Technical Reference Guide

This document describes a Relational Data Migration (RDM) infrastructure used to move business data from one location to another. This process is common for businesses when they upgrade computer systems or change ownership. The instructions here are intended for internal support specialists.

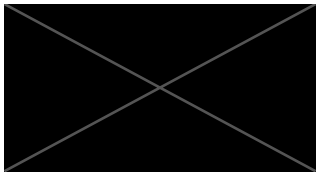

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Table of Contents

Relational Data Migration Overview

The Relational Data Migration (RDM) infrastructure is used to move business data stored in relational databases from one box to another. Currently there are two relational databases that store data for ADP Drive, the ADP report database (adp_report) and the Dealer Management System database (adp_dms). The following is an overview of the steps required to migrate this relational data.

CAUTION! *Before you begin a data migration, you must verify that all required patches have been applied to the source and target boxes. Additionally, you must set up the network between the source box and target box.*

- *Use the MY Patches site to verify what MY patches apply to a given release of APD Drive 1.0.*
- *Use the Set Up Network Hosts (SNH) function to add the target machine to the network database on the source box and to add the source machine to the network database on the target box. For information about how to use the SNH function, see the current Migration to R821 Systems Bulletin (B15219).*

1. (optional) Copy Relational Data

Relational data is sometimes copied or cloned before moving the data from a source box to a target box. You can also re-brand the data to distinguish it from its source.

2. Create a Migration Definition

In order to start the migration process, you must define your source and target boxes, select the accounts to include, and specify whether you are moving the data to a new or existing system.

3. Run the Relational Data Migration

The migration process is outlined below. There are four consecutive operations required for each relational database that you migrate.

Table 1. Data Migration Process

Operation Name	Source or Target Box	Description
Extract	Source	Copies data from the relational databases on the source box into 'migration' databases that will be transferred to the target box.
Transfer	Target	Backs up the migration databases from the source box to files on the target box, provided that the target box is accessible from the source box over a network. If not accessible, the Extract operation backs up the migration databases to files on the source box. The backup files must be transferred to the target box using another medium, such as tape or CD.

Operation Name	Source or Target Box	Description
Transform	Target	Verifies that the target box can accept the migration data. If the box qualifies for migration, the program creates migration databases on the target box; adp_report_migrate is created for the ADP report database data and adp_dms_migrate for the DMS database data. It then restores migration data from the backup files into the migration databases. (If the box does not qualify for migration, the operation stops and reports the condition in the run history.)
Load	Target	Copies data from the adp_report_migrate and adp_dms_migrate databases created in the previous step to adp_report and adp_dms databases, respectively.

4. (optional) View Log Files

As the data migration operations run, their progress is recorded in log files that you can view at any time.

5. Migrate CoRA Accounts

After you have migrated adp_dms relational data, you can migrate CoRA accounts. For more information on how to transfer CoRA-based account information see the current *Migration to R821 Systems Migration Bulletin (B15219)*.

Note. *You can migrate data in the adp_report database before or after you migrate CoRA accounts. The Transform operation for the adp_report database could take hours when the scenario is 'All accounts to a new box'. So in this scenario, the CoRA accounts should migrate before the Transform operation and Load operation run on the adp_report database in order to minimize the time the box is unavailable for business use. For other scenarios, the Transform operation and Load operation for the adp_report database will take less than 1 minute. So there is no reason to wait to do these operations until after CoRA data migrates.*

6. Rebuild ADP Drive and Operational Reporting Groups

After you migrate the CoRA Accounts, you must rebuild the ADP Drive and Operational Reporting groups. The Generic Service Rebuild Groups (GNRG) routine rebuilds the account groups for a selected product server/application. For more information, see the *ADP Drive MM050 Technical Reference and Troubleshooting Guide.*

7. Deactivate the Migration Definition

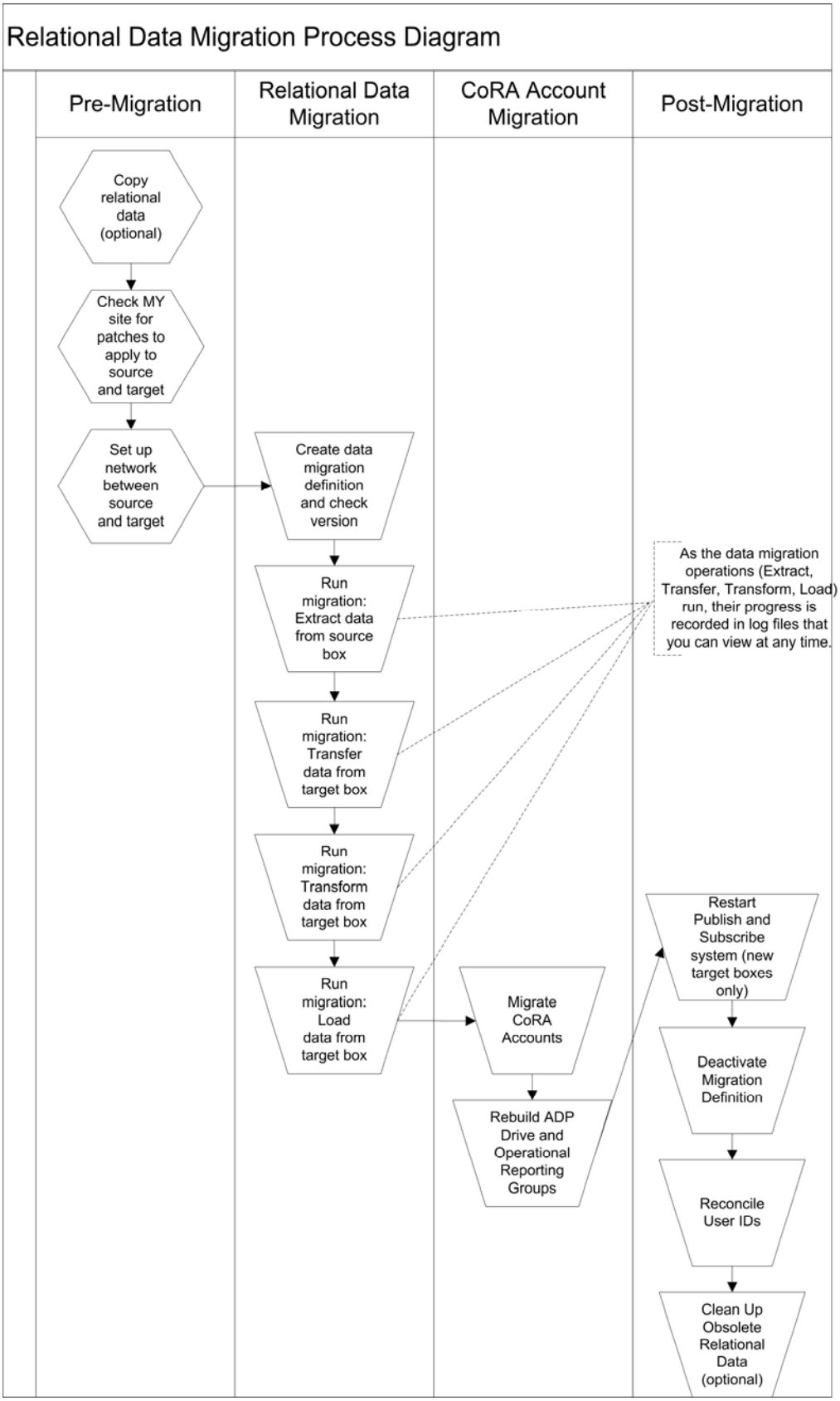
After you have successfully migrated the relational databases, you should deactivate the migration definition. The definition can no longer be changed; however, you can continue to view the definition.

