

Best Practices for Web Intelligence XI Release 3.0 on top of SAP NetWeaver BI



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Agenda



1. General overview of Web Intelligence connectivity for SAP BI
2. SAP Meta-data in OLAP Universes
3. SAP Variables in Web Intelligence
4. Authentication and SSO
5. Publications for Web Intelligence
6. Large data volumes

Business Intelligence Platform

Information Discovery & Delivery

Query, Reporting, & Analysis

Reporting Analysis Dashboards Search Information Delivery

Advanced Analytics

Predictive

Enterprise Information Management

Data
Integration

Data
Quality

Metadata
Management

Master Data
Management

Data Mart
Solutions





BusinessObjects Web Intelligence is the leading end user reporting-and-analysis tool.

Where can Web Intelligence add value?

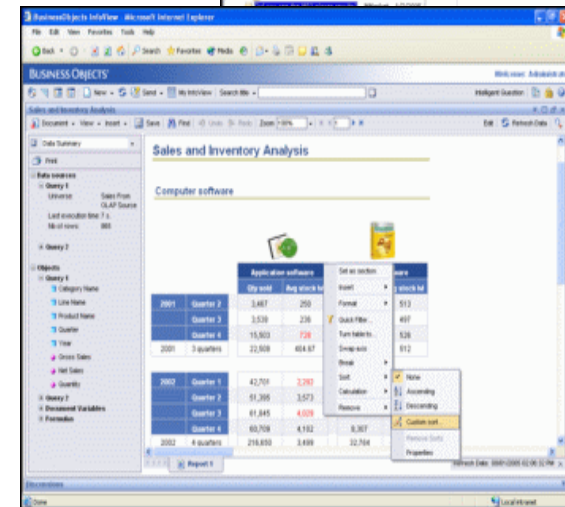
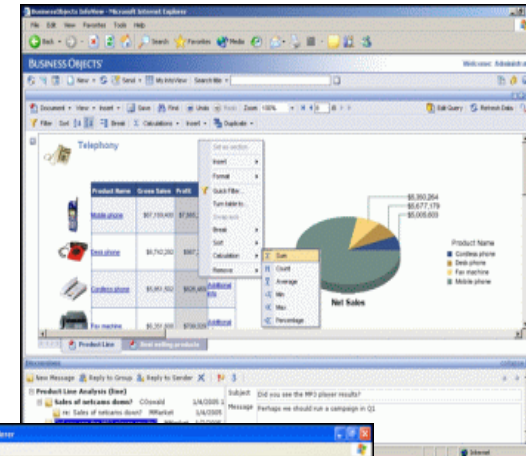
- In the area of ad-hoc reporting
- Easy-to-use interface for end user reporting
- Powerful query features
- Leverage business friendly 'semantic layer' to hide complexity

Customer requirements

- Self-service reporting and analysis, autonomy from IT
- Simple user interface, designed for the masses
- Combine data from SAP and non-SAP data in a single report
- Rich feature set

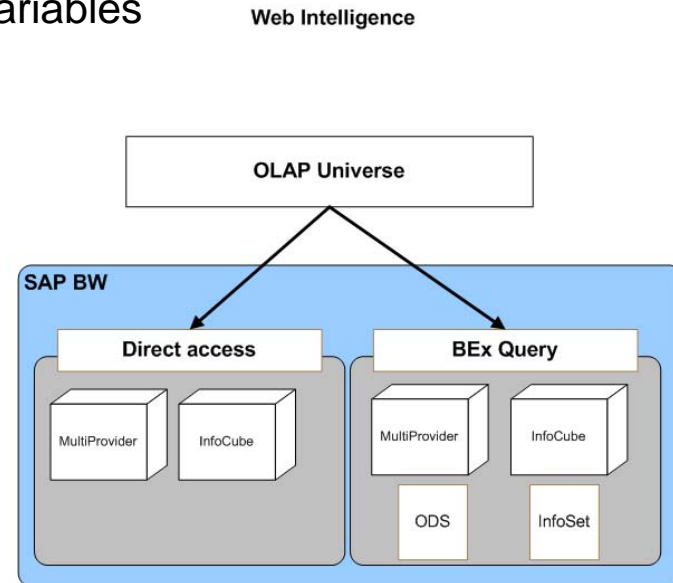
Connectivity to SAP

- Sits on top of Business Objects Enterprise Universes
- Universes connect to SAP NetWeaver BI via OLAP BAPI
- Access objects: BEx Queries & SAP BI InfoCubes

