Kodak

EPM and Hot Standby (EPM+)

Emergency Platemaking and NSI Double-Take®
Installation and Operation

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EPM and Hot Standby (EPM+)

Kodak EPM and NSI Double-Take Installation and Operation

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1. OVERVIEW

1.1 What Is EPM?

The Emergency Platemaking (EPM) option was developed in response to the concerns of Kodak® Prinergy® software users about maintaining job throughput in the event of a Prinergy primary server failure. If the primary server fails, EPM mode enables the system to continue to process jobs and produce plates. However, it does not provide complete system redundancy. EPM is based on using a secondary server as a primary server until the original primary server is restored.

The reconfiguration required to switch to and from EPM mode is very simple, so that the user can be up and running again minutes after detecting a failure of the primary server. The EPM option can be used on all Prinergy 2.0.7 and later x86 platforms.

Hot Standby (formerly EPM+) is a solution to the long-standing customer demand for a near-fully redundant primary server for the Prinergy software. It has been designed specifically for Prinergy, but there are plans to implement its underlying technology for data-replication purposes over a wide variety of Kodak workflow solutions. The Hot Standby option using NSI® Double-Take® software can be used on all platforms running Prinergy 2.3.1.3 or later. For an overview of Hot Standby features and limitations, see the technical bulletins *Prinergy Hot Standb*y (78-0127B) and *Prinergy Hot Standby With Double-Take* (734-00446B), and the FAQ *Prinergy Hot Standby (EPM+) and Job Replication With Double-Take* (734-00507A).

1.2 How Does EPM Work?

The EPM option involves installing all of the primary server's Prinergy software components onto a failover server. These components include all Prinergy 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 Prinergy components required by a regular secondary server. All other non-secondary components, such as the Oracle database, are dormant and unused.

Overnight, 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, and fonts. The copying process captures any configuration information from the original primary server that will be required by the EPM failover, if it is invoked.

If the Prinergy 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 (EPM+) user documentation.

Note: Archiving and Prinergy Backup are disabled when the system is in EPM mode (that is, 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.

1.2.1 Hot Standby

Hot Standby expands on the Prinergy EPM feature. Hot Standby combines the basic functionality of failover (allowing a Prinergy secondary server or render station to take over primary server functions if the primary server fails) with proven data replication capabilities. This allows the failover server (after failover) to have 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 is able to *mirror* a Prinergy job volume across a network, greatly increasing the ability to recover from local server failures or outages, especially if the mirrored job volumes are located in a different location. For more information about Hot Standby user procedures, see the *Hot Standby With NSI Double-Take for Prinergy User Guide (731-00451C)*.

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

1.3 What Is the Second Dongle For?

EPM and Hot Standby include a second Prinergy dongle. This dongle may be used to run the original primary server when the Prinergy system is in EPM or Hot Standby mode. This is useful because the original primary server can be started and run for troubleshooting purposes while production continues on the rest of the system.

Contact a Kodak service representative or licensekey@creo.com for a temporary license key to use for running the original primary server separately from the rest of the system.

1.4 I Already Have EPM+, but I Want Job Replication

Veritas® Storage Replicator™ (VSR), which was shipped with EPM+, must be replaced with NSI Double-Take software to support job replication. VSR did a good job of replicating the Oracle database, but was unable to handle the large amount of traffic involved in replicating a multi-gigabyte Prinergy job volume.

Important: Do not attempt to use VSR to replicate a Prinergy job volume. Lab tests resulted in the job server becoming sluggish to the point where it stopped responding.

Note: When upgrading from EPM+ with VSR already installed, you do not need to re-ghost the EPM+ server.

1.4.1 Double-Take Replaces VSR

Instead of VSR, Double-Take software is now used to replicate both the Oracle database and one or more Prinergy job volumes.

Double-Take software and VSR cannot coexist on the same server. You must remove VSR before installing the Double-Take software. You can do this easily by following the instructions in Section 2.3, *Removing VSR*.

1.5 System Requirements

1.5.1 Prinergy Dongle

Kodak service engineers need a second Prinergy dongle (supplied) when repairing a primary server while customers are using EPM or Hot Standby. When you must use the dongle, contact a service representative to obtain a temporary license key to use with the primary server while performing repairs.

1.5.2 EPM System Requirements

Prinergy must be at version 2.0.7.4 or later.

The secondary server that will be used for EPM must have sufficient RAM to function as a primary server. Unlike other failover solutions, there is no requirement that the server be identical, or even similar. However, the drive letter layout on the failover server must match that of the primary server. It is strongly recommended that the Prinergy path and Oracle path be the same on both servers.

The EPM server requires an available Araxi job volume (that is, a disk volume that is accessible by Apple Mac OS® operating system software and Microsoft Windows NT® operating system software) with sufficient space to accommodate several full-size Prinergy 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, Prinergy processing on the EPM server may fail and the Prinergy system may stop.

The EPM server should have at least:

- 2 GB RAM
- An 18-GB job volume (varies with the customer—some may require 36 GB)

1.5.3 Hot Standby System Requirements

You must be running Prinergy 2.3.1.3 or later to support Hot Standby with Double-Take software. Hot Standby requires the Windows® 2000 or Windows 2003 (standard edition) operating system. Servers with Double-Take software installed require static IP addresses.

Hot Standby has two sets of system requirements, depending on which of two failover schemes you want to apply:

- Prinergy primary failover only
- Prinergy primary failover with job volume replication

In order to avoid confusion, read the system requirements section for each scheme carefully.

Prinergy Primary Failover Only

If Hot Standby is used for Prinergy primary server failover only, with no job replication capability, the system requirements are as follows:

Minimum number of servers: two (primary server and failover server)

1. **Primary Server**

   The Prinergy primary server must *not* store any Prinergy jobs. This is a firm requirement of Hot Standby. All job storage must reside on the failover server, a tertiary server, or another secondary server. Jobs may be stored on more than one of these servers as well.

   The primary and Hot Standby servers must have static IP addresses. The Prinergy program path and Oracle paths must be identical on the primary and Hot Standby servers.

2. **Hot Standby Failover Server** (secondary/render station with Hot Standby installed)

   The failover server 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 (for example, the same amount of RAM and disk space, and the same type and speed of CPU). This is very important, and strongly recommended, if the failover server is also a render station. Hot Standby will run with less RAM and disk space, but performance will suffer proportionally.

   The one strict requirement is that the failover server drive letter layout and the Prinergy and database paths must match that of the primary. For example, if the primary server has C, D, E, and J drives, the failover server must also have C, D, E, 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 (an important requirement at a busy site). The easiest way to guarantee this is to match the configuration drive-for-drive with the primary. This can be done with internal or external disks (internal disks are usually the most economical method).

   Note: Hot Standby requires the Windows 2000 or Windows 2003 (standard edition) Server operating system. This means that workstation-class servers (for example, Dell® OptiPlex™) cannot be used as failover servers.

3. **Job Server (highly recommended)**

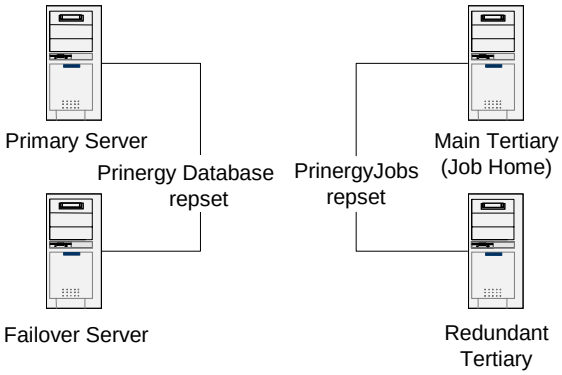
   Jobs can also be homed on a third server. This third server can be configured either as a tertiary (jobs only) or another secondary (jobs and additional JTPs). Homing jobs on a render station is *not* recommended.

Prinergy Primary Failover With Job Volume Replication

The system requirements for Prinergy primary failover with job volume replication are more rigid, because of the flexibility in how such a system can be configured. Not every scenario works well. The two scenarios supported by Kodak are described on the following pages.

Scenario 1: Two Tertiary Servers

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



Scenario 1 requires a total of *four* Double-Take software licenses (one for each node: primary, failover, and two tertiaries).

Primary server: the primary server. No jobs may be homed here. See the primary server requirements in Section 1.5.3.

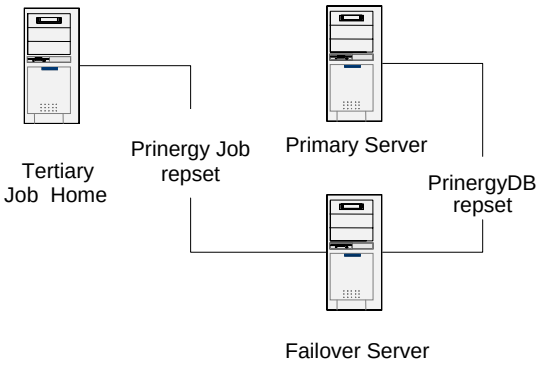
Hot Standby failover server: failover server. The Oracle database is replicated here to be used when the system is in failover mode. See the Hot Standby failover server requirements in Section 1.5.3.

Main Tertiary server: the main job storage location. All jobs are homed here and are replicated in real time to the redundant tertiary server. A gigabit network card is highly recommended. The tertiary server should have a minimum of 1 GB of memory. No JTPs (other than archive/purge) can be homed on the tertiary server. The tertiary server requires a static IP address and must be running the Windows 2000 or Windows 2003 (standard edition) server operating system.

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. The redundant tertiary server should have a minimum of 1 GB of memory. The redundant tertiary server requires a static IP address and must be running the Windows 2000 or Windows 2003 (standard edition) server operating system.

Scenario 2: One Tertiary Server—Job Data and Prinergy Database are Replicated to the Failover Server

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



Scenario 2 requires a total of *three* Double-Take software licenses (one for each node: primary, failover, and tertiary).

Primary server: the primary server. No jobs may be homed here. See the primary server requirements in Section 1.5.3.

Hot Standby failover server: 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 the Hot Standby failover server requirements in Section 1.5.3.

Tertiary server: the main job storage location. All jobs are homed here and are replicated in real time to the failover server. A gigabit card is highly recommended. The tertiary server should have a minimum of 1 GB of memory. No JTPs (other than archive/purge) can be homed on the tertiary server. The tertiary server requires a static IP address and must be running the Windows 2000 or Windows 2003 (standard edition) server operating system.

2. INSTALLATION (EPM AND HOT STANDBY)

Note: Complete Sections 2.1 to 2.6 for EPM and Hot Standby. Continue to Section 2.7 only if you are installing Hot Standby. To test the completed EPM installation, continue to Section 5.

Note: If the EPM or Hot Standby system was ordered from Kodak Production, some steps in Section 2 may have been completed before the system was shipped.

2.1 Prerequisites

2.1.1 Program Path and Drive Letter Requirements

The Prinergy and Oracle paths and drive letter layout on the failover server must match that of the primary server. For further details, see Section 1.5, *System Requirements*.

2.1.2 Collecting Required Materials

This is a list of materials you will require to complete the EPM installation:

- Hot Standby Installation CD (only required for Hot Standby)
- A server in a customer's system that meets or exceeds the specifications listed in *Prinergy Server Installation for Factory and Field*. If no existing server can be repurposed, a new server must be ordered.
- Server-specific DOS SCSI boot disk or CD-ROM. Download the boot disk image from the Downloads page of the appropriate Dell® or HP® server site on TechPlanet, or get the file from the server-specific resource CD.
- Windows Ghost Image Disk and the Norton Ghost™ 6.5 (or later) software executable from the server-specific resource CD in the Prinergy CD set
- A new Prinergy license key with EPM/Hot Standby enabled. You can get the license key by sending an e-mail message to licensekey@creo.com after this option is purchased.
- Double-Take license for each server involved in database or job data replication

2.1.3 Collecting Reference Documents

You will need the following documents:

- *Installing Windows 2000 SP4 and IE6 SP1 for x86 Platforms* (719-00107A)
- Specifically, the procedure *Ghosting W2K from an OS Image* in the document: *Windows 2000 Installation Using Ghost Image for Prinergy and InSite* (72-3476B)
- *Windows 2003 Installation using Ghost Image, Dell PE* (709-00230A)
- *Prinergy 4.x Server Installation for Factory and Field* (72-3497D)
- *Prinergy 4.0 Upgrade Guide* (731-00072F)
- *Dell Server Hardware Setup for Prinergy* (72-3572A)
- *HP Proliant Server Hardware Setup* (709-00285A)
- *Prinergy Emergency Platemaking User Guide* (03-4223A)
- *Hot Standby With NSI Double-Take for Prinergy User Guide* (731-00451C)

2.1.4 Updating Prinergy to the Required Version

For EPM, Prinergy must be at version 2.0.7.4 or later on all primary, secondary, and render station servers.

For Hot Standby with Double-Take software, Prinergy must be at version 2.3.1.3 or later on all primary, secondary, and render station servers.

Follow the procedures in the *Prinergy Upgrade Guide* (731-00072F).

Note: EPM was first included in Prinergy minor update 2.0.7.4.

2.1.5 Updating License Key on the Primary Server

Using Prinergy Administrator, add the new EPM-enabled license key to the primary server (for information about how to obtain this, see Section 2.1.2).

2.1.6 Archiving Jobs Homed on the EPM Server

If you are using an existing secondary as a failover server, as a precaution, use Prinergy Workshop to archive any job that is homed on that secondary server.

2.1.7 Backing Up the Server to be Repurposed as the Failover Server

You may want to back up the system drive of a server if it will be repurposed as a failover server. You can do this using NTBackup. If the site has the Prinergy Backup option, verify if the last server backup was successful.

2.2 Installation Procedure

Note: If a Prinergy server is to be repurposed as a failover server and there are configured printers, shares, and so on that the customer may want to keep, record the information now. All of these settings will be lost during the installation.

Note: You must shut down Prinergy before installing EPM or Hot Standby.

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

- **Phase 0 (Section 2.3)**: Remove VSR from the system (only required in some circumstances).
- **Phase 1 (Sections 2.4 to 2.6)**: Configure the failover server, which includes:
  - Re-ghosting a secondary server
  - Installing Prinergy as a primary server on the secondary server
  - Running the **ConfigEPServer.cmd** script to change the appropriate registry settings and enable Prinergy failover mode
- **Phase 2 (Section 2.7)**: Install Double-Take software.
- **Phase 3 (Section 2.8)**: Configure Double-Take software.

