

Intrex Professional

Intrex Compact

RELEASE 5



Foreign Data Access

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Writing Conventions

In this handbook, text passages will be displayed in *italics* when they refer to settings in the displayed dialogs. Menu items that are available in context menus can, in addition, always be selected from the main menu. Main menu items will not be described if they are not available in the context menu. A description of the general main menu items can be found in the  *Portals* handbook. Programming code in the text will be displayed in the `Courier` font. Context menus can be opened by clicking with the right mouse button on the described element.

In the following, `<intrexx>` refers to your Intrexx installation path; under Windows, for example, this is usually  `c:\intrexx\`. On Linux, the normal install path is  `/opt/intrexx/`. The following symbols will be used for designation of special kinds of information:

-  Information
-  References to an Intrexx handbook
-  Directories
-  URLs
-  Click on buttons

Background Knowledge

For this handbook, you require no special training. You can find helpful information in the Intrexx handbooks  *Portals* and  *Applications*.

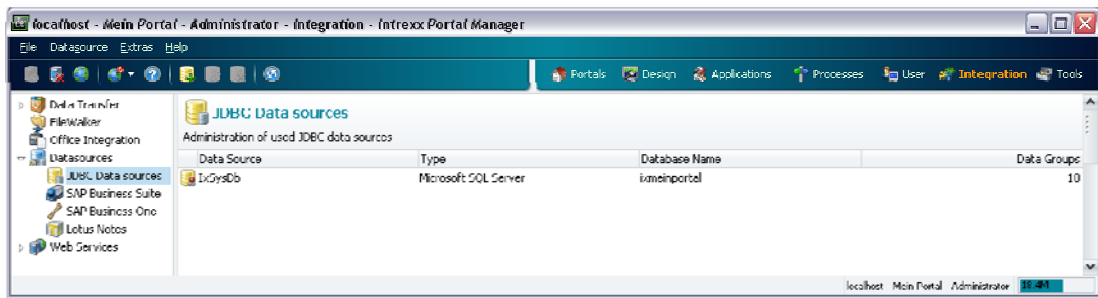
1. Introduction

With Intrexx, you can directly access data sets of various origins. This foreign data will be shown in Intrexx applications in the portal. If the connection to the foreign data source has been set up, all foreign data fields can be connected with edit and view fields in the module *Applications* as usual.

- Under certain circumstances, a function in the module *Applications* will not be supported by a foreign data source. United Planet can offer only limited support for foreign data access. System environments, the configuration of the data source, the technical configuration of the database on which the foreign data source is set up, the basic database drivers, and data types can vary greatly. However, you can assume unlimited functionality on the Intrexx supported data sources SQL Server, Oracle 9, Oracle 10, SAP DB, PostgreSQL, and Derby.

2. Configuring the Connection

The connection to an external data source will be set up in the *Integration* module with the *Data Sources* function.

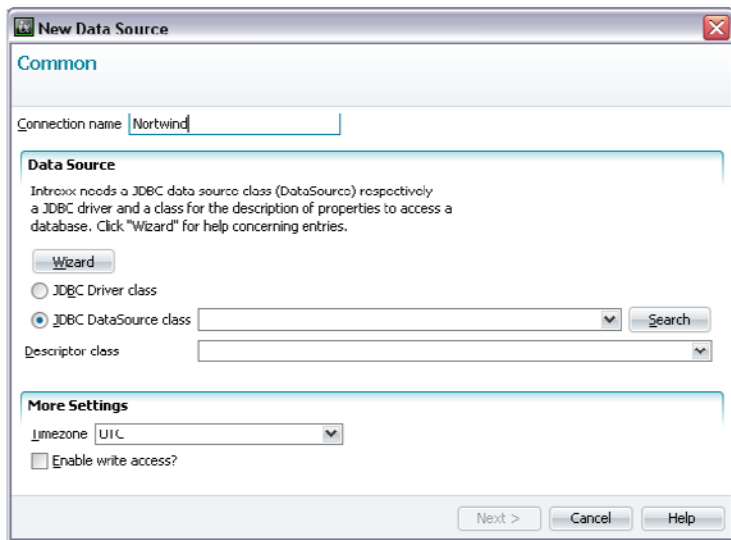


Highlight the *Datasources* entry in the left-hand area of the module *Integration*.

In every newly created portal, one connection will already have been entered. This is the connection to the system database of the currently open portal. A new connection can be set up now via the menu item *Data Sources / New Data Source* or by selecting *New Data Source* from the context menu.

2.1. Configuring a JDBC Data source

The following dialogs show the configuration of a JDBC data source. Please consult the in-program help files for information on how to configure SAP data sources.




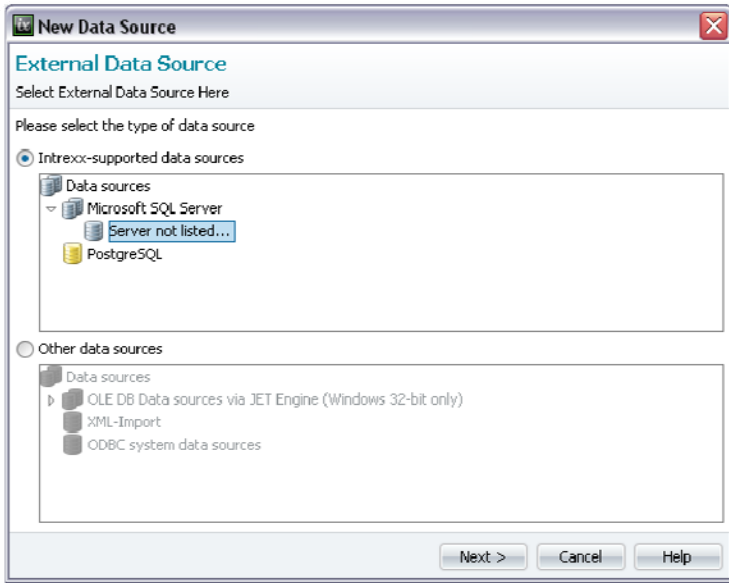
Enter a *Connection Name*. You will be able to better understand the explanation of foreign data access in this document if you create a connection to the Northwind example database (Microsoft SQL Server). For this example, name the connection *Northwind*.


