

SILWOOD TECHNOLOGY LTD Safyr Metadata Discovery Software



Safyr Getting Started Guide

SILWOOD TECHNOLOGY LIMITED Safyr Getting Started Guide – Safyr 7.5

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Introduction

An overview of the Safyr product and the Enterprise Applications it supports

Safyr, is a metadata exploration tool for enterprise applications like SAP, PeopleSoft, Siebel and Oracle E-Business Suite. Safyr makes the data definitions from these major ERP (Enterprise Resource Planning) packages available in an easy to understand form, allowing users to explore ERP data structures without specialist application knowledge.

This manual describes how to install Safyr, how to extract and manipulate the ERP metadata, and gives an overview of the main product features.

Please refer to the 'Safyr User Guide' for full details on all product features.

How does Safyr work?

Using the Safyr product involves two distinct stages; the extraction of metadata from the chosen environment and then the exploration of that extracted metadata. The metadata extraction stage is performed by attaching to the 'source' package (e.g. SAP) where the required metadata is stored. The exact method of achieving this is dependent on the source product. The following sections describe this process in detail. The extracted metadata is used to populate the Safyr Repository. This is a set of tables in a relational database where the various extracted objects (e.g. tables, relationships, indexes...) are stored. A range of popular RDBMS' can be used for the Repository. Once the metadata is extracted, the second stage of Safyr usage comes into effect: the browsing of the metadata.

The browsing stage provides the real value of the Safyr environment. The user interface enables users to search for required data items like tables or columns, explore relationships between tables and create subsets of the metadata for later review, or optionally, for export into a range of tool environments.

Which Enterprise Applications and Versions does Safyr address?

Safyr supports the following Enterprise Applications:

- SAP version 3.1 and above
- SAP Business Warehouse (BW) version 2.2 and above
- PeopleSoft Enterprise applications from Version 8 and above
- J.D.Edwards EnterpriseOne Xe and above
- Siebel version 6.5 and above
- Oracle E-Business Suite version 11 and above
- Salesforce version Winter 14 and above
- Microsoft Dynamics AX 2012 R3 and above

Safyr also has the capability to extract metadata from other packaged applications not listed above. This involves a small amount of research and scripting work to locate the required metadata in the desired system. Please contact your Safyr representative for more details of this capability.

Safyr manual set

There are two Safyr manuals supplied in Adobe Acrobat format (.pdf files) with the Safyr software.

- Getting Started Guide (this manual): Use this manual for details of product installation and an overview of Safyr features
- User Guide: Describes all of the Safyr functions in detail

In addition, the Safyr Documentation folder contains an XSD file that defines the format of the Generic XML export available in the product. See the Safyr User Guide for more details.

Installation

How to install and configure the Safyr software, ready for metadata extraction

The Safyr installation process requires a number of steps to be performed, in addition to the actual 'setup' of the Safyr product itself. The following sections describe these steps in detail. Please take the time to read and understand this chapter before embarking on the installation.

Safyr setup tasks

- Check system and resource requirements. Ensure that your system meets the minimum requirements necessary to install and run Safyr. There may also be additional personnel and hardware/software resources required that you need to assemble before starting the installation. See 'System Requirements' below for more information.
- Create a database for storing the Safyr metadata. Safyr uses a range of RDBMS types to instantiate a database where the extracted metadata is stored. See 'Creating the Safyr database' below for more information.
- Install Safyr. See 'Installing Safyr' below for more information.
- Configure the software. There are a series of configuration tasks that must be performed to allow Safyr to talk to the Safyr repository. See 'Using the Repository Manager to configure Safyr' below.
- Connect to the enterprise application. The final setup task is to connect to the Enterprise Application where the metadata is stored and perform an extraction. See the sections below on connecting to your chosen Enterprise Application.

Safyr system and resource requirements

Before installing, ensure that you have the necessary system and resource requirements, as detailed below. It is also useful to understand how Safyr communicates with the RDBMS. See 'How Safyr communicates with databases' below for more information on this, including the required software components.

System requirements

The PC on which Safyr is to be installed should have the following:

- A minimum of 4 Gigabytes of RAM
- 60 Megabytes of hard disk space for the Safyr Software
- The appropriate client connectivity software (e.g. Oracle Net) for connection to the Safyr Repository database and (unless ABAP extraction is to be used for SAP) the Enterprise Application database. See also the section 'How Safyr communicates with databases' below.
- Where Safyr is being used with SAP or SAP BW and the user wants to have control of running the extraction of metadata from the SAP system, the SAP GUI client software needs to be installed on the PC, if the metadata is to be extracted from SAP via RFC/ABAP. (Note: The ABAP functions provided with Safyr can be run independently of the product. In this case, SAP GUI would not be required on the PC. (See Appendix A for more details.)

- It will be necessary to install the following SAP GUI components if the connection to SAP is to be made via the RFC Netweaver method:
 - SAP GUI for Windows 7.4 or higher
 - o Business Explorer

See 'Entering the SAP RFC connection settings' for more details on the RFC Netweaver connection method.

Note: SAP GUI has a set of Security settings that may need to be adjusted to permit the data files created by Safyr to be written without an acknowledgment for each file. See 'Appendix E – SAP GUI Security Settings' for details of these settings.

Note 2: It is important to have the correct SAP GUI Libraries installed for successful connection to an SAP system. See 'Appendix F – Getting the correct SAP GUI Libraries installed' for more information.

Resource requirements

A full Safyr installation may require the involvement of a range of personnel and resources across the organisation. This section lists the main resources you should have in place before installing Safyr.

- A database for storing the extracted metadata. You may need to contact a Database Administrator (DBA) to create a new database for the Safyr Repository, and to grant appropriate access rights to that database. Safyr can also use a SQLite database. SQLite is an open source RDBMS that is embedded in the Safyr software.
- Access to the Enterprise Application. Safyr needs access to the Enterprise Application in order to extract the metadata stored in its data dictionary. The actual method for extraction is Application dependent, but you will need to gain access to the system before an extraction of metadata can be performed.

How Safyr communicates with databases

A database connection will be required for each database with which Safyr needs to communicate. This will normally be two connections for each 'Enterprise Application' to be reverse engineered:

- One for the Safyr Repository
- One for the 'source' Enterprise Application database

The only exception to this is:

- Where Safyr is being used with an SAP system and the connection to the SAP system is via ABAP. In this case, there is no need for a connection to the SAP database, as the extraction of metadata is performed by the ABAP function, not by a SQL connection.
- Where Safyr is being used with a Salesforce system. In this case, there is no need for a connection to the Salesforce database, as the extraction of metadata is performed using the salesforce API.
- Where Safyr is being used with a Microsoft Dynamics AX 2012 system. In this case, there
 is no need for a connection to the Dynamics AX 2012 database, as the extraction of
 metadata is performed using the Metadata API.

Safyr uses Microsoft ActiveX Data Objects (ADO) to record the connection properties used to communicate with databases. (Note: this does not apply to the SQLite database type).

The table below shows the recommended ADO Providers and versions that are required for each of the RDBMS types Safyr supports.

Database	ADO Provider	
Oracle	Oracle Provider for OLE DB - Version 8.1.7 or later	
Microsoft SQL Server	Microsoft OLE DB Provider for SQL Server - Version 8.1 or later	
IBM DB2	IBM OLEDB Provider for DB2	
Sybase SQL Anywhere	SQL Anywhere OLEDB Provider	

Note: Safyr is available in both 32-bit and 64-bit versions. Matching database drivers will be required for communicating with the database (i.e. 32-bit drivers for the 32-bit Safyr and 64-bit drivers for the 64-bit Safyr).

Creating the Safyr database

The Safyr Repository is a set of database tables for storing the extracted SAP, PeopleSoft Enterprise, J.D. Edwards EnterpriseOne (formerly J.D. Edwards OneWorld), Oracle E-Business Suite, Siebel, Salesforce and Microsoft Dynamics AX 2012 metadata. It will be necessary to create a new database to store this information.

The exact sequence of steps for setting up the Safyr Repository is specific to the target RDBMS and will require some knowledge of that software's capabilities.

Note: Each Safyr repository requires a separate database or schema.

To create the Safyr database

- 1. Decide on the target RDBMS in which the Safyr repository is to be established. This can be Oracle, Microsoft SQL Server (version 7 or later),, SQL Anywhere or SQLite.
- 2. Create a new database in the chosen RDBMS.

For Oracle: The database should be a minimum of 3 Gigabytes with auto extend (a large SAP repository with multiple languages could be 5 Gigabytes). For the undo tablespace, use the ORACLE default (with default Oracle extents).

For SQL Server: Place the database and Transaction Log on different physical devices. Make the database 3 Gigabytes and the Transaction Log 100MB.

For SQL Anywhere: Create a new database for the Safyr Repository.

For SQLite: Safyr can create this database type as part of the repository configuration process.

Database user requirements

A Database User is required for the Safyr database. This must have Table Owner permissions so that the various objects (tables, constraints, etc.) that are required in the Safyr database can be created when the Safyr repository setup process is run.

Where more than one Safyr license is to be used to access the same Safyr Repository, each Safyr license in this group must use the same Database User (i.e. the Table Owner).

Installing Safyr

The Safyr Setup program controls the installation process.

To install Safyr locate the Safyr setup file and run this program.

Follow the instructions of the Safyr Setup program through installation.

Starting Safyr for the first time

The first time Safyr is run you may be prompted to provide licensing details. The exact screen displayed will depend upon which Safyr version you have purchased.

Safyr then displays the Repository Manager.

Using the Repository Manager to configure Safyr

The Repository Manager uses a Wizard to guide you through the setup steps for configuring Safyr and connecting to your chosen Enterprise Application.

🧧 Repository Manager		×
Please select a repository		
/ *1 🖻 🕼 🔿 Ð 🕒 🖏 🖡 🣍		
Repositories (0)		
Repository Details		
		~
-		Ψ
Open	Can	cel

The Repository Manager

To Configure a new Safyr repository

From the Repository Manager, click the ¹ button to start the process of configuring a new repository. Click the 'Next' button on the first 'Repository Wizard' form to display the 'Step 1' form.

Repository Wizard		x
New Reposito	ry	
Step 1: General Inform	nation	
Please define a name an	d a description for the repository.	
Definition		
Repository Name:	Development System	
Repository Description:	SAP Dev instance	
	< Back Next > Ok C	Cancel

Repository Wizard – Step 1 – General Information

Specify a name in the Repository Name field, and optionally a Repository Description. Click the Next button to display the Step 2 form.

Please define the databa	ase type and the connection information of the repository.
Database Type	
SQL Anywhere	⊖ MS SQL ○ SQLite
Database Connection	
Connection Name:	New Edit
Database Username:	
Database Password:	
Multibyte Support:	(enable to support character sets as Chinese, Japanese)

Repository Wizard – Step 2 – Database Configuration

Select the Radio Button that corresponds to the Database Type being used to host the Safyr Repository. The Database Connection properties in the lower half of the screen will change depending on the Database Type selected.

For a SQLite database, the following Database Connection properties are displayed:

Database Connection SQLite			
DataBase File Name:			
Cache Size DB Engine:	100 [MB]		
Multibyte Support:	(enable to support character sets as Chinese, Japanese)		
Test Connection	Create Database		

SQLite Database Connection properties

Specify a location for the SQLite database file in the Database File Name field. Then click the 'Create Database' button to create the database. Note that this creates not only the database but the Safyr repository tables within that database.

Click the 'Next' button to display the Repository Wizard Step 3 form (see below).

Database Connection			
Connection Name:	•	New	Edit
Database Password:			
Multibyte Support:	(enable to support character sets as Chinese, Japanese)		
Test Connection			

For all other database types, the following Database Connection properties are displayed:

Database Connection properties for RDBMS types other than SQLite

- The Database Alias dropdown list shows all the existing ADO connections previously configured. If this is a new Safyr installation, it will be necessary to create a new connection. Click on the 'New' button to the right of the drop down to begin this process.
- 2. The 'Edit Connection Definition' form is now displayed. Enter an appropriate name for the connection in the 'Connection Definition name' field and click the 'OK' button. The ADO Data Link Properties form is then displayed.

Data Link Properties
Provider Connection Advanced All
Select the data you want to connect to:
OLE DB Provider(s)
IBM OLE DB Provider for DB2 - DB2COPY1
Microsoft Jet 4.0 OLE DB Provider
Microsoft Office 12.0 Access Database Engine OLE DB Pro
Microsoft OLE DB Provider for Analysis Services 10.0
Microsoft OLE DB Provider For Data Mining Services
Microsoft OLE DB Provider for DTS Packages
Microsoft OLE DB Provider for Indexing Service
Microsoft OLE DB Provider for ODBC Unvers
Microsoft OLE DB Provider for OLAP Services 8.0
Microsoft OLE DB Provider for Oracle
Microsoft OLE DB Provider for SQL Server
Microsoft OLE DB Simple Provider
4 III >
Next >>
OK Cancel Help

ADO Data Link Properties form

- 3. If the database connection being created is Oracle, select 'Oracle Provider for OLE DB' from the list of Providers. If the database connection being created is SQL Server, select 'Microsoft OLE DB Provider for SQL Server' and for Sybase SQL Anywhere select 'SQL Anywhere OLEDB Provider'. Now click the 'Next' button.
- 4. The Data Link Properties Connection tab is now displayed. The available fields on this tab will be dependent on the chosen Provider. The layouts for SQL Server, Oracle and SQL Anywhere are shown below.

📑 Data Link Properties 📃 📉			
Provider Connection Advanced All			
Specify the following to connect to SQL Server data:			
1. Select or enter a server name:			
2. Enter information to log on to the server:			
 Use <u>Windows</u> NT Integrated security Use a specific user name and password: 			
User <u>n</u> ame:			
Password:			
Blank password Allow <u>s</u> aving password Select the database on the server:			
▼			
Attach a database file as a database name:			
Using the filename:			
Test Connection			
OK Cancel Help			

Data Link Properties 'Connection' tab for SQL Server

Data Link Properties	X
Provider Connection Advan	iced All
Specify the following to conne	ect to this data:
1. Enter the data source an	d/or location of the data:
Data Source:	
Location:	
2. Enter information to log o	n to the server:
Use <u>W</u> indows NT I	ntegrated security
O Use a specific user	name and password:
User <u>n</u> ame:	
Password:	
Blank password	Allow saving password
3. Enter the initial catalog to) use:
	·
	Lest Connection
0	Cancel Help
for Oracle	

Data Link Properties

Provider
Connection

Advanced
All

Specify the following to connect to this data:

1. Enter the data source and/or location of the data:

Data Source:

Location:

2. Enter information to log on to the server:

Image: Use Windows NT Integrated security

Image: Use Vindows NT Integrated security

Image: User name:

Password:

Image: Data password

Allow saving password

3. Enter the initial catalog to use:

...and for SQL Anywhere

ОК

Cancel

•

Help

Test Connection

- 5. For an Oracle database, in the 'Data Source' field, enter the connection string for connecting to the Oracle database. This will normally be the string used in the TNSNAMES file for connection to the database. For a SQL Server database, in the 'Select or enter a server name' field, enter or select the name of the Server where the database is located. For SQL Anywhere, a connection string needs to be specified in order to connect to the database. See Appendix D for details of this connection string.
- 6. Enter a User name and Password. The User Name is a valid database User-id with owner access rights to the Safyr Repository. Alternatively, leave these fields blank and enter the User Name and Password in the Repository Wizard form. We do not recommend entering the User Name and Password both here and in the Repository Wizard form. Entering the Password here will also require the 'Allow saving password' check box to be selected which has a potential security risk as the password is stored in plain text within the ADO file.
- 7. If a User name and Password were entered in the previous step, test the connection to the database by clicking the 'Test Connection' button. If the connection is successful, click 'OK' to return to the Repository Wizard.
- 8. If not previously entered in the ADO configuration, enter the owner username and password for the database.
- 9. Check the 'Multibyte Support' box if the Repository needs to support Multibyte characters. This will typically be required if the metadata being extracted and stored contains non-western characters.
- 10. For Microsoft SQL Server, a 'Command Timeout' property may be specified. This indicates the length of time in seconds to allow for a given query to complete (e.g. 300 seconds). If left empty, the value will be the default for the environment of the PC. It will not normally be necessary to enter a value for this field unless 'timeout' problems are encountered.
- 11. Click the 'Test Connection' button to ensure that a connection can be established between Safyr and the specified database.
- 12. Click the 'Next' button to display the Repository Wizard Step 3 form.

Repository Wizard	×
Modify Repository	
Step 3: Source System Type	
Please select the source system to use v	ith the repository.
Туре	
SAP SAP with Core Data Services JD Edwards Enterprise One PeopleSoft Enterprise Core Data	 Siebel Salesforce Microsoft Dynamics AX Oracle E-Business Suite
O SAP BW	Generic Source
	< Back Next > Ok Cancel

Repository Wizard – Step 3 – Source System Type

Step 3 is about specifying the type of Enterprise Application that Safyr will connect to. Check the radio button that corresponds to the 'source' system that this Repository is to be used with.

Note: The process of specifying a source system is specific to each Repository. A number of ERP instances (e.g. Production, Development) and/or Systems (e.g. SAP, PeopleSoft) may be managed by the same Safyr installation. The ability to manage multiple ERPs is controlled by the type of Safyr license your organisation has purchased.

The next steps in the Repository Wizard are about specifying the location and connection method for the 'source' Enterprise Application. These steps are specific to each Enterprise Application. You can either carry on with the Wizard steps now, or click through each screen and return to specify the specific connection parameters later.

