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Session 16762: Oracle Business Intelligence Publisher Best Practices

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The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decision. The development, release, and timing of any features or functionality described for oracle's products remains at the sole discretion of oracle.

Program Agenda

- Oracle BI Publisher Enterprise Overview
- System Configuration Guidelines
- BI Publisher Server Configuration Options
- Report Design Best Practices
 - Data Modeling Guidelines
 - Template Design Guidelines (Klaus)
- Q & A



Oracle BI Publisher Enterprise

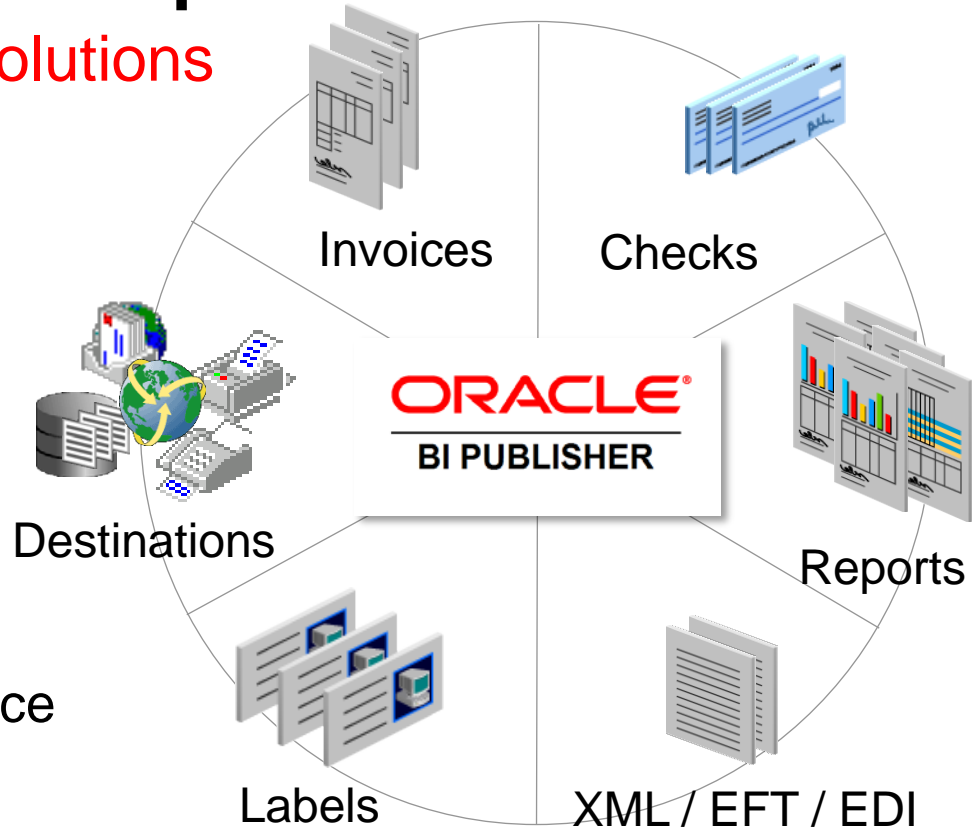
Eliminate Multiple-point Solutions

- One Environment

- Author
- Generate
- Deliver

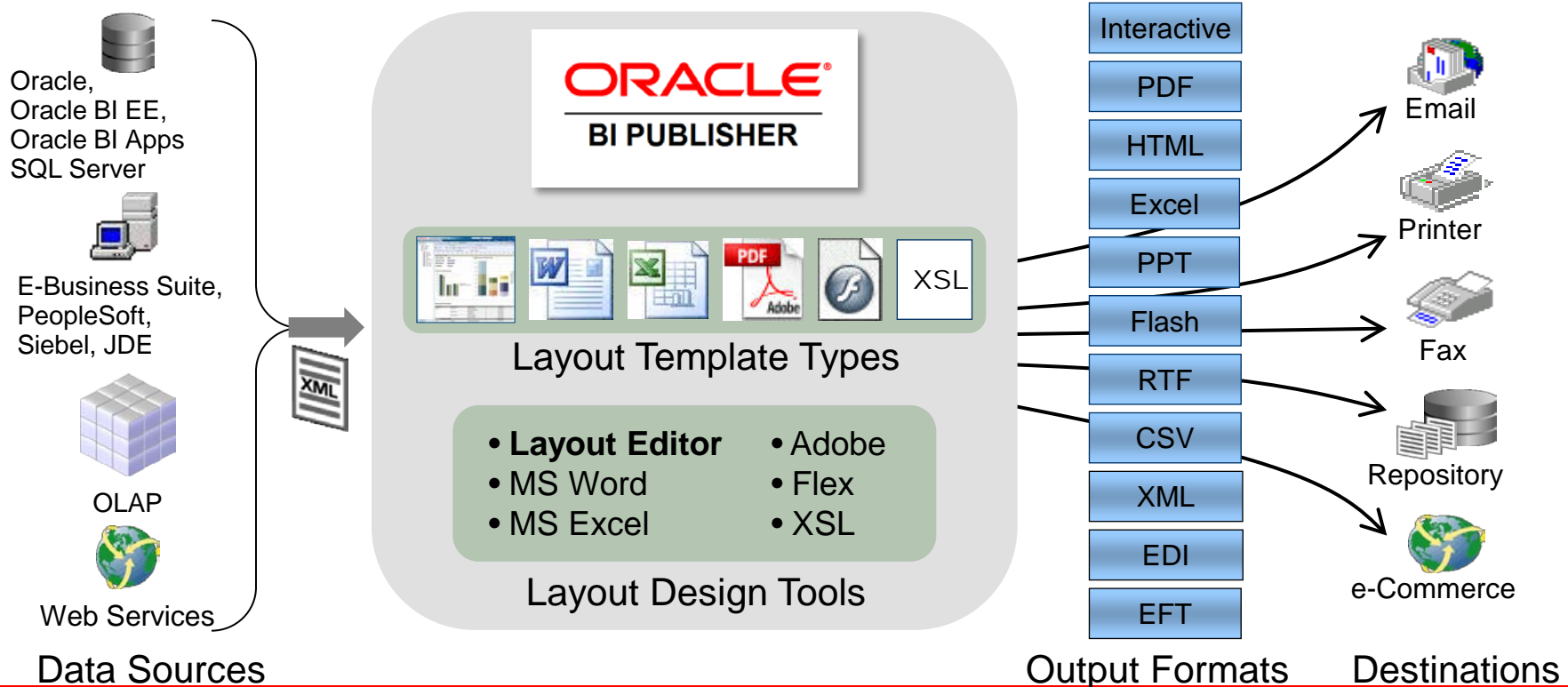
- Benefits

- Eliminate complexity
- Simplify report development & maintenance
- Reduce costs

