

**Oracle® Retail XBR Loss Prevention and Store
Analytics**
Implementation Guide
Release 7.0

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7.0.0 CONSIDERATIONS AND UPGRADE ADVISEMENTS

Note: The rebranding for the latest version of this documentation set is in development as part of post MICROS acquisition activities. References to former MICROS product names may exist throughout this existing documentation set.

This section presents a brief explanation of new, changed or updated, and other important information that the person performing an upgrade or new installation should read before starting the installation/configuration.

All Users

Employee Violations Dashboard

A new feature has been added that provides an intuitive dashboard report called an Employee Violations Dashboard (EVD) as a unique distribution on alert reports. ~~The EVDs will be generated for each employee/cashier that exceeded one or more alert filters configured in a scheduled query. The EVDs will be distributed as a PDF attachment via email to each recipient on the scheduled run.~~

If upgrading to XBR 7.0, the default condition for EVD for a customer is "Off". EVDs must be enabled through the Customer Profile page in XBR Desktop. See ["Enabling EVD" on page 317](#) for instructions.

The EVD can be configured by changing the settings in the dvreport-config.xml file. See ["Employee Violations Dashboard" on page 187](#) for more information.

The EVD KPI violations can be modified or new ones created. See ["EVD Maintenance" on page 318](#) for more information.

The logo and instructions that appear in the footer of the EVD report can be changed to meet customer specifications.

The logo (png, jpg, or gif format) should be approximately 8k or less in size with an image size of about 80 px wide by 40 px high. The logo must also be placed in the following folder:

```
...\tomcat\liferay\html\skin\image\common\report_menu_icons\
```

See ["Employee Violations Dashboard" on page 187](#) for more information on configuring the logo and instructions.

Orgintro

The orgintro utility should be run according to the following guidelines:

- If this is a new XBR 7.0.0 installation, run orgintro after the database and Desktop have been installed.
- If upgrading to XBR 7.0.0 from XBR 6.8.x, orgintro does **not** have to be run.
- If upgrading to XBR 7.0.0 from an XBR version earlier than 6.8.x, run orgintro after **all** database upgrades have been done.

RETAIL/GROCERY

No Match

If upgrading to XBR 7.0, determine if the required elements for No Match are present. These elements are:

- original purchase transaction information for refunds and exchanges
- transaction detail for cancels and post voids.

If these elements are present, No Match can be enabled.

Refer to [“No Match Analysis” on page 360](#) for enable/disable information on No Match.

Post Voids

If upgrading to XBR 7.0, determine if the transaction detail for the post voiding transaction is provided in the Tlog. If this information is not provided, enable the Post Void procedure so that it can be created.

Refer to [“Post Void - Details” on page 359](#) for enable/disable information on Post Voids.

Staging Fields

Four new fields have been added to the staging/audit temp table - config_version, volume, weight and lvertime. Since Oracle uses a control card, no control card change is necessary for the upgrade if the new fields are not being output from the loader. If the loader is modified to output the four new fields or you are doing a new install then you will be required to use the new 7.0 control card. The 7.0 control cards have been included on the installation CD and in CVS.

Oracle

Oracle New Install or 7.0 Upgrade with new fields - Use 7.0 control card located here

For XBR:

```
CVS:\ database_scripts\Database Architecture\Database Scripts\Analytics  
Product Suite 7.0\XBR 7.0\XBR Retail 7.0\Oracle\ pos_staging_70.ct1
```

Or

```
CD:\XBR-FULL\DATABASE_SCRIPTS\RETAIL\NEW_INSTALL\ORACLE\pos_staging_70.ct1
```

For Balance:

```
CVS:\database_scripts\Database Architecture\Database Scripts\Analytics  
Product Suite 7.0\Balance 7.0\Oracle\adc_pos_data_tmp_70.ct1
```

Or

```
CD:\ BALANCE-  
FULL\DATABASE_SCRIPTS\RETAIL\NEW_INSTALL\ORACLE\adc_pos_data_tmp_70.ct1
```

SQL Server

For SQL Server, no format file was used with BCP prior to version 7.0. This will cause an error during data processing for upgraded customers if the new fields are not being output from

the loader. A format file is now required to be used in this situation. For consistency we suggest a format file be used with a new install and with an upgrade if the loader has been modified to output the four new fields. The new 7.0 and old format cards have been included on the installation CD and in CVS. Note: _old refers to the file without the 4 new fields.

SQL Server New Install or 7.0 Upgrade with new fields - Use new format file located here

For XBR:

```
CVS:\database_scripts\Database Architecture\Database Scripts\Analytics
Product Suite 7.0\XBR 7.0\XBR Retail 7.0\SQL Server\ pos_staging_70.fmt
```

Or

```
CD:\XBR-FULL\DATABASE_SCRIPTS\RETAIL\NEW_INSTALL\MSSQL\pos_staging_70.fmt
```

For Balance:

```
CVS:\database_scripts\Database Architecture\Database Scripts\Analytics
Product Suite 7.0\Balance 7.0\SQL Server\adc_pos_data_tmp_70.fmt
```

Or

```
CD:\BALANCE-
FULL\DATABASE_SCRIPTS\RETAIL\NEW_INSTALL\MSSQL\adc_pos_data_tmp_70.fmt
```

SQL Server 7.0 Upgrade without new fields - Use old format file located here

For XBR:

```
CVS:\database_scripts\Database Architecture\Database Scripts\Analytics
Product Suite 7.0\XBR 7.0\XBR Retail 7.0\SQL Server\ pos_staging_old.fmt
```

Or

```
CD:\XBR-FULL\DATABASE_SCRIPTS\RETAIL\UPGRADE\MSSQL\pos_staging_old.fmt
```

For Balance:

```
CVS:\database_scripts\Database Architecture\Database Scripts\Analytics
Product Suite 7.0\Balance 7.0\SQL Server\adc_pos_data_tmp_old.fmt
```

Or

```
CD:\ BALANCE-
FULL\DATABASE_SCRIPTS\RETAIL\UPGRADE\MSSQL\adc_pos_data_tmp_old.fmt
```

Statistics Buckets

For the 7.0 upgrade, some new statistics buckets were added and some existing statistics buckets were updated. The following information pertains to the 7.0 upgrade **not** 7.0 new installs.

The new statistics buckets were inserted into pro_view_syntax with active_flag = 'Y'. If the customer chooses not to use these new statistics buckets and/or the information is not available in the tlog, they must be turned off (active_flag = "N").

The New statistic buckets are:

CA_REF_EXC_NO_ORIG_TX_AMT	CA_REF_EXC_NO_ORIG_TX_CT
CASH_REF_SAME_DAY_AMOUNT	CASH_REF_SAME_DAY_COUNT

CASH_REF_SINGLE_SKU_AMT	CASH_REF_SINGLE_SKU_CT
EMP_OWN_TRANS_AMOUNT	EMP_OWN_TRANS_COUNT
EMP_OWN_TRANS_DISC_AMOUNT	REF_EXC_NO_ORIG_TX_AMT
REF_EXC_NO_ORIG_TX_CT	REF_SAME_DAY_AMOUNT
REF_SAME_DAY_COUNT	SALES_LT_THRESH_AMOUNT
SALES_LT_THRESH_COUNT	SALES_LT_THRESH_LV_AMT
SALES_LT_THRESH_MOD_AMT	SALES_LT_THRESH_MOD_COUNT

The updated statistics buckets were inserted into pro_view_syntax with system = 'UPG' and active_flag = 'N'. This was done to avoid overwriting any existing formulas. The active_flag for any record where system = 'UPG' are to remain inactive. The implementation team will be responsible to make these updated statistic buckets active if necessary. The system field will also need to be changed to 'STAT'.

SQL Example:

```
--First turn off the existing STAT bucket
update pro_view_syntax set active_flag= 'N'
  where system = 'STAT' and posting_source = 'ST' and
    target_field = '<target_field>';
--Then activate the UPG bucket.
Update pro_view_syntax set system = 'STAT', active_flag = 'Y'
  where system = 'UPG' and posting_source = 'ST' and
    target_field = '<target_field>';
```

The updated statistics buckets are:

CANCEL_NOMATCH_AMOUNT	CANCEL_NOMATCH_COUNT
CASH_POST_VOID_AMOUNT	CASH_POST_VOID_COUNT
GCARD_ISS_AMOUNT	GCARD_ISS_LINE_COUNT
GCARD_SOLD_AMOUNT	GCARD_SOLD_COUNT
POSTVOID_NOMATCH_AMOUNT	POSTVOID_NOMATCH_COUNT
REF_EXCH_MO_NOMATCH_AMOUNT	REF_EXCH_MO_NOMATCH_COUNT



GCARD_ISS_LINE_COUNT and GCARD_ISS_AMOUNT are actually new buckets. The GCARD_SOLD_COUNT & AMOUNT used to include both issued and sold gift cards but now they have been broken out into two buckets.

Extensibility

Procedures

If a custom procedure is being used, it may need to be modified to include the 7.0 modifications. Query pro_procedures to see if a custom procedure is in use. If custom_name is NULL, then no further action is required since the core procedures were updated with the upgrade script. If custom_name is not NULL, the custom procedure needs to be compared to the core procedure and the custom procedure modified accordingly. This can be accomplished by using the Web Interface (DB Config) to edit the procedure definition. The following extensible procedures have been modified for 7.0:

- SP_ADC_BR_POST_GL
- SP_ADC_BR_UPDATE
- SP_ADC_LM_AGING
- SP_ADC_MOVE_REL
- SP_ADC_NO_POLL
- SP_MST_UPD_EMP
- SP_PRO_LOAD_HIST
- SP_PRO_LOAD_SPO
- SP_PRO_LOAD_STATS (MSSQL Only)
- SP_PRO_VIDEO

Views

If a custom view is being used, it may need to be modified to include the 7.0 modifications. Query pro_views for active non-core views (orgid <> -1001 and active_flag = Y) to see if a custom view is in use. If no custom view is in use, no further action was required since the modified core views were delivered to pro_views and then the views were re-created based on the settings in pro_views. If there is a custom view in use, the custom view needs to be compared to the core view and the custom view modified accordingly. This can be accomplished by using the Web Interface (DB Config) to edit the view definition. The following extensible views have been modified for 7.0:

- ADC_JRNL_HDR
- POS_ARCHIVE_DTL
- POS_ARCHIVE_HDR
- POS_JRNL_DTL
- POS_JRNL_HDR
- POS_JRNL_SKU
- POS_JRNL_TND
- POS_SALES_HDR
- POS_SALES_OTH
- POS_SALES_SKU

- POS_SALES_TND
- POS_STAGING_DTL
- POS_STAGING_HDR
- POS_STAGING_HDR_FLG
- POS_STAGING_HDR_LOAD
- POS_STATISTICS
- POS_VIDEO

Creating New Queries for Upgrading Customers

For customers upgrading to v7.0, there is a new library (COREUPG) that will be created and utilized as a repository for Operations to deliver new reporting to customers on an as needed basis. The Upgrade Library includes all new queries/controls, modified queries/controls, and queries that are linked to or from modified queries.

See [“Install XBR 7.0.0 Upgrade Query Library” on page 275](#) for information on upgrading an Oracle database.

See [“Install XBR 7.0.0 Upgrade Query Library” on page 283](#) for information on upgrading a SQL Server database.

CORE Library/Upgrade Library

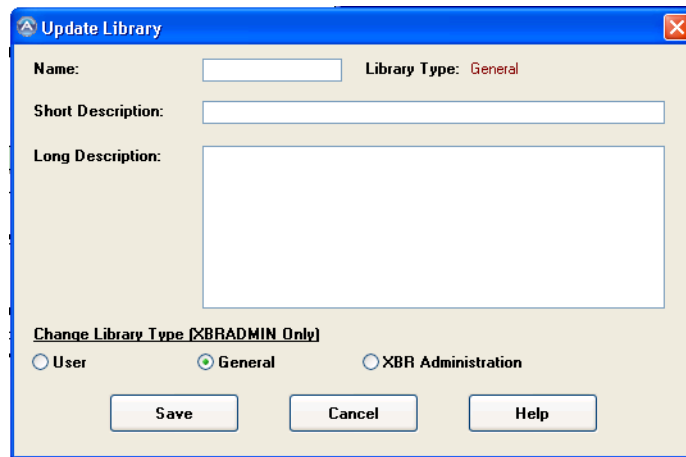
New queries that have been created to support new application functionality (i.e. - Query Tracking) are automatically added into the CORE XBR library. New queries and controls that have been created for XBR Retail and Balance that support data model changes (i.e. new statistic buckets) are imported into distinct upgrade libraries, COREUPG and BALUPG. These libraries contain queries and controls that are new, modified, or a dependency on a new or modified query.

In order for the customer to have access to this new reporting, the queries and controls must be copied either to an existing customer library or a new library (e.g. - XBR70, which will specifically contain the new queries.) It is recommended that a new library be created so that any modified or custom queries created by the customer are not overwritten.

If the queries and controls are going to be copied to a new library, this library must be created.

Use the following procedure to create a new library:

1. Log into XBR Desktop as XBRADMIN.
2. Select **Administration → Libraries**.
3. Click **New** in the side panel.



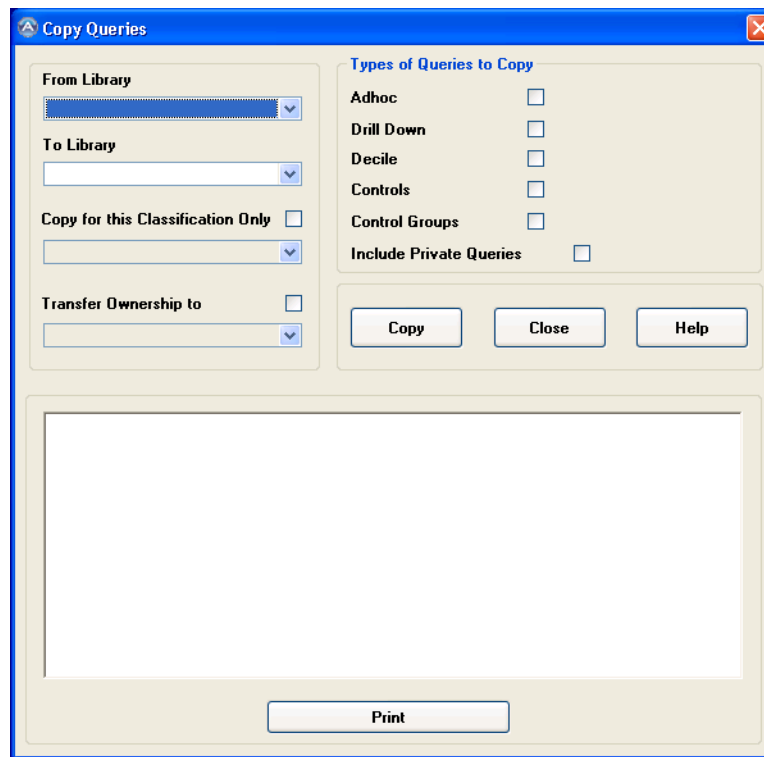
4. On the Update Library screen:
 - a. Enter a **Name** for the new library.
 - b. [optional] Enter a **Short Description** for the new library.
 - c. [optional] Enter a **Long Description** for the new library.
 - d. Select **General** as the **Library Type**.
 - e. Click **Save**.

The new library name will appear in the Libraries list.

5. Click **Close**.

Use the following procedure to copy queries and controls to an existing customer library or a new library:

1. Log into XBR Desktop as XBRADMIN.
2. Select **Administration → Copy Queries**.



3. Select "CORE XBR Upgrade Library" as the **From Library**. This is the source library for the queries and controls that are going to be copied.
4. Select the newly created library as the **To Library**. This is the destination library for the queries and controls.
5. If you do not wish to copy all of the queries and controls included with the upgrade, you may select a specific Classification to copy:
 - a. Select **Copy for this Classification Only**.
 - b. Select the Classification from the drop down list.
6. The ownership **must** be transferred to a customer user (i.e. - System Administrator):
 - a. Select **Transfer Ownership to**.
 - b. Select the new owner from the drop down list.
7. Select the **Types of Queries to Copy** in order to create all of the new queries.
The upgrade includes new or modified Adhocs, Drill Downs, and Controls.
8. Click **Copy**.

FOODSERVICE

CORE Metadata and Query Library

Database utility scripts have been developed to provide a mechanism to refresh the CORE metadata in hosted, multi-tenant environments so that new organizations added to the database receive the most current metadata and query library.

See [“Refresh XBR-mymicros CORE Metadata in Multi-Tenant Environments” on page 270](#) for information on running these scripts.

Distributing New Queries for Upgrading Customers

All new queries (Query Tracking, Inventory, and Current Day) are automatically added into the COREXBR library.

In order for customers to have access to this new reporting, the queries and controls must be copied from the COREXBR library to the XBR library.



The following procedure must be performed for each organization.

Use the following procedure to copy queries and controls from the COREXBR library to the XBR library:

1. Log into XBR Desktop as XBRADMIN.
2. Select **Administration** → **Copy Queries**.

A screenshot of the 'Copy Queries' dialog box in the XBR Desktop application. The dialog has a blue title bar with the text 'Copy Queries' and a close button. It is divided into several sections. On the left, there are two dropdown menus: 'From Library' (currently showing 'COREXBR') and 'To Library' (currently showing 'XBR'). Below these is a checkbox labeled 'Copy for this Classification Only' which is unchecked, followed by another dropdown menu. At the bottom left is a checkbox labeled 'Transfer Ownership to' which is also unchecked, followed by a dropdown menu. On the right side, under the heading 'Types of Queries to Copy', there is a list of query types with checkboxes: 'Adhoc', 'Drill Down', 'Decile', 'Controls', 'Control Groups', and 'Include Private Queries'. All these checkboxes are currently unchecked. At the bottom right of the dialog are three buttons: 'Copy', 'Close', and 'Help'. At the very bottom center is a 'Print' button. The main area of the dialog is a large empty rectangular box.

-
3. Select "COREXBR" as the **From Library**. This is the source library for the queries and controls that are going to be copied.
 4. Select the XBR library for the organization as the **To Library**. This is the destination library for the queries and controls.
 5. Select **Copy for this Classification Only**.
 6. Select "Current Day" from the drop down list.
 7. The ownership **must** be transferred to a customer user (i.e. - System Administrator):
 - a. Select **Transfer Ownership to**.
 - b. Select the new owner from the drop down list.
 8. Select the **Types of Queries to Copy** in order to create all of the new queries.
The upgrade includes new or modified Adhocs, Drill Downs, and Controls.
 9. Click **Copy**.
 10. Repeat steps 5 through 9 for the "Inventory" and "Query Tracking" classifications.

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CHAPTER

1

About This Guide

OVERVIEW

Note: The rebranding for the latest version of this documentation set is in development as part of post MICROS acquisition activities. References to former MICROS product names may exist throughout this existing documentation set.

The MICROS-Retail XBR software suite consists of the XBR® and Balance™ applications.

XBR is the loss prevention and store data analysis tool and uses exception based reporting methods to easily identify, track, and respond to store events.

Balance is the auditing tool used to validate point-of-sale information before passing it downstream. Balance flags transactions with errors, such as invalid codes or out-of-balance conditions, and isolates them to prevent these transactions from making their way into downstream systems until the problems have been corrected by an auditor.

In addition to the applications, there are two components of the XBR suite that can be installed: Query Launcher and Table Editor.

Query Scheduler allows full access to all scheduling, alert, and report distribution settings in the system. The Query Scheduler can be launched from within XBR under the Administration menu. Only those users (administrators and system managers) who are responsible for administering report scheduling and distribution will have access to Query Scheduler.

Query Launcher - You must install Query Launcher if you want to take advantage of the auto run, auto distribute, and auto alert features of XBR. However Query Launcher is not installed for all users. Query Launcher runs scheduled queries, produces report output, and generates scripts to distribute reports via email or file copies. Query Launcher is installed on a Windows machine; this could be either a Workstation or a Server. Please note that the existing XBR auto-run server could be used where applicable.

Query Launcher is started on a regular basis by a scheduled process. If you are not already using Query Launcher, this could affect your existing batch scripting as you, for example, might want Query Launcher to run every night after your XBR Loader process has finished.

Table Editor is designed to let you maintain supplemental files (i.e. non point-of-sale files) that are used with your XBR software. For example, it is an efficient means to organize and edit existing master files. Data can be managed through basic functionality like sorting, filtering, printing and exporting. Table Editor allows the flexibility of modifying multiple fields in a master file by utilizing spreadsheet or data form formats, radio buttons and drop down lists in conjunction with existing functionality.

This Implementation Guide describes the installation and configuration of MICROS-Retail XBR® (both Web and Desktop applications), Balance™, and also includes information about installing and configuring Query Launcher, and database setup information.



If you are already an XBR user and are adding Balance, please refer to the Balance Implementation Guide for installation information and procedures.

Refer to the following chapters for the information you need to get started:

- [Chapter 2, "XBR Desktop Application" on page 5](#) describes the installation and configuration of the desktop client software for MICROS-Retail XBR. Step-by-step procedures with screen images of the installation wizard and detailed configuration information guide you through the entire installation process.
- [Chapter 3, "Query Launcher" on page 59](#) provides installation and configuration instructions for Query Launcher. Step-by-step procedures with screen images of the installation software and detailed configuration information guide you through the entire installation process. Install Query Launcher if you want to take advantage of the auto-run, auto-distribute, and auto-alert features of XBR.
- [Chapter 4, "XBR Web Server Application" on page 103](#) describes the installation and configuration of the web application server and the desktop component of MICROS-Retail XBR. Step-by-step procedures with screen images of the installation wizard and detailed configuration information guide you through the entire installation process.
- [Chapter 5, "Database Setup" on page 253](#) describes database setup procedures, both a new install and an upgrade to an existing database. Procedures for Oracle and MS SQL databases are provided.
- [Appendix A, "System Architecture" on page 321](#) describes the objects used in the database, the processing and flow of data, and front-end setup needed to install and maintain Balance.
- [Appendix B, "Extensibility" on page 387](#) describes the process necessary to modify an existing CORE stored procedure or database view or create a new custom view.

Who Should Use this Guide

This guide is intended for anyone responsible for the installation, upgrade, and configuration of MICROS-Retail XBR and Balance, including Operations Technical Support and Customer Technical Support.

Upgrading

The MICROS-Retail XBR and Balance installation is a complete installation. In other words, these applications, when installed, do **not** overwrite or add components to previous versions.

If you would like to remove the previous version, use the installation CD for that version and follow the instructions in the Implementation Guide on using the "Remove" option. An alternate procedure would be to use the Windows Add/Remove Programs.

XBR Version 7.0 Supported Platforms

Database

- Microsoft SQL 2005/2008
- Oracle 10g/11g

Operating System

Application Server

- Windows Server 2003/2008

Client

- Windows XP
- Windows 7 (64-bit)

Web Server

- Apache Tomcat
- Liferay Portal
- JDK 1.6

Web Client

- Internet Explorer 8.0
- JRE 1.6

Balance

- Windows XP
- Windows 7 (64-bit)

Remote Desktop Connectivity & Access

- Remote Desktop Services (Terminal Services)
- Windows Server 2008 Release 2



The XBR Web Application server along with a Linux/Unix compatible DBMS (i.e. Oracle) are capable of being deployed in a Linux/Unix environment, however, are not certified on these platforms at this time nor have pre-configured installs for these environments.

The XBR Desktop, Balance Desktop and Query Launcher applications can only be deployed on Windows operating system environments.

CHAPTER

2

XBR Desktop Application

OVERVIEW

This chapter describes the installation and configuration of the desktop client software for MICROS-Retail XBR. Step-by-step instructions with screen images of the installation software and detailed configuration information walk you through the entire procedure.



If you are going to be using both XBR and Balance, in addition to performing the XBR installation/configuration procedures in this chapter; you must also perform the Balance installation/configuration procedures that are described in the Balance Implementation Guide.

About This Chapter

- In this chapter you will install the XBR desktop application: See [“Installing the XBR Desktop Application” on page 9](#).
- After successfully installing XBR, you may want to further configure the application for your requirements: See [“Configuring the XBR Desktop Installation” on page 45](#).
- If you need to modify your XBR installation, you can add or remove features and reinstall any features: See [“Changing an Existing XBR Desktop Installation” on page 53](#).
- Troubleshooting tips help you to resolve some common problems: See [“Troubleshooting the XBR Desktop Installation” on page 62](#).
- To add a new organization to a multi-tenant instance: [“Add Organization Attributes” on page 40](#)

Audience

This chapter is intended for the person who is responsible for installing and configuring XBR. This person should be familiar with Windows installation procedures and have some experience with editing configuration files.

Prerequisites

This chapter assumes:

- You know the name of the LDAP server, and the connection port value (if you use LDAP).
- You know the database server name and other parameters that may be required to connect XBR to it.
- You know the gateway IP address for email.
- You know the server name and database name that will be used for offline reports, if it is different from the main database.
- You know the org code that was used in the database setup.

Process Flow

Perform the following steps in the order given to install the XBR 7.0.0 Desktop application.

1. Perform the Pre-Installation checks ([“Pre-Installation Checks” on page 8](#)).
2. Install the appropriate (Oracle or SQL Server) XBR database [“Database Setup” on page 253](#)).
3. Run the InstallShield installation procedure ([“Installing the XBR Desktop Application” on page 9](#)).
4. Run the Add Organization utility ([“Adding A New Organization” on page 39](#)).



- Do **NOT** perform this procedure if you are upgrading from XBR 6.8.x.
- If you are upgrading from 6.7.x or this is a new installation, you **must** perform this procedure.
- If you are upgrading from an XBR version earlier than 6.8.x, you must perform **all** the database upgrades **before** performing this procedure.

5. **[OPTIONAL]** Configure the Desktop installation as necessary ([“Configuring the XBR Desktop Installation” on page 45](#)).

PRE-INSTALLATION CHECKS

Read this section before you install the XBR Desktop application at a user workstation.

Distributed Installations

Distribute a copy of the XBR CD to all users who will run a local copy of the XBR client software at their PC. You can make copies of the CD that has been supplied to you or you may distribute the CD files over your network.

Centralized Installations

If you are installing XBR from a centralized network drive, it is not necessary to distribute the CD to individual users. Individual products (including the XBR Desktop client software) are stored in subdirectories under a main product directory.



Regardless of whether you are installing from the network or by distributing the CD to individual users, be sure that you have a network connection to your database servers. XBR uses several .DLL files from those servers.

Settings for XBR Installation: dtvcustom.ini

XBR uses a file called `dtvcustom.ini` that MICROS-Retail delivers on the installation CD. This file is important because it contains settings that are used during installation for customers who:

- Use more than one video vendor.
- Want to provide database settings to their users who are installing XBR 7.0.0.
- Want to provide a default company email address.

The InstallShield application prompts you through the installation by using the contents of `dtvcustom.ini` as defaults for some of the parameter settings in the customer's .ini files.

Installing From a Network Drive

If your users install XBR from a network drive and the `dtvcustom.ini` file is on your installation CD, make sure the `dtvcustom.ini` file is in the same directory as the `setup.exe` file for XBR 7.0. If it isn't in the same directory, its settings are not used during installation.



If you wish to install the XBR Desktop application in more than one location, you must run the installation program for each location. Do not copy the installed XBR Desktop application from one location to another.

INSTALLING THE XBR DESKTOP APPLICATION



A dtvcustom.ini file may have been created that will provide default entries for some of the InstallShield screen values.

1. Insert the XBR installation CD into the CD drive. The installation program should start automatically.



If the CD doesn't start automatically, or if you are running the CD off the network:

- At the Windows desktop, click the **Start** button, then select Run.
- In the "Run" window, click the **Browse** button and select the drive where the installation CD is located.
- Find the file setup.exe, select it and click **OK**. It is located in the \Desktop folder on the installation CD.
- In the "Run" window, click **OK**. The InstallShield program runs, and displays the following Welcome screen window.

2. Click **Next** to continue with the installation process.

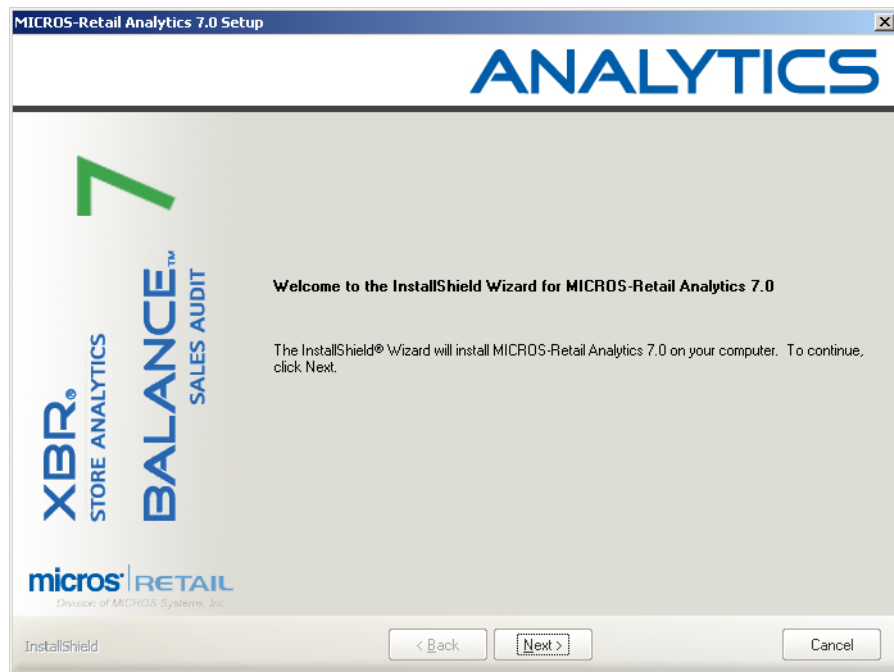


Figure 2-1: Welcome Screen for Install Wizard

3. Click **Next** to accept the default destination directory:

C:\MICROS-Retail_Analytics_7.0.

Although you can change the drive letter, it is best to use MICROS-Retail_Analytics_7.0 as the directory name. However, if you need to change the directory, click the **Browse** button, type in or navigate to and select the new directory, and click **OK**.

Click the **Next** button.

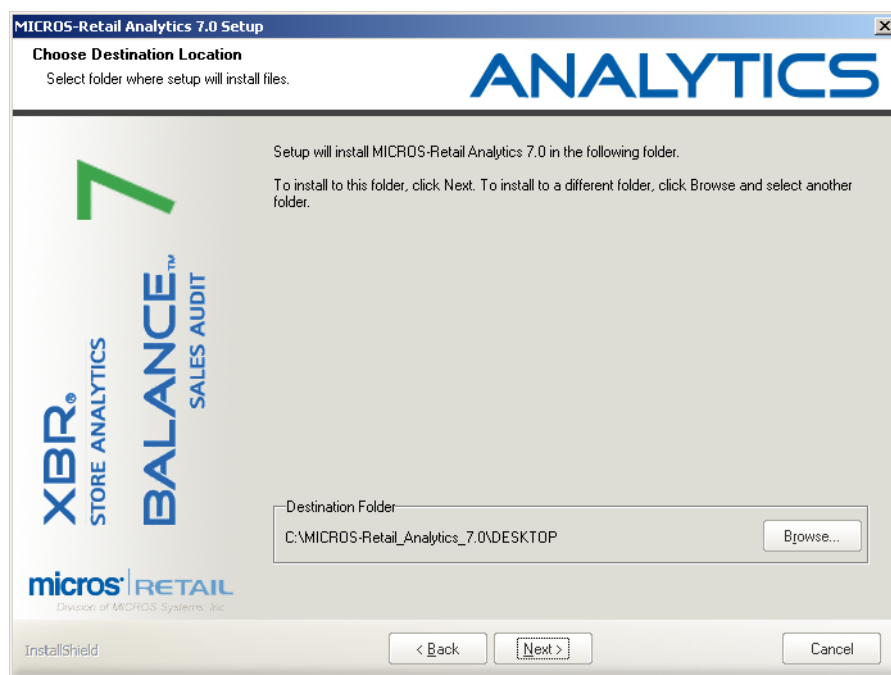


Figure 2-2: Destination Location for XBR

4. You are prompted to choose the type of installation you want to perform.
 - A **Typical** installation installs the components of the XBR client (XBR, Query Viewer, and Table Editor) and creates the directories shown in the table below.

Subdirectory	Files
XBR	XBR program files.
Help	On-line help files.
Picts	Quick Run icon picture files
Table_Editor	Table Editor files.
Query_Viewer	Query Viewer files.
PDF	Installation files for the driver that allows reports to be exported in PDF format.

- A **Compact** installation only installs XBR and Balance (if purchased).
- A **Custom** installation allows you to pick the components that you want to install. Depending on the components installed, one or more of the directories in the table below are created.

Subdirectory	Files
OrgIntro	Org Intro utility.
Balance	Balance program files.
Query_Launcher	Query Launcher program files.

If the “Table Editor” module is installed, its configuration file, `dtveditor.ini`, is set up with the same database connection attributes as the file `dtvanalytics.ini`.

Likewise, if the “Balance” module or “Query Launcher” are installed, their corresponding configuration files (`dtvbalance.ini` for Balance; `dtvlauncher.ini` for Query Launcher) are set up with the same database connection attributes as `dtvanalytics.ini`.

For a server installation, select **Custom** and click **Next** to continue to the next step.

For a local user installation, select **Typical**, click **Next**, and [go to step 6](#).

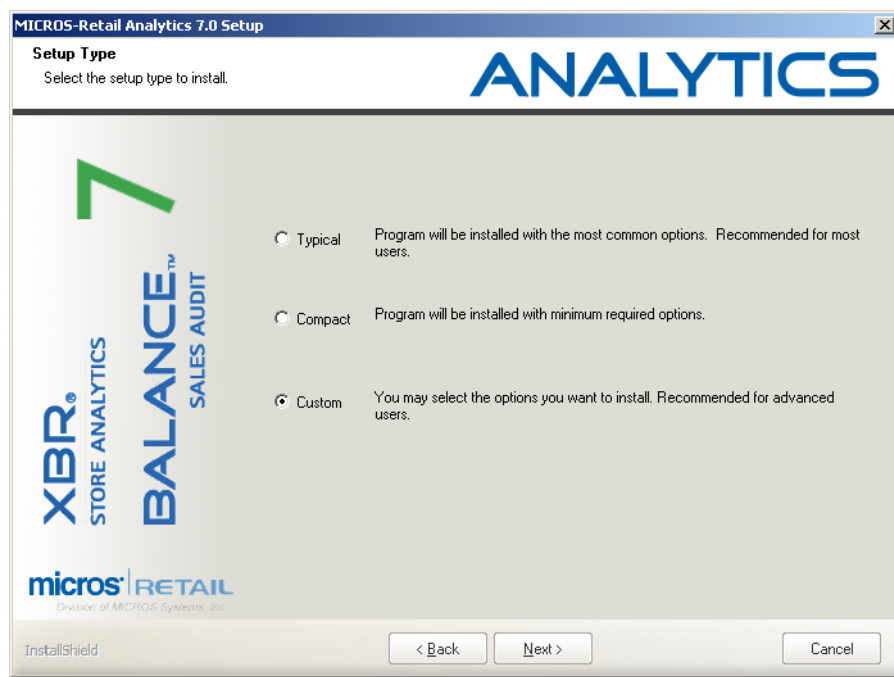


Figure 2-3: Select Installation Type

5. If you chose to perform a Custom installation, the screen shown below is displayed. Check XBR, Query Launcher, OrgIntro, and any other component(s) that you want to install and click **Next** to continue.

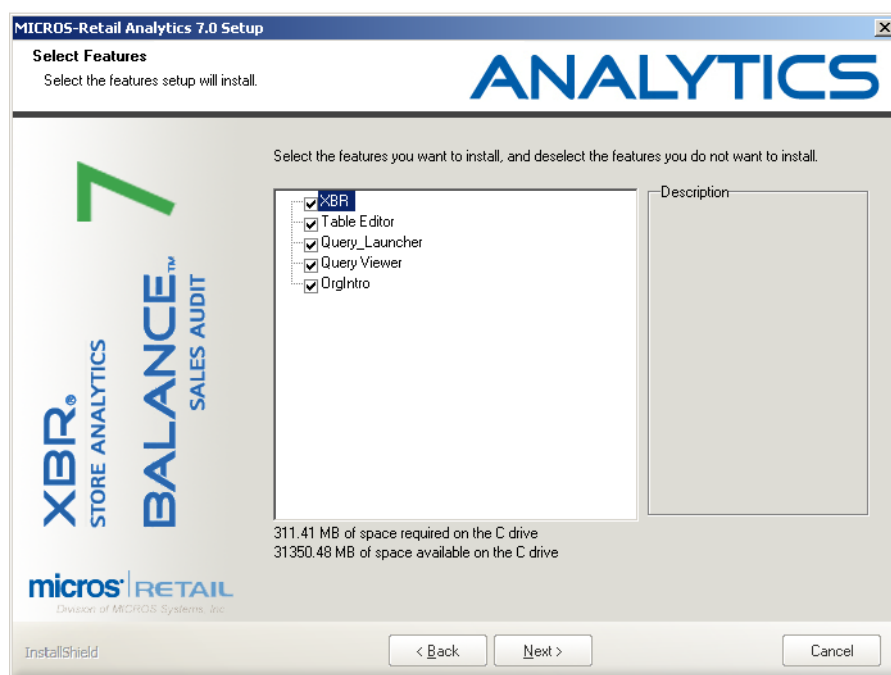


Figure 2-4: Select Features

6. By default, the installation CD creates a program folder called MICROS-Retail Analytics 7.0 with desktop shortcut icons for the applications being installed. To change the default folder, enter a different name or select another existing folder and click **Next**.

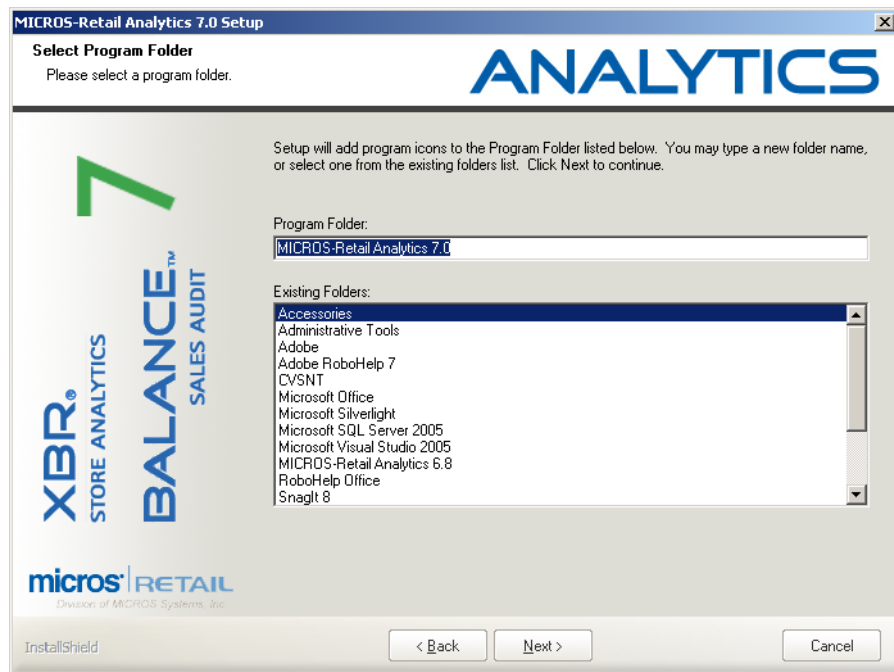


Figure 2-5: Program Folder

7. If necessary, you may change the settings you have selected by clicking **Back** to return to previous screens and make changes. If you believe that your settings are correct, click **Next** to begin the installation. The status of the installation is displayed as it occurs.

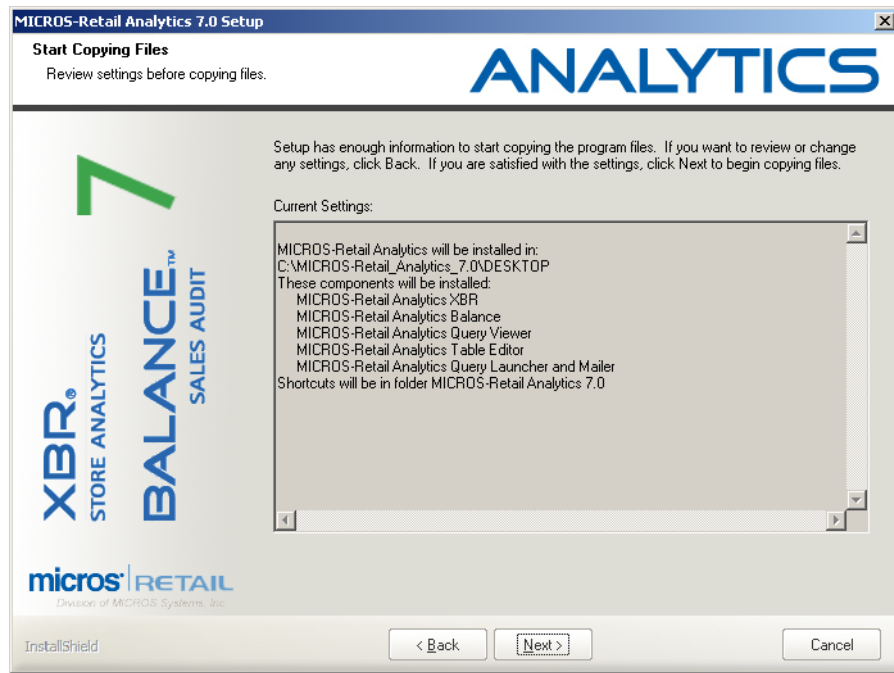


Figure 2-6: Current Settings



The Organization Code that you enter in the next step **MUST** match the Company Code you will enter in the Org Intro utility later in this installation (see [“Add Organization Attributes” on page 40](#)).

8. Once the installation has finished, enter your company name and organization code. Click **Next**.

Figure 2-7: Company Name and Organization Code

9. If you are installing the XBR Desktop on a server that will be accessed via Terminal Services or Citrix, select **Yes**; otherwise, select **No**.

Click **Next** after selecting an option.

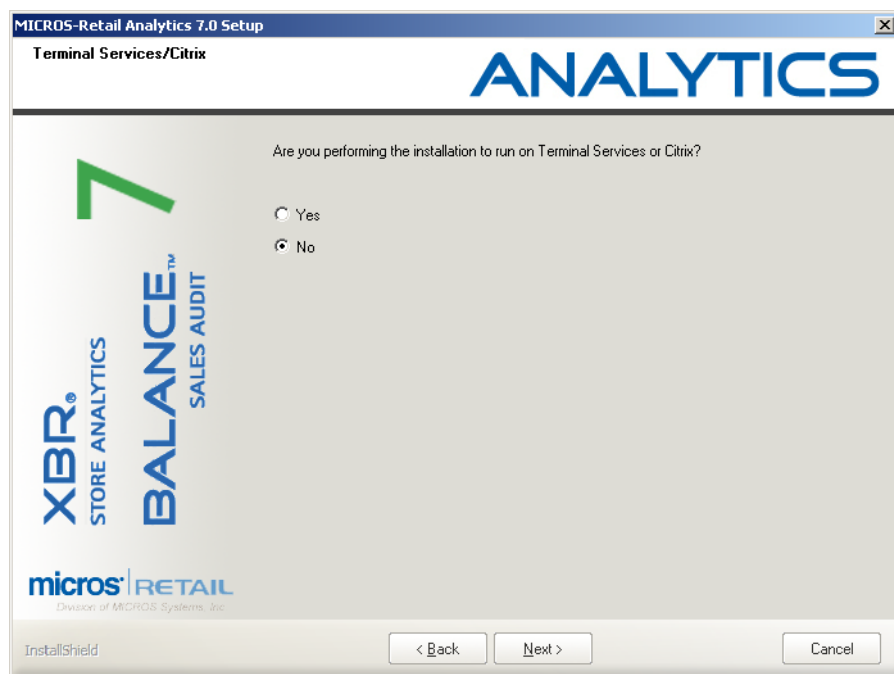


Figure 2-8: Terminal Services

10. If you use LDAP, select **Yes** and click **Next** to continue with the next step.
If you do *not* use LDAP, select **No**, click **Next**, and [go to step 11](#).

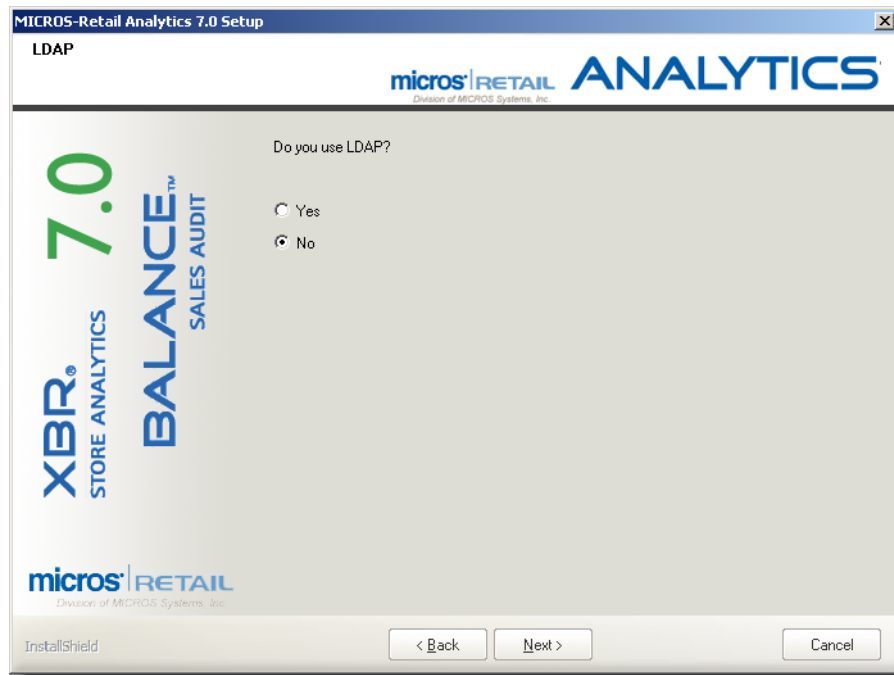


Figure 2-9: LDAP Option



LDAP means Lightweight Directory Access Protocol, an internet protocol used by email and other programs to look up information from a server. This option is not available for a hosted mymicros implementation.

(Detailed descriptions of the LDAP attributes are available in [“LDAP Configuration Settings” on page 48](#)).

- a. If you use Active Directory as the LDAP service, select **Yes**; otherwise, select **No**. Click **Next** after selecting an option.

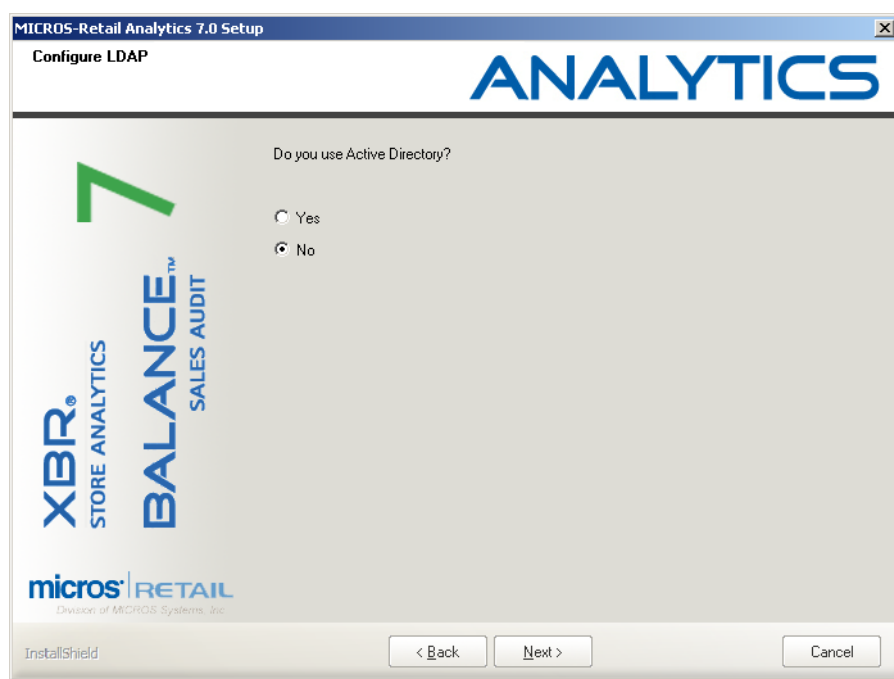


Figure 2-10: Active Directory

- b. If you run LDAP over SSL (Secure Socket Layer), select **Yes**; otherwise, select **No**. Click **Next** after selecting an option.

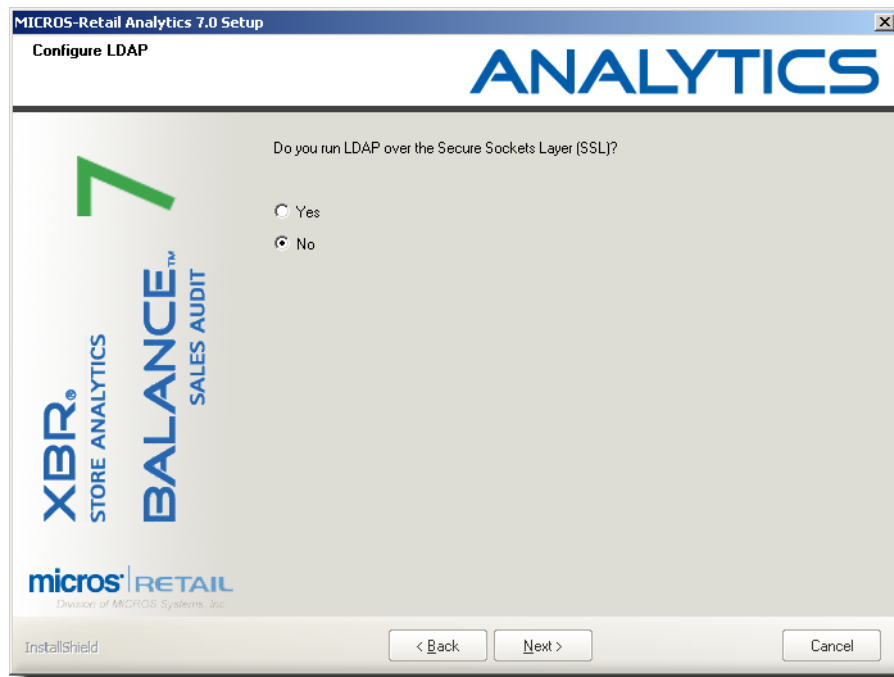


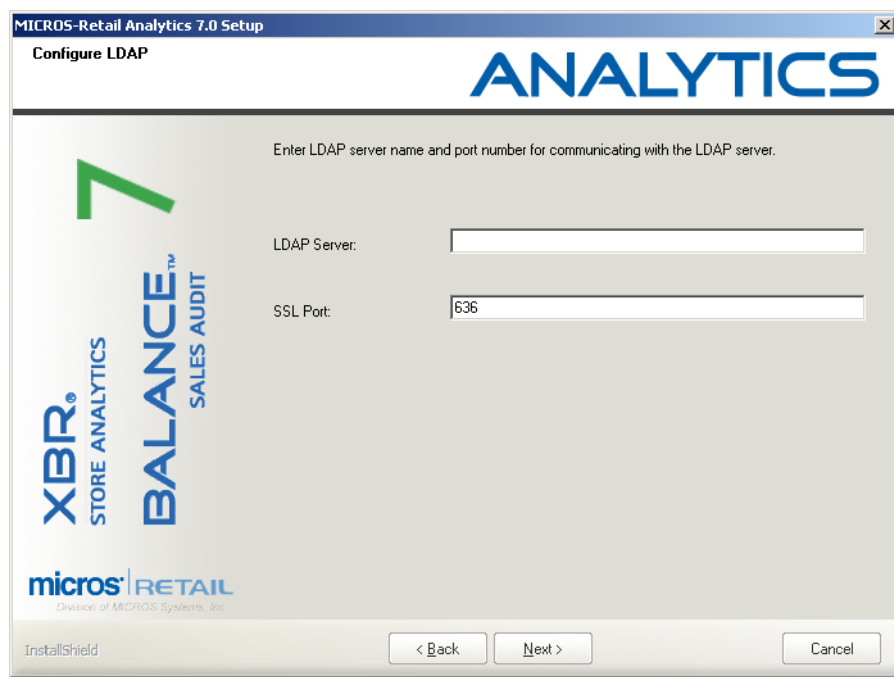
Figure 2-11: LDAP Over SSL



If you select "Yes" you may need to install an SSL certificate. This type of installation is not part of the current process and has to be done separately. Please refer to ["Installing an SSL Certificate" on page 55](#) for more information.

- c. Depending on your response to the previous screen, you will see one of the following screens. Complete the form and click **Next**.

If you responded **Yes**, enter a name for the LDAP Server and a number for the SSL Port (default port value is "636").



The screenshot shows the 'MICRO5-Retail Analytics 7.0 Setup' window with the 'Configure LDAP' tab selected. The window features the 'ANALYTICS' logo at the top right and a large green number '7' on the left. Below the number is the text 'XBR. STORE ANALYTICS' and 'BALANCE SALES AUDIT'. The main area contains the instruction 'Enter LDAP server name and port number for communicating with the LDAP server.' and two input fields: 'LDAP Server:' and 'SSL Port:'. The 'SSL Port' field contains the value '636'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'InstallShield' logo is visible in the bottom left corner.

Figure 2-12: LDAP Server and SSL Port

If you responded **No**, enter a name for the LDAP Server and a number for the Clear Port (default port value is "389").

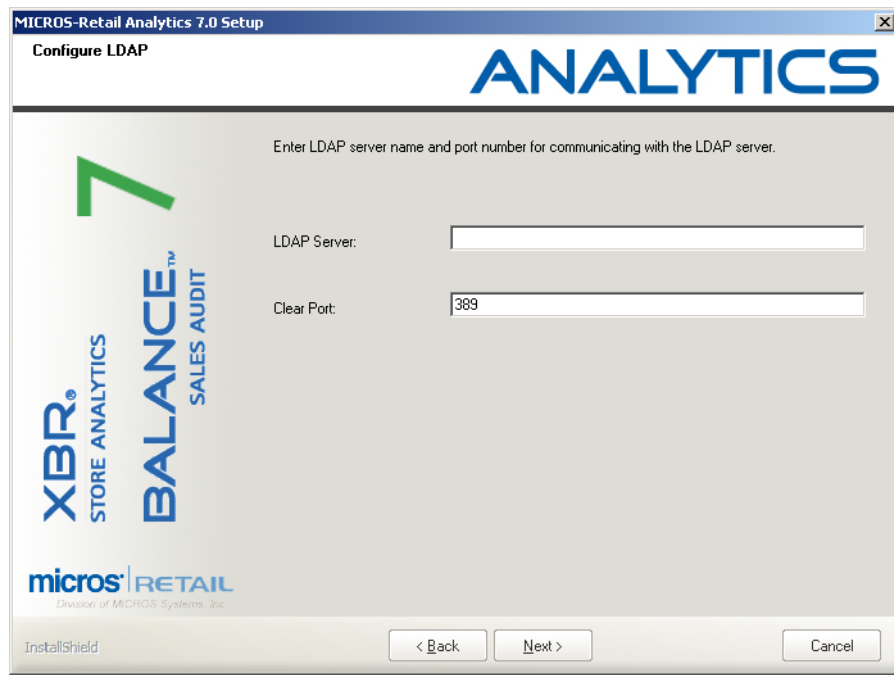


Figure 2-13: LDAP Server and Clear Port

- d. This screen allows you to identify a base distinguished name (top level) of the LDAP directory. Enter the distinguished name and click **Next**.



The format of the entry at this screen is LDAP-dependent. If you are not familiar with the LDAP format, consult your LDAP specialist. The distinguished name is a unique identifier for an entry in the LDAP directory hierarchy. It is used to find, delete, modify, or insert an entry in the directory. The name is used as the starting point for the search. In the example below, o = organization and ou = the organizational unit.

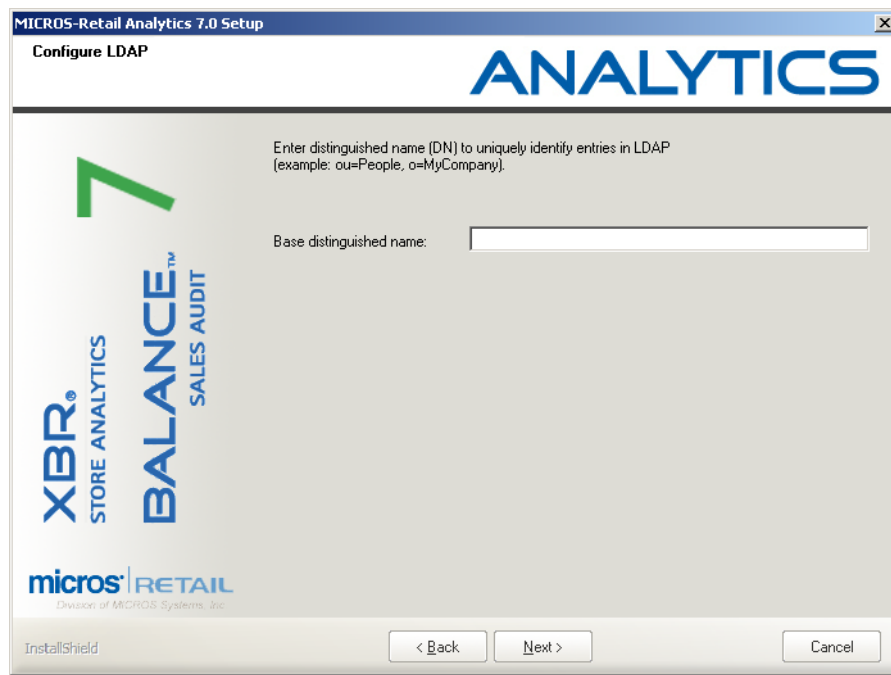


Figure 2-14: Distinguished Name For LDAP

- e. If your company manages the user application security level through LDAP (rather than by using the internal XBR application security levels), you should enter the pattern which designates the role of the user at this workstation.



The “pattern” defines the format that is followed for specifying different user roles and is related to the user’s security level. The pattern is “XBR-USER-” and the role follows the right-most hyphen.

For example, established role names include XBR-USER-SYSADMIN (System Administrator), XBR-USER-SYSMGR (System Manager), XBR-USER-LP (Analyst), and XBR-USER-RO (Read-Only).

If your organization uses a different approach for specifying user roles, the entry “IGNORE” should be made in the “User Role” field.

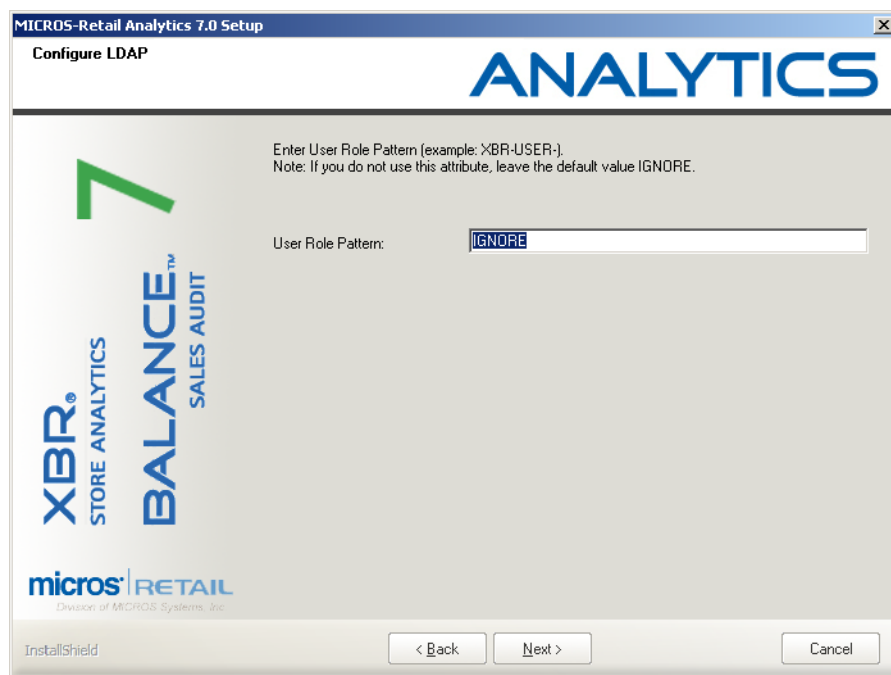


Figure 2-15: User Role Pattern

11. If you are using Oracle as your database type, select **Oracle**, click **Next**, and continue with the next step.

If you are using SQL Server as your database type, select **Microsoft SQL Server**, click **Next**, and go to step [15](#).

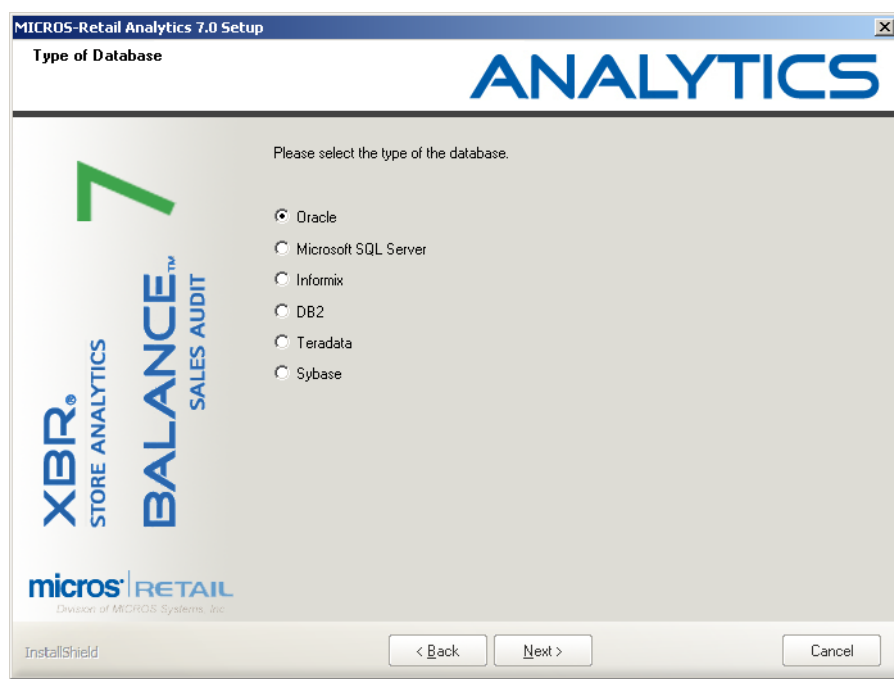


Figure 2-16: Database Type

12. Select how you will access the Oracle database:

- a. Select PowerBuilder Native Drivers, click **Next**, and continue with the next step, or
- b. Select ODBC, click **Next**, and go to step [17](#).

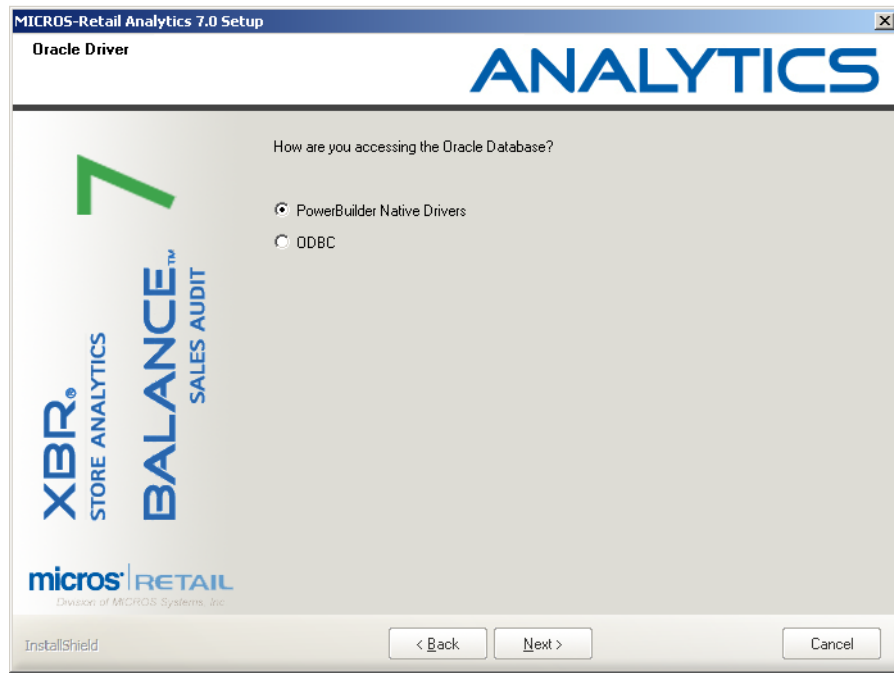


Figure 2-17: Access the Oracle Database

13. Select the version of Oracle (10g or 11g) you are using and click **Next**.

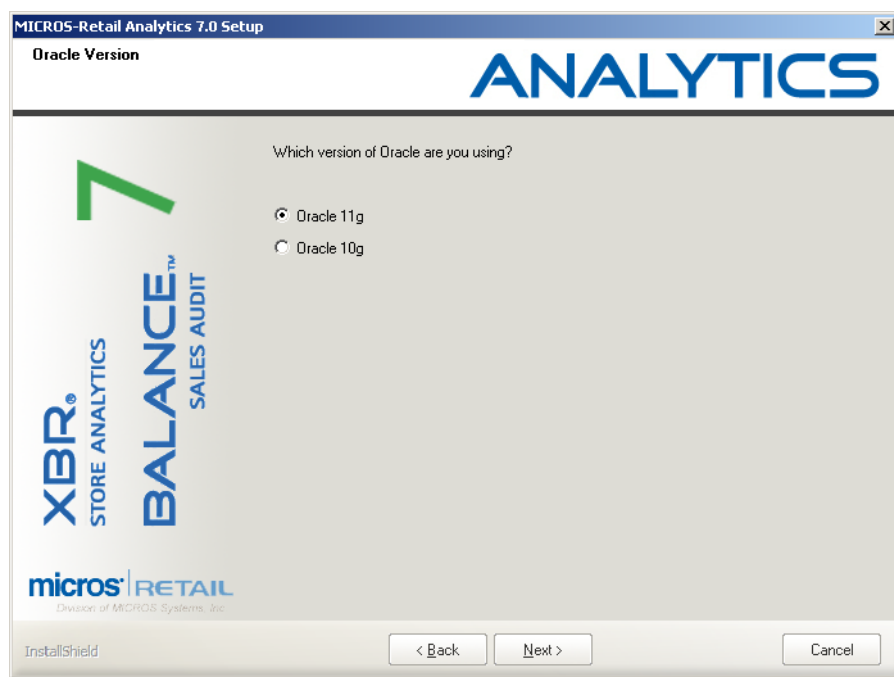


Figure 2-18: Oracle Version

14. Skip to step [17](#).

15. After you select SQL Server as your database type, you are prompted for the database name to which you want to connect. Enter the database name and click **Next**.

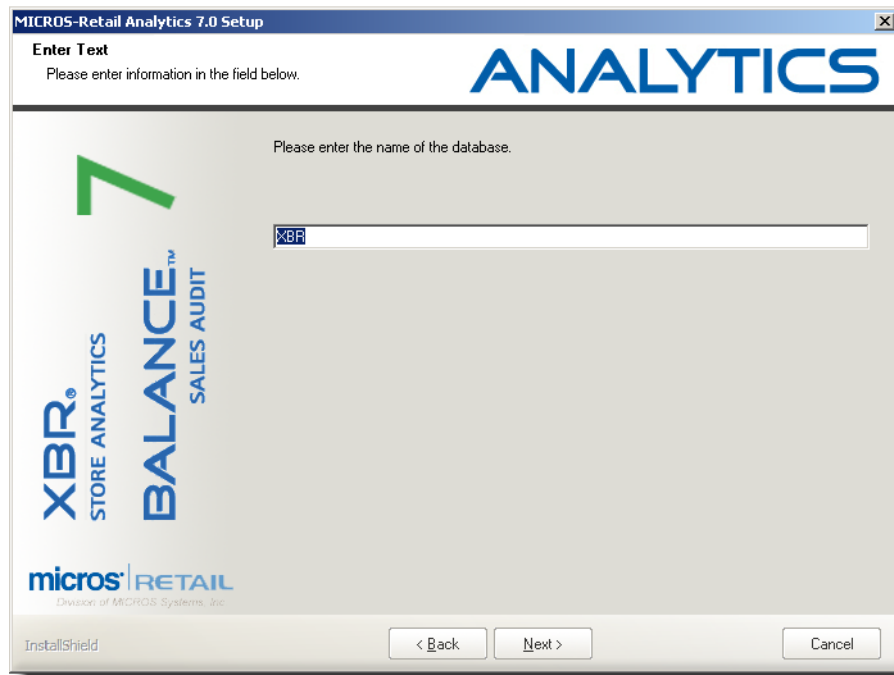


Figure 2-19: SQL Server Database Name

16. If your company uses NT Authentication, select **Yes** to indicate authentication is present. The default option "IntegratedSecurity='SSPI'" is added to a parameter string in the next step.

If your company does not use NT Authentication, select **No**.

Click **Next**.

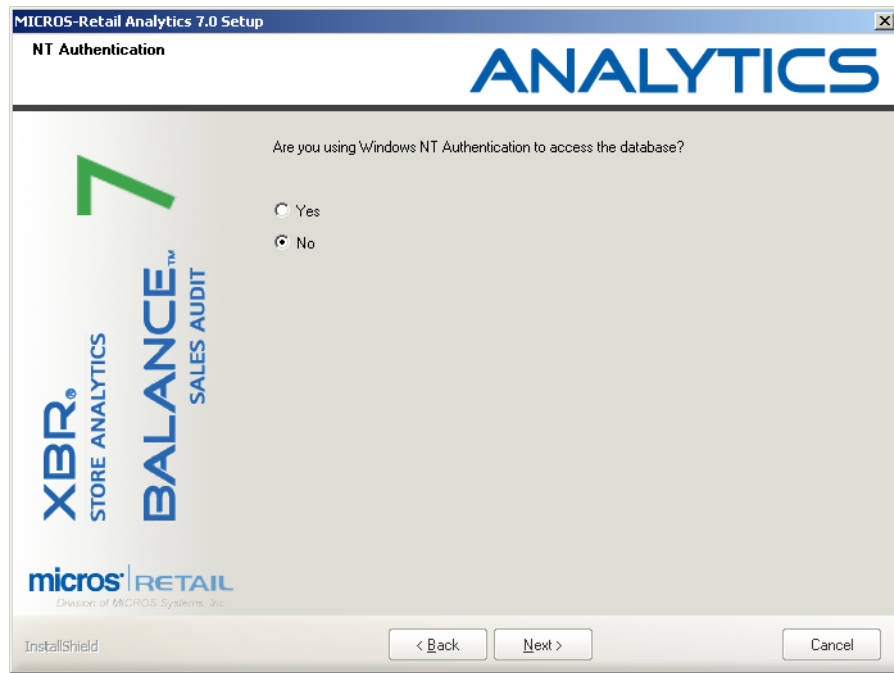


Figure 2-20: NT Authentication

17. Enter the Database Server, Parameters and Connection information on the screen and click **Next**.

MICRO5-Retail Analytics 7.0 Setup

Please enter remaining connection parameters.

ANALYTICS

Please enter server name, database parameters, and connection options.

7

XBR® STORE ANALYTICS

BALANCE™ SALES AUDIT

micro5 | RETAIL
Division of MICRO5 Systems, Inc.

InstallShield

Server

Parameters Staticbind = 1, PwDialog = 1

Connect

< Back Next > Cancel

Figure 2-21: DB Server, Parameters, Connection Information

18. Offline reports are stored in the database. The database may be either the main database (as shown in the previous screen) or any other database, regardless of whether or not it is on the same server.

This screen allows you to specify if the same database connection attributes (server name and database name) are used for offline reports.

If you are going to use the same database: select **Yes**, click **Next**, and go to step [20](#).

If you are going to use a different database: select **No**, click **Next**, and continue to the next step.

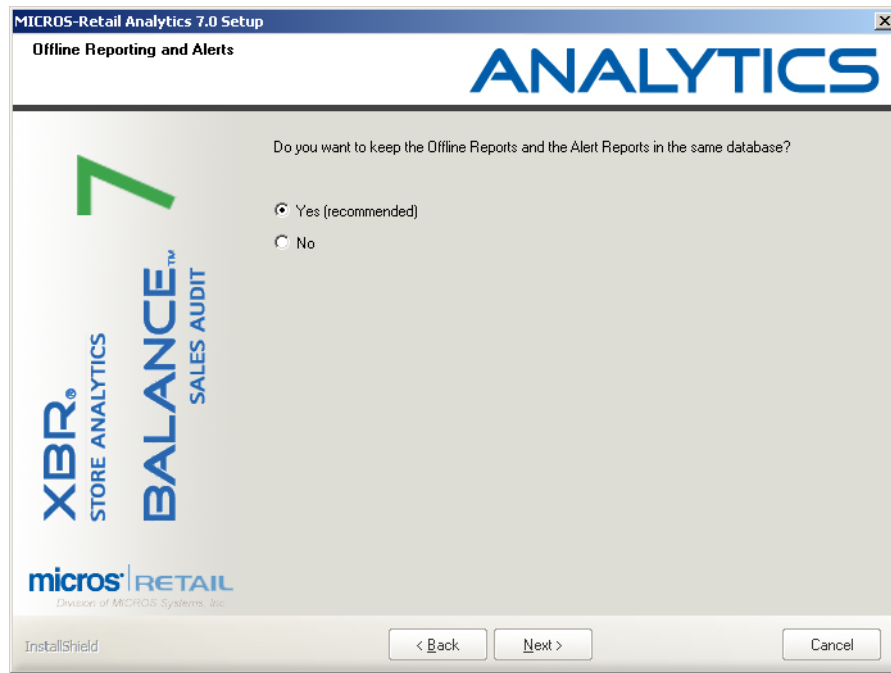


Figure 2-22: Offline Reports and Alerts

19. If you are going to use a different database for Offline Reporting and Alerts:
- Select the database type and click **Next**.

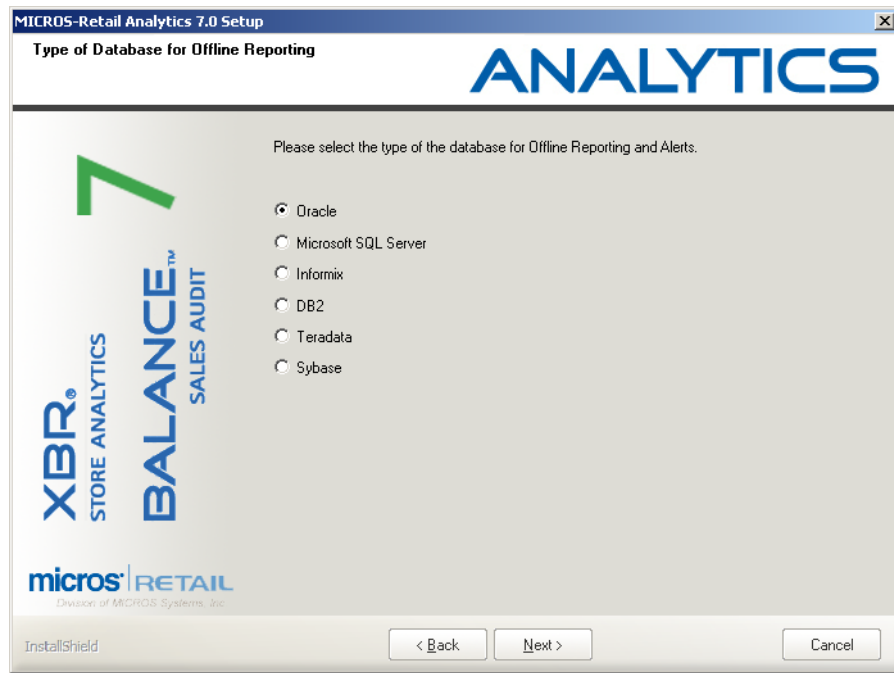


Figure 2-23: Database Type for Offline Reports



Depending on which database, Oracle or Microsoft SQL Server you selected, you will see one of the following screens.

- b. If you selected Oracle: provide a server name, click **Next**, and continue with the next step.

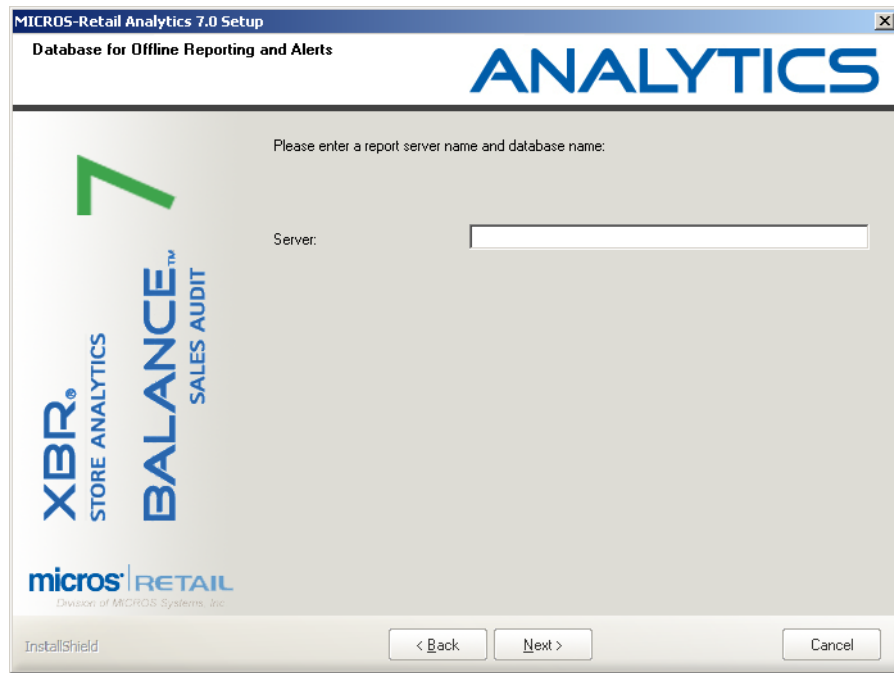


Figure 2-24: Offline Reports Oracle - Server Name

- c. If you selected Microsoft SQL Server, provide a server name and a database name, click **Next**, and continue with the next step.

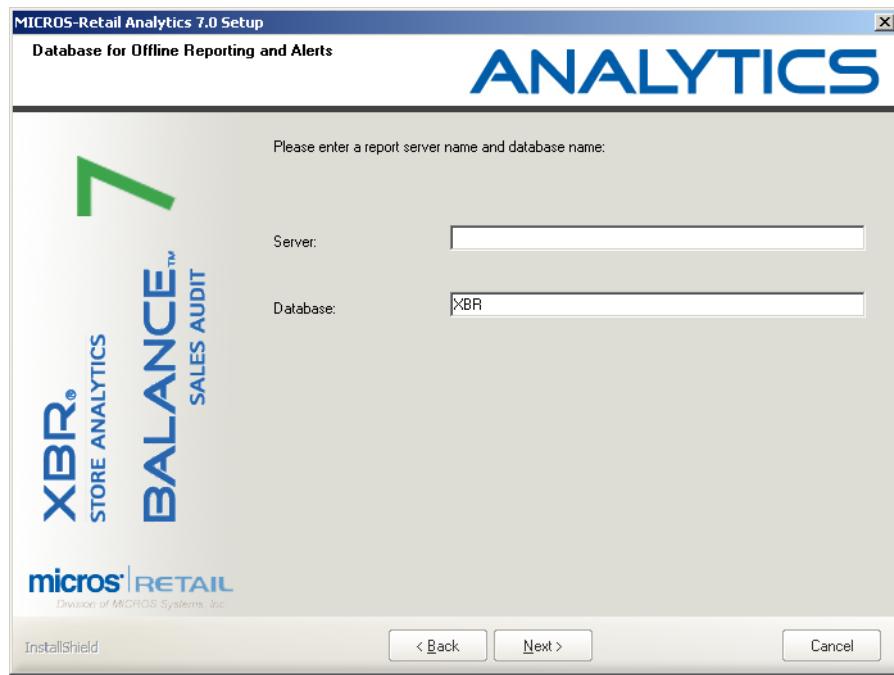


Figure 2-25: Offline Reports SQL Server - Server Name and Database Name

20. At the Mail gateway address window, enter the IP address or name of your SMTP relay (your email server) and click **Next**.

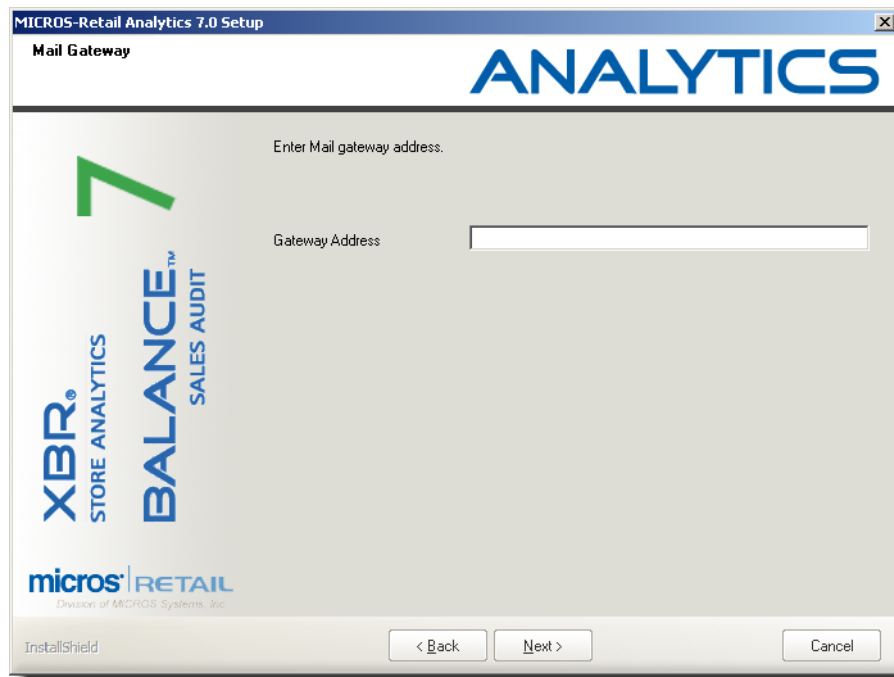


Figure 2-26: IP Address or Email Server Name



If there is no default entry or you don't know the name of your SMTP relay, leave the field blank and complete the install. Refer to [“Email Configuration Settings” on page 51](#) for information about how to enter the mail gateway address.

21. Enter the default email address to be used by the sender, for example, "myemail@company.com". Click **Next**.

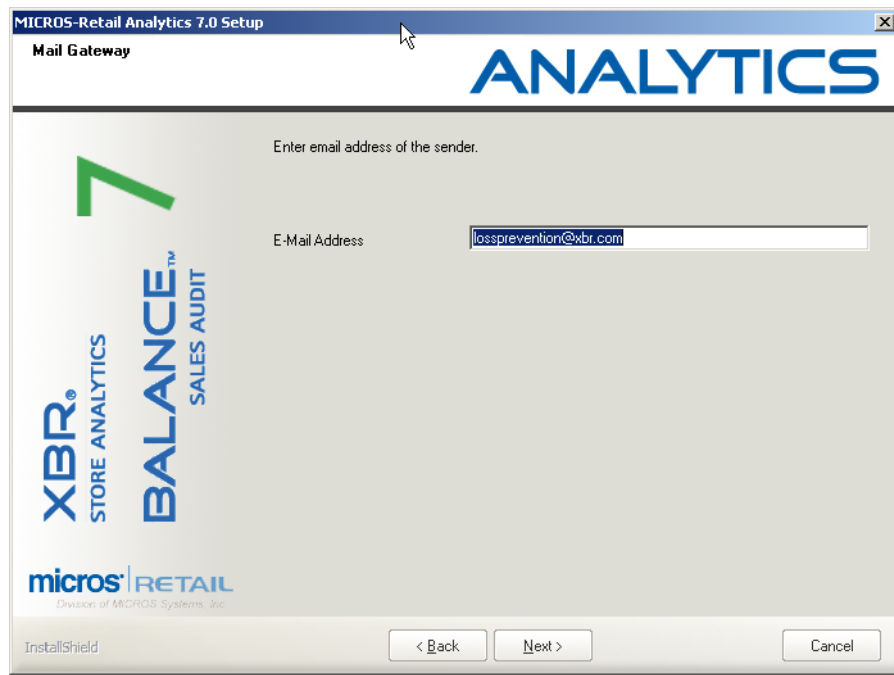


Figure 2-27: Sender's Email Address

22. This screen allows you to specify if you use video. If you do, select **Yes**, click **Next**, and continue with the next step.

If you do *not* use video, select **No**, click Next, and [go to step 24](#).

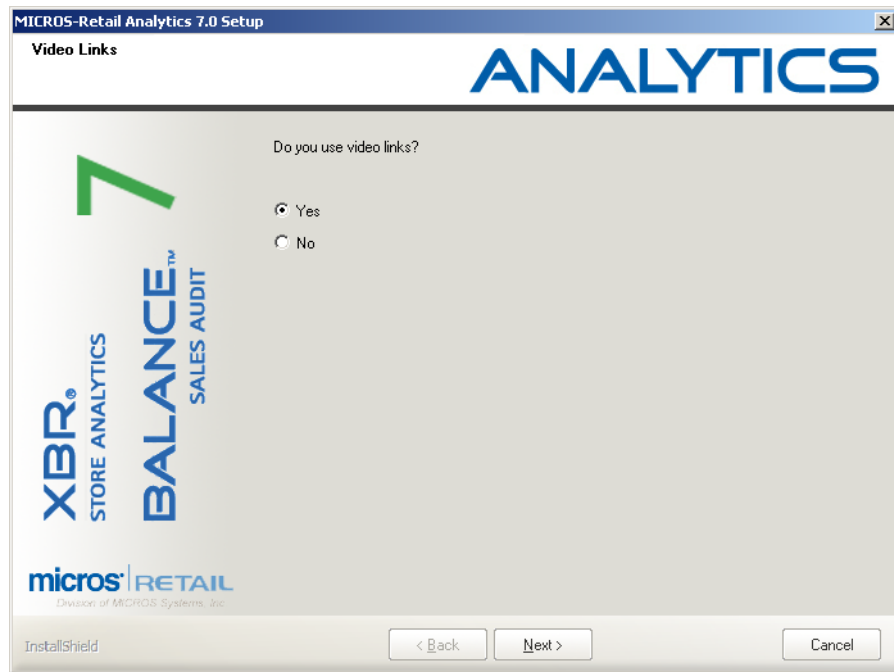


Figure 2-28: Video Links

23. If you selected **Yes** in the previous screen you are prompted to navigate to (either on the network or on your local hard drive) and select the default executable file that runs your video.

If your company uses only one video vendor, the following entry is written to the file `dtvanalytics.ini`:

```
VideoDir= line
```

After you select the default video executable file, click **Open**.

If more than one video vendor is used, refer to [“Update XBR Desktop's dtvanalytics.ini file.” on page 291](#) in the Video Integration Chapter for more information.

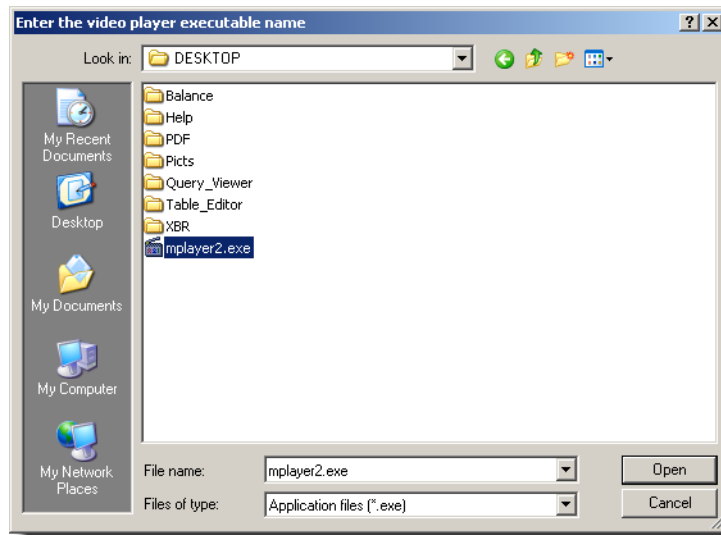


Figure 2-29: Video Player Executable

If you don't know where a video vendor's executable file resides, select **Cancel**.

24. After the "Installation Complete" screen displays, click **Finish** to complete the installation. You're done with the InstallShield portion of the installation.

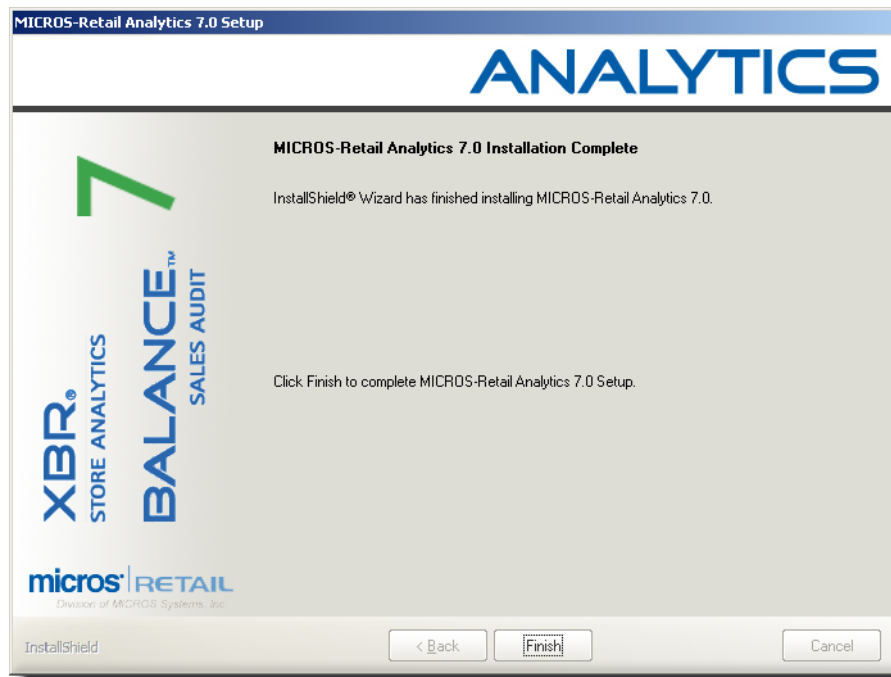


Figure 2-30: Installation Complete

The next step in the installation process is to add any organizations that need to be added (see [“Adding A New Organization” on page 39](#)).

ADDING A NEW ORGANIZATION



- Do **NOT** perform this procedure if you are upgrading from XBR 6.8.x.
- If you are upgrading from 6.7.x or this is a new installation, you **must** perform this procedure.
- If you are upgrading from an XBR version earlier than 6.8.x, you must perform **all** the database upgrades **before** performing this procedure.

This section is intended to outline the required steps to introduce an organization to the deployment. The database must already be installed (or upgraded to 7.0.0) and you must have the connection information before proceeding with this process. This is required for both single tenant and multi-tenant environments and it is essential that this process is run for all new installs and 7.0.0 upgrades in order for the customer to access and utilize the application.

When the database is installed, it will include CORE metadata in most of the application tables. This data will be populated with an OrgID of -1001. This data needs to be cloned for the new organization so that the customer has their own metadata (data dictionary, lookups, date names, users, etc.) to use and modify. In multi-tenant environments, this will also prevent other organizations contained within the implementation from being affected. This data duplication process is done using a utility application Org Intro (`orgintro.exe`), which is installed in the `\MICROS-Retail_Analytics_7.0\DESKTOP\OrgIntro` directory during the XBR Desktop server installation. This process will call database scripts that clone the customer specific metadata for their OrgID, define the company code and URL, and create the default users for the newly added organization. The following sections outline the instructions and screens in the Org Intro application.

Connect to Database

First you will need to connect to the database with proper XBRADMIN credentials.

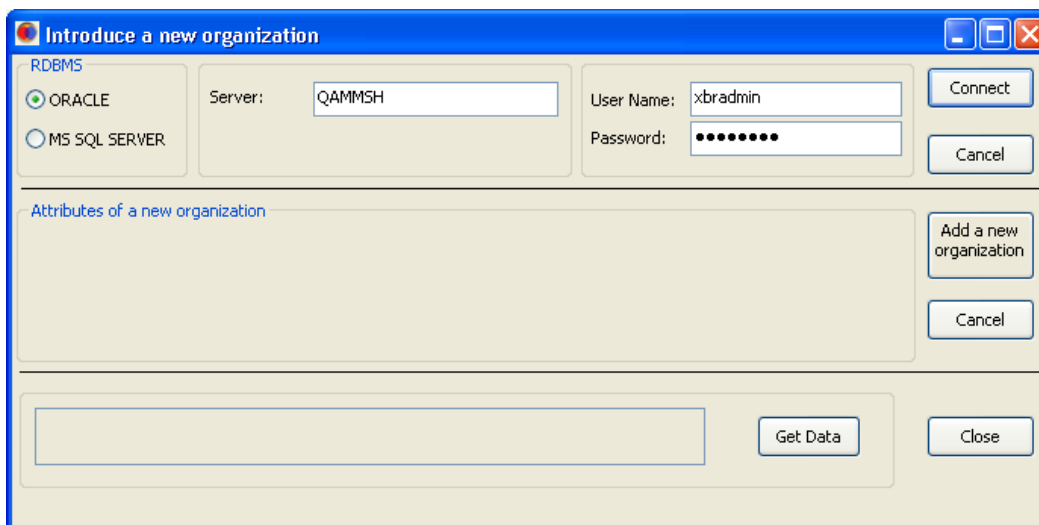


Figure 2-31: New Organization Window

1. Select the database type (Oracle or MS SQL Server).
2. Enter the name of the database Server.
3. Enter your User Name.
4. Enter your Password.
5. Click **Connect**.

Add Organization Attributes

Next you will need to add the specific attributes for the new organization. This information will be stored in the organization's profile and used throughout the application. For hosted customer, the Company Code will also be used for DNS configuration to direct the customer to the correct login page for the XBR Web application.

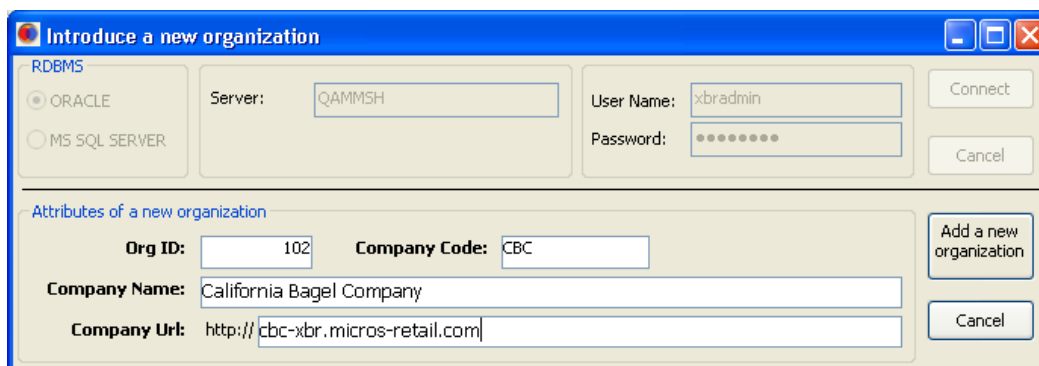
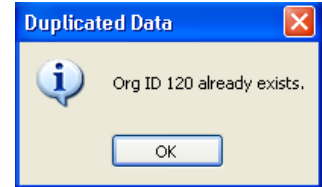


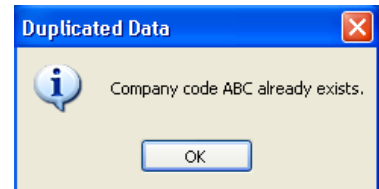
Figure 2-32: New Organization Attributes

Org ID: This must match the organization ID used in the transactional data. If the Org ID already exists in the database, you will receive an error.



