AccessData

Forensic Toolkit

Migrating Cases from Oracle to PostgreSQL

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Migrating Cases from Oracle to PostgreSQL

Migrating FTK Databases Overview

How you upgrade your cases depends on the following situations:

- You can upgrade your active Oracle-based cases to PostreSQL.

  See Upgrading Cases on page 6.

- If you create Oracle-based cases in 3.4 and then want to change them to use PostreSQL, you can do that by backing up and restoring the cases.

See Migrating Cases Between Database Types on page 3.

See Backing Up a Case on page 4.

See Restoring a Case on page 5.

Migrating Cases Between Database Types

If you have decided to migrate your Oracle cases to PostgreSQL, the migration paths vary depending on your starting point.

Upgrading 3.x Cases From Oracle to 3.x PostgreSQL

Cases created (version 3.0 or newer) with an Oracle database can be upgraded (and converted) for use with PostgreSQL database support by using the case copy function.

Note: Migrating from a PostgreSQL database to Oracle is not supported.

Moving 3.4.x Cases from Oracle to PostgreSQL

3.4 cases can be moved from Oracle to PostgreSQL. In order to do so, you must do the following:

- Backup each case that you want moved using the “Database Independent Format.”
- Restore each case to the new database.

To migrate cases from Oracle to PostgrSQL

1. Open the Case Management interface.
2. Back up ALL cases that need to be migrated using the database independent format. For help on this step, see “Backing Up a Case.”
3. Connect to the new database. If the instance you are running has been connected to a database previously, you will need to follow these steps to switch default databases:

3a. After all cases have been backed up successfully, close the Case Management Interface completely.

3b. Shut down the database service(s). (In Windows, you can use the services.msc managment snap-in to stop the database services.)

3c. Ensure the new database is up and accepting connection requests.

3d. Launch the application (you should receive a message stating that it was unable to connect to the database).

3e. Connect to the new database and complete the initialization process. For help, see “Initializing the FTK Database.”

4. Open the Case Management interface (connected to the new database).

5. Restore your cases to the new database. For help, see “Restoring a Case.”

Backing Up a Case

Performing a Backup and Restore on a Two-Box Installation

If you have installed FTK and the database on separate boxes, there are special considerations you must take into account. For instructions on how to back up and restore in this environment, see “Configuring FTK for a Two-box Back-up and Restore.”

Performing a Backup of a case

At certain milestones of an FTK investigation, it is recommended that you back up your case to mitigate the risk of an irreversible processing mistake or perhaps case corruption. It is important to understand that a case backup must be restored to the same version of the database from which it was created. Case backup can also be used when migrating case data from one database type to another. For example, if you have created cases in FTK 3.4 running an Oracle database and you want to move the case(s) to the same version of FTK that is running a PostgreSQL database.

When you back up a case, FTK copies case information and database files (but not evidence) to the selected destination folder. AccessData recommends that you store copies of your drive images and other evidence separate from the backed-up case.

Important: Case Administrators back up cases and must maintain and protect the library of backups against unauthorized restoration, because the user who restores an archive becomes that case’s administrator.

Note: FTK does not compress the backup file. A backed-up case requires the same amount of space as that case’s database tablespace and the case folder together.

To back up a case

1. In the *Case Manager* window, select the case to back up.

2. Do one of the following:

- Click **Case > Back up.**
- Right-click on the case in the *Cases* list, and click **Back up**.

3. In the field labeled *Back up folder*, enter a destination path for the backup files.

Important: Choose a folder that does not already exist. The backup will be saved as a folder, and when restoring a backup, you will point to this folder (not the files it contains) in order to restore the case to FTK.

4. (Optional) Select the option *Use intermediate folder for DB data transfer* if the database services have not been configured with write access to the destination folder.

To use an intermediate folder:

4a. Mark the checkbox *Use intermediate folder for DB data transfer.*

4b. Identify the path to a folder to which the database has write access. Enter that path in the field labeled *DB local folder*.

4c. On the system hosting the database, share the folder (C:\sharename) that was specifed as the DB local folder.

4d. Enter the UNC path (\\servername\sharename) to the DB local folder in the field labeled *Path from FTK to the 'DB local folder' above*.

5. (Optional) Select the option *Use database independent format* if this case will potentially need to be restored to a different brand of supported database (e.g. Oracle, PostgreSQL, etc).
6. Click **OK**.

Note: The following information may be useful as you use FTK:

- Each case you back up should have its own backup folder to ensure all data is kept together and cannot be overwritten by another case backup. In addition, it is recommended that backups be stored on a separate drive or system from the case, to reduce space consumption and to reduce the risk of total loss in the case of catastrophic failure (drive crash, etc.).
- FTK now records the absolute path of the case folder. When restoring a case, the default path is the original path. The user can choose the default path, or enter a different path for the case restore.

Restoring a Case

A case backup can only be restored to the same version of FTK as was used to create the backup files. Do not use the *Restore...* function to attach an archive (instead use *Attach...*). When your case was backed up, it was saved as a folder. The folder selected for the backup is the folder you must point to when restoring the backup.

