HP SOA Systinet Workbench

Software Version: 3.20

Report Editor Guide

Document Release Date: July 2009
Software Release Date: July 2009

Legal Notices

Warranty

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

The information contained herein is subject to change without notice.

Restricted Rights Legend

Confidential computer software. Valid license from HP required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

Copyright Notices

Contents

About this Guide

Welcome to the HP SOA Systinet Report Editor Guide. This guide describes how to use Report Editor to create and modify reports for use with SOA Systinet.

This guide contains the following chapters:

- Chapter 1, Report Editor

  Introduces Report Editor, the user interface, and the main use cases.

- Chapter 2, Getting Started

  Explains how to configure your environment and Report Editor.

- Chapter 3, Designing Reports

  Explains how to create and modify report definitions for use with SOA Systinet.

- Chapter 4, Using DQL

  Describes the syntax and grammar for creating DQL queries.

- Chapter 5, Exploring the Database

  Explains how to examine, optimize, and access the database.

- Chapter 6, Deploying Reports

  Explains how to deploy your report definitions to SOA Systinet.

- Chapter 7, Use Case Examples

  Walks you through the main use cases for Report Editor.

- Appendix A, Dialog Boxes

Describes Report Editor dialog boxes in detail.

- Appendix B, Troubleshooting

  Describes some common issues and their solutions.

- Appendix C, Eclipse Plug-in Requirements

  Required plug-ins when installing Workbench as an update.

Document Conventions

This document uses the following typographical conventions:

run.bat make	Script name or other executable command plus mandatory arguments.
[--help]	Command-line option.
either | or	Choice of arguments.
`replace_value`	Command-line argument that should be replaced with an actual value.
{arg1 | arg2}	Choice between two command-line arguments where one or the other is mandatory.
`java -jar hpsystinet.jar`	User input.
`C:\System.ini`	File names, directory names, paths, and package names.
`a.append(b);`	Program source code.
`server.Version`	Inline Java class name.
`getVersion()`	Inline Java method name.
Shift+N	Combination of keystrokes.
Service View	Label, word, or phrase in a GUI window, often clickable.
OK	Button in a user interface.
New→Service	Menu option.

Documentation Updates

This guide's title page contains the following identifying information:

- Software version number, which indicates the software version
- Document release date, which changes each time the document is updated
- Software release date, which indicates the release date of this version of the software

To check for recent updates, or to verify that you are using the most recent edition of a document, go to:

http://h20230.www2.hp.com/selfsolve/manuals

This site requires that you register for an HP Passport and sign-in. To register for an HP Passport ID, go to:

http://h20229.www2.hp.com/passport-registration.html

Or click the **New users - please register** link on the HP Passport logon page.

You will also receive updated or new editions if you subscribe to the appropriate product support service. For details, contact your HP sales representative.

Support

You can visit the HP Software Support Web site at:

http://www.hp.com/go/hpsoftwaresupport

HP Software Support Online provides customer self-solve capabilities. It provides a fast and efficient way to access interactive technical support tools needed to manage your business. As a valued support customer, you can benefit by using the HP Software Support web site to:

- Search for knowledge documents of interest
- Submit and track support cases and enhancement requests
- Download software patches
- Manage support contracts
- Look up HP support contacts
- Review information about available services
- Enter into discussions with other software customers
- Research and register for software training

Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract.

To find more information about access levels, go to:

http://h20230.www2.hp.com/new_access_levels.jsp

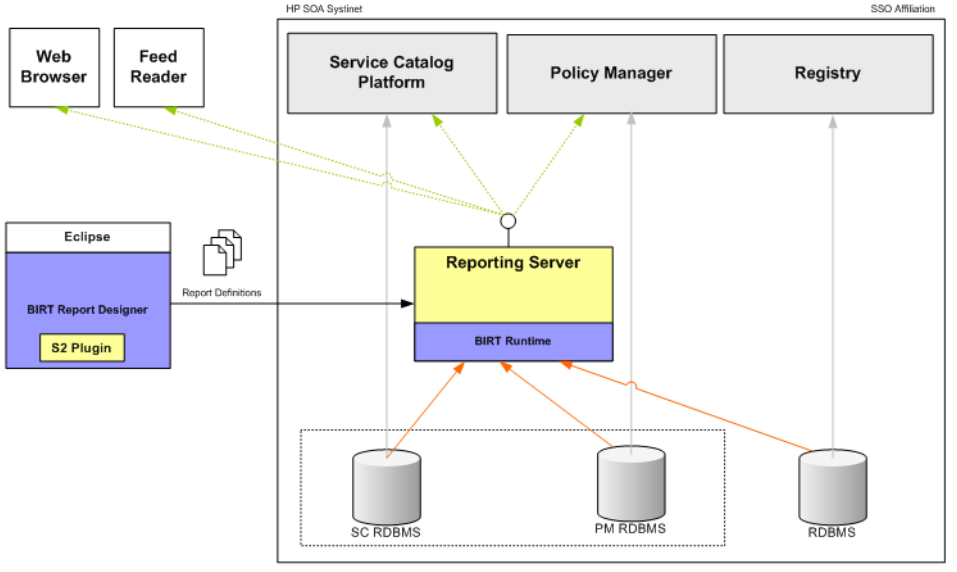
To register for an HP Passport ID, go to:

http://h20229.www2.hp.com/passport-registration.html

1 Report Editor

Workbench includes Report Editor enabling you to create and deployment new reports easily and simply. The relationship between Report Editor and the SOA Systinet Reporting Service is shown in Figure 1, “SOA Systinet Reporting Framework”.

Figure 1. SOA Systinet Reporting Framework



HP SOA Systinet Report Editor is an implementation of the Built-In Reporting Tool (BIRT), an open source Eclipse-based reporting system. The Help menu includes the BIRT documentation. The *BIRT Report Developer Guide* describes the general use of BIRT to create

reports. The Report Editor Guide adds to this by explaining how to use this functionality in conjunction with SOA Systinet.

This chapter introduces Report Editor in the following sections:

Workbench Suite

HP SOA Systinet Workbench is a suite of editor tools enabling you to customize your deployment of SOA Systinet.

Workbench consists of the following editor tools, distributed as a single Eclipse development platform:

- **Customization Editor**

  Customizes the underlying SOA Definition Model (SDM) and the appearance of these artifacts within SOA Systinet.

- **Taxonomy Editor**

  Customizes the taxonomies used to categorize artifacts in SOA Systinet.

- **Assertion Editor**

  Customizes the conditions applied by your business policies within SOA Systinet.

- **Report Editor**

  Customizes report definitions for use with SOA Systinet.

Overview

Report Editor interacts with SOA Systinet, enabling you to access existing report definitions, create customized reports, and deploy them to the SOA Systinet server.

To access, create, and deploy reports with SOA Systinet, follow this process:

1 Create a reporting project.

For details, see Configuring a Reporting Project on page 31.

2 Create and modify reports.

For details, see Chapter 3, Designing Reports.

3 Deploy your reports to SOA Systinet.

For details, see Chapter 6, Deploying Reports.

4 Access your reports in SOA Systinet.

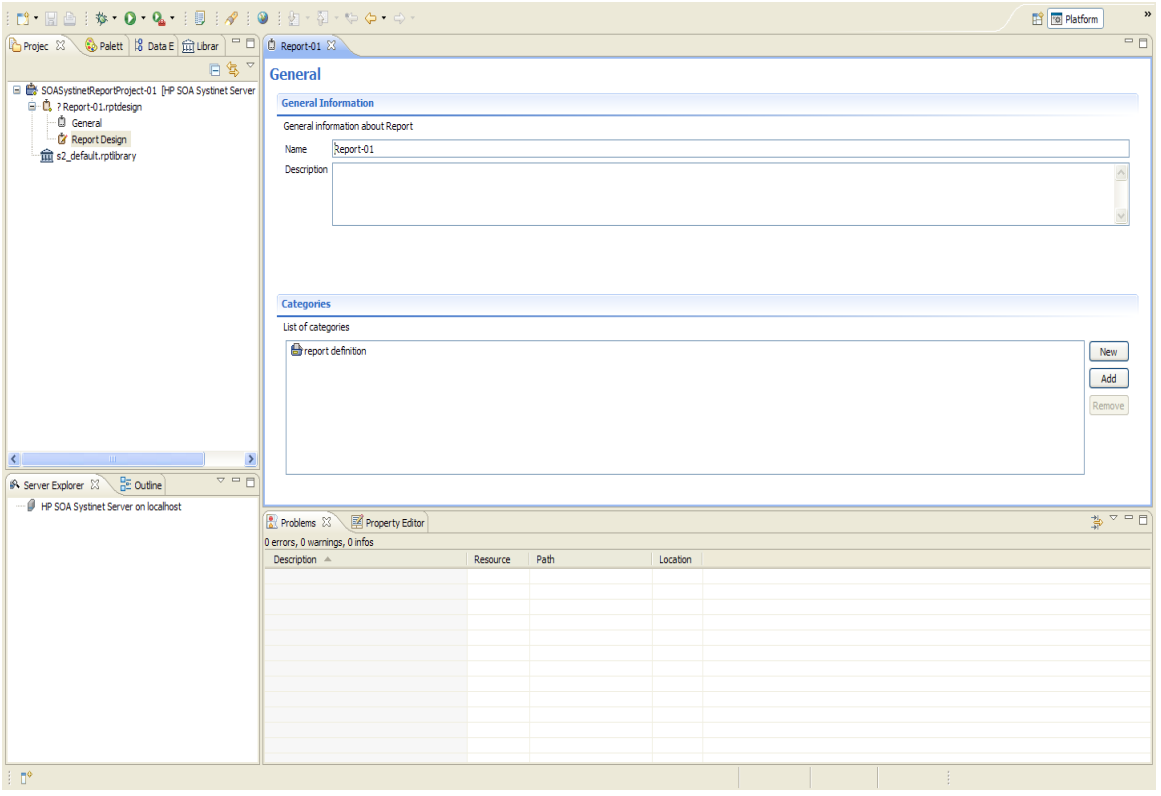
For details, see:

- Use Cases on page 19
- Accessing Reports on page 83
- Chapter 7, Use Case Examples
- *HP SOA Systinet User Guide*

User Interface

The default platform perspective is split into a number of views with menu options across the top, as shown in Figure 2, “Platform Perspective”.

Figure 2. Platform Perspective



The perspective consists of the following views:

- **Project Explorer**

  The tree view of your reporting project. For details, see Project Explorer on page 15.

- **Data Explorer**

  The view of the data sources and data sets for a particular report. For details, see Data Explorer on page 17.

- **Server Explorer**

  A list of SOA Systinet servers connected to Workbench. For details, see Server Explorer on page 18.

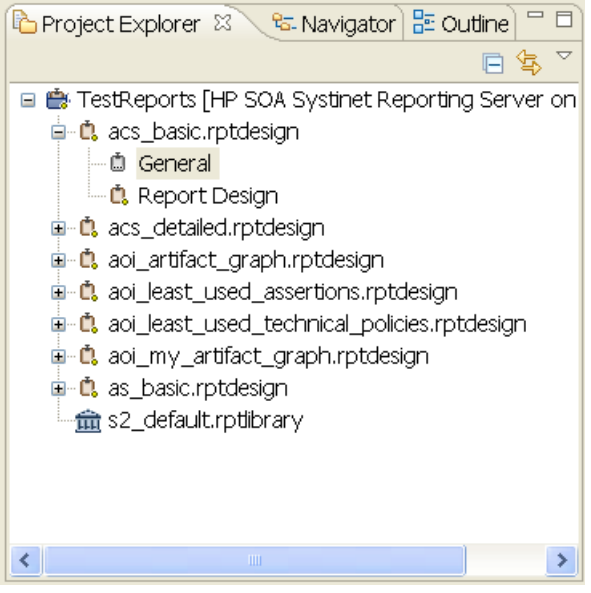
- **Editor Views**

  The main area of the perspective contains report editor views. In this view you can edit the layout and properties of your report definition. For details, see the *BIRT Report Developer Guide*, which you can access from the menu by selecting **Help→Help Contents**.

Project Explorer

The Project Explorer, as shown in Figure 3, “Project Explorer”, is a view of the projects in your workspace and the report definitions they contain. This view is also an interaction point with SOA Systinet.

Figure 3. Project Explorer



Each project contains a set of report definitions and the SOA Systinet library.

Each report definition contains the following sections:

- **General**

  Double-click to open a properties editor view enabling you to change the name and description and to categorize the report definition.

- **Report Design**

  Double-click to open a layout editor view enabling you to change the appearance and content of the report definition.

The Project Explorer contains additional context menu options enabling you to interact with a running SOA Systinet SOA Systinet server. Right-click the project name or a particular report definition, and select **HP SOA Systinet** to view the options listed in Table 1, "Project Context Menu Options" and Table 2, "Report Definition Context Menu Options".

Table 1. Project Context Menu Options

Option	Function
Download Report	Import report definitions from SOA Systinet. For details, see Importing Report Definitions on page 34.
Publish Report	Export a report to the default SOA Systinet server. For details, see Deploying a Report to SOA Systinet on page 75.
Publish To Other Server	Export a report to a specified SOA Systinet server.
Build Extension	Create a reporting extension for SOA Systinet containing all the reports in your project. For details, see Creating a Reporting Extension on page 77.

Table 2. Report Definition Context Menu Options

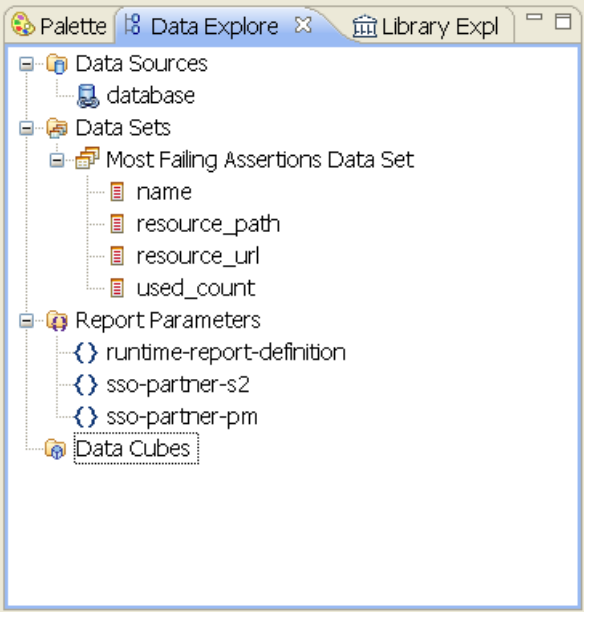
Option	Function
Publish Report	Export the report definition to the default SOA Systinet server. For details, see Deploying a Report to SOA Systinet on page 75.
Update Report	Updates the report with the current version on the server.
Remove Report From Server	Remove the report definition from the default SOA Systinet server with an option to delete it from the report project as well.

