

Sterling Selling and Fulfillment Foundation



Business Intelligence Operational Reports

Release 9.1

Sterling Selling and Fulfillment Foundation



Business Intelligence Operational Reports

Release 9.1

Note

Before using this information and the product it supports, read the information in "Notices" on page 57.

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Chapter 1. Introduction

Overview of the Sterling Business Intelligence Component

The IBM Sterling Business Intelligence component is an optional component, providing powerful analytic and performance metrics that interface with the IBM Sterling Selling and Fulfillment Foundation data set. The Sterling Business Intelligence component allows you to explore and analyze a multi-enterprise order, inventory, or catalog data. You can then identify performance trends and make consistent, coordinated decisions to strengthen your extended enterprise and value chain relationships.

The Sterling Business Intelligence component is delivered through a partnership with Cognos® Corporation. The goal of the Sterling Business Intelligence component is to enhance the value of the Sterling Selling and Fulfillment Foundation by providing operational and analytical reporting capabilities to its users, suppliers, and partners.

Cognos Product

The Sterling Business Intelligence component integrates with Cognos 8 Business Intelligence, Cognos' web-enabled client-side reporting tool used for creating and managing ad-hoc and scheduled reports.

Cognos 8 Business Intelligence includes:

- **Query Studio** - enables you to create ad-hoc reports through a graphical user interface and save the reports in a variety of formats, such as PDF, Excel, real-time reports, or prompted reports.
- **Report Studio** - used to create managed reports that are maintained, reused, and require a higher level of complexity than a report produced in Query Studio.
- **Analysis Studio** - enables you to create ad-hoc cross-tab reports based on the multi-dimensional data sources.

The Sterling Business Intelligence Component

The Sterling Business Intelligence component is delivered with the following:

- Data Model
- Sample Reports
- Custom Files

The Sterling Business Intelligence Data Model is a metadata model created using Framework Manager. This Data Model is used to build Cognos 8 reports. The reports generated by Report Studio are viewed using Cognos Connection. Cognos Connection is used for administering security.

Sterling Business Intelligence: Data Model

The Data Model provided by Sterling Business Intelligence is the base for creating reports and queries.

Sterling Business Intelligence: Sample Reports

The following sample reports are included with the Sterling Business Intelligence component:

- Sample Backlog Summary Report provides visibility into sales orders that have been in certain fulfillment statuses for a specific period of time.
- **Sample Days of Supply Report** provides visibility into the estimated number of days the inventory supply will be available, and the total supply and demand.
- Sample Goods in Transit Report provides visibility into transfer orders and procurement orders whose delayed shipment impacts the shipment of an outbound order.
- Sample Invoice Collections Report provides visibility into the total amount invoiced and the total payments for each invoice type.
- **Sample Open Order Report** provides high-level visibility into unshipped orders grouped by enterprise, buyer, and requested ship date. This report is utilized by operational users of the Sterling Selling and Fulfillment Foundation to provide information detailing orders during their fulfillment cycle.
- **Sample Orders on Hold Report** provides visibility into the number of sales orders, purchase orders, and transfer orders that are on hold and unresolved.
- Sample Returned Products Report provides visibility into the ten most frequently returned items for an enterprise within a specific period of time, based on quantity.
- **Sample Top 10 Products Report** provides visibility into the 10 most frequently purchased products within a specified time period.
- **Sample Unshipped Orders Report** provides visibility into the requested order releases for a specific day.

Sterling Business Intelligence: Custom Files

The custom files (located in <ANALYTICS_HOME>/custom) are used to enhance the user's experience of Analytics. See Chapter 2, "Installing and Configuring Sterling Business Intelligence," on page 3.

Sterling Business Intelligence and Cognos Integration

The Sterling Business Intelligence component provides direct access to the Cognos Connection. When you launch Sterling Business Intelligence, the Sterling Selling and Fulfillment Foundation-customized Cognos Connection is accessed. The Cognos Connection is then used to launch reports. You must have authorization to perform these functions.

Chapter 2. Installing and Configuring Sterling Business Intelligence

Cognos Setup

Before using the IBM Sterling Business Intelligence component, install the Cognos products from the following Cognos CDs:

- IBM® Cognos 8 Business Intelligence Server (specification for operating systems, such as 64 bit Windows)
- IBM Cognos 8 Business Intelligence Modeling (operating system)
- IBM Cognos 8 Supplementary Language Documentation (optional)

The following Cognos products should be installed in accordance with Cognos installation instructions for each product:

- Cognos 8 Business Intelligence
- Framework Manager

If you are installing all Cognos products on one machine, install them in the order presented here. When installing the LDAP server, use the same settings used to configure the IBM Sterling Selling and Fulfillment Foundation.

Depending on your usage (volume, users, data), Cognos recommends different configurations for the various servers used in this setup. Follow the recommendations to avoid setup-related performance issues. For sample server sizing guidelines, see “Cognos Server Sizing Requirements” on page 53.

Cognos Setup: Security Setup

The Sterling Business Intelligence component does not ship with the security enabled because it would complicate the deployment at a client site. All of the Sterling Selling and Fulfillment Foundation reports are created using Anonymous User privileges. It is recommended that you enable security for the various Cognos components and subsequently the Sterling Business Intelligence component after they are installed.

Cognos Setup: Access Manager

The Access Manager provides authentication information for users. It also provides a level of data access control by allowing the setup of User Classes and Groups. All the users of Sterling Business Intelligence are set up in Access Manager, which provides access configuration for data sources and other Cognos servers.

Access Manager and Sterling Business Intelligence User Independence

The user and user group setup in the Sterling Selling and Fulfillment Foundation are not linked to the user and user class setup in Cognos' Access Manager. Nor are they synchronized between the two products. This is not possible because of the proprietary nature of the Cognos LDAP storage scheme.

The users and user groups for the Sterling Selling and Fulfillment Foundation must be maintained independently of the users and user classes for Sterling

Business Intelligence. This is required because each user in Sterling Selling and Fulfillment Foundation may not have access to the Sterling Business Intelligence component or some users of the Analytics may not have access to the other components of the Sterling Selling and Fulfillment Foundation . Additionally, it is necessary that users common to both the Sterling Selling and Fulfillment Foundation and Sterling Business Intelligence have the same user identifier and password setup. Otherwise that user does not have seamless access to Sterling Business Intelligence from the Application Console.

Cognos Setup: User Setup

The Sterling Selling and Fulfillment Foundation uses the concept of user groups and organizations. User classes in Access Manager also support a hierarchical structure. For visual consistency and ease of understanding, it is recommended that you create Analytics Users and User Classes in Access Manager who correspond to the Users and User Groups in the Sterling Selling and Fulfillment Foundation as depicted in Figure 1.

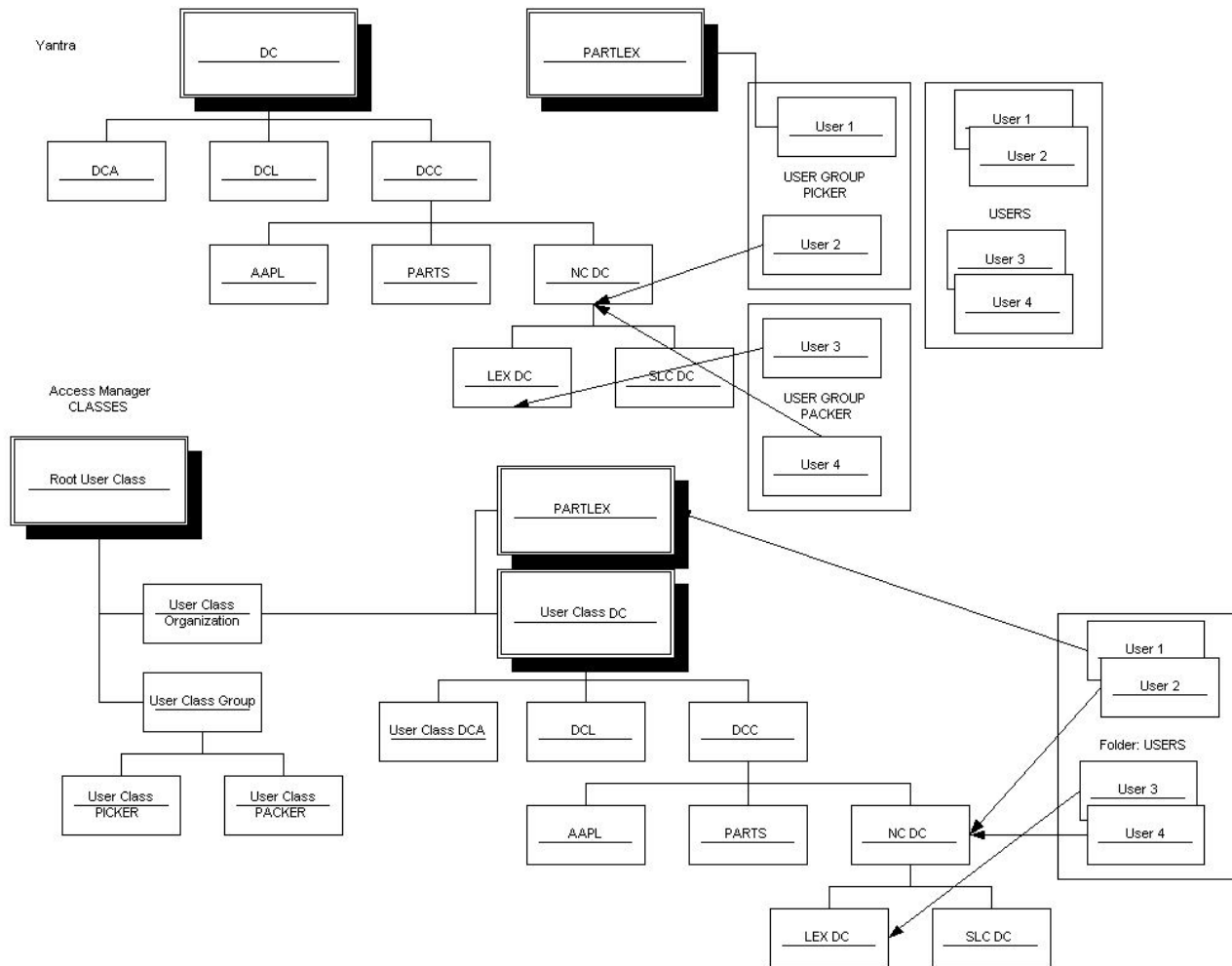


Figure 1. Cognos Users

You can also set up the following user classes in Access Manager that relate to the roles played by an organization in the Sterling Selling and Fulfillment Foundation :

- Hub
- Enterprise

- Buyer
- Seller
- Carrier

Cognos 8 Business Intelligence

The reporting component does not ship with security enabled. Cognos Connection should be used to enable security for these components.

Implementations must use the Sterling Selling and Fulfillment Foundation Authentication Mechanism to authenticate users for viewing reports.

The database for content store for Oracle must have either UTF-8 or UTF-16 encoding. For more information about creating the database for content store, see the Cognos documentation at: <http://support.cognos.com/>.

You can copy the Oracle thin driver to <COGNOS_HOME>/webapps/p2pd/WEB-INF as classes12.jar. For more information about Oracle or DB2® drivers, see the Cognos documentation at: <http://support.cognos.com/>.

Since Cognos 8 cannot access the <INSTALL_DIR>/properties/ folder, you can include the connectivity information for the Sterling Selling and Fulfillment Foundation in the <ANALYTICS_HOME>/bin/analytics.properties file.

Setting Up the Sterling Selling and Fulfillment Foundation Authentication Mechanism

About this task

To set up the Sterling Selling and Fulfillment Foundation Authentication Mechanism:

Procedure

1. Launch Cognos Configuration.
2. Go to Security > Authentication.
3. Add a new resource Namespace "sscap" of the type Custom Java Provider.
4. Assign namespace ID sscap to this namespace resource.
5. Assign com.yantra.authenticator.YantraAuthentication Java class name.

Results

Before applying the above configuration changes and restarting the Cognos Service, complete the steps specified in "Deployment of Sterling Business Intelligence Reports: An Overview" on page 17.

Setting Access to Cognos Administration and Reporting

To help increase the security of your business systems and data, with the Sterling Selling and Fulfillment Foundation, you can selectively assign access to Cognos administrative functions, reports, folders, and packages. The Sterling Business Intelligence Administrator IBM Sterling Application Platform resource is used to assign permissions to Cognos.

Setting up access requires the following:

- Controlling access to Cognos Administration (set the permissions for the Sterling Business Intelligence Administrator resource in the Sterling Selling and Fulfillment Foundation Applications Manager and remove the Everyone group from the Cognos System Administrator role)
- Controlling access to Cognos reports, folders, and packages (after the above task is completed, only Administrators can set permissions for reports, folders and packages)

Controlling Access to Cognos Administration

About this task

The first task in limiting user access to Cognos administrative functionality is to grant permissions to the Sterling Business Intelligence Administrator resource in the Sterling Application Platform. You must have security groups created in the Sterling Selling and Fulfillment Foundation prior to completing this task.

