IBM DB2 Warehouse Manager Standard Edition

Managing ETI Solution Conversion Programs with DB2 Warehouse Manager

Version 8.2

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Version 8.2

First Edition (2004)

This edition replaces and makes obsolete the previous edition, SC27-1268-00. The technical changes for this edition are indicated by a vertical bar to the left of a change.

This edition applies to Version 8.1 of Data Warehouse Center, and to any subsequent releases until otherwise indicated in new editions or technical newsletters. Make sure you are using the correct edition for the level of the product.

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About this book

This book describes how to set up and implement integration between DB2® Warehouse Manager and ETI Solution™ Version 5, including ETI's patented Dialogue Coach™ technology.

Any information concerning ETI Solution is based on information provided by Evolutionary Technologies International (ETI™). IBM® makes no representation or warranty concerning the performance of ETI products.

Data Warehouse Center is the component of DB2 that you use to do warehousing tasks.

The warehouse function as included with Data Warehouse Center is sufficient to schedule and run conversions created by ETI Solution. DB2 Warehouse Manager is only a prerequisite if the function offered by the Information Catalog Manager is required.

Who should read this book

This book is intended for the administrators and data warehouse designers who want to build a data warehouse that contains both data that is managed by ETI Solution and data managed by Data Warehouse Center, or want to use Data Warehouse Center to schedule and monitor data conversion programs that are generated by ETI Solution. It is also intended for administrators who manage their metadata using Information Catalog Manager.

Prerequisite knowledge

You must be familiar with the Data Warehouse Center, Information Catalog Manager, and ETI Solution before you configure and use the interoperation features described in this document. Specifically, you must know how to do the tasks listed in the following table:

Table 1. Prerequisite knowledge of related products.

Product	Task	For more information, see....
ETI Solution	Integration Architecture tasks	*ETI Solution Administration Guide and the ETI Solution online help*
	Conversion tasks	*ETI Solution User's Guide and the ETI Solution online help*
Information Catalog Manager	Prepare an information catalog in the Information Catalog Manager	*DB2 Warehouse Manager Installation Guide, GC27–1122*
	Publish metadata from the Data Warehouse Center to the Information Catalog Manager	*Data Warehouse Center Administration Guide*

Table 1. Prerequisite knowledge of related products. (continued)

Product	Task	For more information, see....
Data Warehouse Center	Define a Data Warehouse Center agent site	*Data Warehouse Center Administration Guide* and the Data Warehouse Center online help
	Create, promote, run, and monitor processes	*Data Warehouse Center Administration Guide* and the Data Warehouse Center online help
	Modify parameters for Data Warehouse Center programs	*Data Warehouse Center Administration Guide* and the Data Warehouse Center online help

Chapter 1. Planning your ETI Solution-Data Warehouse Center solution

ETI Solution automatically extracts, transforms, and migrates existing data from legacy and operational systems into new applications, datamarts and warehouses, bridges and interfaces. This software interoperates with the DB2 Data Warehouse Manager to provide a comprehensive data warehousing solution that allows you to leverage existing investments in legacy systems.

The interoperation between the Data Warehouse Center and ETI Solution gives you a single point of control from which to view all the processes in the data warehouse. ETI Solution generates all the conversion programs needed to collect, transform, and load data into target systems. The Data Warehouse Center then imports the execution plan for these programs and uses the plan to run and monitor the programs.

How the products work together

ETI offers an accelerator, ETI Meta Scheduler for DB2 Warehouse Manager, that generates a version of the execution plan for use by the Data Warehouse Center. The accelerator transfers this execution plan to the workstation containing the Data Warehouse Center administrative client.

The Data Warehouse Center then generates steps that correspond to each instruction in the execution plan for the Data Warehouse Center.

For example, you have a data conversion that does the tasks shown in Table 2. For each task in the execution plan, the Data Warehouse Center generates one step.

Table 2. Sample data conversion

Step	Task	Type of instruction in execution plan	Generated step
1	Queries an unsorted personnel file	QUERY	Query Personnel
2	Queries an unsorted salary database	QUERY	Query Salary
3	Sorts the results of the query of the personnel file on the EMP-ID field	SORT	Sort Personnel
4	Deletes the unsorted temporary file containing the results of the personnel file query	DELETE	Delete Personnel Temp File
5	Sorts the results of the query of the salary database on the EMP-ID field	SORT	Sort Salary
6	Deletes the unsorted temporary file containing the results of the salary database query	DELETE	Delete Salary Temp File

Step	Task	Type of instruction in execution plan	Generated step
7	Merges the sorted data, based on the EMP-ID field	MERGE	Merge Sorted Data
8	Deletes the temporary file containing the sorted personnel data	DELETE	Delete Personnel Temp File
9	Deletes the temporary file containing the sorted salary data	DELETE	Delete Salary Temp File
10	Populates an employee database with the merged data	POPULATE	Populate Employee Database
11	Deletes the temporary file containing the merged data	DELETE	Delete Merged Data

The Data Warehouse Center maintains the sequencing of the execution plan by using the Starts on Success task flow function. In Table 2 on page 1, the Query Personnel step corresponds to the first instruction in the execution plan. The Data Warehouse Center starts the Query personnel step. After the Query Personnel step finishes processing, it starts the Query Salary step, and so on.

Figure 1 shows how the steps in the ETI Solution data conversion correspond to the steps generated by the Data Warehouse Center. The accelerator transfers the execution plan from the ETI Solution source databases to the Data Warehouse Center sources. Then the Data Warehouse Center generates the first step. In this example, the first step is Query Personnel. After the Query Personnel step finishes, the Data Warehouse Center starts the Query Salary step, which is followed by the Sort Personnel and Sort Salary steps. Next, the Merge Sorted Data step runs. The final step in this execution plan, Populate Employee Database, populates an employee database with the merged data.
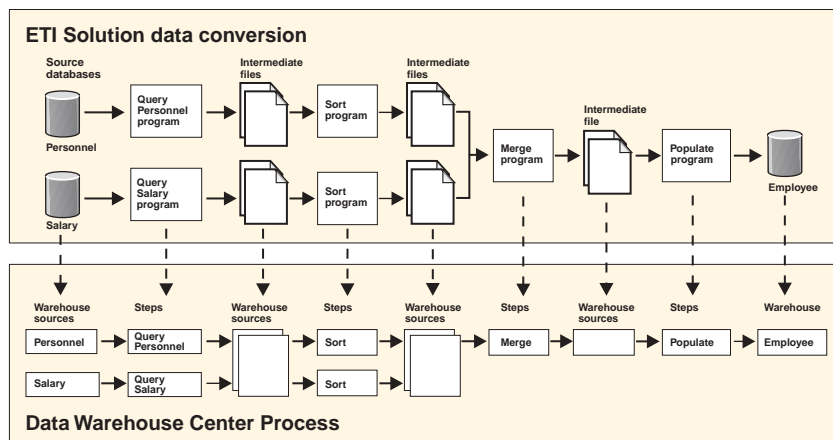
Figure 1. Relationship between an ETI Solution data conversion and Data Warehouse Center definitions. For clarity, the figure does not include any delete steps that the Data Warehouse Center would generate.

The steps that the Data Warehouse Center generates use Data Warehouse Center programs to start the ETI Solution conversion programs.

The Data Warehouse Center programs are shown in the table below.

Table 3. Data Warehouse Center programs

Program	Description
ETIDLMVS	Delete a file on MVS
ETIDLUNX	Delete a file using REXEC
ETIEXMVS	ETI-RUN for MVS
ETIEXUNX	ETI-RUN using REXEC
ETIRCMVS	Run FTP on an MVS Host
ETIRCUNX	Remote FTP using REXEC

For example, the QUERY program for the personnel file is a COBOL program running on an OS/390™ host. The Data Warehouse Center supplies a Data Warehouse Center program, ETIEXMVS, that submits the JCL that ETI Solution generates for the QUERY program to an OS/390 system to run and receives the JES log file on the agent site. The personnel QUERY step uses the ETIEXMVS program to start the QUERY program on OS/390. Figure 2 illustrates this example.
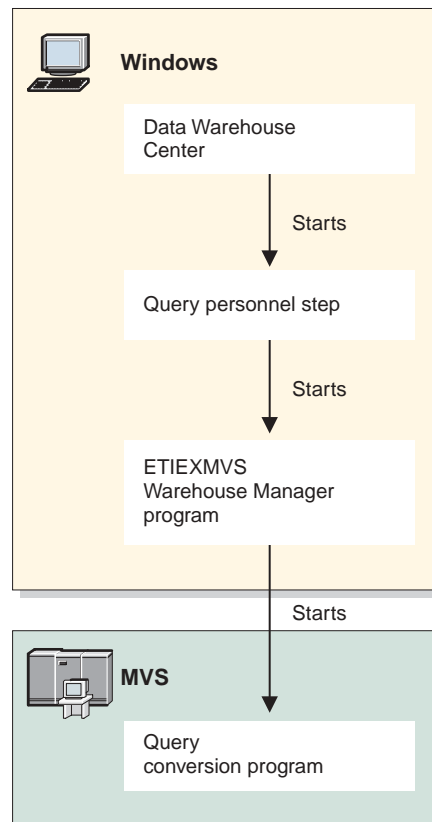
Figure 2. Relationship between a step, a Data Warehouse Center program, and an ETI Solution conversion instruction.

In Figure 2, the Data Warehouse Center scheduler starts the step at the scheduled time. The step starts a Data Warehouse Center program, ETIEXMVS, which in turn starts the program for an ETI Solution conversion instruction on an OS/390 system.

You can also use the Data Warehouse Center to add steps that are related to the steps generated from the ETI Solution execution plan. For example, if you want to create a datamart that summarizes salary data by job title for your Human Resources department, you can create a step that uses the Employee database as a source and the database for the datamart as a target.

