.
6. Type 1 and press **Enter** to start creating the replication set.
7. When prompted, enter the name of the hot standby failover server.
8. When prompted, enter the name of a local administrator account. Use the Administrator account if it exists otherwise specify another account.
9. When prompted, enter the password of the Administrator account specified in the previous step. The script creates a new replication set named **PrinergerDB**, which appears in the Replication Console window.
10. [Configure the database replication set using the Double-Take Console](#)(see page 16).

### 2.6.2 Configuring the main tertiary server for job replication

Perform this task only from the main tertiary server. If **PrinergerJobs** replication set exists, you must delete it using the Double-Take Console before you perform this task.

1. It is recommended that any job shares that are going to be replicated do not contain the server name. This is to avoid confusion as the failover tertiary will have to be configured with the same share names as the main tertiary.
2. Make sure that the job share folder is shared in both Windows and Prinerger Administrator.

3. Make sure that Application Server role is enabled and Microsoft .Net 3.5 is installed on the tertiary server:
  - a. Go to **Control Panel > Programs and Features**, and select the **Turn Windows features on** option. Server Manager is activated and the Add Roles and Features Wizard opens. If it does not open automatically, from the **Quick Start** list on the Dashboard, select **Add roles and features**.
  - b. In the Select installation type screen, in **Installation Type**, select the **Role-based or feature-based installation** option, and click **Next**.
  - c. In the Select destination server screen, in **Server Selection**, under **Server Pool**, make sure that the tertiary server is selected as the destination server, and click **Next**.
  - d. **Windows 2012 R2 only:** In the Select server roles screen, in **Server Roles**, Under **Roles**, select the **Application Server** check box, and click **Next**.
  - e. In the Select features screen, in **Features**, make sure that the **.NET Framework 3.5 Features (1 of 3 installed)** and the **.NET Framework 4.6 Features (Installed)** options are selected, and click **Next**.
  - f. Click **Next**.
  - g. Click **Next**.
  - h. Click **Install**.
4. Enable an unrestricted execution policy on the local machine:
  - a. Open a command prompt: right-click Windows > Command Prompt (Admin)
  - b. Copy and paste the following command: `powershell Set-ExecutionPolicy unrestricted`
  - c. Confirm it is possible to ping the redundant (backup) tertiary server from the main tertiary server by name.  
If it is not possible the redundant server will need to be added to the hosts file.
  - d. Close the command prompt.
5. From the root folder of the DT Installer, run the DT\_Configure.cmd script.
6. Type the drive letter of the Jobs drive.
7. The script verifies whether the server is a tertiary server. Type Y.
8. From the main menu, type 3 (Configure Replication Sets), and press Enter.  
**Note:** Running the CreateRepset.cmd script opens this menu as well.
9. Type 2, and press Enter to create a Jobs folder replication set.
10. Type 1, and press Enter to start creating the replication set.
11. Write down the paths of the Jobs folders that need to be replicated (your tertiary server might only have one).
12. Enter the path where your Jobs folder is (Usually G: or J:). For a Jobs folder in J:\Volume1\Jobs, enter J:\Volume1. For a Jobs folder in J:\Jobs, enter J:.
13. When prompted, enter the name of the redundant (backup) tertiary server.
14. When prompted, enter the name of a local administrator account. Use the Administrator account if it exists, otherwise specify another account.
15. When prompted, enter the password for the administrator account specified in the previous step.
16. If there are other Jobs folders to be replicated, type y and when prompted, type the path. If you have typed all Jobs drives that are to be replicated, type n. The script creates a new replication set named **PrinergyJobs**, which appears in the Replication Console window.
17. [Complete the configuration of the Jobs folder replication set using the Double-Take Replication Console](#)(see page 17).

### 2.6.3 Configuring the redundant tertiary server

You must perform this procedure on the redundant (backup) tertiary server. If job data is to be replicated to the failover server, then perform this procedure on the failover server.

1. Create NT and Mac shares with the same names and paths as on the main tertiary server. Ensure that there are no nested shares and that each folder has only one NT share and one Mac share. Delete any other share on the job folder/drive.
2. Verify that local users and group accounts are identical to those on the main tertiary server.

3. Edit PostFailover.bat (*system drive*\Program Files\Vision Solutions\Double-Take\creo\bin) to contain the main tertiary server name as the source\_name. To do so:
  - a. Find the string source\_name, and replace it with the name of the main tertiary server.
  - b. Save the file to retain the changes.

## 2.6.4 Adding the database and job replication related servers to Double-Take Console

This topic only covers Double-Take Console (DTC) information that is related to using the Hot Standby software with Prinerger. For more information, see the *Double-Take User Guide* and *Double-Take Installation Guide* supplied by *Vision Solutions* in the DT Installer folder.

