SAP BO 3.1/4.0

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BW-BI-BO | BI-ABAP | BO R3/R4 | HANA 1.X

Contents

SAP - BUSINESS OBJECTS
(BO/BO XI /BOBJ/SAP BO/SAP BOBJ)

Business Intelligence (BI)

- BI is an approach for gathering data across multiple data sources and integrating a report for simplifying decision making.

Company	Database(DB)	ETL	Reporting	BI
SAP	R3 and ECC	BW	BEX / BO	SAP BI
IBM	DB2	Data stage	Cognose	IBM BI
Oracle	SQL and PL/SQL	ODW	SIBEL Analytics	OBI
Microsoft	SQL Server	SSIS	SSRS and SSAS	MSBI

System Requirements:

	RAM	HDD	Processor
BO-Non SAP	512 MB +	5 GB +	Any
BI with BO- SAP Without R/3	2 or 3 GB+	20 GB +	Core 2 Duo +
BI with BO- SAP With R/3	3 or 4 GB+	160 GB +	Core 2 Duo +

Advantages with BO than others:

1. Direct cost cutting with BO is 20%
2. BO support multiple data sources
(SAP, Non-SAP, Relational, Non-relational DB)
3. Supports for 50,000 simultaneous users
4. BO has a very robust security model than BEX.
5. BO supports Horizontal scaling as well as vertical scaling.
6. Installation and maintenance is very easy

SAP BEX vs. BO

Report type	SAP-BEX	BO
Ad-hoc	BEX web analyser	Web intelligence
Real-time/Enterprise	Report Designer	Crystal Reports
Dashboards	WAD(web application designer)	Xcelsius

Installation Process:
1. SAP front end tools
2. Install BO
3. SAP BO Integration KIT (compatible version)
4. Crystal Reports
5. Xcelsius / Crystal Xcelsius / Dashboard Designer
6. Widgets for mobile reporting
7. Voyager SAP↔ Non SAP
8. Live Office for dynamic access

BO content plug inns - Client, Server

1.Infoview:

- It is a web based tool for creating report to the browser or modifying report or distributing report

2.Desktop Intelligence:

- It is a window based tool or standalone or Desktop for creating reports through desktop/window.

3.Central Management Control (CMC)

- It is web based tool for the administration.
- The admin can do the following:

User management: Create new users
Modify existing users
Delete users
Enable and disable the password

Server Management: Start/Stop/Restart/Configure the server
Content Management: Create new folder
Modifying existing folder
Delete folder

4.Central Configuration Manager (CCM):

- It is a window based tool for administration

The admin can do the following:
Only the server management:Start/stop/restart/configure the server

5.Import Wizard:

- It is a window based tool for the migration
- It is migrating reports from DEV → QA → PROD or
  Migration of reports from lower to higher version.

6.Universe:

- It is used to improve the performance.
- Universe is a semantic or meaningful layer which is subset of the database.
- Universe contains **Objects** and **Classes**

7.Diagnostic Tool:

- It is for identifying the exact root cause of the problem in business objects software.

8.Software Inventory Tool:

- It is for identifying the installed BO software's in the local system and their license information.

9.Query As a Web Service (QAAWS) - URL:

- It is for converting a report query into WSDL (Web service definition language).

10.Report Conversion Tool:

- It is used to convert DESKI reports to Web Intelligence report formats.

11.Translation Manager:

- It is used to translate the reports from one language to other language.

12.Publishing Wizard:

- Publishing /Exporting the large volume of data from Local machine to server.

13.Web Intelligence Rich Client:

- It is collaboration (combination) of both DESKI and Web Intelligence.

14.Universe Builder:

- It is for creating a universe on top of Meta data cubes or XML data sources.

15.Crystal Reports:

- It is used to create a report on multiple source systems or heterogeneous systems.
- i.e. is for creating a report on top of various data sources like OLTP (SQL tables, R/3) OLAP (infoproviders, DWH), discontinued data services (XML, WDSL), Microsoft exchange server, personal data files (Excel, Notepad) etc.

16.Crystal Reports (**Real Time Reports**):

- It is used to create a report without universe.

17.Xcelsius:

- It is for creating interactive or colourful dashboards (Graphical Representation of Reports).

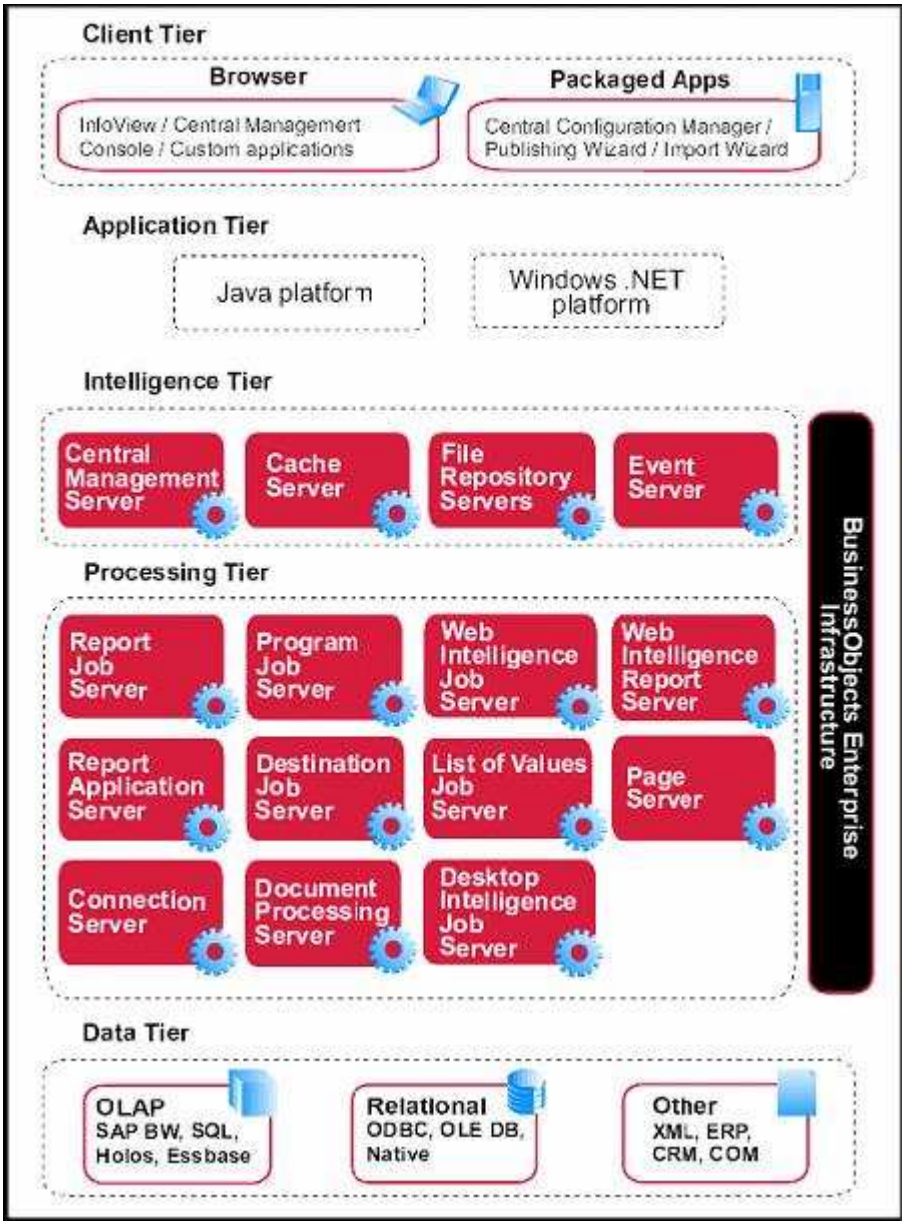
18.BI Widgets:

- It is used to create reports for the mobile users.

19.Voyager:

- It is used to create an OLAP reports on top of multiple OLAP objects/cubes.

BO XI Architecture



Web Based Tools:

- Infoview & CMC (Central Management Console) are web based tools in BO.

Window Based Tools:

- CCM (central Configuration Manager) and Publish Wizard and Import Wizard are windows based applications.
- Application tier has WCA (Web Component Adaptor) which is a component in Java/.Net
- File Repository Server is memory storage device in BO.
- CMS (Central Management server) acts as gate wall device which validates the user logon credentials and also redirects the user requests to the respective server.
- Page Server is used to compress the reports into **E**ncapsulation **P**age **F**ormat (EPF).
- Report Application Server is used to create a crystal reports and Xcelsius reports.
- Report Job Server is used to schedule crystal and Xcelsius reports.
- Document processing server is used to convert your documents into PDF.

1.Client Tier

- All front end applications
  (Web based - CMC/Infoview);
  (Window Based - CCM, Import Wizard, Publish Wizard)

2. Application Tier

- Java/.Net plot form

3. Intelligence Tier

- CMS (Central Management Server),
- Cache Server,
- Event Server,
- File Repository Server (IFRS, OFRS)
- IFRS - Input File repository server - It contains all saved reports, Logon credentials, Repository objects;
- OFRS - Output File Repository server - It contains only scheduled instances of the reports;
- CMS (Central Management Server)
  The primary objective of CMS is it will authenticate the users and acts as a gate wall and directs all the requests to the respective/desired server.
- Cache Server - It contains all recently opened reports.
- Event Server - It will manage all scheduled events.

4. Processing Tier - This layer contains the following servers

- Web Intelligence (WEBI) Report Server - used to create a new WebI report or open existing reports.
- WEBI Job Server - used to schedule the WebI report.
- Report Application Server (RAS) - used to create a new crystal report

or open an existing crystal report.

- Report Job Server - used to schedule the crystal reports.
- Desktop Intelligence (DESKI) Report Server - used to create a new DESKI report or open an existing DESKI report
- DESKI Job Server - Scheduling the DESKI reports.
- Document Processing Server - used to convert the WEBI, DESKI,
- Crystal Reports into pdf/Excel/Word/Text or other formats.
- Page Server - to compress the documents into EPF format
- Connection Server - Used to manage the connections between BO and
- Database.
- Destination Job Server - Used to deliver the scheduled instances to the
- end user destination/ location.
- List of values (LOV) job Server - Used to manage the list of values in the runtime.
- Program Job server - Used to execute/run the external programs (Java/.Net etc) in BO.

5. Data Tier

- Any database (SAP or Non-SAP)

FAQ: How many layers/tiers are there in BO Architecture?
Ans: We have following 5 tiers:

FAQ: What is EPF?
Ans: EPF stands for Encapsulation Page Format and is compressed format of the report. All reports in the repository will be in EPF format.
FIRST Step in any BO project is Security Model:

Reports file formats and extensions:

Webi / Webi Rich Client : .wid WEBI Document
Crystal Report : .rpt Report Template
DESKI : .rep Report
Xcelsius : .xlf (Xcelsius format for colleagues)
: .swf (Shock wave format to enterprise/Export)
Universe : .unv Universe

BO-ADMIN

Security Model:
The BO Security model contains the below objects:
1. Users 2. Groups
3. Folders 4. Reports
5. Access Privileges for the groups against the folders and applications.

CCM is used for Server management.
CMC is used for Server management, User management and Content management.

Steps for creating new User:

1. Logon to CMC [Central Management Console (web based)]
- Open the web browser in the local system
- Type the URL for the CMC
- Enter Administrator logon credentials (not normal users)
- Click on logon
2. Navigate and Select Users & Groups option from drop down box
3. Click on create New User icon
4. Enter the required BO user account details to be created.
5. Enable the check box "User must change password at next logon".
6. Select the connection type as "Named User"
For 'normal User (only one user will be able to login at one instance)'
For 'admin' select 'concurrent User (multiple users can login at the same instance)'.
7. Click on Create and Close.

Steps for creating Groups:

1. Logon to CMC by following steps given above
2. Select Users & Groups option from drop down box
3. Click on Create New Group icon
4. Enter the required BO Group account details to be created.
5. Click on OK
Steps for assigning users to the Group:
1. Navigate to the users & groups drop down box
2. Select the users list and select the required user
3. Right click on the required user and select the option 'join group'
4. Select the group list and select the required group and use right arrow and
5. Click on OK
Steps for creating a Folder:
1. Navigate to select the ‘Folders’ option from the drop down box.
2. Click on 'Folders' icon
3. Name the Folder
4. Click on OK

Providing access for the groups on folders:

1. Select the desired folder and
2. Right click on the Folder→Manage→Security →User Security
3. Click on ‘Add Principles’
4. Enable the 'Groups' option
5. Select the desired Group and
6. Click on single right arrow >
7. Click on 'Add & Assign security'
8. From Assign security page,
Go to Access levels tab and
Select the desired access levels and
Click on right arrow and
Click on Apply & OK.
9. To provide custom access levels,
Go to Advance tab and
Provide the required custom access levels.

Steps for providing access for the Groups on Applications:

1. Open web browser (for instance internet explorer0
Enter URL and press ‘Enter’ to Open CMC
2. Log on to CMC
4. Navigate to Select the ‘Applications’ from the drop down box.
5. Select the required application
6. Right click on select security option → User Security
7. Click on ‘Add Principles’ option
8. Select the user/group of users as required
9. Click on single right arrow
10. Select the required access levels
11. Click on right arrow
13. Click on Apply & OK
14. Click on Advance tab to Restrict/Modify the existing access level

FAQ: What is the main difference between CMC and CCM?
Ans: CMC is a web based tool for the administration that admin can do user management, server management, content management.
But CCM is a window based tool. The admin can do only server management.
FAQ: How many types of users you have in BO
Ans: 1. Concurrent User:
• If the user is a concurrent user with the same login credentials multiple users can access BO at a time.
2. Named User
• If the account type is normal only one user can access BO with the same login credentials at a time.
FAQ: How to provide advance access levels for the users/groups on application/ folders in BO?
Ans: Follow the above steps (1 to 10) and then
Click on Advance tab and click on add/remove rights
Select the required check box/ radio buttons.