To connect to an SAP or SAP BW system, see 'Configuring Safyr to connect to an SAP system' below

For a PeopleSoft Enterprise system, see 'Connecting to PeopleSoft Enterprise' below

For a J.D.Edwards EnterpriseOne system, see 'Connecting to J.D.Edwards EnterpriseOne' below.

For a Siebel system, see 'Connecting to Siebel' below.

For an Oracle EBS system, see 'Connecting to Oracle Enterprise Business Suite' below.

For a Salesforce system, see 'Connecting to Salesforce' below.

For a Microsoft Dynamics AX 2012 system, see 'Connecting to Dynamics AX 2012' below.

To use the Generic Source capability, please contact your Safyr representative.

Once the Repository Wizard Steps have been completed, when attempting to open the Repository with the 'Open' button, Safyr performs a check on the database to see if the Repository tables exits. If not (or if the Repository was created with an earlier Safyr version), Safyr displays a form asking you to confirm that the Repository Maintenance function should be started. See the next section for details of the repository maintenance process. Note: for a SQLite-based Safyr repository, the Repository tables are created as part of the database creation process.

Note that you can return to the Repository Wizard forms at any time to amend the entered settings by clicking the setting button on the Repository manager toolbar.

Repository Maintenance

The Repository Maintenance form deals with the Creation, Deletion and Modification of the tables and other RDBMS objects in a Safyr repository. The process will appear automatically when configuring a new repository, or when upgrading from an older version of Safyr. In addition, the

Repository Maintenance form can be accessed by clicking the S button on the Repository manager toolbar.

Safyr Repository Manager		X
Operations		
Operations		
Repository Maintenance This process performs all necessary steps to keep your repository up to date!		
<u>Create Repository</u> This process creates a new repository.		
This process deletes the repository.		
	Close	

Repository Maintenance

There are three buttons on the form:

 Repository Maintenance: Click this button to check the structure of the Safyr repository against the latest standard. This will typically be used when upgrading from an earlier Safyr release.

- Create Repository: Click this button to create the tables, views and triggers that form the structure of the Safyr repository.
- Drop Repository: Click this button to drop all the tables, views and triggers in an existing Safyr repository. Please note that this will delete the entire contents of the repository!

In each case, Safyr executes a set of SQL scripts to perform the required database tasks.

Configuring Safyr to connect to an SAP system

One of the most important steps in installing Safyr for use with SAP is to decide which of the two methods to use for extracting the metadata. The choices are:

- Extract via Direct Database Connection to SAP
- Extract via ABAP Function

Extracting via Direct Database Connection to SAP uses the appropriate RDBMS connectivity software to attach to the SAP Database to extract metadata via SQL calls from the SAP Data Dictionary Tables.

Extracting via ABAP uses an ABAP function, supplied with Safyr, to extract metadata into flat file format, via the SAP Application Layer. Safyr then takes the flat files and imports the metadata into the Safyr Repository.

The choice of Extraction Method influences the steps required to successfully implement Safyr. These are described in the following sections.

IMPORTANT NOTE: Extracting via Direct Database Connection to SAP will *NOT* extract the SAP Attribute definitions, as these are stored in a form not accessible to this connection method. If Attribute Definitions are required, use the ABAP Extraction method.

Connecting to SAP using the Direct Connection Method

If you have chosen to connect to SAP using the 'Direct' connection method, then it will be necessary to configure a connection to the SAP database where the required metadata is stored. As with the connection to the Safyr database, this is achieved using Microsoft ADO (ActiveX Data Objects).

Connecting to SAP using the ABAP Method

If you have chosen to connect to SAP using the ABAP connection method, then it will be necessary to install a SAP Transport, containing an ABAP Function on the SAP Application Server. There are three ABAP functions supplied as Transports to Safyr customers. These are:

- For an SAP system: /SILWOOD/SAFYR_NONCDS
- For an SAP system with CDS (Core Data Services) features: /SILWOOD/SAFYR_CDS.
- For an SAP BW system: /SILWBW/SAFYR_BW

Full details of how to install the ABAP functions are to be found in Appendix A of this manual.

Note: Safyr is supplied with 3 additional ABAP functions (one for SAP, one for SAP CDS and one for SAP BW) that can be used to run the 'main' ABAP functions from within the SAP environment. These may be used to run the extraction process and create text files if it is not possible to access the SAP system via RFC calls. See Appendix A for details of using these functions.

Required Access Rights for the SAP User used by Safyr

If the extraction of metadata is to be run via ABAP and from within the Safyr environment then an SAP Username and Password will be required to enable Safyr to invoke the ABAP function.

This user must be of User Type 'Dialog' or 'Service' and have a security profile which allows RFC access to the Safyr Function Group created above. The minimum SAP Authorization Objects required are S_RFC and S_GUI.

Once the ABAP has been installed, you may proceed to the next stage. Turn to 'Entering the Extraction Method choice into Safyr' below.

Entering the extraction method choice into Safyr

Once you have decided the extraction method and configured the appropriate connection to the SAP system, navigate to Step 4 of the Repository Wizard. This is where you record the Database type being used by SAP, and the connection method.

Step 4: Database for SAP					
Please define the type of the source database.					
Database Type					
Oracle	O DB2				
MS SQL	SAP HANA				
SAP Connection Type					
Direct DB Connect	SAP RFC Connect				
PC-Like Byte Order / Application	Server on PC and not on a Workstation				
epository Wizard – Step 4 – specifying th	e SAP database type and connection method				

- 1. Select the radio button which corresponds to the database type on which the SAP system has been installed. Note: The 'Direct DB Connect' method is not available for a HANA based SAP system.
- For Microsoft SQL Server and DB2, a 'Command Timeout' property may be specified. This indicates the length of time to allow for a given query to complete. The default is 210 seconds. It will not normally be necessary to enter a value for this field unless 'timeout' problems are encountered.

- 3. Select the radio button for the Connection Type
- 4. If the SAP Application Server is installed on a PC rather than a non-windows workstation, check the 'PC-Like Byte Order...' check box.

Click the 'Next' button.

If you have chosen the 'Direct DB Connect' method for extracting metadata from SAP, the next form will be Step 5 – SAP Database Connection (see 'Entering the SAP Database Connection settings' below).

If you have chosen 'SAP RFC Connect', the next form will be Step 5 – SAP RFC Connection (see 'Entering the SAP RFC Connection settings' below).

Entering the SAP database connection settings

Modify Repos	itory					
Step 5: SAP Database	Step 5: SAP Database Connection					
Database Connection						
Connection Name: Database Username:	SAPDIRECT	New Edit				
Database Password:		Crant SOL				
Command Timeout:	[sec]					
Test Connection						

Repository Wizard – Step 5 – SAP Database Connection

Step 5 of the Repository Wizard records the information required for Safyr to connect directly to the SAP database.

- The Database Alias dropdown list shows all the existing ADO connections previously configured. If this is a new Safyr installation, it will be necessary to create a new connection to the SAP database. Click on the 'New' button to the right of the drop down to begin this process.
- The 'Edit Connection Definition' form is now displayed. Enter an appropriate name for the connection in the 'Connection Definition name' field and click the 'OK' button. The ADO Data Link Properties form is then displayed.



 If the database connection being created is Oracle, select 'Oracle Provider for OLE DB' from the list of Providers. If the database connection being created is SQL Server, select 'Microsoft OLE DB Provider for SQL Server'. For DB2 select the 'IBM OLEDB Provider for DB2'. Now click the 'Next' button. 4. The Data Link Properties Connection tab is now displayed. The available fields on this tab will be dependent on the chosen Provider. The layouts for Oracle, SQL Server and DB2 are shown below.

Data Link Properties	J
Provider Connection Advanced All	
Specify the following to connect to this data:	
1. Enter the data source and/or location of the data:	
Data Source:	
Location:	
2. Enter information to log on to the server:	
Use Windows NT Integrated security	
Use a specific user name and password:	
User <u>n</u> ame:	
Password:	
Blank password Allow saving password	
3. Enter the initial catalog to use:	l
Test Connection	
OK Cancel Help	

Data Link Properties 'Connection' tab for Oracle...

🐨 Data Link Properties 📃 🗾		
Provider Connection Advanced All		
Specify the following to connect to SQL Server data: 1. Select or enter a s <u>e</u> rver name:		
2. Enter information to log on to the server:		
O Use a specific user name and password:		
User name:		
Password:		
Blank password Allow saving password		
3. O Select the database on the server:		
		
Attach a database file as a database name:		
Line the Charges		
Using the filename:		
Test Connection		
OK Cancel Help		

...for SQL Server...

Data Link Properties
Provider Connection Advanced All
Specify the DB2 database:
Existing data source
Data source:
Direct server connection
Select or enter a server name:
Select the database on the server:
· · · · · · · · · · · · · · · · · · ·
Log on information
User name:
Password:
Allow saving password
Test Connection
OK Cancel Help
and for DB2

5. For an Oracle database, in the 'Data Source' field, enter the connection string for connecting to the Oracle database. This will normally be the string used in the TNSNAMES file for connection to the database. For a SQL Server database, in the

'Select or enter a server name' field, enter or select the name of the Server where the database is located. If the database is DB2, enter the database name in the 'Data Source'.

- 6. Enter a User name and Password. The User Name is a valid database User-id with 'select' access rights to the SAP database. Alternatively, leave these fields blank and enter the User Name and Password in the Repository Wizard form. (Note: this is a database Username and Password – not an SAP Application User Name and Password).
- 7. If a User name and Password were entered in the previous step, test the connection to the database by clicking the 'Test Connection' button. If the connection is successful, click 'OK' to return to the Repository Wizard.
- 8. If not previously entered in the ADO configuration, enter a username and password for the database
- 9. If necessary, enter the SAP Table Owner (e.g. 'SAPR3').

Click the Test Connection' button to have Safyr check that the database can be accessed using the supplied information.

The 'Grant SQL' button will generate the appropriate SQL 'Grant' statements for each of the tables that Safyr need to access in the SAP database. You can use this feature to help your SAP DBA set up a database user for use in Safyr.

Click the 'Save' button to save all the settings entered during the Repository Wizard session.

Grant SQL Script			x
CRANT SELECT ON SARERR DD011 TO USer			
GRANT SELECT ON SAPERP DD01E TO USER			
GRANT SELECT ON SAPERP DD02LTO user:			
GRANT SELECT ON SAPERP DD02T TO USER			
GRANT SELECT ON SAFERP DD03L TO USER:			
GRANT SELECT ON SAPERP DD03T TO user:			
GRANT SELECT ON SAPERP. DD04L TO user:			
GRANT SELECT ON SAPERP. DD04T TO user:			=
GRANT SELECT ON SAPERP, DD05S TO user:			
GRANT SELECT ON SAPERP. DD07L TO user:			
GRANT SELECT ON SAPERP.DD07T TO user:			
GRANT SELECT ON SAPERP.DD08L TO user;			
GRANT SELECT ON SAPERP.DD 12L TO user;			
GRANT SELECT ON SAPERP.DD17S TO user;			
GRANT SELECT ON SAPERP.DD25L TO user;			
GRANT SELECT ON SAPERP.DD25T TO user;			
GRANT SELECT ON SAPERP.DD26S TO user;			
GRANT SELECT ON SAPERP.DD27S TO user;			
GRANT SELECT ON SAPERP.DF14L TO user;			
GRANT SELECT ON SAPERP.DF14T TO user;			
GRANT SELECT ON SAPERP.TDEVC TO user;			
GRANT SELECT ON SAPERP.TDEVCT TO user;			_
			_ <u> </u>
		•	
BB Select All	Copy to Clipboard	Close	
		0.000	

The Grant SQL form showing the GRANT statements for each SAP table accessed by Safyr

Now turn to 'Opening a Safyr Repository' below.

Entering the SAP RFC connection settings

PEC Connection			
KI C CONNECTION			
Connection Type:	RFC Netweaver 💌		
Application Server:	SAPECC6	SAP Client No.:	000
System Number:	00	SAP Username:	R96514
SAPRFC.ini DEST: (optional)		SAP Password:	•••••
SAP GUI Version:	GUI_7_x ▼	SAP Language:	E
RFC Function Name	: /SILWOOD/SAFYR_CDS		
RFC Extract Path:	C:\SafyrDataFiles\		
Test Connection			

Repository Wizard – Step 5 – SAP RFC Connection

Step 5 of the Repository Wizard records the information required for Safyr to connect to the SAP system using SAP Remote Function Calls (RFCs). If the ABAP function is being run external to the Safyr environment (see Appendix A) then there is no need to enter this information.

- 1. Select the Connection Type from the drop-down list. This can be:
 - a. RFC Netweaver. We would recommend this for all new Safyr repositories.
 - b. RFC Classic. This will be the default for any Safyr repository already configured prior to Safyr 6.3.9. RFC Classic is no longer an SAP supported method.
- 2. Enter the Application Server name of the desired SAP system, the SAP Client Number, the System Number and the Username and Password.
- Enter the optional SAPRFC.ini Destination string if the SAPRFC.ini file is being used for connection to SAP systems (see Appendix C for more details of the SAPRFC.ini usage).
- 4. Use the SAP GUI Version drop down to choose the SAP GUI version of 4.x, 6.x or 7.x.
- 5. Select the desired SAP extraction language. If you do not see the language you require, you can modify the range of available language codes by modifying the SafyrSettings.xlsx file. (see Appendix B for details).
- 6. Specify the name of the ABAP Function to be invoked by the RFC calls.

7. Enter a path for the location of the RFC text files. This is only required if the extraction is to be performed in two phases, as described in 'Extracting Metadata from SAP', later in this manual.

Click the Test Connection' button to have Safyr check that the SAP system can be accessed using the supplied information.

Click the 'Save' button to save all the settings entered during the Repository Wizard session. Now turn to 'Opening a Safyr Repository' below.

Connecting to PeopleSoft Enterprise

If you have chosen to connect to a PeopleSoft system, then it will be necessary to configure a connection to the PeopleSoft database where the required metadata is stored.

As with the connection to the Safyr database, this is achieved using Microsoft ADO (ActiveX Data Objects).

Choosing the PeopleSoft database type

Now navigate to Step 4 of the Repository Wizard. This is where you record the Database type being used by PeopleSoft.

Step 4: Database for PeopleSoft Enterprise							
	Please define the type of the source database.						
	Database Type						
	Orade	◎ DB2					
	MS SQL						

Repository Wizard – Step 4 – specifying the PeopleSoft database type

Select the radio button which corresponds to the database type on which the PeopleSoft system has been installed.

Click the 'Next' button.

Entering the PeopleSoft database connection settings

Step 5 of the Repository Wizard records the information required for Safyr to connect to the PeopleSoft database.

ep 5: PeopleSoft Enterprise Database Connection Please define and test the database connection of the source system.			
Database Connection			
Connection Name:	PSCRM 💌	New	Edit
Database Username:			
Database Password:			
Table Owner:	SYSADM	Gra	int SQL
Test Connection			

Repository Wizard – Step 5 – PeopleSoft Database Connection

- The Database Alias dropdown list shows all the existing ADO connections previously configured. If this is a new Safyr installation, it will be necessary to create a new connection to the PeopleSoft database. Click on the 'New' button to the right of the drop down to begin this process.
- 2. The 'Edit Connection Definition' form is now displayed. Enter an appropriate name for the connection in the 'Connection Definition name' field and click the 'OK' button. The ADO 'Data Link Properties' form is then displayed.



ADO Data Link Properties Form

3. If the database connection being created is Oracle, select 'Oracle Provider for OLE DB' from the list of Providers. If the database connection being created is SQL Server, select 'Microsoft OLE DB Provider for SQL Server'. For DB2 select the 'IBM OLEDB Provider for DB2'. Now click the 'Next' button.

4. The Data Link Properties Connection tab is now displayed. The available fields on this tab will be dependent on the chosen Provider. The layouts for Oracle, SQL Server and DB2 are shown below.

🗊 Data Link Properties 🛛 🛛 🕅
Provider Connection Advanced All
Specify the following to connect to this data:
1. Enter the data source and/or location of the data:
Data Source:
Location:
2. Enter information to log on to the server:
Use <u>Windows NT Integrated security</u>
Use a specific user name and password:
User <u>n</u> ame:
Password:
Blank password Allow saving password
3. Enter the initial catalog to use:
· · · · · · · · · · · · · · · · · · ·
Test Connection
OK Cancel Help

Data Link Properties
Provider Connection Advanced All
Specify the following to connect to SQL Server data:
1. Select or enter a server name:
▼ <u>R</u> efresh
Enter information to log on to the server:
Use <u>Windows NT Integrated security</u>
Use a specific user name and password:
User name:
Password:
Blank password Allow saving password
3. O Select the database on the server:
Attach a database file as a database name:
Using the filename:
Test Connection
OK Cancel Help

Data Link Properties 'Connection' tab for Oracle...

...for SQL Server...

Data Link Properties
Provider Connection Advanced All
Specify the DB2 database:
 Direct server connection Select or enter a server name:
Select the database on the server:
- Log on information
Password:
Allow saving password 🔲 Use Trusted Connection
Test Connection
OK Cancel Help

...and for DB2

- 5. For an Oracle database, in the 'Data Source' field, enter the connection string for connecting to the Oracle database. This will normally be the string used in the TNSNAMES file for connection to the database. For a SQL Server database, in the 'Select or enter a server name' field, enter or select the name of the Server where the database is located. If the database is DB2, enter the database name in the 'Data Source'.
- 6. Enter a User name and Password. The User Name is a valid database User-id with 'select' access rights to the PeopleSoft database. Alternatively, leave these fields blank and enter the User Name and Password in the Repository Wizard form. (Note: this is a database Username and Password – not a PeopleSoft Application User Name and Password).
- 7. If a User name and Password were entered in the previous step, test the connection to the database by clicking the 'Test Connection' button.. If the connection is successful, click 'OK' to return to the Repository Wizard. (Note: this is a database Username and Password – not a PeopleSoft Application Username and Password).
- 8. If not previously entered in the ADO configuration, enter a username and password for the database.
- 9. If necessary, enter the PeopleSoft Table Owner.
- 10. For Microsoft SQL Server and DB2, a 'Command Timeout' property may be specified. This indicates the length of time to allow for a given query to complete. The default is 210 seconds. It will not normally be necessary to enter a value for this field unless 'timeout' problems are encountered.