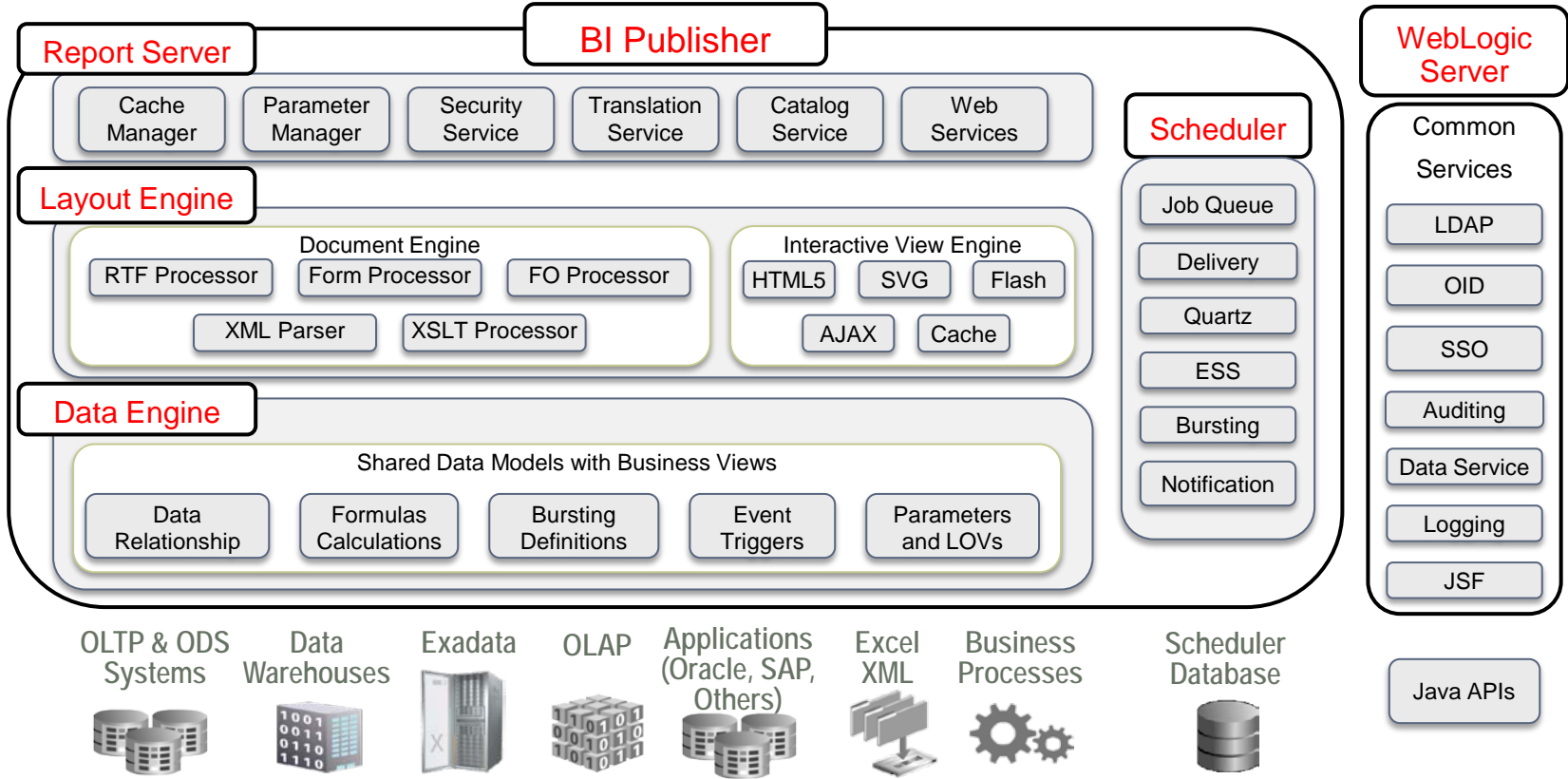


Oracle BI Publisher Enterprise

From Data to Document to Delivery



BI Publisher – Enterprise Class Reporting



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System Configuration Guidelines

- Minimum install requirement
- JDK requirements
- BI Publisher recommended configuration
- Enterprise deployment options

Install Requirements

Oracle Business Intelligence 11g

System Requirements

- Disk Space: **20GB** or more
- Available Memory (RAM): **4GB** or more
- Temp Space: **950MB** or more
- Swap Space: **3GB** or more
- CPU: **dual-core Pentium, 1.5GHz** or greater

Database Requirements

Disk space requirements for the database containing the Oracle Business Intelligence Scheduler database tables.

- **500MB** on Oracle and Microsoft SQL Server databases for standalone and Business Intelligence applications and deployments.
- **500MB** on IBM DB2 databases for standalone deployments.

Oracle® Fusion Middleware Installation
Guide for Oracle Business Intelligence
11g Release 1 (11.1.1)
Part Number E10539-02

JDK Requirements

Oracle Business Intelligence 11g

- Refer to the certification matrix for supported JDK versions for specific operating systems.
 - <http://www.oracle.com/technetwork/middleware/bi-enterprise-edition/bi-11gr1certmatrix-166168.xls>
- Oracle Business Intelligence does not support 32-bit JDKs on 64-bit operating systems
- If you install a 32/64-bit hybrid JDK on a 64-bit operating system, ensure that it is deployed in 64-bit mode.

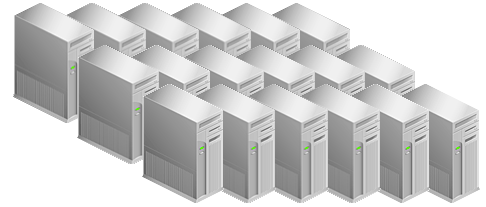
Oracle Business Intelligence Publisher

Recommended Configuration

- JVM settings & JDK version
 - 64 bit JVM/JDK (on a 64 bit OS)
 - JDK version 1.6 (update 2) or higher
- Memory (RAM)
 - 8 GB on 64 bit JVM is recommended for large, high volume use
 - 2 GB on 32 bit OS suitable for small to mid volume use (2gb limitation for JDK on win OS)
- Storage
 - 30 GB Hard disk space (repository) could be shared for cluster
 - 20 GB Temp space (document processing) not shared

Sizing Guidelines

How Many servers?



Concurrent Use

- Users viewing reports online
- Scheduled Jobs running at the same time

Factors to consider

- Number of users viewing Small, Medium, Large, XLarge reports
- Number of CPUs /server

Bursting

- Bursting reports

Factors to Consider

- Total Number of Reports
- Time window
- % of Small, Medium, Large reports
- Number of CPUs /Server