8. Reconcile User IDs

Reconcile any new user IDs in the migration that match existing IDs on the target box. (Sometimes during a data migration, new user IDs from the source box match or 'collide' with user IDs from the target box.)

9. (optional) Clean Up Obsolete Relational Data

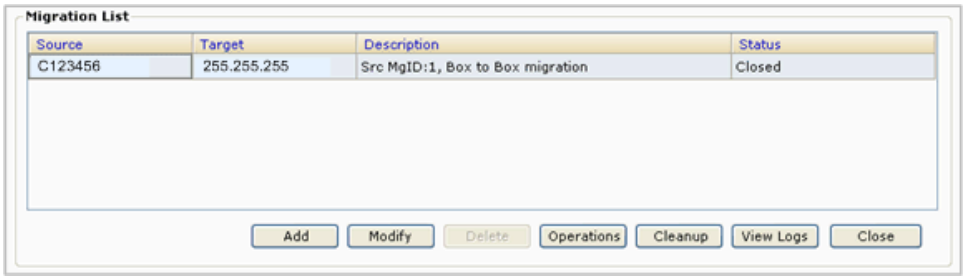
You use the Data Migration Cleanup operation to remove migrated account data that is no longer needed on a source box.



Create a Data Migration Definition

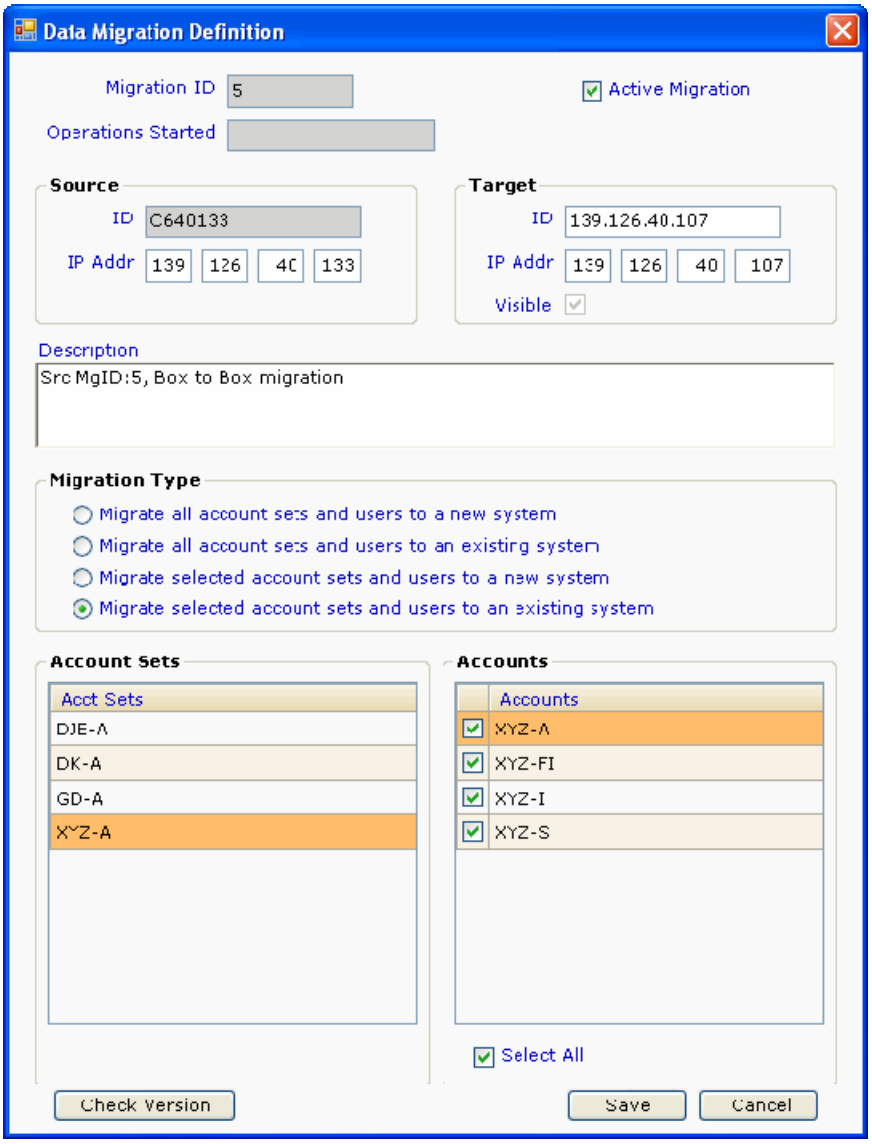
You must set up a definition for new migrations before you can extract data from relational databases on a source box and transfer that data to a target box.

1. Log on to the source box and start ADP Drive.
2. On the Support menu, click **Relational Data Migration**. The Relational Data Migration Screen opens.



Relational Data Migration Screen

3. Click **Add** and confirm that you want this new definition to be the active definition. The Data Migration Definition Screen opens.



Data Migration Definition Screen

4. Information about the source box is entered automatically; however, you must verify that the IP address that appears is the external IP address. In some cases, when the internal and external IP address are both available, you must enter the external IP address manually.
5. If the source box and the target box are **not** connected by a network, leave the target box information blank.

   If the source box and the target box are on the same network, identify the target box of the migration. Enter the client DMS Serial number (C number) and/or the IP address. Then click **Check Version to** verify that all required patches have been applied to the target box.

CAUTION! *Check Version assesses the target box and looks for the patches and release version required to migrate data between the two boxes. If it discovers any*

missing patches or out-of-date releases, you must load these before you start the relational data migration Transform operation.

6. Under **Description**, enter any comments you want to include for the migration.
7. Select a migration type. You can choose to migrate all or selected accounts, and to move the data to a new or existing system.

   Note. *If you are using this definition to perform a data migration cleanup, choose, "Migrate selected account sets and users to an existing system."*
8. If you are migrating selected accounts, choose the account set, and then select the appropriate accounts to include.
9. Save your changes. Now you are ready to run the migration.

Run a Data Migration

Currently there are two relational databases that store data for ADP Drive, the ADP report database (adp_report) and the Dealer Management System database (adp_dms). You transfer both when you run a data migration.