Click the Test Connection' button to have Safyr check that the database can be accessed using the supplied information.

The 'Grant SQL' button will generate the appropriate SQL 'Grant' statements for each of the PeopleSoft tables that Safyr need to access in the PeopleSoft database. You can use this feature to help your PeopleSoft DBA set up a database User for you.

Click the 'Save' button to save all the settings entered during the Repository Wizard session.

Now turn to 'Opening a Safyr Repository' below.



The Grant SQL form showing the GRANT statements for each PeopleSoft table accessed by Safyr

Connecting to J.D.Edwards EnterpriseOne

If you have chosen to connect to a J.D.Edwards EnterpriseOne system, then it will be necessary to configure a connection to the EnterpriseOne database where the required metadata is stored. Safyr extracts the metadata from a small set of tables in this database and a group of XML files that are generated by a process on the EnterpriseOne application. You will need to generate the XML files before attempting the extraction of metadata from the EnterpriseOne system.

As with the connection to the Safyr database, the connection to the EnterpriseOne database is achieved using Microsoft ADO (ActiveX Data Objects). The tables that Safyr accesses are EnterpriseOne Data Dictionary tables (in particular, F9202, F9210 and F00165).

To produce the XML Files from the EnterpriseOne system

- 1. From the J.D.Edwards EnterpriseOne Explorer, select Foundation and then Report Writer.
- 2. From the Menu, select Batch Versions.
- 3. Key R91400A into the Batch Application field and press Find. There is only one version, select it by double clicking.

The XML files produced should be:

- SysCodes.xml
- Tables.xml
- UseCodes.xml
- Views.xml

Choosing the EnterpriseOne database type

Now navigate to Step 4 of the Repository Wizard. This is where you record the Database type being used by the EnterpriseOne system.

p 4: Database for JD Edwards Enterprise One				
Please define the type of the source database.				
Database Type				
Oracle	© DB2			
MS SQL	Access			
L				

Repository Wizard – Step 4 – specifying the EnterpriseOne database type

Select the radio button which corresponds to the database type on which the EnterpriseOne system has been installed

Click the 'Next' button.

Entering the EnterpriseOne database connection settings

Step 5 of the Repository Wizard records the information required for Safyr to connect to the EnterpriseOne database.

Safyr extracts metadata from EnterpriseOne tables: F9202, F9210 and F00165. These tables can sometimes be located in more than one EnterpriseOne schema. Typically F9202 and F9210 would be in a 'Data Dictionary' schema and F00165 in a 'Business Data' schema. To accommodate this, the Safyr connection settings allow for two database connections to be made. If all the tables are accessible in one schema, it is only necessary to enter setting in the 'Business Data (default)' tab (see the screenshot below). If the tables are split between schemas then the settings on the 'Central Data Dictionary' tab should also be supplied.

In both cases the method for configuring the database connection is as described below.

tep 5: JD Edwards En Please define and test th	e database connection		
Business Data (default)	Central Data Dictionary (optional)		
Database Connection			
Connection Name:	JDE91	New	Edit
Database Username:			
Database Password:			
Table Owner:		Gra	nt SQL
JD Edwards EnterpriseC	One XML Path		
XML Directory:			
Schema Wildcard:	*		
Test Connection			

Repository Wizard – Step 5 – EnterpriseOne Database Connection

- The Database Alias dropdown list shows all the existing ADO connections previously configured. If this is a new Safyr installation, it will be necessary to create a new connection to the EnterpriseOne database. Click on the 'New' button to the right of the drop down to begin this process.
- 2. The 'Edit Connection Definition' form is now displayed. Enter an appropriate name for the connection in the 'Connection Definition name' field and click the 'OK' button. The ADO Data Link Properties form is then displayed.

🗊 Data Link Properties	23
Provider Connection Advanced All	
Select the data you want to connect to:	
OLE DB Provider(s)	A
IBM OLE DB Provider for DB2 - DB2COPY1	
Microsoft Jet 4.0 OLE DB Provider	
Microsoft Office 12.0 Access Database Engine OLE D	B Pro
Microsoft OLE DB Provider for Analysis Services 10.0	=
Microsoft OLE DB Provider For Data Mining Services	
Microsoft OLE DB Provider for DTS Packages	
Microsoft OLE DB Provider for Indexing Service	
Microsoft OLE DB Provider for ODBC Drivers	
Microsoft OLE DB Provider for OLAP Services 8.0	
Microsoft OLE DB Provider for Oracle	
Microsoft OLE DB Provider for Search	
Microsoft OLE DB Provider for SQL Server	-
Microsoft OLE DB Simple Provider	- F
<u>N</u> ext	.»>
OK Cancel	Help
DO Data Link Properties Form	

 If the database connection being created is Oracle, select 'Oracle Provider for OLE DB' from the list of Providers. If the database connection being created is SQL Server, select 'Microsoft OLE DB Provider for SQL Server'. For DB2 select the 'IBM OLEDB Provider for DB2'. Now click the 'Next' button. 4. The Data Link Properties Connection tab is now displayed. The available fields on this tab will be dependent on the chosen Provider. The layouts for Oracle, SQL Server and DB2 are shown below.

🗊 Data Link Properties 🛛 🔯
Provider Connection Advanced All
Specify the following to connect to this data:
1. Enter the data source and/or location of the data:
Data Source:
Location:
2. Enter information to log on to the server:
Use <u>W</u> indows NT Integrated security
Use a specific user name and password:
User name:
Password:
Blank password Allow saving password
3. Enter the initial catalog to use:
· · · · · · · · · · · · · · · · · · ·
Test Connection
OK Cancel Help

Data Link Properties 'Connection' tab for Oracle...

📑 D	ata Link Properties
Pro	vider Connection Advanced All
Sp	pecify the following to connect to SQL Server data:
	1. Select or enter a server name:
	▼ <u>R</u> efresh
	2. Enter information to log on to the server:
	Use <u>Windows NT Integrated security</u>
	Ose a specific user name and password:
	User name:
	Password:
	Blank password Allow saving password
	3. O Select the database on the server:
	Attach a database file as a database name:
	Lising the filename:
	Test Connection
	OK Cancel Help

... for SQL Server...

💼 Data Link Properties	X
Provider Connection Advanced All	
Specify the DB2 database:	
Existing data source	
Data source:	
Direct server connection	
Select or enter a server name:	
Select the database on the server:	
· · · · · · · · · · · · · · · · · · ·	
Log on information User name: Password: Randow saving password Use Trusted Connection	
Test Connection	
OK Cancel He	p
and for DB2	
- 5. For an Oracle database, in the 'Data Source' field, enter the connection string for connecting to the Oracle database. This will normally be the string used in the TNSNAMES file for connection to the database. For a SQL Server database, in the 'Select or enter a server name' field, enter or select the name of the Server where the database is located. If the database is DB2, enter the database name in the 'Data Source'.
- 6. Enter a User name and Password. The User Name is a valid database User-id with 'select' access rights to the EnterpriseOne database. Alternatively, leave these fields blank and enter the User Name and Password in the Repository Wizard form. (Note: this is a database Username and Password – not an EnterpriseOne Application User Name and Password).
- 7. If a User name and Password were entered in the previous step, test the connection to the database by clicking the 'Test Connection' button. If the connection is successful, click 'OK' to return to the Repository Wizard.
- 8. If not previously entered in the ADO configuration, enter a username and password for the database.
- 9. If necessary, enter the EnterpriseOne Table Owner.
- 10. For Microsoft SQL Server and DB2, a 'Command Timeout' property may be specified. This indicates the length of time to allow for a given query to complete. The default is 210 seconds. It will not normally be necessary to enter a value for this field unless 'timeout' problems are encountered.
- 11. Enter the directory where the 4 XML files produced from the EnterpriseOne batch process described in Connecting to J.D.Edwards EnterpriseOne' above are located.
- 12. Enter a Schema Wildcard. As JDEdwards has tables stored under different schemas, it may be necessary to enter a partial schema name in order to access the row count information stored in the system tables with different schema owners. For example, this might be JDE* to accommodate schema names such as JDEDATA900, JDEDD900, JDECTL90. The default setting for this is '*', meaning 'all schemas'.

Click the 'Test Connection' button to have Safyr check that the database can be accessed using the supplied information.

Click the 'Save' button to save all the settings entered during the Repository Wizard session.

Now turn to 'Opening a Safyr Repository' below.

Connecting to Siebel

If you have chosen to connect to a Siebel system, then it will be necessary to configure a connection to the Siebel database where the required metadata is stored.

As with the connection to the Safyr database, this is achieved using Microsoft ADO (ActiveX Data Objects).

Choosing the Siebel database type

Now navigate to Step 4 of the Repository Wizard. This is where you record the Database type being used by Siebel.

Step 4: Database for Siebel				
Please define the type of the source database.				
	Database Type			
	Oracle	◎ DB2		
	MS SQL			

Repository Wizard – Step 4 – specifying the Siebel database type

Select the radio button which corresponds to the database type on which the Siebel system has been installed.

Click the 'Next' button.

Entering the Siebel database connection settings

Step 5 of the Repository Wizard records the information required for Safyr to connect to the Siebel database.

tep 5: Siebel Database Connection				
Database Connection				
Connection Name:	Siebel811Source	New	Edit	
Database Username:				
Database Password:				
Table Owner:	siebel	Gra	nt SQL	
Siebel Repository Settin	ngs			
Repository Name	1-1-1 Siebel Repository		•	
Test Connection				

- 1. The Database Alias dropdown list shows all the existing ADO connections previously configured. If this is a new Safyr installation, it will be necessary to create a new connection to the Siebel database. Click on the 'New' button to the right of the drop down to begin this process.
- 2. The 'Edit Connection Definition' form is now displayed. Enter an appropriate name for the connection in the 'Connection Definition name' field and click the 'OK' button. The ADO Data Link Properties form is then displayed.



ADO Data Link Properties Form

 If the database connection being created is Oracle, select 'Oracle Provider for OLE DB' from the list of Providers. If the database connection being created is SQL Server, select 'Microsoft OLE DB Provider for SQL Server'. For DB2 select the 'IBM OLEDB Provider for DB2'. Now click the 'Next' button. 4. The Data Link Properties Connection tab is now displayed. The available fields on this tab will be dependent on the chosen Provider. The layouts for Oracle, SQL Server and DB2 are shown below.

🖶 Data Link Properties			
Provider Connection Advanced All			
Specify the following to connect to this data:			
1. Enter the data source and/or location of the data:			
Data Source:			
Location:			
2. Enter information to log on to the server:			
Use Windows NT Integrated security			
• Use a specific user name and password:			
User name:			
Password:			
Blank password Allow saving password			
3. Enter the initial catalog to use:			
· · · · · · · · · · · · · · · · · · ·			
Test Connection			
OK Cancel Help			

Data Link Properties 'Connection' tab for Oracle...

📑 Data Li	nk Properties		23
Provider	Connection Advanced	All	
Specify	the DB2 database:		
Exist	ng data source		
Data	source:		-
© Direc Select	t server connection or enter a server name:		Refrech
Select	the database on the serv	ver:	mandari
Log on i	nformation		
User	name:		
Passv	vord:		
A	ow saving password	Use Trusted Co	nnection
		Tes	t Connection
	ОК	Cancel	Help

...and for DB2

📑 Data Link Properties				
Provider Connection Advanced All				
Specify the following to connect to SQL Server data:				
1. Select or enter a server name:				
▼ <u>R</u> efresh				
Enter information to log on to the server:				
Use <u>W</u> indows NT Integrated security				
Output Description of the second s				
User <u>n</u> ame:				
Password:				
Blank password Allow saving password				
3. Select the <u>d</u> atabase on the server:				
▼				
Attach a database file as a database name:				
Using the filename:				
Test Connection				
OK Cancel Help				

... for SQL Server...

- 5. For an Oracle database, in the 'Data Source' field, enter the connection string for connecting to the Oracle database. This will normally be the string used in the TNSNAMES file for connection to the database. For a SQL Server database, in the 'Select or enter a server name' field, enter or select the name of the Server where the database is located. If the database is DB2, enter the database name in the 'Data Source'.
- 6. Enter a User name and Password. The User Name is a valid database User-id with 'select' access rights to the Siebel database. Alternatively, leave these fields blank and enter the User Name and Password in the Repository Wizard form. (Note: this is a database Username and Password – not a Siebel Application User Name and Password).
- If a User name and Password were entered in the previous step, test the connection to the database by clicking the 'Test Connection' button. If the connection is successful, click 'OK' to return to the Repository Wizard. (Note: this is a database Username and Password – not a Siebel Application Username and Password).
- 8. If not previously entered in the ADO configuration, enter a username and password for the database.
- 9. If necessary, enter the Siebel Table Owner.
- 10. For Microsoft SQL Server and DB2, a 'Command Timeout' property may be specified. This indicates the length of time to allow for a given query to complete. The default is 210 seconds. It will not normally be necessary to enter a value for this field unless 'timeout' problems are encountered.
- 11. Using the Repository drop down list, select the Siebel Repository from which the extraction is to be performed. (Note: this is the *Siebel* Repository, not the Safyr Repository).

Click the 'Test Connection' button to have Safyr check that the database can be accessed using the supplied information.

The 'Grant SQL' button will generate the appropriate SQL 'Grant' statements for each of the Siebel tables that Safyr need to access in the Siebel database. You can use this feature to help your Siebel DBA set up a database User for you.

Click the 'Save' button to save all the settings entered during the Repository Wizard session.

Now turn to 'Opening a Safyr Repository' below.

Grant SQL Script		x
GRANT SELECT ON siebel.S_TABLE TO user; GRANT SELECT ON siebel.S_LST_OF_VAL TO user; GRANT SELECT ON siebel.S_COLUMN TO user; GRANT SELECT ON siebel.S_INDEX TO user; GRANT SELECT ON siebel.S_INDEX_COLUMN TO user; GRANT SELECT ON siebel.S_BUSCOMP TO user; GRANT SELECT ON siebel.S_DID TO user; GRANT SELECT ON siebel.S_FIELD TO user; GRANT SELECT ON siebel.S_BUCOMP TO user; GRANT SELECT ON siebel.S_BUSOBJ TO user; GRANT SELECT ON siebel.S_BUSOBJ TO user; GRANT SELECT ON siebel.S_VIEW TO user; GRANT SELECT ON siebel.S_VIEW TO user; GRANT SELECT ON siebel.S_SCREEN_VIEW TO user; GRANT SELECT ON siebel.S_SCREEN_VIEW TO user; GRANT SELECT ON siebel.S_SCREEN TO user; GRANT SELECT ON siebel.S_SCREEN TO user; GRANT SELECT ON siebel.S_SCR_MENU_ITEM TO user; GRANT SELECT ON siebel.S_APPLICATION TO user; GRANT SELECT ON siebel.S_REPOSITORY TO user; to access the "has data" information the following system tables have to be selectable Hint: grant "SELECT_CATALOG_ROLE" to access the following table GRANT SELECT ON SYS.ALL_TABLES TO user;		*
4	4	-
Select All E Copy to Clipboard	Close	

The Grant SQL form showing the GRANT statements for each Siebel table accessed by Safyr

Connecting to Oracle Enterprise Business Suite

If you have chosen to connect to an Oracle EBS system, then it will be necessary to configure a connection to the Oracle EBS database where the required metadata is stored.

As with the connection to the Safyr database, this is achieved using Microsoft ADO (ActiveX Data Objects).

Choosing the EBS database type

Now navigate to Step 4 of the Repository Wizard. This is where you record the Database type being used by EBS.

Step 4: Database for Oracle E-Business Suite				
Please define the type of the source database.				
Database Type				
Oracle				
Repository Wizard – Step 4 – specifying the FBS database type				

In the case of EBS, there is only one possible source database type and this is pre-set as Oracle.

Click the 'Next' button.

Entering the EBS database connection settings

Step 5 of the Repository Wizard records the information required for Safyr to connect to the Oracle EBS database.

Step 5: Oracle E-Business Suite Database Connection						
Please define and test the database connection of the source system.						
Database Connection	Database Connection					
Connection Name:	EBiz12	New	Edit			
Database Username:						
Database Password:						
Table Owner:		Gran	t SQL			
Test Connection						

Repository Wizard – Step 5 – EBS Database Connection

- 11. The Database Alias dropdown list shows all the existing ADO connections previously configured. If this is a new Safyr installation, it will be necessary to create a new connection to the EBS database. Click on the 'New' button to the right of the drop down to begin this process.
- 12. The 'Edit Connection Definition' form is now displayed. Enter an appropriate name for the connection in the 'Connection Definition name' field and click the 'OK' button. The ADO Data Link Properties form is then displayed.