Examples of current state vs. required phases:

System State	Hot Standby Only	EPM and Hot Standby	Hot Standby Only	
	Phase 0 (Section 2.3)	Phase 1 (Section 2.4-2.6)	Phase 2 (Section 2.7)	Phase 3 (Section 2.8)
In Prinergy Production, configuring a brand new system		X	X	X
In the field, with an existing Prinergy system without EPM or Hot Standby		X	X	X
In the field, with an existing Prinergy system with EPM already installed, upgrading to Hot Standby			X	X
In the field, with an existing EPM+ (VSR) system, and the customer wants to add job replication	X		X	X

2.3 Removing VSR (Phase 0)

This procedure is required only when you are on site and have an existing, configured EPM+ VSR installation and are adding job replication. Remember that Double-Take software and VSR cannot coexist on the same server because they perform the same functions. Remove VSR from the *primary* and *failover* servers, as follows:

1. Close the Prinergy software.
2. Select **Start > Control Panel > Add and Remove Programs**.
3. Select **Veritas Storage Replicator**.
4. Click **Remove**.
5. Follow the on-screen prompts.
6. After you have uninstalled VSR, restart the server when prompted.
7. Proceed to the next required phase.

Note: When upgrading from EPM+ with VSR already installed, you do not need to re-ghost the failover server.

2.4 Configuring the Failover Server (Phase 1)

Note: Skip this section when upgrading from EPM or EPM+ with VSR already installed. Proceed to Section 2.7, *Installing Double-Take*.

Failover server configuration requires the following procedures:

Note: If the failover server was supplied by Kodak Production, some of these procedures may have already been completed.

- Install Windows using Ghost.

- Install the latest qualified Windows Service Pack as required.
- Install Prinergy as a primary server.
- Update Prinergy to an update level that matches the original primary.
- Restore the original jobs folder.
- Run the **ConfigEPServer.cmd** script.
- Fix the backup service.
- Add local login accounts.

2.4.1 Installing Windows Using a Ghost Image

EPM and Hot Standby require the Windows operating system on the failover server to be exactly the same build and patch level as on the primary.

To update Windows on the failover server

1. Install a fresh copy of Windows on the system drive on the failover server using the procedure in *Windows 2000 Installation Using Ghost Image for Prinergy and InSite* (72-3476B) or *Windows 2003 Installation using Ghost Image, Dell PE* (709-00230A).
2. 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.

2.4.2 Installing Windows Service Pack

Note: More recent versions of the ghost images may already have the latest service pack applied. If this is the case, there is no need to reapply it.

Install the Windows Service Pack on the failover server to match the service pack level of the primary server using the procedure in *Installing Windows 2000 SP4 and IE6 SP1 for x86 Platforms* (719-00107A).

2.4.3 Installing Prinergy as a Primary Server

The version of Prinergy on the failover server must match the version of Prinergy on the rest of the system.

Install Prinergy as a primary server on the failover server, using the document *Prinergy 4.0 Server Installation for Factory and Field* (72-3497D).

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

2.4.4 Installing Prinergy Updates/Upgrades

EPM

Ensure that the version of Prinergy on the EPM failover server is the same as on the rest of the system by installing major and minor updates as needed (follow the procedure in the *Prinergy Upgrade Guide*).

The Prinergy major update must be at least 2.0.7.0 and the minor update must be the most current one that supports EPM. EPM was first included in Prinergy update

2.0.7.4, with additions in some of the subsequent minor updates. To verify the version level, check the readme files for the updates.

Hot Standby

Use the procedure in the *Prinergy Upgrade Guide* to upgrade Prinergy to version 2.3.1.3 or later.

Install the appropriate Prinergy updates on the failover server so its update level matches that of the primary server (the end result must be version 2.3.1.3 or later).

Note: The Prinergy update must be at least version 2.3.1.3 to support the Double-Take software. To verify the version level, check the readme files for the updates.

2.4.5 Restoring the Original Jobs Folder

If no shares or jobs were on the server before Prinergy was installed, restoring the original **Jobs** folder on the RAID is optional.

1. On the desktop, right-click **My Computer** and select **Manage**.

   The following Macintosh share is the default **Jobs** share created during installation. If not applicable, remove it:

   Jobs on **<EPMServerName> <RAIDDriveLetter>** drive
   Example: **Jobs** on **CWA662 J** drive

2. Add any necessary shares, users, printers, or other system configurations that existed before the system ghosting.

2.4.6 Running the ConfigEPServer Script

Perform this part of the procedure on the failover server. You must be logged in using the Araxi service login account.

To connect the failover server to the Prinergy system as a secondary server run, the following script from a command prompt:

> ConfigEPServer.cmd –p <NameOfPrimaryServer> -l <path to log file>

The –l (lowercase L, not the number one) option should specify a directory name only—do not specify the name of the log file in the path. The name of the log file created in the directory is **ConfigEPServer.log**. After running the script, open the log file and verify that all the steps in the procedure were completed successfully.

Note: ConfigEPServer.cmd is located in **%AraxiHome%\CreoAraxi\Support\bin**. You may want to keep the log file in the same directory.

2.4.7 Changing the Backup Service Account

Perform this part of the procedure on the failover server.

1. On the desktop, right-click **My Computer** and select **Manage**.
2. In the Computer Management dialog box, select **Services and Applications**, and then select **Services**.
3. To edit the service properties, right-click **AraxiSysStateBackup**.
4. Change the account that the service runs under to be the same account as the Araxi service.

2.4.8 Adding Workshop Operator Local Login Account

To add local login accounts used by Workshop operators to the failover server:

1. On the desktop, right-click **My Computer** and select **Manage**.
2. In the Computer Management dialog box, locate **Local Users and Groups**.
3. Right-click **Users** and select **New User**.
4. Enter information in the required sections and click **Create**.

2.4.9 Create Standard Share Prefix

The default standard share prefix is **AraxiVolume**. If this is different in the Prinergy system being configured, a share with the correct prefix must be created in the failover secondary server. You can share out a folder in the **temp** drive for this purpose.

2.5 AraxiFileReplicator: Replicating Prinergy Configuration Information

In Prinergy 2.0.7.17 and later, replication is run by the AraxiFileReplicator service.

2.5.1 What Does the AraxiFileReplicator Service Do?

AraxiFileReplicator copies Prinergy-specific configuration data from the primary server to the failover server. This data cannot be replicated using VSR or Double-Take software, because some data is contained in the registry and some is manipulated during transfer. Do not confuse the AraxiFileReplicator with VSR or Double-Take—they are entirely independent.

The replication functionality is contained within a Python® module (**%Araxihome%\lib\python\com\creo\araxi\filereplicator\PReplicateD.py**) that copies all process plans, workflow plans, the primary's registry, and a number of other data files from the primary server to the failover secondary server.

The script creates a new directory—**%AraxiHome%\CreoAraxi\data\failover**—on the primary server and the failover secondary server. All of the files needed to convert to failover mode are stored in this directory. 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 Prinergy configuration data from the primary server to the failover server. The service is present on the failover server (because Prinergy was installed as a primary there before being configured to Hot Standby), but does not do anything on that server.

After AraxiFileReplicator has run, files such as the following may be present in the failover directory, although the number and names of files may not be exactly as shown:

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

2.5.2 Preparing the Service to Run Automatically

Note: Perform this procedure on the primary server.

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

1. On the desktop, right-click **My Computer** and select **Manage**.
2. In the **Computer Management** dialog box, select **Services and Applications > Services**.
3. In the **Services** area, edit the properties of the **AraxiFileReplicator** service.
4. Change the user name/password to be the same as the Araxi service.
5. Run the `at` command and ensure that there is a scheduled task that looks similar to the following:

   ```
   25   Each M T W Th F S Su   10:00 PM    cmd /c
   D:\Prinergy2.0.4\lib\python\com\creo\araxi\FileReplicator
   \StartAraxiFileReplicator.cmd
   ```

   If this task is not present in the list of tasks, add it. To do this, select **Start > Settings > Control Panel > Scheduled Tasks**. Click **Add Scheduled Task** and follow the Scheduled Task Wizard steps.
6. Check to see if the file **%AraxiHome%\CreoAraxi\etc\PReplicateD.ini** is correctly configured. There should be a setting named `AraxiFileReplicatorOn`. Ensure that it is set to `Y`. If this setting is not present, add it to the configuration file: `AraxiFileReplicatorOn=Y`.

2.5.3 Running the AraxiFileReplicator Service

Important: You must manually start the AraxiFileReplicator service once on the primary server before failover will function properly. See the instructions for manually starting the service on page 14.

Daily Automatic Running of the Service

The scheduled task launches the command `StartAraxiFileReplicator.cmd`, daily at 10 PM local time.

The command `StartAraxiFileReplicator.cmd` first checks to see if the **PReplicateD.ini** file is configured to run the service. If `AraxiFileReplicator=Y`, the command will continue, otherwise, it exits and no further action is taken.

If the service is configured to run, the command starts the service. At this time, a log file is created:
%AraxiHome%\CreoAraxi\system\log\araxifilereplicator\araxifilereplicator.log

If any detectable errors are encountered when the command 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 error information.

To manually start the service (must be done at least once prior to initial testing):

1. On the desktop, right-click **My Computer** and select **Manage**.
2. In the left pane, select **Services and Applications**, and in the right pane, select **Services**.
3. From the **Services** menu, select **AraxiFileReplicator**.
4. Right-click **AraxiFileReplicator** and click **Start**.

2.6 Configuring JTPs

JTPs and JTP pools must be configured the first time the system is switched to failover mode. The JTP/JTP pool configuration on the failover server is independent of the configuration on the primary server.

Note: If you are setting up EPM only, proceed to Section 5, *Testing EPM/Hot Standby in Normal Operating Mode*. The following sections on Double-Take are for Hot Standby and Hot Standby with job replication only.

2.7 Installing Double-Take (Phase 2)

Note: VSR and Double-Take cannot be installed on the same server. If VSR is installed, it must be removed before the Double-Take software can be installed. See Section 2.3 for the VSR removal procedure.

Note: You must perform this procedure on the primary server, the failover server, and any tertiary servers involved in Hot Standby with job replication.

1. Insert the Hot Standby (EPM+) Installation CD into the CD-ROM drive.
2. Run the script **DT_Configure.cmd** from the root folder of the CD.
3. Enter the drive letter of the database drive (primary and failover servers), or the Jobs drive (for tertiary servers).This will host a spool folder that allows Double-Take to buffer replicated data when the receiving end is down or temporarily unable to keep up. If no Oracle installation is detected, the script verifies if the server is a tertiary.

   The following menu appears (install path depends on the system drive letter):

```
Double-Take Kodak Installer - Main Menu

Double-Take will be installed in D:\Program Files\Double-Take

Please select the action you wish to perform:

[1] Install Double-Take

[2] Remove Double-Take

[3] Configure Replication Sets
```

```
[4] Prepare an EPM+ Failover Server (do this after Double-
Take install)

[0] Do Nothing and Exit

Type in your selection and press ENTER:
```

4. Press 1 to install Double-Take.
5. Press Y to confirm that you will install Double-Take and restart the computer afterwards.
6. Enter the activation code supplied with the Hot Standby order. An activation code is required to start Double-Take, and replication will not work without it. If you do not have an activation code, or if you make a mistake, you can correct it later from the Management Console. (Double-Take does not offer a trial period.)
7. Double-Take will be installed. When prompted, click **Yes** to restart.

2.8 Configuring Database and Job Data Replication Using Double-Take

The replication sets are created using either **DT_Configure.cmd** (installation CD) or **CreateRepset.cmd** (**<system drive>\Program Files\DoubleTake\Creo**). Further configuration is done using the Double-Take Management Console.

2.8.1 Database and Job Data Replication Sets

The installation CD can be used to create a database (DB) replication set and a Jobs volume replication set. The Double-Take Management Console is used for further configuration and starting the replication.

Creating a DB Replication Set

Note: Do this only from the primary server.

1. Insert the installation CD into the CD-ROM drive.
2. From the root folder of the installation CD, run the script **DT_Configure.cmd**.
3. Enter the drive letter of your database drive.
4. From the main menu, select `[3] Configure Replication Sets`.

   Note: Running **CreateRepset** opens this menu as well.

   The following menu appears:

   ```
   Double-Take Kodak Installer - Replication Set Configuration
   Menu

   Please select the action you wish to perform:

   [1] Create Oracle DB Replication Set (Primary Server Only)

   [2] Create Job Folder Replication Set (Job Home Server)

   [0] Back to Main Menu

   Type in your selection and press ENTER:
   ```

5. Press 1 to select the creation of an OracleDB replication set.

6. Press `1` to start the creation of the replication set.
7. The script will run, and a new replication set named **PrinergyDB** will appear in the Management Console window.
8. The database replication set should be further configured using Double-Take Management console (see Section 2.8.2).

Creating a Job Volume Replication Set

Note: Do this only from the main tertiary server.

1. Insert the installation CD into the CD-ROM drive.
2. From the root folder of the installation CD, run the script **DT_Configure.cmd**.
3. Enter the drive letter of the **Jobs** drive.
4. From the main menu, select `[3] Configure Replication Sets`.

   The following menu appears:

   Note: Running **CreateRepset** opens this menu as well.

   ```
   Double-Take Kodak Installer - Replication Set Configuration Menu

   Please select the action you wish to perform:

   [1] Create Oracle DB Replication Set (Primary Server Only)

   [2] Create Job Folder Replication Set (Job Home Server)

   [0] Back to Main Menu

   Type in your selection and press ENTER:
   ```

5. Press `2` to select the creation of a **Jobs** folder replication set.
6. Press `1` to start the creation of the replication set.
7. Enter the path where the **Jobs** folder is located (usually **G:** or **J:**). The script will verify that `<path>:\jobs` exists before continuing.
8. You will be asked if there are other **Jobs** folders to be replicated. You may enter more paths with **Jobs** folders to be replicated. Select **N** if you have entered all **Jobs** drives that are to be replicated.
9. The script will run, and a new replication set called **PrinergyJobs** will appear in the Management Console window.
10. Complete the configuration of the **Jobs** replication set using Double-Take Management Console (see Section 2.8.2).

Redundant Tertiary Server Configuration

You must perform this procedure on the redundant (backup) tertiary server, or on the failover server if job data is to be replicated to it from the main tertiary server.

1. Create shares (NT and Mac) with the same name and path as those on the main tertiary server. Ensure that there are no nested shares, and that each folder has only one share.
2. Create local users identical to those on the main tertiary server.