Sizing Guidelines

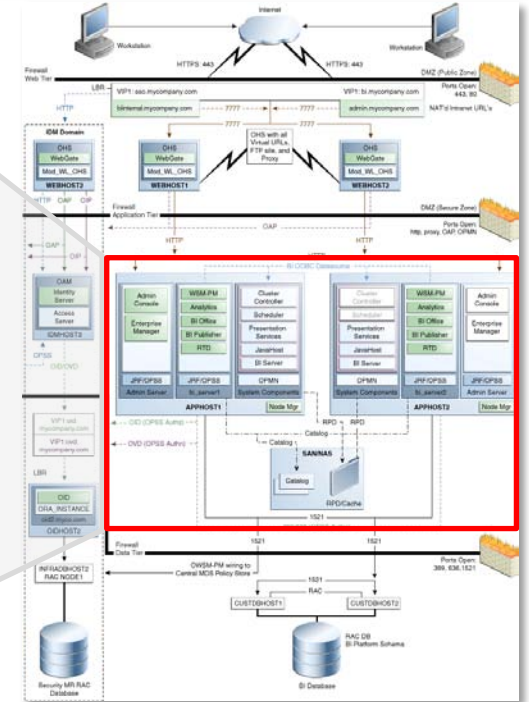
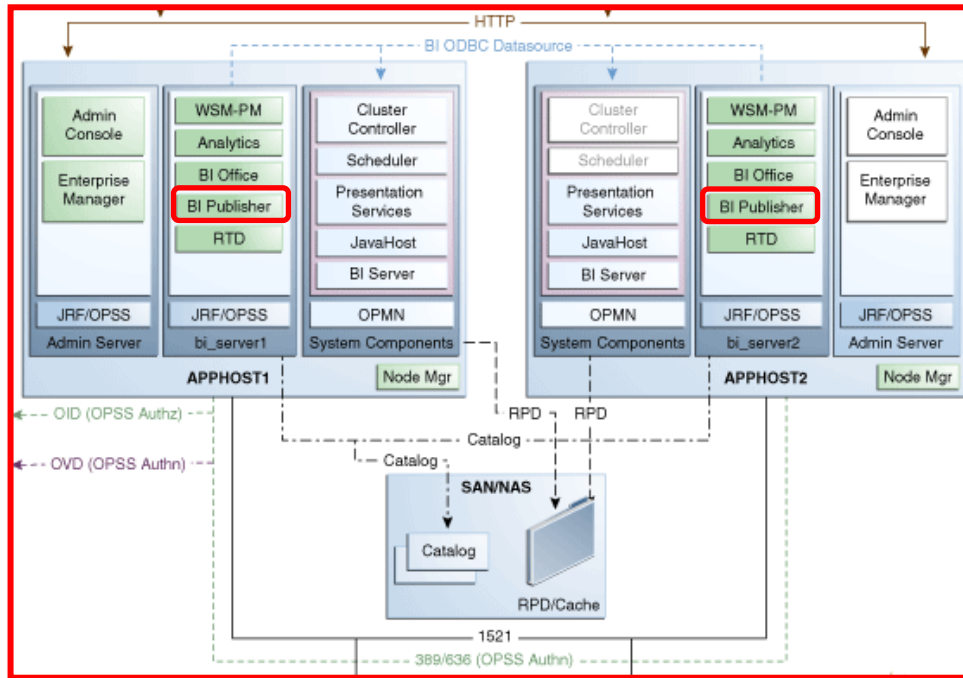
My Oracle Support – Note 948841.1

Oracle BI Publisher Sizing Guide			
Please Refer to Instruction Sheet for more Information			
SIZING BASED ON CONCURRENT USAGE		SIZING BASED ON BURSTING USAGE	
Sizing Data Input		Sizing Data Input	
Number of users viewing small report (~ 2 Pages)	1500	Total Number of Reports	1000
Number of users viewing medium report (~ 25 pages)	200	Time to Generate Reports	30 Minutes
Number of users viewing large report (> 100 pages)	Not Available		
Number of users viewing extremely large report (> 10,000 rows)*	1		
		Report Distribution By Size	
			Distribution(%)
		Small reports (~ 10 pages)	30%
		Medium reports (~50 pages)	40%
		Large reports (> 100 pages)	30%
Total % CPU	283.25	Total % CPU	79.74
Total Number of CPUs/Server	2		2
Estimated % of CPU Usage (Production Machine)	354.06	Estimated % of CPU Usage (Production Machine)	99.68
Recommended Number of CPU	4	Recommended Number of CPU	1
Total Number of CPUs/Server			
Recommended Number of Servers	2	Recommended Number of Servers	1
Server(s) Utilization	88.51	Server(s) Utilization	49.84

Enterprise Deployment Options

Oracle Business Intelligence

Oracle® Fusion Middleware Enterprise
 Deployment Guide for Oracle Business
 Intelligence
 11g Release 1 (11.1.1)
 Part Number E15722-03



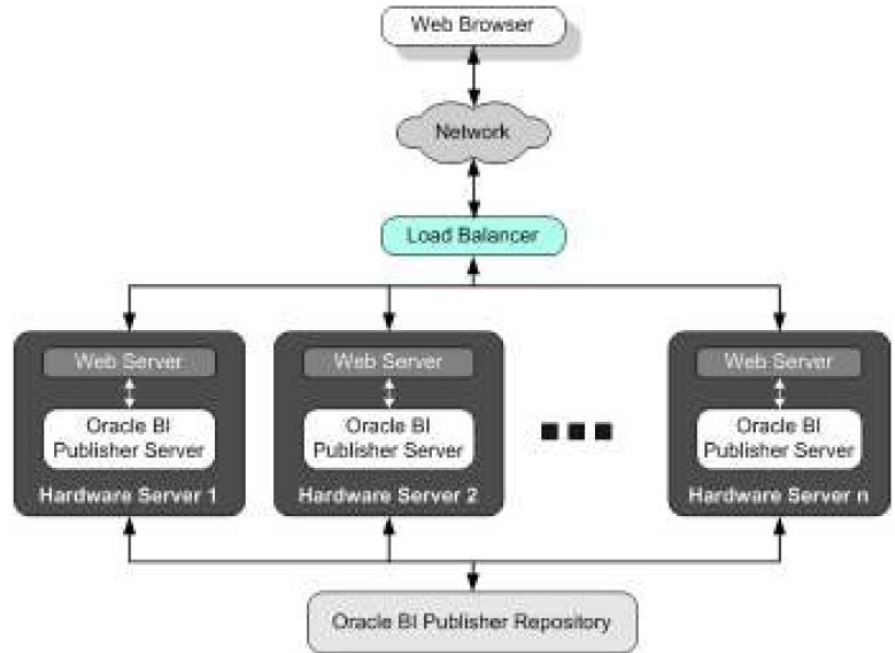
Enterprise Deployment Options

Business Intelligence Publisher (10g or 11g)

- High availability
 - Improve availability of the system
- Load balancing
 - Increase throughput

For more details on clustering BI Publisher standalone, please refer to our White Paper on High Availability.

The link is available in the Appendix.



Simple Cluster Deployment

Enterprise Deployment Options

BI Publisher Scheduler Configuration (v10g only)

- Enable clustering

Admin > Scheduler Configuration

System Maintenance

Report Repository Server Configuration Scheduler Configuration

TIP Any changes will only take effect after the application is restarted.