ETI Solution conversion specifications and schemas contain information about enterprise data that is critical for administrators and users who need to understand the lineage of the data in the data warehouse. The conversion specifications and schemas contain information about databases, records, elements, and the relationships (joins and mappings) between those entities. The conversion specifications and schemas also contain information about the transformations of the data from its source format to its target format.

Hardware and software requirements

You must have the required hardware and software for the following products:
- DB2 Universal Database Enterprise Server Edition Version 8.1 (or later)
- DB2 Warehouse Manager Version 8.1 (or later)
- ETI•EXTRACT® Release 4.2.2 or ETI Solution 5.0.0 (or later)
- The ETI Data System Library for Shared Objects, Release 4.2.2 (or later)
- The ETI Data System Library for Tcl Functions, Release 4.2.1 (or later)
- The ETI Meta Scheduler Release 4.2.0 (or later)

A conversion can be registered with or manually imported into Data Warehouse Center running on either Windows®, AIX®, or Sun Solaris. The Data Warehouse steps can be run on the following Data Warehouse agent platforms: Windows, AIX, or Sun Solaris.

In addition, you must have FTP and Telnet software installed on the Windows workstation that is to contain the Data Warehouse Center administrative client:
- If you want to automate the remote import of metadata, you need Hummingbird Exceed Version 7 or later for FTP and Telnet support between the Data Warehouse Center and ETI Solution computers.
- If you do not want to install Hummingbird Exceed, you can install any FTP daemon, however, you will not be able to automate the remote importing of metadata. Instead, you must transfer the metadata and then manually import it as described in "Transferring files without importing metadata" on page 16.
- If you want to run conversion programs on your OS/390 system, TCP/IP 3.2 or above must be installed on OS/390. Verify that the FTP service is enabled before running the conversion programs.

Chapter 2. Setting up ETI Solution and Data Warehouse Center

To set up ETI Solution, the Data Warehouse Center, and the Information Catalog Manager to work together, do the following tasks:

- Install and configure prerequisite products
- Enable FTP and Telnet support
- Modify the Data Warehouse Center template for FTP support

Installing and configuring prerequisite products

You must install and configure the prerequisite products before you can set up integration between ETI Solution, the Data Warehouse Center, and the Information Catalog Manager. Complete the tasks summarized in Table 4, and see the documentation listed for each task for more information.

Table 4. Summary of installation and configuration tasks

Product	Tasks	For more information, see....
DB2 Universal Database Enterprise Server Edition Version 8.1 and DB2 Warehouse Manager Version 8.1	Install the Data Warehouse Center administrative client on the same workstation as the Information Catalog Manager.	*DB2 Warehouse Manager Installation Guide, GC27–1122*
	The AIX agent must be at the same release level as the Data Warehouse Center.	For instructions on installing the AIX agent, see the *DB2 Warehouse Manager Installation Guide, GC27–1122*
Information Catalog Manager Version 8.1	Install the DB2 Warehouse Manager. It contains a wizard that enables you to create an information catalog. It must be installed on the same workstation as the Data Warehouse Center and/or Information Catalog Manager administrative client.	*DB2 Warehouse Manager Installation Guide, GC27–1122*
	Create an information catalog for the metadata that is transferred from ETI Solution.	*Information Catalog Manager Administration Guide, SC27–1125*
Information Catalog Manager Version 8.1 (optional)	End users must install the Information Catalog Center client to access a remote information catalog. This client can be installed with the DB2 Administration Client.	*DB2 Warehouse Manager Installation Guide, GC27–1122*

Table 4. Summary of installation and configuration tasks (continued)

Product	Tasks	For more information, see....
ETI•EXTRACT Release 4.2.2 (or later) or ETI Solution 5.0.0 (or later)	Install ETI Solution on Windows or UNIX	*ETI Solution Quick Install Guide*
	Install the ETI Meta Scheduler Installation Guide	*ETI Meta Scheduler Installation Guide*
	Customize the ETI Solution Executive to connect to all remote hosts referenced in the conversions you plan to register with the Data Warehouse Center. Check connectivity from the ETI Solution host to the Data Warehouse Center server workstation.	*ETI Solution User's Guide and the ETI Solution online help*
	Perform the Integration Architect tasks for the data sources and targets.	*ETI Solution User's Guide and the ETI Solution online help*
Hummingbird Exceed Version 7.0 or later[1]	Install Hummingbird Exceed on the same workstation as the Data Warehouse Center/Information Catalog Manager.	"Enabling FTP and Telnet support on the Data Warehouse Center workstation (Windows)."

1. (Required on Windows only): If you are using an FTP daemon other than Hummingbird Exceed, refer to the product documentation for a list of configuration tasks. If you are using Windows 2000, you must use Hummingbird Exceed Version 7.0.

Enabling FTP and Telnet support on the Data Warehouse Center workstation (Windows)

The ETI Meta Scheduler for DB2 Warehouse Manager uses FTP and Telnet to transfer metadata to the Data Warehouse Center and Information Catalog Manager. You must install and configure Hummingbird Exceed on the workstation where the Information Catalog Manager and the Data Warehouse Center server (or Data Warehouse Center administrative client) is installed to set up FTP and Telnet connectivity to the workstation. You must enable FTP and Telnet support before you invoke the register or transfer functions of the ETI Meta Scheduler. The ETI Meta Scheduler for DB2 Warehouse Manager runs ETI Solution Executive scripts that use FTP and Telnet to transfer files to the workstation where the Information Catalog Manager and Data Warehouse Center are installed. Metadata is remotely imported into the Information Catalog Manager and Data Warehouse Center.

Installing Hummingbird

1. To install Hummingbird, select **Custom install** and click **Next**.
2. Select **Yes** —> **Next**.
3. Accept the default directories offered to you and click **Next**.
4. Deselect all features, then select **Inetd**. You should get All x Server Related Components by default. Click **Next**.
5. Click **Finish** when on the Summary page.
6. Choose to register later.

7. Accept the default keyboard file and click **Next**.
8. Leave the password blank and click **Next**. Answer **No** to the prompt.
9. Answer **No** to the shortcut question.
10. Skip the tuning of the x server.

FTP is used to transfer files from ETI Solution to the Data Warehouse Center and the Information Catalog Manager. Telnet is used to invoke the interchange programs to convert metadata from ETI Solution to the Data Warehouse Center and the Information Catalog Manager, and to communicate run messages back to the Meta Scheduler. After you install Hummingbird, you must enable FTP and Telnet support:

1. Select **Start —> Settings —> Control Panel**.
2. Double-click the **Hummingbird Inetd** icon (see Figure 3).

Figure 3. Hummingbird Inetd icon.

The Hummingbird Inetd Configuration window opens (see Figure 4).
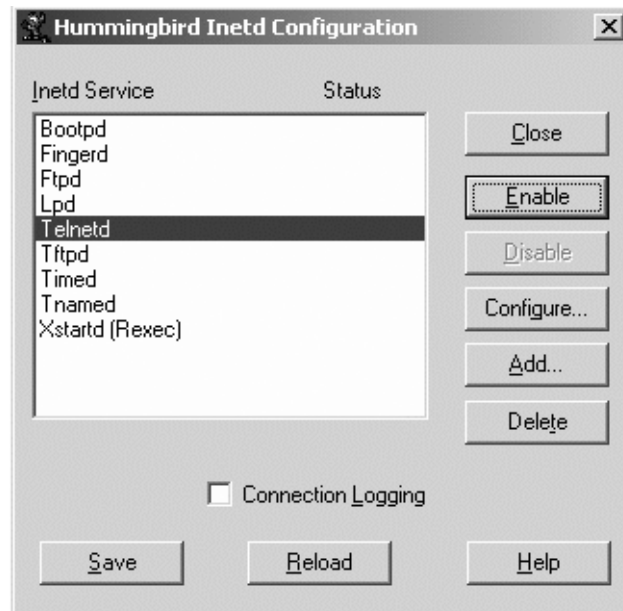
Figure 4. Hummingbird Inetd Configuration window.

3. Select **Ftpd**.
4. Click **Enable**.
5. Select **Telnetd**.
6. Click **Enable**.

    Figure 5 on page **8** shows Ftpd and Telnetd with the status Enabled.
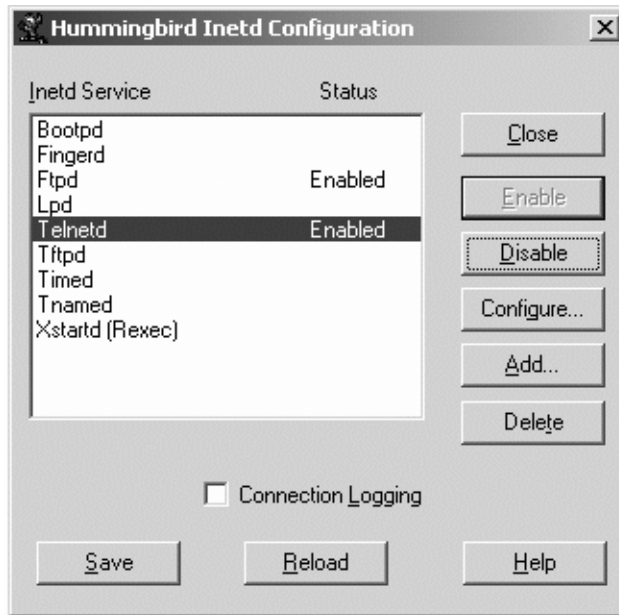
Figure 5. Ftpd and Telnetd enabled in the Hummingbird Inetd Configuration window.

7. Click **Save**.
8. Click **Close**.

You also must specify the directory that is to contain the files transferred from ETI Solution to the Information Catalog Manager and Data Warehouse Center. This directory is associated with a Windows user ID specified on the ETI Solution export panel. On the ETI side, it is specified in the Register Conversion or Transfer Conversion options in the Tools pull-down menu found on the Displaying Worksets panel.