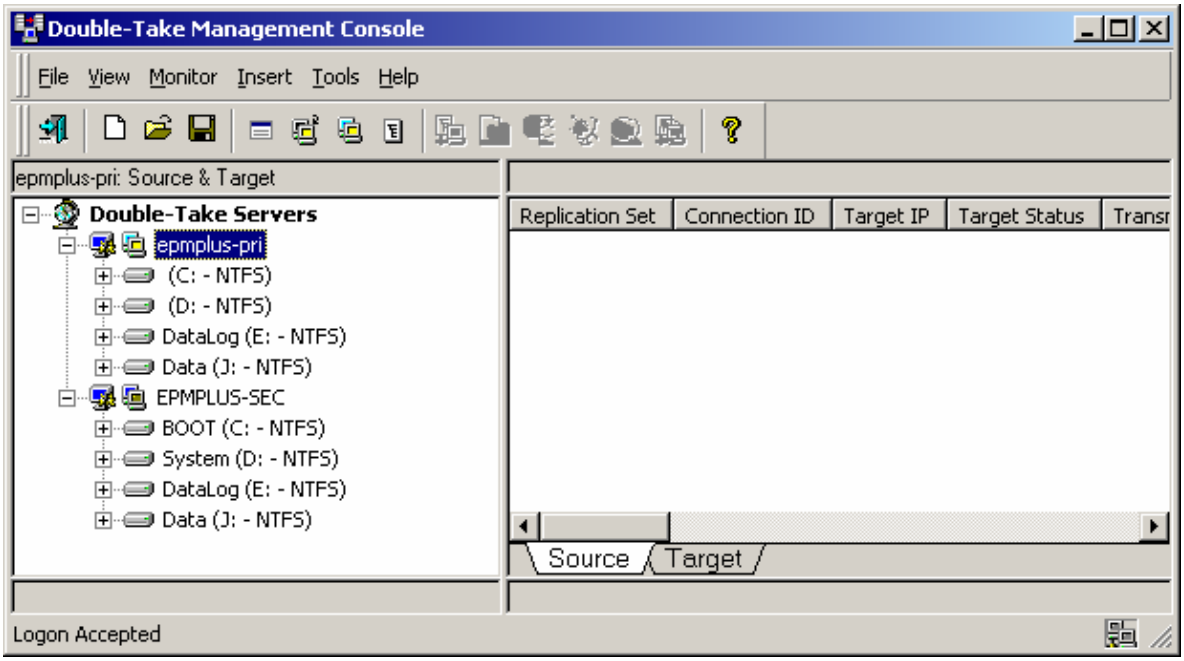
3. Edit **EnableSFM.BAT** (**<system drive>\Program Files\DoubleTake\creo\bin**) to contain the main tertiary server name as the source_name in the line: **%programfiles%\DoubleTake\chngname.exe/s source_name**.

2.8.2 The Double-Take Management Console (DTMC)

Note: For simplicity, the DTMC information covered in this document is limited to the operational requirements of Hot Standby. For more detailed information, see the *Double-Take User* and *Installation Guides*, available on the Hot Standby (EPM+) Installation CD.

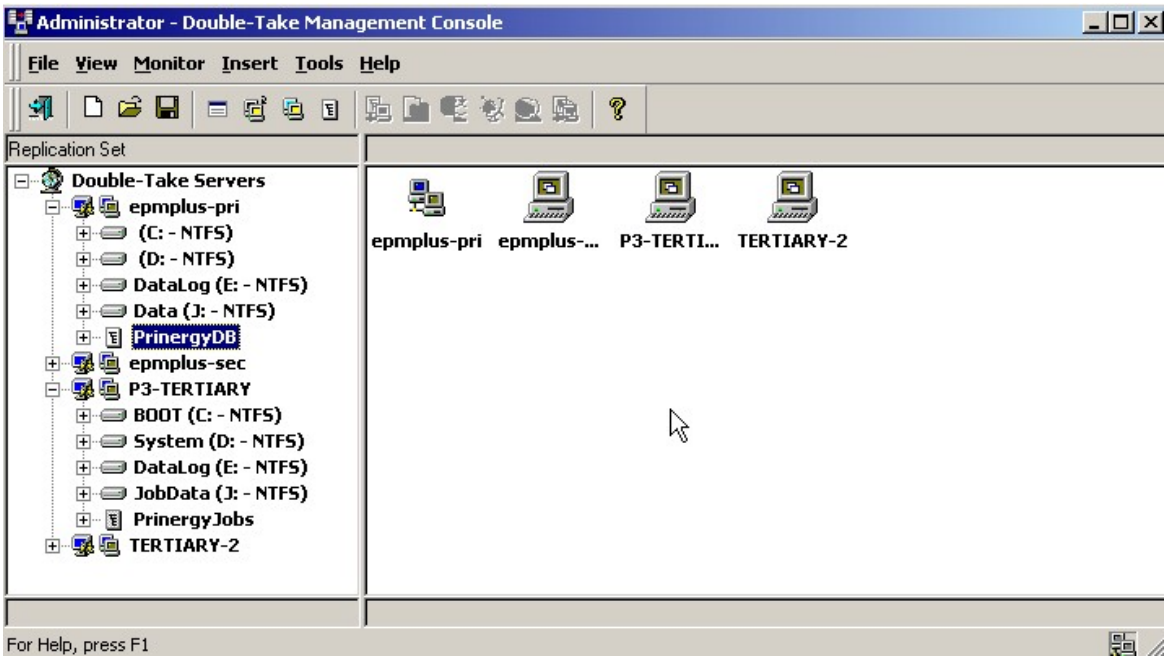
The first time the DTMC is started, the Welcome to Double-Take window appears. Select **Don't display this startup screen again** and click **Cancel**.

When you open the DTMC and after logging into all servers, this screen appears:



The Double-Take servers are listed in the left pane. At least two servers should be listed. More may be listed, depending on the configuration of the Prinergy system. Each server involved in data replication requires a Double-Take license, and will appear in the servers list after they are installed.

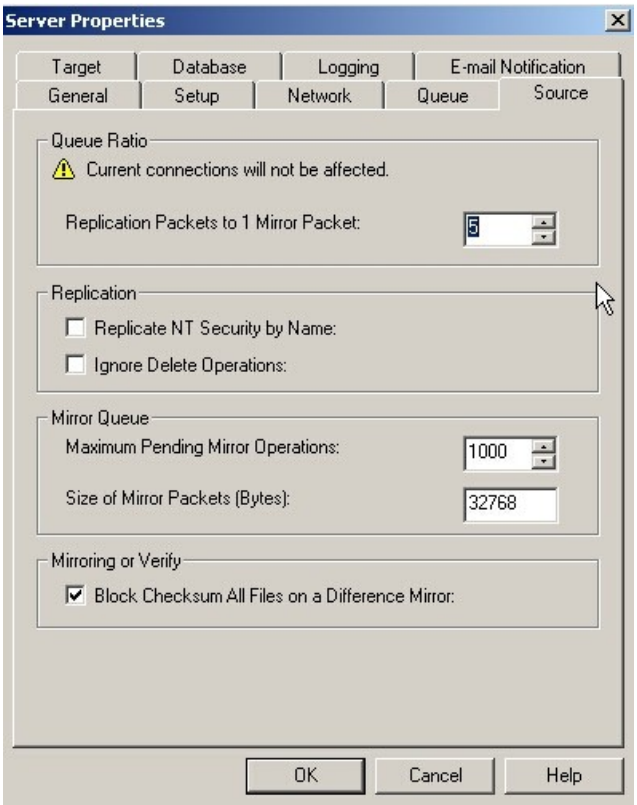
After you create the replication sets using the **DT_Configure.cmd** or **CreateRepset.cmd** configuration script, the replication sets will appear in the servers list in the left pane.



The **PrinergyDB** set should always be under the primary server. The **PrinergyJobs** replication set should be under the main tertiary server.

2.8.3 Prinergy Server Setup for Database Replication

1. In DTMC, double-click the primary server to log on.
2. Right-click the primary server and select **Properties**.
3. On the Source tab, enable **Block Checksum All Files on a Difference Mirror** and click **OK**.



2.8.4 Preparing Oracle on the Failover Server

Note: *Perform this procedure only on the failover server*.

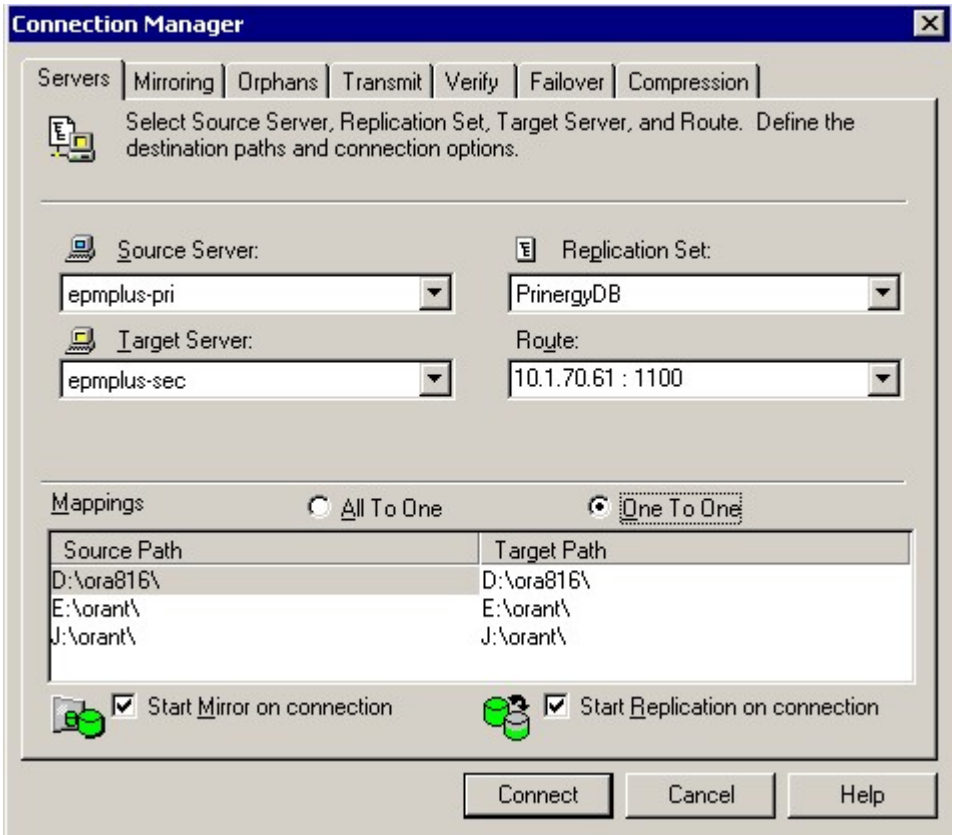
1. Insert the Hot Standby (EPM+) installation CD into the CD-ROM drive.
2. From the root folder of the installation CD, run the script **DT_Configure.cmd**.
3. Enter the drive letter of your database drive.
   - Select `[4] Prepare an EPM+ Failover Server`.
   - Select `[1] Stop and Disable Oracle and AraxiFileReplicator Services`.

   The system will check to ensure that it is actually a failover server. If it is, Oracle will be stopped and disabled.
4. Check the output for errors.

2.9 Starting Replication

The procedure for starting data replication is the same for both the **PrinergyDB** and **PrinergyJobs** replication sets.

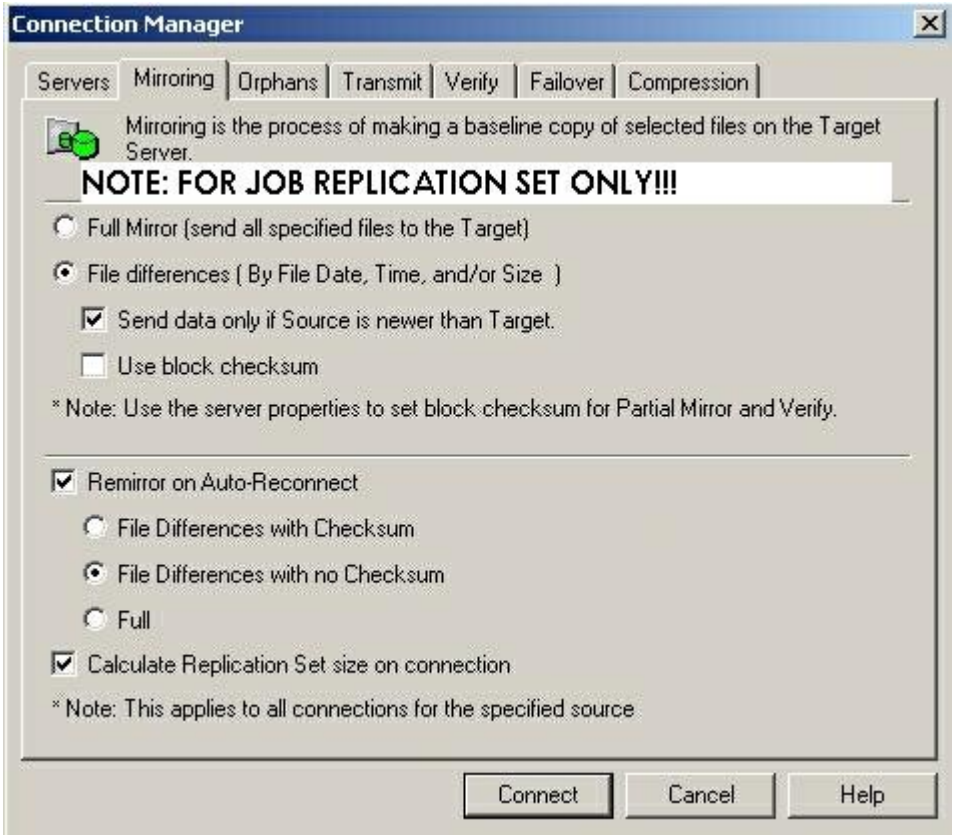
1. In DTMC, right-click the replication set that you want to configure.
2. Select **Connection Manager**. The Connection Manager window appears.



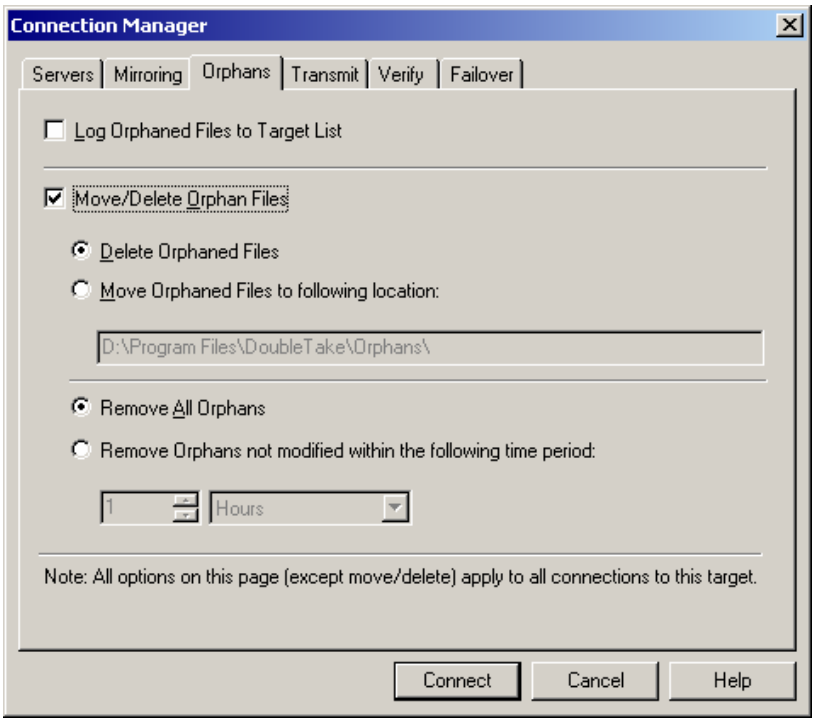
Note: Source Path and **Target Path** may not appear exactly as shown, depending on the **Replication Set**.