Procedure

1. In the Sterling Selling and Fulfillment Foundation Applications Manager, select **Application** → **Sterling Application Platform**.
2. From the tree in the application rules side panel, select **Security** → **Groups**. The Groups window displays in the work area.
3. Select the group to be given permissions to access the Cognos screens.
4. From the Permissions screen, select **Applications** → **Sterling Business Intelligence** → **Business Intelligence Admin**, as shown in Figure 2.



Figure 2. Setting Entity Permissions in the Sterling Selling and Fulfillment Foundation Applications Manager

5. Right-click **Business Intelligence Admin** and select **Grant All**.
6. Click **Save**.

Results

The second task in limiting user access to Cognos administrative functionality is to make two changes to the System Administrator role in Cognos, as described in "Editing the System Administrator Role in Cognos."

Editing the System Administrator Role in Cognos

The second task in limiting access to Cognos administration functionality is to make two changes to the System Administrator role in Cognos. The two changes

are described in “Adding the sscap/SYSTEM Group” and “Removing the Everyone Group from the Sys Admin Role” on page 9. You can only complete this task after you set access to Cognos administration (as described in “Adding the sscap/SYSTEM Group.”

When a user launches Cognos Connection through the Console, all user groups to which that user belongs are displayed. If the user has permission to access the Sterling Business Intelligence Administrator, the user sees all groups defined in the database and an additional group called sscap/SYSTEM. Otherwise, the user sees only the groups to which he belongs.

In Cognos, by default, all users have administrative capabilities because the Everyone group (which includes all users) is included in the System Administrator role.


Adding the sscap/SYSTEM Group

About this task

Note: You *must* complete this task before deleting the Everyone group (see “Removing the Everyone Group from the Sys Admin Role” on page 9).

When you grant BI Admin rights to a user in the Sterling Selling and Fulfillment Foundation Applications Manager, a new group called SYSTEM is displayed in the user's list of groups under the sscap namespace in Cognos. Add this sscap/SYSTEM group to the System Administrator role in Cognos:

Procedure

1. Start your Web browser and enter the URL of your Cognos applications (the default is <http://localhost/cognos8>).
The Cognos 8 home page displays.
2. Click Cognos Connection.
3. Log in to the Cognos Connection portal as a System Administrator.
4. Locate sscap in the list of roles, and click **sscap**.
5. Locate SYSTEM in the list, and click  in the Action column.
6. The Set Properties - SYSTEM screen displays. Select the **Permissions** tab.
7. Check the **Override the access permissions acquired from the parent entry** checkbox, as shown in Figure 3 on page 8.

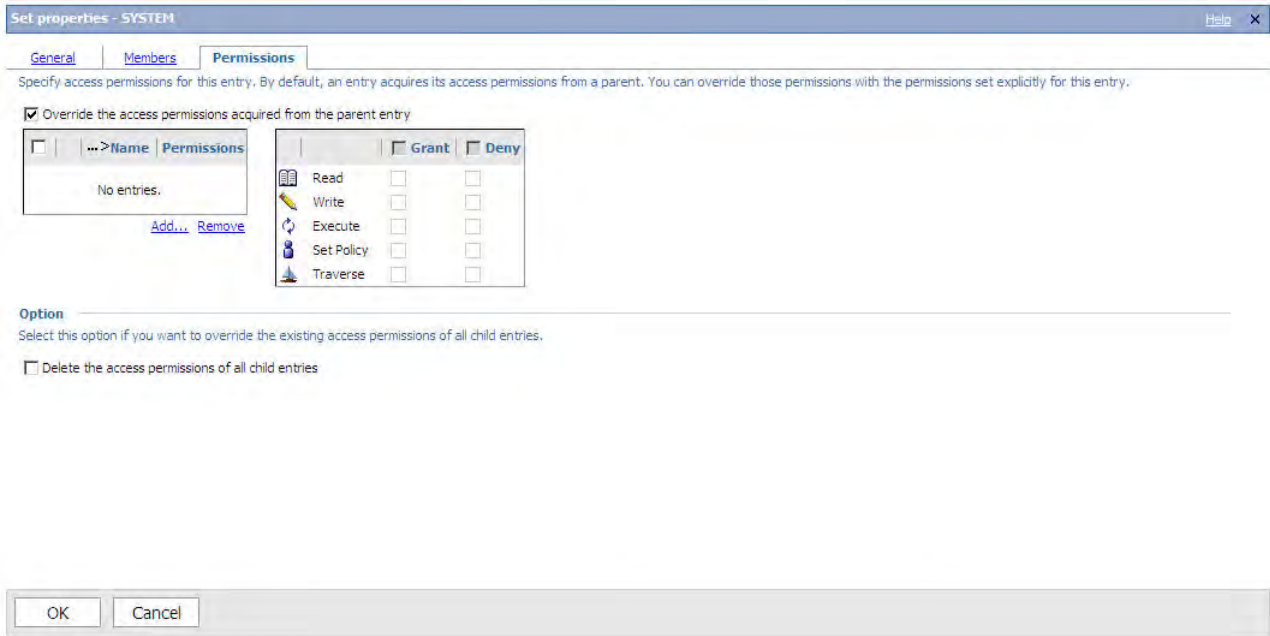


Figure 3. Set Properties - SYSTEM

8. Click Add. The Select Entries - System screen displays.
9. Click **sscap**. The screen shown in Figure 9 on page 11 displays.
10. In Available Entries, select the **System** checkbox and click the arrow to move it to **Selected Entries**. Click **OK**. The Set Properties - System screen displays, as shown in Figure 4.

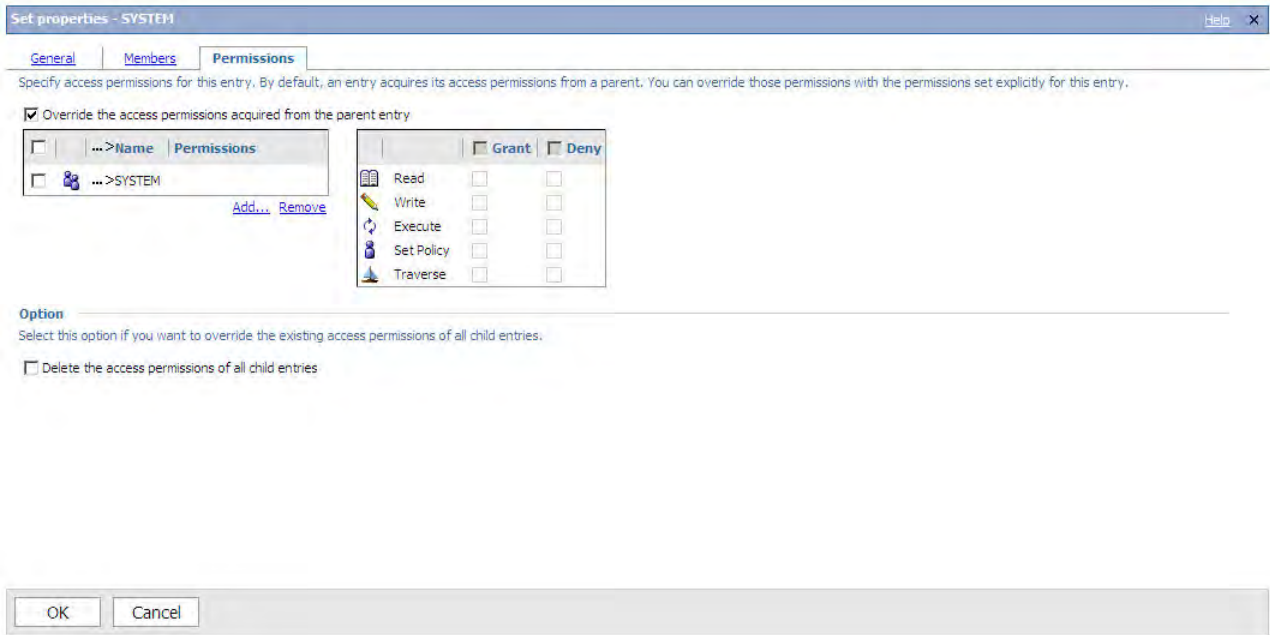



Figure 4. Set Properties - SYSTEM

Removing the Everyone Group from the Sys Admin Role

About this task

After adding the sscap/SYSTEM group to the System Administrator role, remove the Everyone group from the System Administrator role:

Procedure

1. Log in to the Cognos Connection portal as a System Administrator.
2. Go to **Tools** → **Directory** and select the Cognos namespace.
3. Locate System Administrators in the list of roles, and click  in the Action column.
4. Select the **Members** tab, as shown in Figure 5. Select Everyone, and click Remove.

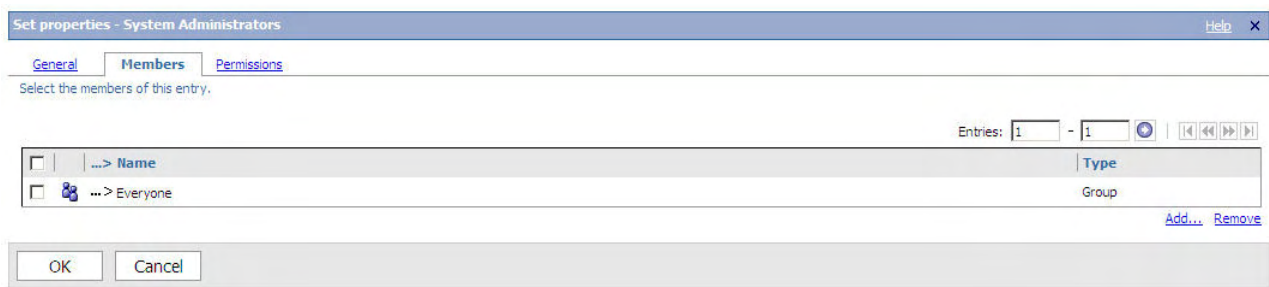


Figure 5. Removing Everyone Group

Results

The result is that only users who have permission to access the Sterling Business Intelligence Administrator have administrative capabilities in Cognos.

Controlling Access to Cognos Reports, Folders, and Packages

About this task


The second part of controlling Cognos access through Sterling Selling and Fulfillment Foundation is to set specific permissions to entries in Cognos.

Procedure

1. In Cognos Connection on the **Capability** screen, as shown in Figure 6 on page 10, locate the entry for which you want to set access permissions.



Figure 6. Capabilities - Select Functionality

2. Click  next to the desired entry to display the corresponding Set Properties menu. Click **Set Properties**. The **Set Properties** screen displays.
3. In the **Set Properties** screen, select the **Permissions** tab.
4. Choose whether to use the permissions of the parent entry or select permissions specifically for the entry:
 - To use the permissions of the parent entry, clear the **Override the access permissions acquired from the parent entry** option. If you are prompted to use the parent permissions, click **OK** in the prompt dialog. Click **OK** on the Set Properties screen.
 - To set access permissions for the entry, select the **Override the access permissions acquired from the parent entry** option, as shown in Figure 7. Proceed to step 5.

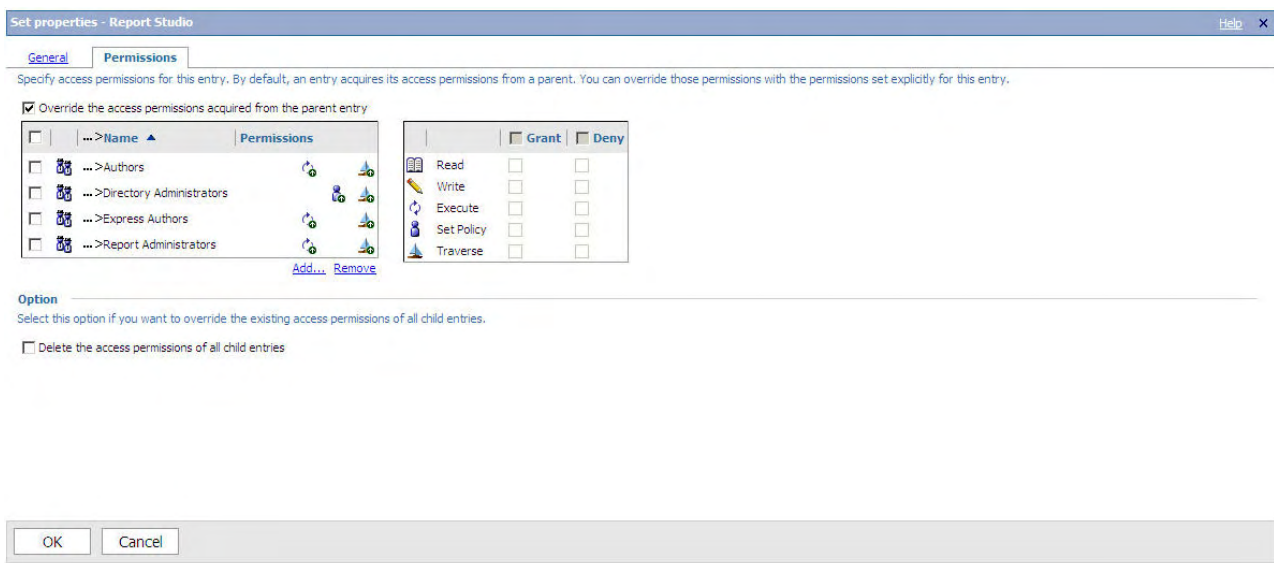


Figure 7. Set Properties - Permissions

5. To remove an entry from the list, select it and click **Remove**.

6. To specify a new entry for which you want to grant or deny access, click **Add**.
7. The screen shown in Figure 8 displays. Click **sscap**.