To specify the directory:
1. Select **Start —> Settings —> Control Panel**.
2. Double-click **Users and Passwords**.
   The Users and Passwords window opens.
3. Click the **Advanced** tab.
4. Click the **Advanced** button.
5. Click **Users** in the left panel.
6. In the right panel, double-click the user ID you use to log on to Data Warehouse Center.
7. Click the **Profile** tab.

Figure 6. User ID Properties Profile window.

8. In the **User Profile Path** field, enter the name of the default directory to use for FTP and Telnet services.

   The ETI Meta Scheduler for DB2 Warehouse Manager transfers files to a subdirectory of this default directory. You specify the subdirectory for a data conversion when you register the data conversion. For example, if you specify `c:\vwadmin` as the default directory and `etidir` as the subdirectory for the data conversion, ETI Solution will transfer files to `c:\vwadmin\etidir`. To specify the `etidir` subdirectory, see *ETI Meta Scheduler for DB2 Warehouse Manager*.

9. In the **Home folder Local Path** field, type the same name that was entered in the **User Profile Path** field.

10. Click **OK** to close the window.

Modifying the Data Warehouse Center template for FTP support

The Data Warehouse Center installs a JCL template for transferring files using FTP. If you plan to use an FTP GET or PUT command to transfer files from an OS/390 host to another remote host, you need to modify the account information in this template for your OS/390 system. To modify the template:

1. Find the ftp.jcl file on each agent site that you intend to use:
   - On Windows, the file is in the \SQLLIB\templates directory,

- On AIX, the file is in the /usr/opt/db2_08_01/templates directory. Log on with a root ID to complete the following tasks.
- On Sun Solaris, the file is in the /opt/IBM/db2/V8.1/templates directory. Log on with a root ID to complete the following tasks.

2. Copy the file as systemname.ftp.jcl, where systemname is the name of the OS/390 system. Create a copy of this file for each OS/390 system on which you plan to run ETI Solution conversion programs.

   For example, if you want to run ETI Solution conversion programs on STLMVS1, create a copy of the file called STLMVS1.ftp.jcl.

3. Use a text editor to modify the account information to match the standard account information for your OS/390 system. Do not modify other parts of the JCL.

   The following example shows the JCL template included with the Data Warehouse Center.

```
//[USERID]A  JOB , 'PUT/GET',
//* THE NAME OF THE JOB MUST BE THE NAME OF THE
//* MVS USER ID FOLLOWED BY ONE ALPHANUMERIC
//* CHARACTER.  THIS IS A RESTRICTION OF FTP/MVS.
//          CLASS=A,
//          USER=&SYSUID,
//          NOTIFY=&SYSUID,
//          TIME=(,30),
//          MSGCLASS=H
//STEP1 EXEC PGM=FTP,PARM='( EXIT'
//INPUT DD DSN=[FTPFILE],DISP=SHR
//OUTPUT DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
```

   Do not modify any parameters contained in brackets, such as [USERID] and [FTPFILE].

Chapter 3. Implementing ETI Solution-Data Warehouse Center integration

To implement a data conversion that is to be managed by the Data Warehouse Center, use ETI Solution to:

- Create a conversion specification.
- Generate the conversion programs.
- Run the conversion programs to test them.
- Register the conversion specification with the Data Warehouse Center.

Use the Data Warehouse Center and Information Catalog Manager to do the following tasks:

1. Modify the Data Warehouse Center steps to access remote hosts by supplying passwords for them and, optionally, changing the agent site from the default agent site.
2. Promote the steps.
3. Run the steps to test the integration.
4. Schedule the steps for production.

Creating and running a conversion with ETI Solution

When you use ETI Solution with Data Warehouse Center, you follow the same procedures to create a conversion specification as you would to use ETI Solution alone. However, the ETI Solution Conversion Editor generates an execution plan file that is tailored for the Data Warehouse Center. It contains the metadata about the data conversion that the Data Warehouse Center requires to generate steps. The Conversion Editor also generates three job control scripts for each conversion program: one that compiles, links and runs the conversion program, one that compiles and links the conversion program and one that runs the conversion program.

Table 5 lists the files that the Conversion Editor creates. *Conversion* is the name of the conversion specification, and *instruction* is the job control script for a conversion program. JCL and SH are the types of job control scripts.

Table 5. Files generated by ETI Solution for the Data Warehouse Center

Task	Execution Plan	JCL	SH
Rcopy, compile, link, and run the conversion programs.[1]	*conversion*plan.exm	*instruction*.jcl	*instruction*.sh
Rcopy, compile, and link the conversion programs[2]	*conversion*planc.exm	*instruction*.jcc	*instruction*c.sh
Run the conversion programs[2]	*conversion*plane.exm	*instruction*.jce	*instruction*e.sh

Table 5. Files generated by ETI Solution for the Data Warehouse Center (continued)

Task	Execution Plan	JCL	SH
Provide metadata about the conversion for Data Warehouse Center	vw_*conversion*plan[3] [5].vw	N/A	N/A
Provide metadata about the sources and targets for the information catalog	*conversion.*MDIS[4] [5]	N/A	N/A

1. This is the format that the ETI Solution Executive generally uses for testing.
2. This is the format the ETI Solution uses for testing the compile and link of the conversion programs separately from running the conversion programs.
3. This file is transferred to the Data Warehouse Center during the step "Registering a conversion specification" on page 13 or "Transferring files without importing metadata" on page 16.
4. This file is created and transferred to the Data Warehouse Center and the Information Catalog Manager during the step "Registering and transferring conversion specifications with the Data Warehouse Center."
5. These files are transferred to the Data Warehouse Center without registering them during the step, "Transferring files without importing metadata" on page 16.

To confirm that the files have been created:
1. From the ETI Solution Workset Browser, select the **Files** tab.
2. Select the conversion from the list.
3. Click the arrow next to the conversion to see the list of files.

Before transferring the metadata for the conversion to the Data Warehouse Center, it is recommended that you generate, compile, link and run the conversion programs in the planned execution environment.

For instructions on how to run the conversion programs, see the section ″Executing Conversion Programs″ in the *ETI Meta Scheduler for DB2 Warehouse Manager Installation and User's Guide.*

Registering and transferring conversion specifications with the Data Warehouse Center

ETI Solution registers a conversion specification with the Data Warehouse Center. Files are transferred between ETI Solution and the Data Warehouse Center, then imported into the information catalog and the Data Warehouse Center by the program FLGNMVE0. For more information, see *ETI Meta Scheduler for DB2 Warehouse Manager.*

If you encounter problems in registering a conversion specification with the Data Warehouse Center, you also can specify that the files be transferred without importing the metadata into the information catalog and the Data Warehouse Center. This method enables you to verify that the file transfer between the ETI Solution host and the workstation containing the Data Warehouse Center administrative client is working correctly. If you choose the transfer option, you

must manually import the files into the information catalog and the Data Warehouse Center before you can use the conversion. See "Transferring files without importing metadata" on page 16.

If you are using an FTP daemon other than Hummingbird Exceed, you cannot register a conversion specification with the Data Warehouse Center. You must use the transfer option and then manually import the files.

If you intend to use the same values for multiple conversion specifications, you can set default values for fields by clicking **Browsing Worksets** —> **Options** —> **Register Tool** —> **Register Conversion**, or **Transfer Conversion**.

ETI Solution creates the *conversion*.mdis file, where *conversion* is the name of the conversion specification for which you are registering files, in the mdis_export directory under the MetaStore's root directory. ETI Solution transfers the *conversion*.mdis file and the vw_*conversion*plan.vw file to the warehouse directory and, if registering the conversion, invokes the Data Warehouse Center program, FLGNMVE0.

The Data Warehouse Center then imports metadata about the sources and targets from the MDIS file into the Information Catalog Manager. It imports metadata about the sequence of conversion programs to run and the inputs and outputs for the conversion programs into the Data Warehouse Center.

Registering a conversion specification

To confirm that the files were successfully transferred and the metadata was successfully imported into the Data Warehouse Center and Information Catalog Manager, read the messages in the following trace file:

<VWS_LOGGING>\vw_*conversion*plan.trc

where <VWS_LOGGING> is the value of the environment variable VWS_LOGGING.

Open Data Warehouse Center to view the definitions that were generated from the ETI Solution metadata, as shown in Figure 7 on page 14.
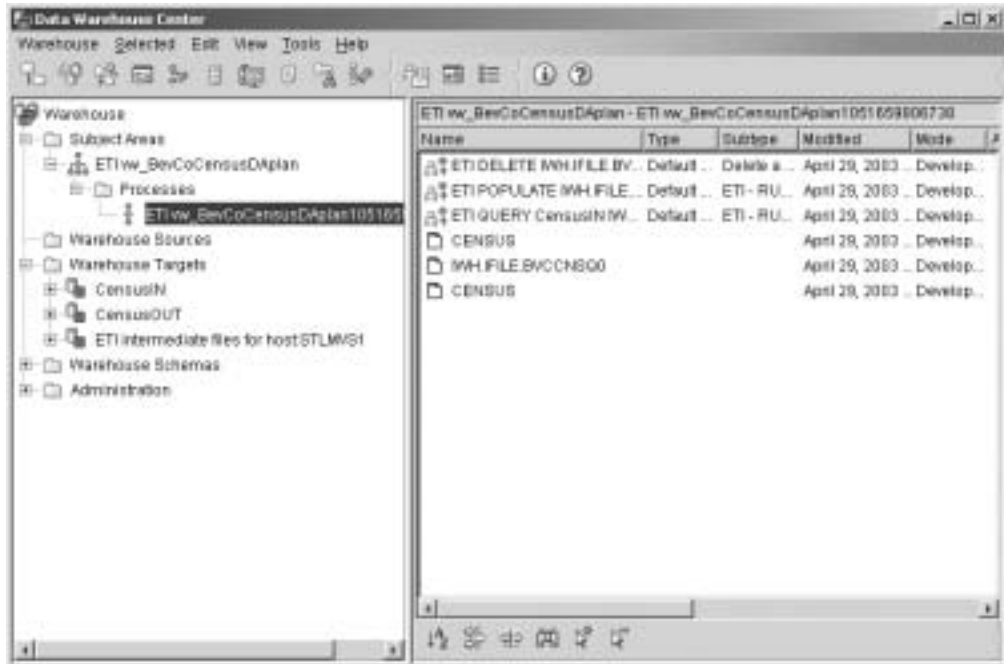
Figure 7. Data Warehouse Center definitions generated from the ETI Solution metadata

The Data Warehouse Center generates processes each time a conversion specification is registered with Data Warehouse Center. If you have previously registered the conversion specification, the Data Warehouse Center generates a second process with a different time stamp from the original set. If you replaced a set of conversion programs with a new process and then re-registered the conversion specification, delete the old process. If you have changed the location where the original set of conversion programs is stored and want to manage the original programs separately from the new programs, you can keep both sets of steps.