Database Connection

Database Connection Type

Database Type

Connection String

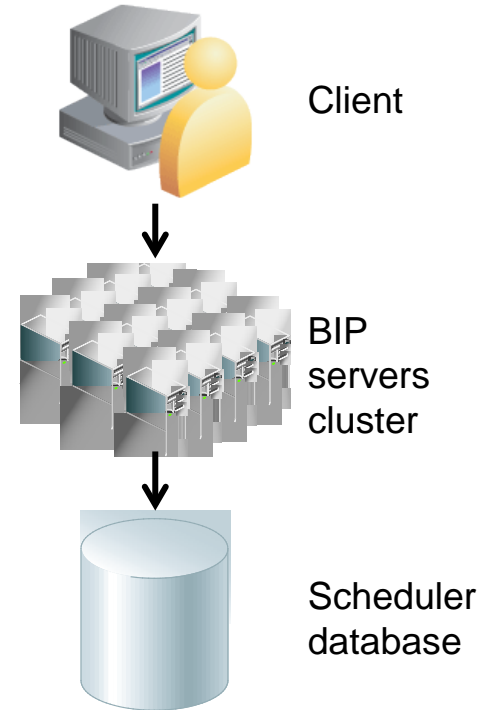
Username

Password

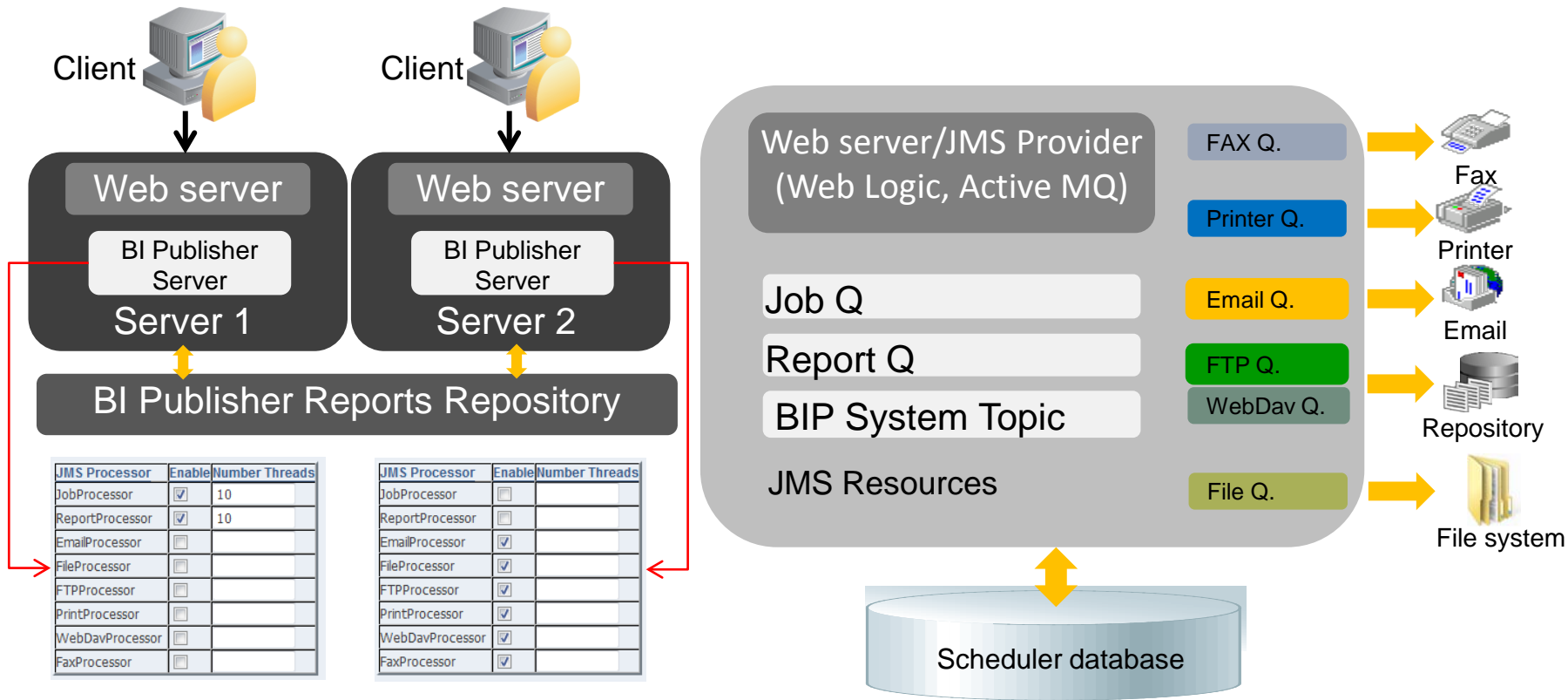
Database Driver Class

Scheduler Properties

Enable Clustering



Oracle BI Publisher Scheduler 11g



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Server Configuration Options

Administration > Server Configuration

- Scalable threshold (in bytes)
- Cache expiration (in min)
- Cache size limit (# of datasets)
- Maximum cached reports
- Database Fetch Size

The screenshot displays the Oracle BI Administration console interface for Server Configuration. The breadcrumb path is 'Administration > Server Configuration'. The 'Catalog' section includes a description: 'The Catalog contains all content such as reports and data models.' Below this, there are dropdown menus for 'Catalog Type' (set to 'Oracle BI EE Catalog'), 'Server Version' (set to 'v6'), and 'Connection protocol' (set to 'TCP'). A 'Test Connection' button is present. A red box highlights the 'Default values' section, which includes the 'General Properties' and 'Caching' sections. The 'General Properties' section shows: 'System Temporary Directory' (empty), 'Report Scalable Threshold' (10,000,000), and 'Database Fetch Size' (300). The 'Caching' section shows: 'Cache Expiration (minutes)' (30), 'Cache Size Limit' (1000), and 'Maximum Cached Report Definitions' (50). The 'Database Failover' section is partially visible at the bottom.

Property	Value
System Temporary Directory	
Report Scalable Threshold	10,000,000
Database Fetch Size	300
Cache Expiration (minutes)	30
Cache Size Limit	1000
Maximum Cached Report Definitions	50

Server Configuration Options

Administration > Runtime Configuration > Properties

- Bursting (10g only)
 - Enable multithreading – *Default: False**
 - Thread count – *Default: 2**
- FO processing
 - **Use BI Publisher's XSLT processor** – *Default: True*
 - **Enable scalable feature of XSLT processor** – *Default: False**
 - Pages cached during processing – *Default: 50*
 - **Enable multithreading** – *Default: False**
 - **FO Parsing Buffer Size** – *Default: 1000000**
 - **Enable XSLT runtime optimization** – *Default: True*

FO Processing		
Use BI Publisher's XSLT processor	▼	True
Enable scalable feature of XSLT processor	▼	False
Enable XSLT runtime optimization	▼	True
Enable XPATH optimization	▼	False
Pages cached during processing		50
Bidi language digit substitution type	▼	National
Disable variable header support	▼	False
Add prefix to IDs when merging FO	▼	False
Enable multithreading	▼	False
Disable external references	True ▼	True
FO Parsing Buffer Size		1000000
Enable XSLT runtime optimization for sub-template	▼	True
Enable PPTX native chart support	▼	True

Report-level Properties

Edit Report > Properties > Formatting

The screenshot displays two overlapping instances of the 'Report Properties' dialog box, both with the 'Formatting' tab selected. The background window shows the 'PDF Output' section, and the foreground window shows the 'FO Processing' section.

Report Properties (Background Window) - PDF Output Section

Properties	Report Value
PDF Output	
Compress PDF output	▼
Hide PDF viewer's menu bars	▼
Hide PDF viewer's tool bars	▼
Replace smart quotes	▼
Enable PDF Security	▼
Open document password	
Modify permissions password	
Encryption level	▼
Disable document modification	▼
Disable printing	▼
Disable adding or changing comments and form fields	▼

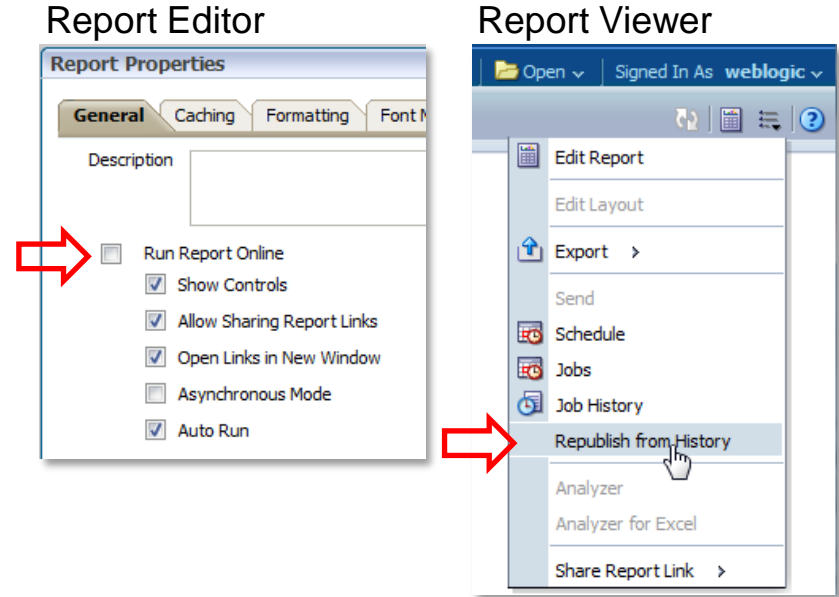
Report Properties (Foreground Window) - FO Processing Section