1. To start Double-Take Console, run C:\Program Files\Vision Solutions\Double-Take\Console\ConsoleUI.exe.
2. When Double-Take Console is started for the first time there are no servers configured. To add servers, perform the following actions:
  - a. Select **Manage Servers**, and then **Add Server**.
  - b. Specify the following values for the primary server:
    - **Server**—type the name of the server
    - **User Name**—type Administrator
    - **Password**—type the administrator password for the server
    - **Domain**—type the name of the server
  - c. Click **Add**.
3. Repeat step 2 to add the Hot Standby failover server.
4. Confirm that the two replication jobs exist by selecting **Manage Jobs** and verifying that there are two jobs named **PrinergerDB** and **PrinergerDBRestore**. The status of both jobs should be stopped.
5. If job replication is going to be done as well, the tertiary servers must be added and configured in Double-Take Console. Repeat steps 2 for the main tertiary server.
6. If the jobs are going to be replicated to a redundant tertiary server, repeat step 2 for it as well.
7. If jobs are going to be replicated, confirm that the job replication job exists by selecting **Manage Jobs** and verifying that there is a job named **PrinergerJobs** and that its source and target servers are correct. The status of the job should be stopped.

## 2.6.5 Configuring database replication in Double-Take Console

1. In Double-Take Console, select **Manage Jobs**.
2. Right-click the **PrinergerDB** job, and select **View Job Details**.
3. In the **Tasks** list (located on the right side), click **Edit job properties**.
4. In the **Mirror, Verify & Orphaned Files** section, under **General Options**, select the **Delete orphaned files** check box.
5. In the **Path Mapping** section, under **Mappings**, click the **One to One** button (located on the right side).
6. Click **Next**.
7. Click **Finish**.
8. Select **Manage Jobs**.
9. Right-click the **PrinergerDBRestore** job, and select **View Job Details**.
10. In the **Tasks** list (located on the right side), click **Edit job properties**.
11. In the **Mirror, Verify & Orphaned Files** section, under **General Options**, select the **Delete orphaned files** check box.
12. In the **Path Mapping** section, under **Mappings**, click the **One to One** button (located on the right side).
13. Click **Next**.
14. Click **Finish**.



## 2.6.6 Configuring job replication in Double-Take Console

Configure a backup tertiary server to monitor the regular tertiary server and to take over if the regular server fails. Perform this procedure only on the redundant (backup) tertiary server that backs up the regular tertiary server.

1. In Double-Take Console, select **Manage Jobs**.
2. Right-click the **PrinergerJobs** job, and select **View Job Details**.
3. In the **Tasks** list (located on the right side), select **Edit job properties**.
4. In the **Mirror, Verify & Orphaned Files** section, perform the following sections:
  - a. Under **Mirror Options**, select the **Compare file attributes. Send the attributes and bytes that differ** option.
  - b. Under **General Options**, clear the **Calculate size of protected data upon connection** check box.
  - c. Under **General Options**, select the **Delete orphaned files** check box.
5. In the **Path Mapping** section, under **Mappings**, click the **One to One** button (located on the right side).
6. In the **Failover Monitor** section, select the **Network monitoring** check box.
7. In the **Monitor these addresses** section, if the regular tertiary server does not appear in the **Source IP Address** list, add it by performing the following actions:
  - a. Type the IP address for the regular tertiary server, and click the **Add** button (located on the right side).
  - b. Verify that the newly-added IP address appears in the list and is selected.
8. In the **Failover Identity** section, perform the following actions:
  - a. Make sure that the **Apply source network configuration to the target** option is selected.
  - b. Make sure that the **Failover server name** check box is selected.
  - c. Make sure that the regular tertiary server IP address is selected in the **Source IP Address** list.
9. In the **Failover Options** section, perform the following actions:
  - a. Select the **Wait for user to initiate failover** check box.
  - b. Select the **Failover shares** check box.
  - c. If the Prinerger system is a member of a domain that uses the Microsoft Active Directory service, perform the following actions under **Active Directory**:
    - i. Select the **Failover host name** check box.
    - ii. Select the **Failback host name** check box.
    - iii. Click the **Active Directory Credentials...** button, and specify the credentials for an account that has update privileges within Active Directory.
  - d. Under **Target scripts**, specify the appropriate scripts from the following list. All scripts are located in the C:\Program Files\Vision Solutions\Double-Take\Creo\bin folder. Where relevant select one or both of the check boxes for delaying failover or failback until the script completes.
    - Pre-failover script:PreFailover.bat
    - Post-failover script:PostFailover.bat
    - Pre-failback script:PreFailback.bat
    - Post-failback script:PostFailback.bat
10. Click **Next**.
11. Click **Finish**.