Figure 8 on page 15 shows an example of database objects generated in an information catalog from ETI Solution metadata. CensusIN and CensusOUT are ETI Solution database objects. Notice that both the CensusIN and CensusOUT database objects contain a CENSUS file. The CensusIN database object also contains the ETI Solution conversion data CensusOUT, while the CensusOUT database object contains the ETI Solution conversion data CensusIN.
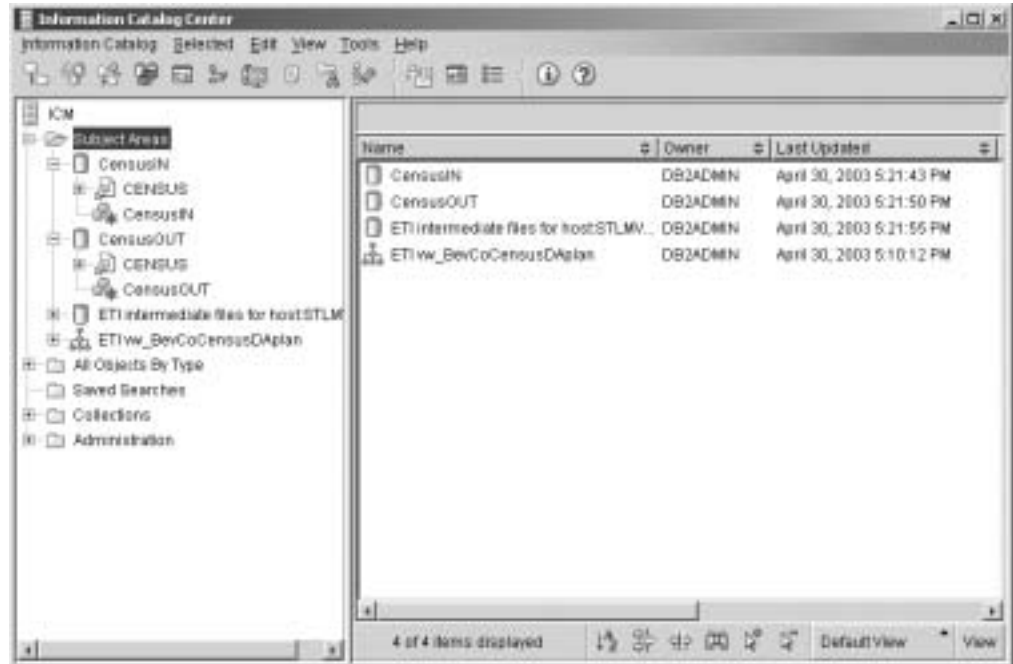
Figure 8. ETI Solution database objects in an information catalog.

By default, the ETI Solution metadata defines all non-relational databases as hierarchical databases. To override the default, specify a value for the MDIS_db_type conversion property (in order of precedence) on the database, on the schema, or on the Data Access System object in ETI (DAS), which sets the default. The allowable values are RELATIONAL, HIERARCHICAL, FILE, or NETWORK. These values are case-sensitive. For more information about setting the MDIS_db_type conversion property, see *ETI Meta Scheduler for DB2 Warehouse Manager*.

To view the objects within a database, double-click the icon for the database. Figure 9 on page 16 shows an example tree structure of objects within a database. (In Figure 9 on page 16, the tree is expanded to show the transformation objects.)
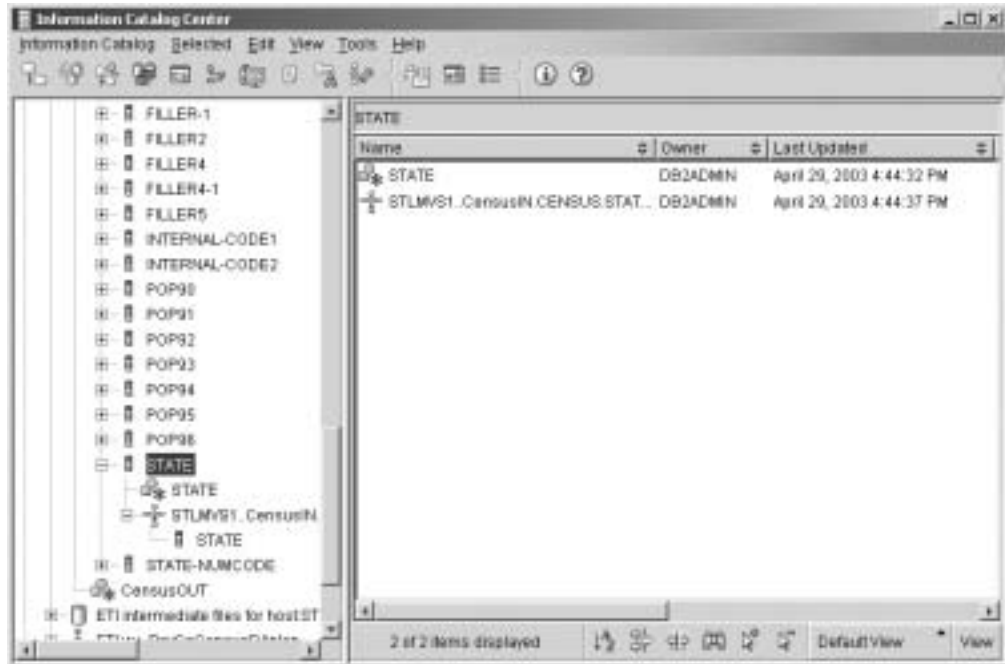
Figure 9. ETI Solution transformation objects in an information catalog.

Transferring files without importing metadata

To confirm that the files have been transferred, verify the following files exist on
the target directory. For example, c:\dwadmin\etidir:

- *conversion*.mdis
- vw_*conversion*plan.vw

where *conversion* is the name of the conversion specification for which you are
transferring files.

After the files have been transferred, you can manually import the metadata from
the files into the information catalog and the Data Warehouse Center.

To import the metadata manually:

1. (Optional) Log on with a user ID for which you specified the default directory
   for FTP and Telnet services.
2. Type the following command on a DOS command line (omit the carriage
   return):

```
flgnmve0 exec_plan MDISFile VWUser VWPass VWControl ICMUser ICMPass
ICMCatalog ICMSchema
```

where:

exec_plan
   is the path and name of the transferred conversionplan.vw file. For the
   path, you can specify either the full path or a subdirectory of the directory
   set by the HOMEDRIVE and HOMEPATH environment variables on
   Windows (or $HOME on AIX and Sun Solaris).

   For example, if the following environment variables are set:
   - HOMEDRIVE = c:

- HOMEPATH = \DB2ADMIN
- Data Warehouse Center directory set in ETI Solution = etidir

you can specify either the full path name as
`c:\DB2ADMIN\etidir\conversionplan.vw` or the subdirectory as
`etidir\conversionplan.vw`.

MDISFile
    is the path and name of the transferred conversion.mdis file. For the path, you can specify either the full path or a subdirectory of the directory set by the HOMEDRIVE and HOMEPATH environment variables on Windows (or $HOME on AIX and Sun Solaris).

    For example, if the following environment variables are set:
- HOMEDRIVE = c:
- HOMEPATH = \DB2ADMIN
- Data Warehouse Center directory set in ETI Solution = etidir

    you can specify either the full path name as
`c:\DB2ADMIN\etidir\conversion.mdis` or the subdirectory as
`etidir\conversion.MDIS`.

VWUser
    The user ID used to log on to the Data Warehouse Center

VWPass
    The password used to log on to the Data Warehouse Center

VWControl
    The name of the warehouse control database in which to import the run time metadata

ICMUser
    The name of the user ID used to access the information catalog

ICMPass
    The name of the password used to access the information catalog

ICMCatalog
    The name of the database where the information catalog is stored

ICMSchema
    The schema name in the information catalog to import metadata. This parameter is required in DB2 Warehouse Manager V8.1 and later.

Viewing new Metadata imported into the Data Warehouse Center

After your metadata is imported into the Data Warehouse Center you can view the new steps from the Data Warehouse Center window. Expand **Subject Areas**, the desired subject, **Processes**, and then click on the selected process.

