



SAP UNIVERSE BEST PRACTICES

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Abstract:

SAP BusinessObjects that can use multiple data sources, which UNV universes cannot. This allows organizations to use more of their data for BI and analytics. UNX Universes can also connect to many visualization tools, including BusinessObjects Explorer and Crystal.

Keywords: Multisource universes that federate multiple relational data sources, Extended connection management, design environment that facilitates designer teamwork and universe resource sharing, security editor for universe data and metadata, Easier management of repository resources.

1. Introduction

Fundamentally a Business Objects Universe is a file that contains:

- Connection information to a database
- Components that map to structures in the database. A structure and layout of classes, objects, tables, views, joins, and contexts

2. UNX UNIVERSES

Multi-sourced universes are possible with UNX universes. In a BI4 UNX everything is contained in a project (a named local workspace). A project can contain multiple connections, a data foundation, and a business layer. The data foundation contains the tables, joins, and contexts. The technical part of universe design (connections and database structures) has been completely separated from the business representation (classes and objects). The developer can build more than one business layer on top of a shared data foundation, allowing the business to leverage a single enterprise model for multiple universes. UNX universes are created in the new Information Design Tool.

A UNX universe is a file that combines a data foundation, business layer, and connections into a

single file. The file name is <universe name>.unx. You can create a UNX universe using the information design tool. UNX universes can use multiple data sources, which UNV universes cannot. This feature can help organizations use more of their data for BI and analytics. You can create universe filters with true optional prompts in unX.

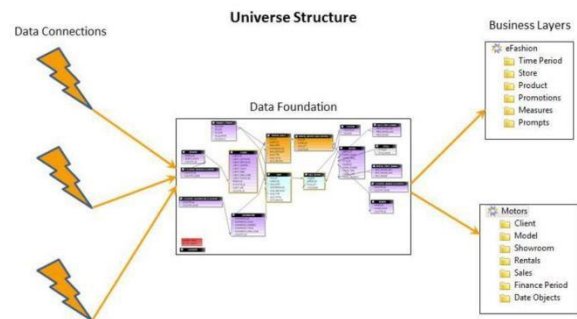


Figure 1- Design tool

The Universe Structure the data foundation is in the center of the hub and connects to data connections

and business layers in both the ways and makes the

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transformations easier and smoother. The Compatibility is well explained below.

Product Support	UNV	UNX
Live Office	Yes	Yes (from BI 4.1 Support Pack 6)
Explorer	Yes	Yes
Web Intelligence	Yes	Yes
Crystal Reports	Yes	No
Crystal Reports for Enterprise	No	Yes
Dashboards (using the Query Panel within Dashboards), aka Xcelsius	No	Yes
Design Studio	No	Yes (though there are some limitations)

Figure 2- Compatibility

3. MULTISOURCE UNIVERSE

Using the information design tool, the developer can create a data foundation on multiple relational data sources to create a multisource universe. Using this universe, SAP BusinessObjects data analysis and reporting applications can query multiple relational sources at once. To provide this functionality, the query engine technology from SAP BusinessObjects Data Federator has been enhanced and integrated into SAP BusinessObjects Business Intelligence platform 4.0.

The integrated data federation query engine provides many features including the following:

- The ability to federate data from multiple relational databases. (A federated database system is a type of meta-database management system (DBMS), which transparently maps multiple autonomous database systems into a single federated database).
- Use of standard SQL 92 syntax to define joins, derived tables, and business objects. The query engine translates the queries for all sources and distributes them.
- Use of database-specific syntax to define expressions for calculated columns and derived tables in the data foundation. These native expressions take advantage of database-specific functions of the data sources.

4. CONNECTION MANAGEMENT

The information design tool lets the developer create local connections on the file system or secured connections in the repository. Once the developer has validated a local connection, the developer can publish it in the repository to create an equivalent secured connection. In the repository, the developer can store connections under the Connections folder and its subfolders.

The same relational connections can be used by universes created with the information design tool and the universe design tool.

5. DESIGN ENVIRONMENT

Resources are stored in projects. The developer can share projects in a repository to make resources available to other designers. Several designers can work on the same project at the same time and can share and synchronize their universe resources.

The developer can also reuse universe resources. For example, the developer can base several business layers on a single data foundation. The data modeling in the data foundation can then be shared by multiple universes.

The following new universe features are available when designing the data foundation:

- Multisource universes based on multiple relational connections.
- Calculated columns. A calculated column is a new column in a table that is the result of a calculation based on one or more columns of the same table.
- Data foundation views. A view is a set of the tables and joins in the data foundation used to focus the work of the designer on a specific part of the schema.
- Profiling of data stored in a column. Graphs and tables show the repartition of the distinct values of the column.
- Enhanced contexts to solve join path loops.

- Table families. A family is a set of display parameters that can be used to visually group tables of the same type when working in the editor.

- A powerful search panel to visually filter the data foundation tables based on specific characteristics, for example connections, table types, contexts, or families.

- Prompted parameters and lists of values (LOVs) that are inherited by any business layer built on the data foundation.

The following new universe features are available when designing the business layer:

- The ability to create and run test queries and store them in the business layer.

- Business layer views. A business layer view allows the developer to define a subset of a universe as a starting point for building a query. With views, it is possible to create larger universes and provide smaller views that can be business-oriented, for example, a Human Resources view or a Finance view.

Prompted parameters and LOVs as independent objects in the universe that are shareable:

- An LOV can be shared by multiple business layer objects.

- An LOV can be shared by multiple parameters (prompts) or filters.

- For multi-column LOVs, the developer can choose which columns to display, and which column will be used for the query.

6. SECURING UNIVERSE DATA AND METADATA

Using the Security Editor in the information design tool, the developer can define universe security for users and groups. As a first level of security, using the CMC, the developer grants the right to access specific folders, resources, universes, and connections in the repository to specific users and groups. The developer defines another level of security using the information design tool Security Editor. The developer can restrict

the data that is returned in a query using query limits and controls, filters, and row restrictions. The developer can also grant or deny access to objects and views in the business layer. To create this level of security, the developer defines security profiles for the universe and assign these profiles to users and groups.

The developer first defines profiles for the universe:

- Data Security Profiles control access to data. Data Security Profiles can be seen as the equivalent to Access Restrictions defined for universes using the universe design tool.

- Business Security Profiles control access to data by using business layer views and objects, or by defining filters on these objects.

The developer then assigns profiles to users and groups.

In the Security Editor, the developer can easily browse the defined security by user or by universe. The developer can also preview the net security profile for a user or group, and display the security inherited by a user.

The Access Restrictions defined for universes in the universe design tool and their assignments are converted into the equivalent Data and Business Security Profiles when a secured universe is converted.

From the Security Editor, the developer can run a query on a universe in a repository. The query is then secured by the Data

Security Profiles and Business Security Profiles that apply to the user used to log into the Security Editor.

7. CONCLUSION

SAP BusinessObjects (BO) allows companies to deliver information to a wider audience by using methods and solutions that complement automated data access and extraction with interactive and visual data.

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