

Sterling Business Intelligence™

Implementation Guide

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Getting Started

The Sterling Business Intelligence solution can be extended and customized to meet specific business requirements. Sterling Business Intelligence provides a predefined set of content, including the Adaptive Warehouse model, Adaptive Analytics reports, and dashboards for sales order business processes. You can analyze your business requirements and customize each of this content according to individual requirements.

Intended Audience

This document is intended for use by application developers, analytic system administrators, and analytic users who implement the Sterling Business Intelligence solution.

Implementing Sterling Business Intelligence

Ensure that you have installed Sterling Business Intelligence, and that the content is deployed as per the instructions provided in the *Sterling Business Intelligence Installation Guide*.

Use the following process to perform the implementation of the Sterling Business Intelligence solution:

1. Review the reports and dashboards provided in Sterling Business Intelligence and understand whether they meet your business requirements. For more information about the reports and dashboards, refer to the *Sterling Business Intelligence User Guide*.
2. Make appropriate configuration changes to the model. For more information about configuring Sterling Business Intelligence, refer to the topic “[Configure Sterling Business Intelligence](#)”.
3. Perform the initial data load, which helps load the existing data into the data mart database. For more information about initial data load, refer to the topic “[Load Management](#)”.
4. Perform incremental data load, which helps load the transactional data into the data mart database. For more information about incremental data load, refer to the topic “[Load Management](#)”.
5. Extend and customize Sterling Business Intelligence to meet your business requirements. For more information about extending and customizing, refer to the topic “[Extend and Customize Sterling Business Intelligence](#)”.

Configure Sterling Business Intelligence

You can configure Sterling Business Intelligence to restrict the data that is loaded into the data warehouse from the online transaction processing (OLTP) system.

Prior to configuring Sterling Business Intelligence, ensure that you have performed all the steps mentioned in the *Sterling Business Intelligence Installation Guide*. For details about setting up the Adaptive Warehouse Content, refer to the *Sterling Business Intelligence Installation Guide*.

To configure Sterling Business Intelligence, perform the following tasks:

- ◆ [Configure the Staging Project](#)
- ◆ [Configure the Data Mart Project](#)
- ◆ [Configure the Sterling Business Intelligence Application](#)
- ◆ [Configure the Purge Criteria](#)

Configure the Staging Project

After setting up the Adaptive Warehouse Content, perform the following configurations to restrict the data that is loaded into the staging schema.

Define the Hold Types

The model that is shipped along with Sterling Business Intelligence consists of all the hold types, including the system-specific hold types. You can exclude specific hold types and perform the analysis. To perform analysis based on specific hold types, perform the following tasks:

1. Launch the IBM® Cognos® Adaptive Warehouse application.
2. Open the Sterling Staging Data Source project.
3. Click **Transaction**.
4. Double-click **YFS_ORDER_HOLD_TYPE**.
5. Click the **Dataflow** tab.
6. Double-click **YFS_ORDER_HOLD_TYPE Input Source**.
7. Click the **Filter** tab.
8. Add a new filter the hold type and provide a list of hold types that have to be considered, for example, `[YFS_ORDER_HOLD_TYPE YFS_ORDER_HOLD_TYPE Input Source].[YFS_ORDER_HOLD_TYPE Input Source].[HOLD_TYPE] in ('Fraud Check', 'Credit Fraud')`.
9. Add the Hold Type filter to all the input query subjects pertaining to YFS_ORDER_HOLD_TYPE dataflows.
10. Click the **Warehouse** tab.
11. Click **Save**.

Configure the Data Mart Project

After setting up the Adaptive Warehouse Content, perform the following configurations to restrict the data that is loaded into the data mart schema.

Configure the Install Locale

To configure the install locale, perform the following tasks:

1. Launch the IBM® Cognos® Adaptive Warehouse application.
2. Open Sterling Data Source project.
3. Click the **Source** tab.
4. Click **Parameter Maps** and select **Locale Code Map**.
The Parameter Map Definition screen is displayed.
5. Change the values for the **Country** and **Language** keys. By default, **US** and **en** are the values respectively for the **Country** and **Language** keys. For example, if your base locale is **ja_JP**, the **Country** and **Language** values must be changed to **ja** and **JP** respectively.
6. Click the **Warehouse** tab.
7. Click **Save**.

Define a Catalog

You must determine a catalog for analytical purpose. Only items belonging to this catalog will be considered for analysis.

Note: When an item belongs to multiple categories in a catalog, the item is displayed as a part of one category only.

To define a catalog, perform the following tasks:

1. Launch the IBM Cognos Adaptive Warehouse application.
2. Open Sterling Data Source project.
3. Click the **Source** tab.
4. Navigate to **Source > Product Category Hierarchy source > Product Category Hierarchy Product Category Tree Input Source**.
5. Double-click **Category Domain Filter**.
The Filter Definition screen is displayed.
6. Click the **Parameter** tab.
7. Select the required catalog code from **Category Domain Map**.
8. Click **OK**.
9. Click the **Warehouse** tab.
10. Double-click the **Product Category Hierarchy** dimension.

11. Click the **Dataflow** tab.

For each dataflow, apply the category domain filter.

12. Click **Save**.

Configure the Sterling Business Intelligence Application

After setting up the Adaptive Warehouse Content, perform follow the additional configurations to restrict the data that is loaded into the staging schema.

Map Address to a Region

You must define a region schema for analytical purpose. This region schema is used to determine the region associated with the customer's address and to perform analysis based on regions.

To define a region schema for analytics purpose, perform the following tasks:

1. Launch Application Manager.
1. From the **Application Rules Side** panel, select **Analytics > Region Usage For Analytics**.
The Region Usage For Analytics window is displayed.
2. From the **Schema for Analytics** panel, select the region schema, you want to use for the data warehouse reports.
3. Click **Save**.

Convert Long Zip Code to Short Zip Code

Short zip code is used to obtain the best match region for a customer's address. It is a simplified format of an address' zip code. Short zip code regex expression defined for a country is used to convert long zip codes to a simplified format. You can also implement `YCPGetShortZipCodeUE` user exit to convert long zip code into short zip code.

If you have installed Selling and Fulfillment Foundation, Release 8.5, in upgrade mode, you must follow the instructions provided in the section "Business Intelligence Enhancements: Best Match Region" in the *Selling and Fulfillment Foundation: Upgrade Guide*. If you have installed Selling and Fulfillment Foundation, Release 8.5, in the nonupgrade mode, refer to the section "Update Best Match Region" in the *Selling and Fulfillment Foundation: Application Platform Configuration Guide*.

Configure the Purge Criteria

Purge transactions determine when a record has to be purged, by determining the current date and subtracting the retention days specified in the purge criteria. If the timestamp on the table is less than or equal to the value of current days minus retention days, the record is purged.

You can define purge criteria rules for data purges not related to specific document types. Purge is the process by which old data is removed from the system database. A purge minimizes the number of unused database records to increase search efficiency and reduce the size of the required physical disk.

For more information about configuring a document's purge criteria, refer to the *Sterling Distributed Order Management: Configuration Guide*.

Order Timestamp Tag Purge

The Order Timestamp Tag (YFS_ORDER_TS_TAG) table maintains a record of each order that is added or updated in the online transaction processing (OLTP) system. The ETL_TS column of this table is used as a Change Data Capture filter for all the order-related dataflows. Based on the data volumes, this table can grow rapidly. To avoid this, a purge agent is provided to purge the records that are older than the configured retention days. The records are purged only if the data has been loaded into the staging system.

Purge Criteria

The following table displays the purge rule for the Order Timestamp Tag Purge:

Rule	Description	Retention Days
SBIORDERTAGTS	Order Tag Timestamp Purge	7

Attributes

The following table displays the attributes for the Order Timestamp Tag Purge transaction:

Attribute	Value
Base Transaction ID	ORDER_TS_TAG_PRG
Agent Criteria ID	ORDERTSTAGPRG
Base Document Type	General
Base Process Type	General
Abstract Transaction	No
APIs Called	None
User Exits Called	YFSBeforePurgeUE

Criteria Parameters

The following table displays the criteria parameters for the Order Timestamp Tag Purge transaction:

Criteria Parameter	Description
Action	Required. Triggers the transaction. If left blank, it defaults to Get, the only valid value.
CollectPendingJobs	If this parameter is set to N, the agent does not collect information about the pending jobs for this monitor. This pending job information is used for monitoring the monitor in the System Management Console.
Number of Records To Buffer	Optional. Number of records to retrieve and process at one time. If left blank or specified as 0 (zero), it defaults to 5000.
EnterpriseCode	Optional. The organization for which the Alert Purge has to be run. If it is not passed, all the enterprises are monitored.

Criteria Parameter	Description
Live	Optional. Mode in which to run. Valid values are: Y - Deletes qualifying records from the YFS_ORDER_TS_TAG table. N - Determines the rows that are deleted from the YFS_ORDER_TS_TAG table.
PurgeCode	Required. Cannot be modified. Used for internal calculations, such as determining retention days. Corresponds with the PurgeCode used in Business Rules Purge Criteria. Purge code is SBIORDERTAGTS.

Statistics Tracked

None.

Events Raised

None.

Tables Purged

YFS_ORDER_TS_TAG.

Shipment Timestamp Tag Purge

The Shipment Timestamp Tag (YFS_SHIPMENT_TS_TAG) table maintains a record of the orders that are shipped. The ETL_TS column of this table is used as a CDC filter for all the shipment-related dataflows. Based on the data volumes, this table can grow rapidly.

Attributes

The following table displays the attributes for the Shipment Timestamp Tag Purge transaction:

Attribute	Value
Base Transaction ID	SHIPMENT_TS_TAG_PRG
Agent Criteria ID	SHIPMENTTSTAGPRG
Base Document Type	General
Base Process Type	General
Abstract Transaction	No
APIs Called	None
User Exits Called	YFSBeforePurgeUE

Purge Criteria

The following table displays the purge rule for the Shipment Tag Timestamp Purge:

Rule	Description	Retention Days
SBISHIPMENTTAGTS	Shipment Tag Timestamp Purge	7

Criteria Parameters

The following table displays the criteria parameters for the Shipment Timestamp Tag Purge transaction:

Criteria Parameter	Description
Action	Required. Triggers the transaction. If left blank, it defaults to Get, the only valid value.
CollectPendingJobs	If this parameter is set to N, the agent does not collect information on the pending jobs for this monitor. This pending job information is used for monitoring the System Management Console.
Number of RecordsTo Buffer	Optional. Number of records to retrieve and process at one time. If left blank or specified as 0 (zero), it defaults to 5000.
EnterpriseCode	Optional. The organization for which the Alert Purge has to be run. If it is not passed, all the enterprises are monitored.
Live	Optional. Mode in which to run. Valid values are: Y - Default value. Moves qualifying records from the regular tables listed under Tables Purged to the corresponding history tables. N - Test mode. Determines the rows that are being purged without actually purging them.
PurgeCode	Required. Cannot be modified. Used for internal calculations, such as determining retention days. Corresponds with the PurgeCode used in Business Rules Purge Criteria. Purge Code is SBISHIPMENTTAGTS.