🗊 Data Link Properties	X			
Provider Connection Advanced All				
Select the data you want to connect to:				
OLE DB Provider(s)				
IBM OLE DB Provider for DB2 - DB2COPY1				
Microsoft Jet 4.0 OLE DB Provider				
Microsoft Office 12.0 Access Database Engine OLE DE	3 Pro			
Microsoft OLE DB Provider for Analysis Services 10.0	_			
Microsoft OLE DB Provider for Data Mining Services				
Microsoft OLE DB Provider for Indexing Service				
Microsoft OLE DB Provider for ODBC Drivers				
Microsoft OLE DB Provider for OLAP Services 8.0				
Microsoft OLE DB Provider for Oracle				
Microsoft OLE DB Provider for Search				
Microsoft OLE DB Provider for SQL Server	-			
	•			
Next >>				
OK Cancel	Help			

ADO Data Link Properties Form

- 13. Select 'Oracle Provider for OLE DB' from the list of Providers. Now click the 'Next' button.
- 14. The Data Link Properties Connection tab is now displayed.

🗊 Data Link Properties	<u> </u>		
Provider Connection Advance	ed All		
Specify the following to connect	t to this data:		
1. Enter the data source and/	for location of the data:		
Data Source:			
Location:			
2. Enter information to log on t	to the server:		
Use <u>W</u> indows NT Inte	egrated security		
Use a specific user na	ame and password:		
User <u>n</u> ame:			
Password:			
Blank password	Allow saving password		
3. Enter the initial catalog to u	ise:		
	~		
	Test Connection		
OK Cancel Help			

Data Link Properties 'Connection' tab for Oracle

- 15. In the 'Data Source' field, enter the connection string for connecting to the Oracle database. This will normally be the string used in the TNSNAMES file for connection to the database.
- 16. Enter a User name and Password. The User Name is a valid database User-id with 'select' access rights to the Oracle EBS database. Alternatively, leave these fields blank and enter the User Name and Password in the Repository Wizard form. (Note: this is a database Username and Password – not an EBS Application User Name and Password).
- 17. If a User name and Password were entered in the previous step, test the connection to the database by clicking the 'Test Connection' button. If the connection is successful, click 'OK' to return to the Repository Wizard. (Note: this is a database Username and Password not an EBS Application Username and Password).
- 18. If not previously entered in the ADO configuration, enter a username and password for the database. If necessary, enter the EBS database Table Owner.

Click the 'Test Connection' button to have Safyr check that the database can be accessed using the supplied information.

The 'Grant SQL' button will generate the appropriate SQL 'Grant' statements for each of the EBS tables that Safyr need to access in the EBS database. You can use this feature to help your EBS DBA set up a database User for you.

Click the 'Save' button to save all the settings entered during the Repository Wizard session.

Now turn to 'Opening a Safyr Repository' below.

Grant SQL Script	
GRANT SELECT ON ebs.FND_APPLICATION TO user; GRANT SELECT ON ebs.FND_APPLICATION_TL TO user; GRANT SELECT ON ebs.FND_COLUMINS TO user; GRANT SELECT ON ebs.FND_FOREIGN_KEYS TO user; GRANT SELECT ON ebs.FND_FOREIGN_KEY_COLUMINS TO user; GRANT SELECT ON ebs.FND_INDEXES TO user; GRANT SELECT ON ebs.FND_INDEX_COLUMINS TO user; GRANT SELECT ON ebs.FND_PRIMARY_KEYS TO user; GRANT SELECT ON ebs.FND_PRIMARY_KEY_COLUMINS TO user; GRANT SELECT ON ebs.FND_PRILCATION TO user; GRANT SELECT ON ebs.FND_PRODUCT_INSTALLATIONS TO user; GRANT SELECT ON ebs.FND_ORACLE_USERID TO user; Hint: grant "SELECT_CATALOG_ROLE" to access the following table GRANT SELECT ON SYS.DBA_OBJECTS TO user; to access the "has data" information the following system tables have to be selectable Hint: grant "SELECT_CATALOG_ROLE" to access the following table GRANT SELECT ON SYS.ALL_TABLES TO user;	
	, ,
Select All	Close

Grant SQL form showing the GRANT statements for each EBS table accessed by Safyr

Connecting to Salesforce

If you have chosen to connect to a Salesforce system, then it will be necessary to configure a connection to the Salesforce system where the required metadata is stored. Safyr extracts the metadata from Salesforce using the Salesforce Enterprise WSDL API. You will need details of how to connect to the Salesforce system and these are described below.

Choosing the Salesforce database type

Now navigate to Step 4 of the Repository Wizard. This is where you record the Database type being used by the Salesforce system. The primary purpose of making this choice is so Safyr knows what data types to use when making an export of metadata into third-party data modelling and other tools.

St	Step 4: Database for Salesforce			
1	Please define the type of the source database.			
	Database Type			
	Oracle	© DB2		
	MS SQL			

Repository Wizard – Step 4 – specifying the Salesforce database type

Select the radio button which corresponds to the database type on which the Salesforce system has been installed

Click the 'Next' button.

Entering the Salesforce connection settings

Step 5 of the Repository Wizard records the information required for Safyr to connect to the Salesforce system.

Please define the details for the data extract			
Source Extraction Details			
e.g. https://login.salesforce.com/services/Soap/c/48.0):			
/48.0			
: 48.0;44.0;41.0;39.0)			
Password:			
•••••			
e.g. https://login.salesforce.com/services/Soap/c/48.0): (48.0 : 48.0;44.0;41.0;39.0) Password: •••••• ••••••• ····			

Repository Wizard – Step 5 – Salesforce Connection details

- 1. Enter the URL for the connection to the salesforce instance. Note that this will normally need the '/services/Soap/c/' suffix. Please ensure version 48, 44, 41 or 39 of the api is specified. Other versions will not operate correctly with Safyr. We recommend that you use version 48.
- 2. Enter the User Name, Password and Security Token.
- 3. Enter a path for the location of the extracted text files. In addition to populating the Safyr repository with the extracted Salesforce metadata, each set of 'objects' (tables, columns, relationships...) is written to a text file in this folder. It would not normally be necessary to use these files. However, they can also be used to rerun the repository population without making a connection to the Salesforce system.

Click the 'Test Connection' button to have Safyr check that the Salesforce system can be accessed using the supplied information.

Click the 'Save' button to save all the settings entered during the Repository Wizard session.

Now turn to 'Opening a Safyr Repository' below.

Connecting to Dynamics AX 2012

If you have chosen to connect to a Dynamics AX 2012 system, then it will be necessary to configure a connection to the Dynamics AX system where the required metadata is stored. Safyr extracts the metadata from a Dynamics using the Dynamics AX Metadata Service API. You will need details of how to connect to the Salesforce system and these are described below.

In order to connect to the AX Server, the Windows user for the workstation where Safyr is installed needs to be known to the AX Server Active Directory, and .NET framework 4.0 or higher needs to installed on the workstation.

Choosing the Dynamics AX database type

Now navigate to Step 4 of the Repository Wizard. This is where you record the Database type being used by the Dynamics system. This is always SQL Server.

Step 4: Database for Microsoft Dynamics AX
Please define the type of the source database.
Database Type
MS SQL

Repository Wizard – Step 4 – specifying the Dynamics database type

Click the 'Next' button.

Entering the Dynamics AX connection settings

Step 5 of the Repository Wizard records the information required for Safyr to connect to the Dynamics system.

ep 5: Extract Mi Please define the d	rosoft Dynamics AX D tails for the data extract	ata	
Source Extraction	etails		
Server Address: Server Port:	8201		
Extract File Path:			
Test Connection]		

Repository Wizard – Step 5 – Dynamics Connection details

- 1. Enter the Server Address and Server Port number.
- 2. Enter a path for the location of the extracted text files. In addition to populating the Safyr repository with the extracted Dynamics metadata, each set of 'objects' (tables, columns, relationships...) is written to a text file in this folder. It would not normally be necessary to use these files.

Click the 'Test Connection' button to have Safyr check that the Dynamics system can be accessed using the supplied information.

Click the 'Save' button to save all the settings entered during the Repository Wizard session.

Now turn to 'Opening a Safyr Repository' below.

Opening a Safyr Repository

The Repository Manager is not only the means by which Safyr Repositories are created and maintained, it is also the mechanism for opening and switching between repositories.

To Open an existing Repository

When Safyr is started, the Repository Manager is automatically displayed. If Safyr is already started and you wish to switch to a different repository, click the sufference button on the Safyr toolbar.

Please select a repository
🖍 🎦 🖻 😺 🎝 🕒 🔂 🚱 🚱 😵
Repositories (11)
BW7.31
EBiz12
ECC6
JDE
General States and Sta

Selecting a Repository in the Repository Manager

To open a repository, select the required entry from the list and click the 'Open' button.

For an empty repository (where no extraction has yet been performed), the following message will be displayed.



This indicates that there are no data definitions stored in the repository as yet. The population of the repository occurs when you perform an extraction from your chosen Enterprise Application. This is described in the next chapter.

If the database for the repository exists, but the tables and other object required for Safyr have not yet been created then a warning message will appear.



This is as a result of Safyr looking for the required tables. Clicking the 'OK' button on this message will display the following:

Confirm	X	
1	Should the repository maintenance be started?	
	Yes No)

Clicking the 'Yes' button will then display the Repository maintenance screen to allow the Repository tables to be created. See 'Repository Maintenance' earlier in this chapter for more details of this feature.

Overview of Safyr Workflow

What to do next, once the Safyr software is installed and configured

Having successfully installed and configured Safyr, the next steps in using the product are available using the main Navigation screen, which is displayed when opening a Safyr Repository.

Safyr Navigation screen

The Navigation screen presents a series of clickable 'tiles' which correspond to the three phases involved with using the product effectively. There is an implied 'workflow' in the way the tiles are arranged.



Safyr Navigation screen

This workflow is composed of three phases: 'Discover, Scope, Deliver'.

Discover

• This is the process of extracting the metadata from the 'source' ERP system

Scope

This area encompasses the main activities of searching and sub-setting tables using Safyr. There are 4 tiles:

- Multi-Object Search a facility for searching across a range of object types
- Show List of Tables display the Safyr Model Overview screen to allow querying on Tables
- Show Hierarchy display the Application Hierarchy
- Group Tables by Subject Area show the Subject Area editor for grouping tables

Deliver

This covers the capability for exporting Subject Areas. There are 2 tiles:

- Export Subject Areas to 3rd party Tools export Subject Area contents to a range of formats
- Compare Subject Areas compare contents of two Subject Areas to determine differences

All of the capabilities on the navigation screen are also available from the Safyr menu and/or icon bar.

The following table shows where to find more details on these features.

Tile Category	Tile	For more details see
Discover	Extract from ERP	Extracting Metadata
Scope	Multi-Object Search	Multi Object Search
	Show List of Tables	Show List of Tables
	Show Hierarchy	The Application Hierarchy
	Group Tables into Subject Areas	Subject Areas
Deliver	Export Subject Areas to 3 rd Party Tools	Exporting to 3 rd Party Tools
	Compare Subject Areas	Safyr User Guide, – Comparing metadata

Extracting Metadata

How to extract metadata from your chosen Enterprise Application

Before Safyr can be used to explore metadata, the Extraction process must be performed to extract metadata from the Enterprise Application. The following sections describe how to achieve this for SAP, PeopleSoft Enterprise, J.D.Edwards EnterpriseOne, Siebel, Oracle EBS, Salesforce and Microsoft Dynamics AX 2012.

Extracting metadata from SAP or SAP BW

Start the extraction process by selecting the 'ERP Extract' option from the Safyr File menu, or the 'Extract from ERP' tile from the Navigation Screen. This will start the SAP Extraction Wizard. Click the 'Next' button on the first 'Extraction Wizard' form to display the 'Source System Connection' form.

SAP Extraction Wizard	- • ×
Extract SAP Data	
Source System Connection	
Please verify the configuration for the Source System below.	
Configuration	Change
ERP Type: SAP SAP Appl Server: 192.168.1.18 SAP System No: 00 SAP Client No: 210 SAP User Name: ADMIN SAP Data Extract Path: C:\erpdata\SAPSERVERECC6\ABAPFilesEnadD SAP Data Extract Sub Mode: Full Transfer Repo-DB: MS SQL Repo-DB Array Command Size (min/max): 1000/1000	
Test Connection	
< Back Next >	Cancel

SAP Extraction Wizard – Source System Connection

This form shows a summary of the connection parameters, previously supplied when completing the Repository Wizard. The connection parameters will vary in format depending on the connection method chosen (Direct DB Connect or SAP RFC Connect). You can:

- Click the 'Change' button to further amend the connection parameters
- Click the 'Test Connection' button to verify the connection through to the Application.

Now click the 'Next' button to proceed to the next stage.

SAP Extraction Wizard	<u> </u>
Extract SAP Data	
Extraction Steps	
Please define the extraction steps below.	
Steps	
 Usg Source DB Physical Connection Clear affected repository tables or recreate the whole repository Log Repository DB Physical Connection Prepare the Repository Environment (after deleting unused data) DD_LANGUAGES / Fill Languages Initialize Language Environment from DD_LANGUAGES DD01L / Domain DD07L / Domain Description DD07L / Domain Values D007T / Domain Values Description DD04L / DataElement DD04L / DataElement Description DD04L / DataElement Description DD02L / Table DD02L / Table DD02L / Table Description Check of DD_DOMAIN / check if DD_LOOKUP_ENTITYNAME exists DD03T / Field Description DD03T / Field Description DD03T / Field Description DD12S / Index Item DD03S / Relationship Header DD05S / Relationship Item DD22S / View Webcription DD25T / View Description DD25T / View Description DD25T / View Percention DD25T / View Percention DD25T / View Percention DD25T / View Application Tree (AppComp) DF14T / SAP Application Tree (DevClass Text) DEVTB / SAP Application Tree (DevClass Views) 	E
 ✓ TREE2_DF 14L / SAP Application Tree (AppComp) ✓ TREE2_DF 14T / SAP Application Tree (ApplComp Text) ✓ TREE2_TDEVC / SAP Application Tree (DevClass) 	Ŧ
< Back Next >	Cancel

SAP Extraction Wizard – Extraction Steps

This form lists each of the stages involved in extracting metadata from an SAP system. Most steps are checked 'On' and we recommend that you leave this default selection and continue to the next stage. The last two steps are to 'Generate Rules Based relationships;' and 'Generate Extended Relationships'. These describe the process by which Safyr can be used to add

additional relationships for the SAP metadata that are not explicitly defined in the SAP table structures. These options are checked 'Off' by default and we recommend that you only select these options to be 'On' after fully understanding the Extended Relationship generation process which is described in the 'Safyr User Guide.'

Note: The steps for a SAP BW system are different, but again, it is recommended that you leave the default selection of steps. There is no equivalent of the 'Generate Extended relationships' for BW.

Click the 'Next' button to proceed to the next stage.

SAP Extraction Wizard	– – X
Extract SAP Data	
Extraction Languages	
Please select at least one language to extract.	
Languages	
<pre>D - German (Source = D) I - Italian (Source = T) F - French (Source = F) S - Spanish (Source = S) N - Dutch (Source = N) P - Portuguese (Source = P) V - Swedish (Source = R) C - Czech (Source = C) 1 - Chinese (Simplified) (Source = 1) M - Chinese (Traditional) (Source = M) J - Japanese (Source = J) 3 - Korean (Source = 3)</pre>	
Set as Default Language	
< Back Next >	Cancel

SAP Extraction Wizard - Extraction Languages

SAP holds metadata in a wide range of languages. This means that you can find descriptive table and column names, plus attribute definitions in English, German, French, Italian and many other

languages. The Safyr extraction process lets you extract metadata for one or more of these languages.

On the Extraction Languages form, check each of the language codes you require (you must select at least one). If you do not see the languages you require, you can extend the list by editing the SafyrSettings.xlsx file. See Appendix B for details of this file.

Now click the 'Next' button to proceed to the next stage of the Extraction Wizard. If the metadata extraction for SAP is to be performed by the RFC Connection method, then the next form to be displayed will be the 'SAP Extraction Options' form. The purpose of this form is described on the next page. If the Direct DB Connect method has been chosen instead, you can skip to the next Extraction Wizard form.

SAP Extraction Wizard	
Extract SAP Data	
SAP Extraction Options	
Please select the extraction options below.	
Options	
Full Transfer	
Export SAP Data to Load Files	
Import Repository from Load Files	
	< Back Next > Cancel

SAP Extraction Wizard – SAP Extraction Options

The RFC Connect extraction method extracts metadata from SAP by invoking an SAP ABAP function which creates a series of text files for each of the SAP metadata tables being interrogated. These text files are read by Safyr and the contents used to load the Safyr repository with the extracted data. The SAP Extraction Options form enables this process to be split into two discreet

phases, should you wish. The 'Options' radio button controls this process. The possible values are:

Full Transfer	The metadata is exported to text files and then immediately read into the Safyr repository
Export SAP Data to Load Files	The metadata is exported to text files only. The Safyr repository is not updated.
Import Repository from Load Files	Existing text files, created by a previous 'Export SAP Data to Load Files' session, are used to populate the Safyr repository

The most likely use of these options is when the person requiring the metadata has no access to the source SAP system and requires the extraction to be done by someone else. We recommend that you choose the 'Full Transfer' extraction option if you have no real reason to split the extraction process into two stages.

SAP Extraction Wizard	
Extract SAP Data	
Test and Start the Extraction	
You are now ready to first test and then start the extraction.	
Test Extract Start Extract Stop Extract	

SAP Extraction Wizard – Test and Start the Extraction

This form is the last stage of the Extraction Wizard process.

Clicking the 'Test Extract' button causes Safyr to run a series of queries to ensure that all the objects requested for extraction are available.

Assuming the 'Test Extract' was successful, click the 'Start Extract' button to begin the full extraction process.

A series of status messages will allow you to monitor the extraction process. Once the extraction has completed, you will be ready to browse the extracted metadata. An overview of the Safyr features for achieving this is provided in the next chapter.