Option	Function
Publish to Other Server	Export the report definition to a specified SOA Systinet server.
Build Extension	Create a reporting extension for SOA Systinet containing the report. For details, see Creating a Reporting Extension on page 77.

Data Explorer

The Data Explorer displays the sources and sets of data used by the particular report you are working with, as shown in Figure 4, “Data Explorer View”.

Figure 4. Data Explorer View



Data Explorer contains the following elements:

- **Data Sources**

  Open the context menu and select **New Data Source** to access a database.

For details, see Adding a Data Source to a Report on page 38.

- **Data Sets**

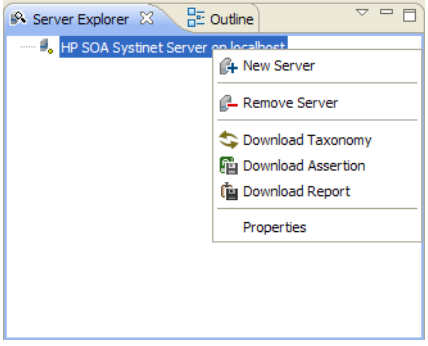
  Open the context menu and select **New Data Set** to define the data used by the report.

  For details, see Creating a Data Set on page 39.

Server Explorer

The Server Explorer displays the SOA Systinet servers connected to Workbench, as shown in Figure 5, “Server Explorer View”. The functionality is shared by all the Workbench editors.

Figure 5. Server Explorer View



Right-click a server in the Server Explorer to open the context menu described in Table 3, "Server Explorer Context Menu Options".

Table 3. Server Explorer Context Menu Options

Option	Function
New Server	Add a server for downloading assertions and taxonomies (Assertion Editor, Taxonomy Editor, and Customization Editor).
Remove Server	Delete a server from the Server Explorer.

Option	Function
Download Taxonomy	Download a taxonomy from a platform server (Taxonomy Editor and Customization Editor).
Download Assertion	Download assertions from a platform server (Assertion Editor).
Download Report	Download reports from a reporting server (Report Editor).
Properties	View and edit the server name, URL, username, and password.

Use Cases

SOA Systinet uses report categories to associate reports with particular functionality as follows:

- **Platform – Dashboard Report**

  A dashboard report is designed to fit inside a portlet on the SOA Systinet dashboard, as described in Creating a Report for the Dashboard on page 21.

- **Platform – Tools Report**

  A tools report is intended for use with a reporting tool in SOA Systinet, as described in Creating a Report for the Reporting Tool on page 20.

- **Policy Manager – Artifact Compliance Report**

  Reports with the artifact compliance report category are available in the View menu of compliance report pages, as described in the "Document Reports" section of the *HP SOA Systinet User Guide*.

- **Policy Manager – Artifact Summary Report**

  Reports with the artifact summary report category are available in the View menu of compliance report pages, as described in the "Document Summary Reports" section of the *HP SOA Systinet User Guide*.

- **Policy Manager – Business Policy Compliance**

  Reports with the business policy summary category are available in the View menu of compliance report pages, as described in the "Business Policy Summary Reports" section of the *HP SOA Systinet User Guide*.

- **Policy Manager – Business Policy Summary**

  Reports with the business policy summary category are available in the View menu of compliance report pages, as described in the "Business Policy Reports" section of the *HP SOA Systinet User Guide*.

- **Policy Manager – Detail Report**

  Reports with the detail report category are available in the View menu of compliance report pages, as described in the "Document Reports" section of the *HP SOA Systinet User Guide*.

- **Policy Manager – Homepage Report**

  Selecting homepage report enables you to select the report as an area of interest to view on the main Policies tab in SOA Systinet. See the "Areas of Interest" section of the *HP SOA Systinet User Guide*.

Each use case describes the high-level steps required to implement them. The examples provided in Chapter 7, Use Case Examples can be used as a reference.

The main use cases are described in the following sections:

- Creating a Report for the Reporting Tool on page 20
- Creating a Report for the Dashboard on page 21
- Creating Reports for Policy Manager on page 23

Creating a Report for the Reporting Tool

The main use case for Report Editor is to create a new report definition designed for use with a reporting tool in SOA Systinet.

To create and use a reporting tool report definition:

1. Create a new report definition.

   For details, see Creating a Report Definition on page 37.

2. Add a data source for the report.

   For details, see Adding a Data Source to a Report on page 38.

3 Create a data set for the report,

For details, see Creating a Data Set on page 39.

4 Design your report layout.

For details, see the *BIRT Report Developer Guide*, which you can access from the main menu by selecting **Help→Help Contents**.

5 Categorize the report with **Platform - Tools** as the category.

For details, see Categorizing Reports on page 41.

6 Deploy the report to SOA Systinet.

For details, see Deploying a Report to SOA Systinet on page 75.

7 Create a reporting tool in SOA Systinet.

For details, see the "Creating a Reporting Tool" section of the *HP SOA Systinet User Guide*.

8 Execute the reporting tool in SOA Systinet.

For details, see the "Running a Reporting Tool" section of the *HP SOA Systinet User Guide*.

9 Optionally, create a scheduled task in SOA Systinet to use the new reporting tool.

For details, see the "Creating a Task" section of the *HP SOA Systinet User Guide*.

For a step-by-step walkthrough demonstrating this use case, see Example: Failure Impact Report for the Reporting Tool on page 85.

Creating a Report for the Dashboard

SOA Systinet contains functionality enabling you to display small reports on the **Dashboard**.

To create and use a dashboard report definition:

1 Create a new report definition.

For details, see Creating a Report Definition on page 37.

2 Add a data source for the report.

For details, see Adding a Data Source to a Report on page 38.

3 Create a data set.

For details, see Creating a Data Set on page 39.

4 Design your report layout.

For details, see the *BIRT Report Developer Guide*, which you can access from the main menu by selecting **Help→Help Contents**.

The dashboard portlet for a report has a width limitation of 211 pixels.

For an example of configuring your report layout to fit the portlet, see Example: Failure Impact Report Layout for the Dashboard on page 99.

5 Categorize the report with **Platform - Dashboard Report** as the category.

For details, see Categorizing Reports on page 41.

6 Deploy the report to SOA Systinet.

For details, see Deploying a Report to SOA Systinet on page 75.

7 Add the dashboard report to the SOA Systinet Dashboard.

For details, see the "Adding a Content Report" section of the *HP SOA Systinet User Guide*.

For a step-by-step walkthrough demonstrating this use-case, see Example: Failure Impact Report for the Dashboard on page 97.

Creating Reports for Policy Manager

Policy Manager supports the implementation of policy reports as alternative or additional views for policy pages in SOA Systinet.

Select a Policy Manager category to associate the report with a particular Policy Manager page. For details, see Use Cases on page 19.

2 Getting Started

SOA Systinet is distributed with a set of predefined reports and various ways to access them.

Report Editor provides a mechanism to customize these existing reports, and also enables you to create new report definitions from scratch.

This chapter describes the setup of Report Editor in the following sections:

Installing a Report Development Environment

This section describes a setup to develop and test reports on a single computer.

For supported platforms, see `readme.txt` in the installation folder.

A typical report development environment consists of the following:

- PC or notebook with at least 2GB RAM and at least 5GB free disk space
- Windows XP or Windows 2000
- Oracle eXpress Edition (XE)

  For deployment details, see Oracle XE Account Setup on page 26.

You do not need to install XE if you have dba-level access to deployed SOA Systinet environment using Oracle 10g.

- Java 1.5_9 or higher

  For deployment details, see Java Environment Setup on page 26.

- HP SOA Systinet deployed to JBoss

  For details, see *HP SOA Systinet Installation and Deployment Guide*.

You do not need to install SOA Systinet if you have access to a test environment.

- Oracle Developer

  HP Software recommends this tool for tuning SQL queries.

Oracle XE Account Setup

If you install Oracle XE, you must create a user account.

To create an Oracle XE account:

1 Open the XE web console and log on as the system user.

2 Create a new user, `platform`, with the password `changeit`, then grant the new user all available privileges.

Java Environment Setup

After installing Java, you must set an environment variable, JAVA_HOME.

To set the JAVA_HOME environment variable:

1 In Windows, click through **Control Panel→System→Advanced→Environment Variables**.

The Environment Variables dialog box opens.

2 In the User Variables section, click **New**.

3 Input Variable Name, `JAVA_HOME`, and set Variable Value to the installation folder for Java.

4 Click **OK** to exit each dialog box.

Installing Workbench

HP SOA Systinet Workbench is an Eclipse development platform distributed as a zip file, `hp-soa-systinet-workbench-3.20-win32.zip` or as a plugin for an existing Eclipse environment, `hp-soa-systinet-workbench-3.20-plugin.zip`.

For supported platforms and known issues, see `readme.txt` alongside the archive.

To install HP SOA Systinet Workbench as a new Eclipse platform:

- Extract the archive to your required location, referred to in this document as `WB_HOME`.

The path must not be longer than 18 characters.

To install HP SOA Systinet Workbench to an existing Eclipse platform:

1 Ensure that your Eclipse platform contains the necessary plug-ins. For details, see Appendix C, Eclipse Plug-in Requirements.

2 In your current Eclipse SDK (3.3 or later), use the software updates feature to install HP SOA Systinet Workbench.

Select **Help→Software Updates→Find and Install...**.

The Install/Update dialog opens.

3 In the Install/Update dialog, select **Search for new features to install**, and click **Next**.

The Install – Update Sites to Visit dialog opens.

4 In the Update Sites to Visit dialog, click **New Archived Site**.

The Select Local Archive Site dialog opens.

5 Locate and select `hp-soa-systinet-workbench-3.20-plugin.zip`, and then click **Open**.

The Edit Local Site dialog opens.

6 In the Edit Local Site dialog, if required, rename the local archive name, and click **OK**.

7 In the Install – Update Sites to Visit dialog, select the new local archive, and then click **Finish**.

The Updates – Search Results dialog opens.

8 Select the modules from the archive that you want to install:

- **Workbench Extra 3.20**

  HP SOA Systinet Workbench splash screen.

- **Taxonomy Editor 3.20**

  Required for Customization Editor.

- **Customization Editor 3.20**
- **Assertion Editor 3.20**
- **Report Editor 3.20**
- **Common Plugin 3.20**

  Shared components used by the editors.

Click **Next**.

The Install – Feature License dialog opens.

9 In the Feature License dialog, select **I accept the terms in the license agreements**, and click **Next**.

The Install – Installation dialog opens.

10 In the Installation dialog, if required, change the installation location, and then click **Finish**.

11 If you install `Workbench Extra 3.20` make the following configuration changes:

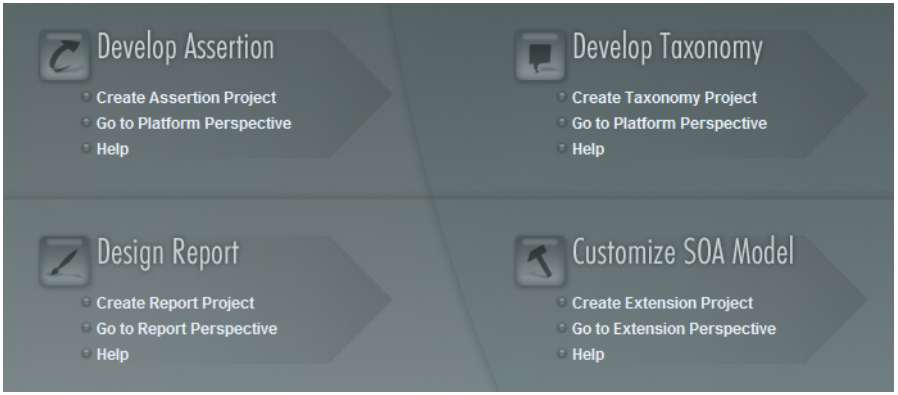
- Remove `-showsplash org.eclipse.platform` from `ECLIPSE_HOME/eclipse.ini`.
- Edit ECLIPSE_HOME/configuration/config.ini and make the following changes:
  - Set `osgi.splashPath=platform:/base/plugins/com.systinet.tools.workbench .`
  - Set `eclipse.product=com.systinet.tools.workbench.ide`

To start HP SOA Systinet Workbench:

- Execute **WB_HOME/systinet-workbench/start.exe**.

The first time you start Workbench, the welcome screen opens, as shown in Figure 6, “Workbench Welcome Screen”.

Figure 6. Workbench Welcome Screen



Select one of the options to open one of the editor tools, start a new editing project, or view the documentation set.

You can return to the welcome screen from any of the editor tools by selecting **Help→Welcome** from the menu options.

HP SOA Systinet Workbench requires Java SE Development Kit (JDK) 1.5.0 or higher. You must include the path to this version of the JDK in the *JAVA_HOME* environment variable.

HP SOA Systinet Workbench is memory-intensive. If you experience performance issues, HP recommends increasing the memory allocation.

To increase the memory allocation for HP SOA Systinet Workbench:

1. Open `WB_HOME/start.ini` for editing.
2. Set these new values:
   - `-Xms128m`
   - `-Xmx1024m`

3 Save your changes.

4 Restart Workbench.

SSL Configuration

By default, Workbench trusts all SOA Systinet server certificates. You may want Workbench to verify SOA Systinet certificates.

To verify SOA Systinet server certificates:

- Add the following options to `WB_HOME/start.ini`:

```
-Dcom.hp.systinet.security.ssl.verifyCert=true
-Djavax.net.ssl.trustStore=USER_TRUSTSTORE
-Djavax.net.ssl.trustStorePassword=TRUSTSTORE_PASS
-Djavax.net.ssl.trustStoreType=TRUSTSTORE_FORMAT
```

If SOA Systinet is configured for 2-way SSL, you must provide Workbench certificates to SOA Systinet.

To provide Workbench client certificates to SOA Systinet:

- Add the following options to `WB_HOME/start.ini`:

```
-Djavax.net.ssl.keyStore=USER_KEYSTORE
-Djavax.net.ssl.keyStorePassword=KEYSTORE_PASS
-Djavax.net.ssl.keyStoreType=KEYSTORE_FORMAT
```

Configuring a Reporting Project

To use Report Editor with SOA Systinet, you must create or import a project, and import any report definitions you want to modify.

These procedures are described in the following sections:

- Creating a Reporting Project on page 32

- Importing a Reporting Project on page 33
- Importing Report Definitions on page 34

Creating a Reporting Project

The Report Editor organizes your work into project folders in your workspace.

To create a reporting project:

1 Do one of the following:

- In the Workbench Welcome page, select **Create Report Project**.
- From the menu, select **File→New→Report Project**.
- Press **Alt+Shift+N**, and then press **R**. Expand **HP SOA Systinet**, select **Report Project**, and then click **Next**.

The New Report Project Wizard opens.

2 Input a name for your project and, if needed, change the workspace location, and then click **Next**.

3 Do one of the following:

- Select **Create a New Server**, and then click **Next**.

  Continue to Step 4.

- Select **Use an Existing Server**, select the server from the list and input its credentials, and then click **Next**.

  Continue to Step 5.