To restore a case

1. Open the *Case Manager* window.
2. Do either of these:
   - Click **Case > Restore > Restore**.
   - Right-click on the *Case Manager* case list, and select **Restore > Restore**.
3. Browse to and select the backup folder to be restored.
4. A prompt asks if you would like to specify a different location for the case folder. The processing status dialog appears, showing the progress of the archive. When the archive completes, close the dialog.

Initializing the FTK Database

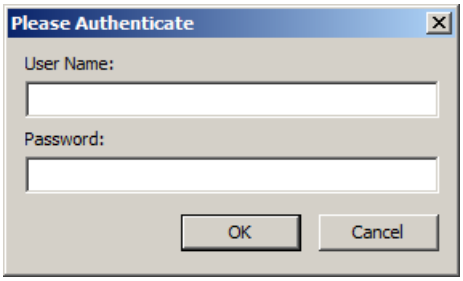
Before you can get started with case management, you must initialize the FTK database.

To initialize the FTK Database

1. Start FTK.
2. If FTK does not detect an existing database connection for that version of FTK, you will be prompted to *Add Database*.
3. In the *RDBMS* drop-down menu, select the brand of database to which you are connecting to FTK.
4. Enter the IP address or DNS hostname of the server hosting the database in the *Host* field.

5. (Optional) Give the database connection a nickname in the *Display name* field.
6. Do not change the values in the *Oracle SID*, *Postgres dbname*, or *Port number* fields unless you have a custom database configuration.
7. Click **OK.**
8. If the connection attempt to the database was successful, the database will be initialized.
9. Upon completion of the initialization process, you will be prompted to create the Application Administrator account for that version of the database schema. Enter the desired credentials for the account and click **OK**.
10. Log into the database using the Application Administrator account credentials via the *Please Authenticate* dialog.

FIGURE 1-1 Please Authenticate



11. A successful login enables you to use the Case Manager window. From here, you can create other user accounts and perform other administrative tasks as discussed in the following sections.

Upgrading Cases

If you have cases that were created in 3.0 or newer, you can convert them to open in the current release of FTK. The steps in this documente can also be used when upgrading cases from an Oracle database to a PostgreSQL.

Important Considerations

- Some features supported by newer versions may not be available when reviewing a case that has been upgraded. Depending on the feature, you may need to reprocess some or all of the evidence in the case to be able to use a particular feature.
- FTK does not support skipping versions when upgrading cases. You must upgrade in the order of released versions. For example: you cannot upgrade cases from FTK 3.1 to FTK 4.0. In this example you would need to upgrade first from FTK 3.1 > FTK 3.2 > FTK 3.3 > 3.4 > FTK 4.0.
- 4.0 does not support upgrading cases from 2.x. If you have 2.x cases that you want to upgrade, you must first upgrade the cases to 3.0 or newer.

To upgrade a case

1. Open the *Case Manager* interface (using the latest version).
2. Click **Case** > **Copy Previous Case...**
3. On the *Copy Case(s)* dialog, select the version of the database (from which you would like to copy your case) via the *Select Database* drop-down menu.

   Note: If prompted to authenticate, enter the system administrator (sys) credentials for the Oracle database and then click **OK**.
4. Highlight the case(s) which you would like to upgrade into the new database. Use **Shift+Click** or **Ctrl+Click** to select more than one case at a time.

Important: The selected case(s) must not be in use at the time of upgrade.

5. Once you have selected the case(s) to be upgraded, click **OK** to proceed.
6. On the *Copy Previous Case(s)* dialog, use the *Case:* drop-down menu to switch between the list of users associated to each case.
7. For each case being upgraded, use the *Associate Users* control box to map the user names that exists in the previous database (*Old User Name*) to a user name(s) that exist in the new database (*New User Name*).
8. Do the following to associate users:
   - **8a.** Highlight the old user name(s) to which you would like to associate to a username in the new database. Use **SHIFT+Click** or **CTRL+Click** to select more than one username at a time.
   - **8b.** Click **Associate to...**
   - **8c.** Select the user name from the new database to which you would like to associate the old user names.

   This step assumes you have already created user accounts in the new database.
9. Ensure that the folder path in the *Temporary Storage* field points to a location that contains storage space sufficient to copy the entire contents of the case (which includes the case folder, index, and case data but not evidence).
10. Click **OK**.
11. The selected user associations are mapped and the case is copied into the new database.

Note: The copied case is written to the same main case folder as the source case. The upgraded case name will be appended with a number to make it unique. For example, My Example Case Name (1).

Configuration for a Two-box Backup and Restore

By default, a two-box installation (also known as a distributed installation, where the application and its associated database have been installed on separate systems) is not configured to allow the user to back up and restore case information. Some configuration changes must be performed manually by the system administrator to properly configure a two-box installation. Please note that the steps required to complete this configuration differ slightly for domain systems than for workgroup systems.

Configuration Overview

The following steps are required before you can perform two-box case back ups and restoration.