Statistics Tracked

None

Events Raised

None.

Tables Purged

YFS_SHIPMENT_TS_TAG

Purge for Staging Tables

The Staging database is used to stage the data before loading it into the data mart database. To keep the staging tables manageable, timely clean up has to be carried out. The purge is based on retention days, and only records older than the retention days are deleted. Retention days should be set based on the volumes of data and the frequency of the incremental load. To ensure that only data that is no longer useful is cleaned up, the data is cleaned only if the ETL job of the Sterling Data Source project has successfully run within the last 'n' days. Purging of transaction tables pertaining to YFS_ORDER_HEADER is done only when the order is in Closed status. Master data and configuration data is not cleaned up unless you manually run load management, requesting a refresh of the master data and the configuration data.

To run the purge for staging tables, perform the following tasks:

1. Rename <AC_INSTALL_DIR>/bin/dbconnection.properties.sample as <AC_INSTALL_DIR>/bin/dbconnection.properties.
2. Configure the dbconnection.properties file. Set the following properties:

db.driver=<path of the db driver jar>
purge.days=<Retention Days>
jdbc.driver.class=<Db Driver Class Name>
db.vendor=<Db Vendor Name>
staging.jdbc.url= <JDBC URL of staging DB>
staging.jdbc.catalog= <DB Name of staging DB>
staging.jdbc.user= <User Name of staging DB>
staging.jdbc.password=<Password of staging DB>

target.jdbc.url=<JDBC URL of datamart DB>
target.jdbc.catalog=<DB Name of datamart DB>
target.jdbc.user=<User Name of datamart DB>
target.jdbc.password=<Password of datamart DB>
3. Edit the purge_staging.cmd file and set the path to <AC_INSTALL_DIR>.
4. From the Analytics Content Installation directory, <AC_INSTALL_DIR>/bin, run the following command:

purge_staging.cmd (For Windows)
purge_staging.sh (For UNIX)

Note: This command deletes the records from the staging database. You will, therefore, not be able to retrieve these records.

Load Management

Load management extracts, transforms, and loads (ETL) data from the online transaction processing (OLTP) database and other data sources into your data warehouse. Load management synchronizes the source model and target model to the warehouse model and updates the data mart database to reflect the changes in the warehouse model. Load management also publishes the source and target packages to the IBM® Cognos® 8 portal. You can use load management differently, depending on the environment that you work in.

Note: The ETL process may not load some data into the data mart if the system time of the Cognos server is ahead of the OLTP database server. To avoid this, prior to starting the ETL process, you must ensure that the time in the Cognos Server is set to at least one minute slower than the OLTP database server. In case the platform considerations do not allow for time synching, the Cognos server should run one minute slower than the OLTP server.

Considerations for Multischema Deployment

In a multischema deployment, you can load data from multiple colonies into a single data mart.

Notes:

- ◆ Before you deploy multischema in Sterling Business Intelligence, it is recommended that you refer to the *Selling and Fulfillment Foundation: Multitenant Enterprise Guide* and understand the concepts of multitenant configuration.
- ◆ Perform this configuration only for the staging project.

Setup for the Sterling Staging Data Source Project

To set up the Sterling Staging Data Source Project, perform the following tasks:

1. Launch the IBM Cognos Adaptive Warehouse application.
2. Open the Sterling Staging Data Source project.
3. Click the **Source** tab.
4. Define data sources for the Master schema and Transaction schema in the colonies. Ensure that the Query Processing property of the data source is set to `Limited Local`. For more information about setting up data source connections, refer to the *IBM® Cognos® 8 Installation and Configuration Guide* and the *IBM® Cognos® 8 Analytic Applications Adaptive Warehouse User Guide*.
5. Add corresponding key-value pairs for the data sources added in the previous step to the Master Data Source Map and the Transaction Data Source Map respectively. For example, all the transaction-related data sources should be added to the Transaction Data Source Map. The value must be entered in the following format: [`<Data Source Name>`].
6. Click the **Warehouse** tab and select the warehouse object for which you want to load data. You must first select the warehouse objects present in the Timestamp Tags folder.
7. Click the **Dataflow** tab of the selected object.

8. From the **Dataflow Actions** drop-down list, select **Duplicate Dataflow**.
A duplicate dataflow is created for this warehouse object.
9. Click the **Source** tab and select **Source namespace**.
10. Click the namespace of the warehouse object selected in step 6.
Notice that a new input source is created for the dataflow created in step 8.
11. Select the new input source namespace.
12. Double-click **Data Source Query Subject**.
The Query Subject Definition window is displayed.
13. Click the macro definition for the data source in the SQL panel.
The Macro Editor panel is displayed.
14. Modify the macro definition accordingly and select the corresponding colony key from the parameter map.
15. Click **OK**.
16. Repeat step 6 to 15, for the corresponding dataflows in the Timestamp Tags, Transaction, and Master folders.
Note: CDC filters pertaining to new incremental data flows created in the Transaction folder must be changed so that these data flows consider the CDC time interval from the warehouse objects (YFS_ORDER_TS_TAG and YFS_SHIPMENT_TS_TAG) of their respective colony.
To change the CDC filters, perform the following steps:
 - a. Select the Transaction folder and click the required warehouse object.
 - b. From **Dataflow Actions**, select the duplicate dataflow created in step 7.
 - c. Double-click the Input Source for this dataflow.
The Input Source Manager screen is displayed.
 - d. Select the **CDC Filter** tab and click the ellipses (. . .) button in the CDC Filter panel.
The Calculation Definition screen is displayed.
 - e. Modify the value in the Expression Definition panel so that the CDC filter is mapped to its respective colony.
17. Click the **Warehouse** tab.
18. From the **Actions** menu, select **Synchronize Meta Data**.
19. Click **Save**.

Staging Database

Staging serves as a gateway for integrating data from multiple schemas, and delivering the same to the data mart database. Staging is required for an ETL process to deliver functionally correct data with the least impact on the source system. The advantages of the staging process are as follows:

- ◆ Staging reduces the load on the production server by ensuring that the incremental data is first copied to a staging database, and then transforms are applied from the staging database to the data mart database.
- ◆ In a multischema mode, staging helps obtain data from multiple colonies into a single data mart database.

Data Mart Database

Sterling Data Mart database is a dimensionally modeled relational database. The reports in Sterling Business Intelligence are based on this database.

The Sterling Data Source project extracts data from the staging database and performs the necessary transformations and loads them into the warehouse database. This project contains all the metric calculations and star schema definitions. The Sterling Data Source project contains dataflows that extract data such as Configuration, Master, and Transaction.

Change Data Capture Filters

Change Data Capture (CDC) filters determine the updates to your OLTP source system from one load to another. You can set a date range to control the amount of data that is loaded.

CDC filters determine the updates to your data warehouse from one load to another. You can set a date range to control the amount of data that is loaded. Let us for example, consider that you have previously loaded data for the period 2000-2006, and now want to load only the data pertaining to 2007. You must create a CDC filter to add only the new or changed data and avoid reloading data from 2000-2006.

Load Interval

You can set a load interval for a CDC filter. Specifying a load interval reduces the amount of data being read and processed by the Adaptive Warehouse load engine at one time by dividing the data into a number of smaller batches. This ensures that the server does not run out of memory and that the load operation completes successfully.

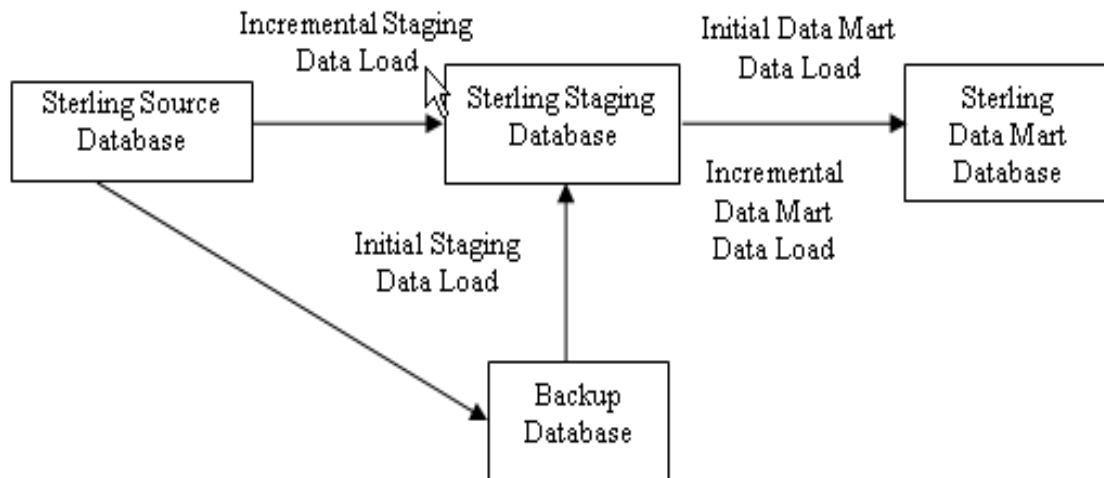
For example, for the initial load of your data warehouse, will probably have historical data from many years that you want to load. Calculate the number of batches for the filter by dividing the difference between the From and To dates by the number of load intervals. The Adaptive Warehouse load engine creates a maximum of 99 batches. Based on the volume of the data, you must find a balance between the batch limit and the memory capacity of your machine.

The load interval is measured in days for loading a fact with a change date. For example, if the date range for a CDC filter is from January 1, 2000, to June 15, 2007, and you specify a load interval of 30. When load management is run, multiple batches are generated by the Adaptive Warehouse load engine. Each batch consists of 30 days. The first batch extracts data from January 1, 2000, to January 30, 2000, the second batch extracts data from January 31, 2000, to March 1, 2000, and so on. In this example, the Adaptive Warehouse load engine generates 90 batches.

For more information about load management and optimizing performance, refer to the *IBM® Cognos® 8 Analytic Applications Installation and Configuration Guide* and the *IBM® Cognos® 8 Analytic Applications Adaptive Warehouse User Guide*.