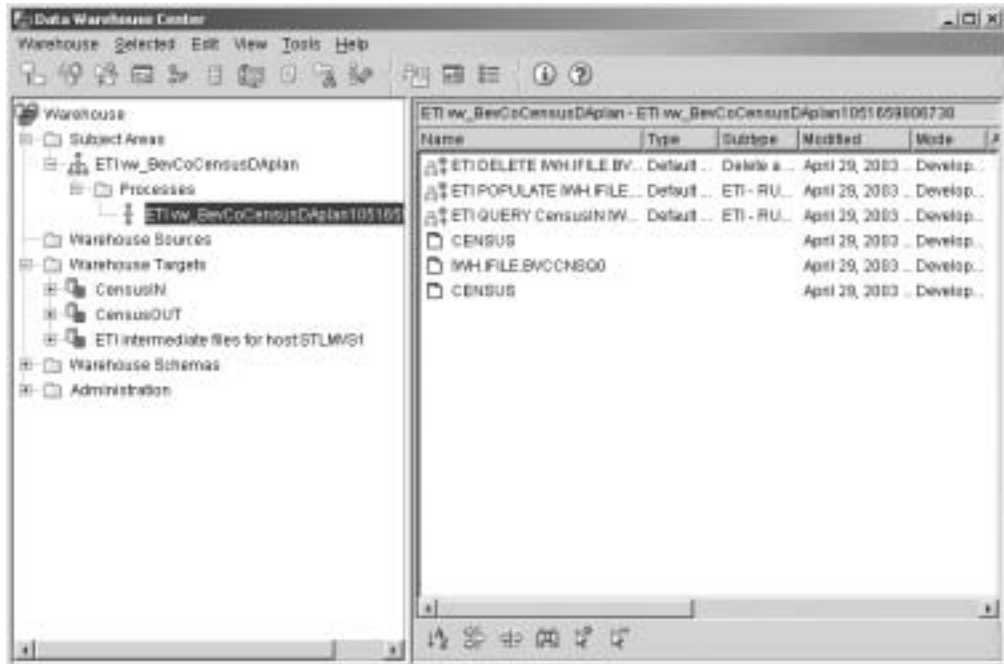The Steps List window opens, displaying the new steps.

Figure 10. Generated steps for the ETI vw_BevCoCensusDAplan.vw.

Figure 11 is an example of the Data Warehouse targets that the import generates.
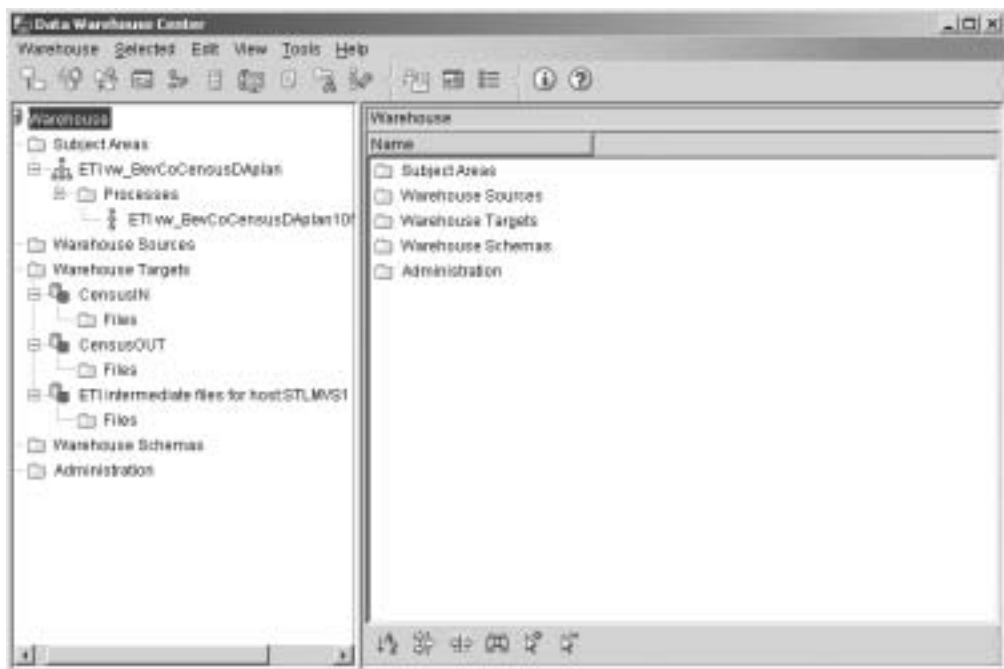

Figure 11. Data Warehouse targets that the import generates

Modifying the steps to access remote hosts

Some of the generated steps require a user ID and password for the remote OS/390 or UNIX host where the ETI Solution conversion program resides. The Data Warehouse Center passes the user ID and password to the Data Warehouse Center program it uses to access the remote host. The user ID is generated as part of the step definition, but the password is not. You must supply a value if a password is required.

By default, the generated steps use the default warehouse agent site. If you want to use an agent site other than the default, you can select another agent site from those Windows, OS/390, Sun Solaris or AIX agent sites you have defined to the Data Warehouse Center.

To modify the steps to access remote hosts:

1. Supply the password for the remote host on which the conversion program resides.
2. Optionally, change the agent site to use from the default value.

Specifying generated file names

Some programs do not create message files; specify a - as the Property Value to prevent the program from terminating.

1. From the Data Warehouse Center window expand **Subject Areas**, expand the desired subject, expand **Processes**, and then click the desired process. A list of objects appears in the process window.
2. Right-click on the desired step, select **Properties**, and then select the **Parameters** tab.
3. Type a - in each Parameter Value field corresponding to the parameter that defines the file that will not be created.

Supplying the password for the remote host

To view and modify the user ID and password:

Right-click a step name in the Step window, and then choose **Properties** →**Parameters**. The list of parameters that the Data Warehouse Center program requires (see Figure 12 on page 20) is displayed.
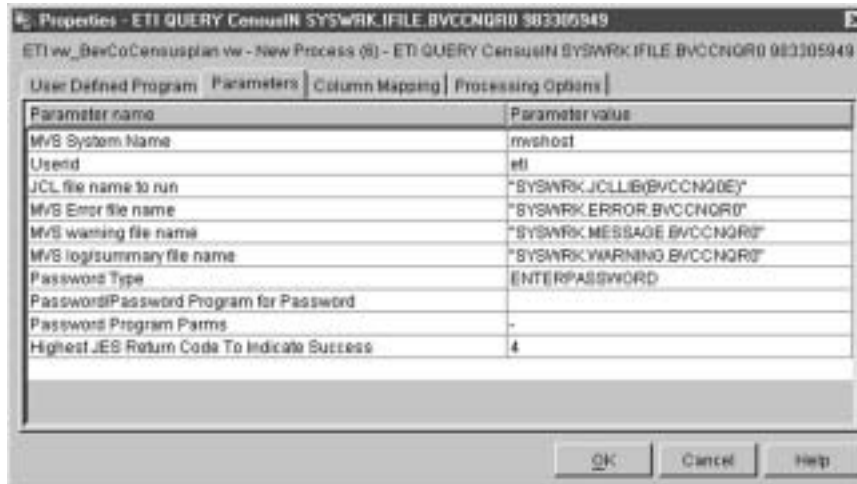
Figure 12. Parameters for the ETI Query Data Warehouse Center program

If the Password Type is...	Do this
ENTERPASSWORD	Supply a password. Type the password in the **Parameter Value** field corresponding to the Password/Password Program for Password parameter.
GETPASSWORD	If the value of the **Password Type** field is GETPASSWORD, and you have written a program that supplies passwords, you can call the program instead of typing the password in this window. The password program must reside on the agent site that is selected for the step. It must write a file that contains the password used in the first line of the file. It must return 0 if it runs correctly. In the **Parameter Value** field corresponding to the Password/Password Program for Password parameter, type the path and name of your password program. In the **Parameter Value** field corresponding to the Password Program Parms parameter, type the values to pass to your password program. The parameter list must be in enclosed in double quotation marks (""). The first parameter in the list must be the path and file name of the file that the password program creates during execution.
PASSWORDNOTREQUIRED	Type - in the Parameter Value field corresponding to the Password/Password Program for Password Parameter. Also, type - in the Parameter Value field corresponding to the Password Program Parms parameter.

Setting the highest acceptable return code

In some cases a program will set a return code higher than 0 that should be interpreted as a successful execution of the program. For example, the merge instructions in an ETI Solution conversion might set the return code to a 4, which indicates a normal program ending. A return code higher than 0 can be defined as a normal program ending by specifying the highest value for the parameter name: Highest JES Return Code to Indicate Success.

1. From the Data Warehouse Center window expand **Subject Areas**, the desired subject, and then **Processes**. Click on the desired process and a list of objects appears in the process window.
2. Right-click on the desired step, select **Properties**, and select the **Parameters** tab.
3. Type the highest return code that is to be treated as a normal program completion in the Parameter Value field corresponding to the Highest Return Code for Normal Completion parameter.

Selecting the warehouse agent site

To select a warehouse agent site other than the default:
1. In the Process window, select a step by right-clicking it, then right-click on **Properties** —> **Processing Options**.
2. Select a Windows, AIX, Sun Solaris, or OS/390 agent site from the **Agent site** list.
3. Click **OK**.

Running the steps to test the integration

Before you can run the steps, you must promote each step to at least test mode and then to production mode. In test, each step must be manually started. After the steps have been promoted to production, they will cascade and run automatically from the scheduler:
1. In the Step window, right click on a step.
2. Select **Mode** —> **Production**.

   The Data Warehouse Center promotes the step. The mode of the step changes to production. Repeat this process for each step.

In DB2 Warehouse Manager version 8 a step can be promoted directly from development to production mode.

To test the steps:
1. Double-click on a process to display the sequence of the steps in a process model chart.