- Create a service account common to all systems involved. See Create a Service Account on page 8.
- Share the case folder and assign appropriate permissions. See Share the FTK Case Folder on page 8.
- Configure the database services to run under service account. See Configure Database Services on page 9.
- Share back up destination folder with appropriate permissions. See Share the Backup Destination Folder on page 9.

Note: When prompted to select the backup destination folder, *always* use the UNC path of that shared folder, even when the backup destination folder is local.

Each of these items is explained in detail later in this chapter.

Create a Service Account

To function in a distributed configuration, all reading and writing of case data should be performed under the authority of a single Windows user account. Throughout the rest of this appendix, this account will be referred to as the "service account." If all the systems involved are members of the same domain, choosing a domain user account is the recommended choice. If not, all systems are members of the same domain, then you can configure "Mirrored Local Accounts" (see Microsoft KB 998297) as detailed in the following steps:

To set up Mirrored Local Accounts

1. On the Examiner host system, create (or identify) a local user account.
2. Ensure that the chosen account is a member of the Local Administrators group.
3. On the database host system, create a user that has the exact same username and password as that on the Examiner host system.
4. Ensure that this account is also a member of the Local Administrators group on the database host system.

Instructions for Domain User Accounts

Choose (or create) a domain user account that will function as the service account. Verify that the chosen domain user has local administrator privilege on both the Examiner host system and the database host system.

To verify the domain user account privileges

1. Open the "Local Users and Groups" snap-in.
2. View the members of the Administrators group.
3. Ensure that the account selected earlier is a member of this group (either explicitly or by effective permissions).
4. Perform this verification for both the FTK and the database host systems.

Share the FTK Case Folder

On the system hosting the Examiner, create a network share to make the main case folder available to other users on the network. The case folder is no longer assigned by default. The user creating the case creates the case folder. It is that folder that needs to be shared.

For this example, it is located at the root of the Windows system volume, and the pathname is:

`C:\FTK-Cases`.

To share the case folder

1. Before you can effectively share a folder in Windows you must make sure that network file sharing is enabled. Windows XP users should disable Simple File Sharing before proceeding. Windows Vista/7 users will find the option in the Sharing and Discovery section of the Network and Sharing Center. If you encounter any issues while enabling file sharing, please contact your IT administrator.
2. Open the *Properties* dialog for the case folder.
3. Click the **Sharing** tab to share the folder.
4. Edit the permissions on both the *Sharing* and *Security* tabs to allow the one authoritative user Full Control permissions.
5. Test connectivity to this share from the database system:

   5a. Open a Windows Explorer window on the system hosting the database.

5b. Type *servername**sharename* in the address bar, where “servername” = the hostname of the Examiner host system, and “sharename” = the name of the share assigned in Step 1.

For example: If the name of the system hosting the Examiner is ForensicTower1 and you named the share “FTK-Cases” in Step #1 above, the UNC path would be \\forensictower1\FTK-Cases.

5c. Click **OK**. Check to see if the contents of the share can be viewed, and test the ability to create files and folders there as well.

Configure Database Services

To ensure access to all the necessary resources, the services upon which the database relies must be configured to log on as a user with sufficient permissions to access those resources.

To configure the database service(s) to Run As [service account]

1. On the database server system, open the Windows Services Management console:
   - **1a.** Click **Start > Run**.
   - **1b.** Type services.msc.
   - **1c.** Press **Enter.**
2. Locate the following services:

   Oracle

   - Oracle TNS Listener service listed as OracleFTK2TNSListener or OracleAccessDataDBTNSListener (Found on Oracle System)
   - OracleServiceFTK2 (Found on Oracle System)

   PostgreSQL

   - postgresql-x64-9.0

   or

   - postgresql-x86-9.0
3. Open the properties of the **s**ervice and click the **Log On** tab.
4. Choose **This account**.
5. Click **Browse** to locate the service account username on the local system or domain. Ensure that “From this location” displays the appropriate setting for the user to be selected. Note that “Entire Directory” is used to search for a domain user account, while the name of your system will be listed for a workgroup system user.
6. In the object name box, type in the first few letters of the username and click **Check Names**. Highlight the desired username. Click **OK** when finished.
7. Enter the current password for this account and then enter it again in the *Confirm Password* box. Click **Apply** and then **OK**.
8. Repeat Steps #3-8 for each database service.
9. Restart database service(s) when finished.

Share the Backup Destination Folder

Using the same steps as when sharing the main case folder, share the backup destination folder. Use the UNC path to this share when performing backups. For a two-box backup to work correctly, you must use a single UNC path that both the FTK application, and the database application have read/write access to.

Test the New Configuration

To test the new configuration

1. Launch the Case Manager and log in normally.
2. Select (highlight) the name of the case you want to back up.
   - **2a.** Click **Case > Back up.**
   - **2b.** Select a back up destination folder.

   Note: The path to the backup location must be formatted as a UNC path.

The *Data Processing* window opens, and when the progress bar turns green, the backup is complete. If the *Data Processing* window results in a red progress bar (sometimes accompanied by “Error 120”), the most likely cause is that the database service does not have permission to write to the backup location. Please double check all the steps listed in this document.