Properties	Report Value	Server Value
FO Processing		
Use BI Publisher's XSLT processor	▼	true
Enable scalable feature of XSLT processor	▼	false
Enable XSLT runtime optimization	▼	true
Enable XPATH optimization	▼	false
Pages cached during processing		50
Bidi language digit substitution type	▼	national
Disable variable header support	▼	false
Add prefix to IDs when merging FO	▼	false
Enable multithreading	▼	false
Disable external references	True ▼	true
FO Parsing Buffer Size		1000000
Enable XSLT runtime optimization for		

Report-level Properties

Viewing Reports Online

- For long running reports
 - Take advantage of scheduling and disable **Run Report Online**.

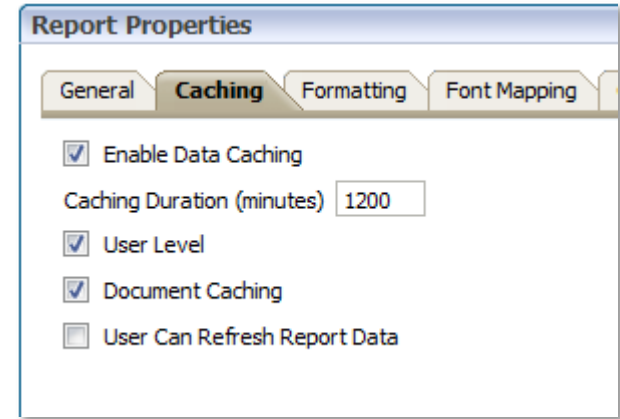


Report-level Properties

Viewing Reports Online

- **Enable Data Caching**
 - Saves XML data for reuse up to the Cache Expiration threshold
 - Improved performance with different template/output format
 - Not recommended for real-time data
- **Enable Document Caching**
 - Better performance
 - Consumes more Temp storage space
- **User Level (11g only)**
 - Disable for better performance if data can be shared across users
- **Cache Duration (11g only)**

Report Editor



Program Agenda

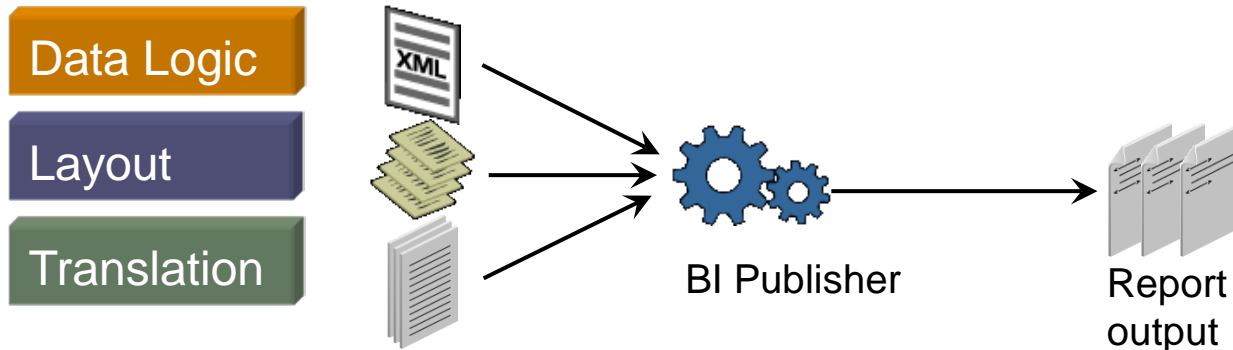
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Oracle Business Intelligence Publisher

Report Architecture

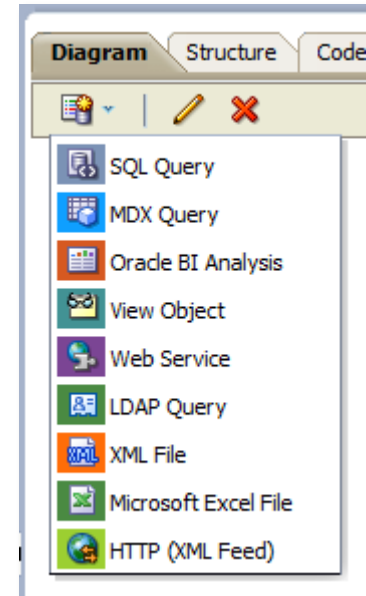
- Separate data logic, layout & translation benefits
 - greater flexibility and reuse
 - fewer reports and better report maintenance
 - optimize data extraction and document generation process



Data Generation

Data Sources

- Data Source Types
 - File (XML)
 - SQL Query
 - MDX Query
 - LDAP Query (11g only)
 - Excel Spreadsheet (11g only)
 - HTTP (XML Feed)
 - Web Service
 - Oracle BI Analysis
 - Oracle BI Discoverer (10g only)
 - Data Template (10g only)

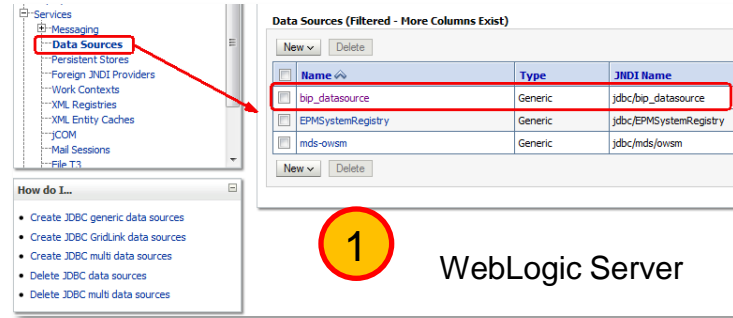
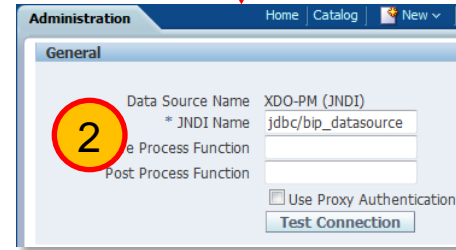


Data Generation

Connection Types

JDBC Vs JNDI (SQL Type)

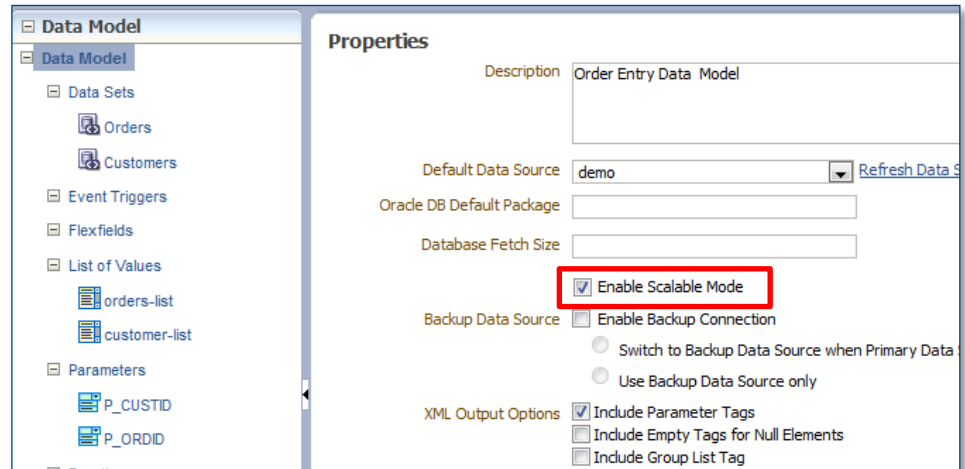
- Both types of connection use the same JDBC driver
- With JNDI you can take advantage of connection pooling
 - Better performance
 - Connection already established to the source
 - **Best practice** for reports with many parameters with SQL type LOVs attached to them
 - Better RDBMS resource management