FAQ: How do you create a sub groups in BO?
Ans: Double click on the main group.
Click on create main group and
Name and describe the group
Click on OK.
FAQ: How many of access levels you have BO and explain them?
Ans: BO has following 4 controls of access levels
1. View
• If the user/group has view access levels in the folder, they can only view the existing reports.
2. View on Demand
• The user/group will be able to view and run the reports and pass the parameters dynamically during runtime.
3. Schedule
• User/Group with schedule access will be able to view, run and schedule the reports
4. Full control
• User/Group with full control will have all (admin) accesses.
FAQ: How to monitor the 'scheduled' status/history of the reports in real time?
Ans: In CMC, Navigate to Instance manager (from drop down box) and
Select the 'Status' check box and
Select the required time intervals for the report and
Click on 'Find' option.
FAQ: How do you add new license to the existing BO software (s/w)?
Ans: Log on to CMC
In CMC, Go to license keys (select license key option from drop down box)
In the 'Add Key' field, add the new license.

Scheduling activity of the Reports:
It is for automatic running process

Manual and Recurrence Scheduling:
Steps:
1. Log on to Infoview
2. Navigate to the report
3. Right click on report
4. Click on schedule
5. Give the instance title
6. Click on Recurrence
7. Set the time intervals as per the requirement [in run object navigation box]
Note: You can modify the prompt by using Prompts option in the left side pane]
8. Click on Format and Destinations
9. Select the required formatting [output format: []Webi []MS excel[]adobe]
10. Select the required location [output Format details:[]inbox []File loc..[]email]
11. Click on Destination Option and Settings
12. Disable 'Use the Job Server's 'option
13. Select the required user from list of 'Available Recipient:
14. Click on Right arrow >Enter the user details
15. Click on Schedule

Calendar year Based Scheduling: [Admin Job?]
• It is for running report based on customised calendar
This scheduling has two parts
1. Defining a calendar
2. Create schedule, based on defined calendar

Part 1: Defining a calendar

1. Log on CMC
[Start → programs → BOXI3→BO Enterprise→ BOE CMC]
2. Navigate for the calendar [ ]
3. Click on Create New Calendar icon on Tool bar
4. Give the Name and Description of the Calendar
5. Click on OK
6. Select/highlight the desired calendar (ex. created by you)
7. Go to Actions
8. Click on select dates
9. Select the desired dates as per the requirement
10. Click on Save and close

Part 2**:** Creating the schedule, based on the define calendar

1. Log on to Infoview
[Start → Programs → BOXI 3 →BO Enterprise → BOE Java Infoview]
2. Enter BO login credentials
3. Navigate to the desired report
4. Right click on Report & Click on Schedule
5. Give the Name of the Instance
6. Go to Recurrence
7. Select run object as :Calendar
8. Select the designed calendar name [drop down- to view the defined calendar in part 1]
9. Select the time intervals
10. Click on Schedule For
11. Select radio button as schedule for specified user and user groups
12. Select user form the available list and clink on right arrow
13. Go to Notification and click on it [left pane]
14. Enable [] A job has been run successfully
15. Go to Format and Destinations and click on it
16. Select the required Output Format from the following options
[] Web Intelligence
[] MS excel
[] Adobe Acrobat
17. Select the Destination Location
Output Format Details from the following as per requirement
[] Inbox [] File Location [] FTP server [] Email recipients
18. Go to ‘Caching’ and Click on it [left pane]
19. Select the Language click on right arrow
20. Go to Events and click on it
21. Select the desired events and click on right arrow

22. Go to Scheduling Server Group and click on it [left pane]
23. Enable use first available server
24. Click on Schedule [Bottom of the right pane]

UNIVERSE DESIGNER

• Designer is used for creating new Universes.

UNIVERSE
• The universe is a semantic or meaningful layer or a micro-cube or a metadata layer between target databases (DWH, Infocube etc.) and reporting layer.

FAQ: Why we need Universe in the Business Objects?
Ans: Universe is for improving the performance of the reports.

Points to be designed while creating a Universe:
• Define the Parameters
• Insert Tables
• Make the Joins
• Resolve the Loops
• Create *Classes* and *Objects*
• Setup Hierarchy
• Testing
• Distribution

Steps for creating Universe on top of Non-SAP database:

1. Start the BO servers with the help of CCM (Start → Programs → CCM)
2. Logon to Designer
(Start → Programs → Business Objects XI 3.0 → BO Enterprise → Designer)
3. Provide the required details like BO server and logon credentials.
4. Click OK.
5. Go to File → New
6. Define the Parameters
(i.e. enter the 'Name', 'Description' and select the existing 'Connection' or create a 'New Connection' for the Universe)

Connection: It is a link between the Universe and Target Database.
The link is achieved using the middleware (or drivers....ex: ODBC)
Types of Connections: There are 3 kinds of connections in Business Objects.
a) Personal: Can only be used on the client.
Note: Since it's a personal connection,
It cannot be exported to the Repository.
b) Shared: Can be used by more than one user to send Queries to the target database from a shared server.
Note: Since its shared connection, we will be able to share the Universe. However this type of connection is not secure and also it cannot be exported to repository.
c) Secured: This connection is used when you wish to distribute the completed universe to the usual population via the repository.
Note: This type of connection is sharable and also possible to export to repository. And since it is exportable to repository it's always secured.
Steps for creating a New Connection:

• Click on ‘New’ Connection.
• Click on ‘Next’
• Give the name of the connection [secured].
• Select the required ‘Middleware’ (Database)
• Click ‘Next’
• Select the required database (data source/DWH name)
• Enter the concerned data source/DWH logon credentials.
• Click on ‘Next’ & ‘Finish’.
Note: *Make sure in real time always the connection type must be secured.*

Designer for Universe

• Start BO Server
• Start → Programs → Business Objects XI 3.0 → Business Objects Enterprise → Designer
• Enter the following details(logon credentials):
System : sapdev
User : Administrator
Password : india1
Authentication: Enterprise (by selection)
• Click on OK
• Select File and
• Click on New [to get on Universe Parameters Window]

FAQ: How many tabs are there in the universe defining parameters and explain them.
Ans: The Universe parameter contains the following tabs;
1) Definition: This tab is to name the universe and to create connection/or chose the existing connections
2) Summary: This tab is basically for getting start of existing universe
3) Strategies: Select the bellow strategies
Objects: (Built –in) standard renaming
Joins: Edit manually (none)
Tables: (Built-in) Standard
4) Controls: This is basically setting common controls for all the reports executing on this universe
- Limit size of the results set to :1000 rows
- This is for applying a control for all the reports executing on this universe.
- Enable the size of results set to option
- Type the number as specified in the requirement document.
(if not specified in the requirement document just disable)
- Limit executive time: This is basically setting the connection time out for all the reports
- Enable limit executive time option
- Enter time out number(in min)
[if not mentioned in the requirement table just disable this option
- Limit size character
5) SQL Tab:
- Enable all query properties

- Enable Cartesian products [prevent] option
[if its mentioned in requirement doc]
6) Links: This is for reusing the existing universe in the current universe
7) Parameters:
- Make **ANSI92** as '**Yes**' by following the bellow steps:
- Go to File → Parameters
- Select **ANSI92** make value 'Yes'
- {If it is not found in the list existing, Enter Property Name: ANSI 92 and Value: Yes and Click on Add. This allows you to chose the full outer join =Left + Right our join}
- Click on replace and
- Click on OK

FAQ: Is your BOXI R2 supports for full outer join.
Ans: Yes, but we need to set ANSI92 as Yes
FAQ: What is the main Relationship between Dimension and Fact table?
Ans: The relationship between dimension and fact is always 1- N.
FAQ: What is the main difference between *Relational Table* and *Dimensional Table*?
Ans: Relation Table contains both Character and Numeric values.
Dimensional Table contain only Character values
FAQ: Tell me in which table you have more data in the Data Warehouse?
Ans: Fact Table contains more data.

JOIN
• Join a matching condition between two or more tables. OR
• A join is a condition that restricts the result set of a multi-relational Query.
Types of Joins:
1. Equi-Join
2. Left Outer Join
3. Right Outer Join
4. Full outer join [combination of Left and Right outer join)
5. Theta Join [Non equi-join]
6. Self Restricting Join
7. Short Cut Join
8. Complex Join.
Note: No join – more records
Join- less records
Equi-Join:
• A Equi-Join is a matching condition between 2 or more tables with Equal (=) Operator
Steps:
• Identify the common columns from two tables and
• Select the common column from 1st table and
• Map it with corresponding column in the second table using drag & drop.
OR
1. Right Click on the structure pane and select the option 'Join'.
2. Select the Table 1 from LHS and select the common column from LHS table 1
3. Similarly select the Table 2 and matching column from RHS.
4. Click on Detect

5. Click on ‘Parse’ to test the correctness of the specified join.
6. Click OK+OK+OK
Note: Equi-Join is also known as Standard or Inner Join.
Ex:
Table 1: Article_Lookup
Fields: Article_ID, Article_Label, Category, Sale_Price, Family_Name, Family_Code
Table2: Shop_Facts
Fields: Shop_Facts_Id, Article_ID, Color_Code, Week_ID, Shop_ID, Margin, Amount_Sold, Quantity_Sold
Select

Left Outer Join:

• A Left Outer Join is a condition between 2 tables.
It will fetch matching and un-matching from left side (All from left side) and only matching from Right side and Null values from the right side for unmatched records.
Steps:
1. Create an Equi-Join between 2 tables.
2. Double click on the mapping join/line
3. Enable the left side ‘Outer join’ check box
4. Click OK...OK

Right Outer Join:

• It’s quite opposite to the left outer join.
It will fetch matching and un-matching from Right side (All from Right side) and only matching from Left side and Null values from the Left side for unmatched records.
Steps:
1. Create an Equi-Join between 2 tables.
2. Double click on the mapping join/line
3. Enable the Right side ‘Outer join’ check box
4. Click OK...OK

Full Outer Join:

• It’s a combination of both Left & Right Outer joins.
It will fetch at maximum addition of 2 tables. ....i.e. matching from left & right side and null values for un-matching from left & right side.
Steps:
1. Create an Equi-Join between 2 tables.
2. Double click on the mapping join/line
3. We need to enable the ‘Outer join’ check box in LHS (Left hand side) and RHS (Right hand side).
Note: However to enable both the outer joins in LHS and RHS, we need to do the following:
Menu bar File → Parameters → and make sure ANSI92 as ‘Yes’
4. Click on OK+OK+OK

FAQ: What is the main difference between full outer join and Cartesian products?

Ans: Full outer join will fetch at maximum ‘addition of 2 tables’
Ex: Table A - 2 rows;
Table B - 3 rows.
Full outer join will fetch in 2+3 = 5 rows.
Where as in Cartesian product will fetch in ‘product of 2 tables’.

Ex: Table A - 2 rows;
Table B - 3 rows. Full outer join will fetch in 2x3 = 6 rows

Theta Join:

• It is a condition between 2 tables other than Equal operator. OR
A theta join contains an expression that is based on something other than equality.
Ex: Election Commission reports (where we use less than or greater than or in between operators to get the desired information).
Steps:
1. Right click on the structure pane and Click on Join
2. Select the left side table and select the desired/ required column 1 from the Table 1.
3. Similarly select the Right side Table2 and select the desired column2 required from the RHS Table by using the control button
4. Click on Parse and OK+OK+OK

Shortcut Join:

• Short cut join is a join that provides an alternative path between two tables.
• Shortcut join improves the performance of the query by not taking into account intermediate tables, and so shortening a normally longer join path.
Note: Referential Integrity
The number joins must always be less than the number of tables.
Otherwise if the number of joins is equal then it will become a database violation and will become a 'continuous loop'.
Steps:
1. First create direct join between Tables (A-C)
2. Right click on the structure pane by click on the required direct Join
3. Enable the 'Shortcut join' and click on 'Parse'
4. Click OK+OK+OK
Ex: Table A –
Fields: Country_ID, Country
Table B –
Fields: Region_ID, Region, Country_ID
Table C –
Fields: Country_ID, Region_ID, Sales_Revenue

Self Restricting Join:

• This is not really a join at all.
• It is a method used to set a restriction on a single table in the universe structure
• Very good for improving the domestic performance if you have 3 tables
Ex: Select SALE.SALE_DATE, SALE.SALE_TOTAL, SALE.SALE_TYPE
From SALE
WHERE (SALE.SALE_TYPE = S)
Steps:
1. Right Click on the structure pane
2. Go to **J**oin
3. Click on Edit
4. Navigate from the 'Table & Columns' for the required column
5. Double click on the required column
6. Select the 'operator' required
7. Provide the required operand (Value)

8. Click on Parse and OK+OK+OK.

Complex (Restricting) Join:

• A complex join is a join which is created with the help of 2 or more joins with 'AND' or 'OR' operator.

• It is used to extract data from 2 tables without any common matching columns by using/introducing the 3rd table with matching columns in the required 2 tables

FAQ: What is cardinality?

Ans: Cardinality is a Relationship between 2 Tables.

Most of the times the relationship between 2 tables is 1-N.

FAQ: How to automate the creation of Universe Process?

Ans: 1. Right Click on the structure pane → Options → Select the Database Tab →Enable the required options like:

'Extract joins with tables'

'Detect cardinalities in joins'

'Create default classes and objects from tables'

2. Click on Apply & OK

FAQ: How to export the convert the universe into PDF format?

1. Right click on structure pane → Options → Go to Print/PDF tab and enable the required check boxes for the objects for which we need the PDF.

2. Go to Menu bar File → Save as

3. Select the 'Save as type' as PDF

4. Navigate to the required folder

5. Provide the required name and

6. Click on Save

FAQ: How to save the universe automatically for every 2 min?

Ans: Right click on structure pane → Options → Go to Save tab and

Enable the 'Save automatically every' option and

Provide the concerned time for which it needs to be saved automatically.

FAQ: How to list out the joins in Universe Structure pane?

Ans: Click on 'View List Mode' icon.

LOOPS

• A loop exists when the join between tables form a continuous path.

Note: Database Referential integrity: Number of joins < number of tables.

[To satisfy the database referential integrity rule we need to resolve the loops}

• For resolving loops in BO, we have 3 techniques.

1. Short cut join:

If the loop exists with 3 tables (Δ loop) that can be resolved with shortcut join.

2. Alias

If the loop exists among more than 3 tables with one 'fact table' that can be resolved with 'Alias'

3. Context

If the loop exists among more than 3 tables with more than one 'fact table' that can be resolved with context.