## 2.6.7 Preparing Oracle on the PrinergerDB failover server

1. From the root folder of the DT Installer, run the DT\_Configure.cmd script.
2. Type the drive letter of the database drive.
  - a. Type 4 (Prepare an EPM+ Failover Server), and press Enter.
  - b. Type 1 (Stop and Disable Oracle and AraxiFileReplicator Services), and press Enter.  
The system checks that it is a failover server. If it is, Oracle is stopped and disabled.
3. Check the output for errors.

## 2.6.8 Starting replication

Configure and activate the connections that are needed to replicate data from the main primary server to the Hot Standby server, or from the tertiary server to the backup tertiary server.

**Note:** If the system was in Prinerger failover mode, the database files must have been restored on the primary server after reverting the Hot Standby server to a secondary server. If the restoration is not completed first, database changes made in failover mode will be lost.

### 2.6.8.1 Starting database replication

1. In Double-Take Console, select **Manage Jobs**.
2. Right-click the **PrinergerDB** job, and select **Start**.
3. Wait until the activity state (in the **Activity** column) changes to **protecting**, then right-click the **PrinergerDB** job, and select **Other Job Actions > Mirroring > Start**.
4. In the Mirror dialog box, perform the following actions:
  - a. Under **Mirror Options**, select the **Do not compare files. Send the entire file.** option.
  - b. Clear the **Calculate size of protected data before mirroring** check box.
  - c. Click **OK**, and wait until the activity state (in the **Activity** column) changes to **protecting**.

### 2.6.8.2 Starting job replication

1. In Double-Take Console, select **Manage Jobs**.
2. Right-click the **PrinergerJobs** job, and select **Start**.
3. Wait until the activity state (in the **Activity** column) changes to **protecting**, then right-click the **PrinergerJobs** job, and select **Other Job Actions > Mirroring > Start**.
4. In the Mirror dialog box, perform the following actions:
  - a. Under **Mirror Options**, select the **Do not compare files. Send the entire file.** option.
  - b. Clear the **Calculate size of protected data before mirroring** check box.
  - c. Click **OK**, and wait until the activity state (in the **Activity** column) changes to **protecting**.

## 2.6.9 Monitoring replication

Replication Monitor Utility does not work with Double-Take 7.1 and later. This issue will be fixed in a future release. Until then, the Double-Take Console should be used to monitor and confirm the replication is working correctly.

## 3 Testing failover

Simulate a failover at regular intervals to ensure that the failover system operates properly.

Perform a failover test immediately after installing the failover server, and at least once every quarter afterwards. By testing the failover system, you ensure that when you need the failover system urgently, it will operate smoothly. It also helps you to know what to expect during a failover.

The test takes about 30 minutes. Allow more time when you first run the test because you need to configure the failover server to match the primary server's configuration.

For testing, simulate primary and tertiary server failure by disconnecting the server network connection.

You can then follow the procedures for:

- Failing over to the server
- Restoring the primary server to normal operation

### 3.1 Performing a failover test remotely

1. When calling the customer to set up a date and time for the failover check:
  - a. Perform a dry run-through and explain to the customer that they need to find their primary server dongle location and also an available USB port on the failover server.
  - b. Ask the customer to remove any service dongles from the failover server.
  - c. Check the customer's process plans and make sure that none of them have hard-coded a path to the primary server for marks or ICC profiles. If they have, change these to `<%ARAXIHOME%>\path\to\marks\folder`. If there are a lot of them, it may take a while to fix. Plan the test date accordingly.
2. One day before the failover test date:
  - a. Check if the Double-Take replication status is OK.
  - b. Check the AraxiFileReplicator log file for any errors.
  - c. Check if a successful DB backup has taken place.
  - d. Check if local user accounts from the primary server exist on the EPM+ machine.
3. On the day of the test, but before initiating the test:
  - a. Check that the Double-Take replication status is OK.
  - b. Check the AraxiFileReplicator log file for any errors.
  - c. Check if a successful DB backup has taken place.
  - d. Double-check that the service dongles have been removed.

**Note:** When restoring the original primary server configuration, you may get an error message about one of the secondary servers being unable to be contacted. If this occurs, close and reopen Prinerger Administrator and attempt the *Revert to Secondary Server* operation again before escalating.

### 3.2 Backing up a cold database

For planned failovers, before you switch to failover mode, ensure that you have a current Oracle database backup, and perform a cold database backup.

**Important:** Ensure you have a current Oracle database backup and a cold database backup in case the restoration procedure is not followed correctly causing database corruption.

1. On the primary server, make sure the Oracle services are stopped.
2. Make a copy of the `C:\Oracle\oradata` folder and the `J:\Oracle` folder.