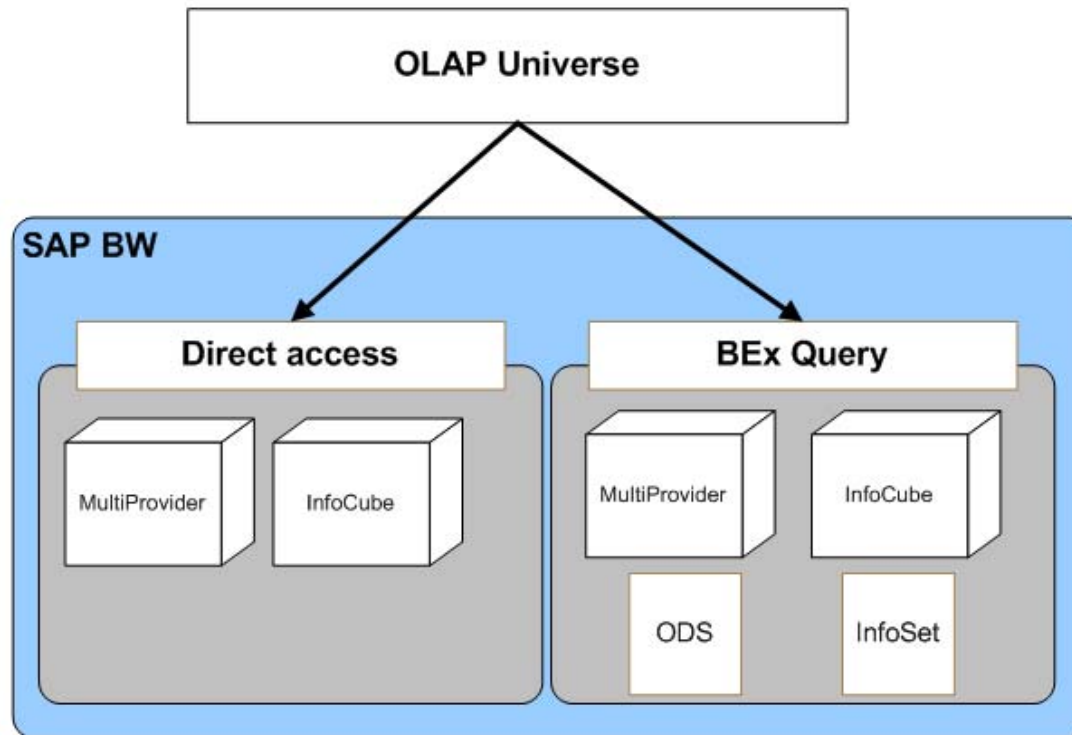


Web Intelligence / OLAP Universes

- Connectivity towards BI queries
 - Queries need to be configured to “Allow external access”
 - Consider Crystal Reports for a direct ODS / DSA access (Direct BAPI access)
- Connectivity towards InfoProvider level
 - Consider the different sets of meta-data exposure
 - Consider BI Authorizations / Authorization variables



Web Intelligence



BI metadata feature	SAP OLAP BAPI support level
Characteristics (incl. Time and Unit)	InfoCube/BI Query
Hierarchies	InfoCube/BI Query
Basic Key Figures	InfoCube/BI Query
Navigational Attributes	BI Query only
Display Attributes	InfoCube/BI Query
Calculated Key Figures / Formulas	BI Query only
Restricted Key Figures	BI Query only
Custom Structures	BI Query only
Variables	BI Query only