Steps for resolving loops with Alias:

ALIAS:

• Alias is an exact Duplicate of the Original table with a new name.

FAQ: Why you need alias in universe?
Ans: Alias is only for resolving loops.
FAQ: Is alias impact on the performance?
Ans: There is no impact on performance, because it is not created in the background database schema.

Steps for creating Alias (automatic):
1. Cardinality detection must be first
2. Go to Tools → Auto detection → Detect loops
3. The universe designer routine suggests inserting alias
if the loop is created with more dimensions and one fact tables.
4. Click on Insert alias.
5. Click on close.
Manual Method for creating alias:
1. Cardinality detection must be first.
2. Identify the loops and count the loops.
If the loops have more than 3 tables and one fact table to resolve the loop follow the steps bellow:
- Identify the table which have both ends 1-1 cardinality.
- Select the table which has 1-1 cardinality and right click on the table
- Click on Alias
- Give the name of table alias.
Note: Best practice is make alias name always with original table name followed by the dimension table name.
- Remove the join line between original and the following table.
- Recreate a join between alias table and the following table
- Follow the same steps other side too.
- Set the cardinalities.
Important Note: Do not remove the original table, keep it in safer side.
Join between two 'Fact' tables leads to Cartesian.
Report can be created between more than one query
CONTEXT:
• A context is a set of related joins which specified the desired Business.
Steps for resolving loop:
1. Cardinality detect routine must be first
2. Go to Tools →Automated Detection → Detect loops
If the loop is created with more than 3 tables and with more than one fact tables. The Universe runtime routine suggests up going for candidate context.
3. Click on Candidate context
4. If the loop is created with the 2 fact tables the universe designer create 2 contexts
5. Select and add candidate detects to Accepted context.
6. Click on Ok
Manual Method:
1. Cardinality detect routine must be first
2. Identity the loop and observe the number of tables and number of facts are there in the loop.
3. If the loop contains more than more than 3 tables and more than one fact

that can be resolved with context.
4. Right click on structure pane
5. Go t context
6. Give the name of the context as first fact table name
7. Select the joins which directly or indirectly connected with the fact table one.
8. Click on check (if there is a loop again between fat table 1 and the remaining dimensions, click on alias else OK)
9. Repeat the same steps for other context.

FAQ: I have a loop with the 3 fact tables and 4 dimensions tables. Let me know how many contexts required for resolving this loop?
Ans: At least 3 as it have 3 fact tables.
Classes and Objects:
Object:
• In BO products an object is a named component in a universe that represents a column or function in a database.
• It's a replica of the column name.
In BO we have three kinds of objects listed below:
1. Dimension: A character analytical value is called as dimension
OR
Projects columns or functions from the Data Base
Which are key to a query?
Ex: Country id Product Id
Emp Id Product Name
Ename Last Name
2. Measure: A numeric calculated value is called as measure
OR
Contains aggregates to project statistics.
Ex: Salary Quantity sold
Sales Revenue profit
3. Detail: Projects column from the database that provide detailed information to dimension
Ex: Address Phone no
Fax no color
Class:
• A class is a logical grouping of the objects.
Steps for creating Classes:
An automated Method:
1. Drag and drop the complete table from right side structure pane to left side classes and objects pane.
2. Give the name of the classes
3. Double click on class name and give the name of the class as per the naming convention / requirement
Manual:
1. Right click on classes and objects pane or go to insert → class
2. Give name of the class
3. Give the description of the class
4. Then click on apply
5. Click on OK.
Steps for creating Objects:

An Automated Method:
1. Select column from the table drag and drop into the desire class.
2. Double click on the object
3. Rename the object as per the naming convention/requirement.
4. Go to properties
5. Select the qualifications [O Dimension O Detail O Measure]
6. Click on apply and OK
Manual:
1. Select the desired class
2. Right click on object
3. Give the name of the object
4. Select data type of the object [if not num check data type compatibility]
5. Click on select clause right arrows(>>)
6. Expand the desired table and
7. Double click on the column
8. Click on parse
9. Go to properties
10. Select the qualification [O Dimension O Detail O Measure]
11. Enable/Disable associated list of values as per the naming convention/requirement
12. Go to advanced tab
13. Enable/disable Results
Condition
Short option as per the requirement.
[Note: make sure always three options must be enable]
14. Got to keys
15. Convert foreign key as primary as per the requirement
16. Go to source information tab
17. Enter the technical information and
18. Mapping logic and lineage of the object [lineage: level of info]

HIERARCHIES:

• Order of the objects arranged in the Class will take as hierarchy
.i.e. Hierarchies are for drilling down/up the objects in the report.
The drill down of hierarchies in the report is based on the order of the objects defined in the Universe.
In BO, we have 2 types of hierarchies:
1. Default Hierarchy
2. Custom Hierarchy

Default Hierarchy:

• Are a hierarchy which need not be created here and the order of the objects arranged in the class will take as default hierarchy.
• Default hierarchy can be used within the same class.
The universe designer will create number of hierarchies based on the number of classes available in the universe.
The levels of the hierarchy will be created based on the order of the objects arranged in that class.
Steps to view Default Hierarchy:
1. Menu bar go to Tools → Hierarchies
2. Default Hierarchy(dimension objects only)

FAQ: Is it possible creating hierarchy for measure.
Ans: No. we can't create hierarchy for measures.
It is Possible only for dimensions

Custom Hierarchy:
• A Custom Hierarchy is a hierarchy which is created based on one or more default hierarchies or classes.
Steps:
3. Menu bar go to Tools → Hierarchies
4. Enable 'Custom Hierarchies' radio button or
5. Click on 'New' tab [then custom Hierarchies radio button is automatically enabled]
6. Provide the Name of the Hierarchy
7. Select the desired objects from classes in default Hierarchies and
8. Drag & Drop them into custom hierarchies and
9. Click on Add and
10. Arrange them into the required order by using move up &move down buttons.

List of Values (LOV's)
• It is for making instructiveness for the end user on run time.
Steps for creating LOV's
1. Double click on desired object
2. Go to properties
3. Enable associate LOV's
4. Click on Edit
5. Drag and drop objects from classes and object pane to conditions pane.
6. Select the operator - type operand
7. Click on run
8. Click OK

Steps for creating Hierarchical LOV's
1. Double click on the object
2. Go to properties
3. Click on edit
4. Drag and drop the higher level objects from classes and objects to results object pane.
5. Click on Run
6. Click on OK

[You can preview the Hierarchical values by clicking on Display for preview]

Cascading List of values:
Steps for creating Hierarchical LOV's
1. Go to Tools in Designer → List of Values
2. Click on create Cascading List of Values
3. Select the objects from available objects pane
4. Click on Right arrow(>)
5. Click on Generate LOV's
6. Click on OK

Save and export to universe
Note: 1. Cascade will be seen in WEBI / Rich Client
Where as we cannot seen on Infoview.
Don't apply Hierarchy &Cascade both at a time, its meaningless.
Steps for redirecting LOVs to the personnel data files:

1. Got to Tools in Designer → List of values
2. Edit List of Values
3. Object Navigate to the object
4. Select/enable the Personnel Data Option
5. Click on OK+OK
6. Browsing for the File
7. Click on Open
8. Click on Run

Row Level Restriction:

• It is for restricting the number of rows for the desired group based on their security level.

Steps for applying Row Level Restriction:

1. Open Universe Designer
2. Import desired Universe
3. Go to Tools
4. Manage security → Manage Access Restriction
5. Click on New
6. Give Restriction Name and click on Rows
7. Click on Add
8. Click on >> double arrows in the Table text box
9. Select the required table (ex. Year Table)
10. Click on OK
11. Click on >> (double arrows) where Clause
12. Navigate to the Table Column
13. Double click on the Column
14. Double click on the required operator (=)
15. Type operand (year)
16. Click on OK+OK +OK
17. Click on Add User or Group
18. Select desired group
19. Click on single > arrow
20. Click on OK
21. Apply the desired restriction [drag and drop from left to right: select from left and click on Apply >>]

• [1.Preview the restriction also
2. Preview the priority
3. X Remove the restriction
4. Can apply 2 restrictions using AND]

Object Level Restriction

• It is for restricting the complete object to the desired group

Steps for Object Level Restriction

1. Open Universe Designer
2. Import desired Universe
3. Go to Tools → Mange security → Manage Access Restriction
4. Click on New
5. Give Restriction Name and
6. Click on Objects
7. Click on Add
8. Click on Select
9. Navigate for the object

10. Click on OK + OK + OK
11. Click on Add Users or group
12. Select the user or group desired
13. Click on single > right arrow
14. Click on OK
15. Apply restriction [select from left and click on Apply >>]
16. Click on OK

FAQ: What is the main difference between Row Level Restriction and self restriction?
Ans: Row level restriction is applicable for desired groups but self restriction is applicable for entire group in the BO/Repository
{Note: concurrent update is not possible}
FAQ: How you can apply security for the Universe
1. Go to File → Import
2. Brows for the Universe
3. Double click on the Universe
4. Unlock the Universe

Linking of the Universes
• It is for restriction the existing universe in the current universe.
Mandatory Rules for linking of 2 universes
1. Both the universes must be there on the same Database
2. Tow universes must have at least one common column
3. Both the universes must be in the repository
In BO we have two methods for linking the universes
1. Add Link
2. Include Link
ADD Link:
• It is for reusing the existing complete universe in the current universe
1. Open Universe Designer
2. Import Desired Universe
3. Go to File → Parameter → Links
4. Click on Add Link
5. Navigate for the existing Universe
6. Click on open
7. Click on OK
INCLUDE Link:
1. Open Universe Designer
2. Import Desired Universe
3. Go to File → Parameter → Links
4. Click on Add Link
5. Select the Universe in the Kernel
6. Click on Include
7. Clink on OK

Aggregate Awareness:
• This is for redirecting to query to the desired table as per selection happened in the report level OR
Reusing the existing summary tables in the BO universe

Syntax: @aggregate_aware(most summary table.col,2nd summary table.col,3rd summary table.col…….Detailed_table.col)

FAQ: How you map one object with multiple columns presented in different tables with the help of aggregate_awareness function

Ex: If the country column is in two tables

For mapping country object with two columns, follow the syntax given bellow

Country name is

=@aggregate_aware(Table1.countryname,table2.countryname)

FAQ: Is your aggregate_awarness will improve the performance

Ans: Yes, It will while mapping aggregate-awareness function is mapping with summarized table

FAQ: Who will create summarized tables

Ans: ETL team

Aggregate Navigation:

• It is for defining in compatible object for the aggregate awareness

Steps for defining incompatible objects

1. Go to tools
2. Aggregate Navigation
3. Select the summary table 1
4. Enable the objects which are not mapping with aggregate table

Note: Before exporting the universe should perform this option

Derived Tables:

• It is for creating a universe level view

Steps:

1. Right click on structure pane
2. Click on derived table
3. Write a SQL query
4. Check syntax
5. Click on Parse
6. Click on OK

FAQ: What is fantrap and chasmtrap? And how you can resolve?

Fantrap:

• Due to oracle limitation some time it give multiple duplicate values when 3 tables join continuously with 1-N and 1-N

For overcoming this problem in BO we have 2 methods

Method 1: Create alias table for the last table and recreate join between table1 Alias Table

Method2: Enable all the options in the file parameters SQL tab multiple tasks

Chasm trap:

• Due to limitation in the databases some times report will display Cartesian product when the situation occurs like 1 dimension table join with the 2 fact tables with 1-n and 1-n

This can be resolved with two methods

Method 1: Create separate contexts for dimension1 and fact1 (one context) dimension 1 and fact 2 (second context)

Method 2: Enable all the options in the File→ Parameters→ SQL tab
multiple tasks

SAP Integration with BO (SAP BI with BO)

• The mandatory conditions for creating BO reports on top of SAP as flows

1. SAP must be installed
2. SAP servers must be up & running

Right click on SAP Management console
Click on open
Right click on DEV → Start
Enter SAP password: india1
(ABAP table list must be turned to wait)

3. SAP BO must be installed
4. BO servers must be up and running [CMC → logon → start services]
5. Integration kit must be installed between SAP and BO

(Note: The integration kit version must be sync with BO version, ie the same version of the BO, not high or not low)

6. Single Sign On (SSO) must be enabled between SAP and BO

[for this required admin account]

Steps for creating single sign on between SAP & BO

1. Log on with the CMC (as admin)
2. Navigate to Authentication Tab
3. Double click on SAP

Enter the logon credentials (given by admin)

4. Click on Role import
5. Select the desired users or Roles
6. Click on ADD
7. Click on Update.
8. Go to option
9. Enable Automatically import options
10. Click on update
11. Close window
12. Navigate user and groups
13. Assign the users in desired group [by Add>]

Steps for creating Universe on to top of Infocube:

1. Make sure the SAP and BO servers must be up and running
2. Start → Programs → BOXI 3 → BO Enterprise → Designer
3. Enter BO logon credentials
4. Go to File → New → Give the name of the Universe
5. Click on New Connection →
6. Click on New
7. Click on Next → Give the name of the connection
8. Navigate for SAP client: SAP → SAP Business Warehouse →SAP Client
9. Click on Next
10. Enter the SAP Login credentials

Universe Name: sapuser
Password: India1
Client: 001
Language: en
Login mode :Application server[default]

Application: Server sapdev
System Number: 03
System ID :dev
11. Click on Next
12. Click on Test connection [message: server is responding]
13. Click on OK
14. Navigate for desired Infocube [OLAP Cubes → Demo cube for BO folder]
15. Select the desired cube
16. Click on Next
17. Click on Finish
18. Click on OK
19. Go to parameters → Make sure the parameter Property Name
OLAP_UNIVERSE with values Yes
Note:Here we need not to do any table operation as it doesn't have tables
20. Go to file → Save → webi folder and
21. Go to File → Export → Browse for folder → Click on OK +OK

Steps for creating Universe on top of BEX query

• In this implementation we have TWO parts.