Load Data Into Data Mart

The load management process in Sterling Business Intelligence is illustrated here:



1. Back up the OLTP source database before you go live (typically two weeks earlier) with Sterling Business Intelligence.
2. Initial data load from the backup database to the Sterling staging database
3. Initial data load from the Sterling staging database to the Sterling data mart database
4. Incremental data load from the Sterling source database to the Sterling staging database
5. Incremental data load from the Sterling staging database to the Sterling data mart database

Create a Backup Database

It is recommended that you take a backup of your OLTP source database along with the history data as required (typically, 2 years) before you go live with Sterling Business Intelligence. Restore this backup into a different database and use this to perform initial data load.

For more information about taking a backup and restoring your database, refer to your database vendor documentation.

Initial Data Load

Initial load dataflows enable you to load existing data into the staging database. These dataflows load data from transaction tables and their history tables. You can set properties such as CDC filters and Load Interval, to improve the performance of the ETL process that occurs during load management. Initial data load is used to bring data into the data warehouse the first time.

Because Initial Data Load is a long-running and memory-intensive process, you must control the amount of data that is loaded in order to avoid running into out-of-memory exceptions. This is done using the CDC filters and Load Interval properties.

Note: When an order is purged, the quantity in YFS_ORDER_RELEASE_STATUS record is set to zero. These records are not considered in the Volume Analysis metrics calculations.

Load Initial Data in Sterling Business Intelligence for the Staging Project

The staging project contains dataflows that extract data from the configuration, master, and transaction tables. Following are the dataflows pertaining to initial data load for the staging project:

- ◆ Dataflows that extract configuration data are:
 - ◆ YFS_ORGANIZATION Dataflow
 - ◆ YFS_COMMON_CODE Dataflow
 - ◆ YFS_PAYMENT_TYPE Dataflow
 - ◆ YFS_HOLD_TYPE Dataflow
 - ◆ YFS_STATUS_MODIFICATION_TYPE Dataflow
 - ◆ YFS_PERSON_INFO_CONFIG Dataflow
 - ◆ YFS_REGION Dataflow
 - ◆ YFS_DOCUMENT_PARAMS Dataflow
 - ◆ YFS_LOCALIZED_STRINGS Dataflow
 - ◆ YFS_REGION_BEST_MATCH Dataflow
 - ◆ YFS_CATEGORY_DOMAIN Dataflow
 - ◆ YFS_REGION_SCHEMA Dataflow
 - ◆ YFS_REGION_USAGE Dataflow
 - ◆ YFS_CAT_DOMAIN_LOCALE Dataflow
- ◆ Dataflows that extract master data are:
 - ◆ YFS_ITEM Dataflow
 - ◆ YFS_CATEGORY Dataflow
 - ◆ YFS_CATEGORY_ITEM Dataflow
 - ◆ YFS_CUSTOMER Dataflow
 - ◆ YFS_CONSUMER Dataflow

- ◆ YFS_CUSTOMER_CONTACT Dataflow
- ◆ YFS_USER Dataflow
- ◆ YFS_USER_GROUP_LIST Dataflow
- ◆ YFS_ITEM_LOCALE Dataflow
- ◆ YFS_CATEGORY_LOCALE Dataflow
- ◆ Dataflows that extract transaction data are:
 - ◆ YFS_ORDER_HEADER Initial Dataflow
 - ◆ YFS_ORDER_LINE Initial Dataflow
 - ◆ YFS_ORDER_RELEASE_STATUS Initial Dataflow
 - ◆ YFS_ORDER_DATE Initial Dataflow
 - ◆ YFS_ORDER_LINE_SCHEDULE Initial Dataflow
 - ◆ YFS_CHARGE_TRANSACTION Initial Dataflow
 - ◆ YFS_PAYMENT Initial Dataflow
 - ◆ YFS_ORDER_HOLD_TYPE Initial Dataflow
 - ◆ YFS_ORDER_HOLD_TYPE_LOG Initial Dataflow
 - ◆ YFS_ORDER_AUDIT Initial Dataflow
 - ◆ YFS_ORDER_AUDIT_LEVEL Initial Dataflow
 - ◆ YFS_SHIPMENT Initial Dataflow
 - ◆ YFS_SHIPMENT_LINE Initial Dataflow
 - ◆ YFS_PERSON_INFO_TRAN Dataflow
 - ◆ YFS_PERSON_INFO_TRAN Initial Load Dataflow

Two types of dataflows are available to load transaction data, dataflows that are used for initial load and dataflows that are used for incremental load. The dataflows used for loading initial data have names that end with Initial Dataflow. The noninitial dataflows are used for loading incremental data.

To load the initial data in Sterling Business Intelligence for the staging project, perform the following steps:

1. Launch the IBM® Cognos® Adaptive Warehouse application.
2. Open the Sterling Staging Data Source project.
3. From the **Actions** menu, select **Load Management**.
The Load Management screen is displayed with all the available dataflows.
4. Select the required initial dataflow and click **CDC Filters**.
The Change Data Capture Parameters screen is displayed.
5. Enter the time period range in the **From Value** field and **To Value** field to load data in each filter item.
6. Repeat steps 3 to 5, for the other required dataflows.

7. Click **Close**.
8. Click **Save**.
9. From the **Actions** menu, select **Load Management**.

The Load Management screen is displayed with all the available dataflows.

10. Click **Deselect All**.
11. Select all the initial dataflows. The initial dataflows have names that end with Initial Dataflow, for example, YFS_ORDER_DATE Initial Dataflow.

Notes:

- ♦ When you are loading data for the first time, you must also select the dataflows that load the configuration data and master data. At the time of loading, whenever there is a change in the configuration data and the master data, select the dataflows that load the configuration data and the master data.
- ♦ In a single schema deployment, do not select the YFS_PERSON_INFO_CONFIG Dataflow.

12. Click **Script**.

The Script dialog box is displayed.

13. Enter the location in which you want to save the script in the **Script Location** field.
14. Click **Save**.
15. Click **OK**.
16. Click **Close**.

Notes:

- ♦ If the IBM® Cognos® Adaptive Application Framework (AAF) Runtime and IBM® Cognos® Adaptive Application Framework (AAF) applications are installed on different servers, copy the generated script to the appropriate location.
 - ♦ The script must be regenerated every time there is a change in the Sterling Staging Data Source project.
17. To run the load management scripts, execute the following command from the \cognos\ap\bin folder:

pwexec.cmd <path\filename>.xml (For Windows)

pwexec.sh <path\filename>.xml (For UNIX)

Load Initial Data in Sterling Business Intelligence for the Data Mart Project

The data mart project contains dataflows that extract data from the configuration, master, and the transaction tables. Following are the dataflows pertaining to initial data load for the data mart project:

◆ Dataflows that extract configuration data and master data are:

- ◆ Enterprise Dataflow
- ◆ Ship Node Dataflow
- ◆ Seller Dataflow
- ◆ Buyer Dataflow
- ◆ Payment Type Dataflow
- ◆ Hold Type Dataflow
- ◆ Channel Dataflow
- ◆ Fulfillment Dataflow
- ◆ Delivery Method Dataflow
- ◆ Product Dataflow
- ◆ Product Category Tree Dataflow
- ◆ Modification Type Dataflow
- ◆ Customer Hierarchy Dataflow
- ◆ Customer Contact Dataflow
- ◆ Address Dataflow
- ◆ Address Region Hierarchy Dataflow
- ◆ Document Type Dataflow
- ◆ User Ranges Dataflow
- ◆ Time Period Dataflow

◆ Dataflows that extract transaction data are:

- ◆ SO Line Initial Load Dataflow
- ◆ Shipment Line Initial Load Dataflow
- ◆ SO Payment Initial Load Dataflow
- ◆ SO Hold Initial Load Dataflow
- ◆ SO Modification Initial Load Dataflow

To load the initial data in Sterling Business Intelligence for the data mart project, perform the following steps:

1. Launch the IBM Cognos Adaptive Warehouse application.
2. Open the Sterling Data Source project.

3. From the **Actions** menu, select **Load Management**.
The Load Management screen is displayed with the available dataflows.
4. Select the required initial dataflow and click **CDC Filters**.
The Change Data Capture Parameters screen is displayed.
5. Enter the time period range in the **From Value** field and **To Value** field to load data in each filter item.
6. Repeat steps 3 to 5, for the other required dataflows.
7. Click **Close**.
8. Click **Save**.
9. From the **Actions** menu, select **Load Management**.
The Load Management screen is displayed with all the available dataflows.
10. Click **Deselect All**.
11. Select all the initial dataflows to load the transaction data, for example, SO Payment Initial Load Dataflow.
Note: When you are loading data for the first time, you must also select the dataflows that load the configuration data and master data. At the time of loading, whenever there is a change in the configuration data and the master data, select the dataflows that load the configuration data and the master data.
12. Click **Script**.
The Script dialog box is displayed.
13. Enter `\cognos\ap\bin\<filename>.xml` in the **Script Location** field.
14. Click **Save**.
15. Click **OK**.
16. Click **Close**.

Notes:

- ♦ If the IBM Cognos Adaptive Application Framework (AAF) Runtime and Cognos Adaptive Application Framework (AAF) applications are installed on different servers, copy the generated script to the appropriate location.
 - ♦ The script must be regenerated every time there is a change in the Sterling Staging Data Source project.
17. To run the load management scripts, execute the following command from the `\cognos\ap\bin` folder:

`pwexec.cmd <path\filename>.xml` (For Windows)

`pwexec.sh <path\filename>.xml` (For UNIX)

Note: It is recommended that you truncate all the transaction tables in the staging database before starting the incremental load.

Incremental Data Load

Incremental data load refers to changes in the OLTP source system. Every change in the OLTP source system must be reflected in the data mart system, and occurs through incremental load (basically, synchronizing the data between the OLTP source system and the data mart system). You must also add the configuration data and master data because they do not change frequently. It is recommended that the incremental load scripts are run as scheduled jobs, and the configuration data and master data are reloaded periodically.

Note: The CDC filters for the incremental data load use the **ETL_TS** column in the YFS_ORDER_TS_TAG table or the YFS_SHIPMENT_TS_TAG table.