A JDBC data source class, i.e. a JDBC driver and a class for the description of various database properties, must be specified as the *data source* for access to be possible. Intrexx can access all data source classes entered in the Java class path. If you connect a data source that has no class assigned to it, please copy the library (.jar) to the directory *intrexx/lib*. Afterwards all Intrexx services have to be restarted.

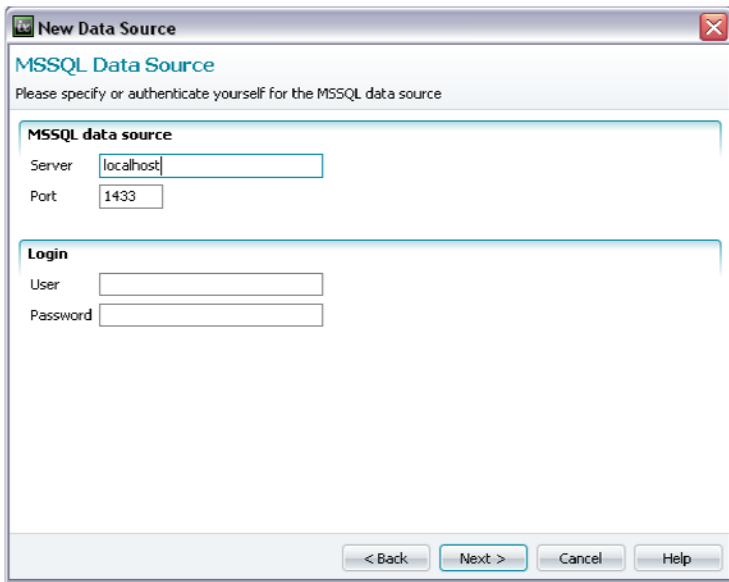
In the *Descriptor Class* selection list, the underlying data source class will be entered. Normally, this class will be made available to you by JDBC2 conforming drivers. If this is not the case, you can establish access to JDBC1-similar drivers with the data source class *de.uplanet.server.poolmanager.EmulatedPooledDataSource*.


You can look in your software's documentation to see if your driver fulfils these requirements. The descriptors class must be entered for access to the data source and the corresponding data fields in the correct SQL syntax to be possible.

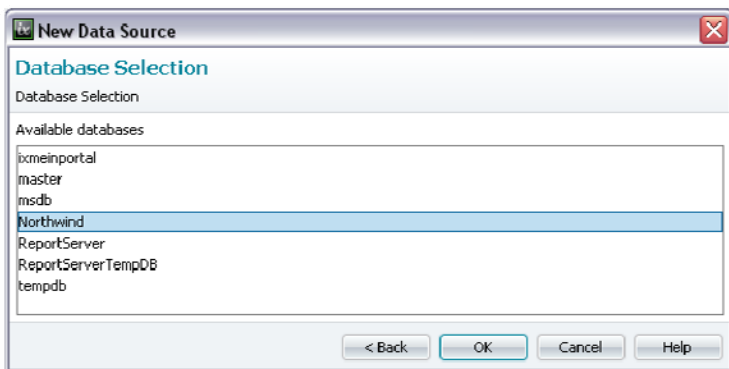
This is responsible, for example, for how date formats are queried. Clicking  *Wizard* will open an assistant that will help you through the configuration process.




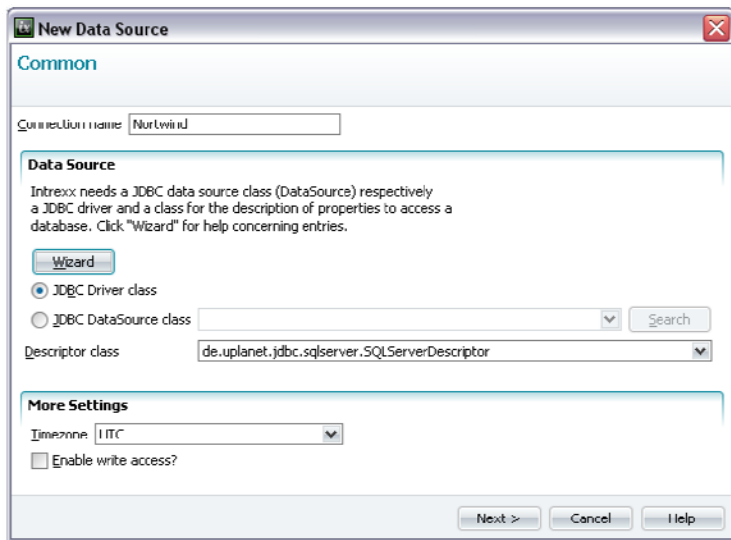
Select the server that contains the data source here. To continue, click  *Next*.





Enter the *Server*, *Port*, and if required, any required authentication data, then click  *Next*.