Part 1: **Creating BEX query on top of Infocube**

Steps:
1. Long on to BEX query designer [Start→ Programs→ BEX → Query Designer]
2. Click on OK
3. Select BI Server and Click on OK
4. Enter the SAP log on credentials [Client :001 User:sapuser, Password:india1]
5. Click on Enter
6. Go to Query
7. Click on New
8. Click on Infoarea →Navigate for the Demo info cube for BO
9. Click on Open
10. Click on Row/Column
11. Drag and drop characteristics(Dimensions) in to Rows pane and
Key figures into columns pane
12. Click on Filter
13. Drag and drop the characteristics in to Filter pane
14. Right click on characteristics in filter pane
15. Click on Restrict
16. Select the required values and
17. Click on Right arrow (→) and Click on OK
18. Go to Query→ Properties
19. Click on Advanced tab
20. Enable [√] Allow External Access to this Query
21. Go to Query → Save
22. Give the technical name and description (for query)
23. Click on Save [BEX query created and save in the desired folder]

Part 2: Creating Universe on top of BEX query

Steps:
1. Log on to Universe Designer
(Start → All Programs→BOXI3 →BO Enterprise → Designer)
2. Enter BO logon credentials [pass word: india1]
3. Go to File → New

4. Give the Name of the Universe [follow the same naming convention]
5. Click on New connection
6. Click on Next
7. Give the connection Name [connection should give for individual cubes]
8. Choose the SAP drivers [Same as Part 1]
9. Click on Next
10. Enter SAP log in credentials [Same as Part 1]
11. Click on Next
12. Click on Test connection
13. Navigate for the BEX query
14. Click on Next and Click on Finish
15. Click on Test
16. Click on OK
17. Go to file → Save and Export

Comparison between BEX Query and Info Cube:

BEX	Info Cube
Dimension group	Dimension group
Key figures group	Key figures group
Characteristics	Characteristics
Key figure	Key figure
Display attribute	Display attribute
Calculated key figure	No Calculated key figure
Restricted key figure	No Restricted key figure
Filter	No Filter
Variables	No variables (no prompts)
Exceptions	No exceptions
Condition	No conditions

Comparison in between BO and SAP:

BO	SAP
Measure class	Key figure group
Dimension object	Characteristics
Measure	Key figure
Detail object	Display attribute
Global condition	Filter
Prompt/Dynamic condition	Variable
Alerts (colour code)	Exception
Report level filter	Condition
Default Hierarchy	(attribute) Hierarchies → Note: Measures no Hierarchies
Measure with key figure	Calculated key figure
Measure with dimension restriction	Restricted key figure

SAP Customization:

1. Hiding of the objects is possible
2. Duplication of the classes and objects is possible

3. Renaming of the classes and objects is possible
4. Modification of the object data type is possible
5. Qualification modification is possible as per back end modifications
6. List of Values (LOVs): Enable/Disable of the LOVs is possible
7. Advanced : Restriction of the object for ○ Result
○ Condition
○ Short is possible
8. Conversion of the Primary → Foreign and vice versa is possible
9. Metadata exchange of the universe is possible
10. Replication of the back end changes in the front end is possible
11. Edit connection is possible [Universe Designer →Tool → Connection → Edit (for new Add)]
12. Creating custom hierarchy is possible
13. Creating cascading LOVs is possible
14. Testing of the objects and condition is possible
15. Row level security is not possible
16. Object level security(restriction) is possible

FAQ: How to replicate backend SAP changes in Universe?
Ans: 1. Go to Universe Designer → Menu bar View → Refresh Structure
2. Click on Begin & select the required options
3. Click on Finish
4. Export it to the Text document

SAP Universe Disadvantage or Limitations:
1. Customization is not possible in the universe level
2. Remapping/redirection of the object to new column is not possible
3. Importing Table
Table level operations,
Joins,
Detect cardinalities,
Detect loops
Creating Alias and Context
Stored procedures is not possible
4. Controlling LOVs
Hierarchical LOVs is not possible
5. Redirecting LOVs to the personnel data file is not possible
6. Aggregate awareness and
Aggregate navigation is not possible
7. Testing of joins, loops, context, cardinalities is not possible
8. Low level restriction is not possible
9. Creating derived tables is not possible

FAQ: What is the best practice for creating universe on top of SAP?
Ans: Best practice is create BEX query on top of Infocube and apply the required calculations and filters then create a universe on top of BEX query
SAP has very good OLAP leverage engine than BO

Web Intelligence Reporting (WEBI)

• It is for creating reports through the web in BO XI-R3
Tools in BO XI R3
1) Info view
2) WEBI Rich Client (it is not there in R2)
With the Infoview we can create a WEBI report on top of personnel data files (PD) [example: Excel, Notepad]

Steps for creating WEBI report through Infoview on top of Non-SAP Universe:

1. Log on to Infoview (with URL)
(Open web browser → Provide/paste the URL → Enter BO logon credentials)
2. Click on Document List
3. Go to New → WEBI Document
4. Select the required Universe
5. Built a Query by drag and dropping objects from data(classes and object) pane to results object query filter pane
6. Click on Run Query
[If there is a requirement for the chart, follow the below steps:
i. Go to templates
ii. Select the desired chart
iii. Go to data and
iv. Drag and Drop at least one dimension (x-axis) and one measure (yaxis) in the respective axes.
v. Export it to PDF or as per the requirement.
vi. Click on Save and provide the required name for the WEBI document.
vii. Click on OK]
7. Apply the required formatting
8. Click on save
9. Navigate to the folder
10. Give the name for the WEBI document
11. Click on OK

Data Provider

• This provides data from the reports.
• Most of the time the data provider is a combination of Query and Universe.

Steps for creating multi data provider reports on top of Non-SAP universes
1. Long on to Infoview
2. Got to Document list → New → WEBI document
3. Select the required universe
4. Build Query1 by drag and dropping the objects into query filter pane
5. Click on “Add Query”
6. Select the required Universe to built new query
7. Click on OK
8. Build the second Query2 as per the requirement
9. Click on Run Queries (by default the report gives vertical tables)
10. If still required one more black in the report – click on edit query
11. Click on Add Query
12. Select the Required Universe

13. Build a new Query3 as per the requirement
14. Go to Run Queries
15. Click on 3rd query
16. Select the required bellow option as per requirement
i) Insert table in a new report: it create a new table- insert new black
ii) Insert a table in the current report: inserts new black in the same tab
iii) Include the result object in the document without generating a table: It will just add objects in the data tab)
17. Click on OK
18. Apply required formatting
19. Click on save
20. Navigate to the desired destination folder
21. Give the name of the Document
22. Click on OK

FAQ: Is there any limitation for the number of queries and number of blocks for one report?
Ans: No. There is no limitation
We can add any number of queries and any number of blocks for one report.
FAQ: How you disable Edit Query option for the End user
Ans: Go to Edit Query in Query Panel
Select the desired Query
Go to Query 'Properties' tab
Navigate to "Security" tab (drop down)
Set the check box(Disable) 'Allow other users to edit all queries' option
FAQ: How you redirect an existing report to the new universe?
Ans: Go to Query panel
Click on Properties
Navigate to universe (drop down)
Click on Browse option and select the desired Universe
Click on OK + OK
FAQ: How you restrict/control number of records/rows for the report in the report level
Ans: In the Query panel → Go to Properties
Go to Limits tab
Enable "Max Rows Retrieve" and type the Parameter (number)
(webi supports max 90K)
Note: On one universe you can create any number of reports
On first report you can keep 300 numbers of records
On second report you can keep 200 numbers of records
FAQ: How you eliminate duplicate rows form the report
Ans: Go to Edit Query in Query Pane
Go to query 'Properties'
Disable 'Retrieve Duplicate' rows option
FAQ: I have a report with two queries and each query have prompt on some object. Tell me how many times it will ask for the input
Ans: Only one time
FAQ: How do you change the Prompt order on the run time?
Ans: In the query properties
Go to Prompt Order

Change the order as per the requirement
Steps for creating a WEBI report on top of SAP Universe:
1. Logon to Infoview
2. New → WEBI document
3. Select the required SAP Universe
4. Build a Query [drag and drop]
5. Click on Run Query
6. Apply required formatting
7. Click on save navigating to the folder with a name
8. Click on OK

FILTER(s):
• It is for restricting the DATA
In BO we have 3 kinds of filters
1. Global Condition [Universe Level Filter]
2. Query level filter
3. Report level filter

Global Condition:
• It is a filter created on the Universe level for reusing all the reports executing on particular universe
Steps for creating Universe level (Global) Condition:
1. Log on to the universe designer
2. Import the Universe [if exists]
3. Enable Gold colour cone filter radio button which is there on left side bottom of the window
4. Right click on the desired Class
5. Go to the context menu Click on/select the Condition
6. Give the Name and description for the Condition
7. Click on where clause right arrows
8. Navigate for the column in the table and
9. Double click on the column
10. Select the operator and operand [ex: = and 2004]
11. Click on Parse
12. Click on OK
Apply enable any one option listed below:
1. Apply on Universe: It his option enable the desired filter is applicable for all the reports by default
2. Apply on Class: By enabling this option this filter is applicable for all the reports executing on the class by default
3. Apply on list of values: This option controls LOVs
Note : The above 3 features are not there in BO XI R2

Query Level Filter:
• It is for restricting the data for desired report while executing on the database.
• This filter is also called as a local filter some times.
In BO we have 2 kinds of query level filters: 1. Static filter 2. Dynamic filter
1. Static filter:
• If the filter is static the report always run for constant values
Steps
i. In the Query Pane Drag and drop the required object from data pane/classes and object pane to the query level filters pane in the query

panel
ii. Select the operator and type the operand
2. Dynamic filter or Prompt:
• It is for creating a dynamic report
• If the filter is dynamic, the end user can pass the values for the filter on run time and they can see the data as per the prompt values submitted
Steps
i. Drag and the drop the object from data pane to query filter pane
ii. Select operator
iii. Select operator type as prompt
Type the prompt message as per the end user requirement
Note: If you want the operand prompt to be optional, go to prompt properties and select the check box 'optional prompt'

FAQ: How you make prompt as optional in BO
Ans: In the prompt properties- Enable optional prompt option
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FAQ: How you disable type a value text box for the end user?
Ans: In the prompt properties- Enable select only list
FAQ: How you disable the list of values for few (in particular) reports executing on universe?
Ans: In the prompt properties- disable prompt with list of values option
FAQ: How do you run a report with default values?
Ans: In the prompt properties- enable set of default values (along with prompt)
Type default values and Click on OK
Then on run, it shows report on default and you can also enter the optional values too.

Report level filter:
• It is for hiding the data in report level
In BO we have 2 kinds of report level filters.
1. Block level filter
• Its applicable for desired block in the report
Steps:
i. In the report level click on show/hide filter pane on top left corner
ii. Select the desired block
iii. Drag and drop the object from the data tab to report filter pane
iv. Select the operator
v. Enable values from the list
vi. Select the values and click on right arrow(>)
vii. Click on OK
2. Global filter (report level) [where as Global condition is universe level]
• Its applicable for all the blocks there in the report
Steps:
i. Click on show/hide pane
ii. Click on white report structure pane (for deselecting any of the blocks if any case selected)
iii. Drag and drop the common object from data tab to the report filter pane
iv. Select the operator

v. Select the values
vi. Clink on OK.

Breaks and Sections:

Break:

• It is for subdividing a desired block into sub blocks
• Break is a block level grouping

Steps

1. Select desired dimension of the desired block
2. Click on insert /remove break

Section:

• It is for subdividing complete report into sub reports.
• It is a report level grouping

Steps:

1. Click on report structure pane
2. Go to data tab
3. Drag and drop common dimension (white report structure pane)

Note: It is always good to put filter on objects.

FAQ: What is the main difference between section and break?

Ans: Section is for subdividing complete master report in to detailed report.
Break is for subdividing desired block into sub blocks.

FAQ: How do you apply colour coding for alternative two rows?

Ans: Select complete block by clicking on Boarder
Go to properties → expand alternative row/column
Type frequency as 2
Select the required colour code

ALERTERS:

• It is a conditional colour coding. In BO we have two kinds of Alerter

1. Formatting Alerter
2. Text based Alerter

Formatting Alerter:

• It is for applying colour coding based on the condition.

Steps:

1. Click on Alerter for alerter editor
2. Click on new
3. Give the name of the alerter
4. Brows for the numeric value [measure]
5. Select the operator [ex. Less than]
6. Enter/Type operand [given value]
7. Click on + for second condition [ex. Greater than]
8. Click on format for alerter display window
9. Apply required formatting
10. Click on OK + OK + OK
11. Select the required column on the block
12. Click on Alerter
13. Enable the alerter
14. Click on OK [it applies only for that column/block chosen]

Note: We can’t apply alerter for all columns at once

Text Based Alerter:
• It is for displaying a text in a report based on the condition.
Steps:
1. Click on Alerter → New → give Alerter Name
2. Apply/type a condition
3. Write a Text Display Text Tab
4. Click on Validate (√)
5. Apply required formatting
6. Click on OK + OK + OK
7. Insert a new column in the block
8. Select the blank column
9. Go to Alerter
10. Enable the Alerter

Sub Alerter:
• It is for implementing multiple Alerter within the same Alerter.
Steps:
1. Click on Alerter → New → Give the Name Alerter
2. Make condition one
3. Click on format
4. Apply required formatting and
5. Click on OK
6. Add sub Alerter by Clicking on +
7. Make the condition
8. Click on format
9. Apply required formatting
10. Click on OK+OK+OK

FAQ: How you hide a particular Column in the report?
Ans: Select the column
Go to properties
Display width make = 0
OR
Apply white colour for all character, back ground, font, and boarder.

VARIABLES:
• Name of the formula is called as variable
• It is for reusing formula in multiple places in the same report.
Steps:
1. From Infoview go to WEBI and built a report first.
2. Click on variable editor
3. Give the name of the variable
4. Select the qualification
5. Select the object from data tab
Operator from Operator and Type Operand
6. Click on validate (√)
7. Click on Close and Click on OK
8. An new object is created in data tab
9. Drag and drop the object from data tab to report block in structure pane

FAQ: How you display top 3 and bottom 3 ranks

Ans: Select the desired dimension
Click on Rank → Add rank → Enable top 3 bottom 3
Select desired measure in based on the drop down

FAQ: Is it possible to apply rank, sort, filter on one column.