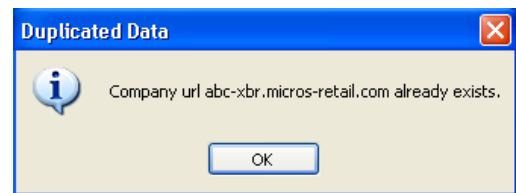
The Company Code that you enter in the Attributes section **MUST** match the Organization Code you entered in step 8 of the InstallShield installation process.

Company Code: This will be in the dtvanalytics.ini file for the XBR Desktop application and DNS configuration for the XBR Web application. If a duplicate entry is entered, you will receive the error message shown at the right.



Company Name: Enter the full company name in this field.

Company URL: This is the web address that customers will use to access the XBR Web application. Hosted customers will always follow this naming convention: `https://xxx-xbr.micros-retail.com` where xxx is the Company Code. When entering the URL in this field, the `https://` should be omitted. If you enter a URL that already exists, you will receive the error message shown to the right.



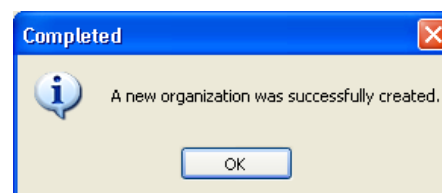
Once all required fields are completed, click **Add a new organization** to add the customer to the database. This adds a record in the ADM_ORGANIZATIONS table.

Add Organizational Data & Users

Once the new organization has been successfully added to the database, you will receive a confirmation and instructions to click on the **Get Data** button. This will run the database scripts to clone the customer metadata and create the default users.

Figure 2-33: Add New Organization Confirmation

Once the organizational data and users have been created, you will receive a confirmation message and the application will automatically close.



Additional Configuration for Hosted Customers



This section is applicable for hosted customers in a multi-tenant environment.

XBR Desktop Application

Now that the new organization has been set up in the database, the XBR Desktop application installation needs to be configured in order to log in as the new customer. This is done in `dtvanalytics.ini` file where the `OrgCode` (Company Code) is explicitly defined in the `[ORGANIZATION]` section. Each customer will use the same application executable that will call a unique `dtvanalytics.ini` file that references their Company Code. See sample configuration files below.

The XBR Desktop application will be accessed via Citrix or Terminal Services. There will be an icon on the Citrix or Terminal Services page that will allow the customer to launch the XBR Desktop application.

Table Editor

The configuration file for Table Editor (dtveditor.ini) will also reference the Company Code and need to be replicated for each customer. The individual Table Editor .ini file is explicitly defined in the TableINI entry in the dtvanalytics.ini file. See sample configuration files below.

Sample configuration files:

```
Filename- dtvanalytics_abc.ini
[ORGANIZATION]
OrgCode=ABC

TableINI=..\Table_Editor\dtveditor_abc.ini
Filename- dtveditor_abc.ini
[ORGANIZATION]
OrgCode=ABC

XBRLPINI=dtvanalytics_abc.ini
```

Logging In

The organization code will be invisible to customers when logging into the XBR Desktop application. When the user logs in, the application will automatically use the OrgCode previously set in the dtvanalytics.ini file.



The XBRADMIN User ID exists for all organizations and can be used to login to any customer environment but only for one organization at a time. There is no ability to see across organizations. When the XBRADMIN User ID is entered in the login window, a Company Code field displays the organization code from the dtvanalytics.ini file. This can be temporarily overridden at the time of login and will not affect the .ini file setting.

The same login logic as above also applies to Table Editor.

Once logged into the XBR Desktop application, the Copy Queries function should be used to copy the CORE queries to the customer XBR Library. Any additional customer specific metadata changes (i.e. lookups, custom query changes, user profile setup, etc.) should also be made at this time.

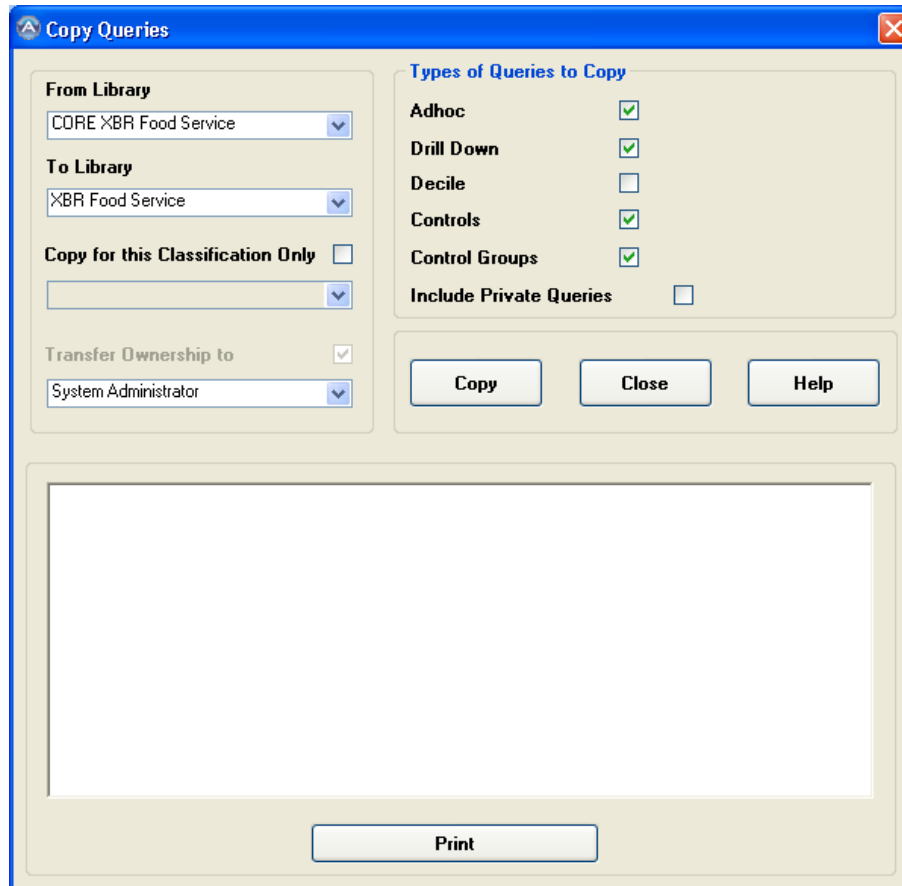


Figure 2-34: Copy Queries Window

Continue with the configuration of your XBR installation (see [“Configuring the XBR Desktop Installation” on page 45](#)”).

CONFIGURING THE XBR DESKTOP INSTALLATION

After you have completed the installation of XBR, you may further configure the application by defining your video vendors, setting up the Loss Prevention Management System (LPMS), setting up Light Direct Access Protocol (LDAP) and, if you follow Payment Card Industry (PCI) standards, setting up for your PCI configuration.

Video Vendor Configuration Settings

Use the following to create an entry for each video vendor in the [video] section of the dtvanalytics.ini file.

The [video] section of the file contains the entry:

```
Vendor= [path to executable]
```

The [video] section of the dtvanalytics.ini file will look similar to the following example, except that it lists only those vendors your company uses and it lists your company's directories where the vendors' executables are found.

```
[video]
SENSORMATIC=c:\sensormatic\video.exe
KYRUS=[Your Path]
IVEX=[Your Path]
ARROWSIGHT=[Your Path]
MIRASYS=[Your Path]
KALATEL=[Your Path]
IMAGEVAULT=[Your Path]
DEDICATEDMICROS=[Your Path]
I3DVRREMOTE=[Your Path]
FOCUSMICRO=[Your Path]
VERINT=[Your Path]
```

The vendors whose cameras are positioned over the registers in the stores are those that must be defined in the dtvanalytics.ini file during installation. Each register's video vendor is defined in the store/register master (mst_register_tab) table. Each video is specific to a register. If a register's video vendor is not listed in the dtvanalytics.ini [video] section, the executable listed in the entry "VideoDir= line" is used instead.

LPMS Configuration Settings

The Loss Prevention Management System (LPMS) configuration settings are found in the [LPMS] section of the file dtvanalytics.ini.

If you use LPMS, set up LPMS database connection information in the [LPMS] section in the dtvanalytics.ini file. The [LPMS] section looks like this:

```
[LPMS]
DBMS =OLE DB
ServerName =
Database =
DbDBMS =SQLSERVER
DbParm=PROVIDER='SQLOLEDB',DATASOURCE='XP-WL',
PROVIDERSTRING='database=LPDATA',Staticbind = 1
Lock = RC
LPMSDIR=C:\Program Files\LPMS\lpmain.exe
LPMSEXP=c:\
```



The DBMS, ServerName, and DBDBMS entries will be pre-populated by values inherited from the main database and can be changed if necessary.

The following table shows how to set up the entries in the [LPMS] section of the dtvanalytics.ini file.

Configuration Parameter	Description
LPMSDIR	<p><i>Location of LPMS Executable File</i></p> <p>Specify the location and name of the LPMS executable file. The XBR installation CD writes the following as the default location and name: LPMSDIR=C:\ProgramFiles\LPMS\lpmain.exe</p>
LPMSEXP	<p><i>Location of Exported LPMS File</i></p> <p>Specify the location of the exported LPMS file. The XBR installation CD writes the following as the default location: LPMSEXP=C:</p>
DBMS	<p><i>LPMS Database Type</i></p> <p>Specify the type of database used for LPMS. MS SQL Server: DBMS= OLE DB Oracle: DBMS= o10 or ORA</p>

Configuration Parameter	Description
ServerName	<p><i>LPMS Database Server Name</i></p> <p>Specify the name of the server that the LPMS database is on. If this entry is missing or you don't provide a value, XBR uses the name of the XBR server by default.</p>
Database	<p><i>LPMS Database Name</i></p> <p>Default value is blank (for future use).</p>
DbDBMS	<p><i>LPMS Internal Database Type</i></p> <p>Specify the database type that is used internally for the LPMS database.</p> <p>MS SQL Server: DbDBMS= SQLSERVER Oracle: DbDBMS= ORACLE</p> <p>If this entry is missing or you don't provide a value, XBR uses SQLSERVER by default.</p>
DbParm	<p><i>LPMS Database Hold Connection Parameters</i></p> <p>Specify the hold connection parameters to the LPMS database.</p> <p>MS SQL: DbPARM= PROVIDER='SQLOLEDB', DATASOURCE='<server-name>', PROVIDERSTRING='database=LPDATA', staticbind=1</p> <p>Oracle: DbPARM= staticbind=1</p>
Lock	

LDAP Configuration Settings

LDAP configuration settings are found in the [LDAP] section of the `dtvanalytics.ini` file

If you use LDAP (Light Direct Access Protocol), set up LDAP repository connection information in the [LDAP] section in the `dtvanalytics.ini` file. The [LDAP] section looks like the following example:

```
[LDAP]
USELDAP=Y
ACTIVEDIRECTORY= Y
USE_SSL = N
SERVER = ABCompany
CLEAR_PORT= 389
SSL_PORT= 636
KEYNODE= cn=USERID
BASEDN = DC=People,DC=ABCompany,DC=com
XBR_USERROLEPATTERN = XBR-USER-
XBR_ROLESYSADMIN= SYSADMIN
XBR_ROLESYSMGR= SYSMGR
XBR_ROLEANALYTIC= LP
XBR_ROLEREADONLY= RO
XBRDEFATTRIBUTES= XBR-USER-, XBR-DIV-
XBR-USER-= GROUPMEMBERSHIP
XBR-DIV-= GROUPMEMBERSHIP
```

The following table shows how to set up the entries in the [LDAP] section of the `dtvanalytics.ini` file.

Configuration Parameter	Description
USELDAP	Specify if a user connects to the application through LDAP. The XBR installation CD writes the following entry based on the selection: USELDAP=Y
USE_SSL	Specify if LDAP is run over the Secure Socket Layer (SSL). The XBR installation CD writes the following entry based on the selection: USE_SSL =N
SERVER	Specify the name of the LDAP server: SERVER=ABCompany
CLEAR_PORT	Specify the number of the LDAP SERVER PORT (no SSL). The XBR installation CD writes the following port based on the entry assigned during the installation: CLEAR_PORT=389

Configuration Parameter	Description
SSL_PORT	Specify the number of the LDAP SERVER PORT if SSL is used. The XBR installation CD writes the following port based on the entry assigned during the installation: SSL_PORT=636
KEYNODE	Specify a keystroke that the application uses to build a search base string. Default value is KEYNODE=cn=USERID where USERID is a reserved word and cannot be changed.
BASEDN	Specify a static part of DN (distinguish name) where authentication/search starts from. The XBR installation CD writes the following DN based on the entry assigned during installation: BASEDN= DC=People,DC=ABCompany,DC=com
XBR_USERROLEPATTERN	Specify a keystroke which will serve as a prefix for a user application role in the LDAP attribute value. XBR_USERROLEPATTERN=XBR-USER- If you do not use LDAP as a source of the user application role, then the value of this entry is a string "IGNORE". XBR_USERROLEPATTERN=IGNORE
XBR_ROLESYSADMIN	Specify a keystroke of a System Administrator (SYSADMIN) user role. This gets concatenated at run time with XBR_USERROLEPATTERN. It has to match values setup in the LDAP attribute referenced in the parameter entry XBR-USER-. The XBR installation CD writes the following as the default: XBR_ROLESYSADMIN = SYSADMIN

Configuration Parameter	Description
XBR_ROLESYSMGR	<p>Specify a keystroke of a System Manager (SYSMGR) user role. This gets concatenated at run time with XBR_USERROLEPATTERN. It has to match values setup in the LDAP attribute referenced in the entry XBR-USER.</p> <p>The XBR installation CD writes the following as the default:</p> <pre>XBR_ROLESYSMGR = SYSMGR</pre>
XBR_ROLEANALYTIC	<p>Specify a keystroke of an XBR (LP) user role. This gets concatenated at run time with XBR_USERROLEPATTERN. It has to match values setup in the LDAP attribute referenced in the entry XBR-USER-.</p> <p>The XBR installation CD writes the following as the default:</p> <pre>XBR_ROLEANALYTIC = LP</pre>
XBR_ROLEREADONLY	<p>Specify a keystroke of a Read Only (RO) user role. This gets concatenated at run time with XBR_USERROLEPATTERN. It has to match values setup in the LDAP attribute referenced in the entry XBR-USER-</p> <p>The XBR installation CD writes the following as the default:</p> <pre>XBR_ROLEREADONLY = RO</pre>
XBRDEFATTRIBUTES	<p>A list of default XBR patterns which are concatenated and used to extract and then parse the values setup in LDAP. The XBR installation CD writes the following as the default:</p> <pre>XBRDEFATTRIBUTES= XBR-USER-, XBR-DIV-</pre>
XBR-USER-	<p>Specify a name of the LDAP attribute where the user role is set. The XBR installation CD writes the following as the default:</p> <pre>XBR-USER- = GROUPMEMBERSHIP</pre>

Configuration Parameter	Description
XBR-DIV-	<p>A reference to the LDAP repository attribute where the rules for XBR queries are. The values of this attribute are mapped to the XBR table ADM_LDAP_RULE_MAP. The XBR installation CD writes the following as the default:</p> <p>XBR-DIV- = GROUPMEMBERSHIP</p>

Miscellaneous Configuration Options

Two additional configuration options are available. You have the ability to enforce store group security and check offline reporting intervals.

Enforcing Store Group Security

The entry "EnforceStoreGroupSecurity" is found in the [other] section of the dtvanalytics.ini file. Its purpose is to prevent the database server from being overwhelmed by simultaneous queries by different users running against a complete range of data.

For example, an analyst and a read-only user may be running queries at the same time. It is possible that the database server may be overwhelmed if the queries are run against a whole range of data, rather than just a subset of the data. To prevent this from happening, you may set up a flag in the [other] section of the dtvanalytics.ini file:

EnforceStoreGroupSecurity = Y

Checking the Offline Reporting Interval

The entry "offlinereportcheckinterval" is found in the [other] section of the file dtvanalytics.ini. It sets the time interval at which XBR will check for any new offline reports that are ready for reviewing and user notification. The value is set in minutes and the default value is 5 (minutes):

OFFLINEREPORTCHECKINTERVAL = 5

Email Configuration Settings

After you have installed and configured XBR, the next step is to modify the mail.ini file. This file is used with the SMTP mail program. The mail program is specific to the email program identified in the table "ADM_SYS_DEFAULTS", in the field "SCRIPT_TYPE", where the entry is "STK".

You can find the mail.ini file for Query Launcher in the following XBR folders:

- \XBR
- \Table_Editor



Depending on the components installed on your system, you may not have both folders in the XBR directory. Change the mail.ini files in all of the folders that are on your system.

You must enter the following settings in the `mail.ini` in order for the email program to run. Open the `mail.ini` file, find the following lines in the [SMTP] section and enter values for the installation.

Entry	Description
Gateway=	Name or IP address of the SMTP relay (must be correctly registered in a DNS server). For example: GateWay = 255.255.255.255 If you didn't enter a gateway address during installation, add the line under the [SMTP] section heading.
Sender=	Default email address of the sender; entered during installation. Sender=tepstein@brs.com Some email systems, such as Exchange, validate the email address of the sender, so ensure the email address is a valid address.
Realname=	Default real name of the sender Realname=XBR Auto Run Reports

When initiated, the mail program (`dtvmailer.exe`) runs the Script File specified in the file `dtvlauncher.ini`. The script file/mail program can be run a number of different ways. For example, the script file/mail program can be:

- Called directly from the Query Launcher. For this to happen, the RunMailer variable must be set to "Y" in the `dtvlauncher.ini` file.
- Launched directly by double-clicking it.
- Called directly from Kornshell scripting.

Test the Email Component

To test the email component of the setup:

1. Copy the sample code below into a batch file (such as "testmail.bat", for example) and double-click on the file name to run it.

```
echo off |mail -s "Analytics Alert! - Refunds > 5% Found" <yourname@email.com>
```

2. Change the variable `<yourname@email.com>` to your own email address so that the message will be delivered to your inbox. Then you will know if email works.
3. Run the batch file from the directory where the Query Launcher program (`dtvlauncher.exe`) is installed.

TESTING THE XBR DESKTOP INSTALLATION

To test your client installation:

1. Double-click the MICROS-Retail Analytics 7.0 program folder icon on your desktop.
2. Double-click the XBR icon in the MICROS-Retail Analytics 7.0 program group.

If you are having problems running XBR or Query Viewer, refer to the section "Troubleshooting the Client Installation" in ["Troubleshooting the XBR Desktop Installation" on page 62](#).

CHANGING AN EXISTING XBR DESKTOP INSTALLATION

If you are missing a component after completing the installation, you can correct this.

1. Run the file `setup.exe` again from the installation CD. You are prompted to Modify, Repair, or Remove (components) from the installation.
 - Select "Modify" to add new components or remove existing components.
 - Select "Repair" to reinstall what is already installed on your machine. You may want to do this if you had problems during the initial installation.
 - Select "Remove" to remove XBR from the client. If you select Remove, you must reinstall XBR on the client.

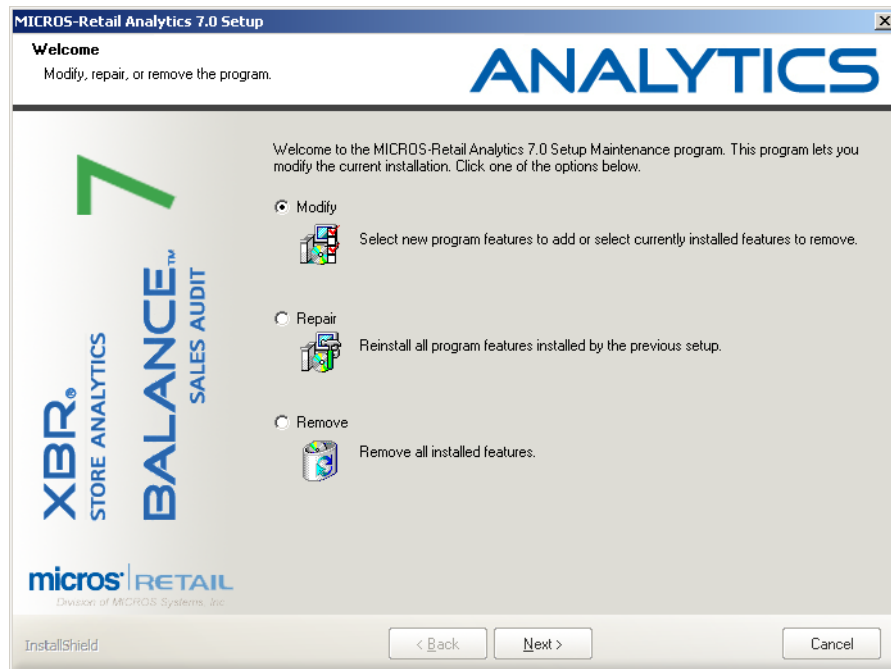


Figure 2-35: Making Changes to the Installation

2. Click **Next**.
3. The next screen shows you which components are already installed and allows you to select the components to install/remove.



Do not uncheck the components that are already checked unless you want to uninstall them. If you uncheck any of these components, they will be uninstalled.

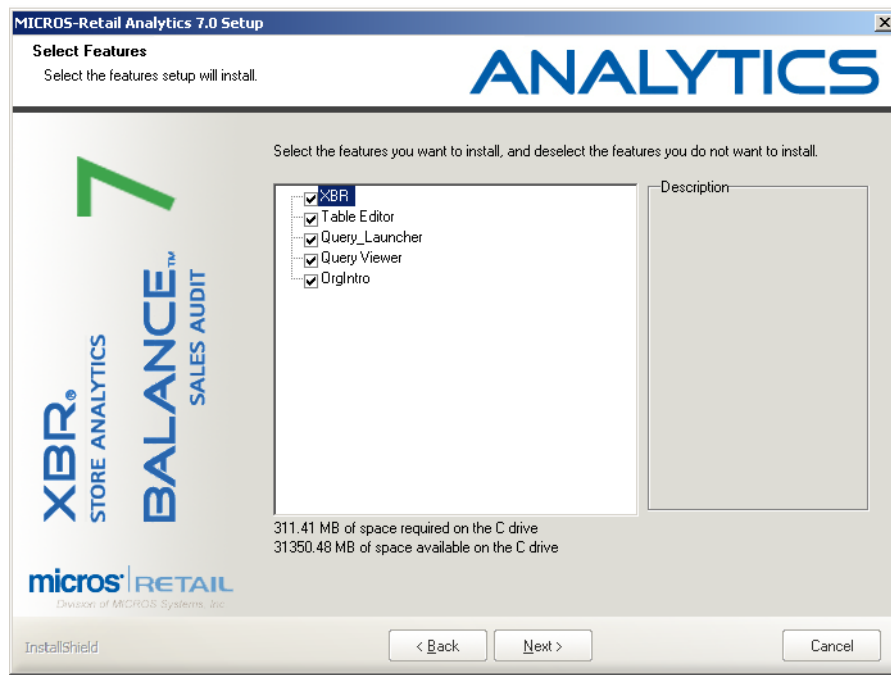


Figure 2-36: Select Features

Check the components that you would like to install and click **Next** to continue. As you check/uncheck options, the amount of disk space required is displayed at the bottom of the Features panel.

4. Continue and respond to the prompts.

INSTALLING AN SSL CERTIFICATE

This section describes the procedure for installing an SSL certificate if it is required by your installation.

Assumptions Prior to Certificate Installation

The procedure to install a certificate is based on two assumptions:

- XBR is configured to connect to the LDAP server over SSL (Secure Socket Layer).
- The person who performs the installation knows the location of the certificate file and its name.

SSL Certificate Installation Procedure

1. Open the Microsoft Management Console (MMC) on the computer where XBR is being installed: Select **Start**, and select "Run" from the Start Menu. When the Run dialog box displays, enter "mmc" and click **OK**.

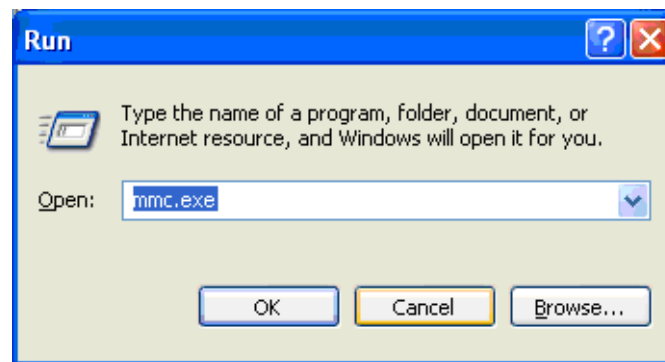


Figure 2-37: Run Dialog Box

2. Select "File" on the console menu and select "Add/Remove Snap-in".

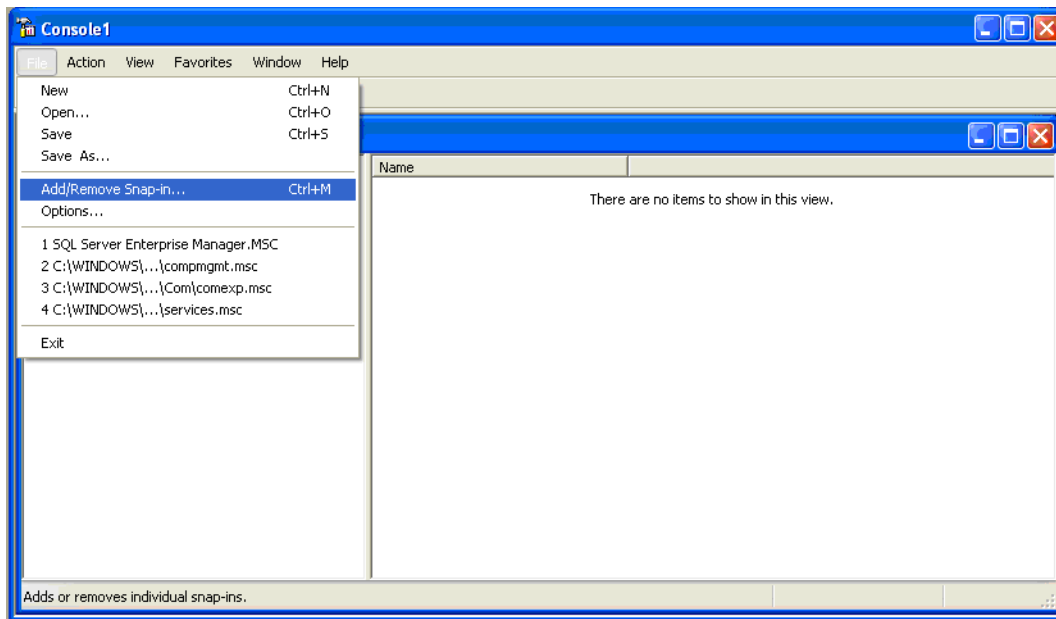


Figure 2-38: MMC Menu

3. When the "Add/Remove Snap-in" window displays, click **Add**. The window will be overlaid with the "Add Standalone Snap-in" window ([Figure 2-39](#)).
4. Click on **Certificates** from the list of snap-ins.
5. Click **Add**.

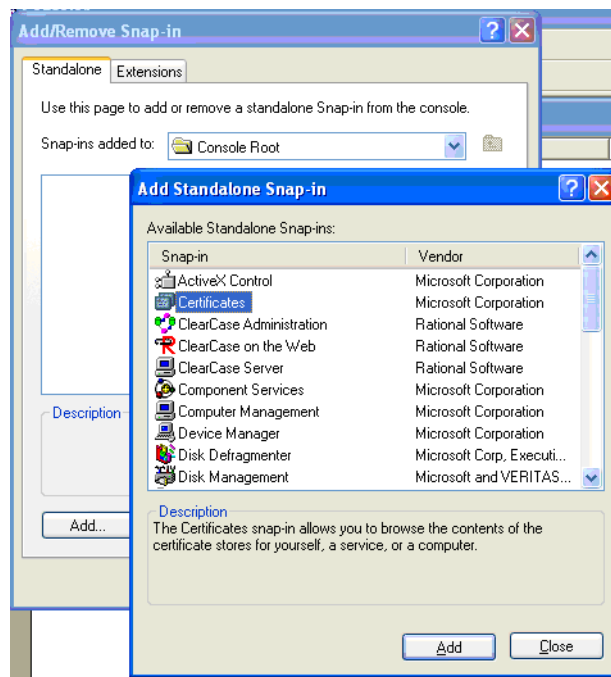


Figure 2-39: Add Snap-in Windows

6. The "Certificates snap-in" window will display. Select "Computer account" and click **Next**.

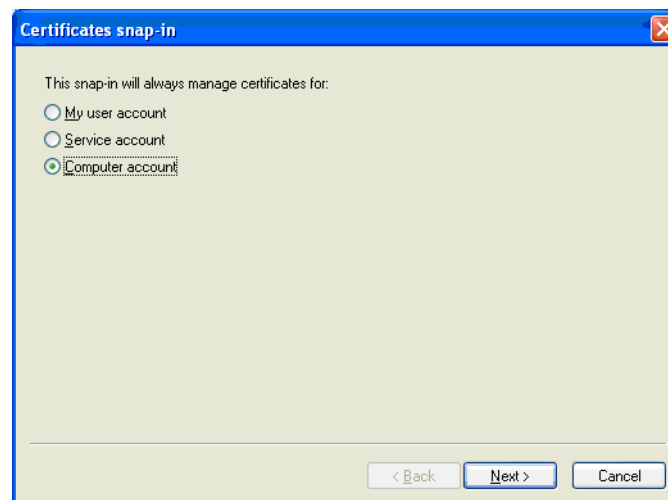


Figure 2-40: Certificate Snap-in Window

7. The “Select Computer” window will display. The “Local computer” option should be selected. Do not change it. Click **Finish**.

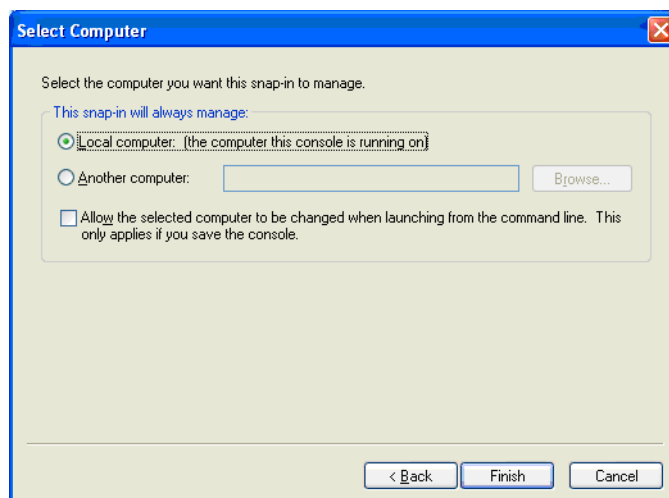


Figure 2-41: Select Computer Window

8. Click **Close** when you return to the “Add Standalone Snap-in” window.
9. Click **OK** when you return to the “Add/Remove Snap-in” window.
10. At the Console window, the node “Certificates (Local Computer)” is displayed in a window. Expand the node until you find “Trusted Root Certification Authorities”. (The list of certificates is displayed.) Click **Certificates**.

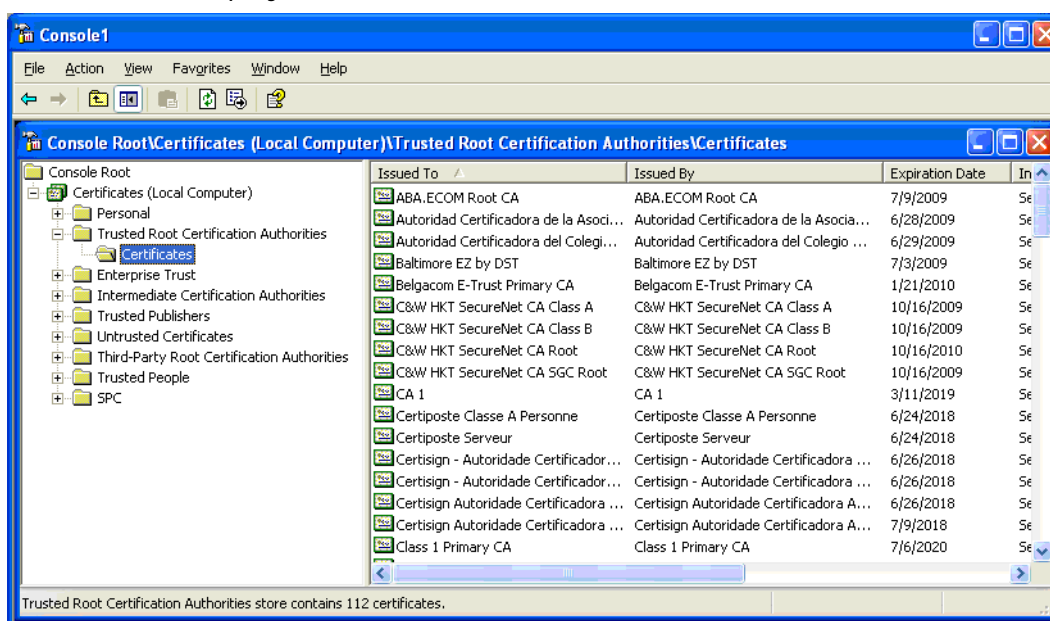


Figure 2-42: Console Window

11. Select **Action → All Tasks → Import** on the Console Menu.

12. The “Certificate Import Wizard” window will display. Click **Next**.



Figure 2-43: Certificate Import Wizard Window

13. Select **Browse** and navigate to the directory where the certificate file is located. Select the certificate file name. Click **Next**.

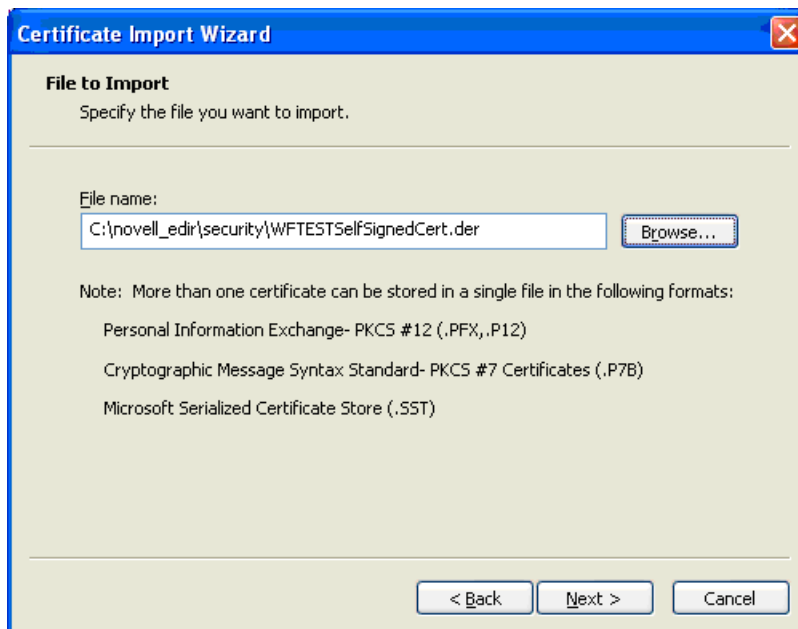


Figure 2-44: Browse to the Certificate File Name

14. The option “Place all certificates in the following store...” should already be selected. Do not change it. Click **Next**.

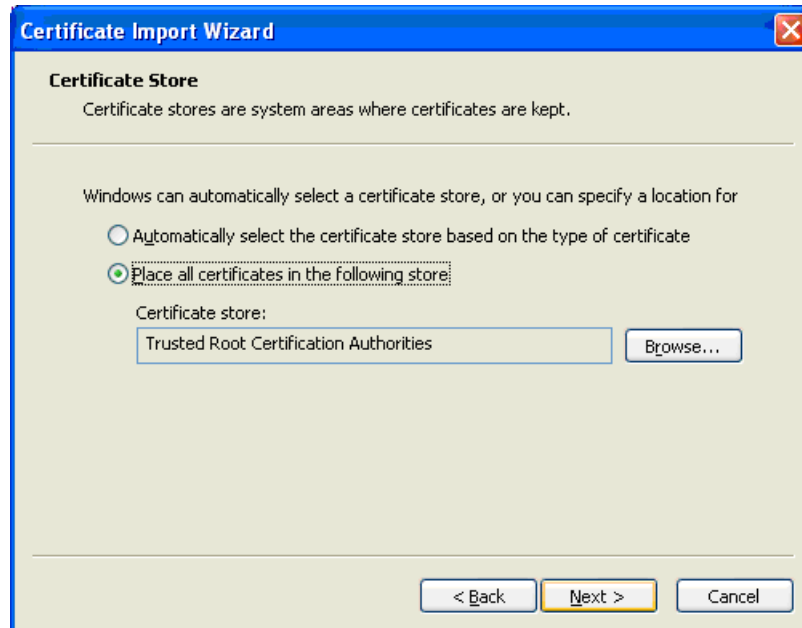


Figure 2-45: Use the Default Option

15. The next screen displays the certificate(s) you selected. If the information is correct, click **Finish**. (You may click **Back** to make changes.)

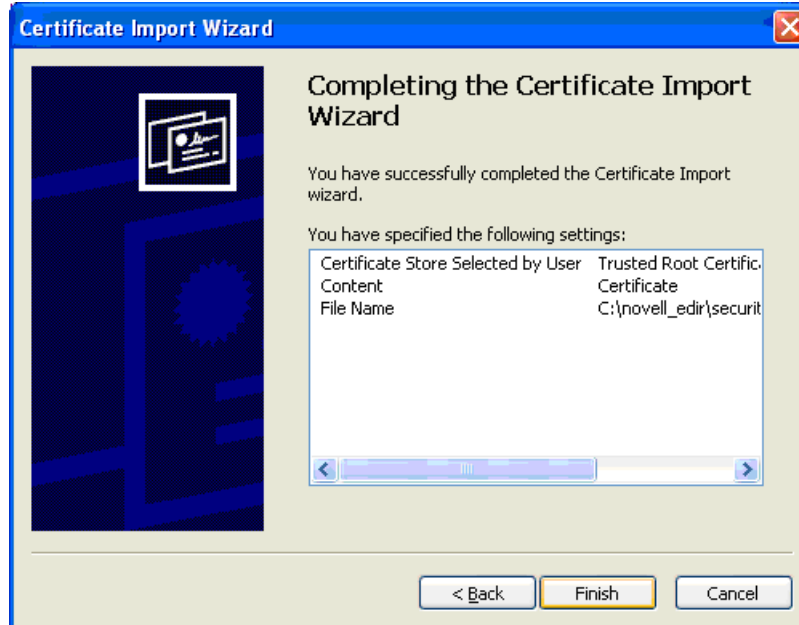


Figure 2-46: Finishing the Wizard Procedure

16. If the installation is successful, you will see the following confirmation window over the Console window.

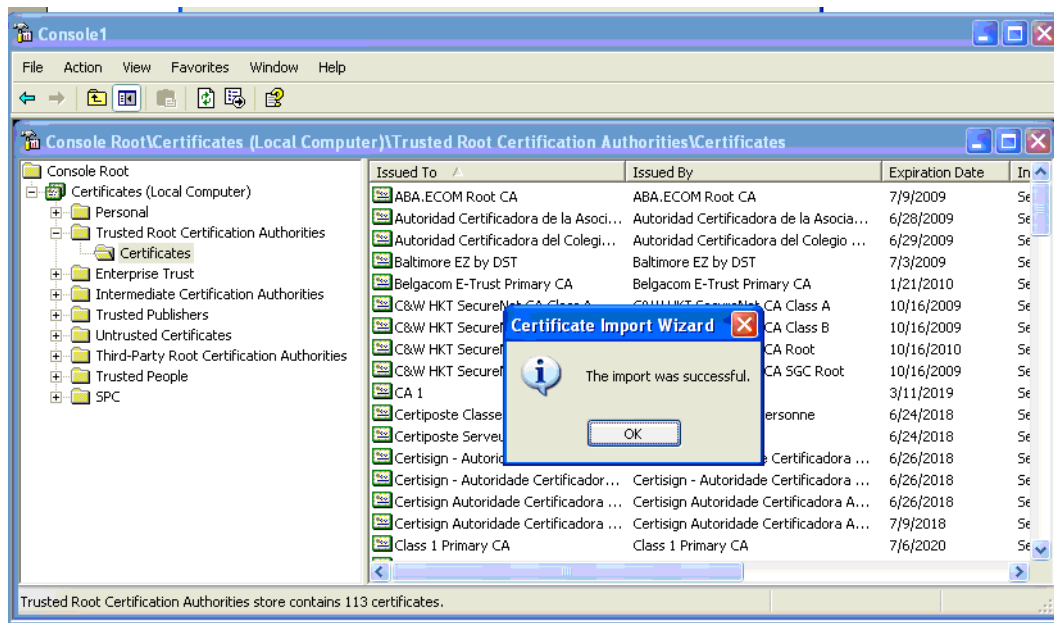


Figure 2-47: Successful Installation Message

17. Close the Microsoft Management Console window. Select **File → Exit** on the menu. When you are prompted to save the console settings, select **No**.

TROUBLESHOOTING THE XBR DESKTOP INSTALLATION

This section provides solutions for problems that may occur with your XBR installation.

Problem 1 Can't launch .PSR report files with the Query Viewer.

Solution The XBR installation should associate .PSR files with the Query Viewer automatically. But if it doesn't, you will see the message "Can't launch .PSR report files with the Query Viewer" when you try to launch a .PSR file. You must manually create the association by following these steps:

1. Use Windows Explorer. Navigate to the "Query Viewer" directory (the default is "\MICROS-Retail_Analytics_7.0\Query_Viewer") and double-click the file `test.psr`.
2. A dialog box will open. Select the option "Select the program from a list" option and click **OK**.
3. The "Open With" dialog box opens. Click the **Browse** button, and when the Browse window opens, navigate to the directory "\MICROS-Retail_Analytics_7.0\Query_Viewer". Select the file `dtvviewer.exe` and click **Open**.
4. When the dialog closes, make sure the option "Always use the selected program to open this kind of file" is selected.
5. Click the **OK** button.

From now on, whenever you double-click a .PSR file or launch one from email the Query Viewer will open it.

Problem 2 Can't export to PDF format.

Solution XBR installs a print driver (Amyuni PDF Converter) that converts exported reports to Adobe PDF format. First, check to make sure the driver was installed:

1. Click the **Start** button on the task bar. Select **Settings**, select **Printers and Faxes**.
2. Make sure that "Amyuni PDF Converter" is listed in the Name column.

If it is not there, reinstall the driver by double-clicking the file `install.exe` located in the following directory:

\MICROS-Retail_Analytics_7.0\PDF

A status window will open.

3. Click **OK** when the reinstallation is done.



You may need administrator rights to your PC to install it successfully.

Problem 3 **The error “Navigation to the web page was canceled” displays when you click a Help button in the XBR Desktop application to open the online help.**

Solution You will receive this error if you copy the installed XBR Desktop application folders and files to another location instead of re-running the XBR Desktop installation. If you wish to install the XBR Desktop application in more than one location, you must run the installation program for each location.

If you have already copied the XBR Desktop application folders and files to another location and wish to manually fix this issue, follow the steps outlined below.

Enabling the XBR Desktop Help to Work on a Network Drive

Due to Microsoft security updates, you may receive the error: “Navigation to the webpage was canceled” when you click a **Help** button in the XBR Desktop application to open the online help.

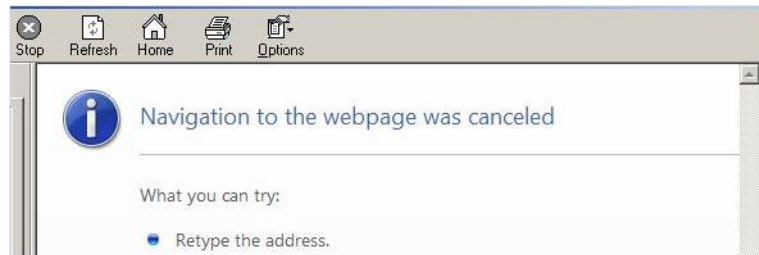


Figure 2-48: XBR Desktop Help Error

To correct this error, you must modify the registry to allow the system to open online help (.CHM) files.

Note: Before you make any changes to the registry, you may wish to back up and restore the registry. See the Microsoft web site for Windows XP instructions: <http://support.microsoft.com/kb/322756> or Windows Vista instructions:

1. At the Windows desktop, click the **Start** button, then select **Run** to advance to the Run window. In the **Open** field, enter **Regedit** and click **OK** to advance to the Registry Editor window.

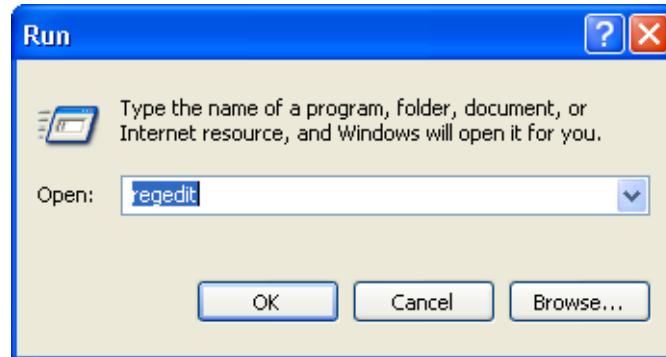


Figure 2-49: Enter Regedt32.exe at the Run Window

2. At the Registry Editor window, expand the tree in the left-hand pane to advance to
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\HTMLHelp\1.x.

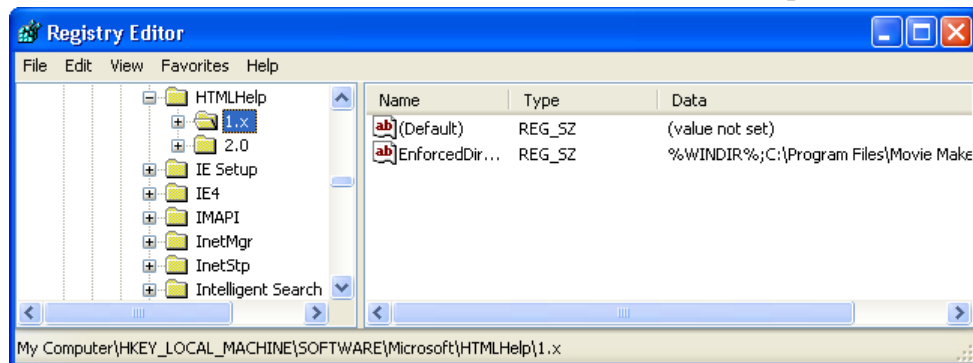


Figure 2-50: HTMLHelp in Registry Editor

3. Highlight **1.x** and select **Edit → New → Key**. Name the new key **ItssRestrictions**.

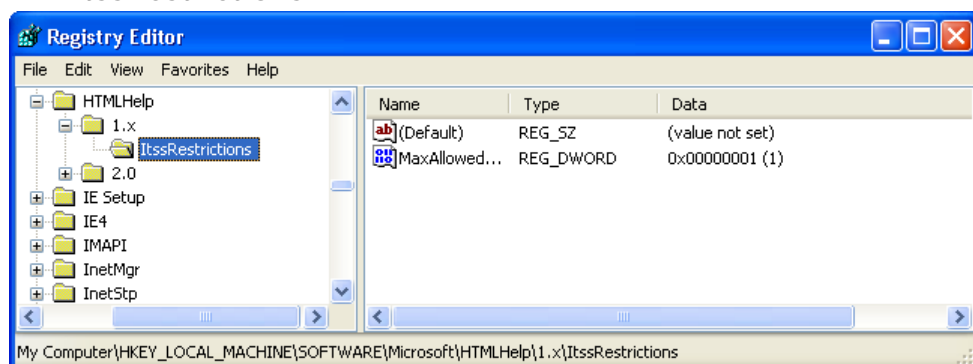


Figure 2-51: New Key "ItssRestrictions"

4. Highlight the ItssRestrictions key and select **Edit → New → DWORD Value**. Name the new DWORD value **MaxAllowedZone**.

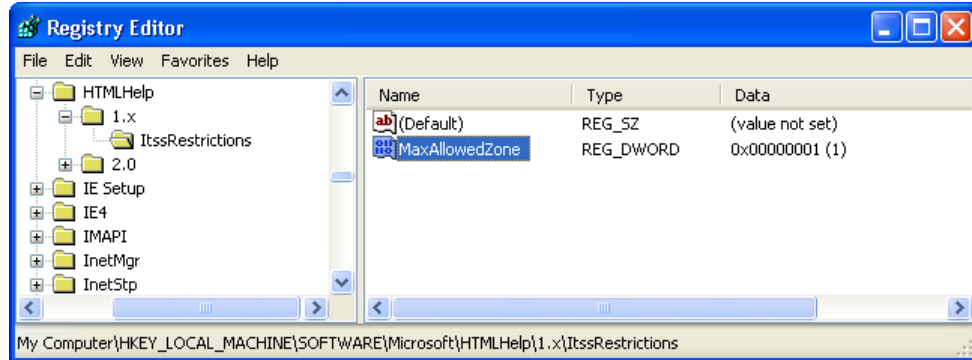


Figure 2-52: New DWORD Value “MaxAllowedZone”

5. Right-click on the **MaxAllowedZone** DWORD value and select **Modify** to advance to the Edit DWORD Value window.
 - a. In the **Value data** field, enter **1**.
 - b. In the **Base** field, select **Hexadecimal**.

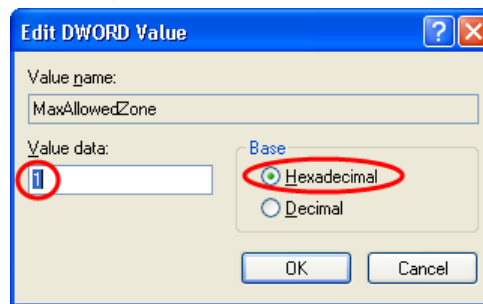


Figure 2-53: DWORD Value Data

6. Click **OK** and close the Registry Editor window.

CHAPTER

3

Query Launcher

OVERVIEW



Query Launcher is installed as part of a Custom installation of the XBR Desktop Application installation. For more information on installing Query Launcher, see [“Installing the XBR Desktop Application” on page 9](#).

This document describes how to configure the Query Launcher component of MICROS-Retail XBR®. Query Launcher runs scheduled queries, produces report output, and generates scripts to distribute reports via email or file copies. To use the auto run, auto distribute, or auto alert features of XBR, Query Launcher must be installed.

About This Document

The following sections are available in this document:

- Following the installation or upgrade to the current version of XBR, there are additional configuration steps that must be performed. This includes modifying the `dtvlauncher.ini` file, setting up the Query Launcher Kicker and Query Launcher Kicker Service, and modifying the `mail.ini` file: See [“Configuring Query Launcher” on page 69](#).
- Troubleshooting tips help resolve some common problems: See [“Troubleshooting the Query Launcher Installation” on page 98](#).
- Configuration of Qlaunch processes (including kicker functionality) for Multi-Tenant implementation: See [“Multi-Tenant Configuration” on page 88](#).
- If batch processing is going to be used: See [“Batch Processing Setup - Multi-Tenant Hosted Environment” on page 89](#).

Audience

This document is designed for the person responsible for installing and configuring Query Launcher. This person should be familiar with Windows installation procedures and basic text editing.

CONFIGURING QUERY LAUNCHER

Modify the dtvlauncher.ini File

After installation, the `dtvlauncher.ini` needs to be edited. To edit the XBR `dtvlauncher.ini` file, open the file in Notepad or another text editor and make the following changes:

1. To change the database connection information, enter the database connection information in the [Data Source] and [XBR Database] sections in `dtvlauncher.ini`.
See [“Variable Settings in dtvlauncher.ini” on page 73](#) for a full description of the variables and their values.
2. Specify the user ID and password in the `UserID=` and `DatabasePassword=` parameters under the [XBR Database] section.



Query Launcher does not prompt for a user ID and password when it runs, so specify them here.

If there is a generic user ID and/or password for connecting to the database and they are provided through the application INI file, the user ID and password can be encrypted:

```

UserId          =530DFF31DBA74A83D30CDA7CC31CF229
DatabasePassword =0A30DFF31DBC2293D30CD7CC31F31DB
  
```

- To use the encrypted user ID and password, set the variable `EncryptedPassword` in the **dtvlauncher.ini** to `TRUE` or `Y`. This variable is in the section [XBR Database].

```
EncryptedPassword = TRUE
```

-or-

```
EncryptedPassword = Y
```

- To generate the encrypted user ID and password, use the XBR Administrator tool, as described in the following procedure:

Within the General Default Maintenance dialog box there is an option to **Encrypt** a common user ID with the `.ini` files. The encrypted strings are automatically entered into the following files:

```

-- dtvanalytics.ini
-- dtvbalance.ini
-- dtveditor.ini
  
```

Once you encrypt the user ID and password within the files, the encryption string replaces the unencrypted ID and password.

Perform the following steps to encrypt a user ID and password:

- 1) In the XBR front end, select the **Administration → Configuration → General Defaults** menu option.
- 2) Click the **Encrypt** button.
- 3) Enter the user ID to encrypt in the **String to Encrypt** text box (Figure 3-1).
- 4) Click the **Encrypt** button. The encrypted number is displayed in the Encrypt text box.
- 5) Click the **Clipboard** button to copy the Encrypted value to the clipboard.
- 6) Check the **UserId and/or Database** password check boxes in the Override Connection Attributes (ini files) section. This will place the encrypted values in the .ini files instead of displaying the actual password and ID.
- 7) Click the **Apply** button.
- 8) Click the **Cancel** button to exit the dialog box.
- 9) In the text editor being used for the `dtvlauncher.ini` file, select the **Edit** button, then the **Paste** menu option. The encrypted user ID and password are entered in the file.
- 10) Delete the old, unencrypted **UserId** and **DatabasePassword** lines in the file.
- 11) Save the file.

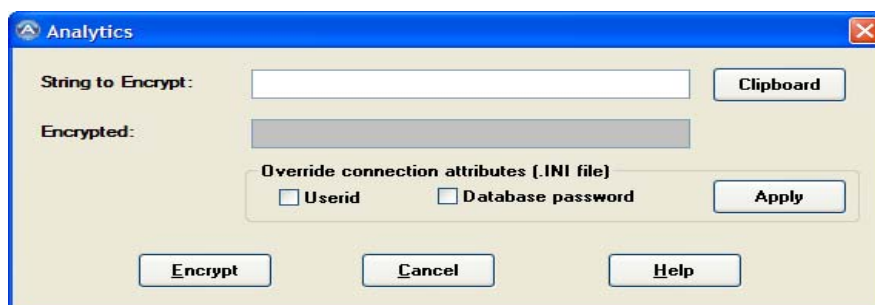


Figure 3-1: Encrypt Function

Pass Parameters to Query Launcher

When creating a batch file that will be scheduled using the Windows system scheduler or setting up a Windows shortcut, the following parameters can be passed to Query Launcher:

- The name of the configuration (INI) file.
- The mode (true/false) for processing runs scheduled for "Offline" or "As Soon As Possible".
- Base date.

You can use one, two, or all three of these parameters in any order.

The first parameter should be separated from the name of the application with a "space". Subsequent parameters are separated using a semicolon (";").

The parameters are not case sensitive.

Syntax

Configuration File: ini=dtvlauncher_custom.ini

Offline Mode: runoffline=true

Base Date: rundate=2006/08/25 (this means if the query is scheduled to process data for date range =YESTERDAY, then the QUERY LAUNCHER will place date = '2006-08-24' into the query WHERE clause)

Examples

dtvlauncher.exe ini=dtvlauncher123.ini

dtvlauncher.exe ini=dtvlauncher123.ini;runoffline=true

dtvlauncher.exe runoffline=true;rundate=2005/10/30

dtvlauncher.exe rundate=2005/10/30;runoffline=true

dtvlauncher.exe rundate=2005/10/30;runoffline=true;ini=dtvlauncher123.ini

Sample dtvlauncher.ini

Below is a sample of the dtvlauncher.ini file. Following the sample are descriptions of the [XBR Database] and [Other] sections.

```
[Data Source]
0=XBR Database

[XBR Database]
DBMS=ORA
LogId=
LogPassword=
ServerName=servername
Database=database-name
UserId=database-user-id
DatabasePassword=database-password
DbDBMS=ORACLE
DbParm=StaticBind=1
ConnectOptions=
EncryptedPassword = N

[license]
line_1=Chandler
line_2=456 Seventh Ave.
line_3=Pullman, WA 99165

[other]
```

```
HelpFile=
ClientName=QA 7.0 Oracle
LogSeverity=20
IconPath=
XBRTTrackVersion=7.0 [This is the XBR version number.]
ThreadNumber=3
LogFile=qlaunch.log
ScriptFile=sendrpts.bat
DateFormat=dd-mmm-yy
Debug=FALSE
AlertText= Analytics Alert.
MessageTextMaster= Analytics Report by Master File.
MessageTextUser= Analytics Report by User.
RunMailer=Y
PolicyDir=Policy
PDFdevice = Amyuni PDF Converter
DefaultLanguage= EN

[LDAP]
USELDAP          = Y
ACTIVEDIRECTORY  = Y
USE_SSL          = N
SERVER           = ABCompany
CLEAR_PORT       = 389
SSL_PORT         = 636
KEYNODE          = cn=USERID
BASEDN           = DC=People,DC=ABCompany,DC=com
XBR_USERROLEPATTERN = XBR-USER-
XBR_ROLESYSADMIN  = SYSADMIN
XBR_ROLESYSMGR    = SYSMGR
XBR_ROLEANALYTIC = LP
XBR_ROLEREADONLY  = RO
XBRDEFATTRIBUTES  = XBR-USER-, XBR-DIV-
XBR-USER-         = GROUPMEMBERSHIP
XBR-DIV-          = GROUPMEMBERSHIP

[KICKER]
KICK_INTERVAL = 10
KICKERLOG=QLAUNCHKICKER.LOG
```

Variable Settings in dtvlauncher.ini

The following tables describe the variables in the `dtvlauncher.ini` file and the information that is entered into these variables.

Table 3-1: *[XBR Database] Settings in dtvlauncher.ini*

Parameter	Description
DBMS	<p>Indicates which database is being used and which database drivers are required. Valid entries are:</p> <ul style="list-style-type: none"> ■ o10 (for connecting to Oracle 10g and 8/8i) ■ ORA (for connecting to Oracle 11g) ■ ODBC (for Open Database Connectivity, which allows access to any database with ODBC-compliant drivers) ■ OLE DB (for connecting to Microsoft SQL Server)
ServerName	<p>The name of the database server.</p> <p>The format of this differs depending on the database used.</p> <ul style="list-style-type: none"> ■ Not used for Microsoft SQL Server. ■ For Oracle, use the name in the TNSNAMES.ORA entry (for example, XBR): ■ For ODBC entries, this is blank.
Database	Default value is blank (for future use).
UserID DatabasePassword	This is a valid database user ID and password. Since the Query Launcher does not prompt for a user ID and password when it runs, these values must be supplied.
DbDBMS	<p>This is a database name that is used internally. As the database name is case sensitive, it should be in capital letters. The valid values are:</p> <ul style="list-style-type: none"> ■ SQLSERVER ■ ORACLE

Table 3-1: *[XBR Database] Settings in dtvlauncher.ini (continued)*

Parameter	Description
DbParm	<p>These hold connection parameters to the database.</p> <ul style="list-style-type: none"> ■ For Microsoft SQL Server: PROVIDER='SQLOLEDB',DATASOURCE='<server-name>', PROVIDERSTRING='database=<database-name> ', staticbind=1, INTEGRATEDSecurity='123SSPI' ■ For Oracle: staticbind= 1 ■ For ODBC, it is the actual connect string to the database including DSN and DBF.
ConnectOptions	<p>Additional parameters for ODBC entries. These parameters are added after the UserID and Password are added to the ConnectString.</p>

Table 3-2: *[other] Settings in dtvlauncher.ini*

Parameter	Description
HelpFile ClientName LogSeverity IconPath XBRTrackVersion	<p>These settings are XBR standards and are in this area of the INI file for consistency.</p>
ThreadNumber	<p>This is the thread number, or process number, on which Query Launcher is run. (The Thread_Number is really just an internal process number that the Query Launcher uses; XBR is not a multi-threaded application.) The program reads this number, retrieves all of the reports that are assigned to this thread in the QSC_RUNS table, then determines if the reports are to be run or not.</p> <p>Use threads for scalability and to account for timing considerations. For example, if most of the reports run at 3:00 AM, but some run at 8:00 AM, assign the alerts to different threads or processes to run them at different times.</p>

Table 3-2: *[other] Settings in dtvlauncher.ini (continued)*

Parameter	Description
LogFile	The events of the Query Launcher are written to a log file. This log file indicates what reports ran and if there were any problems with any reports that were scheduled to run. This file is re-created each time the Query Launcher runs. If a path is not entered, the file is saved in the same directory as the dtvlauncher.exe.
ScriptFile	The script file Query Launcher uses to email or copy the reports for users. The extension must be .bat so the program can run the file. This file is formatted to run with the provided mail program (mail.exe). This file must be unique for each ThreadNumber. The default file name is sendrpts.bat. If no path is entered, this file is put in the same directory as the dtvlauncher.exe.
DateFormat	<p>The date format for running the queries. If it isn't found, then it will default to YYYY-MM-DD. The date format must match the database.</p> <ul style="list-style-type: none"> ■ For Microsoft SQL Server: YYYY-MM-DD ■ For Oracle: DD-MMM-YYYY
AlertText MessageTextMaster MessageTextUser	<p>These entries identify the subject lines of emails. The program reads the subject message from the INI file and then appends the description of the alert or reports to it. Note that some email systems may have length limitations for the subject line.</p> <ul style="list-style-type: none"> ■ AlertText= is used for all alerts ■ MessageTextMaster= is used when reports are distributed by Master File ■ MessageTextUser= is used when reports are distributed by user or group

Table 3-2: *[other] Settings in dtvlauncher.ini (continued)*

Parameter	Description
RunMailer	<p>This option is used to run the mailer after the Query Launcher program has run. Use it to split up the generation of the reports from the delivery of the reports.</p> <p>If it is set to:</p> <ul style="list-style-type: none"> ■ N, the mailer will not run and the reports will not be sent. Schedule the <code>sendrpts.bat</code> file through NT Scheduler to run and send reports. ■ Y, the Query Launcher program will call the <code>MAIL.EXE</code> program, which will run <code>sendrpts.bat</code> and email and/or copy the reports. <p>If the Query Launcher is scheduled to run at 3:00 AM, but users don't want to receive emails on their pagers at 3:00 AM, set this to N and schedule the <code>MAIL.EXE</code> or <code>sendrpts.bat</code> to run at a later time (for example, 8:00 AM).</p>
PDFdevice	<p>This setting is installed automatically when Query Launcher is installed. The driver is set to <code>Amyuni PDF Converter</code>, which is the driver installed by XBR to allow exporting reports to Adobe PDF format. Check if this driver is installed on the auto run server -- the same server that is running Query Launcher.</p>

Modify the mail.ini File

Once the `dtvlauncher.ini` file has been configured, the next step is to modify the `mail.ini` file. This file is used in conjunction with the SMTP mail program. The mail program is specific to the email program identified in the `ADM_SYS_DEFAULTS` table's `SCRIPT_TYPE` field, which is `STK`, for Stalker Labs Mail.

The `mail.ini` file for Query Launcher is found in the **Query_Launcher** folder.

Settings must be configured in the `mail.ini` for the Stalker Labs Mail program to run. Open the `mail.ini` file, find the following lines in the `[SMTP]` section and enter the correct values for the installation:

Table 3-3: mail.ini File Settings

Parameter	Description
Gateway	<p>Name or IP address of the SMTP relay (must be correctly registered in a DNS server). For example:</p> <pre>Gateway = 255.255.255.255</pre> <p>If a gateway address was not entered during installation, add the line under the <code>[SMTP]</code> section heading.</p>
Sender	<p>Default email address of the sender; entered during installation.</p> <pre>Sender=tepstein@brs.com</pre> <p>Some email systems, such as Exchange, validate the email address of the sender, so ensure the email address is a valid address.</p>
Realname	<p>Default real name of the sender.</p> <pre>Realname=XBR Auto Run Reports</pre>

When initiated, the mail program (`mail.exe`) runs the `ScriptFile` specified in the `dtvlauncher.ini` file. The script file/mail program can be run a number of different ways. For example, the script file/mail program can be:

- Called directly from the Query Launcher. For this to happen, the `RunMailer` variable must be set to `Y` in the `dtvlauncher.ini` file.
- Launched directly by double-clicking on it.
- Called directly from Kornshell scripting.

Test the Email component

To test the email piece of the setup, copy the sample code below into a batch file and double-click on the file to run it.

Run this file from the directory where the Query Launcher program (dtvlauncher.exe) is installed:

```
echo off |mail -s "Analytics Alert! - Refunds > 5% Found" <yourname@email.com>
```



Be sure to change the <yourname@email.com> variable to a known email address to test if the mail program works.

Set Up the Query Launcher Kicker

The Query Launcher Kicker is an application that runs Query Launcher periodically with a configured interval. This allows Query Launcher to process scheduled XBR queries that are requested to be processed as soon as Query Launcher starts.

If Query Launcher uses Offline Reporting, an interval must be set up for the application DTVLAUNCHKICKER, as well as a name and location of a log file in the [KICKER] section in the dtvlauncher.ini file. The [KICKER] section looks like the following:

```
[KICKER]
KICK_INTERVAL = 10
KICKERLOG=QLAUNCHKICKER.LOG
```



The value of the key KICK_INTERVAL is set in minutes.

Use the following syntax to set up the entries in this section:

Table 3-4: [KICKER] Settings in dtvlauncher.ini

Parameters	Description
KICK_INTERVAL	Specify the interval in minutes after which the Query Launcher starts. The XBR installation CD writes the following as the default interval: KICK_INTERVAL = 30 Note: You can also install the Query Launcher Kicker as a service. See "Installing the Query Launcher Kicker Service" on page 79.
KICKERLOG	Specify the name of the DTVLAUNCHKICKER log file. The XBR installation CD writes the following as a default name: KICKERLOG=QLAUNCHKICKER.LOG

Upon starting, an icon for the Kicker is placed in the system tray.

To stop the Kicker, right-click the Kicker icon in the system tray, then click **Stop Query Launcher Kicker** in the popup menu.

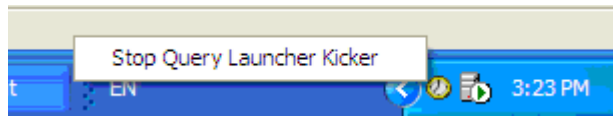


Figure 3-2: Stopping the Query Launcher Kicker

Installing the Query Launcher Kicker Service

The Query Launcher Kicker Service allows you to start the Query Launcher Kicker automatically whenever the machine where you have installed Query Launcher is restarted.

Before you install the Query Launcher Kicker Service:

- Make sure the database trace option is not enabled.
- Make sure you do not have any windows updates pending. Check your windows toolbar to verify that the windows updates icon does not display:

A screenshot of a Windows notification bubble that says 'Updates are ready for your computer. Click here to install these updates.' The bubble is positioned over the system tray, which includes the Windows Update icon.

Perform the following steps to install the Query Launcher Kicker Service:

1. Copy the `Instsrv.exe` and `Srvany.exe` files to the location where Query Launcher has been installed. You can copy these files by:

- Copying the files from the XBR installation CD.
- Downloading the Windows Server 2003 Resource Kit Tools from the Microsoft web site:

<http://www.microsoft.com/downloads/details.aspx?FamilyID=9D467A69-57FF-4AE7-96EE-B18C4790CFFD&displaylang=en>.

The Windows Server 2003 Resource Kit Tools download as an executable file `rktools.exe`. Double-click this file to run the install and setup wizard. When prompted, install the Windows Server 2003 Resource Kit Tools in the recommended directory:

`C:\Program Files\Windows Resource Kits\Tools\.`

Copy the `Instsrv.exe` and `Srvany.exe` files to the following location:

`C:\MICROS-Retail_Analytics_7.0\Query_Launcher\bin\service`

The directory path `C:\MICROS-Retail_Analytics_6.8\Query_Launcher` represents the location where you have installed Query Launcher.

If the folders **bin** and **service** do not already exist, create them.

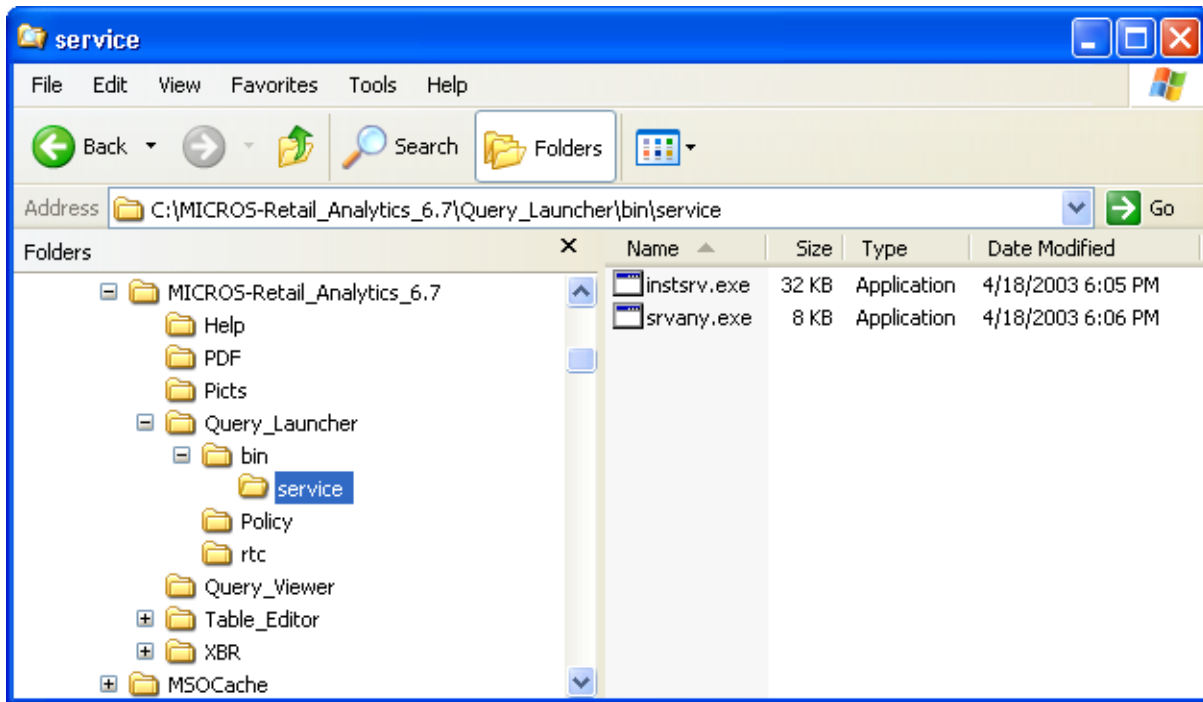


Figure 3-3: Location of Instsrv.exe and Srvany.exe Files

2. On the Windows desktop, click the **Start** button, then select **Run** to advance to the Run window.
3. In the *Open* field, enter **cmd** and click **OK** to advance to the MS-DOS command prompt window.

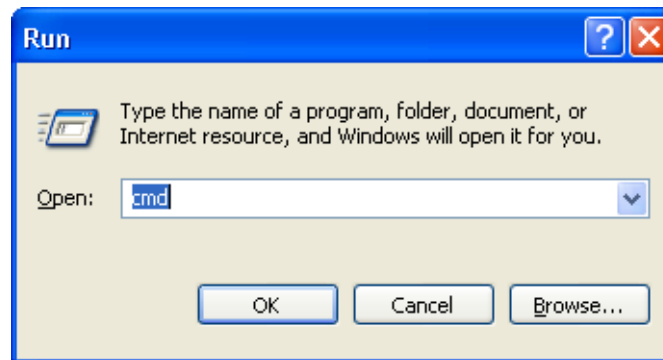


Figure 3-4: Enter cmd at the Run Window

4. At the MS-DOS command prompt window, enter the following command, where C:\MICROS-Retail_Analytics_7.0\Query_Launcher is the location where you have installed Query Launcher:

```
C:\MICROS-Retail_Analytics_7.0\Query_Launcher\bin\service\Instsrv.exe
xbrKicker C:\MICROS-Retail_Analytics_7.0\Query_Launcher\bin\
service\Srvany.exe
```

Press **Enter** to initiate the command.

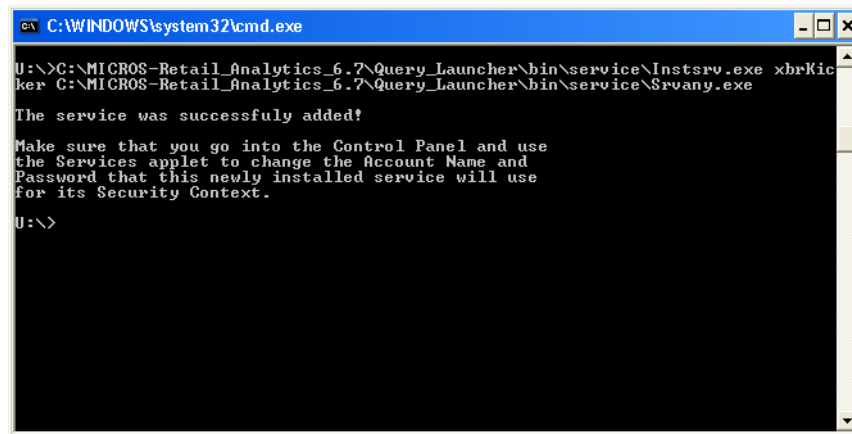


Figure 3-5: Enter MS-DOS Command

5. Verify that the xbrKicker service was created correctly:
 - a. At the Windows desktop, click the **Start** button and select **Run** to advance to the Run window.
 - b. In the *Open* field, enter **Regedt32.exe** and click **OK** to advance to the Registry Editor window.

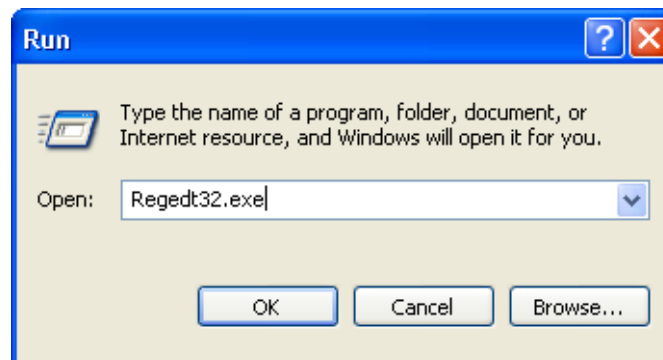


Figure 3-6: Enter Regedt32.exe at the Run Window

- c. At the Registry Editor window, expand the tree in the left-hand pane to advance to HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\xbrKicker.

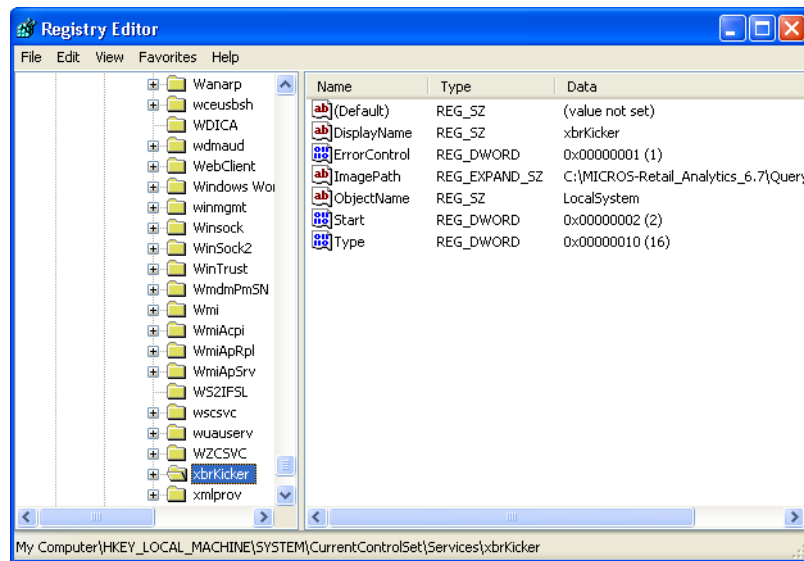


Figure 3-7: Verify xbrKicker Service exists in Registry Editor

6. Update the xbrKicker service in the Registry Editor.



Before you make any changes to the registry, you may wish to back up and restore the registry. See the Microsoft web site for instructions: <http://support.microsoft.com/kb/322756>.

- a. At the Registry Editor window, expand the tree in the left-hand pane to advance to HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\xbrKicker.

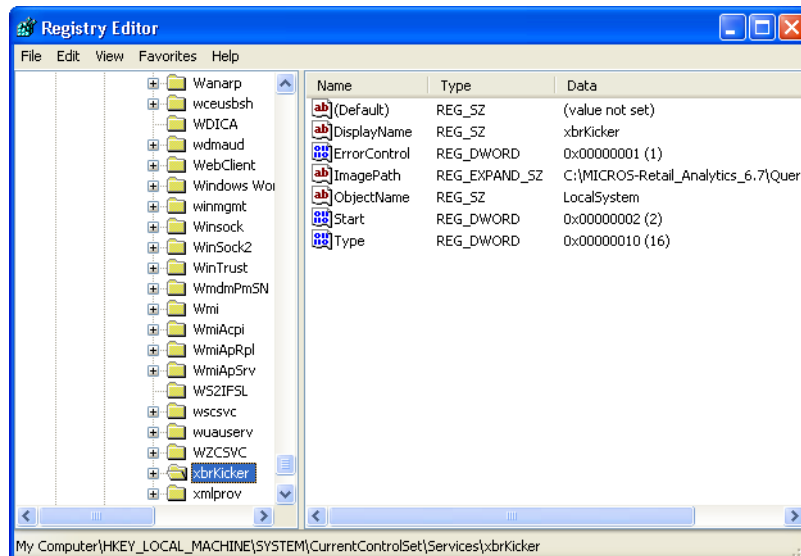


Figure 3-8: xbrKicker Service in Registry Editor

- b. Highlight **xbrKicker** and select **Edit → New → Key**.

- c. Name the new key **Parameters**.

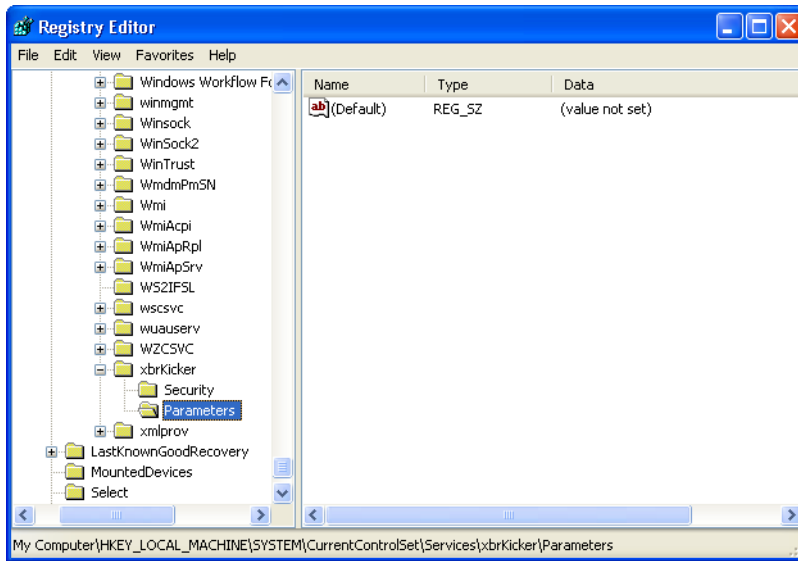


Figure 3-9: New Key "Parameters"

- d. Highlight the Parameters key and select **Edit → New → String Value**. Name the new string value **Application**.

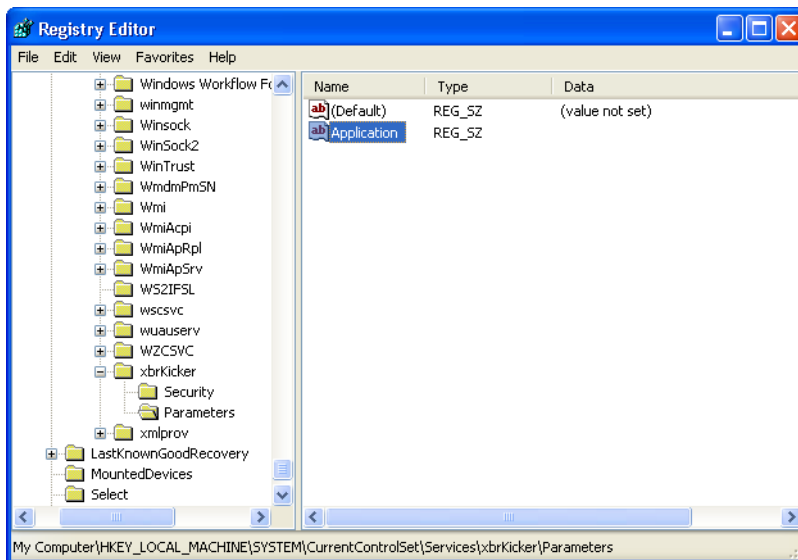


Figure 3-10: New String Value "Application"

- e. Right-click on the **Application** string value and select **Modify** to advance to the Edit String window.
- f. In the *Value data* field, enter the location of the Query Launcher Kicker, where C:\MICROS-Retail_Analytics_7.0\Query_Launcher is the location where you have installed Query Launcher:
- C:\MICROS-Retail_Analytics_7.0\Query_Launcher\dtvlaunchkicker.exe

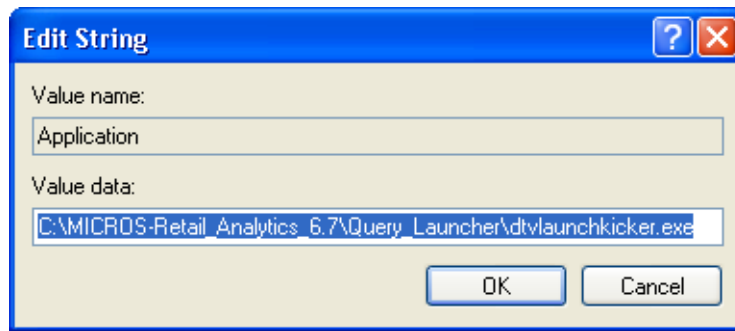


Figure 3-11: Application Value Data

- g. Highlight the **Parameters** key and select **Edit → New → String Value**.
- h. Name the new string value **AppDirectory**.

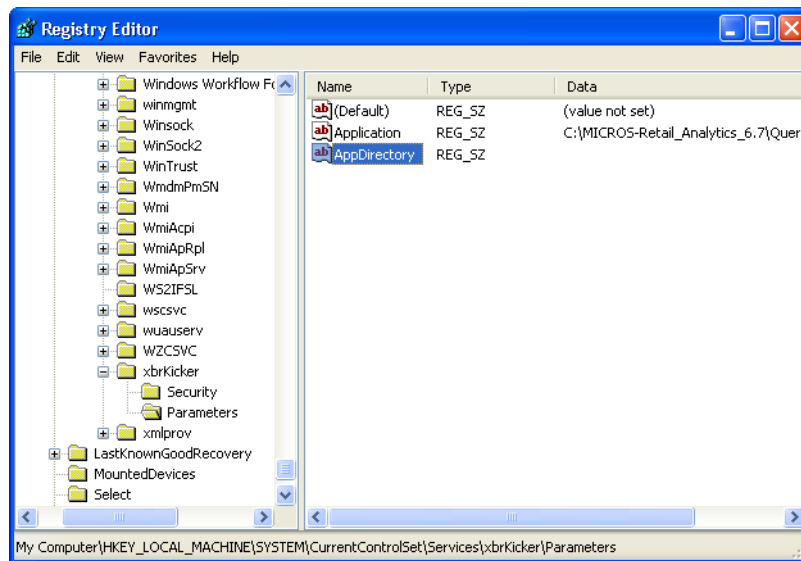


Figure 3-12: New String Value "AppDirectory"

- i. Right-click on the **AppDirectory** string value and select **Modify** to advance to the Edit String window.
- j. In the *Value data* field, enter the location where you have installed Query Launcher:
C:\MICROS-Retail_Analytics_7.0\Query_Launcher

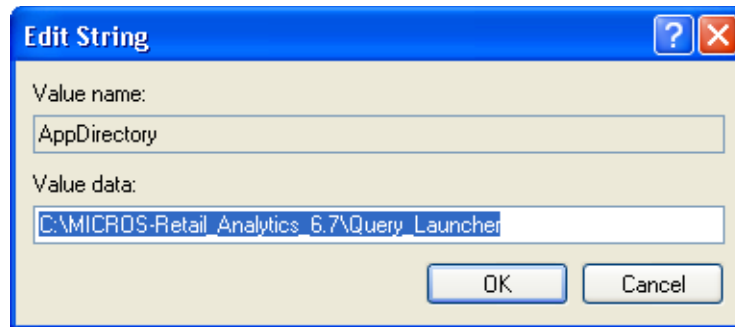


Figure 3-13: AppDirectory Value Data

- k. Close the Registry Editor window.
7. Update the xbrKicker service in the Services window.
 - a. On the Windows desktop, select the **Start** button and select **All Programs** → **Administrative Tools** → **Services** to advance to the Services window.
 - b. In the *Name* column, locate the xbrKicker service.

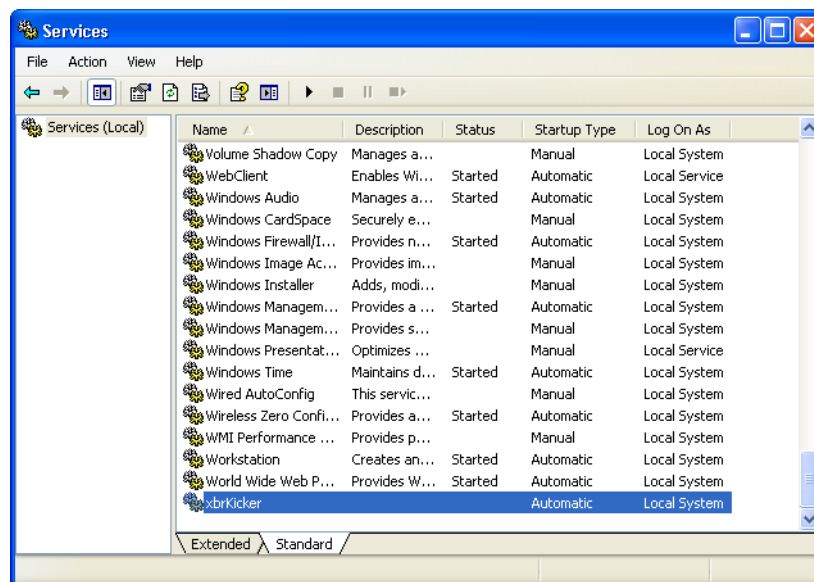


Figure 3-14: xbrKicker Service

- c. Right-click on the xbrKicker service and select **Properties** to advance to the xbrKicker Properties window.
- d. On the General tab, verify that the *Startup type* field is set to **Automatic**.

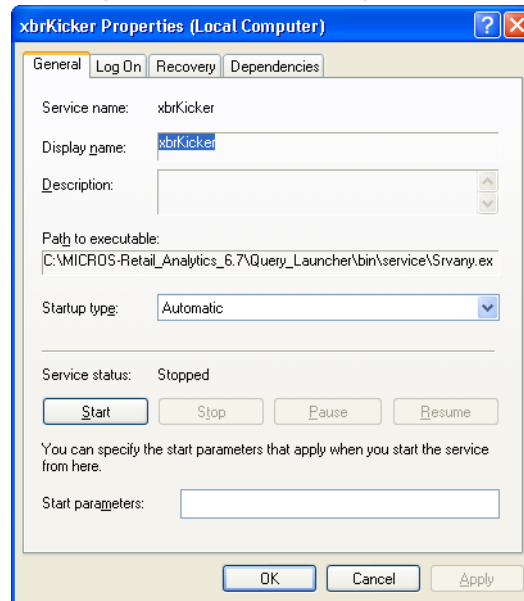


Figure 3-15: xbrKicker General Properties

- e. On the Log On tab, verify that the **Local system account** and **Allow service to interact with desktop** options are selected.

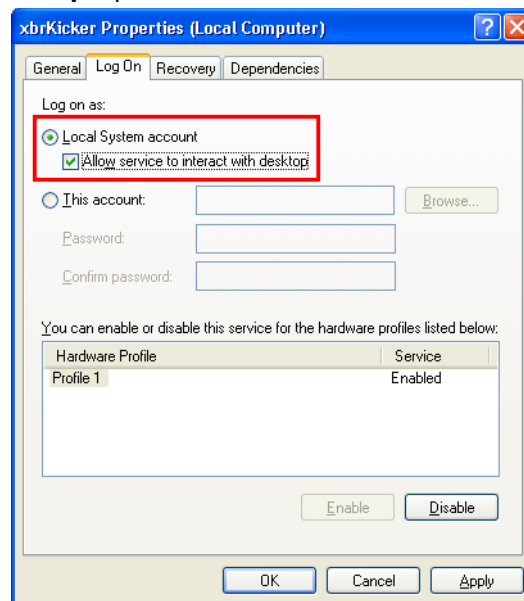


Figure 3-16: xbrKicker Log On Properties

- f. On the Recovery tab, verify that the **First Failure**, **Second Failure**, and **Subsequent Failures** fields are set to **Restart the Service**.

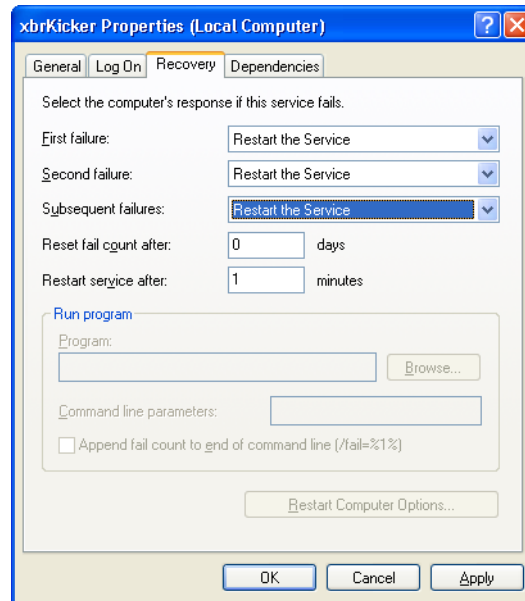


Figure 3-17: XBR Kicker Recovery Properties

- g. Click **OK** to save your changes.

Query Launcher Kicker System Tray Icon

Once the Query Launcher Kicker Service (xbrKicker) has been installed and configured, depending on your system configuration, the xbrKicker icon will display in your computer system tray as a clock icon.



Query Launcher Kicker in Windows Task Manager

You can review the Query Launcher Kicker Service in the Windows Task Manager.

To view the Windows Task Manager:

1. Right-click on the computer system tray and select **Task Manager** to advance to the Windows Task Manager window.
2. At the Windows Task Manager window, select the Processes tab.
 - Select the *Show processes from all users* checkbox.

- Verify the `dtvlaunchkicker.exe` process is listed in the *Image Name* column.

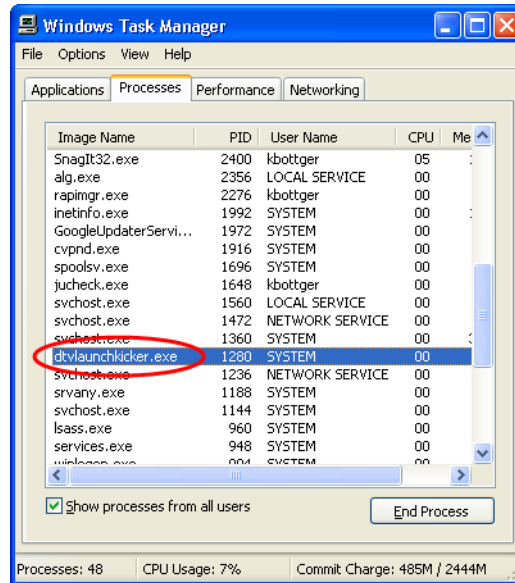


Figure 3-18: Query Launcher Kicker Service in Task Manager

Multi-Tenant Configuration

The configuration file for Query Launcher (`dtvlauncher.ini`) does not need to be replicated for each customer; the organization will be identified from the run data. However, there will be a unique file created where multiple database nodes exist. Query Launcher Kicker (`dtvlaunchkicker.exe`) will not be utilized for offline reporting in the hosted deployments. Instead, there will be batch job scheduled every 5 minutes that will call Query Launcher and execute all runs scheduled under thread 500. The command line will be similar to the following:

```
path1\dtvlauncher.exe runoffline=true path2\dtvlauncher_N.ini
```

where

- path1 - location of `dtvlauncher.exe`
- path2 - location of the `.ini` file with database connection parameters for a node "N"
- `dtvlauncher_N.ini` - name of the `.ini` file with database connection parameters for a node "N"



Each file `dtvlauncher_N.ini` should have a unique name and/or location of the log file (`qlaunch.log` for a traditional standard environment) and dynamic mail batch file (`sendrpts.bat` for a traditional standard environment).

Batch Processing Setup - Multi-Tenant Hosted Environment

These guidelines are provided to walk you through the process of setting up a batch process for QLaunch and Offline reports.

The Offline Process is used in place of `dtvlaunchkicker.exe` to process offline reports in a multi-tenant environment. In a single tenant environment, either method can be used.

If there are multiple nodes (database), there should be a folder for each node in the Qlaunch & Offline Process folders. Each `dtvlauncher.ini` file should be named differently to avoid confusion, especially if multiple threads are used.