4 In the New Server dialog box, add the parameters you require, and then click **Next**.

For parameters descriptions, see New Report Project Wizard: New Server on page 103.

5 If needed, in the New Data Source dialog box, click **Manage Drivers** to add a JDBC driver.

For details, see Adding a JDBC Driver on page 68.

6 In the New Data Source dialog box, add the parameters you require.

For parameters descriptions, see New Report Project Wizard: Default Library Configuration - Create a new data source on page 104.

If your database server is running, click **Test Connection** to check if your settings are correct.

7 Click **Next** to set project options.

8 Do one of the following:

- To create a generalized reporting project, click **Finish** and exit the wizard.
- To create a project associated with a specific report category, click **Next** and continue this procedure.

The SOA Systinet server must be running to access report definitions.

9 Select a report category for your reporting project, and then click **Next**.

10 Select report definitions from the selected category to download to the Report Editor, and then click **Finish**.

Importing a Reporting Project

You can import a reporting project created elsewhere into your Workbench installation.

To import a reporting project:

1 Copy the project folder to your local files ystem.

2 From the menu, select **File→Import**.

The Import dialog box opens.

3 Expand **General** and select **Existing Projects into Workspace**.

4 Use **Browse**, select the project from your local file system, and then click **OK**.

5 Click **Finish** to import the reporting project.

Importing Report Definitions

The SOA Systinet SOA Systinet server contains all the report definitions for SOA Systinet. To modify existing reports, you must import their definitions from the SOA Systinet server.

To import SOA Systinet report definitions:

1 In the Project Explorer, open the context menu for the project, and do one of the following:

- Select **HP SOA Systinet→Download Report** to import from the current SOA Systinet server.
- Select **Import→Report**, and then select a reporting server.

The SOA Systinet server must be running.

2 Select the report category, and then click **Next**.

3 Select the report definitions you require, and then click **Finish**.

Rebranding SOA Systinet Reports

By default, most SOA Systinet reports include an HP branded logo. You can replace this image with your own company-specific image.

To rebrand SOA Systinet reports:

1. Open `s2_default.rptlibrary` for editing.
2. In the Outline view, expand Embedded Images.
3. Open the context menu for `logoHP.gif` and select **Delete**.
4. Open the context menu for Embedded Images, and select **New Embedded Image**.
5. Upload your new company branded image which must be named `logoHP.gif`.
6. Save `s2.default.rptlibrary`.
7. Redeploy all reports that use this image to SOA Systinet. For details, see Chapter 6, Deploying Reports.

3 Designing Reports

This chapter describes the functionality of Report Editor in conjunction with SOA Systinet. The standard functionality of Report Editor is described in the *BIRT Report Developer Guide*, which you can access from the main menu by selecting **Help→Help Contents**.

This chapter contains the following sections:

Creating a report:

Creating a Report Definition

The first step in defining a report is to create the report definition.

To create a report definition:

1. Select **File→New→Report** from the menu.
2. Input a name and description for the report, and then click **Next**.
3. Select the project folder, and then click **Finish** to create the report definition.
4. Press **Ctrl+S** to save the report definition.

See Step 1 of Example: Failure Impact Report for the Reporting Tool on page 85 for an example of this procedure.

Adding a Data Source to a Report

By default, new reports contain DQL and SQL data sources setup during project creation. If you need to use a different one, you must add it to the report.

To add a data source to a report:

1 Open the report definition editor view.

2 In the Data Explorer, open the Data Sources context menu and select **New Data Source**.

The New Data Source dialog box opens.

3 Do one of the following:

- To add a datasource for DQL queries, select **DQL JDBC Data Source**.
- To add a datasource for SQL queries, select **JDBC Data Source**..

Click **Next**.

4 If required, in the Data Source dialog box, click **Manage Drivers** to add a JDBC driver (the DQL driver is pre-installed and there should never be a requirement to add one.

For details, see Adding a JDBC Driver on page 68.

5 In the Data Source dialog box, add the parameters you require.

For parameter descriptions, see New Report Project Wizard: Default Library Configuration - Create a new data source on page 104.

If your database server is running, click **Test Connection** to check if your settings are correct.

6 Click **Finish** to add the data source to your report.

7 Press **Ctrl+S** to save your changes to the report definition.

Creating a Data Set

Each report is associated with one or more queries that each return a data set.

To create a data set:

1 From the Report Design perspective, open the report definition view for the report requiring the new data set.

If you need to use an alternative data source, see Adding a Data Source to a Report on page 38.

2 In the Data Explorer, open the Data Sets context menu, and select **New Data Set**.

The **New Data Set** dialog opens.

3 In the New Data Set dialog box, add the parameters you require.

For parameters descriptions, see New Data Set on page 102.

4 Click **Next** to open the **Query** dialog box.

5 Do one of the following:

- Copy a query from your development tool to the query editor.

  Skip to Step 8.

- Create your query in Report Editor as described in Step 6 to Step 7.

6 Use **Schema** (SQL only), **Filter**, and **Type**, and then click **Apply Filter** to focus on the data you require in Available Items.

For SQL queries, Workbench limits the amount of data collected. To change the settings, see Changing the Data Collection Settings on page 68.

7 Browse Available Items to find the data items you require. Drag and drop items from Available Items to the query editor and construct your query.

For portability to different SOA Systinet installations using different schemas, remove the schema name from the variables in your query if your database schema does not require them.

8 Click **Finish** to add the data set to the report definition.

9 Press **Ctrl+S** to save your changes.

For details about writing DQL queries, see Chapter 4, Using DQL.

For details about the database structure and writing SQL queries, see Chapter 5, Exploring the Database.

For an example of this procedure, see Example: Failure Impact Data Set on page 87.

If possible, use only one dataset per report definition. If you need more datasets in one report (for example, multiple properties in one table row), use JavaScript to build one table.

Designing a Report Layout

The *BIRT Report Developer Guide* contains all the information required to design the layout and content of your reports. Select **Help→Help Contents** to view the guides included with Workbench.

For an example, see Example: Failure Impact Report Layout for the Reporting Tool on page 91.

Categorizing Reports

The Report Editor enables you to categorize reports. Each category corresponds to a particular page or function in SOA Systinet.

To categorize a report:

1. In the **Project Explorer**, expand the report you want to categorize and double-click **General** to open a view of the report definition containing categorization.
2. The Categories section displays the current categories that apply to your report.

   Click **Add** to open the **Add Category** dialog.
3. Select the category you require.

   For details about categories, see Use Cases on page 19.
4. Click **OK** to confirm your categorization.
5. Press **Ctrl+S** to save your changes.

See Step 4 of Example: Failure Impact Report for the Reporting Tool on page 85 for an example of this procedure.

Modifying Existing Report Definitions

Report definitions that already exist in SOA Systinet can be modified.

To modify existing report definitions:

1. Import the report definition.

   For details, see Importing Report Definitions on page 34.
2. To open the report definition, in the Project Explorer, double-click the report definition `rptdesign`.
3. Make your modifications, as described in Creating a Report Definition on page 37.

4 Press **Ctrl+S** to save your changes.

5 Redeploy the report definition to SOA Systinet.

For details, see Deploying a Report to SOA Systinet on page 75.

4 Using DQL

The DQL query language provides a simple query model using the SOA Definition Model (SDM). It enables you to query all aspects of the model – artifacts, properties, relationships, governance, and compliance – using SQL-like queries, and it uses permissions set on artifacts from ACLs.

This chapter describes DQL in the following sections:

Introduction to DQL

This section provides examples of DQL queries,which you can use to create your own queries. DQL is based on SQL, enabling you to apply your SQL knowledge to DQL.

In SOA Systinet, you can use DQL queries in the following use cases:

- To create custom data sets for reports in HP SOA Systinet Report Editor.
- To extract data sets for use in customized pages of the SOA Systinet user interface.

You can also use DQL in any SQL designer using the DQL JDBC driver.

For more details, see DQL in SQL Designers on page 64.

The basic grammar for DQL when querying a single artifact type is as follows:

```
SELECT <properties>
  FROM <artifact or property group>
  WHERE <condition>
```

The basic grammar for DQL when querying artifacts joined by a relationship type is as follows:

```
SELECT <properties>
  FROM <artifact or property group>
    JOIN <artifact or property group>
    USING <relationship>
  WHERE <condition>
```

The localnames for artifacts, properties, and relationships to use in queries is described in the "Artifact Types" section of the *HP SOA Systinet Reference Guide*.

The following sections contain DQL examples, explaining aspects of the grammar and syntax of DQL:

Primitive Properties

Primitive properties are single-valued properties that may occur multiple times for an artifact depending on the cardinality as defined in the SDM. You can use them in SELECT and/or WHERE clauses.

The following query returns the name and all emails from the latest revisions of all person artifacts (you can use modifiers to obtain other revisions, for details, see Artifacts and Property Groups in DQL on page 52):

```
select name, email
 from personArtifact
```

The following query returns the name, description, and version of the latest revisions of all business service artifacts whose version is at least 2.0.

```
select name, description, version
  from businessServiceArtifact
  where version >= '2.0'
```

Instances of primitive properties with multiple cardinality are all returned as comma separated values.

Complex Properties

Complex properties are composed of one or more single or multiple-valued sub-properties (for example, address). It is only possible to query the sub-property components. Sub-properties are either separated by **.** or **$**.

```
select address.addressLines.value, address$country
  from personArtifact
  where address$city = 'Prague'
```

For a full reference of all complex properties in the default SDM, see "SOA Definition Model" in the *HP SOA Systinet Reference Guide*. Each artifact lists all its properties, with complex properties broken down into sub-properties.

Artifact Inheritance

Artifacts in SOA Systinet form a hierarchy based on the SDM model. Artifacts lower in the hierarchy inherit properties from higher artifact packages. You can query artifact packages and return a result set from all the instances of artifact types lower in the hierarchy. Property groups function in a similar way, querying a property group returns results from all artifact types that inherit properties from the group.

The following query returns results from all implementation artifacts, SOAP Services, XML Services, and Web Applications.

```
select name, serviceName
  from implementationArtifact
```

Notice that in this query, serviceName is a specific property of SOAP Service artifacts. In the result set, name is returned for all implementation artifacts but serviceName is only displayed for SOAP service artifacts.

ArtifactBase is the extreme example of inheritance. All artifact types are below artifactBase in the SDM hierarchy, therefore, DQL makes it possible to query all properties of all artifacts using artifactBase.

Artifacts may inherit the same property from an artifact package with different cardinalities. In these cases, querying the artifact package for these properties may fail. Examples that fail include **SELECT environment FROM artifactBase** and **SELECT accessPoint FROM artifactBase**.

Category Properties

Category properties are a special case of complex properties. You can query categorization using the following properties and their components:

- **_category**

  This property holds all categorizations in the categoryBag SDM property and specifically named category properties in the SDM.

  Each categorization has the following components:

  - Value - _category$val
  - Name - _category$name
  - Taxonomy URI - _category$taxonomyURI

- **categoryBag**

  Each categorization has the following components:

  - Value - _categoryBag$categories$val
  - Name - _categoryBag$categories$name
  - Taxonomy URI - _categoryBag$categories$taxonomyURI

categoryBag also includes sub-properties categories and categoryGroup which consist of the same sub-properties as categoryBag. This forms a complex hierarchy of categories. HP Software recommend querying _category instead of _categoryBag to ensure that all categorizations are returned.

- **Named category properties** (for example, business service criticality)

  Each categorization has the following components:

  - Value - <propertyName>$val
  - Name - <propertyName>$name
  - Taxonomy URI - <propertyName>$taxonomyURI

Where each component describes the following:

- Value - machine readable name of the category.
- Name - human readable name of the category.
- Taxonomy URI - identifies the taxonomy defining the category.

The following query returns the names, descriptions, and versions of all last revisions of business service artifacts which are categorized using the named criticality taxonomy property with a high failure impact.

```
select name, description, version
  from businessServiceArtifact
  where criticality.val = 'uddi:systinet.com:soa:model:taxonomies:impactLevel:high'
```

Fixing Multiple Properties

When a query is in progress, effectively, only one instance of a multiple property is returned at a time. This prevents querying different values of the same property unless you fix properties.

Consider a business service with keywords, 'Finance' and 'Euro'. The intuitive query for finding a 'Euro Finance' service is as follows:

```
select name, description, version
  from businessServiceArtifact b
  where b.keyword.val = 'Finance'
      and b.keyword.val = 'Euro'
```

This query does not work as a single instance of keyword can never be both 'Finance' and 'Euro'

The solution is to fix multiple properties as shown in the following query:

```
select name, description, version
  from businessServiceArtifact b, b.keyword k1, b.keyword k2
  where k1.val = 'Finance'
      and k2.val = 'Euro'
```

Relationships

A relationship is a special kind of complex property. A relationship has the following components which you can query:

- target - the UUIDs of the artifact the relationship points to.
- rType - the SDM QNames of the relationship type.
- useType - the values of the useType relationship property

You can query relationships in DQL using SQL JOINs. DQL supports the following styles of JOIN:

- **FROM WHERE (equi-join)**

  The relationship is represented as an SDM relationship property using the components described above.

- **JOIN USING**

  The relationship is identified as a foreign key after USING.

- **LEFT JOIN USING**

  The relationship is identified as a foreign key after USING.

The following queries all return business services and the contact details of their provider except the LEFT JOIN which returns all business services and includes the contact details only if they exist.

```
select b.name, b.version, p.name as contact, p.email
  from businessServiceArtifact b, personArtifact p
  where b._uuid = p.provides.target
```

```
select b.name, b.version, b.keyword.name, p.name as contact, p.email
  from businessServiceArtifact b join personArtifact p using provides
```

```
select b.name, b.version, b.keyword.name, p.name as contact, p.email
            from businessServiceArtifact b left join personArtifact p using provides
```

It is possible to specify a particular provider type using useType. The following query returns all business service and their contact details where the provider is an architect.

```
select b.name, b.version, p.name as contact, p.email
  from businessServiceArtifact b, personArtifact p
  where b._uuid = p.provides.target
    and p.provides.useType = 'architect'
```

It is possible to traverse several relationships in a query using several JOIN-USING clauses. This example, searches for business services in applications, which are also part of a project.

```
select b.name, b.description, a.name as Application, p.name as Project
  from businessServiceArtifact b
    join hpsoaApplicationArtifact a using hpsoaProvidesBusinessService
    join hpsoaProjectArtifact p using contentRelationshipType
```

Lifecycle Queries

SOA Systinet defines virtual properties, that are not defined by the SDM. SOA Systinet stores or calculates these properties enabling DQL to query meta information about artifacts.

The following virtual properties for lifecycle are available:

- **_currentStage**
- **_isApproved**
- **_lastApprovedRevision**
- **_lastApprovedStage**
- **_lastApprovalTimestamp**

DQL further enables the artifact type/property group modifier, `last_approved_revision` to enable you to query the latest approved versions of artifacts instead of the latest revision.