Ans: No, Not possible because all are same somehow/ meaningless assumption

FAQ: How you display the data with specified order

(Customised as per the requirement)
Ans: By using the customized sort, we can arrange the data as per the requirement.

FAQ: What is the difference Count and Count All?

Ans: Count will not take duplicates in the context (calculation)
Count all will take duplicates in the context.

FAQ: Can I apply section and break on one column?

Ans: Yes

FORMULAS

• In BO there is a function is called as **user response**

User response

• It is for catching/grabbing the prompt input on the run time and displaying in report level.
Syntax: =userresponse (“<prompt text message>”)
Example: userresponse(“Enter value(s) for Year:”)
Result: display the input values passed for the year prompt
Steps:
1. Go to templates
2. Go to free standing cells
3. Expand formula and text cells
4. Drag and drop blank cell into report structure pane
5. Select the blank cell
6. Click on show/hide formula tool bar [top left]
7. Write below formula in the formula editor box
8. Type=userresponse [“Enter Value(s) for Year:”]

Last Refreshing Date:

• It is for displaying last execution date of the report
Steps:
• Drag and drop the last refresh date from formula and text cells (from templates) in to report structure pane

Relative Date: [from formula editor]

• It is for displaying previous data and future data based on input data.
Syntax: relative date (<input date>; <integer number>)
Example: relative date (last execution date; 5)
If the last execution date is 29-05-2011
Out put is 24-05-2011

Query Summary:

• It return the statistics of the query
1. Execution duration
2. Number of records fetched
3. Results objects
4. Universe name
5. Query definition

6. Relative duplicate on/off

FAQ: How you make a report title as dynamic with the year value
Ans: Click on show/hide formula tool bar
Click on report title
In formula editor write below formula
=”Year”+ “ “+[Year]+” “+”sales”
FAQ: How to make header dynamic:
Ans: Click on Header and write condition formula
• It is for deriving logical condition in report level
Syntax: If ([Year]=”2004”) then “previous sales” else if ” “ else” current value”

Drill Filter:
• It is for grabbing the navigated Drill value
Steps:
Go to Templates tab
→Free Standing Cells
→Drill Filters
Syntax: Drill Filter ([object name])

Concatenation:
• It is for merging two strings in to one long string.
Syntax: concatenation (string1;string2)
Example: concatenation ([Year];Q2]) output: 2004Q2
Merge Dimension:
• It is a common dimension in between tow blocks for deriving 3rd block
• If you want a common block based on two queries we need a common dimension in both queries
Combined queries:
• It is for implementing set operators between two queries with the help of bellow operators:
1. Union: It will display both queries result
2. Intersection: It will display common results from both queries
3. Minus: I will display the difference between queries
Steps:
1. In the query panel click on combined queries
2. Click on query 1
3. Drag and drop objects in to results pane
4. Click on query 2 and drag and drop common objects to result query pane
Purging:
• It is for removing data from report before exporting to the repository
Note: Make sure refresh in open option is enabled before export to the repository
Steps
1. Click on purge data
2. Click on Yes
3. Click on Close
4. Right click on structure pane
5. Go to document properties
6. Enable refresh on open option
7. Close

Drilling:
• It is for analysing data on the fly to simplify the decision making.
• In BO we have bellow kind of drills:
1. Drill down
2. Drill up
3. Drill by
4. Drill through

Drill Down
• Navigating from most aggregate level (high granularity) to detail level(low grain level) or one by one
Or
Summarised value to detailed values

Drill up
• Navigating from low granularity to high grain level
Or
Most detailed to less detailed values

Drill by
• This is for navigating from one granularity to any grain level in the same hierarchy by eliminating intermediate level.

Drill through
• It is for navigating one hierarchy to any hierarchy with the help of custom Hierarchy
Note: In WEBI we don't have Drill through option
Steps for Drilling:
1. Long on to Designer
2. Select Desired Universe
3. Create a report following the steps known already
4. Go Tools → Hierarchy [for hierarchy editor]
5. Select Default or custom hierarchy [in this case custom hierarchy]
6. Click on New
7. Give the name of the folder of the custom hierarchy [ex. YrQrtMn]
8. Select desired objects from left pane and click on Add>>
9. Click on New for 2nd hierarchy folder
10. Type the name for the 2n hierarchy folder [ex. YrWkidHday]
11. Select the desired objects form left pane and click on ADD>>
12. Click on OK
13. Click on Save and save the universe in the desired folder with desired name
14. Go to File → Export → to the repository
15. Long on to Infoview → New → Click on WEBI doc
16. Select the universe exported
17. Built a query by Drag and dropping objects from Data tab to Results and objects pane.
18. Click on Run query for report
19. Select desired column form the report table
20. Click on Drill
21. Right click on any of the row object and select drill to down/up as per the requirement
Note: if you chose the Drill by option you can drill to the desired level
22. Select one object from the rows and click on the object to chose the drill path
23. Select the desired drill path

24. Click on OK
Note : Steps for all the drill functionalities are almost same as above
Tracker: [new in R3]
• It is for tracking data difference between previous version and current version of document
Steps:
1. Create a desired WEBI report following the steps known already.
2. Click on Track
3. Click OK to activate desired data tracking
4. Click on Data tracking option icon [next to next track icon]
5. Set the required formatting as per the requirement
6. Click on OK
Note: Modify the existing report to track the changes

Note: Report level join= merging

FAQ: What is calculation context and how you can apply in the report
Ans: Calculation Context (Report level context)
• It is for applying calculations in the report based on individual bocks
Or based on complete reports for each
In BO we have two kinds of calculation context
1. Foreach: it will take single dimension value in to the context
Example: sum ([sales avenue])for each([quarter])
Output: it will give for each quarter sum
2. Forall: it will take all quarters in to the context.
Example: sum ([sales avenue])for all([quarter])
Output: it will give for all quarter sums

Desktop Intelligence (DESKI)

Differences between DESKI and WEBI / Infoview:

Deski	Webi	
Supports online and offline mode	Only for online mode, doesn't support offline mode	R2
Called as Full client	Called as Off client	
Thick client	Thin client	
Software installation is required in the local system	Need not require software installation	
Support Personnel Data File	Does not support Personnel Data File	
Saving in local system as well as to repository is possible	Only exporting to the repository is possible	
Supports Drill through	Does not supports Drill through	
Supports for Scope of analysis	Doesn't support for the Scope of analysis (extensively)	
Hide a column is possible	Hide a column is not possible	
Supports for Slice and Dice	Does not support Slice and Dice	
Scheduling is possible	Scheduling is possible	
Supports for local universes	Not supports local universes	

Steps to create multiple data provider report in DESKI:

1. Logon to DESKI
[Start → Programs → BOXI 3 → BO Enterprise → Desktop Intelligence
2. Enter BO logon credentials
3. Click on OK
4. File New
5. Select Generate standard report
6. Click on Begin
7. Select the Universe option [or 'others' for PD file]
8. Click on Next
9. Select the required Universe
10. Click on Finish
11. Build a query by drag and dropping objects from classes and objects pane to 'Result Objects' pane
12. Drag and drop object from classes and object pane to 'Condition' pane for prompt [ex: year]
13. Click on Run
14. Submit the values for the Prompt
15. Click on OK
16. Apply formatting as per the requirement

For second query

17. Go to 'Insert' select the required template [table block- chart]
18. Keep the template [block] somewhere in the report
19. Select and Enable 'Access New Data in a Different Way' option
20. Click on 'Begin'
21. Click on Next
22. Select 'Others' [for desired personnel data file]

23. Click on Finish
24. Click on Browse
25. Navigate for the desired Personnel Data File
26. Click on Open
27. Click on View [for data manage window]
28. Click on Definition
29. Select the object + change qualification of the column
30. Click on OK
31. Go to File
32. Save and Name the File
33. File → Export to Repository
34. Navigate to the folder
35. Click on OK

SCOPE of Analysis [for WEBI and DESKI]:

• It is for restricting number of levels for the end user to drill down or/and drill up on a Hierarchy

Steps for scope of Analysis in WEBI

1. Logon to Infoview
[Start → Programs → BOXI3 →BO Enterprise → BOE Java Infoview
2. Go to Document List
3. Click on New and Select WEBI Document
4. Select the desired Universe [ex: efashion]
5. Built a query as per the requirement [Yr, Qrt, SalRve, Yr prompt]
6. Click on 'Show/Hide Scope of Analysis Pane' icon in tool bar for the scope of analysis pane appears bellow query filter pane.
7. In the Scope of Analysis pane Select the number of Scope levels from drop down list
8. If you want to give more than 3 levels
9. Enable the number requirement as per the requirement
Note: To see the list of available universe level default/custom Hierarchy
Enable 'Display by Hierarchies' Radio button
10. Click on run Query
11. Click on 'Drill' option to travel through desired levels of Hierarchy

Steps for scope of Analysis in DESKI

1. Log on to DESKI
2. Create a report
3. In the query panel
4. Select number of levels for the scope of analysis drop down
5. Click on Run
Or
Right clink on the column and set the levels of scope of analysis in the report level

Drill through:

• It is for navigating one hierarchy to other hierarchy
Steps:

Slice and Dice

• It is basically for working on structure of the report
• It is for getting all the features in the same window
• It helps to reduce the development time
Steps for Slice and Dice

1. Logon to DESKI
[Start → Programs → BOXI3 →BO Enterprise →Desktop Intelligence]
2. Enter BO Logon credentials
3. Click on OK
4. Click on Begin
5. Select desired data source [O Universe or O others(personnel data)]
6. Click on Next
7. Select desired Universe
8. Click on Finish [for Query Panel]
9. Built a query as per the requirement [yr, qr, sal rev, prompt on yr]
10. Click on Run
11. Click on 'Slice and Dice' [or Go to Analysis→ Slice and Dice]
for slice and dice panel
12. Select the desired Object and apply required formatting
[ex. Variables, Section, Break, Filter, Sort, Ranking, Calculations]
13. Click on Apply
14. Close Slice and Dice Panel
Note: 'Drill through' and 'Slice and Dice' option are not there in WEB.
They are therein DESKI

ALERTER in DESKI

• It is for applying colour coding based on the conditions
Steps
1. Select a Table Column in the Report on which you want apply a colour coding
2. Go to Format → Click on Alerter
3. Click on Add → Definition
4. Give the name of the Alerter
5. Go to Conditions
6. Select the Numeric value [measure]
7. Chose Operator1, Value, Operator2, None [or Value]
8. Click on drop down button of 'Result' text box
9. Click on Format [for cell format]
10. Apply required formatting
11. Click on Apply
12. Click on OK
13. Click on Apply again
14. Click on OK

VARIABLE in DESKI

Steps for creating variables in DESKI
1. Logon to DESKI
[Start → Programs → BOXI3 →BO Enterprise → Desktop Intelligence]
2. Enter BO Logon credentials
3. Click on OK
4. Click on Begin
5. Select desired source [O Universe or O others]
6. Click on Next
7. Select desired Universe
8. Click on Finish [for Query Panel]
9. Built a query as per the requirement [Yr, Qrt,SalRev, Prompt on Yr]
10. Click on Run [for DESKI report]
11. Select the last column of the table

12. Go to Insert → Column
13. Select 'Insert' a column to the right side of the selection
14. Click on OK
15. Select and Right click on the inserted blank column [or Go to Data]
16. Select Variables
17. Click on Add [for variable editor]
18. Go to Definition and give the name of the variable
19. Select the Qualification
20. Go to Formula
21. Write a formula in formulas editor text box as per the requirements
[Ex: = <sales revenue> * 0.3]
22. Click on OK
23. Click on Insert
24. Click on Close
25. Save to User doc and Export to Repository
Note: Here inserting a report is possible by use the same objects

Report Conversion Tool:

• It is for converting DESKI reports in to WEBI format.
Steps:
1. Log on to Reporting Conversion tool
(Start → Programs → BOXI3 → BO Enterprise → Report conversion tool)
2. Navigate for the DESKI report
3. Select the report and click on right arrows(>>)
4. Click on Convert

Webi Rich Client

It contains both Webi and Deski features. Is for creating a Webi report with both Webi and Deski features.

Differences between BO XI R2 & R3:

BO XI R3	BO XI R2
Server Intelligence Agent (SIA) is there	SIA is not there
Supports personal data files	Will not support personal data files (through info can't create universe on top of personnel data files)
Rich Client is there	Rich Client is not there
We can save WEBI report into Local as well as Repository	It supports only for Repository
WEBI report can be created with the offline as well as online mode	WEBI report can be created only in online mode
Optional prompt is there	Optional prompt is not there
Change tracker is there in R3	Change tracker not available
Nested derived table option is there in R3	Nested derived tables option is not There
Row level and Object level security is there	Row level and Object level security is there

	from R2 not there in lower version in designer

Steps for creating report with the Rich client:

Note: We can access Rich client through Web / Desktop.

1.Logon to Web Intelligence Rich client

2.Enter the BO login credentials

3.Click on logon

4.Click on create new document

5.Click on Universe / Personnel data file

(Rich client having both features of Webi and Deski)

Query as a Web Service (QAAWS)

• It is a connection mechanism between Xcelsius, spread sheet and universes
Configuration steps for QAAWS:
Steps:
1. Start → Programs → BOXI 3 → BO Enterprise → QAAWS
2. Click on ADD
3. Enter Host details
Enter the host definitions:
Name: sapdev
URL: by default URL will create as on enter the name
CMS: sapdev
User: administrator
4. Click on OK
5. Click on Close
6. Enter BO password:india1
7. Click on OK

Advantages / Disadvantages:

1. Need not spend extra money for
licence
2. Need not spend extra time for
installation and maintenance

1. It supports only for universe
2. We cannot set data with format

LIVE OFFICE

Live Office (LO) Configuration
1. Long on to MS Excel
2. Go to Live Office option
3. Go to Enterprise
4. Enable use specified long on option
BO user: Administrator and Password:India1
5. Give the web services URL
Syntax:
http://<BO server name>:<port number>/swsbobj//services/session
Example: http://sapdev:8080/swsbobj/services/session
Enter System Name: sapdev (if it is development....)
6. Click on OK
Pros and Cons of Live Office(LO)

Advantages / Disadvantages:

1. It supports for multiple data sources like Universe, WEBI, Crystal Reports
2. It supports for part of the blocks in the report
3. It will fetch the data formats (where it is not possible in QAAWS)
4. Pointing the dashboard with the latest instance of the report is possible
5. Need to spend extra money for the license
6. Need to spend extra time for installation and maintenance

CRYSTAL REPORT(S)

• It is for creating a report on top of multiple data sources like OLTP[R/3. ECC, SQL…..], OLAP [DWH, Infocube], BEX, Personnel Data(PD) files [note pad, excel], Discontinued data sources [XML, WSDL URL], Microsoft Exchange server….