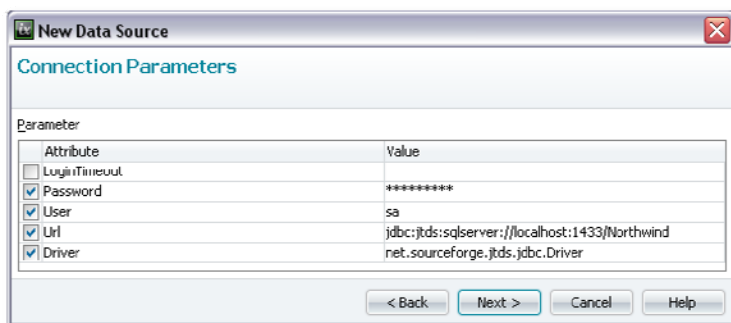
The foreign database can be selected in this dialog. Click  OK to continue.




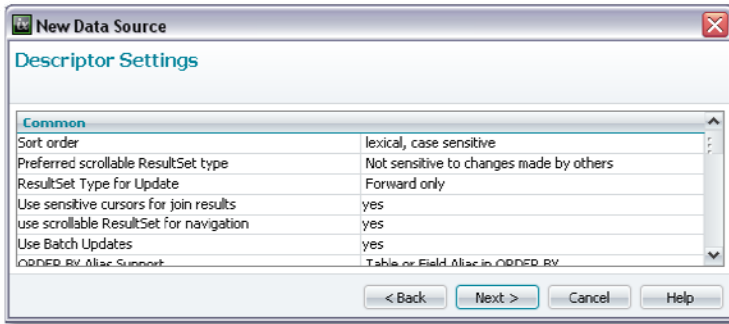
The wizard has now entered the connection data for you. In the *Advanced settings* area, the time zone of the foreign data source can be set. Information on this topic can be found in the handbook  *Multilingual Applications*. The setting *Allow Write Access* makes it possible to change the data in the foreign data source.

 Please note that United Planet can provide no support for data inconsistency resulting from write access given to foreign data sources.

Click  *Next*.




The connection parameters may vary depending on the data source in use. After clicking  *Next*, you will proceed to descriptor settings. This dialog will only be displayed if a data source not directly supported by Intrexx is selected (*de.uplanet.jdbc.GenericDescriptor*).

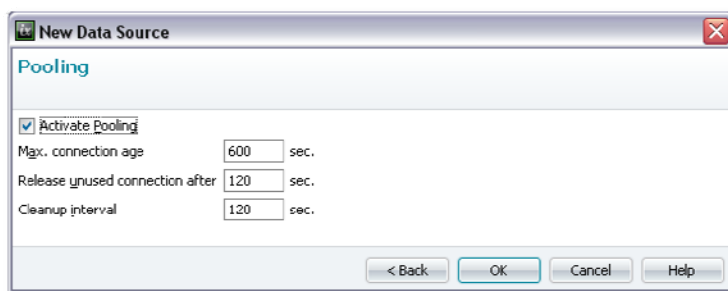


Descriptor settings

General	
Sorting	Sets the correct sorting order (for example, how data is sorted within view tables or results lists when searching).
Result set type for update	If write access will cause any problems, select another result set type here.
Batch Updates use	You should keep this setting (yes) for performance reasons. Only change this setting if problems occur while saving data sets.
ORDER BY Alias support	<p>1) SELECT Field1 AS FieldAlias FROM Table1 TablesAlias ORDER BY TablesAlias.FieldAlias</p> <p>2) SELECT Field1 AS FieldAlias FROM Table1 TablesAlias ORDER BY TablesAlias.Field1</p> <p>SELECT Field1 AS FieldAlias FROM Table1 TablesAlias ORDER BY FieldAlias</p> <p>3) SELECT Field1 AS FieldAlias FROM Table1 TablesAlias ORDER BY TablesAlias.Field1</p> <p>Examples: Type 1) SQL Server Type 2) HSQL, SAP DB, Oracle Type 3) Access</p>
Oracle 8 Syntax for Outer Joins	Oracle versions 8 and earlier use a different SQL syntax for OUTER JOIN queries than most other data bases. If a database uses the same syntax, please select yes.
Clobs searchable	In this database, long text fields can be searched. This setting affects the search function.
Use driver Clob/Blob objects	For most databases you can enter <i>no</i> here. One of the few exceptions is Oracle. For performance reasons, it can sometimes be useful to use driver objects anyway.


Data field transformation	
Boolean Literal TRUE	Possible values: TRUE / true / 1 Normally <i>TRUE</i> is the correct selection. (Except: MS SQL Server, Oracle: 1)
Boolean Literal FALSE	Possible values: FALSE / false / 0 Normally <i>FALSE</i> is the correct selection. (Except: MS SQL Server, Oracle: 0)
Calendar is supported by date fields	Some databases do not support calendar objects for the query of date and time fields. This calendar object is necessary for calculation of the local time zone. Normally, <i>no</i> is the safest selection.
Date according to SQL	Formats a data object for saving it in the database via SQL command. (%t must be set as placeholder)
ISO data text according to SQL	Formats a string for saving it in the database via SQL command. (%t must be set as placeholder)
Large objects (Clob/Blob)	
Clob method for empty Clob	Please read the documentation for the corresponding driver. Normally no entries have to be made and the fields cannot be selected.
Clob method for Writer	
Blob class for driver	
Blob method for empty Blob	
Blob method for Output stream	

The entries explained above will normally be correctly configured by the wizard. For special data sources you can enter more exact details here. In this case, read the documentation of your database system and/or database driver. Clicking  *Next* will show the dialog for pooling settings.