Load Incremental Data in Sterling Business Intelligence for Staging Project

The staging project contains dataflows that extract data from the configuration, master, and transaction tables. For incremental data load, the dataflows that extract the configuration data and the master data are the same as that of the initial data load. The dataflows that extract transaction data are:

- ◆ YFS_ORDER_HEADER Dataflow
- ◆ YFS_ORDER_LINE Dataflow
- ◆ YFS_ORDER_RELEASE_STATUS Dataflow
- ◆ YFS_ORDER_DATE Dataflow
- ◆ YFS_ORDER_LINE_SCHEDULE Dataflow
- ◆ YFS_CHARGE_TRANSACTION Dataflow
- ◆ YFS_PAYMENT Dataflow
- ◆ YFS_ORDER_HOLD_TYPE Dataflow
- ◆ YFS_ORDER_HOLD_TYPE_LOG Dataflow
- ◆ YFS_ORDER_AUDIT Dataflow
- ◆ YFS_ORDER_AUDIT_LEVEL Dataflow
- ◆ YFS_SHIPMENT Dataflow
- ◆ YFS_SHIPMENT_LINE Dataflow
- ◆ YFS_ORDER_TS_TAG Dataflow
- ◆ YFS_SHIPMENT_TS_TAG Dataflow
- ◆ YFS_PERSON_INFO_TRAN Dataflow

To load the incremental data in Sterling Business Intelligence for the staging project, perform the following steps:

1. Launch the IBM Cognos Adaptive Warehouse application.
2. Open the Sterling Staging Data Source project.
3. From the **Actions** menu, select **Load Management**.

The Load Management screen is displayed with the available dataflows.

4. Click **Deselect All**.

5. Select all the noninitial dataflows. The noninitial dataflows have names that do not end with Initial Dataflow, for example, YFS_ORDER_DATE Dataflow.

Notes:

- ◆ When you are loading data for the first time, you must also select the dataflows that load the configuration data and master data. At the time of loading, whenever there is a change in the configuration data and the master data, select the dataflows that load the configuration data and the master data.
- ◆ In a single schema deployment, do not select the person info configuration dataflow.

6. Click **Script**.

The Script dialog box is displayed.

7. In the Script Location field, enter the location in which you want to save the script.
8. Click **Save**.
9. Click **OK**.
10. Click **Close**.

Notes:

- ◆ If the IBM Cognos Adaptive Application Framework (AAF) Runtime and Cognos Adaptive Application Framework (AAF) applications are installed on different servers, copy the generated script to the appropriate location.
 - ◆ The script must be regenerated every time there is a change in the Sterling Staging Data Source project.
11. To run the load management scripts, execute the following command from the \cognos\ap\bin folder:

`pwexec.cmd <path\filename>.xml (For Windows)`

`pwexec.sh <path\filename>.xml (For UNIX)`

Load Incremental Data in Sterling Business Intelligence for Data Mart Project

In the incremental data load process for the data mart project, the dataflows that extract the configuration data and the master data are the same as that of the initial data load. Following are the dataflows that extract transaction data pertaining to incremental data load for the data mart project:

- ◆ SO Line Dataflow
- ◆ Shipment Line Dataflow
- ◆ SO Payment Dataflow
- ◆ SO Hold Dataflow
- ◆ SO Modification Dataflow

To load the incremental data in Sterling Business Intelligence for the data mart project, perform the following steps:

1. Launch the IBM Cognos Adaptive Warehouse application.
2. Open the Sterling Data Source project.

3. From the **Actions** menu, select **Load Management**.

The Load Management screen is displayed with all the available dataflows.

4. Click **Deselect All**.
5. Select all noninitial dataflows. The noninitial dataflows have names that do not end with Initial Dataflow, for example, SO Line Dataflow.

Notes:

- ♦ When you are loading data for the first time, you must also select the dataflows that load the configuration data and master data. At the time of loading, whenever there is a change in the configuration data and the master data, select the dataflows that load the configuration data and the master data.
- ♦ In a single schema deployment, do not select the YFS_PERSON_INFO_CONFIG Dataflow.

6. Click **Script**.

The Script dialog box is displayed.

7. Enter \cognos\ap\bin\<filename>.xml in the **Script Location** field and click **Save**.
8. Click **OK**.
9. Click **Close**.

Notes:

- ♦ If the IBM Cognos Adaptive Application Framework (AAF) Runtime and Cognos Adaptive Application Framework (AAF) applications are installed on different servers, copy the generated script to the appropriate location.
 - ♦ The script must be regenerated every time there is a change in the Sterling Staging Data Source project.
10. To run the load management scripts, execute the following command from the \cognos\ap\bin folder:

pwexec.cmd <path\filename>.xml (For Windows)

pwexec.sh <path\filename>.xml (For UNIX)

Extend and Customize Sterling Business Intelligence

Sterling Business Intelligence can be customized to meet your business requirements. Prior to extending and customizing Sterling Business Intelligence, you must perform the following tasks:

1. Analyze the reports, model, and dashboards that are shipped along with Sterling Business Intelligence.
2. Based on your business requirements, identify the customizations that have to be performed.
3. Identify the components that have to be customized to meet your business requirements.

Based on your analysis, perform the following tasks:

- ◆ [Extend the Adaptive Warehouse Content](#)
- ◆ [Extend the Adaptive Analytics Reports](#)
- ◆ [Extend the Dashboards](#)
- ◆ [Customize the User Interface](#)

Note: This version of Sterling Business Intelligence is shipped with the Order data mart. All the extensions should be limited to bringing in data that is related to orders or shipments because incremental change data capture is supported only for the order and shipment objects.

Extend the Adaptive Warehouse Content

The Sterling Business Intelligence model can be customized based on your business requirements. A model is a set of related warehouse objects such as dimensions, facts, and calendars required for one or more related reporting applications. To customize your model, you must identify the warehouse objects required to meet your business requirements, create the warehouse model, and publish it.

Prerequisites: To extend the Adaptive Warehouse content, you must be familiar with developing metadata model using the IBM® Cognos® Adaptive Warehouse and the IBM® Cognos® Framework Manager applications.

To extend and customize the Adaptive Warehouse content, perform the following tasks:

- ◆ Modify the existing dimensions, facts, and add new warehouse objects
- ◆ Add new facts, dimensions, and create a new star schema
- ◆ Add custom hierarchy, target model filters, and new target model calculation
- ◆ Add custom hierarchy, hierarchy levels to existing hierarchy, source and target model filters, filters on warehouse objects, and new target model calculation

When extending and customizing the Adaptive Warehouse content, you must not perform the following tasks:

- ◆ Delete existing warehouse objects, including facts, dimensions, and references
- ◆ Modify the existing target model calculations, filters, and hierarchy

To extend the Adaptive Warehouse content, modify the existing Adaptive Warehouse projects that are shipped with Sterling Business Intelligence, namely Sterling Staging Data Source (staging project) and Sterling Data Source (data mart project).

For more information about working with warehouse objects, refer to the *IBM® Cognos® 8 Analytic Applications Adaptive Warehouse User Guide*.

Extend the Adaptive Analytics Reports

Based on your business requirements, you can add new reports in Sterling Business Intelligence. For customizing the reports, you must determine the metric types, hierarchy references, and the corresponding packages, create a deployment archive, and publish the reports.

Prerequisites: To extend the reports in Sterling Business Intelligence, you must be familiar with developing reports in the IBM® Cognos® Adaptive Analytics application.

Note: When extending and customizing reports using Sterling Business Intelligence, you can add new reports, but you should not delete or modify the existing reports.

To create a new analytic report, follow the process listed here:

1. Open the Sterling Data Source Adaptive Analytics project.
2. Create a Report Pack within a metric type. The metric type defines what you are reporting on.
3. Select an Hierarchy to report.
4. Create an Analytic Type. The Analytic Type defines the style of the report.
5. Optionally, set other properties as follows:
 - ♦ Define additional measures or levels (hierarchy)
 - ♦ Define filters

Note: All adaptive analytic reports must contain a time reference. If the time hierarchy is not present in the report, you must select an available prompt parameter in the Parameter Configuration screen and set the time reference properties to *Yes*.

For more information about generating analytic reports, refer to the *IBM® Cognos® 8 Analytic Applications Adaptive Analytics User Guide*.

Extend the Dashboards

Based on your business requirements, you can add dashboards in Sterling Business Intelligence. For customizing the dashboards, you must clearly understand the business requirements and the layout of the dashboards. Ensure that the metrics and the dimensions required are available in the model. If the metrics and dimensions are not available, modify the model to meet your business requirements.

Prerequisites: To extend and customize the dashboards, you must be familiar with the task of authoring reports using IBM® Cognos® 8 BI Report Studio Professional.

Notes:

- ◆ You must not modify or delete the existing dashboards. If you want to modify the existing dashboards, ensure that you make a copy of the dashboard and modify it in the same folder where the existing dashboards are present.
- ◆ All customization of the dashboards must be saved in the Analytic Applications/Info Packs/Sterling Analytics Package/Metric Type Report Packs/Sterling TOC /Dashboards folder in the Content Store.

For more information about creating reports, refer to the *IBM® Cognos® 8 BI Report Studio Professional Authoring User Guide*.

Customize the User Interface

You can customize the Sterling Business Intelligence user interface by using the Designer Workbench application, which allows you to add new screens.

Prerequisites: To customize the Sterling Business Intelligence user interface, you must be familiar with the task of developing an user interface using the Sterling Web UI Framework.

In Sterling Business Intelligence, you can perform the following customizations:

- ◆ Create new screens: You must create a new screen if you are adding a new report or a dashboard and want to deliver this using the Web UI Framework. You can create new screens using the Sterling Designer Workbench application.
Note: You cannot modify an existing screen. You can only add new screens. When customizing the user interface, copy the standard resources of the application and then modify your copy. Do not modify the standard resources of the application.
- ◆ CSS: Icons and font sizes in the user interface can be customized by modifying the CSS entries in the CSS file. You can create a new CSS entry, and extend and override the existing CSS entries. This is done by creating a file in the extn folder with the same structure as the sbi folder. For more information about customizing a CSS file, refer to the *Web UI Framework Extensibility Guide*.
- ◆ Menu: The menu bar and the menu options in the interface can be customized. You can customize the sequence of the menu options and add new menu options. For more information about customizing menu options, refer to the *Web UI Framework Extensibility Guide*.

For more information about extending the Web user interface, refer to the *Customizing the Web UI Framework Guide*.

Create a New Screen

1. Install the Sterling Business Intelligence application and build a WAR file for it.
 - a. Deploy the WAR file on the server in the exploded format.
 - b. After the deployment is completed, start the application server.
2. Copy the SBISample.json file from the <web_ui_extn>/sbi/bi/json folder to the appropriate folder and rename it as <screenname>.json.
3. Open the <screenname>.json file in Designer Workbench.

4. Change the properties of the screen that you want to create as follows:
 - ◆ `sciId` as `<screen name >`
 - ◆ `class name` as `sc.bi.<screenname>`
 - ◆ `regxtype` as `sc.bi.<screenname>`
 - ◆ `Source namespaces` as the `namespace` names as required by the added widgets in the screen.
5. Change the value of the hidden parameter `report_name` to `<cognos report name>`.
6. Add the required widgets in the **SearchPanel**. For details about adding a widget to a screen, refer to the *Customizing the Web UI Framework Guide*.