The adp_report database contains report data for a DMS. You can migrate data in the adp_report database at any time (before or after you migrate CoRA accounts).

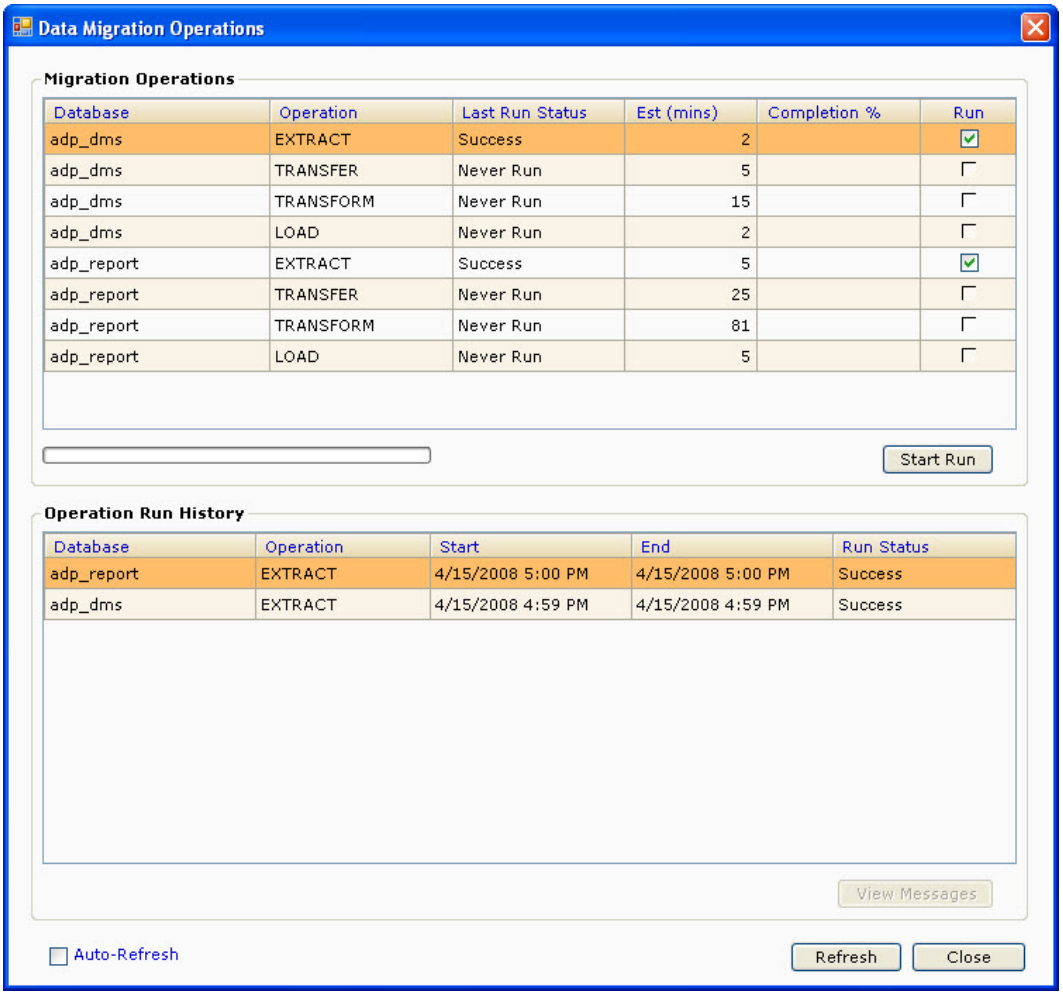
The adp_dms database is the sole repository for some business transaction data, for example purchase orders. ***Note.*** *You must migrate the adp_dms data before you migrate CoRA Accounts. For information on how to transfer CoRA-based account information see the current Migration to R821 Systems Bulletin (B15219).*

Order of Migration Operations

Because the four migration operations must be run consecutively, the **Run** check box is available for an operation only when the previous operation has completed. For example, you cannot select to transfer a database before you have run the extract operation. For more information about the order of these operations, see *Relational Data Migration Overview* on page 1.

Extract

1. Log onto the source box.
2. On the Support menu, click **Relational Data Migration**.
3. From the Migration List, select the active migration definition, and then click **Operations**.
4. The Migration Operations grid has a line for each combination of database and operation. A line shows the status of the last run of an operation and an estimate of the duration of the operation. For each database that you want to migrate (adp_dms and adp_report), select the **Run** check box that corresponds to the Extract operation.
5. Click **Start Run**.



Data Migration Operations Screen

6. (optional) When an operation begins, a new row appears in the Operation Run History. You can select it, and then click **View Messages**, to see the progress of individual operation steps. Or you can close the Data Migration tab while an operation runs and return to it later. The **Completion %** and the progress bar (below the Migration Operations grid) refresh every few seconds to show the progress of the operation.
7. When Extract operation is 100% complete and it has a run status of Success, you can start the next operation in the sequence, Transfer, on the target box. Or, if the operation failed, refer to the log file to see what errors were recorded during the process, make any necessary corrections, and run the operation again.

Transfer

There are two transfer options available. Based on the network connection between the source and target boxes, choose one of the following:

- No Network Connection
- Network Connection

No Network Connection

During a data migration, if the target box you are using is not accessible from the source box over a network, you must manually transfer migration files between the two.

1. Using a tape, CD, or other medium, copy the following files from the source box:

File	Owner:Group	Permissions
/adp/my/backup/adp_dms_migrate.bak.gz	adp_dba:clients	664
/adp/my/backup/adp_report_migrate.bak.gz	adp_dba:clients	664
/adp/my/migrate_def.txt	adp_dba:clients	664

2. Log onto the target box.
3. From the Support Login page, at the $ prompt, enter **su adp_dba** and the current adp_dba password.
4. Enter the command **cd /adp/my/bin**.
5. To run the Transfer operations for the adp_dms database in the migration database, enter
   ./mg_transfer.php =:d adp_dms
6. To run the Transfer operations for the adp_report database in the migration database, enter
   ./mg_transfer.php =:d adp_report
7. When the transfer operation is complete and it has a run status of Success you can move on to the next two operations: Transform and Load.

Network Connection

1. Log onto the target box.
2. On the Support menu, click **Relational Data Migration**.
3. From the Migration List, select the active migration, and then click **Operations**.
4. Select the **Run** check box that corresponds to the transfer operation for each of the databases you extracted earlier. When the transfer operation is 100% complete and it has a run status of Success you can move on to the next two operations: Transform and Load.

Verify That the Transfer Was Successful

1. Log onto the target computer.
2. On the Support menu, click Relational Data Migration.
3. From the Migration List, select the active migration, and then click Operations.

4. Under Operation Run History, find the transfer operation and its Run Status. If it has a Run Status of Success you can move on to the next two operations: Transform and Load.