3. On the **Servers** tab, select the **Replication Set** that you want to connect.

4. Set **Target Server** to the server to which you are pushing the replication data:
   - For the **PrinergyDB** replication set, this should be the Hot Standby failover server.
   - For the **PrinergyJobs** replication set, this should be the redundant (backup) tertiary server or the failover server.
5. **Route** should generally be left alone, unless there is more than one NIC in the server (possible on a tertiary server).
6. Set **Mappings** to **One To One**. This will push the data to the same <driveletter>:\path location on the receiving server.
7. **Note**: This step is only for job data replication. Do not make any changes in the **Mirroring** tab for the **PrinergyDB** replication set. For **PrinergyJobs** replication, select the **Mirroring** tab. Select **File differences** and **Send data only if Source is newer than Target**. Select **Remirror on Auto-Reconnect** and **File Differences with no Checksum**. See the following example.



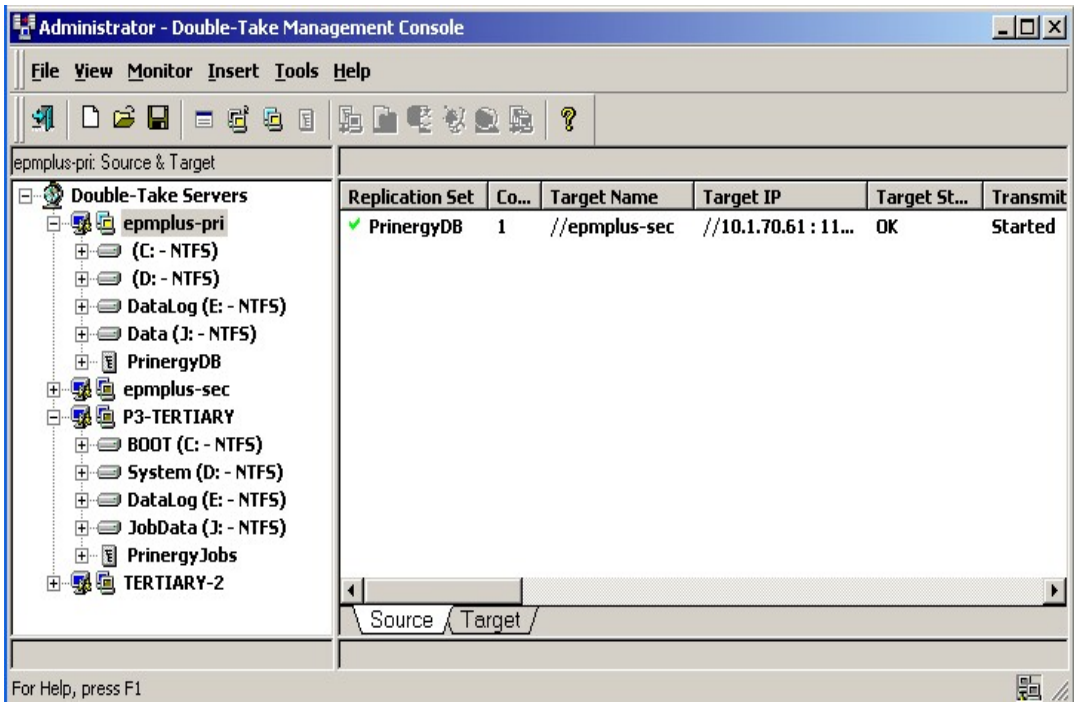
8. Select the **Orphans** tab.



An orphan is a file that is in the replicated folder on the target server, but does not exist on the source server. If orphaned files are not deleted, they will remain on the target server, consuming disk space. The default configuration of Hot Standby is to delete orphan files. To do this, configure the **Orphans** tab settings as shown in the previous screen capture.

It is sometimes useful for backup purposes to leave orphan files alone, move them to another location, or delete them after a period of time. If a customer wants to do this, refer them to the relevant information in the *Double-Take User Guide*. The customer may also consider using verification (for instructions, see the *Double-Take User Guide*).

9. Do not make any changes on other tabs. For information about the purpose and use of these tabs, see the *Double-Take User Guide*. Click **Connect** to start job replication.



The right pane of DTMC indicates what is happening in real time. It lists connection status, whether anything is transmitting or mirroring, queued bytes, and other information.

Double-Take essentially runs itself—only occasional monitoring of the status reports in DTMC is necessary. If the primary, failover, or tertiary servers are restarted, Double-Take automatically picks up where it left off, and re-mirrors the replication sets if necessary.

2.10 Replication Monitoring

2.10.1 E-mail Notification

Double-Take has an e-mail notification feature. Double-Take errors and warnings that are logged by the Windows Event Viewer can be sent as e-mail messages. This feature can be used to notify an administrator if there is a problem with Double-Take replication. For e-mail notification configuration, see the *Double-Take User Guide*.

2.10.2 Replication Monitor Utility

Note: Windows Messenger Service must be set to **Automatic** and it must be running for the notification to work. In Windows 2003, the Messenger Service may have been set to **Disabled**.

Another option for monitoring replication jobs is to set up the Replication Monitor utility. You set up this utility on the Prinergy primary server and main job server. After it is set up, it queries the Double-Take replication transmit status. If the status is other than *Started* (normal operational status), a dialog box appears on the servers in the notification list.

To set up the replication monitor utility

1. Run **%ProgramFiles%\DoubleTake\Creo\MonitorSetup.cmd**.

   The following menu appears:

   ```
   Replication Monitor Setup Utility

   This should be run after installation of EPM+ with
   Double-Take.

   Run only in a Primary and Job home server which are
   replication source machines. This will create a new
   Replication Monitor file.

   Please select the action you wish to perform:

   [1] Setup Monitoring on the Primary

   [2] Setup Monitoring on the Job Home server (usually
   tertiary)

   [0] Do Nothing and Exit

   Type in your selection and press <ENTER>.
   ```

2. Select 1 or 2, depending on which server you are setting up.
3. Enter the failover server name.
4. The servers to be notified are listed.
5. To add another server, type y, press ENTER, and type the server name.
6. Type n when all of the servers you want notified are listed. The Replication Monitor setup will finish.
7. You can start Replication Monitor manually from **Start > Programs > Startup**. It will also start automatically when a user logs onto the server.

3. EPM/HOT STANDBY OPERATION

This section covers primary server failover and failback procedures.

Important: If you are planning a Hot Standby failover test, ensure that you have a recent Oracle database backup. Perform a cold backup of the database before running a failover test. The database may become corrupted if the failback procedure is not performed correctly.

3.1 Primary Server Failover

Use the following procedure to recover from a primary server failure.

3.1.1 Failing Over the Primary Server

Note: Perform this procedure when the Prinergy primary server has problems and the failover server must be used. This procedure is also described on the quick reference card that should always be available at the primary server location. For instructions about failing over systems using Kodak Link software, Kodak Prinergy Business Link software, and Kodak Prinergy Production Reporting software, see

Appendix A, *Using Link, Business Link, or Production Reporting Software With Hot Standby (EPM+) and NSI Double-Take*.

1. On the failover server, shut down Prinergy on all servers by selecting **Administrator > File > Emergency Shutdown**.

   Note: Emergency shutdown is not available if the primary server is running.

2. Move the dongle to the failover server.

3. On the failover server, fail over Prinergy by selecting **Administrator > File > Switch To Primary**.

   Note: If the Hot Standby failover server is a render station with a Kodak Print Console software dongle, Administrator may report that there is a dongle mismatch. This is caused by Administrator detecting the Print Console dongle security code. If this happens, replace the Print Console dongle with the Prinergy dongle and restart Administrator. After restarting Prinergy, install the Print Console dongle where the Prinergy dongle was originally installed.

   To redirect Kodak InSite™ software to the Hot Standby server after failover:

   - InSite 4.5.0.2054 and earlier—contact a Kodak service representative
   - InSite 4.5.0.2055 and later—run the InSite Configuration Utility (ICU)

4. Start Prinergy. In a Hot Standby system, all jobs should be accessible.

   Note: For Hot Standby, ensure that the database is up to date, and all of the jobs are present and accounted for. For EPM, verify that new jobs can be created and jobs are processed successfully.

3.1.2 Restoring the Primary Server to Normal Operation

Important: You must perform this procedure in the exact, numbered sequence that follows. Failure to do so can permanently corrupt the database and require restoration from tape backup.

Important: Because of the possibility of database corruption if the restoration procedure is not followed correctly for planned failover (running a test, for example), you should have a current Oracle database backup on tape and a cold database backup. Before restoring the Hot Standby failover server to secondary mode:

- *In Prinergy 3.1 and earlier: stop Oracle services and make a copy of the* ***E:\Orant*** *and* ***<Datadrive>:\ Orant*** *folders*
- *In Prinergy 4.0: stop Oracle services and make a copy of the* ***<C or E>:\Oracle*** *and* ***<Datadrive>:\Oracle*** *folders*

1. **EPM:** Export all jobs created and processed during failover mode.
2. Verify that the primary server network cable is connected.
3. **Hot Standby Critical Step:** On the primary server, disconnect the Prinergy database replication set using DTMC, and disconnect the Link, Business Link, or Production Reporting software database replication set (if used).

Important: Ensure that you have disconnected the Prinergy and Link, Business Link, or Production Reporting software database replication jobs, as called for in this step.

If you proceed without first disconnecting the database replication jobs, the database will be corrupted.

4. Stop Prinergy on all servers.
5. Stop Link, Business Link, or Production Reporting on the Hot Standby server (if installed):

   Start > Programs > SynapseLink > Stop Server

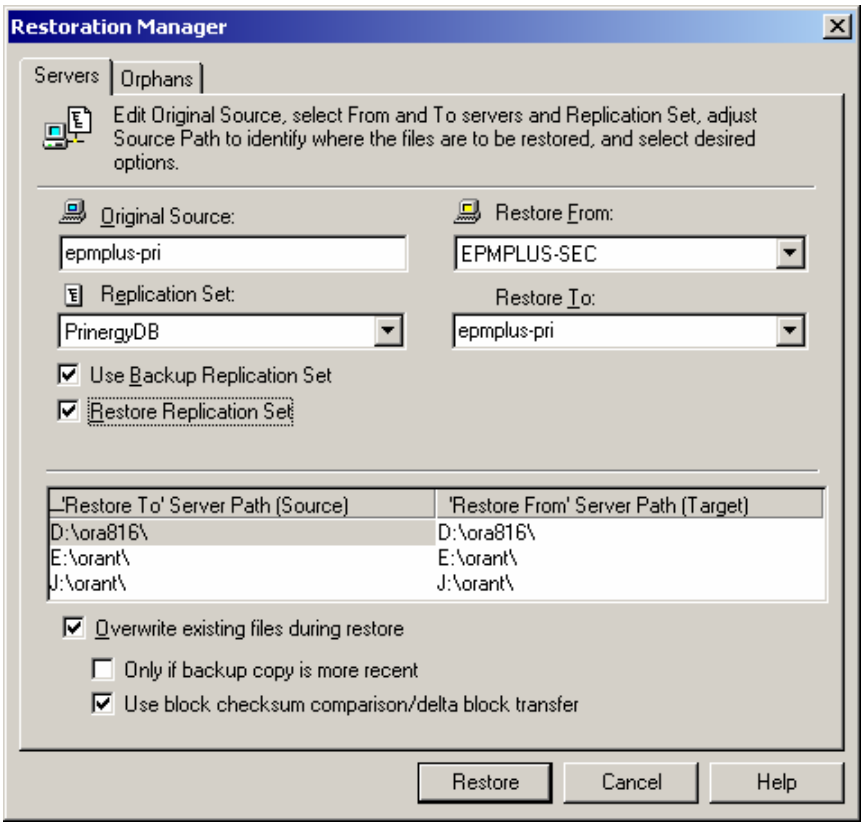
   Start > Programs > Kodak > Business Link > Stop Server

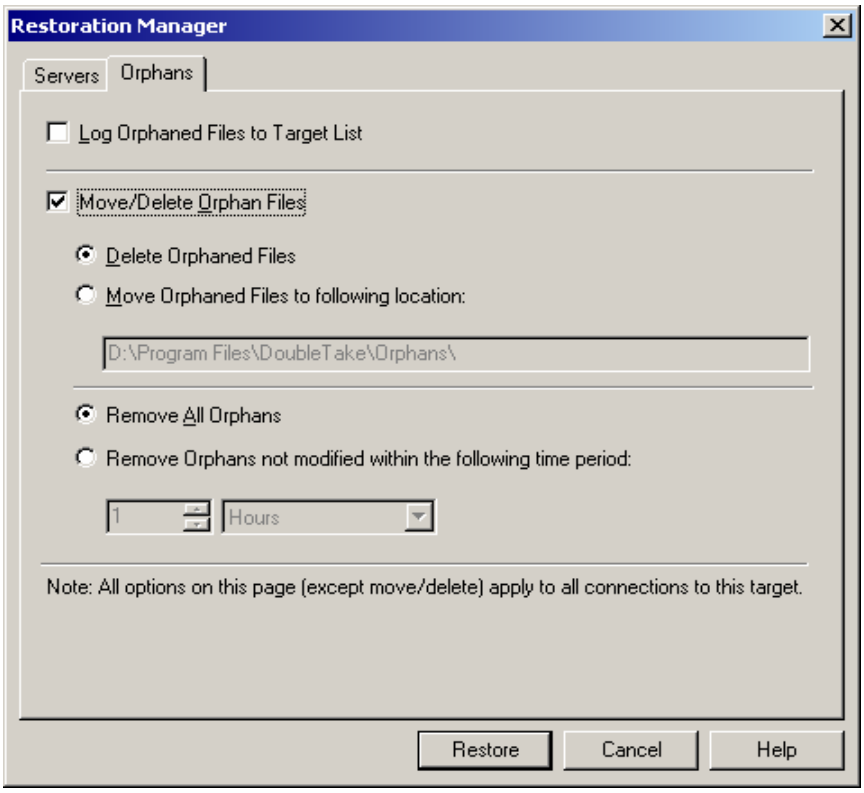
   Start > Programs > Kodak > Production Reporting > Stop Server

   For instructions about restoring systems using Link, Business Link, and Production Reporting software, see Appendix A, *Using Link, Business Link, or Production Reporting Software With Hot Standby (EPM+) and NSI Double-Take*.
6. Move the dongle back to the primary server.
7. On the failover server, switch the failover server to a secondary again, by selecting **Administrator > Revert to Secondary**.