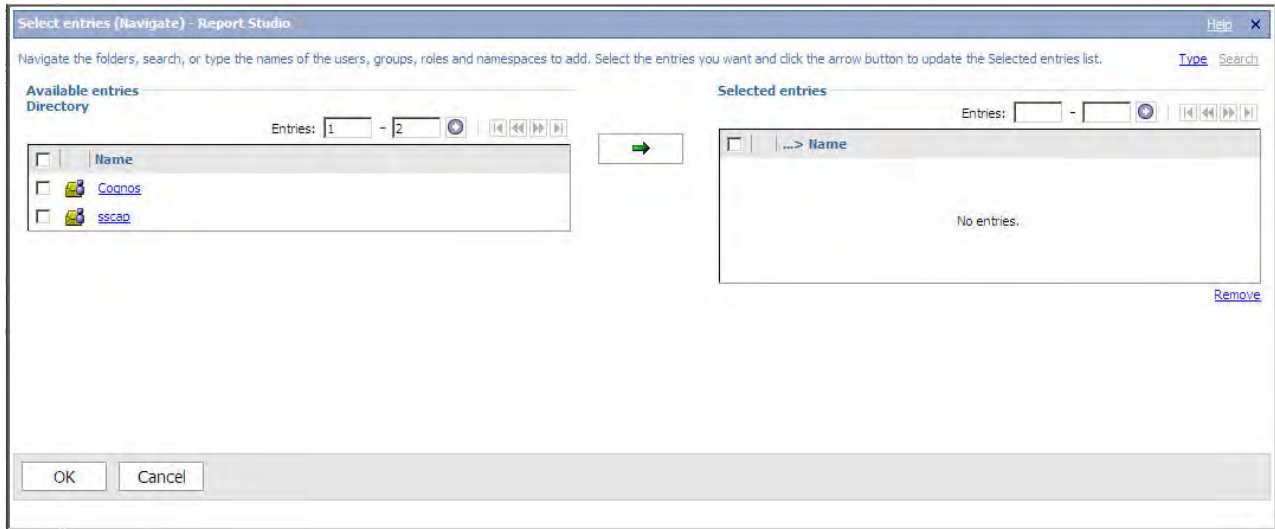


Figure 8. Select Entries

8. The screen shown in Figure 9 displays. In Available Entries, select the **SYSTEM** checkbox and click the arrow to move it to **Selected Entries**.

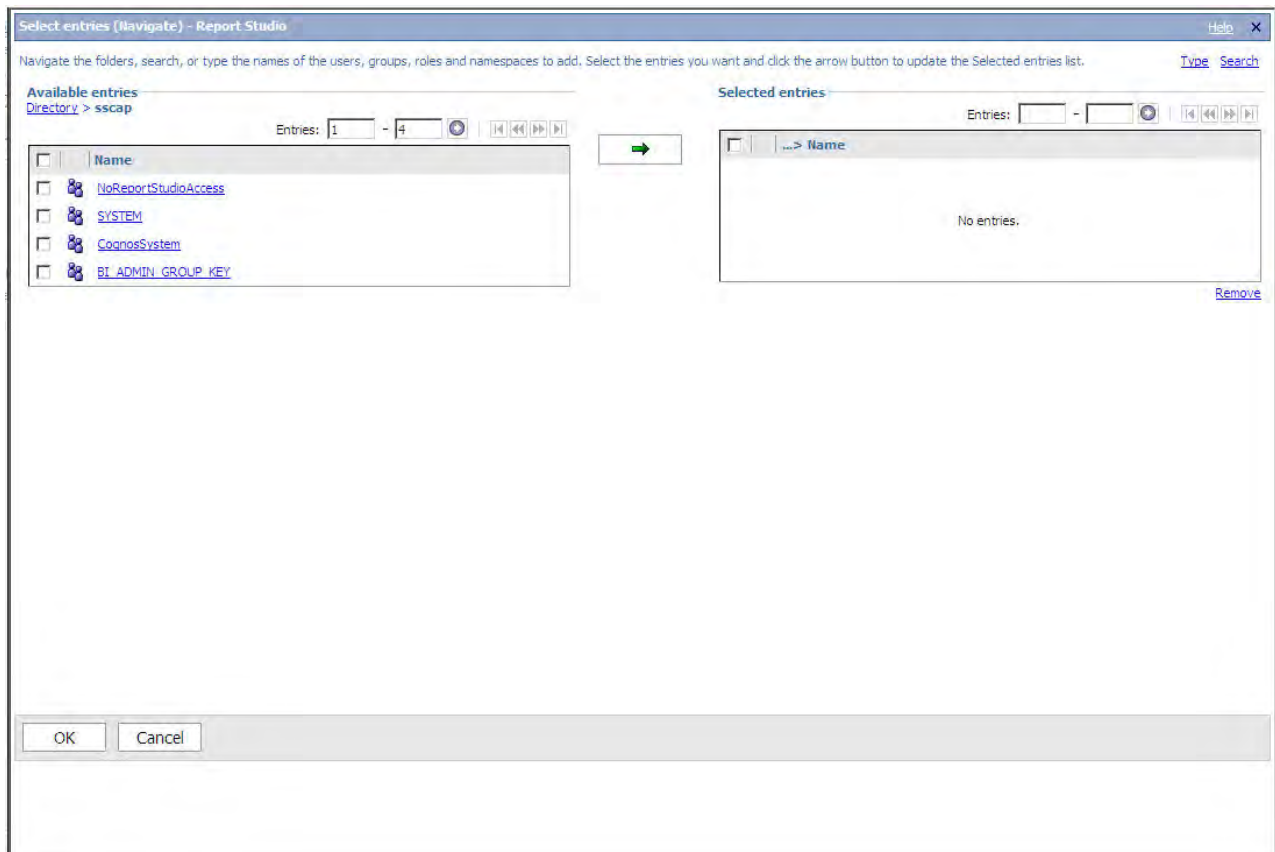


Figure 9. Select Entries

9. Select entries using one of the following methods:

- To choose from the listed entries, click the appropriate namespace, and select the users, groups, or roles.
- To enter new names, click **Type** and type the names of the groups, roles, or users into the Entries field. Separate multiple entries with a semicolon (;), as shown in the following example and in Figure 10.

For example: sscap/SYSTEM;Cognos/Everyone

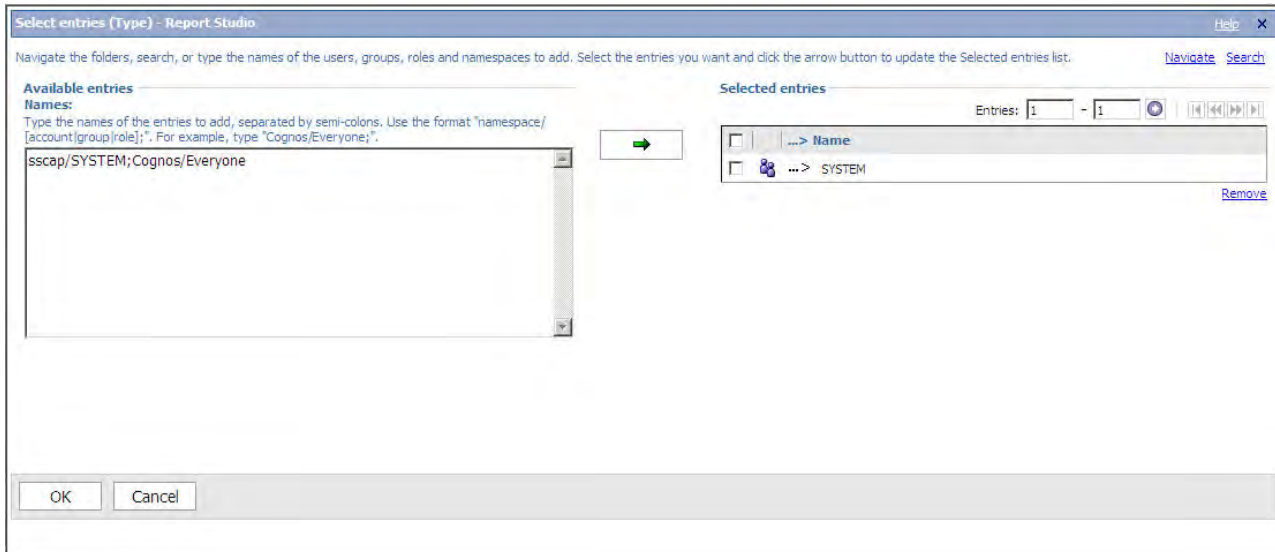


Figure 10. Selecting Entries

10. Click the right-arrow to move entries to the **Selected entries** box and click **OK** when done. You return to the Permissions tab, as shown in Figure 11 on page 13.

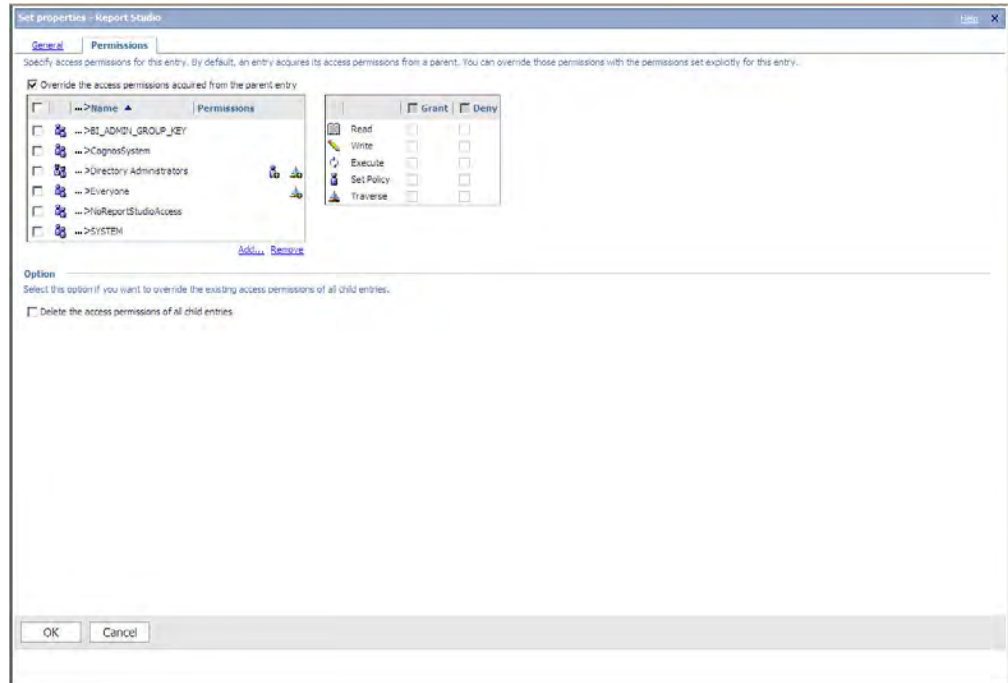


Figure 11. Granting Permissions

11. Click **add**. You return to the Select entries screen, as shown in Figure 8 on page 11.
12. Select **sscapp** and then click the arrow to move **sscapp** to **Selected Entries**. Click **OK**. You return to the Permissions tab, as shown in Figure 11, with **sscapp** added to the Name column.
13. To specify permissions for a user, group, or role, select the appropriate checkbox in the Name column and then select permissions checkboxes in the Grant or Deny columns. The icon next to each user, group, or role in the Permissions column represents the type of access granted or denied. Repeat this step for each user, group, and role.
14. If you want to replace the existing permissions of the child entries with the permissions you set for this entry, in the Option section, select the **Delete the access permissions of all child entries** check box. This option appears only with the entries that are containers.
15. Click **OK**.