Transform

1. Log onto the target computer.
2. On the Support menu, click **Relational Data Migration**.
3. From the Migration List, select the active migration, and then click **Operations**.
4. Select the **Run** check box that corresponds to the transform operation for each of the databases. You can select the **Run** check box for both operations. The program will run them consecutively.

Load

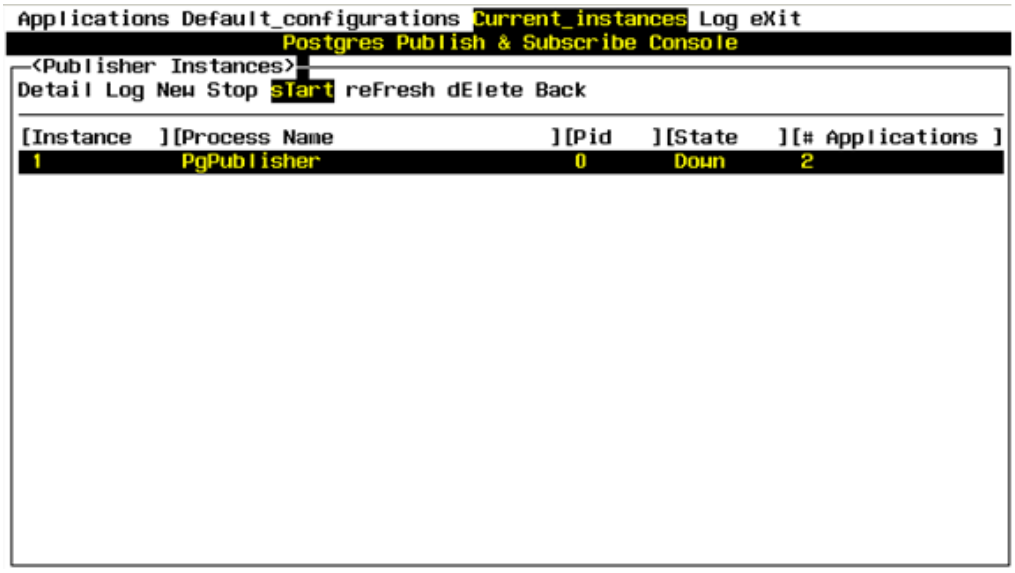
To run a data migration Load operation:

1. Log onto the target computer.
2. On the Support menu, click **Relational Data Migration**.
3. From the Migration List, select the active migration, and then click **Operations**.
4. Select the **Run** check box that corresponds to the load operation for each of the databases. You can select the **Run** check box for both operations. The program will run them consecutively.
5. If you are migrating data to a new target box, you must restart the Publish and Subscribe system. For information on how to do this, see the restart instructions below.

Restart the Publish and Subscribe system

CAUTION! *You restart the Publish and Subscribe system after migrating both relational data and CoRA account data to a new target box. For more information on how to transfer CoRA-based account information see the current Migration to R821 Systems Migration Bulletin (B15219).*

1. Start a reality session on the target box.
2. For the adp account, enter the function code GPGC–Postgres Publish and Subscribe Console.
3. Open the Current_instances screen and start each instance of PgPublisher listed on the screen (usually there is only one instance).



Current_instances screen

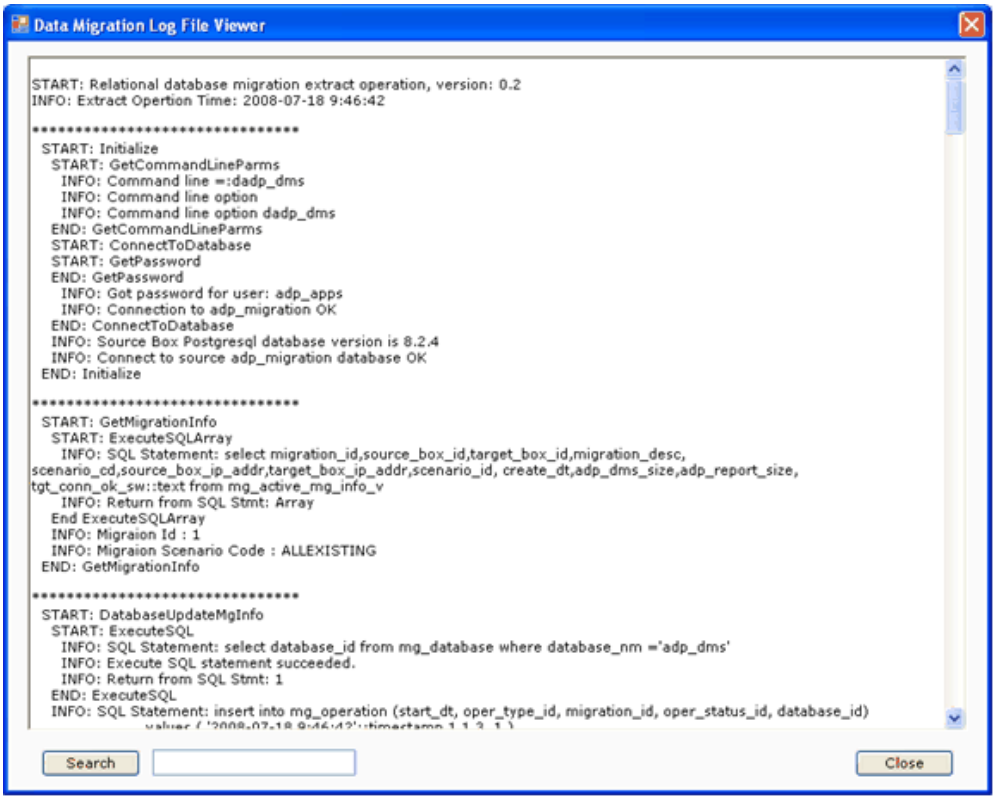
View a Data Migration Log

There are two ways to view a data migration log. One procedure generates a history of log files from which to choose from, the other displays the log file for a specific data migration operation.

Note. *To view a log for an operation, you must be logged on to the box (i.e., source or target) on which the operation ran.*

To view a list of available log files

1. On the Support menu, click **Relational Data Migration**.
2. From the Migration List, select a migration, and then click **View Log**. A list of log files and folders appears. Both data migration and cleanup operations are included.
3. Double-click a log name to view it in the Data Migration Log File Viewer window.