   Note: To save time when performing tests, you can skip restoration of the Oracle data files (steps 8 to 14), especially if the database is large. Note however, that any work done while the system is in failover mode will be lost.
8. **Hot Standby Critical Step:** On the primary server, run the **DisableOracle.cmd** script, located in **<systemdrive>\Program Files\DoubleTake\creo**. When you are prompted by the script, confirm that you want to stop and disable Oracle.
9. **Hot Standby:** Check the output of **DisableOracle.cmd** for errors. If there are no apparent problems, proceed. If there appears to be a problem, *do not proceed*. Contact a service representative for assistance.
10. **Hot Standby:** In DTMC, select **Tools > Restoration Manager**. The Restoration Manager dialog box appears.
11. **Hot Standby:** Use the following examples to enter the correct settings on the **Servers** and **Orphans** tabs. Substitute server names as appropriate.

    Note: The source path and target path may not appear exactly as shown in the following example, depending on the replication set.





12. **Hot Standby:** After entering the correct settings, click **Restore**.
13. **Hot Standby:** On the primary server, you can monitor restoration progress using DTMC. *You must let this process finish (restore repset disappears from DTMC)*.

Interrupting the restore process will leave an unusable database on the primary server.

Note: If there is an unexpected interruption (a power outage, for example), you can restart the restore process by repeating steps 8 through 13 of this procedure. The restore process will overwrite the unusable database on the primary server with the still-good copy from the failover server.

14. **Hot Standby:** On the primary server, run the **EnableOracle** script. This will start Oracle on the primary.
15. On the primary server, start Prinergy on all servers. Ensure Prinergy is operating properly before proceeding to the next step.
16. **Hot Standby:** On the primary server, after confirming that Prinergy is operating correctly, reconfigure Double-Take to replicate the database onto the failover server again by performing the procedure in Section 2.9.
17. **EPM:** On the primary server, after confirming that Prinergy is operating correctly, import all jobs that were created and processed during failover mode.

3.1.3 Redirecting InSite in Prinergy Hot Standby

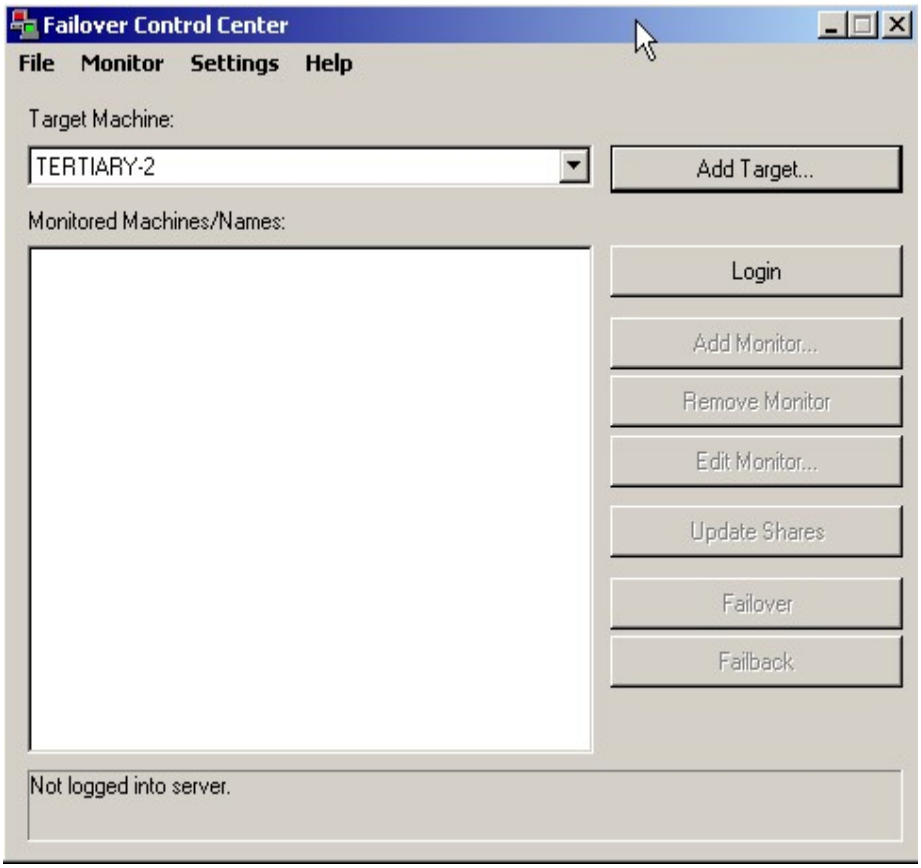
- For InSite 4.5.0.2054 and earlier, contact a Kodak service representative, who will perform the redirect.
- For InSite 4.5.0.2055 and later, run the ICU to perform the redirect. For details, see the *Hot Standby With NSI Double-Take for Prinergy User Guide* (731-00451B).

4. TERTIARY FAILOVER SETUP

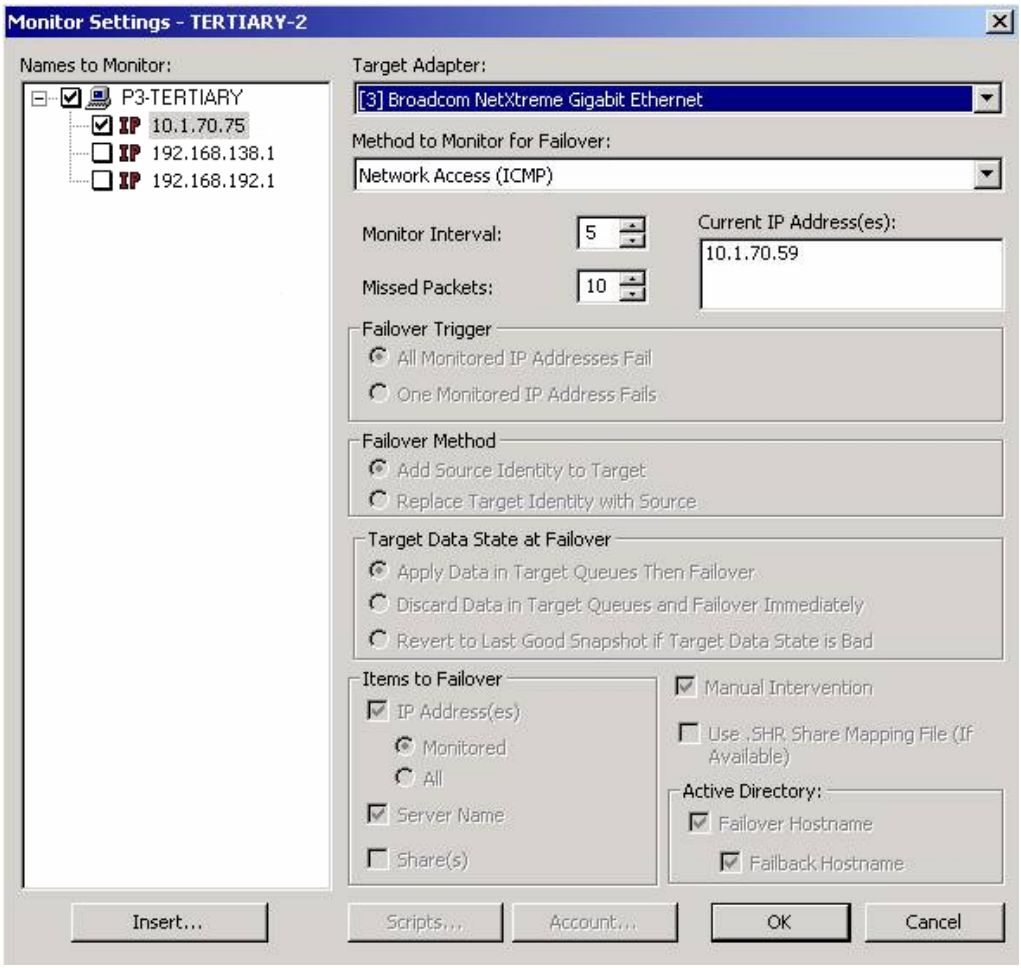
This section describes failing over and restoring a tertiary server. It is significantly different than failing over a primary server, and does not involve any actual changes to Prinergy.

Note: Do not perform this procedure on a primary server, only on the redundant (backup) tertiary server. Verify that the procedure in Section 2.8.1, *Redundant Tertiary Server Configuration*, has been completed.

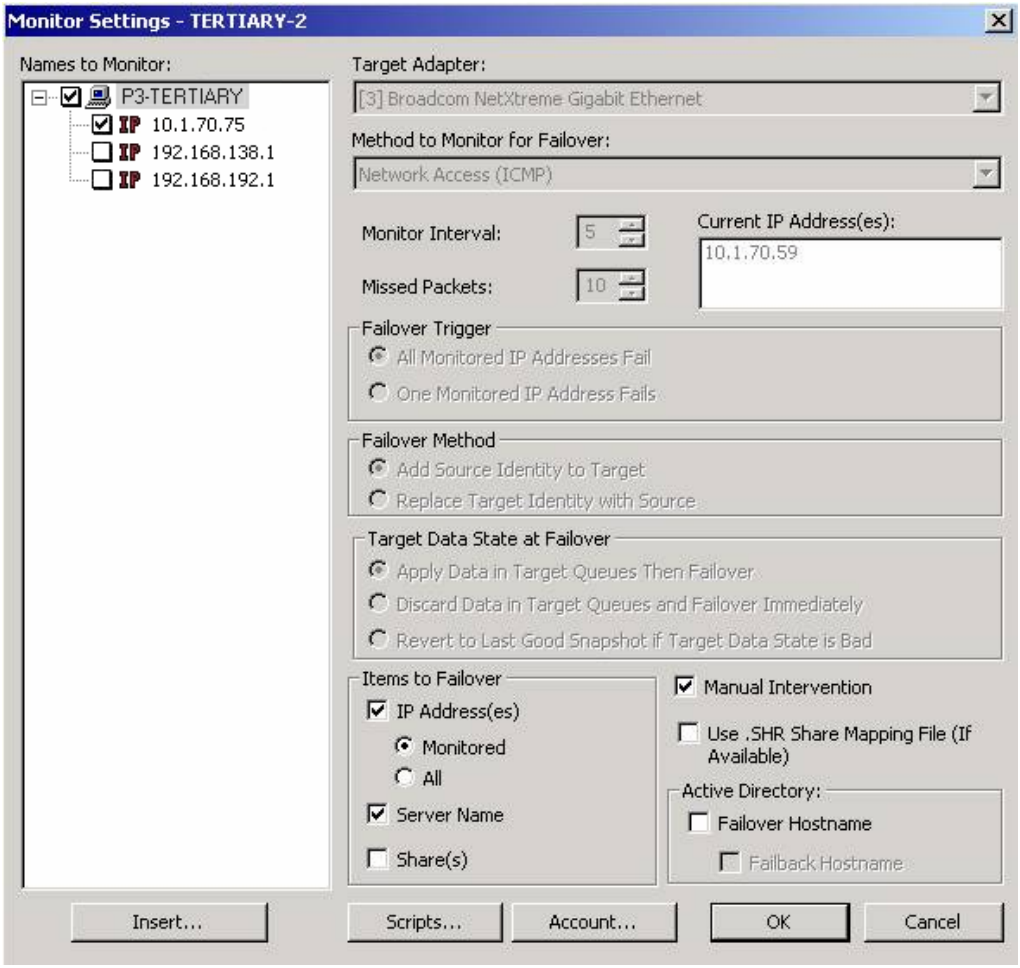
1. Open the Double-Take Failover Control Center (FCC).
2. Ensure that the name of the redundant (backup) tertiary server is in the **Target Machine** list. Log on to the target server. This is the target of the failover command, and where the server name and IP address of the source server will appear.



3. Click **Add Monitor**.
4. When prompted, type the name of the regular tertiary server name. Select the checkbox of the IP address to be monitored (this is the IP address in the production LAN). Note that there may be other IP addresses shown, such as the one for the RSS Kodak Support Adapter IP. There is no need to monitor the other IP addresses. From the **Target Adapter** menu, select the adapter of the redundant (backup) tertiary that is connected to the production LAN.


Monitor Settings - TERTIARY-2
Names to Monitor:
P3-TERTIARY
10.1.70.75
192.168.138.1
192.168.192.1
Target Adapter:
[3] Broadcom NetXtreme Gigabit Ethernet
Method to Monitor for Failover:
Network Access (ICMP)
Monitor Interval:
5
Missed Packets:
10
Current IP Address(es):
10.1.70.59
Failover Trigger
All Monitored IP Addresses Fail
One Monitored IP Address Fails
Failover Method
Add Source Identity to Target
Replace Target Identity with Source
Target Data State at Failover
Apply Data in Target Queues Then Failover
Discard Data in Target Queues and Failover Immediately
Revert to Last Good Snapshot if Target Data State is Bad
Items to Failover
IP Address(es)
Monitored
All
Server Name
Share(s)
Manual Intervention
Use .SHR Share Mapping File (If Available)
Active Directory:
Failover Hostname
Failback Hostname
Insert...
Scripts...
Account...
OK
Cancel

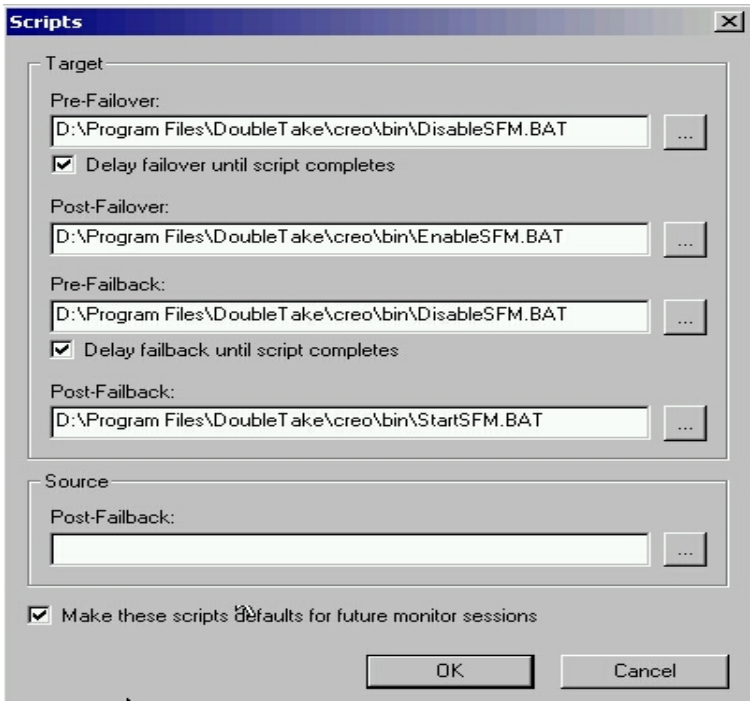
5. Highlight the monitored server name and apply monitor settings as shown in the following example.