Differences between WEBI and Crystal:

Crystal	**Webi**
Supports for Multiple data sources	Supports only for universes
Supports for real time data	Cannot support real time data(must be in organised format)
Supports for pixel level operation	Does not support for pixel level operation
Crystal supports for multiple Formulas	Supports for few formulas
Crystal 2008 directly supports for SAP	Cannot support SAP directly

Steps for creating Crystal Report on top of Universe:

1. Logon to Crystal Reports
[Start → Programs → Crystal Report 2008]
2. Click on Blank Report
3. Select and Expand 'Create New Connection'
4. Navigate for 'Universe' Folder and expand
5. Enter BO logon credentials
6. Click on OK
7. Navigate to the desired Universe [ex. efashion123]
8. Click on Open
9. Build a query with state, city, store name, sales avenue with the state prompt [by drag and dropping objects in to result objects pane]
10. Click on OK
11. Select the Query Name
12. Click on right arrow >
13. Type a value for prompt
14. Click on OK
15. If Field Explorer is not visible [Go to View → Click on Field Explorer]
16. Expand the Database fields [in Field Explorer]
17. Drag and drop the desired objects from field explorer in to 'Details' tab of the Design pane
18. Apply the required formatting
19. Click on Refresh button or F5
Note: Formatting is possible in preview mode also
20. Go to Insert Click on Chart
21. Redirect dimensions to 'On change of' tab(X-axis) and measures in to show values(Y-axis)
22. Go to type and select the required chart
23. Click on OK
24. Go to File → Save as → Enterprise
25. Navigate to the Folder and give the name of the Report

26. Click on Save

FAQ: Can you open .rpt file with Infoview
Ans: Yes. But it is not possible to modify
FAQ: Define the Cross tab?
Ans: *Cross Tab– Definition*: Cross tabs (or cross tabulations) display the joint distribution of two or more variables (minimum 2 Dimension and 1 Measure is mandatory)

GROUPS
• It is for subdividing the report in to sub groups as per the requirement
Steps
1. Log on to Crystal Report
2. Create a report as per the requirement by following the steps given earlier
3. Select the Dimension on which you want apply group [ex:year]
4. Go to Insert → Group
[or click on Group Expert icon or Got to Report → Group Expert]
5. Select the desired fields from list 'Available Fields'
6. Click on right arrow>
7. Change order of the fields in Group by pane by suing up or down arrows [ascending or descending or specified/custom]
8. Click on OK

Steps for Applying Totals/Sub Totals
1. Select the measure object on which you want apply total in the report
2. Go to Insert → Summary
3. Chose the field to summaries [Select the measure]
4. Select the calculation operator as Sum
5. Select the summary location as group name
6. Click on OK
Steps for creating Crystal Reports on top of SAP BEX query
In this implementation we have 2 parts
Part 1. Creating BEX query on top of Infocube
Part 2. Building crystal report on top of BEX query
Part 1. Steps
1. Log on to Crystal reports
9. Go to SAP → Start →Programs →BW Query Designer
2. Select the SAP (BI) server
3. Click on OK
4. Enter the SAP logon credentials
Client : 001
User : sapuser
Password: india1
5. Click on OK
6. Click on 'Table display' icon [to get Char, Column, Rows panes]
7. Click on 'New Query' icon [for Infoarea]
8. Navigate to the Infocube [ex: Demo cube for BO]
9. Click on OK
10. Drag and drop characteristics in to Rows, Keyfigures in to Columns
11. On left side pane Right click on characteristics or dimension

12. Click on ‘New Variable’
13. Click on Next
14. Give the Variable name and Description
15. Click on Next
16. Select Multiple single values for Variable Represent
17. Click on Next +Next
18. Click on Exit
19. Expand the Characteristics on which you created the variable [left side]
20. Drag and drop the variables in to Rows tab and tag to the same characteristic
21. Go to Query Property [icon]
22. Go to Extended tab
23. Enable ‘Allow External Access to this Query’ option
24. Click on OK
25. Click on Quit and Use query [a tool bar icon]
26. Give the name and description of the query
27. Click on Save

Part 2.

28. Go to Field Explorer [Have objects from the query built in Part1]
29. Drag and drop the required objects in to details tab
30. Click on Refresh icon or Press F5
31. Submit the parameters for Prompt
32. Click on OK
33. Apply required formatting
34. Click on Refresh and select the new values on prompt
35. Go to File → Save as → Enterprise → Navigate to the Desired Folder
36. Give the report Name
37. Click on Save

Note: SAP have good OLAP engine than BO

Crystal doesn’t support the Drill

Steps for creating Crystal Report on top of Database (ODBC)

1. Logon to Crystal Reports

[Start → Programs → Crystal Report 2008]

2. Click on Blank Report

Note: Any type of report can be created by using blank report option

3. Select and Expand ‘Create New Connection’
4. Navigate for ODBC folder and click on ODBC
5. Select the desired Database
6. Click on Next
7. Enter the ODBC database user name and password
8. Click on Next
9. Select the required tables
10. Click on right arrow >
11. Click on OK [Go to links to see joins]
12. Click on OK
13. Go to Field Explorer and expand the database
14. Drag and drop the required fields in to ‘Details’ tab
15. Click on refresh or F5
16. Apply the required formatting
17. Save to BO platform

Formula

• It is for deriving a new object in report level based on formula and existing object

Steps for creating formula Fields

18. Go to Field Explorer
19. Right click on Formula Fields
20. Click on New
21. Give the name of the Formula
22. Write the desired formulas [Ex. If then else or First name + ‘ ‘+ last name].
23. Click on Save and Close

Select Expert

• It is for hiding data or applying filter in the report level

Steps:

1. Select the required dimension on which you want apply a filter
2. Go to Report → Select Expert → Record [records in a row not in group]
3. Click on New
4. Select the Operator [ex. less than]
5. Select Operand [ex. Quarter from drop down]
6. Click on new
7. Select the Operator [ex. year for one more filter as per the req]
8. Select Operand
9. Click on OK

FAQ: Is it possible to apply multiple filters in the report level

Ans: Yes. You can add as many as New filters at this level on any selected fields

Highlight Expert [like alerter in WEBI]

• It is for applying colour coding or highlighting based on conditions.

Steps:

1. Select the measure field in the report on which you apply colour code[numeric column]
2. Go to Format →Highlight Expert
3. Click on New
4. Select the Operator and Operand
5. Apply the required formatting
6. Click on OK

Steps for creating Crystal Report on top of Personnel Data (PD) files:

1. Log on to Crystal Reports
2. Click on Blank report
3. Click on create new connection
4. Click on Access/Excel (DAD)
5. Type data base Type [if excel type excel or word pad type text]
6. Choose Data Base type using drop down arrow [ex. Excel]
7. Browse for the database file
8. Click on Opens
9. Select the required sheet
10. Click on right arrow
11. Click on OK
12. Go to Field Explorer
13. Drag and drop the fields from field explorer to ‘Details’ tab
14. Click on Refresh or F5

15. Apply required formatting
16. Save to BO platform

Hyperlinks (Open Document Functionality?)

• It is calling the target document (rpt or any other) in to the current report.

Steps:

1. Right click on the object in the Design mode
2. Go to format text
3. Go to Hyperlink
4. Enable ‘A website on the internet’ option
5. Click on ‘Create enterprise hyper link’
6. Click on Browse and
7. Navigate to the document
8. Click on open
9. Click on OK
10. Click on formula editor [X↔2 icon]
11. Add server name and port number prior to hyperlink
[“http://sapdev:8080/.....]
12. Click on Save and Close

FAQ: How you inset or create a sub report in the current Crystal report

Ans: Sub reports can be inserted in two ways:

Method 1

Go to Insert → Sub report
Enable ‘Chose an existing report’ option
Browse for the report
Click on report and open
Click on OK
Click somewhere on existing report

Method 2

Go to Design mode
Right click on the field
Click on format text
Go to hyperlink
Enable a website on the internet option
Click on enterprise hyperlink option
Browse and navigate to the target report
Click on open and Click on OK
Click on formula editor
Enter http://<server name>:<port number>/……
Click on save and close

FAQ: How you modify an existing query for the crystal report

Ans: Go to Database→ Query Panel
Select the desired query
Click on Edit
Modify the query as per the requirement
Click on OK
Go to Field Explorer
Drag and drop in to ‘Details’ tab in the design mode
Enter prompt

Refresh or Press F5

FAQ: How you validate crystal report results with the database
Ans: Go to database-show SQL query
Copy the SQL query
Execute the query on database [Toad]
Compare Crystal Report results with Database report results
FAQ: How you hide a detailed Row in Crystal Reports
Ans: Go to 'Design' mode
Right click on 'Details' Tab → Click on Hide
FAQ: How you can hide the duplicate row values in a column
Ans: Go to 'Design' mode
Right click on desired object → Click on Format Field
Go to common tab
Enable 'suppress if duplicate' option
Click on OK
Steps for creating cross tab reports with Crystal Report
Steps
1. Log on to crystal reports
2. Click on blank report
3. Click on create new connection
4. Click on Universes
5. Enter the BO log on credentials
6. Select the required Universe
7. Click on Open
8. Built a query at least with 2 dimension and 1 measure
9. Click on OK
10. Select the query and click on right arrow>
11. Click on Next
12. Redirect dimensions into columns and rows, measures in to summary field
13. Click on next
14. Select the chart, if required
15. Click on next
16. Apply a filter, if required
17. Click on Next
18. Select the predefined templates, if required
19. Click on Finish
20. Apply the required formatting
21. Got to report and apply the template, if required, on the existing report

FAQ: How you redirect a report connection form DEV to QA without changing the formatting?
Ans: Go to database→ Set data source location
Select the dev connection with 'Current Data Source' pane
Create a new connection in QA in the 'Replace with' window
Click on update
FAQ: How you point development report with QA Database
Ans: Go to Database
Click on set data source location
Select the existing current data source

Create a new connection for other data source
Click on update
Click on close

FAQ: How you check the database status

Ans: Go to database
Click on verify database

Steps for creating crystal reports on top of OLAP Infocube:

1. Log on to crystal report
2. Click on OLAP cube Report Wizard
3. Click on Select Cube
4. Click on Add Cube [for connection properties window]
5. Select server type as 'SAP Business Information Warehouse'
6. Give the Caption [Connection Name]

Host: sapdev [SAP log on credentials]
System Number: 03
User Name: sapuser
Password: india1
System name: dev
Client: 001
Language: en

7. Click on Test Connection
8. Click on OK + OK
9. Expand the Connection Name
10. Navigate for the desired Cube
11. Click on Open [for OLAP data window]
12. Click on Next + Next + Next
13. Select the Template as per requirement
14. Click on Next
15. Select the required Chart
16. Click on Finish [for the report in the cross tab format with a chart]
17. Apply required formatting
18. Save to BO platform

Steps for creating Crystal Reports on top of WSDL URL

1. Log on to Crystal Report
2. Click on 'Blank Report'
3. Click on 'Create New Connection'
4. Navigate and Expand 'XML & Web Services' folder
5. Specify the Schema File [Disable]
6. Enable 'Use Web Service Data Source' option
7. Click on Next
8. Enable 'Use HTTP(s) WSDL URL' option
9. Paste the WSDS URL
10. Click on Next + Next
11. Click on Finish
12. Expand the Connection String
13. Select the Third Service [ie last one- first two is for metadata]
14. Click on right arrow >
15. Enter the BO user name in the login in text box
16. Enter the password in the password text box [leave the rest empty]
17. Click on OK + OK

18. Drag and drop the required fields from ‘Field Explorer’ to ‘Details’ tab
19. Click on Refresh or F5 [to view data/report]
20. Apply the required formatting
21. Save to BO platform/Enterprise

FAQ: How you create a report level Parameters

Steps: In the field explorer
Right click on Parameters field
Click on New
Give the name of the Parameter
Select List of values as ‘Dynamic’
Type the ‘Prompt Group Text’
Select the value field
Click on Parameters
Click on OK

Steps for creating mailing Label report

1. Logon to Crystal Report
2. Go to ‘Mailing Labels Creation Wizard’
3. Click on Create New Connection/Select existing connection
4. Click on right arrow
5. Enter database user name and password
6. Click on Next
7. Select the required fields
8. Click on right arrow >
9. Click on Next [page set]
10. Click on Next [put Filter if needed]
11. Apply the required report level filter
12. Click on Finish
13. Apply required formatting if required
14. Save to BO platform

FAQ: How you save report without Data

Ans: Go to file and disable save data with report option

Sort Control

• It s for adding sorting button in the report

Steps:
1. Go to insert
2. Sort control
3. Select the dimension
4. Click on OK
5. Keep the icon where ever it required in the report

Alerter

• It is for displaying comments based on condition

Go to report –Alerter
Create and modify alerter
Give the name of the alerter
Type the alerter message
Click on condition
Write an alerter condition
Click on save
Click on

XCELSIUS 2008

• It is for creating a interactive and colourful dashboards
Dashboard
• A graphical representation of the data is called as dashboard
In Xcelsius we can able to create two kinds of dashboards
1. Static dashboard: It is a dashboard which is created on top of the static excel data
2. Dynamic dashboard: It is a dashboard which is created on Corporate Database
The mandatory requirement for Xcelsius
1. MicroSoft Office must be installed
2. Flash player must be installed
Xcelsius Home page have 4 panes:
1. Component Browser: It contains all the available components
2. Object Browser: It displays list of components used for building dashboard
3. Canvas Browser/work space: The place where you implement the business logic
4. Spread sheet: The place where we keep the business data
Steps for creating a Static Dashboard (Xcelsius)

Exercise: Create a dashboard with pie chart for displaying sales and export to Infoview portal

Steps:
1. Log on to Xcelsius
2. Make a sample data in the spread sheet
3. Drag and drop pie chart from component browser to canvas browser
4. Double click on the component [chart]
5. Give the title of the chart [in general tab]
6. Map the values with the measure [keyfigure] by clicking on selector button
7. Map the labels with the dimensions
8. Go to behaviour tab and Enable ignore blank cells [√] in values
9. Go to appearance tab and apply the required formatting
10. Click on preview and cross verify the formatting followed by the requirement document
11. Click on preview to come out from view
12. Go to File → Export → BO Enterprise
13. Enter the BO credentials
14. Navigate to the folder
15. Go to file → Save → Enterprise → Navigate to the folder→ Give the name of the file
16. Click on save.