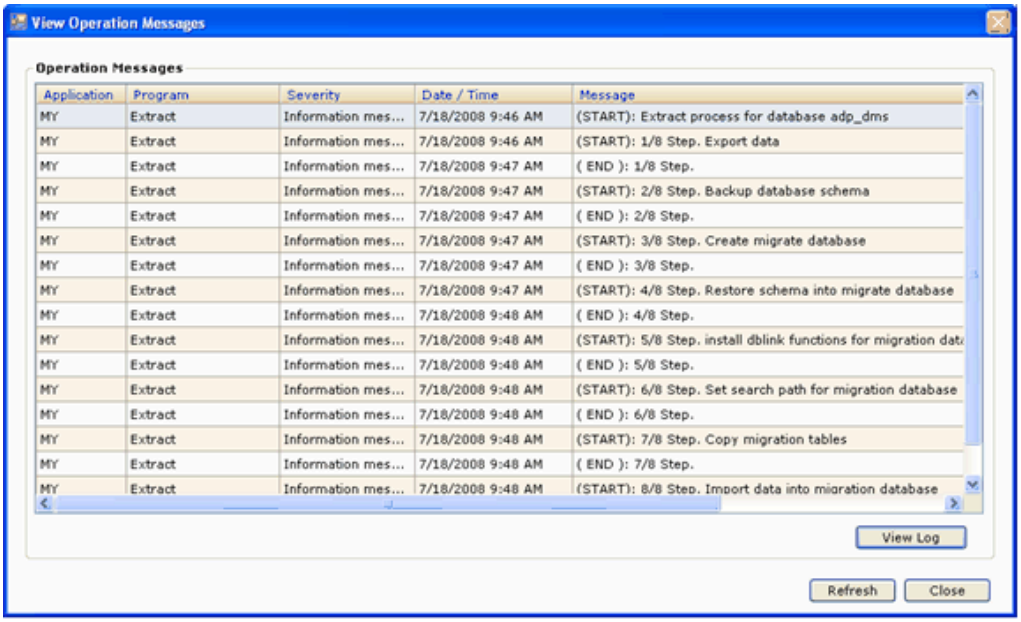
Log File Viewer Screen

Note. *To find errors in a log file, enter the term ERROR in the field provided, and then click* ***Search****.*

To view the log file of a specific data migration operation

1. On the Support menu, click **Relational Data Migration**.
2. From the Migration List, select a migration, and then click **Operations**.

   In the Operation Run History list, each message represents a step in the operation. Major processes are set off by asterisks, while Individual functions are detailed between the headings START and END. Both informative messages and program errors appear.
3. Select an operation, and then click **View Messages**.
4. From the View Operations Messages window, click **View Log**.



View Operation Messages Screen

Note. *This screen automatically refreshes about every 10 seconds so you can view the progress of the operation.*

Deactivate a Migration Definition

After you have successfully migrated the relational databases, you should deactivate the migration definition on both the source box and the target box. You can no longer change the definition; however, you can continue to view it.

1. On the Support menu, click **Relational Data Migration**.
2. Select the definition you want to deactivate, and then click **Modify**.
3. Clear the **Active Migration** check box, and then click **Save**.

Note. *If you never started the data migration operation, you can delete the definition. From the Relational Data Migration screen, select the definition and click* ***Delete****.*

Reconcile User IDs after a Migration

Sometimes during a data migration, user IDs from the source box match or 'collide' with user IDs from the target box. When this happens the Transform operation adds the source box C number to the matching source ID. For example, a user ID that is 'Peterson' on the source box becomes 'C123456:Peterson' on the target box.

After the migration you can reconcile these new C number IDs from the source box with existing user records on the target box. For example, you can map C123456:Peterson to the existing user PetersonJ on the target box. The user reconciliation process will change C123456:Peterson to PetersonJ.

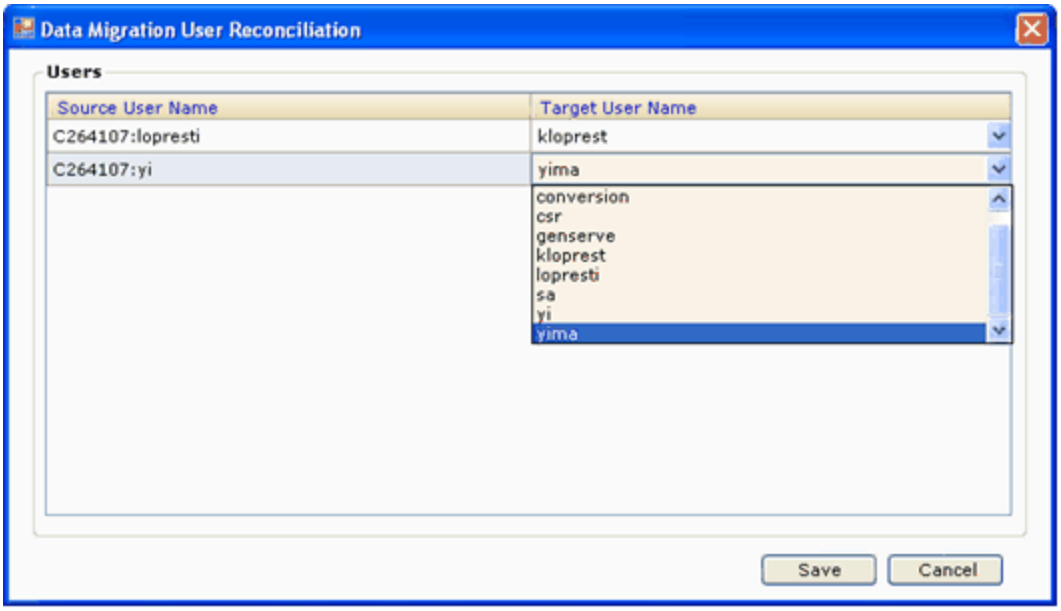
Note. *You should reconcile user IDs after the new IDs are created on the target box and before any data in the database references these IDs.*

To reconcile user IDs after a migration:

1. Log onto the target box.
2. On the Support menu, click **Relational Data Migration**.
3. From the Migration List, select the active migration, and then click **Cleanup**.
4. From the Data Migration Cleanup window, click **User Reconciliation**.
5. For every Source User Name that appears, select a new user ID from the Target User Name drop-down list.

   Note. *You can create new user profiles for these source IDs using the Update User Profiles (function UUP) on the target box.*