Note: If you do not require the Time Period drop-down list in a screen, remove the `TimePanel` from the screen.
7. If the custom report has a new parameter, which needs to be displayed as a list of values, for example, as a check box or Combo box, from the datamart database, then you must change the value of a hidden parameter named `QueryIds`. The `QueryIds` should be same as the parameter in the report. Change the value of the hidden parameter `QueryIds` as required, using the added widgets in the screen.

Note:

 - ◆ The `sbi_query.xml` file defines a list of queries used by the `entityLookup` API. Each query defined in `sbi_query.xml` is identified by a `QueryId`. For details about the `entityLookup` API, refer to API javadocs.
 - ◆ If you are adding a new query to populate a widget in a screen, you must define a new entry in a new file named `sbi_query.xml` inside the `<Runtime>/repository/xapi/template/merged/metadata/extn` folder.
 - ◆ For new `QueryIds`, you must extend and add new corresponding entries pertaining to the mashups. The `id` attribute of the mashup entry should be `get<queryid>`. The value of `QueryIds` must be a coma separated value and each value must be same as defined in the `sbi_query.xml` file.
 - ◆ To extend the `sbi_mashups.xml` file, create a new file, `<filename>.xml`, in the `<Runtime>/repository/eardata/sbi/war/mashupxmls/extn` folder.
8. Navigate to **Screen > SearchPanel > Buttons > Btn_Search**.
9. Change the value of `Handler` property to `sc.bi.utils.generateReportForPrompt`.
10. Click **Save**.

The `<screen name>_config.js` and `<screen name>.js` files are created.
11. Add the following code in the `<screen name>.js` file within the `<screen name>` class:


```
getViewID :function(){
    return "<screenname>";
},
getScreenContext : function(){
    return "<screenname>";
}
```

12. Copy the <screen name>_config.js and <screen name>.js files, created in step 9 to <INSTALL_DIR>/extensions/sbi/webpages/bi/screens folder. If this folder does not exist, create the same.
13. Create a Java Script builder file sbi.jsb in the <INSTALL_DIR>/extensions/<sbi>/webpages/bi/screens folder. The folder contains entries for the newly created screens.

Note: If you have chosen to retain the **Time Period** drop-down list, add the entry in the same target element of sbi.jsb file.

Following is the sample code for JSB:

```
<?xml version="1.0" encoding="utf-8"?>

<project name="sbi" author="Sterling Commerce Pvt.Ltd" version="1.0"
copyright="$projectName&#xD; &#xA; Copyright(c) 2006,
$author.&#xD; &#xA; &#xD; &#xA; This code is licensed under BSD license. Use
it as you wish, &#xD; &#xA; but keep this copyright intact."
source="False" source-dir="$output/source" minify="True"
min-dir="$output/build" doc="False" doc-dir="$output/docs" master="true"
master-file="$output/yui-ext.js" zip="false"
zip-file="$output/yuo-ext.$version.zip">

    <target name="<screenname>"
file="/extn/bi/scripts/<screenname>Lib.js" allowDynamicLoad="true"
debug="true" shorthand="false" shorthand-list="">

        <include name="/extn/bi/screens/<screenname>_config.js" />
        <include name="/extn/bi/screens/<screenname>.js" />
        <include name="/bi/common/TimeScreen_config.js" />
        <include name="/bi/common/TimeScreen.js" />

    </target>

</project>
```

14. Create a new servlet to register the new JSB and mashup file.

Following is a sample code for creating servlet:

```
import javax.servlet.ServletConfig;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import
com.sterlingcommerce.ui.web.framework.helpers.SCUIJSLibraryHelper;
import
com.sterlingcommerce.ui.web.framework.helpers.SCUI MashupHelper;
public class CreateServlet extends HttpServlet {
private static final long serialVersionUID =
4693417985837892469L;
public synchronized void init(final ServletConfig config)
throws ServletException {
//loads the JSB specified at the path
SCUIJSLibraryHelper.loadJSLibraryXml
("extn/bi/screens/sbi.jsb", config.getServletContext());
//loads the mashup XML specified at the path
SCUI MashupHelper.loadMashupXml
("/extn/bi/screens/<filename.xml>", config.getServletContext());
}
}
```

15. Package the servlet into a JAR file.

16. Create a new web.xml file by copying the original

<INSTALL_DIR>/repository/eardata/sbi/extn/web.xml.sample file in the same directory, and add the entry for the servlet in web.xml file as follows:

```
<servlet>
    <display-name><servletName></display-name>
    <servlet-name><servletName></servlet-name>
    <servlet-class><full servlet class name> </servlet-class>
    <load-on-startup>1500</load-on-startup>
</servlet>
```

17. Run the following command in the <INSTALL_DIR>/bin directory so that the JAR file containing the servlet is added to the WAR file when the WAR file is generated:

```
install3rdParty.sh <vendorName> <vendorVersion> -j <full path of the JAR
file> -targetJVM APP (for UNIX)
install3rdParty.cmd <vendorName> <vendorVersion> -j <full path of the JAR
file> -targetJVM APP (for Microsoft Windows)
```

18. Create a minified file using the following command:

```
sci_ant.sh -f jsUtil.xml minify-js -Dgis.install=<Install> -Dminify=true  
(for UNIX)
```

```
sci_ant.cmd -f jsUtil.xml minify-js -Dgis.install=<Install> -Dminify=true  
(for Microsoft Windows)
```

For more details about compiling and minimizing JavaScript files, refer to *Customizing Web UI Framework Guide*.

19. Create the resource jar file using the following command:

```
<INSTALL_DIR>/bin/deployer.sh -t resourcejar (for UNIX)
```

```
<INSTALL_DIR>/bin/deployer.cmd -t resourcejar (for Microsoft Windows)
```

20. Create a new menu item using Application Manager, and attach the Resource ID. For more information about configuring presentation components, refer to the *Selling and Fulfillment Foundation: Application Platform Configuration Guide*.
21. Create user permissions for the resources that have been added. For more information about user permissions, refer to the *Selling and Fulfillment Foundation: Application Platform Configuration Guide*.
22. Re-create the `smcfs.ear` file.

For more information about recreating the EAR file, refer to the *Selling and Fulfillment Foundation: Installation Guide*. Create a resource with `resourceId` as `<screenname>` for the new screen. For more information about creating a resource, refer to the *Selling and Fulfillment Foundation: Application Platform Configuration Guide*.

The Sterling Business Intelligence Model

This topic explains the data model and the schemas pertaining to Sterling Business Intelligence.

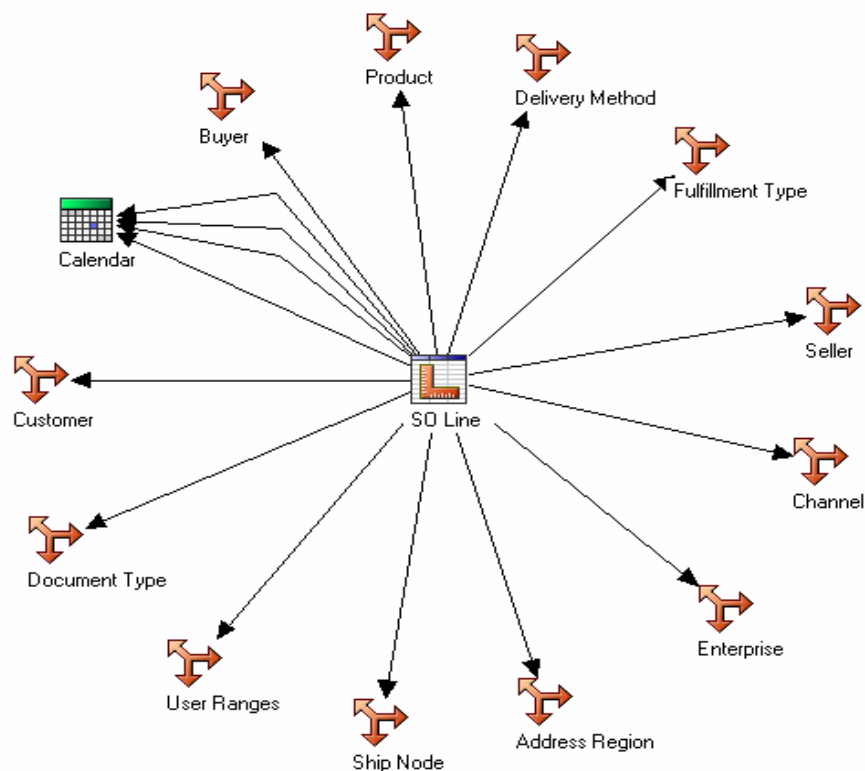
Warehouse Model Star Schemas

Sterling Business Intelligence provides metadata to deliver the warehouse content in the warehouse model using the star schemas shown in the following illustration.

The tables in this section list the dimensions and the corresponding role names for each star schema. A role is the role name given when multiple references exist between a fact and a dimension.

SO Line Star Schema

The SO Line star schema is illustrated here.

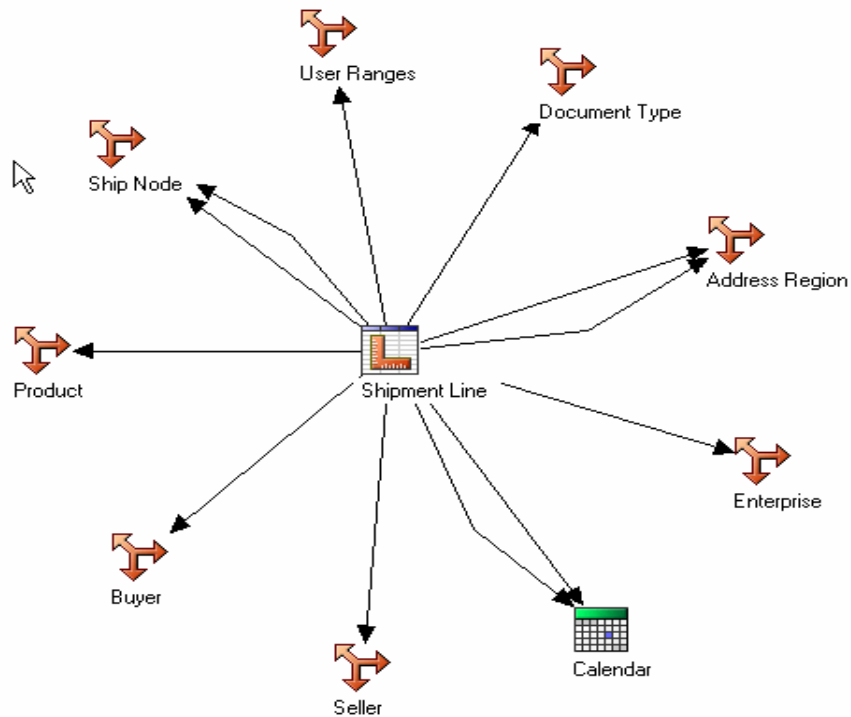


The SO Line star schema consists of SO Line measures and references to the dimensions listed in the following table:

Dimension	Role
Enterprise	Default
Address Region	Default
Calendar	Actual Ship Date-SO Line Released Date Confirmed Date Promised Ship Date
Ship Node	Default
User Ranges	Default
Buyer	Default
Seller	Default
Customer	(Default)
Product	Default
Delivery Method	Default
Fulfillment Type	Default
Document Type	Default
Channel	Default

Shipment Line Star Schemas

The Shipment Line star schema is illustrated here.