EXTRACTING METADATA

st and S	itart the Extraction		
'ou are no	ow ready to first test and then start the extraction.		
Test Ex	xtract Start Extract Stop Extract		
Extraction	n Status		
RFC Fu	unction Call Area: DD07T / Output: C:\erpdata\SAPSERVERECC6\ABAPFilesEnadD\DD07T.txt		
	 SAP Repository Extraction (Mode=Run) 17:23:44 Safyr-Environment 17:23:44 !Msg! Repository: SAPSERVER ECC6 17:23:44 !Msg! Log Source DB Physical Connection 17:23:44 Clear affected repository tables or recreate the whole repository 17:23:44 [00:01:10] Log Repository DB Physical Connection 17:24:54 Prepare the Repository Environment (after deleting unused data) 17:24:54 DD_LANGUAGES / Fill Languages 17:24:54 Initialize Language Environment from DD_LANGUAGES 17:24:54 DD01L / Domain 17:24:55 [00:00:16] 		
	 DD01T / Domain Description 17:25:12 [00:00:29] DD07L / Domain Values 17:25:42 [00:00:29] 		
4	DD07T / Domain Values Description 17:26:12		
•	4		

Extraction log during the extraction process

Extracting metadata from PeopleSoft Enterprise

Start the extraction process by selecting the 'ERP Extract' option from the Safyr File menu, or the 'Extract from ERP' tile from the Navigation Screen. This will start the PeopleSoft Extraction Wizard. Click the 'Next' button on the first 'Extraction Wizard' form to display the 'Source System Connection' form.

PeopleSoft Enterprise Extraction Wizard	- • ×
Extract PeopleSoft Enterprise Data	
Source System Connection	
Please verify the configuration for the Source System below.	
Configuration	Change
Source-DB User Name: Source-DB TableOwner: SYSADM Repo-DB: MS SQL Repo-DB Array Command Size (min/max): 1000/1000	
Test Connection	
< Back Next >	Cancel

PeopleSoft Extraction Wizard – Source System Connection

This form shows a summary of the connection parameters, previously supplied when completing the Repository Wizard. You can:

- Click the 'Change' button to further amend the connection parameters
- Click the 'Test Connection' button to verify the connection through to the Application.

Now click the 'Next' button to proceed to the next stage.

Steps
🔽 Log Source DB Physical Connection
Check PeopleSoft Enterprise Environment
Clear affected repository tables or recreate the whole repository
Log Repository DB Physical Connection
Prepare the Repository Environment (after deleting unused data)
DD_LANGUAGES / Fill Languages
☑ Initialize Language Environment from DD_LANGUAGES
✓ Domain
V DataElement
DataElement Description (default language) DataElement Description (additional languages)
V DataElement Description (additorial languages)
Table Description (default language)
Table Description (default languages)
Check of DD_DOMAIN / check if DD_LOOKUP_ENTITYNAME exists
Fields and Indices
Sync DD FIELD / get DD DOMAINNAMES from DD DATAELEMENTS
V Field Description (default language)
Field Description (additional languages)
Application Hierarchy
🗹 Statistics for Transp Tables (Has Data)
🗹 Delete Tables without Fields
Sync DD_FIELD Key Flags with Primary Key IndexMembers
Reorganisation of Repository after Extract
Generate ERP Based Relationships
Generate Rule Based Relationships
Generate Extended Relationships

PeopleSoft Extraction Wizard – Extraction Steps

This form lists each of the stages involved in extracting metadata from a PeopleSoft system. The first 25 steps are checked 'On' by default. The 26 th and 27th steps ('Generate Rule Based Relationships' and 'Generate Extended Relationships') can be used to create additional relationships between PeopleSoft tables using user-specified rules and Safyr inference rules respectively. We recommend that you only select either of the last two options after fully understanding the processes described in Appendix B ('Generating Relationships not found in the ERP') of the 'Safyr User Guide.'

Click the 'Next' button to proceed to the next stage.

🤝 PeopleSoft Enterprise Extraction Wizard
Extract PeopleSoft Enterprise Data
Extraction Languages
Please select at least one language to extract.
Languages
M = english (Source = ENC) = Default Language D - German (Source = TRA) F - French (Source = FRA) S - Spanish (Source = DUT) P - Portuguese (Source = POR) V - Swedish (Source = SVE) R - Russian (Source = RUS) C - Czech (Source = CZE) 1 - Chinese (Simplified) (Source = ZHS) M - Chinese (Sourci = JPN) J - Japanes (Source = MOR) 3 - Korean (Source = KOR)
Set as Default Language
< Back Next > Cancel

PeopleSoft Extraction Wizard – Extraction Languages

On the Extraction Languages form, check each of the language codes you require (you must select at least one). If you do not see the languages you require, you can extend the list by editing the SafyrSettings.xlsx. See Appendix B for details of this file.

Now click the 'Next' button to proceed to the next stage of the Extraction Wizard.

EXTRACTING METADATA

PeopleSoft Enterprise Extraction Wizard	_ _ ×
Extract PeopleSoft Enterprise Data	
Test and Start the Extraction	
You are now ready to first test and then start the extraction.	
Test Extract Start Extract Stop Extract	
<back next=""></back>	Close

PeopleSoft Extraction Wizard – Test and Start the Extraction

This form is the last stage of the Extraction Wizard process.

Clicking the 'Test Extract' button causes Safyr to run a series of queries to ensure that all the objects requested for extraction are available.

Assuming the 'Test Extract' was successful, click the 'Start Extract' button to begin the full extraction process.

A series of status messages will allow you to monitor the extraction process. Once the extraction has completed, you will be ready to browse the extracted metadata. An overview of the Safyr features for achieving this is provided in the next chapter.

Extracting metadata from Siebel

Start the extraction process by selecting the 'ERP Extract' option from the Safyr File menu, or the 'Extract from ERP' tile from the Navigation Screen. This will start the Siebel Extraction Wizard. Click the 'Next' button on the first 'Extraction Wizard' form to display the 'Source System Connection' form.

🦻 Siebel Extraction Wizard	
Extract Siebel Data	
Source System Connection	
Please verify the configuration for the Source System below.	
Configuration	Change
ERP Type: Siebel Source-DB User Name: Siebel Repository Name: 1-4-1 Siebel Repository Repo-DB: MS SQL Repo-DB Array Command Size (min/max): 1000/1000	
Test Connection	-
< Back Next >	Cancel

Siebel Extraction Wizard – Source System Connection

This form shows a summary of the connection parameters, previously supplied when completing the Repository Wizard. You can:

- Click the 'Change' button to further amend the connection parameters
- Click the 'Test Connection' button to verify the connection through to the Application.

Now click the 'Next' button to proceed to the next stage.

Steps
Log Source DB Physical Connection
Check existance of Siebel Repository ID
Clear affected repository tables or recreate the whole repository
✓ Log Repository DB Physical Connection
Prepare the Repository Environment (after deleting unused data)
DD_LANGUAGES / Fill Languages
V DataElement
V Table
Fields + Primary Keys
✓ Index
Relationships
View View
ViewField
Application + Business Object Hierarchy
Application + Screen + View Hierarchy
Statistics for Transp Tables (Has Data)
V Delete DD. VIEWS without ViewEields
Reorganisation of Repository after Extract

Siebel Extraction Wizard – Extraction Steps

This form lists each of the stages involved in extracting metadata from a Siebel system. The 22 steps are checked 'On' by default and we recommend that you leave this selection and continue to the next stage.

Click the 'Next' button to proceed to the next stage.

6	Extract Siebel Data		
Ext	traction Languages		
Ple	ease select at least one language to extract.		
L	anguages		
	✓ E - English (Source = E) - Default Language □ D - German (Source = D)		

Siebel Extraction Wizard – Extraction Languages

On the Extraction Languages form, check the language code you require.

Now click the 'Next' button to proceed to the next stage of the Extraction Wizard.

Extract Sie	ebel Data	
lest and Start the	Extraction	
You are now ready t	to first test and then s	start the extraction.
Test Extract	Start Extract	Stop Extract

Siebel Extraction Wizard – Test and Start the Extraction

This form is the last stage of the Extraction Wizard process.

Clicking the 'Test Extract' button causes Safyr to run a series of queries to ensure that all the objects requested for extraction are available.

Assuming the 'Test Extract' was successful, click the 'Start Extract' button to begin the full extraction process.

A series of status messages will allow you to monitor the extraction process. Once the extraction has completed, you will be ready to browse the extracted metadata. An overview of the Safyr features for achieving this is provided in the next chapter.

Extracting metadata from J.D.Edwards EnterpriseOne

Start the extraction process by selecting the 'ERP Extract' option from the Safyr File menu, or the 'Extract from ERP' tile from the Navigation Screen. This will start the EnterpriseOne Extraction Wizard. Click the 'Next' button on the first 'Extraction Wizard' form to display the 'Source System Connection' form.

JD Edwards Enterprise One Extraction Wizard	
Extract JD Edwards Enterprise One Data	
Source System Connection	
Please verify the configuration for the Source System below.	
Configuration	Change
ERP Type: JD Edwards Enterprise One Source-DB User Name: JD Edwards Enterprise One XML Directory: C:\erpdata\jde9 Repo-DB: MS SQL Repo-DB Array Command Size (min/max): 1000/1000	
Test Connection	
< Back Next >	Cancel

J.D.Edwards EnterpriseOne Extraction Wizard – Source System Connection

This form shows a summary of the connection parameters, previously supplied when completing the Repository Wizard. You can:

- Click the 'Change' button to further amend the connection parameters
- Click the 'Test Connection' button to verify the connection through to the Application.

Now click the 'Next' button to proceed to the next stage.

Steps
 Log Source DB Physical Connection Clear affected repository tables or recreate the whole repository Log Repository DB Physical Connection Prepare the Repository Environment (after deleting unused data) DD_LANGUAGES / Fill Languages Initialize Language Environment from DD_LANGUAGES Domain from DB DataElement from DB DataElement Description from DB Read Table Info from XML Check of DD_DOMAIN / check if DD_LOOKUP_ENTITYNAME exists Read View Info from XML Read System Code Hierarchy Info from XML Read Data Element Long Description Info from DB evaluation of the Physical Schema Owner Statistics for Transp Tables (Has Data) Reorganisation of Repository after Extract Generate Rule Based Relationships Generate Extended Relationships

J.D.Edwards EnterpriseOne Extraction Wizard – Extraction Steps

This form lists each of the stages involved in extracting metadata from an EnterpriseOne system.

The 18th and 19th steps (Generate Rule Based Relationships and 'Generate Extended Relationships') can be used to create additional relationships between JDEdwards tables using user-specified rules and Safyr inference rules respectively. We recommend that you only select either of the last two options after fully understanding the processes described in Appendix B ('Generating Relationships not found in the ERP') of the 'Safyr User Guide.'

Click the 'Next' button to proceed to the next stage.



EnterpriseOne Extraction Wizard – Extraction Languages

On the Extraction Languages form, check each of the language codes you require (you must select at least one). If you do not see the languages you require, you can extend the list by editing the SafyrSettings.xlsx file. See Appendix B for details.

Now click the 'Next' button to proceed to the next stage of the Extraction Wizard.

Extract JD Edwards Enterprise One Data	
Test and Start the Extraction	
You are now ready to first test and then start the extraction.	
Test Extract Start Extract Stop Extract	

This form is the last stage of the Extraction Wizard process.

Clicking the 'Test Extract' button causes Safyr to run a series of queries to ensure that all the objects requested for extraction are available.

Assuming the 'Test Extract' was successful, click the 'Start Extract' button to begin the full extraction process.

A series of status messages will allow you to monitor the extraction process. Once the extraction has completed, you will be ready to browse the extracted metadata. An overview of the Safyr features for achieving this is provided in the next chapter.

Extracting metadata from Oracle EBS

Start the extraction process by selecting the 'ERP Extract' option from the Safyr File menu, or the 'Extract from ERP' tile from the Navigation Screen. This will start the EBS Extraction Wizard. Click the 'Next' button on the first 'Extraction Wizard' form to display the 'Source System Connection' form.

Oracle E-Business Suite Extraction Wizard	
Extract Oracle E-Business Suite Data	
Source System Connection	
Please verify the configuration for the Source System below.	
Configuration	Change
ERP Type: Orade E-Business Sulte Source-DB User Name: Repo-DB: MS SQL Repo-DB Array Command Size (min/max): 1000/1000	
Test Connection	
< Back Next >	Cancel

Oracle EBS Extraction Wizard – Source System Connection

This form shows a summary of the connection parameters, previously supplied when completing the Repository Wizard. You can:

- Click the 'Change' button to further amend the connection parameters
- Click the 'Test Connection' button to verify the connection through to the Application.
Now click the 'Next' button to proceed to the next stage.

Steps
 Log Source DB Physical Connection evaluating EBS Table Physical Information Clear affected repository tables or recreate the whole repository Log Repository DB Physical Connection Prepare the Repository Environment (after deleting unused data) DD_LANGUAGES / Fill Languages Domains DataElements Tables Fields + Primary Keys Indexes Relationships Application Hierarchy Statistics for Transp Tables (Has Data) Delete Tables without Fields Reorganisation of Repository after Extract

EBS Extraction Wizard – Extraction Steps

This form lists each of the stages involved in extracting metadata from an EBS system. The 16 steps are checked 'On' and we recommend that you leave this selection and then click the 'Next' button to proceed to the next stage.

6	Extract Oracle E-Business Suite Data
Extrac	ction Languages
Pleas	e select at least one language to extract.
Lang	guages
V	: - English (Source = US) - Default Language

EBS Extraction Wizard – Extraction Languages

The extraction of metadata from EBS will always be in US English. Click the 'Next' button to proceed to the next stage of the Extraction Wizard.

📑 Extract Or	acle E-Business Suite Data
Test and Start the	Extraction
You are now ready	to first test and then start the extraction.
Test Extract	Start Extract Stop Extract

EBS Extraction Wizard – Test and Start the Extraction

This form is the last stage of the Extraction Wizard process.

Clicking the 'Test Extract' button causes Safyr to run a series of queries to ensure that all the objects requested for extraction are available.

Assuming the 'Test Extract' was successful, click the 'Start Extract' button to begin the full extraction process.

A series of status messages will allow you to monitor the extraction process. Once the extraction has completed, you will be ready to browse the extracted metadata. An overview of the Safyr features for achieving this is provided in the next chapter.

Extracting metadata from Salesforce

Start the extraction process by selecting the 'ERP Extract' option from the Safyr File menu, or the 'Extract from ERP' tile from the Navigation Screen. This will start the Salesforce Extraction Wizard. Click the 'Next' button on the first 'Extraction Wizard' form to display the 'Source System Connection' form.

Salesforce Extraction Wizard	
Extract Salesforce Data	
Source System Connection	
Please verify the configuration for the Source System below.	
Configuration	Change
ERP Type: Salesforce SalesForce URL: https://login.salesforce.com/services/Soap/c/33.0 SalesForce User Name: info@silwoodtechnology.com SalesForce entract Path: C:\erpdata\SFDev Repo-DB: MS SQL Repo-DB Array Command Size (min/max): 1000/1000	
Test Connection	
< Back Next >	Cancel

Salesforce Extraction Wizard – Source System Connection

This form shows a summary of the connection parameters, previously supplied when completing the Repository Wizard. You can:

- Click the 'Change' button to further amend the connection parameters
- Click the 'Test Connection' button to verify the connection through to the Application.

Now click the 'Next' button to proceed to the next stage.

Salesforce Extraction Wizard – Extraction Steps

This form lists each of the stages involved in extracting metadata from a Salesforce system. The 27 steps are checked 'On' and we recommend that you leave this selection and then click the 'Next' button to proceed to the next stage.

Extract Salesforce Data			
Extraction Languages			
Please select at least one language to extract.			
Languages			
<pre> E - English (Source = E) - Default Language D - German (Source = D) I - Italian (Source = I) F - French (Source = F) S - Spanish (Source = S) N - Dutch (Source = N) P - Portuguese (Source = P) V - Swedish (Source = V) R - Russian (Source = R) C - Czech (Source = C) 1 - Chinese (Simplified) (Source = 1) M - Chinese (Traditional) (Source = M) J - Japanese (Source = 3) </pre>			

Salesforce Extraction Wizard – Extraction Languages

The extraction of metadata from Salesforce will normally be in English. Click the 'Next' button to proceed to the next stage of the Extraction Wizard.

ditonal Extraction Ontions	
Please select the extraction options below.	
Options	
Full Extract	
0	

Salesforce Extraction Wizard – Additional Extraction Options

The extraction of metadata from Salesforce not only populates the Safyr repository, but also creates a series of text files. These text files can be used to rerun the extraction, or to allow population of a different Safyr instance based upon these files.

The normal selection for this would therefore be 'Full Extract'.

Click the 'Next button to move to the next extract step.

Extract Sale	sforce Data		
est and Start the E	first test and then st	art the extraction.	
Test Extract	Start Extract	Stop Extract	

Salesforce Extraction Wizard – Test and Start the Extraction

This form is the last stage of the Extraction Wizard process.

Clicking the 'Test Extract' button causes Safyr to run a series of queries to ensure that all the objects requested for extraction are available.

Assuming the 'Test Extract' was successful, click the 'Start Extract' button to begin the full extraction process.

A series of status messages will allow you to monitor the extraction process. Once the extraction has completed, you will be ready to browse the extracted metadata. An overview of the Safyr features for achieving this is provided in the next chapter.