6. After you have reconciled all users from the source box to user IDs on the target box, click **Save**.

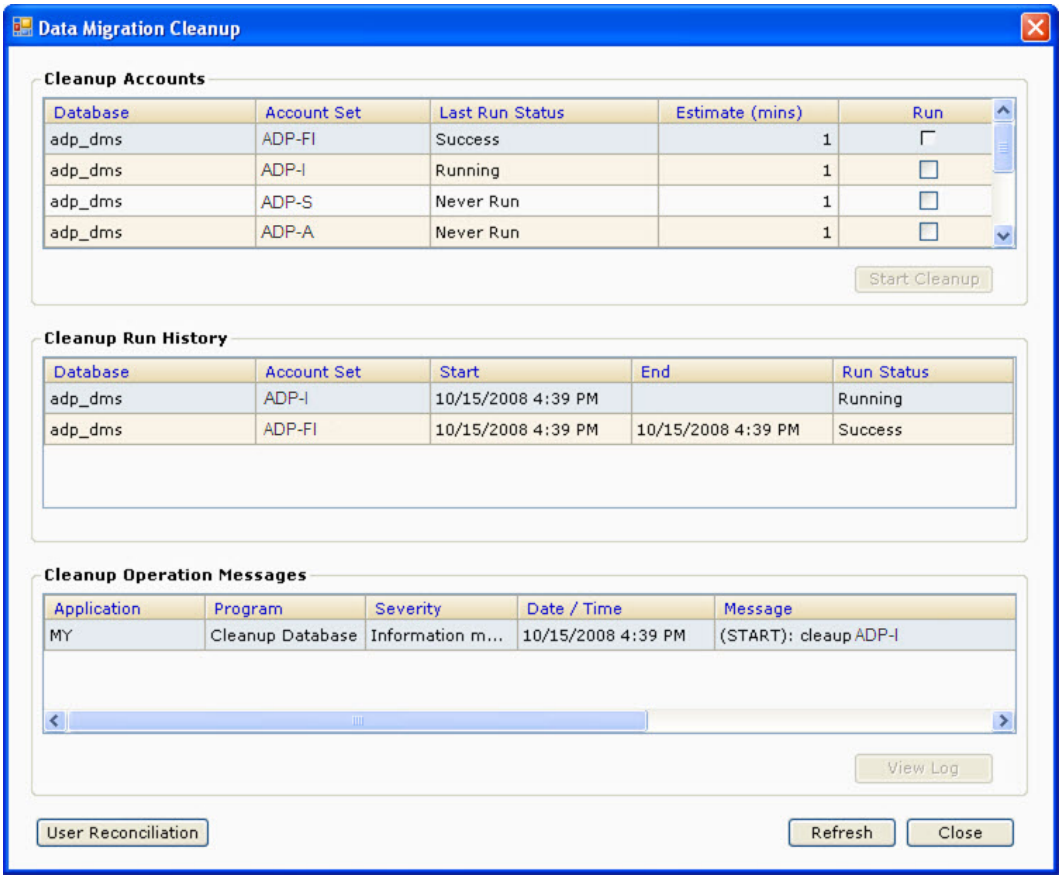


Data Migration User Reconciliation Screen

Clean Up after a Data Migration

Note. *Before you can delete any relational data, you must first set up a data migration definition that establishes which accounts to delete. You can use an existing definition that you created for a data migration. When you have a completed definition you can begin the following clean up steps.*

1. Log on to the source box.
2. On the Support menu, click **Relational Data Migration**.
3. From the Migration List, select the migration that contains the accounts you want to delete, and then click **Cleanup**.
4. For each account set that you want to delete, select the corresponding **Run** check box.
5. Click **Start Cleanup**. The cleanup operation runs for each database and account that you selected.



Data Migration Cleanup Screen

Note. *As accounts are deleted, a row appears under* ***Cleanup Run History****. When you select a row, the steps associated with the operation appear under* ***Cleanup Operation Messages****. Select a step, and then click* ***View Log*** *to view details about the process.*

Copy and Re-brand Relational Data Overview

Relational data may be copied or cloned before moving the data from a source box to a target box. Data is re-branded when a dealership is bought or sold, or to distinguish the copied data from its source. The following is an overview of the steps required to copy and re-brand relational data on a DMS.

CAUTION! *Before you begin to copy or re-brand relation data, you must verify that all required patches have been applied to the source and target boxes. Use Patch Delivery to verify what patches apply to a given release of APD Drive 1.0.*

1. Copy and Re-brand CoRA Accounts

You must copy and re-brand CoRA accounts before you copy and re-brand any relational data for a DMS. For more information on how to copy and re-brand CoRA-based account information see the current *Account Copy (ACCP) Support Guide* B19338.

2. Rebuild Groups for ADP Drive

After you copy and reband the CoRA Accounts, you must rebuild the groups for ADP Drive. The Generic Service Rebuild Groups (GNRG) routine rebuilds the account groups for a selected product server/application. For more information, see the *ADP Drive MM050 Technical Reference and Troubleshooting Guide.*

3. Create a Copy Re-brand Definition

Before you can start the copy and re-brand operation, you must map source accounts, companies and financial statements to target accounts, companies and financial statements. To do this, create a copy/re-brand definition.

4. Run the Copy Re-brand Operation

After you complete the copy re-brand definition, you are ready to start the copy re-brand operation. This operation runs for both the adp_dms and adp_report databases.

5. (optional) View Log Files

As the copy re-brand operation runs, its progress is recorded in a log file that you can view at any time.

6. Deactivate the Copy Re-brand Definition

After you have successfully copied or re-branded the relational databases, you should deactivate the copy re-brand definition. The definition can no longer be changed; however, you can continue to view the definition.

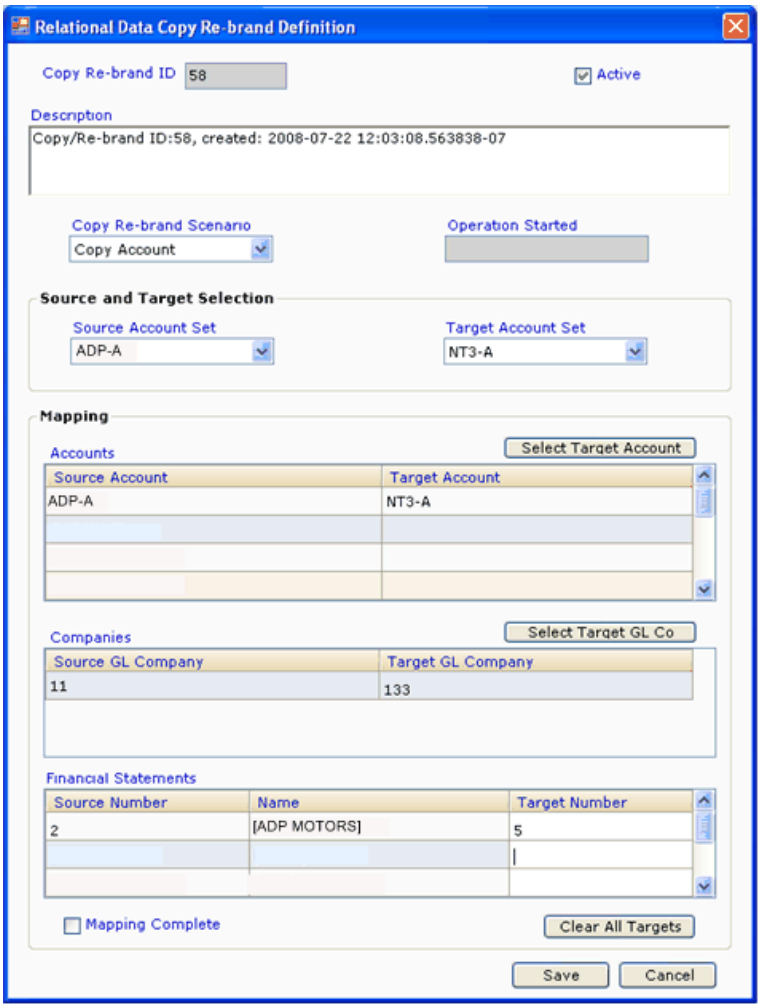
Create a Copy Re-brand Definition

Note. *There are two tasks to complete before you copy and re-brand any relational data for a DMS. Copy and re-brand CoRA accounts and then rebuild the groups for ADP Drive.*

For information on how to copy and re-brand CoRA-based account information see the current Account Copy (ACCP) Support Guide. For more information on the Generic Service Rebuild Groups (GNRG) routine, see the ADP Drive MM050 Technical Reference and Troubleshooting Guide.