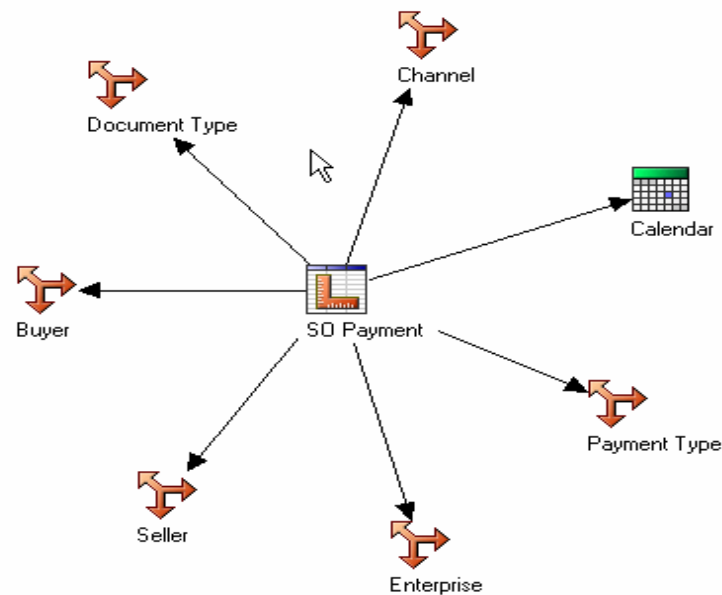
The Shipment Line star schema consists of the Shipment Line measures and references to the dimensions listed in the following table:

Dimension	Role
Enterprise	Default
Address Region	Ship To Bill To
Calendar	Actual Ship Date-Shipment Line Expected Shipment Date
Ship Node	Default Procurement Node
User Ranges	Default
Buyer	Default

Dimension	Role
Seller	Default
Product	Default
Document Type	Default

SO Payment Star Schema

The SO Payment star schema is illustrated here.

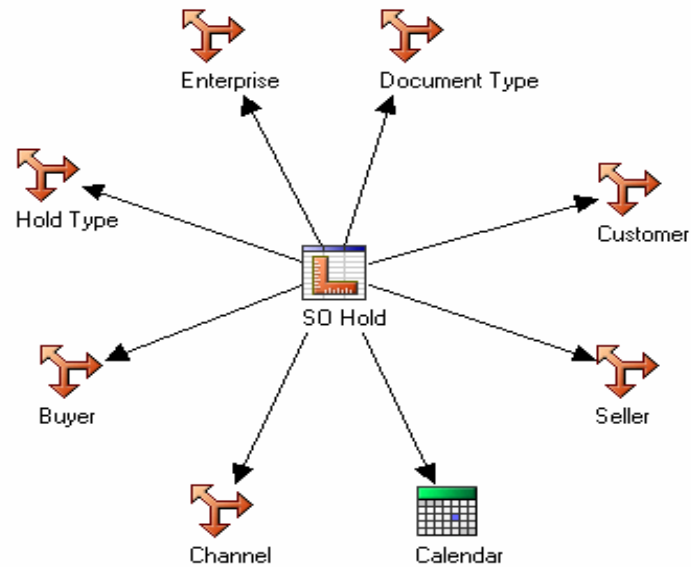


The SO Payment star schema consists of the SO Payment measures and references to the dimensions listed in the following table:.

Dimension	Role
Calendar	Charge Date
Channel	Default
Document Type	Default
Seller	Default
Buyer	Default
Enterprise	Default
Payment Type	Default

SO Hold Star Schema

The SO Hold star schema is illustrated here.

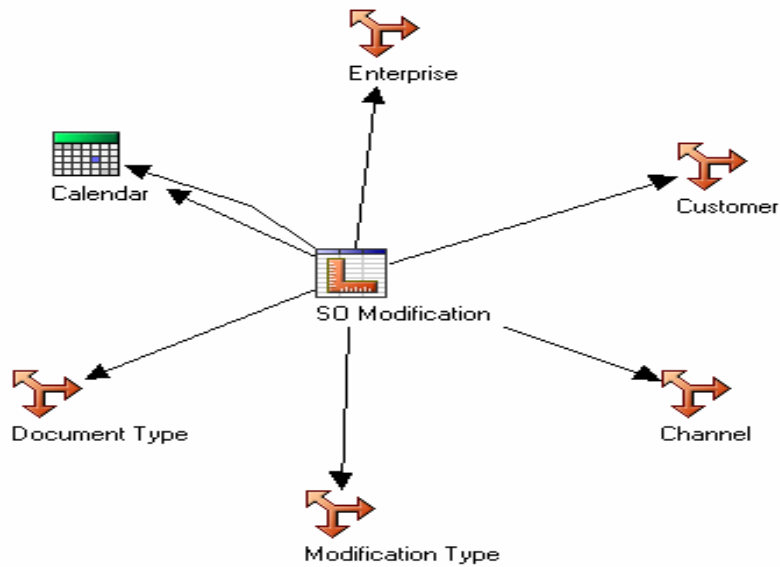


The SO Hold star schema consists of the SO Hold measure and references to the dimensions listed in the following table:.

Dimension	Role
Enterprise	Default
Customer	Default
Document Type	Default
Calendar	Hold Date
Seller	Default
Channel	Default
Buyer	Default
Hold Type	Default

SO Modification Star Schema

The SO Modification star schema is illustrated here.



The SO Modification star schema consists of the SO Modification measure and references to the dimensions listed in the following table:.

Dimension	Role
Enterprise	Default
Customer	Default
Channel	Default
Modification Type	Default
Document Type	Default
Calendar	Confirmed Date Modify Date

Target Model Star Schemas

The target model generated by the Adaptive Warehouse applies the best practices for reporting. The target model provides a business view of the information in the source model, and is used to simplify the building of reports, analyses, and queries. The following star schema groupings are delivered in the target model of the Sterling Business Intelligence Warehouse content.

SO Line Star Schema Grouping

The SO Line star schema grouping consists of the SO Line measures and the following dimensions.

Dimensions

- ◆ Enterprise
- ◆ Buyer
- ◆ Seller
- ◆ Channel
- ◆ Calendar
- ◆ Delivery Method
- ◆ Fulfillment Type
- ◆ Product
- ◆ Product Category Hierarchy
- ◆ Address Region
- ◆ Ship Node
- ◆ Address Region Hierarchy
- ◆ Customer
- ◆ Customer Hierarchy
- ◆ Document Type
- ◆ User Ranges

Measures

The following table provides a list of the SO Line measures:

Measure	Description
Total Line Charges	This is the total amount pertaining to an order line.
Is Shipped	This measure indicates whether the order line is shipped.
Elapsed Time Actual Ship Promised	The time that has elapsed between the actual shipment time and the promised time (in minutes).
Elapsed Time Actual Ship Released	The time that has elapsed between the actual shipment time and the released time (in minutes).
Elapsed Time Confirm Release	The time that has elapsed between the released time and confirmed time (in minutes)

Measure	Description
Shipped Quantity	This is the shipped quantity of the order lines.
Is ASAP Order	This measure indicates whether the order is an ASAP order.
Ordered Quantity	This is the ordered quantity of the order lines.
Capture to Shipment Time for ASAP Order	This is the time between the shipped time and the captured time for ASAP orders.
Is Delayed	This measure indicates whether the order line has been delayed.
Is BackOrdered	This measure indicates whether the order line has been backordered.
Is BackOrdered and Delayed	This measure indicates whether the order line has been backordered and delayed.
Is Shipped On Time	This measure indicates whether the order line has been shipped on time.
Elapsed Time Actual Ship Confirmed	The time that has elapsed between the actual shipment time and the confirmed time (in minutes).
Elapsed Lead Time ASAP	The time that has elapsed for the ASAP orders (in minutes).
Sales Order Line Count	This is the total number of order lines.
Fulfilled Revenue (Currency)	This is the fulfilled revenue of an order line.
Is Released	This measure indicates whether the order line has been released.
Booked Value (Currency)	This measure indicates the booked value.
Is Shipped ASAP Order	This measure indicates whether the shipped order is an ASAP order.
Not Cancelled	This measure indicates whether the order line has been cancelled.

Grouped Measures

The following table provides a list of the SO Line group measures:

Measure	Description
Percentage Shipped on Time	This is the percentage of order lines shipped on or before the first promised date.
No. of Orders Shipped	This is the total number of orders shipped.
Avg. Exp. Lead Time (ASAP Orders)	This is the time between the promised date and the confirmed date for ASAP orders.
Avg. Capture to Ship Time (ASAP)	This is the average amount of time between the stage an ASAP order line is captured and the time it is shipped.
Avg. Lead Time to Ship	This is the average time required to move the order lines from the release stage to the ship stage.
Avg. Value of an Order	This is the average booked value of confirmed orders.
No. of Order Lines Confirmed	This is the total number of order lines confirmed.
Percentage BackOrdered	This is the percentage of shipment lines backordered from a node.
No. of Order Lines Shipped	This is the total number of order lines shipped.
Avg. Capture to Ship Time (ASAP)	This is the average amount of time between the stage when an ASAP order line is captured and the time it is shipped.
Avg. Order to Release Time	This is the average time required to move the order lines from the order capture stage to the order release stage.
Avg. Order Lines per Order	This is the average number of order lines in a confirmed order.

Shipment Line Star Schema Grouping

The Shipment Line star schema grouping consists of the Shipment Line measures and following dimensions.