Extracting metadata from Microsoft Dynamics AX 2012

Start the extraction process by selecting the 'ERP Extract' option from the Safyr File menu, or the 'Extract from ERP' tile from the Navigation Screen. This will start the Dynamics AX Extraction Wizard. Click the 'Next' button on the first 'Extraction Wizard' form to display the 'Source System Connection' form.

Dicrosoft Dynamics AX Extraction Wizard	
Extract Microsoft Dynamics AX Data	
Source System Connection	
Please verify the configuration for the Source System below.	
Configuration	hange
ERP Type: Microsoft Dynamics AX Microsoft Dynamics AX Extract Path: C:\erpdata\DynamicsAX Repo-DB: MS SQL Repo-DB Array Command Size (min/max): 1000/1000	
Test Connection	
< Back Next >	Cancel

Dynamics AX Extraction Wizard – Source System Connection

This form shows a summary of the connection parameters, previously supplied when completing the Repository Wizard. You can:

- Click the 'Change' button to further amend the connection parameters
- Click the 'Test Connection' button to verify the connection through to the Application.

Now click the 'Next' button to proceed to the next stage.

Dynamics AX Extraction Wizard – Extraction Steps

This form lists each of the stages involved in extracting metadata from a Dynamics AX system. The 28 steps are checked 'On' and we recommend that you leave this selection and then click the 'Next' button to proceed to the next stage.



Dynamics AX Extraction Wizard – Extraction Languages

The extraction of metadata from Dynamics will normally be in English. Click the 'Next' button to proceed to the next stage of the Extraction Wizard.

3	Extract Microsoft Dynamics AX Data
ddito	onal Extraction Options
Pleas	e select the extraction options below.
Opti	ions
© F	Eull Extract
() L	oad existing Flat Files from Extraction Path

Dynamics AX Extraction Wizard – Additional Extraction Options

The extraction of metadata from Dynamics not only populates the Safyr repository, but also creates a series of text files. These text files can be used to rerun the extraction, or to allow population of a different Safyr instance based upon these files.

The normal selection for this would therefore be 'Full Extract'.

Click the 'Next button to move to the next extract step.

Extract Microsoft Dynamics AX Data
Test and Start the Extraction
You are now ready to first test and then start the extraction.

Dynamics AX Extraction Wizard – Test and Start the Extraction

This form is the last stage of the Extraction Wizard process.

Clicking the 'Test Extract' button causes Safyr to run a series of queries to ensure that all the objects requested for extraction are available.

Assuming the 'Test Extract' was successful, click the 'Start Extract' button to begin the full extraction process.

A series of status messages will allow you to monitor the extraction process. Once the extraction has completed, you will be ready to browse the extracted metadata. An overview of the Safyr features for achieving this is provided in the next chapter.

Restarting an extraction

There may be circumstances where an extraction fails or has to be abandoned. In such a case, it is possible to restart the extraction process. This can also be used to rerun steps of a successfully completed extraction, without the need to run the full extract again.

To achieve this, follow the steps described above for the required source ERP system until the Extraction Steps screen. From this screen, click on the step which is the first step to be performed and Right Mouse Click to show the RMC menu. Now select the 'Select Start Step and Required Steps'.

This will select any steps that need to be performed, plus the subsequent required steps. Then proceed with the extraction as normal.

Extract Salesforce Data
Extraction Steps
Please define the extraction steps below.
Steps
V Log Source DB Physical Connection Clear affected repository tables or recreate the whole repository V Log Repository DB Physical Connection Prepare the Repository Environment (after deleting unused data) Enable "Records Count Scanning" for the Salesforce Extract Extract the Salesforce Metadata by WebService-Calls DD _LANGUAGES / Fill Languages V Initialize Language Environment from DD_LANGUAGES DD_DOMAIN / Domain DD_DOMAIN / Domain DD_DOMAINVALUE / Domainvalue DD_DOMAINVALUE / Domainvalue DD_DOMAINVALUE / Domainvalue DD_DOMAINVALUE / Domainvalue DD_DOMAINVALUE / Data Element DD_DATAELEMENT / Data Element DD_TABLE_Table DD_TABLE_Table DD_TABLE_Table DD_TABLE_Table DD_FIELD / Field DD_FIELD / Field DD_FIELD / Field DD_INDEX / Field Description for empty descriptions Ø D_INDEX / Index V DD_INDEX / Desc / Index Select Start Step and Required Steps Select All Unselect All Unselect All V D_RELATIONSHIP / Re V Reorganisation of Repository after Extract

Quick Tour of Safyr's Features

Gives an overview of the main Safyr features for browsing the extracted metadata.

The extraction of metadata from your chosen Enterprise Application was described in the previous chapter. Once this process is complete, Safyr provides a convenient interface for exploring the metadata and exporting sub-sets into other environments.

Navigation Screen

The Navigation screen presents a series of clickable 'tiles' which correspond to the three phases involved with using the product effectively. There is an implied 'workflow' in the way the tiles are arranged. The middle tier of Tiles is a good starting point for exploring the metadata extracted from the ERP.



The features available from the four tiles shown are described in introductory form in the sections below. Please see the Safyr User Guide for full details of these features.

- Multi-Object Search see 'Multi-Object Search' below
- Show List of Tables see 'Show List of Tables' below
- Show Hierarchy see 'The Application Hierarchy' below
- Group Tables into Subject Areas see 'Subject Areas' below

Multi-Object Search

This feature provides a search capability across a range of Safyr repository 'object' types. Using the Search box at the top of the form, entering a search string will return the matching objects. The objects searched are Tables, Views, Domains, Data Elements, and Application Hierarchies. The results are returned as a series of nodes, categorised by object type.

O Multi Object Search	×
Search for: *sales order* >>> Search	≡
Max Rows: 0 (0=all):	
> - Tables (109)	^
> · · · · · · · · · · · · · · · · · · ·	
Detailements (79)	
Tree: SAP Application / DevClass Tree(6)	
CO PCP MCSO / Mass Costing of Sales Orders (DevClass)	
ERP SALES O2C MAIN / ERP Sales Order 2 Cash - Main (DevClass)	
ERP_SALES_02C_SLS / ERP Sales Order 2 Cash - Sales (DevClass)	
WOST_WSSO_TOOLS / SAP Retail Store: Sales Order tools (DevClass)	
Y - Te: SAP Program Tree(179)	
INFM/CORRECT1 / Correction Program for Sales Orders with NF (Program)	
Improvement in the second seco	
T= 0.1K1 / General Sales Order (FuncGroup)	
WCSRS14 / Customizing Sales Order (FuncGroup)	
WCV / IS-R: Sales order (Customizing) (FuncGroup)	
- 12 2032 / Business Object Sales Order (Functoroup)	
ADDIVIDUO: Transfer Quotation/Sales Order (Functoroup) ADDIVIDUO: ADDIVIDOO: ADDIVIDOO: ADDIVIDOO: ADDIVIDOO: ADDIVIDUO: ADDIVIDOO: ADDIVIDUO: ADDIVIDOO: AD	
ADDDS2032 (Program for object type 250b2032; Sales order Ad (Program)	
RPBC (Solar Order Tarding (Dav(Jaco)	
CK36 (Matof Cast Est Numbers for Sales Order (EuroGroup)	
CK82 / Noted BDM Sales Orders (Transact)	
CKAPPO3 / Sales Order I then to be Costed (Transact.)	
CKKA / Sales Order Costing (DevClass)	
CKKA / Sales Order Costing - Interfaces (FuncGroup)	
CNC5 / Consistency checks sales order/proj. (Transact.)	
CO08 / Production order with sales order (Transact.)	
COP11 / Plan HUs Without Sales Order (Transact.)	
CO_PCP_MCSO / Mass Costing of Sales Orders (DevClass)	Υ.

Multi-Object Search

Objects discovered by the Search can be further explored by clicking on the desired object. See the Safyr User Guide for full details of how to use this feature.

Show List of Tables

This feature is available from the Navigation Screen, and also the 'Model Overview' tool on the Menu and Icon bar and is a good place to start exploring the metadata extracted from your application, such as searching for tables, their characteristics and how they are related.

Clicking the Search button will return a list of all the tables in the Safyr repository, as shown below, which can be scrolled through.

III Tables	Views 🧼 Data Elements 🗳 Domains				
er Tables by:	Short Description Subject Area ID				
,		🔹 🕨 Sear	ch	E	Advanced Se
bl Name 🔺	Short Desc	Tbl Type	No. of Child Tbls	No. of Parent Tbls Row	Count
HTVAZUO	IS-M/AM: Contract/Agency Assignment	Transparent	0	3	0
HTVB	IS-M/AM: Contract Requirements	Transparent	1	2	0
HTVBERS	IS-M: COA Implications	Transparent	0	1	0
HTVBPO	IS-M/AM: Contract Requirement Element	Transparent	0	27	0
HTVBZUO	IS-M/AM: Contract/Beneficiary Assignment	Transparent	0	3	0
HTVGPZ	IS-M/AM: Business Partner Assignment to the Contract	Transparent	0	5	0
нтуко	IS-M/AM: Contract	Transparent	16	16	0
HTVMEMORY	IS-M/AM: Buffering Table for Contract Data Transfer	Transparent	0	0	0
HTVPO	IS-M/AM: Contract Item	Transparent	2	2	0
HTVVBER.	IS-M/AM: Contract/Assigned Sales Areas	Transparent	0	3	0
HTVVZUO	IS-M/AM: Contract/ Sales Agent Assignment	Transparent	0	2	0
HWWWTEMP_BE	IS-M/AM: Temporary Table for Additional Booking Units	Transparent	0	0	0
HWWWTEMP_ET	IS-M/AM: Temporary Table for Additional Publication Da	Transparent	0	0	0
HWWWTEMP_ORDER	IS-M/AM: Temporary Table for Order Data from the Inte	Transparent	0	21	0
HWWWTEMP_TEXT	IS-M/AM: Temporary Table for Order Texts from the Int	t Transparent	0	0	0
IT_AZVAR	Display variant in JIT cockpit or graphical progress.	Transparent	7	1	0
IT_AZVART	Text Table for Display Variant	Transparent	0	3	0
IT_PRINT	JIT :Shared Buffer for Print Data	Transparent	0	0	0
ITBACKFTMP	Temporary File for Confirmation Pool	Transparent	0	6	0
ITCIRCBOOK	IS-M/SD: Circulation Book with Delivery Quantities	Transparent	0	4	0
псо	Call components	Transparent	1	2	0
ITCOL	JIT: Table with the Color Profile of the JIT Cockpit	Transparent	3	2	0
ITCOLP	JIT: Assignment of the Colors to the Characteristics	Transparent	0	3	0
ITCOLT	JIT: Text Table for JIT_COL	Transparent	0	3	0
ITCRI	Selection Criteria in JIT Cockpit	Transparent	2	1	0
ITCRI1	Selection Criteria per Application in JIT Cockpit	Transparent	0	2	0



Tables

The fields displayed for each table, in the 'Model Overview' include the internal table name 'Tbl Name' and some table descriptive text 'Short Desc'. The 'No. of Child Tbls' and 'No. of Parent Tbls' show the number of child and parent tables related to each individual table. The 'Row Count' shows the number of rows in each table (see 'How Safyr determines the Row Count' in the Safyr User Guide for more details of the Row Count) feature). The total number of tables or records is shown at the bottom of the frame.

Use the '**Filter Tables by**': section in the upper part of the screen to search for tables with certain criteria and reduce the list of tables, or find a specific table. For example, type '*Order*' into the 'Short Description' box and click **Search** This will return a list of all tables with the characters 'Order' in the 'Short Desc' field. The 'Number of Records:' at the bottom of the screen reduces.

QUICK TOUR OF SAFYR'S FEATURES

Tables	Views 🧼 Data Elements	🧼 Domains					
er Tables by:							
able Name	Short Description	Subject Area ID					_
~	~ "order"		Sear	rch 🗶	Er Ad	Ivanced Se	aro
Tbl Name 🔺	Short Desc		Tbl Type	No. of Child Tbls	No. of Parent Tbls Row Coun	nt	_
FRE_DOC_TY_SO	Relevant Document Catego	ories and Types for Sales Ord	Transparent	0	1	0	
RE_IF_ITEM	F&R Order Outbound IF: in	ternal Item Table	Transparent	0	0	0	
RE_OP_HEADER_IN	F&R CON R/3 - Order Prop	osal Inbound Header Buffer	Transparent	0	0	0	
RE_OP_ITEM_IN	F&R CON R/3 - Order Prop	osal Inbound Item Buffer	Transparent	0	0	0	
RE_OP_PO_KEY	Key-Completion F&R Order	Proposal <-> R/3 Purchase	Transparent	0	0	0	
RE_ORD_CONS	F&R CON Order Interface	- Consignment Value Mapping	Transparent	0	2	0	
FRE_ORD_FASH	Customizing Data for Order	r Inbound Interface	Transparent	0	1	0	
RE_PO_GI_WL	Database Table for order it	tem worklist concerning GI da	Transparent	0	0	0	
RE_PO_POINTER	Change Pointers Changed	Purchase Order Documents	Transparent	0	0	0	
RE_SO_POINTER	Change Pointers for chang	ed Sales Order Documents	Transparent	0	0	0	
FUNOCM	Function marked for Order	Change Management	Transparent	0	0	7	
GHO_OTS	GHO Order Template Struc	tures	Transparent	0	0	0	
GHO_OTS_MAT	GHO Order Template Struc	ture Materials	Transparent	0	0	0	
GLS_CNT_REDEL	Control of Document Seque	ence for Purchase Order Cha	Transparent	0	1	5	
HIKO	Order master data history		Transparent	3	28	0	
HIMA	PM order history - material	5	Transparent	0	13	0	
HIVG	PM order history - operatio	ns	Transparent	0	23	0	
CFLOGORDER	Order of Logon Procedures	for Each Service	Transparent	0	0	0	
CFRECORDER	Store ICF Documents (Rela	ited to Recorder Layer)	Transparent	0	0	0	
CH_D_MWO_PPN	ManufactoringWorkOrderP	roductionProgress control	Transparent	0	0	0	
ICL_CINSTSERV	Order Type - Transaction T	уре	Transparent	0	3	0	
CL_CINSTTYPE	Order Type		Transparent	2	0	0	
CL_CINSTTYPET	Order Type Text		Transparent	0	3	0	
HC_DB_BCA_EXTPO	Process Parameter Externa	al BCA Payment Orders	Transparent	0	2	0	
HC_DB_ENQ_PN	Lock Table for Payment Or	der	Transparent	0	0	0	
HC_DB_PN	Source Document for Incor	ning Payment Orders	Transparent	0	4	0	

Model Overview showing the results of a Search

The total number of tables extracted from a full ERP database into the Safyr repository is usually very large, (e.g. over 90,000 shown in the example above), too many to understand and manage easily as a single group.

So an important facility provided by Safyr is its powerful filter/search capability to help the user find the tables appropriate to a particular requirement and then enable the tables to be grouped as required into manageable sets or subject areas for further analysis or export to another tool.

See later section on **Filtering &Searching** including use of the **Advanced Search** button and **Subject Areas**.

Clicking the 🔀 to the right of the Description is a quick way to clear all search criteria.

Double Click on one of the tables listed in the 'Model Overview' screen to see more information about the table highlighted. Information is shown in a series of tabs. The '**Fields**' tab is introduced below.

Fields

The Fields tab shows a list of fields making up the table. It is the first tab to be presented of the Table tabs.

Table D	etails: AUFK (Order ma	ster data							>
	Table-Info	🔠 Fie	elds 🛛 📥 Rela	ation	ships 🗄 Indexe	s				
Fields	Field Filter	8			Field Details					
Fieldna	ame	Posit	Fieldtext	^	Field Name:	MANDT				
2	MANDT	1	Client		Short Desc:	Client				
1 III	AUFNR	2	Order		Posit:	1 Key Ela	a: V	Mandatory: V		
200	AUART	3	Order Type				9. [
= ==	AUTYP	4	Order category		Parent Table/Field:	1000	MANDT			£
2 💷	REFNR	5	Reference order		Data Element					
	ERNAM	6	Entered by							
	ERDAT	7	Created on		Data Element Name:	MANDT				t
	AENAM	8	Last changed by		Short Desc:	Client				
	AEDAT	9	Changed on							
	KTEXT	10	Description		Domain Info					
	LTEXT	11	Long text exists		Domain Name	MANDT				•
2 💷	BUKRS	12	Company Code		d					
- 💷	WERKS	13	Plant		Short Desc:	Client (key field in	client-specific t	tables)		
2	GSBER	14	Business Area		Data Type / ERP:	String	/ CLNT	Length: 3	Decimals: 0	
2	KOKRS	15	Controlling Area		Entity Table:	T000				t l
	CCKEY	16	Cost collector key							
2	KOSTV	17	Responsible CCtr		Descriptions (T = te	chnical description)				
2 🎞	STORT	18	Location/Plant		Field Fie	ld (T) Data Eler	nent Data El	em. (T) Domain	Domain (T)	
2 💷	SOWRK	19	Location plant		A locally and superior					
	ASTKZ	20	Statistical		< A legally and organiz	ationally independe	ent unit which l	uses the system.		<u>^</u>
2 💷	WAERS	21	Currency							
	ASTNR	22	Order status							
	STDAT	23	Status change							
2 💷	ESTNR	24	Reached status							
	PHAS0	25	Created							
	PHAS1	26	Released							
	PHAS2	27	Completed							
	PHAS3	28	Closed							
	PDAT1	29	Planned release							
	PDAT2	30	Planned completion							
I FIF	DDAT2	21	Disposed closing d	*						~

Table Field Details

Clicking on individual field names in the left-hand side of the screen will cause the details about the field to be shown in the frames on the right-hand side of the screen.