Use the following steps to set up the Batch Process for Qlaunch and Offline reports:

1. In the root directory of the Application server hosting the qlaunch process, create a folder called `DTV\XBR7.0_Batch_Process`.
2. Create following two folders under the `DTV\XBR7.0_Batch_Process` folder ([Figure 3-19](#)):
 - Offline_Process
 - Qlaunch_Process

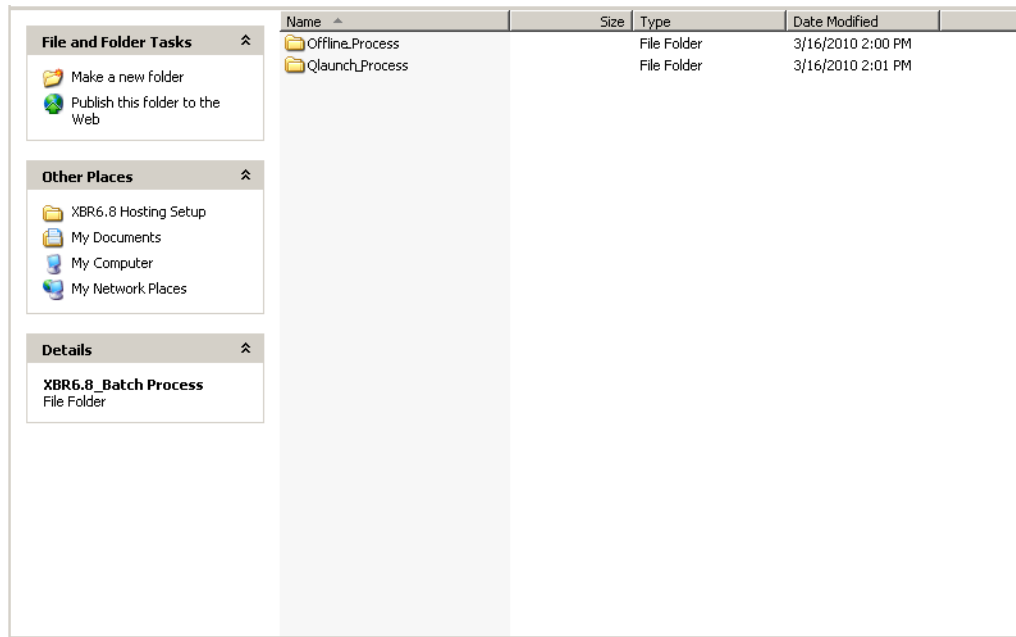


Figure 3-19: Batch Process Folders

Offline Process

Use the following steps to set up the .ini file and the OfflineProcess.bat file to point to the corresponding .ini file:

1. Create the following folders under DTV\XBR7.0_Batch_Process\Offline_Process:
 - INI_files
 - Policy
 - reports
2. Copy the following files into the DTV\XBR7.0_Batch_Process\Offline_Process folder from the Query_Launcher folder in the installed application directory.
 - Mail.exe
 - Mail.ini
 - Pro_comp.pbd
3. Copy the dtv_launcher.ini file from the installed application directory into the DTV\XBR7.0_Batch_Process\Offline_Process\INI_files folder.
4. Modify the .ini file copied in the previous step to point to a "Node" and rename it to identify the node that it is pointing to and the type of process its running (e.g. dtvlauncher_node1_offline.ini).
 - a. Open the renamed DTV\XBR7.0_Batch_Process\Offline_Process\INI_files\dtv_launcher.ini file. It should look similar to the following:

```
[Data Source]
0=XBR Database

[XBR Database]
DBMS= ORA
LogId=
LogPassword=
ServerName=QA70SH
UserId=411DE8CB21933729727D0B0CF4C66EC9
DatabasePassword=411DE8CB21933729727D0B0CF4C66EC9
DbDBMS=ORACLE
DbParm=Staticbind = 1
EncryptedPassword=Y

[REPORT Database]
DBMS=ORA
ServerName=QA70
LogId=
LogPassword=
UserId=E6127F214FD3D72036EACB0A81311149
DatabasePassword=E6127F214FD3D72036EACB0A81311149
DbDBMS=ORACLE
DBParm =Staticbind = 1
Lock=RC
EncryptedPassword=Y
```

```

[license]
line_1=MICROS-Retail
line_2=1800 West Park Drive
line_3=Westboro, MA 01581

[other]
HelpFile=
ClientName=7.0 Release
LogSeverity=20
IconPath=
XBRTTrackVersion=7.0
ThreadNumber=
LogFile=Offline_Process.log
ScriptFile=Offline_Process.bat
LogofflineFile=Offline_Process.log
ScriptofflineFile=Offline_Process.bat
DateFormat=dd-mmm-yyyy
Debug=FALSE
AlertText=Analytics Alert.
MessageTextMaster= Analytics Report by Master File.
MessageTextUser= Analytics Report by User.
RunMailer=Y
PolicyDir=Policy
PDFdevice=Amyuni Document Converter
DefaultLanguage=EN
LoadMessages = N
LoadMessagesFileName = DTVANALYTICS_MSGF
UseNTAuthentication=N
EnforceStoreGroupSecurity=N

-- In order to make this file cleaner please change/review/consider
  this:
-- Make a unique value for the entry LogFile;
-- Make a unique value for the entry ScriptFile;
-- Remove section [KICKER]
-- Remove entry ThreadNumber

```

- b. In the [XBR Database] section, set `ServerName` (highlighted above) to the instance name of the server on which the database is running against.
- c. In the [REPORT Database] section, set `ServerName` (highlighted above) to the instance name that contains the offline reports. This will often be the same for all servers and applications.
- d. In the [other] section (highlighted above):
 - 1) `ThreadNumber` entry should be blank (null).
 - 2) Set `LogFile` to the name of the offline log file for this process.
 - 3) Set `ScriptFile` to the name of the offline batch file for this process.

5. Create additional ini files for each "Node" as shown below.

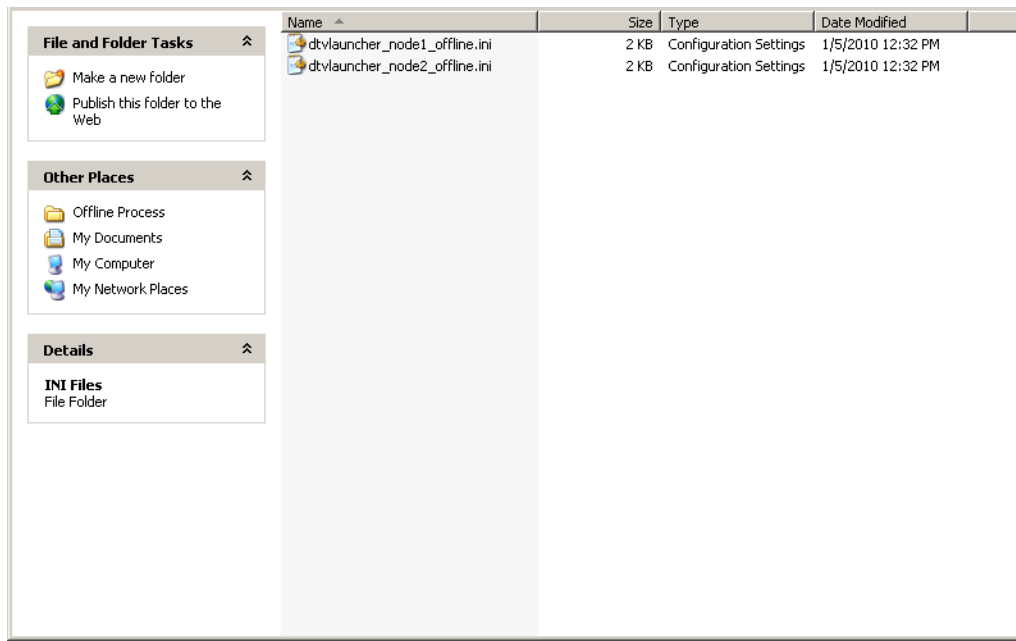


Figure 3-20: Offline Process ini Files

6. Create a batch file (Offline_Process.bat) in the DTV\XBR7.0_Batch_Process\Offline_Process folder to run the offline process for each "Node".
7. In the Offline_Process.bat file, make an entry for each .ini file. Each entry should have three parts:

```
C:\dtv\Qlauncher\dtvlauncher.exe runoffline=true ini=C:\DTV\
XBR7.0_Batch Process\Offline Process\INI_files\
dtvlauncher_node1_offline.ini
```

- Part one: the location of dtvlauncher.exe.
- Part two: offline flag.
- Part three: "ini=" the location/name of the modified dtvlauncher.ini file.

Sample code:

```
REM ===== NODE 1 XBRP1 DATABASE pointing to Prod 1 server
"C:\MICROS-Retail_Analytics_7.0\Query_Launcher\dtvlauncher.exe"
runoffline=true; ini=C:\DTV\XBR7.0_Batch Process\Offline
Process\INI_Files\dtvlauncher_node1_offline.ini;
REM ===== NODE 2 XBRP2 DATABASE pointing to Prod2 server
"C:\MICROS-Retail_Analytics_7.0\Query_Launcher\dtvlauncher.exe"
runoffline=true; ini=C:\DTV\XBR7.0_Batch Process\Offline
Process\INI_Files\dtvlauncher_node2_offline.ini;
```

When you are finished, your file structure should look similar to the following:

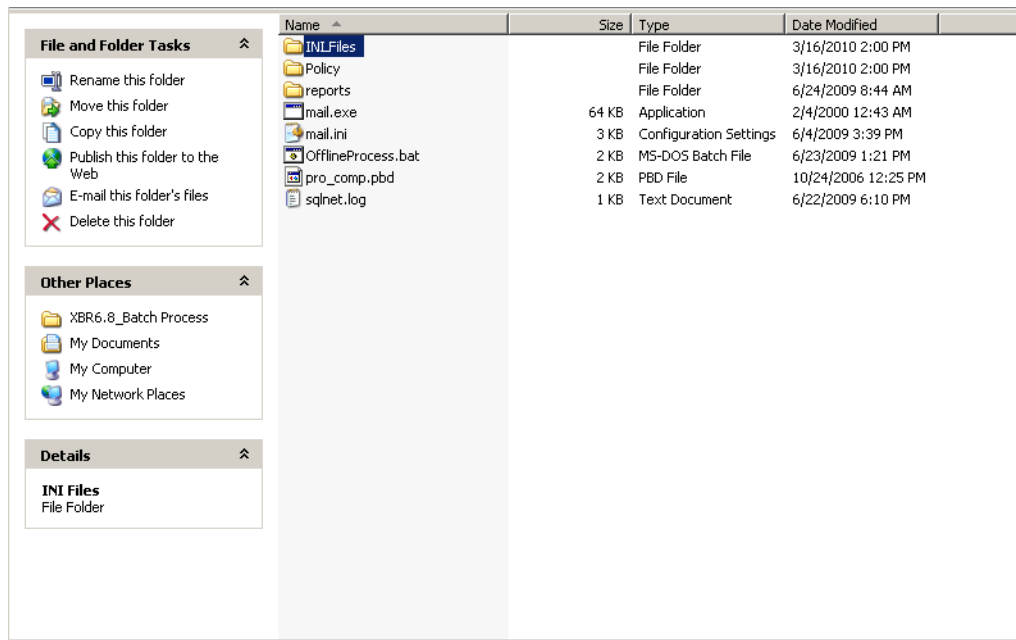


Figure 3-21: Offline_Process File Structure

Qlaunch Process

If there are multiple nodes (servers), there should be a folder for each node in the Qlaunch Process folder. Each server should have its own processes and each process will have its own dtvlauncher.ini file. Each .ini file should be named differently to avoid confusion, especially if multiple threads are used.

Use the following steps to set up the dtvlauncher.ini file and the Qlaunch_process.bat file to point to the corresponding .ini file:

1. Create the following folders under DTV\XBR7.0_Batch Process\Qlaunch_Process:
 - Node <number of node> (e.g. Node1; Node2; Node3 etc.)
 - Policy
 - reports
2. Copy the following files into the DTV\XBR7.0_Batch Process\Qlaunch_Process folder from the Query_Launcher folder in the installed application directory.
 - Mail.exe
 - Mail.ini
 - Pro_comp.pbd
3. Copy the dtv_launcher.ini file from the installed application directory to each "Node" folder created in the previous step.
4. Modify the ini file(s) copied in the previous step to point to a "Node" and rename it to identify the node that it is pointing to and the thread number for that node (e.g. dtvlauncher_node1_thread1.ini).
5. Open the DTV\XBR7.0_Batch Process\Qlaunch_Process\dtvlauncher_node1_thread1.ini file. It should look similar to the following:

```
[Data Source]
0=XBR Database

[XBR Database]
DBMS= ORA
LogId=
LogPassword=
ServerName=QAMMSH
UserId=411DE8CB21933729727D0B0CF4C66EC9
DatabasePassword=411DE8CB21933729727D0B0CF4C66EC9
DbDBMS=ORACLE
DbParm=Staticbind = 1
EncryptedPassword=Y

[REPORT Database]
DBMS=ORA
ServerName=QA_70
LogId=411DE8CB21933729727D0B0CF4C66EC9
LogPassword=411DE8CB21933729727D0B0CF4C66EC9
UserId=
DatabasePassword=
```



```

DbDBMS=ORACLE
DBParm =Staticbind = 1
Lock=RC
EncryptedPassword=Y

[license]
line_1=MICROS-Retail
line_2=1800 West Park Drive
line_3=Westboro, MA 01581

[other]
HelpFile=
ClientName=7.0 Release
LogSeverity=20
IconPath=
XBRTTrackVersion=7.0
ThreadNumber=1
LogFile=dtvlauncher_node1_thread1.log
ScriptFile=dtvlauncher_node1_thread1.bat
DateFormat=dd-mmm-yyyy
Debug=FALSE
AlertText=Analytics Alert.
MessageTextMaster= Analytics Report by Master File.
MessageTextUser= Analytics Report by User.
RunMailer=Y
PolicyDir=Policy
PDFdevice=Amyuni Document Converter
DefaultLanguage=EN
LoadMessages = N
LoadMessagesFileName = DTVANALYTICS_MSGF
UseNTAuthentication=N
EnforceStoreGroupSecurity=N

-- In order to make this file cleaner please change/review/consider
  this:
-- Make a unique value for the entry LogFile;
-- Make a unique value for the entry ScriptFile;
-- Remove section [KICKER]
-- Remove entry ThreadNumber

```

6. In the [XBR Database] section, set ServerName (highlighted above) to the instance name of the server on which the database is running against.
7. In the [REPORT Database] section, set ServerName (highlighted above) to the instance name that contains the offline reports. This will often be the same for all servers and applications.
8. If multiple threads (processes) are being used, in the [other] section, set ThreadNumber (highlighted above) to the proper thread number.
9. In the [other] section (highlighted above):
 - a. Set LogFile to the name of the log file for this process.

- b. Set ScriptFile to the name of the batch file for this process.
10. Create additional ini files for each "Node" and thread number as shown below.

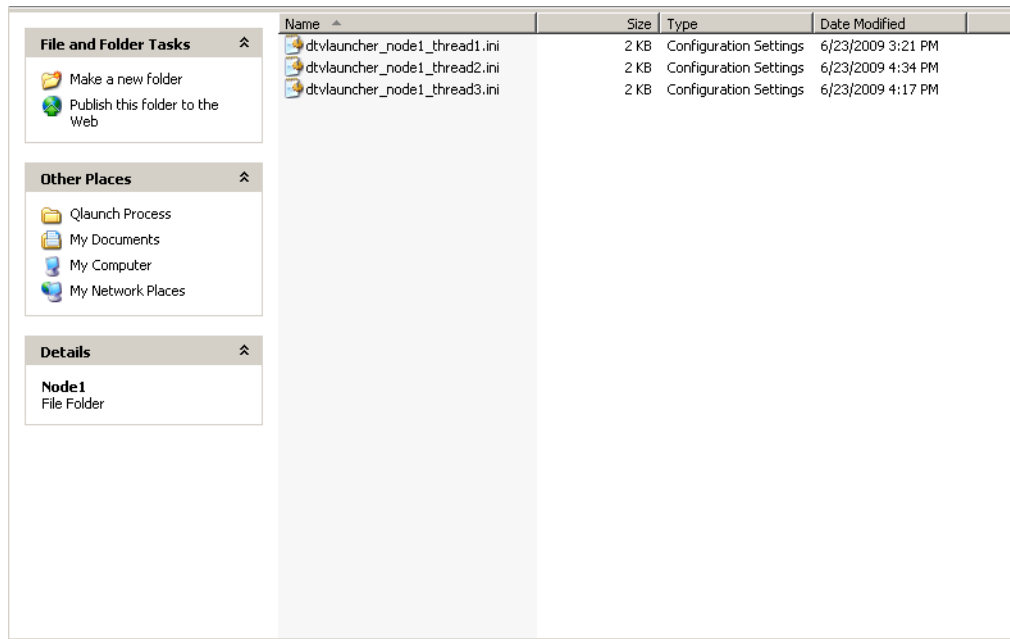


Figure 3-22: Qlaunch Process ini Files

11. Create three batch files in the DTV\ XBR7.0_Batch_Process \Qlaunch_Process directory to run the Qlaunch process for each "thread".

- Qlaunch_Process_Morning.bat
- Qlaunch_Process_Noon.bat
- Qlaunch_Process_Night.bat

12. Each batch file will have one or more entries for ini files. Each entry should have two parts:

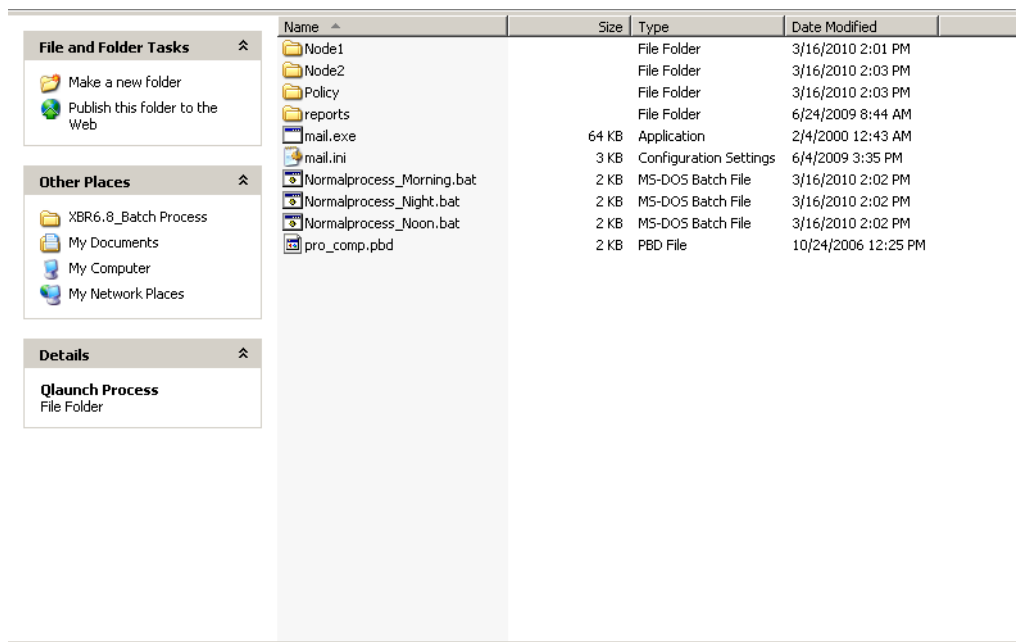
C:\dtv\Qlauncher\dtvlauncher.exe ini=C:\dtv\ini\dtvoffline1.ini

- Part one: the location of dtvlauncher.exe.
- Part two: "ini=" the location/name of the modified dtvlauncher.ini file.

Sample code of Qlaunch_Process_Morning.bat:

```
REM ===== NODE 1 XBRP1 Pointing To Prod1 Server
C:\ MICROSOFT-Retail_Analytics_7.0\Query_Launcher\dtvlauncher.exe
ini=C:\DTV\XBR7.0_Batch_Process\Qlaunch_Process\Node1\dtvlauncher_node
1_thread1.ini;
REM ===== NODE 2 XBRP2 pointing to Prod2 server
C:\ MICROSOFT-Retail_Analytics_7.0\Query_Launcher\dtvlauncher.exe
ini=C:\DTV\XBR7.0_Batch_Process\Qlaunch_Process\Node2\dtvlauncher_node
2_thread1.ini;
```

When you are finished, your file structure should look similar to the following:



Name	Size	Type	Date Modified
Node1		File Folder	3/16/2010 2:01 PM
Node2		File Folder	3/16/2010 2:03 PM
Policy		File Folder	3/16/2010 2:03 PM
reports		File Folder	6/24/2009 8:44 AM
mail.exe	64 KB	Application	2/4/2000 12:43 AM
mail.ini	3 KB	Configuration Settings	6/4/2009 3:35 PM
Normalprocess_Morning.bat	2 KB	MS-DOS Batch File	3/16/2010 2:02 PM
Normalprocess_Night.bat	2 KB	MS-DOS Batch File	3/16/2010 2:02 PM
Normalprocess_Noon.bat	2 KB	MS-DOS Batch File	3/16/2010 2:02 PM
pro_comp.pbd	2 KB	PBD File	10/24/2006 12:25 PM

Figure 3-23: Qlaunch_Process File Structure

TROUBLESHOOTING THE QUERY LAUNCHER INSTALLATION

If Query Launcher is not performing in the manner expected, there may be a simple fix for the issue. Use the following troubleshooting methods to make simple checks or corrections of the installation.

Problem	Can't export to PDF format
Solution	<p>During installation, a print driver that converts exported reports to Adobe PDF format should be installed in XBR. This print driver, Amyuni PDF Converter, may not have been installed correctly. First check to make sure the driver was installed:</p> <ol style="list-style-type: none"> 1. From the Start menu on the task bar, select Settings, then Printers and Faxes. 2. Make sure that Amyuni PDF Converter is in the list of printers. <p>If it is not there, re-install the driver:</p> <ol style="list-style-type: none"> 1. Open the directory \MICROS-Retail_Analytics_7.0\PDF in a window. 2. In the directory, run <code>INSTALL.EXE</code> program. It may require an administrator to run it so that it can be installed successfully.
Problem	Can't connect to the database
Solution	<p>Make sure the appropriate database connection information is entered in the <code>dtvlauncher.ini</code> file for the Query Launcher. This product uses the same database connection information as XBR so, it should not need to be adjusted. However the UserID and DatabasePassword parameters must be entered in <code>dtvlauncher.ini</code> for the Query Launcher.</p>
Problem:	Reports are not being produced
Solution:	<p>Step 1: Were the reports scheduled to run for that day?</p> <p>Look in the QSC_RUNS table to see which reports were scheduled for the day. Check the run_number, thread_number, and frequency from this table. The frequency field indicates how often the report runs. Valid values for the frequency field are:</p> <p>D Daily</p> <p>W Weekly. The field run_day determines the day of the week on which the report runs.</p> <p>M Monthly. The field run_day determines the day the month on which the report runs.</p> <p>S Specify Dates. Query QSC_RUN_DATES where the run_number = the run_number from QSC_RUNS.</p>

Problem: Reports are not being produced (continued)

Step 2: If the reports were scheduled, what thread were they assigned to? Was there a Query Launcher instance set up to process this thread?

Look in the **dtvlauncher.ini** file for the ThreadNumber. Make sure a separate instance of the Query Launcher is set up to process each thread. If a separate instance wasn't set up, then copy the program to another directory and modify the INI file to process the thread. Then modify the WIN AT scheduler to schedule this new instance to run regularly.

Step 3: Were there users assigned to the query?

Look in the QSC_RUN_USERS table for the run_number to see who was assigned to receive output from the query, in the userid field.

If the field user_or_group = G, query the ADM_USER_PROFILE table where group_name = userid from the QSC_RUN_USERS table. Make sure the users who were supposed to receive the report are either assigned in the QSC_RUN_USERS table or are part of the group that is assigned to the query. If the users aren't assigned to the query, then they can be added using the front-end of XBR.

Step 4: Did the query produce any output?

Look in the qlaunch.log file in the Query Launcher directory. If there were no rows to print for the query, that will be indicated in the log file.

Step 5: Was the output suppressed?

Typically, a report is suppressed when users want to receive alerts only, but no attachments. To see if the report was suppressed:

1. Run XBR.
2. From the Administration menu, select **Scheduler**, then **Schedule Queries**.
3. Expand the tree for the report.
4. See if the report is suppressed for the query by double-clicking the query to open the Run Maintenance window.
5. Click the **Distribution** tab and look in the Output Type box.
6. The report could be suppressed for the user or group. To see if it is, double-click the user or group to open the Run Properties window and look in the Output Type box.

Problem	Users are not receiving emails
----------------	---------------------------------------

Solution	Step 1: Were the reports created?
-----------------	--

In the Query Launcher INI file (the default is `dtvlauncher.ini`), there is a variable named `ScriptFile`. This holds the name of the batch file that will be run by the mail program. Look at the file that was created, and if it has the date/time stamp close to the time it was scheduled to run, this verifies that the reports were created. If not, rerun the launcher program.

Additionally, look in the `\reports` subdirectory (or the directory specified in the `output_dir` column in the `adm_sys_defaults` table), where the generated reports are found. If there are reports with a date and time close to the time they were scheduled to be created, this verifies that they were created. If not, rerun the launcher program.

Step 2: Was the mailer scheduled to run?

In the Query Launcher INI file (default is `dtvlauncher.ini`), there is a variable named `RunMailer`.

If `RunMailer` is set to:

- `n`, then the reports are not automatically mailed; the mailer must be scheduled separately. Users can set up queries and alerts to go to their beepers. If the mailer is scheduled to run later in the morning than the launcher, alerts are sent when the mailer runs. However, mission-critical alerts can be sent at the time they were created by setting the `RunMailer` option to `y`.
- `y`, look in the directory from which the Query Launcher program is running. If there is a file named `dead_letter.txt`, open it. The program that actually mails the files writes to this file if it encounters an error. Usually this occurs when the program can't find the Gateway specified in the `mail.ini` file.

Step 3: Is the email address correct?

Use the front-end XBR application to verify the email addresses of users in their user profiles. If they are incorrect, correct them.

Problem	Thread wasn't scheduled or needs to be rerun
----------------	---

Solution	<p>Schedule the instance of the Query Launcher to run through the WIN AT Scheduler if it isn't already scheduled.</p> <p>To rerun a scheduled run, edit the <code>rerun.bat</code> file in the Query Launcher directory. (If there isn't a <code>rerun.bat</code> file there, create it following the examples below.) Use this file to pass parameters into the Query Launcher program. Valid parameters are:</p> <ul style="list-style-type: none">■ <code>ini=</code>■ <code>rundate=</code> <p>To pass both parameters, separate them by a semicolon (;).</p> <p>The following sample <code>rerun.bat</code> line runs the Query Launcher for December 13, 2008, and passes the <code>qlaunch2.ini</code> to the program. The line constitutes the entire content of the <code>rerun.bat</code> file:</p> <pre>dtvlauncher.exe ini=qlaunch2.ini;rundate=12/13/2008</pre> <p>The <code>ini=</code> parameter is not required to use the default INI file (<code>dtvlauncher.ini</code>). To use the default INI, the contents of the <code>rerun.bat</code> file are:</p> <pre>dtvlauncher.exe rundate=12/13/2008</pre> <p>Regardless of whether this file is run manually or scheduled to run, the output will be produced for the date specified regardless of the actual date. For example: if today is Friday, 12/19/2008, and the example above is run, it will produce output for all of the reports that were scheduled to run on 12/13/2008 and all that are scheduled to run Daily, and on Fridays. The date ranges reflect the <code>rundate</code> (for example, Last Week would be 12/1/2008 - 12/07/2008 instead of 12/8/2008 - 12/14/2008).</p>
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CHAPTER

4

XBR Web Server Application

OVERVIEW

This chapter describes installing the default deployment configuration of the web server which includes the XBR Web Application embedded in the Liferay Portal Server (v3.1.0) hosted on the Apache Tomcat Web Server (v5.0.28).

About This Chapter

This chapter contains the following sections:

- To set up the Java Developer's Kit (JDK) Path variable and install the web server: see ["Installation" on page 106](#).
- See ["Installation" on page 107](#) for information and procedures on using the InstallShield process to install the Web application.
- To configure Liferay and the web server default port: see ["Configuration" on page 147](#).
- To configure and set up overrides for the main configuration file, `dvreport-config.xml`: see ["XBR Web Application" on page 164](#).
- To configure the `portal-ext.properties` file: see ["Liferay Portal Server" on page 217](#)
- To enable the XBR Web Application to run on a secured web site: see ["XBR Web Application on a Secured Web Site" on page 231](#).
- For instructions on starting and shutting down the XBR Web Server and Starting the Web Client: see ["Testing the Installation" on page 249](#).
- To upgrade the XBR Web Application Server from a previous version: see ["Upgrade" on page 250](#)
- Considerations for setting up internet access for the web application: see ["Multi-Tenant Configuration" on page 244](#)

Audience

This chapter is intended for anyone responsible for installing or upgrading to the XBR Web Application Server.

Prerequisites

This chapter assumes the following:

- The installation's application database (including Liferay tables) and instances of XBR Desktop Client have already been upgraded to version 6.8 or greater.
- A suitable hardware platform running a Windows operating system is available for web-application hosting.
- Users exist for desktop application.
- The latest service packs are installed for the versions of Microsoft Windows and Microsoft SQL Server being used.
- Oracle: Oracle client is installed on the application server running the Web application and configured for connection to the database.

Process Flow

This section presents the process flow that should be followed when installing the XBR Desktop application using InstallShield.

1. Perform the InstallShield installation (["Installation" on page 107](#)) process.
2. Add or edit the Path Environment Variable (["Java Developer Kit \(JDK\) 1.6.x Path Variable" on page 140](#)).
3. **[OPTIONAL]** If desired, change the configuration settings on the Tomcat Web Application Server (["Configuration" on page 147](#)).
4. **[OPTIONAL]** If desired, change configuration settings on the XBR Web Application (["XBR Web Application" on page 164](#)).
5. **[OPTIONAL]** If desired, change configuration settings on the Liferay Portal Server (["Liferay Portal Server" on page 217](#)).
6. If necessary, set up the Web Application to run on a secured web site (["XBR Web Application on a Secured Web Site" on page 231](#)).

INSTALLATION

Pre-Requisites/Requirements

Hardware Requirements

Performance

This varies depending on the number of users and the typical size of the reports being processed. From experience with other customers, a Dual 2+ GHz cpu with 4+ GB Ram should be more than sufficient to handle around 250 users. If the box is powerful enough, it makes sense to deploy the web server on the same box as the Scheduler service used by the desktop application to handle scheduled reports. The web server has been tested on Windows 2003/2008 Server operating system.

Storage Space

The background report generation feature has been designed to have the option of caching reports in either the file system or a specified database datasource. If the file system option is selected, then sufficient space to hold the generated reports must be mounted on the server, either as a drive or a network file share. The network file share should be used if they are going to use multiple web servers in a cluster. If the database option is selected, then the same disk space needs to be available to the database instance that is being used to hold the reports. A safe starting point would be at least 10 GB per 50 users with the ability to grow as needed. Outside of the report storage consideration, the base web server needs only about 200 MB of free disk space at installation time.

Software Requirements

Server Side

JDK 1.6 must be installed on the server system. This is often pre-installed on many systems already, but can be downloaded from <http://java.sun.com/javase/downloads/widget/jdk6.jsp>. In the default deployment for v7.0, the Apache Tomcat Web server and Liferay Portal server are installed along with our software as an integrated bundle. No pre-installation of these is necessary. For Oracle deployments, the JDBC driver provided by Oracle is included and for MS SQL Server deployments, the open source JTDS driver is included so there is no need to separately pay for, or procure a JDBC driver for those two dbms types.

Client Side

MICROS-Retail officially supports the Internet Explorer web browser, version 8, running on the Windows XP or Windows 7 operating systems. Other web browser/operating system combinations that support javascript, cookies, and applets may work, but have not been tested. The web client uses java applets and will assert the use of JRE 1.6. While it is recommended that this be pre-installed, it is not necessary as the user should get prompted to download and install the correct version the first time they use the application. Java 6 (or other versions) can be installed at the same time, as other applications and applets may require that.

Installation

Web Server



If you use SSL with LDAP; perform this installation normally and then perform the advanced configuration in [“XBR Web Application on a Secured Web Site”](#) on page 231.

Use the following steps to install the Web Application:

1. Insert the Web Application Installation CD into the CD-ROM drive.
2. If the InstallShield wizard started automatically, continue to the next step; otherwise double-click the `setup.exe` file on the CD to start the InstallShield wizard.
3. Click **Next** to accept the default destination folder.

If you would like the Web Application installed to a different location; use the Browse button to find an alternate location and then click **Next**.

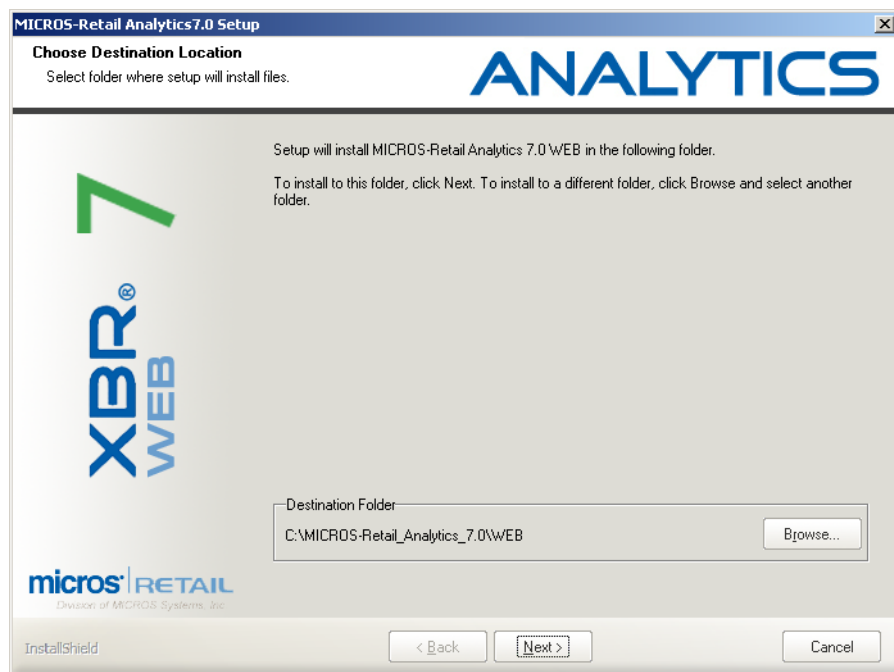


Figure 4-1: Destination Folder

4. Select LDAP if LDAP will be used for authentication for XBR Web.
Select Video if video integration/linking will be used.
Click **Next**.

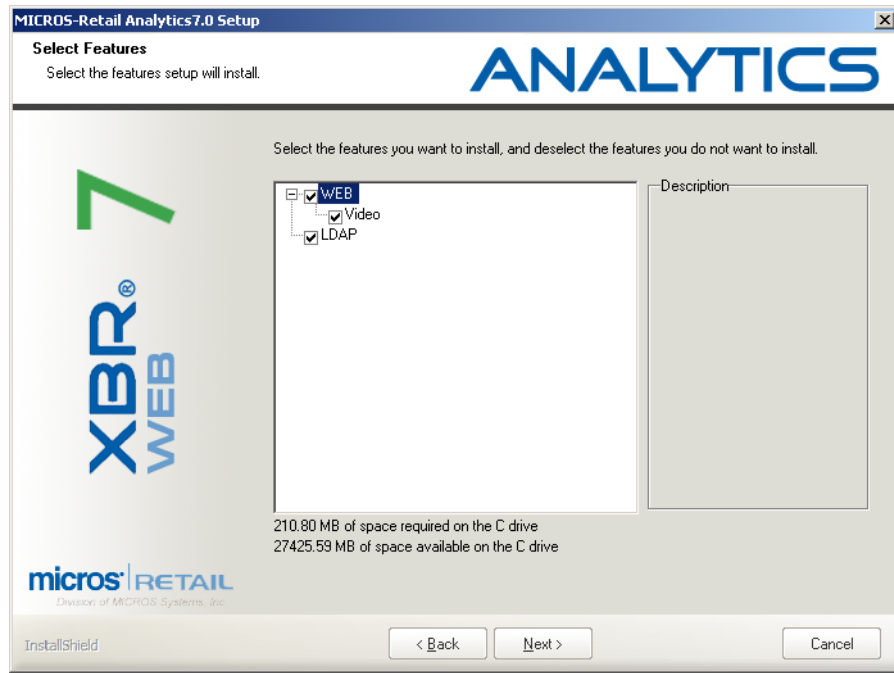


Figure 4-2: Select Features

5. Click **Next** to start the installation. This process may take a few minutes.

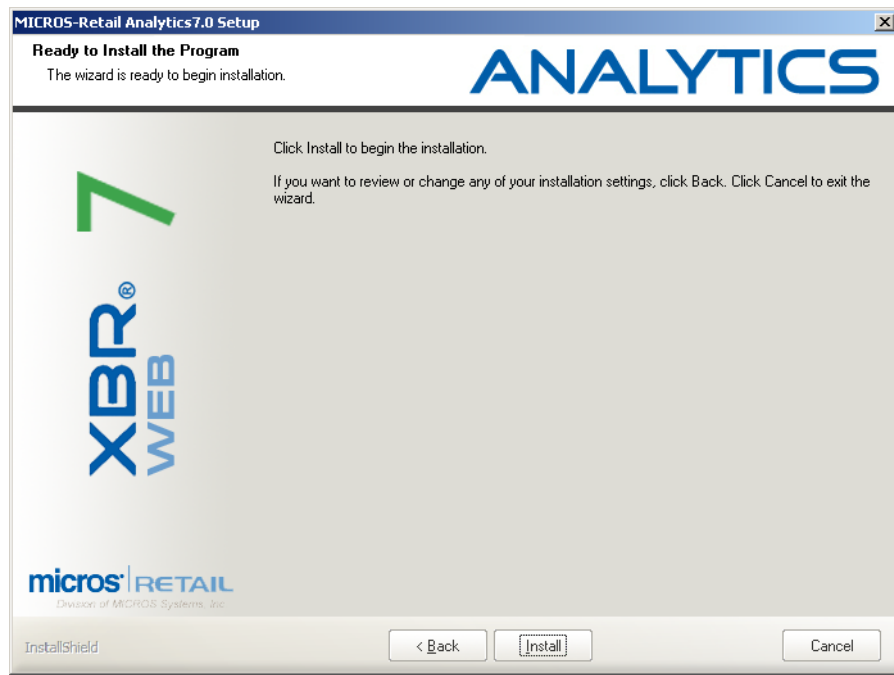


Figure 4-3: Ready to Install

6. The InstallShield application checks to see if a JDK is installed:
 - a. If version 1.6 of the JDK is not found, the following screen is displayed. Click **Next** and go to step [7](#).

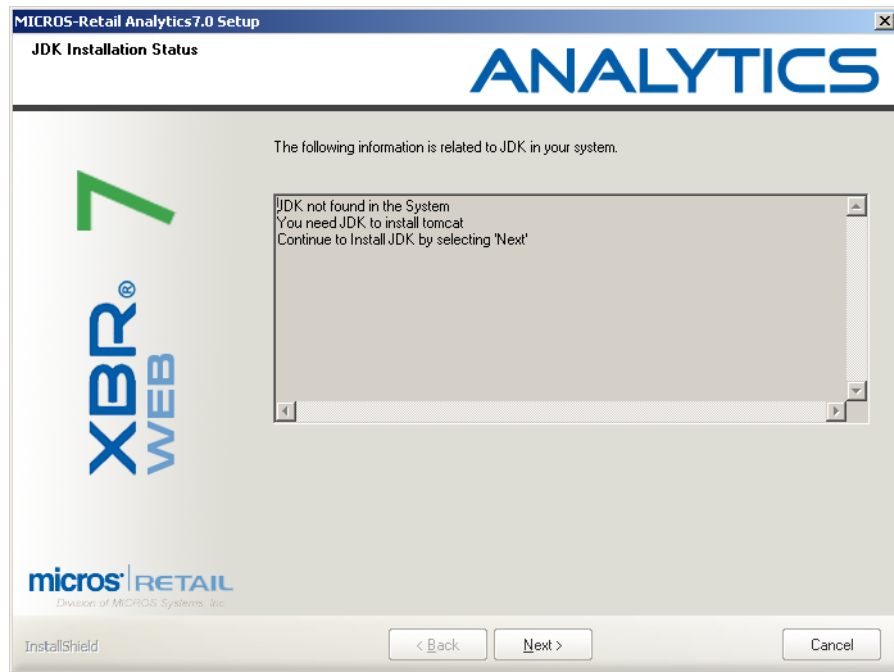


Figure 4-4: JDK Version 1.6 Not Found

- b. If the proper version of the JDK is found, you will see the following screen. Click **Next** and go to step [11](#).

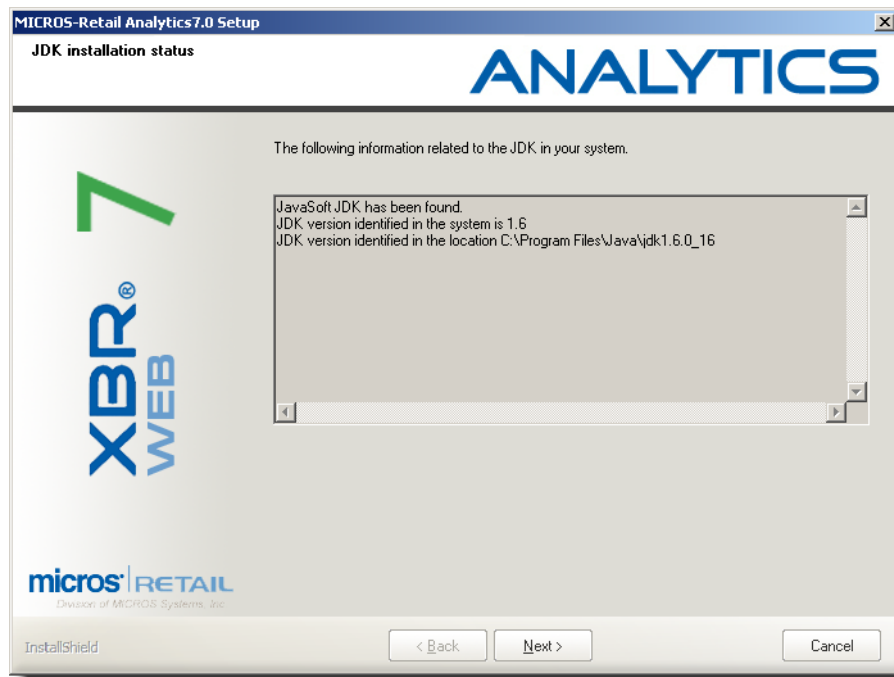


Figure 4-5: Java JDK Found

7. If the proper version of the JDK is not installed, you will be prompted to install the JDK.

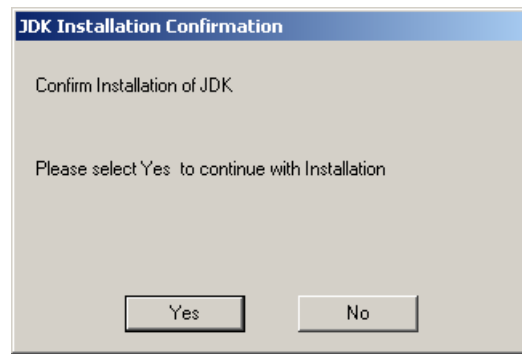


Figure 4-6: Install JDK Confirmation

Click **Yes** to continue with the JDK installation. The JDK installation process may take a few minutes to start and will install with default options.



If the correct version of the JDK is not installed on your system, the XBR Web Application may not function properly.

8. Click **Next** to install the JDK.

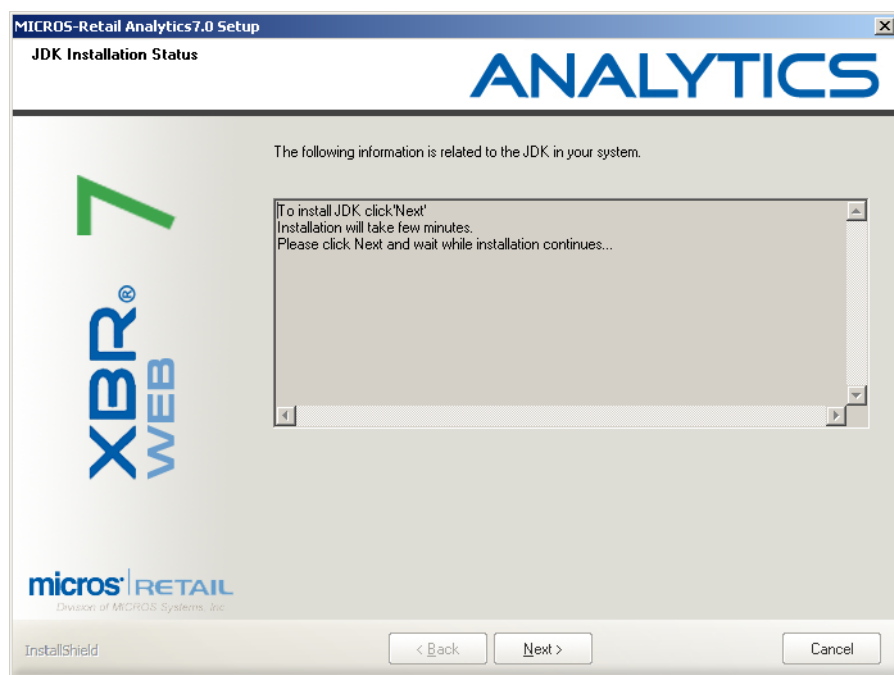


Figure 4-7: Click Next to Install

9. Click **Next**. The process will check for the proper JDK again.

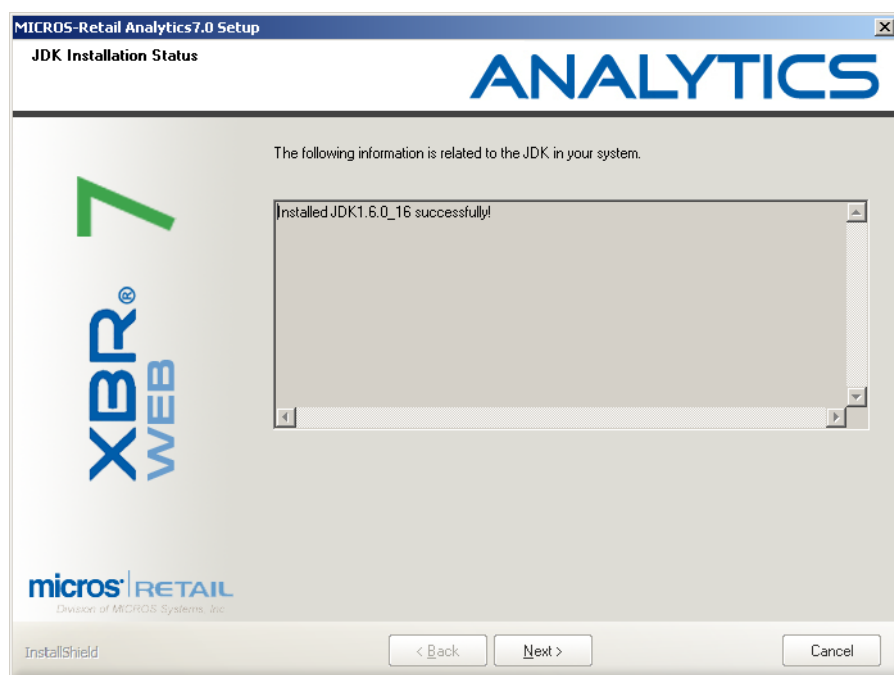


Figure 4-8: JDK1.6.0_16 Installed Successfully

10. Click **Next** to continue the JDK installation.

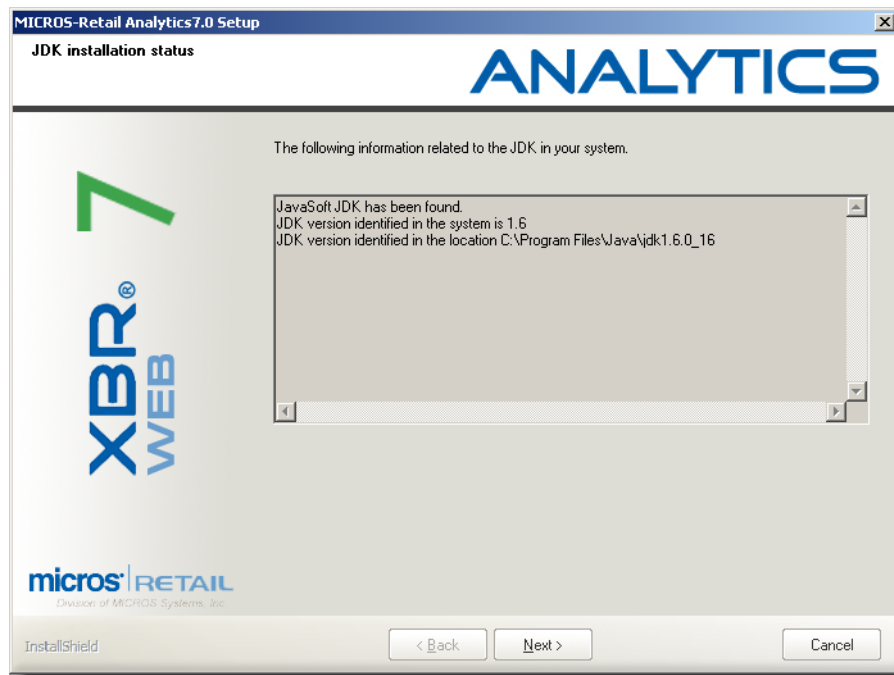


Figure 4-9: JDK Installation

11. Click **Next** to continue the JDK installation.

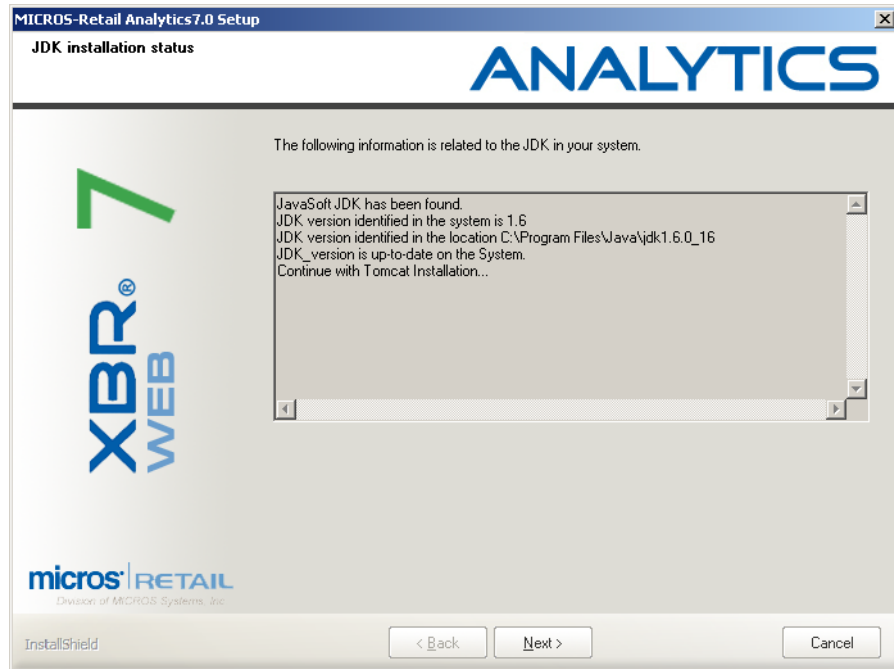


Figure 4-10: JDK Installation

12. The JDK installation is complete and the JAVA_HOME variable is set. Click **Next**.

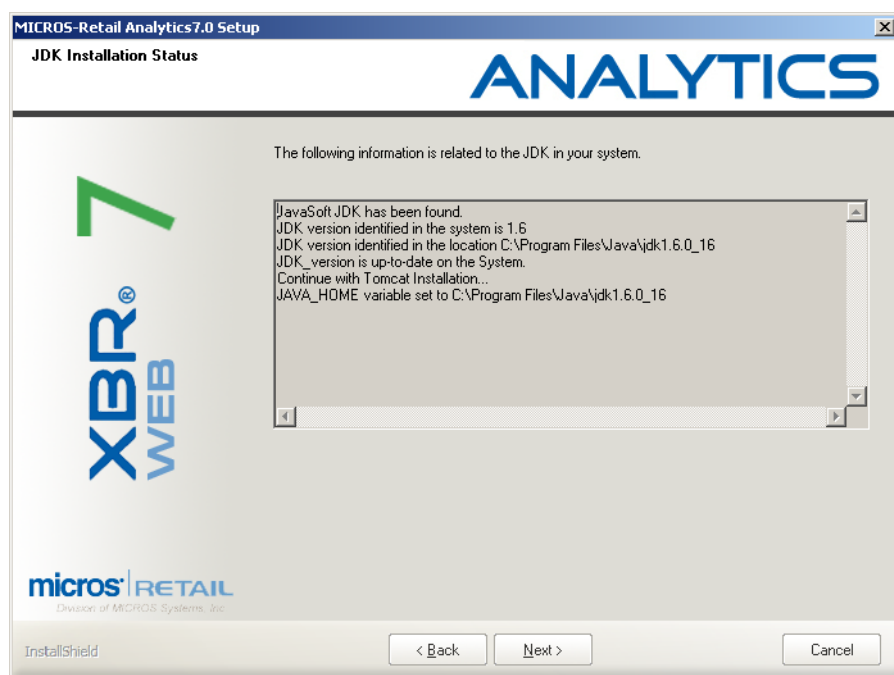


Figure 4-11: JAVA_HOME Variable Set

13. Select the type of database you are going to use for the Analytics Pool and click **Next**. The Analytics Pool contains the XBR tables and views.

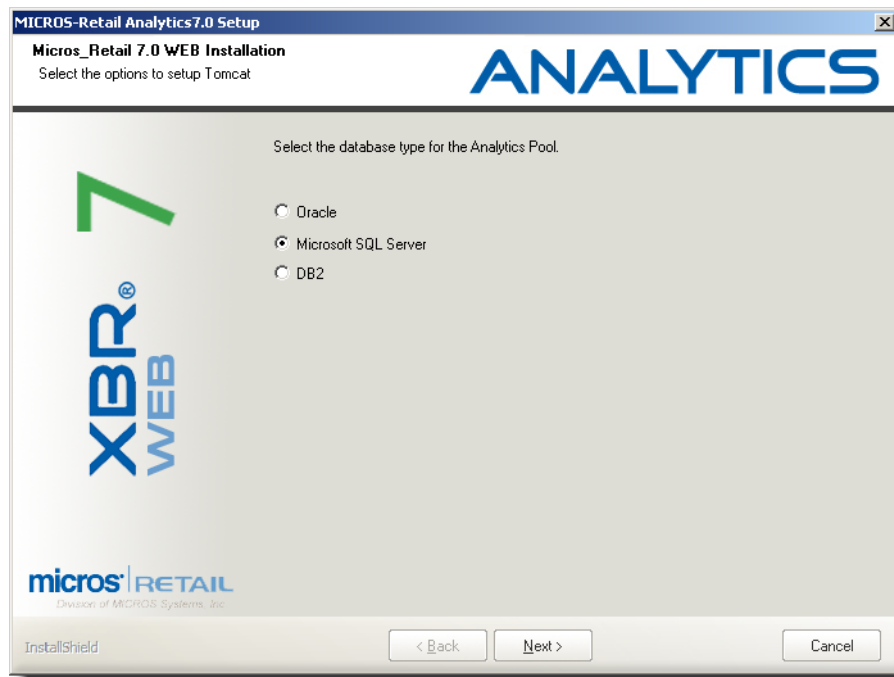
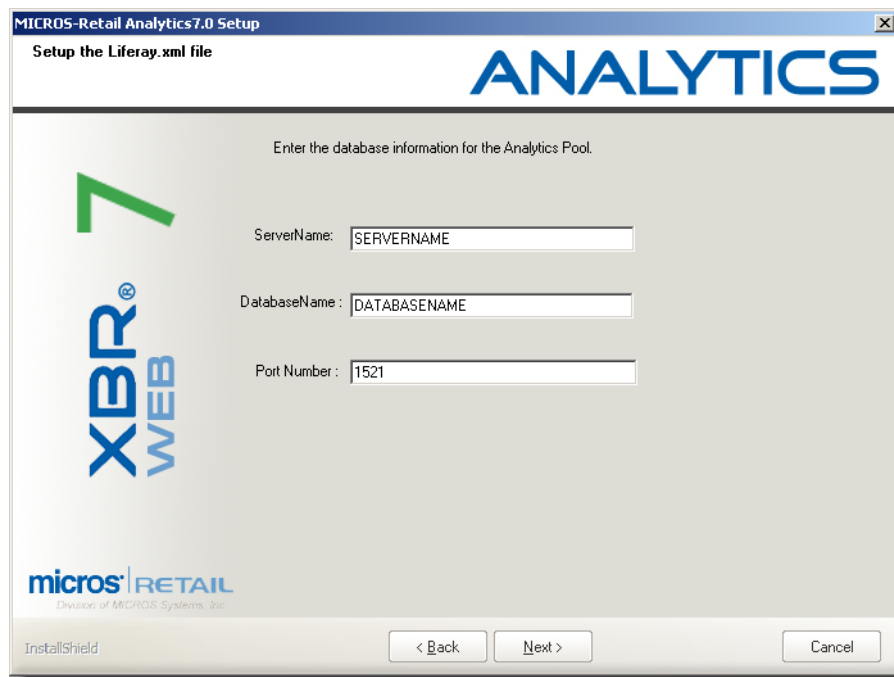


Figure 4-12: Analytics Pool Database Selection

14. Enter the following database information for the Analytics Pool database:
- Server Name** - This is the name of the server that hosts the database instance.
 - Database Name** - The name of the database being used for the Analytics Pool.
 - Port Number** - The port on which the database is listening.
 - Click **Next** when you have entered all the database information.



MICRO5-Retail Analytics7.0 Setup

Setup the Liferay.xml file

ANALYTICS

Enter the database information for the Analytics Pool.

7

XBR® WEB

micro5 RETAIL
Division of MICRO5 Systems, Inc.

ServerName: SERVERNAME

DatabaseName: DATABASENAME

Port Number: 1521

InstallShield

< Back Next > Cancel

Figure 4-13: Analytics Pool Database Information

15. Enter your **User ID** and **Password** for the Analytics Pool database. You may need to contact your Database Administrator (DBA) to help you with this information. Click **Next** when you are finished.



SQL Server is case sensitive. You must enter your password exactly as it was created with regard to upper and lowercase letters. If you do not do this, the XBR Web application will not be able to access the database.

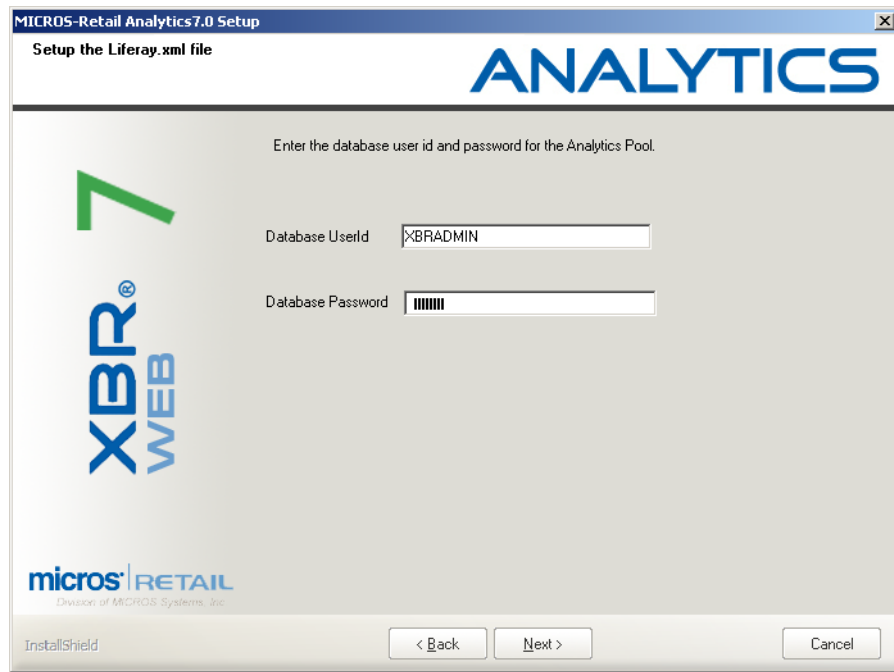


Figure 4-14: Analytics Pool Database URL User ID and Password

16. Select **Yes** if you want to use the same User Name and Password for the remaining pools (Liferay and Offline Reports) or select **No** if you want to use different User Names and Passwords. Click **Next** to continue.

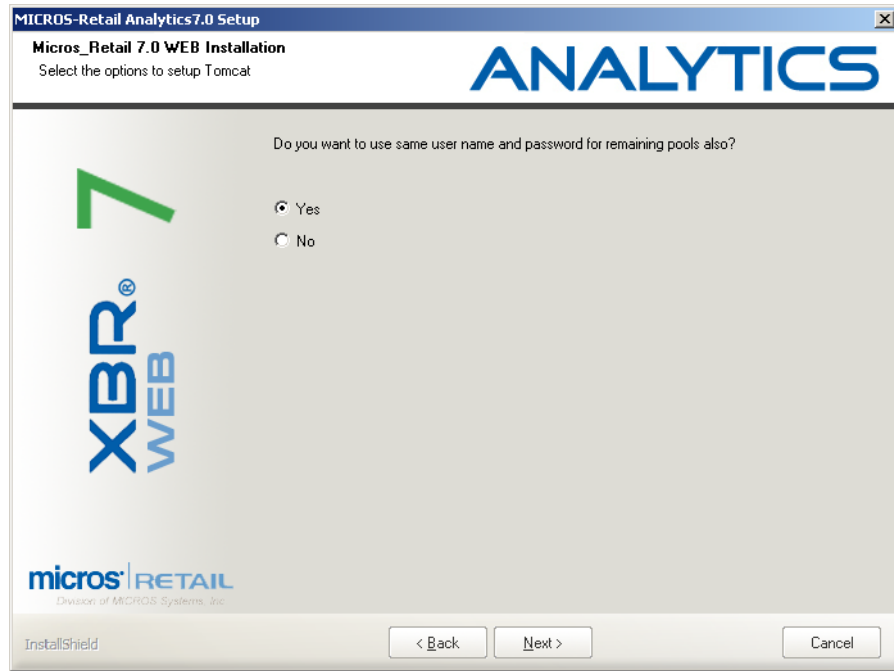


Figure 4-15: Same User Name and Password for Other Pools

17. Select the type of database you are going to use for the Liferay Pool and click **Next**. The Liferay Pool contains the Liferay tables.

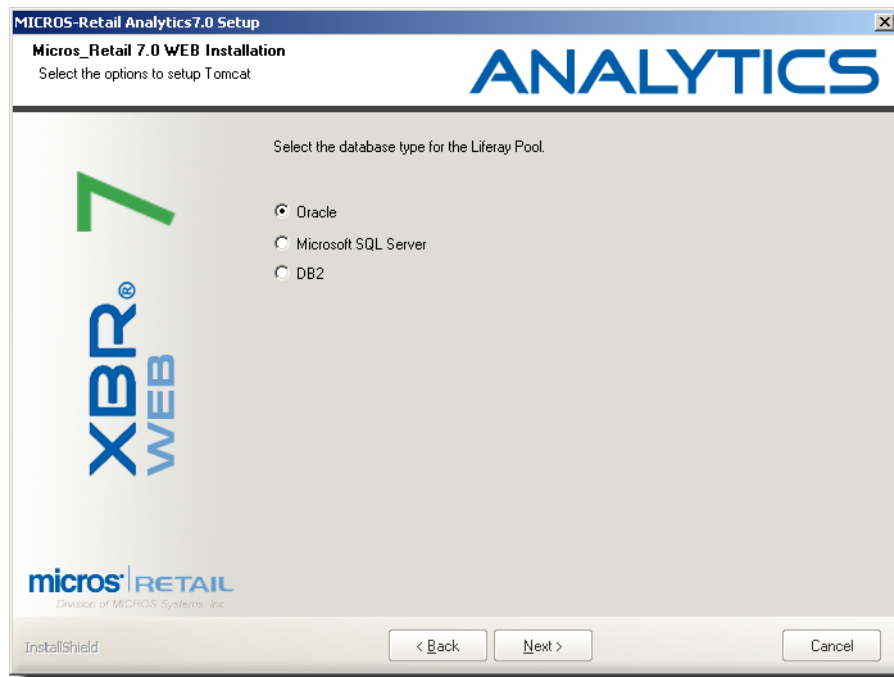
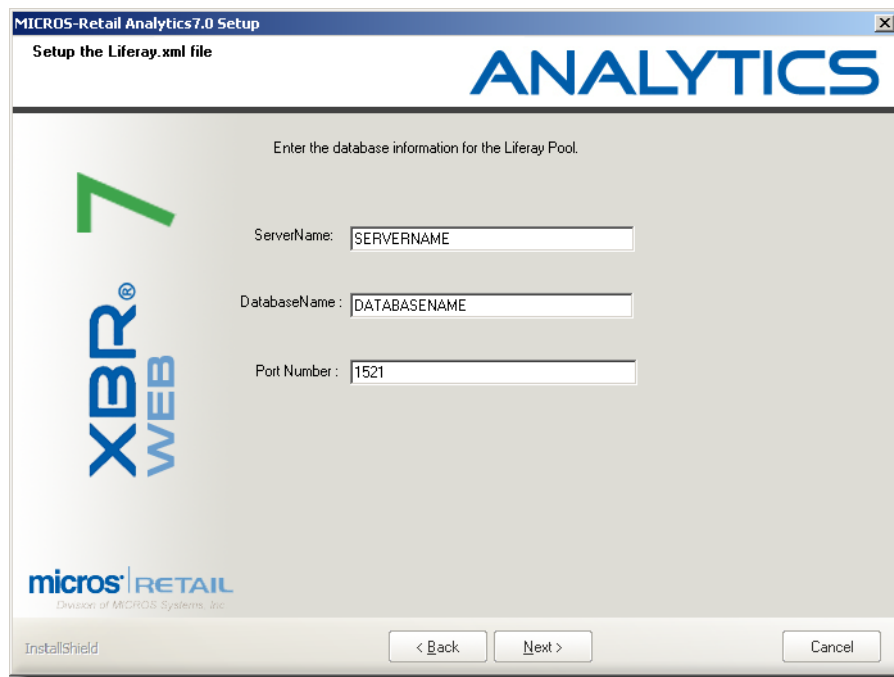


Figure 4-16: Liferay Pool Database Selection

18. Enter the following database information for the Liferay Pool database:
- Server Name** - This is the name of the server that hosts the database instance.
 - Database Name** - The name of the database being used for the Liferay Pool.
 - Port Number** - The port on which the database is listening.
 - Click **Next** when you have entered all the database information.



The screenshot shows a Windows-style setup window titled "MICRO5-Retail Analytics7.0 Setup". The subtitle is "Setup the Liferay.xml file". The window features the "ANALYTICS" logo in blue at the top right. On the left side, there is a large green number "7" and the "XBR® WEB" logo. The main area contains the text "Enter the database information for the Liferay Pool." followed by three input fields: "ServerName:" with the placeholder "SERVERNAME", "DatabaseName:" with the placeholder "DATABASENAME", and "Port Number:" with the placeholder "1521". At the bottom left, the "micro5 RETAIL" logo is visible, with "Division of MICRO5 Systems, Inc." in smaller text below it. The bottom right corner contains three buttons: "< Back", "Next >", and "Cancel". The "InstallShield" logo is in the bottom left corner of the window frame.

Figure 4-17: Liferay Pool Database Information



The following screen will *only* appear if you chose to use different User Names and Passwords for all the pools. If you do not see the following screen, skip the next step.

19. Enter your **User ID** and **Password** for the Liferay Pool database. You may need to contact your Database Administrator (DBA) to help you with this information. Click **Next** when you are finished.



SQL Server is case sensitive. You must enter your password exactly as it was created with regard to upper and lowercase letters. If you do not do this, the XBR Web application will not be able to access the database.

Figure 4-18: Liferay Pool Database User ID and Password

20. Select the type of database you are going to use for the Offline Pool and click **Next**. The Offline Pool contains the tables to store definitions and results for the offline reports.

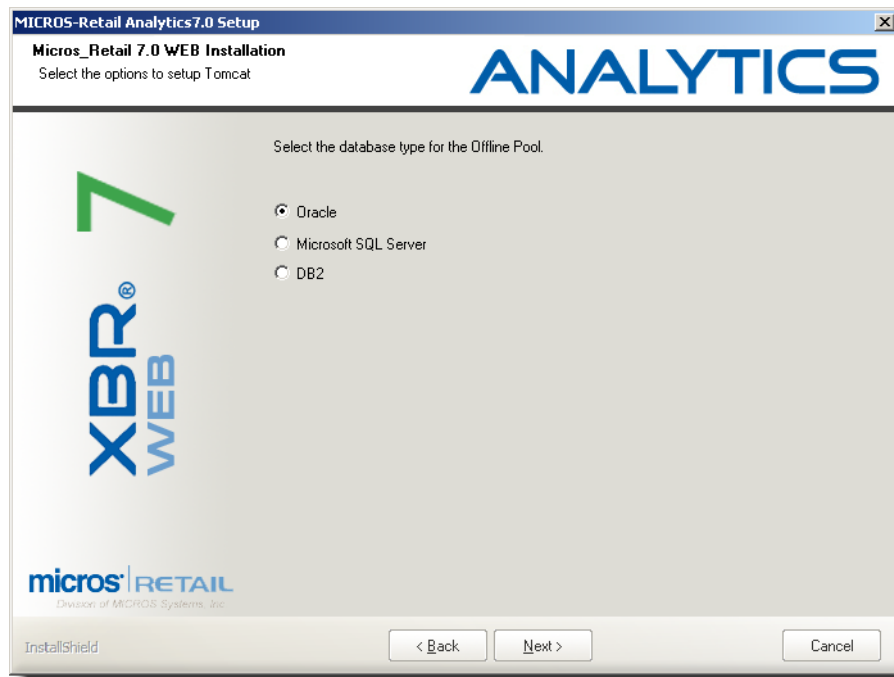
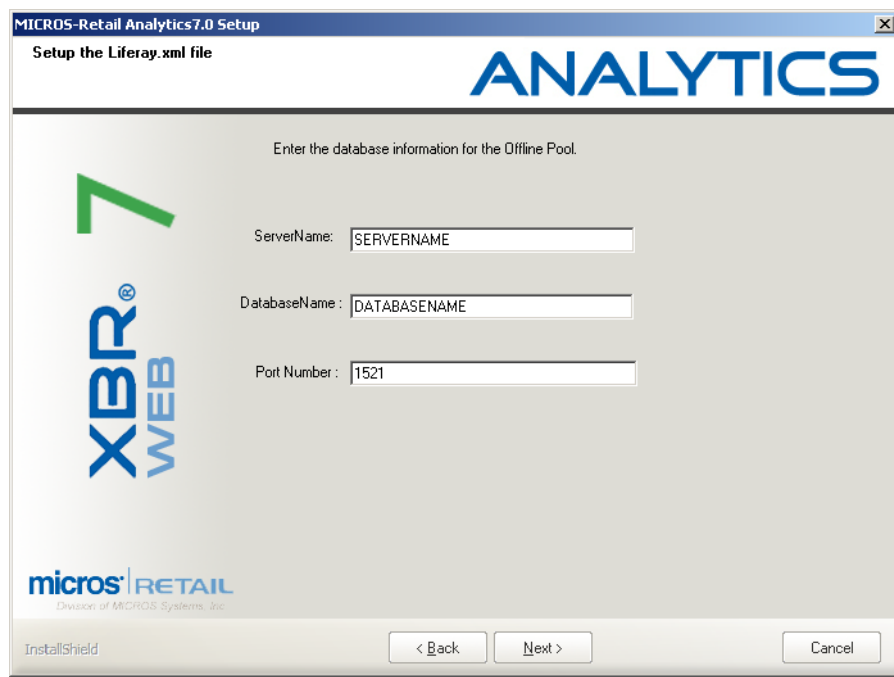


Figure 4-19: Offline Pool Database Selection

21. Enter the following database information for the Offline Pool database:
- Server Name** - This is the name of the server that hosts the database instance.
 - Database Name** - The name of the database being used for the Offline Pool.
 - Port Number** - The port on which the database is listening.
 - Click **Next** when you have entered all the database information.



The screenshot shows a Windows-style setup window titled "MICRO5-Retail Analytics 7.0 Setup". Below the title bar, it says "Setup the Liferay.xml file". The main area has a large "ANALYTICS" logo in blue. Below the logo, it says "Enter the database information for the Offline Pool." There are three input fields: "ServerName:" with a text box containing "SERVERNAME", "DatabaseName:" with a text box containing "DATABASENAME", and "Port Number:" with a text box containing "1521". On the left side of the window, there is a large green number "7" and the "XBR® WEB" logo. At the bottom left, it says "micro5 | RETAIL" and "Division of MICRO5 Systems, Inc.". At the bottom right, there are three buttons: "< Back", "Next >", and "Cancel".

Figure 4-20: Offline Pool Database Information



The following screen will *only* appear if you chose to use different User Names and Passwords for all the pools. If you do not see the following screen, skip the next step.

22. Enter your **User ID** and **Password** for the Offline Pool database. You may need to contact your Database Administrator (DBA) to help you with this information. Click **Next** when you are finished.



SQL Server is case sensitive. You must enter your password exactly as it was created with regard to upper and lowercase letters. If you do not do this, the XBR Web application will not be able to access the database.

Figure 4-21: Offline Pool Database User ID and Password

23. Enter the port number that the Tomcat Web Application Server will use. If you are running IIS, the typical entry is “8080”; otherwise, you can accept the default or enter another port number. Click **Next**.

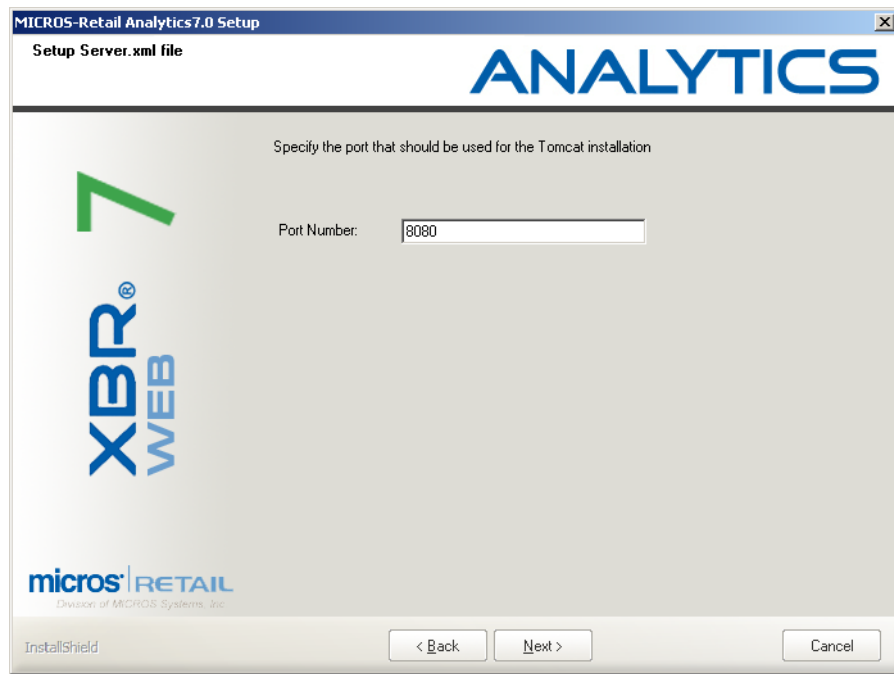


Figure 4-22: Tomcat Port Number

24. Enter a **User Name** and **Password** for the Tomcat service and click **Next**.

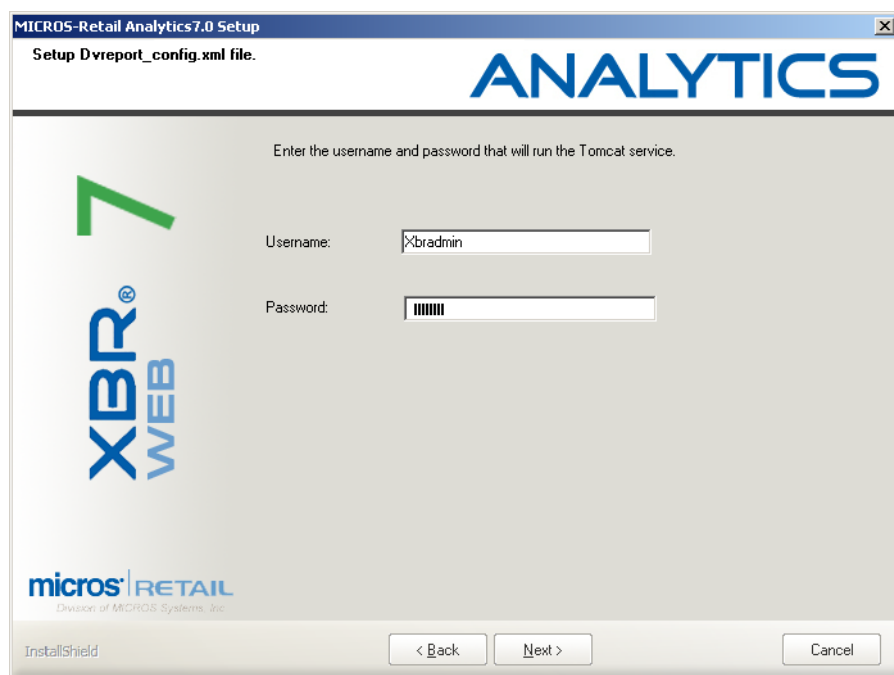


Figure 4-23: Tomcat Service User Name and Password

25. Enter the **Domain Name** where the User Account that uses the Tomcat service exists and click **Next**.

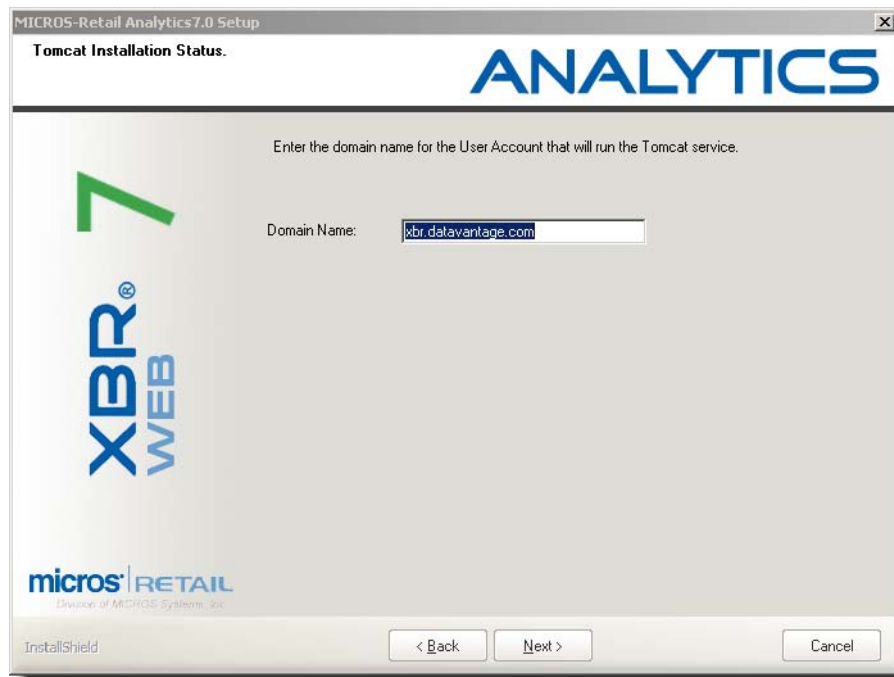


Figure 4-24: Domain Name

26. Enter the **Mail Server Name** and click **Next**.

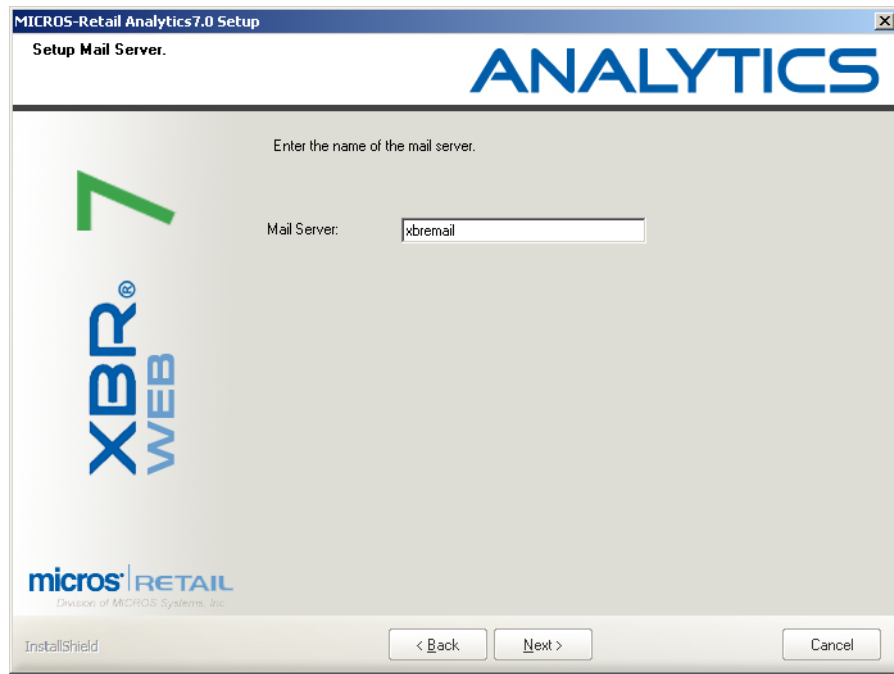


Figure 4-25: Mail Server Name

27. Select the Data Model you are using and click **Next**.

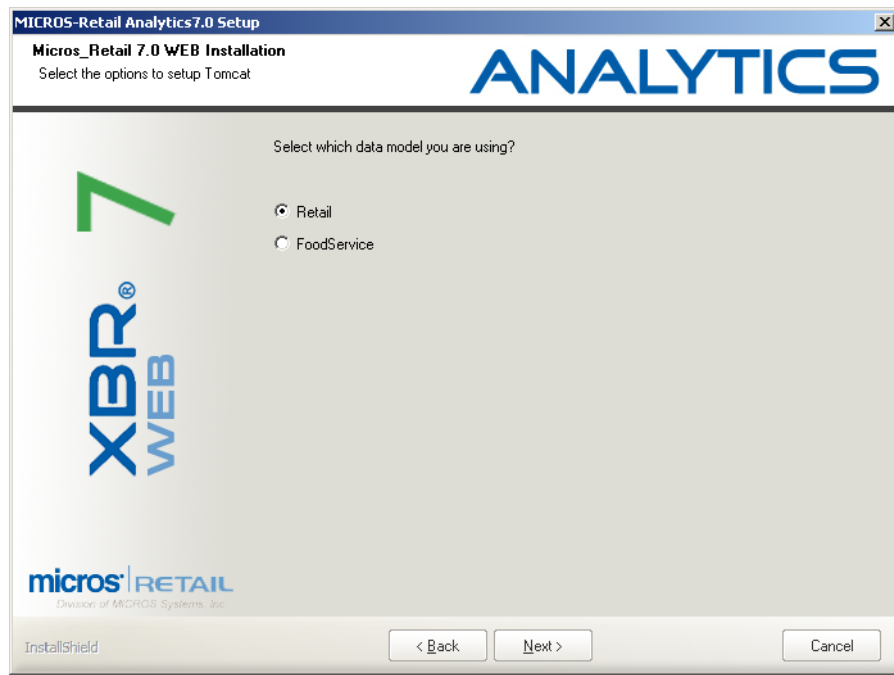


Figure 4-26: Data Model

28. Set up your video configuration and click **Next**:

- a. Enter your Organization ID.
- b. Select the video vendor that you use from the drop down list.



If you use more than one video vendor or a custom vendor, you must add additional video vendors directly to the `dtvreport-config.xml` override file (see [“Adding Additional Video Vendors” on page 186](#) for more information).

- c. Enter the path/filename for the executable video file, or use the **Browse** button to navigate to and select the executable video file, for the vendor you selected in the previous step.



This path and file will be used for all web users. Additional paths must be entered directly in the `dtvreport-config.xml` override file.

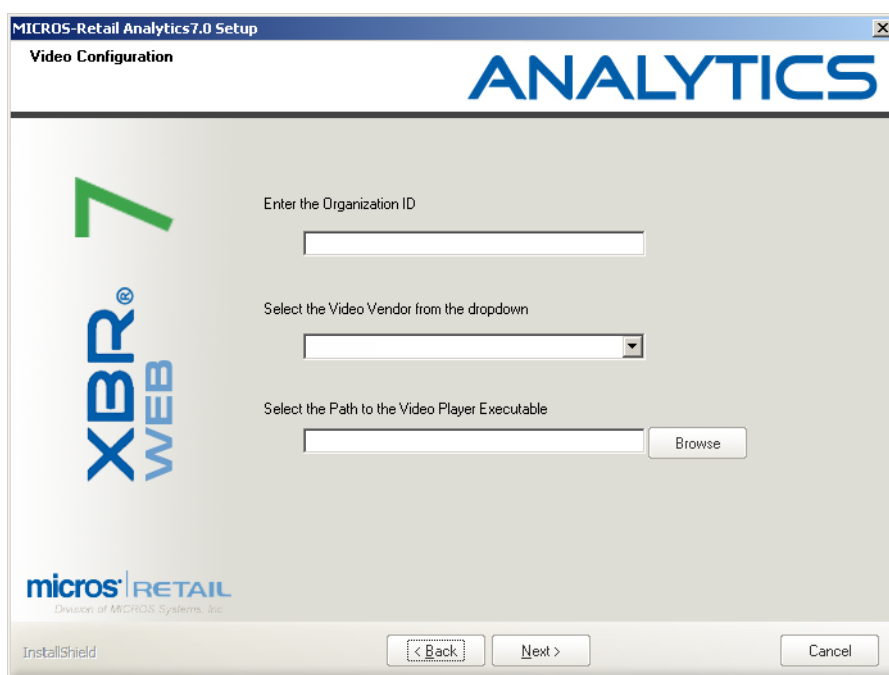
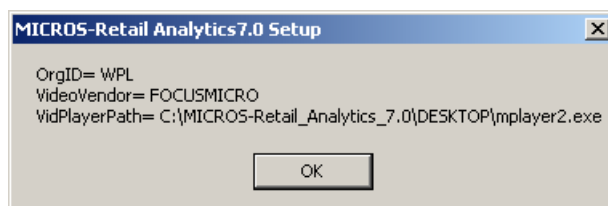


Figure 4-27: Video Configuration

29. Click **OK** to confirm your video configuration.

30. The following screen will only be displayed if you are using SQL Server as your database. Enter the full name of the database server and click **Next**.

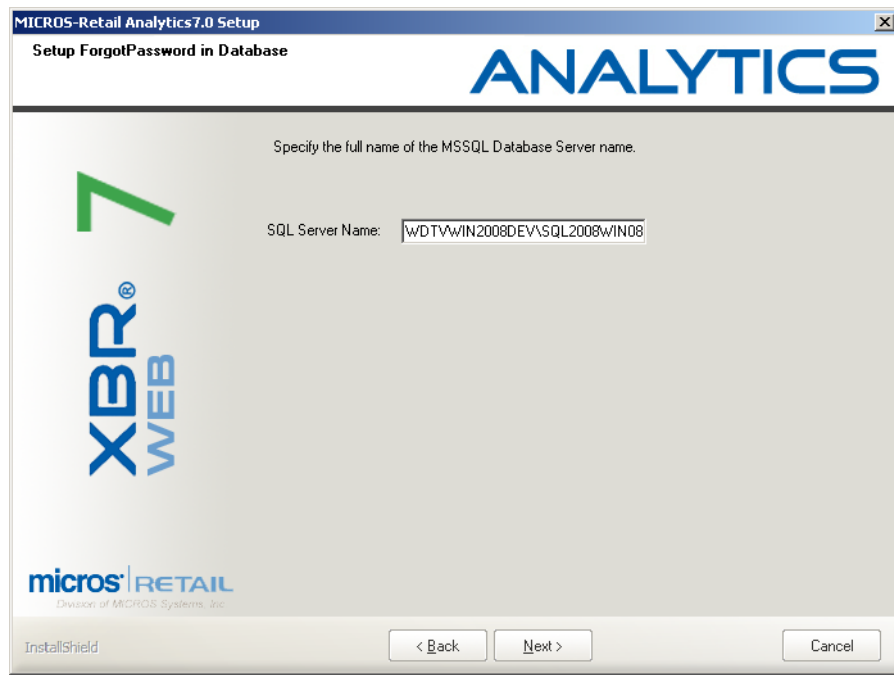


Figure 4-28: Database Server Name

31. The following screen will only be displayed if you are using Oracle as your database. Enter the Oracle Net Service name from the TNS Names file and click **Next**.

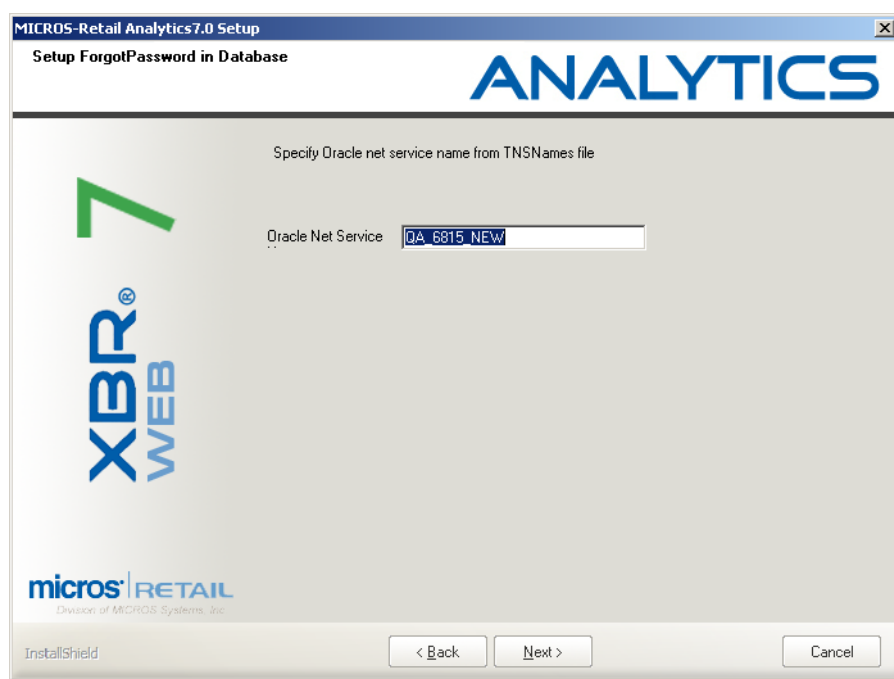


Figure 4-29: Oracle Net Service Name



The following screen will only appear if you selected LDAP on the Select Features screen (see [step 4 on page 108](#)).

32. Indicate if you use LDAP (**Yes**) and click **Next**.

If you selected **Yes**, continue with the next step.

If you selected **No**, go to step 39.

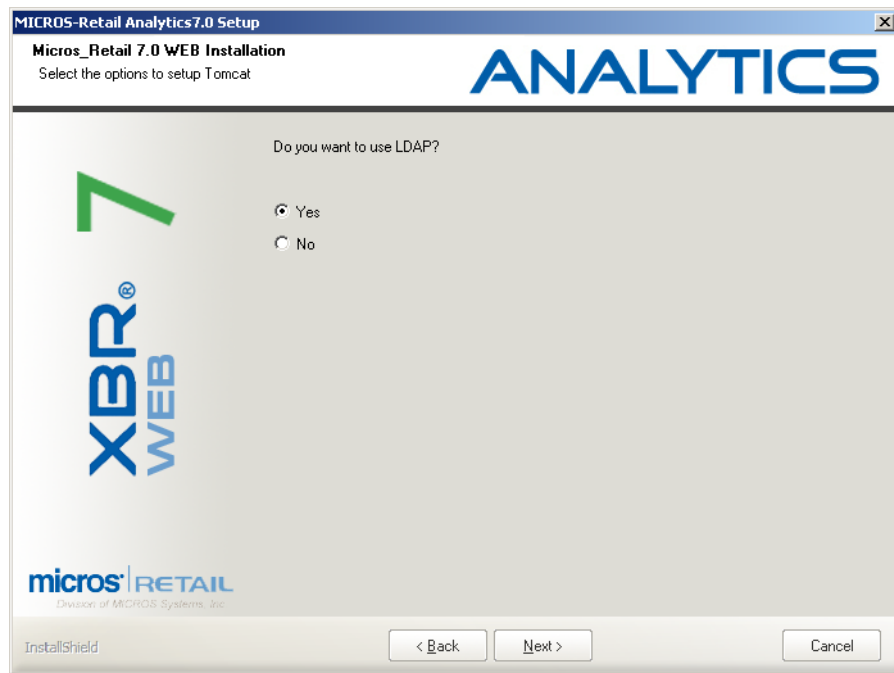


Figure 4-30: LDAP Selection

33. Since you are using LDAP, you must select **Yes** for Active Directory. Click **Next**.

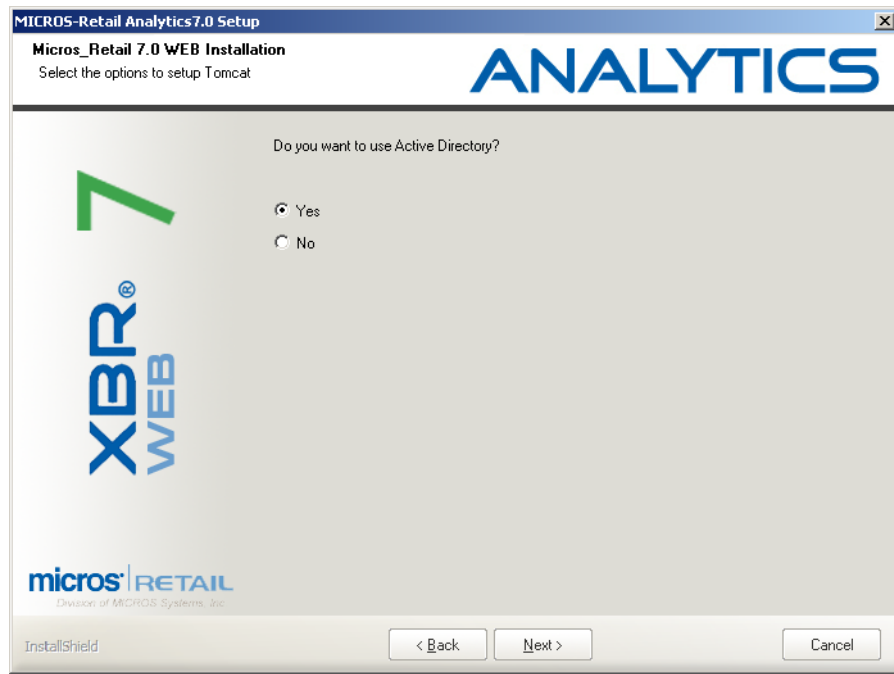


Figure 4-31: Active Directory

34. Enter a **Distinguished Name** and click **Next**.

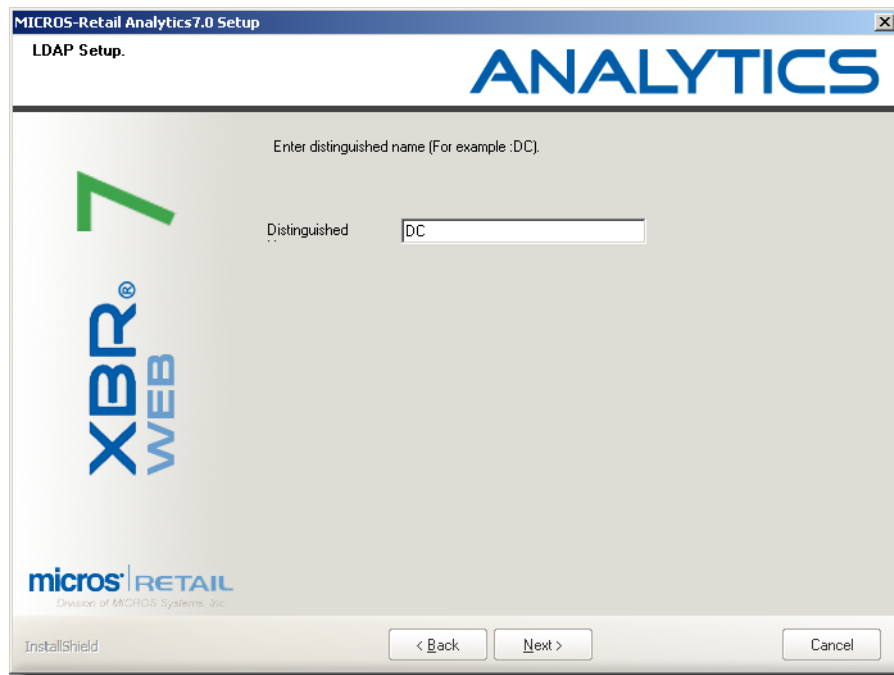


Figure 4-32: Distinguished Name

35. Enter the **Domain Name** for the LDAP server and click **Next**.

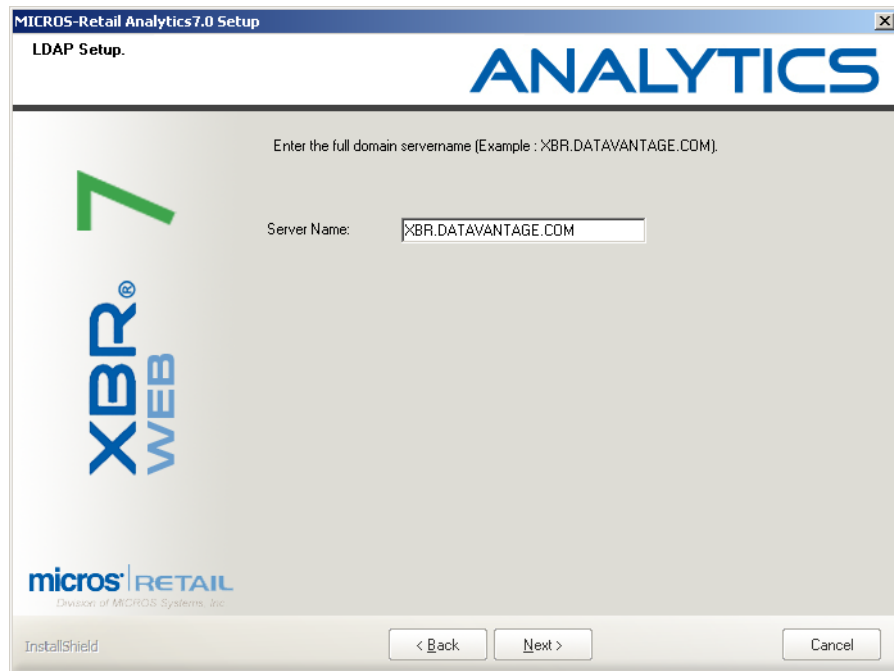


Figure 4-33: LDAP Server Name

36. Enter the Clear Port number that will be used to communicate with LDAP and click **Next**.

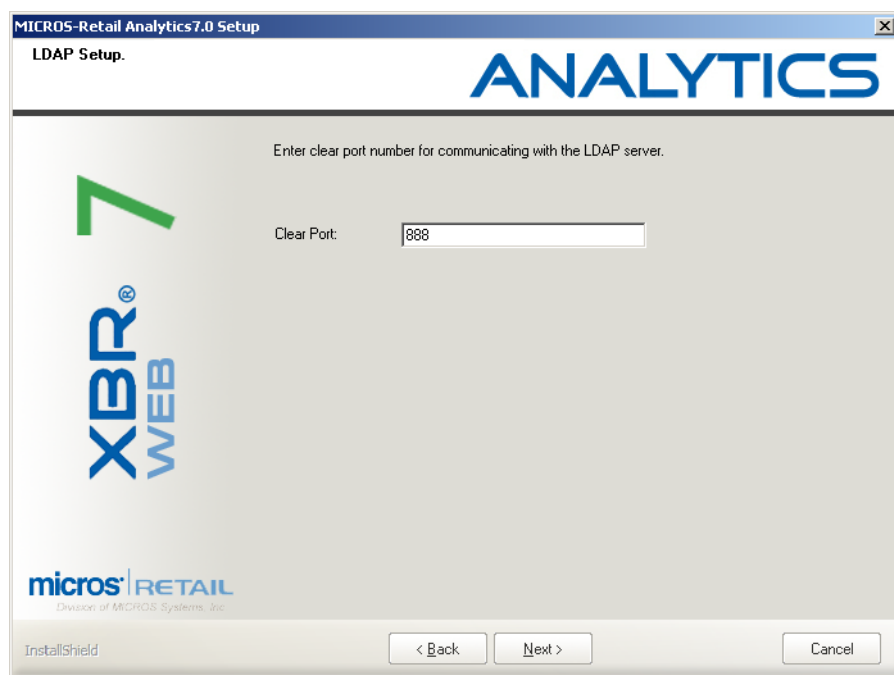


Figure 4-34: LDAP Clear Port Number

37. Enter the Administrative **User ID** and **Password** and click **Next**.

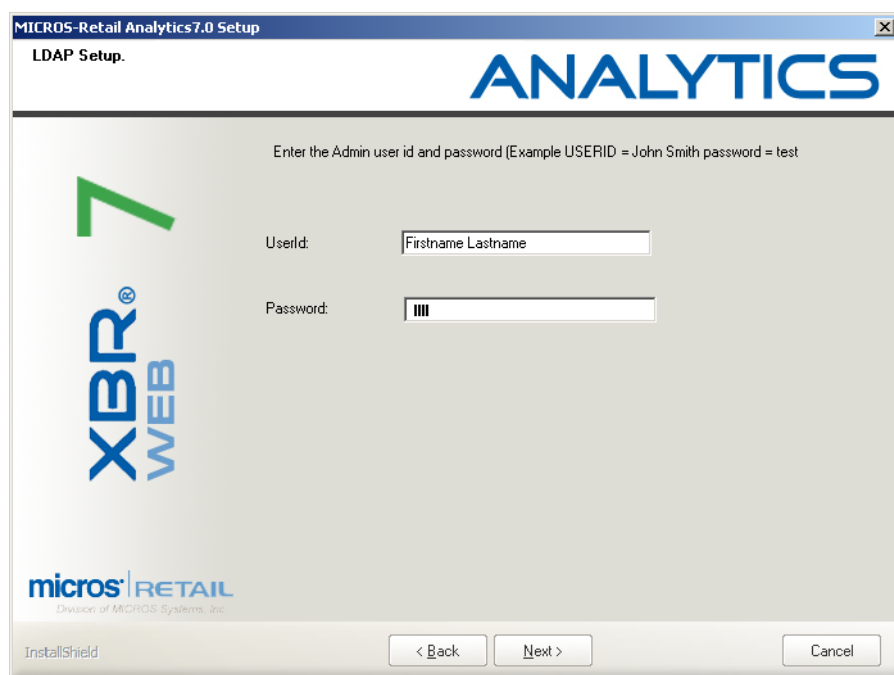


Figure 4-35: LDAP Admin User ID and Password

38. Enter the administrative **Email Address** and click **Next**.

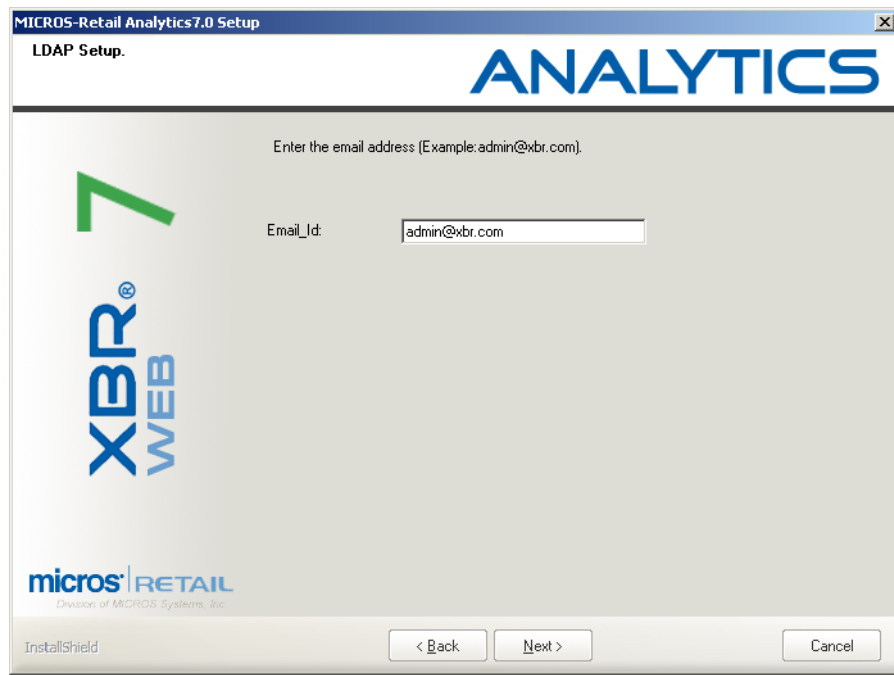


Figure 4-36: Email Address

39. This screen lists the steps that have been performed as part of the XBR Web Application installation. Click **Next**.