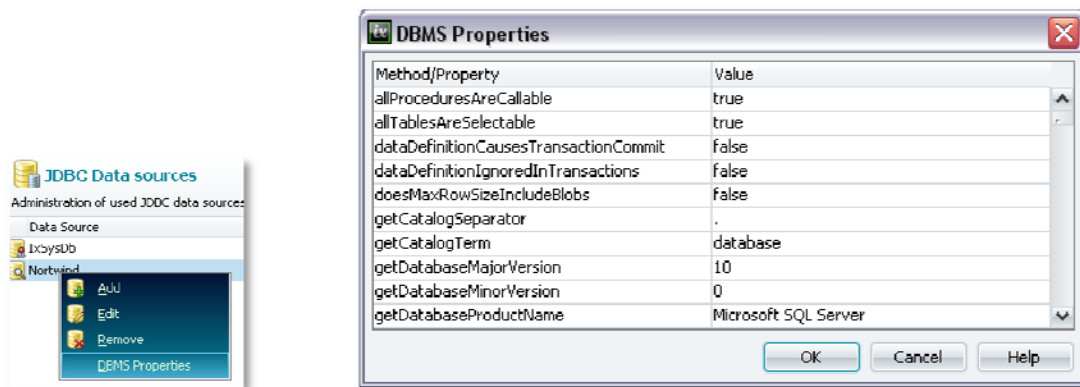
The option to *Activate Pooling* means that database connections requested once can be used again. This increases performance, especially for highly frequented portals. If you only rarely access the configured data source, it makes sense to deactivate pooling, which will reduce unnecessary load on the database. This may also be required by the license terms of the database manufacturer, who may restrict the amount of permitted simultaneous connections.

The setting for *Maximum connection age* allows you to define a span of time, after which a frequently used connection must be released, as soon as it is not in use. The setting to *Release unused connections after* defines that a connection will be released after that number of seconds of inactivity. The setting for *Clearing interval* defines after which amount of time unused objects will be released.

After clicking  *OK*, the connection to the data source will be configured. You can access it in the module *Applications*.

2.2. DBMS Properties


From the context menu item *DBMS Properties*, you can reach an overview of the JDBC settings of individual connections.



2.3. Configuring a Lotus Notes Data Source

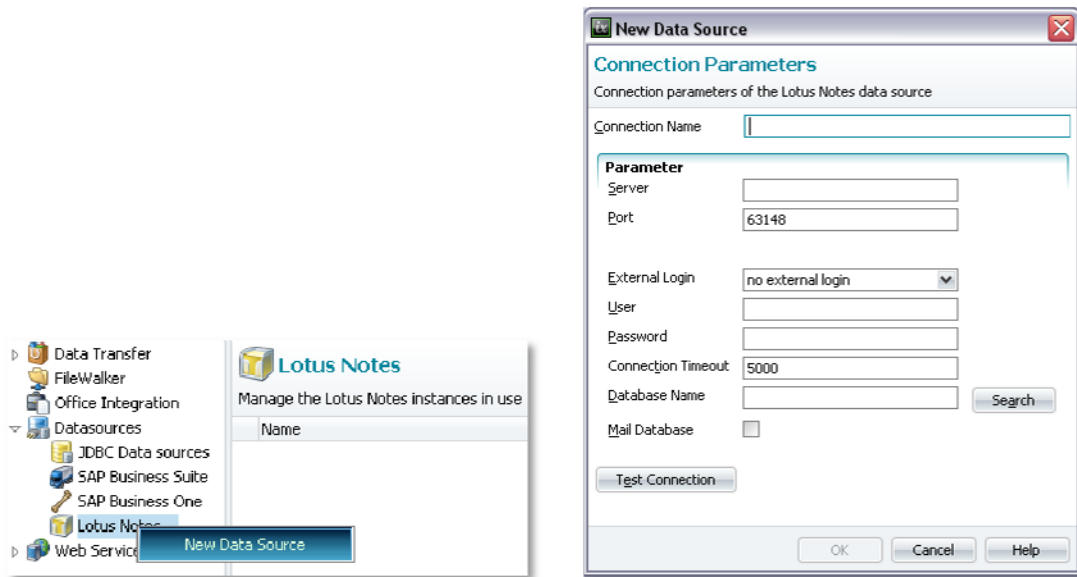
When connecting the Lotus Notes interface and creating a data connection via DIIOP (Domino Internet Inter-ORB Protocol), it is possible to integrate data (such as addresses, project data, etc.) from a Domino server into a portal.

To do so, the library file *NCSO.jar* must be connected. This file is contained in the delivery package of Lotus Notes. In order to correctly register the library, please close the Portal Manager.


In addition, stop all Intrexx services via the Intrexx Service Console or via the services manager in Windows. Next, select your *NCSO.jar* file and copy it to the directory  *<intrexx>\lib*.

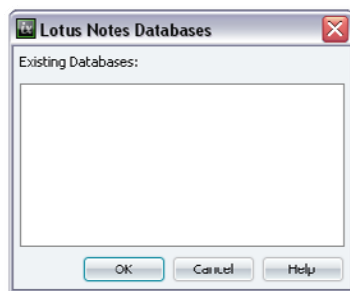
After successfully copying the file, restart all Intrexx services via the Intrexx Service Console or via the Windows services manager. Open the Portal Manager.


The Lotus Notes data source can now be configured via the context menu item *New Data Source*.




Enter the following connection parameters here:

- Connection Name* Name of your data connection.
- Server* Host or IP address of the Domino server.
- Port* Port to be used. The port entered here must not be blocked (default port: 63148).
- External Login* Here you may either use external logins saved in Intrexx, or by selecting *No external login*, not use this possibility and instead enter the username and password manually directly underneath.
- User* Enter the user name here.
- Password* Enter the Password here.
- Connection-Timeout* Here the value of the connection timeout can be edited.
- Database Name* By clicking  *Search* the Lotus database that will be used as data source can be selected.




If you have selected the data source, close the *Connection Parameters* dialog window by clicking  *OK*. The database will now be available for use as a data source and can be used in an application by integrating it as a foreign data group.