Dimensions

- ◆ [Seller](#)
- ◆ [Ship Node](#)
- ◆ [Enterprise](#)
- ◆ [Buyer](#)
- ◆ [Address Region](#)
- ◆ [Product](#)
- ◆ [Product Category Hierarchy](#)
- ◆ [Address Region Hierarchy](#)
- ◆ [Calendar](#)
- ◆ [Document Type](#)

Measures

The following table provides a list of the Shipment Line measures:

Measure	Description
Shipped Quantity	This measure indicates the quantity that has been shipped.
Elapsed Time Expected Ship	This measure indicates the difference between the shipped time and the expected time (in minutes).
Is Procured	This measure indicates whether the shipment line has been procured.
Is Shipped	This measure indicates whether the shipment has been shipped.
Is Delayed	This measure indicates whether a shipment line has been delayed.
Delay in Shipment per Line	This measure indicates the delay in shipment for each shipment Line.
Elapsed Time Released Ship	This measure indicates the difference between the shipment time and the released time (in minutes).
Is Shipped on Time	This measure indicates whether the shipment has been shipped on time.
Is Backordered from Node	This measure indicates whether the order line has been backordered from a node.
Ordered Quantity	This measure provides the ordered quantity.
Is Fulfillment Partner	This measure indicates whether the ship node of a shipment line is a fulfilled partner.
Delay in Shipment	This measure indicates the delay in shipment for each shipment.

Grouped Measures

The following table provides a list of the Shipment Line group measures:

Measure	Description
Percentage Shipped on Time	This is the percentage of order lines that are shipped on or before the first promised date.
No. of Shipment Lines Shipped	This is the total number of shipment lines shipped.
Avg. Release to Ship Time	This is the average time required to move the shipment lines from the release stage to the ship stage.
Percentage Procured	This is the percentage of shipment lines procured for a node.
No. of Shipments Shipped	This is the total number of shipment shipped.
Avg. Value of an Order	This is the average booked value of the confirmed orders.
Avg. Delay in Shipment	This is the average delay in the delayed shipments shipped.

SO Payment Star Schema Grouping

The SO Payment star schema grouping consists of the SO Payment measures and the following dimensions.

Dimensions

- ◆ Enterprise
- ◆ Calendar (Charge Date)
- ◆ Buyer
- ◆ Seller
- ◆ Channel
- ◆ Payment Type
- ◆ Document Type

Measures

The following table provides a list of the SO Payment measures:

Measure	Description
Authorization Count	This measure indicates whether the transaction has been authorized.
Authorization Failure Count	This measure indicates whether the authorization of transaction has failed.
Credit Amount	This is the amount that is actually charged or refunded to the buyer.
Authorized Amount	This is the amount that is authorized for an order.
Settlement Count	This measure indicates whether the transaction settlement has been completed or not.
Settlement Failure Count	This measure indicates whether the settlement of transaction has failed.
Request Amount	This is the amount that has been requested for settlement or authorization.
Settled Amount	This measure is the amount for which a settlement has been requested.

Grouped Measures

The following table provides a list of the SO Payment grouped measures:

Measure	Description
Percentage Authorization Failures	This is the percentage of payment instruments that failed during the authorization of payment.
Percentage Settlement Failures	This is the percentage of settlements that failed during the settlement cycle.

SO Hold Star Schema Grouping

The SO Hold star schema grouping consists of the SO Hold measure and following dimensions.

Dimensions

- ◆ [Calendar \(Hold Date\)](#)
- ◆ [Enterprise](#)
- ◆ [Seller](#)
- ◆ [Buyer](#)
- ◆ [Channel](#)
- ◆ [Hold Type](#)
- ◆ [Document Type](#)
- ◆ [Customer](#)
- ◆ [Customer Hierarchy](#)

Measures

The SO Hold measure is Hold Duration. This field indicates the duration of hold applied on an order (in minutes).

Grouped Measures

The following table provides a list of the SO Hold grouped measures:

Measure	Description
No. of Orders on Hold	This is the total number of orders on hold.
Avg. Hold Duration	This is the average time the orders are kept on hold.

SO Modification

The SO Modification star schema grouping consists of the SO Modification measure and following dimensions.

Dimensions

- ◆ [Calendar \(Modify Date\)](#)
- ◆ [Channel](#)
- ◆ [Modification Type](#)
- ◆ [Enterprise](#)
- ◆ [Document Type](#)
- ◆ [Customer](#)
- ◆ [Customer Hierarchy](#)

Measures

The SO Modification measure is Is Manually Modified. This field indicates whether the order is manually modified.

Grouped Measures

The following table provides a list of the SO Modification grouped measures:

Measure	Description
Orders from SO Modification	This is the total number of orders manually modified after confirmation.
Orders from SO line	This is the total number of orders confirmed.
Percentage of Orders Manually Modified	This is the percentage of orders that have been manually modified after confirmation.

Target Model Dimensions

Dimensions reflect the attributes of a business, such as enterprise, channel, seller, buyer, and so on. Each dimension consists of one or more hierarchy that typically contain several levels. For example, the enterprise dimension contains the enterprise hierarchy and the corresponding levels such as Enterprise (All) and Enterprise Code.

Dimensions also provide contextual information to facts. For example, order being shipped is a fact, However, data such as the order ship date, ship to address, ship from address, and so on are contextual information that is captured by a dimension. Dimensions can be used to filter data and arrive at an appropriate data set. Sterling Business Intelligence contains the following target model dimensions.

Enterprise

An enterprise is an organization that brokers business. An enterprise represents the organization that owns and controls all transactions. An enterprise controls the flow of documents such as a sales order, and is considered the owner of the documents. Most business rules and fulfillment processes pertaining to an order are defined by an enterprise.

Dimension Hierarchy

The dimension hierarchy related to enterprise is Enterprise.

The levels associated with enterprise are:

- ◆ Enterprise (All)
- ◆ Enterprise Code

Location in the target model: Enterprise

Filter

The filter associated with the enterprise dimension is Enterprise Code.

Ship Node

This dimension contains all the ship nodes. Ship node is the warehouse or distribution center that is shipping the shipment or products.

Dimension Hierarchy

The dimension hierarchy related to ship node is Ship Node.

The levels associated with ship node are:

- ◆ Ship Node (All)
- ◆ Ship Node Code

Location in the target model: Ship Node

Filter

The filter associated with the ship node dimension is Ship Node Code.

Dimension Role Play

The dimension role play related to ship node is Ship Node (Procurement Node).

Seller

This dimension contains all the sellers. A seller is an organization that supplies products to an enterprise or other buyer organizations.

Dimension Hierarchy

The dimension hierarchy related to seller is Seller.

The levels associated with seller are:

- ◆ Seller (All)
- ◆ Seller Code

Location in the target model: Seller

Filter

The filter associated with the seller dimension is Seller Code.

Buyer

This dimension contains all the buyers. A buyer is an organization that purchases product from an enterprise or other seller organizations.

Dimension Hierarchy

The dimension hierarchy related to buyer is Buyer.

The levels associated with buyer are:

- ◆ Buyer (All)
- ◆ Buyer Code

Location in the target model: Buyer

Filter

The filter associated with the buyer dimension is Buyer Code.

Payment Type

This dimension contains the credit card payment types supported by various organizations. Payment type is the type of payment that a customer uses to pay for an order, for example, check, credit card, store value card, and so on.

Dimension Hierarchy

The dimension hierarchy related to payment type is Payment Type.

The levels associated with payment type are:

- ◆ Payment Type (All)
- ◆ Enterprise Code
- ◆ Payment Type Code

Location in the target model: Payment Type

Filter

There is no filter associated with the payment type dimension.

Hold Type

Holds are applied on orders because of exception conditions and can be used to stop order processing. For example, an order can be put on fraud hold. Holds can be applied at either the order level or the order line level that meeting a certain condition.

Dimension Hierarchy

The dimension hierarchy related to hold type is Hold Type.

The levels associated with hold type are:

- ◆ Hold Type (All)
- ◆ Enterprise Code
- ◆ Hold Type Code

Location in the target model: Hold Type

Filter

There is no filter associated with the hold type dimension.

Channel

This dimension contains the channel. Orders are placed through various channels, for example, Web channel, catalog, call center, so on.

Dimension Hierarchy

The dimension hierarchy related to channel is Channel.

The levels associated with channel are:

- ◆ Channel (All)
- ◆ Channel Code

Location in the target model: Channel

Filter

The filter associated with the channel dimension is Channel Code.

Fulfillment Type

An enterprise can define the list of valid values for fulfillment type, and specify them on the order line. Fulfillment type specifies how the order line will be sourced.

Dimension Hierarchy

The dimension hierarchy related to fulfillment type is Fulfillment Type.

The levels associated with fulfillment type are:

- ◆ Fulfillment Type (All)
- ◆ Enterprise Code
- ◆ Fulfillment Type Code

Location in the target model: Fulfillment Type

Filter

There is no filter associated with the fulfillment type dimension.

Delivery Method

This dimension contains all the delivery methods. This specifies how an order is delivered.

Dimension Hierarchy

The dimension hierarchy related to delivery method is Delivery Method.

The levels associated with delivery method are:

- ◆ Delivery Method (All)
- ◆ Enterprise Code
- ◆ Delivery Method Code

Location in the target model: Delivery Method

Filter

There is no filter associated with the delivery method dimension.

Product

This dimension contains the products. A product is an item that has at least one characteristic that is different from all other products, and which requires a unique identifier such as a Stock Keeping Unit (SKU) or part number. A product is the most basic part of a catalog hierarchy.

Note: When an item has multiple units of measures (UOM) defined, only one unit of measure is considered for analysis in Sterling Business Intelligence.

Dimension Hierarchy

The dimension hierarchy related to product are:

◆ Product

The levels associated with Product are:

- ◆ Product (All)
- ◆ Catalog Organization Code
- ◆ Product Code
- ◆ Unit of Measure Code

◆ Products

The levels associated with Products are:

- ◆ Product (All)
- ◆ Product Code

Location in the target model: Product

Filter

There is no filter associated with the product dimension.

Product Category Hierarchy

Items are classified based on categories. You can define an hierarchy of categories for a product.

Dimension Hierarchy

The dimension hierarchy related to product category hierarchy are:

◆ Categories (Product)

The levels associated with Categories (Product) are:

- ◆ Categories (Product) (All)
- ◆ Top Level Categories (Product)
- ◆ Second Level Categories (Product)
- ◆ Third Level Categories (Product)
- ◆ Fourth Level Categories (Product)
- ◆ Fifth Level Categories (Product)

◆ Product Category Hierarchy

The levels associated with Products are:

- ◆ Product Category Hierarchy (All)
- ◆ Catalog Organization Code
- ◆ Category Identifier

Location in the target model: Product Category Hierarchy

Filter

The filter associated with the product category hierarchy dimension is Product Category.

Customer

This dimension contains a repository of all customers. Customers are further categorized into Business Customers (Organizations or Businesses) and Consumer Customers (Individual).

Dimension Hierarchy

The dimension hierarchy related to customer is Customer.

The levels associated with customer are:

- ◆ Customer (All)
- ◆ Customer Organization Code
- ◆ Customer Identifier

Location in the target model: Customer

Filters

There is no filter associated with the customer dimension.