This example returns lifecycle details from the last approved revisions of all business service artifacts, ordered by revision number.

```
select name, _isApproved, _lastApprovedStage.name Stage, _revision
  from businessServiceArtifact(last_approved_revision)
  order by _revision
```

For details about other virtual properties, see Properties in DQL on page 52.

Compliance Status Queries

You can also query the compliance status of an artifact which is implemented as virtual property `_complianceStatus`.

The following example returns the name and compliance status of last approved revisions of all business services which a compliance status of at least 80%.

```
select b.name, b._complianceStatus
  from businessServiceArtifact b (last_approved_revision)
  where b._complianceStatus >= 80
```

Other Virtual Properties

There are several other virtual properties provided for artifacts. Virtual properties represent values which are not defined in the SDM, but by server components (for example, repository and lifecycle).

The following query returns the name and virtual properties artifactTypeName and owner from the latest revisions of consumer properties (the property group for all consuming artifact types).

```
select name, _artifactTypeName, _owner
  from consumerProperties
```

For details of virtual properties, see Properties in DQL on page 52.

Embedding SQL Queries

DQL cannot access data from SQL tables because it is dedicated to SDM entities. In some cases it is necessary to obtain values from outside the SDM (for example, system configuration). An SQL subquery may be used as a parameter of a NATIVE clause. DQL expects SQL to return an unnamed list of values which can be queried using = or **in**.

The following example returns the last revisions of business services owned by the administrator using the name defined during installation.

```
select name,description, version
  from businessServiceArtifact
  where _owner in (
    native {select svalue
      from systemConfiguration
      where name='shared.administrator.username'})
```

By default, the NATIVE clause is enabled but you can disable it in the configuration. For details, see "Configuring DQL" in the *HP SOA Systinet Administration Guide*.

Native clauses can not contain variables (? or :<variable>).

DQL Language

DQL is an SQL-like language that enables you to query the repository of artifacts in SOA Systinet defined by the SDM model. DQL preserves SQL grammar, but uses artifacts instead of tables, and artifact properties instead of table columns.

DQL supports most features of SQL with the following exceptions:

- SELECT * is not supported.
- Only JOIN and LEFT OUTER JOIN are supported.
- It is not possible to use properties with multiple cardinality in HAVING or ORDER BY clauses.

A DQL query has the following basic structure:

```
SELECT <property>,...
  FROM <artifact> <artifact alias>, …
     [LEFT] JOIN <artifact> USING <relationship>
     WHERE <condition>
```

DQL is described in more detail in the following sections:

- Artifacts and Property Groups in DQL on page 52
- Properties in DQL on page 52

Artifacts and Property Groups in DQL

SDM artifacts and property group in DQL are equivalent to SQL tables. They are specified in the FROM clauses of DQL queries.

```
FROM <artifact> <artifact alias> (modifiers)
```

The artifact type is identified by the ID of an artifact (local name) or property group (typically the last part of the URI) from the SDM. An alias can be used to specify the artifact type or property group for property and condition identification elsewhere in the query.

Modifiers define particular instances or revisions to query. Multiple comma-separated modifiers may be used. If no modifier is specified, the last revisions of undeleted artifacts for which the user has read access are queried.

The following modifiers are available:

- **no_acl** - queries all artifacts regardless of security.
- **all_rev** - queries all revisions of artifacts.
- **my** - queries artifacts belong to the user.
- **include_deleted** - queries all instances, including deleted artifacts.
- **last_approved_revision** - queries the last approved revisions of artifacts.

Properties in DQL

Artifact (property group) properties hold values which may be queried in DQL expressions.

DQL recognises the following property types:

- **SDM Properties**

Properties defined in the SDM model by their localname.

The differ by type and cardinality:

Property Type	Description
Primitive	Holds string, number, or boolean values. For example, name, description, version.
Complex	Hold complex structures such as address. Only components of complex properties may be queried, Components are separated by **.** or **$**. For example, `personArtifact$address$city`.
Categorization	Hold categorization data and are handled in a similar way to complex properties. All categories consist of `name`, `value`, and `taxonomyURI` components. For example, `businessServiceArtifact$criticality$name`.
Relationships	Properties that specify a directional relationship to other artifacts.

Property Cardinality	Description
Single	Only one instance of the property exists for an artifact and it may be optional or required.
Multiple	The property may occur multiple times for an artifact. In WHERE clauses, the expression returns a result if any instance of a property matches the condition.

Artifacts may inherit the same property from an artifact package with different cardinalities. In these cases, querying the artifact package for these properties may fail. Examples that fail include **SELECT environment FROM artifactBase** and **SELECT accessPoint FROM artifactBase**.

- **Virtual Properties**

  Properties holding metadata about artifact instances. They are divided into the following groups:

Model Property	Description
_artifactTypeName	The human readable name of the artifact type (the SDM label of the artifact).
_sdmName	The local name of the artifact type.
_longDescription	SOA Systinet supports a long description including HTML tags up to 25000 characters by default. HP Software recommend using the `description` property in DQL queries instead as queries using _longDescription may affect performance and the HTML tags may corrupt report outputs. `description` contains only the first 1024 text characters of `_longDescription` (may vary according to your database type).  The `platform.repository.max.description.length` property determines the maximum length of _longDescription. You can modify this property in `SOA_HOME/conf/setup/configuration-propeties.xml`. DB2 has an absolute limit of 32672 characters which is sufficient for descriptions containing ASCII (single-byte encoding) characters but may be exceeded, for example by Japanese descriptions, leading to description truncation.

System Property	Description
_category	All categorizations for an artifact with `name`, `val`, and `taxonomyURI` components.
_id	The database ID of an artifact instance (number).
_path	Legacy REST path of the artifact (nvarchar2).

UI Property	Description
_isFavorite	Marked by the user as favorite flag (boolean).

Security Property	Description
_writeable	User write permission flag (boolean).

Contract Property	Description
_enabledConsumer	The artifact is a valid consumer artifact type.
_enabledProvider	The artifact is a valid provider artifact type.

Lifecycle Property	Description
_currentStage	Current working stage of an artifact.
_isApproved	Lifecycle approval flag (boolean).
_lastApprovedRevision	Revision number of the last approved revision (number).
_lastApprovedStage	The name of the last approved stage.
_lastApprovalTimestamp	Timestamp for the last approval (number, ms since 00:00 1/1/1970).

Policy Manager Property	Description
_complianceStatus	Compliance status as a percentage (number).

Relationships in DQL

You can query SDM relationships in DQL using the complex relationship property with the following components in SELECT and WHERE clauses:

- target - the UUID of the artifact the relationship points to.
- rType - the SDM QName of the relationship type.
- useType - the value of the useType relationship property

You can query relationships in DQL using SQL JOINs. DQL supports the following styles of JOIN:

- **FROM WHERE (old-style join)**

  The relationship is represented as an SDM relationship property using the components described above.

- **JOIN USING**

The relationship is identified as a foreign key after USING.

- **LEFT JOIN USING**

  The relationship is identified as a foreign key after USING.

It is possible to use multiple JOINs in the same query.

Security in DQL

DQL uses the permissions for an artifact as set in the repository. By default, only artifacts that a user can read are returned.

The following modifiers and virtual properties are available to change this behaviour:

Security Modifier/Property	**Description**
no_acl	Modifier to ignore permissions. Must be enabled on the server. For details, see DQL in SQL Designers on page 64.
my	Modifier to query only artifacts owned by the user of groups the user belongs to.
_owner or _revisionCreator	Virtual properties to specify instances owned or created by a specific user.
_writeable	Virtual property to only return instances where the user has write permission.

Security (ACL) is defined on an artifact instance (not on each revision). The security set for the latest revision applies to all historical revisions.

DQL Grammar

A DQL query consists of the following elements with their grammar explained in the following sections:

- Expressions on page 60
- Lexical Rules on page 61

Table 4. Typographical Conventions

Convention	Example	Description
KEYWORDS	**SELECT**	A reserved word in DQL (case-insensitive).
parsing rules	*expr*	Name of a parsing rule. A parsing defines a fragment of DQL which consists of keywords, lexical rules, and other parsing rules.
LEXICAL RULES	*ID*	Name of a lexical rule. A lexical rule defines a fragment of DQL which consists of letters, numbers, or special characters.
[ ]	[**AS**]	Optional content.
[...]	[, *select_item*, ...]	Iterations of optional content.
|	**ASC** | **DESC**	Alternatives.
{ }	{ + | - }	Group of alternatives.
..	0..9	A range of allowable characters.

Select

```
select :
  subquery [ ORDER BY order_by_item [, order_by_item ...]]

subquery :
    subquery [ set_operator subquery ...]
  | ( subquery )
  | native_sql
  | subquery_base

subquery_base :
  SELECT [ DISTINCT ] select_item [, select_item ...]
  FROM from_clause_list
  [ WHERE condition ]
  [ GROUP BY expression_list
    [ HAVING condition ]
  ]

select_item :
```

```
  expr [  [ AS ] alias ]

alias :
  ID | QUOTED_ID

order_by_item :
  expr [ ASC | DESC ]

set_operator :
  UNION ALL | UNION | INTERSECT | EXCEPT

native_sql :
  NATIVE { sql_select }
```

The { } around the sql_select are required and sql_select is an SQL query.

FROM Clause

```
from_clause_list :
  { artifact_ref | subquery_ref | fixed_property | native_sql } [ from_clause_item ... ]

from_clause_item :
  , { artifact_ref | subquery_ref | fixed_property | native_sql }  |  [ LEFT [ OUTER ] ] JOIN { artifact_ref
 | subquery_ref } join_condition

artifact_ref :
  artifact_name [ alias ] [ ( artifact_modifiers ) ]

subquery_ref :
  ( subquery ) alias

fixed_property :
  property_ref alias

artifact_modifiers :
  ID [ , ID ... ]

artifact_name :
  ID

join_condition :
  | USING
property_ref
```

Conditions

```
condition :
  condition_and [ OR condition_and ... ]

condition_and :
  simple_condition [ AND simple_condition ... ]

simple_condition :
  ( condition )
  | NOT simple_condition
  | exists_condition
  | like_condition
  | null_condition
  | in_condition
  | simple_comparison_condition
  | native_sql

simple_comparison_condition :
  expr comparison_op expr

comparison_op :
  = | <> | < | > | <= | >=

like_condition :
  expr [ NOT ] LIKE like_expression [ ESCAPE STRING ]

like_expression :
  STRING
  | variable_ref

null_condition :
  expr IS [ NOT ] NULL

in_condition :
  expr [ NOT ] IN ( { subquery | expression_list } )

exists_condition :
  EXISTS ( subquery )
```

Explanation:

- Conditions can be evaluated to true, false, or N/A. *condition* consists of one or more *condition_and* that are connected by the **OR** logical operator.
- *condition_and* consists of one or more *simple_condition* connected by the **AND**

- *simple_condition* is one of following:
  - *condition* in parentheses.
  - Negation of *simple_condition*.
  - *exists_condition*
  - *like_condition*
  - *null_condition*
  - *in_condition*
  - *simple_comparison_condition*
  - *native_sql*
- *simple_comparison_condition* is a comparison of two expressions using one of the comparison operators: =, <>, <, >, <=, >=
- *like_condition* compares an expression with a pattern. Patterns can contain wildcards:
  - **_** means any character (including numbers and special characters).
  - **%** means zero or more characters (including numbers and special characters).
  - **ESCAPE** *STRING* is used to prefix _ and % in patterns that should represent those characters and not the wildcard.

Expressions

```
expr :
  term [  { + | - | CONCAT }  term ... ]

term :
  factor [  { * | / } factor ... ]

factor :
  ( select )
  | ( expr )
  | { + | - } expr
```

```
  | case_expression
  | NUMBER
  | STRING
  | NULL
  | function_call
  | variable_ref
  | property_ref
  | native_sql

case_expression :
  CASE
    case_item [ case_item ... ]
    [ ELSE expr ]
  END

case_item :
  WHEN condition THEN expr

function_call :
  ID ( [ DISTINCT ] { [ * ] | [ expression_list ] } )

property_ref :
   { ID | QUOTED_ID } [ { . | $ } { ID | QUOTED_ID } ... ]

expression_list :
  expr [, expr ... ]

variable_ref :
  ? | :ID
```

Explanation:

- Variables are of two kinds:
  - Positional variables - ? in DQL.
  - Named variables - :<name_of_variable>
- When variables are used in DQL, each variable must have a value bound to the variable.

Lexical Rules

```
CONCAT :
  ||
```

```
STRING :
  [ N | n ] ' text '

NUMBER :
  [ [INT] . ] INT

INT :
  DIGIT [DIGIT ... ]

DIGIT :
  0..9

ID :
  CHAR [ { CHAR | DIGIT } ... ]

CHAR :
  a..z | A..Z | _
```

Explanation:

- *ID* is sequence of characters, numbers and underscores beginning with a character or underscore.
- *QUOTED_ID* is text in quotes.
- *CONCAT* means a concatenation of strings - syntax ||

DQL with 3rd Party Products

Any SQL based product can be used to write DQL queries, the only requirement is that it must be able to use the DQL JDBC driver (for example, with an ODBC-JDBC bridge).

The following sections describe the driver and its use with 3rd party products:

- DQL JDBC Driver on page 63
- DQL in SQL Designers on page 64
- DQL in MS Access on page 64

DQL JDBC Driver

DQL is provided as a JDBC driver. The DQL JDBC driver requires the JDBC driver of the database used during installation, because the DQL query (translated into SQL) is executed directly in the RDBMS.

All the JAR files for the DQL driver are available in `SOA_HOME/client/lib/jdbc`:

- `pl-dql-jdbc.jar`
- hessian-*version*.jar
- Database driver JAR files are copied here during installation (for example, ojdbc14.jar).

Table 5, "DQL JDBC Driver Configuration" describes the driver configuration required to use the driver with 3rd party products.

Table 5. DQL JDBC Driver Configuration

Property	Description
Connection String	jdbc:systinet:http(s)://<username>@<host:port>/<context>[|schema=schema name] • <username> is the SOA Systinet username who executes the DQL query using SOA Systinet permissions security. • <host:port> are the connection details of your SOA Systinet installation (for example, localhost:8080 for HTTP or secure:8443 for HTTPS. • <context> is the application server context, the default is `soa`. • |schema=schema name is optional as it is usually identified automatically, but you may require it if you used a non-default schema during DB configuration. For example, `jdbc:systinet:http://admin@demoserver.acme.com:8080/soa|schema=SOA320`
DB Credentials	The user requires a DB username and password with read access for all tables for the SOA Systinet DB.

Property	Description
DQL JDBC Classname	com.hp.systinet.dql.jdbc.DqlDriver

The DQL JDBC driver must be able to connect to the database from the client. Use the full hostname for your database during installation or setup.

DQL in SQL Designers

SQL Designer software can use the DQL driver if the designer is JDBC-aware.