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SAP BI element	Universe object
Dimension	Class
Characteristic	Subclass with dimension and detail objects
Characteristic with hierarchy	<p>BI Query: Subclass containing dimension and detail objects for each hierarchy level in the currently defined hierarchy</p> <p>BI InfoProvider: Subclasses containing dimension and detail objects for each hierarchy level for all hierarchies defined for the characteristic</p>
Structure based on Characteristics (BEx Queries only)	Class with single dimension object for the structure
Navigational attribute	Subclass with dimension and detail objects (identical to characteristic)
Display Attribute	Detail object for the dimension
Key Figure	Measure object in the class for the Key Figure structure with dimension objects for units/currency, numeric value and formatted value (based on User preferences)
Calculated Key Figure (BEx Queries only)	Measure and dimension objects (same as Key Figure)
Restricted Key Figure (BEx Queries only)	Measure and dimension objects (same as Key Figure)
Variables (BEx Queries only)	<p>Pre-defined Filter in the Universe</p> <p>In the class for the dimension to which the variable applies, two dimension objects supporting the list of values, one for caption, one for description.</p>
Key date variable (BEx Queries only)	Universe parameters defining key date variable in the universe

Meta-data mapping in OLAP Universes



The screenshot illustrates the configuration of an InfoProvider and its mapping to an OLAP Universe. The InfoProvider configuration is shown on the left, and the OLAP Universe structure is shown on the right. Arrows indicate the mapping between the two.

InfoProvider Configuration:

- InfoProvider:** SAP Demo Szenario DaIS
- Structures:** Key Figures, Dimensions
- Key Figures:** Billed Quantity, Billed Quantity Plan, Lost Deals, Net Sales, Number of Lost Deals, Sales Plan
- Dimensions:** Customer, Product, Time, Unit
- Filter:** Characteristic Restrictions (Product, Calendar Year), Default Values (Calendar Year, Product, Customer)
- Rows/Columns:** Free Characteristics (Calendar Year), Columns (Key Figures: Net Sales, Lost Deals, Billed Quantity)
- Rows:** Product, Customer, Industry keys
- Preview:** Matrix showing combinations of Product and Customer.

OLAP Universe Structure:

- Customer
 - Customer2
 - L00 Customer
 - L01 Customer
- Product
 - Product2
 - L00 Product
 - L01 Product
 - LovProduct Mul Sel
 - LovProduct Mul SelBase
- Time
 - Calendar Year
 - L00 Calendar Year
 - L01 Calendar Year
 - LovCalendar Year
 - LovCalendar YearBase
- Key Figures
 - Net Sales
 - Net Sales Unit
 - Net Sales Formatted Value
 - Lost Deals
 - Lost Deals Unit

Arrows indicate the mapping from the InfoProvider's Key Figures and Dimensions to the corresponding structures in the OLAP Universe.

Meta-data mapping in OLAP Universes



InfoProvider: SAP Demo Szenario DaIS

- Structures
- Key Figures
 - Billed Quantity
 - Billed Quantity Plan
 - Lost Deals
 - Net Sales
 - Number of Lost Deals
 - Sales Plan
- Dimensions
 - Customer
 - Area Code
 - Customer
 - Ind. Sector: DB S
 - Region Code
 - Product
 - Product
 - Product group
 - Distribution Channel
 - Reason
 - Data Package
 - Time
 - Unit

Filter

- Characteristic Restrictions
 - Product
 - Product Mul Sel
 - Calendar Year
 - Calendar Year
- Default Values
 - Calendar Year
 - Product
 - Customer

Rows/Columns

- Free Characteristics
 - Calendar Year
- Columns
 - Key Figures
 - Net Sales
 - Lost Deals
 - Billed Quantity

Area for Dimensions

Rows

- Product
- Customer
- Industry keys

Area for Dimensions

Preview

a-Product	a-Customer	Net S
	b-Customer	
b-Product	a-Customer	
	b-Customer	

0 Messages

- Customer
 - Customer2
- Product
 - Product2
 - Filter
- Time
 - Calendar Year
- Key Figures

Overall recommendation

- BI Queries are recommended as data sources for generating universes for the following reasons:
 - BI Queries offer a flexible extension to the data modeling environment and require less effort to change than InfoCubes
 - BI Queries offer significant functionality to create customized data sources that meet end-user requirements, such as Calculated & Restricted Key figures and SAP Variables.