The default display format shows details of each field in the table. To the left of each field icon III there may be an additional icon. This can be: -

- The Field is part of the Table's Primary Key
- The Field is part of the Primary Key and also a Foreign Key
- The Field is a Foreign Key field

Table Relationships

From the 'Tables' tab on the Model Overview Screen, select a table and click the Right Mouse button. A number of options are presented.

Table Details Table Relationships
Add table 'AFPO' to a 'New Subject Area' (all fields) Add table 'AFPO' to a 'New Subject Area' (only marked fields) Display Subject Areas that contain table 'AFPO' Select All
Find Table in •
Drill into Source Data Export Source Data Export Source Data (Full Selection)
Export Table Properties Export Table-List to File or Clipboard (1 item)
Create SQL Scripts

Model Overview Right Mouse Click menu

Select 'Table Relationships' by moving the mouse over the option and clicking. A new window is opened with details of the Tables linked to the selected table in the Model Overview.

The table name and description are shown of both the Parent and Child tables, making it easier to trace linked tables and include them in appropriate sets

elationships for Table	:	
NA1		Only with Data
arent Tables (51)	all relationships
+ Tbl Name 🔺	Short Desc	
NSO/R_DPOINT	Collective Unloading Point for VSO	
BUSTYPE	Type of Business	
FMFGT_ALC	Agency Location Code - U.S. Federal Government	
FMFGT_PO	Payment Office - U.S. Federal Government	
INDUSTYPE Table Details hild Tables (84	Type of Industry	all relationships
INDUSTYPE Table Details hild Tables (84 Thi Name	Type of Industry 7) Short Desc	all relationships
INDUSTYPE	Type of Industry 7) Short Desc Customer Empties Stock per Month	all relationships
INDUSTYPE Table Details hild Tables (84 Tbl Name JBEV1/EMLGBSD /BEV1/EMLGBWDK	Type of Industry Type of Industry Short Desc Customer Empties Stock per Month Customer Empties Movement - Lock Object	all relationships
INDUSTYPE Table Details hild Tables (84 Tbl Name /BEV1/EMLGBSD /BEV1/EMLGBWDK /BEV1/EMLGBWDP	Type of Industry Type of Industry Short Desc Customer Empties Stock per Month Customer Empties Movement - Lock Object Empties Movement Account Customer	all relationships
INDUSTYPE Table Details hild Tables (84 Tbl Name ▲ /BEV1/EMLGBSD /BEV1/EMLGBWDK /BEV1/EMLGBWDP /BEV1/EMLGFAD	Type of Industry Type of Industry Short Desc Customer Empties Stock per Month Customer Empties Movement - Lock Object Empties Movement Account Customer Empties Movement - Customer Billing Status	all relationships
INDUSTYPE Table Details hild Tables (84 Tbl Name ▲ /BEV1/EMLGBSD /BEV1/EMLGBWDK /BEV1/EMLGBWDP /BEV1/EMLGFAD /BEV1/EMLGOFS	Type of Industry 7) Short Desc Customer Empties Stock per Month Customer Empties Movement - Lock Object Empties Movement Account Customer Empties Movement - Customer Billing Status Empties - Billing Document Without Update	all relationships
INDUSTYPE Table Details ild Tables (84 Tbl Name ▲ /BEV 1/EMLGBSD /BEV 1/EMLGBWDR /BEV 1/EMLGFAD /BEV 1/EMLGFAD /BEV 1/EMLGOFS /BEV 1/LATERMINE	Type of Industry Short Desc Customer Empties Stock per Month Customer Empties Movement - Lock Object Empties Movement Account Customer Empties Movement - Customer Billing Status Empties - Billing Document Without Update Shipping: Standard Dates Loading Places	all relationships
INDUSTYPE Table Details hild Tables (84 → Tbl Name ▲ → Tbl Name ▲ → JBEV1/EMLGBSD /BEV1/EMLGBWDK /BEV1/EMLGBWDP /BEV1/EMLGFAD /BEV1/LATERMINE /BEV1/LATERMINE /BEV1/LAZEITF	Type of Industry Type of Industry Short Desc Customer Empties Stock per Month Customer Empties Movement - Lock Object Empties Movement Account Customer Empties Movement - Customer Billing Status Empties - Billing Document Without Update Shipping: Standard Dates Loading Places Shipping: Loading Agenda	all relationships

Parent and Child relationships for a Table

Filtering / Searching

another set.

The total number of tables extracted from a full ERP database into the Safyr repository is usually very large. Safyr's powerful filter / search capability is essential to help the user find the tables appropriate to a particular requirement and enable the tables to be grouped as required into manageable sets or subject areas.

This grouping ability makes it easier to understand and communicate appropriate parts of the metadata model. The concept of Subject Area groupings can also be utilised in filtering and searching, providing an additional dimension to limit the task to a particular set of tables. Criteria can be combined to allow more focused searches and the Advanced Search button makes available a number of additional criteria to use. The Advanced Search capability, combined with the use of Subject Areas, also allows searches of one set of tables whilst excluding tables in

Subject Areas

Subject Ares are the means to make user-defined groupings of Tables and Views in Safyr.

To create and use a Subject Area, click the 'Group Tables into Subject Areas' tile on the navigation screen, or click the 🔀 icon on the Safyr toolbar. This will display the Edit Subject Areas form which has features for creating and populating subject areas.

C Edit Subject Area: 'Accounting'					×
Subject Area	Member List				
Filter by Name:	Table/View Name	Table/View Description	Marked Fields	Row Count	^
Containing Table/View: *	A003	Tax Classification		2581	
🕞 Absence quota accrual rule	🖽 A013	Overhead Type		24	
Absence valuation rule	🖽 A014	Overhead Type/Overhead Key		32	
C Account	🖽 A026	Controlling Area/Cost Center		0	
Contraction	🖽 A027	Controlling Area		18	
Contraction Account determination rule	🖽 A035	Overhead Type/Plant		146	
C Accounting	🖽 A036	Overhead Type/Order Type		16	
C Accounting Document	🖽 A037	Overhead Type/Order Catg.		16	
Counts Payable	🛄 A038	Overhead Type/Company Code		16	
Accounts Receivable	📖 A039	Overhead Type/Business Area		16	
Accounts receivable document	A058	Controlling Area/Cost Center Type		0	
Accrual cost calc special	🖽 A059	Controlling Area/Company Code		0	
Activities	A060	Controlling Area/Business Area		0	
	🖽 A061	Controlling Area/Cost Center Type/Cost Center		0	
	🖽 A062	Controlling Area/Company Code/Cost Center		0	
	A063	Controlling Area/Business Area/Cost Center		0	
Additional Account Assignments	🖽 A105	Controlling Area/Company Code/Business Area		0	
Additional dangerous goods inf	AFAB	Network - Relationships		24	
Additional ledger	AFFL	Work order sequence		161	
Additional Ledger Document	AFIH	Maintenance order header		14	
Additionals request	AFKO	Order Header Data PP Orders		125	
🐻 Address	AFPO	Order item		117	
🐻 Allocation structure	AFRH	Header information for confirmation pool		0	\checkmark
G AM Asset Accounting ✓	<			3	>
1 1 1 1 1		3 5		1209 mer	nbers

The Subject Area Editor

Click the 12^{10} icon to create a new subject area and enter a suitable name and click OK.

C	reate New Subjec	t Area	23
	Create New Subje	ect Area	
	Name:	Subject Area for Manuals	
	Remark:	This is a Subject Area created for the Safyr manual screen shots	
	Created:		
	Last Updated:		
		Ok	cel

Creating a New Subject Area

The next step is to add tables into the subject area.

Keep open the Subject Area into which you want to place tables.

Return to the Model Overview main 'Tables' tab. Select the required tables using a standard Shift/Click or Control/Click approach to choosing rows.

Then Right Mouse Click on one of the highlighted selected tables. The Right Mouse Click menu is then displayed, as shown. Now choose the 'Add the selected...' option to add the selected tables to the currently open Subject Area.

	Table Details Table Relationships
	Add table 'AFPO' to Subject Area 'Subject Area for Manuals' (all fields) Add table 'AFPO' to Subject Area 'Subject Area for Manuals' (only marked fields) Display Subject Areas that contain table 'AFPO' Select All
	Find Table in >
	Drill into Source Data Export Source Data Export Source Data (Full Selection)
	Export Table Properties Export Table-List to File or Clipboard (1 item)
	Create SQL Scripts

Model Overview Right Mouse Click menu

There are other methods for populating a subject area. These are described fully in the Safyr User Guide.

Filtering using Subject Areas

From the Model Overview screen, one of the filter criteria fields available is the Subject Area. This allows a Search to be focused on a set of tables included in the subject area. With this facility a chosen set of tables can be split into other sets or refined by using further searches. This is described further in the Safyr User Guide.

Advanced Search

From the Model Overview Tables screen, click the Advanced Search button to show the additional filter criteria available.

Filter criteria from the Model overview screen is carried forward to the Advanced Search.

The icons in the left- or right-hand portion of the fields allow more complex comparisons available. Click in the field to select the field and then click on the icon shown to the left of the field to select the appropriate criteria.

The section at the bottom of the Filter screen allows tables from a subject area to be included or excluded from a search.

Filter Tables by		×
Standard Filter S	earch for Field Patterns Extended Filter	
Table Name <u>Short Description</u> Table Type No. of Parent Tbls Long Description	~	
Contains Fields with:		
Field Name	~	
Short Description	~	
Data Elmnt Name	= Domain Name =]
Long Description	~	
Subject Area:		
in:		•
not in:		•
Clear Filter	Ok Can	cel

Advanced Search screen

The Application Hierarchy

The Application Hierarchy feature in Safyr is an alternative way of looking at the contents of the Safyr repository. The general concept of the Hierarchy is to show tables and/or views in logical groupings. The content of these hierarchies is very dependent on the ERP being used, but the general appearance and functionality is the same across all ERP types supported by Safyr.

Click the 'Show Hierarchy' tile on the Navigation screen, or the sicon on the Safyr toolbar to display the Application Hierarchy. This presents a list of modules and their associated tables. The actual content of the hierarchy shown will depend on the Enterprise Application being viewed. There may also be a choice of hierarchy, based on the drop-down list at the top of the Application Hierarchy screen.

Clicking on a tree node expands a tree of subsidiary 'objects'. Right Mouse Clicking on an object with a subject area open provides a facility to add all objects of a given tree level to the selected subject area.

See the Safyr User Guide for more details on Application Hierarchy navigation.



Displaying the Application Hierarchy

Exporting to third party tools

The Export to third party tools is based on the Safyr subject area concept. To begin the process of exporting the chosen data definitions to the tool of choice, click the sicon on the Safyr tool

bar to open the Export Data Model Wizard, or click the 'Export Subject Areas...' tile on the Navigation screen. Then click the 'next' button to start the export steps.

The 'Define Subject Areas' form is for selecting one or more subject areas to be exported. Click the 'Add Subject Areas' button to add one or more subject areas you require. Click the 'Next' button to progress to the next stage of the export wizard.

Export Data Model As	
Export Data Model Wizard	
Step 1: Define Subject Areas	
Please add the subject areas to export by clicking the "Add" button.	
Subject Areas	
Cash Management	
Add Remove	
	1
< Back Next >	Cancel

The Export Wizard – specifying the Subject Areas required

The next form displayed is the place to choose the export format. The actual export formats displayed and the subsequent wizard steps will depend on the formats that your Safyr installation has been configured to use.

lease select where to export t	he subject areas and define the export se	ttings.	
Export To	O PowerDesigner		
◯ ER/Studio	◯ System Architect		
Safyr ER Diagrammer	O IBM InfoSphere Data Architect		
Comparison File	Generic XML		
🔾 Metadata Report	🔾 Collibra		
CSV File	 Informatica EDC 		

The Export Wizard – choosing the Export format

Task Automation with Safyr

Many of the tasks that are typically required for regular usage of Safyr can be automated. These include:

Extraction from the source application (SAP, Salesforce....)

Creation of Subject Areas

Expansion of Subject Areas

Export of Subject Areas (only certain formats currently supported)

An overview of this capability can be found in Appendix D of the Safyr User Guide. Full details of the options to achieve automation are described in the 'Safyr Task Automation Guide'.

Appendix A. Installing the SAP ABAP Functions

Details of the ABAP functions used by Safyr to extract metadata

If extraction of metadata from SAP or SAP BW via ABAP has been chosen, then it will be necessary to install an ABAP Function on each SAP system from which metadata is to be extracted.

These Functions are supplied as SAP Transports and will be made available to customers for installation.

There is a separate Transport for each of the three types of SAP system that Safyr can work with. These correspond to the 'Source System Type' specified on Step 3 of the Repository Wizard (see 'Using the Repository Manager to configure Safyr' earlier in this manual).

Safyr is supplied with three additional ABAP functions (one each for SAP, SAP CDS and SAP BW) that can be used to run the 'main' ABAP functions from within the SAP environment. These may be used to run the extraction process and create text files if it is not possible to access the SAP system via RFC calls.

The SAP Objects installed are described in the following table. Each transport, includes an SAP Package, Function Group and two Functions.

The 'Main' Function is the one normally called by Safyr to extract metadata from the SAP system. The 'All' Function can be used when invocation by RFC is either not possible or not permitted by the SAP team. The All Function runs the 'main' function to create a set of text files. These files can then be imported to Safyr.

System	System without CDS Extensions	CDS	BW
Туре			
Main	/SILWOOD/SAFYR_NONCDS	/SILWOOD/SAFYR_CDS	/SILWBW/SAFYR_BW
Function	_		_
ALL	/SILWOOD/SAFYR_NONCDS_ALL	/SILWOOD/SAFYR_CDS_ALL	/SILWBW/SAFYR_BW_ALL
Function			
Function	/SILWOOD/SAFYR_NONCDS_FGRP	/SILWOOD/SAFYR_CDS_FGRP	/SILWBW/SAFYR_FGRP
Group			_
Package	/SILWOOD/SAFYR NONCDS PACKAGE	/SILWOOD/SAFYR CDS PACKAGE	/SILWBW/SAFYR PACKAGE
-			_

Using the ABAP ALL Function

The ALL function calls the main ABAP function to extract metadata from the SAP, SAP CDS or SAP BW system. The Function can be run in two different ways:

- To create the files on the 'local' PC. The generated ABAP files will be directly available to Safyr so they can be processed by Safyr to populate the Safyr repository. This method uses an SAP feature called GUI_DOWNLOAD. GUI_DOWNLOAD moves files from the server onto a local PC and this cannot be run in 'batch' mode.
- 2) To create the files on the SAP server. The generated ABAP files will be created on a local SAP Server drive and will need to be copied to a drive visible to Safyr before they can be processed by Safyr to populate the Safyr repository. This method does not use

GUI_DOWNLOAD and can therefore be run in 'batch' mode. It is the responsibility of the Safyr user to create a suitable batch program for scheduling the ABAP function when it has been decided to run in batch mode.

Running the 'ALL' function creates a set of text files. These will need to be processed by Safyr to complete the metadata load. This can be accomplished by running the Extraction Wizard as normal, and selecting 'Import Repository from Load Files' on the SAP Extract Options dialog. For more details see the Chapter 'Extracting Metadata from SAP and SAP BW'.

Running the ABAPALL Function

The ALL Functions use 4 parameters. These are:

P_EXP_FILE_PATH: enter a suitable location for the files created by the function

P_LANGUAGE_LIST: Enter a valid SAP language code

P_TRIAL_MODE: Enter 'Y' to run the function without exporting actual data, enter 'N' to create the data files.

P_EXP_TARGET: Set this to 'G' to create files via GUIDOWNLOAD onto a PC, or 'S' to create the files on an SAP Server (using Dataset transfer).

Appendix B. The SafyrSettings.xlsx file

Describes the structure and usage of the SafyrSettings.xls file

The SafyrSettings.xlsx file stores most of the options used by Safyr. It is not normally necessary to modify the file manually, but there are a few circumstances where this may be necessary. These are described below.

File usage

The SafyrSettings.xlsx file is used by Safyr to record a range of settings used by Safyr. The sections below describe the contents of this Excel spreadsheet, which is presented as a set of worksheets.

IMPORTANT NOTE: Safyr users may want to modify the spreadsheet (in particular see Appendix B of the Safyr User Guide). Before doing this, copy the SafyrSetting.xlsx and use this to create a copy named SafyrSettings_Cust.xlsx in the Safyr installation folder. Then add the required rules to this SafyrSettings_Cust.xlsx spreadsheet.

When the Safyr application is started, if the file SafyrSettings_Cust.xlsx exists, then this will be used instead of the delivered SafyrSetting.xlsx file.

File structure

The file is structured as a number of worksheets. The worksheets are:

DataTypeMapping

This worksheet area shows a table of logical Safyr data types and how they map to the various RDBMS' supported by Safyr. The format is shown in the following example:

RepoDa	a RepoDataTypel	ISAP	JDED	PSoft	SAPBW	Siebel	SiebelAly	ORAEBS	Oto	t Ot I	LenFixed
S	String	CHAR;VARC	Α	CHAR	CHAR;VARC	V		E;V			No
S	String	ACCP;CLNT;CUKY;LANG;U	JNIT		ACCP;CLNT;CUKY;LANG;U	С					No
S	String			LONG							No
BN	Binary	RAW	B;O	VERS	RAW			R			No
FS	FloatSingle										8
FL	Float										12
FD	FloatDouble	FLTP			FLTP						16
N	Number	CURR;DEC;PREC;QUAN	P;S		CURR;DEC;PREC;QUAN	N		N			No
N	Number			NUM							No
N	Number			NUM							No
N	Number			SIGNED							No
N	Number			SIGNED							No
NS	NumberString	NUMC			NUMC						No

The extraction of metadata by Safyr from the ERP includes 'logical' ERP datatypes. These are specific to each ERP type. Safyr has no direct knowledge of how these logical datatypes are implemented in the physical RDBMS. This sheet presents a mapping, showing how each logical ERP datatype maps to a physical RDBMS-specific datatype.