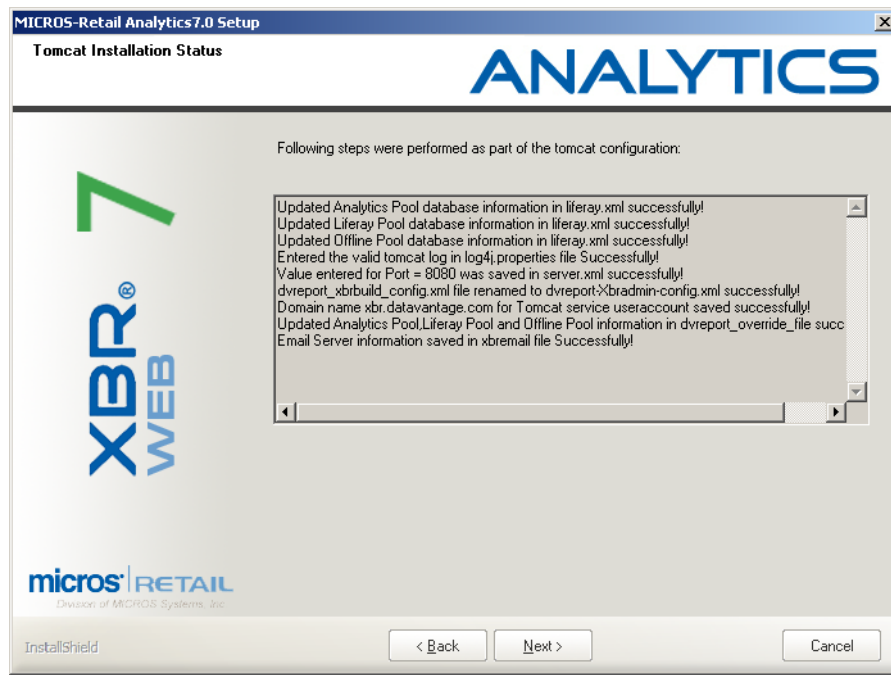


Figure 4-37: Installation Review

40. This screen indicates that the Tomcat service has started successfully. Click **Next**.



If the screen indicates that the Tomcat service did not start, refer to [“Start the Tomcat Service” on page 143](#) for instructions on how to manually start the service.

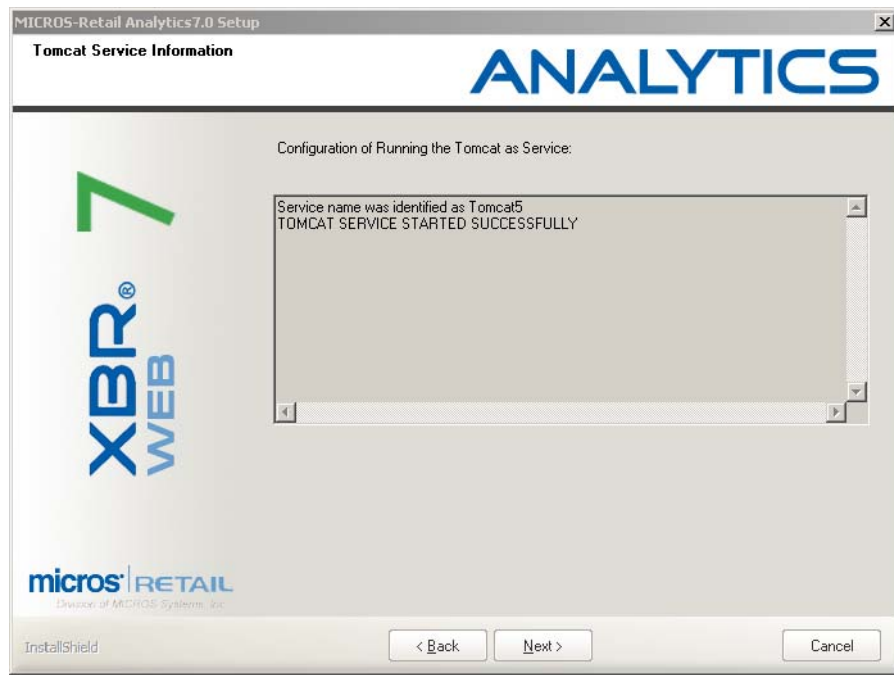
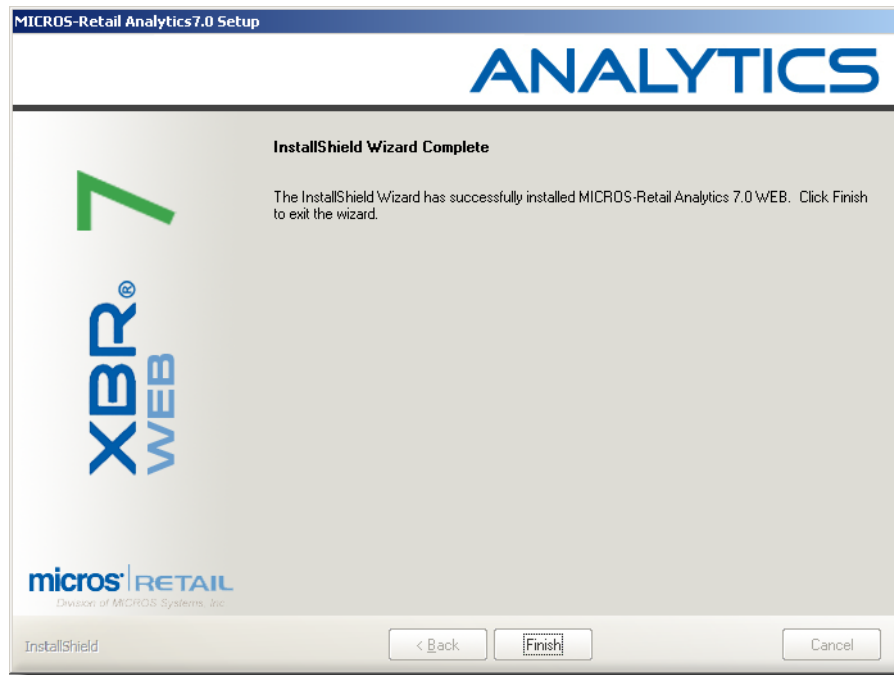


Figure 4-38: Tomcat Service Started

41. The InstallShield Wizard is now finished installing the XBR Web Application. Click **Finish** to complete the installation.



Java Developer Kit (JDK) 1.6.x Path Variable

The InstallShield process will install the JDK and set up the JAVA_HOME Environment Variable; but, does *not* set up the Path.

Perform the following steps to set up the Path:

1. From the Start menu, select **Settings → Control Panel**.
2. In the Control Panel, double-click **System**. The System Properties window opens.
3. Click the **Advanced** tab. On that tab, click the **Environment Variables** button. This opens the Environment Variables window.

4. In the Environment Variables window, System Variables pane, highlight the Path system variable, then click **Edit**.

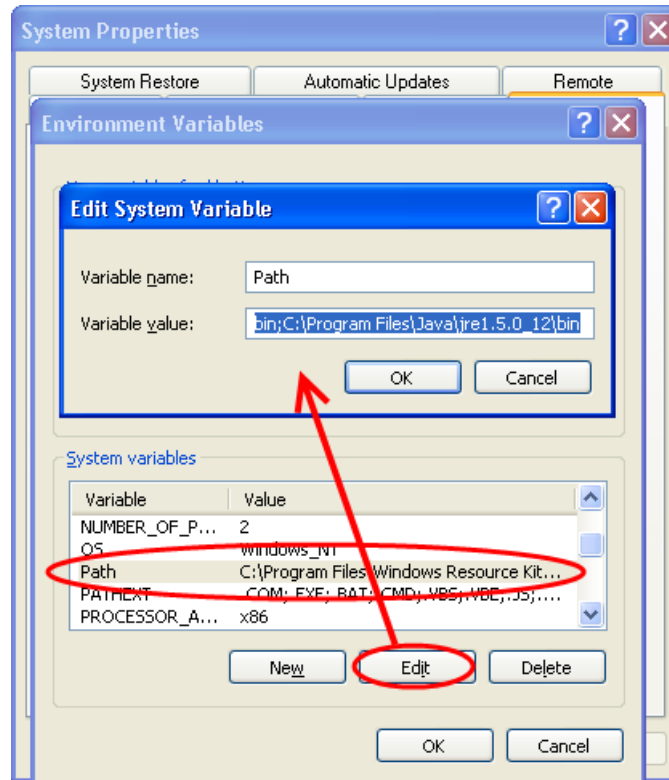


Figure 4-39: Edit Path

5. Check for existing value:
Check to see if the value "%JAVA_HOME%\bin;%JAVA_HOME%\lib" already exists. If it does, continue to the next section.
Otherwise, continue with the next step.
6. In the Edit System Variable dialog box, put the cursor in the Variable Value field, and then press the End key. This places the cursor at the end of the path. Enter the following in the path value:
`;%JAVA_HOME%\bin;%JAVA_HOME%\lib`
7. Click **OK** to save the System Variables. At the Environment Variables window, click **OK** to save the Environment Variable information.
8. Exit the Control Panel.

Start the Web Application

Use the following steps to start the XBR Web Application:

1. Open a web browser.
2. Enter the following in the address field:

http://<server>:<port>

where: <server> is the name of the server where the XBR Web Application is installed, and

<port> is the port number entered in [step 23](#).

The XBR Web Application Log In screen is displayed.

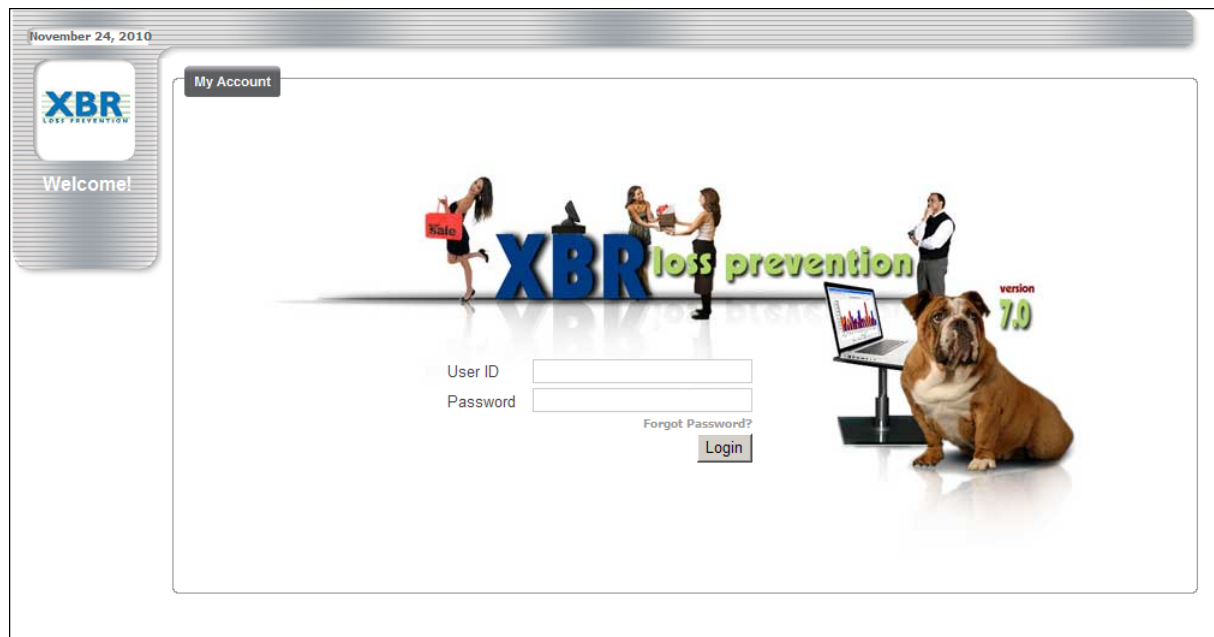


Figure 4-40: XBR Web Application Log In

3. Enter your User ID and Password.
4. Click the Login button.

Tomcat Service

The InstallShield installation process created a Tomcat Windows service called “MICROS-Retail XBR Web Application”.

Start the Tomcat Service

Near the end of the installation process, the Tomcat service is started. If for some reason, the service does not start; you will have to use these instructions to start the service manually.

The InstallShield process sets the Tomcat service up as a “manual” service. This means that if the system is restarted, you will have to use these instructions to start the service manually.

Perform the following steps to manually start the Tomcat service:

1. Open the **Control Panel**.
2. Double-click on **Administrative Tools**.
3. Double-click **Services**. The Services window will open.

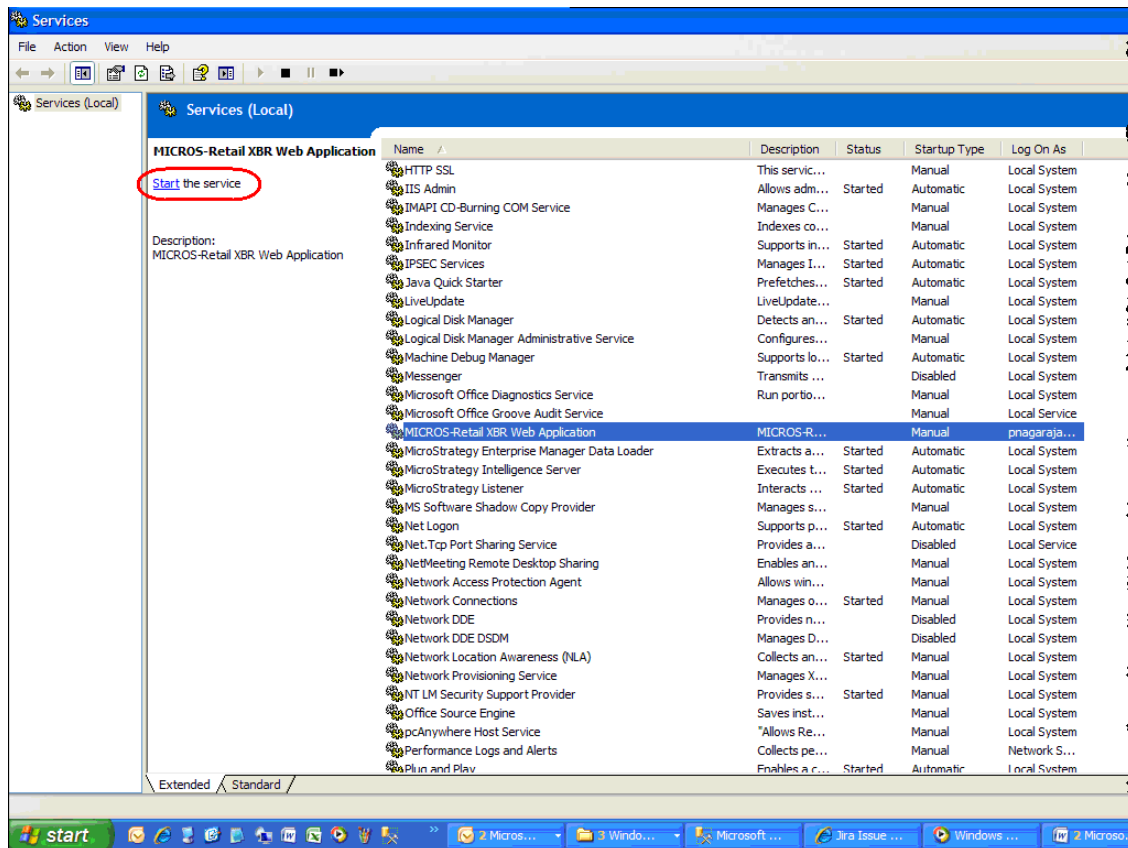


Figure 4-41: Service Window - Web Service Not Started

4. Right-click on the “MICROS-Retail XBR Web Application” service and select **Properties**. The MICROS-Retail XBR Web Application service properties window opens.

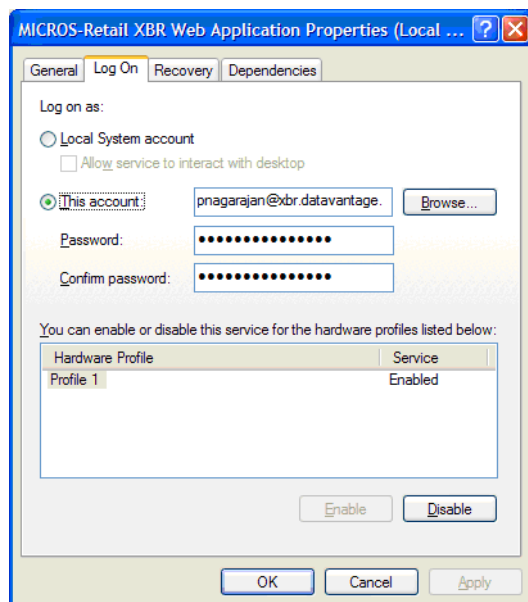


Figure 4-42: Web Service Properties Window

5. Select the **Log On** tab.



Once you log on to the service, the information will be preserved and you will have to log onto the service to start or stop the service.

6. Enter your **Account ID** (User ID + domain name).
7. Enter your **Password**.
8. Enter your **Password** again.
9. Click **OK** to exit the properties window.
10. Select the “MICROS-Retail XBR Web Application” service.
11. Click “**Start** the Service” in the upper left corner of the left panel (see Figure 4-41). The service will start and the status change to Started.
12. Close the **Services** window, the **Administrative Tools** window, and the **Control Panel**.

Stop the Tomcat Service

Use the following steps if you ever need to stop the Tomcat service:

1. Open the **Control Panel**.
2. Double-click on **Administrative Tools**.

3. Double-click **Services**. The Services window will open.

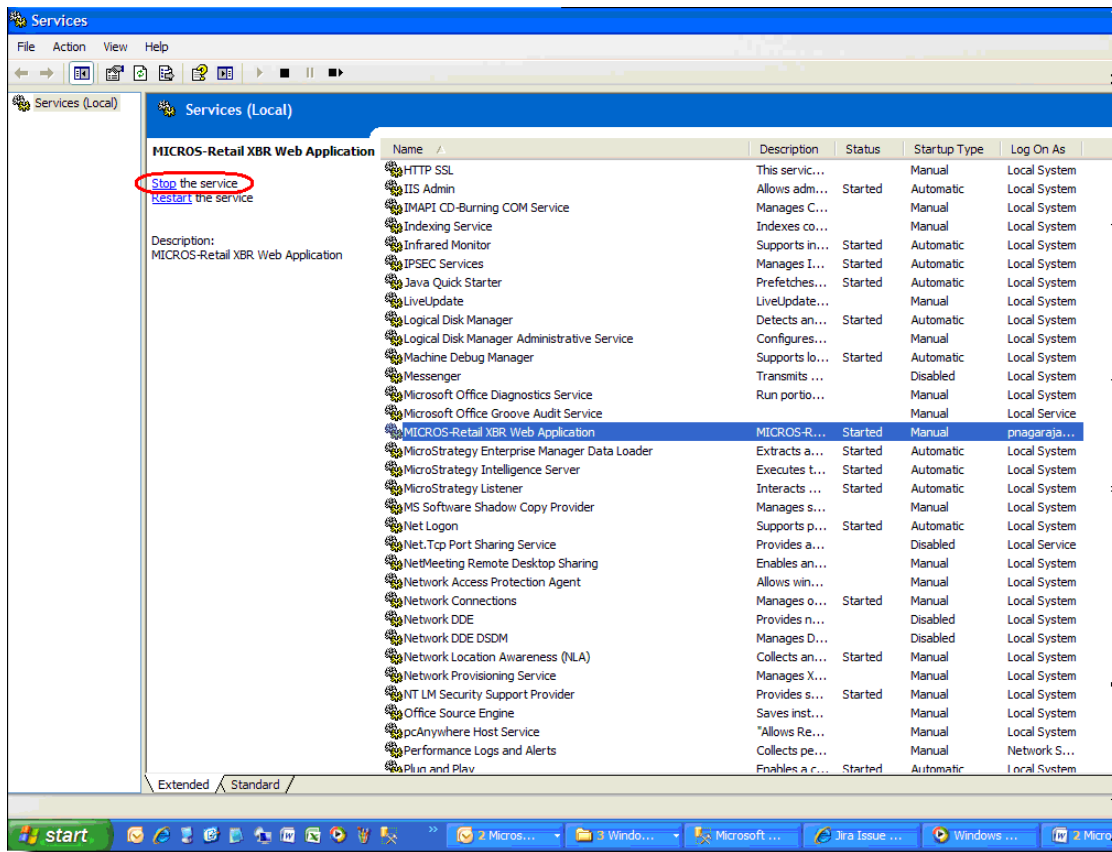


Figure 4-43: Service Window - Web Service Started

4. Select the "MICROS-Retail XBR Web Application" service.
5. Click "**Stop** the Service" in the upper left corner of the left panel (see Figure 4-43). The service will start and the status change to Started.
6. Close the **Services** window, the **Administrative Tools** window, and the **Control Panel**.

Set the Tomcat Service for Automatic Start

The InstallShield process sets the Tomcat service up as a "manual" service. This means that whenever the system is restarted, you will have to restart the service manually.

These instructions will set the Tomcat service for Automatic Start. This means that whenever the system is restarted, the service is automatically restarted.

Use the following steps to set the Tomcat service for Automatic Start:

1. Open the **Control Panel**.
2. Double-click on **Administrative Tools**.
3. Double-click **Services**. The Services window will open.

- Right-click on the “MICROS-Retail XBR Web Application” service and select **Properties**. The MICROS-Retail XBR Web Application service properties window opens.

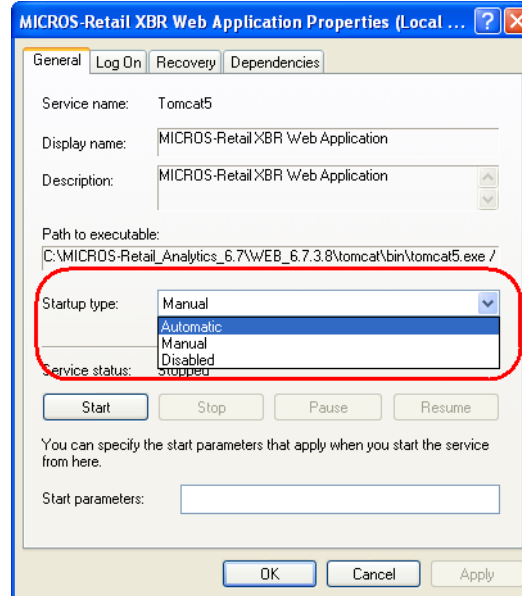


Figure 4-44: Web Service Properties Window

- Select Automatic from the **Startup type** list.
- Go to the Recovery tab.
- Set the option for the First, Second, and Subsequent failures to “Restart the Service.”

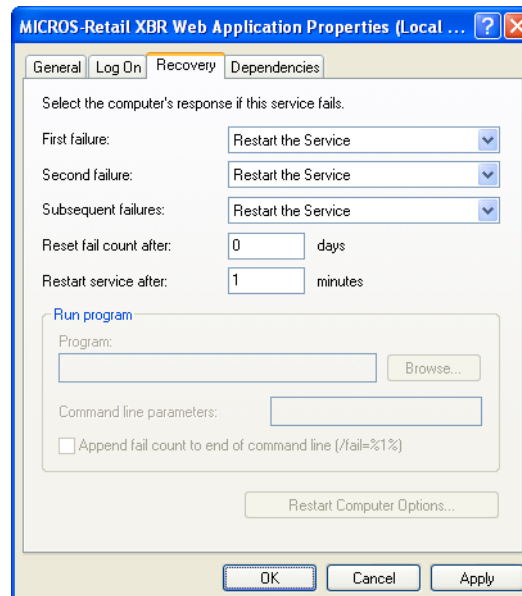


Figure 4-45: Web Service Recovery Mode

8. Click **OK**.
9. Close the **Services** window, the **Administrative Tools** window, and the **Control Panel**.

CONFIGURATION

The XBR Web Application installation procedure provides a basic default configuration. Depending on customer requirements, additional configuration may be required.

This section provides information and instructions for configuring the Tomcat Web Application Server and the XBR Web Application.

Tomcat Web Application Server

Configuring the Tomcat Web Application Server consists of modifying the elements of two XML files: `liferay.xml` and `server.xml` according to the requirements of the customer.

liferay.xml File

The `liferay.xml` file is used to configure the Tomcat Web Application Server, in particular:

- Declare the database resources to be registered by the application server's internal (JNDI) directory services.
- Configure Tomcat to generate system emails.

The `liferay.xml` file declares the Liferay Portal web application context for the host Tomcat web application server. In addition, it is used to register database resources to be used by the web application.

Typically, the `liferay.xml` file is located on the Tomcat Web Application Server in the following location:

`C:\xbr_6.8.x.x\tomcat\conf\Catalina\localhost\liferay.xml`



MICROS-Retail recommends against using Notepad or Wordpad to edit configuration files because they are known to cause problems when saving XML files. Please use a programmer's text editor such as jEdit, UltraEdit, TextPad, nEdit, etc. jEdit can be downloaded for free at:

<http://www.jedit.org/index.php?page=download>.

Datasources

Modify the `liferay.xml` file based upon the type of database installed. Currently, Oracle and MS SQL Server are the only supported databases. For support information for other databases, please contact your MICROS-Retail Project Manager.

The Application relies on the definitions for the following datasources:

- **LiferayPool:** Contains the Liferay tables.
- **AnalyticsPool:** Contains the XBR tables & views.
- **OfflineReportPool:** Contains the tables to store definitions and results for the offline reports.

In addition to the LiferayPool, AnalyticsPool, and OfflineReportPool datasources, you can define additional datasources. For example, you may wish to separate the datasource used for the application metadata from the datasource(s) used for reporting.



It is possible to use different databases for each of the datasources; however, the examples below assume the datasources are all using the same dbms.

Oracle

Use the following steps to set up the **LiferayPool**, **AnalyticsPool**, and **OfflineReportPool** datasource connections, in addition to any other datasource connections you wish to define, to allow the XBR Web Application to connect to an Oracle database.

The *driverClassName*, *url*, *username*, *password* and *maxActive* parameters in the *liferay.xml* file are defined for each datasource. Make sure all parameters are modified correctly for each datasource you define.



The application server does not require a local installation of the Oracle client to connect to the Oracle database.

1. Locate all of the parameter elements named **driverClassName**.

Change the <value> setting for the **driveClassName** parameter to the following:

```
<value>oracle.jdbc.driver.OracleDriver</value>
```

```
<Resource name="jdbc/LiferayPool" auth="Container"
  type="javax.sql.DataSource" />
<ResourceParams name="jdbc/LiferayPool">
  <parameter>
    <name>driverClassName</name>
    <value>oracle.jdbc.driver.OracleDriver</value>
  </parameter>
```

2. Locate all of the parameter elements named **url**.

Change the <value> setting for the **url** parameter to the following, where:

- <host> = The name of the server which hosts the Oracle instance.
- <port> = The port on which the Oracle instance is listening.
- <database> = The name of the database to which to connect.

```
<value>jdbc:oracle:thin:@<host>:<port>:<database></value>
```



The values referenced above are obtained from user input during the InstallShield process.

Example: If the host name is `oracleportal`, the port number is 1521 and the database name is `lpdb`, the **url** value would be:

```
<parameter>
  <name>url</name>
  <value>jdbc:oracle:thin:@oracleportal:1521:lpdb</value>
</parameter>
```

3. Modify all of the following database connection parameters:

Table 4-1: Database Connection Parameters (Oracle)

Configuration Parameter	Description
username	<p>User ID</p> <p>The user ID that the application server connection cache uses. This user ID must have access to the XBR schema on the database server.</p> <p>This value is obtained from user input during the InstallShield process.</p>
password	<p>User Password</p> <p>The database password for the user ID supplied in the username parameter.</p> <p>This value is obtained from user input during the InstallShield process.</p> <p>Password encryption: To take advantage of automated obfuscation (encrypted value replacement) combine all password tags into one single line (for example: <code><parameter><name>password</name><value>clear_text_pwd</value></parameter></code>) and use <code>EncryptedDataSourceFactory</code> as the extended factory. Remember the password because it will become unreadable after the first load. Keep in mind password encryption/decryption is system/network user account (user.name) dependent. When the application is set up as a windows service use the same account (user.name) for <i>Log on as</i>.</p>

Table 4-1: Database Connection Parameters (Oracle) (continued)

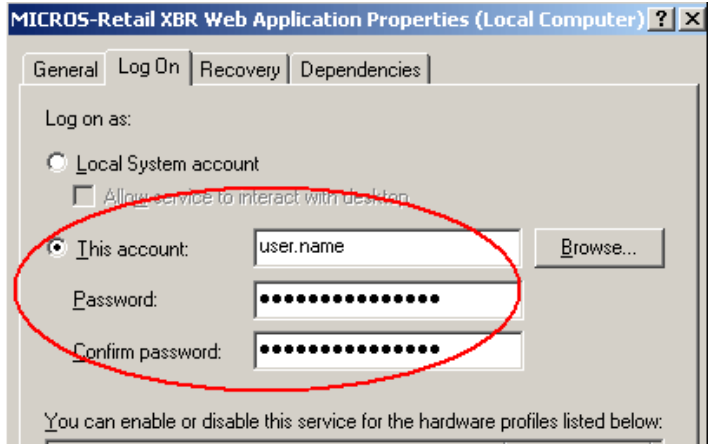
Configuration Parameter	Description
Password (Continued)	 <p style="text-align: center;"><i>Figure 4-46: User Account Log On</i></p> <p>Unencrypted password parameter:</p> <pre> <parameter> <name>username</name> <value>xbruser</value> </parameter> <parameter> <name>password</name> <value>xbruserpassword</value> </parameter> </pre> <p>Encrypted password parameter:</p> <pre> <parameter> <name>password</name> <value>-1109768743FQ8fDAkABAM=-1109768743</value> </parameter> </pre>
maxActive	<p><i>Maximum Number of Active Database Connections</i></p> <p>The value of this parameter is the maximum number of active database connections that the web application will use. This is a throttle on the number of active connections with the DB managed by the JDBC driver. This number should be set in accordance with the installation's policy for the connection allocation for the DBMS.</p> <pre> <parameter> <name>maxActive</name> <value>5</value> </parameter> </pre>

Table 4-1: Database Connection Parameters (Oracle) (continued)

Configuration Parameter	Description
testOnBorrow	<p><i>Validate Connections?</i></p> <p>This value is a Boolean.</p> <ul style="list-style-type: none"> ■ true = Connections are validated to assure that they are working before they are used. This slows performance slightly, but allows connection errors to be caught earlier. ■ false = As connections are requested they are handed off immediately if available, without testing to confirm if they still work. <pre><parameter> <name>testOnBorrow</name> <value>true</value> </parameter></pre>
validationQuery	<p><i>SQL Query to Validate Connections</i></p> <p>The value of this parameter is a simple sql query used to test the validity of a connection before issuing it. This is used only if testOnBorrow is set to true.</p> <pre><parameter> <name>validationQuery</name> <value>select * from Dual</value> </parameter></pre>
maxWait	<p><i>Timeout Period</i></p> <p>The value of this parameter is the timeout period for allocating a db connection from the connection pool when the pool is set to block when empty. If all connections are currently in use and if the whenExhaustedAction is set to WHEN_EXHAUSTED_BLOCK, then this will determine how long the driver will wait for one to be released before causing an error.</p> <p>(java.util.NoSuchElementException)</p> <pre><parameter> <name>maxWait</name> <value>12000</value> </parameter></pre>

Table 4-1: Database Connection Parameters (Oracle) (continued)

Configuration Parameter	Description
maxIdle	<p>Maximum Number of Idle Connections</p> <p>The value of this parameter is the maximum number of idle connections in the pool.</p> <pre><parameter> <name>maxIdle</name> <value>2</value> </parameter></pre>
whenExhaustedAction	<p>Action to take when Maximum Connections Reached</p> <p>The value of this parameter is the action to be taken when a new connection is requested and the pool has reached the maximum number of active connections.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> ■ 0 = WHEN_EXHAUSTED_FAIL (throws a java.util.NoSuchElementException) ■ 1 = WHEN_EXHAUSTED_BLOCK (does not allow the user to connect until a connection is available or maxWait time has expired). ■ 2 = WHEN_EXHAUSTED_GROW (increases the maxActive value). <p>Most deployments should use 1 or 2.</p> <pre><parameter> <name>whenExhaustedAction</name> <value>2</value> </parameter></pre>

Table 4-1: Database Connection Parameters (Oracle) (continued)

Configuration Parameter	Description
factory	<p><i>Class/Interface</i></p> <p>The class/interface to create instance for the described Tomcat DataSource:</p> <ul style="list-style-type: none"> ■ <code>org.apache.commons.dbcp.BasicDataSourceFactory</code> is the default one with clear text password value. ■ <code>com.datavantage.xbr.server.tomcat.EncryptedDataSourceFactory</code> is extended class to operate with encrypted and clear text passwords. Password encryption will happen on the fly (automated obfuscation) when password tags are set on a single line (for example: <code><parameter><name>password</name><value>clear_text_pwd</value></parameter></code>). <pre> <parameter> <name>factory</name> <value>com.datavantage.xbr.server. tomcat.EncryptedDataSourceFactory </value> </parameter> </pre>

SQL Server

Use the following steps to set up the **LiferrayPool**, **AnalyticsPool**, and **OfflineReportPool** datasource connections, in addition to any other datasource connections you wish to define, to allow the XBR Web Application to connect to an MSSQL database.

The *driverClassName*, *url*, *username*, *password* and *maxActive* parameters in the `liferay.xml` file are defined for each datasource. Make sure all parameters are modified correctly for each datasource you define.

1. Locate all of the parameter elements named **driverClassName**.

Change the `<value>` setting for the **driveClassName** parameter to the following:

```
<value>net.sourceforge.jtds.jdbc.Driver</value>
```

```

<Resource name="jdbc/LiferrayPool" auth="Container"
  type="javax.sql.DataSource" />
<ResourceParams name="jdbc/LiferrayPool">
  <parameter>
    <name>driverClassName</name>
    <value>net.sourceforge.jtds.jdbc.Driver</value>
  </parameter>

```

2. Locate all of the parameter elements named **url**.

Change the <value> setting for the **url** parameter to the following, where:

- <host> = The name of the server that hosts the MSSQL instance.
- <port> = The port on which the MSSQL instance is listening.
- <database> = The name of the database to which to connect.

<value>jdbc:jtds:sqlserver://<host>:<port>/<database></value>



The values referenced above are obtained from user input during the InstallShield process.



If MSSQL server is not running on its default port (1433), use the url parameter value: <value> jdbc:jtds:sqlserver://<host>:<port>/<database></value>.

Example: If the host is `msqlportal` and the database name is `lpdb`, the **url** value would be:

```
<parameter>
  <name>url</name>
  <value>jdbc:jtds:sqlserver://msqlportal:1433/lpdb</value>
</parameter>
```

3. Modify all of the following database connection parameters:

Table 4-2: Database Connection Parameters (SQL Server)

Configuration Parameter	Description
username	<p><i>User ID</i></p> <p>The value of this parameter is the user ID that the application server connection cache uses. This user ID must have access to the XBR schema on the database server.</p> <p>This value is obtained from user input during the InstallShield process.</p>

Table 4-2: Database Connection Parameters (SQL Server) (continued)

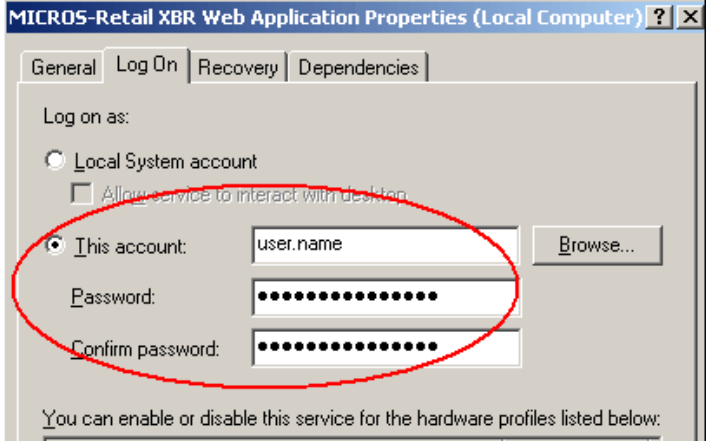
Configuration Parameter	Description
password	<p><i>User Password</i></p> <p>The value of this parameter is the database password for the user ID supplied in the previous parameter.</p> <p>This value is obtained from user input during the InstallShield process.</p> <p>To take advantage of automated obfuscation (encrypted value replacement) combine all password tags into one single line (for example: <code><parameter><name>password</name><value>clear_text_pwd</value></parameter></code>) and use EncryptedDataSourceFactory as extended factory. Remember the password because it will become unreadable after the first load. Keep in mind password encryption/decryption is system/network user account (user.name) dependent. When the application is set up as a windows 'service' use the same account (user.name) for <i>Log on as</i>.</p> 

Figure 4-47: User Account Log On

Table 4-2: Database Connection Parameters (SQL Server) (continued)

Configuration Parameter	Description
	<p>Encrypted password parameter:</p> <pre><parameter> <name>username</name> <value>xbruser</value> </parameter> <parameter> <name>password</name> <value>xbruserpassword</value> </parameter></pre> <p>Encrypted password parameter:</p> <pre><parameter> <name>password</name> <value>-1109768743FQ8fDAkABAM=-1109768743 </value> </parameter></pre>
maxActive	<p><i>Maximum Number of Active Database Connections</i></p> <p>The value of this parameter is the maximum number of active database connections that the web application will use. This is a throttle on the number of active connections with the DB managed by the JDBC driver. This number should be set in accordance with the installation's policy for the connection allocation for the DBMS.</p> <pre><parameter> <name>maxActive</name> <value>5</value> </parameter></pre>
testOnBorrow	<p><i>Validate Connections?</i></p> <p>This value is a Boolean.</p> <ul style="list-style-type: none"> ■ true = Connections are validated to assure that they are working before they are used. This slows performance slightly, but allows connection errors to be caught earlier. ■ false = As connections are requested they are handed off immediately if available, without testing to confirm if they still work. <pre><parameter> <name>testOnBorrow</name> <value>true</value> </parameter></pre>

Table 4-2: Database Connection Parameters (SQL Server) (continued)

Configuration Parameter	Description
validationQuery	<p><i>SQL Query to Validate Connections</i></p> <p>The value of this parameter is a simple sql query used to test the validity of a connection before issuing it. This is used only if testOnBorrow is set to true.</p> <pre><parameter> <name>validationQuery</name> <value>select * from Dual</value> </parameter></pre>
maxWait	<p><i>Timeout Period</i></p> <p>The value of this parameter is the timeout period for allocating a db connection from the connection pool when the pool is set to block when empty. If all connections are currently in use and if the whenExhaustedAction is set to WHEN_EXHAUSTED_BLOCK, then this will determine how long the driver will wait for one to be released before causing an error. (<code>java.util.NoSuchElementException</code>).</p> <pre><parameter> <name>maxWait</name> <value>12000</value> </parameter></pre>
maxIdle	<p><i>Maximum Number of Idle Connections</i></p> <p>The value of this parameter is the maximum number of idle connections in the pool.</p> <pre><parameter> <name>maxIdle</name> <value>2</value> </parameter></pre>

Table 4-2: Database Connection Parameters (SQL Server) (continued)

Configuration Parameter	Description
whenExhaustedAction	<p><i>Action to take when Maximum Connections Reached</i></p> <p>The value of this parameter is the action to take when a new connection is requested and the pool has reached maximum number of active connections.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> ■ 0 - WHEN_EXHAUSTED_FAIL (throws a java.util.NoSuchElementException) ■ 1 - WHEN_EXHAUSTED_BLOCK (does not allow the user to connect until a connection is available or maxWait time has expired). ■ 2 - WHEN_EXHAUSTED_GROW (increases the maxActive value). <p>Most deployments should use 1 or 2.</p> <pre><parameter> <name>whenExhaustedAction</name> <value>2</value> </parameter></pre>
factory	<p><i>Class/Interface</i></p> <p>The class/interface to create instance for the described Tomcat DataSource:</p> <ul style="list-style-type: none"> ■ org.apache.commons.dbcp.BasicDataSourceFactory is the default one with clear text password value. ■ com.datavantage.xbr.server.tomcat.EncryptedDataSourceFactory is extended class to operate with encrypted and clear text passwords. Password encryption will happen on the fly (automated obfuscation) when password tags are set on a single line (i.e. <pre><parameter><name>password</name><value> clear_text_pwd</value></parameter>). <parameter> <name>factory</name> <value>com.datavantage.xbr.server. tomcat.EncryptedDataSourceFactory </value> </parameter></pre>

Defining Additional Datasources

In addition to the LiferayPool, AnalyticsPool, and OfflineReportPool datasources, you can define additional datasources. For example, you may wish to separate the datasource used for the application metadata from the datasource(s) used for reporting.

For each additional datasource that you wish to define, you must register the connection and give the datasource an appropriate name.

1. Open the `liferay.xml` file in a programmer's text editor such as jEdit, UltraEdit, TextPad, or nEdit.
2. Locate and highlight the entire text block for the **OfflineReportPool** datasource. Make sure you highlight the entire text block for the datasource, where the first entry line for the **OfflineReportPool** is:

```
<Resource name="jdbc/OfflineReportPool" auth="Container"
type="javax.sql.DataSource" />
```

And the last entry line for the **OfflineReportPool** is:

```
</ResourceParams>
```

The entire text block for a datasource should look similar to the following:

```
<Resource name="jdbc/OfflineReportPool"
    auth="Container" type="javax.sql.DataSource" />
<ResourceParams name="jdbc/OfflineReportPool">
    <parameter>
        <name>driverClassName</name>
        <value>oracle.jdbc.driver.OracleDriver</value>
    </parameter>
    <parameter>
        <name>url</name>
        <value>jdbc:oracle:thin:@wdtvora10Gdev:1521:qa67</value>
    </parameter>
    <parameter>
        <name>username</name>
        <value>xbradmin</value>
    </parameter>
    <parameter>
        <name>password</name>
        <value>xbradmin</value></parameter>
    <parameter>
        <name>maxActive</name>
        <value>5</value>
    </parameter>
    <parameter>
        <name>testOnBorrow</name>
        <value>true</value>
    </parameter>
    <parameter>
        <name>validationQuery</name>
        <value>select * from Dual</value>
    </parameter>
    <parameter>
```

```

    <name>maxWait</name>
    <value>12000</value>
  </parameter>
  <parameter>
    <name>maxIdle</name>
    <value>2</value>
  </parameter>
  <parameter>
    <name>whenExhaustedAction</name>
    <value>2</value>
  </parameter>
  <parameter>
    <name>factory</name>
    <value>com.datavantage.xbr.server.tomcat.
      EncryptedDataSourceFactory</value>
  </parameter>
</ResourceParams>

```

3. Copy the entire entry for the **OfflineReportPool** datasource.
4. Locate the following line in the liferay.xml file: <Resource name="mail/MailSession" auth="Container" type="javax.mail.Session" />

```

<Resource name="mail/MailSession" auth="Container"
  type="javax.mail.Session" />

```

5. Add a new line before the <Resource name="mail/MailSession"... line and paste the text that you have copied to this new line.
6. Modify the text that you have copied so that it reflects a new datasource.
 - a. Locate the **Resource** element in the text block that you have added to the liferay.xml file and change the <name> value to the name of the new datasource. For example, if you have copied the OfflineReportPool datasource, change the **Resource** element from:

```

<Resource name="jdbc/OfflineReportPool" auth="Container"
  type="javax.sql.DataSource" />

```



Take note of the name you assign to the new datasource as you will need to define it in the Datasources element of the dvreport-config.xml.

7. Review and update the additional parameters defined for the new datasource according to whether you are connecting to an Oracle database or an MSSQL database.
8. Add the information for the new datasource that you have just created to the datasources section of the [dvreport-config.xml](#) file.

Mail

Use the following steps to configure the Tomcat Web Application Server to generate system emails.

The **ResourceParams name="mail/MailSession"** section of the liferay.xml File file defines the settings required for mail configuration.

In addition to defining mail settings in the liferay.xml file, you must also update the **NewUserEmailConfirmation** setting in the dvreport-config.xml file to **true** in order for the system to generate emails.

Mail Syntax Layout

```
<Resource name="mail/MailSession"
    auth="Container" type="javax.mail.Session" />
<ResourceParams name="mail/MailSession">
    <parameter>
        <name>mail.smtp.host</name>
        <value>email_server.mycompany.com</value>
    </parameter>
    <parameter>
        <name>mail.smtp.auth</name>
        <value>false</value>
    </parameter>
    <parameter>
        <name>mail.smtp.user</name>
        <value>auth_account</value>
    </parameter>
    <parameter>
        <name>mail.smtp.password</name>
        <value>auth_password</value>
    </parameter>
    <parameter>
        <name>factory</name>
        <value>com.datavantage.xbr.server.tomcat.
            EncryptedMailFactory</value>
    </parameter>
</ResourceParams>
```

Table 4-3: Mail Settings

Configuration Parameter	Description
mail.smtp.host	<p>Mail Domain</p> <p>Set this value to your mail domain. Example: email_server.mycompany.com.</p> <p>This value is obtained from user input in the InstallShield.</p>

Table 4-3: Mail Settings (continued)

Configuration Parameter	Description
mail.smtp.auth	<p><i>Send Email Outside Mail Domain?</i></p> <p>Defines whether the system can send emails to an email address outside of the mail domain.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> ■ true = The system can send emails to an email address outside of the mail domain. If you set this value to true, you must provide the user ID and password used to authenticate all outgoing mail. ■ false = The system cannot send emails to an email address outside of the mail domain.
mail.smtp.user	<p><i>Authentication User ID</i></p> <p>The user ID used to authenticate all outgoing mail. You must provide a user ID if the <i>mail.smtp.auth</i> setting is true.</p>
mail.smtp.password	<p><i>Authentication User Password</i></p> <p>The password of the user used to authenticate all outgoing mail. You must provide a password if the <i>mail.smtp.auth</i> setting is true.</p>
factory	<p><i>Password Encryption</i></p> <p>Defines whether the system encrypts the value defined in the mail.smtp.password setting for security purposes.</p> <p>Set this value to the following to encrypt the user password:</p> <pre>com.datavantage.xbr.server.tomcat.EncryptMailFactory</pre> <p>See "Password Obfuscation" on page 169 for a more information on encrypting passwords in the XBR configuration files.</p> <p>Leave this value blank if you do not wish to encrypt the user password.</p>

Server.xml File

The XBR Web Server is configured to use port 80 by default. If that port is not available, you must update the *Port* setting in the `server.xml` file.

Location of server.xml file: Typically, the `server.xml` file is located on the Tomcat Web Application Server in the following location:

`c:\xbr_6.8.x.x\tomcat\conf\server.xml`

To update the `server.xml` file, open file in a text editor.



MICROS-Retail recommends against using Notepad or Wordpad to edit configuration files because they are known to cause problems when saving XML files. Please use a programmer's text editor such as jEdit, UltraEdit, TextPad, nEdit, etc. jEdit can be downloaded for free at:

<http://www.jedit.org/index.php?page=download>.

Connector Port Layout

```
<Connector port="8080" maxThreads="150" minSpareThreads="25"
maxSpareThreads="75" enableLookups="false" redirectPort="8443"
acceptCount="100" debug="0" connectionTimeout="20000"
disableUploadTimeout="True" />
```

Table 4-4: Connector Port Settings

Configuration Parameter	Description
Connector port	<p>Change the <i>Connector port</i> entry to the new port number.</p> <p>The following example identifies the <i>Connector Port</i> Entry as 8080</p> <p>This value is obtained from user input in the InstallShield.</p>

XBR Web Application

There are a variety of settings that can be configured to change the behavior of the XBR Web Application. The `dvreport-config.xml` file contains the default settings shipped with the XBR application. Custom modifications to these settings are loaded from external files.

An important consideration to note before starting the web server is that passwords specified in the `dvreport` configuration files will be obfuscated (encrypted) on behalf of the process owner. Once obfuscated, those files cannot be used to run the server under a different process owner unless the passwords are re-entered fresh. Custom mods, including all password elements, should be placed into separate files under the process owner's own home directory tree. If more than one user is to run the server using the same passwords, then that configuration file should be copied to each user's home directory before running the server. See [“Password Obfuscation” on page 169](#) for more information on data encryption.

dvreport-config.xml

The `dvreport-config.xml` is the main XML configuration file for the XBR application.

Typically, the `dvreport-config.xml` file is located on the Tomcat Web Application Server in the following location:

```
C:\MICROS-Retail_Analytics_7.0\WEB\tomcat\liferay\WEB-INF\dvreport-config.xml
```

Main Sections of the dvreport-config.xml File

The `dvreport-config.xml` is divided into several sections:

- [“Deployment Properties” on page 169](#)
- [“General Configuration” on page 170](#)
- [“SQL Files” on page 174](#)
- [“Datasources” on page 175](#)
- [“Cache” on page 178](#)
- [“Exception” on page 180](#)
- [“Lookups” on page 181](#)
- [“Store Group Security” on page 184](#)
- [“Video” on page 185](#)
- [“Employee Violations Dashboard” on page 187](#)
- [“Note History” on page 190](#)
- [“Drop Down Display” on page 191](#)
- [“Report Layout” on page 191](#)
- [“Heart Beat Monitor \(HBM\)” on page 195](#)
- [“Report File Repository” on page 201](#)
- [“Home Layouts” on page 202](#)
- [“LDAP/Active Directories \(AD\)” on page 203](#)
- [“Background Report Generator \(BRG\)” on page 208](#)

- [“Mail” on page 211](#)

When making configuration changes to the `dvreport-config.xml` file, the actual configuration file itself *should not be changed*. Instead, overrides should be used for each setting the administrator wishes to change. This is done for four primary reasons.

- When the system is upgraded, the original `dvreport-config.xml` will be overwritten. Files (such as overrides) which are outside the main directory will remain untouched. This means the system will not need to be entirely re-configured for each upgrade.
- Putting configuration changes in a separate file makes changes to the configuration more obvious and easier to find without needing to hunt through a large configuration file.
- Keeping the configuration changes in a separate file allows for easier reversion to the default configuration settings.
- Since passwords are encrypted and only usable by one process user once they are encrypted, password elements should be configured in files contextual to the process owner.

Overrides

The **overrides** section of the `dvreport-config.xml` file defines the location of the overrides to the `dvreport-config.xml` file.

```
<overrides>
  <file>version.xml</file>
  <file>dvreport- $\{xbr.deployment.id\}$ -config.xml</file>
  <file> $\{user.home\}$ /xbr/dvreport-config.xml</file>
  <file>dvreport- $\{user.name\}$ -config.xml</file>
</overrides>
```

In general, the file where administrators should place overrides to the `dvreport-config.xml` file is the following, where `%HOME%` is the home directory of the web application's process owner:

```
"%HOME%\xbr\dvreport-config.xml"
```

EXAMPLE: If the process owner for XBR's web application is `xbrwebadm`, then the file used should be: `C:\Documents and Settings\xbrwebadm\xbr\dvreport-config.xml`. Note that this file will not automatically be created during the installation process. The admin will need to create a directory called `xbr` within the home directory of the process owner and then create a file called `dvreport-config.xml` within that folder.

There are two other possible options for where to place the `dvreport-config.xml` file. However, both of these file locations will be over-written in the event of an upgrade or re-install. Also, these directories may or may not be accessible in your installation. Because of this, these file locations are only recommended for use in special cases.

- The first location, where `$\{user.name\}$` is the web application's process owner's user id:

```
<Install Drive>:\<Install Directory>\liferay\WEB-INF\dvreport-  
 $\{user.name\}$ -config.xml
```

EXAMPLE: If you run the web application under the username `xbrwebadm` from the `C:\xbr_6.8_x_x\` directory then it will look for a file named `C:\xbr_6.8_x_x\liferay\WEB-INF\dvreport-xbrwebadm-config.xml`. This method is primarily useful for testing configurations of the application.

- The second location, where `${xbr.deployment.id}` is an identifier that can be specified at launch of the web server executable using the option –
`Dxbr.deployment.id=acme_company:`

```
<Install Drive>:\<Install Directory>\liferay\WEB-INF\dvreport-  
${xbr.deployment.id}-config.xml
```

In this example, it would look for a file named `dvreport-acme_company-config.xml`. This is primarily useful for creating pre-configured packages. It can also be used to specify options on runtime of the web server.

Override Rules and Samples

The `dvreport-config.xml` supplied with the product is not meant to be modified directly.

The `<overrides>` element is used to specify additional config files that will be loaded (if found) in the specified order and merged with this document to form the final configuration state.

The format of the `<overrides>` element looks like the following:

```
<overrides>  
  <file>\some\path\to\a\file.xml</file>  
  <file>\some\other\path\to\afile.xml</file>  
</overrides>
```

If an override file path is relative, it will be calculated relative to the directory containing this document. File paths may contain references to System properties like so:

```
<file>${user.home}\some\path.xml</file>
```

If an override file is not found, a warning is logged but it is not considered an error.

The merge of override files follows the following rules and can be controlled by an 'override' attribute which can be added to ANY element:

Merges are processed per-node. By default, if a node is replaced, so are it's children. This behavior can be modified through use of the 'override' attribute. Since the purpose of the merge is to build a runtime document, only Element and Text content nodes are merged. Comments, DocType, Entity and processing instruction declarations are ignored.

At each level, if a node does not exist, it is simply added. If a named node already exists at that level, then by default, the source node will simply replace the original. By default the attributes are included in the matching so that an element will replace only an element that has the exact same attributes.

So if a destination already has the multiple elements:

```
<person name="Adam">A nice guy.</person>  
<person name="Bob" >Another nice guy.</person>
```


and the source has:

```
<person name="Bob">A real bad singer.</person>
```

then the end result will be:

```
<person name="Adam">A nice guy.</person>
<person name="Bob">A real bad singer.</person>
```

Note that if either the source or destination had an additional attribute other than 'name', then there would not be a match. So, if the source instead had:

```
<person name="Bob" title="VP">A real bad singer.</person>
```

then the result would be:

```
<person name="Adam">A nice guy.</person>
<person name="Bob" >Another nice guy.</person>
<person name="Bob" title="VP">A real bad singer.</person>
```

To disable/control which attributes are used in the matching, add the 'override' attribute to the element and set it to "match=*" or "match=attr1,attr2,..." - that is, a comma-delimited list of attributes that must match in order to overwrite. An asterisk (*) means to ignore attributes completely.

So, if the source was:

```
<person name="Bob" title="VP" override="match=*">A real bad singer.
</person>
```

then the attributes would be ignored and the source would replace the first <person> element:

```
<person name="Bob">A real bad singer.</person>
<person name="Bob" >Another nice guy.</person>
```

if the source looks like this:

```
<person name="Bob" title="VP" override="match=name">A real bad
singer.</person>
```

it would result in:

```
<person name="Adam">A nice guy.</person>
<person name="Bob" title="VP">A real bad singer.</person>
```

To force a node to be added, without overwriting the original even if there is an exact match, add the 'overwrite' attribute and set it to 'add'. For example, the override source might contain:

```
<person attr1="value1" attr2="value2" override="add"></person>
```

This will cause the source `<person>` attribute to be added as a sibling to any `<person>` that is already in the destination document at that level. This is most useful for adding child elements that have an n:1 relationship with their parent and do not have distinctive (or any) attributes, but may have distinctive content.

To merge children without overriding a parent, the 'override' attribute can be added to the parent element and set to "skip". For example, an override source might contain:

```
<grandparent override="skip">
  <parent override="skip">
    <child1 ..> ... </child1>
    <child2 ..> ... </child2>
  </parent>
</grandparent>
```

This will cause the merge to skip down past the grandparent and parent elements and merge each child node individually. If either the grandparent and parent elements do not already exist, then they are added, along with any attributes specified in the source version of these elements (sans the 'override' attribute).

If the destination element itself has the override attribute set to 'false', then neither it or it's children will be overridden.

So, to summarize, the override attribute can have the following values:

When on the source element:

- **add:** Causes the source element to be added even if the destination parent already has an exact matching element.
- **skip:** Causes this source element to only be added if there is no matching destination element. Processing continues on to the source element's children.
- **match:***|attr1[,attr[,...]] - If set to "*", then attributes will be ignored in matching the source element to a destination element. Otherwise, is a comma-delimited list of which attributes to include in the comparison.
- **false:** No meaning.

When on the destination element:

- **add:** No meaning.
- **skip:** No meaning.
- **match:** No meaning.
- **false:** Prevents this element (and its children) from being overridden.

More than one value can be assigned to the override attribute - simply separate the values with semi-colons like so:

```
<FieldName override="skip;match=*;false">...</FieldName>
```

Password Obfuscation

As the extended dvreport-config.xml file is loaded, obfuscation is applied to any passwords identified by using the following patterns:

```
password="!!CwsLCws=!!"
key="password" value="!!CwsLCws=!!" - only one space allowed before
'value'
<password>!!CwsLCws=!!</password>
PASSWORD="!!CwsLCws=!!"
key="PASSWORD" value="!!CwsLCws=!!" - only one space allowed before
'value'
<PASSWORD>!!CwsLCws=!!</PASSWORD>
```

If an unobfuscated password is detected, the file is rewritten back out (if possible) with obfuscation applied. Obfuscated passwords can only be decoded by the same process owner so the passwords must be reset if the application is run under a different process owner after obfuscation has been applied.

Deployment Properties

The [<deployment_properties>](#) section of the dvreport-config.xml file declares several attributes of the deployment configuration, including the path to the liferay.xml File. This section must be properly configured before starting the server.

Deployment Properties Syntax Layout

```
<deployment_properties>
  <context.doc>C:/eclipse/workspace/tomcat/conf/Catalina/localhost/
    liferay.xml</context.doc>
  <request.scheme>http</request.scheme>
  <portal.container>
    <container.type>liferay</container.type>
    <container.version>3.1.0</container.version>
    <container.context>/</container.context>
  </portal.container>
  <application.server>
    <server.type>Apache Tomcat</server.type>
    <server.version>5.0.28</server.version>
  </application.server>
</deployment_properties>
```

Table 4-5: *Deployment Properties Settings*

Configuration Parameter	Description
context.doc	<p><i>Context Declaration Location</i></p> <p>Defines the location of the xml file that contains the <context> declaration for the XBR web application. If this value is blank, the system looks for a context.xml file in the WEB-INF folder.</p>

Table 4-5: *Deployment Properties Settings (continued)*

Configuration Parameter	Description
portal.container	<p><i>Portal Container Properties</i></p> <p>Defines the properties of the portal container hosting the Analytics portlets.</p> <ul style="list-style-type: none"> ■ container.type = Defines the type of portal server used. Valid value is liferay. ■ container.version = The version specified for the container type. ■ container.context = The name of the servlet context for the portal container itself. This value always starts with / and is the base of all URLs to the portal server. For example: /liferay.
application.server	<p><i>Application Server Properties</i></p> <p>Defines properties of the application server hosting the portal container.</p> <ul style="list-style-type: none"> ■ server.type = Defines the type of application server used. For example: Apache Tomcat. ■ server.version = The version of the application server used.
request.scheme	<p><i>Request Scheme Type</i></p> <p>Use HTTPS when application runs behind a router which converts http to https.</p>

General Configuration

General Configuration Syntax Layout

```

<server-mode development="true" />
<DVReportJarPath relativePath="../common/lib/ext/xbr.jar"
    realPath="" />
<JasperJarPath relativePath="../common/lib/ext/jasperreports-
    0.6.6.jar" realPath="" />
<HideSnippetInfoInFullyAssembledSQL value="false" />
<SessionParametersSupport value="false" />
<SQL_Button value="true" />
<Query_Filter_Display value="true" />
<Reports_in_Report_History value="12" />
<MaxConcurrentReports value="12" />
<EliminateInaccessibleComponentsFromPages value="false" />
<ReportAppletSimulationSupport mode="false" userid="XBRADMIN" />

```

```
<XBRRecordLockSupport remove-existing-user-locks-on-login="true"
remove-existing-user-locks-on-session-timeout="true" schedule-
marker="" set-new-schedule-locks="true" respect-schedule-locks="true"
exception-marker="exception" set-new-exception-locks="false" respect-
exception-locks="false" />
<DataModel type="RETAIL" />
```

Table 4-6: General Configuration Settings

Configuration Parameter	Description
server-mode development	<p><i>Development or Production Mode</i></p> <p>A JVM-level flag that indicates whether the application is run in development mode or production mode.</p> <p>Valid values:</p> <ul style="list-style-type: none"> ■ true = Disable VO and parameter caching so that report and config parameter changes will take effect immediately. ■ false = Do not disable VO and parameter caching. <p>CRM installations should ALWAYS set this value to false.</p>
DVReportJarPath relativePath	<p><i>DVReport Jar Location</i></p> <p>For Tomcat installations, set this value to the following:</p> <pre><DVReportJarPath relativePath="../common/lib/ ext/xbr.jar" realPath="" /></pre> <p>For JBoss installations, set this value to the following:</p> <ul style="list-style-type: none"> ■ JBOSS Windows sample: <pre><DVReportJarPath relativePath="" realPath="C:/eclipse/workspace/portal/ext/ servers/jboss-tomcat/server/default/ deploy/ext.ear/xbr.jar" /></pre> ■ JBOSS UNIX sample: <pre><DVReportJarPath relativePath="" realPath="/jboss/server/default/deploy/ ext.ear/xbr.jar" /></pre> <p>LifeRay 3.1 extensions are packaged into xbr.jar and deployed to either:</p> <ul style="list-style-type: none"> ■ Under Tomcat: /common/lib/ext/xbr.jar ■ Under JBoss: /ext.ear... <p>When updating this value, use a relative path and leave the real path equal to "".</p>

Table 4-6: *General Configuration Settings (continued)*

Configuration Parameter	Description
JasperJarPath relativePath	<p><i>Jasper Jar Location</i></p> <p>For Tomcat installations, set this value to the following:</p> <pre><JasperJarPath relativePath="../common/lib/ext/jasperreports-0.6.6.jar" realPath="" /></pre> <p>For JBoss installations, set these values to the following:</p> <ul style="list-style-type: none"> JBoss Windows sample: <pre><JasperJarPath relativePath="" realPath="C:/eclipse/workspace/portal/ext/servers/jboss-tomcat/server/default/lib/ext/jasperreports-0.6.6.jar" /></pre> JBoss UNIX sample: <pre><JasperJarPath relativePath="" realPath="/jboss/server/default/lib/ext/jasperreports-0.6.6.jar" /></pre> <p>LifeRay 3.1 extensions are packaged into xbr.jar and deployed to either:</p> <ul style="list-style-type: none"> Under Tomcat: /common/lib/ext/xbr.jar Under JBoss: /ext.ear... <p>When updating this values, use a relative path and leave the real path equal to "".</p>
HideSnippetInfoInFullyAssembledSQL	<p><i>Hide Snippet Information?</i></p> <p>Valid values are true and false.</p>
SessionParametersSuport	<p><i>Provide Session Parameters Support?</i></p> <p>Valid values are true and false.</p>
SQL_Button	<p><i>Allow SQL Buttons?</i></p> <p>Valid values are true and false.</p>
Query_Filter_Display	<p><i>Allow Query Filter Display?</i></p> <p>Valid values are true and false.</p>
Reports_in_Report_History	<p><i>Number of Report in History</i></p> <p>Enter a number in this value. For example: 12.</p>
MaxConcurrentReports	<p><i>Maximum Number on Concurrent Reports</i></p> <p>Enter a number in this value. For example: 12.</p>

Table 4-6: *General Configuration Settings (continued)*

Configuration Parameter	Description
EliminateInaccessibleComponentsFromPages	<p><i>Hide Components that are Disabled for a User</i></p> <p>Defines whether the system hides components that an Admin has disabled for a user. For example, if an Admin turns off user access to Quick Runs and Exceptions, the system hides Quick Runs and Exceptions for the user in the application.</p> <p>Valid values:</p> <ul style="list-style-type: none"> ■ true = The system hides components that an Admin has disabled for a user. ■ false = The system does not hide components that an Admin has disabled for a user.
ReportAppletSimulationSupport	<p><i>Enable Report Validator</i></p> <p>Enables the Report Validator. The Report Validator is a QA tool that is used to verify that execution of queries without using the GUI interface.</p> <p>To enable the Report Validator, set the mode parameter to true and the userid to XBRADMIN.</p>
XBRRecordLockSupport	<p><i>Support Record Lock</i></p> <p>Specifies the extent to which the thin-client application respects the manual record locking scheme used by the Client-Server XBR.</p>
DataModel	<p><i>Data Model Type</i></p> <p>Defines the type of data model used by the XBR application. Valid values are RETAIL and FOODSERVICE.</p>

SQL Files

Specifies the paths to the SQL files that contain the SQL statement definitions used to access the database(s) for most of the functions in the XBR Web Application. A separate path is specified for each particular DBMS vendor type. The **Common** vendor MUST be specified and should contain ANSI standard sql for every query and also name the logical datasource to use for each query.

Based on the vendor type assignments to the named datasource in the <datasources> element, the system looks here to see if there is a vendor-specific override for the particular query.

SQL Files Syntax Layout

```
<sql-files default="Common">
  <sql-file vendor="Common">
    <file-name>dvreport-common-sql.xml</file-name>
  </sql-file>
  <sql-file vendor="Microsoft SQL Server">
    <file-name>dvreport-transact-sql.xml</file-name>
  </sql-file>
  <sql-file vendor="Oracle">
    <file-name>dvreport-pl-sql.xml</file-name>
  </sql-file>
  <sql-file vendor="DB2">
    <file-name>dvreport-db2-sql.xml</file-name>
  </sql-file>
  <sql-file vendor="Teradata">
    <file-name>dvreport-teradata-sql.xml</file-name>
  </sql-file>
  <sql-file vendor="HSQL">
    <file-name>dvreport-hsql-sql.xml</file-name>
  </sql-file>
</sql-files>
```

Table 4-7: *SQL Files Settings*

Configuration Parameter	Description
vendor	<p><i>DBMS Vendor Type</i></p> <p>The name of the DBMS vendor type for which you wish to specify the path to the SQL files.</p>

Table 4-7: SQL Files Settings (continued)

Configuration Parameter	Description
file-name	<p><i>SQL Statement Definition Location</i></p> <p>The directory path and name of the SQL file that contains the SQL statement definitions used to access the database(s) for most of the functions in the XBR Web Application. The path can be specified as an absolute path or a relative path in relation to the parent dvreport-config.xml file. In addition, you can embed Java system property values in the paths using the syntax <code>\${some.property}</code>. For example:</p> <pre><file-name>\${user.home}/some-sql.xml<file-name></pre>

Datasources

Defines the XBR datasource elements by indicating the name of the JNDI datasource to use for the datasource, the vendor type of the connection to use for the datasource, and the date format.

If you have defined an additional datasource in the `liferay.xml` File, you must define the information for the new datasource in the **Datasources** section of the `dvreport-config.xml` file.

Datasources Syntax Layout

```
<datasources>
  <Number_Of_Liferay_Database_Nodesvalue="1" />
  <Number_Of_XBR_Database_Nodes value="1" />
  <Number_Of_Offline_Report_Database_Nodesvalue="1" />
  <datasource name="Liferay">
    <jndi>jdbc/LiferayPool</jndi>
    <date-format>MM/dd/yyyy</date-format>
    <date-format-locale>en_US</date-format-locale>
    <date-range-syntax>B</date-range-syntax>
    <sql-vendor>Microsoft SQL Server</sql-vendor>
    <test-sql>select count(*) from company</test-sql>
  </datasource>
  <datasource name="XBR Database">
    <jndi>jdbc/AnalyticsPool</jndi>
    <date-format>MM/dd/yyyy</date-format>
    <date-format-locale>en_US</date-format-locale>
    <date-range-syntax>B</date-range-syntax>
    <sql-vendor>Microsoft SQL Server</sql-vendor>
    <test-sql>select count(*) from pro_sys_def</test-sql>
  </datasource>
  <datasource name="REPORT Database">
    <jndi>jdbc/OfflineReportPool</jndi>
    <date-format>MM/dd/yyyy</date-format>
    <date-format-locale>en_US</date-format-locale>
    <date-range-syntax>B</date-range-syntax>
```

```

    <sql-vendor>Microsoft SQL Server</sql-vendor>
    <test-sql>select count(*) from pro_pub_rpts_content</test-sql>
  </datasource>
</datasources>

```

Table 4-8: *Datasources Settings*

Configuration Parameter	Description
Nodesvalue	<p><i>Number Of ##### Database Nodes</i></p> <p>Default is 1.</p> <p>Change to the proper value when the same datasource (ex.: XBR_Database) is presented via multiple physical nodes.</p> <p>Only for multiple nodes: make sure names for Resource and ResourceParams (liferay.xml) end with the proper number. (ex. jdbc/AnalyticsPool_1, jdbc/AnalyticsPool_2)</p>
datasource name	<p><i>XBR Datasource Name</i></p> <p>The name of the XBR datasource.</p> <p>In order to write a query against a specific datasource, the datasource name must match the name defined in the Data Dictionary used by the XBR Desktop application.</p>
jndi	<p><i>JNDI Datasource Name</i></p> <p>The name of the JNDI datasource to use for the XBR datasource.</p> <p>The jndi name must match the name of the database resource defined in the liferay.xml File.</p>
date-format	<p><i>Date Format</i></p> <p>The date format to use for the XBR datasource.</p> <p>Valid values:</p> <ul style="list-style-type: none"> ■ Any format usable by the java SimpleDateFormat class. ■ MM/dd/yyyy = MSSQL default. ■ dd-MMM-yyyy = Oracle default. ■ yyyy/MM/dd = Teradata default. ■ yyyy-MM-dd = HSQL default. ■ yyyy-MM-dd = DB2 default. <p>Note: This value must coorespond to the date format used by the target RDBMS(s).</p>

Table 4-8: *Datasources Settings (continued)*

Configuration Parameter	Description
date-format-locale	<p><i>Locale</i></p> <p>Used to enforce database locale formats.</p> <p>Default is "en_US"</p>
date-range-syntax	<p><i>Data Range Syntax</i></p> <p>The data range syntax to use for the XBR datasource.</p> <p>Valid values:</p> <ul style="list-style-type: none"> ■ B = Use syntax <code>report-Date between date-X and date-Y</code>. ■ G = Use syntax <code>report-Date >= dateX and report-Date <= dateY</code>. ■ I = Use syntax <code>report-Date in (...)</code>. <p>Note: Check which syntax works most efficiently on your target RDBMS(s).</p>
sql-vendor	<p><i>SQL Vendor Type</i></p> <p>The type of vendor to use for the XBR datasource.</p> <p>The sql-vendor name must match the vendor value in the SQL Files section of the <code>dvreport-config.xml</code> file. This allows the system to find vendor-specific customizations of the SQL code.</p> <p>Valid values:</p> <ul style="list-style-type: none"> ■ Microsoft SQL Server ■ Oracle ■ DB2 ■ HSQL ■ Teradata <p>Note: The datasource values need to match the values used in the SQL Files element.</p>
test-sql	<p><i>SQL Code to Test Connectivity</i></p> <p>A simple piece of SQL code that can be executed against a particular database in order to confirm connectivity and schema presence.</p>

Cache

Cache Syntax Layout

```

<CACHED_ROWSET_IMPL_CLASS>com.datavantage.common.datawindow.JRowSet</
CACHED_ROWSET_IMPL_CLASS>
<report-links use-cache="true" />
<graphs use-cache="true" />
<named-dates use-cache="true" />
<controls use-cache="true" pre-cache-control-targets-and-
groups="false" cache-exception-sets-at-client="true" />
<ExceptionReview storeDetail="STORE MASTER" associateDetail="ASSOCIATE
MASTER" />

```

Table 4-9: *Cache Settings*

Configuration Parameter	Description
CACHED_ROWSET_IMPL_CLASS	<p>RowSet Class</p> <p>The class that implements the RowSet interface.</p> <p>If you want to use your own choice of Rowset, make sure that it supports update: rowset.setObject(columnIndex, newValue).</p> <p>Examples:</p> <pre> <CACHED_ROWSET_IMPL_CLASS>com.datavantage.common.datawindow.JRowSet </CACHED_ROWSET_IMPL_CLASS> <CACHED_ROWSET_IMPL_CLASS>com.sun.rowset.CachedRowSetImpl</CACHED_ROWSET_IMPL_CLASS> <CACHED_ROWSET_IMPL_CLASS>com.inet.tds.CachedRowSet</CACHED_ROWSET_IMPL_CLASS> </pre>
report_links use-cache	<p>Cache Report Links?</p> <p>Defines whether the system caches report links with report definitions or retrieves report links each time they are requested.</p> <p>Valid values:</p> <ul style="list-style-type: none"> ■ true = The system caches report links. ■ false = The system does not cache report links.

Table 4-9: *Cache Settings (continued)*

Configuration Parameter	Description
graphs use-cache	<p><i>Cache Graphs with Report Definitions?</i></p> <p>Defines whether the system caches graphs with report definitions or retrieves graphs each time they are requested.</p> <p>Valid values:</p> <ul style="list-style-type: none"> ■ true = The system caches graphs. ■ false = The system does not cache graphs.
named-dates use-cache	<p><i>Cache Named Dates with Report Definitions?</i></p> <p>Defines whether the system caches named dates with report definitions or retrieves named dates each time they are requested.</p> <p>Valid values:</p> <ul style="list-style-type: none"> ■ true = The system caches named dates. ■ false = The system does not cache named dates.
controls use-cache	<p><i>Cache Controls with Report Definitions?</i></p> <p>Defines whether the system caches controls with report definitions or retrieves controls each time they are requested.</p> <p>Valid values:</p> <ul style="list-style-type: none"> ■ true = The system caches controls. ■ false = The system does not cache controls.
pre-cache-control-targets-and-groups	<p><i>Cache Control Targets and Groups with Report Definitions?</i></p> <p>Defines whether the system caches control targets and groups with report definitions or retrieves control targets and groups each time they are requested.</p> <p>Valid values:</p> <ul style="list-style-type: none"> ■ true = The system caches control targets and groups. ■ false = The system does not cache control targets and groups.

Table 4-9: *Cache Settings (continued)*

Configuration Parameter	Description
cache-exception-sets-at-client	<p><i>Cache Exception Sets with the Client?</i></p> <p>Defines whether the system caches exception sets with the client or retrieves exception sets each time they are requested.</p> <p>Valid values:</p> <ul style="list-style-type: none"> ■ true = The system caches exception sets. ■ false = The system does not cache exception sets.
ExceptionReview	Provides appropriate query mapping for store and employee details

Exception

This configuration provides the means for translating the Exception screen titles to another language.



These settings should only be changed for foreign language versions of the XBR application.



Unicode entries may have to be used in order for some special characters to be displayed properly.

For example, MAÎTRE DE MAGASIN --> MAÎTRE DE MAGASIN.

Exception Syntax Layout

```
<exception>
  <queries>
    <sets>EXCEPTION SETS</sets>
    <detail>EXCEPTION DETAIL</detail>
    <controlPoint>EXCEPTION VIEW SINGLE MEASURE</controlPoint>
    <controlGroup>EXCEPTION VIEW MULTI-MEASURES</controlGroup>
    <storeDetail>STORE MASTER</storeDetail>
    <associateDetail>ASSOCIATE MASTER</associateDetail>
  </queries>
</exception>
```

Table 4-10: *Exception Settings*

Configuration Parameter	Description
sets	Default value = EXCEPTION SETS

Table 4-10: *Exception Settings (continued)*

Configuration Parameter	Description
detail	Default value = EXCEPTION DETAIL
controlPoint	Default value = EXCEPTION VIEW SINGLE MEASURE
controlGroup	Default value = EXCEPTION VIEW MULTI-MEASURES
storeDetail	The default value depends on the data model, Retail or Foodservice, that is selected: Retail = STORE MASTER Foodservice = LOCATION MASTER
associateDetail	The default value depends on the data model, Retail or Foodservice, that is selected during installation: Retail = EMPLOYEE MASTER Foodservice = EMPLOYEE MASTER

Lookups

This configuration provides a means for translating the Watch List and Alert Classification lookup titles in the Lookup list to another language.



These settings should only be changed for foreign language versions of the XBR application.



Unicode entries may have to be used in order for some special characters to be displayed properly.

For example, MAÎTRE DE MAGASIN --> MAÎTRE DE MAGASIN.

Lookups Syntax Layout

```
<lookups>
  <watchStatus>WATCH LIST</watchStatus>
  <alertClassification>ALERT CLASSIFICATION</alertClassification>
</lookups>
```

Table 4-11: *Lookups Settings*

Configuration Parameter	Description
watchStatus	Default value = WATCH LIST

Table 4-11: *Lookups Settings (continued)*

Configuration Parameter	Description
alertClassification	Default value = ALERT CLASSIFICATION

Liferay User

Liferay User Syntax Layout

```
<UseProactUserTables value="true" />
<CreateNewLifeRayLoginsForXBRUsersWithout value="true" />
<LifeRayEmailAddressIsXBRUserId value="false" />
<LifeRayUserTemplate value="lp_user_template" />
<InsertPlaceholderEmail value="true" />
<NewUserEmailConfirmation value="false" />
```

Table 4-12: *Liferay User Settings*

Configuration Parameter	Description
UseProactUserTables	<p><i>Synchronize LifeRay and XBR Security Tables During Startup?</i></p> <p>Defines whether the system synchronizes LifeRay and XBR security tables during start-up. Note: All reporting tables currently use XBR security tables to determine user permissions.</p> <p>Valid values:</p> <ul style="list-style-type: none"> ■ true = Synchronize LifeRay and XBR security tables during start-up. ■ false = Do not synchronize Liferay and XBR security tables during start-up.
CreateNewLifeRayLoginsForXBRUsersWithout	<p><i>Automatically Create Users Referenced in Reports?</i></p> <p>Defines whether LifeRay automatically creates user records for users that are referenced in XBR reporting tables that are not valid portal users.</p> <p>Valid values:</p> <ul style="list-style-type: none"> ■ true = LifeRay automatically creates user records. ■ false = LifeRay does not automatically create user records.

Table 4-12: *Liferay User Settings (continued)*

Configuration Parameter	Description
LifeRayEmailAddressIsXBR UserId	<p><i>Create Users using Email Address?</i></p> <p>Defines whether the system creates user records using the email address as the user ID.</p> <p>Valid values:</p> <ul style="list-style-type: none"> ■ true = The system creates user records using the email address as the user ID. Set this value to true if you wish to keep XBR user record compatible with Liferay email address logins. This allows you to use email logins for both the portal and XBR. ■ false = The system does not create user records using the email address as the user ID.
LifeRayUserTemplate	<p><i>User ID Template</i></p> <p>Defines the user ID the system uses as a template when automatically creating new user records. For example: <code>lp_user_template</code>.</p>
InsertPlaceholderEmail	<p><i>Insert Placeholder for Duplicate or Invalid Email Addresses?</i></p> <p>Defines how the system handles duplicate, null or invalid email addresses that are found during user sync.</p> <p>Valid values:</p> <ul style="list-style-type: none"> ■ true = The system attempts to insert a placeholder. ■ false = The system aborts the user sync for the user ID in question.

Table 4-12: *Liferay User Settings (continued)*

Configuration Parameter	Description
NewUserEmailConfirmation	<p><i>Generate Email for New User and Password Assistance?</i></p> <p>Defines whether the system generate emails when a user is initially registered as a user and also when a user requests Password Assistance.</p> <p>Valid values:</p> <ul style="list-style-type: none"> ■ true = The system generates an email. ■ false = The system does not generate an email. <p>Note: You must set this value to true if the passwords.regexptoolkit.pattern setting in the Portal Properties File (portal-ext.properties) is set to a value other than <code>regexptoolkit.pattern=/(?=.{1})</code>, indicating the system uses complex password rules to generate a user password. In this situation, the system must generate a Password Email Notification in order for the user to know his new password.</p>

Store Group Security

To enable Store Group Security in the XBR Web Application, the **Store_Group_Security required** value in `dvreport-config.xml` must be set to **Y**.

Store Group Security Syntax Layout

```
<Store_Group_Security required="N" />
<Sort_Alerts_By_Date_Initially value="false" />
<DebugApplet value="false" />
```

Table 4-13: *Store Group Security Settings*

Configuration Parameter	Description
Store_Group_Security required	<p><i>Require Store Group Security to Run Reports?</i></p> <p>Defines whether the system requires a user to have Store Group Security enabled in order to run reports.</p> <p>Valid values:</p> <ul style="list-style-type: none"> ■ Y = The system requires users to have Store Group Security enabled in order to run reports. Set this value to Y if you are executing queries over extremely large databases. The system prevents users from logging in until they have valid Store Group Security settings assigned to them. ■ N = The system does not require users to have Store Group Security enabled in order to run reports. The system allows all users to log in regardless of their Store Group Security settings.
Sort_Alerts_By_Date_Initially	<p><i>Sort Alerts by Date?</i></p> <p>Defines whether the system initially sorts alerts by date.</p> <p>Valid values:</p> <ul style="list-style-type: none"> ■ true = The system initially sorts alerts by date. ■ false = The system does not initially sort alerts by date.
DebugApplet	<p><i>Enable Debug Applet?</i></p> <p>Valid values are true and false.</p>

Video

Video Syntax Layout

```

<!-- Use forward slashes for video player pathnames -->
<company name="WPL">
  <videoVendor name="3VRVIDEOPLAYER">
    <MediaPlayer pathname="C:/Program Files/VideoLAN/VLC/vlc.exe" />
    <MediaPlayer pathname="C:/Program Files/Mozilla Firefox/
      firefox.exe" />
    <MediaPlayer pathname="DEFAULT BROWSER" />
  </videoVendor>
</company>
</Video>

```

Table 4-14: *Video Settings*

Configuration Parameter	Description
company name	This is the Organization/Company Code.
videoVendor name	This is the name of the video vendor.
MediaPlayer pathname	This is the path and video viewer executable for web users. Multiple paths can be included for the same video vendor. The web client will attempt to launch the executable path in the order they are listed.

Adding Additional Video Vendors

Use the following steps to add any additional video vendors you may use:

1. Open the `dvreport-config.xml` override file and locate the [Video] section.
2. Copy a `videoVendor` section (see below) and paste it after the existing `videoVendor` section.

```
<videoVendor name="3VRVIDEOPLAYER">
  <MediaPlayer pathname="C:\MICROS-
    Retail_Analytics_7.0\DESKTOP\mplayer2.exe" />
</videoVendor>
```

3. Set up the new vendor:
 - a. Change the video vendor name in the copied section to the name of the video vendor you want to add.
 - b. Change the media player pathname in the copied section to the path to the media player executable file for the vendor you just entered.
4. Repeat steps 2 and 3 for any additional video vendors you want to add.
5. Save the `dvreport-config.xml` override file.

Adding Additional MediaPlayer Pathnames

Use the following steps to add any additional locations for a media player:

1. Open the `dvreport-config.xml` override file and locate the [Video] section.
2. Copy the `MediaPlayer` line (see below) and paste it after the existing `videoVendor` section.

```
<videoVendor name="3VRVIDEOPLAYER">
  <MediaPlayer pathname="C:/Program Files/VideoLAN/VLC/vlc.exe" />
  <MediaPlayer pathname="D:/MyVideoPlayer/VideoLAN/VLC/vlc.exe" />
</videoVendor>
```

3. Change the pathname in the copied line to the path of the media player you want to add.
4. Repeat steps 2 and 3 for any additional media player pathnames you want to add.

5. Save the dvreport-config.xml override file.

Web-based Video Clients

If the video client is web-based and requires a specific browser; this browser can be specified in the dvreport-config.xml file:

```
<videoVendor name="3VRVIDEOPLAYER">
  <MediaPlayer pathname="C:/Program Files/VideoLAN/VLC/vlc.exe" />
  <MediaPlayer pathname="C:/Program Files/Mozilla Firefox/
    firefox.exe" />
</videoVendor>
```

If a specific browser is not required, the user's default browser can be called:

```
<videoVendor name="3VRVIDEOPLAYER">
  <MediaPlayer pathname="C:/Program Files/VideoLAN/VLC/vlc.exe" />
  <MediaPlayer pathname="DEFAULT BROWSER" />
</videoVendor>
```

Employee Violations Dashboard

Employee Violations Dashboard Syntax Layout

```
<EMPLOYEE_VIOLATIONS_DASHBOARD>
  <ENABLED>N</ENABLED>
  <PDF_DIRECTORY>C:/XBR/Employee Violation Dashboard</PDF_DIRECTORY>
  <NUMBER_OF_PREVIOUS_ALERTS_TO_BE_SHOWN>5
</NUMBER_OF_PREVIOUS_ALERTS_TO_BE_SHOWN>
  <NUMBER_OF_DAYS_IN_ALERT_HISTORY>90
</NUMBER_OF_DAYS_IN_ALERT_HISTORY>
  <MAX_NUMBER_EMPLOYEE_WATCH_NOTES>12
</MAX_NUMBER_EMPLOYEE_WATCH_NOTES>
  <MST_STORE_ID>orglocationref</MST_STORE_ID>
  <MST_EMPLOYEE_ID>posref</MST_EMPLOYEE_ID>
  <POS_TRANSDATE>businessdate</POS_TRANSDATE>
  <POS_ORGID>organizationid</POS_ORGID>
  <POS_DIVISION />
  <POS_STORENUM>storenum</POS_STORENUM>
  <POS_CASHIERNUM>cashiernum</POS_CASHIERNUM>
  <MAIL>
    <!--
      SEND.INTERVAL == run interval (in minutes) for the
      MailDaemon to send email with EVD attachment.(default is 30
      minutes)
    -->
    <SEND.INTERVAL>30</SEND.INTERVAL>
    <!--
      ATTACHMENT.MAX == limit for combined number of EVD attachments
      per single email (default is 10 attachments)
    -->
    <ATTACHMENT.MAX>10</ATTACHMENT.MAX>
    <!--
      DAYS.KEEP.PDF.BEFORE.PURGE == limit number of days to keep evd
```

```

    mail attachments/pdf before purged by daemon.
-->
<DAYS.KEEP.PDF.BEFORE.PURGE>30</DAYS.KEEP.PDF.BEFORE.PURGE>
</MAIL>
<CUSTOMIZATION>
  <COMPANY name="ORG_CODE">
    <LOGO>Org_LOGO.gif</LOGO> <!-- dir: \tomcat\liferay\html\
                                skin\image\common\report_menu_icons\ -->
    <INSTRUCTION>Disclaimer: This alert report ... </INSTRUCTION>
  </COMPANY>
</CUSTOMIZATION>
</EMPLOYEE_VIOLATIONS_DASHBOARD>

```

Table 4-15: Employee Violations Dashboard Settings

Configuration Parameter	Description
ENABLED	"Y" enables the Employee Violations Dashboard functionality.
PDF_DIRECTORY	This setting specifies the location where the PDF reports are temporarily stored for distribution. Default value = C:/MICROS-Retail_Analytics_7.0/WEB/tomcat/temp/EVD
NUMBER_OF_PREVIOUS_ALERTS_TO_BE_SHOWN	The number of previous EVD alerts for the employee that should appear on the report. Default value = 5
NUMBER_OF_DAYS_IN_ALERT_HISTORY	The number of days the system should look back to find previous alerts for the employee. Transaction dates are used for the look back, not the alert dates. Default value = 90
MAX_NUMBER_EMPLOYEE_WATCH_NOTES	The number of watch notes for the employee that should appear on the report. Default value = 5
MST_STORE_ID	The Store Master field used for the location number in the report header of the EVD. Default values: <i>Foodservice</i> - orglocationref <i>Retail</i> - storenum
MST_EMPLOYEE_ID	The Employee Master field used for the employee number in the report header of the EVD. Default values: <i>Foodservice</i> - posref <i>Retail</i> - cashiernum

Table 4-15: *Employee Violations Dashboard Settings (continued)*

Configuration Parameter	Description
POS_TRANSDATE	The date field in POS_STATISTICS to be used for the KPI Summary data on the EVD. Default values: <i>Foodservice</i> - businessdate <i>Retail</i> - transdate
POS_ORGID	The orgID field in POS_STATISTICS to be used for the KPI Summary data on the EVD. Default values: <i>Foodservice</i> - organizationid <i>Retail</i> - orgid
POS_DIVISION	The division field in POS_STATISTICS to be used for the KPI Summary data on the EVD. Default values: <i>Foodservice</i> - n/a <i>Retail</i> - division
POS_STORENUM	The store number field in POS_STATISTICS to be used for the KPI Summary data on the EVD. Default values: <i>Foodservice</i> - storenum <i>Retail</i> - storenum
POS_CASHIERNUM	The employee number field in POS_STATISTICS to be used for the KPI Summary data on the EVD. Default values: <i>Foodservice</i> - cashiernum <i>Retail</i> - cashiernum
SEND.INTERVAL	How often (in minutes) the mail daemon should send email with EVD attachments. Default value = 30
ATTACHMENT.MAX	This is the limit for the number of EVD attachments per single email. Default value = 10
DAYS.KEEP.PDF.BEFORE.PURGE	This is the number of days to keep EVD PDF files before being purged. Default value = 30

Table 4-15: *Employee Violations Dashboard Settings (continued)*

Configuration Parameter	Description
LOGO	<p>This is the name of the graphics file for the logo that will be on the EVD report.</p> <p>The file should be approximately 8k or less with an image size of about 80 px wide by 40 px high.</p> <p>The file type should be png, jpg, or gif.</p> <p>The file should be placed in the ...\\tomcat\\liferay\\html\\skin\\image\\common\\report_menu_icons\\ folder.</p> <p>Default value = micros.png</p>
INSTRUCTION	<p>This is the company-specific instructions that are included on the footer of each EVD report.</p>

Note History

Note History Syntax Layout

```
<Note_History value="true" />
<ShowOpenAlertsOnlyInitially value="true" />
```

Table 4-16: *Note History Settings*

Configuration Parameter	Description
Note_History	<p><i>Enable Note History?</i></p> <p>Set this value to true if you wish to enable ShowOpenAlertsOnlyInitially and WATCH_STATUS_MULTI_ROLE_SUPPORT.</p>
ShowOpenAlertsOnlyInitially	<p><i>Initially Display Open Alerts Only?</i></p> <p>Defines whether the system initially displays open alerts only.</p> <p>Valid values:</p> <ul style="list-style-type: none"> ■ true = The system initially displays open alerts only. ■ false = The system initially displays both open and closed alerts.