Exercise: Create a drill down dashboard with the pie chart for displaying year wise totals and column chart for displaying quarter wise sales based on year selection in the pie chart

Steps:
1. Make a data with year wise, quarter wise sales with cross tab format
2. Apply year total row wise
3. Drag and drop the pie chart from component browser to canvas browser
4. Double click on pie chart
5. Give the title and sub title of the pie chart

6. Map the values with the year totals
7. Map the labels with year labels
8. Go to drilldown
9. [√] Enable drill down
10. Make insertion type as row
11. Map the source data with complete data except quarter labels and year totals
12. Map the destinations with blank row with cells as many as quarters [ex. 5]
13. Drag and drop the column chart from component browser to canvas browser
14. Double click on column chart [ex: year]
15. Give the title of the chart
16. Map the subtitle with destination cell 1 [ex: for quarter wise sales]
17. Enable by series
18. Add series by clicking on [+] button
19. Map the series name with destination cell 1
20. Map the values with destination cell 2 to cell 5
21. Map the x-axis with the quarter labels
22. Click on preview and cross verify with the requirement document
23. Come out from preview mode by clicking on preview [on Tool bar]
24. Go to File → Export → BO Enterprise
25. Enter the BO credentials
26. Navigate to the Folder
27. Go to File → Save → Enterprise → Navigate to the Folder
28. Give the Name of the File
29. Click on Save

Dynamic Dashboard

• A Dynamic dashboard is a dashboard created on top of the
Universe, Web Intelligence (WEBI), Crystal with the help of
Live office (LO), Query as a Web Service (QAAWS)

Note: OLTP (Online Transport Process)[SAP: R/3; Non-SAP : SQL, MySequel]
Non SAP: Staging
SAP: Data Store Object (DSO)

Different methods for creating dashboard on top of SAP and Non-SAP sources:

Method 1: OLTP → Crystal reports (CR)→ Live office(LO)→ Xcelsius dashboard
Method 2: OLTP → Staging/DSO→ Crystal Reports→ Live Office→ Xcelsius dashboard
Method 3: OLTP → Staging/DWH/InfoCube→ Crystal Reports→Livee Office→ Xcelsius dashboard
Method 4: OLTP → Staging→ DWH→ Universe→Live Office/QAAWS→ Xcelsius dashboard
Method 5: OLTP → DSO→ BEX Query→ Crystal→ Live Office→ Xcelsius dashboard
Method 6: OLTP →DSO→ BEX Query→ Universe→ Live office /QAAWS→ Xcelsius dashboard
Method 7: OLTP → DSO→ BEX Query→ Universe→ WebI→Live Office→ Xcelsius dashboard
Method 8: OLTP → DSO→ Infocube→BEX Query→ Universe→Live Office/QAAWS→ Xcelsius dashboard
Method 9: OLTP → DSO→ Infocube→BEX Query→ Universe→webi/Crystal→Live Office → Xcelsius dashboard

Steps for creating on demand dynamic dashboard on top of the Universe:

Exercise: Create on demand dashboard with input textbox for submitting input values for the year prompt line chart for displaying quarter wise sales

based on enter values in the input text refresh button.
In this implementation we have 2 parts.
Part1. Creating Query and Publishing as URL
Steps
1. Log on to QAAWS
(Start → Programs → BOXI 3 → BO Enterprise → Query as a Web Service)
2. Enter BO login credentials [if prompts]
3. Configure QAAWS [if not configured]
i. Click on ADD
ii. Enter Host details
iii. Enter the host definitions:
iv. Name: sapdev
v. URL: by default URL will create as on enter the name
vi. CMS: sapdev
vii. User: administrator
viii. Click on OK
ix. Click on Close
x. Enter BO password:india1
xi. Click on OK
3. Click on New [left side bottom of the window- for new query]
4. Give the Name and the description of the query
5. Click on Next [to select universe to built a query]
6. Select the desired universe
7. Click on Next [To built a Query]
8. Built a query [with Quarter Sales and year prompt]
9. Click on Next
10. Type/Submit any one value for year prompt
[or select from list and click on right arrow]
11. Click on OK [to preview query result]
12. Click on Publish [Right side bottom of the window to get URL]
13. Click on 'To Clipboard' [to copy the URL]
Part 2 : Building dashboard on top of WSDL (web service definition language) URL
Steps:
14. Log on to Xcelsius
(Start → Programs → Xcelsius)
15. Go to Data → Navigate for Connections
16. Click on Connections
17. Click on ADD [in Data Manager]
18. Click on Web service connection
19. Go to Definition
20. Give the name of the connection
21. Paste the WSDLURL in the WSDL URL text box
22. Click on Import [to bring input and output values list]
23. Map the Quarters with column A in the spread sheet
[Select quarter from the input list and click on insert in selector button]
24. Map the Sales avenue values with column B in the spread sheet
[Select Sales avenue from the input list and click on insert in selector button]
25. Map the Year prompt with column cell C1
[Select Year from the Output list and click on insert in selector button]
26. Go to Message and

27. Enable ‘Refresh on Load’
28. Close the connection properties
29. Drag and drop the ***L****ine chart*, ***C****onnection Refresh Button*, ***I****nput Text* box from components pane to canvas pane.
30. Double click on Input Text
31. Enable [√] Insert Data on Load [in Data Insertion]
32. Map the destination as a year with input cell C1
33. Double click on the chart
34. Type the title and map the subtitle Year input cell C1
35. Enable (o) By Series option
36. Add one series by clicking on + button
37. Map the series name with year input cell (C1)
38. Map the Y axis values with Colum B
39. Map Category/X axis labels with column A
40. Double click on Refresh Button
41. Enable Available connection Name
42. Click on Preview
43. Enter BO logon credentials [user name and password]
44. Click on Preview
45. Cross verify the functionality of the requirement document
46. Come out from Preview by clicking on Preview
47. Go to file and save and export

FAQ: QAAWS supports for how many Universes at a time.
Ans: Only ONE

Exercise: Create on demand dynamic dashboard with combo box displaying year wise list and line chart displaying quarter wise Sales Avenue

Exercise: End to end scenario creating a dynamic on top SAP
In this implementation we have 4 parts:
Part 1: Creating BEX query on top of Infocube
Part 2: Creating Universe on top of BEX query
Part 3: Create QAAWS on top of Universe and publish as WSD URL
Steps:
1. Log on to QAAWS
2. Configure QAAWS
3. Click on New
4. Give the Name and description of the Query [name: Customerlist]
5. Click on Next
6. Select the desired Universe
7. Click on Next
8. Built Query1 as per the requirement
9. Click on Next
10. Click on Publish [URL 1 is created for use]
11. Click on New
12. Give the Name and description of the Query
13. Click on Next
14. Select the desired Universe
15. Click on Next

16. Built Query2 as per the requirement
17. Click on Next
18. Submit a value for prompt
19. Click on OK
20. Click on Publish

Part 4: Creating dashboard on top of QAAWS URL(s)/WSD URL(s)

21. Log on to Xcelsius
22. Go to Data → Connections → ADD → QAAWS for connection1 and → ADD → QAAWS for connection 2
23. Click on connection 1
24. Go to Definition
25. Copy customer list URL from QAAWS tool and paste in the WSDL URL text box in the Definition option
26. Click on Import
27. Map the customer(output values) with column A of spread sheet
28. Go to Behavior and Enable Ignore Blanks if required
29. Go to Usage
30. Enable [√] 'Refresh on Load'
31. Go to 2nd Query Definition Tab
32. Copy 2nd query URL form QAAWS and paste in WSDL URL text box
33. Click on Import
34. Map L01 Material with Column B [←output values]
35. Map Revenue data with Column C [←output values]
36. Map the prompt with Cell D1 [←input values]
37. Go to Usage and Enable 'Refresh on Load' option
38. Close the connection properties
39. Drop and drag the combo box, Pie Chart, Connection Refresh Button
40. Double click on Combo Box
41. Map the label with Column A
42. Select insertion type as Label
43. Map the destination with customer prompt input cell D1
44. Double click on Pie Chart
45. Map the values (revenue) with the Column C and Labels with column B
46. Double click on Refresh Button
47. Enable connection 2
48. Click on preview
49. Cross verify the format with requirement document
50. Come out from the preview
51. Save and export to the BO platform

Try with:

How to work with no refresh button

How to display loading/ ideal message

Exercise: Create a dashboard with Pie chart, Combo Box, Line Chart, Combo Box for displaying year wise list, Pie chart for quarter wise sales, line chart with month wise sales.

Steps for creating a dynamic dashboard on top of the Universe with LO Connection:

1. Long on to MS Excel → Menu bar → Live Office→ Insert → New [for new query]
2. Navigate to the desired Universe and select
3. Click on Next

4. Built a query with Quarter, Sales Revenue and prompt on Year object
[on one universe you can built many queries]
5. Click on Next
6. Submit a value for year prompt
7. Click on Next
8. Give the Name of the connection [LO connection]
9. Click on Data
10. Go to Live Office → Modify objects → Prompt settings
11. Enable/chose Excel Data Range and
12. Map with any one of the blank cell (C1) in Excel sheet
13. Click on OK
14. Go to Live Office
15. Publish to BO Enterprise
16. Navigate to the folder
17. Give the file name
18. Click on Save

Steps for building an Xcelsius dashboard on top of the Live Office connection by using QAAWS connection

1. Log on Xcelsius
2. Go to Data →Import from Enterprise
3. Navigate to the spread sheet
4. Click on Open
5. Go to Data → Connections
6. Click on Add → Live Office connection
7. Go to Definition
8. Replace <webserver> tag in URL with BO server name
9. Go to Usage → Enable Refresh on Load
10. Drop and drag Combo Box, Pie Chart, Connection Refresh Button from component pane to canvas pane
11. Create a QAAWS connection with year list [by following steps given earlier]
12. Add QAAWS connection in Xcelsius
13. Go to Definition
14. Click on Import
15. Map Year with Column D
16. Go to Usage and Enable Refresh on Load
17. Double Click on combo box
18. Map the labels with Column D [1- 4]
19. Select Insertion type as Label
20. Map destination with cell C1
21. Double click on Pie Chart
22. Map the values with sales revenue
23. Map labels with quarter labels
24. Double click on Refresh Button
25. Enable Live Office Connection

Steps for creating a dynamic dash board on top of universe with LO connection

1. Long on to MS Excel → Menu bar
→ Live Office→ Insert → New [for new query]
2. Navigate to the desired Universe and select
3. Click on Next
4. Built a query with Year object [on one universe you can built many queries]

5. Click on Next
6. Give the name of the Connection
7. Click on Finish
8. Keep the mouse point on Business Intelligence
9. Go to live office again → Insert → New query2
10. Click on next
11. Built query2 with quarter wise sales and year prompt
12. Click on next
13. Submit a parameter from the year prompt (ex 2006)
14. Click on next
15. Click on finish
16. Keep the mouse on data
17. Go to Live Office → Modify objects → Prompt settings
18. Select the prompt
19. Enable chose excel data range and
20. Map with any one blank cell (F1)
21. Click on OK

For Query 3

22. Keep the mouse on D1
23. Go to live office → Insert → New [for Query3]
24. Navigate for the universe
25. Click on next
26. Built a query month wise sales avenue with quarter prompt
27. Click on next
28. Submit a parameter for the quarter prompt
29. Click on next
30. Select the third quarter data
31. Go to Live Office → Modify objects → Prompt settings
32. Enable Chose Excel Data Range
33. Map with any one blank cell (G1)
34. Click on OK
35. Go to Live Office
36. Publish to the BO enterprise
37. Navigate to the Folder
38. Give the name of the File
39. Click on Save

Steps for Building dashboard

1. Log on to Xcelsius (window based)
2. Go to data
3. Import from enterprise
4. Navigate to the file
5. Click on open
6. Go to data → connections → ADD → Live office connections
7. Click on Connection1
8. Go to definition tab
9. Rename <webserver> tab with BO server name in the URL
10. Go to Usage
11. Enable Refresh on Load
12. Apply the same steps for remaining connections
13. Close the connection properties

14. Drag and drop Combo box,
Pie chart,
Column or line chart and
Connection Refresh Button
15. Double click on combo box
16. Map the labels with year list [all]
17. Select the insertion type as label
18. Map destination with [F] second query input cell
19. Double click on Pie Chart
20. ..
21. Go to Drill Down
22. Enable Drill Down
23. Select Insertion type as Row
24. Map the source data with Quarter label
25. Destination with input cell for Query 3
26. Double click on line chart
27. Enable by series
28. Add one series
29. Map the values with month sales avenue values
30. Labels with month labels
31. Double click on connection replace button
32. Enable connection 2 and 3
33. Export to BO plot form navigating a name folder

Steps for creating a dynamic (Xcelsius) dashboard on top of WEBI report with LO connection

In this implementation we have 2 parts
Part 1. Creating WEBI report and applying Formulas, Formatting..
Part 2. Create LO on top of WEBI
Part 1.
1. Log on to Infoview
2. Go to New → Web Intelligence Document
3. Chose desired Universe → Classes & Objects [2 dimension , 1 measure]
4. Create a WEBI report with Year, Quarter, Sales avenue
5. Click on Run Query
6. Go to Templates
7. Drag and drop the Cross Tab [→ data converts in to horizontal]
8. Select the Table Data and Apply Sum [Click on Σ and select sum]
9. Remove Row wise sum if not required
10. Click on Save and Navigate to the Folder
11. Give the Name of the Report
12. Click on OK
Part 2
13. Log on to MS Excel
14. Go to Live Office → Insert → WEBI Content
[Configure LO to desired system if required]
15. Navigate to the WEBI Report and select → Click on Next
16. Select the required [one] block in the report [from multiple blocks if have]
17. Click on Next
18. Give the name of the Connection
19. Click on Finish