To configure a JDBC-aware SQL Designer:

1. Add the DQL JDBC JAR files to the classpath.
2. Create a JDBC connection using the properties described in Table 5, "DQL JDBC Driver Configuration".

After you establish the DQL JDBC connection, the following functionality should be available in your SQL Designer:

- Schema introspection, browsing the list of artifact types, property groups, and their properties.
- DQL query execution.

DQL in MS Access

MS Access 2007 can execute DQL queries using an ODBC-JDBC bridge. Before using MS Access, you must configure the ODBC datasource in Windows.

To configure an ODBC-JDBC bridge:

1. Download and install an ODBC-JDBC bridge. For example, *Easysoft ODBC-JDBC Gateway*.
2. Configuration typically consists of:
   - JDBC driver configuration using the properties described in Table 5, "DQL JDBC Driver Configuration".

- Bridge configuration. For details, see the documentation for the bridge software.

DQL syntax varies from the examples given in Introduction to DQL on page 43 in the following cases:

- Complex properties must use $ notation and be enclosed by [ ].

  ```
  personArtifact.[address$addressLines$value], personArtifact.[address$country]
  ```

- To use modifiers such as (include_deleted) use the Pass-Through option in MS Access.
- Left Joins do not work. Use equi-joins instead.
- For fixed properties, use the Pass-Through option in MS Access.
- For timestamps, use the Pass-Through option in MS Access.
- Native queries do not work in MS Access.

5 Exploring the Database

The functionality of Report Editor relies on interaction with the database.

This chapter describes how to examine and setup the database in the following sections:

SDM to Database Mapping Tool

Artifacts in SOA Systinet are stored in the form of XML documents. Their structure is defined by the SOA Definition Model (SDM). Artifacts are serialized into a database over a standard serialization layer. The serialization of data may differ from the norm, based on customer specific extensions or modifications.

The sdm2dbmap tool is a mapping tool that generates a report containing the mapping between your SDM and database tables.

To generate the report, execute the following command:

SOA_HOME/lib/sdm/bin/sdm2dbmap

The mapping report is output to the following file:

```
SOA_HOME/lib/sdm/build/sdm2dbmap.html
```

The output consists of the following parts:

- A top level 1:1 mapping between SDM artifacts and DB tables. Each artifact listed, maps directly to one table.
- A list of artifacts. Each artifact in the report maps each SDM property to a specific column in the table. There are also associated tables and foreign keys, joined using the primary key of the artifact table.
- A report documenting the DB schema for all database tables coming from the SDM. Tables with names ending in _Rev are used to store older revisions.

Adding a JDBC Driver

To connect to a database you must specify a JDBC driver.

To add a JDBC driver:

1. In the Database Connections dialog box, click **Manage Drivers**.

   The Manage JDBC Drivers dialog box opens.

2. Click **Add** to browse your filesystem for a driver.

   HP Software recommends using the same JDBC driver used during SOA Systinet installation.

3. Select the driver, and then click **Open** to add it to the list of drivers in the **Manage JDBC Drivers** dialog box.

Changing the Data Collection Settings

By default, the editor limits the amount of data collected to 20 schemas and 100 tables in the Query dialog box.

To change the data collection settings:

1. From the menu, select **Windows→Preferences**.

2 Expand **Report Design→Data Set Editor**, and then select **JDBC Data Set**.

3 Change the number of schemas and tables as required, and then click **OK**.

Optimizing the Database

If you frequently use particular fields for joins in your queries, create an index for that field to improve performance.

To create an Oracle index:

1 Log on to the sqlplus or isqlplus console as the system user.

2 Enter the following command:

create index ix_docrel_optimize2 on ry_docRel(sourceId, rtype);

As a minimum optimization, HP Software recommends the following:

- **create index ix_res_optimize1 on ry_resource(fk_artifactType, m_deleted, id, m_path);**
- **create index ix_docrel_optimize2 on ry_docRel(sourceId, rtype);**

Writing SQL Queries

Although it is possible to use the query editor in Workbench, it is often more convenient to use a specialized tool to develop queries.

This section describes some typical methods and provides examples to help you design your queries.

These examples were created using Oracle Developer for use with an Oracle Database. Changes may be required to use these queries with other database types.

This section contains the following methods and examples:

Joining Tables in Queries

To join tables in your queries, add the following to the WHERE clause of your SELECT statement:

- Key or foreign key condition
- Discriminator expression
- Check the deleted flag (0 means false)

Example:

```
WHERE ryga_bsnService.id = rygt_ctgryPty.fk_resource_id
    AND rygt_ctgryPty.discriminator = 'bsnPolicy_iBag'
    AND bsnRes.m_deleted = '0'
```

Example: Business Service SELECT

This example query returns details for business services that are marked as ready for consumption:

```
SELECT
    bsn.id bsn_id,
    bsn.name_val bsn_name,
    bsnRes.m_path bsn_path,
    bsn.serviceVersion_val bsn_version,
    bsn.description_val bsn_description,
    bsn.productionStage_name bsn_productionStage

FROM ryga_bsnService bsn
    INNER JOIN ry_resource bsnRes ON
    (
        bsnRes.id = bsn.id
        AND bsnRes.m_deleted = '0'
```

```
    )

WHERE bsn.readyForConsumption_val ='1'
ORDER BY lower(bsn.name_val)
```

Table ry_bsnService contains the main fields for business services.

Table >ry_resource contains general information about every artifact (for all artifact types).

The inner join to ry_resource in the FROM clause excludes deleted artifacts.

Example: Contract SELECT

This example query returns details for contracts that have been accepted:

```
SELECT
    contract.id ctrct_id,
    contract.name_val ctrct_name,
    contract.description_val ctrct_description,
    contract.contractstate_name ctrct_state,
    providerContractRel.targetpath ctrct_targetpath

FROM ry_contract contract
    INNER JOIN ry_docrel providerContractRel ON
    (
        providerContractRel.rtype = '{http://systinet.com/2005/05/soa/model/property}providerContractor'
        AND providerContractRel.obsolete='0'
        AND providerContractRel.deleted='0'
        AND providerContractRel.targetDeleted='0'
        AND providerContractRel.sourceId = contract.id
    )
    INNER JOIN ry_resource contractRes ON
    (
        contractRes.id =contract.id
        AND contractRes.m_deleted='0'
    )

WHERE contract.contractState_val = 'uddi:systinet.com:soa:model:taxonomies:contractAgreementStates:accepted'
```

Table ry_contract contains the main fields for contracts.

Table ry_docrel contains artifact relationship details.

The inner join to ry_docrel in the FROM clause excludes contracts where the provider-contract relationship is obsolete, deleted, or where the provider does not exist.

Example: Combined Business Service and Contract SELECT

Example: Business Service SELECT on page 70 and Example: Contract SELECT on page 71 can be combined to list the names of the contracts and the business service to which they apply.

```
SELECT
    contract.id ctrct_id,
    contract.name_val ctrct_name,
    bsn.id bsn_id,
    bsn.name_val bsn_name

FROM ryga_bsnService bsn
    INNER JOIN ry_resource bsnRes ON
    (
        bsnRes.id = bsn.id
        AND bsnRes.m_deleted = '0'
    ),
    ry_contract contract
    INNER JOIN ry_docrel providerContractRel ON
    (
        providerContractRel.rtype = '{http://systinet.com/2005/05/soa/model/property}providerContractor'
        AND providerContractRel.obsolete='0'
        AND providerContractRel.deleted='0'
        AND providerContractRel.targetDeleted='0'
        AND providerContractRel.sourceId = contract.id
    )
    INNER JOIN ry_resource contractRes ON
    (
        contractRes.id =contract.id
        AND contractRes.m_deleted='0'
    )

WHERE bsn.readyForConsumption_val ='1'
   AND  contract.contractState_val = 'uddi:systinet.com:soa:model:taxonomies:contractAgreementStates:accepted'

    AND providerContractRel.targetId = bsn.id
ORDER BY lower(bsn.name_val)
```

By merging the queries you create an n:1 relationship between contracts and business services.

Example: Accepted Contract Count for a Business Service

This example returns business service details and the number of accepted contracts for each service:

```
SELECT
    bsn.id bsn_id,
    bsn.name_val bsn_name,
    bsnRes.m_path bsn_path,
    bsn.serviceVersion_val bsn_version,
    bsn.description_val bsn_description,
    bsn.productionStage_name bsn_productionStage,

    ( -- Contracts --
    SELECT count (0)
    FROM ry_contract contract
        INNER JOIN ry_docrel providerContractRel ON
        (
          providerContractRel.rtype = '{http://systinet.com/2005/05/soa/model/property}providerContractor'

           AND providerContractRel.obsolete='0'
           AND providerContractRel.deleted='0'
           AND providerContractRel.targetDeleted='0'
           AND providerContractRel.sourceId = contract.id
        )
        INNER JOIN ry_resource contractRes ON
        (
            contractRes.id =contract.id
            AND contractRes.m_deleted='0'
        )
    WHERE  contract.contractState_val =
'uddi:systinet.com:soa:model:taxonomies:contractAgreementStates:accepted'
        AND providerContractRel.targetId = bsn.id
    ) ctrct_count

    FROM ryga_bsnService bsn
        INNER JOIN ry_resource bsnRes ON
        (
            bsnRes.id = bsn.id
            AND bsnRes.m_deleted = '0'
        )

WHERE bsn.readyForConsumption_val ='1'
ORDER BY lower(bsn.name_val)
```

6 Deploying Reports

When your report is ready, you must deploy it to the SOA Systinet server.

Report Editor offers two methods:

- Deploy a report directly to the SOA Systinet server.

  For details, see Deploying a Report to SOA Systinet on page 75.

- Deploy a set of reports as an extension to the SOA Systinet server.

  This process consists of the following steps:

  1 Creating a Reporting Extension on page 77

  2 Applying Extensions on page 77

  3 Redeploying the EAR File on page 82

After deployment, you can access your report in various ways.

For details, see Accessing Reports on page 83.

You can remove custom reports from the SOA Systinet server.

For details, see Removing Report Definitions from SOA Systinet on page 83.

Deploying a Report to SOA Systinet

The SOA Systinet plug-ins for Report Editor enable you to deploy your report directly to the SOA Systinet server.

To deploy a report to SOA Systinet:

1 Make sure that the SOA Systinet server is running.

2 In the Project Explorer or Navigator view, open the context menu for the report design you want to deploy, and select **HP SOA Systinet→Publish Report**.

You will be asked if you want to publish the default library. If you do not want to be asked again, you can set this preference in the Preference menu of Report Editor.

Expand **Window→Preferences→HP SOA Systinet→Report Editor** and select whether you want Assertion Editor to prompt you every time you publish, always publish the default library, or never publish the default library.

Custom Policy Manager reports do not contain **Notify** functionality by default. To add this functionality you must add the report name to the notification context file.

To add notify functionality to custom PM reports:

1 Deploy your report to SOA Systinet as described above.

2 Open `SOA_HOME\deploy\hp-soa-systinet.ear\lib\pm-persistence.jar\META-INF\pmNotificationContext.xml` with a text editor.

3 Add a `value` element containing the report definition name to the file.

For example:

```
<bean id="pm-persistence.systemReportChecker"
          class="com.hp.systinet.policy.notification.SystemReportChecker">
  <property name="reports">
    <set>
      <!-- Systinet system reports - report definition IDs -->
      <value>acs_basic</value>
      ...
      <value>MyTestReport</value>
    </set>
  </property>
</bean>
```

4 Save `pmNotificationContext.xml`.

5 Restart the SOA Systinet server.

Creating a Reporting Extension

You can also deploy a set of reports as an extension.

To create a reporting extension:

1 In the Project Explorer, open the context menu for the project you want to deploy and select **HP SOA Systinet→Build Extension**.

The Build Extension Wizard opens.

2 In the Build Extension Wizard, input the parameters you require.

For parameter descriptions, see Build Extension Wizard on page 101.

3 Click **Finish** to create the extension.

Deploy the extension to the SOA Systinet server using the Setup Tool.

For details, see Applying Extensions on page 77.

Applying Extensions

You can extend SOA Systinet by adding libraries or JSPs to the deployed EAR files, by modifying the data model, by configuring the appearance of the UI, and by importing prepackaged data.

Extensions to SOA Systinet come from the following sources:

- **Customization Editor**

  Typical extensions created by Customization Editor contain modifications to the data model and artifact appearance, and possibly data required by the customization (taxonomies). They may also contain new web components, which may include custom JSP and Java code.

- **Assertion Editor, Report Editor, and Taxonomy Editor**

These extensions contain assertion, reporting, and taxonomy data only. They do not involve changes to the data model.

The Setup Tool opens the EAR files, applies the extensions, and then repacks the EAR files.

Apply extensions according to one of the following scenarios:

- Single-Step Scenario on page 79

  The Setup Tool performs all the processes involved in applying extensions, including any database alterations, as a single step.

- Decoupled DB Scenario on page 81

  Database SQL scripts are run manually. The Setup Tool performs the other processes as individual steps that are executable on demand. This scenario is useful in organizations where the user applying extensions does not have the right to alter the database, which is done by a database administrator.

In some specific circumstances (underscores and numbers in property names), extension application may fail because SOA Systinet cannot create short enough database table names (31 character maximum for most databases).

The error in `setup.log` resembles the following:

```
[java] --- Nested Exception ---
[java] java.lang.RuntimeException: cannot reduce length of identifier
  'ry_c_es_Artifact02s_c_priEspPty01Group_c_priEspPty01',
  rename identifier elements or improve the squeezing algorithm
[java] at com.systinet.platform.rdbms.design.decomposition.naming.impl.
  BlizzardNameProviderImpl.getUniqueLimitedLengthName(BlizzardNameProviderImpl.java:432)
[java] at com.systinet.platform.rdbms.design.decomposition.naming.impl.
  BlizzardNameProviderImpl.filterTableName(BlizzardNameProviderImpl.java:374)
```

This is due to SOA Systinet using an older table naming algorithm in order to preserve backward compatibility with SOA Systinet 3.00 and older versions.

If you do not require backwards compatibility with these older versions, you can change the table naming algorithm.

To change the table naming algorithm:

1. Open `SOA_HOME/lib/pl-repository-old.jar#META-INF/rdbPlatformContext.xml` with a text editor.
2. In the `rdb-nameProvider` bean element, edit the following property element:

   <property name="platform250Compatible" value="false"/>

3. Save `rdbPlatformContext.xml`

This solution only impacts properties with multiple cardinality. If the problem persists or you need to preserve backwards compatibility, then review the property naming conventions in your extension.

Single-Step Scenario

Follow this scenario if you have permission to alter the database used for SOA Systinet.

To apply extensions to SOA Systinet in a single step:

1. Make sure that all extensions are in the following directory:

   `SOA_HOME/extensions`

   The Setup Tool automatically applies all extensions in that directory.

   If you are applying extensions to another server, substitute the relevant home directory for `SOA_HOME`.