   Figure 13 on page 22 shows an example of a process model chart. In this example, the first step is QUERY, the next one is POPULATE, and the last one is DELETE. The source is CENSUS. The target is the intermediate file, which in turn is the source of the POPULATE step. The target of the POPULATE step is CENSUS. The DELETE step deletes the intermediate file.
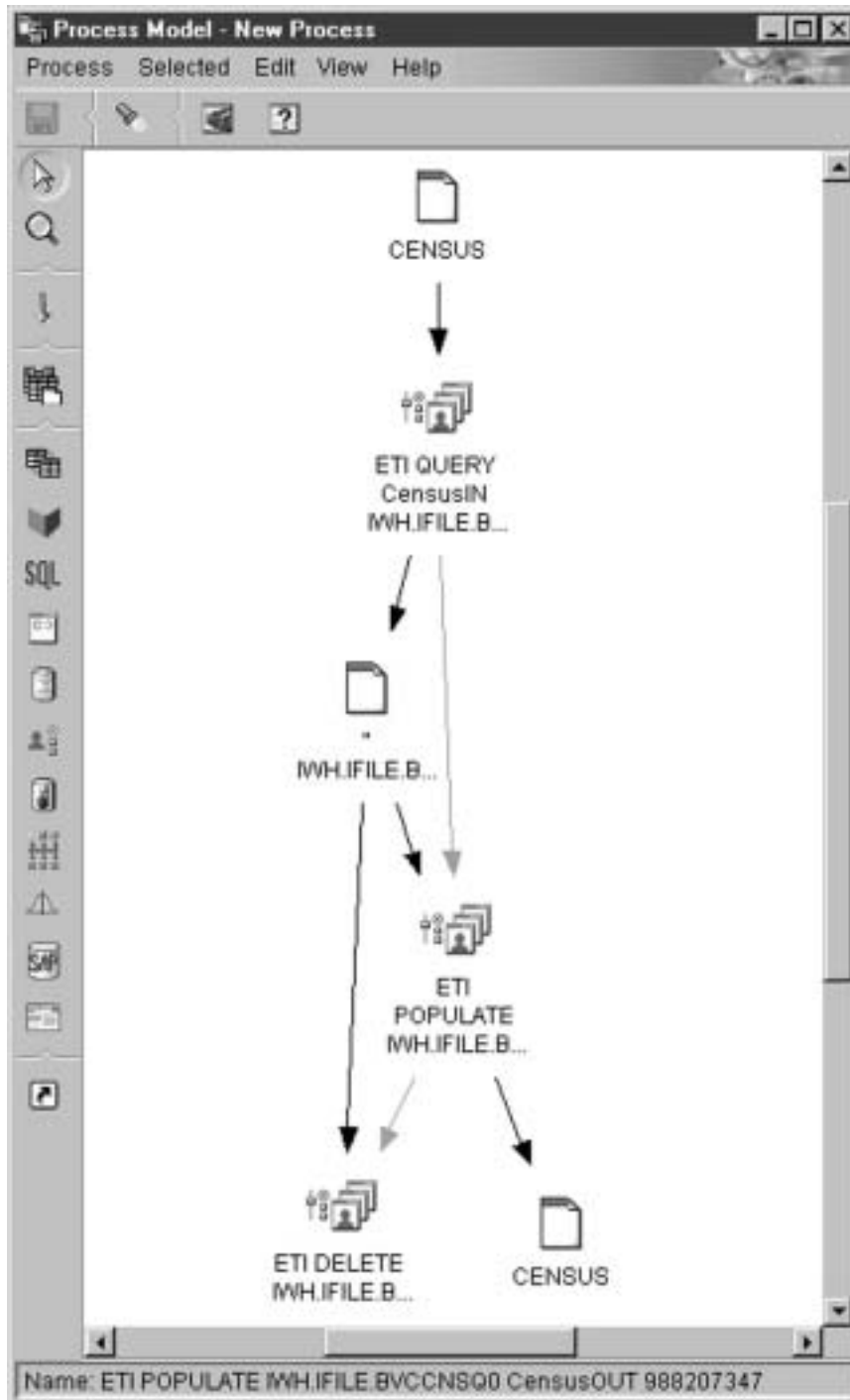
Figure 13. Process model chart. The step with QUERY as part of its name is the one to start manually.

2. Note the name of the first step in the tree. It will have QUERY as part of the name; this is the step you will start manually.

3. From the Data Warehouse Center desktop, select **Warehouse —> Work in Progress.**

4. Click on **Run New Step**.

   The Run New Step window displays a list of steps (see Figure 14 on page 23).
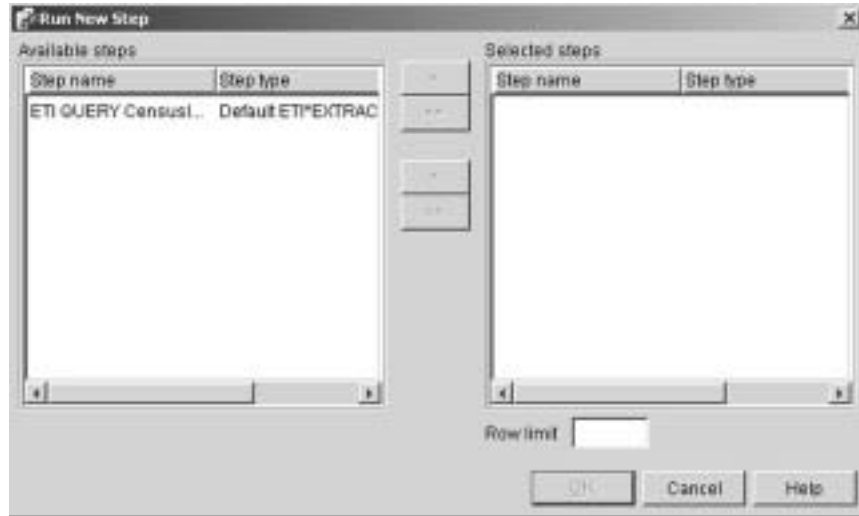
Figure 14. Manually starting a step

5. Select the step you noted in step 2 from the Available steps window.
6. Click on >> to move the step to the Selected steps window. Click **OK**.
7. If the step does not run successfully, see "Running a step fails" on page 26.

Scheduling the steps for production

After you test the steps, specify the schedule for the Data Warehouse Center to automatically run the steps. You need to specify the schedule on only the first step in the process model chart. When the first step in the process model chart finishes processing, it will start the next step, and so on.

To specify the schedule:

1. From the Step window, right-click on the step that has QUERY as part of its name.
2. Select **Mode —> Test**.
   The Data Warehouse Center demotes the step to test mode.
3. Right-click on the step again.
4. Select **Schedule.**
5. Enter the **Interval, Frequency, Day, Start,** and **End** values, then click **Add**.
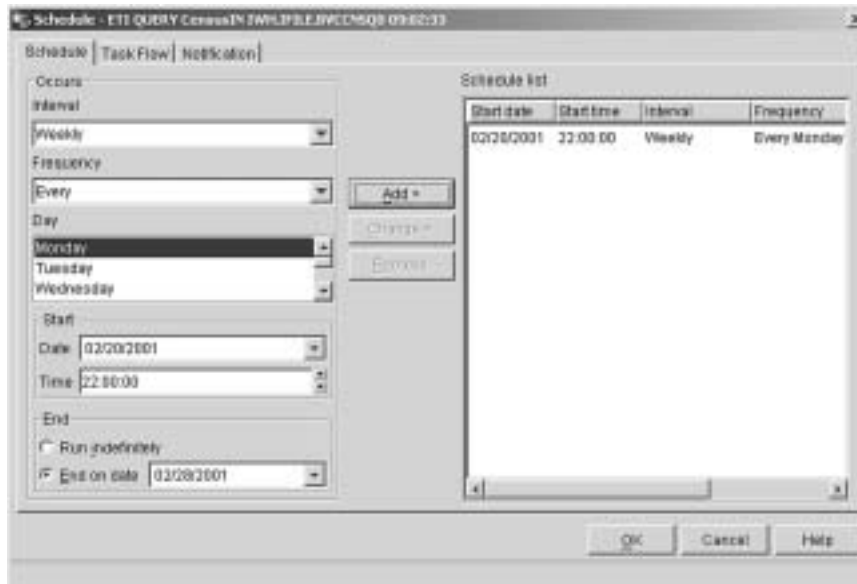
Figure 15. Schedule screen

For the schedule to take effect, you must promote the step to production mode:

1. In the Step window, right-click on the step that you selected in step 1 of the previous procedure.

2. Select **Mode —> Production**.

The Data Warehouse Center promotes the step; its mode changes to production. The step now runs at the scheduled time. The Data Warehouse Center Show Log window under **Work in Progress** displays the status of each step.

Publishing the business metadata in the Information Catalog Manager

You can publish information about the Data Warehouse targets and the mappings used in the ETI Solution conversion from Data Warehouse Center to Information Catalog by using the Data Warehouse Center GUI. Select **Warehouse —> Publish Metadata —> Data Warehouse to Information Catalog**. Publish can be scheduled to run automatically to keep Data Warehouse Center and Information Catalog objects in sync. If you want end users to view the intermediate transformations of the data from its source format to its target format, you can also publish information about the steps that the Data Warehouse Center generates from the ETI Solution metadata.

Metadata stored in Data Warehouse Center about targets does not exactly match metadata stored in the Information Catalog during Register. Therefore, publish from Data Warehouse Center to Information Catalog will result in a different set of target objects with the same name created in the Information Catalog (if you had previously registered the conversion to Information Catalog). We would advise against doing the publish if you have registered the conversion to Information Catalog.

Chapter 4. Troubleshooting common problems

This chapter gives tips for troubleshooting problems that involve both ETI Solution and the Data Warehouse Center:

- Registering a conversion specification with the Data Warehouse Center does not result in generated steps
- Transferring files between ETI Solution and the Data Warehouse Center fails
- Running a step fails

For related reference information, see the following appendixes:
- Appendix A, "ETI Solution execution plan files," on page 29
- Appendix B, "Return codes for Data Warehouse Center programs," on page 35

Registering a conversion specification with the Data Warehouse Center does not result in generated steps

If registering a conversion specification with the Data Warehouse Center fails, do the following steps:

1. Determine whether the files were transferred to the target directory.

   If the files were not transferred, read the error messages in the status window that ETI Solution displays during the transfer. Check the ex-run.log on the ETI client machine.