To create copy and re-brand definition:

1. On the Support menu, click **Relational Data Copy Re-brand**.
2. Click **Add** and confirm that you want this new re-brand definition to be the active definition. The Relational Data Copy Re-brand Definition Screen opens.



Relational Data Copy Re-brand Definition Screen

3. Under **Description**, enter any comments you want to include about the operation.
4. Select a Copy Re-brand Scenario:

Copy Account – Copy all data from the source to the target

Copy Account Setups – Copy setup data from the source to the target

Re-brand Account – Re-brand the source to the target and do not copy any data

5. Select the source and target account sets from the drop-down lists.
6. Map source accounts, GL companies, and financial statements to counterpart targets. To do this:
   a. Select a source account from the list, and then click **Select Target Account** and choose an account from the drop-down list. A target account can map to only one source account. The target accounts in the list must also be the same type (application code) as the source account.
   b. Select a source GL company from the list, and then click **Select Target GL Co** and choose a company from the drop-down list. The target companies in the list are related to the selected target Accounting account. A target company can map to only one source company.
   c. For each source financial statement in the list, enter a target financial statement number. A target FS number can map to only one source FS number and cannot be equal to an existing source FS number. For example, if 1 and 3 are a source financial statement numbers, then it is invalid to map the source FS 1 to the target FS 3.

Note. *Click* ***Clear All Targets*** *to remove your selections and start over.*

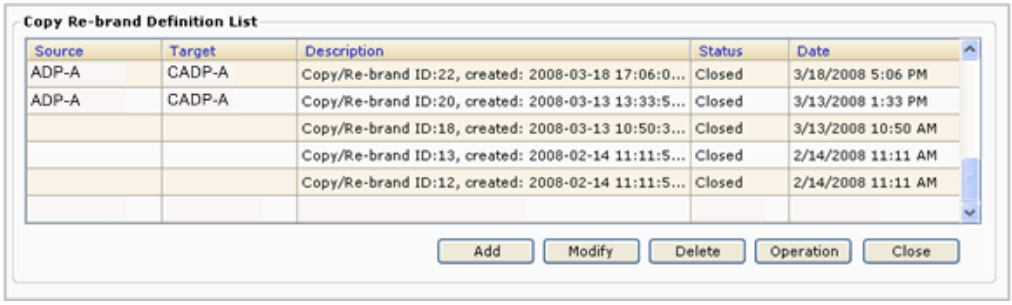
7. When you have finished mapping source data to your target data, select the **Mapping Complete** check box, and then click **Save**. Now you are ready to copy and/or re-brand the relational data.

Copy and Re-brand Relational Data

You must copy and re-brand CoRA accounts before you copy and re-brand any relational data for a DMS. For more information on how to copy and re-brand CoRA-based account information see the current Account Copy (ACCP) Support Guide.

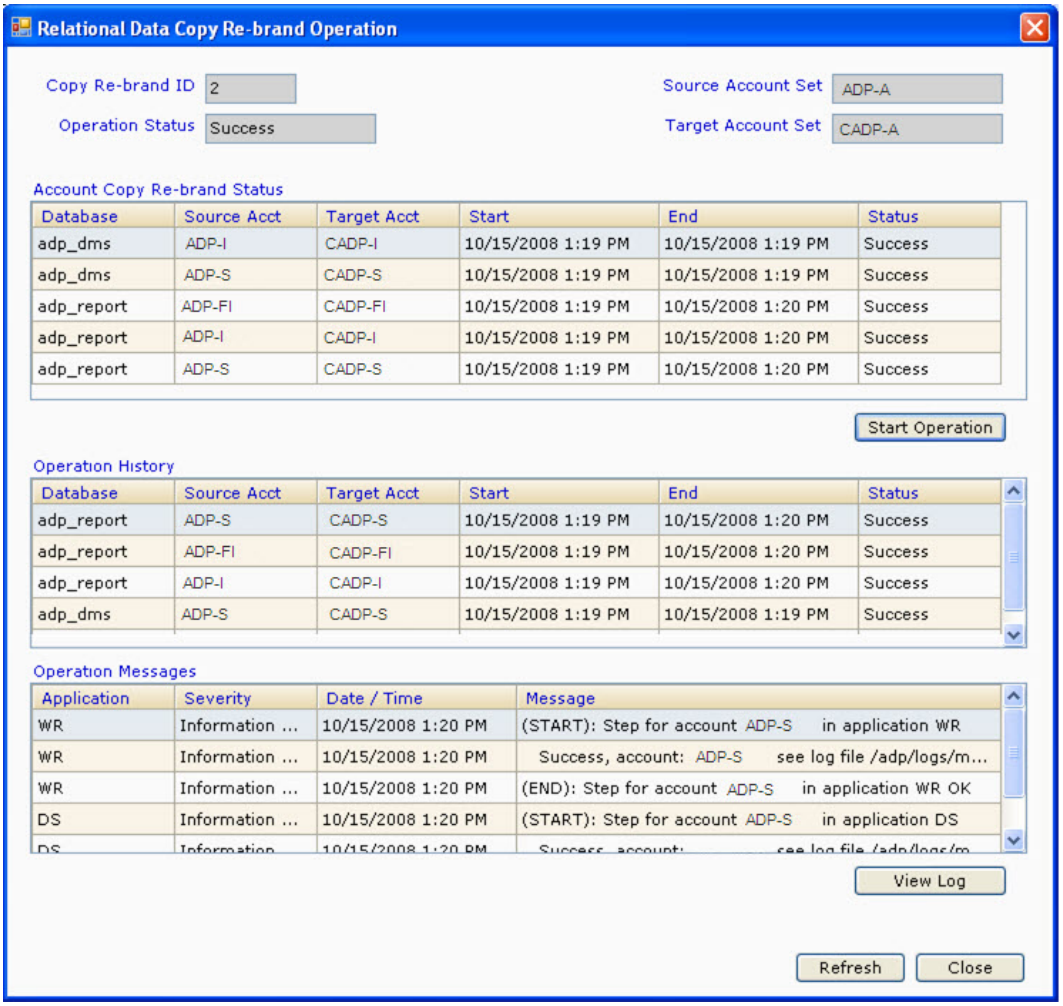
1. On the Support menu, click Relational Data Copy Re-brand.
2. From the Copy Re-brand Definition List, select the active definition, and then click **Operation**.

   Note. *If the selected copy re-brand definition has not been marked as 'Mapping Complete' the* ***Operation*** *button is not available.*



Copy Re-brand Definition List

3. On the Relational Data Copy Re-brand Operation window, click **Start Operation**.
4. (optional) As accounts are copied or re-branded, a row appears under **Operation History**. When you select a row, the steps associated with the operation appear under **Operation Messages**. Select a step and click **View Log** to view details about the process.