- You do **not** need a BI Query for every report and you do **not** need a universe for every BI Query.
 - Focus the implementation strategy on limiting the number of BI Queries and universes that share common elements
 - DO NOT build one query per InfoProvider because elements can add processing time even though you not using them into the Web Intelligence report
 - Build a small set of queries focusing on sharing common elements in a small number of universes

- **Set the property “Use Selection of Structure Members” in transaction RSRT for the query to ensure structure elements are sent to the database for processing**

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The following types of BI variables are supported in universes:

- Characteristic variables
- Hierarchy variables
- Hierarchy node variables
- Currency variables
- Formula variables
- Text variables (as replacement path and authorization processed variables)
- Key date variables

Variable type	Processing Type				
	User Entry/ Default Value	Replacement path	Authorization	Customer exit	SAP exit
Characteristic	Supported	Supported	Supported	Supported	Supported
Text	Not Supported	Supported	N/A	N/A	N/A
Formula	Supported	Supported	N/A	Supported	Supported
Hierarchy	Supported	N/A	N/A	Supported	Supported
Hierarchy node	Supported	N/A	N/A	Supported	Supported

SAP Variables in Web Intelligence

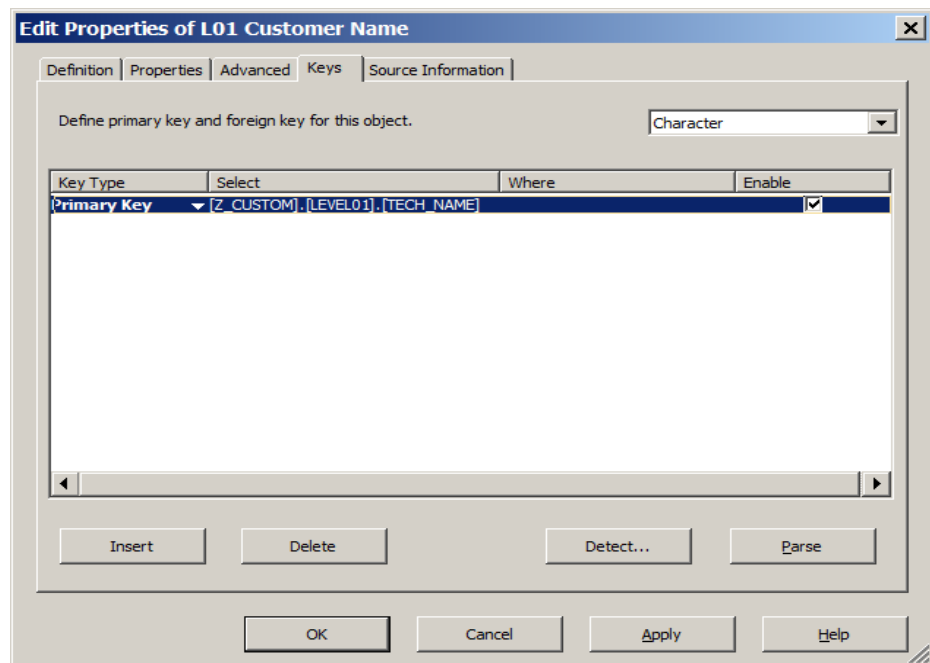
- Mandatory variables will always load a list of values (try to leverage more optional variables)
- Leverage the **Delegated Search** feature for List of values

Web Intelligence filters

- Prefer the inclusive filter over the exclusive member to increase the performance
- Ensure the reference objects are **indexed** to avoid unnecessary steps to resolve the value to the member unique name
- Ensure the user can only select values from the actual LOV (List of values)