Note: Ensure that you select **Manual Intervention**, otherwise a failover will occur without warning if contact with the source server is lost. This can cause problems, if you don't know it is occurring.

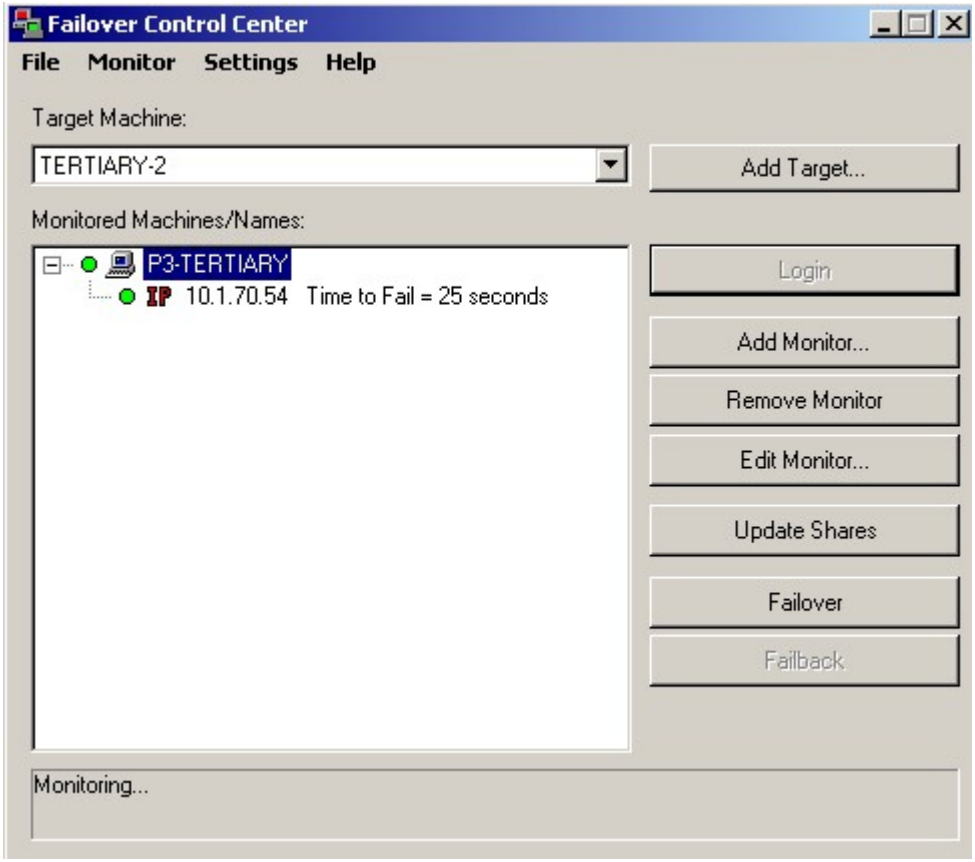
If the Prinergy system is a member of a domain using Active Directory, you may need to select the **Failover Hostname** and **Failback Hostname** checkboxes and specify an account that has update privileges within Active Directory. Otherwise, domain users will not be properly authenticated for the failover instance of the tertiary server.

6. Click **Scripts** and fill in the paths for the **Pre-Failover**, **Post-Failover**, **Pre-Failback**, and **Post-Failback** scripts as follows:



7. Click **OK** in the **Scripts** dialog box.
8. Click **OK** in the **Monitor Settings** dialog box.

9. The FCC monitoring window will now appear, similar to the following example:

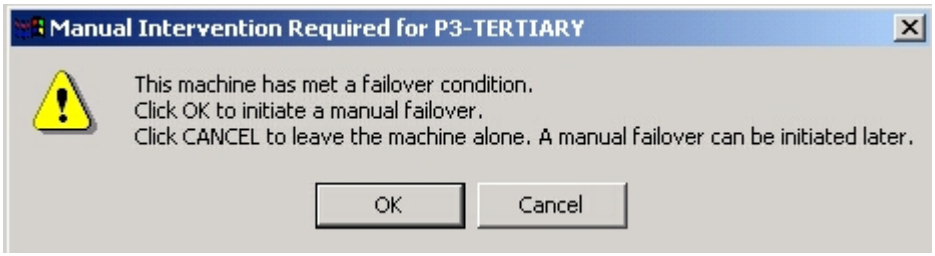


Note: The FCC monitoring window should always be running on the redundant (backup) tertiary server in order for Double-Take to detect a tertiary server failure.

4.1 Failing Over a Tertiary Server

Note: Client computers may need to refresh connections to the tertiary after failover and failback.

If the redundant (backup) tertiary server loses contact with the regular tertiary server, the following dialog box will appear on the local console:



Nothing will happen until you respond to the prompt. If you click **Cancel**, nothing will happen, and a manual failover can be done at a later time.

If you click **OK**, the failover will begin. If the following dialog box appears, choose **Apply Data in Target Queue Then Failover**, and click **OK**.



The server name and IP address of the regular tertiary server will be added to the local server, causing it to assume the source server's identity. File Services for Macintosh will be started, with the redundant tertiary assuming the same AppleTalk® software server name as the regular tertiary. Macintosh and NT clients may need to refresh their connections.

Ensure that the source server is not connected to the network—if connected, it will cause an IP address conflict.

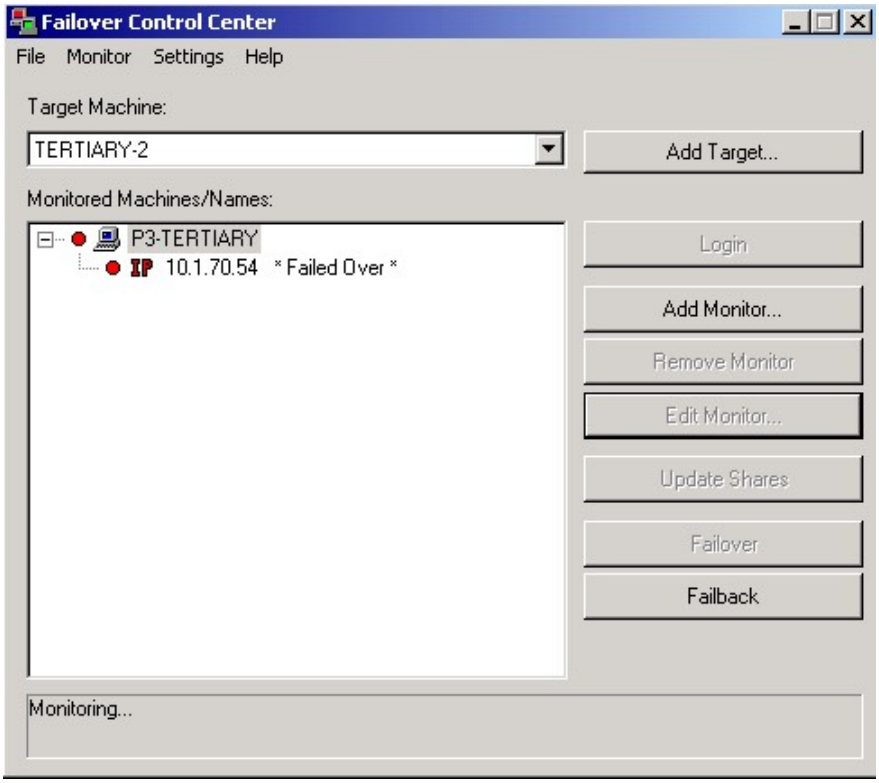
4.2 Manual Failover

If **Cancel** was selected in the Manual Intervention dialog box, you can initiate manual failover as follows:

1. Ensure that the source server is not connected to the network, or it will cause an IP address conflict when you fail over.
2. Open FCC.
3. Highlight the failed monitor.
4. Click **Failover**, and confirm by clicking **OK**.

A failover will begin immediately. The server name and IP address of the regular tertiary server will be added to the local server, causing it to assume the source server's identity. File Services for Macintosh will be restarted with the redundant tertiary assuming the same AppleTalk software server name as the regular tertiary. Macintosh and NT client computers may need to refresh their connections.

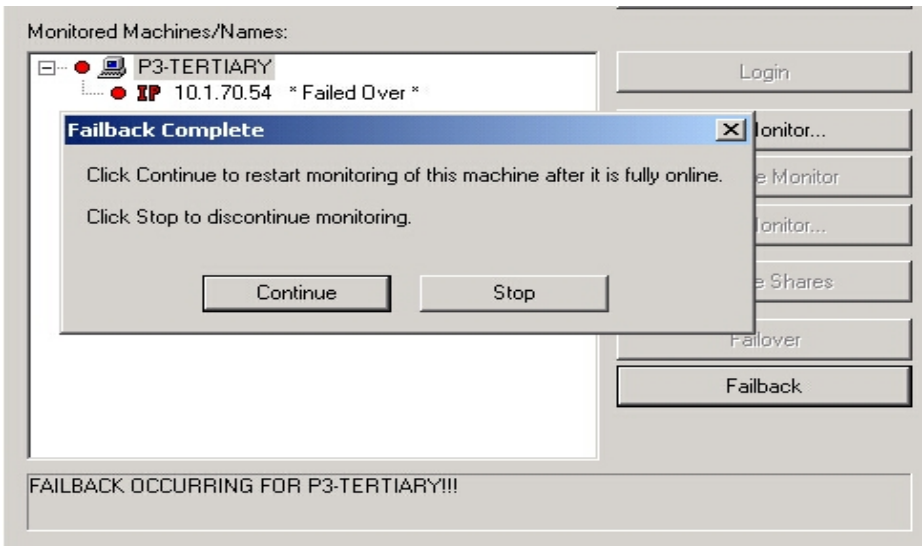
The FCC window will now look similar to the following:



4.3 Restoring a Tertiary Server to Normal Operation

Note: When troubleshooting the tertiary server, it must be isolated from the network. A failback should be initiated before reintroducing the tertiary into the Prinergy system.

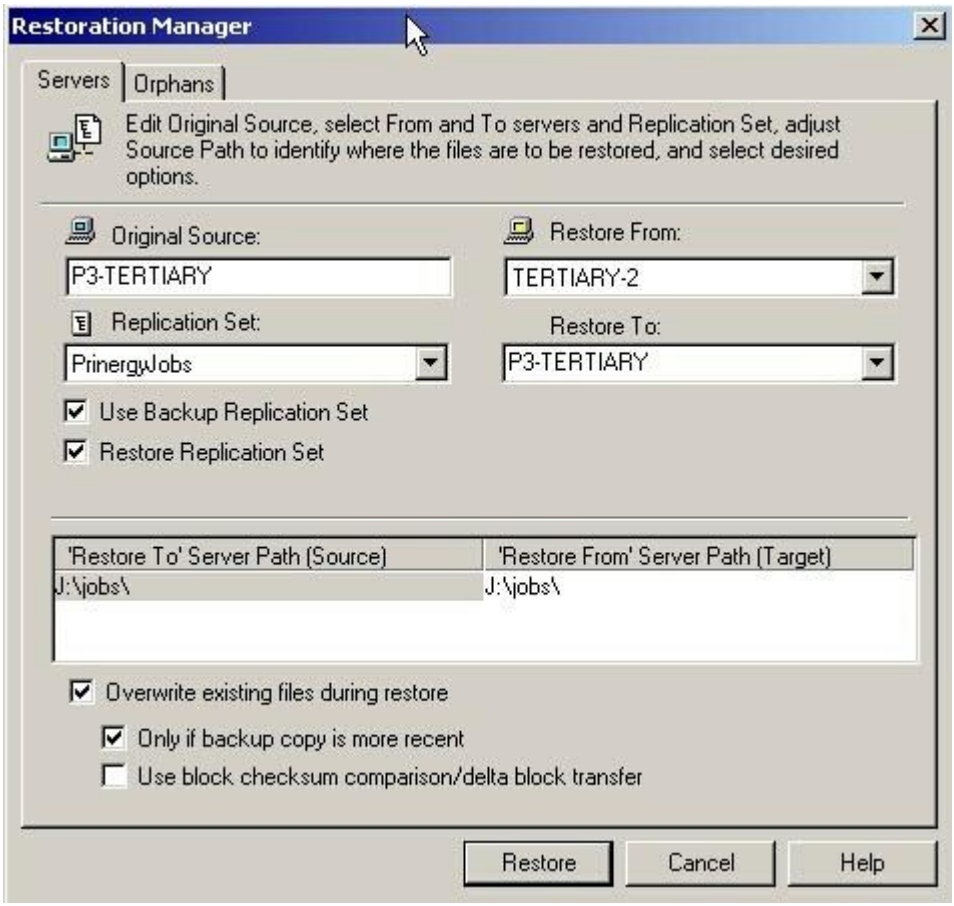
1. Shut down Prinergy. Open FCC on the redundant tertiary server.
2. Highlight the failed monitor.
3. Click **Failback**, and in the Failback Complete dialog box, click **Continue**.