20. Publish to BO enterprise and Local System [best practice-BO Enterprise]
Steps for building Dashboard
21. Log on to Xcelsius
22. Go to Data → Import from Enterprise
23. Enter BO Logon credentials
24. Click on OK
25. Navigate to the File/Document
26. Click on Open
27. Go to Data → Connections → Add → Live Office Connection
28. Go to Definition
29. Replace <webserver> tag with BO server name
30. Go to Usage
31. Enable with refresh on load
32. Close the connection properties
Try with Pie Chart & Column Chart
Exercise

End to End scenarios Xcelsius Dashboard on top of SAP

In this implementation we have 5 parts
Part 1.
1. Create on top of BEX query on top of Infocube
2. Log on to BEX query Designer
3. Click on Query New
4. Navigate for the Infocube
5. Click on Open
6. Click on Row/Column
7. Drag and drop characteristics into Rows
8. Key Figures in to Columns
9. Go to Query Properties
10. Go to Advance
11. Enable Allow External Access to this Query Option
12. Click on Save
13. Enter the Technical name and Description
14. Click on save
Part 2
1. Steps for creating universe on top of BEX query
2. Log onto Universe Designer
3. Enter BO Credentials
4. Go to File → New
5. Give the name of the Universe
6. Select or Create a New Connection for the Query
7. Click on OK
8. Click on save and export to Repository
Part 3
1. Steps for creating on top of WEBI
2. Logon to Infoview
3. Create new WEBI report on top of SAP Universe
4. Click on Save
5. Navigate the Folder
6. Give the name of the Folder
7. Click on OK

Part 4
1. Creating live office connection on top of WEBI
2. Log on MS Excel
3. Go to live office
4. Navigate for the WEBI report (saved from WEBI-SAP folder report name)
5. Click on Next (click on black ?)
6. Click on Next → give the name of the connection
7. Click on Finish → see the Data in Excel Sheet
8. Go to Live Office → Modify Objects →Prompt Setting
9. Select Prompt
10. Enable Chose Excel Data Rows
11. Map with one empty Cell
12. Click on OK
13. Publish to BO Plot form

Part 5
1. Steps for creating Xcelsius dashboard on top of LO Data
2. Log on Xcelsius

VLOOKUP:
Syntax: =VLOOKUP (source cell, Block Range, lookup column number)
Example: =VLOOKUP (B2, A8:J38, 2[false])

Exercise: Create a dash board with calendar, column chart component to display date wise sales for all the states based on date selection happened in the calendar component

DYNAMIC VISIBILITY

• It is for creating relationship between two components for displaying selected components.

Exercise: Create dashboard with the list box for displaying all the component names, Pie chart, Column chart, Line chart, OHLC for displaying corresponding data and make dynamic visibility between List box and components.

Steps for creating dashboard with Dynamic Visibility functions

1. Log on to Xcelsius
[Start → Programs → Xcelsius]
2. Drag and drop Pie Chart, Line Chart, Column Chart, Text box, List box or Radio button, OHLC chart from component browser to canvas browser
3. Type Labels for the components in the spread sheet
4. Double click on List box
5. Map the Labels with the Labels in the spread sheet
[or Go to labels flight symbol → Type the Label names based on the component name → click on OK]
6. Select the insertion type as Label
7. Map the destination with cell A1
8. Close the Properties
9. Double click on Pie Chart → Go to Behaviour → Dynamic Visibility
10. Map the status with Column A1 (list box destination cell) and type Key as Pie
11. Close the Properties
12. Double click on Column Chart → Go to Behaviour → Dynamic Visibility
13. Map with statues with A1 and type Key as Column
14. Double click on Line Chart → Go to Behaviour → Dynamic Visibility
15. Map with statues with A1 and type Key as Line
16. Double click on OHLC → Go to Behaviour → Dynamic Visibility

17. Map with statues with A1 and type Key as OHLC
18. Double click on Toggle Button [Switch button]
19. Click on Label flight symbol
20. Type label name as
21. Show Help for status OFF
22. Type label name as Hide Help for status ON
23. Click on OK
24. Map the destination with cell B1
25. To create relationship between-
Double click on input Text area and enter the help text in the enter text place
26. Go to Behaviour → Dynamic Visibility
27. Map the status with cell B1,Toggle destination
28. Type Key as 1
29. Close the Properties
30. Export and Save to BO
? Try with Combo Box? Radio Button? Check Box?

Review on Xcelsius:

Exercise: Create a dynamic dashboard with Pie chart for displaying quarter wise sales, column chart for month wise sale based on year selection in combo box and quarter selection on Pie chart

Steps:
1. Logon to MS Excel → Live Office → Insert → New Query
2. Select the desired Universe
3. Click on Next
4. Build a Query with Year (for year list)
5. Keep the cursor on next blank cell
6. Go to Live Office → Insert →New query
7. Select the desired universe
8. Click on Next
9. Build a query with quarter wise, sales rev, put filter on Year prompt
10. Submit input prompt for year
11. Click on Next
12. Give the name of the Connection
13. Click on Finish
14. Keep the cursor on Sales Rev Data in excel sheet
15. Click on Data
16. Go to LO
17. Modify Object
18. Prompt settings
19. Enable chose excel data range
20. Map the with any one blank cell D1
21. Click on OK
22. Built query3 with month wise sales and year, quarter prompt
23. Keep the mouse on Data
24. Go to LO → Modify object → Prompt settings
25. Select year prompt – Enable chose excel data range and map with year prompt (D1)
26. Select quarter prompt-chose Excel data range and map with any one blank cell (G1)
27. Go to LO-Publish to BO Enterprise

28. Save to BO Enterprise
29. Navigate to Folder and give the name of the document
30. Click on Save
31. Log on to Xcelsius
32. Go to Data
33. Import from Enterprise
34. Navigate to the File
35. Click on Open
36. Go to Data [connection should add after importing the data in to Xcelsius sheet]
37. Go to connections → Add → LO connection
38. Replace web server tab with BO server name for all the connections
39. Enable Refresh on load in the usage tab for all the connections
40. Close the connection properties
41. Drag and drop Pie Chart
42. Map the labels with year labels
43. Select the insertion type as label
44. Map destination with year input (prompt) cell [D1]
45. Double click on pie chart
46. Map the values with quarter wise sales avenue and labels with the quarter labels
47. Go to Drill down
48. Map the source with quarters
49. Map the destination with quarter prompt cell G1
50. Double click on column chart
51. Enable By series
52. Click on + symbol to add one series
53. Map the series Name with quarter prompt cell G1
54. Map the values(Y) values with month wise sales revenues
55. Map X labels with month labels
56. Click on Preview and do the unit testing [dashboard functionality]
57. Add formatting based on the requirement
58. Go to File and Export to BO Platform
59. Navigate to the desired folder and click on save

Create **what if** dashboard with the help of **slider**, **gauge** components:

Using a profit formula = sales * 0.3

Steps:

1. Logon to Xcelsius
2. Drag and drop Horizontal slider and gauge components from component browser to canvas browser

Note: It is possible to hide the component as well as from Object browser

3. Double click on slider
4. Map the display data with cell A1
5. In manual option type min and max limit
6. Go to behaviour
7. Type the incremental value in slider movement option
8. Enable Min and Max Limit as adjustable as per the requirement
9. Enable play button as per the requirement
10. Go to appearance
11. Set the colour coding as per the requirement and customise the ranges.....

12. Go to alerter and set the alerter as per the requirement
13. Write profit formula in cell B1
14. Double click on gauge
15. Map data with the cell B1
16. Double click on gauge and type min and max limit as adjustable
17. Click on Preview
18. Do the unit testing
19. Come out from preview
20. Go to file Export to BO Platform
21. Go to file and Sage to Enterprise

Tab Set Component:

• It is for reusing the canvas for creating dashboard with multiple components

FAQ: How you display Hierarchial list in Xcelsius

Ans: For display Hierarchial in Accordance menu
Add the categories
Map the name with category names
Add the labels
Map the complete source data [except category labels] and
Map the destination with blank Row

FAQ: What is the maximum limitation in Xcelsius? Is there any possibility to increase the size?

Ans: Default limitation for Xcelsius is 512 rows
We can set the max limitation by using steps bellow
File → Preferences → Excel Options
And set the max number of rows: 512
It can be changed whatever the number we like
but it will take 512 rows only

MIGRATION(Import Wizard):

• It is for moving of the reports, universes, connection, folders, groups, access privileges…..from DEV to QA to PROD (or)

• Migration from lower version to higher version

Steps for Migration [windows using Import Wizard]

1. Start → Programs → Business Intelligence 3x
2. Log on to Import Wizard
3. Click on Next
4. Select the source Environment (↓)
5. Enter source system logon credentials
6. Click on Next
7. Select destination as BIAR
8. Click on Next
9. Browse for the local system → Give the file name and click on open
10. Click on Next
11. Select the objects to Import
12. Click on Next
13. Select the desired server groups
14. Click on Next
15. Select the required Users and Groups as per requirement
16. Click on Next
17. Select the custom access level
18. Click on Next
19. Select the category
20. Click on Next
21. Select the required folders and objects

PUBLISHING Wizard:

Steps for publishing BIAR from local system to repository

Steps for BI Archive Resource (BIAR)

1. Logon to Publishing Wizard

[Start → Programs → BOXI R3 → BOE → Publishing wizard]

2. Click on Next
3. Enter the repository logon credentials [BO server]
4. Click on Next
5. Click on Add file
6. Navigate for the file
7. Click on Open
8. Click on Next
9. Select the object type as a program
10. Click on Next
11. Navigate to the Migration folder
12. Click on Next + Next + Next
13. Select program type as Scripts
14. Click on Next + Next
15. Select the change default values
16. Click on Next + Next,17. Click on Finish

BI WIDGETS:

• It is for extracting blocks or parts from the report to share with mobile users
Widgets configuration Steps:
1. Logon to BI widgets
[Start → Programs → BOXI Release 3 → BI Widgets]
2. Icon appears on -O System tray
3. Right click on BI widgets icon from system tray
4. Click on Host and Login Preferences [Host name: visuinfoview]
5. Click on New
6. Enter Host Name: sapdev [as BO server name]
User : administrator [as BO user]
Password: india1 [as BO password]
7. Click on OK
8. Close the logon preference window
Steps for making Widgets
1. Right click on BI Widgets icon on system tray
2. Go to Document List Explorer
3. Navigate for the report [Xcelsius/Crystal/WEBI report]
4. Double click on the report
5. Select the desired block
6. Drag and drop on Desktop
7. Keep the mouse pointer on widget on desktop
8. Click on widget preferences
9. Give the name of the widget
10. Select the schedule option
11. Click on Save
12. Select the path in the local system
13. Click on OK

Voyager: [= BEX + WEBI]

• It is for creating multi dimensional OLAP report on top of multiple OLAP cubes without creating universes
This development has 2 parts
Part 1. Creating voyager connections for the data sources
Part 2. Creating report on top of connections

I. Steps for creating voyager connection

1. Logon to Central Management Console (CMC)
[Start →Programs → BOXI 3 → BO Enterprise → CMC]
2. Navigate to Voyager connections
3. Click on New Connection
4. Give the Connection Name and Description
5. Select the Data ‘Provider’ type [as SAB Business Info Warehouse]
6. Enter BO ‘Server’ information [SAP log on credentials]
System: dev
Server: sapdev
System number 03
Client:001
7. Click on Connect
8. Enter SAP User Name and Password
9. Click on OK [for cube browser window]
10. Navigate for the Infocube

11. Click on Select
12. Select Authentication as ‘Prompt’
13. Click on Save
14. Repeat above steps for other connections

Note: Creation of multiple connections is possible here following the steps given above

II. Steps for creating Voyager report on top of Voyager connection

15. Logon to Infoview

[Start → Programs → BO XI 3 → BO Enterprise → Infoview]

16. Go to Document List → New
17. Click on Voyager Work Space [to get list of created connections]
18. Select the required connection
19. Click on OK
20. Enter log on credentials [as authentication prompt] [user name/password]
21. Click on OK
22. Drag and Drop the Characteristics in to Rows and Keyfigures in to Columns
23. Insert and Apply Chart .... totals.... highlighting cells, apply rank, sort, filters..slice and dice
24. Click on ‘Add Connections to the Work Space’ icon [top left of the window -To display other connection]
25. Select the desired Connection 2
26. Click on OK
27. Drag and Drop the Characteristics in to Rows and Keyfigures in to Columns [You can add one more cross tab if required]
28. Apply the required formatting like in WEBI
29. Click on Save
30. Give the name of the file
31. Navigate to the desired Folder
32. Click on OK [to save in the server]

Software Development Life Cycle
(SDLC)

SDLC contains 5 Phases.

Phase 1: Requirement analysis

BRD: Business Requirement Design Document

This page will get requirement document from client

The document contains the sections bellow

Section 1: Mock up report

Section 2: General information--- formatting look up....

Phase 2: Gap Analysis

In this section the off shore and on shore team maintains a document is called an Issue Tracker

Columns in Issue tracker	For example
Issue #	01
Issue Raised by	Please justify the Bus logic for sales tax column
Issue Description	Mr.MMRao
Issue Date	19 June 2011
Priority/ Severity	High/Low/Medium
Status	Open
Assigned to	SAP Group
Resolution	Bus logic for sales tax is....
Comments	Sastfied still need some more Information
Closed Date	Work is in progress [19-6-2011 if status is closed]

Phase 3: Design

• This document contains a very detailed mapping information for the universes and reports

Phase 4: Unit Testing

• In this phase the developer need to compare the report standards with the requirement documents

Test case design document contains the columns bellow:

Test#	01
Test case description	Formatting Report titles should be Arial 14
Expected results	Report is in Veradana 14
Actual results	Fail
Round 1	Pass
Round 2	Pass

Phase 5: QA migration

• In this phase the user will do one more round of Testing to accept the deliverables