 **DIOP must be activated on the Domino server.**

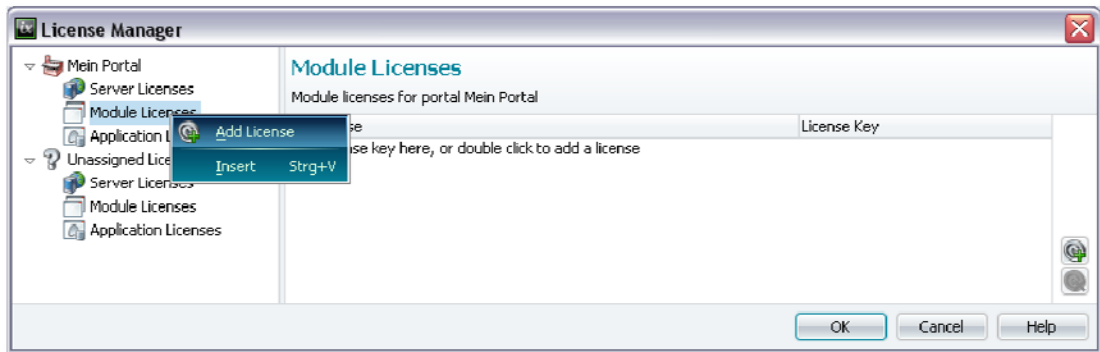
Mail Database


With this setting the database of the user that you entered in the configuration will be accessed.

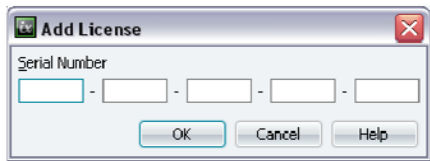
If you have correctly input your personal connection data, you can check this with  *Test Connection*.


2.3.1. Entering a License Key


Without entering a license key, displaying data from a Lotus Notes data source is restricted to 10 data records. You can enter your license key in the Portals module via the menu item *Extras / License Manager*.



In the license manager on *module licenses*, select the context menu  *Add License*.

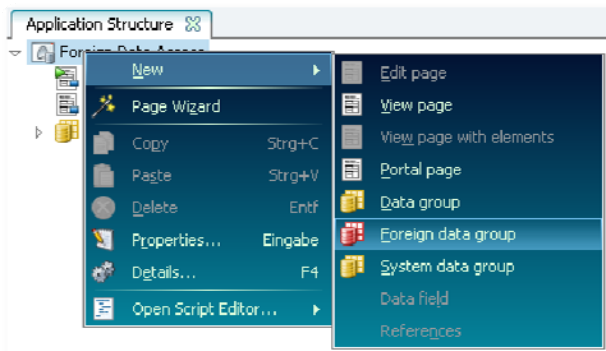


Enter your serial number here and confirm with  *OK*.

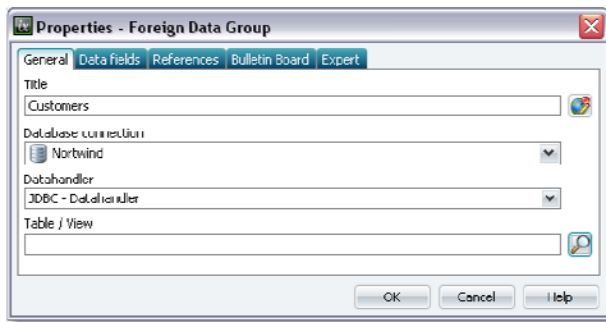
-  When using a Lotus Notes data source, not all Intrexx functions are available. For example, a process cannot access files (embedded objects) in a Notes data source. The search function of an Intrexx application will also not be available in a Notes foreign data group.

3. Foreign Data in the module Applications


Foreign data groups will be entered under the application node.



Select the context menu *Foreign Data Group* here.

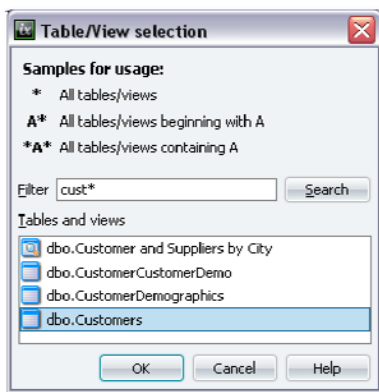



Enter the *Title* (*Customers* in our example) for the new foreign data group. In the *Database Connection* selection list, the desired connection can be selected.

Select the appropriate data handler for the connection from the *Datahandler* selection list. You can enter the name of the *Table* and/or *View* directly or find it via  *Search*.

JDBC and SAP Data Sources

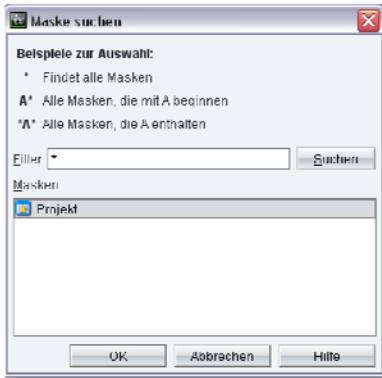
In the window that then opens, you can search for the table or view name. Enter a character string for the search in the *Filter* string. The * character serves as a placeholder for an arbitrary character. *A** will find all tables and views whose name begins with *A*. **A** returns as a result all tables whose names contain the letter *A*.



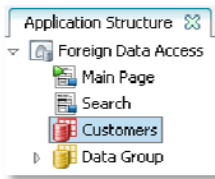
Highlight the desired table (in our example, *dbo.Customers*) or view in the lower part of the dialog and then click  *OK*.

Lotus Notes Data Sources

For a Lotus Notes data source, you can search in the same manner for forms.