Data Generation

Scalable Mode

- Enable for large reports
 - Use with scheduled reports
 - Slower performance
 - Prevents out-of-memory errors



Data Generation

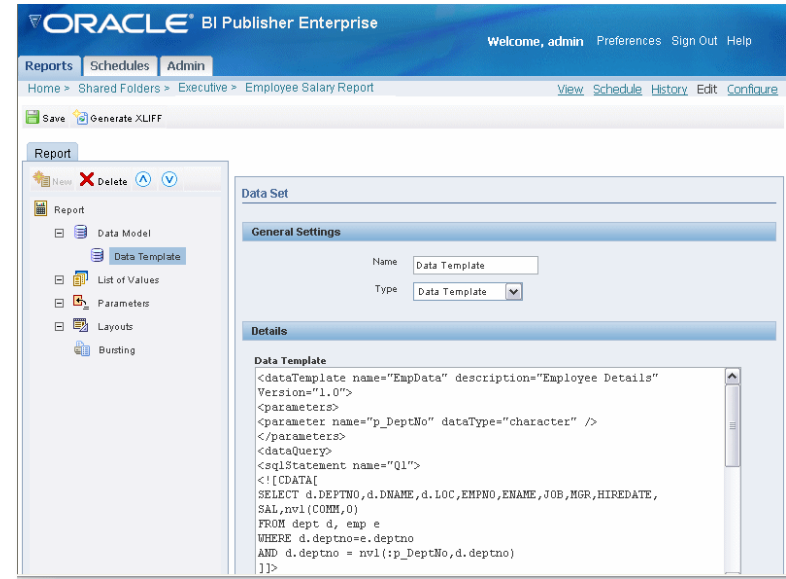
Enabling Scalable Mode for Data Engine (10g)

- Set scalable mode property to “on” in Data Template

```
<properties>
```

```
  <property name="scalable_mode" value="on" />
```

```
</properties>
```



Data Model Design

Objectives

- Optimize data extraction
- Simplify layout design for report developers
- Reduce document generation time

Data Model Design

Data Extraction

- Leverage back-end system resources (when possible)
 - Join data
 - Filter & group data
 - Perform expensive calculations & data transformations
 - Sort data
- Consider going against BI Server instead of extracting data directly from the source systems

```
Select
  o."OFFICE_DSC" as "Office"
  sum(f."REVENUE") as "Sales Sum"
From
  "BISAMPLE"."SAMP_REVENUE_F" f
  "BISAMPLE"."SAMP_OFFICES_D" o
Where
  o."OFFICE_KEY"=f."OFFICE_KEY"
group by
  o."OFFICE_DSC"
```

20 Vs 20,000 records

Data Model Design

Data Extraction

- Parameters & LOVs
 - Cache LOVS for better performance
 - For large LOVs, pass **NULL** to the parameter when users select **All** & modify WHERE clause in Data Set query to use the NVL function.

For example:

```
"Where  
order_id=nvl(:p_orcid,  
order_id)"
```

The screenshot displays two configuration panels in Oracle APEX. The top panel, titled "List of Values", contains a table with two entries: "orders-list" and "customer-list", both of type "SQL Query" and data source "demo". Below the table, the configuration for "orders-list" is shown, including a checked "Cache Result" option and an SQL query: `select "ORDERS_VIEW"."ORDER_ID" as "ORDER_ID" from "OE"."ORDERS_VIEW" "ORDERS_VIEW" where "ORDERS_VIEW"."CUSTOMER_ID" IN (:P_CUSTID)`. The bottom panel, titled "Parameters", contains a table with two entries: "P_CUSTID" (String, Default Value 109, Menu) and "P_ORCID" (String, Menu). Below the table, the configuration for "P_ORCID" is shown, including a checked "Multiple Selection" option, a checked "Can select all" option, and radio buttons for "NULL Value Passed" (selected) and "All Values Passed".

#Name	Type	Data Source
orders-list	SQL Query	demo
customer-list	SQL Query	demo

orders-list: Type: SQL Query

Options Cache Result

SQL Query

```
select "ORDERS_VIEW"."ORDER_ID" as "ORDER_ID"  
from "OE"."ORDERS_VIEW" "ORDERS_VIEW"  
where "ORDERS_VIEW"."CUSTOMER_ID" IN (:P_CUSTID)
```

#Name	Data Type	Default Value	Parameter Type
P_CUSTID	String	109	Menu
P_ORCID	String		Menu

P_ORCID: Type: Menu

Display Label: Order Number(s):

List of Values: orders-list

Options Multiple Selection

Can select all

NULL Value Passed All Values Passed

Refresh other parameters on change

Data Model Design

Data Extraction

Event triggers

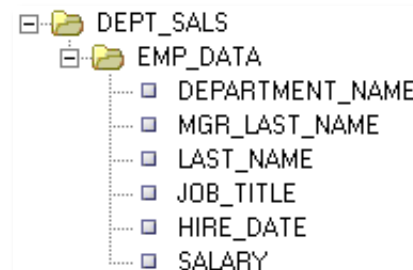
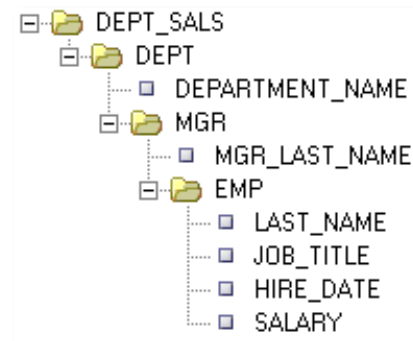
- Before Data Triggers
 - Generate dynamic SQL
 - Populate TEMP tables
 - Set user context
- After Data Triggers
 - Insert rows to a target table
 - Send notifications
 - Clean or delete TEMP tables

```
Select EMPLOYEE_ID,  
        DEPARTMENT_ID,  
        FIRST_NAME,  
        LAST_NAME,  
        EMAIL,  
        PHONE_NUMBER,  
        HIRE_DATE,  
        JOB_ID,  
        SALARY  
  
from employees  
where &p_where_clause
```

Data Model Design

Best Practices for Faster Document Generation

- **Structure data** – to match how data is displayed in the report
- **Use short XML tag names** – they reduce the size of XML data file
- **Use display names** – to simplify template design
- **Create global & group-level aggregate functions** – for best performance, create them in data model instead of report layout
- **Pre-sort data**
Note: Grouping data in data model automatically sorts data by the grouping element
- **Bursting**
It also requires that data in the XML is sorted (or grouped) by the split-by key.