User Authentication Between Cognos and Sterling Selling and Fulfillment Foundation

In Sterling Business Intelligence, the YantraAuthenticationServlet authenticates the user credentials being passed from Cognos. The servlet resides on the Sterling Selling and Fulfillment Foundation server and does the following:

- Authenticates the user
- Provides information about user details/user groups
- Verifies that the user is a Cognos Administrator and returns user groups based on the user resource permissions

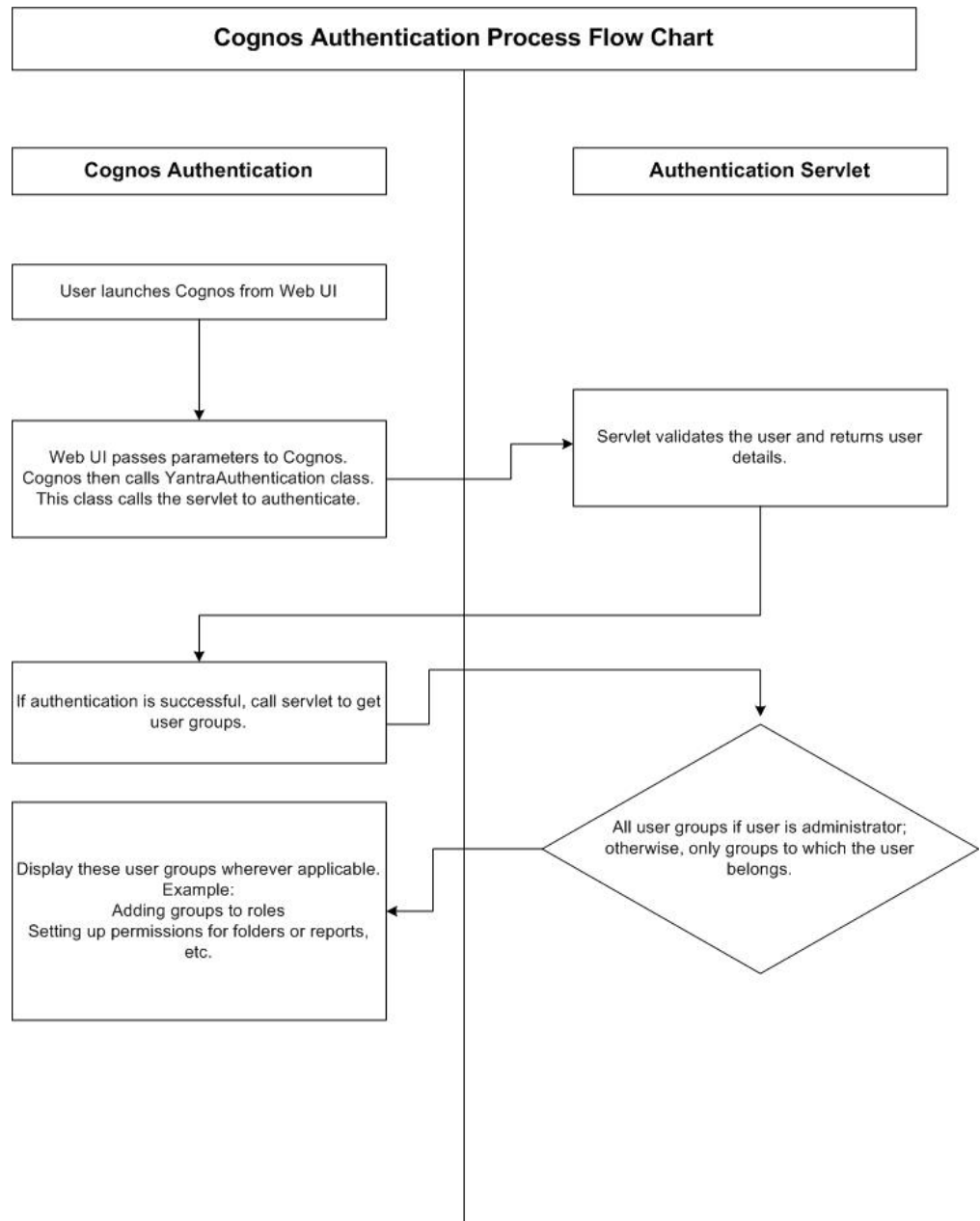
Note: The data that the user can see in Cognos is not restricted by any data access policies in Sterling Selling and Fulfillment Foundation.

The following table contains the interfaces provided by Cognos that are used for authentication:

Table 1. Cognos Authentication Interfaces

Interface	Description
com.cognos.CAM_AAA.authentication.INamespaceAuthenticationProvider2	Main interface. Must be implemented for authenticating users to log in to the Cognos applications. YantraAuthentication is the implementation class.
com.cognos.CAM_AAA.authentication.IAccount	Interface that holds user information. YantraAccount is the implementation class.
com.cognos.CAM_AAA.authentication.IGroup	Interface that holds user group information. YantraGroup is the implementation class.
com.cognos.CAM_AAA.authentication.IVisa	Interface that holds user information such as user details/user groups and user roles. YantraVisa is the implementation class.

The following diagram illustrates the Cognos authentication process flow:



Isolating the Sterling Business Intelligence Data from Analytics

About this task

Typically, users who use Sterling Business Intelligence and Cognos prefer to separate the Sterling Business Intelligence data from Analytics and grant read-only permissions to the Cognos data source because:

- Users do not want to risk the unauthorized usage of the database user name or password or both of the Sterling Selling and Fulfillment Foundation in Cognos.
- If the user name or password or both of the Sterling Selling and Fulfillment Foundation changes, the Cognos data source must be modified.

To overcome these limitations, users must create and expose tables without having the need for the Sterling Selling and Fulfillment Foundation user name or password or both.

To separate the Analytics data from the Foundation tables:

Procedure

1. Grant select privileges to a non-Sterling Selling and Fulfillment Foundation administrative user (for example, yanalytics).
2. Create synonyms under the yanalytics schema.
3. Create or modify the Cognos data source to point to the yanalytics schema.

Sterling Business Intelligence Setup

About this task

Before using the Sterling Business Intelligence component, you must perform the following steps:

Procedure

1. Install Sterling Business Intelligence:
 - Place the Sterling Business Intelligence installation CD in the appropriate drive.
 - From the installation CD, copy the SCIInstallWizard.jar file to your home directory or base directory and change to that directory.
If you are using FTP to copy the files, verify that your session is set to binary mode.
 - To begin the installation, type the absolute path to the JDK directory, followed by the command:

```
<JAVA_HOME>/bin/java -Xmx512m -jar SCIInstallWizard.jar
```
 - When the installer opens, follow the directions.
2. Run scripts to install the custom files. See “Sterling Business Intelligence Setup: Run Custom Scripts on Windows.”

Sterling Business Intelligence Setup: Run Custom Scripts on Windows

About this task

To install a set of customized Web pages and images that enhance the users' experience of the Sterling Business Intelligence Web component and to enable Sterling Selling and Fulfillment Foundation branding in this installation, you must set the environment variables for COGNOS_HOME and ANALYTICS_HOME in the Image_Setup.bat script, as follows:

Procedure

1. Set the environment variables for SKIN_DIR in the Image_Setup.bat script.
2. Images: Run <ANALYTICS_HOME>\scripts\Image_Setup.bat. This copies some images of Sterling Business Intelligence over the Cognos 8 images.

Sterling Business Intelligence Setup: Run Custom Scripts on UNIX

About this task

To install a set of customized Web pages and images that enhance the users' experience of the Sterling Business Intelligence Web component and to enable Sterling Selling and Fulfillment Foundation branding in this installation, you must set the environment variables for COGNOS_HOME and ANALYTICS_HOME in the \$ANALYTICS_HOME/scripts/image_setup.sh script, as follows:

Procedure

1. Set the environment variables for SKIN_DIR in the image_setup.sh script.
2. Images: Run \$ANALYTICS_HOME/scripts/image_setup.sh. This copies some images of Sterling Business Intelligence over the Cognos 8 images.

Configuring Cognos to Run with Sterling Selling and Fulfillment Foundation

About this task

Before running Cognos Connection with the Sterling Selling and Fulfillment Foundation, you must ensure to:

Procedure

1. Set up the Cognos components as described (see "Cognos Setup" on page 3).
2. Deploy reports for Sterling Business Intelligence (see "Deploying Reports" on page 45).
3. Modify your customer_overrides.properties file (see "Required Properties Modifications to Launch Analytics" on page 19).

Deployment of Sterling Business Intelligence Reports: An Overview

About this task

Ensure that the following tasks have been completed:

Procedure

1. Cognos Connection has been installed.
2. The content repository has been created through the Cognos Configurator.
3. Data Sources have been created using Cognos Connection, each named as follows:
 - smcf-meta
 - smcf-config-default
 - smcf-transaction-default
 - smcf-masterdata-default

Note: The Data Sources are ideally set with isolation level set to Read uncommitted.

Results

You can optionally create multi-schema data sources at this time for transaction and master data schema types, following this pattern:

```
smcf-<transaction|masterdata>-<pk_prefix>
```

For example:

```
smcf-transaction-01
```

```
smcf-masterdata-02
```

If you are using a single schema deployment, the four data sources must point to the same database. However, if you are using a multi-schema deployment, the four data sources should point to the configured schemas. For more information about primary key prefixes and multi-schema features, see the *Selling and Order Management Foundation Multitenant Enterprise Guide*.

For more Cognos information, see the *Cognos Configuration User Guide*.

Deploying Sterling Business Intelligence Reports

About this task

To deploy the Sterling Business Intelligence reports:

Procedure

1. Copy the SMCF-Analytics.zip deployment file from <Sterling_Analytics_Installation_Directory>/deployment folder into the deployment directory as specified in the Cognos Configurator. The default is: <Cognos_8_Installation_Directory>/deployment.
2. Open Cognos Connection and launch IBM Cognos Administration.
3. Select Configuration and then Content Administration.
4. Select New Import.
5. Select the SMCF-Analytics deployment archive.
6. Enter a name for the import and select Next.
7. Select the Package name.
8. Continue through the prompts and run the newly created job.
9. Copy over the <ANALYTICS_HOME>/lib/sscap-auth.jar to <Cognos_8_Installation_Directory>/C8/webapp/p2pd/WEB-INF/lib folder on the machine where Cognos 8 has been installed. Similarly, copy the file <ANALYTICS_HOME>/bin/analytics.properties.sample to the <Cognos_8_Installation_Directory>/webapps/p2pd/WEB-INF/classes folder.
10. Save the file <Cognos_8_Installation_Directory>/webapps/p2pd/WEB-INF/classes/analytics.properties.sample as analytics.properties in the same folder.
11. Change the value of the sscap.app.url property to point to the Sterling Selling and Fulfillment Foundation URL. For example:
sscap.app.url=http://hostname:port/smcfs

Required Properties Modifications to Launch Analytics

To launch ReportNet® Analytics from the Application Console, you must configure the `analytics.reportnet.url` property in the `<INSTALL_DIR>/properties/customer_overrides.properties` file. For information about overriding properties using the `customer_overrides.properties` file, see the *Selling and Fulfillment Foundation: Properties Guide*.

The ReportNet Analytics URL format is:

```
http://<machinename>/cognos8/cgi-bin/cognos.cgi
```

Note: In the URL shown above, replace `<machine_name>` with the machine name or the IP address of the Cognos 8 installation machine. Also, if you have changed the reference URL for cognos using the Cognos Configurator, replace `cognos8` with the correct path.

Note: DO NOT change the other parts of this URL. The Analytics access from the Sterling Selling and Fulfillment Foundation may fail.

You must also configure the `analytics.namespace` property in the `<INSTALL_DIR>/properties/customer_overrides.properties` file. This property indicates the namespace that is to be configured to authenticate users in Cognos 8 Business Intelligence.

For information about overriding properties using the `customer_overrides.properties` file, see the *Selling and Fulfillment Foundation: Properties Guide*.

Chapter 3. Sterling Business Intelligence Framework

Sterling Business Intelligence Framework

The Sterling Business Intelligence Framework is the foundation where you build a set of reports.

The Sterling Business Intelligence Framework contains a Data Model (see “Sterling Business Intelligence Framework: Data Model”). Complete the following tasks to utilize Sterling Business Intelligence for analysis and reporting:

1. Build reports (see “Sterling Business Intelligence Framework: Designing Reports” on page 27).
2. Deploy, refresh, and optionally extend reports (see “Deploying Reports” on page 45).

Sterling Business Intelligence Framework: Data Model

The Data Model is a metadata model that provides:

- A single administration point for metadata supporting Cognos 8 reports
- Centralized business rule definitions for maintenance and consistency
- Access to data from several different types of sources
- Expanded querying and reporting capabilities
- Centralized data access setup (permissions)

You can extend the basic Data Model to include other tables from the Sterling Selling and Fulfillment Foundation Database.

For more details about extending the Data Model, see “Extending the Sterling Business Intelligence Data Model” on page 47.

Star to Snowflake Model

In a normalized database, there are typically master tables and transactional tables. The master table data is shared by many transactional tables, or a given transactional table may have multiple columns as foreign keys for the same master table. In a query, when this type of transactional table(s) are joined to the same master table, the master table is repeated in the SQL query. For example:

```
SELECT ... FROM YFS_ORGANIZATION O, YFS_PERSON_INFO PI1, YFS_PERSON_INFO PI2,  
           YFS_PERSON_INFO PI3  
WHERE O.CORPORATE_ADDRESS_KEY = PI1.PERSON_INFO_KEY (+) AND  
      O.CONTACT_ADDRESS_KEY = PI2.PERSON_INFO_KEY (+) AND O.BILLING_ADDRESS_KEY =  
      PI3.PERSON_INFO_KEY (+)
```

In this example, the Person Info master table has been repeated for each referencing column. If the Organization table was joined to another table that had more references to the Person Info table, you would see more Person Info tables in the query.

In the Data Model, joins are created between the entities to represent the relationships between them. Naturally, if a master table contains only one entity, and more than one reference to it is needed in a particular query, the SQL that is produced is not correct. For example:

```
SELECT ... FROM YFS_ORDER_LINE OL, YFS_SHIP_NODE SN
WHERE OL.SHIPNODE_KEY = SN.SHIPNODE_KEY AND OL.RECEIVING_NODE =
      SN.SHIPNODE_KEY .
```

This query is not correct. Therefore, in this case, you need two entities in the Catalog that correspond to YFS_SHIP_NODE. This is done by replicating the entity Organization Distribution Nodes into Organization Receiving Nodes and Organization Ship Nodes. These are now joined individually to the Order Line's columns above.