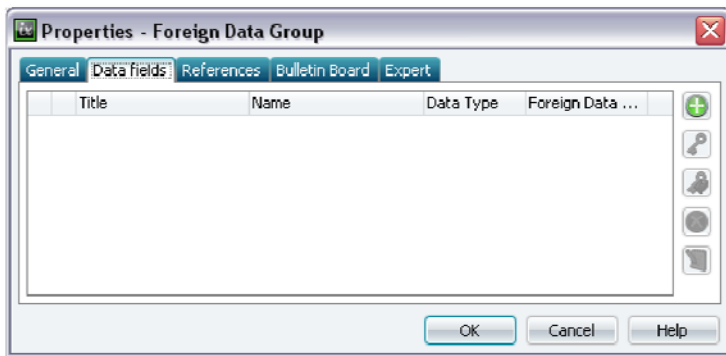


Highlight the desired form in the lower area of the dialog and then click **OK**.

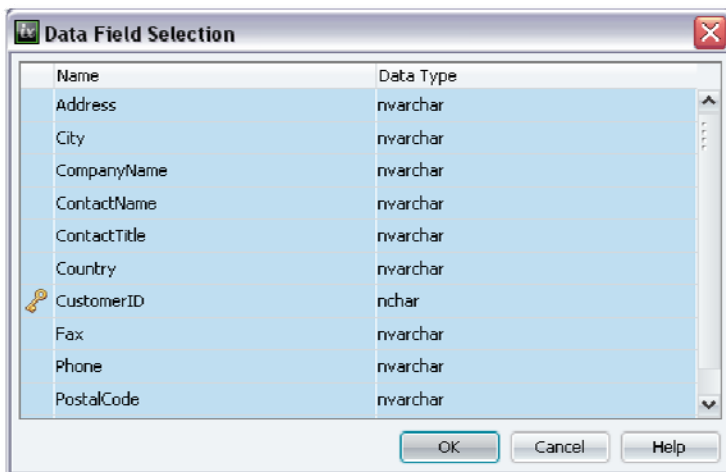




The foreign data group has now been entered.

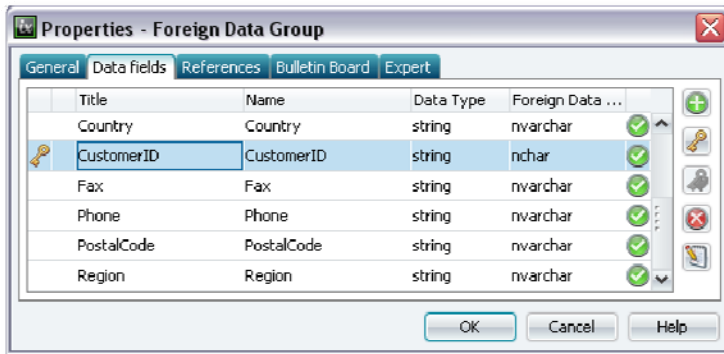
Open the properties dialog of the foreign data group via double-click or via the context menu item *Properties*. Switch to the tab marked *Data fields*.





Click **Add** to select the fields of the foreign data source you want to access.



The Primary Key (unique key) of the table already has been identified by Intrexx and is designated with a  key symbol. The Primary Key must always be selected. Please ensure that a data field with unique values is used. The *Primary Key* of a foreign data source will be handled like a string by Intrexx. Select the desired fields and then click  OK.

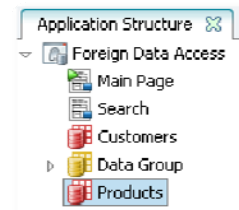
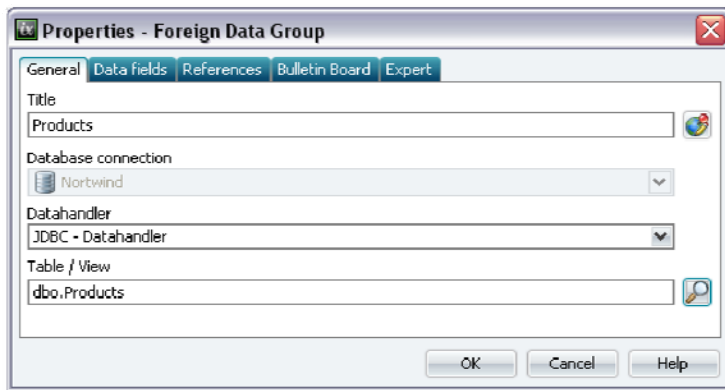


Intrexx recognizes the data types of the foreign data fields and automatically assigns the corresponding Intrexx data type to them.

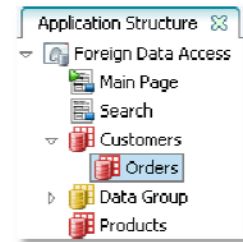
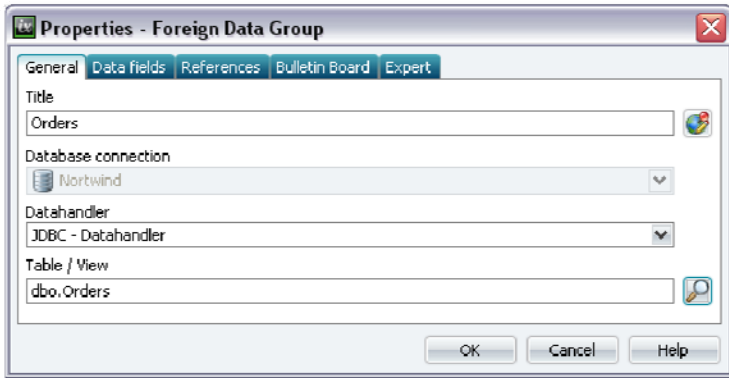
 Foreign data groups will always be displayed in the module *Applications* with a red  symbol. The data fields of a foreign data group can be shown as usual with the context menu item *Show data fields* and connected with edit and view elements.