## 4 Troubleshooting (EPM and Hot Standby with Double-Take for Prinerger)

- [I accidentally deleted the replication job](#)(see page 20)
- [I used the incorrect activation code](#)(see page 20)
- [I get a "No shared volumes" error message](#)(see page 20)
- [I get an Event 8196](#)(see page 20)
- [Job creation fails during tertiary server failover](#)(see page 21)
- [Some paths in process templates do not work in failover mode](#)(see page 21)
- [Unable to monitor replication from Double-Take Console](#)(see page 22)

### 4.1 I accidentally deleted the replication job

If you accidentally deleted the replication job, repeat either [Creating an Oracle database replication set](#)(see page 14) or [Configuring the main tertiary server for job replication](#)(see page 14).

### 4.2 I used the incorrect activation code

During setup, if you didn't use an activation code, or typed the wrong activation code, the Double-Take software will not work.

To change the license key for a server:

1. In Double-Take Console, select **Manage Servers**.
2. Right-click the problem server and select **View Server Details**.
3. Select the **Edit Server Properties** task.
4. Open the **Licensing** section.
5. Use the Add or Remove controls to add or remove a license key.
6. To confirm the changes, click **OK**.

### 4.3 I get a "No shared volumes" error message

When you try to create a job after failover, an error message appears: No shared volumes were found, check network connection to share.

- Verify that there is at least one NT share on the failover server with the standard share prefix. Normally this is AraxiVolume, which the Prinerger installer automatically creates.
- If the standard share prefix was changed in HKLM\SOFTWARE\Creo\Araxi\Settings\Default\PFIL\Sharing\StandardSharedPrefix, you must manually create a share with the standard shared prefix in the failover server.

### 4.4 I get an Event 8196

Double-Take software encounters an Event 8196 logged in Events Viewer and triggers a re-mirror.

Event 8196 occurs when the replication queue cannot be flushed fast enough. This might occur when the server is very busy. This is a fail-safe mechanism in the DoubleTake software to maintain data integrity.

To minimize 8196 events:

1. Move the Double-Take directory queue to a drive that is not very busy. If the replicated folder creates high disk activity on the drive where the disk queue is located, write requests on the disk queue might be delayed.
2. Increase the memory queue size. The memory queue is set by default to 128 MB. This can be increased to 1024 MB provided there is available physical memory in the server. The Double-Take software uses only the memory it needs and dynamically releases the memory it does not need.
3. If you are using antivirus software, exclude Double-Take.exe and the Double-Take disk queue from real-time virus scan.
4. If the error is on the primary server, exclude \*.bck files (in the Oracle backup folder) from the **PrinergerDB** reset.
5. Run dbhook.reg from the DT Installer folder.
6. Restart the server.
7. Offload some processes running on the tertiary and/or backup tertiary servers.

## 4.5 Job creation fails during tertiary server failover

- The error may appear as Unable to Create Job: The message for "1396" could not be found.
- In DiagView, there may be an error stating  
Error creating folder\\<tertiary server name>\AraxiVolume\_<tertiary server name>\_J\Jobs\<JobName>: Logon Failure: the target account name is incorrect.
- The servers may be members of a domain using Active Directory. Perform a failback and edit the **Failover Monitor Settings** to failover and failback the hostname in Active Directory. You must specify an account with update privileges within Active Directory. For details, see [Configuring job replication in Double-Take Console](#)(see page 17).

## 4.6 Some paths in process templates do not work in failover mode

Marks files and webgrowth profile paths in process templates do not work in failover mode.

Process templates, marks, and webgrowth profiles in the default location (<%AraxiHome%>\CreoAraxi\Data) are replicated nightly. But marks and output JTPs do not assume default paths, unlike Color Matcher JTP, which assumes ICC profiles to be in \\primaryserver\AraxiHome\CreoAraxi\Data\ICC-Profiles.

So for ICC profile path in the process template, if you specify \printer\CMYK\myprofile.icm, the Colormatch JTP interprets the path to be \\primaryserver\AraxiHome\CreoAraxi\Data\ICC-Profiles\printer\CMYK\myprofile.icm. This works well because the ICC-Profiles paths in the process templates will be valid in failover mode.

**Note:** It is recommended to check for absolute paths to the primary server in the process templates while setting up, as the problem may not be noticed in the failover test, but occurs during an actual failover.

### Workaround for marks file paths

If there is no server name in the path, the marks JTP will assume the file to be in \\primaryserver\AraxiHome\A\dobeExtreme\bin.

- For process templates to work in failover mode, the marks file path can be changed from \\primaryserver\AraxiHome\CreoAraxi\data\MarkSets\... to ..\..\CreoAraxi\data\MarkSets\....

### Workaround for webgrowth profiles

- Put the webgrowth profiles in a network share that is available in both normal and failover mode. If the customer has job data replication, this can be placed in the job volume that is replicated in real time to the backup tertiary server.

## 4.7 Unable to monitor replication from Double-Take Console

Error message indicates 'Insufficient credentials'.

Add the account the user is currently logged on to the **Double-Take Monitor** group.