   If the files were transferred, but the metadata was not imported into the Data Warehouse Center or Information Catalog, verify that you have added your user ID to the ETI Definition Default security group.

2. Check the traces in vw_*conversion*plan.trc, the trace file from import. If the result message and trace files indicate a problem during the import of metadata:

   - For the Information Catalog Manager, read the messages in the *conversion*.LOG file.

   - For the Data Warehouse Center, read the messages in the *conversion*plan.log file.

Table 6. Trace and message files on the Data Warehouse Center workstation

Type	Name	Location
Conversion result trace file	vw_*conversion*plan.trc	*VWS_LOGGING*[1] on the Data Warehouse Center workstation[2]
Information Catalog Manager import log file	*conversion*.LOG	*VWS_LOGGING*[1] on the Data Warehouse Center workstation[2]
Data Warehouse Center import log file	vw_*conversion*plan.log	*VWS_LOGGING*[1] on the Data Warehouse Center workstation[2]

Table 6. Trace and message files on the Data Warehouse Center workstation (continued)

Type	Name	Location
Data Warehouse Center program log file	trc-*xx-date-time*.log, where: • *xx* identifies the Data Warehouse Center program (ex, dl, or rc) • *date* is the date in mmddyy format • *time* is the time in hhmmss format	• On a Windows agent site, *VWS_LOGGING*[1] • On an AIX agent site, the /var/IWH directory

[1]`VWS_LOGGING` is the directory set by the `VWS_LOGGING` system environment variable. If not specified, the default is Program Files\IBM\SQLLIB\logging.

[2]The Data Warehouse Center workstation contains the Data Warehouse Center administrative client.

Transferring files between ETI Solution and the Data Warehouse Center fails

If the transfer of files fails, use the ETI Solution Executive to verify that you can use FTP and Telnet to transfer files from the ETI Solution host to the workstation containing the Data Warehouse Center administrative client.

For more information on using the Executive, see the chapter on the ETI Solution Executive in the *ETI Solution User's Guide*.

Running a step fails

When a Data Warehouse Center step fails during processing, use the Selected —> Show Log on the Work in Progress window to determine how the step failed. If the value of the **RC1** field is 8410, check the value of the **RC2** field. If the value is nonzero, do the following tasks:

1. Look up the explanation of the RC2 code in Appendix B, "Return codes for Data Warehouse Center programs," on page 35.
2. Look at the log file for the Data Warehouse Center program.

   On Windows, the file is in the directory set by the VWS_LOGGING environment variable, which has a default value of C:\Program Files\IBM\SQLLIB\logging.

   On AIX, use the VWS_LOGGING variable with the default to the /var/IWH directory.

   On both operating systems, the file is called trc-xx-date-time.log, where:
   • xx identifies the Data Warehouse Center program (ex, dl, or rc)
   • date is the date the Data Warehouse Center program created the log file in mmddyy format
   • time is the time the Data Warehouse Center program created the log file in hhmmss format

   To find the most recent log file, sort the files by the date and time.

3. If the step corresponds to conversion programs on OS/390, look at the JES log file that is in the same directory as the trc and ftp log files. The JES log file is a copy of the file produced on the OS/390 system.

Appendix A. ETI Solution execution plan files

The information in this appendix is intended for troubleshooting purposes only. Refer to it when an ETI Solution conversion fails to run successfully.

When you register a conversion specification with the Data Warehouse Center, ETI Solution sends the execution plan to the Data Warehouse Center. An execution plan is a set of instructions that the Data Warehouse Center uses to generate steps that manage the ETI Solution data conversion. Occasionally, ETI Solution will generate an incomplete execution plan. This is caused by incorrect or incomplete environment set up. Also on occasion, the Data Warehouse Center will fail to run the execution plan instructions properly.

The execution plan is generated in the same directory where the programs are generated for a given conversion. The name of the execution plan is *conversion*plan.vw.

Use a common text editor to view the execution plan files.

Instruction types

The Data Warehouse Center execution plan file is organized in a comma-delimited format. It lists the instruction types that are used and the parameters that define the instruction types. There are seven instruction types. Table 7 lists each instruction type, describes its function, and lists the parameters that define it. The parameters are listed in the order that they are passed. For more information on parameters, see "Parameters" on page 31.

Table 7. Instruction types

Instruction Type	Function	Parameters
COMMENT/END_COMMENT	Inserts comments, usually conversion specifications, into the execution plan. Comments contain metadata about the execution plan that you might find useful. Anything that appears between the comma after COMMENT and before END_COMMENT is a comment. Comments can be multiple lines and can include any imbedded characters. The Data Warehouse Center does not act on information contained in a COMMENT/END_COMMENT instruction type as it does a parameter. Instead, the Data Warehouse Center uses this information as the long description in a subject area. COMMENT is always paired with END_COMMENT.	None.

Table 7. Instruction types (continued)

Instruction Type	Function	Parameters
LOGIN	Logs on to a remote system.	CurrentHost[1], RemoteHost[1], RemoteHostOS, RemoteAccount, PasswordType, RemotePasswordCommand, RemotePasswordCommandArgs
LOGOUT	Logs off from a remote system	CurrentHost[1], RemoteHost
GET	Copies a file from a remote system and stores it in a temporary file on the local system. This instruction type is limited to intermediate files only.	CurrentHost[1], File, RemoteHost, RemoteFile, RecordLength, TransferMode, RemoteHostOS, RemoteAccount, PasswordType, RemotePasswordCommand, RemotePasswordCommandArgs
PUT	Copies a file from a temporary file on the local system and stores it on a remote system. This instruction type is limited to intermediate files only.	CurrentHost[1], File, RemoteHost, RemoteFile, RecordLength, TransferMode, RemoteHostOS, RemoteAccount, PasswordType, RemotePasswordCommand, RemotePasswordCommandArgs
RUN	Runs a program on your local system.	*Instruction*, CurrentHost[1], Program, Input(n), Output(n), LogFile, ErrorFile, SummaryFile, ProgExt(n), PasswordType, RemotePasswordCommand, RemotePasswordCommandArgs
DELETE	Deletes a file on your local system. It is limited to intermediate files only.	CurrentHost[1], File

1. The system that is the current host switches during the execution of the plan. The current host initially is the system on which the plan is executing. After the LOGIN instruction is issued, however, the current system is the system that ETI Solution has logged on to (and the remote system is the system on which the plan is executing). After the LOGOUT instruction is issued, the current system switches back to the system on which the plan is executing.

   In the example in "Sample Data Warehouse Center execution plan" on page 33, `minerva` is the system on which the plan is executing. The LOGIN instruction logs on to `funafuti`, which is the current system until the LOGOUT instruction is issued. After the LOGOUT instruction is issued, `minerva` is the current host.

Parameters

An instruction type defines a general action, such as logging on to a remote system, running a program, or deleting a file. Parameters define the instruction type. For example, the parameters for a DELETE instruction type tell the instruction type the name of the system that the file is on and the name of the file to delete. Table 8 lists the names of the parameters and the areas they define in the instruction type. The parameters are listed alphabetically by name.

Table 8. Parameter descriptions

Parameter	Defines
CurrentHost	The host name of the local system.
ErrorFile	The name and location of the file to which ETI Solution writes run-time error information.
File	The name of the file that a GET instruction copies to when it copies information from a remote system to your local system, or the name of the file that a PUT instruction copies when it copies from your local system to a remote system.
Input(n)	The data source used by a RUN instruction. Depending on the type of RUN instruction, the Input(n) parameter can be a flat file or a database table. In some cases, a RUN instruction has more than one input.
Instruction	The specific type of RUN instruction. See Table 9 on page 32 for more information.
LogFile	The name and location of the file to which ETI Solution writes log information.
Output(n)	The target to which the RUN instruction writes. In some cases, a RUN instruction has more than one output.
PasswordType	Password information for a remote host. When an instruction type accesses a remote host, it runs one the following password types: **GetPassword** This password type uses the Remote Password Command program to obtain the remote host password. **EnterPassword** This password type directly supplies a password to the remote host. **PasswordNotRequired** This password type is sent when the remote host does not require a password.
PrgExt(n)	A program used by an instruction type.
Program	The name of the program that ETI Solution generates. This program is either JCL or a shell script.

Table 8. Parameter descriptions (continued)

Parameter	Defines
RecordLength	The record length of file that a PUT or GET instruction uses, as necessary. This parameter is optional.
RemoteAccount	The user ID for the remote host.
RemoteFile	The name of the file that a GET instruction copies from a remote system to a file on your local system, or the name of the file that a PUT instruction copies to when it copies a file from your local system to a remote system.
RemoteHost	The host name of the remote system.
RemoteHostOS	The operating system of the remote system.
RemotePasswordCommand	The required password when the PasswordType is EnterPassword. You must supply a password when you schedule this instruction in the Data Warehouse Center. Otherwise, this parameter will not be passed.
RemotePasswordCommandArgs	The arguments that the RemotePasswordCommand passes. This parameter is used only with the RemotePasswordCommand.
SummaryFile	The name and location of the file to which ETI Solution writes information about warnings and status.
TransferMode	The type of file transfer (bin, char, or default to FTP). This parameter is used only with the RecordLength parameter.

The parameters for instruction types map to the parameters for the Data Warehouse Center programs that are supplied for ETI Solution support.

Instruction parameters

Instruction is a general name for a subset of parameters that define a database action to a RUN instruction type. The term *Instruction* is not listed in the execution plan. Instead, the subset parameter that defines the database action is listed. Table 9 lists the subset of parameters that the *Instruction* parameter passes, describes their functions, and enumerates the sources and targets that they use.