4. References

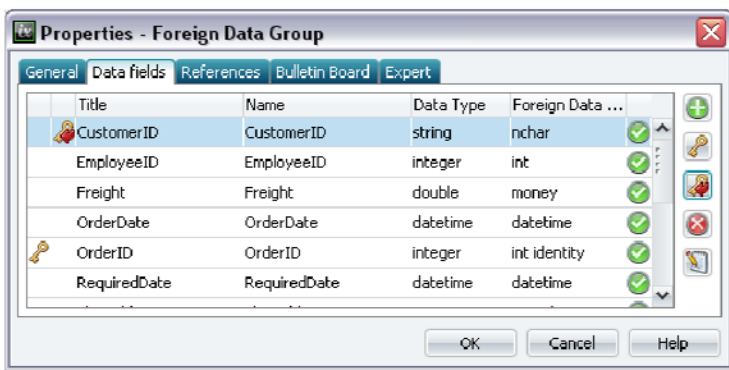
In references in foreign data groups, the *Foreign Key*, which references the data record, must be assigned. For clarification, we have expanded our example somewhat. First, we have created the foreign data group *Products*, which represents the *Products* table in the *Northwind* data source.



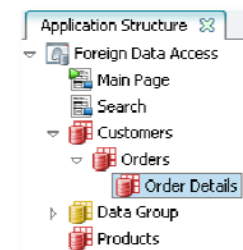
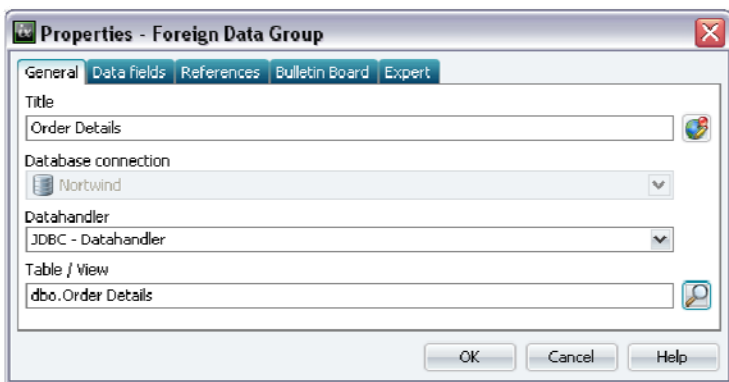
Under the data group *Customers*, we have created the foreign data group *Orders* (*Orders* table in the *Northwind* data source).



Switch to the *Datafields* tab here.



The *OrderID* field has been selected as *Primary Key*. For the relationship to the superior customer data record, the *CustomerID* field will be set as *Foreign Key*. Subordinate to the data group *Orders*, the data group *Positions* (table *Order Details* from the Northwind data source) has been created.



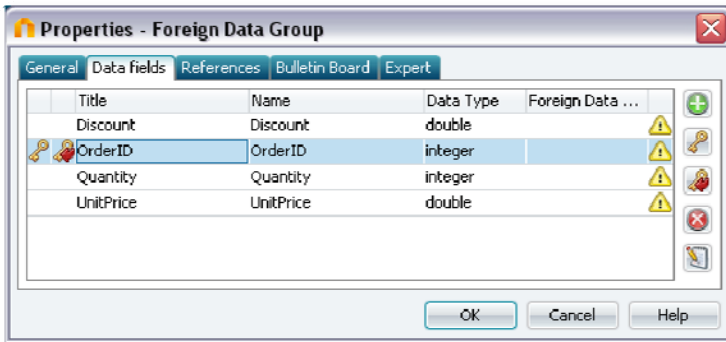
i Table names that contain empty spaces must be placed in brackets in the XML of the application.

In our example, the database name *dbo.Order Details* from the *Northwind* source database must be changed in the XML of the application as follows:

```
<datagroup
adminhandler="de.uplanet.lucy.server.businesslogic.admindata.j
dbc.DataGroupExternalImpl" connection="Northwind"
datahandler="de.uplanet.lucy.server.businesslogic.rtdata.jdbc.
```

```
RtDataGroupTable" foreign="true" guid="B468....787B"  
name=" [Order Details]">
```

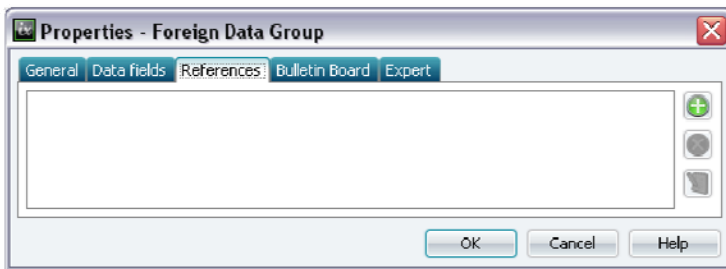
For the *Positions* data group, all data fields with the exception of the *ProductID* field must be included. The *OrderID* field acts as the *Foreign Key* and creates the relationship to the superior data group *Orders*.



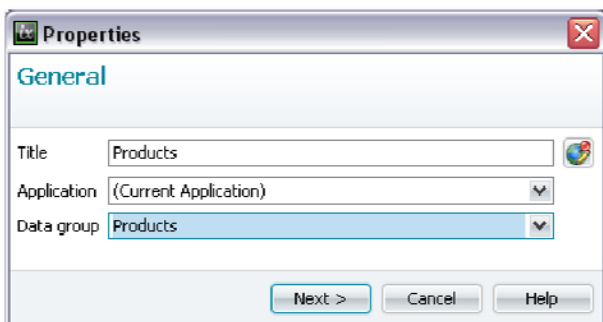
The *ProductID* field must be set as the reference field to the data group *Positions*. In order for it to be made available as a reference field, it may not be included in the list of data fields.