Drop Down Display

Drop Down Display Syntax Layout

```
<Sort_DropDown_By_Display_Value value="true" exceptions="MONTH,
SEASON" />
```

Table 4-17: Drop Down Display Settings

Configuration Parameter	Description
Sort_DropDown_By_Display_Value	<p><i>Sort Drop Down Column Entries by Display Value?</i></p> <p>Defines whether the system sorts entries in a drop down column in a Criteria Prompt panel by data value or display value.</p> <p>Valid values:</p> <ul style="list-style-type: none"> ■ true = The system sorts entries in a drop down column in a Criteria Prompt panel by display value. ■ false = The system sorts entries in a drop down column in a Criteria Prompt panel by data value.
exceptions	<p><i>Lookup Name Exceptions to Drop Down Column Sort</i></p> <p>Allows you to specify the Lookup names that you wish the system to sort opposite the value specified for the Sort_DropDown_By_Display_Value parameter. For example, if you enter true for the Sort_DropDown_By_Display_Value, the system sorts entries in a drop down column in a Criteria Prompt panel by display value; however, for the Lookup names specified for the exceptions parameter, the system sorts entries in a drop down column in a Criteria Prompt panel by data value.</p>

Report Layout

After the XBR web server starts running, fine tune the XBR Web Server operation and the layout of all the reports displayed by web clients by modifying the following entries in `liferay\WEB-INF\dvreport-config.xml`.

Report Layout Syntax Layout

```
<ReportLayout>
  <DEFAULT_PAGE_WIDTH>792</DEFAULT_PAGE_WIDTH>
  <DEFAULT_PAGE_HEIGHT>612</DEFAULT_PAGE_HEIGHT>
  <DEFAULT_LEFT_MARGIN>0</DEFAULT_LEFT_MARGIN>
  <DEFAULT_RIGHT_MARGIN>0</DEFAULT_RIGHT_MARGIN>
```

```

<DEFAULT_TOP_MARGIN>0</DEFAULT_TOP_MARGIN>
<DEFAULT_BOTTOM_MARGIN>0</DEFAULT_BOTTOM_MARGIN>
<FIELD_SEPERATOR_LENGTH>4</FIELD_SEPERATOR_LENGTH>
<BIG_FONT_SIZE>14</BIG_FONT_SIZE>
<NORMAL_FONT_SIZE>12</NORMAL_FONT_SIZE>
<SMALL_FONT_SIZE>8</SMALL_FONT_SIZE>
<MINI_FONT_SIZE>4</MINI_FONT_SIZE>
<TINY_FONT_SIZE>2</TINY_FONT_SIZE>
<CURRENCY_SYMBOL FRONT="true">$</CURRENCY_SYMBOL>

<THOUSAND_SEPARATOR>,</THOUSAND_SEPARATOR>
<DECIMAL_POINT>.</DECIMAL_POINT>
<PAGE>Page</PAGE>
<OF>of</OF>
<REPORT_SUMMARY>Report Totals</REPORT_SUMMARY>
<END_OF_REPORT>End Of Report</END_OF_REPORT>
<GROUP_TOTAL_FOR>Total for</GROUP_TOTAL_FOR>
<SIMPLE_DATE_FORMAT>MM/dd/yyyy</SIMPLE_DATE_FORMAT>
<SQL_DATE_TIME_FORMAT>MM/dd/yyyy HH:mm:ss</SQL_DATE_TIME_FORMAT>
<REPORT_CACHE_SIZE>600</REPORT_CACHE_SIZE>
<MAX_RECORDS_RETURNED>1000</MAX_RECORDS_RETURNED>
<CAN_CLIENT_OVERRIDE_MAX_RECORDS_RETURNED>N
</CAN_CLIENT_OVERRIDE_MAX_RECORDS_RETURNED>
<ULTIMATE_LIMIT_ON_RECORDS_RETURNED>5000
</ULTIMATE_LIMIT_ON_RECORDS_RETURNED>
<VERTICAL_SEPARATION_FOR_REPORT_SUMMARY>0
</VERTICAL_SEPARATION_FOR_REPORT_SUMMARY>
<COLOR_SEPARATORS_IN_RECORD_DETAIL>Y
</COLOR_SEPARATORS_IN_RECORD_DETAIL>
<CASHIER_NUM_IS_ALPHANUMERIC>N</CASHIER_NUM_IS_ALPHANUMERIC>
<HORIZONTAL_LENGTH_NORMALIZATION_FACTOR>1.0
</HORIZONTAL_LENGTH_NORMALIZATION_FACTOR>
<SERVER_LANGUAGE_CODE>en_US</SERVER_LANGUAGE_CODE>
</ReportLayout>

<ReportFileRepository location="/WEB-INF/reportfiles"
                        path="relative" />

```

Table 4-18: Report Layout Settings

Configuration Parameter	Description
DEFAULT_PAGE_WIDTH DEFAULT_PAGE_HEIGHT DEFAULT_LEFT_MARGIN DEFAULT_RIGHT_MARGIN DEFAULT_TOP_MARGIN DEFAULT_BOTTOM_MARGIN CASHIER_NUM_IS_ALPHANUMERIC	Reserved for future use.
FIELD_SEPERATOR_LENGTH	<i>Space Size between Report Columns</i> The number of pixels between two report columns.
BIG_FONT_SIZE	<i>Report Title Font Size</i> The font size for the report title.
NORMAL_FONT_SIZE	<i>Report Body Font Size</i> The font size for the report header, report detail, and report summary.
SMALL_FONT	Reserved for future use.
MINI_FONT_SIZE	<i>Space Size between Report Title and Data</i> The number of pixels between the top of the page and the report title, and between the report title and the line specify page number.
TINY_FONT_SIZE	<i>Space Size of Top and Bottom Margin</i> The number of pixels for the top and bottom margin for a group or report summary band.
CURRENCY_SYMBOL	<i>Currency Symbol</i> The symbol to be used locally for monetary field displays in reports. For example, a dollar sign (\$). FRONT determines where the symbol is displayed in relation to the number. FRONT="true", symbol appears before number (\$4.45) FRONT="false", symbol appears after number (4.45\$) NOTE: Unicode entries may have to be used in order for some special characters to be displayed properly. For example, the Euro symbol: € - € or the Pound symbol: £ - £.

Table 4-18: *Report Layout Settings (continued)*

Configuration Parameter	Description
THOUSAND_SEPARATOR	<i>Thousands Separator</i> The symbol to be used locally as the thousands separator in reports. For example, a comma (,).
DECIMAL_POINT	<i>Decimal Separator</i> The symbol to be used locally as the decimal separator in reports. For example, a period (.)
PAGE	<i>Page Numbering Descriptor</i> The word to be used for "page" in the page-numbering string "Page 1 of 3" at the upper right corner of each report page. For example, specify Page for English-speaking customers or "Pagina" for Spanish-speaking customers.
OF	<i>Page Numbering Sequence</i> The word to be used for "of" in the page-numbering string "Page 1 of 3" at the upper right corner of each report page. For example, specify of for English-speaking customers or "de" for Spanish-speaking customers.
REPORT_SUMMARY	<i>Report Summary Descriptor</i> The word(s) to be used for report summary. Example: Report Totals
END_OF_REPORT	<i>End of Report Descriptor</i> The word to be used for the end of report.
GROUP_TOTAL_FOR	<i>Group Total For Descriptor</i> The word to be used for the group total for: Total for.
SIMPLE_DATE_FORMAT	<i>Date Column Format</i> The format for displaying date columns. Possible values include: <ul style="list-style-type: none"> ■ mm/dd/yyyy = Displays 12/31/2005 ■ mm-dd-yyyy = Displays 12-31-2005 ■ dd-mm-yyyy = Displays 31-12-2005 ■ dd-MMM = Displays 05-APR
SQL_DATE_TIME_FORMAT	<i>Reserved for future use.</i>

Table 4-18: *Report Layout Settings (continued)*

Configuration Parameter	Description
REPORT_CACHE_SIZE	<i>Number of Reports Stored in Memory Cache</i> The number of report definitions that can be stored in the memory cache. Most recently used reports stay in the cache; anything beyond that is removed. The default is 100.
MAX_RECORDS_RETURNED	<i>Maximum Number of Reports for a Report</i> The maximum number of records that can be returned in each report. Default = 5000.
CAN_CLIENT_OVERRIDE_MAX_RECORDS_RETURNED	<i>Reserved for future use.</i>
ULTIMATE_LIMIT_ON_RECORDS_RETURNED	<i>Reserved for future use.</i>
VERTICAL_SEPARATION_FOR_REPORT_SUMMARY	The vertical distance between the report summary and the rest of the report. This is a number of pixels.
COLOR_SEPARATORS_IN_RECORD_DETAIL	In the case where the report background color is not white, this value specifies whether the separator fields between columns should be set to the report background color too. Values are Y or N. Entering Y will make the report roughly 60% larger in size.
HORIZONTAL_LENGTH_NORMALIZATION_FACTOR	This value can be used to adjust amount of horizontal space used to display each column. Set the value to less than 1.0 if the content of the reports should be more compressed horizontally. If the report data is too compressed horizontally resulting in too many fields being displayed in more than one line, widen the space for each column by setting the value larger than 1.0.
SERVER_LANGUAGE_CODE	Reserved for future use.
CACHE_CONTROLS	This value determines whether information concerning control target, control points, and control groups can be cached in the memory, or read fresh from the database each time. Values are Y or N. Set it to N while setting up definitions for the controls. Once the definitions of the controls have been stabilized, set it to "Y" for efficiency.

Heart Beat Monitor (HBM)

Heart Beat Monitor (HBM) is an XBR component which checks the health of the XBR server periodically and reports the status back to the Tech Track (TT) system in Westboro. All the TT Messages are time-stamped.

Heart Beat Monitor Overview

Whenever possible, the HBM helps the XBR server recover from errors. The following are the different types of messages sent by HBM to the Tech Track system:

Start Up Message

When the XBR server first starts up, HBM sends the following message back to TT:

- Server Name
- Amount of memory allocated to the Java Virtual Machine
- Whether LDAP authentication is enabled
- Point(s) in time when the XBR server is scheduled to be re-started
- Time periods during which the XBR server is supposed to ignore errors
- Time zone of the server

Heart Beat Message

From then on, HBM performs the following checks periodically:

- Check the status of the Liferay connection pool
- Check the status of the Liferay database
- Check the status of the XBR connection pool
- Check the status of the XBR database
- Check the status of the LDAP directory
- Check for memory leak

If everything is OK, the Heart Beat Monitor will send a heart beat message back to TT

- Amount of free memory
- # of reports being actively processed at the moment

Unrecoverable Error Message

If HBM detects one of the following errors:

- Liferay database is not accessible
- XBR database is not accessible
- LDAP directory is not accessible

HBM will conclude that the XBR Server is in a hopeless state, and thus it will send a fail message back to TT indicating what unrecoverable error conditions have been detected.

Recoverable Error Message

If HBM detects the following recoverable errors:

- Liferay database connection pool is bad but Liferay database is accessible
- XBR database connection pool is bad but XBR database is accessible
- JVM memory is running low

HBM will send a restart message back to TT and proceed to restart the XBR Server. Restart message will not trigger a service call.

Performance Statistics Message

Each hour the Heart Beat Monitor reports to the Tech Track System the following performance statistics for the prior hour:

- # report requests
- # of successful report requests
- # of report requests with errors
- # of report requests rejected due to system being busy
- # of reports with 0 records
- # of reports with records between [1, 100]
- # of reports with records between [101, 500]
- # of reports with records between [500, 1000]
- # of reports with records between [1001, 2000]
- # of reports with records between [2001, 3000]
- # of reports with records between [3001, 4000]
- # of reports with records between [4001, 5000]
- # of reports with records between > 5000
- average processing time for reports with non-zero records.

Coordination between HBM Installer and Tech track Team

Before installing an XBR Server with HBM capability, the person performing the install should have the following information ready:

- information about the server (e.g. name, location, and means of access)
- date & time when the active monitoring by Tech Track should commence or stop
- time when the XBR server is to have daily scheduled restart
- time when the HBM will ignore errors

Heart Beat Monitor Syntax Layout

```
<Customer_Name value="DTV" />
<HeartBeatMonitor>
  <ENABLED>Y</ENABLED>
  <SEND_FTP>Y</SEND_FTP>
  <FTP_USER></FTP_USER>
  <FTP_PASSWORD></FTP_PASSWORD>
  <FTP_URL>ftp.xbr.com/TECHTRACK</FTP_URL>
  <LIFERAY_TEST_SQL>select count(*) from company</LIFERAY_TEST_SQL>
  <XBR_TEST_SQL>select count(*) from pro_sys_def</XBR_TEST_SQL>
  <TIME_BETWEEN_PROBES_IN_MINUTES>5</TIME_BETWEEN_PROBES_IN_MINUTES>
  <TIME_FOR_PROBE_AFTER_FAILURE_DETECTION>2
</TIME_FOR_PROBE_AFTER_FAILURE_DETECTION>
  <TIME_BETWEEN_USER_SYNCHRONIZATION_IN_MINUTES>10
</TIME_BETWEEN_USER_SYNCHRONIZATION_IN_MINUTES>
  <TIME_INTERVALS_FOR_IGNOREING_ERRORS>
</TIME_INTERVALS_FOR_IGNOREING_ERRORS>
  <POINTS_IN_TIME_FOR_RESTARTING_ANALYTICS_SERVER>6:00
```

```

</POINTS_IN_TIME_FOR_RESTARTING_ANALYTICS_SERVER>
<LOW_MEMORY_WARNING_THRESHOLD>25000000
</LOW_MEMORY_WARNING_THRESHOLD>
<LOW_MEMORY_FAILURE_THRESHOLD>10000000
</LOW_MEMORY_FAILURE_THRESHOLD>
<SERVER_LOCAL_TIMEZONE>EST</SERVER_LOCAL_TIMEZONE>
<XBR_SUPPORT_CENTER_TIMEZONE>EST</XBR_SUPPORT_CENTER_TIMEZONE>
<SERVER_NUMBER>7</SERVER_NUMBER>
<SYSTEM_ADMINISTRATOR_CONTACT_INFO>CAMXP
</SYSTEM_ADMINISTRATOR_CONTACT_INFO>
<LDAP>
  <check>Y</check>
  <domain>MYDOMAIN</domain>
  <user>myuserid</user>
  <password>mypassword</password>
</LDAP><
<TEST_MODE>Y</TEST_MODE>
</HeartBeatMonitor>

```

Table 4-19: Heart Beat Monitor Settings

Configuration Parameter	Description
CUSTOMER_NAME	<i>Customer Name</i> The name of the customer. By Tech Track convention, it has to be 3 characters.
ENABLED	<i>Enable Heart Beat Monitor</i> Enable Heart Beat Monitor to perform system health check and perform recovery if appropriate.
SEND_FTP	<i>Send Tech Track Messages via FTP?</i> Determines whether Tech Track messages will be sent. Valid values are Y and N. However, we have encountered customer environment with very restrictive firewall policy that prevents HBM from sending Tech Track messages. If you can log into a customer environment, one way to find out the strength of its firewall policy is to use browser inside that environment to access some public sites (e.g. www.boston.com). If the browser is blocked from accessing those public websites, it is a clear indicator that the company firewall will likely block HBM from sending Tech Track messages back to our Westboro office.

Table 4-19: *Heart Beat Monitor Settings (continued)*

Configuration Parameter	Description
FTP_USER	<p><i>FTP User</i></p> <p>If SEND_FTP is Y, the value of FTP_USER will be used to log into the FTP server. If no values are supplied, they will default to the FTP user name and password for ftp.xbr.com/TECHTRACK at Westboro, Massachusetts.</p>
FTP_PASSWORD	<p><i>FTP User Password</i></p> <p>If SEND_FTP is Y, the value of FTP_USER will be used to log into the FTP server. If no values are supplied, they will default to the FTP user name and password for ftp.xbr.com/TECHTRACK at Westboro, Massachusetts.</p>
FTP_URL	<p><i>Address of FTP Server</i></p> <p>The address of the FTP server together with the directory used for the heart beat messages. If not specified, it will default to for ftp.xbr.com/TECHTRACK.</p>
LIFERAY_TEST_SQL	<p><i>SQL Statement to Verify Liferay</i></p> <p>The SQL statement for testing the health of the Liferay database and the Liferay connection pool.</p>
XBR_TEST_SQL	<p><i>SQL Statement to Verify XBR</i></p> <p>The SQL statement for testing the health of the XBR database and the XBR connection pool.</p>
TIME_BETWEEN_PROBES_IN_MINUTES	<p><i>SQL Statement Interval</i></p> <p>Time (in minutes) between system health checks by HBM.</p>
TIME_FOR_PROBE_AFTER_FAILURE_DETECTION	<p><i>SQL Statement Interval After Errors</i></p> <p>Time between system health checks after errors have been detected.</p>
TIME_BETWEEN_USER_SYNCHRONIZATION_IN_MINUTES	<p><i>Interval Between XBR User Synchronization</i></p> <p>Time between XBR and XBR user synchronization. During XBR user synchronization, XBR users not in LifeRay will be placed into Liferay.</p>
TIME_INTERVALS_FOR_IGNORE_ERRORS	<p><i>Interval Between Ignoring Errors</i></p> <p>Time intervals during which errors are ignored. Only heart beat messages will be sent. No additional error recovery steps will be taken. The format is of the form: 03:15-05:30;22:00-23:30. If no value is supplied, no errors will be ignored.</p>

Table 4-19: *Heart Beat Monitor Settings (continued)*

Configuration Parameter	Description
POINTS_IN_TIME_FOR_RESTARTING_ANALYTICS_SERVER	<p><i>XBR Scheduled Restart Time</i></p> <p>Points in time to restart the XBR server. The format is of the form:</p> <p>06:00; 23:00. If no value is supplied, the XBR server will not be scheduled for restart. For improved performance, we recommend that user should restart the XBR server once a day</p> <p>If we specify a value for restarting the XBR Web Server, we need to install the XBR Web Server as a Windows Service. Furthermore, we need to configure in auto-restart mode:</p> <p>XBR Service → Properties → Recovery</p> <p>First Error → Restart the service</p> <p>Second Error → Restart the service</p> <p>Subsequent failure → Restart the service</p>
LOW_MEMORY_WARNING_THRESHOLD	<p><i>Low Memory Warning Threshold</i></p> <p>JVM low memory threshold. HBM will send a warning message to TT, if the JVM memory is less than the JVM low memory threshold. The value is expressed in bytes.</p>
LOW_MEMORY_FAILURE_THRESHOLD	<p><i>Low Memory Failure Threshold</i></p> <p>JVM memory error threshold. If the JVM memory is less than JVM memory error threshold, HBM will restart the server.</p>
SERVER_LOCAL_TIMEZONE	<p><i>Time Zone of XBR Server</i></p> <p>The time zone of the XBR server.</p>
XBR_SUPPORT_CENTER_TIMEZONE	<p><i>Time Zone of Tech Track FTP Server</i></p> <p>The time zone of the Tech Track FTP server.</p>
SERVER_NUMBER	<p><i>Unique Server Number within Customer Site</i></p> <p>An integer ID for the server within the customer site. This is used for supporting customers with multiple servers that need to be monitored. Our convention is to reserve 1 through 6 for supported customer servers, with higher numbers for test servers.</p>
SYSTEM_ADMINISTRATOR_CONTACT_INFO	<p><i>System Administrator Contact Information</i></p> <p>Information that can be used by XBR support folks to identify the server and contact server administrators at the customer site.</p>

Table 4-19: *Heart Beat Monitor Settings (continued)*

Configuration Parameter	Description
check	<i>Verify LDAP Server?</i> Indicates whether HBM should check the health of the LDAP server.
domain	<i>Location of LDAP User Name and Password</i> If check is Y, then domain is the namespace in which LDAP looks for the username and password.
user	<i>LDAP User Name</i> If check is Y, then user and password supply the name and password for logging into the LDAP Directory. If no values are supplied, HBM will extract the values from ADM_USER and ADM_PASSWORD from LDAP_AUTHENTICATION.
password	<i>LDAP User Password</i> If check is Y, user and password supply the name and password for logging into the LDAP Directory. If no values are supplied, HBM will extract the values from ADM_USER and ADM_PASSWORD from LDAP_AUTHENTICATION.
TEST_MODE	<i>Test Mode?</i> If TEST_MODE is Y, HBM will log all FTP messages sent to TT. This feature is useful for debugging (e.g. tracing messages that have not been properly received by TT) even if the TechTrack messages are blocked by the customer's firewall.

Report File Repository

Report File Repository Syntax Layout

```
<ReportFileRepository location="/WEB-INF/reportfiles"
    path="relative" />
```

Table 4-20: *Report File Repository Settings*

Configuration Parameter	Description
location	<i>Location of Manually Created JRXML Files</i> The location of all manually created JRXML files. During system start-up, the system compiles the files into .jasper files, loads them, and adds them to the cache.

Table 4-20: *Report File Repository Settings (continued)*

Configuration Parameter	Description
path	<i>Relative or Absolute Location Path?</i> Defines whether the location setting is a relative or absolute path.

Home Layouts

Use these settings to define the home layouts and IDs for the reporting related portlets referenced in the extensions to Liferay navigation JSPs.

These values can be found in the Liferay Layout table and in `portlet.xml`.

Home Layouts Syntax Layout

```
<HomePortlet layoutId="1" portletId="" />
<WelcomePortlet layoutId="1.1" portletId="" />
<AlertPortlet layoutId="22.4" portletId="alerts" />
<QuickRunPortlet layoutId="22.2" portletId="quick_run" />
<ReportPortlet layoutId="22.3" portletId="query_list" />
<ExceptionReviewPortlet layoutId="22.5" portletId="exception_review"/>
<AdminPortlet layoutId="23.1" portletId="9" />
<MyReportsPortlet layoutId="22.6" portletId="my_reports" />
<DbConfigPortlet layoutId="22.7" portletId="db_config"
  <!--
    This optional setting is used to control the order that portlet
    names appear in the left navigation bar.
  -->
  <Portlet_Order_in_Vertical_Menu value="22.7;22.4;22.5;22.2;22.3;22.6"
  />
  <Initial_Screen_Layout_SQL value="update layout set columnOrder='w,',
  narrow1=NULL, narrow2=NULL, wide='alerts,query_list,' where (userId =
  'group.2' or layoutid = '1') and name='Home' and userid not in
  ('liferay.com.1')" />
  <Suppress_Menu_Entry_From_LP_Users>
    <Exception_Review>N</Exception_Review>
    <Query_List>N</Query_List>
    <Alerts>N</Alerts>
    <Quick_Runs>Y</Quick_Runs>
    <Links>N</Links>
  </Suppress_Menu_Entry_From_LP_Users>
  <Suppress_Buttons>
    <Alerts_Delete>N</Alerts_Delete>
    <Content>N</Content>
    <SignOut>N</SignOut>
  </Suppress_Buttons>
```

Table 4-21: Home Layout Settings

Configuration Parameter	Description
Portlet_Order_in_Vertical_Menu	<p>Portlet Name Sort</p> <p>Controls the order in which portlet names display in the left navigation menu.</p>
Initial_Screen_Layout_SQL	<p>Home Page Layout</p> <p>Used to set up a uniform Home Page layout for all users.</p>
Suppress_Menu_Entry_From_LP_Users	<p>Suppress Menu Items</p> <p>Allows you to suppress menu items from the left navigation menu in the portal. Each child element represents a menu item. To suppress the display of a menu item, set the value of the child element to Y. To display the menu item, set the value of the child element to N.</p> <p>Valid child elements are:</p> <ul style="list-style-type: none"> ■ Exception_Review ■ Query_List ■ Alerts ■ Quick_Runs ■ Links
Suppress_Buttons	<p>Suppress Buttons in Portlet</p> <p>Allows you to suppress buttons from displaying in a portlet. To suppress the display of a button, set the value of the child element to Y.</p> <p>Valid child elements are:</p> <ul style="list-style-type: none"> ■ Alerts_Delete ■ Content ■ SignOut <p>Note: Only suppression of the Delete Alerts and Content buttons is currently implemented.</p>

LDAP/Active Directories (AD)

```

LDAP/Active Directories (AD) Syntax Layout
<LDAP_AUTHENTICATION>
  <USE_LDAP>N</USE_LDAP>
  <LDAP_USE_SSL>N</LDAP_USE_SSL>
  <LDAP_CLEAR_PORT>389</LDAP_CLEAR_PORT>

```

```

<LDAP_SSL_PORT>636</LDAP_SSL_PORT>
<LDAP_TRUSTSTOREABSOLUTEPAH>${user.home}/xbr/ldap
</LDAP_TRUSTSTOREABSOLUTEPAH>
<LDAP_TRUSTSTORE>dtv-sslkeystore</LDAP_TRUSTSTORE>
<LDAP_TRUSTSTORE_PASSWORD>trustStorePassword
</LDAP_TRUSTSTORE_PASSWORD>
<LDAP_TRACE_MESSAGES>Y</LDAP_TRACE_MESSAGES>
<LIFERAY_CHECKDEFAULTEMAIL>Y</LIFERAY_CHECKDEFAULTEMAIL>
<LDAP_CN>cn=userid</LDAP_CN>
<USER_RULE>1</USER_RULE>
<TEMPLATE_USER>fieldlp</TEMPLATE_USER>
<LDAP_XBR_PATTERNS>xbr-user,xbr-div,xbr-email</LDAP_XBR_PATTERNS>
<XBR_USERS>groupmembership</XBR_USERS>
<XBR_DIV>groupmembership</XBR_DIV>
<XBR_USERROLEPATTERN>xbr-user-</XBR_USERROLEPATTERN>
<XBR_DIVPATTERN>xbr-div-</XBR_DIVPATTERN>
<XBR_USERROLESYSADMIN>sysadm</XBR_USERROLESYSADMIN>
<XBR_USERROLESYSMANAGER>sysmgr</XBR_USERROLESYSMANAGER>
<XBR_USERROLEANALYTIC>lp</XBR_USERROLEANALYTIC>
<XBR_USERROLEREADONLY>ro</XBR_USERROLEREADONLY>
<XBR_EMAIL>test@kroger.com</XBR_EMAIL>
<ACTIVEDIRECTORY>Y</ACTIVEDIRECTORY>
<ADM_USERID>rsmith@xbr.datavantage.com</ADM_USERID>
<ADM_PASSWORD>password</ADM_PASSWORD>
<LDAP_SEARCH>
  <SERVER NAME="XBR" REFERRAL="FOLLOW">
    <ELEMENT>DC=XBR,DC=DATAVANTAGE,DC=COM</ELEMENT>
  </SERVER>
  <SERVER NAME="MICROS-RETAIL">
    <ELEMENT>DC=MICROS-RETAIL,DC=DATAVANTAGE,DC=COM</ELEMENT>
  </SERVER>
</LDAP_SEARCH>
</LDAP_AUTHENTICATION>

```

Table 4-22: LDAP/Active Directories (AD) Settings

Configuration Parameter	Description
USELDAP	<p>Use LDAP?</p> <p>Indicate if a user uses LDAP. The XBR installation CD writes the following based on the entry made during installation:</p> <p>USELDAP=Y</p>
LDAP_USE_SSL	<p>Run LDAP Using SSL?</p> <p>Specify if you run LDAP using Secured Socket Layer (SSL) The XBR installation CD writes the following based on the entry made during installation:</p> <p>USE_SSL =N</p>

Table 4-22: *LDAP/Active Directories (AD) Settings (continued)*

Configuration Parameter	Description
SERVER	<i>LDAP Server</i> Specify the name of the LDAP server: SERVER=ABCompany
LDAP_CLEAR_PORT	<i>LDAP Server Port When Not Using SSL</i> Specify the number of the LDAP SERVER PORT if SSL is not used. The XBR installation CD writes the following based on the entry made during installation: CLEAR_PORT=389
LDAP_SSL_PORT	<i>LDAP Server Port When Using SSL</i> Specify the number of the LDAP SERVER PORT if SSL is used. The XBR installation CD writes the following based on the entry made during installation: SSL_PORT=636
LDAP_TRUSTSTORE_ABSOLUTE_PATH	<i>Path to Keystore</i> This is the relative or absolute path to the Keystore location.
LDAP_TRUSTSTORE	<i>Name for Certificates</i> Keystore name for customer certificates.
LDAP_TRUSTSTORE_PASSWORD	<i>Password for KeyStore</i> Specify the password for the KeyStore. The XBR installation CD writes the following based on the installing entry: LDAP_TRUSTSTORE_PASSWORD=trustStorePassword
LDAP_TRACE_MESSAGES	<i>Print Messages</i> Specify "Y" to print out messages; "N" to suppress output.
LIFERAY_CHECKDEFAULT_EMAIL	<i>Bypass LDAP Authentication</i> Specify "Y" to allow Liferay Administrator to bypass LDAP authentication.
LDAP_CN	Reserved for future use.
LDAP_XBR_PATTERNS	<i>Extend Attributes of LDAP</i> List all patterns which will be used to extend attributes of LDAP.

Table 4-22: *LDAP/Active Directories (AD) Settings (continued)*

Configuration Parameter	Description
XBR_USERS	<p><i>Location of LDAP User Role</i></p> <p>Specify a name of the LDAP attribute where the user role is set. The XBR installation CD writes the following as the default:</p> <p>XBR_USERS = GROUPMEMBERSHIP</p>
XBR_DIV	<p><i>Location of LDAP XBR Queries</i></p> <p>A reference to the LDAP repository attribute where the customer rules for XBR queries are. The values of this attribute will be mapped to the XBR table ADM_LDAP_RULE_MAP. The XBR installation CD writes the following as the default:</p> <p>XBR_DIV = GROUPMEMBERSHIP</p>
XBR_USERROLEPATTERN	<p><i>Keystroke for User Role in LDAP</i></p> <p>Specify a keystroke which will be a prefix to a user application role in the LDAP attribute value. If a customer does not use LDAP as a source of the user application role then the value of this entry is a string IGNORE.</p> <p>XBR_USERROLEPATTERN=IGNORE</p> <p>OR</p> <p>XBR_USERROLEPATTERN=XBR-USER-</p>
XBR_DIVPATTERN	<p><i>Division Pattern</i></p> <p>XBR pattern for division.</p> <p>Example: xbr-div-</p>
XBR_USERROLESYSADMIN	<p><i>Keystroke for System Administrator User Role</i></p> <p>Specify a keystroke of a System Administrator (SYSADMIN) user role. Being concatenated at run time with the user role pattern it has to match to a value in the LDAP attribute referenced in the entry XBR_USER:</p> <p>XBR_ROLESYSADMIN= SYSADMIN</p>
XBR_USERROLESYSMANAGER	<p><i>Keystroke for System Manager User Role</i></p> <p>Specify a keystroke of a System Manager (SYSMGR) user role. Being concatenated at run time with the user role pattern it has to match to a value in the LDAP attribute referenced in the entry XBR_USER:</p> <p>XBR_ROLESYSMGR= SYSMGR</p>

Table 4-22: *LDAP/Active Directories (AD) Settings (continued)*

Configuration Parameter	Description
XBR_USERROLEANALYTIC	<p><i>Keystroke for Analytic (LP) User Role</i></p> <p>Specify a keystroke of an Analytic (LP) user role. Being concatenated at run time with the user role pattern it has to match to a value in the LDAP attribute referenced in the entry XBR_USER:</p> <p>XBR_ROLEANALYTIC= LP</p>
XBR_USERROLEREADONLY	<p><i>Keystroke for Read Only (RO) User Role</i></p> <p>Specify a keystroke of a Read Only (RO) user role. Being concatenated at run time with the user role pattern it has to match to a value in the LDAP attribute referenced in the entry XBR_USER:</p> <p>XBR_ROLEREADONLY= RO</p>
XBRDEFATTRIBUTES	<p><i>Default XBR Patterns</i></p> <p>List of default XBR patterns which LDAP attributes values use to perform the referenced attribute values. The XBR installation CD writes the following as the default:</p> <p>XBRDEFATTRIBUTES= XBR-USER-, XBR-DIV-</p>
XBR_EMAIL	Reserved for future use.
ACTIVEDIRECTORY	<p><i>Active Directory used for Authentication</i></p> <p>Specify "Y" when Active Directory is used for authentication.</p>
ADM_USERID	<p><i>Administrator Account</i></p> <p>Specify the Administrator account for Active Directory authentication.</p>
ADM_USERPASSWORD	<p><i>Password for Administrator Account</i></p> <p>Specify the password for the Active Directory Administrator account.</p> <p>The password will be encrypted after the first server startup.</p>
LDAP_SEARCH.SERVER NAME	
LDAP_SEARCH.SERVER REFERRAL	<p><i>Use More than One Server for Authentication</i></p> <p>Value is "IGNORE" by default, specify "FOLLOW" if more than one server can be used for authentication.</p>

Table 4-22: *LDAP/Active Directories (AD) Settings (continued)*

Configuration Parameter	Description
LDAP_SEARCH.SERVER.ELEMENT	<p><i>Distinguished Server Name</i></p> <p>Specify the Distinguished Server Name.</p> <p>Example: DC=XBR, C=DATAVANTAGE, DC=COM</p>

Updates to portal-ext.properties File

Edit the appropriate section in the portal-ext.properties file:

LDAP:

```
auth.pipeline.pre= com.datavantage.util.DVGenericLDAPAuthenticator
```

AD:

```
auth.pipeline.pre= com.datavantage.util.DVActiveDirectoryAuthenticator
```

Background Report Generator (BRG)

Offline Reporting allows a user to run an Adhoc query in the background while continuing to perform other tasks. Once the report has run it is saved and placed on the My Reports.

Background Report Generator Syntax Layout

```
<BackgroundReportGenerator>
  <enabled>true</enabled>
  <minimum.sleep>30</minimum.sleep>
  <completed.job.cleanup.age>off</completed.job.cleanup.age>
  <maximum.job.heartbeat.age>1h</maximum.job.heartbeat.age>
  <maximum.job.age>7d</maximum.job.age>
  <jobpool.size>10</jobpool.size>
  <jobpool.increment>5</jobpool.increment>
  <jobpool.maximum>20</jobpool.maximum>
  <myreport.refresh.interval>2m</myreport.refresh.interval>
  <max.concurrent.background.reports.being.processed>5
</max.concurrent.background.reports.being.processed>
  <storage.model>database</storage.model>
  <published.report.datasource>jdbc/OfflineReportPool
</published.report.datasource>
  <published.report.dir>c:/temp/dtvreports</published.report.dir>
  <published.report.servlet.name>/servlets/PublishedReportServlet
</published.report.servlet.name>
  <published.report.servlet.port></published.report.servlet.port>
  <published.report.cleanup.enabled>TRUE
</published.report.cleanup.enabled>
  <alert.email.service>Default Mail Server</alert.email.service>
  <alert.email.from>analytics@localhost</alert.email.from>
  <heartbeat.servlet.name>/servlets/HeartBeatServlet
</heartbeat.servlet.name>
  <heartbeat.servlet.port></heartbeat.servlet.port>
</BackgroundReportGenerator>
```

Table 4-23: *Background Report Generator Settings*

Configuration Parameter	Description
enabled	Set to "T" or "TRUE" (case sensitive) to enable. Default = "Y"
minimum.sleep	This is the minimum period in seconds between scans of the offline report job table. Default = 60
completed.job.cleanup.age	This is the maximum age for a job heartbeat timestamp before it is considered 'dead'. That is, jobs that are in progress must update their heartbeat within this time interval or the job will be considered dead and will be either restarted or put into error handling mode. Default = off
maximum.job.heartbeat.age	The maximum age for a job since creation, by which point the job must be completed or it is considered in error even if the heartbeat for it is still 'live'. Jobs that exceed this age will be put into error handling mode. Default = 1h
maximum.job.age	The time interval for XBR to log a warning in the server console indicating that an offline report may be taking too long. Default = 23h
jobpool.size	The size of the pool of threads maintained for execution of report jobs. If not specified, default = 10
jobpool.increment	The number of threads added to the pool each time it runs out of threads. If not specified, defaults = 5
jobpool.maximum	The maximum number of job threads allowed. When this number is reached, the BackgroundReport Generator will wait until a current job is done before starting another. If not specified, there is no limit.
myreport.refresh.interval	The time interval for the MyReport portlet to refresh the list of completed offline and scheduled reports. Default = 5 minutes

Table 4-23: *Background Report Generator Settings (continued)*

Configuration Parameter	Description
max.concurrent.background.reports.being.processed	This parameter limits the number of concurrent processed reports. Default = 5
storage.model	The type of storage to use for pre-generated reports. Options are 'database' (default) or 'file'.
published.report.datasource	The name of datasource to use for storing published reports to the database when the storage.model option is set to 'database'. The name of the datasource must match a registered datasource for the web application context.
published.report.dir	The location to publish generated reports when storage.model is 'file'.
published.report.servlet.name	The name of Servlet used to serve the published report files. This should include the context in addition to the base name and may optionally include the schema and servername:port as well.
published.report.servlet.port	The optional port specification to use when constructing published report URLs. This parameter is ignored if the published.report.servlet.name parameter is a fully specified URL string. May be empty (null) which implies port 80.
published.report.cleanup	toggles whether the Published Report Cleanup Daemon runs or not. This defaults to "true" and must be set explicitly to "F" "FALSE" (case insensitive) to disable. If this is turned off, reports marked for deletion in the My Reports control will not be deleted until this is re-enabled.
alert.email.service	The name of Mail service to use to send alert email notifications. Please refer to <Mail> section below for information on defining/enabling mail services
alert.email.from	The the email address to use in the 'from' header when composing an alert email notification.
heartbeat.servlet.name	The URL address for probing the heartbeat servlet on remote hosts when testing for liveliness.

Table 4-23: *Background Report Generator Settings (continued)*

Configuration Parameter	Description
heartbeat.servlet.port	The optional port specification to use when constructing remote heartbeat servlet URLs.

Mail

Use the Mail settings to define one or more mail <service>s that can be used to send/retrieve email from.

Mail Syntax Layout

```
<Mail>
  <service name="Default Mail Server" default="true">
    <property key="mail.transport.protocol" value="smtp"/>
    <property key="mail.smtp.host" value="wdtvemail"/>
    <property key="mail.protocol.user" value="analytics"/>
    <property key="mail.smtp.auth" value="false" />

    <authenticator class="com.datavantage.xbr.util.mail.
      EmbeddedAuthenticator">
      <property key="username" value="${user.name}"/>
      <property key="password" value="!!AxIAAAQcARc=!!"/>
    </authenticator>
  </service>
</Mail>
```

Table 4-24: *Mail Settings*

Configuration Parameter	Description
service name	<p>Service Name</p> <p>Each declared service should have a name and optionally indicate whether to use it as the default service.</p> <p>Only one service should be marked with <code>default="true"</code>. If more than one is marked as the default, then the first one so marked will be considered the default. If no service is marked as the default, then the first declared service will be used as the default. This behavior is not guaranteed to be deterministic so it is strongly advised that the default is declared explicitly.</p> <p>If more than one service is declared with the same name, the first one declared will be used for that name and subsequent declarations will be ignored (a warning will be logged).</p>

Table 4-24: *Mail Settings (continued)*

Configuration Parameter	Description
property	<p><i>Service Property</i></p> <p>Each service declaration contains one or more optional property sub-element declarations, each consisting of a key and a value attribute. The allowed keys are any property keys used by the JavaMail api. Use the following URL for a complete discussion of these configuration properties:</p> <p>http://java.sun.com/products/javamail/javadocs/overview-summary.html</p>

Table 4-24: Mail Settings (continued)

Configuration Parameter	Description
authenticator	<p>Authenticator</p> <p>In addition to property declarations, each service may have at most one authenticator sub-element. The authenticator element has one required class attribute, which must be the fully-qualified class name of a subclass of javax.mail.Authenticator. The specified class must be visible to the classloader of the com.datavantage.xbr.uril.mail.MailService classloader. The authenticator may optionally declare property sub-elements as above. If so, and if the declared authenticator class provides a constructor that accepts a java.util.Properties object, then the declared property elements will be passed to the instantiated authenticator via that constructor. Otherwise, these property elements will be ignored.</p> <p>Java System Properties</p> <p>Property values in both service and authenticator may reference java System properties using the syntax <code>\${property.name}</code>.</p> <p>Example:</p> <pre> <Mail> <service name="My Mail Service" default="true"> <property key="mail.transport.protocol" value="smtp"/> <property key="mail.smtp.host" value="mail.mydomain.com"/> <property key="mail.protocol.user" value="\${user.name}"/> <authenticator class="org.example.mail. MyAuthenticator"> <property key="default.username" value="\${user.name}"/> <property key="prompt" value="Please enter username and password!"/> </authenticator> </service> </Mail> </pre>

Table 4-24: *Mail Settings (continued)*

Configuration Parameter	Description
authenticator (Continued)	<p>Where:</p> <pre>public class MyAuthenticator extends Authenticator{ ... public MyAuthenticator (Properties props){ ... } ... }</pre> <p>This mechanism allows you to initialize a prompt-less authenticator using embedded, declared username and password to be passed as initialization properties. Any credentials declared here will automatically be obfuscated.</p>

Miscellaneous Settings

<Max_XBR_Client_Memory_MBytes> is the maximum amount of memory the Web Client may use.

<Min_XBR_Client_Memory_MBytes> is the minimum amount of free memory

<MAX_SERVER_STARTUP_INTERVAL_IN_MINUTES> is the maximum time allowed for XBR Web Server to start up.

Syntax Layout

```
...
<Max_XBR_Client_Memory_MBytes value="256" />
<Min_XBR_Client_Memory_MBytes value="28" />
...
<MAX_SERVER_STARTUP_INTERVAL_IN_MINUTES>5
</MAX_SERVER_STARTUP_INTERVAL_IN_MINUTES>
....
```

Table 4-25: *Miscellaneous Settings*

Configuration Parameter	Description
Maximum XBR Client Memory	<p><i>Maximum XBR Client Memory</i></p> <p>This is the maximum amount of memory the Web Client may use for Applet(s).</p>

Table 4-25: Miscellaneous Settings (continued)

Configuration Parameter	Description
Minimum XBR Client Memory	<p><i>Minimum XBR Client Memory</i></p> <p>If the amount of free memory at the Web Client is below the threshold (28M), the Web Client will eliminate one or more least recently referenced reports in Report History to free up memory until the amount of free memory is above the threshold. This is done to make sure that the Web Client has enough space to handle the next report request.</p>
Maximum Server Startup Interval In Minutes	<p><i>Maximum Server Startup Interval In Minutes</i></p> <p>The maximum amount time allowed for XBR Web Server to start up. If the server cannot complete the start up sequence during this time, the Heart Beat Monitor will assume something has gone wrong and re-boot the XBR Web Server.</p>

dvreport-common-sql.xml File

The `dvreport-common-sql.xml` file contains the *common*, or *db vendor-independent*, SQL statement definitions used by the XBR Web application.

For each query, you can define the datasource used by the query. If a datasource is not defined for a query, the query uses the datasource defined for the **default_datasource** parameter. For example, in the syntax layout below, the `REPORTING_DEFAULT` query uses the datasource `XBR POS DATA`. Because a database is not defined for the `RetrieveProAdQuery` query, this query uses the default datasource `XBR Database`.

dvreport-common-sql.xml Syntax Layout:

```
<queries default_datasource="XBR Database">
  <query name="REPORTING_DEFAULT" datasource="XBR POS Data" />
  <query name="QueryCount">
    <![CDATA[
      SELECT COUNT(*) FROM pro_ad_query
    ]]>
  </query>
  <query name="RetrieveProAdQuery">
    <![CDATA[
```

```
SELECT paq.lib_name, paq.query, paq.owner, paq.access_code,
paq.functional_group, paq.long_description, paq.scheduled_flag,
paq.mainfile, paq.suppfile1, paq.suppfile2, paq.suppfile3,
paq.suppfile4, paq.suppfile5, paq.code, paq.style, paq.grid,
paq.datefield, paq.datevalue, paq.query_title, paq.where_cls,
paq.from_cls, paq.having_cls, paq.orderby_cls, paq.join_override,
paq.excl_no_activity, paq.decile_value, paq.decile_number,
paq.drl_path, paq.drl_start, paq.drl_end, paq.ctrl_target,
paq.ctrl_userid, paq.policy_id, paq.header_color,
paq.header_height, paq.summary_color, paq.summary_height,
paq.detail_color, paq.detail_height, paq.detail_autosize,
paq.hdr_text_color, paq.hdr_text_backcolor, paq.hdr_font_face,
paq.hdr_font_height, paq.hdr_font_weight, paq.hdr_font_family,
paq.hdr_font_pitch, paq.hdr_font_charset, paq.hdr_font_underline,
paq.hdr_font_italic, paq.dtl_text_color, paq.dtl_text_backcolor,
paq.dtl_font_face, paq.dtl_font_height, paq.dtl_font_weight,
paq.dtl_font_family, paq.dtl_font_pitch, paq.dtl_font_charset,
paq.dtl_font_underline, paq.dtl_font_italic, paq.sum_text_color,
paq.sum_text_backcolor, paq.sum_font_face, paq.sum_font_height,
paq.sum_font_weight, paq.sum_font_family, paq.sum_font_pitch,
paq.sum_font_charset, paq.sum_font_underline, paq.sum_font_italic,
paq.ttl_text_color, paq.ttl_text_backcolor, paq.ttl_font_face,
paq.ttl_font_height, paq.ttl_font_weight, paq.ttl_font_family,
paq.ttl_font_pitch, paq.ttl_font_charset, paq.ttl_font_underline,
paq.ttl_font_italic, paq.last_update_date, paq.last_update_id,
adt.table_style, adt.use_map, paq.ctrl_key1, paq.ctrl_key2,
paq.ctrl_key3, paq.ctrl_key4, paq.top_level_report,
paq.top_level_field, paq.top_level_sort_dir, paq.top_level_rows
FROM pro_ad_query paq, adm_dd_tables adt
WHERE paq.mainfile = adt.tablename AND lib_name = ? AND query = ?
]]>
</query>
etc...
</queries>
```

Liferay Portal Server

The Portal Properties file (`portal-ext.properties`) is used to configure the Liferay Portal Server. The `portal-ext.properties` file configures and sets up the portal as required by the customer.

Portal Properties File (`portal-ext.properties`)

The `portal-ext.properties` file contains a number of configuration parameters used when customizing an installation. This section provides a brief overview of the parameters available in this file. For more detailed information on modification and configuration of this file, contact the MICROS-Retail XBR Web Application development group.

This file is located on the Liferay Portal Server in the following location, where `xbr_6.8.x.x` is the version of XBR you have installed.

```
xbr_6.8.x.x\tomcat\common\classes\portal-ext.properties
```

General Settings

Table 4-26: *portal-ext.properties General Settings*

Property	Description
Portal Release	Describes the release as Enterprise or Professional.
Portal Context	Specifies the location of the shared portal context, and the number of instances at that can be served by the portal.
Log	Identifies default web portal log files.
Error	Identifies stack trace information for portal, printer and user.
Company	Identifies the types of companies that can be selected in the portal configuration.
Users	Configures user deletion, auto generation and validation.
Groups and Roles	Configures portal group types, system roles and portal administrators. Additionally, this parameter can be configured to set personalized group pages and terms of use pages. See “Groups and Roles” on page 219 .
Languages and Time Zones	Configures the languages and country codes that are recognized. See “Languages and Time Zones” on page 221 .
Skins	Skins identify the portal's look and feel. There are several default skins, or the user can create their own skins. Create extended skins for customers who want their logos incorporated into the portal. See “Skins” on page 224 .

Table 4-26: *portal-ext.properties General Settings (continued)*

Property	Description
Session	Specifies the number of minute for the session times out. See “Specifying Session Timeouts” on page 226 .
Authentication Pipeline	Provides LDAP authentication using Java Authentication Authorization Server. See “Implementing Authentication” on page 227 .
Auto Login	Configures the ability to leave a cookie that lets users log with valid user and password information.
Passwords	Configures the passwords set by users, including the number and types of valid characters. See “Configuring Passwords” on page 228 .
Startup and Portal Events	These properties configure the application startup events and Login events.
Default Guest Layouts	Configures the default guest layout, which also the assigning of permissions for a non-authenticated user.
Default User Layouts	Defines authenticated users default layout, including column order, user keys and resolution.
Layouts	Configures default portal layout information, including refresh rates, setting table and row maximums and unauthenticated user errors.
LifeRay Defaults	The remaining properties in the properties file configure various LifeRay defaults.

Portal Release

The **Portal Release** section is used to define the release as Enterprise or Professional.

Portal Release Layout

```
## Portal Release
#portal_release=enterprise
portal_release=professional
```

Table 4-27: *Portal Release Setting*

Property	Description
portal.release	<p>Portal Release Type</p> <p>Identifies the Portal Type.</p> <p>Valid values:</p> <p>Enterprise = Requires a J2EE-compliant EJB container and a servlet container.</p> <p>Professional = Can run on any J2EE complaint servlet container.</p> <p>For example, to identify the version as professional, comment out (#) the enterprise line.</p>

Groups and Roles

The **Groups and Roles** section is used to identify standard system groups, as well as group roles.

Groups and Roles Layout

```
## Groups and Roles
system.groups=
system.roles=
omniadmin.users=xbradmin
universal.personalization=false
groups.pages.personalization=true
terms.of.use.required=true
```

Table 4-28: *Groups and Roles Settings*

Property	Description
system.groups	<p>Custom System Group Names</p> <p>Enter a list of comma delimited system group names that will exist in addition to the standard system groups. When the server starts, the system verifies that all specified system groups exist. If a system group does not exist, the system creates it.</p>

Table 4-28: *Groups and Roles Settings (continued)*

Property	Description
system.roles	<p><i>Custom System Role Names</i></p> <p>Enter a list of comma delimited system role names that will exist in addition to the standard system roles. When the server starts, the system verifies that all specified system roles exist. If a system role does not exist, the system creates it.</p>
omniadmin.users	<p><i>Core Functionality Administrators</i></p> <p>Defines the users that can administer the portal's core functionality, such as gc and shutdown.</p> <p>Leave this field blank if users assigned to the Administrator role are allowed to administer the portal's core functionality.</p>
universal.personalization	<p><i>Personalize Page Authority</i></p> <p>Defines which users have authority to personalize pages.</p> <p>Valid values:</p> <p>true = All users can personalize pages.</p> <p>false = Only Administrator and Power users can personalize pages.</p>
groups.pages.personalization	<p><i>Personalize Group Page Authority</i></p> <p>Defines which users have authority to personalize group pages.</p> <p>Valid values:</p> <p>true = All users can personalize pages.</p> <p>false = Only Administrator and Power users can personalize pages.</p>
terms.of.use.required	<p><i>Require Agreement to Terms of Use</i></p> <p>Defines whether all users are required to agree to the terms of use page prompt before being able to use the application.</p> <p>Valid values:</p> <p>true = All users are required to agree to the terms of use.</p> <p>false = Only certain users are required to agree to the terms of use.</p>

Languages and Time Zones

The **Languages and Time Zones** section is used to configure the languages and country codes that are recognized.

Languages and Time Zones Layout

```
## Languages and Time Zones
locales=zh_CN,zh_TW,nl_NL,en_US,fr_FR,de_DE,el_GR,it_IT,ja_JP,
        ko_KP,pt_BR,es_ES,tr_TR,vi_VN
locale.default.request=false
struts.char.encoding=UTF-8
time.zones=Pacific/Midway,Pacific/
Honolulu,AST,PST,MST,CST,EST,PRT,CNT,BET,America/Noronha,
Atlantic/Azores,GMT,WET,CET,EET,Asia/Jerusalem,Asia/
Baghdad,Iran,Asia/Dubai,Asia/Kabul,Asia/Karachi,IST,Asia/
Katmandu,Asia/Dhaka,Asia/
Rangoon,VST,CTT,JST,ROK,ACT,AET,SST,NST,Pacific/Enderbury,Pacific/
Kiritimati
```

Table 4-29: *Languages and Time Zones Settings*

Property	Description
locales	<p><i>Locale Codes</i></p> <p>Defines the variables used to represent the available locales. Separate all variables by a comma. For additional languages and country codes, refer to ftp.ics.uci.edu/pub/ietf/http/related/iso639.txt.</p> <p>Valid values:</p> <p>zh_CN = Language is Chinese and country is China.</p> <p>zh_TW = Language is Chinese and country is Taiwan.</p> <p>nl_NL = Language is Dutch and country is Netherlands.</p> <p>en_US = Language is English and country is US.</p> <p>en_UK = Language is English and country is UK, AUS, or NZ.</p> <p>fr_FR = Language is French and country is France.</p> <p>de_DE = Language is German and country is Germany.</p> <p>el_GR = Language is Green and country is Greece.</p> <p>it_IT = Language is Italian and country is Italy.</p> <p>ja_JP = Language is Japanese and country is Japan.</p> <p>ko_KP = Language is Korean and country is Korea.</p> <p>pt_BR = Language is Portuguese and country is Brazil.</p>

Table 4-29: *Languages and Time Zones Settings (continued)*

Property	Description
locales (Continued)	es_ES = Language is Spanish and country is Spain. tr_TR = Language is Turkish and country is Turkey. vi_VN = Language is Vietnamese and country is Viet Nam.
locale.default.request	<i>Preferred Language Default</i> Defines where unauthenticated users get their preferred language. Valid values: true = Unauthenticated users get their preferred language from the Accept-Language header. false = Unauthenticated users get their preferred language from their company.
struts.char.encoding	<i>Struts Character Encoding</i> Defines the struts character encoding setting. Valid values: UTF-8 = Allows more languages, but decreases performance by 15%. ISO-8859-1 = Allows less languages, but does not affect performance.

Table 4-29: *Languages and Time Zones Settings (continued)*

Property	Description
time.zone	<p><i>Time Zones</i></p> <p>Defines the available time zones. The specified time zone IDs must match the IDs from the class <code>java.util.TimeZone</code>.</p> <p>Valid values:</p> <p>Pacific/Midway = Pacific/Midway time.</p> <p>Pacific/Honolulu = Pacific/Honolulu time.</p> <p>AST = Alaskan Standard time.</p> <p>PST = Pacific Standard time.</p> <p>MST = Mountain Standard time.</p> <p>CST = Central Standard time.</p> <p>EST = Eastern Standard time.</p> <p>PRT = Puerto Rico and US Virgin Islands time.</p> <p>CNT = Canada/Newfoundland Standard time.</p> <p>BET = Brazil Eastern Standard time.</p> <p>America/Noronha = American/Noronha time.</p> <p>Atlantic/Azores = Atlantic/Azores time.</p> <p>GMT = Greenwich Mean time.</p> <p>WET = Western European time.</p> <p>CET = Central European time.</p> <p>EET = Eastern European time.</p>

Table 4-29: *Languages and Time Zones Settings (continued)*

Property	Description
time.zones (Continued)	<p><i>Time Zones (Continued)</i></p> <p>Asia/Jerusalem = Asia/Jerusalem time.</p> <p>Asia/Baghdad = Asia/Baghdad time.</p> <p>Iran = Iran time.</p> <p>Asia/Dubai = Asia/Dubai time.</p> <p>Asia/Kabul = Asia/Kabul time.</p> <p>Asia/Karachi = Asia/Karachi time.</p> <p>IST = Indian Standard time.</p> <p>Asia/Katmandu = Asia/Katmandu time.</p> <p>Asia/Dhaka = Asia/Dhaka time.</p> <p>Asia/Rangoon = Asia/Rangoon time.</p> <p>VST = Venezuela Standard time.</p> <p>CTT = China Taiwan time.</p> <p>JST = Japan Standard time.</p> <p>ROK = <i>Republic of Korea time.</i></p> <p>ACT = Australian Capital Territory time.</p> <p>AET = Australian Eastern time.</p> <p>SST = Singapore Standard time.</p> <p>NST = Newfoundland Standard time.</p> <p>Pacific/Enderbury = Pacific Enderbury time.</p> <p>Pacific/Kiritimati = Pacific/Kiritimati time.</p>

Skins

The **Skins** section is used to identify the portal's look and feel.

There are several default skins, or the user can create their own skins. Create extended skins for customers who want their logos incorporated into the portal.

There are three different types of skins:

- *Default* skins that are shipped with the application
- *Customized* skins that are created by changing the color palettes of the default skins and saving the new settings
- *Extended* skins require modifications in the properties file, as well as a number of .gif files

Skins Layout

```
## Skins
  Skins.multiple=true
  Skins.extended.ids=xbr,xbr2,xbr3
```

Table 4-30: Skins Settings

Property	Description
skins.multiple	<p><i>Allow Multiple Skins</i></p> <p>Allows the installation to display multiple skins.</p> <p>Valid values:</p> <p>true = Allow the installation of multiple skins.</p> <p>false = Do not allow the installation of multiple skins.</p>
skins.extended.ids	<p><i>Extended Skins</i></p> <p>Identifies the directory name of the extended skin.</p> <p>Enter the name of the folder created. To identify more than one extended skin, separate the values by commas. To disable extended skins, remove the default list.</p>

Extended Skins

The graphics files that will be used by the web application are required to create an extended skin. These files include logo, banner and portlet graphics files.

1. Create a customer folder in \liferay\html\skin\image\<client folder name>. The quickest way to do this is to copy an existing folder and rename it. This ensures that the necessary files are already in place. If the files are not available, the portlet will display broken graphic links. When renaming the folder, the folder name should be lower case and should not contain any spaces or non-ASCII characters.
2. If copying an existing folder, the folder contains the following files:

MenuMiddleHL.gif	PortBanBotLft.gif	PortBanBotRt.gif
PortBanBottom.gif	PortBanMiddle.gif	PortBanTop.gif
Logo.gif	MenuCapHL.gif	MenuLeftHL.gif
PortBanTpLft.gif	PortBanTpRt.gif	

With the exception of the logo.gif file, each of the files has a specific pixel dimensions. It is important that the pixel dimensions of these files remain the same. However, the client can use a graphic imaging program to modify the colors and look of these graphics.

In addition, there are three resolution directories within the folder. Each of these folders contains two required files, Banner.gif and NavBar.gif. These files also can be modified, however, their pixel dimensions must remain the same.

3. Once the folders have been created and populated with the necessary files, modify the `portal-ext.properties` file in the Skins section of the file.

Specifying Session Timeouts

The **Session** section is used to identify the amount of time that will elapse before a session times out, and if the user receives a warning.

The following example sets expiration time to 60 minutes and sends a warning to the user one minute before the session times out:

```
session.timeout=60
session.timeout.warning=1
```

Table 4-31: *Session Timeouts*

Property	Description
session.timeout	<i>Session Timeout Minutes</i> Identifies the number of minutes before a session expires. The values for this property are numeric. This value is always overridden by the value <code><session-timeout></code> in <code>web.xml</code> .
session.timeout.warning	<i>Session Timeout Warning Minutes</i> Specifies the number of minutes before a warning is sent to the user that their session will expire. The values for this property are numeric. If the value is set to 0, the user will receive no warnings.

Implementing Authentication

The **Authentication Pipeline** section is used to provide LDAP authentication using Java Authentication Authorization Server.

Authentication for the web application is done through a Java Authentication Authorization Service (JAAS). If the customer is using Microsoft Active Directory Server as their LDAP repository, identify the following:

- The name or IP address of the Active Directory server
- The port number to which Active Directory listens
- The user name and password of the Active Directory Administrator

If the environment contains complex security schemes, they will require a custom authenticator class that will require in-house development time. (Contact the Web Applications development team if necessary.) If the environment is standard, implementation can be configured to enforce one of four common new user rules.

Authentication Methods

Portal authentication uses email and password combinations or a User ID and password combination. Both of these authentication methods are called by the same authentication method, entitled DVTActiveDirectoryAuthenticator.

1. Open the `portal-ext.properties` file.
2. The Authentication Pipeline section contains two properties:
 - `auth.pipeline.pre` indicates that the authentication method will be implemented before the user is authenticated against the portal database.
 - `auth.pipeline.post` indicates that the authentication method will be implemented after the user is authenticated against the portal database.
3. Change the `auth.pipeline.pre` property to the following:

`auth.pipeline.pre=DVTActiveDirectoryAuthenticator`

Call multiple authenticators by supplying them as a comma separated list for either the `.pre` or `.post` attribute. Use both the `.pre` and `.post` attributes concurrently, if multiple authenticators are required.

Activating New User Rules

The DVActiveDirectoryAuthenticator class may be configured to use one of four new user rules. New user rules are activated when a user is authenticated against an LDAP repository, and does not have a corresponding profile in the XBR/Liferay user tables. The new user rules will create:

- New user profiles using guest user permissions
- New user profiles using a template user-id specified in the `auth.impl.ads.new.user.template` property found in `portal-ext.properties`
- New user profiles using a template user-id or role found in the user's Active Directory record as specified in the `auth.impl.ads.adfield.containing.templatename` property
- Throw a Liferay authorization exception if a user is authenticated against the Active Directory installation but does not have a valid LifeRay/XBR user profile in the database

1. Open `portal-ext.properties` in the portal installation.
2. Ensure that the `auth.pipeline.pre` property has been set to `com.DataVantage.util.DVActiveDirectoryAuthenticator` as outlined in the section above. This instructs the portal installation to run our custom authenticator before validating a user against the profile tables in the XBR/Liferay data model.
3. If the `auth.pipeline.post` property is active, comment it out so that it reads `#auth.pipeline.post=`.
4. Save the `portal-ext.properties` files and restart the portal instance.
If using a Tomcat application server, execute `\tomcat\bin\shutdown.bat` followed by `\tomcat\bin\startup.bat`.

Configuring Passwords

The **Password** section is used to identify the requirements for user passwords, including the minimum length and any required upper and lower case characters.

Password security allows you to define the complexity requirements of user passwords, such as:

- the minimum password length
- how long a password is valid before it expires
- the requirement of upper and lower case letters in the password
- whether a password can be reused

Password Layout

```

Passwords
passwords.toolkit=com.liferay.portal.pwd.RegExpToolkit
passwords.regexptoolkit.pattern=/(?=\{1})/
passwords.allow.dictionary.word=true
passwords.change.on.first.use=false
passwords.lifespan=0
passwords.recycle=0

```

Table 4-32: *Password Settings*

Property	Description
passwords.toolkit	<p><i>Enable Password Security</i></p> <p>Set this value to <code>com.dataVantage.xbr.container.liferay.pwd.RegExpToolkit</code> to enable password security.</p> <p>Recommended setting: <code>password.toolkit=com.dataVantage.xbr.container.liferay.pwd.RegExpToolkit</code></p>

Table 4-32: *Password Settings (continued)*

Property	Description
passwords.regexptoolkit.pattern	<p>Password Complexity Rules</p> <p>Defines the regular expression pattern that is used to generate and validate passwords. This value determines the password complexity required for user passwords.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> ■ require passwords to have at least 4 characters: <code>regexptoolkit.pattern=/(?=. {4})(?!.*[^\w]) /</code> In addition, the system uses the password complexity rules defined when it generates a user password. ■ require passwords to have at least 8 characters consisting of digits, lower case letters and upper case letters: <code>regexptoolkit.pattern=/(?=. {8})(?=. *[a-z])(?=. *[A-Z])(?=. *[0-9])(?!.*[^\w]) /</code> In addition, the system uses the password complexity rules defined when it generates a user password. ■ require passwords to have at least 1 characters: <code>regexptoolkit.pattern=/(?=. {1})</code> In addition, the system uses the user ID in all upper case letters when it generates a user password. For example, if the user ID is train1, the password the system generates is TRAIN1. <p>Recommended setting: <code>regexptoolkit.pattern=/(?=. {8})(?=. *[a-z])(?=. *[A-Z])(?=. *[0-9])(?!.*[^\w]) /</code></p> <p>Note: If this setting is set to a value other than <code>regexptoolkit.pattern=/(?=. {1})</code>, you should set the NewUserEmailConfirmation setting in the dbreport-config.xml file to true in order for the system to generate emails when a user is initially registered as a user and also when a user requests Password Assistance.</p>
passwords.allow.dictionary.word	<p>Allow Passwords to be Proper Words</p> <p>Allows passwords to be proper words.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> ■ true = Allow passwords to be proper words. ■ false = Prohibit passwords to be proper words. <p>Recommended setting: <code>false</code></p>

Table 4-32: Password Settings (continued)

Property	Description
passwords.change.on.first.use	<p><i>Require Password Change at Initial Login</i></p> <p>Defines whether users are required to modify their password when they first log in.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> ■ true = Users must modify their password when they first log in. ■ false = Users can retain their initial password when they first log in. <p>Recommended setting: true</p>
passwords.lifespan	<p><i>Password Lifespan</i></p> <p>Sets the number of days before users are prompted to change their password.</p> <p>Valid values for this property are numeric.</p> <p>For example, set this value to 90 to require users to change their password every 90 days.</p> <p>Recommended setting: 90</p>
passwords.recycle	<p><i>Number of Days before Password is Allowed for Reuse</i></p> <p>Sets the number of days before a password is allowed to be used again.</p> <p>For example, if the <code>passwords.lifespan</code> setting is 90 and company policy is to not allow a password to be reused until 4 new password updates, then set the <code>passwords.recycle</code> setting to 271. In this situation:</p> <ul style="list-style-type: none"> ■ First password entered: Kabc#20081 ■ After 90 days, the user must provide a second new password: Kdef#20082 ■ After 90 days (180 days towards password recycle), the user must provide a third new password: Kghi#2008 ■ After 90 days (270 days towards password recycle), the user must provide a fourth new password: Kjkl#2008 ■ After 90 days (360 days towards password recycle), the fifth password can be a password that was used 271 days ago; in this example, the user can reuse password Kabc#20081 <p>If passwords cannot be recycled, set this value to 0.</p> <p>Values for this property are numeric.</p> <p>Recommended setting: 271</p>

XBR Web Application on a Secured Web Site

Use the following steps to enable certificates to run Tomcat/Liferay in HTTPS mode.

- [“Verify the Java Development Kit is in the System Path” on page 231](#)
- [“Generate the Certificate Keystore” on page 235](#)
- [“Create a Certificate Signing Request” on page 240](#)
- [“Request a Trusted Certificate” on page 241](#)
- [“Configure the Tomcat Web Application Server” on page 242](#)
- [“Verify the XBR Web Application Runs on a Secured Web Site” on page 243](#)

For more information:

- For instructions on generating a certificate signing request (CSR) using VeriSign and Tomcat, go to: <https://knowledge.verisign.com/support/ssl-certificates-support/index?page=content&id=AR227&pmv=print&actp=PRINT>.
- For instructions on configuring SSL for Apache Tomcat, go to: <http://tomcat.apache.org/tomcat-6.0-doc/ssl-howto.html>.

Verify the Java Development Kit is in the System Path

Use the following steps to verify that the java development kit (JDK) is in the system path.

1. Open a command prompt.
2. In the MS-DOS command prompt window, enter the following command to verify that the java development kit is in the system path.

keytool

Press **Enter**.

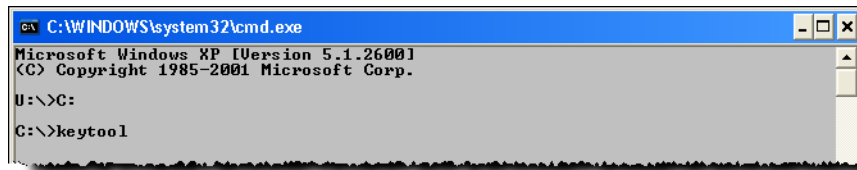


Figure 4-48: Enter keytool command

If you receive the following error, you will need to add the java development kit to the system path.

'keytool' is not recognized as an internal or external command, operable program or batch file

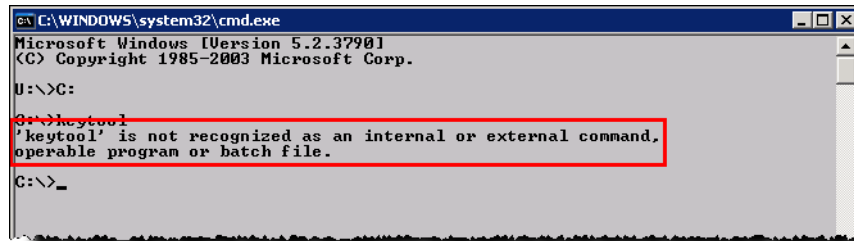


Figure 4-49: Keytool Error

3. On the Windows desktop, click the **Start** button.
4. Right-click on **My Computer** and select **Properties** to open the System Properties window.

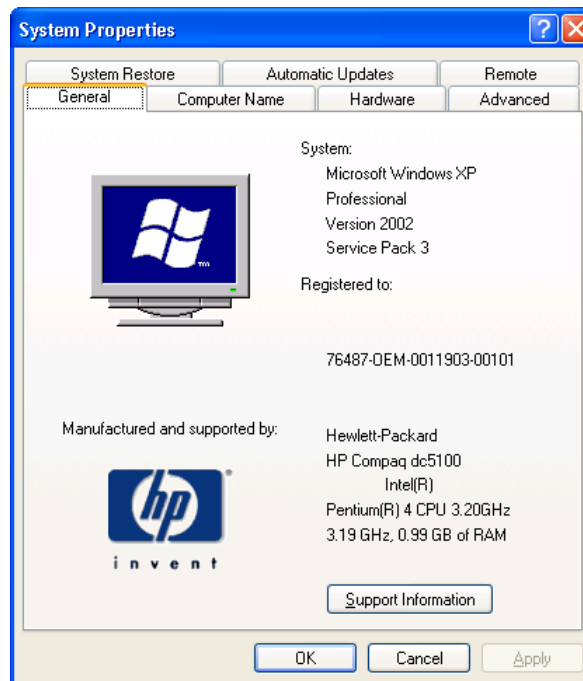


Figure 4-50: System Properties Window

5. Select the Advanced tab and click the **Environment Variables** button to open the Environment Variables window.

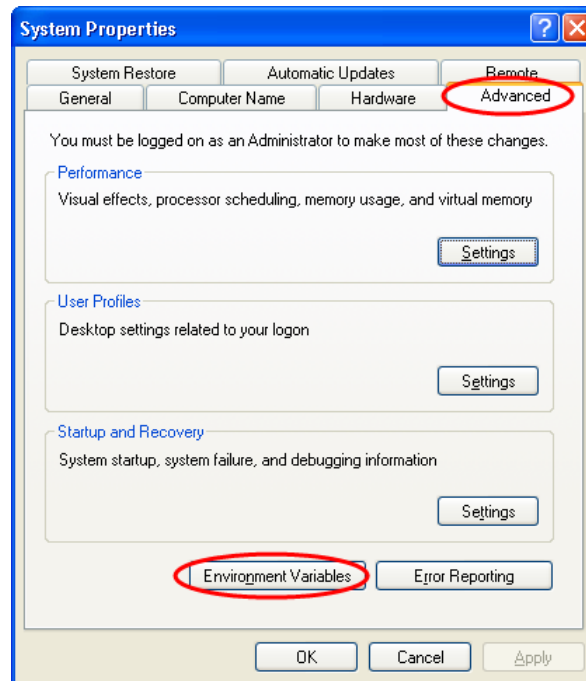


Figure 4-51: Advanced tab on System Properties Window

6. Locate **Path** in the *Variable* column, highlight the **Path** system variable, and click the **Edit** button to advance to the Edit System Variable window.

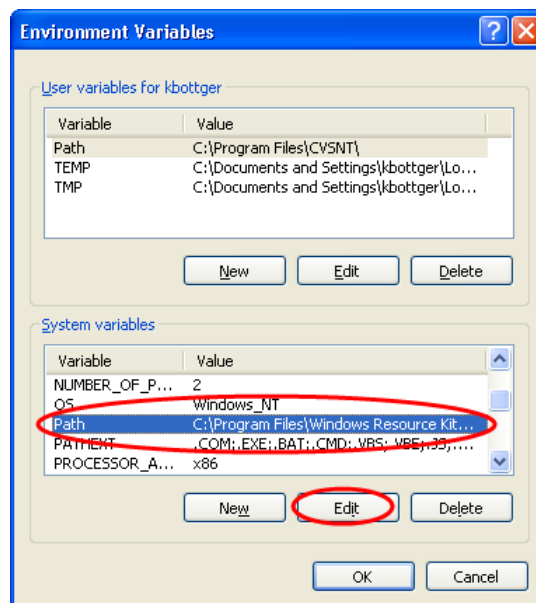


Figure 4-52: Locate Path System Variable and click Edit

7. Place the cursor at the end of the data in the *Variable value* field. Enter a semi-colon (;) and add the location of the most recently installed java development kit to the end of the *Variable value* entry.

For example: C:\Program Files\Java\jre1.6.0_12\bin.

Click **OK** to save your changes.

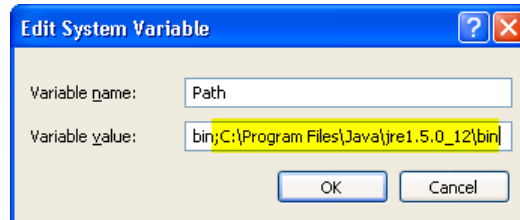


Figure 4-53: Edit System Variable Window

8. Now that you have added the java development kit to the system path, verify that the `keytool` command is now successful in the MS-DOS command prompt window:
 - a. Open a command prompt.
 - b. Enter the following command to verify that the JDK is in the system path.
`keytool`
 - c. Press **Enter**.

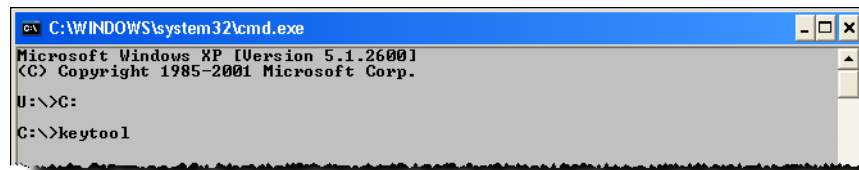


Figure 4-54: Enter keytool command

If you receive a list of keytool usage, the JDK is in the system path.

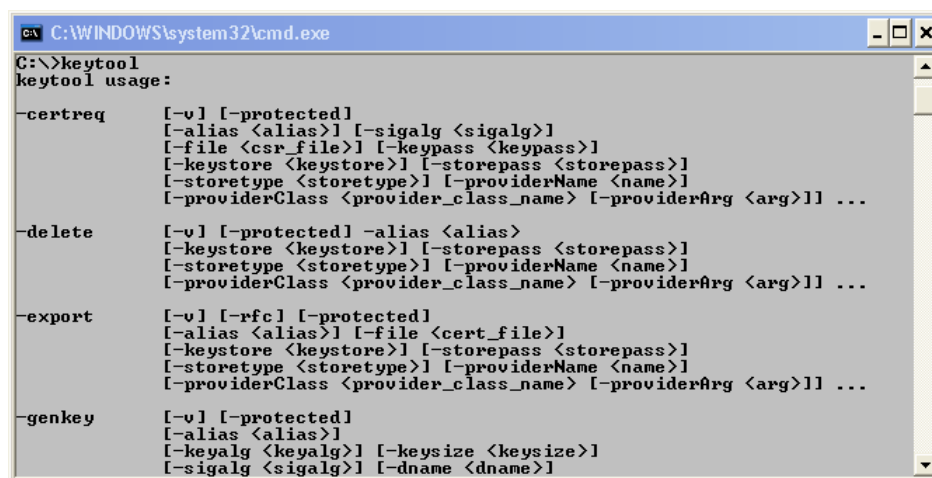


Figure 4-55: Keytool Usage

Generate the Certificate Keystore

Use the following steps to create the .keystore file.

1. Open a command prompt.
2. Enter the following command to change the directory to the JAVA_HOME\bin folder.



Typically, the JAVA_HOME\bin folder is installed at C:\Program Files\Java\jre1.6.0_XX\bin, where 1.6.0_XX is the version of Java that you have installed:

```
cd C:\Program Files\Java\jre1.6.0_XX\bin
```

Press **Enter**.

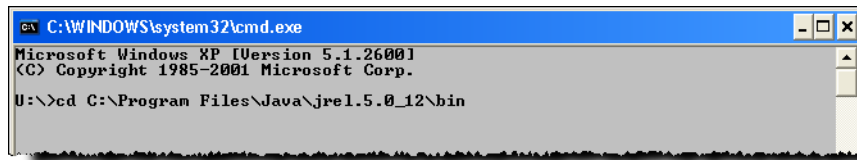


Figure 4-56: Change Directory to the JAVA_HOME\bin Folder

3. Enter the following command to generate the certificate keystore and press **Enter**:

```
keytool -genkey -alias tomcat -keyalg RSA
```

Note that a space exists before each hyphen (-).

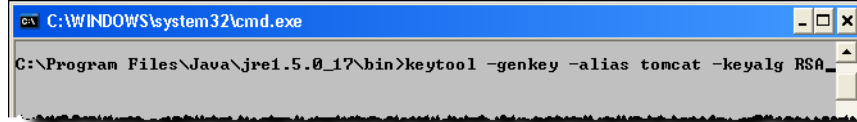


Figure 4-57: Generate Certificate Keystore

4. At the *Enter keystore password* prompt:
 - a. Enter the password you wish to use for the certificate keystore.
 - b. Press **Enter**.

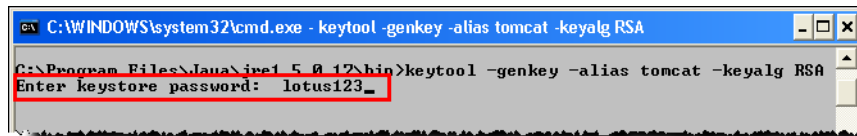
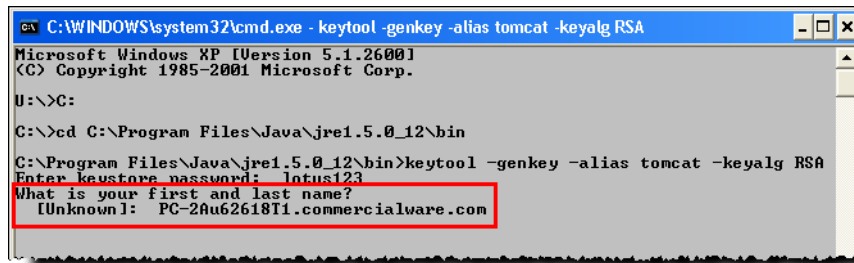


Figure 4-58: Password for Certificate Keystore

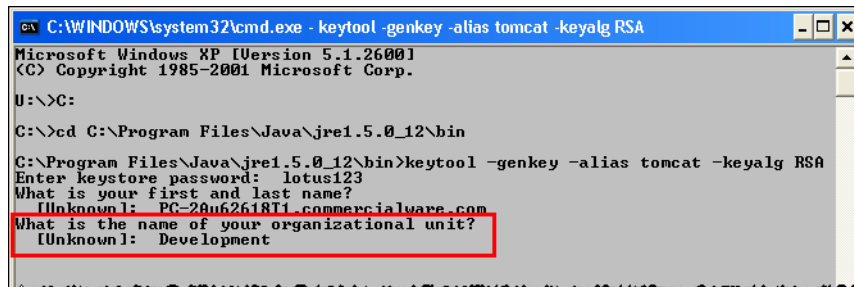
- At the *What is your first and last name?* prompt: enter the name you wish to use to register the certificate keystore and press **Enter**. You may wish to use the name of the machine where you are generating the certificate keystore.



```
C:\WINDOWS\system32\cmd.exe - keytool -genkey -alias tomcat -keyalg RSA
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.
U:\>C:
C:\>cd C:\Program Files\Java\jre1.5.0_12\bin
C:\Program Files\Java\jre1.5.0_12\bin>keytool -genkey -alias tomcat -keyalg RSA
Enter keystore password: lotus123
What is your first and last name?
[Unknown]: PC-2Au62618T1.commercialware.com
```

Figure 4-59: Name for Certificate Keystore

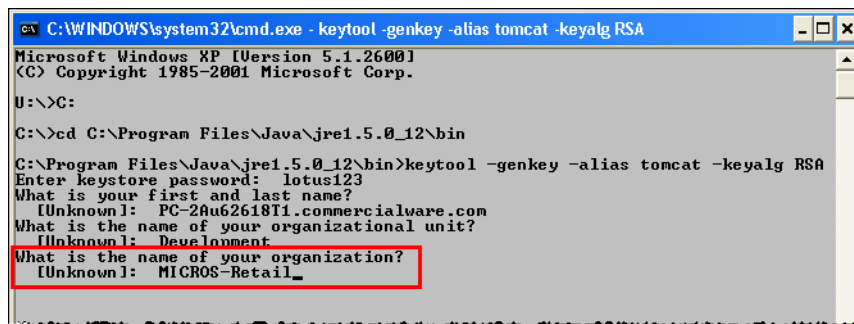
- At the *What is the name of your organizational unit?* prompt: enter the name of your department in your organization and press **Enter**.



```
C:\WINDOWS\system32\cmd.exe - keytool -genkey -alias tomcat -keyalg RSA
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.
U:\>C:
C:\>cd C:\Program Files\Java\jre1.5.0_12\bin
C:\Program Files\Java\jre1.5.0_12\bin>keytool -genkey -alias tomcat -keyalg RSA
Enter keystore password: lotus123
What is your first and last name?
[Unknown]: PC-2Au62618T1.commercialware.com
What is the name of your organizational unit?
[Unknown]: Development
```

Figure 4-60: Organizational Unit for Certificate Keystore

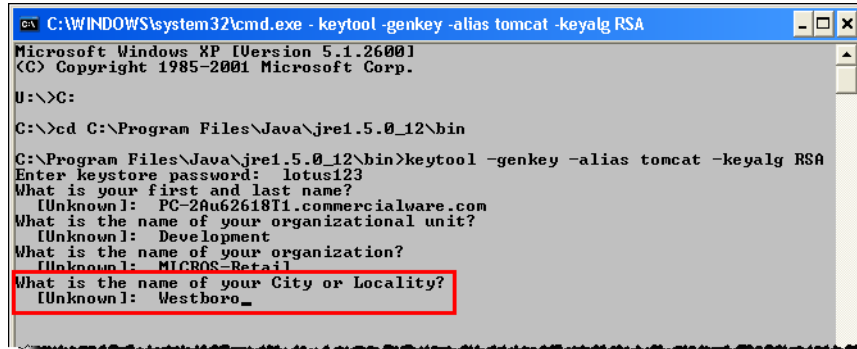
- At the *What is the name of your organization?* prompt: enter the name of your organization and press **Enter**.



```
C:\WINDOWS\system32\cmd.exe - keytool -genkey -alias tomcat -keyalg RSA
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.
U:\>C:
C:\>cd C:\Program Files\Java\jre1.5.0_12\bin
C:\Program Files\Java\jre1.5.0_12\bin>keytool -genkey -alias tomcat -keyalg RSA
Enter keystore password: lotus123
What is your first and last name?
[Unknown]: PC-2Au62618T1.commercialware.com
What is the name of your organizational unit?
[Unknown]: Development
What is the name of your organization?
[Unknown]: MICROS-Retail_
```

Figure 4-61: Organization Name for Certificate Keystore

8. At the *What is the name of your City or Locality?* prompt: enter the name of the city or locality where your business is located and press **Enter**.




```
C:\WINDOWS\system32\cmd.exe - keytool -genkey -alias tomcat -keyalg RSA
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

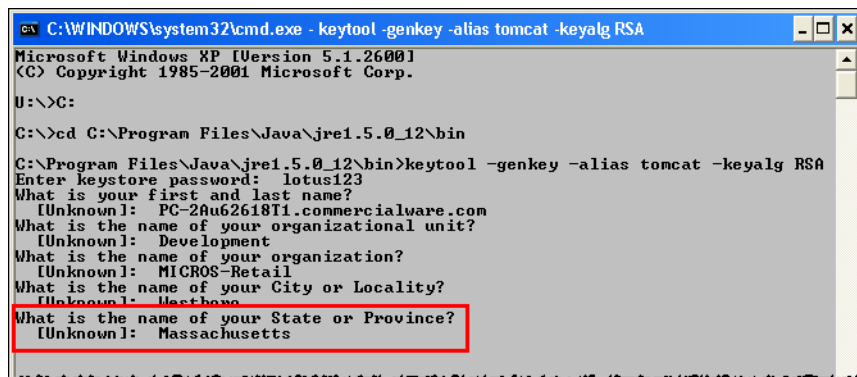
U:\>C:
C:\>cd C:\Program Files\Java\jre1.5.0_12\bin
C:\Program Files\Java\jre1.5.0_12\bin>keytool -genkey -alias tomcat -keyalg RSA
Enter keystore password: lotus123
What is your first and last name?
[Unknown]: PC-28u62618Ti.commercialware.com
What is the name of your organizational unit?
[Unknown]: Development
What is the name of your organization?
[Unknown]: MICROS-Retail
What is the name of your City or Locality?
[Unknown]: Westboro_
```

Figure 4-62: City or Locality Name for Certificate Keystore

9. At the *What is the name of your State or Province?* prompt: enter the name of the state or province where your business is located and press **Enter**.



Do not abbreviate the state or province name.

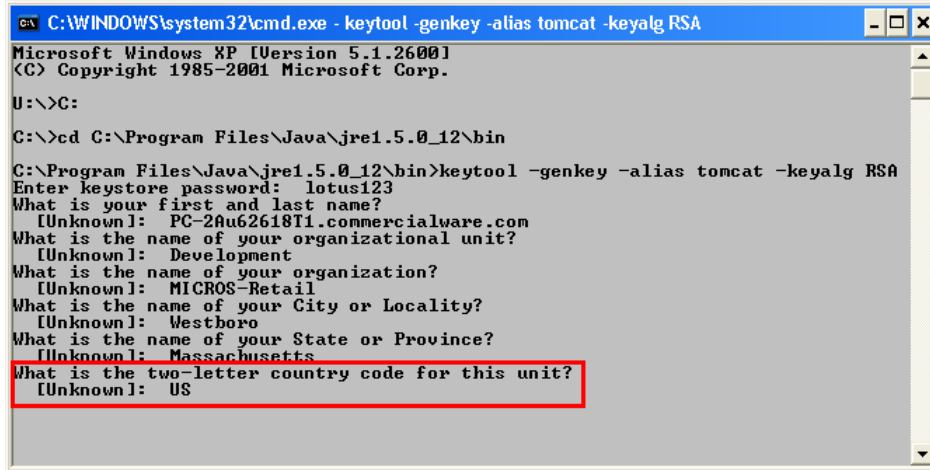


```
C:\WINDOWS\system32\cmd.exe - keytool -genkey -alias tomcat -keyalg RSA
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

U:\>C:
C:\>cd C:\Program Files\Java\jre1.5.0_12\bin
C:\Program Files\Java\jre1.5.0_12\bin>keytool -genkey -alias tomcat -keyalg RSA
Enter keystore password: lotus123
What is your first and last name?
[Unknown]: PC-28u62618Ti.commercialware.com
What is the name of your organizational unit?
[Unknown]: Development
What is the name of your organization?
[Unknown]: MICROS-Retail
What is the name of your City or Locality?
[Unknown]: Westboro_
What is the name of your State or Province?
[Unknown]: Massachusetts
```

Figure 4-63: State or Province Name for Certificate Keystore

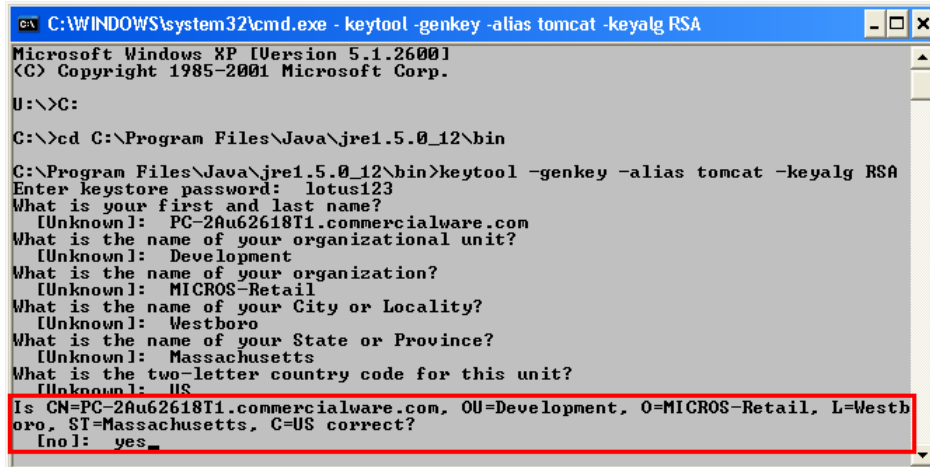
10. At the *What is the two-letter country code for this unit?* prompt: enter the country code where your business is located and press **Enter**.



```
C:\WINDOWS\system32\cmd.exe - keytool -genkey -alias tomcat -keyalg RSA
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.
U:\>C:
C:\>cd C:\Program Files\Java\jre1.5.0_12\bin
C:\Program Files\Java\jre1.5.0_12\bin>keytool -genkey -alias tomcat -keyalg RSA
Enter keystore password: lotus123
What is your first and last name?
[Unknown]: PC-2Au62618T1.commercialware.com
What is the name of your organizational unit?
[Unknown]: Development
What is the name of your organization?
[Unknown]: MICROS-Retail
What is the name of your City or Locality?
[Unknown]: Westboro
What is the name of your State or Province?
[Unknown]: Massachusetts
What is the two-letter country code for this unit?
[Unknown]: US
```

Figure 4-64: Country Code for Certificate Keystore

11. At the *Confirmation* prompt: enter **yes** to confirm that your entries are correct. Press **Enter**.



```
C:\WINDOWS\system32\cmd.exe - keytool -genkey -alias tomcat -keyalg RSA
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.
U:\>C:
C:\>cd C:\Program Files\Java\jre1.5.0_12\bin
C:\Program Files\Java\jre1.5.0_12\bin>keytool -genkey -alias tomcat -keyalg RSA
Enter keystore password: lotus123
What is your first and last name?
[Unknown]: PC-2Au62618T1.commercialware.com
What is the name of your organizational unit?
[Unknown]: Development
What is the name of your organization?
[Unknown]: MICROS-Retail
What is the name of your City or Locality?
[Unknown]: Westboro
What is the name of your State or Province?
[Unknown]: Massachusetts
What is the two-letter country code for this unit?
[Unknown]: US
Is CN=PC-2Au62618T1.commercialware.com, OU=Development, O=MICROS-Retail, L=Westboro, ST=Massachusetts, C=US correct?
Ino]: yes
```

Figure 4-65: Confirm Entries for Certificate Keystore

12. At the *Enter key password for <tomcat>* prompt: enter the password for the machine where you are generating the certificate keystore. If the password is the same as the password you entered for the certificate keystore; you do not need to enter anything; just press **Enter**.

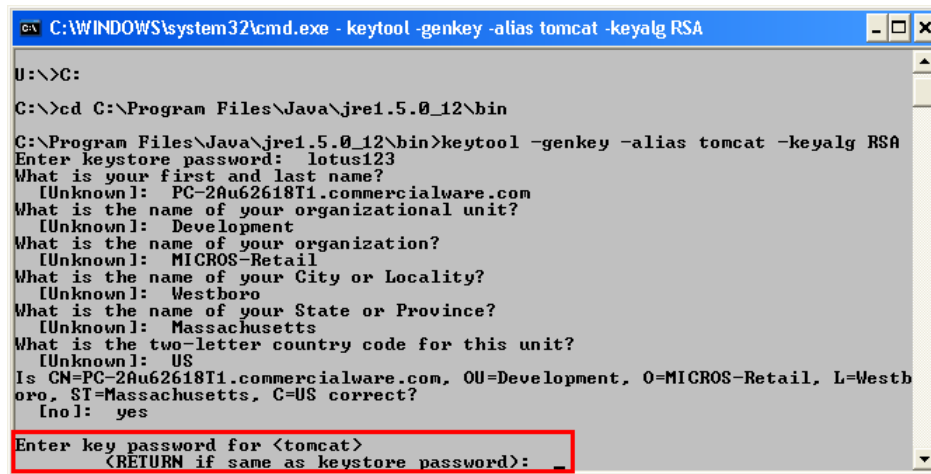


Figure 4-66: Password for Machine where you are Generating Certificate Keystore

13. Close the MS-DOS command prompt window.
14. Verify the .keystore file has been created. Typically, the .keystore file is created in your home account directory. For example, C:\Documents and Settings\User Name\.keystore.

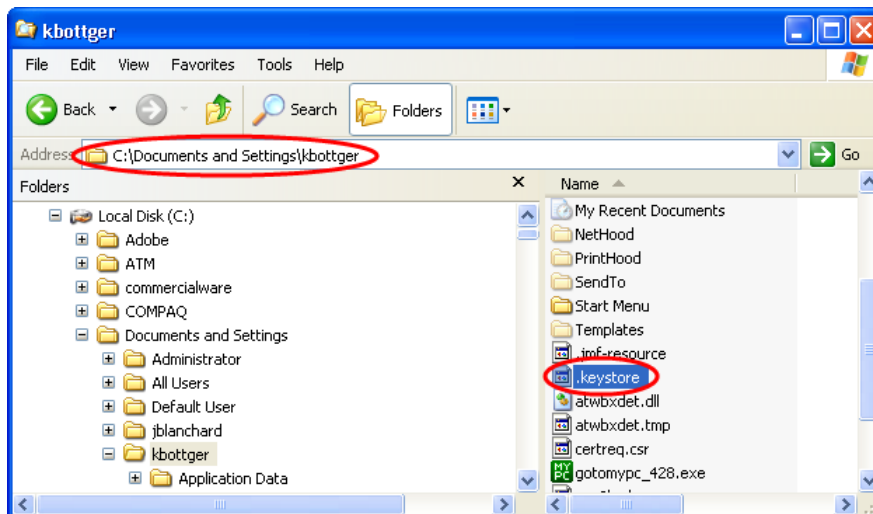


Figure 4-67: Verify .keystore File has been Created

Create a Certificate Signing Request

Use the following steps to create a certificate signing request file (certreq.csr).

1. Open a command prompt.
2. Enter the following command to change the directory to the location where you have generated the .keystore file and press **Enter**. Typically, the .keystore file is created in your home account directory. For example, C:\Documents and Settings\<User Name>, where User Name is the name of the user that generated the .keystore file.

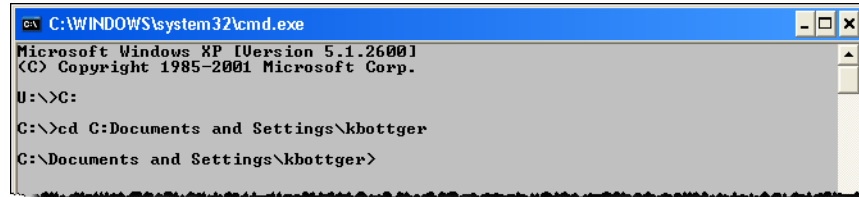


Figure 4-68: Change Directory to the home account

3. Enter the following command to generate the certificate signing request file (certreq.csr) and press **Enter**:

```
keytool -certreq -keyalg RSA -alias tomcat -file certreq.csr
```

Notice that a space exists before each hyphen (-).