Table 9. Data instruction types

Parameter instruction types	Description	Number of sources and targets
query	Reads data to an output file.	*n* sources, *n* targets
sort	Orders data.	1 source, 1 target
split	Writes information from one source to two targets. The source is the first target. The second target is a normal target.	1 source, 1 target

Parameter instruction types	Description	Number of sources and targets
merge	Writes information from two or three different sources to one file.	2 sources, 1 target
populate	Populates a database table.	1 source, 1 target
query_populate	Performs a single-step conversion.	*n* sources, *n* targets

These parameters map to the parameters for the Data Warehouse Center programs that are supplied for ETI Solution support.

Sample Data Warehouse Center execution plan

An execution plan file is an exact mapping of the execution plan that is created when you register a conversion specification. When you open an execution plan file, a set of instruction types and parameter definitions is displayed. This section provides a sample Data Warehouse Center execution plan file and an explanation of the information in the file.

An execution plan file will resemble the following sample:

```
LOGIN,minerva,funafuti,unix,extract,EnterPassword,,,

RUN,query,funafuti,/tmp/CBL_SIMP_splitquery0e.sh,SRC-EMP,/tmp/CBL_SIMP_
splitquery0.int,/tmp/CBL_SIMP_splitquery0.msg,/tmp/CBL_SIMP_splitquery0.err,
/tmp/CBL_SIMP_splitquery0.wrn,jcl=/tmp/CBL_SIMP_splitquery0.jcl,
shell-compile=/tmp/CBL_SIMP_splitquery0c.sh,shell-execute=/tmp/CBL_SIMP_
splitquery0e.sh,cobol74=/tmp/CBL_SMq0.cbl,prog_ext=last,PasswordNotRequired,,,
RUN,populate,funafuti,/tmp/CBL_SIMP_splitpopulate1e.sh,/tmp/CBL_SIMP_
splitquery0.int,TGT-EMP,/tmp/CBL_SIMP_splitpopulate1.msg,/tmp/CBL_SIMP_
splitpopulate1.err,/tmp/CBL_SIMP_splitpopulate1.wrn,jcl=/tmp
/CBL_SIMP_splitpopulate1.jcl,shell-compile=/tmp/CBL_SIMP_
splitpopulate1c.sh,shell-execute=/tmp/CBL_SIMP_splitpopulate1e.sh,
cobol74-prepop=/tmp/CBL_SMp1z.cbl,cobol74=/tmp/CBL_SMp1.cbl,prog_ext=last,
PasswordNotRequired,,,
DELETE,minerva,/tmp/CBL_SIMP_splitquery0.int
LOGOUT,funafuti,minerva
```

There are five separate instructions in this file:

- `LOGIN,minerva,funafuti,unix,extract,EnterPassword,,,`

  where:
  - `minerva` is the CurrentHost
  - `funafuti` is the RemoteHost
  - `unix` is the RemoteHostOS
  - `extract` is the RemoteAccount
  - `EnterPassword` supplies the password
- `RUN,query,funafuti,/tmp/CBL_SIMP_splitquery0e.sh,SRC-EMP,/tmp/CBL_SIMP_splitquery0.int,/tmp/CBL_SIMP_splitquery0.msg,/tmp/CBL_SIMP_splitquery0.err,/tmp/CBL_SIMP_splitquery0.wrn,jcl=/tmp/CBL_SIMP_splitquery0.jcl,`

```
shell-compile=/tmp/CBL_SIMP_splitquery0c.sh,shell-execute=/tmp/CBL_SIMP_
splitquery0e.sh,cobol74=/tmp/CBL_SMq0.cbl,prog_ext=last,
PasswordNotRequired,,,
```

where:

- `query` is the *Instruction*
- `funafuti` is the CurrentHost
- `/tmp/CBL_SIMP_splitquery0e.sh` is the program
- `SRC-EMP` is the Input(n)
- `/tmp/CBL_SIMP_splitquery0.int` is the Output(n)
- `/tmp/CBL_SIMP_splitquery0.msg` is the LogFile
- `/tmp/CBL_SIMP_splitquery0.err` is the ErrorFile
- `/tmp/CBL_SIMP_splitquery0.wrn` is the SummaryFile
- `jcl=/tmp/CBL_SIMP_splitquery0.jcl` is a ProgExt(n)
- `shell-compile=/tmp/CBL_SIMP_splitquery0c.sh` is a ProgExt(n)
- `shell-execute=/tmp/CBL_SIMP_splitquery0e.sh` is a ProgExt(n)
- `cobol74=/tmp/CBL_SMq0.cbl` is a ProgExt(n)
- `prog_ext=last` is a ProgExt(n); `last` indicates that this is the last ProgExt(n) in the instruction.
- `PasswordNotRequired` is passed because the password is pulled from the previous LOGIN instruction.

- ```
  RUN,populate,funafuti,/tmp/CBL_SIMP_splitpopulate1e.sh,/tmp/CBL_SIMP_
  splitquery0.int,TGT-EMP,/tmp/CBL_SIMP_splitpopulate1.msg,/tmp/CBL_SIMP_
  splitpopulate1.err,/tmp/CBL_SIMP_splitpopulate1.wrn,jcl=/tmp
  /CBL_SIMP_splitpopulate1.jcl,shell-compile=/tmp/CBL_SIMP_
  splitpopulate1c.sh,shell-execute=/tmp/CBL_SIMP_splitpopulate1e.sh,
  cobol74-
  prepop=/tmp/CBL_SMp1z.cbl,cobol74=/tmp/CBL_SMp1.cbl,prog_ext=last,
  PasswordNotRequired,,,
  ```

  You can run an instruction type more than once in an execution plan. While this RUN instruction runs a program that is different than the one called in the previous RUN instruction, the parameter breakdown follows the same format.

- `DELETE,minerva,/tmp/CBL_SIMP_splitquery0.int` where:
  - `minerva` is the CurrentHost
  - `/tmp/CBL_SIMP_splitquery0.int` is the file that is to be deleted.

- `LOGOUT,funafuti,minerva` where:
  - `funafuti` is the CurrentHost
  - `minerva` is the RemoteHost

Appendix B. Return codes for Data Warehouse Center programs

This appendix describes the return codes for the Data Warehouse Center programs that manage conversion programs. Use the descriptions of the return codes along with the log files for the Data Warehouse Center programs to debug problems.

- On Windows, the file is in the directory set by the *VWS_LOGGING* environment variable, which has a default value of Program Files\SQLLIB\logging.
- On AIX, use the *VWS_LOGGING* variable with the default to the /var/IWH directory.

OS/390 programs

Table 10 lists the possible values of the **RC2** field in the Show Log window when the value of the **RC1** field is 8410. The programs, ″Delete a File on MVS″ (ETIDLMVS), ″ETI -RUN for MVS″ (ETIEXMVS), and ″Run FTP on an MVS host″ (ETIRCMVS) are used to invoke ETI transformations on the 390 by warehouse agents running on remote Windows, OS/390, AIX or Sun Solaris.

Table 10. Return codes for OS/390 Data Warehouse Center programs

Return code	Description
0	The program ran successfully.
4	The program ran but might have encountered a problem.
8	Parameter error. The program detected a parameter error, such as the following: • Too few parameters were supplied to the program • The password type is incorrect • The File Record Length is not a number
12	FTP error. The program detected an FTP error, such as the following: • The system can't execute an FTP command. • The host name, user ID, or password for OS/390 is invalid. • A file for which the program issued an FTP GET command is empty on the target machine, but not on the source machine.
16	Internal error. The program detected an internal error, such as the inability to open, create, or delete a file.
20	OS/390 error. The program detected an OS/390 error, such as the following: • The JCL file does not exist on the OS/390 system. • The JCL file is empty. • The first 7 characters of the job name are different from the OS/390 user ID. • JES cannot execute the JCL for some reason, such as a syntax error or an invalid data set.

Return code	Description
24	ETI Solution error. The program detected an ETI Solution error and transferred an error file generated by ETI Solution.
28	FTP GET error. The source file to be transferred with the FTP GET does not exist.
36	FTP PUT error. The source file to be transferred with the FTP PUT command does not exist.
44	File empty error. The source file is empty on the OS/390 system.
48	Environment variable error. The *VWS_LOGGING* or *VWS_TEMPLATES* environment variable has not been set.
52	Get password program error. The program detected an error in executing the password program.
60	JCL template error. The program could not find a customized Data Warehouse Center template. For more information about copying and customizing Data Warehouse Center templates, see "Modifying the Data Warehouse Center template for FTP support" on page 9.

AIX programs

Table 11 lists the possible values of the **RC2** field in the Show Log window when the value of the **RC1** field is 8410. The programs, ″Delete a File using REXEC″ (ETIDLUNX), ″ETI - RUN using REXEC″ (ETIEXUNX), and ″Remote FTP using REXEC″ (ETIRCUNX) are used to invoke ETI transformations on AIX by warehouse agents running on remote Windows, OS/390, AIX or Sun Solaris.

Table 11. Return codes for AIX Data Warehouse Center programs

Return code	Description
0	The program ran successfully.
4	The program ran but might have encountered a problem.
8	Parameter error. Too few or too many parameters were supplied to the program, or an invalid value was supplied for a parameter.
16	Internal error. The program was unable to open, create, or write to a temporary file. Modify the environment to fix the problem, such as changing file permissions or changing the directory set by the *VWS_LOGGING* environment variable. See the trace file (if one exists) for more information about the type of file error.

Table 11. Return codes for AIX Data Warehouse Center programs (continued)

Return code	Description
24	ETI Solution error. The program detected an ETI Solution error and transferred an error file generated by ETI Solution.
48	Environment variable error. The *VWS_LOGGING* environment variable has not been set.
52	Get password program error. The program detected a password program error, such as a missing program, an invalid name, or the wrong number of parameters.
56	Remote execution error. The program detected a remote execution error, such as the following : • An incorrect user ID or password was supplied. • A remote file was not found. • A remote host is not responding. • The supplied user ID is not authorized to create or read the remote file.

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