2. Stop the server.
3. Start the Setup Tool by executing the following command:

   SOA_HOME/bin/setup.bat(sh)

4. Select the **Apply Extensions** scenario, and click **Next**.

The Setup Tool automatically validates the step by connecting to the server, copying the extensions, and merging the SDM configuration.

If your extension does not contain data model changes, select **Apply Extensions Don't Touch DB**.

5 Click **Next** for each of the validation steps and the setup execution.

This process takes some time.

6 Click **Finish** to end the process.

7 Deploy the EAR file:

- **JBoss**

  The Setup Tool deploys the EAR file automatically.

  If you need to deploy the EAR file to JBoss manually, see Redeploying the EAR File on page 82.

- **Other Application Servers**

  You must deploy the EAR file manually.

  For application server-specific details, see "Deploying the EAR File" in the *HP SOA Systinet Installation and Deployment Guide*.

8 Restart the server.

Applying an extension that modifies the SDM model may drop your full text indices.

`SOA_HOME/log/setup.log` contains the following line in these cases:

```
Could not apply alteration scripts, application will continue with slower DB drop/create/restore
scenario. ... .
```

In these cases, reapply full text indices as described in the "Enabling Full Text Search" section of the *HP SOA Systinet Installation and Deployment Guide*.

Decoupled DB Scenario

Follow this scenario if the user who applies extensions does not have permission to modify the database.

To apply extensions and modify the database separately:

1. Make sure that all extensions are in the following directory:

   ```
   SOA_HOME/extensions
   ```

   The Setup Tool automatically applies all extensions in that directory.

2. Stop the server.

3. Start the Setup Tool by executing the following command:

   SOA_HOME/bin/setup -a.

4. Select the **Apply Extensions** scenario, and click **Next**.

5. Click **Next**, to execute the extension application, and exit the Setup Tool.

6. Provide the scripts from `SOA_HOME/sql` to the database administrator.

   The database administrator can use `all.sql` to execute the scripts that drop and recreate the database schema.

7. Execute the Setup Tool in command-line mode to finish the extension application:

   SOA_HOME/bin/setup -c

8. Redeploy the EAR file:

- **JBoss**

  The Setup Tool deploys the EAR file automatically.

  If you need to deploy the EAR file to JBoss manually, see Redeploying the EAR File on page 82.

- **Other Application Servers**

  You must deploy the EAR file manually.

  For application server-specific details, see "Deploying the EAR File" in the *HP SOA Systinet Installation and Deployment Guide*.

Redeploying the EAR File

After using the Setup Tool to apply extensions or updates, you must redeploy the EAR file to the application server. For JBoss, you can do this using the Setup Tool.

For other application servers, follow the EAR deployment procedures described in the "Deploying the EAR File" in the *HP SOA Systinet Installation and Deployment Guide*.

To redeploy the EAR file to JBoss:

1. Stop the application server.
2. Start the Setup Tool by executing the following command:

   SOA_HOME/bin/setup.bat(sh).
3. Select the **Advanced** scenario, and click **Next**.
4. Scroll down, select **Deployment**, and then click **Next**.

   When the Setup Tool validates the existence of the JBoss Deployment folder, click **Next**.
5. Click **Finish** to close the Setup Tool.

6 Restart the application server.

Accessing Reports

Use Cases on page 19 describes how SOA Systinet uses specific functionality in the UI for each report category.

It is also possible to directly access the reports in the SOA Systinet server and obtain alternative outputs.

In your browser, the following URLs use the Service Portfolio report as an example:

- `https://hostname:port/reporting/reports/`
- `https://hostname:port/reporting/reports/service_portfolio?alt=text/plain`
- `https://hostname:port/reporting/reports/service_portfolio/documents/`
- `https://hostname:port/reporting/reports/service_portfolio/documents/1/?alt=text/plain`

The last URL is an instance of the report. The page source contains alternate URLs. Change the URL to return a comma separated output of the report as follows:

- `https://hostname:port/reporting/reports/service_portfolio/documents/1/content?alt=text/csv`

Removing Report Definitions from SOA Systinet

You can remove custom report definitions from SOA Systinet.

To remove a single report, use the context menu option.

To remove custom reporting extensions:

1 Remove any custom report extensions from `SOA_HOME/extensions`.

2 Execute the Setup Tool using the apply extensions scenario as described, in "Setup Tool" in the *HP SOA Systinet Administrator Guide*.

7 Use Case Examples

This chapter describes the following use cases:

- Example: Failure Impact Report for the Reporting Tool on page 85

  Explains how to create a failure impact report for use with the reporting tool in SOA Systinet.

- Example: Failure Impact Report for the Dashboard on page 97

  Explains how to create a failure impact report for the SOA Systinet Dashboard.

Each example is based on use cases described in Use Cases on page 19.

Example: Failure Impact Report for the Reporting Tool

To demonstrate the reporting tool use case described in Creating a Report for the Reporting Tool on page 20, follow this example:

To create a Failure Impact Report and execute it with a Reporting Tool:

1 Create the failure impact report definition.

Follow the procedure described in Creating a Report Definition on page 37 with the following inputs:

Parameter	Definition
Name	Failure Impact
Description	Summary of Business Service Failure Impact Status

2 Create the Failure Impact data set.

For details, see Example: Failure Impact Data Set on page 87.

3 Create the Failure Impact Report layout.

For details, see Example: Failure Impact Report Layout for the Reporting Tool on page 91.

4 The Failure Impact Report must be categorized for use with an SOA Systinet Reporting Tool.

Follow the procedure described in Categorizing Reports on page 41, and select category **Platform - Tools Report**.

5 Deploy the Failure Impact Report to SOA Systinet.

For details, see Deploying a Report to SOA Systinet on page 75.

6 In SOA Systinet, create a Failure Impact Reporting Tool.

In the New Reporting Tool page, input the following parameters:

Parameter	Definition
Name	Failure Impact Tool.
Description	Overview of the Failure Impact Status of Business Services.
Report Definition	Select **Failure Impact** from the drop-down list.

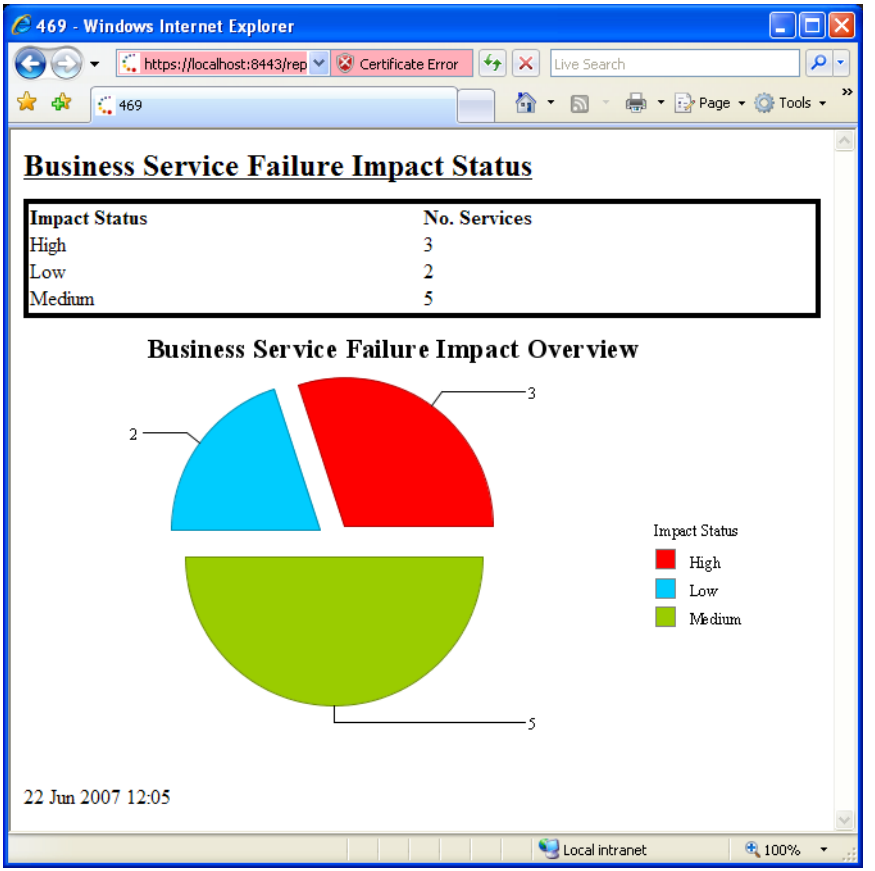
For details, see the "Creating a Reporting Tool" section of the *HP SOA Systinet User Guide*.

7 In SOA Systinet, execute the Failure Impact Reporting Tool.

For details, see the "Running a Reporting Tool" section of the *HP SOA Systinet User Guide*.

8 In SOA Systinet, access the Failure Impact Report.

In the SOA Systinet Tools tab Report Launcher portlet, click **Failure Impact Tool** to view the HTML version of the report, or one of the other format links to view the report in that format.



For details, see the "Report Launcher Portlet" section of the *HP SOA Systinet User Guide*.

Example: Failure Impact Data Set

To demonstrate the reporting tool use case described in Creating a Data Set on page 39, follow this example.

To create the Failure Impact data set:

1 Follow the procedure described in Creating a Data Set on page 39 with the following inputs.

2 In the New Data Set dialog box, input the following parameters:

Parameter	DQL Option	SQL Option
Data Set Name	Failure Impact	
Data Source	dqlDatabase	Database
Data Set Type	DQL Select Query	SQL Select Query

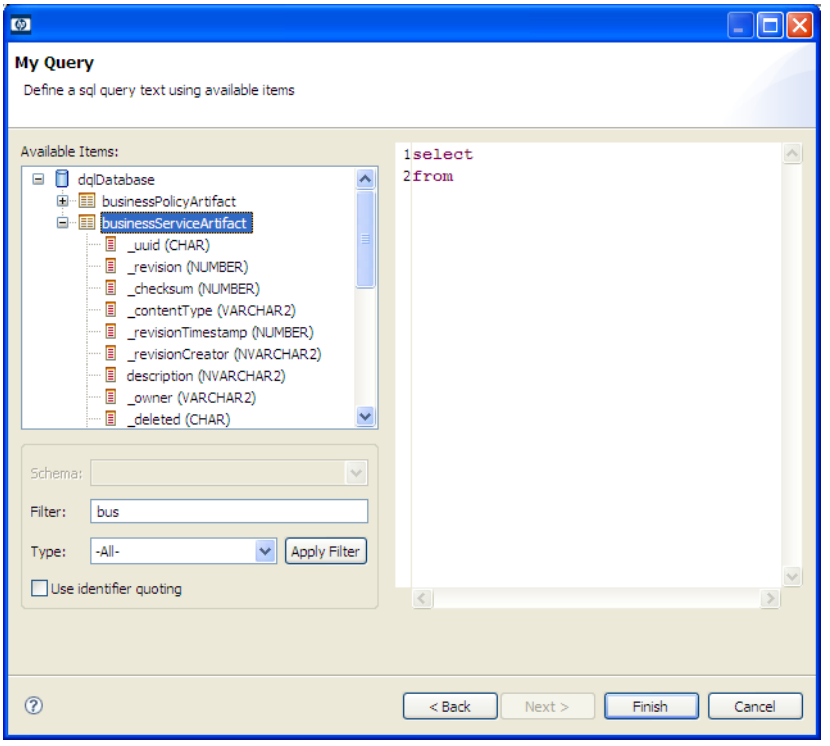
3 Use the filter to only display the data that you want to use.

For SQL queries, all standard tables in SOA Systinet begin with RYGA.

4 Use Available Items to explore the data and identify the tables and columns you need for your query.

For this report all the information required is for business services:

- For DQL, artifact type **businessServiceArtifact**.
- For SQL, table **RYGA_BSNSERVICE**.



5 Construct your query by typing in the query input area and dragging and dropping items from **Available Items**.

For this report the DQL query is:

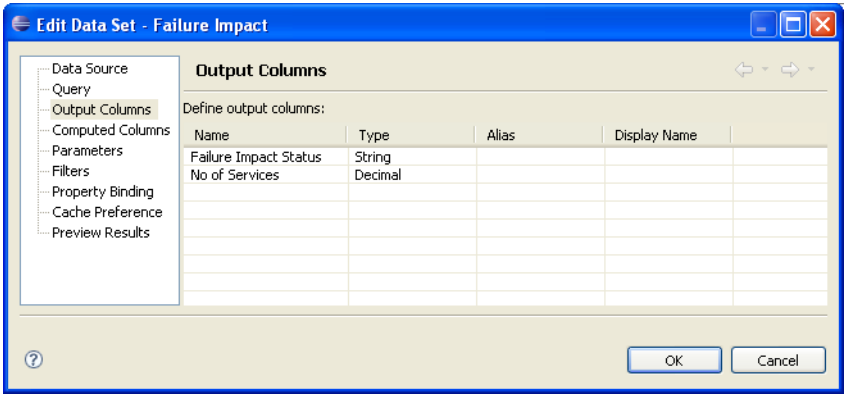
```
select bs.criticality.name as "Failure Impact Status",
           count (bs.criticality.name) as "No. of Services"
 from businessServiceArtifact bs
 group by bs.criticality.name
```

For this report the SQL query is:

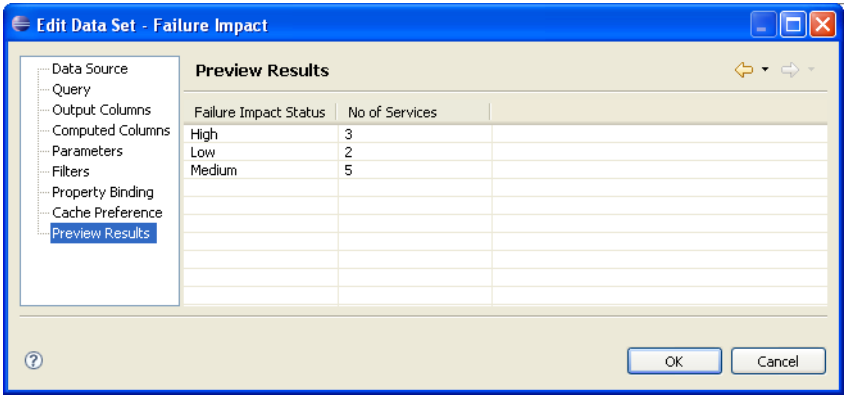
```
select RYGA_BSNSERVICE.CRITICALITY_NAME as "Failure Impact Status",
           count(RYGA_BSNSERVICE.CRITICALITY_NAME) as "No of Services"
```

```
from RYGA_BSNSERVICE
group by RYGA_BSNSERVICE.CRITICALITY_NAME
```

6 Click **Finish** to complete your query and view the Output Columns for the data set.



7 Click **Preview Results** to view the actual data in your database.



8 Click **OK** and press **Ctrl+S** to save the data set as part of the report.

Example: Failure Impact Report Layout for the Reporting Tool

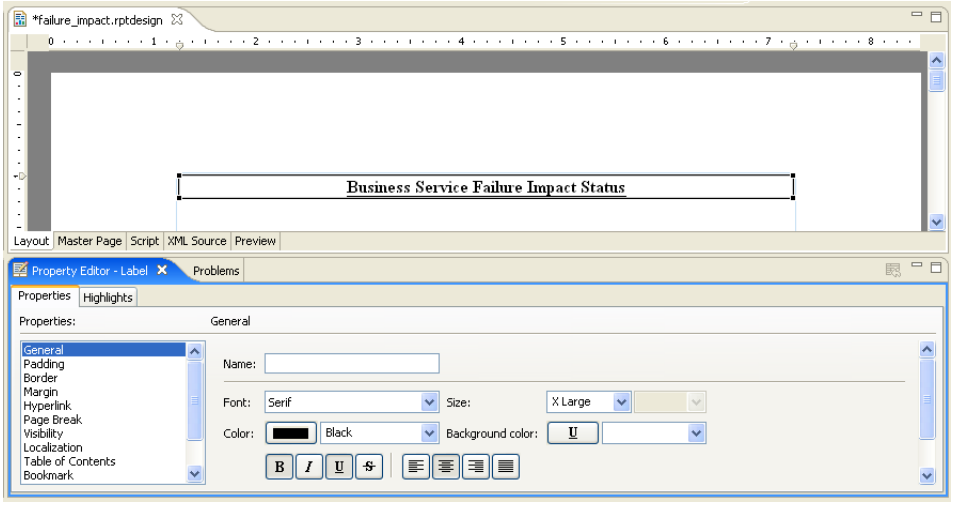
To demonstrate the reporting tool use case referred to in Designing a Report Layout on page 40, follow this example.