Customer Hierarchy

This dimension contains the entire customer hierarchy. It signifies the hierarchy of customers. Customers are further categorized into Business Customers (Organizations or Businesses) and Consumer Customers (Individual). Sterling Business Intelligence supports up to five levels of customer hierarchy.

Dimension Hierarchy

The dimension hierarchy related to customer hierarchy is Customer Hierarchy.

The levels associated with customer hierarchy are:

- ◆ Customer Hierarchy

The levels associated with customer hierarchy are:

- ◆ Customer Hierarchy (All)
- ◆ Customer Organization Code
- ◆ Customer Identifier Customers

- ◆ Customers

The levels associated with customers are:

- ◆ Customers (All)
- ◆ Top Level Customers
- ◆ Second Level Customers
- ◆ Third Level Customers
- ◆ Fourth Level Customers

- ◆ Fifth Level Customers

Location in the target model: Customer Hierarchy

Filters

The filters associated with the customer hierarchy dimension are Business Customer and Consumer Customer.

Customer Contact

Customer contacts represent individuals at a customer location. You can define multiple contacts for each customer.

Dimension Hierarchy

The dimension hierarchy related to customer contact is Customer Contact.

The levels associated with customer contact are:

- ◆ Customer Contact (All)
- ◆ Customer Identifier
- ◆ Customer Contact Identifier
- ◆ Customer Organization Code

Location in the target model: Customer Contact

Filter

There is no filter associated with the Customer Contact dimension.

Address Region

This dimension contains the address of a customer.

Dimension Hierarchy

The dimension hierarchy related to address region is Address Region.

The levels associated with address region are:

- ◆ Address Region (All)
- ◆ Address Identifier

Location in the target model: Address Region

Filter

There is no filter associated with the address region dimension.

Dimension Role Play

The dimension role plays related to address region are:

- ◆ Address Region (Ship To)
- ◆ Address Region (Bill To)

Address Region Hierarchy

This dimension contains the region hierarchy corresponding to an address. A typical region hierarchy would be Country > Regions (Territory) > State > City > Zip Code.

Dimension Hierarchy

The dimension hierarchy related to address region hierarchy is Address Region Hierarchy.

The levels associated with address region hierarchy are:

- ◆ Address Region Hierarchy

The levels associated with address region hierarchy are:

- ◆ Address Region Hierarchy (All)
- ◆ Region Identifier

- ◆ Region Hierarchy (Address)

The levels associated with region hierarchy (Address) are:

- ◆ Region Hierarchy (Address) (All)
- ◆ Top Level Address Region
- ◆ Second Level Address Region
- ◆ Third Level Address Region
- ◆ Fourth Level Address Region
- ◆ Fifth Level Address Region

Location in the target model: Address Region Hierarchy

Filter

The filter associated with the address region hierarchy dimension is Region Hierarchy.

Dimension Role Play

The dimension role plays related to address region hierarchy are:

- ◆ Address Region Hierarchy (Ship To)
- ◆ Address Region Hierarchy (Bill To)

Document Type

This dimension contains the document type. Document type is a kind of document defined by a specific XML template that has been designed to support a specific transaction set or business process. The document type defines possible processes and system behaviors that occur as the document goes through its life cycle.

Dimension Hierarchy

The dimension hierarchy related to document type is Document Type.

The levels associated with document type are:

- ◆ Document Type (All)

- ◆ Document Type Code

Location in the target model: Document Type

Filter

The filter associated with the document type dimension is Document Type Code.

User Ranges

This dimension contains different range types and their possible range values. Customers can extend this dimension to define their own range type and analyze based on the defined range type.

Dimension Hierarchy

The dimension hierarchy related to user ranges is User Ranges.

The levels associated with user ranges are:

- ◆ User Ranges (All)
- ◆ Range Identifier
- ◆ RangeType Code
- ◆ Range (Days)

Location in the target model: User Ranges

Filters

There is no filter associated with the user ranges dimension.

Calendar

This dimension contains the default year, quarter, month, and day for the Gregorian calendar. The dimension hierarchy related to calendar and its role play's are:

- ◆ Calendar

The levels associated with Calendar are:

- ◆ Calendar YMD
- ◆ Calendar YQMD

- ◆ Calendar (Charge Date)

The levels associated with Calendar (Charge Date) are:

- ◆ Calendar (Charge Date) YMD
- ◆ Calendar (Charge Date) YQMD

- ◆ Calendar (Modify Date)

The levels associated with Calendar (Modify Date) are:

- ◆ Calendar (Modify Date) YMD
- ◆ Calendar (Modify Date) YQMD

- ◆ Calendar (Hold Date)

The levels associated with Calendar (Hold Date) are:

 - ◆ Calendar (Hold Date) YMD
 - ◆ Calendar (Hold Date) YQMD
- ◆ Calendar (Actual Ship Date-SO Line)

The levels associated with Calendar (Actual Ship Date-SO Line) are:

 - ◆ Calendar (Actual Ship Date-SO Line) YMD
 - ◆ Calendar (Actual Ship Date-SO Line) YQMD
 - ◆ Calendar (Actual Ship Date-SO Line) YWD
- ◆ Calendar (Released Date)

The levels associated with Calendar (Released Date) are:

 - ◆ Calendar (Released Date) YMD
 - ◆ Calendar (Released Date) YQMD
- ◆ Calendar (Confirmed Date)

The levels associated with Calendar (Confirmed Date) are:

 - ◆ Calendar (Confirmed Date) YMD
 - ◆ Calendar (Confirmed Date) YQMD
 - ◆ Calendar (Confirmed Date) YWD
 - ◆ Calendar (Confirmed Date) MD
- ◆ Calendar (Actual Ship Date-Shipment Line)

The levels associated with Calendar (Actual Ship Date-Shipment Line) are:

 - ◆ Calendar (Actual Ship Date-Shipment Line) YMD
 - ◆ Calendar (Actual Ship Date-Shipment Line) YQMD
 - ◆ Calendar (Actual Ship Date-Shipment Line) MD
 - ◆ Calendar (Actual Ship Date-Shipment Line) YWD
- ◆ Calendar (Expected Shipment Date)

The levels associated with Calendar (Expected Shipment Date) are:

 - ◆ Calendar (Expected Shipment Date) YMD
 - ◆ Calendar (Expected Shipment Date) YQMD
- ◆ Calendar (Promised Ship Date)

The levels associated with Calendar (Promised Ship Date) are:

 - ◆ Calendar (Promised Ship Date) YMD
 - ◆ Calendar (Promised Ship Date) YQMD

Location in the target model: Calendar

Filter

There is no filter associated with the calendar dimension.

Parameter Maps

Parameter maps are objects that store key-value pairs. Use parameters to create conditional query subjects that allow for substitutions when a report is run. Parameter maps are similar to data source look-up tables. Each parameter map has two columns, one for the key and one for the value that the key represents.

Following are the parameter maps for Sterling Business Intelligence:

- ◆ Calendar Quarter Start Date
- ◆ Calendar Quarter End Date
- ◆ Product Category Hierarchy
- ◆ Sales Order Hold
- ◆ SO Hold
- ◆ Payment
- ◆ Dimension Perspective
- ◆ Low Date Map
- ◆ Locale Code Map
- ◆ SO Payment
- ◆ AA_Prompts_Map
- ◆ Relative Time Prompt Map
- ◆ Product Category Tree
- ◆ Shipment Line
- ◆ Sales Order Modification
- ◆ CurrentDateMap
- ◆ SO Modification

Troubleshooting

You may encounter the following issues when using Sterling Business Intelligence. Use the information provided here to solve some of the specific problems that you may encounter.

For additional troubleshooting tips, it is recommended that you refer to the *IBM® Cognos® 8 Analytic Applications Adaptive Warehouse User Guide*, the *IBM® Cognos® 8 Analytic Applications Adaptive Analytics User Guide*, and the *IBM® Cognos® 8 Analytic Applications Installation and Configuration Guide*.

Load Management Process is Stalled

The load management process is stalled when the load process is restarted after the previous run is terminated abnormally.

On analyzing the `aw-etl<timestamp>.log` file, it has been found that, queries such as `SELECT count(*) FROM PWP_ETL_LOCKTABLE WHERE WAREHOUSE_OBJECT_ID = '420f9506-93a3-11de-b501-9a43165eb0f8'` are repeated periodically.

Resolving the Problem

The lock rows must exist only for the duration of a build, after the load management process, system will release them. If there is an abnormal termination of this process, the lock rows remain in the table. The application then truncates the `PWP_ETL_LOCKTABLE` table.

If job streams are manually halted, or the application fails for some reason, then the `PWP_ETL_LOCKTABLE` table must be truncated manually. You must ensure that no application activity is taking place when truncating the table manually.

Report Execution Displays an RSV-BBP-0022 Error

When reports are executed in Microsoft® Internet Explorer, an RSV-BBP-0022 error is displayed stating the following:

```
The absolute affinity request 'asynchWait_Request' fails, the requested session does not exist.
```

Resolving the Problem

Ensure that the IBM® Cognos® URL (`http://<hostname>/cognos8/cgi-bin/cognos.cgi`) has not been added to the Restricted sites list in the Internet Explorer Options dialog box (Tools > Internet Options > Security > Restricted sites).

Schema Not Displayed When Creating an Adaptive Warehouse Project

When creating an Adaptive Warehouse project, after selecting the Sterling Data Source project, no target schema is displayed. You will thus not be able to create the Adaptive Warehouse project.

Resolving the Problem

Launch IBM Cognos Configuration and click **Save**.

ETL Script Running in CLI Stalls in an IBM AIX Environment

The `aw-timestamp.log` file contains two entries that are similar to `Running script <script_name>`
`EEM-INFO-0001 Running script: <script_name>`.

When executing a load with IBM Cognos Adaptive Warehouse Runtime on IBM AIX 5.3, the load management is not executed and no error is displayed.

Resolving the Problem

Download and install the December 2007 IBM XL C/C++ runtime program temporary fix (PTF) from the IBM Web site. Run the ETL script after you have installed the PTF.

ETL Process Does Not Load All the Data into the Data Mart Database

Orders created in the online transaction processing (OLTP) database after the last ETL process, is not loaded to the Data Mart Database, despite being in the change data capture (CDC) time window.

Resolving the Problem

Check if the system time of Cognos Server is ahead of OLTP DB Server. If this is the case, you must ensure that all servers are time synched using services like Network Time Protocol (NTP) to a single clock source. Restart the ETL process by resetting the CDC Time Interval. In case the Platform considerations do not allow for time synching, the Cognos server should run one minute slower than the OLTP server.

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