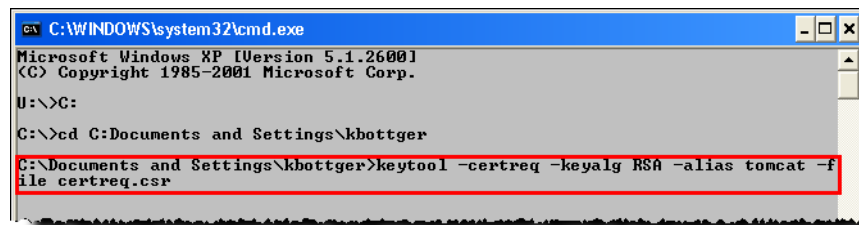


Figure 4-69: Generate Certificate Signing Request file (certreq.csr)

4. At the *Enter keystore password* prompt: enter the password defined for the certificate keystore and press **Enter**.

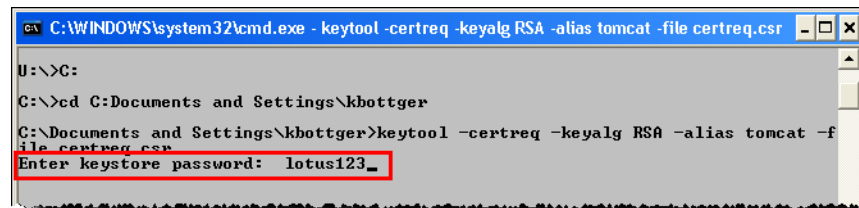


Figure 4-70: Password for Certificate Keystore

- At the *Enter key password for <tomcat>* prompt: enter the password for the machine where you generated the certificate keystore and press **Enter**.

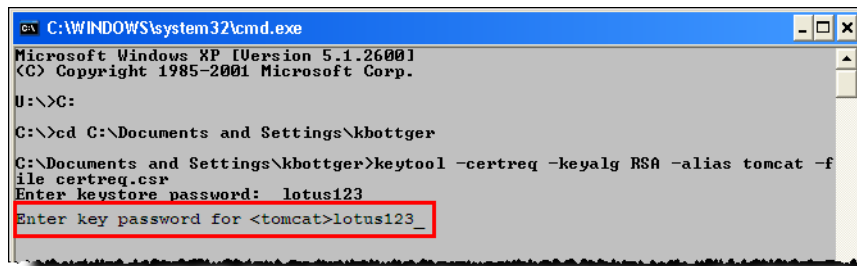


Figure 4-71: Password for Machine where you Generated Certificate Keystore

- Close the MS-DOS command prompt window.
- Verify the `certreq.csr` file has been created. Typically, the `certreq.csr` file is created in your home account directory. For example, `C:\Documents and Settings\User Name\certreq.csr`.

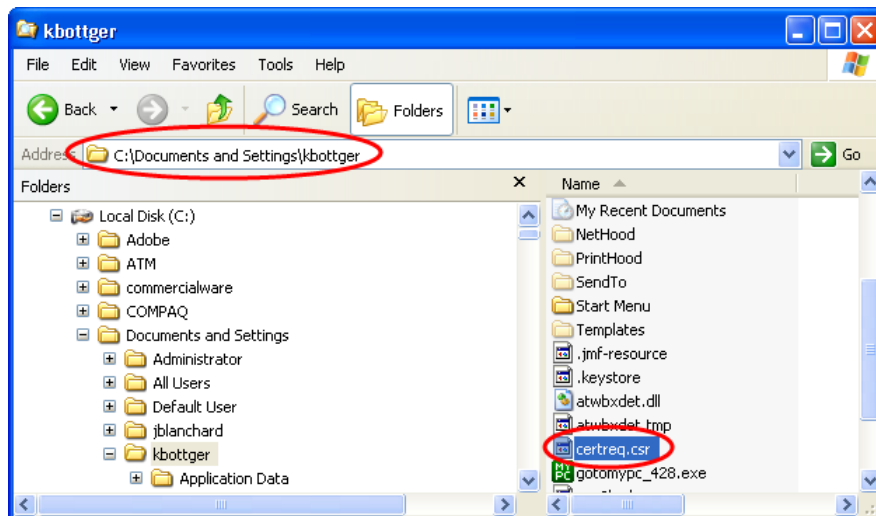


Figure 4-72: Verify `certreq.csr` File has been Created

Request a Trusted Certificate

The certificate keystore that you have generated (see [Generate the Certificate Keystore](#)) is sufficient to run an SSL listener. However, the certificate that you have generated will not be trusted by a browser and users will be prompted with this information.

In order for the certificate that you have generated to be trusted by a browser, you must request a well known certificate authority (CA) to sign your key/certificate.

Trusted CAs include:

- AddTrust
- Entrust
- GeoTrust
- RSA Data Security

- Thawte
- VISA
- ValiCert
- Verisign
- beTRUSTed

Each CA will have their own instructions. Regardless of which instructions you use, all instructions will include a step to generate a certificate signing request (see [Create a Certificate Signing Request](#)).

For the instructions used by Verisign, see the Verisign web site:

`https://www.verisign.com/cgi-bin/clearsales.cgi/leadgen.htm?form_id=5191&toc=w09630203745191002&ra=65.170.42.66&email=.`

Sample Certificate:

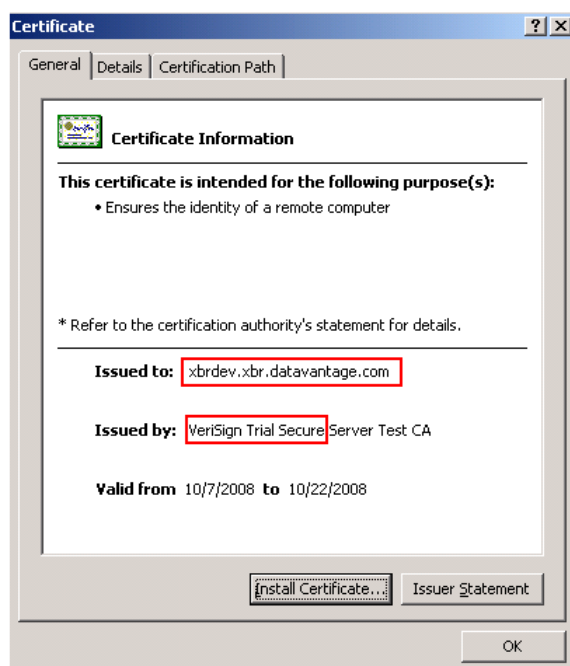


Figure 4-73: Sample Signed Certificate

Configure the Tomcat Web Application Server

Use the following steps to configure the Tomcat Web Application server to support a secured web site.

Update the server.xml file

1. On the Tomcat web application server, open the `server.xml` file located in the `tomcat\conf` directory. For example: `xbr_6.8.x.x\tomcat\conf\server.xml`.
2. Update the `server.xml` file to enable ssl Connector for the default https port **443**.

```
<-- Define a SSL Coyote HTTP/1.1 Connector on port 8443 -->
<Connector port="443" minSpareThreads="5" maxSpareThreads="75"
enableLookups="true" disableUploadTimeout="true" acceptCount="100"
maxThreads="200" scheme="https" secure="true" SSLEnabled="true"
keystoreFile="${user.home}/.keystore" keystorePass="lotus123"
clientAuth="false" sslProtocol="TLS"/>
```

3. Once you update the `server.xml` file, you must restart Tomcat.

Update the portal-ext.properties File

1. On the Tomcat web application server, open the `portal-ext.properties` file.
2. Locate the `main.servlet.https.required` setting and updates its value to **true**.
3. Once you update the `portal-ext.properties` file, you must restart Tomcat.

Verify the XBR Web Application Runs on a Secured Web Site

Use the following steps to verify that the XBR Web Application now runs on a secured web site.

1. Open a browser and navigate to the Apache Tomcat server using https.
For example: `https://xbrdev.xbr.datavantage.com`.
2. Verify that a security lock now displays for the web page.

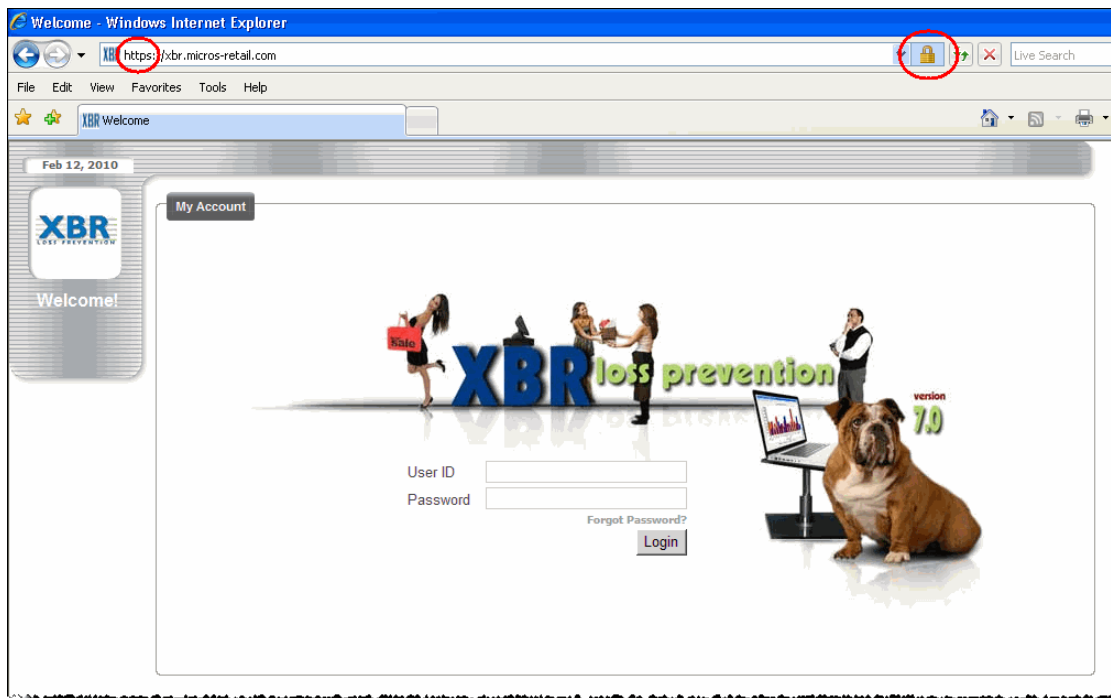


Figure 4-74: HTTPS Security Lock for XBR Web Application



Make sure that ports 80 and 443 are opened on the firewall to allow https traffic and redirect from http to https.

Multi-Tenant Configuration

The XBR Web application is accessed via the Internet from the address configured during the setup of the organization's attributes using `orgintro.exe`. All customers will utilize the same IP address that is routed using DNS with the three letter company code pointing the user to correct database node. The URL will follow the naming convention of `https://xxx-xbr.micros-retail.com` with xxx being the Company Code. This will be the standard however the DNS will need to be mapped individually. It also may be necessary to place a service entry on the firewall to properly direct and allow traffic.

Multi-Node Configuration

A single XBR Web application can be configured to support more than one XBR Database. These multi-node deployments require changing certain configuration options including setting up an additional datasource section for the second (or more than 2) AnalyticsPool configurations in `liferay.xml` and changing the number of database nodes in the `dvreport-config.xml` override file.

liferay.xml

```
<Resource name="jdbc/AnalyticsPool_1" auth="Container"
  type="javax.sql.DataSource" />
  <ResourceParams name="jdbc/AnalyticsPool_1">
    ...
    ...
    ...
  </ResourceParams>

<Resource name="jdbc/AnalyticsPool_2" auth="Container"
  type="javax.sql.DataSource" />
  <ResourceParams name="jdbc/AnalyticsPool_2">
    ...
    ...
    ...
  </ResourceParams>
```

dvreport-override-config.xml

```
<Number_Of_XBR_Database_Nodes value="2" override="match=*" />
```

Password Security

Password security allows you to:

- Define the complexity requirements of user passwords, such as:
 - the minimum password length
 - how long a password is valid before it expires
 - the requirement of upper and lower case letters in the password
 - whether a password can be reused

- Define whether a user can request [Password Assistance in the XBR Web Application](#) in the instance where he has forgotten his current password.
- Define whether the system generates a [Password Email Notification](#) when a user is initially registered as a user and when a user requests [Password Assistance in the XBR Web Application](#).

Password Configuration

To define password security requirements, you must update the following files:

- [Portal Properties File \(portal-ext.properties\)](#)
- [liferay.xml](#)
- [dvreport-config.xml](#)

Portal Properties File (portal-ext.properties)

Use the **Password** section of the **portal-ext.properties** file to identify the requirements for user passwords, including the minimum length and any required upper or lower case characters. See [“Configuring Passwords” on page 228](#) for more information on configuring the **Password** section of this file.

liferay.xml

Use the **ResourceParams name=“mail/MailSession”** section of the **liferay.xml** file to define mail settings that will allow the system to generate emails to users when they are initially registered as a user and when they request password assistance.

See [“Mail” on page 161](#) for more information on configuring the **ResourceParams name=“mail/MailSession”** section of this file.

dvreport-config.xml

Update the **NewUserEmailConfirmation** setting in the **dvreport-config.xml** file to **true** in order for the system to generate emails when a user is initially registered as a user and also when a user requests [Password Assistance in the XBR Web Application](#).

You must set this value to **true** if the [passwords.regexptoolkit.pattern](#) setting in the [Portal Properties File \(portal-ext.properties\)](#) is set to a value other than `regexptoolkit.pattern=(?=.{1})`, indicating the system uses complex password rules to generate a user password. In this situation, the system must generate a [Password Email Notification](#) in order for the user to know his new password.

Password Assistance in the XBR Web Application

Password assistance allows users to request a new password in case they have forgotten their existing password.

If a user cannot remember his password, he/she can click the *Forgot password?* link on the login screen.

The system advances to the Password Assistance Login screen (Figure 4-75) where the user can request a new password or re-enter his/her current User ID and Password.



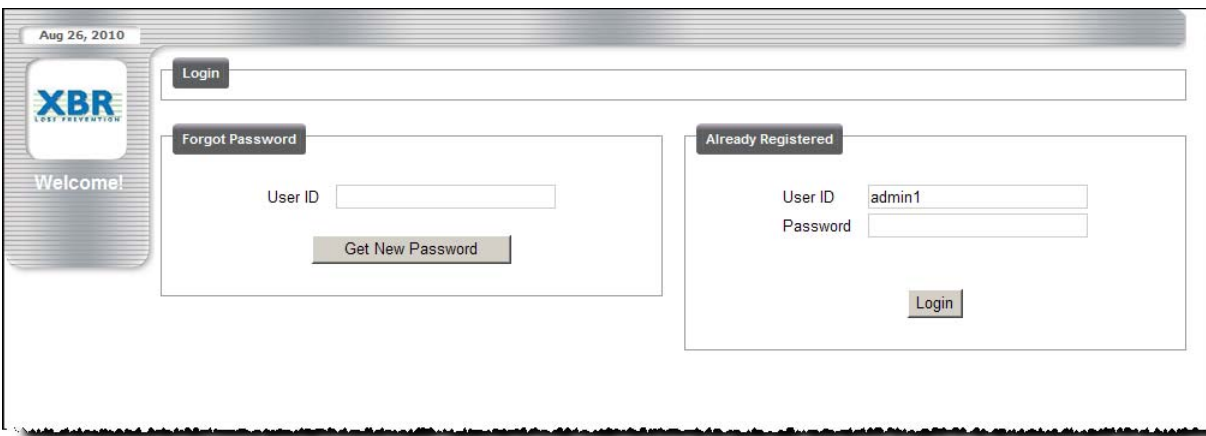


Figure 4-75: Password Assistance Login Screen

Request New Password

The Forgot Password section of the Password Assistance Login screen allows a user to request a new password in the instance where he has forgotten his current password.



Figure 4-76: Request New Password

To request a new password:

1. In the **User ID** field, enter the user ID that was defined for the user profile when the user was registered.
2. Click **Get New Password**. The system displays a window indicating the [XBR Password Reset Email Notification](#) has been generated and sent to the email address specified.

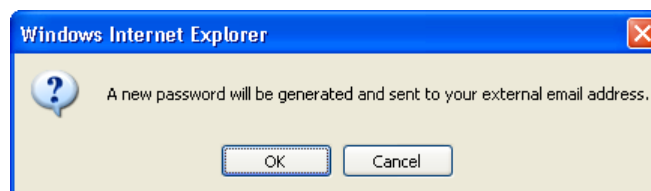


Figure 4-77: New Password Generated Confirmation

3. Click **OK**. The system validates that the email address is the address defined for the user in his user profile.
 - If the email address is not the registered address, the system displays the error message: "The email address you requested is not registered in our database."

- If the email address is the registered address, the system generates the [XBR Password Reset Email Notification](#) and sends the email to the address specified.

Reenter Current User ID and Password

The Already Registered section of the Password Assistance Login screen allows a user to reenter his/her user ID and password. The system automatically advances to this screen if a valid user ID and password is not entered on the initial login screen.

The error message “Authentication failed. Please try again.” is displayed and the system defaults to the user ID and password (encrypted) that the user entered on the initial login.

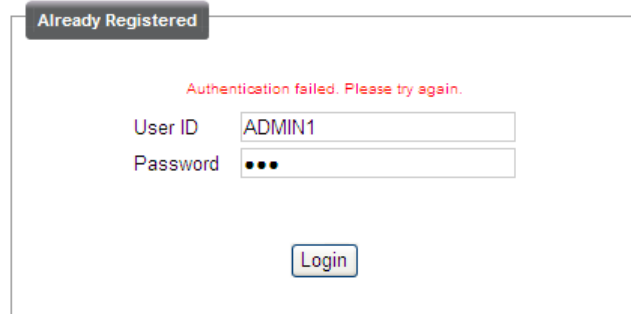


Figure 4-78: Reenter User ID and Password

To reenter the current user ID and password:

1. In the *User ID* field, enter a valid user ID.
2. In the *Password* field, enter the valid password for the user ID, keeping in mind the password complexity rules defined for user passwords.
3. Click **Login**.



If the user cannot remember his current user ID and password, he can use the Forgot Password section of the Password Assistance Login screen to request a new password. See [“Request New Password” on page 246](#).

To Enable Password Assistance

To enable password assistance, contact XBR technical support to update the *Allow Forgot Password assistance?* setting in the Company Profile to **Yes**.

Password Email Notification

You can configure the system to generate a New User Email Notification or a XBR Password Reset Email Notification.

XBR - New User Email Notification

The system generates this email when a user is initially registered as a user if the *NewUserEmailConfirmation* setting in the *dvreport-config.xml* file is set to **true** and you have enabled email generation by updating the mail settings in the *liferay.xml* file.

Sample email:

From:	XBR System Administrator
To:	Karen Bottger
Subject:	XBR - New User

You are receiving this email because an XBR user profile has been setup with this email address. If this is not the case, contact your XBR System Administrator immediately. Below is your temporary login credentials:

User ID: admin123

Password: RPrSJ1Dc6909sONT

You will be prompted to change your password upon your first login. Your new password must meet the complexity requirements: at least 8 characters consisting of both upper and lower case letters and at least one number.

The XBR Web Application can be accessed at: <http://localhost:8080>

Contents:

- From: The XBR system account used to generate email notifications.
- To: The user that has been registered in XBR. The system sends the email to the email address defined for the user's user profile.
- Subject: **XBR - New User**
- User ID: The user ID assigned to the user.
- Password: The password initially assigned to the user. The system uses the password complexity rule settings in the [Portal Properties File \(portal-ext.properties\)](#) to generate the password. The first time the user tries to log in to XBR, the system will prompt the user for a new password. The email notification provides the password complexity rules the user must follow in order to successfully create a new password.

XBR Password Reset Email Notification

The system generates this email when a user requests [Password Assistance in the XBR Web Application](#) if the *NewUserEmailConfirmation* setting in the `dvreport-config.xml` file is set to **true** and you have enabled email generation by updating the mail settings in the `liferay.xml` file.

Sample email:

From:	XBR System Administrator
To:	John Doe
Subject:	XBR Password Reset

You are receiving this email because you requested a new XBR password.

If this is not the case, contact your XBR System Administrator immediately. Below is your temporary login credentials:

User ID: admin123

Password: RPrSJ1Dc6909sONT

You will be prompted to change your password upon your first login. Your new password must meet the complexity requirements: at least 8 characters consisting of both upper and lower case letters and at least one number.

The XBR Web Application can be accessed at: <http://localhost:8080>

Contents:

- From: The XBR system account used to generate email notifications.
- To: The user that has requested password assistance. The system sends the email to the email address defined for the user's user profile.
- Subject: **XBR Password Reset**
- User ID: The user ID assigned to the user.
- Password: The new password generated for the user. The system uses the password complexity rule settings in the [Portal Properties File \(portal-ext.properties\)](#) to generate the password. The next time the user tries to log in to XBR, the system will prompt the user for a new password. The email notification provides the password complexity rules the user must follow in order to successfully create a new password.

TESTING THE INSTALLATION

Once the components have been installed and configured, it is necessary to test the installation.

Starting the XBR Web Server

To start the XBR web server, go to the `c:\XBR_Webserver_68\tomcat\bin` directory, and double click `startup.bat`.

Shutting Down the XBR Web Server

To shut down the XBR web server, go to the `c:\XBR_Webserver_68\tomcat\bin` directory, and double-click `shutdown.bat`.

Starting XBR Web Client

To start an XBR web client, start a web browser on a machine and set the URL to `http://<hostname>:<port>`.

where <hostname> is the name of the machine on which the XBR Web Server is installed and is currently running, and <port> is the port number specified in `server.xml`.

For example: `http://discovery:8080/`

UPGRADE



In order to upgrade the XBR Web Application, a copy of the xbr_v7.0.0 Installation CD is required.

This section assumes that:

- the XBR Desktop Application has been upgraded.
- the database has been upgraded.
- the environment variable `JAVA_HOME` and the System variable Path have been created and correct.

Preserve Custom Settings

In order to preserve custom settings from prior XBR Web versions, perform the following procedure:

1. Use a file comparison tool (e.g. Beyond Compare) to find and copy the differences between the files listed below in the previous installation's directory (e.g. `xbr_v6.7.x.x`) and in the recently created directory for v7.0.0.

`xbr_v6.7.x.x\common\classes\portal-ext.properties` (portal)

`xbr_v6.7.x.x\liferay\WEB-INF\dvreport-[override]-config.xml` (app)

`xbr_v6.7.x.x\conf\Catalina\localhost\liferay.xml` (db)



Do NOT copy the files from the previous installation's directory to the new directory. There are new parameters in these files that would be lost.

2. For customers that have customized corporate logo and skins, copy the content from the current installation's over to the new installation;
 - `\tomcat\liferay\html\skin\image\default`
 - `\tomcat\liferay\html\skin\image\xbr`
 - `\tomcat\liferay\html\skin\image\xbr2`
 - `\tomcat\liferay\html\skin\image\xbr3`

This will preserve files that have been added in more recent versions (in \tomcat\liferay\html\skin\image\default).

Preserve SSL Certificates

Perform this procedure if the site you are upgrading uses SSL to secure its site.

1. Prior to upgrading XBR, locate the directory with the prior installation (for example: xbr_v6.7.x.x).
2. Rename this directory to something unique so that the XBR upgrade process will not overwrite or delete this directory.
3. Perform the XBR upgrade (InstallShield (see [“Upgrade” on page 250](#)) or Manual ([“Preserve Custom Settings” on page 250](#)).
4. In the renamed directory, locate and open the \tomcat\conf\server.xml file.
5. Find the “Connector port=’443’” section and copy it.

```
<-- Define a SSL Coyote HTTP/1.1 Connector on port 8443 -->
<Connector port="443" minSpareThreads="5" maxSpareThreads="75"
enableLookups="true" disableUploadTimeout="true" acceptCount="100"
maxThreads="200" scheme="https" secure="true" SSLEnabled="true"
keystoreFile="c:/xbr_6.7.x.x/tomcat/conf/.keystore"
keystorePass="lotus123" clientAuth="false" sslProtocol="TLS"/>
```

6. Paste the copied section into the \tomcat\conf\server.xml file of the upgrade.
7. Locate and copy the \tomcat\conf\.keystore file from the renamed directory.
8. Paste the copied file into the tomcat\conf\ directory of the upgrade.
9. Update the location as a value of “keystoreFile” in the “Connector port=’443’” section of \tomcat\conf\server.xml file in the upgrade directory with the new address of the .keystore file.

Upgrade Web Application

Use the following steps to upgrade from a previous version of XBR to Version 7.0.0:

1. Locate the directory with the prior installation, such as xbr_v6.7.x.x, and run \bin\shutdown.bat to stop the server.

If the application is installed as a service, locate and stop a service named “Micros-Retail Analytics Loss Prevention Portal Server” or “Datavantage Analytics Loss Prevention Portal Server” from the Services panel.

2. Go to [“Installation” on page 106](#) and perform the InstallShield process.
3. Open a web browser.
4. Enter the following in the address field:

http://<servername>:<port>

where: <servername> is the name of the server where the XBR Web Application is installed, and

<port> is the port number entered in step 23 on page 125 of the installation process.

The XBR Web Application Log In screen is displayed.



Figure 4-79: XBR Web Application Log In

5. Enter your User ID and Password.
6. Click the **Login** button.

CHAPTER

5

Database Setup

OVERVIEW

This chapter provides information for setting up a new XBR & Balance database installation. Instructions for both SQL Server Database and Oracle Database are provided.



Refer to the Balance Implementation Guide for information on configuring the Balance database.

About This Chapter

This chapter contains the following sections:

- [“New Oracle XBR-mymicros 7.0.0 Hosted Database Installation” on page 255](#) provides information for creating a new XBR-mymicros Oracle database in a hosted environment.
- [“New Oracle XBR-mymicros 7.0.0 Self-Hosted Database Installation” on page 260](#) provides information for creating a new XBR-mymicros Oracle database in a self-hosted environment.
- [“New SQL Server XBR-mymicros 7.0.0 Self-Hosted Database Installation” on page 264](#) provides information for creating a new SQL Server XBR-mymicros database in a self-hosted environment.
- [“Upgrade XBR-mymicros Database to 7.0.0” on page 269](#) provides information on upgrading an existing Oracle database (hosted or self-hosted environment) or SQL Server database to version 7.0.0.
- [“New Oracle XBR and Balance 7.0.0 Database Installation” on page 271](#) provides information for creating a new XBR Retail/Grocery & Balance Oracle database.
- [“Upgrade XBR Oracle Database to 7.0.0” on page 275](#) provides information for upgrading an existing XBR Retail/Grocery Oracle database.
- [“New SQL Server XBR and Balance 7.0.0 Database Installation” on page 277](#) provides information for creating a new XBR Retail/Grocery SQL Server database.
- [“Upgrade SQL Server XBR Database to 7.0.0” on page 283](#) provides information for upgrading an existing XBR Retail/Grocery SQL Server database.

Audience

The procedures documented in this chapter are administrative functions and assume the user has basic database management skills.

Prerequisites

The procedures documented in this chapter assume that a new “base” database is being created. The database is created from the objects provided on the CD repository and the system metadata is then loaded from the CD repository.

FOODSERVICE (MYMICROS) INSTALLATION

New Oracle XBR-mymicros 7.0.0 Hosted Database Installation

Setting Up XBR Security in the mymicros Data Warehouse

For a new XBR-mymicros 7.0.0 installation, the first part of the setup is run against all the current mymicros production database instances; however, many may be included in the mymicros data warehouse environment.

The following XBR-mymicros security script must be run to create the XBRREADONLY account which will be used to funnel requests from the XBR 7.0.0 database using database links. The links will be set up during the mymicros XBR 7.0.0 installation. This security script will also grant the XBRREADONLY account SELECT access to all of the required tables in the COREDB and LOCATION_ACTIVITY_DB databases.



This script must be run from a privileged account by either the Mymicros implementation team or by the MICROS-Retail Operations technical team (if given appropriate permissions).

The script is called `Oracle_Mymicros_security.sql` and can be found in either in CVS or on the release CD in the following directories:

CVS\database_scripts\Database Architecture\Database Scripts\Analytics Product Suite 7.0\XBR 7.0\XBR MyMicros 7.0\Oracle

or

CD:\DATABASE_SCRIPTS\FOODSERVICE\NEW_INSTALL\ORACLE

Creating a New XBR-mymicros Oracle Database

Create a new Oracle Instance & Database using the Database Configuration assistant or ensure that a new instance and database have been created by the responsible DBA.

For Oracle 10g installations, to create the new database instance, you can modify and use the following scripts found in either in CVS or on the release CD in the following directories:

CVS\database_scripts\Database Architecture\Database Scripts\Analytics Product Suite 7.0\XBR 7.0\XBR MyMicros 7.0\Oracle

or

CD:\DATABASE_SCRIPTS\FOODSERVICE\NEW_INSTALL\ORACLE

1. Create a directory under your Oracle installation's Admin directory to match your instance name, then create a "scripts" directory under the admin\instance directory (i.e. E:\oracle\product\10.2.0\admin\newdb\scripts).

2. Copy the following scripts to your new scripts directory you just created.
 - build_database_70_10g.bat
 - build_database_70_10g.sql
 - cloneDBCreation.sql
 - CloneRmanRestore.sql
 - postScripts.sql
 - rmanRestoreDatafiles.sql
 - postDBCcreation.sql
 - init.ora
 - initNEWDBTemp.ora (rename this file with new db name also)
 - Oracle_standard_tablespace.sql
3. Edit these files and replace any occurrences of "newdb" with the name of your new database and path.
4. Copy these files to a "scripts" directory under the E:\oracle\product\10.2.0\admin directory hierarchy.
5. Open a command window, CD to the scripts directory and execute build_database_70_10g.bat.

You will be prompted to assign passwords for the sys and system users.

Once the database is created and empty, now it is time to create the XBR and Balance 7.0.0 Standard Tablespaces, Standard Security, and database objects.

6. Log into the new instance with the "sys" account and password as sysdba.
7. Update the tnsnames.ora and listener.ora with new database information.
8. Create the Standard Tablespaces by opening a SQL Query window either through Toad, SQL Plus, or other client interface tool, and attach to the newly created database.
 - a. Open the database script Oracle_standard_tablespace.sql located at:
CVS\database_scripts\Database Architecture\Database Scripts\
Analytics Product Suite 7.0\XBR 7.0\XBR MyMicros 7.0\Oracle
or
CD:\DATABASE_SCRIPTS\FOODSERVICE\NEW_INSTALL\ORACLE
 - b. Ensure the table space locations are correct.
 - c. Copy and paste into the SQL query window, and click **Execute**.

The tablespace locations have to be determined based on the Oracle system where the database is being created. This is determined based on how the Oracle DBA set up the resources on the database system, this information can be obtained from the Oracle DBA. Information needed would be the disk drive and directory where the Oracle data will be stored.

9. Open the database script `Oracle_standard_security.sql` located at:
`CVS\database_scripts\Database Architecture\Database Scripts\Analytics Product Suite 7.0\XBR 7.0\XBR MyMicros 7.0\Oracle`
or
`CD:\DATABASE_SCRIPTS\FOODSERVICE\NEW_INSTALL\ORACLE`
10. Copy contents into SQL Query window and execute to create the database roles and users.
11. Log out and log back in to the database as user XBRADMIN.
12. Open the database script `build_database_mmxbr70.sql` located at:
`CVS\database_scripts\Database Architecture\Database Scripts\Analytics Product Suite 7.0\XBR 7.0\XBR MyMicros 7.0\Oracle`
or
`CD:\DATABASE_SCRIPTS\FOODSERVICE\NEW_INSTALL\ORACLE`
13. Copy the contents into SQL Query window and execute to create the database objects--tables, views, functions, stored procedures, triggers, etc.



This script will give many compilation errors and warnings, but this has been tested and is OK. These are only dependent object warnings and will be rectified after the next step.

14. Click the **Ignore Errors** button to continue and ignore errors.
15. Now you must load the XBR-mymicros 7.0.0 system table metadata using the Migration Utility to load all the XBR formatted .PSR files. They are in `metadata.zip` located at:
`CVS\database_scripts\Database Architecture\Database System Metadata\Analytics Product Suite 7.0\XBR 7.0\XBR MyMicros 7.0\Oracle\metadata`
or
`CD:\DATABASE_SCRIPTS\FOODSERVICE\NEW_INSTALL\ORACLE\METADATA`
Copy the `metadata.zip` to a local hard drive and unzip to create the .PSR files.
16. The latest version of the Migration Utility must now be installed. The Operations Technical team is well versed in using this utility to migrate data. The utility is located on the CD at:
`CD:\UTILITIES`
 - a. Copy the utility to a folder on the desktop.
 - b. Execute `migutil.exe` to run the Migration Utility.
 - c. Once opened, click the **DB Connect** button to open the database connection dialog box and fill in the connection information for the database. If you are successful, you will see a message: "Connected to database."
 - d. Once connected, click **Open Config** button and select the Import tab.
 - e. Ensure ALL tables with the Replace Table option are selected. Also, deselect the option to Initialize Null Values before browsing to .PSR files.

- f. Click on the **Import** button and browse to the location of the .PSR files. When you click on the first .PSR file, the import will begin. You can review the log file MGT_LOG.TXT in the Migration Utility folder to see if the data was loaded correctly.



Not every table selected is loaded with metadata so ignore messages that .PSR file is missing.

The XBR-mymicros 7.0.0 database installation is now completed.

Liferay Installation

For XBR-mymicros Version 7.0.0, the Liferay portal has been stripped out from the full XBR database installation, and is now a separate module that can be added as an option.

Use the following procedure to install the Oracle Liferay 7.0.0 tables:

1. Log into XBR as "XBRADMIN".
2. Open the database script `build_schema_liferay70.sql` at:
`CVS\database_scripts\Database Architecture\Database Scripts\Analytics Product Suite 7.0\Liferay 7.0\Oracle`
or
`CD:\DATABASE_SCRIPTS\LIFERAY\NEW_INSTALL\ORACLE`
3. Copy contents into SQL Query window.
4. Click **Execute** to create the Liferay tables.
5. Load the Liferay 7.0.0 system table metadata using the Migration Utility.



For XBR-mymicros Version 7.0.0, you must log in with the LIFERAY userid. See the System Administrator for the password to this account.

They are located at:

`CVS\database_scripts\Database Architecture\Database System Metadata\Analytics Product Suite 7.0\Liferay 7.0\Oracle\metadata`

or

`CD:\DATABASE_SCRIPTS\LIFERAY\NEW_INSTALL\ORACLE\METADATA`

6. Copy the .PSR files to a folder on the desktop.
7. The Image table will have errors loading due to a problem with the Migration Utility handling the CLOB data type in Oracle. Execute the `SP_INSERT_IMAGE` procedure that is installed to populate the Image table.

Post Installation

Set up ORGID Database Links and Public Synonyms:

1. Log out and log back in to the database as user XBRADMIN.
2. Check the values in the script `insert_adm_db_setup_MYMICROS_XBR.sql` to ensure each database, schema and TNSNAME is correct with the connection information obtained from Mymicros and then execute the script.
3. Now run the stored procedure called `SP_PRO_DATABASE_SETUP` to create all the necessary database links and public synonyms.
4. Due to compilation warnings produced by step [13 on page 257](#) which causes security to not be applied correctly to views that have compilation warnings, you must rebuild the views by opening and exuting the database script `1004_build_views_70.sql` in a query window. The script is located at:

```
CVS\database_scripts\Database Architecture\Database Scripts\  
Analytics Product Suite 7.0\XBR 7.0\XBR MyMicros 7.0\Oracle
```

or

```
CD:\DATABASE_SCRIPTS\FOODSERVICE\NEW_INSTALL\ORACLE
```

New Oracle XBR-mymicros 7.0.0 Self-Hosted Database Installation

Setting Up XBR Security in the Mymicros Data Warehouse

For a new XBR-mymicros 7.0.0 self-hosted installation, the first part of the setup is run against the current mymicros production database instance.

1. Log into the current mymicros production database instance with the COREDB login. See the System Administrator for the password.
2. Update the `tnsnames.ora` and `listener.ora` with new database information.
3. Create the standard tablespaces by opening a SQL Query window either through Toad, SQL Plus or other client interface tool and attach to the newly created database.

- a. Open the database script `Oracle_standard_tablespaces.sql` located at:

```
CVS\database_scripts\Database Architecture\Database Scripts\Analytics  
Product Suite 7.0\XBR 7.0\XBR MyMicros 7.0\Oracle
```

or

```
CD:\DATABASE_SCRIPTS\FOODSERVICE\NEW_INSTALL\ORACLE
```

- b. Ensure the tablespace locations are correct.
- c. Change any occurrences of NEWDB with the name of your database instance.
- d. Copy and paste into the SQL query window and execute.

The tablespace locations have to be determined based on the Oracle system where the database is being created. This is determined based on how the Oracle DBA set up the resources on the database system, this information can be obtained from the Oracle DBA. Information needed would be the disk drive and directory where the Oracle data will be stored.

4. Open the database script `Oracle_standard_security.sql` located at:

```
CVS\database_scripts\Database Architecture\Database Scripts\Analytics  
Product Suite 7.0\XBR 7.0\XBR MyMicros 7.0\Oracle
```

or

```
CD:\DATABASE_SCRIPTS\FOODSERVICE\NEW_INSTALL\ORACLE
```

5. Copy contents into SQL Query window and execute to create the database roles and users.
6. Now run the Mymicros XBR 7.0.0 Self-Hosted Security script:

- a. Open the database script `Mymicros_standard_security_SH.sql` located at:

```
CVS\database_scripts\Database Architecture\Database Scripts\Analytics  
Product Suite 7.0\XBR 7.0\XBR MyMicros 7.0\Oracle
```

or

```
CD:\DATABASE_SCRIPTS\FOODSERVICE\NEW_INSTALL\ORACLE
```

- b. Copy the contents into the SQL Query window and execute to set permissions on the COREDB and LOCATION_ACTIVITY_DB objects.

7. Log out and log back in to the database as user XBRADMIN.
8. Open the database script `build_database_mmxbr70.sql` located at:
`CVS\database_scripts\Database Architecture\Database Scripts\Analytics Product Suite 7.0\XBR 7.0\XBR MyMicros 7.0\Oracle`
or
`CD:\DATABASE_SCRIPTS\FOODSERVICE\NEW_INSTALL\ORACLE`
9. Copy the contents into the SQL Query window and execute to create the database objects-- tables, views, functions, stored procedures, triggers, etc.



This script will give many compilation errors and warnings, but this has been tested and is OK. These are only dependent object errors and warnings and will be rectified after the next step.

10. Click the **Ignore Errors** button to continue and ignore errors.
11. Now you must load the Mymicros XBR 7.0.0 system table metadata using the Migration Utility to load all the XBR formatted .PSR files. They are located at:
`CVS\database_scripts\Database Architecture\Database System Metadata\Analytics Product Suite 7.0\XBR 7.0\XBR MyMicros 7.0\Oracle\metadata`
or
`CD:\DATABASE_SCRIPTS\FOODSERVICE\NEW_INSTALL\ORACLE\METADATA`
Copy the .PSR files to a folder on the desktop.
12. The latest version of the Migration Utility must now be installed. The Operations Technical team is well versed in using this utility to migrate data. The utility is located on the CD at:
`CD:\UTILITIES`
 - a. Copy the utility to a folder on the desktop.
 - b. Execute `migutil.exe` to run the Migration Utility.
 - c. Once opened, click the **DB Connect** button to open the database connection dialog box and fill in the connection information for the database. If you are successful, you will see a message: "Connected to database."
 - d. Once connected, click the **Open Config** button and select the Import tab.
 - e. Ensure *ALL* tables with Replace Table option are selected. Also, deselect the option to Initialize Null Values before browsing to .PSR files.
 - f. Click on the **Import** button and browse to the location of the .PSR files. When you click on the first .PSR file, the import will begin. You can review the log in the `MGT_LOG.TXT` to see if the data was loaded correctly.



Not every table selected is loaded with metadata so ignore messages that .PSR file is missing.

The XBR-mymicros 7.0.0 database installation is now completed.

Liferay Installation

For XBR-mymicros Version 7.0.0 , the Liferay portal has been stripped out from the full XBR database installation and is now a separate module that can be added as an option.

Use the following procedure to install the Oracle Liferay 7.0.0 tables:

1. Log into XBR as "XBRADMIN".
2. Open the database script `build_schema_liferay70.sql` at:
CVS\database_scripts\Database Architecture\Database Scripts\Analytics Product Suite 7.0\Liferay 7.0\Oracle
or
CD:\DATABASE_SCRIPTS\LIFERAY\NEW_INSTALL\ORACLE
3. Copy the contents into a SQL Query window.
4. Click **Execute** to create the Liferay tables.
5. Now you must load the Liferay 7.0.0 system table metadata using the Migration Utility.



For Mymicros XBR Version 7.0.0, you must log in with the LIFERAY userid. See the System Administrator for the password to this account.

They are located in the following location:

CVS\database_scripts\Database Architecture\Database System
Metadata\Analytics Product Suite 7.0\Liferay 7.0\Oracle\metadata

or

CD:\DATABASE_SCRIPTS\LIFERAY\NEW_INSTALL\ORACLE\METADATA

Copy the .PSR files to a folder on the desktop.

6. The Image table will have errors loading due to a problem with the Migration Utility handling the CLOB data type in Oracle. Execute the `SP_INSERT_IMAGE` procedure that is installed to populate the Image table.

Post Installation

Set up Database Links and Public Synonyms

1. Check the values in the script `insert_adm_db_setup_MYMICROS_SH_70.sql` to ensure each database, schema and TNSNAME are correct with the connection information obtained from Mymicros.
2. Execute the script.
3. Run the stored procedure called `SP_PRO_DATABASE_SETUP` to create all the necessary database links and public synonyms.
4. Due to compilation warnings produced by step 9 which causes security to not be applied correctly to views that have compilation warnings, you must rebuild the views by opening the database script `1004_build_views_70.sql` at:

```
CVS\database_scripts\Database Architecture\Database Scripts\Analytics  
Product Suite 7.0\XBR 7.0\XBR MyMicros 7.0\Oracle
```

or

```
CD:\DATABASE_SCRIPTS\FOODSERVICE\NEW_INSTALL\ORACLE
```

At this point the Oracle Mymicros XBR 7.0.0 Self-Host installation is complete and there are no invalid objects in the database.

New SQL Server XBR-mymicros 7.0.0 Self-Hosted Database Installation

Setting up XBR Security in the mymicros Data Warehouse

For a new XBR-mymicros 7.0.0 installation, the first part of the setup is run against the current mymicros production database instance.

The following XBR-mymicros security script must be run to create the XBRREADONLY account which will be used to funnel requests from the XBR 7.0.0 database using database links. The links will be set up during the mymicros XBR 7.0.0 installation. This security script will also grant the XBRREADONLY account read only access to all the tables in COREDB and LOCATION_ACTIVITY_DB databases. This is accomplished by granting XBRREADONLY the db_readonly database role to COREDB and LOCATION_ACTIVITY_DB.



This script must be run from a privileged account by either the mymicros implementation team or by the MICROS-Retail Operations technical team (if given appropriate permissions).

The script is called `SQLServer_Mymicros_security.sql` and can be found in either in CVS or on the release CD in the following directories:

CVS\database_scripts\Database Architecture\Database Scripts\Analytics Product Suite 7.0\XBR 7.0\XBR MyMicros 7.0\SQL Server

or

CD:\DATABASE_SCRIPTS\FOODSERVICE\NEW_INSTALL\MSSQL



The mymicros data warehouse and the XBR 7.0.0 database should be on separate SQL Server instances.

Creating a New XBR-mymicros SQL Server Database

If beginning with a brand new SQL Server instance, initiate the database creation procedure with the following SQL script, `sp_pro_create_database.sql`. The database creation procedure will be created in the master database and used for all subsequent database creations. If this is an older SQL Server system, ensure the database procedure exists. If this is not needed, proceed to step 2.

1. Execute `sp_pro_create_database.sql` which is located at:

CVS\database_scripts\Database Architecture\Database Scripts\Analytics Product Suite 7.0\XBR 7.0\XBR MyMicros 7.0\SQL Server

or

CD:\DATABASE_SCRIPTS\FOODSERVICE\NEW_INSTALL\MSSQL

2. Make a copy of the SQL script `exec_sp_pro_create_database.sql` which is located at:

CVS\database_scripts\Database Architecture\Database Scripts\Analytics Product Suite 7.0\XBR 7.0\XBR MyMicros 7.0\SQL Server

or

CD:\DATABASE_SCRIPTS\FOODSERVICE\NEW_INSTALL\MSSQL

3. Modify DATABASE_NAME, FILE_LOCATION, and LOG_LOCATION in the following three lines.

```
SET @DATABASE_NAME='NEWDB';
SET @FILE_LOCATION='E:\MSSQL\Data\';
SET @LOG_LOCATION='E:\MSSQL\Data\';
```



Ensure the target system's data and log directory locations are correct. The database name is whatever name you have chosen for your new database (the name must start with a character). The file and log locations have to be based on the SQL Server system as to where the database is being created. This is determined on how the DBA set up the resources on the system. You can get this information from the DBA.



For MICROS-Retail in-house Operations client databases, you must run this script on the dedicated internal customer SQL Server system WDTVSQL2005DEV\SQL2005CUST and set the file and log locations to E:\Microsoft SQL Server\SQL2005CUST\Data.

4. Open Microsoft SQL Server Management Studio and connect to the server you wish to create the new database on.
5. Open the script you just modified from `exec_sp_pro_create_database.sql`.
6. Highlight, copy and paste the contents of this script into a new query window and click **Execute** to create the new database. (It is OK if it master is the database name in the window. The script forces it to use the master database.)
7. Once the new database creation is complete:

- a. Refresh the database panel.
- b. Select the new database.
- c. Click **Query** to open a new query window that will run against the new database.

8. Open the XBR 7.0.0 database setup SQL script `SqlServer_database_setup.sql` at:

```
CVS\database_scripts\Database Architecture\Database Scripts\
Analytics Product Suite 7.0\XBR 7.0\XBR MyMicros 7.0\SQL Server
or
```

```
CD: \DATABASE_SCRIPTS\FOODSERVICE\NEW_INSTALL\MSSQL
```

9. Modify REMOTE_SERVER, REMOTEUSER, and REMOTEPWD in:

```
SET @REMOTE_SERVER='WDTVSQL2005DEV\XBRMM';
SET @REMOTEUSER = 'XBRREADONLY';
SET @REMOTEPWD = 'XBRREADONLY';
```

This script will create the database link and required synonyms.

10. Open the XBR & Balance 7.0.0 database creation SQL script `build_database_70.sql` at:

```
CVS:\database_scripts\Database Architecture\Database Scripts\  
MyMicrosXBR 6.8\SQL Server
```

or

```
CD: \DATABASE_SCRIPTS\FOODSERVICE\NEW_INSTALL\MSSQL
```

11. The first line of the script is "USE NEWDB". Change the NEWDB to your new database name before running the script.
- While still in the `build_database_70.sql` script, find the second occurrence of NEWDB.
 - Modify NEWDB along with the file location to be the same as the values you put into `exec_sp_pro_create_database.sql` when first creating the database in Step 3 above.
- ```
SET @DATABASE_NAME='NEWDB';
SET @FILE_LOCATION='E:\MSSQL\Data\NEWDB\';
```



*VERY IMPORTANT! Please be sure to leave the last Backslash in the file location!*

12. Copy the contents of this script into the new query window you just opened and make sure the new database name is showing in the database drop down box located at the lower right corner of the **Query** button.
13. Execute the script by clicking the **Execute** button.
14. Load the XBR-mymicros 7.0.0 system table metadata using the Migration Utility. These XBR formatted .PSR files are located at:

```
CVS\database_scripts\Database Architecture\Database System
Metadata\Analytics Product Suite 7.0\XBR 7.0\XBR MyMicros 7.0\
SQL Server\metadata
```

or

```
CD:\DATABASE_SCRIPTS\FOODSERVICE\NEW_INSTALL\MSSQL\METADATA
```

Copy the psr files to a folder on the desktop.

15. The latest version of the Migration Utility must be installed. The Operations Technical team is well versed in using this utility to migrate data. You can find it on the CD at:
- ```
CD:\UTILITIES
```
- Copy the utility to a folder on the desktop.
 - Execute `migutil.exe` to run the Migration Utility.
 - Once opened, click the **DB Connect** button to open the database connection dialog box.

- d. Fill in the connection information for the database. Remember to set DBMS = MS SQL and PB Driver = Ole DB. If you are successful, you will see a message, "Connected to database".
- e. Once connected, select the **Open Config** button and then the Import tab. Make sure ALL tables with Replace Table option are selected. Also deselect the option to Initialize Null Values before browsing to PSR files.
- f. Click on the **Import** button and go to the location of the psr files. Click on the first .PSR file and click **OK**; the import will begin. You can review the log file MGT_LOG.TXT in the Migration Utility folder to see if the data was loaded correctly.



Not every table selected is loaded with metadata so ignore messages that psr file is missing.

The XBR-mymicros 7.0.0 database installation is now complete.

Liferay Installation

For XBR Version 7.0.0, the Liferay portal has been stripped out from the full XBR database installation, and is now a separate module.

1. Log out and log back in to the database as user LIFERAY.

To install the SQL Server Liferay 7.0.0 tables:

2. Open the database script `liferay_tables_70.sql` at:

```
CVS\database_scripts\Database Architecture\Database Scripts\
Analytics Product Suite 7.0\Liferay 7.0\SQL Server
```

or

```
CD:\DATABASE_SCRIPTS\LIFERAY\NEW_INSTALL\MSSQL
```

3. Copy contents into an SQL Query window and execute to create the Liferay tables.
4. Load the Liferay 7.0 system table metadata using the Migration Utility. They are located at:

```
CVS\database_scripts\Database Architecture\Database System
Metadata\Analytics Product Suite 7.0\Liferay 7.0\SQL Server\metadata
```

or

```
CD:\DATABASE_SCRIPTS\LIFERAY\NEW_INSTALL\MSSQL\METADATA
```

5. Copy the .psr files to a folder on the desktop.
6. The latest version of the Migration Utility must be installed. The Operations Technical team is well versed in using this utility to migrate data. You can find it on the CD at:

```
CD:\UTILITIES
```

- a. Copy the utility to a folder on the desktop.
- b. Execute `migutil.exe` to run the Migration Utility.
- c. Once opened, click the **DB Connect** button to open the database connection dialog box.

- d. Fill in the connection information for the database. Remember to set DBMS = MS SQL and PB Driver = Ole DB. If you are successful, you will see a message, "Connected to database".
- e. Once connected, select the **Open Config** button and then the Import tab. Make sure ALL tables with Replace Table option are selected. Also deselect the option to Initialize Null Values before browsing to PSR files.
- f. Click on the **Import** button and go to the location of the psr files. Click on the first .PSR file and click **OK**; the import will begin. You can review the log file MGT_LOG.TXT in the Migration Utility folder to see if the data was loaded correctly.



Not every table selected is loaded with metadata so ignore messages that psr file is missing.

Upgrade XBR-mymicros Database to 7.0.0



Before starting any upgrade, make sure you back up your database.

This section is applicable for the following situations:

- Oracle XBR-mymicros database in a hosted environment
- Oracle XBR-mymicros database in a self-hosted environment
- SQL Server XBR-mymicros database in a self-hosted environment

The upgrade scripts for Oracle are in CVS or on the release CD in the following location:

```
CVS\database_scripts\Database Architecture\Database Scripts\Analytics  
Product Suite 7.0\XBR 7.0\XBR MyMicros 7.0\Oracle
```

or

```
CD: \DATABASE_SCRIPTS\FOODSERVICE\UPGRADE\ORACLE
```

Prior to running the Oracle XBR-mymicros 7.0 upgrade scripts, you must upgrade the security in the Mymicros databases by running the following security scripts from the same location.



This script must be run from a privileged account by either the Mymicros implementation team or by the MICROS-Retail Operations technical team (if given appropriate permissions).

For Oracle Self-Hosted installations, run:

```
Upgrade_Mymicros_standard_security_SH.sql
```

For Oracle Hosted installations, run:

```
Upgrade_Oracle_Mymicros_security.sql
```

The upgrade scripts for SQL Server are in CVS or on the release CD in the following location:

```
CVS\database_scripts\Database Architecture\Database Scripts\Analytics  
Product Suite 7.0\XBR 7.0\XBR MyMicros 7.0\SQL Server
```

or

```
CD: \DATABASE_SCRIPTS\FOODSERVICE\UPGRADE\MSSQL
```

Prior to running the SQL Server XBR-mymicros 7.0 upgrade script, you must upgrade the security in the Mymicros databases by running the following security script from the same location.



This script must be run from a privileged account by either the Mymicros implementation team or by the MICROS-Retail Operations technical team (if given appropriate permissions).

Prior to running the following script, you must enter your remote server name at the top of the script:

```
--SET UP LINKED SERVER and SYNONYMS
DECLARE          @REMOTE_SERVER VARCHAR(200);
DECLARE @COMMANDTEXT  VARCHAR(8000);
SET @REMOTE_SERVER='<Remote Server>\<Instance>';
```

For SQL Server Self-Hosted installations, run:

Upgrade_SQLServer_Database_setup.sql

The following scripts will upgrade an existing XBR-mymicros 6.8.1 database to 7.0.0. Open and execute the following XBR Data Model and Application Schema upgrade scripts.

mmxbr_appl_681_to_700_upgrade.sql

mmxbr_data_681_to_700_upgrade.sql

Refresh XBR-mymicros CORE Metadata in Multi-Tenant Environments



The following procedure is to be used only for hosted, multi-tenant environments.

Use the following procedure to refresh the CORE metadata:

1. Create a temporary folder on a local hard drive.
2. Open a command prompt and navigate to the temporary folder you just created.
3. Copy the following files to the temporary folder:

- core_mm_metadata_import.cmd
- metadata_upgrade.zip

These files can be found at:

CVS\database_scripts\Database Architecture\Database System
Metadata\Analytics Product Suite 7.0\XBR 7.0\XBR Mymicros
7.0\Oracle\upgrade

or

CD:\DATABASE_SCRIPTS\FOODSERVICE\UPGRADE\ORACLE\METADATA

4. Unzip the metadata upgrade zip file into the temporary folder.
5. Open the windows command file in a text editor and modify the database name, server name, and file location and **Save** the file.
6. At the command prompt, execute the windows command file:

<drive>\<File Location>\core_mm_metadata_import.cmd

Log file for each table will be created for the number of rows deleted and a corresponding log file for the data load.

7. Review the log files for errors. If there are no errors, the metadata loaded successfully.

RETAIL/GROCERY INSTALLATION

New Oracle XBR and Balance 7.0.0 Database Installation

Creating a New XBR and Balance Oracle Database

Create a new Oracle Instance & Database using the Database Configuration assistant, or ensure that a new instance and database has been created by the responsible DBA.

For Oracle 10g installations, to create the new database instance, you can modify and use the following scripts found in either in CVS or on the release CD in the following directories:

CVS\database_scripts\Database Architecture\Database Scripts\Analytics Product Suite 7.0\XBR 7.0\XBR Retail 7.0\Oracle

or

CD:\DATABASE_SCRIPTS\RETAIL\NEW_INSTALL\ORACLE

1. Create a directory under your Oracle installation's Admin directory to match your instance name, then create a scripts directory under the admin\instance directory (i.e. E:\oracle\product\10.2.0\admin\newdb\scripts).
2. Copy the following scripts to the new "scripts" directory you just created:
 - build_database_70_10g.bat
 - build_database_70_10g.sql
 - cloneDBCcreation.sql
 - CloneRmanRestore.sql
 - postScripts.sql
 - rmanRestoreDatafiles.sql
 - postDBCcreation.sql
 - init.ora
 - initNEWDBTemp.ora (rename this file with new db name also)
 - Oracle_standard_tablespace.sql
 - Oracle_standard_security.sql
3. Edit these files and replace any occurrences of "newdb" with the name of your new database and path.
4. Open a command window, CD to the scripts directory, and execute build_database_70_10g.bat.

You will be prompted to assign passwords for the sys and system users.

Once the database is created and empty, now it is time to create the XBR and Balance 7.0.0 Standard Tablespaces, Standard Security and database objects.

5. Log into the new instance with the "sys" account and password as sysdba.
6. Update the tnsnames.ora and listener.ora with new database information.

7. Create the Standard Tablespaces by opening a SQL Query window either through Toad, SQL Plus, or some other client interface tool and attach to the newly created database.

- a. Open the database script Oracle_standard_tablespace.sql at:

```
CVS\database_scripts\Database Architecture\Database Scripts\  
Analytics Product Suite 7.0\XBR 7.0\XBR Retail 7.0\Oracle
```

or

```
CD:\DATABASE_SCRIPTS\RETAIL\NEW_INSTALL\ORACLE
```

- b. Make sure the table space locations are correct.
 - c. Copy and paste the contents into the SQL query window, and execute.

The tablespace locations have to be determined based on the Oracle system where the database is being created. This is determined based on how the Oracle DBA set up the resources on the database system, this information can be obtained from the Oracle DBA. Information needed would be the disk drive and directory where the Oracle data will be stored.

8. Open the database script Oracle_standard_security.sql at:

```
CVS\database_scripts\Database Architecture\Database Scripts\  
Analytics Product Suite 7.0\XBR 7.0\XBR Retail 7.0\Oracle
```

or

```
CD:\DATABASE_SCRIPTS\RETAIL\NEW_INSTALL\ORACLE
```

9. Copy the contents into an SQL Query window and click **Execute** to create the database roles and users.
10. Log out and log back in to the database as user XBRADMIN.

11. Open the database script build_database_objects_70.sql at:

```
CVS\database_scripts\Database Architecture\Database Scripts\  
Analytics Product Suite 7.0\XBR 7.0\XBR Retail 7.0\Oracle
```

or

```
CD:\DATABASE_SCRIPTS\RETAIL\NEW_INSTALL\ORACLE
```

12. Copy the contents into an SQL Query window and click **Execute** to create all the database objects tables, views, functions, stored procedures, triggers, etc.



This script will give many compilation errors and warnings, but this has been tested and is OK, these are only dependent object errors and warnings, and will be rectified after the next step.

13. Click the **Ignore Errors** button to continue and ignore errors.

14. Due to compilation warnings produced by step 12 which causes security to not be applied correctly to views that have compilation warnings, you must rebuild the views by opening the database script 1004_build_views_70.sql at:

```
CVS\database_scripts\Database Architecture\Database Scripts\  
Analytics Product Suite 7.0\XBR 7.0\XBR Retail 7.0\Oracle
```

or

```
CD:\DATABASE_SCRIPTS\RETAIL\NEW_INSTALL\ORACLE
```

15. Copy the contents into SQL Query window and click **Execute** to recreate the views.

16. Load the XBR & Balance 7.0.0 system table metadata using the Migration Utility to load all the XBR formatted .PSR files. They are located at:

```
CVS\database_scripts\Database Architecture\Database System  
Metadata\Analytics Product Suite 7.0\XBR 7.0\XBR Retail 7.0\Oracle\metadata
```

or

```
CD:\DATABASE_SCRIPTS\RETAIL\NEW_INSTALL\ORACLE\METADATA
```

Copy the psr files to a folder on the desktop.

17. The latest version of the Migration Utility must be installed. The utility is located on the CD at:

```
CD:\UTILITIES
```

- a. Copy the utility to a folder on the desktop.
- b. Execute migutil.exe to run the Migration Utility.
- c. Once it is open, click the **DB Connect** button to open the database connection dialog box.
- d. Fill in the connection information for the database. If you are successful, you will see a message, "Connected to database".
- e. Once connected, click the **Open Config** button and select the Import tab.
- f. Make sure ALL tables with Replace Table option are selected. Also deselect the option to Initialize Null Values before browsing to PSR files.
- g. Click on the **Import** button and browse to the location of the .PSR files. When you click on the first .PSR file, the import will begin. You can review the log in the MGT_LOG.TXT to see if the data was loaded correctly.



Not every table selected is loaded with metadata so ignore messages that psr file is missing.

The XBR and Balance 7.0.0 Oracle database installation is finished.

Liferay Installation

For XBR Version 7.0.0, the Liferay portal has been stripped out from the full XBR database installation, and is now a separate module.

Use the following procedure to install the Oracle Liferay 7.0.0 portal:

1. Open the database script `build_schema_liferay70.sql` at:
`CVS\database_scripts\Database Architecture\Database Scripts\Analytics Product Suite 7.0\Liferay 7.0\Oracle`
or
`CD:\DATABASE_SCRIPTS\LIFERAY\NEW_INSTALL\ORACLE`
2. Copy the contents into the SQL Query window and click **Execute** to create the Liferay tables.
3. Load the Liferay 7.0.0 system table metadata using the Migration Utility.



For XBR Version 7.0.0, you must log in with the LIFERAY userid. See the System Administrator for the password to this account.

They are located at:

`CVS\database_scripts\Database Architecture\Database System Metadata\Analytics Product Suite 7.0\Liferay 7.0\Oracle\metadata`

or

`CD:\DATABASE_SCRIPTS\LIFERAY\NEW_INSTALL\ORACLE\METADATA`

Copy the psr files to a folder on the desktop.

4. The Image table will have errors loading due to a problem with the Migration Utility handling the CLOB data type in Oracle. **Execute** the `SP_INSERT_IMAGE` procedure that is installed to populate the Image table.

Upgrade XBR Oracle Database to 7.0.0



Before starting any upgrade, make sure you back up your database.

Upgrade XBR from XBR 6.8.1 to XBR 7.0.0

The upgrade scripts are in CVS or on the release CD in the following location:

```
CVS\database_scripts\Database Architecture\Database Scripts\  
Analytics Product Suite 7.0\XBR 7.0\XBR Retail 7.0\Oracle
```

or

```
CD: \DATABASE_SCRIPTS\RETAIL\UPGRADE\ANALYTICS_6.8\ORACLE
```



Due to Balance being dependent on XBR objects during and after an installation, it is necessary to upgrade XBR first, then Balance. And when upgrading the individual modules, the application schema upgrade script should always be run before the Data Model Schema upgrade scripts.

The following scripts will upgrade an existing or a new XBR 6.8.1 installation. Open and execute the following XBR Data Model and Application Schema upgrade scripts.

```
xbr_appl_681_to_700_upgrade.sql
```

```
xbr_data_681_to_700_upgrade.sql
```

Recompile all invalid views and procedures.

Install XBR 7.0.0 Upgrade Query Library

Use the following procedure to install the new Upgrade query library for XBR 7.0.0:

1. Create a temporary folder on a local hard drive.
2. Open a command prompt and navigate to the temporary folder you just created.
3. Copy the following files to the temporary folder:

- core_rpt_metadata_import.cmd
- metadata_upgrade.zip

These files can be found at:

```
CVS\database_scripts\Database Architecture\Database System  
Metadata\Analytics Product Suite 7.0\XBR 7.0\XBR Retail 7.0\Oracle\upgrade
```

or

```
CD: \DATABASE_SCRIPTS\RETAIL\UPGRADE\ORACLE\METADATA
```

4. Unzip the metadata zip file into the temporary folder.

5. Open the windows command file in a text editor and modify the database name, server name, and file location and **Save** the file.
6. At the command prompt, execute the windows command file:

 <drive>\<File Location>\core_rpt_metadata_import.cmd

 Log file for each table will be created for the number of rows deleted and a corresponding log file for the data load.
7. Review the log files for errors. If there are no errors, the metadata loaded successfully.

New SQL Server XBR and Balance 7.0.0 Database Installation

Creating a New XBR SQL Server Database

If beginning with a brand new SQL Server instance, initiate the database creation procedure with the following SQL script, `sp_pro_create_database.sql`. The database creation procedure will be created in the master database and used for all subsequent database creations. If this is an older SQL Server system, ensure the database procedure exists. If this is not needed, proceed to step 2.

1. Execute `sp_pro_create_database.sql` at:

```
CVS\database_scripts\Database Architecture\Database Scripts\  
Analytics Product Suite 7.0\XBR 7.0\XBR Retail 7.0\SQL Server
```

or

```
CD: \DATABASE_SCRIPTS\RETAIL\NEW_INSTALL\MSSQL
```

2. Make a copy of the SQL script `exec_sp_pro_create_database.sql` located at:

```
CVS\database_scripts\Database Architecture\Database Scripts\  
Analytics Product Suite 7.0\XBR 7.0\XBR Retail 7.0\SQL Server
```

or

```
CD: \DATABASE_SCRIPTS\RETAIL\NEW_INSTALL\MSSQL
```

3. Modify `DATABASE_NAME`, `FILE_LOCATION`, and `LOG_LOCATION` in the following three lines:

```
SET @DATABASE_NAME='NEWDB';  
SET @FILE_LOCATION='E:\MSSQL\Data\';  
SET @LOG_LOCATION='E:\MSSQL\Data\';
```



Make sure the target system's data and log directory locations are correct. The database name is whatever name you have chosen for your new database (the name must start with a character). The file and log locations have to be based on the SQL Server system as to where the database is being created. This is determined on how the DBA set up the resources on the system. You can get this information from the DBA.

*For example the database is named XBR700 and the DBA has set up a database directory on the E: drive in the following location -
E:\Microsoft SQL Server\Data*

The 3 lines in the script will look like this.

```
SET @DATABASE_NAME= XBR700;  
SET @FILE_LOCATION= E:\Microsoft SQL Server\Data\ XBR700\  
SET @LOG_LOCATION= E:\Microsoft SQL Server\Data\ XBR700\;
```

4. Open Microsoft SQL Server Management Studio and connect to the server you wish to create the new database on.
5. Open the script you just modified from `exec_sp_pro_create_database.sql`.
6. Highlight, copy and paste the contents of this script into a new query window and click **Execute** to create the new database. (It is OK if master is the database name in the window. The script forces it to use the master database.)
7. Once the new database creation is complete:
 - a. Refresh the database panel.
 - b. Select the new database.
 - c. Click **Query** to open a new query window that will run against the new database.
8. Open the XBR & Balance 7.0.0 database creation SQL script `build_database_70.sql` at:
`CVS\database_scripts\Database Architecture\Database Scripts\
Analytics Product Suite 7.0\XBR 7.0\XBR Retail 7.0\SQL Server`
or
`CD: \DATABASE_SCRIPTS\RETAIL\NEW_INSTALL\MSSQL`
9. The first line of the script is `USE NEWDB`. Change `NEWDB` to your new database name before running the script.
10. Find the second occurrence of `NEWDB`.
11. Change “`NEWDB`” and the default file location to be the same as the values you put in `exec_pro_create_database.sql` in step 3 above.

```
SET @DATABASE_NAME='NEWDB' ;
```

```
SET @FILE_LOCATION='E:\MSSQL\Data\';
```



Please make sure to leave the last Backslash in the file location!

12. Determine whether you want to build a partitioned database or a non-partitioned database.
 - a. If you want a non-partitioned database (default), continue with step 13.
 - b. If you want a partitioned database:

Adjust the retention period by updating the value PARTITION_DAYS, default is 90 days. By default, the partition scheme gets today's date and creates partitions 90 days back from today. There is also an option to supply an end date for the partitions. Whatever date you supply, the partition scheme will use that date as the high end value of the date range and build the partitions 90 days back from that date.
13. Copy the contents of this script into the new query window you just opened.
14. Make sure the new database name is showing in the database drop down box located at the lower right corner of the **Query** button.
15. Execute the script by clicking the **Execute** button.
16. Load the XBR & Balance 7.0.0 system table metadata using the Migration Utility and load the files. These XBR formatted .PSR files are located at:

```
CVS\database_scripts\Database Architecture\Database System  
Metadata\Analytics Product Suite 7.0\XBR 7.0\XBR Retail 7.0\  
SQL Server\metadata
```

or

```
CD: \DATABASE_SCRIPTS\RETAIL\NEW_INSTALL\MSSQL\METADATA
```

Unzip the psr files to a folder on the desktop.
17. The latest version of the Migration Utility must be installed. The Operations Technical team is well versed in using this utility to migrate data. You can find it on the CD at:

```
CD:\UTILITIES
```

 - a. Copy the utility to a folder on the desktop.
 - b. Execute migutil.exe to run the Migration Utility.
 - c. Once it is, click the **DB Connect** button to open the database connection dialog box.
 - d. Fill in the connection information for the database. Remember to set DBMS = MS SQL and PB Driver = Ole DB. If you are successful, you will see a message, "Connected to database".
 - e. Once connected, click the **Open Config** button and select the Import tab.
 - f. Make sure ALL tables with Replace Table option are selected.
 - g. Deselect the **Initialize Null Values** option before browsing to PSR files.
 - h. Click on the **Import** button and navigate to the location of the psr files. Click on the first .PSR file and click **OK**. The import will begin. You can review the log in MGT_LOG.TXT to see if the data was loaded correctly.



Not every table selected is loaded with metadata so ignore messages that psr file is missing.

Now the XBR and Balance 7.0.0 database installation is finished.

Inventory Product Installation

This is an **OPTIONAL** installation.

Use the following procedure to install the additional XBR Inventory product:

1. Execute the XBR Inventory upgrade script located at:

```
CVS\database_scripts\Database Architecture\Database Scripts\
Analytics Product Suite 7.0\XBR 7.0\XBR Inventory 7.0\SQL Server
```

2. Open `inventory_upgrade_core70.sql`.
3. Search for NEWDB and change the database name to the name of the database you are upgrading, as well as changing the file location to that of the database you are upgrading. The file location section is just below the second iteration of NEWDB.
4. Copy and paste (without saving back to CVS) into the Query window, using the database you are upgrading and then execute the script.
5. Load the Inventory 7.0.0 system table metadata using the Migration Utility. They are at:

```
CVS\database_scripts\Database Architecture\Database System
Metadata\Analytics Product Suite 7.0\XBR 7.0\XBR Inventory 7.0\
SQL Server\metadata
```

or

```
CD:\DATABASE_SCRIPTS\RETAIL\NEW_INSTALL\MSSQL\METADATA
```

6. Unzip the psr files to a folder on the desktop.



Only select the INV_STAT_SYNTAX and INV_TYPE_CONTROL tables. These are currently the only two metadata tables included with the Inventory product.

7. The latest version of the Migration Utility must be installed. You can find it on the CD at:

```
CD:\UTILITIES
```

 - a. Copy the utility to a folder on the desktop.
 - b. Execute `migutil.exe` to run the Migration Utility.
 - c. Once it is, click the **DB Connect** button to open the database connection dialog box.
 - d. Fill in the connection information for the database. Remember to set DBMS = MS SQL and PB Driver = Ole DB. If you are successful, you will see a message, "Connected to database".
 - e. Once connected, click the **Open Config** button and select the Import tab.
 - f. Make sure ALL tables with Replace Table option are selected.
 - g. Deselect the **Initialize Null Values** option before browsing to PSR files.

- h. Click on the **Import** button and navigate to the location of the psr files. Click on the first .PSR file and click **OK**; the import will begin. You can review the log in MGT_LOG.TXT to see if the data was loaded correctly.



Not every table selected is loaded with metadata so ignore messages that psr file is missing.

Now the XBR and Balance 7.0.0 database installation is finished.

Liferay Product Installation

For XBR Version 7.0.0, the Liferay portal has been stripped out from the full XBR database installation, and is now a separate module.

Use the following procedure to install the SQL Server Liferay 7.0.0 tables:

1. Open the database script liferay_tables_70.sql at
CVS\database_scripts\Database Architecture\Database Scripts\
Analytics Product Suite 7.0\Liferay 7.0\SQL Server
or
CD:\DATABASE_SCRIPTS\LIFERAY\NEW_INSTALL\MSSQL
2. Copy the contents into an SQL Query window and click **Execute** to create the Liferay tables.
3. Load the Liferay 7.0.0 system table metadata using the Migration Utility. They are located at:
CVS\database_scripts\Database Architecture\Database System
Metadata\Analytics Product Suite 7.0\Liferay 7.0\SQL Server\metadata
or
CD:\DATABASE_SCRIPTS\LIFERAY\NEW_INSTALL\MSSQL\METADATA
4. Unzip the psr files to a folder on the desktop.
5. The latest version of the Migration Utility must be installed. The Operations Technical team is well versed in using this utility to migrate data. You can find it on the CD at:
CD:\UTILITIES
 - a. Copy the utility to a folder on the desktop.
 - b. Execute migutil.exe to run the Migration Utility.
 - c. Once it is, click the **DB Connect** button to open the database connection dialog box.
 - d. Fill in the connection information for the database. Remember to set DBMS = MS SQL and PB Driver = Ole DB. If you are successful, you will see a message, "Connected to database".
 - e. Once connected, click the **Open Config** button and select the Import tab.
 - f. Make sure ALL tables with Replace Table option are selected.
 - g. Deselect the **Initialize Null Values** option before browsing to PSR files.

- h. Click on the **Import** button and navigate to the location of the psr files. Click on the first .PSR file and click **OK**; the import will begin. You can review the log in MGT_LOG.TXT to see if the data was loaded correctly.



Not every table selected is loaded with metadata so ignore messages that psr file is missing.

Now the XBR and Balance 7.0.0 database installation is finished.

Upgrade SQL Server XBR Database to 7.0.0



Before starting any upgrade, make sure you back up your database and the SQL Server must be set to a minimum compatibility level of SQL Server 2005 (90).

Upgrade XBR from XBR 6.8.1 to XBR 7.0.0

The upgrade scripts are in CVS or on the release CD at:

```
CVS\database_scripts\Database Architecture\Database Scripts\  
XBR & Balance 7.0.0\SQL Server
```

or

```
CD: \DATABASE_SCRIPTS\RETAIL\UPGRADE\ANALYTICS_7.0\ MSSQL
```

Due to Balance being dependent on XBR objects during and after an installation, it is necessary to upgrade XBR first, then Balance. And when upgrading the individual modules, the application schema upgrade script should always be run before the Data Model Schema upgrade scripts.

The following scripts will upgrade an existing or a new XBR 6.8.1 installation.

Open and execute the XBR Data Model and Application Schema upgrade scripts.

```
xbr_appl_681_to_700_upgrade.sql
```

```
xbr_data_681_to_700_upgrade.sql
```

Install XBR 7.0.0 Upgrade Query Library

Use the following procedure to install the new Upgrade query library for XBR 7.0.0:

1. Create a temporary folder on a local hard drive.
2. Open a command prompt and navigate to the temporary folder you just created.
3. Copy the following files to the temporary folder:

- core_rpt_metadata_bcp_in.cmd
- metadata_upgrade.zip

These files can be found at:

```
CVS\database_scripts\Database Architecture\Database System  
Metadata\Analytics Product Suite 7.0\XBR 7.0\XBR Retail 7.0\SQL  
Server\upgrade
```

or

```
CD:\DATABASE_SCRIPTS\RETAIL\UPGRADE\MSSQL\METADATA
```

4. Unzip the metadata zip file into the temporary folder.
5. Open the windows command file in a text editor and modify the database name, server name, and file location and **Save** the file.

6. At the command prompt, execute the windows command file:

```
<drive>\<File Location>\core_rpt_metadata_bcp_in.cmd
```

Log file for each table will be created for the number of rows deleted and a corresponding log file for the data load.

7. Review the log files for errors. If there are no errors, the metadata loaded successfully.

CHAPTER

6

Video Integration

OVERVIEW

This chapter describes how to set up video integration in XBR. This includes use of the pre-supported video vendors as well as the steps necessary to add support for other video vendors.

About This Chapter

The following sections are available in this chapter:

- To add and set up a custom video vendor [See “Setting up a Custom Video Vendor” on page 292.](#)



The version of XBR referenced in this document supports the following video vendors: Sensormatic, Arrowsight, Kyrus, Image Vault, Dedicated Micros, i3DVR remote, FocusMicro, ATVideo, NiceVideo, and Tempest.

Audience

This chapter is designed for the person responsible for configuring the video vendor portion of XBR. If using a supported video vendor, this person should be familiar with editing database tables and configuration files. If adding support for a custom video vendor, this person should be familiar with editing configuration files, and writing SQL and SQL stored procedures.



If you wish to add support for a custom video vendor and are not proficient with writing SQL and SQL stored procedures, please contact your MICROS-Retail representative.

Prerequisites

This chapter assumes:

- XBR has already been installed and is functioning properly.
- The database is one of the following: Oracle 10g/11g or MS SQL Server 2005/2008.
- If necessary, the upgrade scripts to XBR 7.0 have been properly installed in the database.
- Video system: These instructions assume that the video system provides playback using one of two modes:
 - Web-addressable playback - (preferred)- a specified video segment can be retrieved and played back by passing a derived URL to a web-browser. This will be the only supported mode in future web versions of XBR when video linking is added to the web product.
 - Stand-alone video player - a specified video segment is retrieved and played back by passing derived command-line arguments to a specified executable. This is currently supported in the XBR desktop but will not be supported in future web versions.

SETTING UP VIDEO INTEGRATION FOR A SUPPORTED VENDOR

This section is to be used to set up supported video vendors. At the present time, the supported video vendors for XBR are: Sensormatic, Kyrus, ArrowSight, ImageVault, DedicatedMicros, I3DVDRemote, FocusMicro, ATVideo, NiceVideo, 3VRVideoPlayer, and Tempest.

Before You Begin

Make sure that VIDEO_VENDOR, SITECODE, DEVICE_STRING, and VIDEO_FLAG are properly set for each register in the MST_REGISTER_TAB table.

Special Setup Required for ATVideo



If you are not using ATVideo, See ["Set Variables in PRO_SP_VARIABLES"](#) on page 289.

ATVideo requires that a time zone be added to the database so that it can be referenced. This process should be completed *prior* to any other steps taking place.

1. Run the following SQL statements to add the time_zone column to the mst_store_Tab table, re-create the view to include the table.

```
alter table mst_store_Tab
add time_zone varchar(20)
go

drop view MST_STORE
GO

CREATE view mst_Store as
select a.* from mst_Store_Tab a
GO

GRANT SELECT , UPDATE , INSERT , DELETE ON MST_STORE TO xbruser
GO
```

2. Run the following SQL statements to add variables for different time zones and the username and password fields to pro_sp_Variables. The script shown below is for the United States. Other countries can be accommodated by adding additional rows to the table using the appropriate offsets from GMT.

```
insert into pro_sp_Variables

values('ATVIDEO','Eastern','4','N','Eastern Time Zone Offset
Hours','4');
insert into pro_sp_Variables
```

```

values('ATVIDEO','Central','5','N','Central Time Zone Offset
Hours','5');
insert into pro_sp_Variables

values('ATVIDEO','Mountain','6','N','Mountain Time Zone Offset
Hours','6');
insert into pro_sp_Variables

values('ATVIDEO','Pacific','7','N','Pacific Time Zone Offset
Hours','7');
insert into pro_sp_Variables

values('ATVIDEO','Alaska','8','N','Alaskan Time Zone Offset
Hours','8');
insert into pro_sp_Variables

values('ATVIDEO','Hawaii','9','N','Hawaiian Time Zone Offset
Hours','9');
GO
insert into pro_sp_Variables

values('ATVIDEO','USERNAME','admin','N',null,'admin')
insert into pro_sp_Variables

values('ATVIDEO','PASSWORD','12345678','N',null,'12345678')
go

```

3. Populate the time_zone column in mst_store_Tab for each store in which you wish to use video with one of the following: Eastern, Central, Mountain, Pacific, Alaska, or Hawaii.

Set Variables in PRO_SP_VARIABLES

Several video vendors require specific information - such as usernames and passwords - in order to utilize their services. This general information is held within the PRO_SP_VARIABLES table in the XBR Database. These variables must be set before video vendor services can be used.

In addition to the vendor specific variables, there are a few general variables that may need to be configured. They are:

PROACT	REGRECEIPT
PROACT VIDEO	VIDEO_VENDOR
PROACT VIDEO	SECONDS PRIOR
PROACT VIDEO	SECONDS AFTER
PROACT VIDEO	LENGTH

The variables that need to be set depends on your video vendor. The following tables detail the information each video vendor requires. Modify these rows with your information. If no table exists for your supported video vendor, no configuration of the PRO_SP_VARIABLES table is necessary.

Arrowsight

SYSTEM	VAR_NAME	VAR_DATATYPE	VAR_VALUE and var_value2
ARROWSIGHT	CLIENTNAME	C	Your Username for ArrowSight
ARROWSIGHT	DISPLAYTYPE	C	"thumbnails"
ARROWSIGHT	SHAPRNESSVALUE	C	"2"
ARROWSIGHT	SPACING	C	" "
ARROWSIGHT	WEBSITE_NAME	C	beta.arrowsight.com

ATVideo

SYSTEM	VAR_NAME	VAR_DATATYPE	VAR_VALUE and var_value2
ATVideo	USERNAME	C	Your username for ATVideo
ATVideo	PASSWORD	C	Your password for ATVideo

Dedicated Micros

SYSTEM	VAR_NAME	VAR_DATATYPE	VAR_VALUE and var_value2
DEDICATEDMICROS	USERNAME	C	Your username for Dedicated Micros
DEDICATEDMICROS	PASSWORD	C	Your password for Dedicated Micros

FocusMicro

SYSTEM	VAR_NAME	VAR_DATATYPE	VAR_VALUE and var_value2
FOCUSMICRO	USERNAME	C	Your username for Focus Micros
FOCUSMICRO	COMMANDPORT	N	The port which you use to connect to FocusMicro, Default: 4550

SYSTEM	VAR_NAME	VAR_DATATYPE	VAR_VALUE and var_value2
FOCUSMICRO	DATAPORT	N	The port in which your program accepts data Default: 5550
FOCUSMICRO	PASSWORD	C	Your password for Focus Micros

i3DVR remote

SYSTEM	VAR_NAME	VAR_DATATYPE	VAR_VALUE and var_value2
I3DVRREMOTE	PARM1	C	"-n" Start at the next available frame
I3DVRREMOTE	PARM2	C	"-p" Play Video Immediately

Image Vault

SYSTEM	VAR_NAME	VAR_DATATYPE	VAR_VALUE and var_value2
IMAGEVAULT	USERNAME	C	Your username for Image Vault
IMAGEVAULT	PASSWORD	C	Your password for Image Vault

3VR Video Player

SYSTEM	VAR_NAME	VAR_DATATYPE	VAR_VALUE and var_value2
3VRVIDEOPLAYER	USERNAME	C	Your username for 3VR
3VRVIDEOPLAYER	PASSWORD	C	Your password for 3VR

Update XBR Desktop's dtvanalytics.ini file.

On the machine where the XBR Desktop is installed, open the <Drive>:\<Installation Directory>\XBR\dtvanalytics.ini file.

1. Search for the [video] section. The section should look similar to the following:

```
[video]
SENSORMATIC=..\SENSORMATIC.EXE
KYRUS=[Your Path Here]
IVEX=[Your Path Here]
ARROWSIGHT=[Your Path Here]
MIRASYS=[Your Path Here]
```

```
KALATEL=[Your Path Here]
IMAGEVAULT=[Your Path Here]
DEDICATEDMICROS=[Your Path Here]
I3DVRREMOTE=[Your Path Here]
FOCUSMICRO=[Your Path Here]
VERINT=[Your Path Here]
3VRVIDEOPLAYER=[Your Path Here]
INTEGRAL=V:\Integral\QuickSearchViewer\IntegralQuickSearchViewer.exe
```

If there is no [video] section in your dtvanalytics.ini file, add the section to the file as shown above.

2. Delete all lines from [video] section which you will not be using.
3. For each video vendor you are using, enter the path to the vendor's executable. For Arrowsight, which uses a browser to display the video, use the path to the desired browser, for example:

```
MYVIDEO=C:\Program Files\Internet Explorer\iexplorer.exe
```

SETTING UP A CUSTOM VIDEO VENDOR

Before you begin, Make sure that VIDEO_VENDOR, SITECODE, DEVICE_STRING, and VIDEO_FLAG are properly set for each register in the MST_REGISTER_TAB.



The Video Vendors Ivex, Mirasys and Kalatel all have demonstration implementations configured within the sp_pro_video procedure. If you use these vendor names, these demos will run instead of your custom stored procedure. Therefore, it is necessary to either use a name for the vendor other than IVEX, MIRASYS, or KALATEL or comment-out the relevant sections of sp_pro_video.

Creating a Custom Stored Procedure

For Video Vendors which are not currently supported by XBR, it is necessary to create a new stored procedure within the database to generate the necessary file or website address in a form usable by the video system.

The stored procedure should take in a specified list of variables and output the parameters used by your video program to open the appropriate file.



It is recommended that you use the naming convention: SP_PRO_VIDEO_video_vendor_id to avoid naming collisions with other stored procedures.

MS SQL		Oracle	
Input Field Name	Input Field Type	Input Field Name	Input Field Type

MS SQL		Oracle	
@PN_STORENUM	NUMERIC,	pn_storenum	NUMBER
@PN_REGNUM	NUMERIC	pn_regnum	NUMBER
@PDT_TRANSDATE	SMALLDATETIME	pdt_transdate	DATE
@PS_START_TIME	VARCHAR(8)	ps_start_time	VARCHAR2
@PN_TRANSNUM	NUMERIC	pn_transnum	NUMBER
@PS_END_TIME	VARCHAR(8)	ps_end_time	VARCHAR2
@PS_SITECODE	VARCHAR(20)	ps_sitecode	VARCHAR2
@PS_DEVICE	VARCHAR(20)	ps_device	VARCHAR2
@PS_MISC1	VARCHAR(30)	ps_misc1	VARCHAR2
@PS_MISC2	VARCHAR(30)	ps_misc2	VARCHAR2
@PS_MISC3	VARCHAR(30)	ps_misc3	VARCHAR2
@PS_MISC4	VARCHAR(30)	ps_misc4	VARCHAR2
@PS_MISC5	VARCHAR(30)	ps_misc5	VARCHAR2
@PS_MISC6	VARCHAR(30)	ps_misc6	VARCHAR2
@PS_MISC7	VARCHAR(30)	ps_misc7	VARCHAR2
@PS_MISC8	VARCHAR(30)	ps_misc8	VARCHAR2
@PS_MISC9	VARCHAR(30)	ps_misc9	VARCHAR2
@PS_MISC10	VARCHAR(30)	ps_misc10	VARCHAR2
Output Field Name	Output Field Type	Output Field Name	Output Field Type
@P_RTNSTR_OUTPUT	VARCHAR(1020)	pn_rtncode	NUMBER
		ps_rtnstr_output	VARCHAR2



The SQL code which generates the parameters for the each of supported video vendors is located in the pro_sp_video stored procedure. These sections can be used as examples when creating your custom stored procedure.

The meaning of the above parameters is mapped into the stored procedure using the Video Link Field Mapping tool in the Administration tools from the XBR Desktop application. Instructions on setting this up are provided later in the chapter. [See "Register/Video Master" on page 295.](#)

Registering the stored procedure

To register the stored procedure you just created, add a row to the EXT_VIDEO_VENDOR table. The VIDEO_VENDOR field should contain the Video Vendor ID and VIDEO_PROCEDURE should contain the name of your stored procedure.

Updating XBR Desktop's dtvanalytics.ini file

On the machine where the XBR Desktop is installed, open the installation folder for the <Drive>:\<Installation Directory>\XBR\dtvanalytics.ini file.

1. Search for the [video] section. The section should look similar to the following:

```
[video]
SENSORMATIC=..\SENSORMATIC.EXE
KYRUS=[Your Path Here]
IVEX=[Your Path Here]
ARROWSIGHT=[Your Path Here]
MIRASYS=[Your Path Here]
KALATEL=[Your Path Here]
IMAGEVAULT=[Your Path Here]
DEDICATEDMICROS=[Your Path Here]
I3DVRREMOTE=[Your Path Here]
FOCUSMICRO=[Your Path Here]
VERINT=[Your Path Here]
3VRVIDEOPLAYER=[Your Path Here]
INTEGRAL=V:\Integral\QuickSearchViewer\IntegralQuickSearchViewer.exe
```

If there is no [video] section in your dtvanalytics.ini file, add the section to the file as shown above.

2. Delete all lines from [video] section which you will not be using.
3. Within this block, add an entry for your video vendor ID. Use the vendor ID as the key and use the path to the executable used to view that vendor's video as the value. For vendors that use a browser to display the video, use the path to the desired browser, for example:

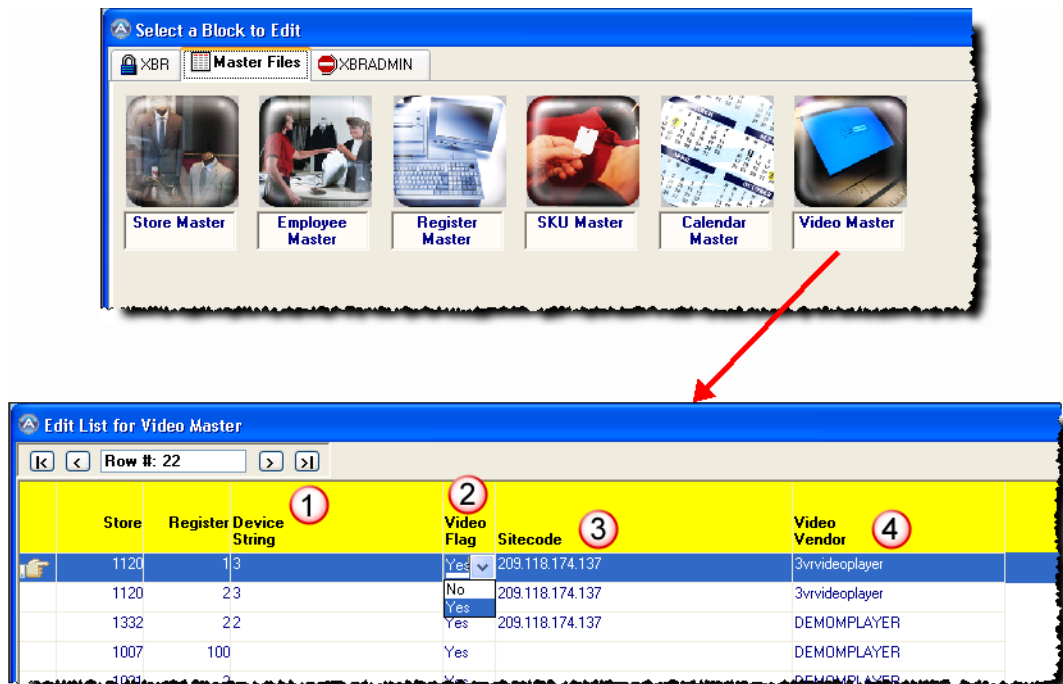
```
MYVIDEO=C:\Program Files\Internet Explorer\iexplorer.exe
```


REGISTER/VIDEO MASTER

Use the Table Editor to modify a field in the Register/Video Master, indicating which stores are video enabled.

The system displays an error message if you try to link a video clip for a store without video capabilities.

The Register/Video Master allows for the cross-correlation entry of which camera is on what register for a given store. This ensures the appropriate video links are established from XBR queries.



1

The Device String is the camera number.

2

The Video Flag indicates whether the video for the register is enabled (Yes) or not (No).

3

The site code represents the IP address for the store's video system.

4

The video vendor directs the application to call the appropriate video viewer for this store/register combination.

VIDEO LINK FIELD MAPPING

1. In the XBR Desktop application, select the **Administration → Configuration → Video Link Field Mapping** to open the Maintaining Fields for Video Links window.



Figure 6-1: Maintaining Fields for Video Links Dialog

2. Click the **Add** button to create a new row.
3. Select the "end_time" field in the newly created Field pull-down menu.
4. Enter "EndTime" in the newly created Header text field.
5. Click the **Save** button. This closes the window.
6. Open the Queries List.
7. Right-click on a query and select 'Link'. This opens up the Link Field Maintenance dialog.

8. Click **Video**. This opens up the Video Link Field Mapping dialog for this query.

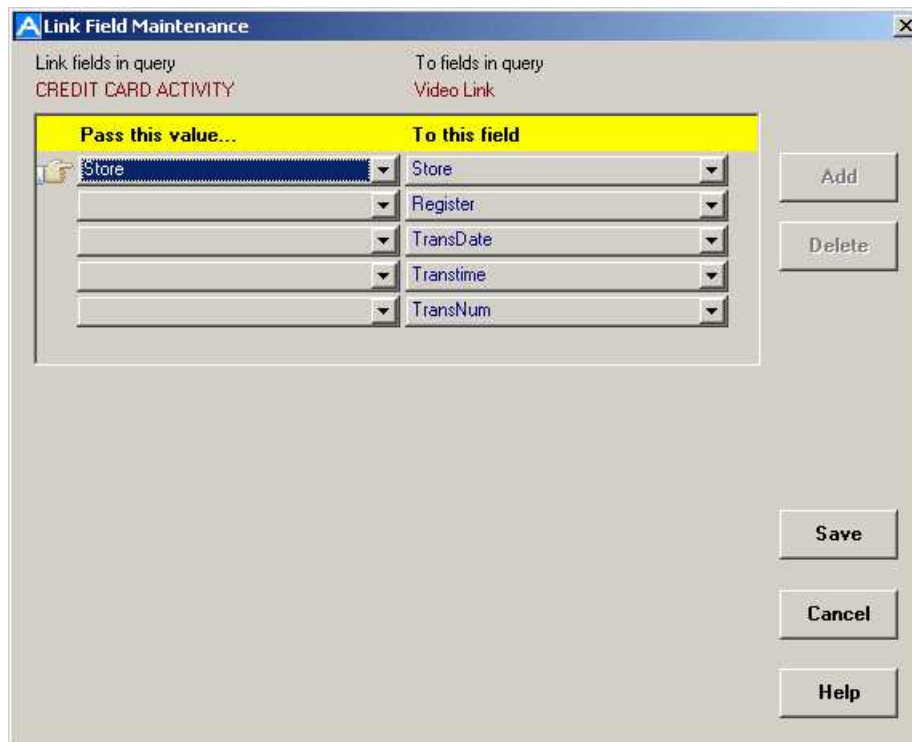


Figure 6-2: Link Field Maintenance Dialog

9. Match the “Pass this value...” field to the “To this field” for each item in the list.
10. Click **Save**. This closes the Link Field Maintenance dialog.
11. Repeat steps 7 - 10 for each query used by your organization which requires video integration.

CHAPTER

7

PCI Data Security

OVERVIEW

PCI is the Payment Card Industry data security standard. PCI protects credit and debit numbers by imposing security requirements on the storage and dissemination of account numbers.

About This Chapter

This chapter describes how MICROS-Retail has implemented data security for the Analytics application suite to ensure compliance with PCI.

MICROS-Retail uses the AES-256 Standard (where AES stands for “Advanced Encryption Standard” and 256 is the key size in bits) for encryption which is an approved encryption method for PCI standards.

- [PCI Data Security Files](#)
- [PCI Data Security Database Changes](#)
- [Account Number Security File](#)
- [TradeCipher](#)
- [ETL](#)

PCI Data Security Features

The following features are provided for PCI Data Security in our Analytics suite of products, including XBR and BALANCE:

- Account number masking - The user can select first 6/last 4 or last 4 only.
first 6/last 4 => 123456XXXXXX1234
last 4 => XXXXXXXXXXXX1234
- Account number hashing - This provides a unique representation of an account number that masking cannot. A “salting” mechanism is also used to increase the security of the hashed value. A hashed value **cannot** be reverse processed to obtain the raw account number.
- Encryption/Decryption - This process allows *authorized* users to decrypt and view the raw account number in XBR reports (only if Datavantage encryption is used). An audit log is maintained that lists the users that have accessed the decryption functionality.
- Added database security by way of securing database login information.

PCI CONFIGURATION

Settings

If you use PCI (Payment Card Industry standard), you must have a set of files that are part of PCI data security and that must be located in particular places:

- **DIGSEND.DLL** - performs the actual encryption. It is placed for you by the application installer along with rest of DLL files.
- **PRO_COMP.PBD** - XBR internal key. It is placed for you by the application installer along with rest of PBD files.
- **XBR.LIC** - XBR key license file containing the encrypted second password for XBRADMIN. It is placed for you by the application installer one level up from the application folder.
- **COMP65.TXT** - encrypted configuration file. It has to be created by the System Administrator using either XBR or BALANCE. This file should be placed on a network drive to make it accessible by the front-end and back-end applications, and it is not part of installation.

Account Number Security

In order for customer System Administrators to be able to configure PCI Account Number Security, XBRADMIN must enable PCI for the customer.

Use the following procedure to enable PCI:

1. Log in as XBRADMIN.

2. Select **Administration** → **Configuration** → **General Defaults**.

Figure 7-1: Enable PCI Check Box

3. Select **Enable PCI**.
4. Click **Save**.

Encrypted User ID and Password

If you use a generic user ID and/or password for connecting to the database, and you provide them through the application's .INI file, you may want to encrypt them, like the following example:

UserId=530DFF31DBA74A83D30CDA7CC31CF229

DatabasePassword=0A30DFF31DBCf2293D30CD7CC31F31DB



Only the System Administrator can provide the encrypted values. Generate the encrypted user ID and password by using the XBR Administrator tool as described below.