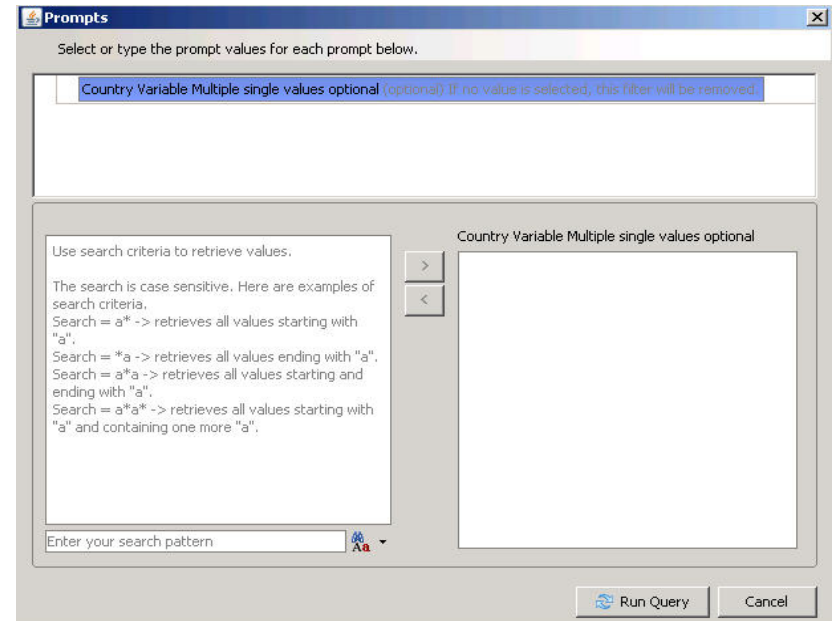
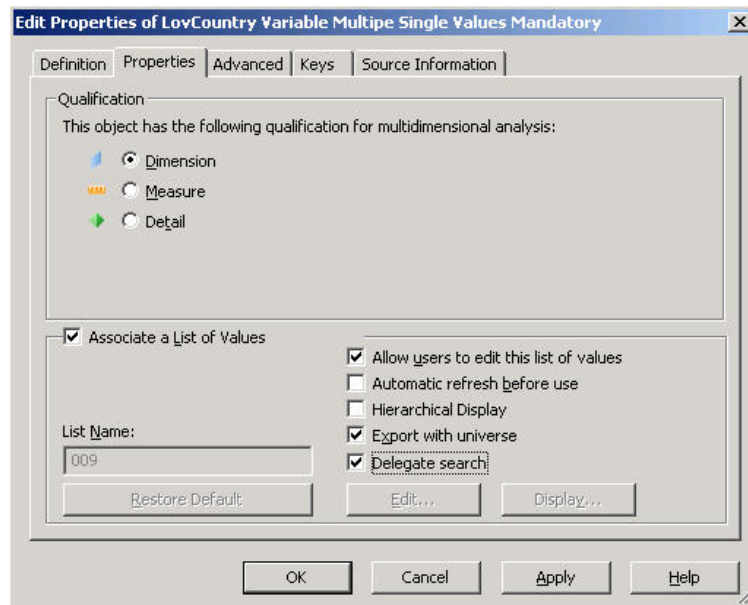
Index Awareness

- Navigate to the tab “Keys” in the Universe Designer
- Add a primary key
 - Type Character
 - Key Type Primary Key
 - Syntax [**<characteristic>**].[TECH_NAME], or
[**<characteristic>**].[LEVEL<xx>].[TECH_NAME]



Delegated search for List of Values (LOV)

- Navigate to the tab “Properties” in the Universe Designer of the LOV items
- Activate the “Delegate Search”
 - No values will be loaded automatically
 - User is “forced” to leverage search to receive members
 - Search is being delegated to the SAP BI system