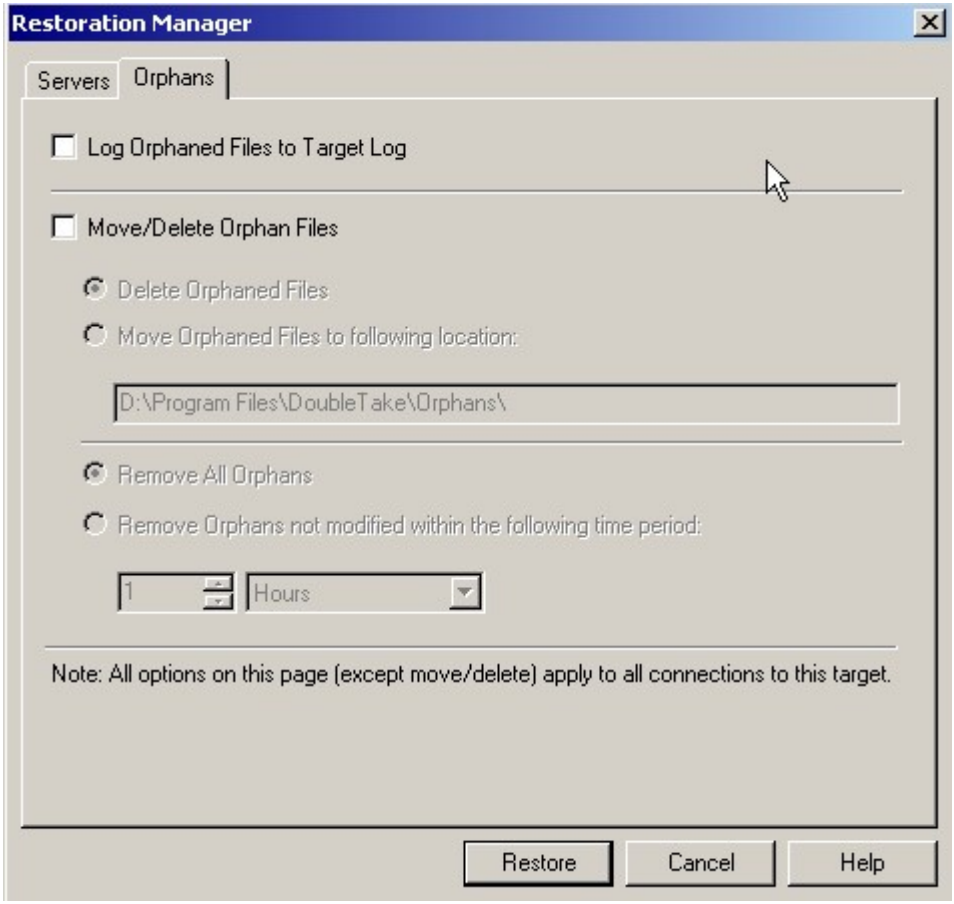


4. The redundant (backup) tertiary server will now release the server name and IP address of the regular tertiary server.
5. If the Manual Intervention dialog box appears, click **Cancel**.
6. Start the regular tertiary server and connect it to the network.
7. In DTMC, log in to the regular tertiary server. If the **PrinergyJobs** replication set is still connected, disconnect it.

   Note: To save time when running tests, you can skip restoration (steps 8 to 10). However, any data changed while the system is in failover mode will be lost.

8. Select **Tools > Restoration Manager**. The Restoration Manager dialog box appears.
9. Use the following examples to enter the correct settings on the **Server** and **Orphan** tabs. Substitute the correct server names as required.





10. Ensure that recovery is completed.
11. Start Prinergy and verify that the jobs are accessible and that Prinergy is functioning properly.
12. On the regular tertiary server, reconfigure Double-Take to replicate **PrinergyJobs** to the redundant (backup) tertiary. See Section 2.9, *Starting Replication*.

5. TESTING EPM/HOT STANDBY IN NORMAL OPERATING MODE

After the EPM/Hot Standby installation, run a test job through the system to ensure that it processes as it previously did.

6. TESTING EPM/HOT STANDBY

Note: Ensure that the script **PReplicateD** has been run on the primary server.

Check that EPM is working as a failover solution on this Prinergy system by switching to EPM/Hot Standby mode, configuring any JTPs needed, and producing output from a test job. This test assumes that all proofing and output devices have been configured and are working properly. See Section 3, *EPM/Hot Standby Operation*.

Important: Because of the possibility of database corruption if the restoration procedure is not followed correctly for planned failover (running a test, for example), you should have a current Oracle database backup on tape and a cold database backup. Before restoring the Hot Standby failover server to secondary mode:

- In Prinergy 3.1 and earlier: stop Oracle services and make a copy of the **E:\Orant** and **<Datadrive>:\ Orant** folders
- In Prinergy 4.0: stop Oracle services and make a copy of the **<C or E>:\Oracle** and **<Datadrive>:\Oracle** folders

Verifying EPM/Hot Standby

1. Start Prinergy Workshop on a Prinergy client, and connect to the EPM/Hot Standby failover server (now operating as the primary) when prompted.
2. Run the test jobs from refining through to plate-making.
3. After confirming that the system is operating properly in failover mode, fail back to normal mode. See Section 3, *EPM/ Hot Standby Operation*.

7. TROUBLESHOOTING

7.1 Accidental Deletion of the Replication Job

Repeat the *Creating a DB Replication Set* or *Creating a Job Volume Replication Set* procedure described in Section 2.8.1.

7.2 I Didn't Enter (or I Entered an Incorrect) Activation Code During Setup, and Double-Take Isn't Working

In DTMC, right-click each server, and select **Properties**. Enter the proper code in the dialog box that appears.

7.3 After Failover, When Creating a New Job, an Error Dialog Box Appears With the Message: "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 Prinergy 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.

7.4 Double-Take 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 may occur when the server is very busy. This is a fail-safe mechanism in Double-Take to ensure that data integrity is maintained. However, the following steps can be done to minimize 8196 events.

1. Move the Double-Take directory queue to a drive that is not very busy. If the replicated folder introduces high input/output on the drive and the disk queue is located in that drive, write requests on the disk queue will be delayed.
2. Increase the memory queue. The memory queue is set by default to 128 MB. This can be increased to 1024 MB as long as there is available physical

memory in the server. Double-Take only uses the memory it needs and dynamically releases what it does not need.

3. If you are using antivirus software, exclude Double-Take.exe and the Double-Take disk queue from the real-time virus scan.
4. If the error is on the primary server, exclude ***.bck** files (in the Oracle backup folder) from the **PrinergyDB** report.
5. Run **dblhook.reg** from the Hot Standby CD (651-00325A-E).
6. Restart the server.
7. Offload some processes running on the tertiary and/or backup tertiary servers.

7.5 Prinergy Encounters CORBA Errors on Startup

This is a known issue prior to Prinergy 3.0. The workaround is to introduce waits in the **Araxi.inf** file. When Double-Take replication is running, the Prinergy startup timing changes and CORBA errors may occur. The timings in **Araxi.inf** can be readjusted, or the Double-Take service can be stopped temporarily before starting Prinergy.

You can also reinitialize the Orbacus configuration to work around the problem. To do this, open a command prompt and run `Orbacusconfig –init`.

7.6 During Tertiary Server Failover, Job Creation Fails

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 Section 4, *Tertiary Failover Setup*.

8. APPENDIX A: USING LINK, BUSINESS LINK, OR PRODUCTION REPORTING SOFTWARE WITH HOT STANDBY (EPM+) AND NSI DOUBLE-TAKE

Note: Link 3.0 differs from Link 2.1 in that Link 3.0 is now two separate products: Business Link software and Production Reporting software.

Link 2.1, Business Link 3.0, and Production Reporting 3.0 are qualified to operate with Hot Standby (EPM+) and Double-Take. Installation of Link, Business Link, or Production Reporting software with Hot Standby and Double-Take allows users access to Link, Business Link, or Production Reporting reports in the event that the primary server fails. If the primary server fails, the reports will be available on the failover server, and they will be up-to-date with respect to the moment that the primary went offline.

8.1 Prerequisites

To install and operate Link, Business Link, or Production Reporting software on a Hot Standby with Double-Take system:

- Hot Standby must be installed on the Prinergy system, successfully tested, and operating correctly.
- Double-Take must be installed on the system and correctly replicating the Prinergy database.
- Link, Business Link, or Production Reporting software must be installed and operating correctly on the primary server.
- The user must be familiar with installing Link, Business Link, and Production Reporting software. For installation instructions, see the *Synapse Link 2.1 Administration Guide* (731-00607A).

8.2 Installing Link, Business Link, or Production Reporting Software on a Hot Standby System with Double-Take

8.2.1 Installing Link, Business Link, or Production Reporting Software on the Failover Server

1. Stop Prinergy on all servers.
2. Stop Link, Business Link, or Production Reporting on the primary server:

   Start > Programs > Synapse Link > Stop Server

   Start > Programs > Kodak > Business Link > Stop Server

   Start > Programs > Kodak > Production Reporting > Stop Server
3. Configure the failover server to operate in failover mode (for example, the failover server must be operating as a secondary). In Administrator on the failover server, select **File > Convert to Primary** (see Section 3.1.1).

   Note: Do not skip this step. In order to install Link, Business Link, or Production Reporting on the failover server, the server must be in failover mode.
4. Install Link, Business Link, or Production Reporting on the failover server according to the instructions in the *Synapse Link 2.1 Administration Guide* (731-00607A).

   Note: If the message `This machine does have Prinergy Director installed, but was not detected as a Prinergy or Directory Primary node. Should the registry be updated anyways?` appears, it means the failover server is not operating as a primary. If this happens, let the installation continue. After it is complete, you must then uninstall Link, Business Link, or Production Reporting from the failover server. Uninstall Link, Business Link, or Production Reporting from the failover server *only*—do *not* uninstall it from the primary.

To uninstall Link, Business Link, or Production Reporting from the failover server, select:

Start > Programs > Synapse Link > Uninstall Synapse Link

Start > Programs > Kodak > Business Link > Uninstall Business Link

Start > Programs > Kodak > Production Reporting > Uninstall Production Reporting

After this is completed, put the server in failover mode and reinstall Link, Business Link, or Production Reporting.

5. Start Prinergy on the failover server.
6. After installing Link, Business Link, or Production Reporting, start it by selecting:

   Start > Programs > Synapse Link > Start Server

   Start > Programs > Kodak > Business Link > Start Server

   Start > Programs > Kodak > Production Reporting > Start Server

7. At this point (optionally) you can configure and save the settings in the Link, Business Link, or Production Reporting Administration client. Settings that are configured and saved on the **Configuration** tab of the Administration Client on the primary server are not replicated to the failover server. Information that is saved in the **Process Mapping** and **Customer Mapping** tabs of the Administration Client *is* replicated from the primary server to the failover server. You *do not* need to set and save any information in the **Process Mapping** and **Customer Mapping** tabs.
8. Close Prinergy.
9. **Important:** Stop Link, Business Link, or Production Reporting on the failover server:

   Start > Programs > SynapseLink > Stop Server

   Start > Programs > Kodak > Business Link > Stop Server

   Start > Programs > Kodak > Production Reporting > Stop Server

10. Revert the failover server to a secondary. In Administrator on the failover server, select **File > Convert to Primary**.
11. After the failover server has been reverted to a secondary, start Prinergy on all servers.

8.2.2 Adding LinkDB Replication Set in Double-Take (db database and data database)

1. Open the Double-Take Management Console.
2. In the left pane of DTMC, select the source (primary) server.
3. In Management Console, select **Insert > Replication Set**. This will add a new replication set.
4. In the left pane, under the source server group, a new replication set named **New Replication Set** should be present. **New Replication Set** is the default name. Change the name to **LinkDB**.

5. In the **LinkDB** replication set file tree menu, depending on your version of Link software, place a check mark beside these folders:

   Link

   - **<system drive>\Program Files\Synapse Link\2.1\data\db**
   - **<system drive>\Program Files\Synapse Link\2.1\yoho\server\default\data**

   Business Link

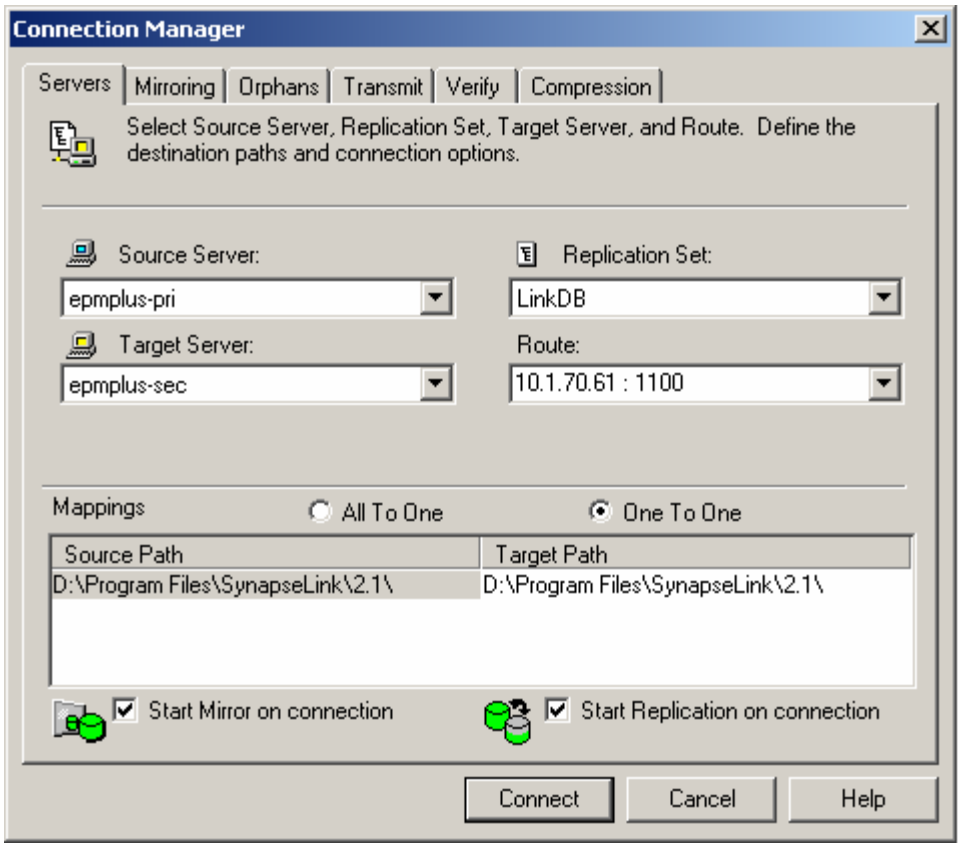
   - **<system drive>\Program Files\Kodak\BusinessLink\3.0\data\db**
   - **<system drive>\Program Files\Kodak\BusinessLink\3.0\ yoho\server\default\data**

   Production Reporting

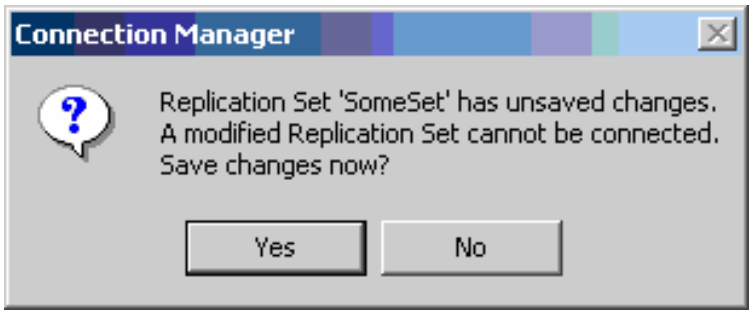
   - **<system drive>\Kodak\ProductionReporting\3.0\data\db**
   - **<system drive>\Kodak\ProductionReporting\3.0\ yoho\server\default\data**

   Important: Place a check mark *only* beside the **db** and **data** folders previously listed. When these two folders are selected, all of the parent folders in the path will appear selected as well. However, do not use the mouse to select any of the parent folders. This will result in all subfolders being selected as well. For example, if you use the mouse to check the **Program Files** folder, all of its subfolders will be selected for replication. This is not desirable.