If more entities require the same set of master tables, the master tables can be further replicated in the Catalog. For example, Organization Receiving Nodes and Organization Ship Nodes are required both by Order Line and Order Release. So there are two instances of each Node table in the Catalog.

Other tables may need to be similarly replicated. As this replication is extended for more and more master tables, the Star model of the database begins to look like a Snowflake. Figure 12 on page 23 illustrates this concept.

Star to Snowflake Concept
 Showing the use of the replicated Organization
 Ship/Receiving/Distribution Nodes
 (If YFS_PERSON_INFO had not been
 denormalized. The dotted entities are replicated
 master tables/views)

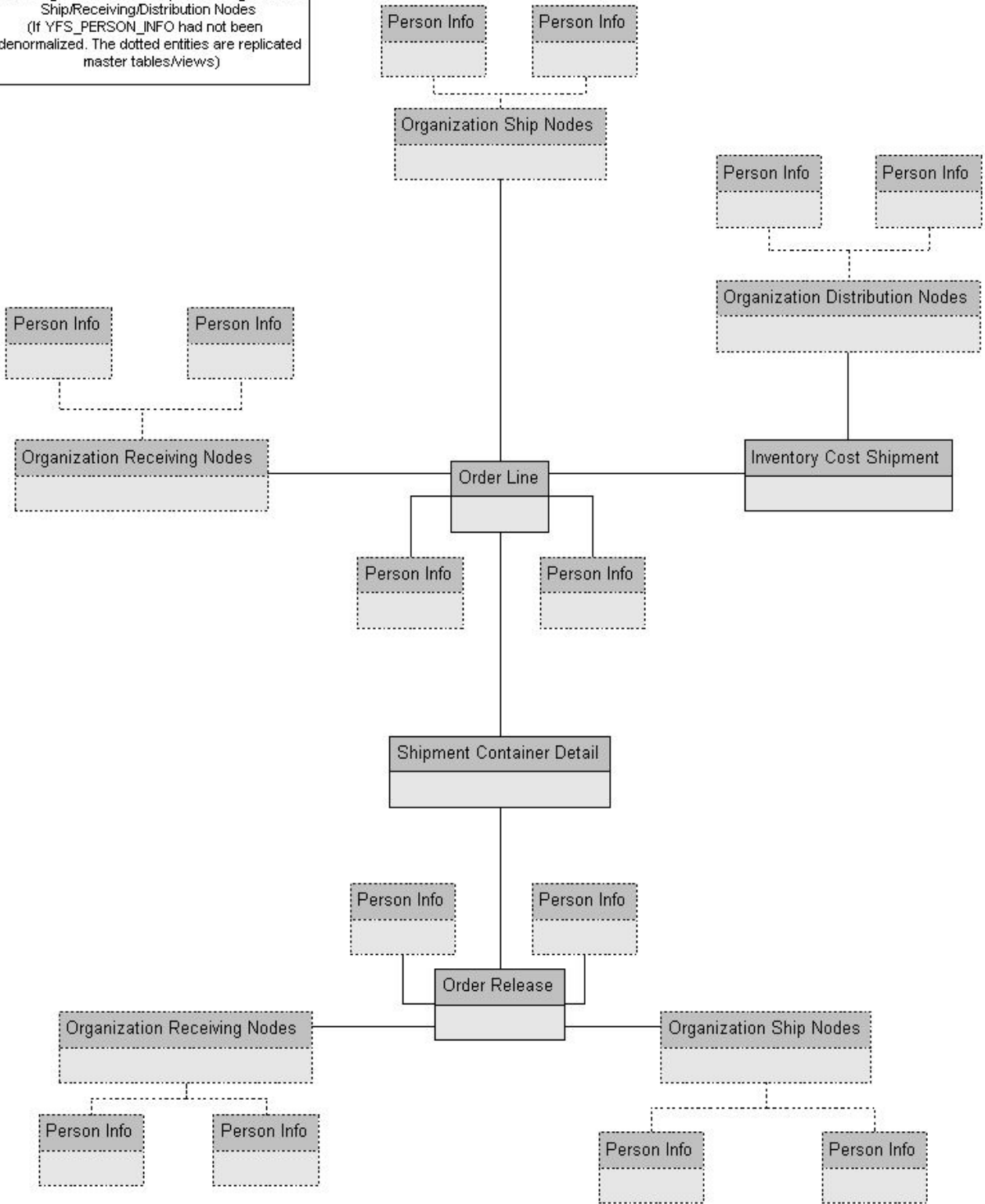


Figure 12. Star to Snowflake Model

Data Model Objects

The Data Model provides a simplified, English-oriented, non-technical view of the metadata. In the Data Model, business entities are defined and information is renamed to enable it to be represented using common business names and grouped from a business perspective. The Data Model provides intuitive access to the report building blocks. Using Tools> Modify Names, you can change the names of the columns. This function provides a list of name rules that are run for these entities. The Data Model has the following components:

- Filters
- Entities
- Joins
- Prompts
- Parameter Maps

Data Model Objects: Filters

A filter provided by the Sterling Selling and Fulfillment Foundation that is used to narrow down the selected data. Filters are required for limiting access to data for different classes of users.

A filter includes the data that is 'filtered' (filtered in, not filtered out). For the condition level detail of a filter, see the filter properties in the model. The SQL that is formed in cases where a filter is applied contains the condition of the filter. The filter that is provided:

- **Sales Order** – limits data to the Document_Type of 0001. Filters are also used in conjunction with Parameter Maps to select the schema in a multi-schema environment. For more about Parameter Maps, see "Data Model Objects: Parameter Maps" on page 25.

Data Model Objects: Entities

The Data Model includes entities created in the model.

Entities Created in the Catalog

When a normalized database, typically represented as a star model, is modeled, it is denormalized in the model to allow multiple joins in the same tables. That is, a star model is expanded into a snowflake. (See "Star to Snowflake Model" on page 21.) Some of this denormalization is done in the Sterling Business Intelligence Framework commonly joined tables, such as YFS_PERSON_INFO. Other entities have been duplicated in the Data Model.

Data Model Objects: Joins

Joins are created in the Data Model. This reduces the maintenance overhead for the model.

Cardinalities for Joins

The cardinality for the joins are specified in accordance with the database design logic for the various entities. For example, An Order Header may not always have a Carrier Service Code. Therefore, the cardinality for the Order Header join with Organization Carrier is 0:1 on the Carrier side.

Additionally, to allow flexibility in reporting, some of the joins have optional cardinality (0:1 or 0:n). This is done so that, in a query, the main entity's data set is not restricted by any lack of data. The Data Model allows changing of the optional cardinality to a direct join at an individual report level. For example, see "Join Cardinality Flexibility".

Join Cardinality Flexibility

The Item and Item Alias entities have a 1:1-0:n join in the business layer. When a Cognos 8 report containing these two entities is created, it is as follows:

```
select T1."MANUFACTURER_NAME" as c1,  
       T2."ALIAS_NAME" as c2  
from ("YFS_ITEM" T1 left outer join "YFS_ITEM_ALIAS" T2 on T2."ITEM_KEY" =  
T1."ITEM_KEY")  
--If we now uncheck the Report->Query->Access->"Include the missing table join  
--values (outer join)" check box, the query changes to  
select T1."MANUFACTURER_NAME" as c1,  
       T2."ALIAS_NAME" as c2  
from "YFS_ITEM_ALIAS" T2,  
     YFS_ITEM" T1  
where (T2."ITEM_KEY" = T1."ITEM_KEY")
```

However, if the join in the business layer was 1:1-1:n instead, the above flexibility would not have been possible to achieve.

Data Model Objects: Prompts

A "Sales Order #" prompt is provided for selecting a single order based on Data Model organization.

Data Model Subject Folders

The Data Model contains *Subject Folders* that group functionally related *Subjects* together. This is done to easily locate the Subject Attributes needed to create reports and queries. Some of the subjects contain sets of attributes that are further grouped into subject folders for the same reasons. This creates a hierarchical folder structure for easy lookup. Such subjects, called "Categorized Subjects", have a Subject Folder and a Subject by the same name.

Cases that use multiple categorized subjects are Order Release and the Order Header folders. For more details about each subject, see the Data Model.

Data Model Objects: Parameter Maps

The Sterling Selling and Fulfillment Foundation supports multiple schemas in an installation, separated by both table type (Configuration and Transaction), and Enterprise Code. This multiple schema implementation of Analytics requires that you select tables from the correct schema. A Cognos Datasource for each schema facilitates this. The schema is then dynamically selected from the report via the Enterprise selection screen shown in Figure 13 on page 26.

Within the Cognos Framework Manager, there are four data sources, based on type of schema: Configuration, Metadata, MasterData, and Transaction. Data sources within Framework manager are like pointers to the true data sources defined within Cognos connection. Database Query Subjects are hard coded with one of these four schemas. For a list of which tables are considered part of which schema, see the *Selling and Order Management Foundation Multitenant Enterprise Guide*. For Release 9.1, the Transaction and MasterData data sources will point to the same schema.

The parameter map shown in Figure 13 enables you to define a prompt. The Key that is associated with that prompt will be required for input in reports; it will be used when an Enterprise is selected in a report.

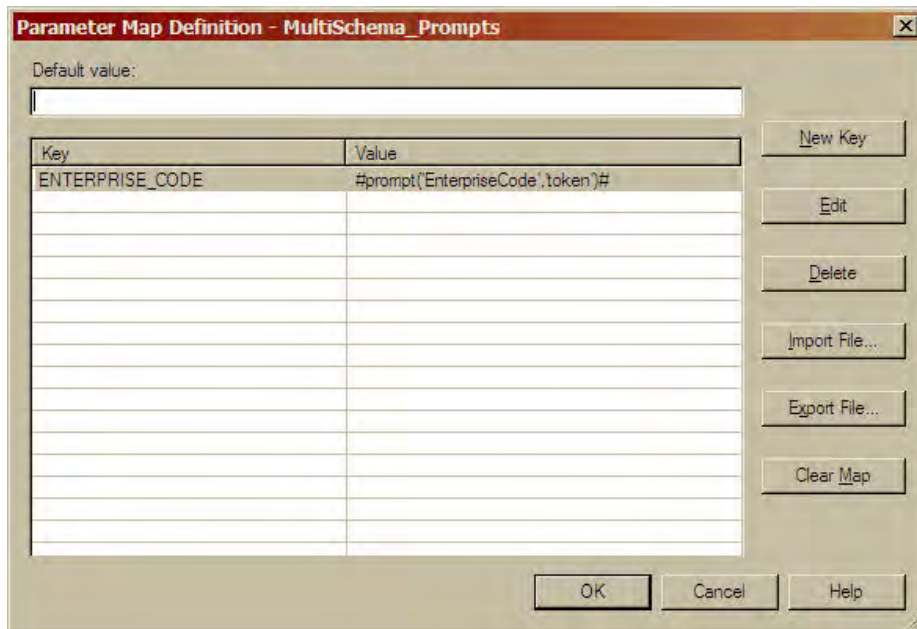


Figure 13. Parameter Map

The input will then be consumed by other Parameter maps that map Enterprise Code to Datasource and Schema. Parameter maps can be nested like this, with the value of one map becoming the key to the next.

This parameter map would be configured in Cognos as pictured:

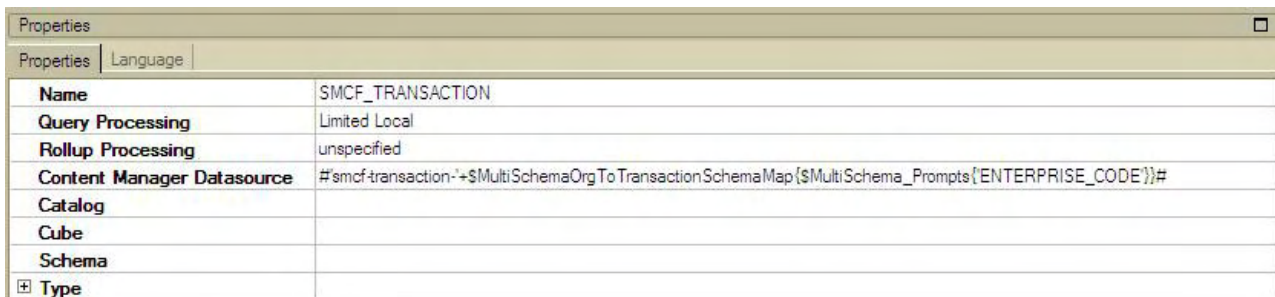


Figure 14. Cognos Map

The prompt that is defined in the parameter map is put into reports. Prompts defined in Framework Manager can be reused in Report Studio.

This feature does not support cross-schema unions. All reports are enterprise specific.