It would not normally be necessary to amend this sheet, but if required to do so, we recommend that you consult your Safyr representative before making any changes.

ERPTypeNaming

This worksheet records the names for the various Enterprise Application packages addressed by Safyr.

ERPTypeID	ShortDesc	LongDesc
Unknown	N_D	Not Defined
SAP	SAP	SAP
JDED	JDE EntOne	JD Edwards Enterprise One
PSoft	PS Ent	PeopleSoft Enterprise
SAPBW	SAP BW	SAP BW
Siebel	Siebel	Siebel
SiebelALY	Siebel Analytics	Siebel Analytics
ORAEBS	Oracle EBS	Oracle E-Business Suite
Other1	Other ERP 1	Other ERP Type 1
Other2	Other ERP 2	Other ERP Type 2
Other3	Other ERP 3	Other ERP Type 3

ERPTypeID:	This is the internal identifier for the ERP type
ShortDesc	The short description that will appear in the Safyr interface
LongDesc	The long description that will appear in the Safyr interface

ERPTypeLanguages

This worksheet lists the available languages for extraction of descriptive fields from each Enterprise Application. A typical set of language codes for each Enterprise Application are coded in this worksheet, but you may need to add your own if you wish to extract metadata in a language not included in the list. The worksheet format is shown in the following example:

А	В	С	D	E	F	G	Н	1	J
RepoLanguageID	LanguageDesc	NeedUnicode	IsActive	SAP	JDED	PSoft	SAPBW	Siebel	ORAEBS
E	English	Ν	Υ	E	E	ENG	E	E	US
D	German	Ν	Υ	D	D	GER	D	D	
I	Italian	Ν	Υ	1	- E	ITA	1		
F	French	Ν	Υ	F	F	FRA	F		
S	Spanish	Ν	Υ	S	S	ESP	S		
N	Dutch	N	Υ	Ν		DUT	Ν		
P	Portuguese	N	Υ	Р		POR	Ρ		
v	Swedish	Ν	Υ	V		SVE	V		
R	Russian	Υ	Υ	R		RUS	R		
С	Czech	Ν	Υ	С		CZE	С		
1	Chinese (Simplified)	Υ	Υ	1		ZHS	1		
м	Chinese (Traditional)	Υ	Υ	Μ		ZHT	М		
l	Japanese	Υ	Υ	J		JPN	J		
3	Korean	γ	Y	3		KOR	3		

The columns are as follows:

RepoLanguageID:	This is the internal identifier for the ERP type
LanguageDesc	A descriptive name for the language
NeedUniCode	Indicates if a Unicode supported schema is required to accommodate the language
IsActive	If 'Y' then the language is active. If 'X' then the language is not currently supported by Safyr
SAP, JDED, etc	The 'native' language code for that ERP that corresponds to the Repository Language code. For example, the PeopleSoft language code for English is 'ENG' – this maps to the Safyr internal language code of 'E'. So when Safyr performs the metadata extraction from a PeopleSoft system where the user has requested 'English', Safyr uses the worksheet to select the PeopleSoft-specific language code to use.

PSoftRuleBasedRelationships

This worksheet is used by the Rules Based Relationship Generation feature of Safyr to create additional relationships for a PeopleSoft Repository. Please see the Safyr User Guide for more details on how to use this feature. The worksheet format is shown in the following example:

А	В	С	D	E	
ChildTableName	ChildFieldNames	ParentTableName	RuleNotActive	ExtRelGenParent	Remark
AAP_YEAR_GOALS		AAP_YEAR			
AAP_YEAR_JOBGRP		AAP_YEAR			
AAP_YEAR_JG_GLS		AAP_YEAR_JOBGRP			
VENDOR_ADDR		VENDOR		х	VENDOR shall be used
VENDOR_ADDR_LNG	+EFFDT	VENDOR_ADDR	х		just and example to she
VENDOR_ADDR_PHN		VENDOR_ADDR			
VENDOR_ADDR_TMP		VENDOR_ADDR			
VENDOR_CNTCT		VENDOR			
VENDOR_LOC		VENDOR			
VENDOR_LOC_TMP		VENDOR_LOC			
VENDOR_PAY		VENDOR_LOC			
VENDOR_PAY_TMP		VENDOR_PAY			
VENDOR_POLICY		VENDOR			
VENDOR_SF_TBL	SETID;VENDOR_ID;	VENDOR			
VENDOR_SF_TBL	EXT_ORG_ID;*;	VENDOR			
EPPCM_CATG_HIER		EPPCM_CATEGORY			default mapping
EPPCM_CATG_HIER	EPPCM_PARPORTALNM;EPPCM_PARCATGID;	EPPCM_CATEGORY			rolenamed mapping

The columns are as follows:

ChildTableName: The name of the Child table for the relationship.

ChildFieldNames: See 'Defining a Rule' in Appendix B of the User Guide.

ParentTableName: The name of the Parent table for the relationship.

RuleNotActive: If blank, then the rule is active. If 'X' then the rule will be ignored.

ExtGenRelParent Used by the Extended Relationship generation process (See Appendix B of the Safyr user Guide for details).

Remark: A free-format comment area for entry of optional notes describing the rule

JDERuleBasedRelationships

This worksheet has the same format as the PSoftRuleBaseRelationships worksheet. It is used by the RulesBased Relationship Generation feature of Safyr to create additional relationships for a JDEdwards Repository. See Appendix B of the Safyr user Guide for more details.

ChildTableName	ChildFieldNames	ParentTableName	RuleNotActive ExtRelGenParent	Remark
F0015		F0013	х	Default Parent for
F0015	+REPLLAST;T1CRDC	F0013		
F08320	BAANN8	F0101		
F083202X		F083202		
F08320B		F083202		
F08320C		F083202		
F08320WF		F083202		
F08320X		F08320		
F08330		F083202		
F083303		F083302		
F083303		F069016		
F083304		F083302		
F083304		F083301		
F083305		F083301		
F08330B		F083202		
F08330B	+REPLLAST;BTAOPT	F083202		
F08330C		F083202		
F08330C	+REPLLAST;PCAOPT	F083202		
F08330WF		F083202		
F08330WF	+REPLLAST;BRAOPT	F083202		

SAPRuleBasedRelationships

This worksheet has the same format as the PSoftRuleBaseRelationships worksheet. It is used by the Rules Based Relationship Generation feature of Safyr to create additional relationships for a SAP Repository. See Appendix B of the Safyr user Guide for more details.

	A	В	С	D	E	
1	ChildTableName	ChildFieldNames	ParentTableName	RuleNotActive	ExtRelGenParent	Remark
2	ACO_GROUP_HIER		ACO_GROUP			
3	ACO_GROUP_HIER	+REPLLAST;CHILD_GROUP_ID	ACO_GROUP			
4	ACO_GROUP_USER		ACO_GROUP			
5	ACO_USER_GROUP		ACO_GROUP			
6	ACO_USER	CLIENT;USER_ID	USR01			
7						
8						
9						

CollibraMappings

This worksheet has a set of Collibra Asset mappings to allow a level of configuration for the Safyr to Collibra interface. The worksheet is only relevant to the Collibra export and users should refer to the appropriate Safyr Collibra interface documentation for details of this worksheet.

	А	В	С	D	E
1	#AttributeTypeMapping				
2	AttributeType	Datatype	CollibraAttributeName	CollibraTagName	IsStandardCollibra
3	ErpPhysicalName	string	Original Name		Yes
4	ErpLogicalName	string	ERP Logical Name		No
5	Description	string	Description		Yes
6	TableType	string	Table Type		Yes
7	RowCount	integer	Row Count		Yes
8	ColumnPosition	integer	Column Position		Yes
9	IsPrimaryKey	boolean	Is Primary Key		Yes

Version Support

This worksheet records the versions of Safyr that will be compatible with this version of the spreadsheet. If the Safyr version is not compatible, the user will see an error message on starting Safyr. Typically this can occur when the user has copied SafyrSettings.xlsx to SafyrSettings_Cust.xlsx in order to record relationship rules (see sections above).

	А	В
1	ValidForVersion	
2	6.3.10	
3	6.3.11	
4		

Appendix C. Using SAPRFC.ini with Safyr

Describes how to use the SAPRFC.ini file to attach to SAP systems with Safyr

The Safyr SAP RFC connection method uses a set of parameters to establish connection with a SAP instance. These are described in the section 'Entering the SAP RFC connection settings' in the Installation Chapter above. The SAPRFC ini file allows a richer set of parameters to be used where the standard set shown in Safyr are not sufficient to perform a satisfactory connection.

Creating the SAPRFC.ini file

The SAPRFC.ini file is referenced by components of the SAPgui software which must be installed on the PC where Safyr is installed.

If there are other applications accessing SAP from the PC, then SAPRFC.ini may already exist. It may be located in the following folder:

\Program Files\SAP\FrontEnd\SAPgui\rfcsdk\

If the file does not exist, use Notepad or a similar text editor to create the file structure as shown below.



Structure of the saprfc.ini file

The connection to the SAP system can now be tested using the 'sapinfo.exe' program. Use a command line session as shown in the following screen shot.

C:\Program Files\SAP\Fi	rontEnd\SAPgui\rfcsdk\bin>sapinfo.exe	DEST=MYSERVER
SAP System Information		
Destination	svsap1_GS0_00	
Host System ID Database DB host DB system	susap1 GSØ GSØ SUSAP1 ORACLE	
SAP release SAP kernel release	620 620	
RFC Protokoll Characters Integers Floating P. SAP machine id	011 1100 (NON UNICODE PCS=1) LIT IE3 560	
Timezone	3600 (Daylight saving time)	

Using 'sapinfo' to check connection to the SAP system

In order to use the SAPRFC.ini from any RFCSDK application, the file needs to be registered as a system variable. From the Windows Control panel, select 'System', then on the 'Advanced' tab click 'Environment Variables' and create a new variable as shown in the next screen shot.

Edit User Variable	2 ? ×
Variable <u>n</u> ame:	RFC_INI
Variable <u>v</u> alue:	Program Files\SAP\FrontEnd\SAPgui\rfcsdk
	OK Cancel

Creating the RFC_INI Environment Variable

Using SAPRFC.ini from Safyr

To use SAPRFC.ini with Safyr, enter the required SAP 'Destination' name into the 'SAPRFC.ini DEST' field on the Safyr RFC Connection form. There is no need to enter an Application Server or System Number. Clicking the 'Test Connection' button should then establish a connection with the appropriate SAP system (see screen shot below).

For full details of how to use SAPRCF.ini see the SAP 'RFCSDK Guide'. This manual describes all the possible parameters for inclusion in the SAPRFC.ini file.

Appendix D. Connecting to a SQLAnywhere database

Describes how to configure an ADO connection to a SQLAnywhere database

It is important to use an ADO connection to a SQLAnywhere database, rather than using ODBC. This will lead to faster extraction times from the ERP system. The Installation chapter above describes how to perform the first few steps in configuring such a connection. The additional settings are described below.

Settings for connecting to the database

Having selected SQL Anywhere OLDEB Provider on the 'Provider' tab of the Data Link Properties screen, click on the 'All' tab to display the screen as shown below.

평 Data ink Properties		
Provider Connection Advan	ced All	
These are the initialization pro value, select a property, then	perties for this type of dai choose Edit Value below	ta. To edit a
Name	Value	<u> </u>
Connect Timeout	300	
Data Source		
Encrypt Password	False	
Extended Properties		
Impersonation Level	Identify	
Initial Catalog		=
Integrated Security		
Locale Identifier	0	
Location		
Mask Password	False	
Password Remist Economical	Taua	
Persist Encrypted	False	
	N NI	×
Edit Value		
0	Cancel	Help

'All' tab on the Data Link Properties screen

Click on the 'Extended Properties' and then select the 'Edit value' button.

Edit Property Value	
Property Description	
Extended Properties	
Property Value	
eng=myanywhereserver;dbn=mydatabase;Li	nks=TCPIP{host=MYSERVER};
Reset Value	OK Cancel

Editing Extended Properties

Now edit the 'Property Value' as shown above.

The string is of the form: eng=<dbserver>;dbn=<dbname>;Links=TCPIP{host=<servername>};

Where the variables are as follows:

dbserver: The name of the SQLAnywhere Server on which the database resides

dbname: The name of the SQLAnywhere database

servername: The name of the hardware server on which the database resides.

After entering these values, click the OK button.

Now click the 'Connection' tab and verify the connection is working by clicking the 'Test Connection' button.

Appendix E. SAP GUI Security Settings

Adjusting the SAP GUI Security Settings to allow a smooth extraction of metadata

Safyr uses libraries in the SAP GUI software to run the supplied ABAP function that accesses the metadata from SAP.

Each SAP 'object' accessed by the ABAP Function (Tables, Fields, Domains...) is written to a text file by the ABAP function using a SAP component call GUI_DOWNLOAD.

These text files will be written to the folder specified on the SAP Connection setting form (See 'Entering the SAP RFC Connection Settings' earlier in this manual).

The permissions that control the writing of these files are controlled by SAP GUI.

The SAP Logon application has an Options menu on the menu

Ξ	E	SAP Logon 750
v	<u>R</u> estore	ange Item Delete Item
	Move	
	<u>S</u> ize	Connections
	Mi <u>n</u> imise	Name System Description
	Ma <u>x</u> imise	Silwood
	Close (Alt+F4)	
	Options	
	About SAP Logon	
		·
		·

SAP Logon – Options menu

Clicking the Options button will display the Security Module.

	SAP GUI Options - SAP Logon			×
Theme: Blue Crystal Theme	~	Search:]
> Visual Design	Security Module			_
> Interaction Design	Status:		Customized \sim	
> Accessibility & Scripting	Open Security Configuration			
Multilingual Settings				
> Traces	Security Rule Status			
✓ Security	Default Action:		Allow	
Security Settings	SAP Rules:		457	
> SAP Logon Options	Administrator Rules (Total/Disabled):		267 / 0	
> Front End Print	User Rules (Total/Disabled):		1/0	
System information				
]			
<u>O</u> K <u>C</u> ancel	<u>A</u> pply <u>H</u> elp		Restore Defaults	
l				

SAP GUI Security Rules

The 'Default Action' can have three values:

- Allow this will allow the text files written by Safyr to be created in the specified folder
- Deny this will prevent the text files from being created in the specified folder
- Ask this will prompt the user for permission to write the file for each file to be written

We recommend that 'Allow' is selected for this setting.
Appendix F. Getting the correct SAP GUI Libraries Installed

Details of the SAP GUI Libraries that are required to connect to SAP via SAP RFC Calls

In order to extract SAP metadata, Safyr makes repeated RFCs (Remote Function Calls) to a Silwood-supplied function module on the SAP system.

On each call the function module extracts metadata into a file and returns it to Safyr using an SAP GUI connection. Safyr reads the metadata from the file, processes it and loads it into a repository. To achieve this, SAP GUI, SAP Business Explorer and a set of SAP RFC DLLs (Dynamic Link Libraries) need to be installed on the Safyr machine.

Possible Issues

Having selected SQL Anywhere OLDEB Provider on the 'Provider' tab of the Data Link Properties

Clicking the Options button will display the Security Module.

The following error may occur when attempting to perform the connection to SAP:



This error message can occur if SAP GUI is not installed on the same PC as Safyr; or if it is installed, it is not being found by Safyr or is not starting.

As a minimum, SAP GUI and SAP Business Explorer are required, as described in the Safyr *Getting Started Guide* section 2.2.1.

Potential Next Problem – File sapnwrfc.dll Still Cannot Be Found

If the Safyr 64-bit version is being used, then this problem may be due to a mismatch between the Safyr bit-size and the installed *sapnwrfc.dll* bit-size which prevents Safyr finding the *sapnwrfc.dll* file.

The easiest way to tell whether Safyr is 32-bit or 64-bit is by checking its installation folder:

If Safyr.exe is in c:\Program Files (x86)\Silwood\Safyr 7 it is 32-bit.

If Safyr.exe is in c:\Program Files\Silwood\Safyr 7 (x64) it is 64-bit.

Some additional installation steps will be required for the 64-bit version. The 64-bit versions of the SAP GUI DLLs required are currently not included in SAP GUI or Business Explorer so they need to be obtained separately from SAP and installed manually.

The required 64-bit SAP RFC NetWeaver DLLs needed are:

sapnwrfc.dll

icudt50.dll

icuin50.dll

icuuc50.dll

libicudecnumber.dll

libsapucum.dll

The examples above are for the 7.50 DLL versions - the embedded numbers may differ for other versions. The DLLs above can be found in the SAP package named *nwrfc750P_5-70002755.zip* on the SAP Marketplace / Support Launchpad site. Try searching on there for downloads with the keywords "SAP NW RFC SDK" to find the current version if different. Be sure to select the correct bit-size (eg: Windows 64-bit if using Safyr 64-bit). When extracting the files from the downloaded package, the required DLLs should be in its *lib* subfolder.

If the correct bit-size DLLs are already installed but Safyr still has a problem finding them, put the DLLs into the Safyr execution folder (normally the installation folder *c:\Program Files\Silwood\Safyr 7 (x64)* for 64-bit Safyr 7 or *c:\Program Files (x86)\Silwood\Safyr 7* for 32-bit Safyr).

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