Relational Data Copy Re-brand Operation Screen

The Account Copy Re-brand Status grid shows the status of data that has been operated on by database and account. Operation History shows each run of an operation on the data for a database and account. This grid shows both successful and failed operations. The Operation Messages grid shows messages related to an operation selected in the Operation History grid. The messages describe the sequence of events during the operation.

5. When the operation is complete and has an Operation Status of Success, you are finished and can deactivate the copy re-brand definition. If the operation failed, refer to the log file to see what errors were recorded during the process, make any necessary corrections, and run the operation again.

View a Data Copy Re-brand Log

1. On the Support menu, click **Relational Data Copy Re-brand**.
2. From the Definition List, select a definition, and then click **Operation**.
3. From the Operation History list, select an operation.
4. From the Operations Messages list, select a message and then click **View Log**.

Note. *To find errors in a log file, enter the term ERROR in the field provided, and then click* ***Search****.*

Deactivate a Copy Re-brand Definition

After you have successfully copied or re-branded the relational databases, you should deactivate the copy re-brand definition. You can no longer change the definition; however, you can continue to view it.

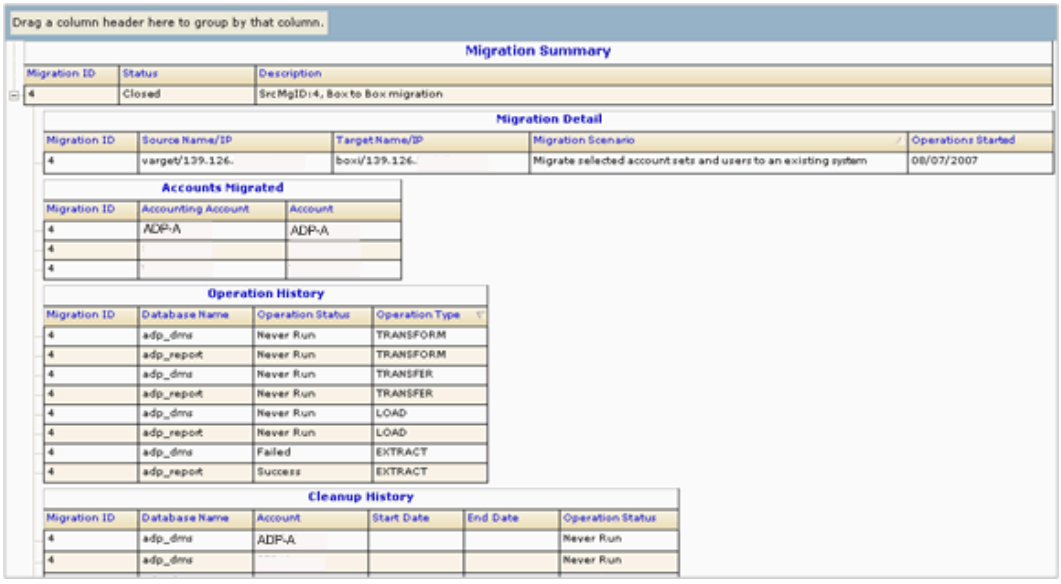
To deactivate copy and re-brand definition:

1. On the Support menu, click **Relational Data Copy Re-brand**.
2. Select the definition you want to deactivate, and then click **Modify**.
3. Clear the **Active** check box, and then click **Save**.

Note. *If you never started the Copy/Re-brand operation, you can delete the definition. From the Relational Data Copy Re-brand screen, select the definition and click* ***Delete****.*

Data Migration Report

You use the Relational Data Migration Report to view all the migrations that have been saved on a box. The Migration Summary lists each migration on one line, which you can expand to view migration detail, accounts migrated, operation history and cleanup history. Below is an example of the expanded view for a migration.



Relational Data Migration Report Screen

View a Data Migration Report

1. On the Support menu, click **Relational Data Migration Report**.
2. From the Migration Summary, click + (plus sign) to view detailed information about a migration. A list of the accounts migrated and any operation or cleanup history appear.
3. Click– (minus sign) to collapse the display.

Note. *Right-click the display to view the Smart Grid tools available for use with the Relation Data Migration report.*

Troubleshooting Tips

Transform Operation Fails

If a transform operation fails, it may be that the database level of one or more products on the source box is greater than the database level on the target box.

Review Log for Errors Due to Different Database Levels

1. From the Data Migration Operations window, under **Operation Run History**, select the row with the run status Failed and click **View Messages**.
2. From the View Operation Messages window, click **View Log**.
3. To find errors in the log file, enter the term ERROR in the field provided, and then click **Search**. A yellow highlight is added to the word 'error' throughout the log.
4. Scroll through the log file and look for the following errors:

```
INFO: MY Version is 2.001.001 on target box
INFO: MY Version is 2.001.002 on source box
ERROR: Target box has lower application level than source
       box for product MY.
ERROR: Please upgrade on Target for this product and rerun
       transform operation.
```

Resolution: Apply Required Patches or Releases

To resolve differences between database levels, apply patches or releases to bring the database level of the target box to be greater than or equal to the level of the source box. Use the MY Patches site to verify what MY patches apply to a given release of APD Drive 1.0.

Load Operation Fails Migrating All Accounts to New Box

If a load operation fails when migration all accounts to a new box, it may be the result of one of the following:

- CoRA accounts were migrated to the new box before the relational data was migrated.
- The target box had existing accounts; it was not a new box.

Review Log for Errors Due to Database in Use

1. From the Data Migration Operations window, under **Operation Run History**, select the row with the run status Failed and click **View Messages**.
2. From the View Operation Messages window, click **View Log**.
3. To find errors in the log file, enter the term ERROR in the field provided, and then click **Search**. A yellow highlight is added to the word 'error' throughout the log.
4. Scroll through the log file and look for the following error:

```
ERROR: Database adp_dms is in use. Load operation will not
       drop the database.
```

Resolution: Re-run Necessary Migration Operations

If the target box is a new box

If the target box is a new box, override the database in-use check and re-run the Load operation.

From the target box, go to the Support Desktop.

1. From the Support Login page, at the $ prompt, enter **su adp_dba** and the current adp_dba password.
2. Enter the command /`adp/my/bin/mg_override_db_inuse_check.ksh`
3. Return to the Data Migration Operations window and run the load operation again.

If the target box has existing accounts

If the target box has existing accounts, you can merge this data with data from the source box. Create a new migration definition and then run the migration operations a second time.

1. Log on to the source box and create a new data migration definition. Choose one of the following migration types:
   - Migrate all account sets and users to an existing system.
   - Migrate selected account sets and users to an existing system.
2. Run the migration operations.

Note. *For detailed instructions, see Create a Data Migration Definition on page 4 and* Run a Data Migration *on page 8.*