Sterling Business Intelligence: Aliases

Sterling Business Intelligence has created the following aliases to eliminate any loops in the joins:

- Audit Order Release (alias of YAF_ORDER_RELEASE_VW)

- Audit Order Line (alias of YAF_ORDER_LINE_VW)
- Order Release Statuses (alias of YAF_ORDER_RELATED_STATUSES_VW)
- Order Line Statuses (alias of YAF_ORDER_RELATED_STATUSES_VW)
- Order Release Ship Nodes (alias of YAF_ORGANIZATION_SHIP_NODES_VW)
- Shipment Order Release (alias of YAF_ORDER_RELEASE_VW)
- Invoice Line (alias of YAF_ORDER_LINE_VW)
- Invoice Collections Charge Transaction (alias of YAF_ORDHDR_CHARGE_TRANSN_VW)
- Invoice Shipment (alias of YAF_SHIPMENT_VW)
- Inventory Item Organization (alias of YAF_ORGANIZATION_VW)
- Inventory Cost Ship Line (alias of YAF_ORDER_LINE_VW)
- Inventory Cost Ship Order (alias of YAF_ORDER_HEADER_VW)
- Cost Receipt Inventory Item (alias of YAF_INVENTORY_ITEM_VW)
- Order Release Receiving Nodes (alias of YAF_ORGANIZATION_SHIP_NODES_VW)
- Cost Receipt Distribution Nodes (alias of YAF_ORGANIZATION_SHIP_NODES_VW)
- Cost Shipment Distribution Nodes (alias of YAF_ORGANIZATION_SHIP_NODES_VW)
- Inventory Supply Distribution Nodes (alias of YAF_ORGANIZATION_SHIP_NODES_VW)
- Inventory Demand Distribution Nodes (alias of YAF_ORGANIZATION_SHIP_NODES_VW)
- Organization Hub (alias of YAF_ORGANIZATION_VW)
- Organization Distribution Nodes (alias of YAF_ORGANIZATION_SHIP_NODES_VW)
- Cost Receipt Distribution Nodes (alias of YAF_ORGANIZATION_SHIP_NODES_VW)
- Order Line Receiving Nodes (alias of YAF_ORGANIZATION_SHIP_NODES_VW)

Sterling Business Intelligence Framework: Limiting Access to Data

Creating filters and user classes limit access to data. Users' access to data in reports is restricted in Cognos using filters that are associated with user classes. For example, to allow various ship node users to see a common ship node report, you can create a filter for each ship node user and associate it with the user class for the corresponding user.

It is not necessary to create filters or user classes to start using Analytics. However, it is strongly recommended that you set these up before you deploy the reports. For details on how to set up Users and User Classes, see the Cognos Access Manager documentation. For details on creating filters, see the Cognos 8 documentation.

Sterling Business Intelligence Framework: Designing Reports

Reports are created using Cognos 8. Please refer to the Cognos 8 documentation for information about designing reports.

Chapter 4. Reports for Sterling Business Intelligence

Reports for Sterling Business Intelligence

The following sample reports have been created using Cognos Report Studio and are provided with the Sterling Selling and Fulfillment Foundation as examples:

- Backlog Summary Report
- Business Volume Report
- Days of Supply Report
- Goods in Transit Report
- Invoice Collections Report
- Open Order Report
- Orders on Hold Report
- Returned Products Report
- Top 10 Products Report
- Unshipped Orders Report

Report Studio is used to create reports having complex layout and formatting requirements or reports that support user interaction. Report Studio should also be used when you need detailed control over a report's appearance, when you are producing a report intended for a large audience, or when you are producing a report that exists long enough to require maintenance. If your report does not have these requirements, you can use Query Studio, which provides a faster solution and requires less technical expertise.

It is beyond the scope of this document to detail Report Studio and Query Studio. Additional information can be found in the Cognos documentation located on the Cognos Web site at www.cognos.com.

Accessing Sample Reports Provided with Sterling Selling and Fulfillment Foundation

About this task

To access the sample reports provided with Sterling Selling and Fulfillment Foundation, use the following procedure:

Procedure

1. Select **Analytics** → **Launch Reports from the Application Console**.
2. Select **Public Folders** from the Cognos Connection.
3. Select **DOM** from Cognos 8.
4. Double-click the report you need.

Backlog Summary Report

Operations managers may need information to help them identify bottlenecks in their organization's fulfillment process. This information includes orders that have been stuck in a particular status for a period of time. This information is necessary to expedite the fulfillment process.

The Backlog Summary Report provides visibility into sales orders that have been in certain fulfillment statuses for a specific period of time. Figure 15 shows a sample of the Backlog Summary Report. This report is parameter-driven to also include the orders that are on hold. A pie chart displays the number of orders in the following fulfillment statuses:

- Backordered: Orders that are in Backordered or an extended Backordered status
- Held: Orders that are on hold
- Pre-released: Orders that have not yet been released (does not include Backordered orders)
- Released: Orders that are between Released and Shipped status (but are not yet shipped)
- Shipped: Orders that are in Shipped or an extended Shipped status
- Other: Orders whose status does not fall into any of the other categories (this does not include cancelled orders)

If an order is in both the Held status and another status, the report depicts that order under the Held status only. For example, if an order is on hold and is also in the Pre-released status, the order is included only with the Held orders.

The Backlog Summary Report should be run at night, during a period of light load.

When entering the status name, it must match the name of the status in the system exactly. For example, Pre-released status must be entered as Pre-released.

Date: Sep 19, 2007 Time: 4:48:57 PM

Sales Order Backlog Summary

Enterprise: Premium Deal
 Order Dates: Between Sep 18, 2007 12:00 AM and Sep 19, 2007 11:59 PM
 Orders to Consider: Held and Unheld

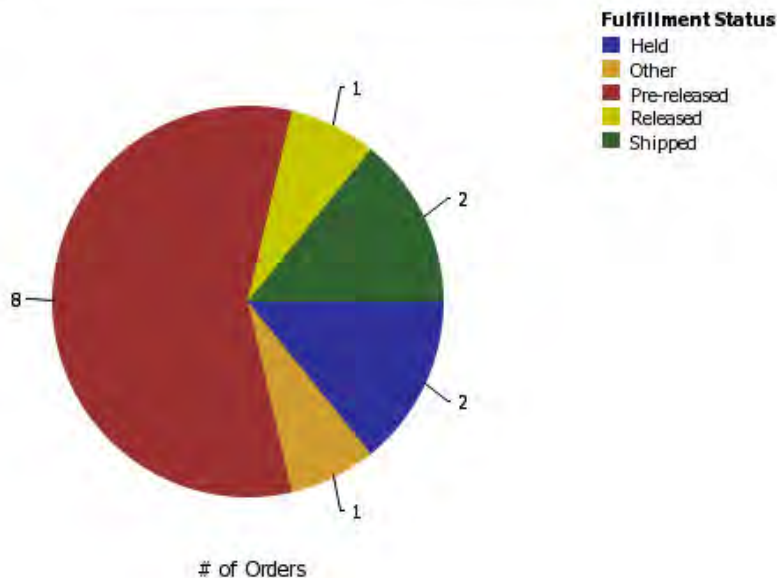


Figure 15. Sample Backlog Summary Report

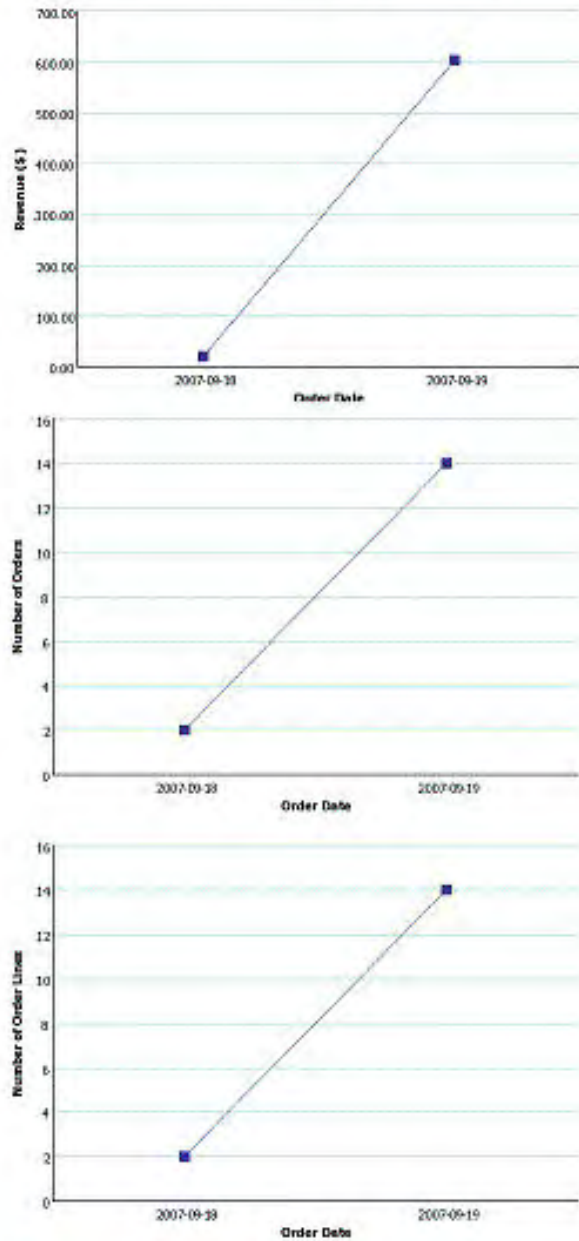
Business Volume Report

Business managers occasionally need to track the number of sales or the amount of revenue generated by a particular seller.

The Business Volume Report provides visibility into the number of sales and the amount of revenue generated during a specific period of time. Figure 16 on page 32 shows a sample of the Business Volume Report. For each day within a specific time period, a graph displays the number of orders and order lines processed. Another graph shows the revenue earned for each day. The sum of the total amount of sales orders for each day determines the earned revenue. This report only includes the non-draft sales orders for an enterprise whose order date falls within the specified date range.

The Business Volume Report should be run at night, during a period of light load.

Enterprise: Premium Deal
 Order Dates: Between Sep 18, 2007 12:00 AM and Sep 19, 2007 11:59 PM



Order Date	Number of Orders	Number of Order Lines	Revenue
Sep 18, 2007	2	2	\$21.00
Sep 19, 2007	14	14	\$603.00

Sep 19, 2007

Figure 16. Sample Business Volume Report

Days of Supply Report

An inventory manager may need to know whether the supply is enough to meet the demand, and on the average, how long the current supply will last.

The Days of Supply Report provides visibility into the estimated number of days the inventory supply will be available, and the total supply and demand. Figure 17 shows a sample of the Days of Supply Report. For a specific enterprise and ship node, the Estimated Days of Supply is calculated as:

Demand for the past 7-day period / 7 = Average Demand
 Current Supply / Average Demand = Estimated Days of Supply

The Estimated Days of Supply is rounded up and displays only two decimal places.

The Days of Supply Report should be run at night, during a period of light load.

If there is no past week demand for an item, the Estimated Days of Supply is shown in the report as 999.

Item ID	Onhand Supply	Past Week Demand	Estimated Days of Supply
Col2Ent22_DVDPlayer	600.00	0.00	999.00
Col2Ent22_MP3Player	125.00	0.00	999.00
Summary	725.00	0.00	999.00

Figure 17. Sample Days of Supply Report

Goods in Transit Report

A logistics manager may need to know which orders are dependent upon delayed transfers or procurements. This information can also help to identify details about the transfers that can delay orders. The transfers can be tracked to ensure timely deliveries.

The Goods in Transit Report provides visibility into transfer orders and procurement orders whose delayed shipment impacts the shipment of an outbound order. You can run this report for procurement orders as long as they are:

- In Shipped but not Received status
- Are chained from a sales order
- Are overdue beyond the specified shipping threshold

The shipping threshold for a procurement order is the acceptable number of days that the buyer is willing to wait for the shipment before it is considered overdue. For example, a procurement order is shipped on the 3rd of December with a specified threshold of 10 days. If the report is run on December 12th and the procurement order hasn't been received, this procurement order does not appear on the report because it has not been 10 days since it was shipped. However, if the report is run on December 15th and the procurement order hasn't been received, it appears on the report because it has been more than 10 days since it was shipped and it has still not been received.

Figure 18 shows a sample of the Goods in Transit Report.

Date: Sep 19, 2007 Time: 5:23:19 PM **Goods in Transit**

Originating Ship Node: PD-DC-001
 Destination Ship Node: PD-STORE-001
 Threshold Period (days): 2
 Dependent Order Enterprise: Premium Deal

Transfer Order #	Actual Shipment Date	Days Over Threshold	Dependent Order #	Order Date
Y100000100	Sep 5, 2007 5:01:26 PM	14	Y100000090	Sep 11, 2007 2:43:59 PM
Y100000100			1	
Summary			1	

Figure 18. Sample Goods in Transit Report

Invoice Collections Report

A finance department employee may need to reconcile invoices with total payments.

The Invoice Collections Report provides visibility into the total amount invoiced and the total payments for each invoice type. Figure 19 shows a sample of the Invoice Collections Report. For each payment pertaining to a specific invoice type, the payment type and the amount collected for the payment type are displayed in the report.