To use the encrypted user ID and password, you must have the entry "EncryptedPassword" in the file `dtvlauncher.ini`. The entry must be in the [XBR Database]) section of the file and its value must be set to "TRUE" or "Y". Either of these two entries are acceptable:

EncryptedPassword = TRUE

or

EncryptedPassword = Y

To generate the encrypted user ID and password, use the XBR Administrator tool, as described in the following procedure:

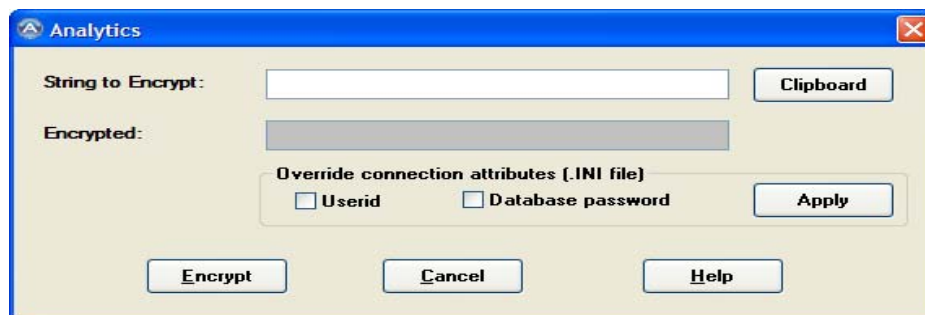
Within the General Default Maintenance dialog box there is an option to **Encrypt** a common user ID with the .ini files. The encrypted strings are automatically entered into the following files:

```
-- dtvanalytics.ini
-- dtvbalance.ini
-- dtveditor.ini
```

Once you encrypt the user ID and password within the files, the encryption string replaces the unencrypted ID and password.

Perform the following steps to encrypt a user ID and password:

- 1) In the XBR front end, select the **Administration → Configuration → General Defaults** menu option.
- 2) Click the **Encrypt** button.
- 3) Type the user ID to encrypt in the String to Encrypt text box.
- 4) Click the **Encrypt** button. The encrypted number is displayed in the Encrypt text box.
- 5) Click the **Clipboard** button to copy the Encrypted value to the clipboard.
- 6) Check the **UserId and/or Database** password check boxes in the Override Connection Attributes (ini files) section. This will place the encrypted values in the .ini files instead of displaying the actual password and ID.
- 7) Click the **Apply** button.
- 8) Click the **Cancel** button to exit the dialog box.
- 9) In the text editor being used for the dtvlauncher.ini file, select the **Edit** button, then the **Paste** menu option. The encrypted user ID and password are entered in the file.
- 10) Delete the old, unencrypted UserId and DatabasePassword lines in the file.
- 11) Save the file.



PCI DATA SECURITY FILES

The following is a list of files that are used by, related to, or part of PCI Data Security:

File Name	Description
dtvAnalytics.exe	Front-end Windows LP Exception Reporting application.
dtvBalance.exe	Front-end Windows LP Audit application.
dtvLauncher.exe	Back-end Windows Query Launcher program.
mail.exe	Back-end Windows Query Mailer program.
digsend.dll	Application Programming Interface for encryption routines. This file performs the actual encryption of the account number.
xbrcomp.exe	Back-end file encryption program.
xbrcompr.exe	Back-end wrapper to do data load and run stored procedures.
pro_comp.dll or .pbd	XBR internal Key ID-Key pairs created by Trade Cipher. This file stores the key used to encrypt/decrypt the password for database connectivity. Contains ANS file.
comp.txt	<p>This is an <i>encrypted</i> configuration file that contains secure information for the front-end and back-end applications. This file contains the information provided by the user on the Account Number Security page in the front-end application.</p> <ul style="list-style-type: none"> ■ The file can be named anything, comp.txt is just an example. ■ Should be placed on network drive to be accessed by front-end and back-end applications.
rigidn.dll	<p>Customer Key ID-Key pairs created by Trade Cipher.</p> <ul style="list-style-type: none"> ■ This file has multiple keys by date. ■ Should be placed on network drive to be accessed by front-end and back-end applications.
xbr.lic	XBRADMIN key license file. This file contains the encrypted second password for XBR Admin.

File Name	Description
init.ksh	<p>Initialization and control file. Contains all variables for specific customers. Transform must be running.</p> <p>If a loader is not necessary then set entry XGV_RUN_LOADER=NO.</p> <ul style="list-style-type: none"> ● XGV_RUN_COMP - This turns on the Account Number Security functionality. Valid entries are YES and NO, the default is NO. All entries below are not applicable if this is set to NO. ● XGV_PCI_FILE, XGV_PCI_FILE2 - This is the name and location of the transform control directory of the file that contains the credit card data to be encrypted. This file will be masked, hashed and encrypted in place. This entry is required. XGV_PCI_FILE2 is optional and used for encrypting an additional file. Example: results/pos_staging_trand.dat ● XGV_PCI_COMPFILE - This is the name and location of the Account Number Security File. A UNC naming convention may be used or a drive letter designator. This entry is required. This file should be available on a network drive so it can be accessed by front-end and back-end applications. <i>Examples:</i> \\servername\xxxx_qa\version6.x_platform6.x_MSSQL\comp_qa6x.txt X:\xxxx_qa\version6.x_platform6.x_MSSQL\comp_qa6x.txt ● XGV_PCI_FILEOUT - This is the name and location from the transform control directory of the optional output file that will contain the encrypted credit card data. Normally the file is masked, hashed and encrypted in place. This entry is optional. Example: results/adc_pos_data_tmp.dat ● XGV_PCI_TRANSDATE_TYPE - This overrides the transaction date format in the input file. Normally XGV_SQLTYPE is used to determine the date format. The only valid entry is STORE21. This is normally used if the loader is not generating the data files. Example: STORE21

PCI DATA SECURITY DATABASE CHANGES

This section describes the changes that were made to the database in order to implement PCI Data Security.

Tables/Fields

The following tables contain new and/or changed database fields.

Table 7-1: *POS_TND_TAB (6.0 data model), XBR_AS_TENDER_TAB and XBR_NS_TRAND_TAB (5.0 data model)*

Attribute	Type	Description
ACCOUNTNUM	varchar(30)	The mask value of the account number. The mask can be first 6/last 4 or last 4.
ACCOUNTNUM_HASH	varchar(40)	The hash value of the account number.
ACCOUNTNUM_ENCRYPT	varchar(96)	The encrypted value of the account number.
ACCOUNTNUM_KEYID	numeric(9)	The ID of the current customer key.

Attribute	Type	Description
COMPRESS_FLAG	char(1)	Specifies whether the account numbers associated with the specific tender will be encrypted/decrypted.

Attribute	Type	Description
WINDOW_TIMEOUT	numeric(5)	Default = 60 Identifies the length of time in seconds that PCI-related windows (i.e. Account Number Security, db Role, accountnum popup, etc.) stay open.
EXPIRE_DAYS	numeric(5)	Default = 120 Identifies the number of days before the next password expires (MS SQL-Server™ only)

Attribute	Type	Description
CHECK_EXPIRE_DAYS	numeric(5)	Default = 10 Specifies the number of days before the password expires to check and display warning during login.
CHANGE_PASSWORD	varchar(1)	Allows the user to change their password within the application.

Attribute	Type	Description
DCRTACT	numeric(10)	Flag that specifies whether the user can decrypt.
EXPIRE_DATE	datetime(8)	When a user's password will expire (MS SQL-Server™ only)

Views

The PRO_COMP_VARIABLES and PRO_SP_VARIABLES views contain variables for the application.

The PRO_CHECK_PASSWORD view reports when the user's password will expire. There are different views for MSSQL and Oracle.

Roles

xbrconnect - Standard Role

xbruser - Application Role, password protected

Any users that will be running the XBR or Balance applications should be granted the standard xbrconnect role. Users logging into these applications will be granted the application role xbruser by the corresponding application.

This is done by a stored procedure named `sp_xbr_enable_role`. The SQL statement to apply the application role is passed to the application, which has a default password of 'rolepassword'. The application role xbruser would need to be created with this password.

A different password can be saved/encrypted in the application, but the application role xbruser would need to be created with this new password. Changing the password on the front-end application does not regenerate the password assigned to the application role xbruser.

ACCOUNT NUMBER SECURITY FILE

The Account Number Security file is created by the XBR application and contains information input by the user.

Account Number Security

Filename:

Level: ☒ Save location to database

CustomerID:

Client file:

ETL file:

ETL User: ETL Password:

Passphrase: Passphrase will need to recreated at ETL

Mask:

Delimiter:

Column number Transdate:

Column number Rectype: Rectype:

Column number Reccode: Additional Reccodes: Example: 416,417
Included: 409,420,430,431,432,433,434,435, 09,20,30,31,32,33,34,35

Column number Accountnum:

Column number SHA: Column name:

Column number AES: Column name:

Column number Keyid: Column name:

Figure 7-2: Account Number Security Form

Account Number Security Form Field Descriptions

Field	Description
Filename	This is the name and location of the Account Number Security File. The information that is entered in this window will be placed in this encrypted file. The file can have any name desired. The location can be specified using a Universal Naming Convention (UNC) or a drive letter designator.
Save location to database	If this is checked, the configuration file name and location will be saved to the database. This will be used by subsequent logins of users to the database.
Level	<p>This is the level in which encryption/decryption data and functionality will be stored. There are three levels: NONE, SHA, SHA/AES.</p> <ul style="list-style-type: none"> ■ NONE will shut off the encryption and decryption of credit card data. <p>NOTE: Encryption/decryption can also be turned on and off with the XGV_RUN_COMP variable in the <code>init.ksh</code> file.</p> <ul style="list-style-type: none"> ■ SHA will do masking and SHA1 hash against credit card data. ■ SHA/AES will use masking, SHA1 hash and AES256 encryption/decryption on credit card data.
CustomerID	This is the ID that is assigned to the customer's installation. The <code>digsend.dll</code> will use this to validate the customer. The ID is also used as salting for the SHA1 hash algorithm.
Client File	This is the name and location of the <code>rigidn.dll</code> key file used by XBR. The location can be specified by a UNC or a drive letter designator.
ETL File	This is the name and location of the <code>rigidn.dll</code> key file used by the back-end programs <code>xbrcomp</code> and <code>xbrcompr</code> . This location can be the same as the Client file. A separate ETL file is for Unix installations where a mapped or NFS mount cannot be established. The location can be specified by a UNC or a drive letter designator.
ETL User	This is the username of the account that will be used to connect to the database and load and run procedures for the application. This user must be an owner of the database objects.
ETL Password	This is the password that is used by the ETL User.

Field	Description
Passphrase	This is a PGP passphrase used for decrypting tlogs and back-end ETL process log files. Changing this passphrase does not change the associated key setup on the back-end; this must be done separately. This is primarily used to receive the customer's encrypted files so that they can be decrypted to run through the back-end ETL process.
Mask	<p>This is the mask that will be used on credit card data. There are currently two masks:</p> <ul style="list-style-type: none"> ■ First6-Last4 (@@@@@@XXXXXX@@@@) <p>This shows the first six and last four numbers on a credit card.</p> ■ Last4 (XXXXXXXXXXXX@@@@) <p>This shows the last four numbers on a credit card.</p>
Delimiter	This is the column delimiter used in the processed tlog file or the incoming tlog file. There are currently four delimiters used: Ascii253, Colon, Pipe, Tab.
Column number Transdate	This is the column number where the transaction date is located in the processed tlog file or the incoming tlog file.
Column number Rectype	This is the column number where the record type is located in the processed tlog file or the incoming tlog file.
Rectype	This is the record type that is used to find a credit card transaction. (Example TND)
Column number Reccode	This is the column number where the record code is located within the record type in the processed tlog file or the incoming tlog file.
Additional Reccodes	These are additional record codes that will be encrypted. The numbers should be comma separated (i.e. 416, 417) Record codes that are already included are: 409, 420, 430, 431, 432, 433, 434, and 435 for the 6.0 data model and 09, 20, 30, 31, 32, 33, 34, and 35 for the 5.0 data model.
Column number Accountnum	This is the column number where the account number is located for the record code within the record type in the processed tlog file or the incoming tlog file.
Column number SHA	This is the column number where the SHA1 hash algorithm will be stored for the account number for the record code within the record type in the processed tlog file or the incoming tlog file.

Field	Description
Column name for SHA	This is the column name that is used internally by the front-end applications for decrypting an account number. This is also used for backward compatibility.
Column number AES	This is the column number where the AES256 encrypted data will be stored for the account number for the record code within the record type in the processed tlog file or the incoming tlog file.
Column name for AES	This is the column name that is used internally by the front-end applications for decrypting an account number. This is also used for backward compatibility.
Column number Keyid	This is the column number where the key number for the encrypted data will be stored for the account number for the record code within the record type in the processed tlog file or the incoming tlog file.
Column name Keyid	This is the column name that is used internally by the front-end applications for decrypting an account number. This is also used for backward compatibility.

TRADECIPHER

This application should be installed and used to generate keys before the XBR application is installed. For more information about TradeCipher, refer to the *TradeCipher User Manual*.

For XBR users, typically only the Manage Cipher File tab is used. The information in this tab is used to generate the Key ID/Key pair used to encrypt/decrypt the account numbers.



The Manage Cipher File tab is only accessible to administrators and key administrators.

Key ID	Effective Date	Expiration Date	Mode	Padding	Encoding	Key Data
1	2006-05-02	2006-07-01	ECB	PKCS5	HEX	62E24AC2513828952A516C941F76A9E7227635F65B3A0778E56E
2	2006-05-02	2006-07-01	ECB	PKCS5	HEX	62E24AC2513828952A516C941F76A9E7227635F65B3A0778E56E
3	2006-06-01	2006-07-31	ECB	PKCS5	HEX	7E38531330F499F6B9A781531A418E29D357585ADE2500272F74
4	2006-07-01	2006-08-30	ECB	PKCS5	HEX	7FC81FD36181897722374AE3EEC8C305ED923450AEE09E73700
5	2006-07-31	2006-09-29	ECB	PKCS5	HEX	2A3985138976384F270A168216D85AB6398739E863FD2DC358D4
6	2006-08-30	2006-10-29	ECB	PKCS5	HEX	85340407F1124AB6E29352828A380FB58A1580E3C1CD8F4EB66
7	2006-09-29	2006-11-28	ECB	PKCS5	HEX	4C3B80883C5D5F1D467E481340F4319738CC25D77CD2236895C

Figure 7-3: TradeCipher - Manage Cipher File Tab

ETL

The Extract Transform Load (ETL) process has three main components: Gather, Transform, and DBProcess.

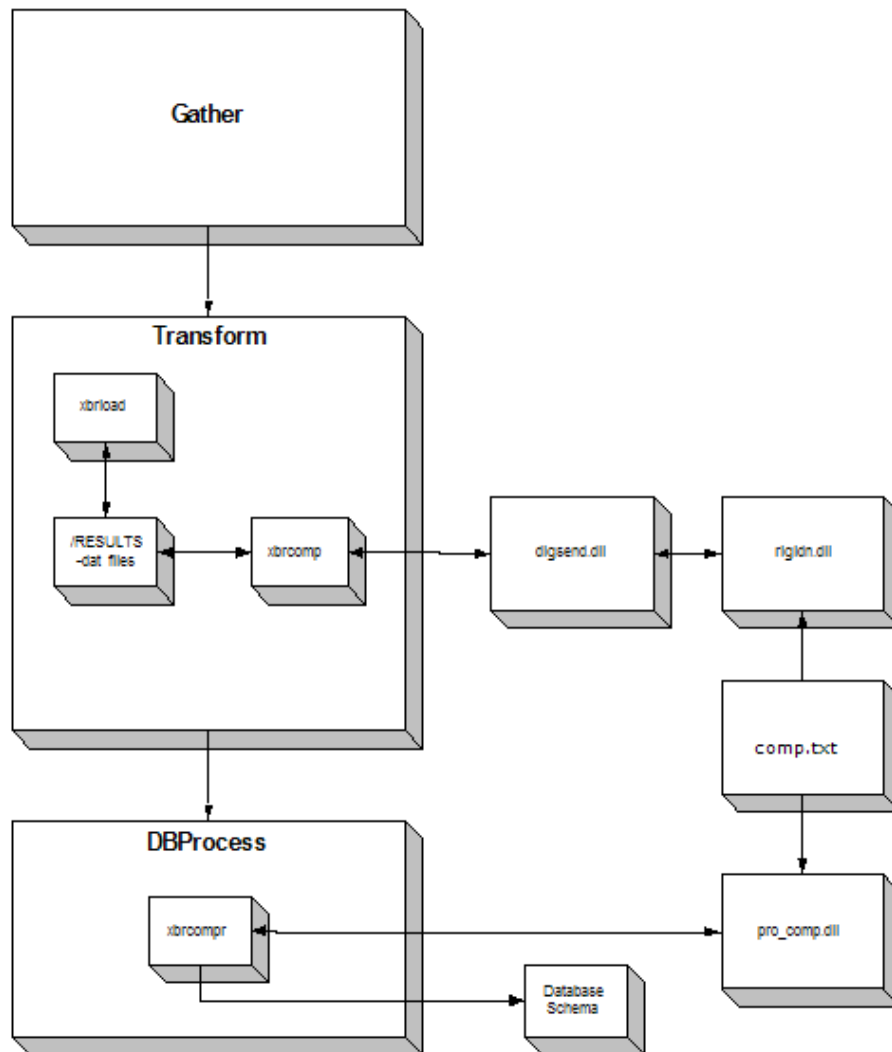


Figure 7-4: PCI-ETL Process

The Gather step has not changed as a result of PCI Data Security; it retrieves the tlogs from the designated directory and prepares them for the Transform step.

In the Transform step, **xbrload** formats the tlogs and loads them into a data file. Once the data file is complete, **xbrcomp** creates the hash, mask. It passes the account number and Key ID to **digsend.dll**. **digsend.dll** opens **rigidn.dll**, parses for the Key Id and obtains the Key. The key is used to encrypt the account number which is returned to **xbrcomp**. The location of **rigidn.dll** is stored in the **comp.txt** file.

In the DBProcess step, **xbrcompr** loads the records from the data files into the database. **xbrcompr** must obtain the ETL User password from the **pro_comp.dll** to be able to access the database.

CHAPTER

8

Employee Violations Dashboard

OVERVIEW



For information on configuring the EVD function and modifying the logo and instruction on the report, see [“Employee Violations Dashboard” on page 187](#).

Employee Violations Dashboard (EVD) is a unique distribution on alert reports. EVDs can be generated for each employee/cashier that has exceeded one or more alert filters configured in a scheduled query. If an employee exceeds multiple thresholds, the EVD will contain the description and details of each one that was exceeded. The EVDs are distributed as a PDF attachment via email to each recipient on the scheduled run.

The content of the EVDs includes:

- summary data for the cashier of the key metrics related to the alert threshold reached
- averages for the other cashiers in the store
- averages for all cashiers in the chain
- description for the KPI constraint reached
- alert history for the cashier
- watch status and note history for the cashier
- hyperlink to the Web application



The report that is scheduled with an alert can only have one record per cashier/employee.

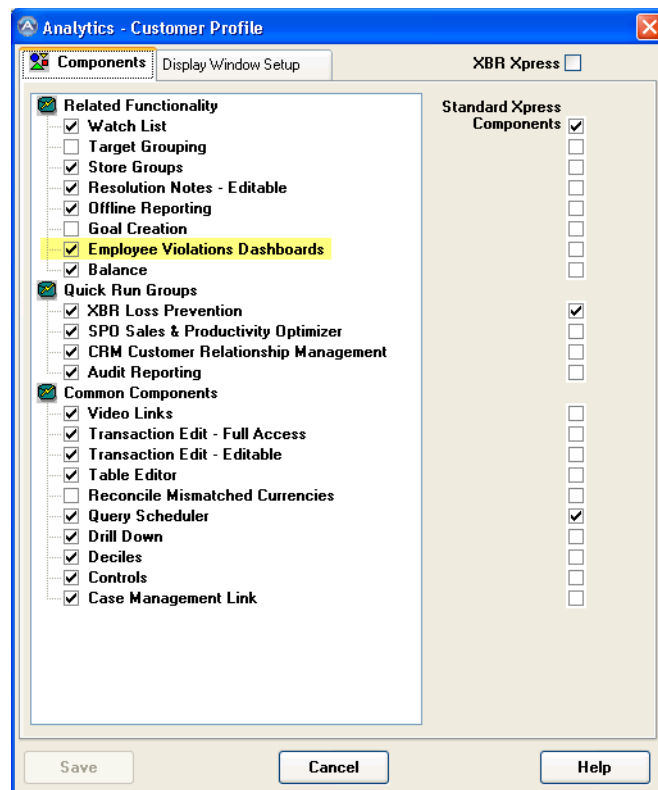
Alert thresholds can contain compound statements, but they must be separated by parentheses.

In an alert string, there must be a space before and after comparators so it can be parsed properly.

ENABLING EVD

If upgrading to XBR 7.0, the default condition for EVD for a customer is “Off”. EVDs must be enabled through the Customer Profile page in XBR Desktop:

1. Log in as “XBRADMIN”.
2. Select **Administration → Customer Profile**.
3. In the **Related Functionality** section, check Employee Violations Dashboards (highlighted below) to enable EVD for the customer.



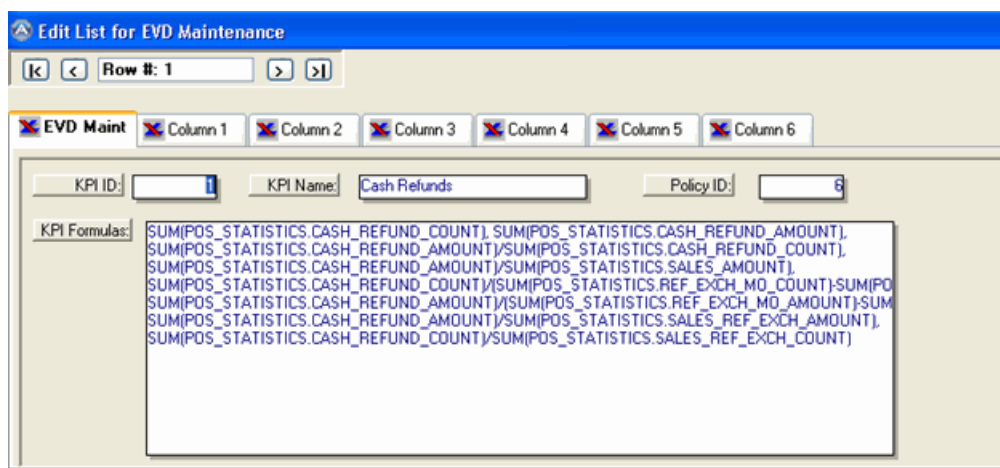
EVD MAINTENANCE



In the Table Editor, there is a block that allows XBRADMIN users to maintain the following aspects of EVD configuration:

- Fields and formulas that tie an alert filter to specific EVD KPI violation
- Link a KPI violation to corresponding policy note id
- Configure content, layout, and formatting for KPI Summary section

This block can be used to modify existing EVD KPI violations or add new ones.



On the first tab (EVD Maint), the following fields are maintained:

KPI ID	This is the unique identifier for EVD KPI violation. These need to be manually entered and should be issued sequentially if a new EVD KPI violation is added.
KPI Name	This is the name of the EVD KPI violation that will be displayed on the EVD report.

Policy ID

This is the ID of the policy note (PRO_POLICY_NOTES.POLICY_ID) that appears as the description on the EVD. The policy IDs can be found by using the Table Editor block for Policy Notes.

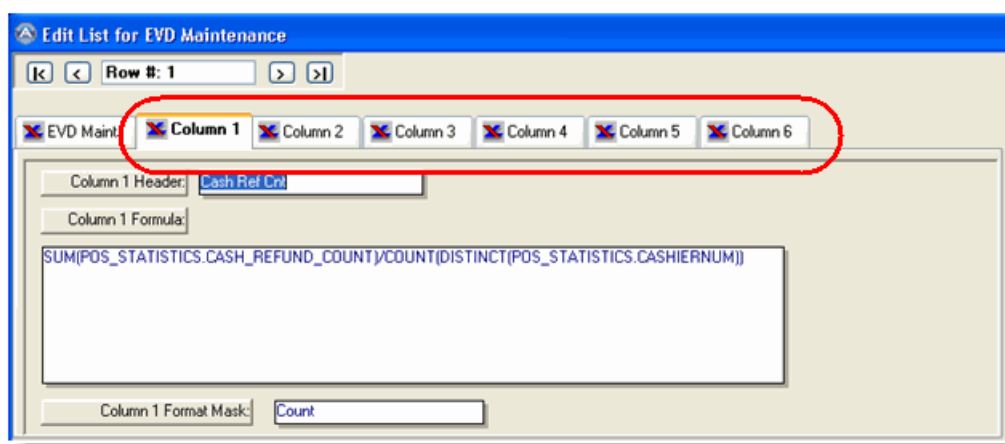


Policy ID	Policy Name	Policy	Page ID
1	EMPLOYEE SALES	Enter your company's employee discount policy or investigative steps for discount abuse here.	1
4	FUNDS/EXCHANGES	Enter your company's refund/exchange policy or investigative steps for refund/exchange fraud here.	1
5	VOIDS	Enter your company's void policy or investigative steps for void fraud here.	1
6	CASH REFUNDS	Cash refund fraud is one of the most common areas of dishonesty in retail environments. Cashiers often ring fictitious returns without a customer or merchandise present...	1
7	POST VOIDS	A post void is a transaction type that cancels a transaction previously completed and tendered, generally occurring in the same day. Post voids can be suspicious even if the void is legitimate...	1
8	CASH POST VOIDS	A post void is a transaction type that cancels a transaction previously completed and tendered, generally occurring in the same day. Cash post voids are the riskiest transaction...	1
9	CANCELS	A cancel or mid-void is a void of an entire transaction prior to tendering and completing the sale. A receipt may or may not be generated by the POS. Cancels provide an...	1
10	LINE VOIDS	A line item void allows one or more SKUs within a transaction to be voided/removed prior to the transaction being completed and tender received from the customer.	1
11	NO SALES	A "no sale" is a transaction that is rung to specifically open up the cash register drawer without a sale taking place. While there are several legitimate reasons to ring a...	1
12	LINE DISCOUNTS	Line item discounts can be an indication that an item is on sale, a coupon is being used, or the customer is entitled to a percentage or dollar discount off the PLU price.	1
13	PRICE OVERRIDES	A price override is a complex function that allows a user to override the PLU price that automatically comes up from the system. An override is used...	1

NOTE: You will see all policy notes, not just those used for EVD violation descriptions. This block is *read-only*. The Policy Notes themselves should be created and maintained using Policy Notes Administration in XBR Analytics.

KPI Formulas

The fields and formulas listed in the text box are what associates an alert filter with a specific EVD KPI violation. The exact syntax of the formula in the column of the query that is used for the alert filter must be listed here in order for the EVD to be populated with the correct violation information.



The next six tabs are used to configure the column headers, metric formulas, and formatting for each column present in the KPI Summary for each EVD violation.



All six columns may not always be used and the width of the layout should be considered.

KPI Summary

Cancels	Cancel Cnt	Cancel Amt	Cancel Avg	Cancel Pct Ttl Trans	Cancel Pct Net Sales
Agatha Julian	11	\$ 138.85	\$ 12.62	5.37%	1.32%
Location Averages	2	\$ 28.32	\$ 15.74	3.41%	1.00%
Chain Averages	0	\$ 15.20	\$ 35.47	1.33%	0.89%

Column [#] Header

This is the column header used in the KPI Summary table. As a best practice, column header should be kept as short as possible to prevent the table being too wide and running off the page.

Column [#] Formula

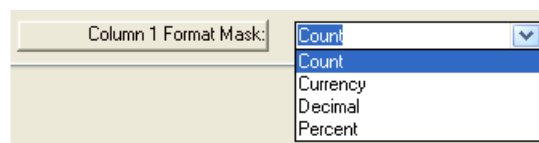
This is the formula that is used for the employee, location average, and chain average for each column.

Column [#] Format Mask

This is the data format that is used for the column.

A drop down box is provided to include the available format

masks: Count, Currency, Decimal, and Percent.



APPENDIX

A

System Architecture

OVERVIEW

About this Appendix

The following sections are available in this appendix:

- A detailed description of the MyMicros XBR Foodservice Hosted data model [“Hosted Food Service Architecture” on page 379](#)
- A short description of the Balance process can be found in [“Architecture of Process” on page 323](#).
- The nightly polling and ETL process is described in [“Nightly Polling and the ETL Process” on page 324](#).
- [“Kornshell Scripts” on page 326](#) describes the scripts that are used in Balance.
- [“RUN_ORDER_* File Formats” on page 326](#) explains the file formats and presents an example of each.
- [“Controls” on page 329](#) presents an explanation of Control files.
- A list of the procedures and control/format files used as part of a tlog control process is contained in [“ETL Control Processes for Incoming TLogs” on page 330](#).
- A list of the procedures and control/format files used as part of a master file control process is contained in [“ETL Control Processes for Incoming Master File Updates” on page 334](#).
- [“RUN_ORDER_START” on page 337](#) describes the RUN_ORDER_START file and the procedures inside.
- [“DBProcess Manager for Tlogs” on page 350](#) describes the process manager with respect to tlogs.
- [“RUN_ORDER_FINISH” on page 354](#) describes the RUN_ORDER_FINISH file and the procedures inside.
- The Master File update procedure is described in [“DBProcess Manager Updates the Master Files” on page 368](#).
- The various logs used in Balance are described in [“Logs” on page 373](#).
- Manager logs are described in [“Manager Logs” on page 375](#).
- [“Glossary of Balance Terms” on page 377](#) defines the terms used in the Balance application.

Audience

This appendix is designed for those individuals who would like to know more about the internal system structure of XBR/Balance.

ARCHITECTURE OF PROCESS

Balance is used to validate POS information before passing it to downstream systems. Instead of simply collecting tlogs and reformatting them for a staging area, Balance flags transactions that have errors such as invalid codes or out-of-balance conditions, and isolates them, preventing them from making their way into downstream systems until errors have been corrected by an auditor.

Balance users, for the most part, are auditors who use front-end reports and windows to review and react to transactions which are in error. Auditors can review history tables to rectify situations that are not errors but do require additional input, for example, over/short conditions in registers and stores.

Modules within Balance let users post entries to a general ledger, manage liabilities, and reconcile bank statements against POS transactions. Auditors can fix errors, accept errors, and create new transactions in reaction to errors, with the goal being to move scrubbed transactions into the staging tables so they can proceed to downstream applications. Security restrictions can dictate the modules, stores and errors each user has access to.

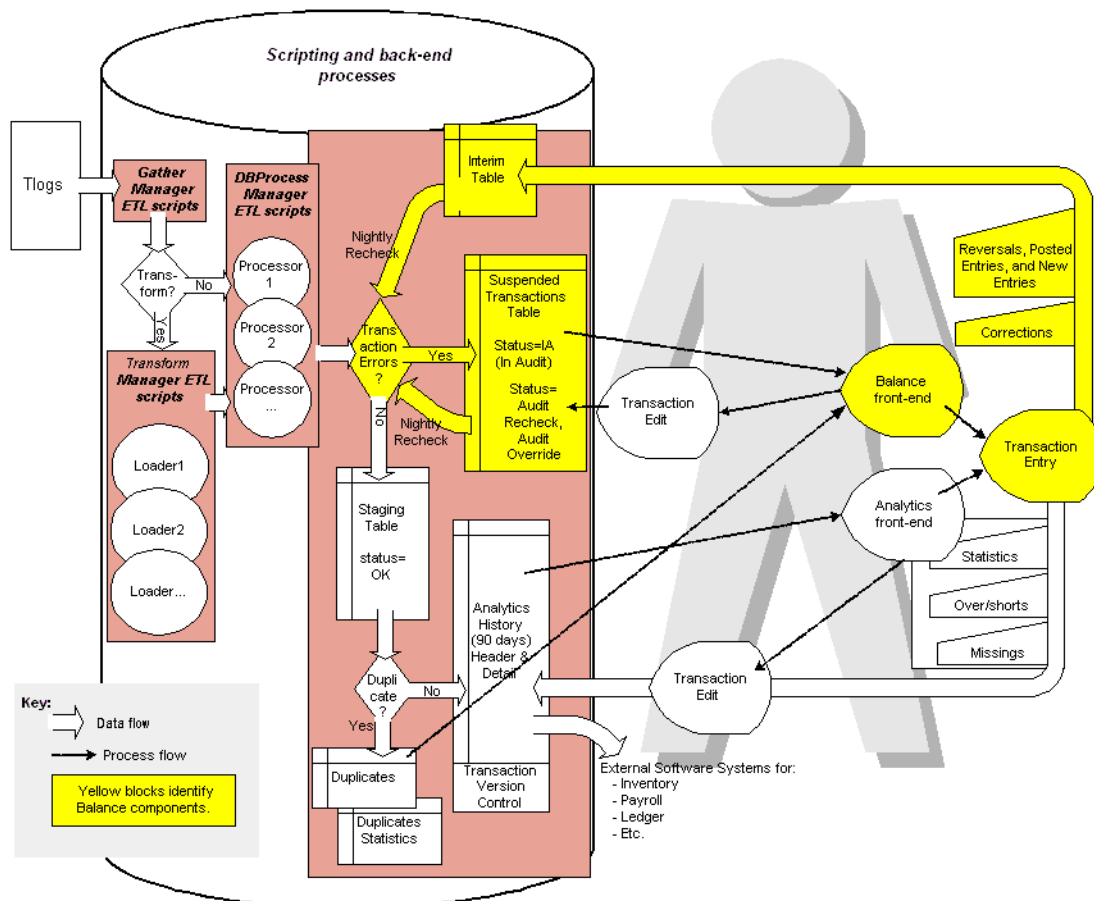


Figure A-1: Overview of the Balance Auditing Process

NIGHTLY POLLING AND THE ETL PROCESS

The ETL (Extract, Transfer, Load) process consists of services that obtain incoming master file updates and tlogs and transfer the data into XBR and Balance. These services, which are controlled by Kornshell scripts, run a series of stored procedures, each of which is described below.

Overview

The ETL process runs inside a timeframe that is configured based upon application requirements. As the customer feeds files to the ETL process, the data is transferred into XBR and Balance, and then on to downstream systems. The ETL process consists of the following:

1. The ETL process runs the `xstart.ksh` process that performs routine maintenance.
2. The master files from corporate feeds are updated and the transaction tlogs are polled.
3. The tlogs are transformed if they need to be sent through the loader.
4. Transactions without errors are moved into the POS_STAGING table, while transactions with errors are moved into a suspended transactions table. (If Balance is not in use, all of the transactions are moved into the POS_STAGING table.)
5. The ETL process runs the `xfinish.ksh` process that releases data into downstream systems and archives logs.

Files, or managers, highlighted in bold in Figure A-2 are always present in the ETL process; the others may or may not be present, depending on system requirements.

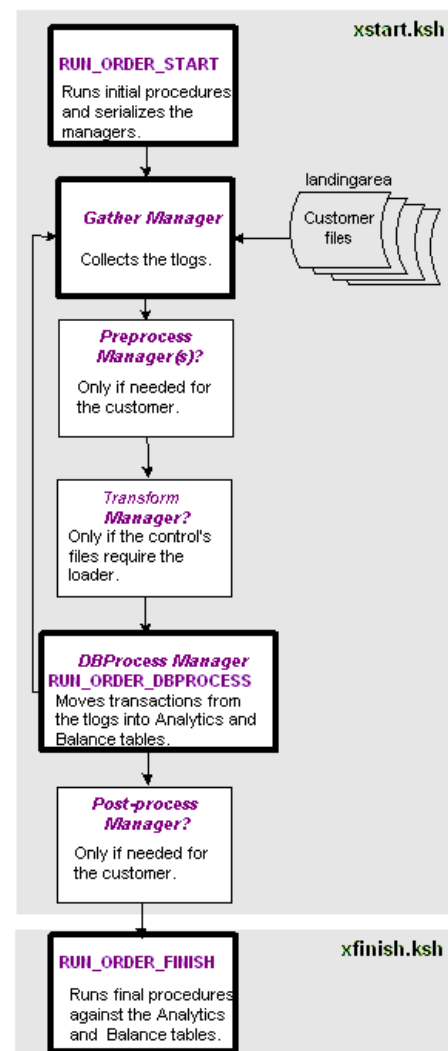


Figure A-2: Data Movement Through Balance

Each type of incoming file is run by its own control process, which performs its specific ETL process. The following is an example of a control process that loads tlogs and another that updates the SKU master:

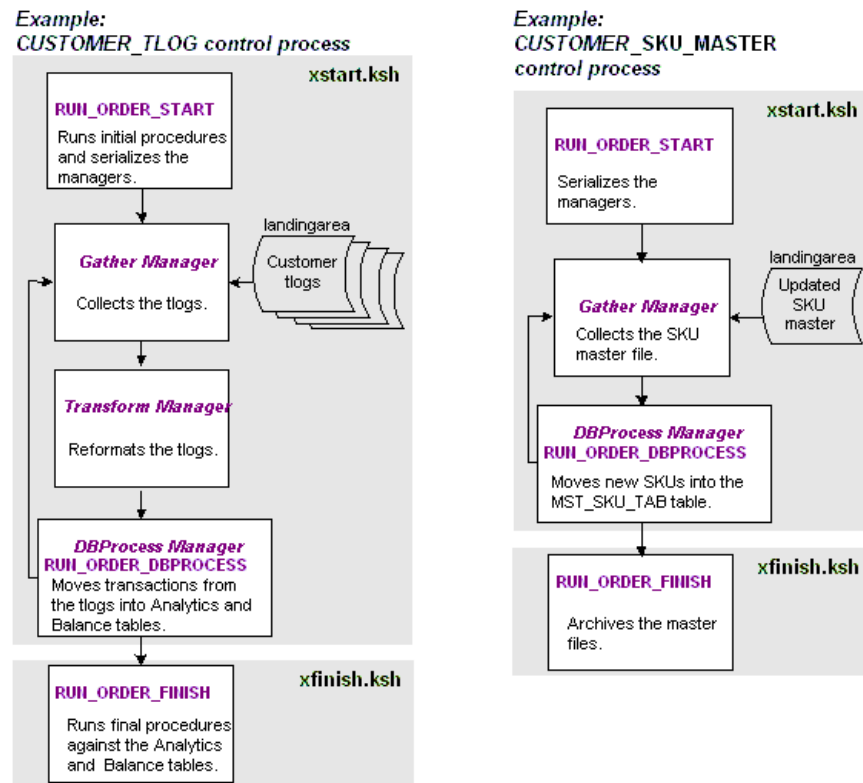


Figure A-3: Example Control Processes

KORNSHELL SCRIPTS

The ETL process consists of services that obtain incoming master file updates and tlogs and transfer the data into XBR and Balance. These services, which are controlled by Kornshell scripts, run a series of stored procedures to sort and process the data for XBR and Balance.

Each type of data file is managed by a control. Controls are sets of rules for processing specific forms of incoming data. For example, there is one control for tlogs. If there are multiple tlog formats, there will be a unique control for each format. The control rules access the managers, which release methods to subprocessors in those managers.

Managers are called from any number of controls that have been defined. These inputs can be processed simultaneously, creating a multi-threaded, multi-tasking process environment. In version 6.x, existing components of the Kornshell have been modified to enable easier configuration of new installs and upgrades.

The new Kornshell consists of three core managers; however, additional managers may be required based upon the installation:

Gather Manager (gathermgr)	Gathers tlogs and master files the customer sends to or puts into the landing area
Transform Manager (transformmgr)	Runs the loader to transform the tlogs; this manager isn't used for master files
Process Manager (dbprocessmgr)	Loads data into the data warehouse table

Managers use methods, which are files that pass parameters to subprocessors that they manage. A subprocessor STATUS directory communicates to the manager. Possible manager statuses are: RUNNING, ERRORED, STOPPED.

Managers are initiated using the `xstart_mgr.ksh` script. Managers must be started before creating controls.

RUN_ORDER_* FILE FORMATS

RUN_ORDER_START, RUN_ORDER_DBPROCESS and RUN_ORDER_FINISH use lists of stored files to initiate various tasks. These files are run in the order in which they are entered into the script, and can be in a number of different formats:

- Kornshell script (startup.ksh)
- SQL statement (initiate8.sql)
- SQL loader control file (load7.ctl)
- PERL script (startperl.pl)
- UNIX commands (kill, nice, mkdir)
- BCP format file, (custom.fmt)

The scripts are written as a 2-column pipe (|) delimited file, for example, sp_adc_truncate.sql|FAIL. The first column identifies the file that executes. The second column, which is optional, indicates what occurs if the file cannot execute. The two options for the second column are:

WARNING executes the next file when the current file fails

FAIL stops the entire process when the current file fails

If a 2nd column is not specified, WARNING is implied by default.

An exclamation point "!" denotes a comment in the file.

The following is an example of RUN_ORDER_START:

```
sp_pro_clear_stage.sql | FAIL
sp_adc_update_business_date.sql | FAIL
sp_pro_create_views.sql | FAIL
sp_adc_create_views.sql | FAIL
sp_pro_create_partitions.sql | WARNNIG ! Oracle customers only
sp_adc_auto_rchk.sql | WARNING
sp_adc_move_int.sql
sp_adc_move_rel.sql
sp_adc_his.sql
sp_adc_archive.sql
!preprocesslmgr ! This is an example of an added CONTROL
gathermgr
transformmgr ! Only if the system requires the loader or Prevasive
dbprocessmgr
```

The following is an example of RUN_ORDER_DBPROCESS:

```
sp_adc_truncate.sql | FAIL
sp_pro_set_runid.sql | FAIL
adc_pos_data_tmp.ctl=adc_pos_data_tmp#XVLV_PROCESSNUMBER#.dat | FAIL
sp_adc_check.sql | FAIL
sp_adc_load.sql | FAIL
sp_adc_move_stage.sql | FAIL
```

The following is an example of RUN_ORDER_FINISH:

```
sp_pro_set_batchno.sql | FAIL
sp_pro_dup_chk.sql | FAIL
sp_adc_no_poll.sql | WARNING
sp_pro_load_hist.sql | FAIL
sp_pro_load_stats.sql | FAIL
sp_adc_lm.sql | WARNING
sp_adc_load_gl.sql | WARNING
sp_adc_missing.sql | WARNING
sp_adc_uac.sql | WARNING
sp_adc_over_short.sql | WARNING
sp_adc_suspend_dup_check.sql | WARNING
sp_adc_br.sql | WARNING
```

```

sp_adc_create_hdr.sql | WARNING
sp_pro_nomatch.sql | WARNING
sp_pro_transdate_purge.sql | WARNING
sp_pro_create_partitions.sql | WARNING      ! Oracle customers only
auto_run.bat | WARNING

```

The init.ksh File

The `init.ksh` file is created from information that has been entered during the installation script. The `init.ksh` file provides information on the database and the locations of files. Without the `init.ksh` file, the managers are blind and the control process will fail. The following is an example of the `init.ksh` file:

```

#=====
# Object name:      init.ksh
# Create date:      05/05/2006
# Purpose:          Initializes processing environment
#                   Sets basic environments variables
#=====
XCOMPANYID=CN
XPRODUCT=Balance
CONTROL_NAME=RUN_TLOGS
XGV_SQLTYPE=ORACLE
XGV_DBLOGIN=admin
XGV_DBPASSWORD=admin
XGV_DATABASE=sqlout
XGV_SQLLOAD=sqlldr
XGV_SQLINTERFACE=sqlplus
XGV_DBPING_UTIL=tnsping
XGV_DBSLEEPSECS=5
XGV_DBCKATTEMPTS=5
XGV_DBLOAD_ERRORS=999999
XGV_GATHER_CLIENTTLOGDIR=C:/ADC60/dtv/landingarea/tlogs
XGV_GATHER_FILESPEPBATCH=2
XGV_GATHER_TIMEOUT=600
XGV_GATHER_TRIGGER_MASK=tlogs*.trg
XGV_TRANSFORMMGR_SUBTRANS=2
XGV_PROCESSMGR_SUBPROCESSORS=4
XBV_SUBPROC_DATAFILE=polldata.set

```

CONTROLS

Control files must be created for each tlog and master file. Controls can be set up manually, either from scratch or by copying a similar control and modifying it.

Creating Control Files for Each TLog

It is likely that only one format will be required for incoming tlogs, however if there are additional formats, it will be necessary to create additional control process for the tlogs.

To create control files, use the `install_control.ksh` script, which prompts for information, sets up controls, creates the directory structure, and enters the variables into the `init.ksh` file. The script is located in `<drive>:\dtv\scriptcommon\install\install_control.ksh`.

Because there is a control process for each type of incoming file, the following controls are necessary:

- A control must exist for each type of tlog. If there is more than one type of tlog, there will be multiple controls.
- A control must exist for each master file loaded by ETL processing.
- A control for feeds, such as bank feeds.

Creating Controls for Each Master File

Creating a control for each master file is similar to creating a control for tlogs except that `transformmgr` is not required. It is necessary to create a different set of stored procedures for loading the master files into the database. It is possible to create a control for each master file using `install_control.ksh`.

In the case of a master file control without a loader, controls will not access the Transform Manager, but will progress directly from the Gather Manager to the DBProcess Manager. If the Transform Manager is not required, remove `transformmgr` from the installation.

Once the managers have been initiated and are running, the control processes are started with the `xstart.ksh` file. The `xstart.ksh` file uses the following processes to manage and process the data from each type of tlog.

Control Files/Format Files

The ETL process uses control (`.ctl`) files for Oracle files, and format (`.fmt`) files for MS SQL files.

ETL CONTROL PROCESSES FOR INCOMING TLOGS

The following is a list of procedures and control and format files that run as part of a tlog control process.

Running xstart

After starting the managers that control the process, initiate the control process by using `xstart`. The following identifies the procedures that run if using both Balance and XBR, or just XBR. All procedures are required, unless identified as optional.

Table A-1: *xstart Tlog Procedures*

Kornshell file contents for incoming tlogs:	Description:	Balance & XBR	XBR only
1) When starting the service, it looks for RUN_ORDER_START, which contains the following. The stored procedures in RUN_ORDER_START run once and then stop. The managers take over and process incoming tlogs until the control times out or is stopped.			
sp_pro_clear_stage	Clears the staging table of transactions that have moved to downstream systems	✓	✓
sp_adc_update_business_date	Updates the business date	✓	
sp_adc_create_views	Creates the Balance error views that will be used for finding audit errors	✓	
sp_pro_create_views	Creates the views to be used for statistical data in XBR and for GL data in Balance	✓	✓
sp_adc_auto_rchk	Automatically rechecks suspended transactions against the updated master files; calls SP_ADC_REL	✓	
sp_adc_move_int	Moves everything from the interim table to the staging table	✓	
sp_adc_move_rel	Moves anything in the suspended transactions table that has been released to the staging table	✓	
sp_adc_his	Tags the released and deleted transactions in the suspended transactions table to be archived	✓	

Table A-1: *xstart Tlog Procedures (continued)*

Kornshell file contents for incoming tlogs:	Description:	Balance & XBR	XBR only
sp_adc_archive	Archives the released and deleted transactions in the suspended transactions table	✓	
preprocess1mgr gathermgr transformmgr dbprocessmgr	A list of managers that process and move data that the control processes.	✓	✓
2) Any preprocessors that are in the control RUN_ORDER_START run.			
3) GATHERMGR takes any data in the landing area and sends it to the next service. If the tlogs require transformation via the loader, the next service is Transform Manager. If the tlogs do not require the loader, the next service is DBProcess Manager.			
4) TRANSFORMMGR initiates the loader, if included in the RUN_ORDER_START.			
5) DBPROCESSMGR runs through the procedures in RUN_ORDER_DBPROCESS, which are:			
sp_adc_truncate	Clears the temporary tables	✓	
sp_pro_set_runid	Sets the run ID	✓	
pos_staging.ctl or pos_staging.fmt	Loads all the transactions in the tlogs into the staging table		✓
adc_pos_data_tmp.ctl or adc_pos_data_tmp.fmt	Loads the temporary tables with the content of the tlogs	✓	
sp_adc_check	Loads the ADC_POS_DATA_TAB table with transactions that have audit errors, Loads the ADC_ERROR_TAB table with the transaction errors, Calls SP_ADC_VALIDATE_ITEM		
sp_adc_load	Loads the ADC_ERROR_STATUS_T table and sets the transaction status to pending (PND)	✓	
sp_adc_move_stage	Loads the staging table with transactions that do not have audit errors	✓	
6) Any post-processors that are in the control RUN_ORDER_START run.			

Running xfinish

After the ETL process is finished (or has been stopped), run `xfinish` to finalize the files that `xstart` loaded. All procedures are required except for those identified as optional.

Table A-2: *xfinish Tlog Procedures*

Kornshell file contents for finishing incoming tlogs:	Description:	Balance & XBR	XBR only
Run <code>xfinish</code> . Xfinish starts <code>RUN_ORDER_FINISH</code> , which initiates the following:			
<code>sp_pro_set_batchno</code>	Creates a batch number for everything in <code>PRO_STAGING</code> that does not have one; calls <code>SP_PRO_SEQUENCER</code>	✓	✓
<code>sp_pro_dup_chk</code>	Removes duplicate transactions from the staging table and puts them in the <code>POS_STAGING_DUPS</code> table	✓	✓
<code>sp_adc_no_poll</code>	Finds the stores and registers that have not been polled and writes them to the <code>ADC_NO_POLL_TAB</code> table	✓	
<code>sp_pro_load_hist</code>	Copies transactions from the staging table to the XBR history tables; updates the versioning tables Runs <code>SP_PRO_NOMATCH_PVCANCEL</code> and <code>SP_PRO_NOMATCH_RETURN_EXCH</code> to perform lookups to find the original transactions related to returns, exchanges, post voids, and cancels. Creates cash post void detail when not available from <code>POS Tlog</code> or captures detail from <code>Tlog</code> when available.	✓	✓
<code>sp_pro_load_stats</code>	Loads the <code>POS_STATISTICS_TAB</code> table for use in XBR	✓	✓
<code>sp_adc_lm</code>	Loads data into the Liabilities Management (LM) tables; only if LM has been purchased	✓	✓

Table A-2: *xfinish Tlog Procedures (continued)*

Kornshell file contents for finishing incoming tlogs:	Description:	Balance & XBR	XBR only
sp_adc_load_gl	Loads data into the GL tables for Balance's GL Post module; only if using GL Post	✓	
SP_ADC_MISSING	Finds missing transactions and writes them to the ADC_MISSING_TAB table	✓	
sp_adc_uac	Finds User Audit Controls (UACs) and writes them to the ADC_USER_CNTL_T table	✓	
sp_adc_over_short	Finds over/shorts and writes them to the ADC_OVERSHORT_TAB table	✓	
sp_adc_suspend_dup_check	Finds duplicate transactions in Balance suspended transactions table and writes them to the ADC_POS_DATA_TAB_DUPS and ADC_ERROR_TAB_DUPS tables	✓	
sp_adc_br	Loads data into the Bank Deposit Reconciliation (BR) tables	✓	
sp_adc_create_hdr	Creates missing headers	✓	
sp_pro_nomatch	Matches refunds and exchanges to their original transactions	✓	✓
sp_pro_transdate_purge	Purges Balance and XBR tables of old entries	✓	✓
sp_pro_create_partition	Creates partitions in the tables (Oracle customers only)	✓	✓
auto_run.bat	Archives and zips up logs and results files	✓	✓

ETL CONTROL PROCESSES FOR INCOMING MASTER FILE UPDATES

Master files are loaded as required, but must be loaded before the tlog controls (described in the previous section) are run. The following is the list of procedures, control and format files that run as part of a control process that loads a master file.

Running xstart

After managers that are used by the master load control processes have been started, start the control processes by using `xstart`.

Table A-3: *xstart Master Files Procedures*

Kornshell file contents for master file updates:	Description:
1) When starting, the service looks for RUN_ORDER_START, which contains the following:	
gathermgr	Sends methods to the Gather Manager to gather master files (or other files) that are in the landingarea.
dbprocessmgr	Sends methods to the DBProcess Manager, which loads the gathered data into the database.
There may be preprocessors and post-processors in RUN_ORDER_START.	
2) DBPROCESSMGR kicks off RUN_ORDER_DBPROCESS. Each control process monitors the loading of one core master file. There may be additional files that get loaded to the following:	
mst_employee_tmp.ctf or mst_employee_tmp.fmt sp_mst_upd_emp	Updates the employee master
mst_store_tmp.ctf or mst_store_tmp.fmt sp_mst_upd_store	Updates the store master
mst_register_tab.ctf or mst_register_tab.fmt sp_mst_upd_regnum	Updates the register master
mst_sku_tab.ctf or mst_sku_tab.fmt sp_mst_upd_sku	Updates the SKU master
mst_tax_tab.ctf or mst_tax_tab.fmt	Updates the tax master
mst_department_tab.ctf or mst_department_tab.fmt	Updates the department master

Table A-3: *xstart Master Files Procedures (continued)*

Kornshell file contents for master file updates:	Description:
mst_vendor_tab.ctl or mst_vendor_tab.fmt	Updates the vendor master
mst_bank_tab.ctl or mst_bank_tab.fmt	Updates the bank master

Running xfinish

Once the master file control process has finished loading or updating (or has been stopped), run `xfinish` to finalize the files loaded by `xstart`.

Kornshell file contents for finishing master file updates:	Description:
Run XFINISH. When running, xfinish looks for RUN_ORDER_FINISH, which runs the following:	
auto_run.bat	Archives and zips up logs and results files

The Data Flow Through XBR and Balance

The following figure diagrams the flow of data through the ETL process for XBR and Balance. Tlogs find their way through error checking in Balance, then into XBR and other downstream systems. While reading through this section, note variations of this diagram that highlight details of individual components.

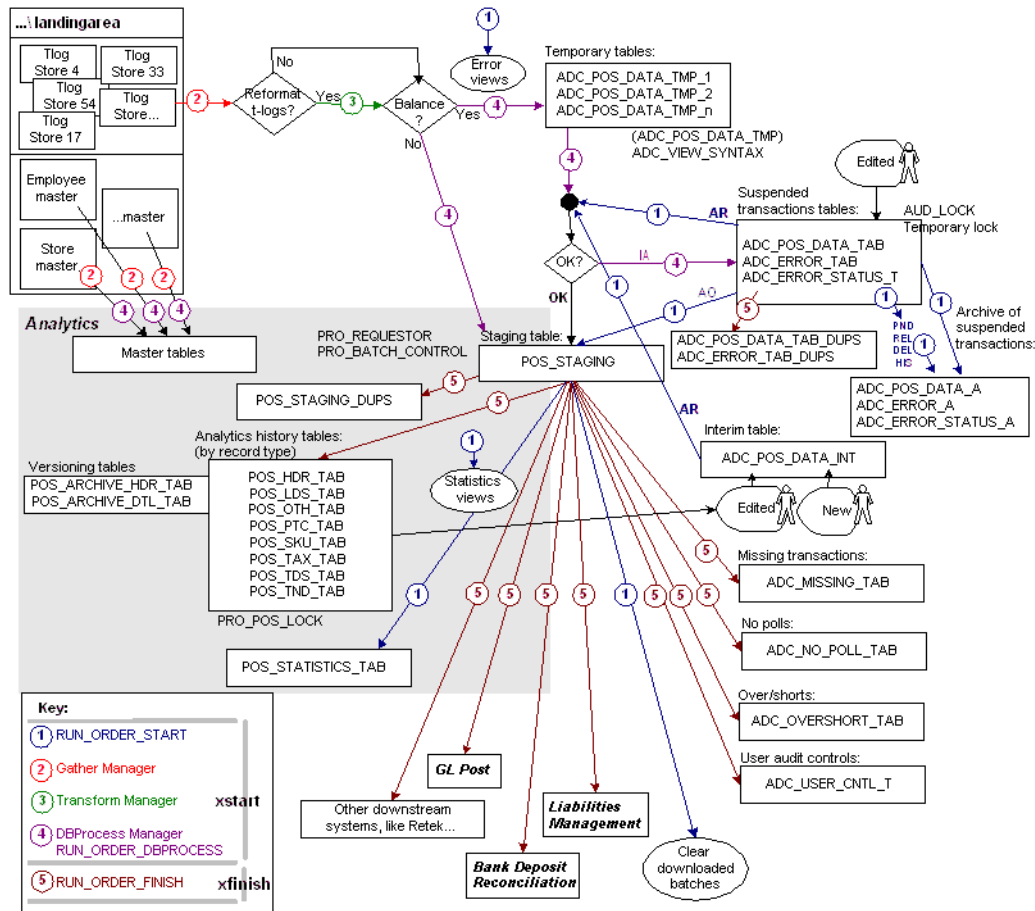


Figure A-4: Data Flow Through Balance

RUN_ORDER_START

Running the xstart.ksh Kornshell script for a control launches the ETL process for that control. Each control has its own ETL process, and each ETL process is set up to start at a time that coincides with store polling of the incoming files that the control is intended to load. Launching an ETL process for a control loads data using the managers that are defined for that control. Because tlog data is different than master file data, their controls are different as are the ways they load data.

When an ETL process starts, it runs a few initial, core-stored procedures in RUN_ORDER_START. It then serializes the managers to be used, such as:

- Any preprocess managers required by the customer
- Gather Manager
- Transform Manager (if necessary)
- DBProcess Manager
- Any post-process managers required by the customer

The core procedures are described below, followed by descriptions of the core managers.

RUN_ORDER_START Procedures

The following section describes the stored procedures that RUN_ORDER_START runs. These steps perform basic housekeeping. Note that there are fewer steps if not using Balance:

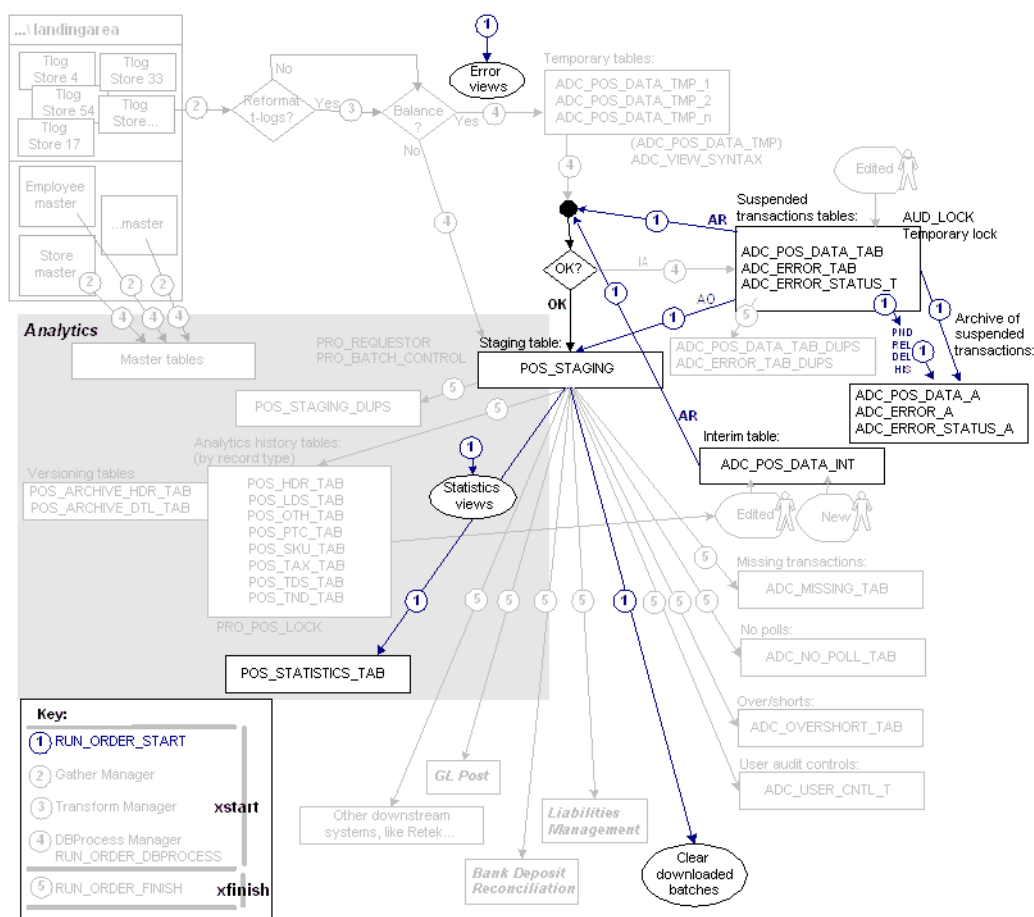
Table A-4: *RUN_ORDER_START Procedures*

Procedure	Step	XBR only	Balance & XBR
sp_pro_clear_stage	Clears the staging table of extracted transactions ()	✓	✓
sp_adc_update_business_date	Updates the business date	✓	✓
sp_adc_create_views	Creates the Balance error views		✓
sp_pro_create_views	Creates POS Statistics Views and GL Views	✓	✓
sp_adc_move_int	Moves transactions from the interim table to the staging table		✓
sp_adc_auto_rchk	Automatically rechecks suspended transactions		✓
sp_adc_move_rel	Moves released transactions out of Balance		✓

Table A-4: *RUN_ORDER_START Procedures*

Procedure	Step	XBR only	Balance & XBR
sp_adc_his	Prepares to archive released and voided transactions from Balance		✓
sp_adc_archive	Archives released and voided transactions from Balance		P

The steps RUN_ORDER_START completes in the overall scheme of the Kornshell scripts are shown in the following figure:

**Figure A-5:** *Dataflow Controlled by the Kornshell*

Clear the Staging Table of Extracted Transactions (sp_pro_clear_stage)

There are a number of downstream systems (such as Retek, the XBR history table, and the Balance GL Post module) that extract the POS transactions pulled in from tlogs. Because all POS transactions go through the POS_STAGING table (either as soon as they have polled or after they have been fixed in Balance), POS_STAGING is the table from which all downstream systems pull their transactions. POS transactions stay in this table until all downstream systems have extracted them. The SP_PRO_CLEAR_STAGE procedure then clears them from POS_STAGING as part of the ETL process routine housekeeping.

To do this, the ETL process tracks the downstream systems that have extracted each batch of transactions from POS_STAGING. After extraction, SP_PRO_CLEAR_STAGE removes the batch from POS_STAGING.

A batch consists of all POS transactions that Gather Manager pulled, as a group, out of the landing area. The POS transactions are processed as a group, and are added to the POS_STAGING table (the staging table) during a nightly run of the ETL process. If using Balance, a batch also consists of only those polled transactions that were error-free, and the transactions that were moved from the suspended transactions and interim tables into the staging table.

Batch numbers ensure that downstream systems have pulled the batch transactions before SP_PRO_CLEAR_STAGE removes the batch from the POS_STAGING table.

The PRO_REQUESTOR Table

SP_PRO_CLEAR_STAGE refers to the PRO_REQUESTOR table to identify which downstream systems actively extract data from POS_STAGING. For example, the PRO_REQUESTOR table may look like the following:

DATA_REQUESTOR_NAME	REQUESTOR_ID	ACTIVE_FLAG
Bank Reconciliation (SP_ADC_BR)	BR	N
Delete records (SP_PRO_CLEAR_STAGE)	DEL	Y
Check For Duplicate Records (SP_PRO_DUP_CHK)	DUP	Y
Suspend Duplicate records (SP_ADC_SUSPEND_DUP_CHECK)	DUPSUSPEND	Y
Insert GL Records (SP_ADC_LOAD_GL)	GL	Y
Insert History Records (SP_PRO_LOAD_HIST)	HIST	Y
Liabilities Management (SP_ADC_LM)	LM	N
Calc Missing Transactions (SP_ADC_MISSING)	MISSING	N
Calc Overshots (SP_ADC_OVER_SHORT)	OS	Y
Insert Statistics Records (SP_PRO_LOAD_STATS)	STATS	Y
User Audit Controls (SP_ADC_UAC)	UAC	Y

Figure A-6: PRO_REQUESTOR Table Example

Note that the DATA_REQUESTOR_NAME column lists each downstream system entry along with the name of the stored procedure that performs the extract for that system. As such, XBR and Balance processes are downstream systems.

Anything in PRO_REQUESTOR that has an ACTIVE_FLAG of Y is a downstream system that must extract transactions before SP_PRO_CLEAR_STAGE can clear the batch from POS_STAGING. Each of the core procedures listed above runs as part of the ETL process unless its row in the PRO_REQUESTOR table has been deactivated.

Downstream System Extracts

SP_PRO_CLEAR_STAGE is aware that a downstream system has extracted batch transactions from POS_STAGING because successful downstream system extracts are tracked in the PRO_BATCH_CONTROL table. The stored procedures that act as downstream systems update the PRO_BATCH_CONTROL table by calling the SP_PRO_UPD_BATCH procedure. If any custom procedures that act as downstream systems are added, the new procedures must also update the PRO_BATCH_CONTROL table.

In PRO_BATCH_CONTROL, each downstream system gets four columns that record its extract status. The four columns are named using a prefix for each system. The prefix is the value in the REQUESTOR_ID column in the PRO_REQUESTOR table:

Column naming conventions:	For example:
prefix_START_DATE	GL_START_DATE
prefix_END_DATE	GL_END_DATE
prefix_NUM_RECORDS	GL_NUM_RECORDS
prefix_ERROR_CODE	GL_ERROR_CODE

The following is an example of columns from the PRO_BATCH_CONTROL table:

BATCHNO	GL_START_DATE	GL_END_DATE	GL_NUM_RECORDS	GL_ERROR_CODE
120819				
89656	12/8/2004 3:49:08	12/8/2004 3:49:08	0	1
133	12/8/2004 3:49:08	12/8/2004 3:49:21	6	1
47	12/8/2004 3:49:21	12/8/2004 3:49:21	0	1
101	12/8/2004 3:49:21	12/8/2004 3:49:21	0	1

Figure A-7: PRO_BATCH_CONTROL Table Column Example

In PRO_BATCH_CONTROL, an error code of 1 (shown above in the GL_ERROR_CODE column) tells SP_PRO_CLEAR_STAGE that data for a batch has been successfully extracted. In the example above, the downstream system is GL Post. Once all *prefix_ERROR_CODE* columns for all downstream systems have been successfully extracted, SP_PRO_CLEAR_STAGE clears the batch transactions from the POS_STAGING table. Then, SP_PRO_CLEAR_STAGE writes a "1" to its own *prefix_ERROR_CODE* column (as shown below) to record that the batch has been cleared from POS_STAGING.

BATCHNO	DEL_START_DATE	DEL_END_DATE	DEL_NUM_RECORDS	DEL_ERROR_CODE
186010	1/12/2005 3:01:22	1/12/2005 3:02:01	0	1

Figure A-8: PRO_BATCH_CONTROL Example of Successful Data Extraction

Information on Purging Data

SP_PRO_CLEAR_STAGE is the only procedure that removes transactions from the POS_STAGING table. POS_STAGING cannot be purged using SP_PRO_TRANSDATE_PURGE, which is the procedure that removes old data from all other tables.

If SP_PRO_CLEAR_STAGE is not clearing POS transactions from POS_STAGING, confirm that each downstream system is setting its *prefix_ERROR_CODE* column to 1 and any downstream systems that have been deactivated.

Update the Business Date (sp_adc_update_business_date)

(BALANCE ONLY)

The ETL process sets the business date for the ETL run. This procedure creates one business date for transactions that roll over into another day. It updates the entry in PRO_SP_VARIABLES where the SYSTEM column is ADC and the VAR_NAME column is BUSINESS_DATE by writing the business date to the VAR_VALUE column.

SYSTEM	VAR_NAME	VAR_VALUE	VAR_DATATYPE
ADC	BUSINESS_DATE	25-JAN-05	D

Figure A-9: Business Date Row in PRO_SP_VARIABLES

Create the Balance Error Views (sp_adc_create_views)

(BALANCE ONLY)

The SP_ADC_CREATE_VIEWS stored procedure creates the Balance error views that are used for finding audit errors.

Create POS Statistics Views and GL Views (sp_pro_create_views)

The SP_PRO_CREATE_VIEWS stored procedure builds the views that are loaded as the ETL process loads the following:

- POS statistics for use with XBR. A description of how the views are created and loaded is described on page 32.
- GL data for use with Balance's GL Post module.

Move Transactions from the Interim Table to the Staging Table (sp_adc_move_int)

(BALANCE ONLY)

Note: The following procedure executes after SP_ADC_AUTO_RCHK but is described here to identify procedures that move transactions from the suspended transactions table to the staging table.

The SP_ADC_MOVE_INT procedure moves transactions from the interim table ADC_POS_DATA_INT to the staging table POS_STAGING.

The SP_ADC_MOVE_REL procedure finds suspended transactions that have an ADC_ERROR_TAB status of AR, AO, or AD and puts them into the staging table. If a transaction has any errors that have an ADC_ERROR_TAB status of IA, it is not released (and therefore is not moved by the SP_ADC_MOVE_REL procedure).

It is assumed that transaction lines with a status of:

- AD have been voided
- AO have an error that has been overridden
- AR have been screened by the error views and are clean

The following is an example of transaction that was voided by an auditor.

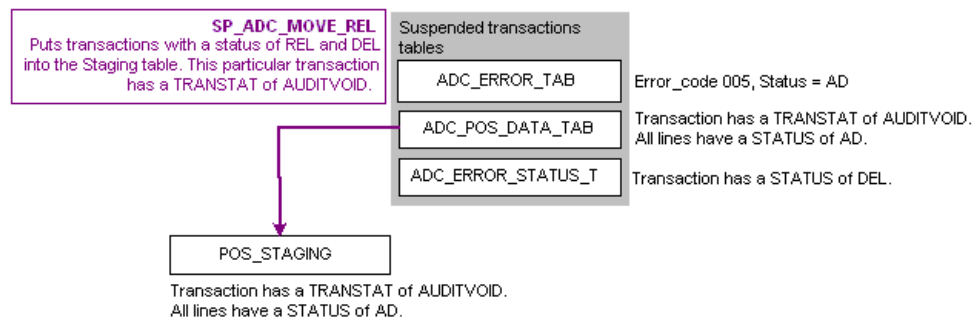


Figure A-10: Voided Transaction Example

SP_ADC_INTERIM

All transactions in the interim table are a result of actions taken by a Balance user working with front-end windows. Before the transactions were moved into the table, they were screened for errors by the SP_ADC_INTERIM procedure. This procedure is called only from the Balance front-end when a Balance user saves a new transaction or edits a transaction from the history tables. SP_ADC_INTERIM screens the transactions for errors and moves transactions that are in error to the suspended transactions table. SP_ADC_INTERIM leaves clean transactions in the interim table.

For that reason, the SP_ADC_MOVE_INT procedure assumes that all transactions in the interim table have no errors, and simply moves the entire content of the interim table into the POS_STAGING table. It then clears the interim table. The interim table repopulates when auditors and other Balance users modify transactions that are in XBR history or when they add new transactions.

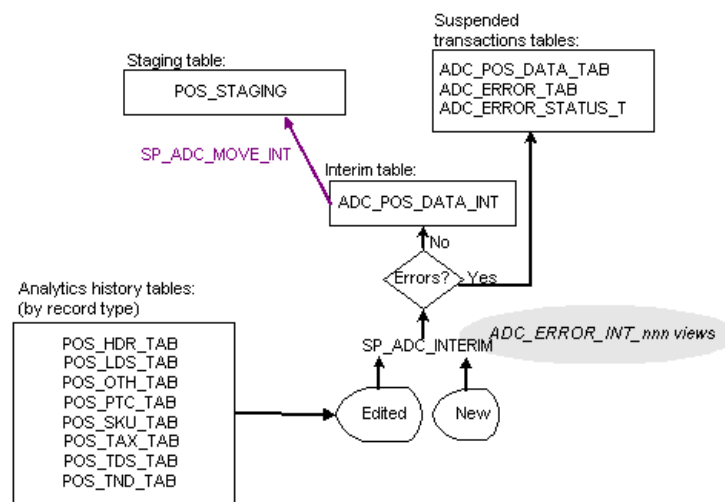


Figure A-11: SP_AC_INTERIM Procedure

Once it has screened for errors, SP_ADC_INTERIM does the following to any transaction errors it finds:

- If the transaction contains a user audit control (UAC), it accepts the UAC. If the UAC condition still exists, it is caught again later in the ETL process by the SP_ADC_UAC procedure.
- If the store, date, register, and cashier have an over/short that a user has accepted, SP_ADC_INTERIM changes the over/short's ACCEPT_FLAG (in the ADC_OVERSHORT_TAB table) back to N as the over/short may have changed. The ETL process checks for over/shorts again when the SP_ADC_OVER_SHORT procedure runs.
- If the transaction is a missing transaction, the SP_ADC_INTERIM procedure removes it from the ADC_MISSING_TAB table. It then calls the SP_ADC_VALIDATE_ITEM procedure, which validates the transaction's SKUs.

Move Suspended Transactions to the Staging Table (sp_adc_move_rel)

(BALANCE ONLY)

The following four stored procedures move error-free and audit-voided transactions out of the suspended transactions tables and into the staging table.

Shown below is an explanation of how the statuses in the three suspended transactions tables (ADC_POS_DATA_TAB, ADC_ERROR_TAB, and ADC_ERROR_STATUS_T) are used. Understanding the use of the STATUS column in these three tables will assist in understanding the movement of transactions out of the suspended transactions tables and into the staging table.

Table A-5: *Suspended Transactions Tables*

Table	Table Status	
adc_error_tab	Shows each error's status for each transaction that has errors. The status indicates how the error has been dealt with. Statuses in this table are:	
	IA	(in audit) the error needs to be fixed.
	AD	(audit delete) the error has been voided
	AO	(audit override) the error will be moved into staging as-is, regardless of whether it still has errors
	AR	(audit release) the error has been fixed and will be moved into staging

Table A-5: *Suspended Transactions Tables (continued)*

Table	Table Status
adc_error_status_t	Shows each transaction status. This table status is used only by the sp_adc_his procedure for determining which transactions to archive once they have moved out of the suspended transactions tables and into staging. Statuses in this table are:
	PND (pending) the sp_adc_check procedure added the transaction to the suspended transactions tables and its errors are not fixed.
	REL (released) a Balance user has taken action to remove the transaction's errors; the sp_adc_move_rel procedure will move the transaction downstream to the staging table.
	DEL (audit voided) a Balance user has voided the transaction; the sp_adc_move_rel procedure will move the transaction downstream to the staging table.
	HIS (history) the transaction has been moved to the staging table and it is ready to be removed from the suspended transactions table and archived by the sp_adc_archive procedure. Once the transaction is archived, sp_adc_archive removes it from the suspended transactions tables.
adc_pos_data_tab	Shows each line status. The status identified here is the same status in the ADC_ERROR_TAB table. Apart from the initial sort that moves lines with an IA status into the suspended transaction table and moves lines with an OK status into the staging table, this status has little meaning. One exception to this rule is that the SP_ADC_AUTO_RCHK procedure (described below) sets the line status to AD when a transaction is voided in Balance, although the AD status is simply informational.

The stored procedures that move error-free and voided transactions out of the suspended transactions table and into the staging table are:

sp_adc_auto_rchk	Automatically rechecks suspended transactions
sp_adc_move_rel	Moves clean transactions out of Balance and into the staging table

Transactions that were moved into staging are now archived by these procedures:

sp_adc_his	Assigns a HIS status to transactions that were moved to staging
sp_adc_archive	Archives transactions that have moved to staging

Recheck Suspended Transactions (sp_adc_auto_rchk)

As soon as the master tables have been updated, transactions which were previously in error due to missing master records may no longer be in error because the master record that was missing is now present (for example, missing SKUs are now available in the SKU master). This is why the SP_ADC_AUTO_RCHK procedure runs immediately after updating the master files.

Initially, SP_ADC_AUTO_RCHK finds the transactions that are no longer in error because the master record is now present. To do this SP_ADC_AUTO_RCHK runs all transactions that have in-audit errors through the ADC_ERROR_AUTO views. (In-audit errors are errors with a status of IA in the ADC_ERROR_TAB table.) If by doing this it finds a transaction error that is no longer an error, SP_ADC_AUTO_RCHK changes the transaction's error status in the ADC_ERROR_TAB table to AR (Audit Release).

The procedure does this recheck by running the ADC_ERROR_AUTO error views. With core Balance, there are ADC_ERROR_AUTO views for six error codes:

001	Invalid Cashier Number
002	Invalid Employee Number
004	Invalid Store
006	Invalid Salesperson
010	Invalid Register/Store
012	Invalid SKU

If these errors are active, they have ADC_ERROR_AUTO views that SP_ADC_AUTO_RCHK checks after the master files are updated.

When the ADC_ERROR_AUTO views have run and the transaction statuses have been changed to AR, SP_ADC_AUTO_RCHK runs the SP_ADC_REL procedure, which identifies the transactions that can be released to the staging table. SP_ADC_REL also releases those transactions that auditors corrected during the day. (Released transactions are moved to the staging table later by the SP_ADC_MOVE_REL procedure.) The Balance front-end also runs SP_ADC_REL when anyone runs Release Transactions from the Administration menu in Balance.

SP_ADC_REL primarily deals with releasing transactions. However, how SP_ADC_REL releases transaction edits depends on whether they are transaction voids or any other transaction edit.

SP_ADC_REL Handling of Transaction Voids

If an auditor voids a transaction, the front-end records a status of AD for the transaction error in the ADC_ERROR_TAB table. The SP_ADC_REL procedure takes that transaction and does the following:

- Sets the transaction status to DEL in the ADC_ERROR_STATUS_T table.
- Changes all error statuses for the transaction errors to AD in the ADC_ERROR_TAB table; this essentially makes any remaining errors for the transaction irrelevant because the transaction has been voided.

- Finds all the lines for the transaction and changes the TRANSTAT column to AUDITVOID and their STATUS column to AD in the ADC_POS_DATA_TAB table.



Although line statuses in the ADC_POS_DATA_TAB table are updated by back-end and front-end processing, these statuses are generally ignored by stored procedures that process suspended transactions. Instead, it is the transactions error status in ADC_ERROR_TAB that determine how suspended transactions are processed.

The following is an example of how a voided transaction is handled by the SP_ADC_REL procedure:

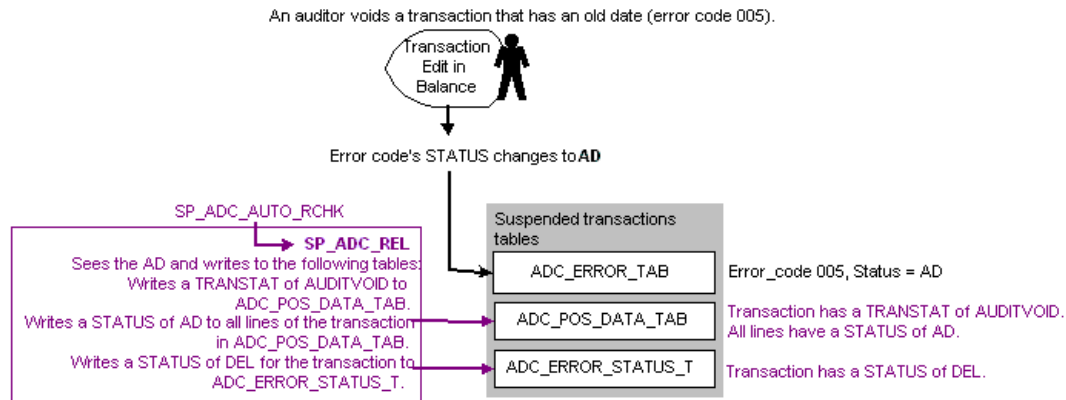


Figure A-12: SP_ADC_REL Example

SP_ADC_REL Handling of Other Transaction Edits

When SP_ADC_REL reviews the transaction error status in the ADC_ERROR_TAB table and finds that all the error statuses are AO or AR (the transaction has no errors with a status of IA or AD), the procedure changes the transaction status in the ADC_ERROR_STATUS_T table from PND to REL.

SP_ADC_REL updates the USER_RELEASED and DATE_RELEASED columns for released transaction errors in the ADC_ERROR_TAB table and lines in the ADC_POS_DATA_TAB table.

Note: Transactions with an ADC_ERROR_STATUS_T status of DEL are processed in the same way transactions with a status of REL are processed. They are moved to the staging table when the Master Update service runs the SP_ADC_MOVE_REL procedure.

Tag released and deleted transactions to be archived (sp_adc_his)

Now that clean transactions have been copied from the suspended transactions tables to the staging table, the SP_ADC_HIS stored procedure prepares to archive the transactions from the suspended transactions tables. The procedure changes all the REL and DEL statuses in the ADC_ERROR_STATUS_T table to HIS. Everything that has been copied to the staging table is now marked as history so that it can be archived by the next procedure, SP_ADC_ARCHIVE.

The following is an example of how SP_ADC_HIS handles the voided transaction shown earlier:

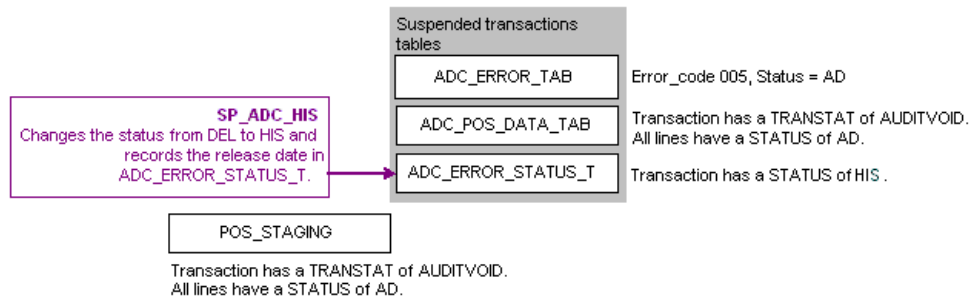


Figure A-13: SP_ADC_HIS Handling of Voided Transaction

Archives released and deleted transactions (sp_adc_archive)

Once a transaction ADC_ERROR_STATUS_T status is HIS, the SP_ADC_ARCHIVE procedure archives the transaction and its related entries to the ADC_ERROR_A, ADC_POS_DATA_A, and ADC_ERROR_STATUS_A tables. It then removes them from the suspended transaction tables. The procedure identifies the entries to be removed from the suspended transaction tables by using the ADC_ERROR_HIS view, ADC_POS_HIS view, and the status of HIS in the ADC_ERROR_STATUS_T table, as illustrated below. The following uses the example of the voided transaction movement from the suspended transactions tables into staging, and into the archive suspended transactions tables.

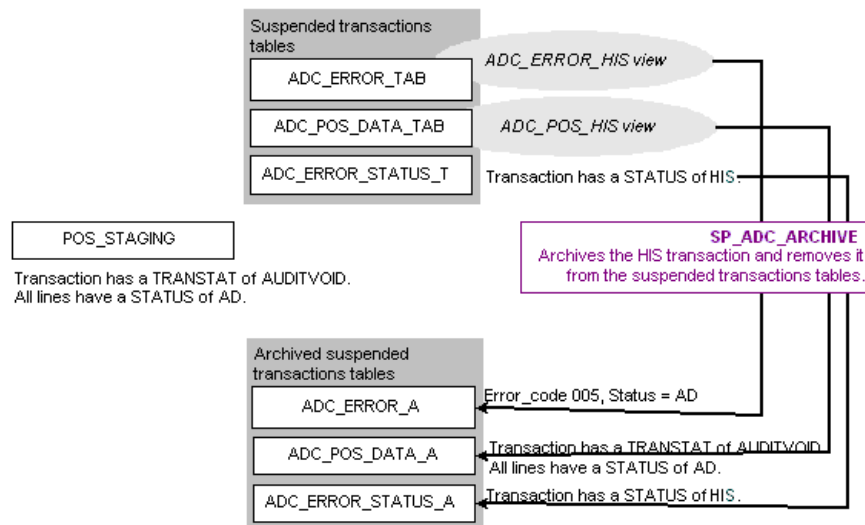


Figure A-14: SP_ADC_ARCHIVE Procedure

This ends the RUN_ORDER_START housekeeping procedures. Assuming the managers have been starting, it begins to process the files it finds in the landing area, starting with Gather Manager.

Gather Manager

The Gather Manager service scans the landing area for incoming files such as tlogs, master files, and file feeds from banks and other institutions. It then sends them off to the Transform Manager or the DBProcess Manager, based upon application requirements.

Transform Manager

The Transform Manager, which is used only in control processes that process tlogs, picks up the polldata.set file from the Gather Manager, and transforms the tlogs. The Transform Manager is required only if the tlogs must be reformatted before the DBProcess Manager picks them up.

The following diagram illustrates Gather Manager and Transform Manager roles in the ETL process:

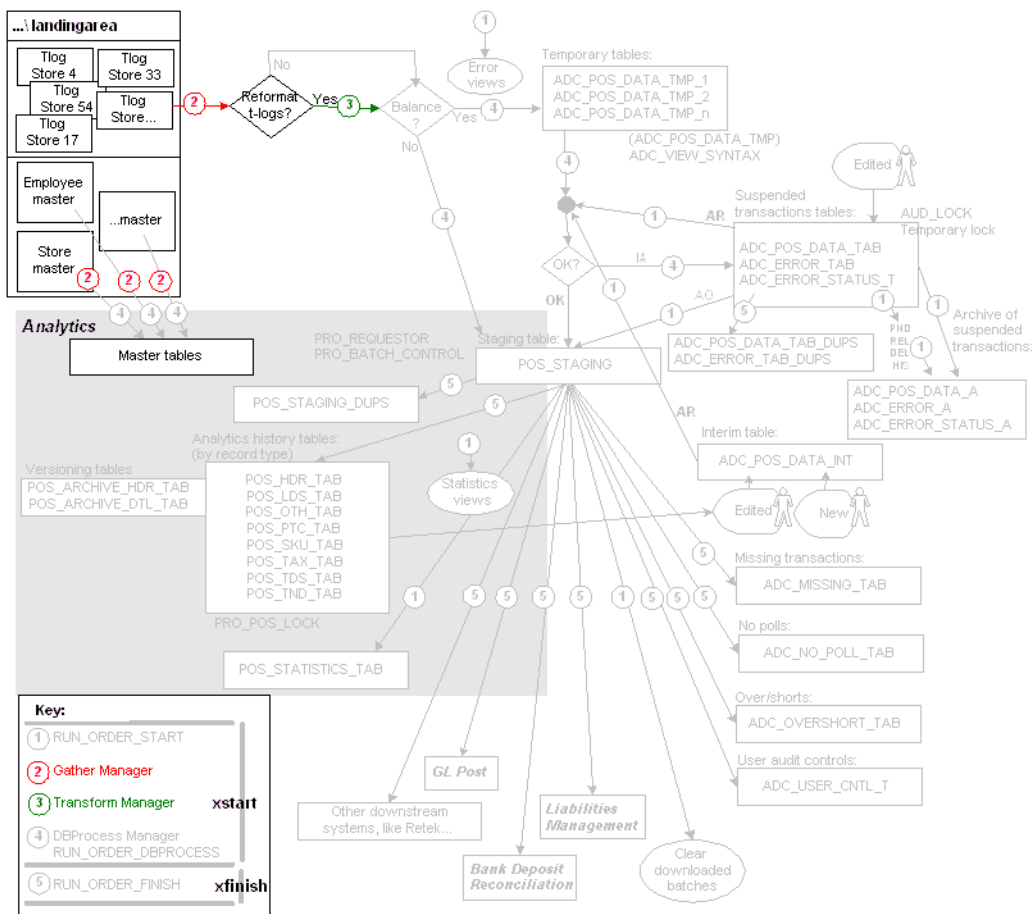


Figure A-15: Gather Manager and Transform Manager's Data Flow Process

DBPROCESS MANAGER FOR TLOGS



DBProcess Manager performs different actions when invoked from a control process than when performing tlog processes.

DBProcess Manager loads the content of the tlogs into temporary tables, and then moves error-free tlog transactions into XBR (into the staging table) and transactions that have audit errors into Balance suspended transactions tables. The following diagram outlines steps of the ETL process that the DBProcess Manager performs for loading tlogs and master files:

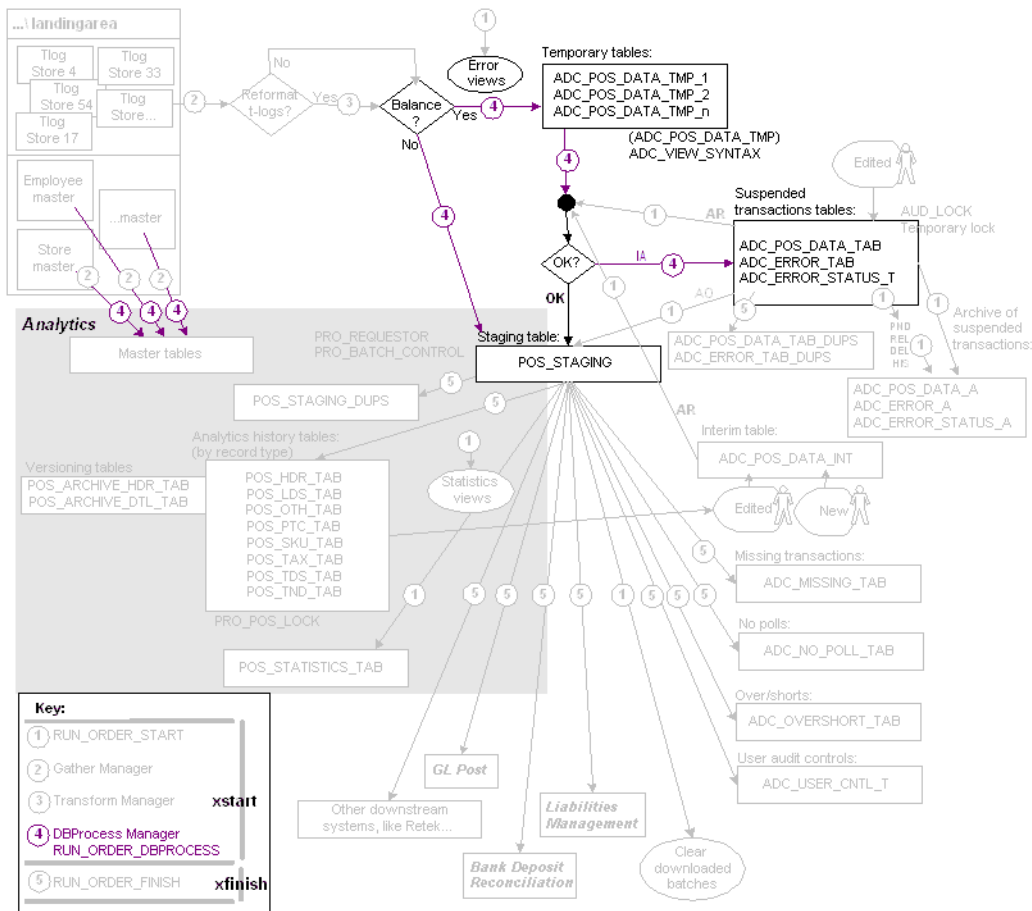


Figure A-16: DBManager's Data Flow Process

RUN_ORDER_DBPROCESS Procedures

The following section describes the procedures performed by the DBProcess Manager. The manager runs the series of procedures listed in RUN_ORDER_DBPROCESS. It sends methods to the next manager, if there is one. (There could be a post-processing manager if necessary.) When all data is processed through the DBProcess Manager, it times out and stops. DBProcess Manager performs only one step if not using Balance.

Table A-6: *RUN_ORDER_DBPROCESS Procedures*

XBR only	Balance & XBR	Step
	P	Clears the temporary tables (SP_ADC_TRUNCATE)
	P	Reloads the temporary tables (ADC_POS_DATA_TMP.CTL)
P		-or- Loads the staging table - XBR Only (POS_STAGING.CTL)
	P	Sets the run ID (SP_PRO_SET_RUNID)
	P	Traps audit errors and loads the ADC_POS_DATA_TAB and ADC_ERROR_TAB tables (SP_ADC_CHECK)
	P	Loads the adc_error_status_t table (SP_ADC_LOAD)
	P	Loads the staging table with OK transactions (SP_ADC_MOVE_STAGE)

Clear the Temporary Tables (sp_adc_truncate)

(BALANCE ONLY)

The SP_ADC_TRUNCATE procedure clears the temporary (_TMP) tables to rid them of the transactions that have already moved into XBR and Balance so that they can be reloaded with fresh data from the tlogs.

Note that if there is only one tlog process running, there is one temporary table - ADC_POS_DATA_TAB. If there are multiple processes, there is a temporary table for each process - ADC_POS_DATA_TMP_1, ADC_POS_DATA_TMP_2, etc.

Reload the Temporary Tables Using a Control or Format File

(BALANCE ONLY)

A control file ADC_POS_DATA_TMP.CTL or a format file ADC_POS_DATA_TMP.FMT loads the temporary tables with the content of the tlogs that were sent to the DBProcess Manager.

Load the Staging Table Using a Control or Format File

(XBR ONLY)

Set up the DBProcess Manager to run the POS_STAGING.CTL control file or the POS_STAGING.FMT format file that loads the tlogs directly into the staging table. No other procedures will run.

Set the Run ID (sp_pro_set_runid)

(BALANCE ONLY)

The SP_PRO_SET_RUNID procedure sets the run IDs for each temporary table and saves them in the ADC_PROCESS_RUNID table:

Table A-7: Run IDs for temporary tables

Table name	Run ID
adc_pos_data_tmp_1	121101
adc_pos_data_tmp_2	121102
adc_pos_data_tmp_3	121103
or	
adc_pos_data_tmp	121100

The run ID is derived as follows:

(The passed-in run number * 100) + the passed-in process ID

The run ID is a sequential number that is the unique run number for the daily set of records. In the example above, the run number is 1211 and process number is 01.

Transactions can be located by the run ID in the file_archive directory.

Trap Audit Errors

(BALANCE ONLY)

Note: SP_ADC_CHECK is different than SP_ADC_RECHECK, which is run only from the Balance front-end.

Once the temporary tables are loaded, the error views run over them to trap audit errors. The SP_ADC_CHECK process performs the following actions.

- Audit errors - SP_ADC_CHECK removes out the transactions with errors and transfers them to the ADC_POS_DATA_TAB table, recording the errors in the ADC_ERROR_TAB table.
- PVTRANSCOUNT and TRANSCOUNT - SP_ADC_CHECK creates two keys for each transaction.
- PVTRANSCOUNT which is a concatenation of orgid, div, transdate, transtype, storenum, regnum, transnum
- TRANSCOUNT which is a concatenation of pvtranscount, version

The following is a sample TRANSCOUNT key with all its PVTRANSCOUNT components included:

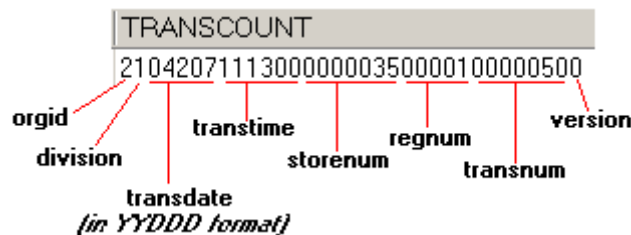


Figure A-17: Parts of a Sample TRANSCOUNT Key

Invalid Transaction Type - For any error code 021 (Invalid Trans Type), SP_ADC_CHECK changes the transtype to UNKNOWN. This change causes the transaction line to be picked up by the error view for error code 021 (ADC_ERROR_021) and as a result the line is moved to the suspended transactions tables.

Invalid Record Type - For any error code 022 (Invalid Record Type), SP_ADC_CHECK changes the rectype to UNK (unknown). This change causes the transaction line to be picked up by the error view for error code 022 (ADC_ERROR_022) and as a result, the line is moved to the suspended transactions tables.

Invalid SKUs - SP_ADC_CHECK checks for valid SKUs by running the sp_adc_validate_item procedure. (Note that SP_ADC_VALIDATE_ITEM validates SKUs only if the Invalid SKU error - error code 012 - is active.)

SP_ADC_CHECK writes transaction tables - Two of the three suspended transactions tables are written by SP_ADC_CHECK, whereas the ADC_ERROR_STATUS_T procedure writes to the third and last suspended transactions table.

Load the ADC_ERROR_STATUS_T Table (SP_ADC_LOAD)

(BALANCE ONLY)

SP_ADC_LOAD writes each transaction that has errors to the ADC_ERROR_STATUS_T table. Each transaction that it writes to the table is given a status of PND. The status changes when an auditor takes action on a transaction's errors.