To Create the Layout of the Failure impact Report:

1 In the failure_impact.rptdesign editor view, right-click and select **Insert→Label**.

2 Type the report heading `Business Service Failure Impact Status`.

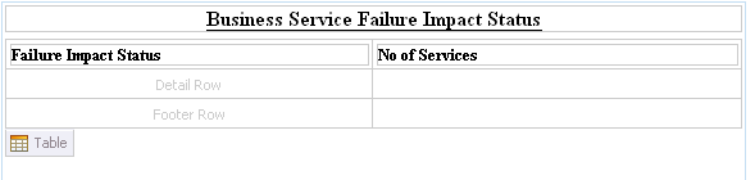
3 Use the Property Editor view to change the format of the heading.



4 In a blank area of the failure_impact.rptdesign editor view, right-click and select **Insert→Table**.

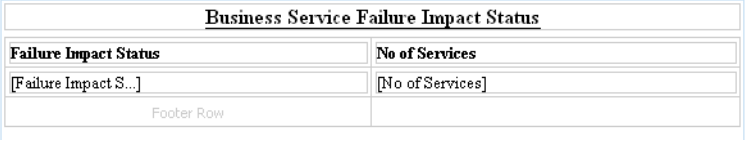
5 Input the table parameters and select the data set. In this case, 2 columns and the **Failure Impact** data set.

6 Select the left column header row, right-click and select **Insert→Text**. Input column header `Failure Impact Status`, and then click **OK**. Repeat for the right column header, `No of Services`.

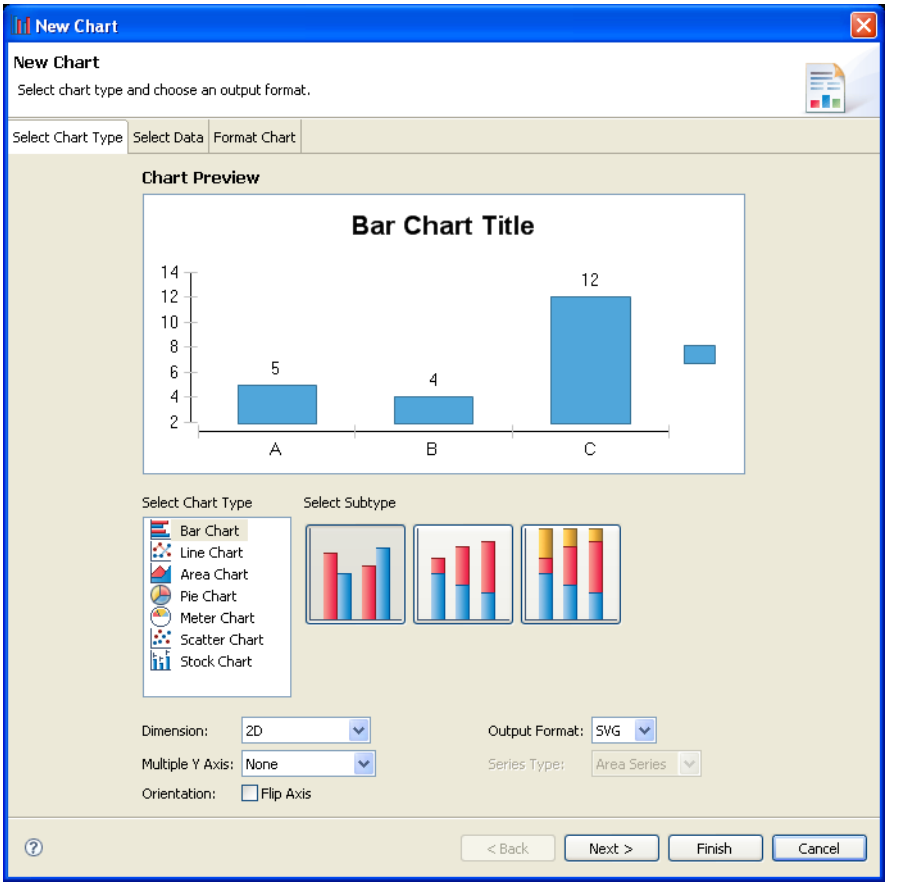


7 In the Data Explorer, expand **Data Sets→Failure Impact**.

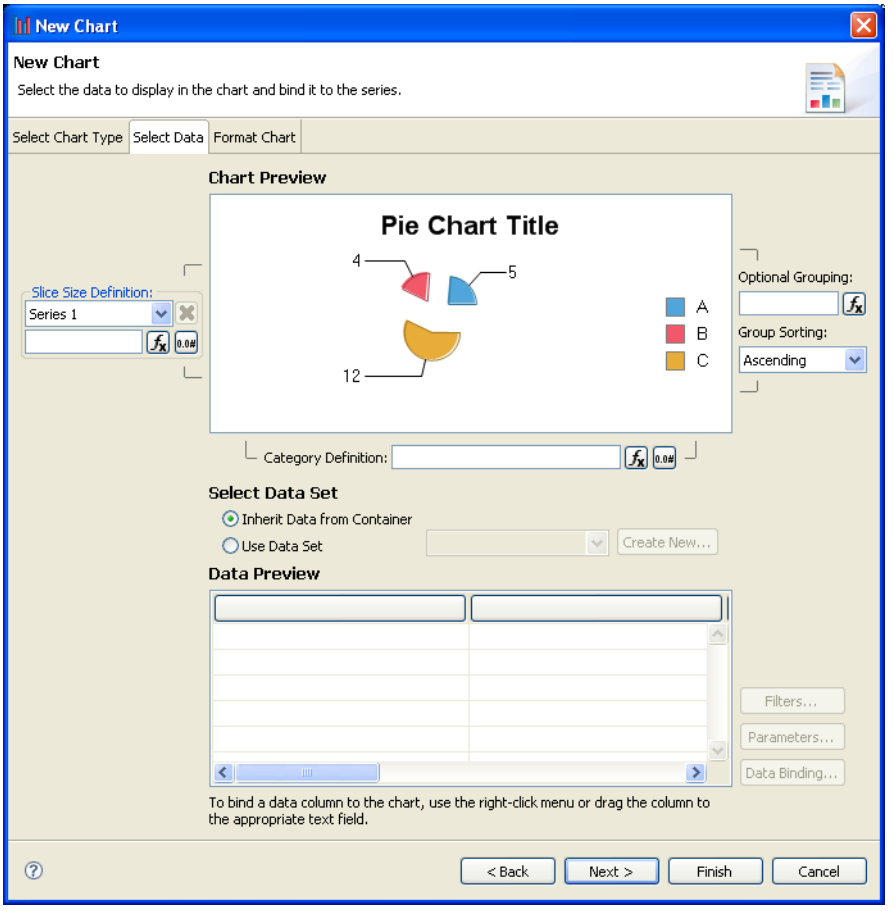
8 Drag **Failure Impact Status** from the Data Explorer to the left detail cell. Repeat for **No of Services** and the right detail cell.



9 In a blank area of the failure_impact.rptdesign view, right-click and select **Insert→Chart** to open the New Chart dialog box.



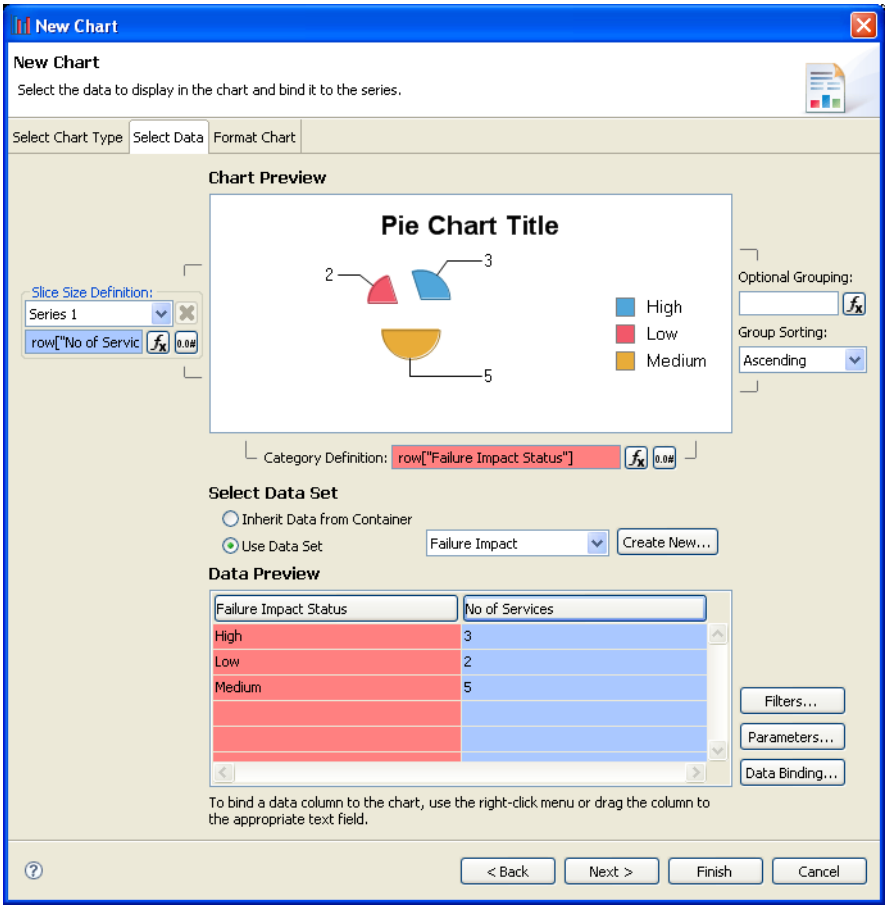
10 This report requires a pie chart, select **Pie Chart**, and then click **Next**.



11 Under Select Data Set, select **Use Data Set** and **Failure Impact** from the drop-down list.

12 Drag **Failure Impact Status** from **Data Preview** to the **Category Definition** input.

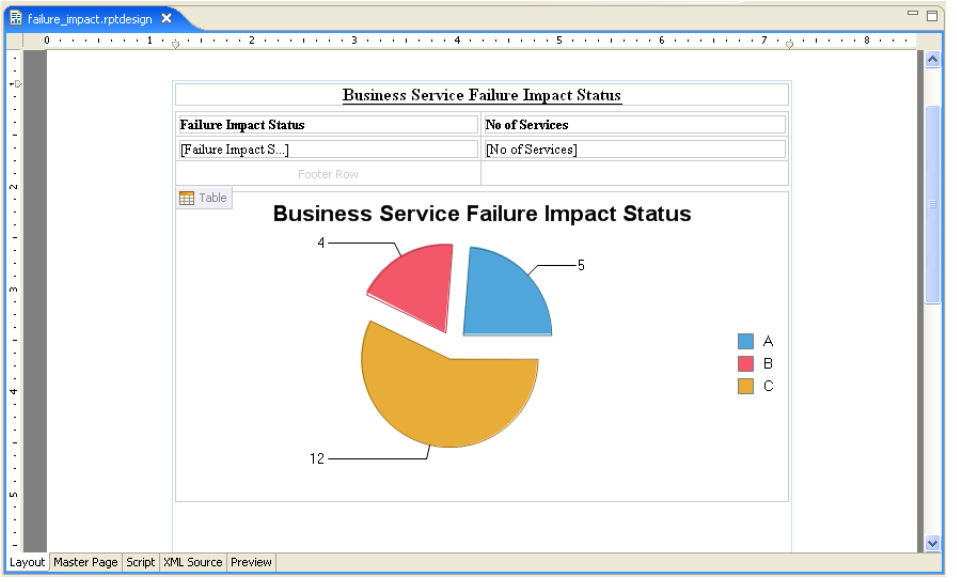
13 Drag **No of Services** from **Data Preview** to the **Slice Size Definition** input.



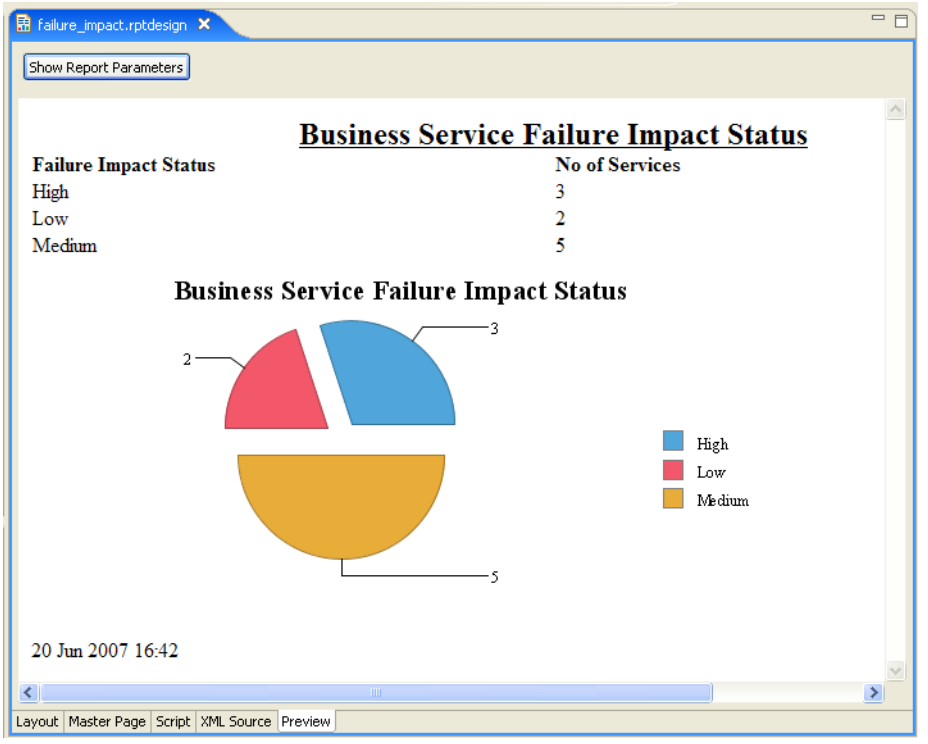
14 Click **Next** to format the chart appearance.