Date: Sep 19, 2007 Time: 5:25:45 PM **Invoice Collections**

Enterprise: U Pay
 Invoice Dates: Between Sep 18, 2007 12:00 AM and Sep 19, 2007 11:59 PM

Invoice Date	Invoice Type	# of Invoices	Total Invoiced	Total Collected	Payment Type	Payment Amount
Sep 19, 2007	ORDER	2	\$22.00	\$22.00	CHECK	\$5.00
			\$22.00	\$22.00	STREET_CRED	\$6.00
Sep 19, 2007		2	\$22.00	\$22.00		
Summary		2	\$22.00	\$22.00		

Figure 19. Sample Invoice Collections Report

Open Order Report

The Open Order Report provides high-level visibility into unshipped orders grouped by Enterprise, Buyer, and Requested Ship Date. This report is used by operational users of the Sterling Selling and Fulfillment Foundation to provide information about orders during the fulfillment cycle. Figure 20 on page 35 shows a partial Open Order Report. This report is grouped mainly by Enterprise, Buyer, and Requested Ship Date, and displays additional information in the columns. This report only runs against the Sales Order document type (0001).

The Open Order Report should be run at night, during a period of light load.

Open Orders

Enterprise Key	Buyer Organization Code	Requested Ship Date	Order No	Order Date	Status	Revenue
Colony1E1	Order for 'Colony1E1	' Enterprise, Buyer 'A5' - 6 Order(s)				\$0.00
	A5	For Requested Ship Date:				\$0.00
			Y100000021	5/14/09 3:17 AM	1100-Created	\$0.00
			Y100000022	5/14/09 3:17 AM	1100-Created	\$0.00
			Y100000023	5/14/09 3:17 AM	1100-Created	\$0.00
			Y100000024	5/14/09 3:18 AM	1100-Created	\$0.00
			Y100000025	5/14/09 3:18 AM	1100-Created	\$0.00
			Y100000026	5/14/09 3:19 AM	1100-Created	\$0.00
	Order for 'Colony1E1	' Enterprise, Buyer 'Col1Cust1' - 26 Order(s)				\$914,000.00
	Col1Cust1	For Requested Ship Date:				\$914,000.00
			A2_SO_1	5/14/09 12:32 AM	1100-Created	\$0.00
			Y100000003	5/14/09 12:34 AM	1100-Created	\$0.00
			Y100000004	5/14/09 12:34 AM	1100-Created	\$0.00
			Y100000005	5/14/09 12:34 AM	1100-Created	\$0.00
			Y100000006	5/14/09 12:34 AM	1100-Created	\$0.00
			Y100000007	5/14/09 12:34 AM	1100-Created	\$0.00
			Y100000008	5/14/09 12:34 AM	1100-Created	\$0.00
			Y100000009	5/14/09 12:37 AM	1100-Created	\$0.00
			Y100000010	5/14/09 12:37 AM	1100-Created	\$0.00
			Y100000011	5/14/09 12:37 AM	1100-Created	\$0.00
			Y100000012	5/14/09 12:37 AM	1100-Created	\$0.00
			Y100000013	5/14/09 12:38 AM	1100-Created	\$0.00
			Y100000014	5/14/09 12:38 AM	1100-Created	\$0.00
			Y100000016	5/14/09 1:53 AM	1300.ex-Super Backordered	\$0.00

[Top](#)
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[Bottom](#)

Figure 20. Sample Open Order Report

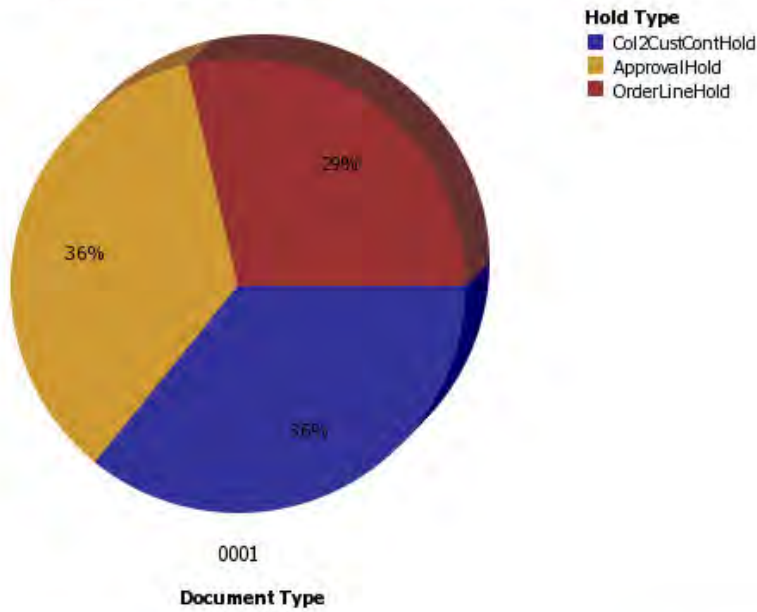
Orders on Hold Report

Businesses may try to guarantee same-day shipment for sales orders, purchase orders, or transfer orders received by a certain time of day. Occasionally, an order received by that time is placed on hold for some reason. In such cases, the supervisor may want to know the percentage of orders that may potentially miss the shipment deadline.

The Orders on Hold Report provides visibility into the number of sales orders, purchase orders, and transfer orders that are on hold and unresolved. Figure 21 on page 36 shows a sample of the Orders on Hold Report. A separate pie chart is displayed for each type of order.

Enterprise: Colony2Ent22

Order Date: Between May 13, 2009 12:00 AM and May 18, 2009 11:59 PM



Document Type: 0001

Hold Type	# of Orders	# of Resolved Orders	# of Unresolved Orders
ApprovalHold	24	4	20
Col2CustContHold	24	4	20
OrderLineHold	16	0	16

No Records Found

Figure 21. Sample Orders on Hold Report

This report also presents the details of the hold type. Click the Hold Type link to see the details of that hold type in the Orders on Hold Details Report. Figure 22 on page 37 shows a sample of the Orders on Hold Details Report.

Enterprise: Colony2Ent22
 Order Date: Between May 13, 2009 12:00 AM and May 18, 2009 11:59 PM
 Document Type: 0001

[Return to Prompt Page](#)

Hold Type: OrderLineHold

Order No	Status	Order Date	Total Amount	Hold Resolved
Y100000026	Created	May 15, 2009 11:41:08 AM	\$0.00	N
Y100000027	Created	May 15, 2009 11:41:16 AM	\$0.00	N
Y100000028	Created	May 15, 2009 11:45:57 AM	\$0.00	N
Y100000029	Created	May 15, 2009 11:46:04 AM	\$0.00	N
Y100000030	Created	May 15, 2009 11:48:01 AM	\$0.00	N
Y100000031	Included In Shipment	May 15, 2009 11:49:55 AM	\$0.00	N
Summary			0.00	

Figure 22. Sample Orders on Hold Details Report

Returned Products Report

A purchasing manager or shipment manager may need to assess and evaluate the performance of suppliers, products, and sellers in terms of the number of returns received.

The Returned Products Report provides visibility into the ten most frequently returned items for an enterprise within a specific period of time, based on quantity. This report includes items from non-draft return orders that are *not* service items.

This report does not filter for UOM or unit price. Therefore, if multiple items have the same item identifier and description, but different UOMs, the items are treated as the same item and the sum of the units sold for all of them is used. Likewise, if multiple items have the same item identifier and description, but different unit prices, the average unit price is used.

If multiple items have the same number of returns within the specified time period, this report can list more than 10 items.

The Returned Products Report should be run at night, during a period of light load.

Figure 23 on page 38 shows a sample of the Returned Products Report.

Date: Jun 16, 2009 Time: 4:36:16 PM

Returned Products

Enterprise: Colony1E1

Order Date: Between May 13, 2009 12:00 AM and May 18, 2009 11:59 PM

Rank	Item ID	Item Description	# Items Returned
1	Col1E1_TV		30
2	Col1E1_VCR		10
Summary			40

Figure 23. Sample Returned Products Report

This report also presents the reasons for the return, and the percentage of returns for each reason. Click the Item ID link to see the reason code and percentage of returns for that reason in the Return Reasons per Product Report. Figure 24 shows a sample of the Return Reason per Product Report.

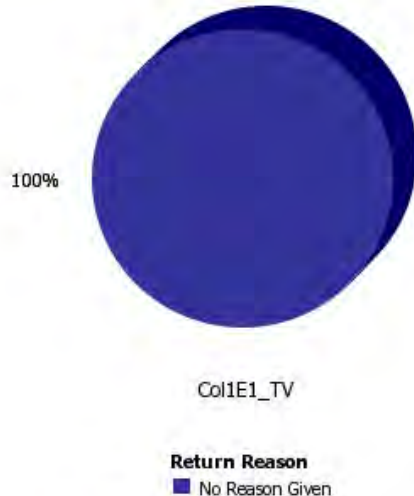
Date: Jun 16, 2009 Time: 4:38:07 PM

Return Reason per Product

Enterprise: Colony1E1

Order Date: Between May 13, 2009 12:00 AM and May 18, 2009 11:59 PM

[Return to Prompt Page](#)



Item ID: **Col1E1_TV**

Return Reason	# of Items Returned
No Reason Given	30

Figure 24. Sample Return Reasons per Product Report

Top 10 Products Report

Marketing and merchandising personnel make catalog and promotional decisions based on the most popular products sold, and inventory analysts track products to anticipate their shelf life.

The Top 10 Products Report provides visibility into the 10 most frequently purchased products within a specified time period. Figure 25 shows a sample of the Top 10 Products Report. The 10 products included in a non-draft sales order within a specific time period, that are *not* service products and have the highest ordered quantity, are included in this report.

This report does not filter for UOM or unit price. Therefore, if multiple items have the same item identifier and description, but different UOMs, the items are treated as the same item and the sum of the units sold for all of them is used. Likewise, if multiple items have the same item identifier and description, but different unit prices, the average unit price is used.

If multiple items have the same quantity sold within the specified time period, this report can list more than 10 items.

The Top 10 Products Report should be run at night, during a period of light load.

Rank	Item ID	Item Description	Units Sold	Unit Price	Revenue
1	Colony2Ent22_cable	Component Item	300	\$0.00	\$0.00
1	Colony2Ent22_memorycard		300	\$0.00	\$0.00
3	Col2Ent22BundItem		150	\$0.00	\$0.00
4	Col2Ent22_DVDPlayer		115	\$0.00	\$0.00
5	Col2Ent22_MP3Player		20	\$0.00	\$0.00
Summary			885		\$0.00

Figure 25. Sample Top 10 Products Report

Unshipped Orders Report

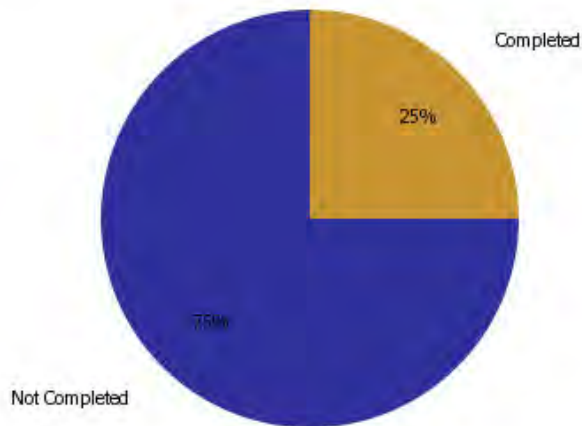
Logistics managers may need to know the volume of shipments that their company is expecting to ship on a particular day in comparison to the shipments already shipped that day. Likewise, a store manager may need to track the number of pending pickups for a certain store location for a particular day.

The Unshipped Orders Report provides visibility into the requested order releases for a specific day. Figure 21 on page 36 shows a sample of the Unshipped Orders Report. A pie chart displays the percentage of completed and the uncompleted shipments.

ShipNode: PD-DC-001
Enterprise: PREMIUM_DEAL

Ship Node: PD-DC-001

Delivery Method: SHP



Completed

Order #	Release #
Y100000170	2

Not Completed

Order #	Release #	Order Status
Y100000040	2	Included In Shipment
Y100000100	1	Released
Y100000168	1	Released
Y100000170	2	Partially Return Created

Sep 20, 2007

- 1 -

Figure 26. Sample Unshipped Orders Report

Importing a Sample Report

About this task

Use this procedure to import a sample report.

Procedure

1. Open Cognos Connection.
2. Select **Report Studio**.

3. Select **File** → **Open**. The Open dialog box is displayed.
4. Select a report.

Rules for Creating New Reports

The following rules should be followed when creating a new report:

- Never make changes to the Sterling Business Intelligence package, or add or modify reports within it. From release to release, the Sterling Selling and Fulfillment Foundation may provide new deployment files. These new files supersede the previously released files in the Analytics package.
- To add new reports, open the Analytics package model in Framework Manager. Rename the package (for example, SSC_NEWNAME_Analytics). Save this package and publish it to the content repository.
- After publishing the renamed package, a new package folder (named, for example, SSC_NEWNAME_Analytics) is created along with the previous Sterling Business Intelligence on Cognos Connection. All new reports should be added to the new package, and any changes to the model (for example, new or modified query subjects) should also be made to the new package in Framework Manager.

Scheduling a Report

About this task

Cognos 8 Business Intelligence provides the ability to schedule reports using the IBM Sterling Warehouse Management System application. A user can schedule reports to run during lean periods. For example, a user can schedule reports during off hours, when demands on the system are low.