DEMO

Agenda



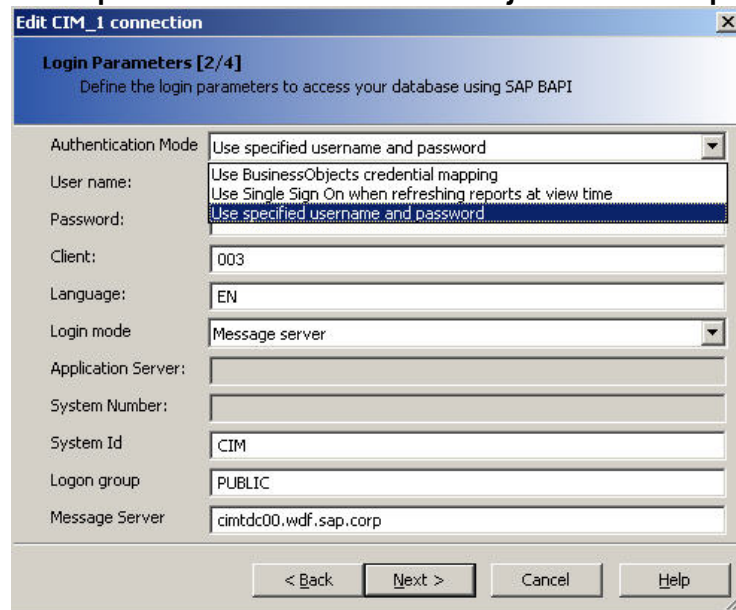
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■ Supported Scenarios

- Using SAP credentials in InfoView
- Using SAP LogonToken (MYSAPSSO2)
- Using SNC

■ Authentication and SSO requires the SAP Security plug-in for BusinessObjects Enterprise

- The SAP system needs to be configured in the Central Management Console (CMC) as entitlement system
- User and Roles need to be imported to BusinessObjects Enterprise



Edit CIM_1 connection

Login Parameters [2/4]
Define the login parameters to access your database using SAP BAPI

Authentication Mode	Use specified username and password
User name:	Use BusinessObjects credential mapping Use Single Sign On when refreshing reports at view time
Password:	Use specified username and password
Client:	003
Language:	EN
Login mode	Message server
Application Server:	
System Number:	
System Id	CIM
Logon group	PUBLIC
Message Server	cimtdc00.wdf.sap.corp

< Back Next > Cancel Help

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- Publications are the counterpart to Information Broadcasting on BusinessObjects Enterprise
 - In Release XI 3.0 publications can leverage server side trust (via SNC) to leverage a multi-pass scheduling process for Crystal Reports
 - In Release XI 3.1 this is being extended to also support Web Intelligence

- Publication allows you
 - ... to schedule a Crystal Report / Web Intelligence object and distribute to several recipients
 - ... to leverage the defined server side trust and in that way leverage the defined SAP security

- Publications with SAP Security – pre-requisites
 - BI authorizations are configured in SAP BI
 - Server side trust being granted between SAP BI and BusinessObjects Enterprise
 - SAP authentication configured in BusinessObjects Enterprise
 - SAP user and roles imported to BusinessObjects Enterprise and available as recipients
 - OLAP Universe deployed with SSO as authentication method
 - Web Intelligence report being created and available in BusinessObjects Enterprise
 - Publication being created as multi-pass bursting process (one fetch per recipient)

- Publication Process
 - Web Intelligence processing tier starts the publication
 - Recipients are being checked and verified
 - Processing of the report is being started “recipient by recipient” (multi-pass) by using impersonation and authentications user by user towards SAP BI
 - Publication process is creating a report per recipient

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- Reduce the amount of cells being received from the SAP BI system
 - Only include items into the Web Intelligence query panel that are being leveraged in the report
 - Web Intelligence will not automatically optimize the query based on the report definition

- Report Design considerations
 - Leverage report linking (aggregated report links to more detailed report)
 - Leverage “Drill” for hierarchical reports

- “Master data” style reports
 - In scenarios where the largest part of the report is based on actual master data (like display attributes) consider to combine two Web Intelligence queries (1 for the display attributes and 1 for the actual data)



DEMO

Note Number	Description
1161911	General OLAP BAPI Performance improvements
1162349	Improving performance of caption resolution
1162416	Improving performance of caption resolution
1164552	Performance improvement if zero suppression is active
1169205	MDX: Filter transfer in the case of cross join
1170323	Improving performance when working with BI Hierarchies
1172076	Performance improvement in special situation
1230303	Improving performance when working with BI Hierarchies
1237104	Performance problems occur when reading the master data
1238661	Slight performance improvement in internal business volume
1240165	Performance optimization for hierarchy authorizations

Thank you!