Data Model Design Guidelines

Element Naming

- Avoid re-using the same name for element names; it can cause confusion in template design.
 - For example, `CITY` under `SHIPPING_ADDRESS` and `BILLING_ADDRESS`. But in many cases you are better off using different names e.g. `S_CITY` and `B_CITY`



Data Model Design Guidelines

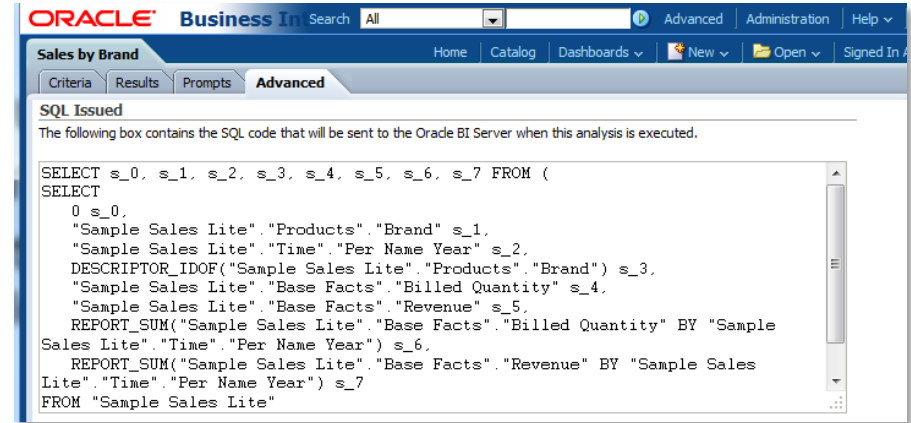
NULL Elements & XML Attributes

- Avoid generating empty tags in the XML
 - Aggregation over fields that contain empty tags **will fail** with a “not a number” exception
 - Missing fields **do not** cause an issue with XSL – for example a print statement will just return an empty string
- Avoid XML attributes
 - They are supported in both RTF & Excel templates but they add an extra layer of complexity; they are not supported in the BI Publisher Layout Editor

Data Model Design Guidelines

OBIEE Data Source

- If possible use SQL/JDBC against BI Server instead of using an Answers Request as a data source
 - **Tip:** Copy the SQL in an Answers Request and paste into the Query Builder text area



The screenshot shows the Oracle Business Intelligence Query Builder interface. The title bar reads "ORACLE Business Intelligence Search All" with navigation buttons for "Advanced", "Administration", and "Help". The main window title is "Sales by Brand" and it has tabs for "Criteria", "Results", "Prompts", and "Advanced". The "Advanced" tab is active, showing a text area titled "SQL Issued". Below the title bar, there are buttons for "Home", "Catalog", "Dashboards", "New", "Open", and "Signed In". The "SQL Issued" text area contains the following SQL code:

```
SELECT s_0, s_1, s_2, s_3, s_4, s_5, s_6, s_7 FROM (  
SELECT  
  0 s_0,  
  "Sample Sales Lite"."Products"."Brand" s_1,  
  "Sample Sales Lite"."Time"."Per Name Year" s_2,  
  DESCRIPTOR_IDOF("Sample Sales Lite"."Products"."Brand") s_3,  
  "Sample Sales Lite"."Base Facts"."Billed Quantity" s_4,  
  "Sample Sales Lite"."Base Facts"."Revenue" s_5,  
  REPORT_SUM("Sample Sales Lite"."Base Facts"."Billed Quantity" BY "Sample  
Sales Lite"."Time"."Per Name Year") s_6,  
  REPORT_SUM("Sample Sales Lite"."Base Facts"."Revenue" BY "Sample Sales  
Lite"."Time"."Per Name Year") s_7  
FROM "Sample Sales Lite"
```

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Template Types ...

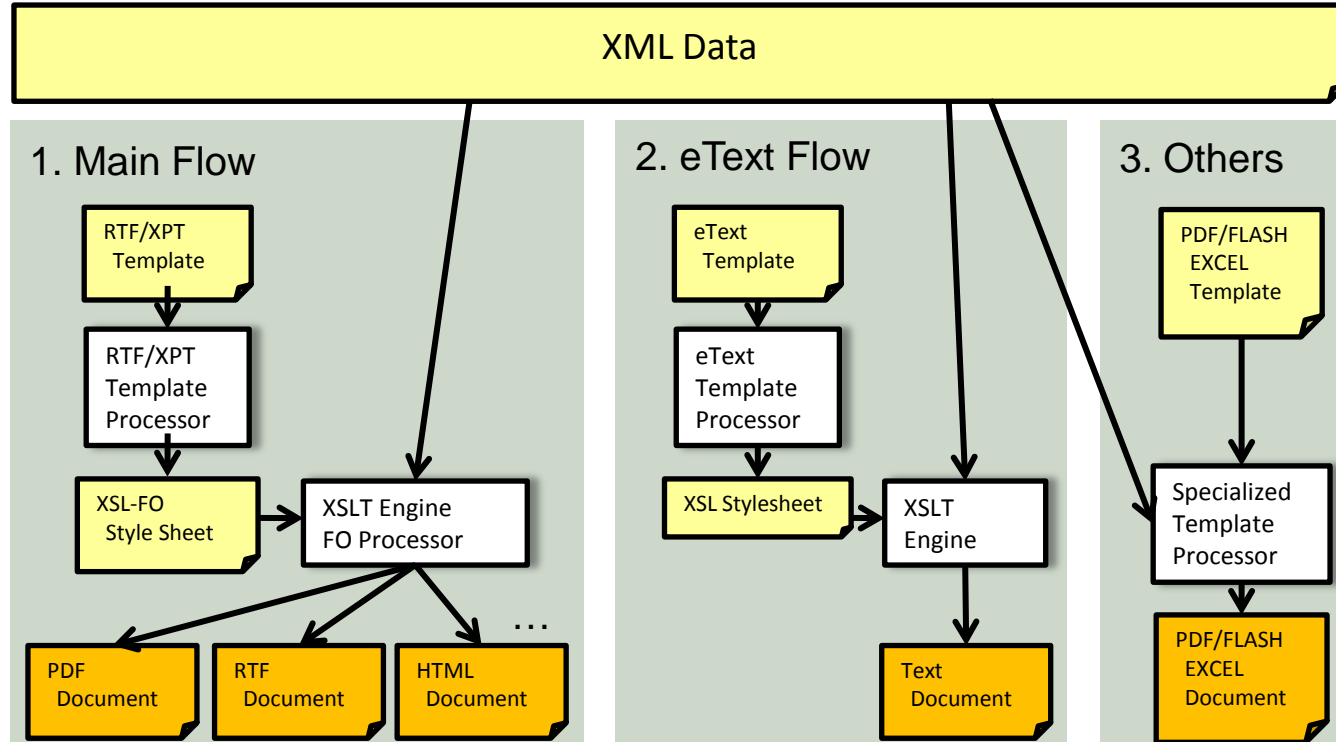
BI Publisher Template 11g	<ul style="list-style-type: none">• Web based Layout Editor – no client installation required• Best for Management Report – WYSIWIG experience• Support Interactive Output• Wide range of output (PDF, HTML, Excel, PPT, RTF, MHTML)
RTF Templates	<ul style="list-style-type: none">• Easy to create w/ BI Publisher Template Builder Add-in to Word• RTF marked up with XSL code or BI Publisher simplified XSL• Greatest flexibility and functionality for pixel perfect reports• Wide range of output (PDF, HTML, Excel, PPT, RTF, MHTML)
PDF Forms	<ul style="list-style-type: none">• PDF forms with XML elements mapped to form fields.• Great to use with government forms• PDF output only• Create in Acrobat Professional