15 Select **Chart Area**, amend **Chart Title** to `Business Service Failure Impact Status`, and then click **Finish** to add the chart to the report definition.

16 Drag the chart area outline to the size you require, and then press **Ctrl+S** to save the report definition.



17 Select the **Preview** tab to view the report with data from your data source.



Example: Failure Impact Report for the Dashboard

SOA Systinet enables you to add small reports to the Dashboard. These reports have a limited width so some layout configuration is required.

This example uses the data set and table used in Example: Failure Impact Report for the Reporting Tool on page 85.

To create the failure impact report for the SOA Systinet Dashboard:

1 Create the failure impact dashboard report definition.

Follow the procedure described in Creating a Report Definition on page 37, with the following inputs:

Parameter	Definition
Name	Failure Impact Dashboard.
Description	Graph of Business Service Failure Impact Status.

2 Do one of the following:

- Create the failure impact data set.

  For details, see Example: Failure Impact Data Set on page 87.

- Copy the data set from the tools Failure Impact Report to the dashboard Failure Impact Report.

  For details, see Example: Copying the Failure Impact Data Set on page 99.

3 Create the Failure Impact Dashboard Report layout.

For details, see Example: Failure Impact Report Layout for the Dashboard on page 99.

4 The Failure Impact Dashboard Report must be categorized for use with the SOA Systinet Dashboard.

Follow the procedure described in Categorizing Reports on page 41, and select category **Platform - Dashboard Report**.

5 Deploy the Failure Impact Dashboard Report to SOA Systinet.

For details, see Deploying a Report to SOA Systinet on page 75.

6 Add the Failure Impact Dashboard Report to the SOA Systinet Dashboard.

For details, see the "Adding a Content Report" section of the *HP SOA Systinet User Guide*.

Select **Failure Impact Dashboard** from the list.

Example: Copying the Failure Impact Data Set

This example forms part of the procedure for the use case Example: Failure Impact Report for the Dashboard on page 97.

To copy the Failure Impact data set:

1. Double-click the tools Failure Impact Report design to open and select it.
2. In the Data Explorer, expand **Data Sets**.
3. Right-click **Failure Impact** and select **Copy**.
4. Click the **FailureImpactDashboard.rptdesign** editor to select it.
5. In the Data Explorer, right-click **Data Sets**, and select **Paste**.
6. Press **Ctrl+S** to save your changes.

Example: Failure Impact Report Layout for the Dashboard

This example forms part of the procedure for the use case Example: Failure Impact Report for the Dashboard on page 97.

To create the layout of the Failure Impact Dashboard Report:

1. In the **failure_impact_dashboard.rptdesign** view, select the **Master Page** tab.
2. In the Property Editor - Master Page view, select **Advanced**.
3. Scroll down the Property table until Type is visible.
4. Click **Type** to activate the drop-down value list, and then select **Custom**.
5. In the Property Editor - Master Page, select **General** to view the page size.
6. Change the **Header** and **Footer** to 5 points, the **Width** to 2 inches, and the **Height** to 3 inches.

The maximum width of a Dashboard Report is 211 pixels. There is no maximum height. Report Editor has problems dealing with pixel sizing so ins and points are used instead for this example.

7 In the Property Editor - Master Page, select **Margins** to view the page margins.

8 Set all the margins to 5 points.

9 In the failure_impact_dashboard.rptdesign editor view, select the **Layout** tab.

10 Do one of the following:

- Follow the procedure described in Example: Failure Impact Report Layout for the Reporting Tool on page 91 from Step 4 to Step 8 to add the table to your dashboard report.
- Copy the table from **failure_impact.rptdesign** and paste it to **failure_impact_dashboard.rptdesign**.

11 Press **Ctrl+S** to save the report definition.

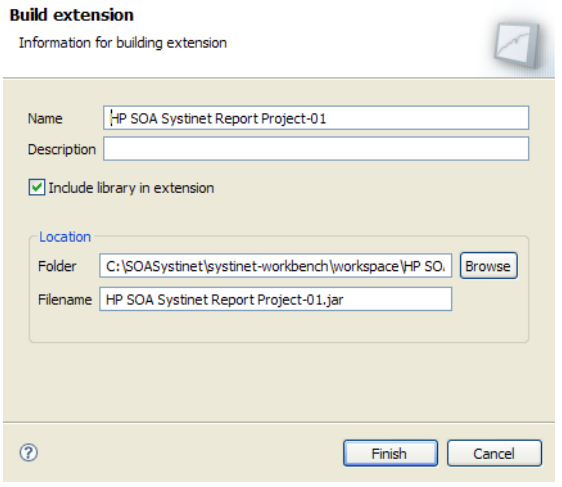
A Dialog Boxes

Each Report Editor input dialog is described in the following sections:

- Build Extension Wizard on page 101. Creating a report extension.
- New Data Set on page 102 Creating a new data set.
- New Report Project Wizard on page 103 Creating a new report project.

Build Extension Wizard

Enter general parameters for the report extension.

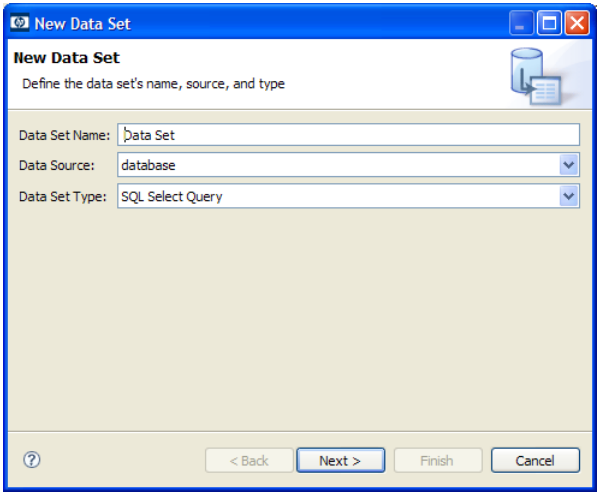


Option	Definition
Name	The name of the reporting extension.

Option	Definition
Description	A description for the reporting extension.
Include library in extension	Select this check-box if you want to include the default library in the extension.
Folder	The location of the reporting extensions folder.
Filename	The filename of the reporting extension.

New Data Set

Enter a name, then enter a source and type for the new data set.



Parameter	Definition
Data Set Name	Input a name for the data set.
Data Source	Select the data source from the drop-down list. The selection of a DQL or SQL datasource determines the exact query language required for your query.
Data Set Type	Choose one of the options from the drop-down list: • Select Query

	• Stored Procedure Query

New Report Project Wizard

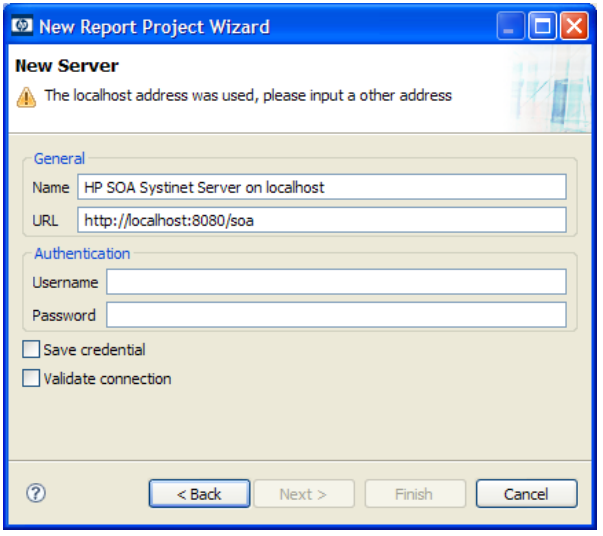
The New Report Project Wizard consists of the following stages depending on the options you select:

1 New Report Project Wizard: New Server on page 103

2 New Report Project Wizard: Default Library Configuration - Create a new data source on page 104

New Report Project Wizard: New Server

Create a new server for the project and optionally specify your authentication credentials.

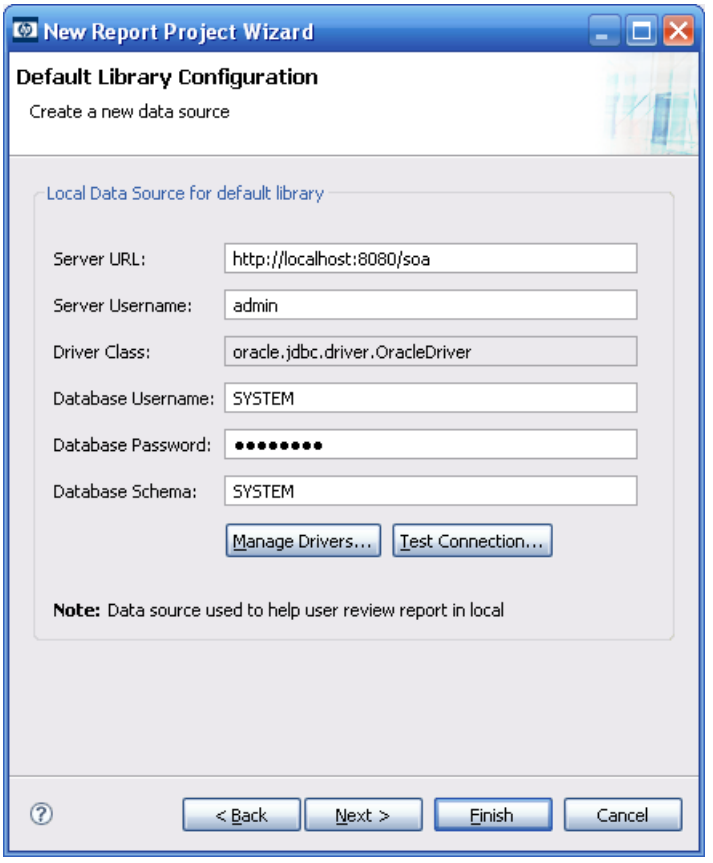


Parameter	Definition
Name	The name of the server to display in the report editor.
URL	The location of the SOA Systinet server.

Parameter	Definition
Username and Password	Credentials for access to the SOA Systinet server.
Save credentials	Select to store the input credentials.
Validate connection	Select to validate the server connection.  The SOA Systinet server must be running to validate.

New Report Project Wizard: Default Library Configuration - Create a new data source

Configure the new data source and specify your login credentials.



Parameter	Definition
Server URL	The location of the SOA Systinet server.
Server Username	Your SOA Systinet login.
Driver Class	Select the driver class for your database from the drop-down list.
Database Username and Password	Your database credentials.
Database Schema	The database schema name.

Parameter	Definition
Manage Drivers	Add, delete, or restore JAR files, and edit drivers.
Test Connection	Test the server connection using the specified parameters.

B Troubleshooting

This appendix describes some common problems and their resolutions:

Workbench Looks Different from the Pictures in the Documentation

Problem

Workbench does not look exactly as depicted in the user documentation. The most likely reason for this disparity is that you are in the wrong perspective.

Solution

Switch to the Platform perspective:

- From the menu, select **Window→Open Perspective→Platform**.

The Platform Perspective is Missing Views

Problem

There are views missing from the Platform perspective. The most likely reason for this is that some of the views are closed.

Solution

Reset the perspective:

- From the menu, select **Window→Reset Perspective**.

Incomplete Table List

Problem

The list of tables is incomplete. Workbench limits the number of schemas and tables accessed for performance reasons.

Solution

Change the settings, as described in Changing the Data Collection Settings on page 68.

Oracle Developer Queries Cause Errors in Workbench

Problem

Workbench returns errors for imported queries. The most likely reason is that your table names do not include the schema.

Solution

Include the schema name in the **FROM** clause of your query. For example, `soadb.ry_docrel`.

Workbench Displays Scrambled Table Names

Problem

The tables names are unreadable. These are most likely to be deleted tables stored in Oracle 10gR2.

Solution

Either change the maximum number of tables to 3000, as described in Changing the Data Collection Settings on page 68, or purge the deleted tables.

To purge deleted tables:

1. Log on to the sqlplus ot isqlplus console as the system user.
2. Enter the following commands:
   - **PURGE RECYCLEBIN**
   - **PURGE DBA_RECYCLEBIN**

The Report Result does not Appear

Problem

The report result is not deployed to the SOA Systinet server.

Solution

Check the report result:

1. In your browser, navigate to the latest report instance page. For example, `https://hostname:port/reporting/reports/service_portfolio/documents/1/?alt=text/plain`.
2. Check the following status elements:
   - `<category label="finished" scheme="urn:com:systinet:reporting:execution:status" term="finished"/>`
   - `<category label="report document" scheme="urn:com:systinet:reporting:kind" term="urn:com:systinet:reporting:kind:document"/>`

   A correctly finished report contains the *`finished`* value.

If the report execution does not finish, check the JMS settings, JMS queue, or the reporting service logs to analyze the bottleneck.

SQL Error on Report Previews

Problem

When viewing the Preview page of a report, the following SQL error is shown:

```
ReportDesign (id = 1):
+ Cannot get the result set metadata.
SQL statement does not return a ResultSet object.
SQL error #1: Invalid column name ROWNUM
```

This error occurs because the Preview is not aware of the database type that the query is applicable to.

Solution

Check the database type parameter:

1. In the Preview page, click **Show Report Parameters**.
2. Verify that the database-type parameter matches the database you use.

C Eclipse Plug-in Requirements

Ensure that the following prerequisite plug-ins are added to your Eclipse development platform based on the required Workbench components:

- DTP SDK 1.5

  Required for Customization Editor and Report Editor.

  http://www.eclipse.org/datatools/downloads.php

- EMF SDO Runtime 2.3.0

  Required for Customization Editor and Report Editor.

  http://www.eclipse.org/modeling/emf/downloads/

- GEF Runtime 3.3

  Required for Customization Editor and Report Editor.

  http://archive.eclipse.org/tools/gef/downloads/drops/R-3.3-200706281000/index.php

- WTP 2.0

  Required for Customization Editor and Report Editor.

  http://www.eclipse.org/webtools/releases/2.0/

- XSD Runtime 2.3

  Required for Customization Editor and Report Editor

  http://www.eclipse.org/modeling/mdt/downloads/?project=xsd

- BIRT 2.2.0

  Required for Report Editor.

  http://download.eclipse.org/birt/downloads/build_list.php