To schedule a report in Cognos Connection:

Procedure


1. Open Cognos Connection.
2. Choose **Public Folders**.
3. Navigate to the folder that contains the list of reports.
4. Select the report that you want to schedule from the list.
5. Choose . The Schedule window displays.
6. Enter information in the applicable fields. For field value descriptions, see Table 2.
7. Click **OK**.
8. Save the report.
9. Enter the parameter values.
10. Click **Finish**.

Table 2. Schedule Window

Fields	Description
Frequency	Choose the frequency at which you want to run the schedule.
Start	Enter the time when you want begin the schedule.
End	Enter the time when you want to end the schedule.
Options	

Table 2. Schedule Window (continued)

Fields	Description
Format	Select the appropriate format from the drop-down list in which you want to display the report.
Delivery	Choose the appropriate delivery option you want to use to deliver the report.
Orientation	Select the appropriate form of the report to display from the drop-down list. This is enabled only if the report is displayed in PDF format.
Paper Size	Select the size of the paper from the drop-down list.
Languages	Select the language in which you want to display the report.
Prompt for values	Check this box to enter attribute values such as locale and so forth.

Generating Reports from the Application Console

About this task

To generate a report, from the Sterling Selling and Fulfillment Foundation Report Search console, click **Generate Report**. The system generates the report in any of the following ways:

- By default, the system always generates the report.
- Displays a cached version of the report.

To view a cached version of the report, edit the <INSTALL_DIR>/properties/customer_overrides.properties file and the following entry:

```
yfs.yfs.analytics.checkCachedReports=Y
```

If a cached version of the report is available, the system displays it. Otherwise, the system generates it and displays it.

For information about viewing cached reports, see “Viewing Cached Reports from the Application Console.”

Viewing Cached Reports from the Application Console

The Sterling Selling and Fulfillment Foundation enables warehouses to schedule reports during lean periods and cache them in a Cognos content repository. If a cached version of the reports is available, you can view the reports without generating them each time.

To view the cached reports, you must save the report view in the following format:

Prefix the report name with parameter values sorted alphabetically and separated by an underscore (_).

- If the parameter name has only one value, sort the parameter names alphabetically in the ascending order and prefix the report name using the parameter values.

For example, consider a report with two parameters, Enterprise and Zone, with values E1 and A1 respectively. Sort the parameters in the ascending order (Enterprise and Zone) and prefix the report name with values E1 and A1. When you schedule a report, save the report as E1_A1_ReportName. When you run the

report for Enterprise E1 and Zone A1, the system queries the Cognos content repository for the E1_A1_ReportName report.

- If a parameter name has multiple values, first sort the values alphabetically, and then sort the remaining parameter names.

For example, consider a report that takes the parameters Enterprise and Zone. The value of Enterprise is E1. The values of Zone are A1 and B1. First sort the values of Zone (A1 and B1), and then sort Enterprise (E1) in the ascending order of the parameters, and prefix the report name using the values E1, A1, and B1. When you schedule a report, save the report as E1_A1_B1_ReportName. When you run the report for Enterprise E1 and Zones A1 and B1, the system queries the Cognos content repository for the E1_A1_B1_ReportName report.

Chapter 5. Deploying Sterling Business Intelligence Reports

Deploying Sterling Business Intelligence Reports: An Overview

To view the data, you must deploy reports and refresh them against your database. The resulting reports allow you to analyze the data in various forms.

Refreshing Against a Replicated Versus a Transactional Database

The database impact of a refresh depends on the volume of data involved, refresh frequency, and the design of the report "complexity". Depending on your requirements, you may have installed all Cognos components on a single machine, 1 to 2 machines, or a distributed setup. See the Cognos 8 Business Intelligence documentation for more information. Your transactional database may be co-located. You may need to refresh your database only during offpeak hours, or have a "24/7" requirement for your system.

Some ad-hoc reports may need to be run hourly. Therefore, you must analyze your deployment scenario and set up the refresh accordingly. *It is recommended that you refresh reports against a replicated database instead of your transactional database.* This allows you to configure and tune the replicated database for your reporting needs, such as creating indices, keys on the tables, or tuning your database parameters. You can replicate the transactional database using the standard database replicating tools in the market. If you need to refresh against a transactional database, keep in mind the performance impact on both the refresh and the transactions of the Sterling Selling and Fulfillment Foundation that are occurring in the database during the refresh period.

Deploying Reports

Refer to the Cognos 8 documentation for information about how to deploy reports for Sterling Business Intelligence.

Remember to provide filter values for any reports that have filters, either for data or security.

Creating a Suggested Folder Structure for Reports

About this task

We recommend the following steps to create your folder structure for report deployment:

Procedure

1. Create a folder named "Staging" (or similar) under /<INSTALL_DIR>/<ANALYTICS_HOME>.
2. Under the "Staging" folder create a folder named "Publish".
3. Under the "Publish" folder, create a folder for "Reports" where the reports that are ready to be deployed are stored.
4. You can create additional folders under "Reports" to group reports. For example, Finance or Marketing.

Refreshing Reports

Based on the type of report deployed, the report could be either scheduled to refresh at certain times, or is run at the time it is viewed (Burst Reports). See the Cognos 8 documentation for more information about refreshing reports.

Chapter 6. Extending the Data Model

Extending the Sterling Business Intelligence Data Model

The Sterling Business Intelligence Data Model can be modified to incorporate the specific needs of your Sterling Selling and Fulfillment Foundation installation by extending the Catalog.

For information about extending your Sterling Selling and Fulfillment Foundation installation, see the *Selling and Fulfillment Foundation: Customization Guide*.

Before you extend the Data Model, read the Cognos 8 documentation so that you understand how to use the product and you can apply that knowledge to the Data Model. Be sure to create a backup of all components that are going to be modified.

The Data Model is extended by adding, deleting or renaming fields, tables, or entities.

Extending the Sterling Business Intelligence Data Model: Adding Fields and Tables

To add fields and tables, follow the instructions in the Cognos 8 documentation.

Extending the Sterling Business Intelligence Data Model: Deleting or Renaming Fields and Tables

IBM recommends that you do **not** delete or rename the objects that already exist in the Catalog delivered with Sterling Business Intelligence. This can create compatibility problems with future versions of the Framework components. However, if it is absolutely necessary to delete some objects, follow the guidelines in the Cognos 8 documentation.

Editing the Sterling Business Intelligence Model

Following are conditions for editing the Sterling Business Intelligence model:

- Limited local processing should not be used during development unless absolutely necessary. This enforces the practice of pushing all operations down to the database, as opposed to pushing them to memory.
- Views should not be used unless all the following conditions are met:
 - All tables in the view are in the same schema type, and will be for the foreseeable future.
 - All tables in the view are necessary; that is, there is no "might use" data (example, Mark For Key on YFS_ORDER_HEADER).
 - One of the following:
 - The view is meant to be used as a stepping stone for query subjects and has complex calculations.
 - There is a combination of unions and group bys (some inventory use cases)

Some views may still be necessary as group-bys are not always enforced as expected within Cognos, due to the aggregation logic it adds on its own.

- All Query Subjects to be used in other query subjects should have their relationships created manually with Filters. Columns and tables not directly referenced may be "optimized" out of the SQL. Using Filters prevents this.
- Filters should be created for the organization code and other cross-schema columns on the query subjects. The filter can contain the prompt. This pushes a where clause down to the individual schema. For example, by filtering enterprise code on order header, then only orders from the enterprise will be read into memory.
- All filters should be created at the same level as relationships.
- Query Subjects should be grouped by schema type at the highest level.

Chapter 7. Troubleshooting and Tuning

The Access Manager Is Not Working

About this task

To ensure that the Access Manager is running correctly:

Procedure

1. Make sure that the access manager is installed after the Netscape LDAP server is installed, configured, and registered.
2. Configure the Cognos LDAP authentication using the same settings as that used to configure the Sterling Selling and Fulfillment Foundation.
3. When registering the Access Manager using the Access Manager Wizard, use the same information as in step 2.
4. If for some reason, the authentication is not working for the default namespace, then uninstall the Access Manager, re-install LDAP, and re-configure with proper parameters, re-register and then try connecting again.

SQL Net Connect String Error

About this task

If you get the error, "The SQL Net connect string shown on the Analytics catalog is BLACKHOLE after installing the IBM Sterling Business Intelligence Framework on a fresh server" when trying to open the catalog:

The catalog's available user classes do not correspond to any defined by the Common Logon Server"

Follow these steps to ensure that the YAF-catalog can be opened:

Procedure

1. Launch Access Manager Administrator.
2. Select Root User Class and right-click,
 - Select Add User Class
 - Under the General tab enter "Creator" in the text box for Name.
 - Select the Permissions tab and set the permissions for the Creator user class.
 - Click the Apply button to save information.
 - Click the OK button to return to the Access Manager Administration Tree.
3. From the Tree select the folder named Users.
 - Select the user (default is administrator) that you would like to associate with the user class, right-click and select the membership tab. Select the user class that the user belongs to. In this case the Creator user class. Alternatively you can associate the user by selecting the user named Administrator, then drag it into the Creator user class.

Results

An error occurs for any user attempting to log into the catalog who does not belong to a specific user class.

Failed to Change User Class

About this task

If you get the error, "Failed to change the User Class. Unable to access the user profile creator. Incomplete catalog login information for user class", when running reports through the browser, you need to embed a user id and password in the catalog.

To embed a database user id and password in a catalog:

Procedure

1. Open the catalog in Cognos 8.
2. Select **Catalog** → **Profiles** from the main menu.
3. Select the **Database** tab.
4. For each User Class, in the Database Security Options section, select **Database Logon** and supply a database id and password.

Changing the Database Logon Type

About this task

To change the Database Logon type:

Procedure

1. Launch **Report Administration**.
2. Select the **Report Project** view.
3. Highlight the report set.
4. Select the **User** radio button in the Database Logon Type section.

Results

If the reports have already been published, delete them all and re-publish with the change mentioned above.

Could Not Locate analytics.properties File Error

When performing custom authentication, if an error "Could not locate the file analytics.properties in the classpath" displays, ensure that the analytics.properties file is located in the correct path.

Tuning Sterling Business Intelligence Reports

Because all the reports for Sterling Business Intelligence are based on SQL statements, tuning the SQL underlying the reports and sub-reports is recommended. You can avoid complicated SQL reports by breaking the reports up into sub-reports.

Tuning Your Sterling Business Intelligence Installation

Tuning your Sterling Business Intelligence installation involves sizing the servers where the installation is installed. For information, see “Cognos Server Sizing Requirements” on page 53.

Unable to View Data in the Reports

About this task

If you are unable to view data in the reports, perform these tasks:

Procedure

1. Ensure that the URL of the Cognos Web site is added as a trusted Web site in your browser.
2. Ensure that accept cookies are enabled in your browser.
3. Ensure that the value of the `yfs.analytics.reportnet.url` property in the `custom_override.properties` file, for example, `yfs.analytics.reportnet.url=http://<machinename>/cognos8/cgi-bin/cognos.cgi`, does not contain extra space at the end.
4. Ensure that the value of the `sscap.app.url` property in the `analytics.properties` file, for example, `sscap.app.url=http://hostname:portnumber/smcfs`, does not contain extra spaces at the end.

Chapter 8. Server Sizing Requirements

Cognos Server Sizing Requirements

Before you install the Cognos server-based products, ensure that you meet the requirements as described in Table 3.

Table 3. Cognos 8 (IWR) Server Requirements

Characteristics	Users	RAM (# of Processes * RAM)	Disk and CPU
8 catalogs 3 databases – DB2, SQL Server, Oracle 10 reports per catalog 75% personnel, 25% public	200 users 10% concurrent (20) Users are evenly distributed across catalogs.	PROCESSES Not applicable - dynamic TOTAL RAM = 256 - 512MB Memory for IWR= 256 – 512 MB Memory for NT Server = 70 MB Memory for Web Server= 5 MB Memory for database drivers	DISK SPACE Temporary disk space needed for report rendering to PDF (5X final report size) and final report storage. Temporary disk space for IWR= 1 GIG IWR Software= 100 MB Reports and Catalogs = 100 MB NT Server = 500 MB Database drivers TOTAL Disk Space= 1.7 GIG CPU # of PROCESSORS = 1 scalable to 2 PROCESSOR = 200+ MHz

Chapter 9. Cognos Components

Cognos Components

Cognos components consist of:

- Client and authoring components
- Server components
- Security components
- Tools

Most of these components are automatically installed with the main Cognos components.

Cognos: Client and Authoring Components

Report Studio - used to build reports from the Sterling Business Intelligence catalog (YAF-Analytics.cpf).

Analysis Studio - used to create ad-hoc cross-tab reports based on multi-dimensional data sources.

Cognos: Server Components

Cognos 8 Reports - used to web-enable reports

Cognos: Security Components

Access Manager - used for user authentication

Others: Ticket server

Cognos: Tools

Cognos 8 Report Administrator

Cognos 8 Server Administrator

PDF Servers (for reports)

Access Manager Configuration Wizard

Other Server Administrator applications

Scheduler

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