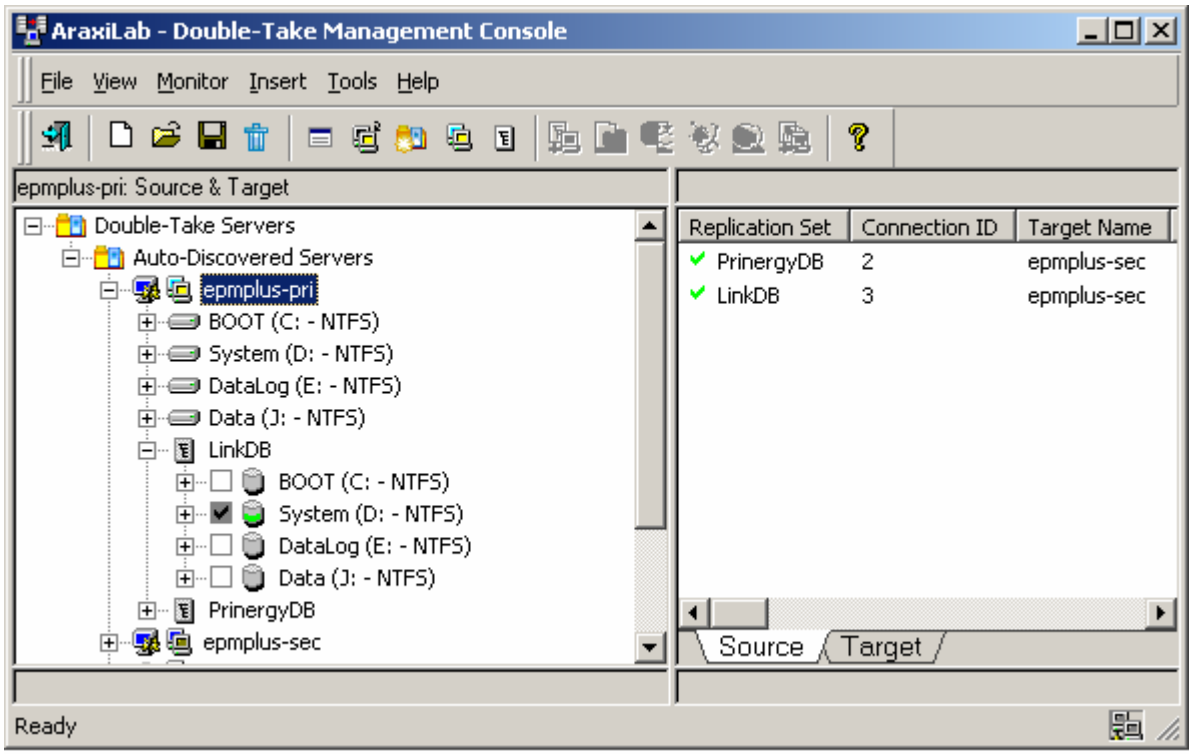
6. After the folders have been checked, select the **LinkDB** replication set in the left pane of DTMC. Drag the **LinkDB** replication set onto the target (failover) server icon in the right pane of DTMC. The **Connection Manager** dialog box appears.



7. In the **Mappings** area of the Connection Manager dialog box, select **One To One**.
8. Click **Connect**. The message `Replication set 'LinkDB' has unsaved changes. A modified replication set cannot be connected. Save changes now?` appears.



9. Click **Yes**.
10. Select the source (primary server) in the left pane. The **LinkDB** replication set should now be listed below the **PrinergyDB** set and should have a green check mark beside it. See the following example:



11. The **LinkDB** set should be replicating without error. If there is a red X beside the **LinkDB** replication set, ensure that Link, Business Link, or Production Reporting is not running on the failover server.

8.3 Testing Link, Business Link, or Production Reporting Software With Hot Standby and Double-Take

Part 1—Testing the System to Ensure Replication From the Primary to the Failover Server is Operating Correctly

Important: This procedure must be performed in the exact, numbered sequence that follows. Failure to do so can permanently corrupt the database and require restoration from tape backup.

Important: Because of the possibility of database corruption if the restoration procedure is not followed correctly for planned failover (running a test, for example), you should have a current Oracle database backup on tape and a cold database backup. Before restoring the Hot Standby failover server to secondary mode:

- In Prinergy 3.1 and earlier: stop Oracle services and make a copy of the **E:\Orant** and **<Datadrive>:\ Orant** folders
- In Prinergy 4.0: stop Oracle services and make a copy of the **<C or E>:\Oracle** and **<Datadrive>:\Oracle** folders

1. Ensure that Prinergy and Link, Business Link, or Production Reporting are running on the primary server.
2. Create a job in Prinergy called **LinkDBReplication** and add some data (for example, add some files and refine them).
3. View the Job Page Summary Report in Link, Business Link, or Production Reporting for the **LinkDBReplication** job.
4. Disconnect the network cable from the primary (to simulate the primary failing).
5. On the failover server, shut down Prinergy on all servers by selecting **Administrator > File > Emergency Shutdown**.
6. Move the dongle to the failover server.
7. On the failover server, fail over Prinergy by selecting **Administrator > File > Switch To Primary**.
8. Start Prinergy on the failover server. In a Hot Standby system, all jobs should be accessible.
9. Start Link, Business Link, or Production Reporting on the failover server:
   - **Start > Programs > SynapseLink > Start Server**
   - **Start > Programs > Kodak > Business Link > Start Server**
   - **Start > Programs > Kodak > Production Reporting > Start Server**
10. Start Prinergy Workshop. The job called **LinkDBReplication** should be present.
11. Open the Link, Business Link, or Production Reporting reports Web site. View the Job Page Summary Report in Link, Business Link, or Production Reporting for the **LinkDBReplication** job. The **LinkDBReplication** job should be present and all of the data should be present and correct.

Part 2—Testing the System to Ensure Restoration From the Failover to the Primary Server Is Operating Correctly

Important: This procedure must be performed in the exact, numbered sequence that follows. Failure to do so can permanently corrupt the database and require restoration from tape backup.

Important: Because of the possibility of database corruption if the restoration procedure is not followed correctly for planned failover (running a test, for example), you should have a current Oracle database backup on tape and a cold database backup. Before restoring the Hot Standby failover server to secondary mode:

- In Prinergy 3.1 and earlier: stop Oracle services and make a copy of the **E:\Orant** and **<Datadrive>:\ Orant** folders
- In Prinergy 4.0: stop Oracle services and make a copy of the **<C or E>:\Oracle** and **<Datadrive>:\Oracle** folders

1. Create a job in Prinergy called **LinkDBRestoration** and add data (for example, add and refine some files.)
2. View the Job Page Summary Report in Link, Business Link, or Production Reporting for the **LinkDBRestoration** job.
3. Stop Link, Business Link, or Production Reporting on the failover server:

   Start > Programs > SynapseLink > Stop Server

   Start > Programs > Kodak > Business Link > Stop Server

   Start > Programs > Kodak > Production Reporting > Stop Server

   Important: This procedure must be performed in the exact, numbered sequence as follows. Failure to do so can permanently corrupt the database and require restoration from tape backup.
4. Reconnect the primary network cable.
5. Stop Prinergy on all servers (on both the failover server and the primary).
6. Stop Link, Business Link, or Production Reporting on the primary server if it is running:

   Start > Programs > SynapseLink > Stop Server

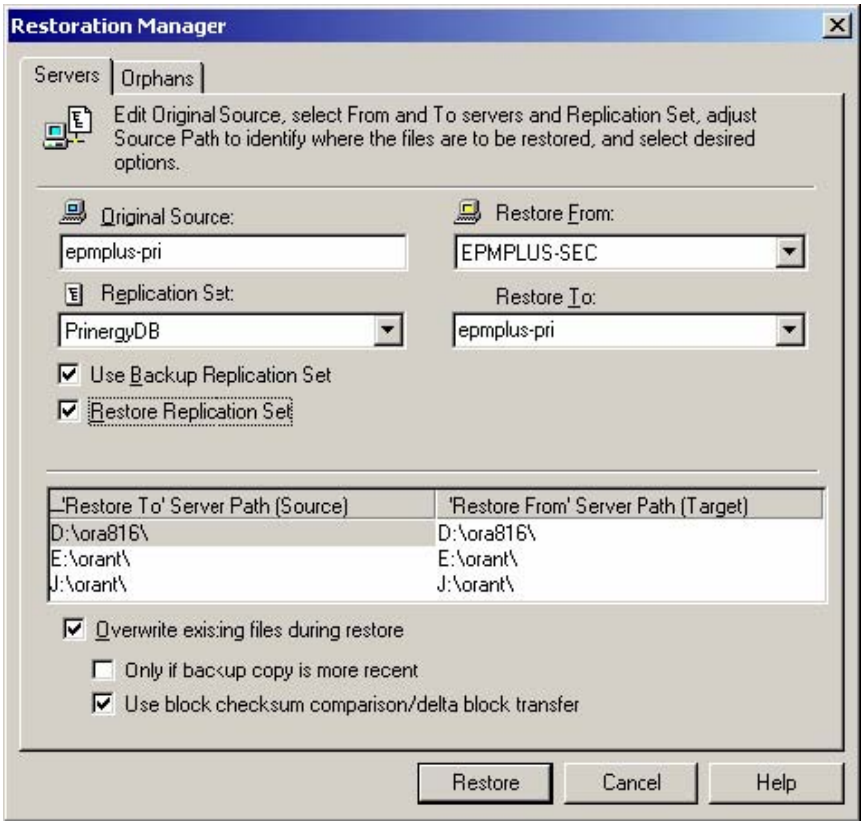
   Start > Programs > Kodak > Business Link > Stop Server

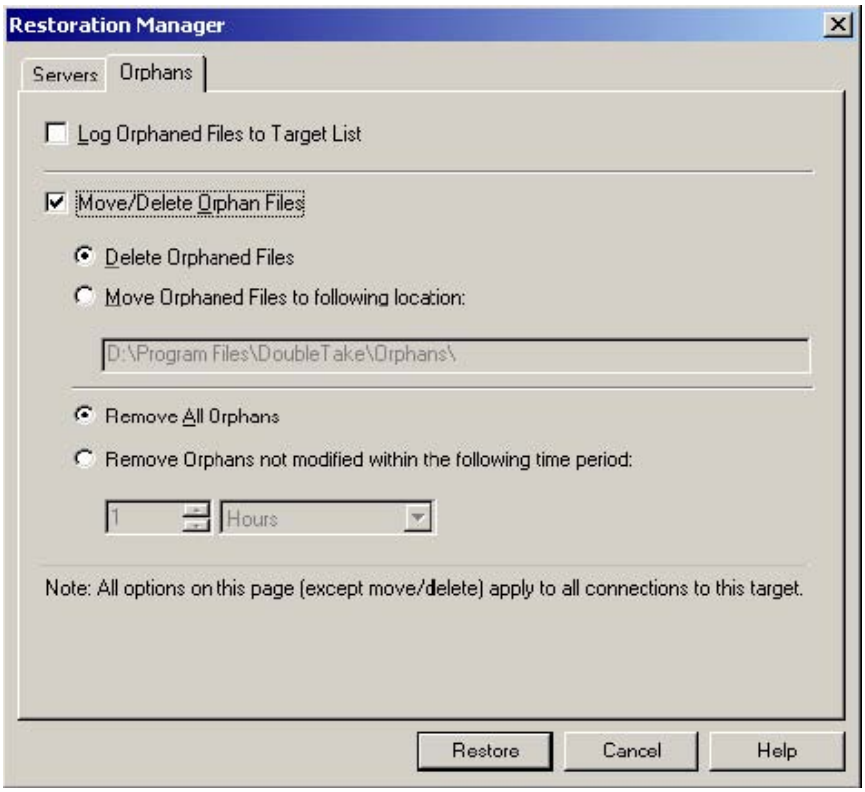
   Start > Programs > Kodak > Production Reporting > Stop Server
7. Move the dongle back to the primary server.

   Important: Ensure that you have disconnected the Prinergy and Link, Business Link, or Production Reporting database replication jobs as called for in steps 8 and 9. If you proceed without first disconnecting the database replication jobs, the database will be corrupted.
8. **Critical Step:** On the primary server, disconnect the Prinergy database replication set using DTMC.
9. **Critical Step:** On the primary server, disconnect the **LinkDB** database replication set using DTMC.
10. On the failover server, switch the failover server to a secondary again, by selecting

Administrator > Revert to Secondary.

11. **Critical Step:** On the primary server, run the **DisableOracle.cmd** script, located in **<systemdrive>\Program Files\DoubleTake\creo**. When you are prompted to do so by the script, confirm that you want to stop and disable Oracle.
12. Check the output of **DisableOracle.cmd** for errors. If there are no apparent problems, proceed. If there appear to be a problem, *do not proceed*. Contact a Kodak service representative.
13. In DTMC, select **Tools > Restoration Manager**. The Restoration Manager dialog box appears.
14. Use the following examples to enter the correct settings on the **Servers** and **Orphans** tabs. Substitute server names as appropriate.





15. After entering the correct settings, click **Restore**.

    On the primary server, you can monitor restoration progress using DTMC. *You must let this process finish*. Interrupting the restore process will leave an unusable database on the primary server.

    Note: If there is an unexpected interruption (a power outage, for example) you can restart the restore process by repeating steps 13 through 15. The restore process will overwrite the unusable database on the primary server with the still-good copy from the failover server.

    Important: Repeat step 15 for the **LinkDB** replication set. Note that some of the details will be different. The replication set is called **LinkDB** (instead of **PrinergyDB**) and the replication folders will be the Link **db** and **data** folders, not **orant** folders.

16. On the primary server, run the **EnableOracle** script to start Oracle on the primary.

17. On the primary server, start Prinergy on all servers. Ensure that Prinergy is operating properly before proceeding to the next step.

18. Start Link, Business Link, or Production Reporting on the primary server:

    Start > Programs > Synapse Link > Start Server

    Start > Programs > Kodak > Business Link > Start Server

    Start > Programs > Kodak > Production Reporting > Start Server

19. Start Prinergy Workshop. The job called **LinkDBRestoration** should be present.

20. Open the Link, Business Link, or Production Reporting reports Web site. View the Job Page Summary Report in Link, Business Link, or Production Reporting for the

LinkDBRestoration job. The **LinkDBRestoration** job should be present and all of the data should be present and correct.

21. On the primary server, after confirming that Prinergy is operating correctly, reconfigure Double-Take to replicate the database onto the failover server again by performing the procedure in Section 2.9, *Starting Replication*.

22. On the primary server, after confirming that Link, Business Link, or Production Reporting is operating correctly, reconfigure Double-Take to replicate the Link, Business Link, or Production Reporting database onto the failover server again by performing the procedure in Section 9.2.2, *Adding LinkDB Replication Set in Double-Take*.