Transactions in this table are by batch, meaning that a transaction can be in this table for more than one batch, but not with the same error code.

Load the Staging table with OK Transactions (sp_adc_move_stage)

(BALANCE ONLY)

SP_ADC_MOVE_STAGE takes anything from the batch that has no errors and copies it to the staging table. As it copies the error-free transaction lines into the staging table, it assigns them a status of OK. Note that, despite its name, the stored procedure does not move the transaction lines, as the transactions remain in the temporary tables until DBProcess Manager picks up the next batch and clears the temporary tables using the SP_ADC_TRUNCATE procedure.

RUN_ORDER_FINISH

Gather Manager, Transform Manager, and DBProcess Manager continue to process tlogs until no more arrive in the landing area. Once processing is complete, xfinish.ksh is launched. This process consists of the steps in the RUN_ORDER_FINISH file.

The following diagram illustrates the steps of the ETL process performed by the FINISH process:

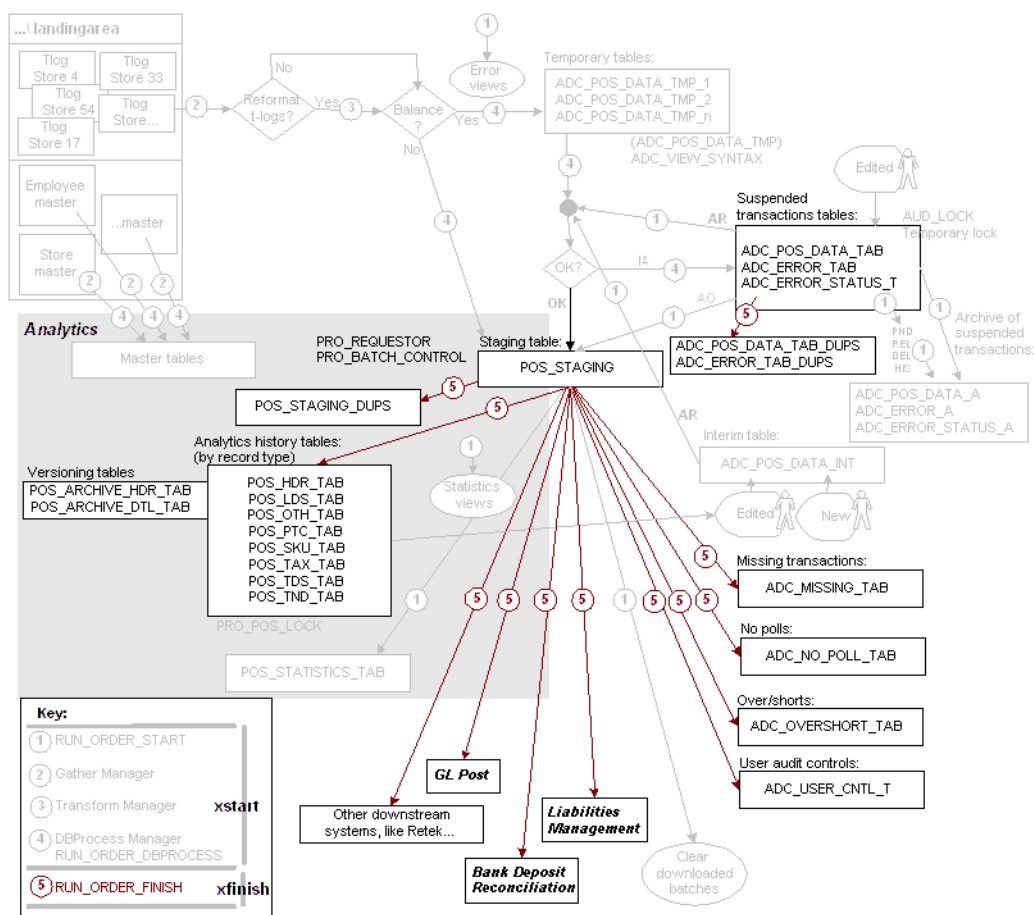


Figure A-18: Dataflow controlled by RUN_ORDER_FINISH

This section covers the steps that the RUN_ORDER_FINISH process performs. There are fewer steps if not using Balance:

Table A-8: Steps in RUN_ORDER_FINISH

XBR only	Balance & XBR	Step
✓	✓	Creates the batch number (SP_PRO_SET_BATCHNO)
✓	✓	Finds duplicate transactions in the staging table (SP_PRO_DUP_CHK)

Table A-8: Steps in *RUN_ORDER_FINISH* (continued)

XBR only	Balance & XBR	Step
	✓	Finds no polls (SP_ADC_NO_POLL)
✓	✓	Puts transactions into XBR history from staging and archives older versions (SP_PRO_LOAD_HIST)
✓	✓	Loads the POS statistical tables (SP_PRO_LOAD_STATS)
	✓	Loads the Liabilities Management tables and views (SP_ADC_LM)
	✓	Loads the GL Post tables (SP_ADC_LOAD_GL)
	✓	Finds missing transactions (SP_ADC_MISSING)
	✓	Finds user audit controls (UACs) (SP_ADC_UAC)
	✓	Finds over/shorts (SP_ADC_OVER_SHORT)
	✓	Finds duplicate transactions in the transaction audit tables (SP_ADC_SUSPEND_DUP_CHECK)
	✓	Loads the Bank Deposit Reconciliation tables and views (SP_ADC_BR)
	✓	Creates missing headers (SP_ADC_CREATE_HDR)
✓	✓	Finds no-matches (SP_PRO_NOMATCH)
✓	✓	Purges old transactions from XBR and Balance tables (SP_PRO_TRANSDATE_PURGE)
✓	✓	Creates partitions - for Oracle only (SP_PRO_CREATE_PARTITION)
✓	✓	Archives logs and results (FILES.ARCHIVE)

Create the Batch Number (sp_pro_set_batchno)

The FINISH process begins by running SP_PRO_SET_BATCHNO, which creates the batch number for one set of gathered transactions that were moved into staging during the ETL run. Each gathered set of transactions gets its own batch number.

The procedure gets the next available batch number by calling the SP_PRO_SEQUENCER procedure, which looks for the BATCHNO in the PRO_MAX_INDEX table. Then it inserts an entry into the PRO_BATCH_CONTROL table and updates all of the records in the staging table with the batch number it received from SP_PRO_SEQUENCER. SP_PRO_SET_BATCHNO only updates the records in POS_STAGING that have a BATCHNO of null.

When all downstream systems have extracted the batch, the SP_PRO_CLEAR_STAGE procedure clears the batch out of the staging table.

A procedure for each downstream system has its own columns in the PRO_BATCH_CONTROL table. The columns are:

prefix_start_date	The date and time the extract began
prefix_end_date	The date and time the extract ended
prefix_num_records	The number of records the procedure extracted
prefix_error_code	A value of 1 indicates the extract ended successfully

Each procedure records a successful extraction by updating its four columns for the batch it extracted. The procedures in core Balance (and XBR) that update the PRO_BATCH_CONTROL table as part of core processing are listed below. Each of these procedures is listed elsewhere in this guide.

Table A-9: Columns modified during a successful data extraction

Procedure	Recorded PRO_BATCH_CONTROL columns
sp_pro_clear_stage	del_start_date, del_end_date, del_num_records, del_error_code
sp_pro_dup_chk	dup_start_date, dup_end_date, dup_num_records, dup_error_code
sp_adc_suspend_dup_check	dupsuspend_start_date, dupsuspend_end_date, dupsuspend_num_records, dupsuspend_error_code
sp_adc_load_gl	gl_start_date, gl_end_date, gl_num_records, gl_error_code
sp_pro_load_hist	hist_start_date, hist_end_date, hist_num_records, hist_error_code
sp_adc_lm_load (sp_adc_lm)	lm_start_date, lm_end_date, lm_num_records, lm_error_code
sp_adc_over_short	os_start_date, os_end_date, os_num_records, os_error_code
sp_pro_load_stats	stats_start_date, stats_end_date, stats_num_records, stats_error_code
sp_adc_uac	uac_start_date, uac_end_date, uac_num_records, uac_error_code
sp_adc_br_load (sp_adc_br)	br_start_date, br_end_date, br_num_records, br_error_code
sp_pro_load_ops	ops_start_date, ops_end_date, ops_num_records, ops_error_code

If adding new downstream systems, modify PRO_BATCH_CONTROL by adding columns that the new downstream systems can update once they have extracted a batch from POS_STAGING.

Find Duplicate Transactions in the Staging Table (sp_pro_dup_chk)

The SP_PRO_DUP_CHK stored procedure moves duplicate transactions from POS_STAGING to the duplicate transactions table.

Find No Polls (sp_adc_no_poll)

(BALANCE ONLY)

Then the SP_ADC_NO_POLL stored procedure finds stores or registers that have not been polled to date.

Put Transactions into XBR History from Staging and Archives Older Versions (sp_pro_load_hist)

At this point, the SP_PRO_LOAD_HIST procedure copies the transactions of all unprocessed batches from the staging (POS_STAGING) table into the XBR history tables. Note that if using the Bank Deposit Reconciliation and Liabilities Management modules, there could be other batches in the staging table that this procedure copies into XBR history, which depends on its RECTYPE in the staging table.

Table A-10: XBR History Tables

pos_hdr_tab	Transaction header table (RECTYPE is HDR)
pos_sku_tab	Item detail table (RECTYPE is SKU, LAYSKU, SOSKU, NM, LAYNM, or SONM)
pos_lds_tab	Line discount transaction detail table (RECTYPE is LDS, LAYLDS, or SOLDS)
pos_ptc_tab	Petty cash detail table (RECTYPE is PTC)
pos_tax_tab	Tax detail table (RECTYPE is TAX, LAYTAX, or SOTAX)
pos_tds_tab	Transaction discount detail table (RECTYPE is TDS, LAYTDS, or SOTDS)
pos_tnd_tab	Tender detail table (RECTYPE is TND)
pos_oth_tab	Detail for everything else (rectype is not tnd, sku, laysku, sosku, nm, laynm, sonm, tax, laytax, sotax, ptc, lds, laylds, solds, tds, laytds, sotds)

Once done, SP_PRO_LOAD_HIST updates the PRO_BATCH_CONTROL table HIST_ columns to indicate that the batch has been moved into XBR history.

HIST_START_DATE	HIST_END_DATE	HIST_NUM_RECORDS	HIST_ERROR_CODE
1/26/2005 4:05:54 PM	1/26/2005 4:06:10 PM	2783	1

Figure A-19: PRO_BATCH_CONTROL HIST_ Columns

SP_PRO_LOAD_HIST sends only the most recent version of a transaction into the XBR history tables. Versioning tables are populated only if using Balance. It puts all other versions into the versioning tables, which are:

POS_ARCHIVE_HDR_TAB and

POS_ARCHIVE_DTL_TAB.

If when SP_PRO_LOAD_HIST runs, a transaction has a version of 0, it goes straight into the XBR history tables.

If a transaction has a version higher than 0, the transaction with the highest version number goes into the XBR history tables. SP_PRO_LOAD_HIST puts all lower versions into POS_ARCHIVE_HDR_TAB and POS_ARCHIVE_DTL_TAB. This means that lower versions come out of the XBR history table. Lower versions of header records go into the POS_ARCHIVE_HDR_TAB table, and lower versions of detail records go into the POS_ARCHIVE_DTL_TAB table.

The following is an example.

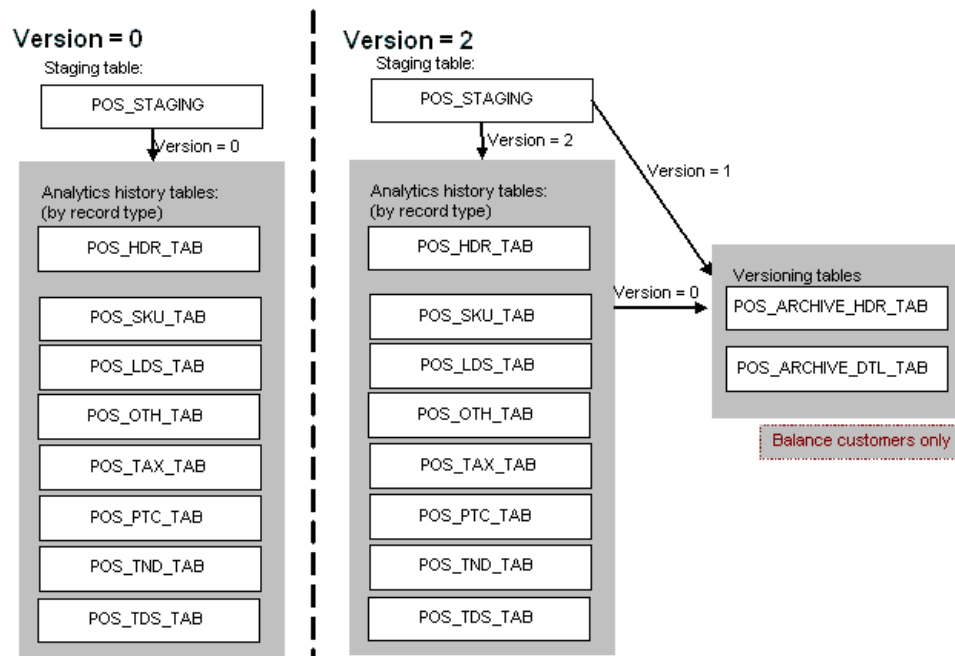


Figure A-20: Record Versioning Example

The two-versioning tables maintain the version history for the length of time specified in the PRO_TRANSDATE_PURGE table, and are purged when the SP_PRO_TRANSDATE_PURGE procedure runs during nightly processing.

Creating Versions

When the user makes a change to something in XBR history, the original remains version 0 and the front-end backs out the original values and stores this reversal as version 1. Then the new values that the user entered are saved by the front-end as version 2. Version 0 is locked in the XBR history tables, and versions 1 and 2 are saved in the interim table (unless, upon saving, the user introduced an audit error, in which case versions 1 and 2 are saved in the suspended transactions tables). So when the SP_PRO_LOAD_HIST procedure copies transactions out of the POS_STAGING table and into XBR history, it saves version 2 to the XBR history tables and relegates versions 0 and 1 to the versioning tables.

If a user then modifies the transaction again, he or she is modifying version 2, which gets locked in the XBR history tables and remains locked until the transaction is loaded back into the XBR history tables by the SP_PRO_LOAD_HIST procedure. When the user saves his or her changes, version 3 is the reversal of version 2, and version 4 contains the new values. At this point, version 2 is locked in the XBR history tables, and versions 3 and 4 are in the interim table (assuming there are no audit errors). When the ETL process runs that night:

- SP_ADC_MOVE_INT sweeps versions 3 and 4 from the interim table into POS_STAGING, then
- SP_PRO_LOAD_HIST:
 - Puts version 4 (the highest version number) into the XBR history tables.
 - Puts version 3 into the versioning tables.
 - Moves version 2 out of the XBR history tables into the archive tables.

Versioning Tables

The version that is saved in the XBR history tables will always be an even-numbered version. If there are prior versions of a transaction in the versioning table, the table will contain the original even-numbered version and its odd-numbered reversal version. Following the example above, there would be four versions in the version tables: the original transaction, version 0; the reversal of the original transaction, version 1; the modified transaction, version 2; and the reversal of the modified transaction, version 3. The highest and most current version, Version 4, is in the XBR history tables.

Post Void - Details

If a POS system does not post detail for post voiding transactions in its tlog, this detail needs to be created in order to evaluate the SKU and tender details of the post void. This detail is generated from the original or post voided transaction.

All post void statistic buckets are aggregated using the post voiding transaction.

Whether the SP_PRO_LOAD_HIST procedure uses the post void detail written by the ETL or needs to create the detail from the post voided transaction can be enabled or disabled with the following entry to the SP_PRO_VARIABLES table:

system	var_name	var_value
proact	capture_pv_details	<p>Determines whether the SP_PRO_LOAD_HIST procedure uses captured post void detail or creates post void detail.</p> <ul style="list-style-type: none"> ■ Y (Default) - Use captured post void details. ■ N - Create post void details.

No Match Analysis



*The SP_PRO_NOMATCH_RETURNEXCH and SP_PRO_NOMATCH_PVCANCEL procedures cannot be used in conjunction with the SP_PRO_NOMATCH procedure. The SP_PRO_NOMATCH procedure **must** be deactivated.*



The No Match procedures do not look at the Balance tables when performing the analysis, nor reanalyze if transactions are added to history.

The SP_PRO_NOMATCH_RETURNEXCH and SP_PRO_NOMATCH_PVCANCEL procedures, which are run from within the SP_PRO_LOAD_HIST procedure, look for original purchase transactions related to refunds and exchanges and subsequent re-ring transactions related to post voids and cancels. Based on the results of these lookups, Match Codes are assigned.

The SP_PRO_NOMATCH_RETURNEXCH and SP_PRO_NOMATCH_PVCANCEL procedures can be enabled or disabled with the following entries to the SP_PRO_VARIABLES table:

system	var_name	var_value
nomatch	process_nm_pvcancel	<p>Determines whether the SP_PRO_NOMATCH_PVCANCEL procedure is run.</p> <ul style="list-style-type: none"> ■ Y - The procedure is run. ■ N (Default) - The procedure is not run.

system	var_name	var_value
nomatch	process_nm_returnexch	<p>Determines whether the SP_PRO_NOMATCH_RETURNEXCH procedure is run.</p> <ul style="list-style-type: none"> ■ Y - The procedure is run. ■ N (Default) - The procedure is not run.

When performing a Return or Exchange lookup, if the original register number (regnum) is used, add the following entry to the SP_PRO_VARIABLES table:

system	var_name	var_value
nomatch	capture_orig_regnum	<p>Determines whether the original register number is used in the no match lookups.</p> <ul style="list-style-type: none"> ■ Y (Default) - The original register number is used. ■ N - The original register number is <i>not</i> used.

Returns & Exchanges

Detail Records

As a result of the lookup, one of the following match codes at the detail level is returned:

0 (good)	The SKU matches, the return amount is less than or equal to purchase price, and the quantity returned is less than or equal to the purchased quantity.
1 (incomplete)	One or more of the original transaction fields (orig_storenum, orig_regnum, orig_transdate, and orig_transnum) for the returned SKU record is null. (orig_regnum is only factored if capture_orig_regnum 'Y').
2 (bad)	The SKU in the return transaction is not present in the original purchase transaction or the original transaction is not found.
3 (bad)	The quantity returned is greater than the quantity in the original purchase transaction.
4 (bad)	Extended amount returned is greater than the extended amount in the original purchase transaction

The conditions are evaluated in sequence. For example, if the SKU does not match, the match code will be 2 regardless of the amount or quantity. If the SKU matches and the quantity returned is greater than what was purchased, the match code will be 3, regardless

of the return amount. Match code 4 is only used if both the SKU and quantity match, but the extended amount returned is greater than the original purchase amount.

Header Records

Header records track 'no match' returns and exchanges in a Yes, No, or Incomplete" manner. The match codes will be represented as follows:

0 (good)	All returned SKU records at the detail level have match codes of 0.
1 (incomplete)	At least one SKU record has a match code of 1 and no SKU records have a match code of 2, 3, or 4.
2 (bad)	At least one SKU record has a match code of 2, 3, or 4.

Statistics

The following summary buckets are aggregated using the logic below:

- REF_EXCH_MO_NOMATCH_COUNT - Transaction count of refund and exchange out transactions that have at least one returned SKU identified as 'no match', header match code of 2.
- REF_EXCH_MO_NOMATCH_AMOUNT- Sum of net tender amount of refund and exchange out transactions that have at least one returned SKU identified as 'no match', header match code of 2.

Cancel Transactions

Cancel transactions are evaluated to see if the SKU items in the canceled transaction were subsequently re-rung in a legitimate purchase transaction in the same store on the same day.

The number of minutes that the procedure looks forward is set by the following entry in the SP_PRO_VARIABLES table:

system	var_name	var_value
nomatch	cancel_mins	Determines how many minutes forward the procedure looks for re-rings. Default = 15

Detail records

Looking at the SKU records of SALE and EXCHANGE transactions with TRANSSTAT = 'CANCEL', VOID_CODE = 0, RETURN_FLAG = 'N', and TRAINING_FLAG = 'N', the match codes should be populated in the following manner:

0 (good)	SKU was sold in a SALE or EXCHANGE transaction with TRANSSTAT = 'COMPLETE', VOID_CODE = 0, RETURN_FLAG = 'N', and TRAINING_FLAG = 'N' within X minutes following the time of the cancel.
-----------------	--

1 (bad)	SKU was not sold in a SALE or EXCHANGE transaction with TRANSSTAT = 'COMPLETE', VOID_CODE = 0, RETURN_FLAG = 'N', and TRAINING_FLAG = 'N' within X minutes following the time of the cancel.
----------------	--

Only SKU, Store, and Trans Date are included in the evaluation criteria. Register, cashier, quantity and amount are not included.

If a cancel transaction does not include SKU detail records, it cannot be evaluated by "no match."

Header Records

The match codes at the header level are populated in the following manner:

0 (good)	All canceled SKU records at detail are populated with a match code of 0.
1 (bad)	At least one SKU record is populated with a match code of 1.

Statistics

The following summary buckets are aggregated using the logic below.

- CANCEL_NOMATCH_COUNT - Transaction count of cancel transactions that have at least one SKU record identified as 'no match', header match code of 1.
- CANCEL_NOMATCH_AMOUNT - Sum of extended amount + tax amount of cancel transactions that have at least one SKU record identified as 'no match', header match code of 1.

Post Void Transactions

Like cancels, post void transactions are evaluated to see if the SKU items in the post voided transaction were subsequently re-rung in a legitimate purchase transaction in the same store on the same date.

The number of minutes that the procedure looks forward is set by the following entry in the SP_PRO_VARIABLES table:

system	var_name	var_value
nomatch	pv_mins	Determines how many minutes forward the procedure looks for re-rings. Default = 15

Detail records

Looking at the SKU records of post void transactions (TRANSTYPE = 'POSTVOID', TRANSSTAT = 'COMPLETE', VOID_CODE = 0, RETURN_FLAG = 'N', and TRAINING_FLAG = 'N'), the match codes should be populated in the following manner:

0 (good)	SKU record was sold in a SALE or EXCHANGE transaction with TRANSSTAT = 'COMPLETE', VOID_CODE = 0, RETURN_FLAG = 'N', and TRAINING_FLAG = 'N' within X minutes following the time of the post void transaction (TRANSTYPE = 'POSTVOID').
1 (bad)	SKU record was not sold in a SALE or EXCHANGE transaction with TRANSSTAT = 'COMPLETE', VOID_CODE = 0, RETURN_FLAG = 'N', and TRAINING_FLAG = 'N' within X minutes following the time of the post void transaction (TRANSTYPE = 'POSTVOID').

Only SKU, Store, and Trans Date are included in the evaluation criteria. Register, cashier, quantity, and amount are not included.

Header Records

The match codes at the header level are populated in the following manner:

0 (good)	All post void SKU records at detail are populated with a match code of 0.
1 (bad)	At least one post void SKU record is populated with a match code of 1.

Statistics

The following summary buckets are aggregated using the logic below.

- POSTVOID_NOMATCH_COUNT- Transaction count of post void transactions that have at least one SKU record identified as 'no match', header match code of 1.
- POSTVOID_NOMATCH_AMOUNT- Sum of the net tender amount of post void transactions that have at least one SKU record identified as 'no match', header match code of 1.

Load the POS Statistical Tables (sp_pro_load_stats)

The SP_PRO_LOAD_STATS procedure creates the POS statistics that are used for XBR queries. In general, statistics capture counts and amounts that users want to report on. Statistics are captured by store/date/register/cashier.

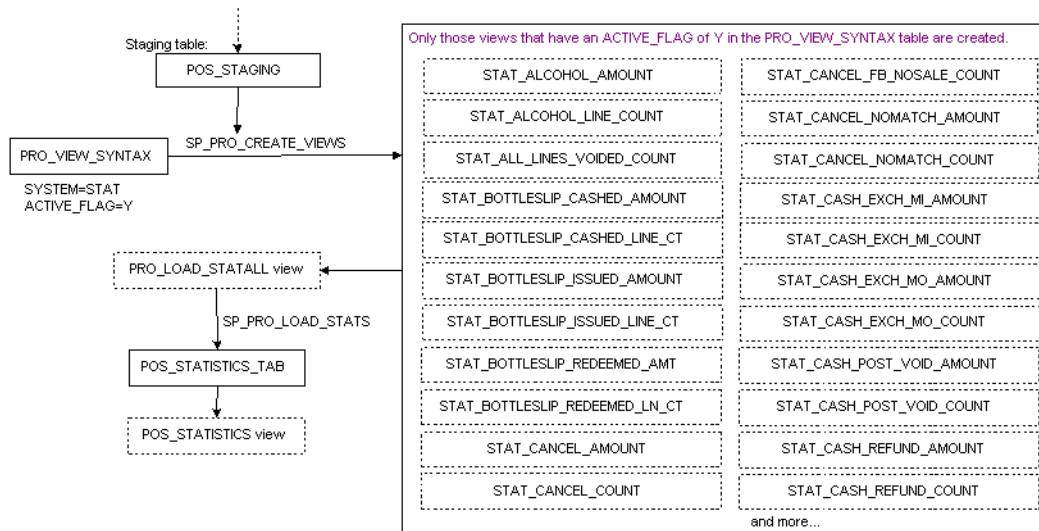


Figure A-21: SP_PRO_LOAD_STATS Procedure

Once a batch is loaded into the POS_STATISTICS_TAB table, the SP_PRO_LOAD_STATS procedure updates the STATS_ columns in the PRO_BATCH_CONTROL table to indicate that the records have been moved into XBR statistics. This allows the batch to be removed from POS_STAGING when all other downstream systems have been fulfilled.

Load the Liabilities Management Tables and Views (sp_adc_lm)

(BALANCE ONLY)

SP_ADC_LM, is used for Balance Liabilities Management module. Comment this procedure out of the RUN_ORDER_FINISH file if not using Balance.

Load the GL Post Tables (sp_adc_load_gl)

(BALANCE ONLY)

The SP_ADC_LOAD_GL stored procedure loads the ADC_GL_LEDGER_TAB and ADC_GL_EXTRACT_TAB tables, for use with GL Post. Comment this procedure out of the RUN_ORDER_FINISH file if not using Balance.

Find Missing Transactions (sp_adc_missing)

(BALANCE ONLY)

The next procedure in the ETL process, the SP_ADC_MISSING stored procedure, finds missing transactions and updates the ADC_MISSING_TAB table. Comment this procedure out of the RUN_ORDER_FINISH file if not using Balance.

Find User Audit Controls (UACS) (sp_adc_uac)

(BALANCE ONLY)

The SP_ADC_UAC stored procedure finds user audit controls (UACs) and updates the ADC_USER_CNTL_T table. Comment this procedure out of the RUN_ORDER_FINISH file if not using Balance.

Find Over/Shorts (sp_adc_over_short)

(BALANCE ONLY)

The next procedure, the SP_ADC_OVER_SHORT stored procedure, finds over/shorts and updates the ADC_OVERSHORT_TAB table. Comment this procedure out of the RUN_ORDER_FINISH file if not using Balance.

Find Duplicate Transactions in the Transaction Audit Tables (sp_adc_suspend_dup_check)

(BALANCE ONLY)

The SP_ADC_SUSPEND_DUP_CHECK stored procedure, finds duplicate transactions in Balance suspended transactions table and updates the duplicates table for Balance suspended transactions. Comment this procedure out of the RUN_ORDER_FINISH file if not using Balance.

Load the Bank Deposit Reconciliation Tables and Views (sp_adc_br)

(BALANCE ONLY)

The SP_ADC_BR stored procedure, is used for Balance Bank Deposit Reconciliation module. Comment this procedure out of the RUN_ORDER_FINISH file if not using Balance.

Create Missing Headers (sp_adc_create_hdr)

(BALANCE ONLY)

SP_ADC_CREATE_HDR finds transactions that do not have header records (transactions trapped in the ADC_ERROR_TAB table by error code 018) and inserts a header record into the ADC_POS_DATA_TAB table. Although transactions typically have headers, this procedure adds the header because the front-end will not work if a transaction is missing its header.

Purge Old Transactions from XBR and Balance Tables (SP_PRO_TRANSDATE_PURGE)

After the interim and suspended transactions tables have been cleared of good transactions, the SP_PRO_TRANSDATE_PURGE procedure purges Balance and XBR tables of transactions that exceed the limits for holding on to them. Limits are defined for each individual database table in XBR and Balance. SP_PRO_TRANSDATE_PURGE finds the limits for each table by going through the active entries in the PRO_TRANSDATE_PURGE table. For example:

Table A-11: Example *PRO_TRANSDATE_PURGE* table

table_name	retention_days	description	criteria	active_flag	date_field
adc_bank_rec_bank_tab	90		reconcile_status = 'r' and post_flag = 'y'	n	transdate
adc_bank_rec_store_tab	90		reconcile_status = 'r' and post_flag = 'y'	n	transdate
adc_dup_count_tab	90			n	transdate
adc_error_a	90			n	transdate
adc_error_status_a	90			n	release_date
adc_gl_extract_tab	180		extract_flag = 'y'	n	extract_date
adc_gl_ledger_tab	180		post_flag = 'y'	n	post_date
adc_lm_hdr_tab	1080	LM Archive		n	transdate
adc_lm_dtl_tab	1080	LM Archive		n	transdate
adc_missing_tab	90			n	transdate
adc_overshort_tab	180	Days to keep 0 amount overshorts	total_os = 0	n	transdate
adc_overshort_tab	400	delete all remaining overshorts		n	transdate
adc_overshort_tab	180	days to keep accepted	accepted_flag = 'y'	n	transdate
adc_pos_data_a	90			n	transdate
pos_hdr_tab	90			n	transdate
pos_lds_tab	90			n	transdate

Table A-11: Example *PRO_TRANSDATE_PURGE* table (continued)

table_name	retention_days	description	criteria	active_flag	date_field
pos_oth_tab	90			n	transdate
pos_ptc_tab	90			n	transdate
pos_sku_tab	90			n	transdate
pos_statistics_tab	720			n	transdate
pos_tax_tab	90			n	transdate
pos_tds_tab	90			n	transdate
pos_tnd_tab	90			n	transdate

SP_PRO_TRANSDATE_PURGE compares the number of RETENTION_DAYS to the date specified in the PRO_TRANSDATE_PURGE table DATE_FIELD column. The condition listed in the CRITERIA column must also be met. For example, using the entry for the ADC_GL_LEDGER_TAB table in the PRO_TRANSDATE_PURGE table above, SP_PRO_TRANSDATE_PURGE purges only posted entries with a POST_FLAG of Y from the ADC_GL_LEDGER_TAB table after 180 days have passed since the date they were posted. But it does this only if the ACTIVE_FLAG is Y.

As the SP_PRO_TRANSDATE_PURGE procedure purges records from the tables, it adds an entry for each purged table into the PRO_SYS_PURGELOG table. Each entry lists the table whose records were purged, the date, and the number of records purged and also indicates whether the purge ended normally or abnormally.

Create Partitions - For Oracle Only (sp_pro_create_partition)

SP_PRO_CREATE_PARTITION creates partitions in the XBR history tables for Oracle customers. For example the POS_SKU_TAB table is partitioned by date.

This procedure figures out the tables that are partitioned and partitions them as needed, by date.

Archive Logs and Results (files.archive)

FILES.ARCHIVE zips up logs, results, and archives and names the zip file using run ID.

DBPROCESS MANAGER UPDATES THE MASTER FILES

DBProcess Manager updates master files using the following steps:

1. Finding feeds of master files in the landing area
2. Updating the master file tables with what it finds there

Ensure that there is an up-to-date master file for any or all of the types of master files listed below. Master files must be named using the naming convention described in the listing.

Table A-12: *Master File Information*

Master File	File Naming Convention	Entries:	Updated Table
Employees	employee.store.date.time	mst_employee_tmp.ctl or .fmt sp_mst_upd_emp	mst_employee_tab
Stores	store.date.time	mst_store_tmp.ctl or .fmt sp_mst_upd_store	mst_store_tab
Registers	register.store.date.time	mst_register_tab.ctl or .fmt	mst_register_tab
SKUs	sku.store.date.time	mst_sku_tab.ctl or .fmt	mst_sku_tab
Banks		mst_bank_tab.ctl or .fmt	mst_bank_tab
Taxes	tax.date.time	mst_tax_tab.ctl or .fmt	mst_tax_tab
Store departments	department.store.date.time	mst_department_tab.ctl or .fmt	mst_department_tab
Vendors	vendor.date.time	mst_vendor_tab.ctl or .fmt	mst_vendor_tab

The date and time provided in the name of the master file does not have to follow a specific format. The date, time, and store components of the file name make the file name unique and easily identifiable.

If using a master file, a 0-byte trigger file of the same file name with an extension of .trg must accompany the file.

The format of the master file is defined in the control file or the format file which must be included in the control RUN_ORDER_DBPROCESS file.

Bank Feeds

If using Bank Deposit Reconciliation, set up an electronic bank feed of the bank deposit records. Bank feed information is not required for Bank Deposit Reconciliation.

Master Files

It is assumed that the master files that contain complete listings of all the records for the master tables they are updating. The content of the following master files that feed to XBR replaces everything that exists in corresponding master tables:

- Register master
- SKU master
- Bank master
- Tax master
- Store department master
- Vendor master

Store Master

DBProcess Manager clears the content from the MST_STORE_TMP table, to which it then writes the content of the store master file. The SP_MST_STORE_UPD procedure inserts any new stores that are in MST_STORE_TMP into the MST_STORE_TAB table.

Each store has its own unique ORGID, DIVISION, and STORENUM. If a store in MST_STORE_TMP already exists in MST_STORE_TAB, the store in MST_STORE_TAB is updated. If it does not exist in MST_STORE_TAB, it is added. No stores are deleted from MST_STORE_TAB.

During the store master update, SP_MST_UPD_STORE also looks at stores on the transactions that have moved into the XBR history tables. More specifically, the procedure looks in the transactions in the POS_STATISTICS view (which sits over the POS_STATISTICS_TAB table).

If on any transaction the SP_MST_UPD_STORE procedure finds a store that is not defined in the MST_STORE_TAB table, it adds the store's orgid, division, and storenum to the store master table with a store name of "Not on File". This entry is needed for performance issues in XBR queries. If there is a master file entry for the store at a later date, the SP_MST_UPD_STORE procedure updates the MST_STORE_TAB table with the new information about the store.

In Balance, if audit errors trap for error code 004 (Invalid Store), a store that is in the store master as "Not on File" is not considered a valid store. Transactions for a "Not of File" store are sent to the suspended transactions table with an Invalid Store error.

Employee Master

The employee master is updated in the same way the store master is in that DBProcess Manager clears the content from the MST_EMPLOYEE_TMP table, to which it then writes the content of the employee master file. Then the SP_MST_EMP_UPD procedure inserts any new employees that are in MST_EMPLOYEE_TMP into the MST_EMPLOYEE_TAB table. No employees are deleted from MST_EMPLOYEE_TAB.

However there are some additional updates that are done for the employee master, which are described next.

An employee CASHIERNUM must be unique, but whether it must be unique at each store or across the entire chain is determined by a value set in the PRO_SP_VARIABLES table. This one entry in the PRO_SP_VARIABLES table applies to employees.

Employees are either:

- Unique across the entire chain of stores, in which case SP_MST_EMP_UPD doesn't care which store each employee is associated with (if any). Employee 1291 in store 60 is the same person as employee 1291 in store 78.
- Unique in each store, in which case SP_MST_EMP_UPD always considers the employee's store number when determining whether the employee is already in the employee master. Employee 1291 in store 60 is a different person than employee 1291 in store 78.

Whether employees are chain-wide or store-specific is specified in a PRO_SP_VARIABLES table entry:

SYSTEM	VAR_NAME	VAR_VALUE	VAR_DATATYPE
CASHIER_STORE	CASHIER_UNIQUE	Y	C

Figure A-22: SP_PRO_VARIABLES Unique Cashier Field

For this entry, the value in the SYSTEM column is CASHIER_STORE and the value in the VAR_NAME column is CASHIER_UNIQUE.

The value in the VAR_VALUE column determines the employee configuration preference

Table A-13: SP_PRO_VARIABLES Unique Cashier Entries

var_value	Indicates Each Employee is:
Y	Unique across the entire chain of stores. Employees have a unique ORGID, DIVISION, and CASHIERNUM in the MST_EMPLOYEE_TAB table. For example, CASHIERNUM 1291 is the same employee regardless of the store. If a store number is available, it is inserted into the STORENUM column, but it does not limit the employee to that one store.
N	Specific to one store. Employees have a unique ORGID, DIVISION, CASHIERNUM, and STORENUM in the MST_EMPLOYEE_TAB table. For example, CASHIERNUM 1291 is a different employee in each store.

During the employee master update SP_MST_UPD_EMP also looks at cashiers on the transactions that have moved into the XBR history tables and are available in the POS_STATISTICS view.

If on any transaction the SP_MST_UPD_EMP procedure finds a cashier that is not defined in the MST_EMPLOYEE_TAB table, it adds the cashier number to the employee master table with a last name of "Not on File". The procedure records the cashier store in the STORENUM column, but if the entry in PRO_SP_VARIABLES indicates that employees are chain-wide, instead it sets the cashier DIVISION and STORENUM columns to 1 in the MST_EMPLOYEE_TAB table.

The following is an example of a cashier that the SP_MST_EMP_UPD procedure found on a transaction and added to the MST_EMPLOYEE_TAB table:

ORGID	DIVISION	EMPLOYEEENUM	STORENUM	FIRSTNAME	LASTNAME	CASHIERNUM
1	1		31		Not on File	123

Figure A-23: Example Cashier Added to MST_EMPLOYEE_TAB

Without this entry for the cashier in the employee master, the transaction would not show up in XBR queries. If there is an entry for the cashier at a later date, the SP_MST_UPD_EMP procedure updates the MST_EMPLOYEE_TAB table with the new information about the cashier.

Other Master Files

There are additional master tables available in XBR and Balance:

- Custom Masters - There may be instances where a procedure has its own master files, such as a purchase order master, that also need to be loaded into the ETL process.
- Calendar Master - The Calendar Master will update the calendar (MST_CALENDAR_TAB) table at the beginning of each year. It is not updated by the ETL process.

Put the Configuration Files Into \Control

(NECESSARY ONLY IF USING TRANSFORM MANAGER.)

Put the DBF files for the tlogs into the \control\transform_configs directory. These files are available from a Configuration Management manager if not in the following directory:

G:\<ClientFolder>\XBRTRACK\CONFIG.RELEASE.

Gather Manager looks for TRG files in the incoming folder in the landing area and strips off the .trg extension and concatenates X number of files into polldata.set. (In the init.ksh, polldata.set is XGV_SUBPROC_DATAFILE.). Transformmgr runs the content of polldata.set through the loader using the definitions in the .dbf config files and saves pos_staging_tranh.dat and pos_staging_trand.dat to the transformmgr\transform\controlname\results directory.

This directory contains core .sql. For example, .fmt files or .ctl files. There may be pos_staging_trand, pos_staging_tranh, pos_savestag_trand, pos_savestag_tranh files that must be put into this directory.

LOGS

Control Logs

These Control logs provide an overview of the entire process for the given instance name. Information is written to the logs by the xstart, xstop, xresume, xfinish scripts and all of the sub-processes.

Table A-14: *Control Log*

File location:	...\DTV\CONTROL\<ControlInstance>\EVENTLOG	
File naming convention:	CONTROL_<ControlInstance>_<Control#>.log	
Log structure:	Name:	Description:
	DATE_TIME	Example: 01-Mar-2005 16:46:50
	INSTANCE_NAME	Example: RUN_TLOGS
	CONTROL_NUMBER	From Control.txt
	SERVICE_NAME	CONTROL, GATHER, TRANSFORM, DBPROCESS, etc.
	STATUS	NORMAL, ERROR, FAIL
	MESSAGE	Message

Sub-Gather Logs

These sub-Gather logs contain detail on file Gather information.

Table A-15: *Sub-Gather Log*

File location:	...\DTV\CONTROL\<ControlInstance>\EVENTLOG	
File naming convention:	GATHER_<ControlInstance>_<Control#>.log	
Log structure:	Name:	Description:
	DATE_TIME	Example: 01-Mar-2005 16:46:50
	INSTANCE_NAME	Example: RUN_TLOGS
	CONTROL_NUMBER	From Control.txt
	GATHER BATCH NUMBER	From gbatch.txt

Table A-15: *Sub-Gather Log (continued)*

	STATUS	NORMAL, ERROR, FAIL
	MESSAGE	Message

Sub-Transform Logs

These sub-Transform logs contain detail on file Transform information.

Table A-16: *Sub-Transform Log*

File location:	...\DTV\CONTROL\<ControlInstance>\EVENTLOG	
File naming convention:	TRANSFORM_<ControlInstance>_<Control#>_<Gather#>.log	
Log structure:	Name:	Description:
	DATE_TIME	Example: 01-Mar-2005 16:46:50
	INSTANCE_NAME	Example: RUN_TLOGS
	CONTROL_NUMBER	From Control.txt
	GATHER BATCH NUMBER	From gbatch.txt
	STATUS	NORMAL, ERROR, FAIL
	MESSAGE	Message

Sub-DBProcess Logs

These sub-DBProcess logs contain detail on file DBProcess information.

Table A-17: *Sub-DBProcess Log*

File location:	...\DTV\CONTROL\<ControlInstance>\EVENTLOG	
File naming convention:	DBPROCESS_<ControlInstance>_<Control#>_<Gather#>_<Subproc#>.log	
Log structure:	Name:	Description:
	DATE_TIME	Example: 01-Mar-2005 16:46:50
	INSTANCE_NAME	Example: RUN_TLOGS
	CONTROL_NUMBER	From Control.txt
	GATHER BATCH NUMBER	From gbatch.txt

Table A-17: *Sub-DBProcess Log (continued)*

	STATUS	NORMAL, ERROR, FAIL
	DB_TASK_NAME	Name of SP or Table being loaded
	MESSAGE	Message

MANAGER LOGS

Gather Manager Logs

These GATHERMGR logs record events in the Gather Manager shell script.

Table A-18: *Gather Manager Log*

File location:	...\DTV\GATHERMGR\EVENTLOGS	
File naming convention:	GATHERMGR_<Timestamp>.log	
Log structure:	Name:	Description:
	DATE_TIME	Example: 01-Mar-2005 16:46:50
	STATUS	NORMAL, ERROR, FAIL
	MESSAGE	Message

Transform Manager Logs

The TRANSFORMMGR logs record events in the Transform Manager shell script.

Table A-19: *Transform Manager Log*

File location:	...\DTV\TRANSFORMMGR\EVENTLOG	
File naming convention:	TRANSFORMMGR_<Timestamp>.log	
Log structure:	Name:	Description:
	DATE_TIME	Example: 01-Mar-2005 16:46:50
	STATUS	NORMAL, ERROR, FAIL
	MESSAGE	Message

DBProcess Manager Logs

These DBPROCESSMGR logs record events in the Database Process Manager shell script.

Table A-20: *DBProcess Manager Log*

File location:	...\DTV\DBPROCESSMGR\EVENTLOG	
File naming convention:	DBPROCESSMGR_<Timestamp>.log	
Log structure:	Name:	Description:
	DATE_TIME	Example: 01-Mar-2005 16:46:50
	STATUS	NORMAL, ERROR, FAIL
	MESSAGE	Message

GLOSSARY OF BALANCE TERMS

The following is a brief glossary of terms used within the Balance product:

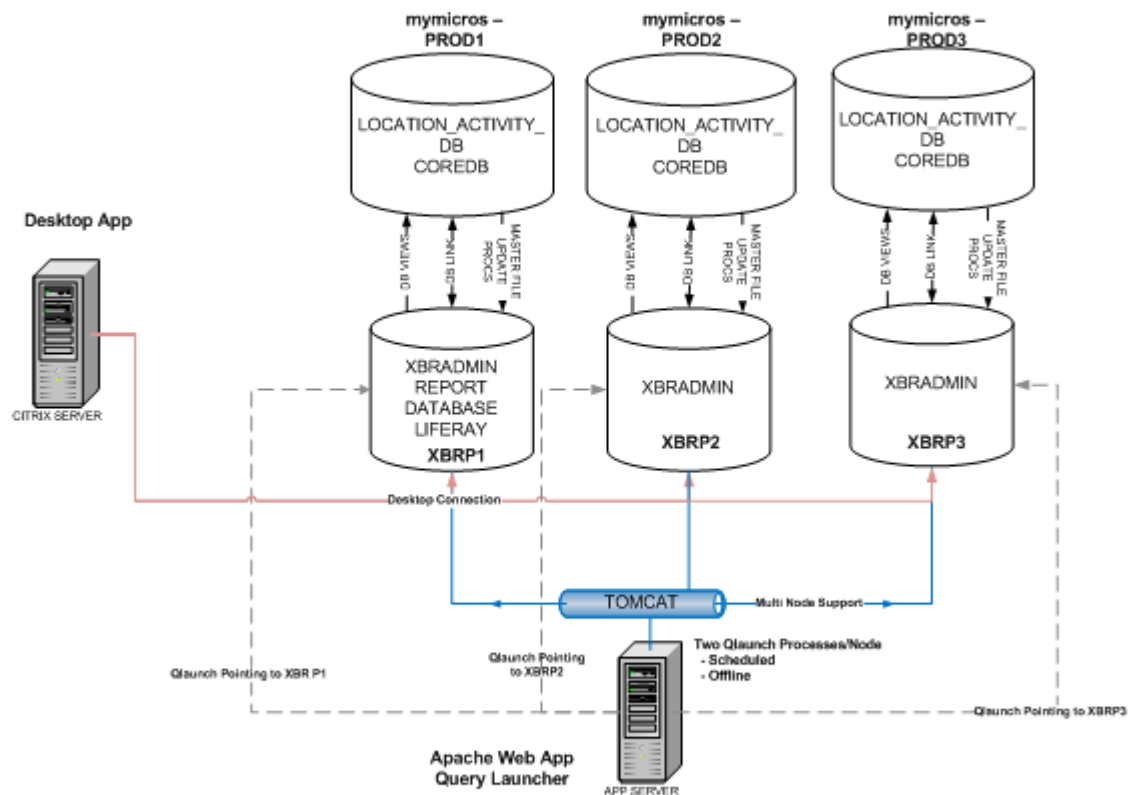
Table A-21: *Balance Glossary*

Term	Description
ADC	As an acronym for the name of Balance in prior releases, Balance tables, views, stored procedures, and values use this acronym as part of their name.
Analytics	Analytics is the new name for the product previously known as Proact and XBR, the Datavantage application that handles loss prevention.
Audit error	Balance looks for audit errors in incoming point-of-sale transactions, new transactions entered by users, or transactions that have been edited by users. Balance can be configured to flag errors provided in the core Balance tables and errors.
Auditor	Auditors are individuals who address errors flagged by Balance.
Balance	The application, formerly known as ADC or Audit, that scrubs data before passing to it downstream systems and includes GL Post, Bank Deposit Reconciliation, and Liabilities Management modules.
Business Date	The date the point-of-sale transaction was recorded in Balance or Analytics or the date a bank deposit transaction was recorded by the bank. Compare to transaction date.
Department	When used in the register master, department indicates the physical department in the store where the register is located, for example, Shoe Department. When used in the SKU line, department indicates the department of the item, but is used as a classification, for example, Men's Oxford Shirt.
Downstream System	Downstream systems are any Balance module, Analytics component, third-party application, or customized process that pulls data out of the staging table. A downstream system has its own columns in the PRO_BATCH_CONTROL table. Once a downstream system has pulled batch data from the staging table, it updates its columns for that batch. When all downstream systems have pulled a batch, the SP_PRO_CLEAR_STAGE procedure deletes the batch from the staging table.
Duplicate	Duplicates are point-of-sale transactions that have already been pulled into a table by the ETL process. For example, this occurs when a store polls its data more than once. Balance can remove duplicate POS transactions from the data warehouse before they are moved to downstream systems.

Table A-21: *Balance Glossary (continued)*

Term	Description
ETL Process	Formerly known as the Lloader, the Extract, Transfer and Load (ETL) process consists of the scripts that look for incoming t-logs and move them into Balance and Analytics. ETL is a data warehousing term.
ISBN	See SKU.
Missing Transaction	Missing transactions are point-of-sale transaction numbers that haven't polled. Balance can keep track of the transaction numbers that poll. Balance assumes there are missing transactions and alerts the auditors when it discovers gaps in the numbers.
No Poll	No polls are caused when no point-of-sale transactions were moved into the Balance data warehouse tables for a store on a day when that store was open for business. No poll errors identify the store and the day on which transactions were not received. However, when only one transaction makes it into the Balance tables, Balance assumes that the store polled successfully.
Over/Short	Point-of-sale transactions whose amounts exceed or fall short of the register receipts for the day and called Overs or Shorts. Balance recognizes over/shorts by store, department, register, cashier, or tender.
Polling	Polling defines the process where stores send or copy their daily t-log files to the ETL directory where they are received and moved into Balance or Analytics data warehouse tables
Proact	As the previous name for Analytics, tables, views, stored procedures and other values use Proact or PRO in their name.
SKU	The Stock Keeping Unit (SKU), Universal Product Code (UPC) item number or the International Standard Book Number (ISBN) identify an individual item. If there is an SKU master file, Balance can identify invalid SKUs on incoming point-of-sale transactions.
Transaction Date	The Transaction date indicates the date on which the transaction occurred. Compare to business date.
UPC	See SKU.
User	Users can include system administrators, auditors, or loss prevention officers.

HOSTED FOOD SERVICE ARCHITECTURE



Mymicros Data Warehouse

The Location Activity database (LOCATION_ACTIVITY_DB) is the main mymicros data warehouse. It contains both the summary and detail level transactional POS data needed by XBR to produce exception reporting and analysis. This database is populated utilizing a

Remote Transfer Agent (RTA) that normalizes and posts the POS data to the database while also aggregating XBR statistics during the end of day procedure. The header and detail data is sent from the POS in 15 minute increments. The RTA and posting agents serve as the ETL function and avoid the necessity of a custom configuration loader. Although there are some subtle differences between the various MICROS POS platforms, the data structure is normalized for the most part.

The CORE database (COREDB) is a distinct database schema that contains core system information about organizations, organizational hierarchies, and locations. XBR utilizes this database as the source data for several of the fields in the XBR Store Master table.

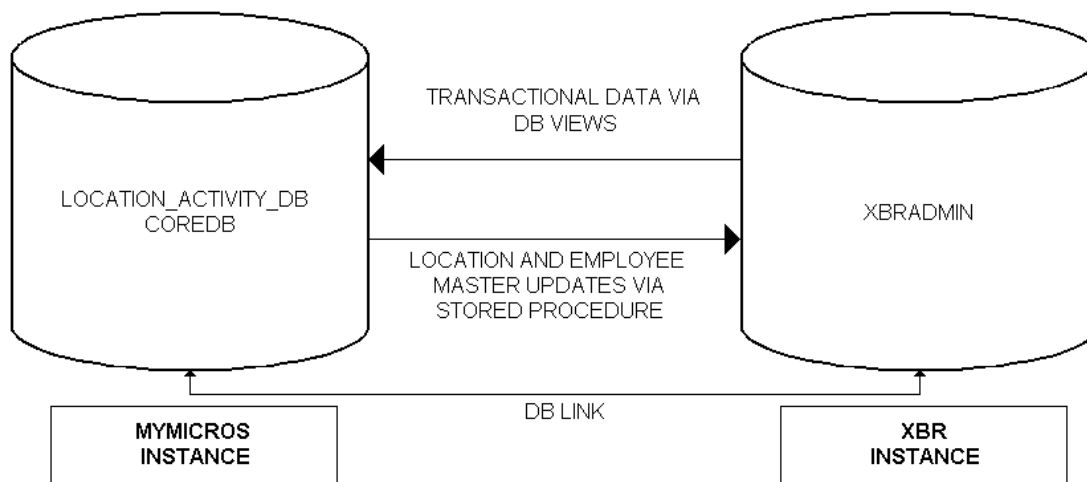
XBR Database Schema

The XBR application resides in a distinct database schema (XBRADMIN). This database maintains the application related tables (i.e. - ADM_*, PRO_*, QSC_*) that manage the functions of XBR as well as the application metadata (query definitions, scheduled reports, user profiles, etc.). The XBRADMIN schema also contains the POS database views (POS_*) that are selects on transactional tables within LOCATION_ACTIVITY_DB. There are several master views (MST_*) for textual information that reference the master tables used in mymicros. The views will be explained in greater detail in a later section.

In addition, there are three master tables: Location Master, Employee Master, and Register Master (MST_STORE, MST_EMPLOYEE, and MST_REGISTER). These are updated daily using stored procedures (SP_MST_UPD_STORE, SP_MST_UPD_EMP, and SP_MST_UPD_REGNUM), using temp views on mymicros tables as the data source. These are distinct tables in the XBRADMIN schema rather than views for performance purposes.

In the hosted environment (MICROS data center), the XBRADMIN schema lives in a separate Oracle database instance from mymicros and communicates to the LOCATION_ACTIVITY_DB via a database link (see diagram below). In a self-hosted customer implementation, it is recommended to install the XBRADMIN schema in the same instance as mymicros to achieve improved performance.

Starting with the XBR 6.8 release, the XBR application will support multiple organizations within the same database schema for hosted deployments. This will alleviate the need for separate schemas for each customer and instead, one XBRADMIN schema will serve all customers (organizations) hosted in the multi-tenant mymicros data warehouse. The customers will share the same database tables, view, and procedures; however the metadata will be cloned (via database scripts) in order to maintain the flexibility for customization with the front end XBR application.



XBR Transactional Database Views

As stated earlier, XBR utilizes the mymicros data warehouse as the data source for all the transactional data for reporting. The following section details the primary XBR views and the associated mymicros source tables used.

- **POS_SALES_DTL** – The POS Sales Detail view pulls from the **GUEST_CHECK_LINE_ITEM_HIST (GCLHI)** table in **LOCATION_ACTIVITY_DB**. Although there are joins to other tables, GCLHI serves as the primary data source for the transaction detail associated with guest checks. This includes detail types such as menu items, tenders, service charges, and discounts. The detail types are further defined by the category which is configured in the Tender Media Master in the Warehouse Admin of the mymicros portal. For example, a cash tender record will have a detail type of 4 and a category of 2. A complete list of detail and category codes can be found in the XBR Data Dictionary.
- **POS_SALES_HDR** – The POS Sales Header view pulls from the **GUEST_CHECK_HIST (GCH)** table in **LOCATION_ACTIVITY_DB**. This transactional view provides check header level reporting and includes fields such as check total, tip total, void total, number of guests, and number of items as well as flags such as employee meal flag, reopened closed check flag, and sales under threshold flag.
- **POS_NONSLS_DTL** – The POS Non-Sales Detail view pulls from the **NON_SALES_DETAIL (NSD)** table in **LOCATION_ACTIVITY_DB**. This provides the detail of non-sales transactions which include training transactions, no sales, paid ins, paid outs, and cancels.
- **POS_JOURNAL_HDR** – The POS Journal Header view unions the Sales and Non-Sales views in order to provide a Transaction Journal report that shows a chronological, daily account of both sales and non-sales POS activity.
- **POS_STATISTICS** – The POS Statistics view pulls from the **XBR_STATISTICS** table in **LOCATION_ACTIVITY_DB**. This table stores the statistical data aggregated by mymicros and is the source table for most of the XBR summary reporting. The table includes statistical counts and totals for over 100 key transactional areas such as error corrects, line voids, no sales, subtotal discounts, employee meal discounts, credit card sales, check count, and net sales. Each record summarizes by

organization, location, revenue center, employee, business date, and day part. The formulas for the statistical calculations are controlled by the posting agent within mymicros.

- POS_STATISTICS_MGR – POS Manager Statistics is a summary view from GCLIH that aggregates counts and totals for three high risk areas (error corrects, line voids, and discounts) by organization, location, revenue center, manager employee, and business date. Unlike POS_STATISTICS, this view is used to analyze and track transactions by the authorizing manager employee rather than the transaction employee.
- POS_DISCOUNT_DAILY_TOTAL – The POS Daily Discount Total view pulls from the DISCOUNT_DAILY_TOTAL table in LOCATION_ACTIVITY_DB. While POS_STATISTICS aggregates discount counts and totals by individual discount categories (coupon, employee meal, loyalty, other category 1, other category 2) as well as by type (line item and subtotal), this table provides summary statistics for each individual discount reason. The table provides a summary by organization, location, revenue center, and business date; it does not include employee information.
- POS_MENU_ITEM_DAILY_TOTAL – The POS Daily Menu Item Total view pulls from the MENU_ITEM_DAILY_TOTAL table in LOCATION_ACTIVITY_DB. This aggregates sales count and totals as well as return and discount totals for individual menu items by location, revenue center, and business date.
- POS_TIME_CARD_DTL – The POS Time Card Detail view pulls from the TIME_CARD_DETAIL and JOB_CODE tables in LOCATION_ACTIVITY_DB. This provides detail reporting of employee clock ins, clock outs, regular hours works, and overtime hours worked.
- INV_SUMMARY - View on INV_ITEM_DAILY_TOTAL. This view gathers daily totals (net sales, open amount, delivery, waste, close amount, etc,) for each location.
- INV_ITEM_DAILY_TOTAL - The Inventory Item Daily Total view pulls from the INVENTORY_ITEM_DAILY_TOTAL table and calculates the close amount, actual usage, ideal usage, waste, actual cost, and ideal cost for specific business dates, locations, cost centers, and item ID.
- POS_SALES_HDR_TODAY - The POS Sales Header Today view pulls from the GUEST_CHECK table and provides check header level reporting and includes fields such as check total, tip total, void total, number of guests, and number of items as well as flags such as employee meal flag, reopened closed check flag, and sales under threshold flag for the current day.
- POS_SALES_DTL_TODAY - The POS Sales Detail Today view pulls from the GUEST_CHECK_LINE_ITEM (GCLI) table. Although there are joins to other tables, GCLI serves as the primary data source for the transaction detail associated with guest checks for the current day. This includes detail types such as menu items, tenders, service charges, and discounts. The detail types are further defined by the category which is configured in the Tender Media Master in the Warehouse Admin of the mymicros portal. For example, a cash tender record will have a detail type of 4 and a category of 2. A complete list of detail and category codes can be found in the XBR Data Dictionary.
- POS_VIDEO_DTL - This view is used for receipt detail information in the Video Queue.

XBR Master (Reference) Views

In addition to the POS views above that are the source for the transactional data, there are several Master (MST_*) views that bring in meaningful values and descriptions from mymicros that can be included on XBR reporting. Since mymicros uses internal unique identifiers (xxxID) for all database tables, it is necessary to incorporate the POSRef value and/or the Name. In some cases, this is done in the transactional views themselves, but the following is a list of the additional master views that are used in dynamic lookups or as supplemental tables in a query.

- MST_DAY_PART - View on DAY_PART. The Day Part Master is used in the Day Part dynamic lookup to display the textual day part, i.e. – Breakfast, Lunch, Dinner, Late Night, etc.
- MST_FAMILY_GROUP - View on FAMILY_GROUP. The Family Group Master includes the Family Group of menu items, i.e. – Entrees, Appetizers, Desserts, Sides, etc.
- MST_HR_EMPLOYEE - View on HR_EMPLOYEE. The HR Employee Master is used mainly for Time Card reporting.
- MST_MAJOR_GROUP - View on MAJOR_GROUP. The Major Group Master includes the Major Group of menu items, i.e. – Food, Beverage, Merchandise, etc.
- MST_MENU_ITEM - View on MENU_ITEM. The Menu Item Master allows for reporting on individual menu items across the organization by incorporating the MENUITEMREPORTID.
- MST_ORDER_TYPE - View on ORDER_TYPE. The Order Type Master is used in the Order Types dynamic lookup to display the textual order type, i.e. – Dine In, To Go, Drive-Thru, etc.
- MST_REASON_CODE - View on REASON_CODE. The Reason Code Master is used in the Reason Code dynamic lookup to display the textual reason codes for voids, returns, etc.
- MST_REVENUE_CENTER - View on REVENUE_CENTER. Revenue Centers can be used to distinguish areas of a given restaurant (bar, delivery, takeout, etc.) or individual units within a complex location such as a stadium, airport, hotel, resort, etc.

XBR Location and Employee Master Tables

There are two master tables that physically reside within the XBRADMIN schema. The Location Master (MST_STORE) maintains additional location information such as location name, organizational hierarchy, address, phone, etc. The Employee Master (MST_EMPLOYEE) stores additional employee related information such as POSRef (customer employee number), employee name, job code, hire date, etc.

Temp views (MST_STORE_TMP and MST_EMPLOYEE_TMP) on specified mymicros tables are utilized to select pertinent data that is then loaded to database tables in the XBRADMIN schema, MST_STORE_TAB and MST_EMPLOYEE_TAB respectively. These tables are loaded using stored procedures (SP_MST_UPD_STORE and SP_MST_UPD_EMP). These procedures should be scheduled to run daily to ensure that these tables are kept up to date. These tables can also be modified through XBR using Table Editor to maintain fields that are included in the XBR table but are not available in the mymicros portal.

Location Master (MST_STORE)

The temp view (MST_STORE_TMP) pulls data from the LOCATION_HIERARCHY_ITEM (LHI) table in LOCATION_ACTIVITY_DB and the CORE_ORG_LEVEL (COL) table in COREDB.

Important Field Definitions:

- STORENUM- This field is mapped to LOCATIONID which is the internal, numeric identifier for a given location. This is used heavily to uniquely identify a location in XBR however since this value is meaningless to the customer, a dynamic lookup is used in the queries to display ORGLOCATIONREF.
- ORGLOCATIONREF- This field is the location identifier known to the customer. This is a character field and may contain numbers, letters, or both.

Organizational/Location Hierarchy – Mymicros uses a parent-child relationship to define the association between a given location and the hierarchical level (i.e. – district, region, territory, etc.). In the CORE_ORG_LEVEL table, a location (or level) will contain an ORGLEVELID, PARENTORGLEVELID, and ORGLEVELTYPE. The PARENTORGLEVELID is used to identify and link to the ORGLEVELID of the hierarchical level that the record belongs to. The ORGLEVELTYPE is used to identify if the record is a location (ORGLEVELTYPE = 1) or hierarchical level (ORGLEVELTYPE = 0).

The table below provides an example of Location 100 (Broadway) that belongs to District 80 (New York) and Region 8 (East) for OrgID 1:

ORGANIZATIONID	ORGLOCATIONREF	ORGLEVELNAME	ORGLEVELID	PARENTORGLEVELID	ORGELEVELTYPE
1	100	Broadway	1234	5678	1
1	80	New York	5678	9012	0
1	8	East	9012	1	0

Since the XBR Location Master uses specific, designated fields rather than relationships, a recursive join is used to populate the following fields:

DISTRICT – ORGLEVELID of first hierarchical level

DISTRICT_NAME – ORGLEVELNAME of first hierarchical level

REGION – ORGLEVELID of second hierarchical level

REGION_NAME –ORGLEVELNAME of second hierarchical level

DIVISION – ORGLEVELID of third hierarchical level

The above example would appear in the XBR Location Master as follows:

ORGID	ORGLOCATIONREF	STORENAME	DISTRICT	DISTRICT_NAME	REGION	REGION_NAME	DIVISION
1	100	Broadway	5678	New York	9012	East	1

Notes:

- If a given organization has locations with a different number of hierarchical levels, you may see misalignment such as “Region” information populated in the “District” fields. For example, Location 100 belongs to District 5678 (New York) and Region

9012 (East) and Location 200 belongs to Region 9012 (East) but does not have a District. Location 200 will be populated with a District 9012 (East). To prevent this from occurring, make sure all locations have the same number of levels but no more than 3.

- ORGLEVELID is an internal identifier that is meaningless to the customer. However, this field was used for DISTRICT, REGION, and DIVISION because these fields must be numeric in order for Store Group Security to work properly in XBR. This field is displayed in certain areas of the XBR application, however a lookup should be used to provide the user with meaningful values.
- LOCATIONID (STORENUM) is not listed in the above examples because it is not included in CORE_ORG_LEVEL. Therefore, it is sourced from LOCATION_HIERARCHY_ITEM instead.

Employee Master (MST_EMPLOYEE)

The temp view (MST_EMPLOYEE_TMP) pulls data from the EMPLOYEE and HR_EMPLOYEE tables in LOCATION_ACTIVITY_DB.

Important Field Definitions:

- CASHIERNUM- This field is mapped to EMPLOYEEID which is the internal, numeric identifier for an employee. This is used heavily to uniquely identify an employee in XBR however since this value is meaningless to the customer, this is typically a hidden field in queries and instead POSREF is displayed.
- POSREF- This field is the employee identifier known to the customer.

XBR CONFIGURATION IN MYMICROS PORTAL

Although a custom configuration loader is not needed when XBR Food Service Analytics is interfaced with mymicros, there are certain options that need to be enabled, configured, and mapped in order for the data to appear properly in XBR. This configuration is done in the Warehouse Administration section of the mymicros Admin portal. A System Administrator login to mymicros is required to access the necessary screens. The following configuration steps are required:

- Enable XBR Posting – This is required to populate the XBR_STATISTICS table and the XBRCATEGORY for tenders and discounts.
- XBR Setup (Setting XBR Variable Parameters) – In this screen, the variable thresholds such as Sales Under Threshold, Discount Percentage Over Threshold, and Tip Percentage Over Threshold are configured.
- Tender Mapping – In the Tender Media Master, the XBR Category for each listed tender needs to be selected. The XBR Tender Categories include: coupon, cash, bank check, credit card, debit card, gift card redeemed, gift certificate redeemed, gift card cashed, gift certificate cashed, corporate charge, other category 1, other category 2, other category 3, other category 4, and employee meal.
- Discount Mapping – In the Discount Master, the XBR Category for each listed discount needs to be selected. The XBR Discount Categories include: coupon, employee meal, other category 1, other category 2, and loyalty.

- Gift Cards/Certificates Mapping – Gift cards and gift certificates can be listed as either a Service Charge or Menu Item. Therefore, this configuration will be done in either the Service Charge Master or Menu Item Master. The XBR Category for these items needs to be mapped as either Gift Card or Gift Certificate.

See “XBR-mymicros Portal Configuration” for complete documentation on this process including screen shots.

XBR Reporting

The XBR Food Service Query Library provides over 250 canned reports that allow the user to identify, trend, and track suspicious POS activity. There are summary reports by Location, Revenue Center, and Employee for each query classification. XBR then has direct links to appropriate header and detail level reports that allow the user further investigate the activity.

There are also almost 300 control points that track exceptions at the Location, Revenue Center, Employee, or Manager level, identifying those with counts, totals, or percentages that exceed the company threshold.

Query classifications include: Coupons, Credit Cards, Current Day Reporting, Debit Cards, Discounts, Employee Meals, Gift Cards, Gift Certificates, Inventory, Menu Item Sales, No Sales, Productivity, Sales Under Threshold, Service Charges, Store Accountability, Tender Analysis, Tip Analysis, Transaction Analysis, and Voids & Cancels. For a complete list of available reporting, see CORE XBR Food Service Query List.

APPENDIX

B

Extensibility

Overview

Often during an installation, a stored procedure or database view has to be modified to meet specific customer requirements. This can lead to problems during an upgrade trying to preserve the custom procedures or views.

This problem has been solved through the development of the Extensibility Module. This module allows the customization of stored procedures and views by extending (customizing) them and maintaining the integrity of the base code.

Certain views and stored procedures have been designated as core and, when extended, are saved as custom code and are marked as active. The corresponding core code is marked as inactive.

Audience

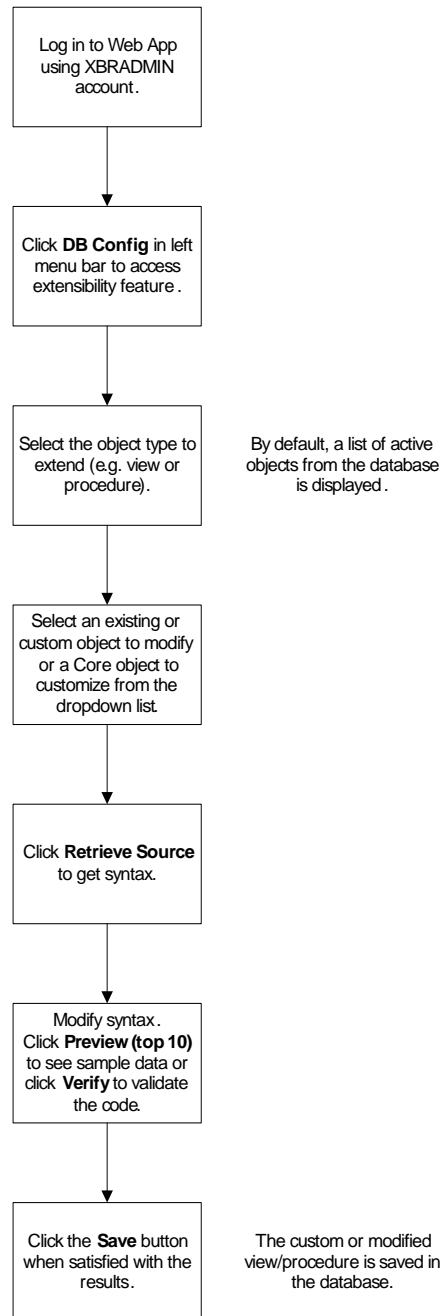
This appendix is designed for those individuals who are responsible for extending (customizing) stored procedures and database views per customer requirements.



Before making any changes to core views or stored procedures, make sure you back up your database.

Web Interface

View and procedures are extended (customized) using the Web Interface. The following flowchart shows the work flow:



Stored Procedure Extensibility

For new installations, a new table, PRO_PROCEDURES, will be created and populated with core procedure names as part of the installation process. If a core procedure needs to be modified, the operations team will use the Web Interface (DB Config) to edit the core code and save it as an extension.

For upgrades, a new table, PRO_PROCEDURES, will be created and populated with core procedure names as part of the upgrade. All current procedures will be considered custom and active. Each custom procedure will be renamed with an "_E", for extended code, appended to the procedure name. Then our core extensible procedures will be created. The PRO_PROCEDURES table will be updated with the custom_name. The Operations team will be responsible for comparing all custom procedures to the core procedures and based on their analysis, decide to activate either the core or custom code. If they decide to activate a core procedure, they will need to use the Web Interface to delete the custom procedure and set the core procedure to active by setting CUSTOM_NAME to Null in the PRO_PROCEDURES table.



Look in the pro_procedures table for the current procedure running. If the custom_name is not null or blank and the custom procedure exists, run the custom procedure. If the custom procedure does not exist, write an error message to pro_eventlog and stop processing. Otherwise (if the custom_name is null or blank) continue running the core procedure.

Web Interface

Modify a Stored Procedure

Use the following steps to modify an existing stored procedure:

1. Log in to the Web Application as "XBRADMIN".



The DB_config role is a new role for Extensibility that is assigned only to the XBRADMIN user.

2. Click **DB Config** in the menu on the left. Two options are displayed: Edit View and Edit Procedure.

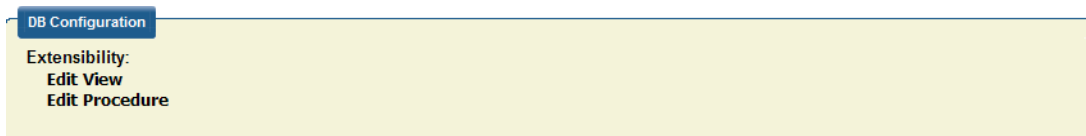


Figure B-1: Extensibility Options

3. Select Edit Procedure. The Edit Procedure form is displayed.

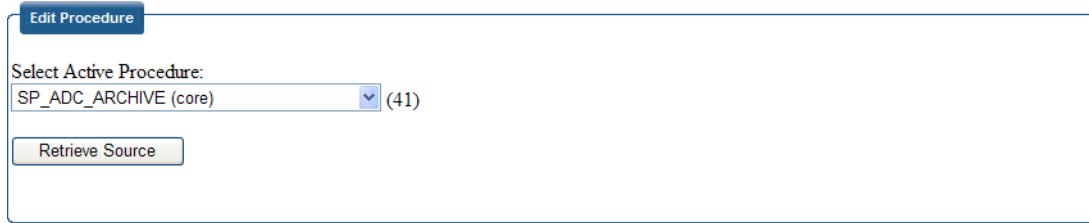


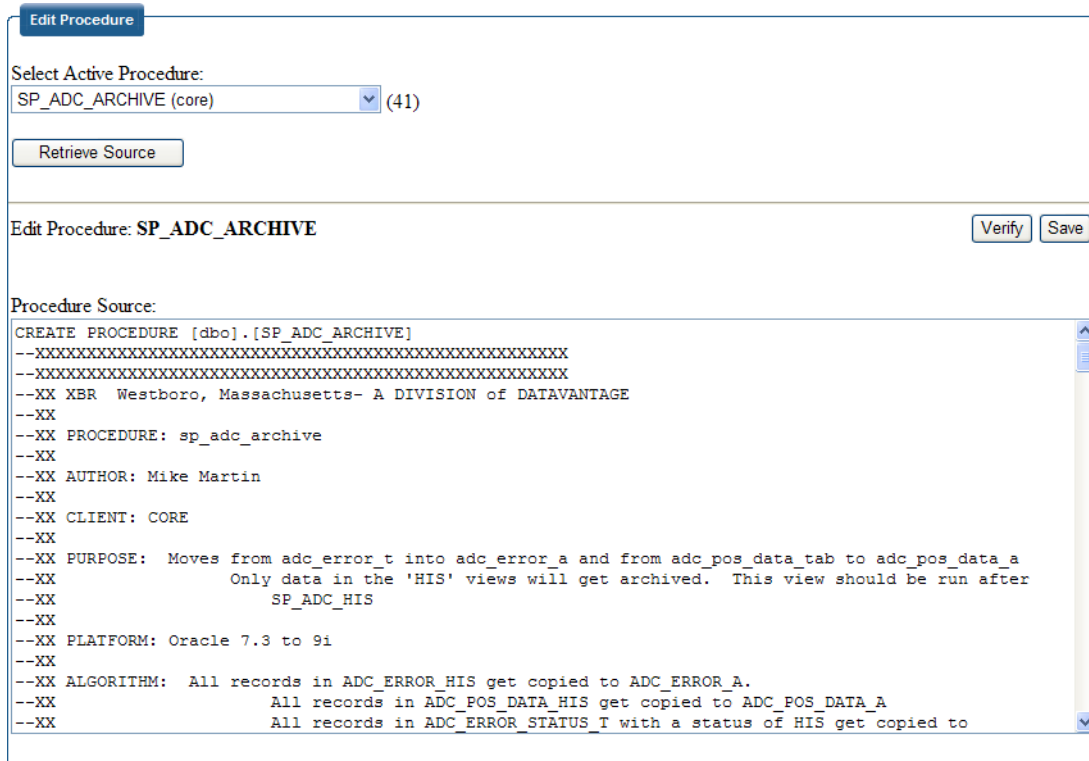
Figure B-2: Edit Stored Procedure Form

4. Select the stored procedure you would like to modify from the dropdown list.



If the procedure name has “Core” after it, the procedure has not been modified. If there is no “Core” after the procedure name, that procedure is a custom procedure.

5. Click the **Retrieve Source** button. The code that creates the procedure is displayed.



```

CREATE PROCEDURE [dbo].[SP_ADC_ARCHIVE]
--XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
--XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
--XX  XBR  Westboro, Massachusetts- A DIVISION of DATAVANTAGE
--XX
--XX PROCEDURE: sp_adc_archive
--XX
--XX AUTHOR: Mike Martin
--XX
--XX CLIENT: CORE
--XX
--XX PURPOSE:  Moves from adc_error_t into adc_error_a and from adc_pos_data_tab to adc_pos_data_a
--XX             Only data in the 'HIS' views will get archived.  This view should be run after
--XX             SP_ADC_HIS
--XX
--XX PLATFORM: Oracle 7.3 to 9i
--XX
--XX ALGORITHM: All records in ADC_ERROR_HIS get copied to ADC_ERROR_A.
--XX             All records in ADC_POS_DATA_HIS get copied to ADC_POS_DATA_A
--XX             All records in ADC_ERROR_STATUS_T with a status of HIS get copied to
  
```

Figure B-3: Core Stored Procedure Retrieved



Customized stored procedures cannot be saved with the same name as the core procedure; they must be saved with “_E” appended to the end of the procedure name.

*If you click **Save** without changing the name, the “_E” it will be added for you.*

6. If you are going to create a new procedure, change the procedure name by adding “_E”. In Figure B-3, the procedure name is “SP_ADC_ARCHIVE.”

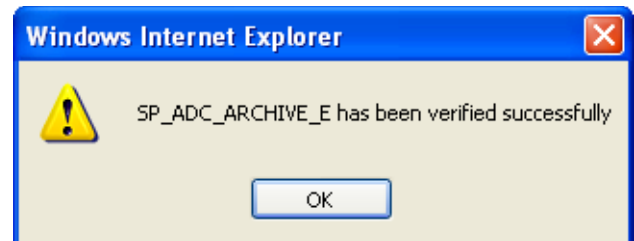


Do not delete the square brackets or change the file header. Sample header:

*Create procedure [dbo].[SP_ADC_RECHECK] (@ps_transcount
varchar(60), @pn_return_code numeric(10) output)*

7. Change the code as necessary to get the procedure that you want.

8. **[OPTIONAL]** Click **Verify** to check the code. If everything is correct, a confirmation message is displayed. Click **OK**.



If there is a problem, an error will occur and a message will be displayed. In the figure below, the name of the procedure was changed to something other than the original name + "_E".

Edit Procedure

Select Active Procedure:
 SP_ADC_ARCHIVE (core) (41)

Retrieve Source

Edit Procedure: **SP_ADC_ARCHIVE2** Verify Save

Verify failed:
 Please use valid procedure names in uppercase letters : SP_ADC_ARCHIVE or SP_ADC_ARCHIVE_E

Procedure Source:

```
CREATE PROCEDURE [dbo].[SP_ADC_ARCHIVE2]
--XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
--XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
--XX XBR Westboro, Massachusetts- A DIVISION of DATAVANTAGE
--XX
--XX PROCEDURE: sp_adc_archive
--XX
--XX AUTHOR: Mike Martin
--XX
--XX CLIENT: CORE
--XX
--XX PURPOSE: Moves from adc_error_t into adc_error_a and from adc_pos_data_tab to adc_pos_data_a
--XX             Only data in the 'HIS' views will get archived. This view should be run after
--XX             SP_ADC_HIS
--XX
--XX PLATFORM: Oracle 7.3 to 9i
--XX
--XX ALGORITHM: All records in ADC_ERROR_HIS get copied to ADC_ERROR_A.
--XX             All records in ADC_POS_DATA_HIS get copied to ADC_POS_DATA_A
--XX             All records in ADC_ERROR_STATUS_T with a status of HIS get copied to
```

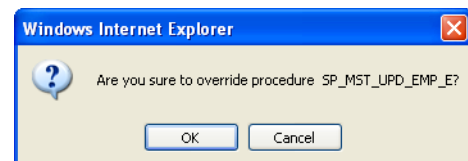
Figure B-4: Verify Error

Correct the problem and click **Verify** again.

9. If you are satisfied, click **Save**.
10. When asked to confirm that you want to override the procedure:

Click **OK** to complete the save.

Click **Cancel** to return to the Edit Procedure form without saving.



If there are errors in the code, an error will be displayed:

Edit Procedure

Select Active Procedure:
 SP_ADC_ARCHIVE_E (39)

Source from: ☐ Core ☒ Custom

Retrieve Source

Edit Procedure: SP_ADC_ARCHIVE_E Verify Delete Custom Save

Procedure has not been saved:
 Incorrect syntax near 'BEGINN'.

Procedure Source:

```

CREATE PROCEDURE [dbo].[SP_ADC_ARCHIVE_E]
--XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
--XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
--XX XBR Westboro, Massachusetts- A DIVISION of DATAVANTAGE
--XX
--XX PROCEDURE: SP_ADC_ARCHIVE_E
--XX
--XX AUTHOR: Mike Martin
--XX
--XX CLIENT: CORE
--XX
--XX PURPOSE: Moves from adc_error_t into adc_error_a and from adc_pos_data_tab to adc_pos_data_a
--XX              Only data in the 'HIS' views will get archived. This view should be run after
--XX              SP_ADC_HIS
--XX
--XX PLATFORM: Oracle 7.3 to 9i
--XX
--XX ALGORITHM: All records in ADC_ERROR_HIS get copied to ADC_ERROR_A.
--XX              All records in ADC_POS_DATA_HIS get copied to ADC_POS_DATA_A
--XX              All records in ADC_ERROR_STATUS_T with a status of HIS get copied to
  
```

Figure B-5: Syntax Error

If there are no errors, you will see a save confirmation displayed:

Edit Procedure

Select Active Procedure:
 SP_ADC_ARCHIVE (core) (41)

Retrieve Source

Procedure SP_MST_UPD_EMP_E saved successfully

Figure B-6: Successful Save Confirmation

Delete a Stored Procedure

Use the following procedure to delete a customized stored procedure:

1. Log in to the Web Application as "XBRADMIN".
2. Click **DB Config** in the menu on the left. Two options are displayed: Edit View and Edit Procedure.

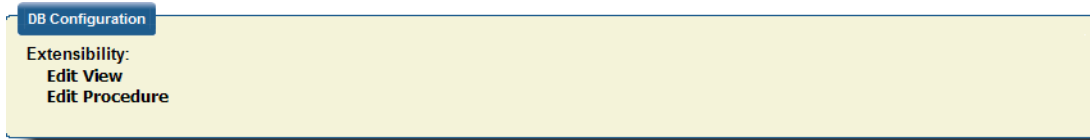


Figure B-7: Extensibility Options

3. Select **Edit Procedure**. The Edit Procedure form is displayed.

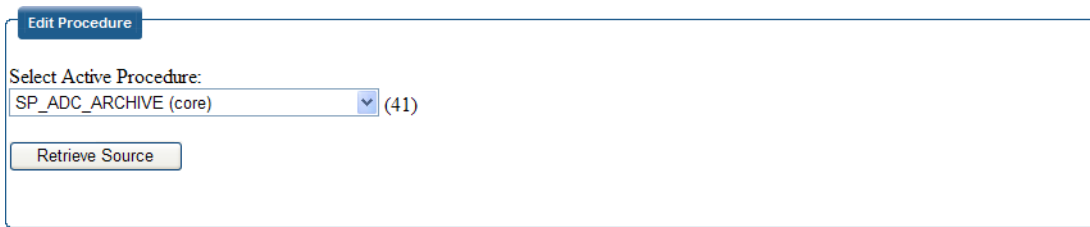


Figure B-8: Edit Procedure Form

4. Select the procedure you would like to delete.

5. Click **Retrieve Source**. The code is displayed.

The screenshot shows the 'Edit Procedure' dialog box. At the top, there is a 'Select Active Procedure:' dropdown menu with 'SP_MST_UPD_EMP_E' selected and '(41)' next to it. Below this is a 'Source from:' section with two radio buttons: 'Core' (unselected) and 'Custom' (selected). A 'Retrieve Source' button is located below the radio buttons. The main area of the dialog is titled 'Edit Procedure: SP_MST_UPD_EMP_E' and contains a 'Procedure Source:' text area. This area displays the following SQL code:

```
CREATE procedure [dbo].[SP_MST_UPD_EMP_E]

/* procedure for updating employee master
file
--
X

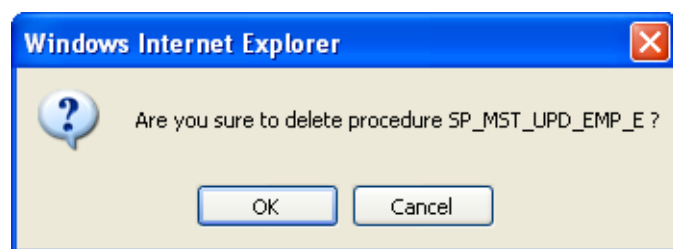
--X written by: mike martin/ Jay
Buckley
--
X

--X date:
2/1/00
```

At the top right of the main area, there are three buttons: 'Verify', 'Delete Custom', and 'Save'.

Figure B-9: Source View with Delete Button

6. Click **Delete Custom**.
7. When asked if you are sure you want to delete the procedure:
- Click **OK** to delete the procedure.
- Click **Cancel** to return to the Edit Procedure form without deleting the procedure.



Once the custom procedure is deleted, the core procedure will become active.

View Extensibility

In a new installation, a new table, PRO_VIEWS, is created and populated with core views that are assigned "-1001" as the orgid. Run the stored procedure sp_create_ext_views to create the active core views. If a core view needs to be modified, the operations team will use the Web Interface (DB Config) to edit a copy of the core code and save it as an extension.

In an upgrade, a new table, PRO_VIEWS, is created and populated with core views that are assigned "-1001" as the orgid. All existing views will be considered custom and the upgrade scripts will first save the existing view definitions into the PRO_VIEWS table as customized under the customer's ORGID. Then the core and custom views are compared for any differences.

If any differences are found, the customized view is set to active and the core view is deactivated. The operations team is responsible for evaluating the difference between the activated custom views and their corresponding core views and determining whether to keep the custom or core view. The view that is kept will be made active and the other will be made inactive. The technician should remove any custom views that are inactive using the Web Interface.

If no differences are found, the core view is set to active and no custom view exists.

The Operations team will use the Web Interface (DB Config) to make any changes to the core code.

Web Interface

Add New or Custom Views

Use the following steps to customize an existing Core view or create a new view:

1. Log in to the Web Application as "XBRADMIN".
2. Click **DB Config** in the menu on the left. Two options are displayed: Edit View and Edit Procedure.



Figure B-10: Extensibility Options

3. Select **Edit View**. The Edit View form is displayed.

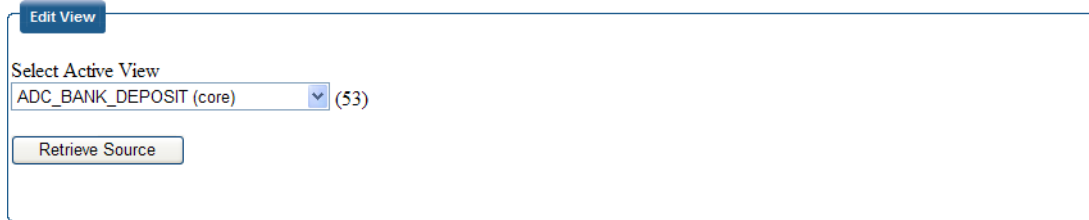


Figure B-11: Edit View Form

4. Select the view you would like to customize from the dropdown list.



If the view name has “Core” after it, the view has not been customized.
If there is no “Core” after the view name, that view is a custom view.

5. Click the **Retrieve Source** button. The SQL code that creates the view is displayed.

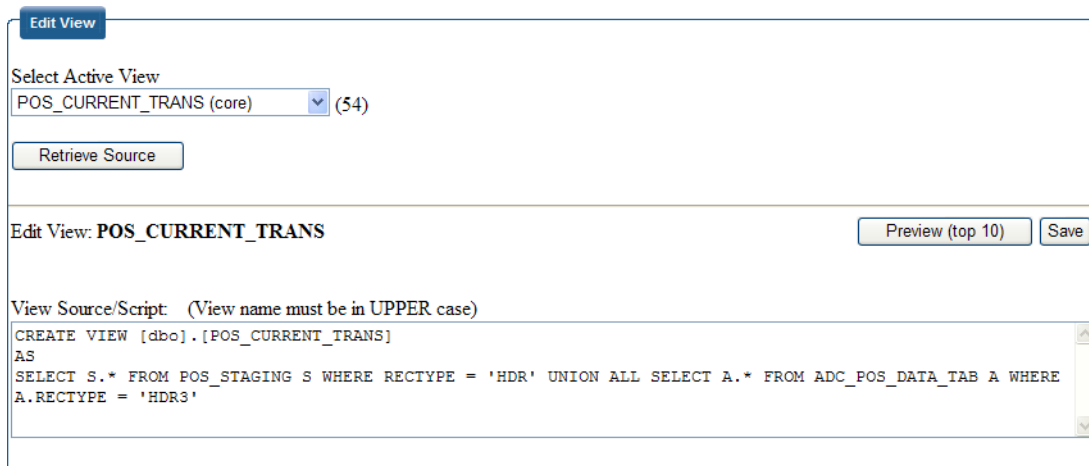


Figure B-12: Core View Retrieved

6. If you are going to create a new view, change the view name. In Figure B-12, the view name is “POS_CURRENT_TRANS.”



When entering a new view name, make sure the name is in all uppercase.

Do not delete the square brackets for SQL Server or the quotation marks for Oracle.

If you are going to create a custom view, continue with the next step.

7. Change the SQL code as necessary to get the view that you want.

8. **[OPTIONAL]** Click **Preview (top 10)** to see the top ten records that would result from the view as modified.

Edit View

Select Active View
POS_CURRENT_TRANS (core) (53)

Retrieve Source

Edit View: POS_CURRENT_TRANS Preview (top 10) Save

Preview:

ORGID	DIVISION	STORENUM	TRANSDATE	TRANSNUM	REGNUM	TRANSTIME	VERSION	LINENUM
1	1	82	2004-12-05 00:00:00.0	2	1	113500	0	0
1	1	82	2004-12-05 00:00:00.0	4	1	115600	0	0
1	1	82	2004-12-05 00:00:00.0	6	1	122300	0	0

View Source: (View name must be in UPPER case)

```
CREATE VIEW [dbo].[POS_CURRENT_TRANS]
AS
SELECT S.*
  FROM POS_STAGING S
 WHERE RECTYPE = 'HDR'
UNION ALL
SELECT A.*
  FROM ADC_POS_DATA TAB A
 WHERE A.RECTYPE = 'HDR2'
```

Figure B-13: Preview Top Ten Records

9. If you are satisfied, click **Save**. Custom views will be saved with the same name as the core but will be marked in the database as "custom". New views will be saved under the name that you entered.

If there are errors in the SQL code, an error will be displayed:

Edit View

Select Active View
POS_CURRENT_TRANS (core) (54)

Retrieve Source

Edit View: POS_CURRENT_TRANS Preview (top 10) Save

View has not been saved:
Incorrect syntax near '='.
CREATE VIEW [dbo].[POS_CURRENT_TRANS] AS SELECT S.* FROM POS_STAGING S WHERE RECTYPE = 'HDR'
UNION ALL SELECT A.* FROM ADC_POS_DATA_TAB A WHERE A.RECTYPE =

View Source/Script: (View name must be in UPPER case)

```
CREATE VIEW [dbo].[POS_CURRENT_TRANS]
AS
SELECT S.* FROM POS_STAGING S WHERE RECTYPE = 'HDR' UNION ALL SELECT A.* FROM ADC_POS_DATA_TAB A WHERE
A.RECTYPE =
```

Figure B-14: Code Error

If there are no errors, you will see a save confirmation displayed:

Edit View

Select Active View
AAA_CURRENT_TRANS (54)

Retrieve Source

View POS_CURRENT_TRANS saved

Figure B-15: Successful Save Confirmation

Modify Custom Views

Use the following procedure to modify custom views that have been previously created:

1. Log in to the Web Application as "XBRADMIN".
2. Click **DB Config** in the menu on the left. Two options are displayed: Edit View and Edit Procedure.

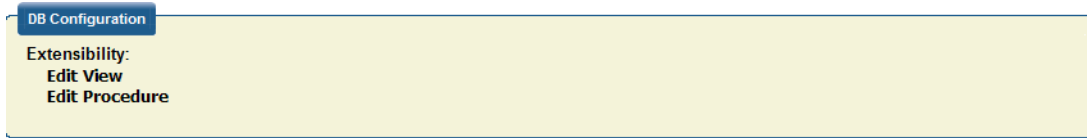


Figure B-16: Extensibility Options

3. Select **Edit View**. The Edit View form is displayed.



Figure B-17: Edit View Form

4. Select the view you would like to modify. When you select a custom view, two radio buttons are displayed: **Core** and **Custom** (default).

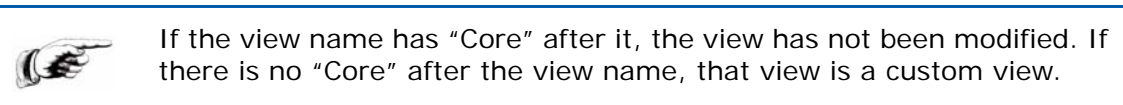
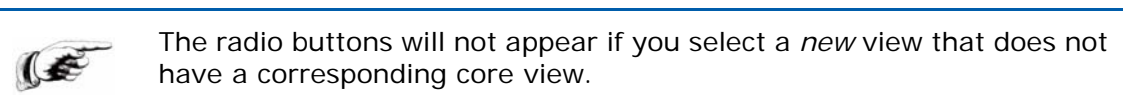
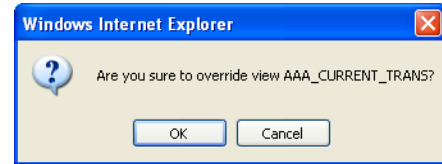


Figure B-18: Core/Custom Radio Buttons



5. Select **Custom** or **Core** (if available) and click Retrieve Source. The SQL code is displayed.
6. Make any modifications that are necessary.
7. When you are finished making changes, click **Save**.
8. When asked if you want to override the existing file, click **OK**.

Click **Cancel** to return to the edit screen.



Delete a Custom View

Use the following procedure to delete custom views that have been previously created:

1. Log in to the Web Application as "XBRADMIN".
2. Click **DB Config** in the menu on the left. Two options are displayed: Edit View and Edit Procedure.

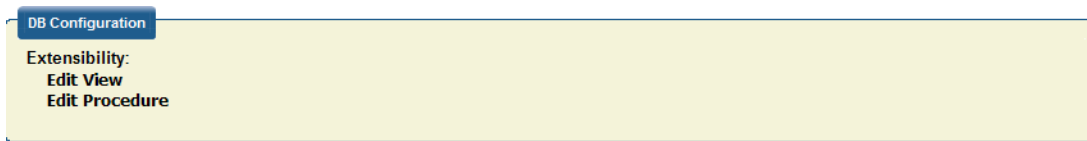


Figure B-19: Extensibility Options

3. Select **Edit View**. The Edit View form is displayed.

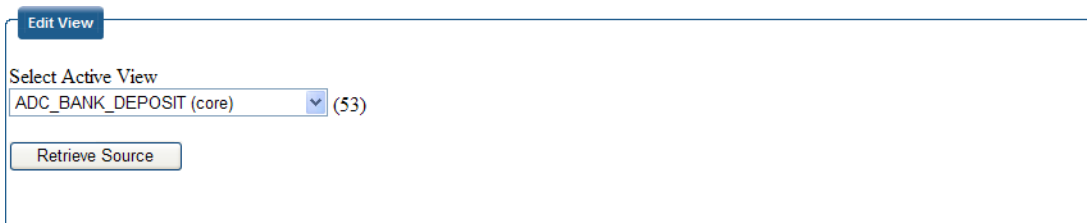


Figure B-20: Edit View Form

4. Select the view you would like to delete.

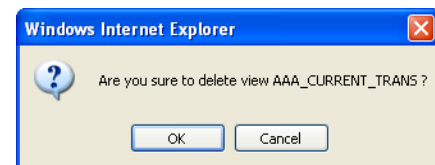
- Click Retrieve Source. The SQL code is displayed.

Edit View
 Select Active View
 AAA_CURRENT_TRANS (54)
 Retrieve Source
 Edit View: AAA_CURRENT_TRANS
 Preview (top 10) Delete Custom Save
 View Source/Script: (View name must be in UPPER case)

```
CREATE VIEW [dbo].[AAA_CURRENT_TRANS]
AS
SELECT S.* FROM POS_STAGING S WHERE RECTYPE = 'HDR' UNION ALL SELECT A.* FROM ADC_POS_DATA_TAB A WHERE
A.RECTYPE = 'HDR3'
```

Figure B-21: Source View with Delete Button

- Click **Delete Custom**.
- When asked if you are sure you want to delete the custom view, click **OK**.
Click Cancel to return to the Edit View form.



Once the custom view is deleted, the core view will become active.



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