As the data group *Positions* does not contain any *Primary Key*, invoice items can be displayed in a view table on an order page, but no jump to a view page can be executed since the current data record cannot be identified.

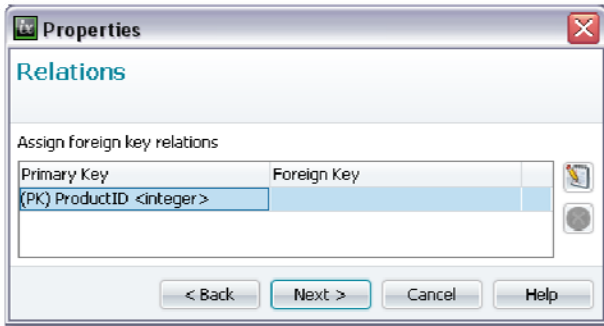
The *ProductID* data field will be added to the *Positions* data group as well as the *Products* data group (*Foreign Key*). Open the properties dialog of the *Positions* foreign data group and switch to the *References* tab.




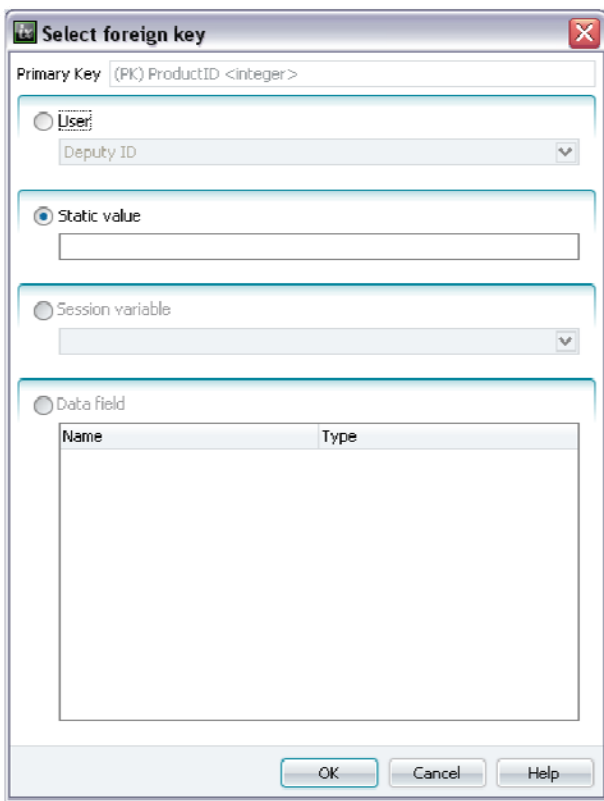
Click *Add* here to create the new reference *Products*.




Then click *Next*.

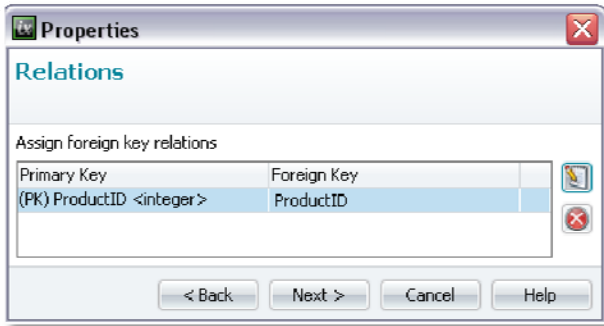


The relationship to a reference data group will always be defined via a *Foreign Key*, whose values will be compared to both data groups. The values of the *Foreign Key* correspond, as a rule, to the *Primary Key* of the referenced data group. Please click  *Edit*.

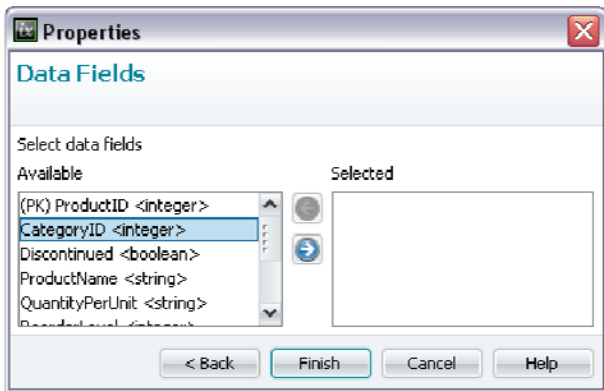



The *User* option allows a field from the User Manager to be used as a Foreign Key here as well. The *Static Value* option allows a fixed value to be used, and *Session Variable* allows the value of a session variable to be used.

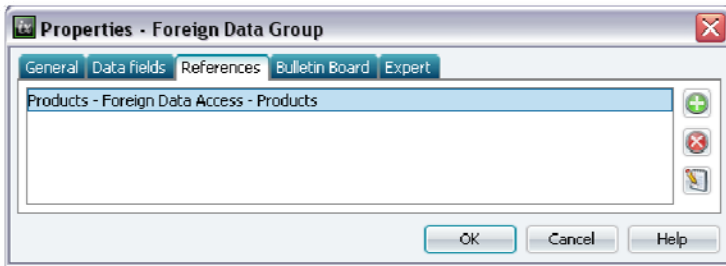
The *Data Field* option allows the value of a data field to be called up for use. For our example, select the *ProductID* field and then click  *OK*.




Then click  *Next*.



Mark your field selection and then click  *Finish*.



Design your view page however you wish.

 Foreign data groups that are set up for the Intrexx Standard connection can also reference all standard data groups. When integrating foreign data tables, the inclusion of

- multiple Primary Keys
- multiple Foreign Keys
- mixed Primary and Foreign Keys

is not possible.