Template Types ... continued

Excel Templates	<ul style="list-style-type: none">• Excel w/ data mapped to named cells & Excel and XSL formatting• Great for formatted, true Excel output and burst over sheets• Excel XLS output only
Excel Analyzer Templates	<ul style="list-style-type: none">• Great to get data into Excel & and refresh data w/ parameters• Excel output only
Flash Templates	<ul style="list-style-type: none">• SWF files with BI Publisher data – for sophisticated interactivity• Create in Adobe Flex Builder
XSL Style Sheets	<ul style="list-style-type: none">• Allows for third party tools and legacy solutions
e-Text Templates	<ul style="list-style-type: none">• RTF with table of statements to place fields and separators• Great for character delimited or fixed position docs (EFT & EDI)• Text output only

Oracle BI Publisher Enterprise

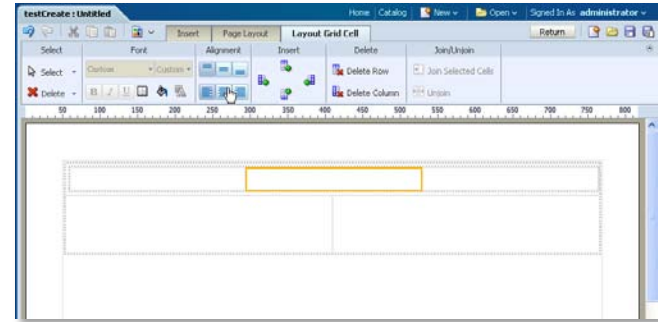
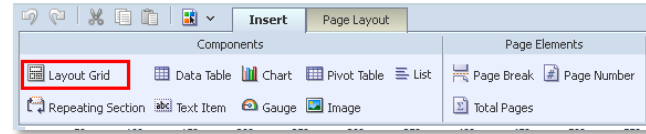
Document Formatting Process



BI Publisher Template Best Practices

Design Consideration

- Use Layout Grids to position components
- Layout Grids can be nested
- Layout Grid Cell can be joined
- The minimum height of rows can be fixed
- Layout Grids behave like tables in RTF Templates



BI Publisher Template Best Practices

Design Consideration

- The Interactive Viewer is one of BI Publisher's most promising new features
- Interactivity works best for flat tables or simple nested master-detail data sets
- Unrelated queries or groups can not interact
- Disable interactions for unrelated queries in the "Configure Events" Dialog

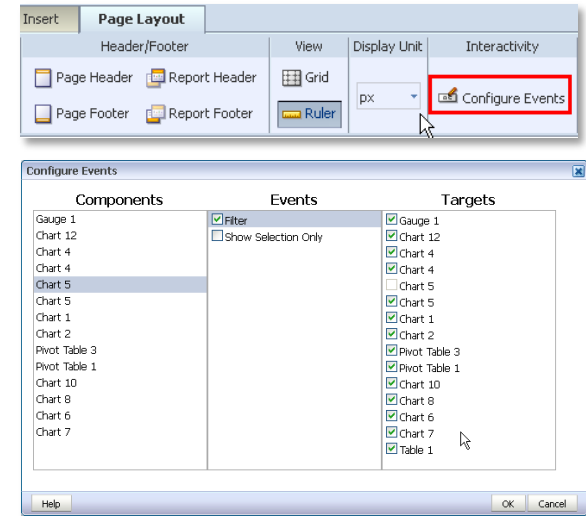
Problem: Country on two branches

Data
G1
 Country
 Revenue
G2
 Country
 Cost



Better: Country in common parent

Data
G1
 Country
 G2
 Revenue
 G3
 Cost



RTF Template Best Practices

Use Word Tables

- Use tables to control precisely where field data will be placed in the report

Grp:Supplier

Supplier	Supplier 1				
Address	1 Long Avenue				
Invoice Number	Invoice Date	Currency	GL Date	Entered Amount	Accounted Amount
Grp:Invoice1134922	01-Jan-2007	USD	01-Jan-2007	\$100.00	\$100.00End Invoice
Total for Supplier: Supplier 1				\$100.00	\$100.00

End Supplier

Invoice Tax Summary

Tax Code	Entered Amt	Accounted Amt
Grp:TaxVAT 17.5%	\$100.00	\$100.00End Tax
Report Total	\$100.00	\$100.00

RTF Template Best Practices

Use Form Fields

- Keep the template clean
- Supported by the Template Builder *Field Browser*
- Can be **colored** or hidden to help understand the structure
- Caveat: Word header & footer don't allow form fields

Invoice Number	Date
<?for-each:G_INVOICES?> TRX_NUMBER	TRANSACTION_DATE

Invoice Number	Date
F TRX_NUMBER	TRANSACTION_DATE

Find: Find Next

Text	Code
COUNTRY	<?COUNTRY?>
AS_OF_DATE	<?AS_OF_DATE?>
TRX_CURRENCY_CODE	<?TRX_CURRENCY_CODE?>
CF_INV_BAL_DISPLAY	<?CF_INV_BAL_DISPLAY?>
F TRX_NUMBER	<?for-each:G_INVOICES?>
TRX_NUMBER	<?TRX_NUMBER?>
TRANSACTION_DATE	<?TRANSACTION_DATE?>
1,000.00	<?TRANS_AMOUNT?>
500.00	<?TRANS_AMOUNT_REMAINING?>
E	<?end for-each?>

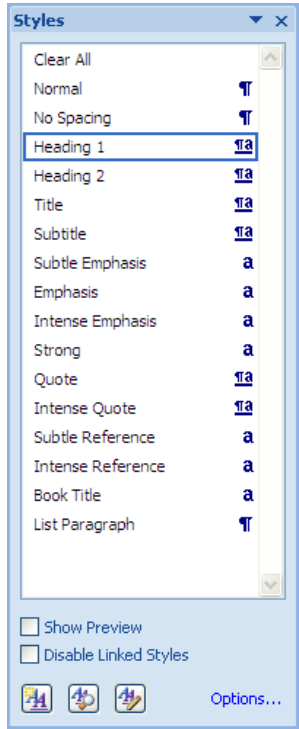
Edit

<?for-each:G_INVOICES?>

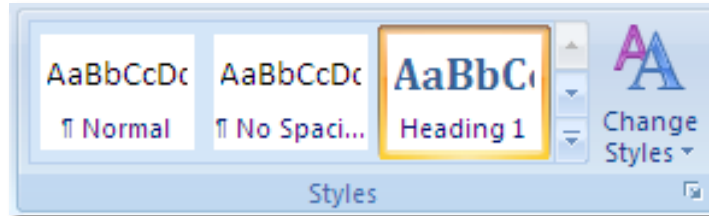
Update Refresh Show All Close Help

RTF Template Best Practices

Use Word Styles



- Achieve consistency in the template and between templates
- In 11g use Style Templates to control the template styles



RTF Template Best Practices

Don't overcomplicate your template

- Keep it easy to understand, debug and maintain
- In general better to have different business documents in different templates
- Try to limit the logic in templates to simple if or loop statements
- Use sub templates to simplify documents if necessary
- Many calculations are better performed in the data model

Document Formatting and Layout

Sub Templates: Introduction

- What is a sub template?
 - A document that contains layout and or code that can be defined once and used multiple times
 - Multiple functions (called “templates” in XSL) or text segments can be defined in a single sub template
- Sub template types
 - XSL sub templates for code re-use or separation
 - RTF sub templates for layout re-use
 - Caveat: Use of RTF sub templates makes it hard to understand the template structure

Document Formatting and Layout

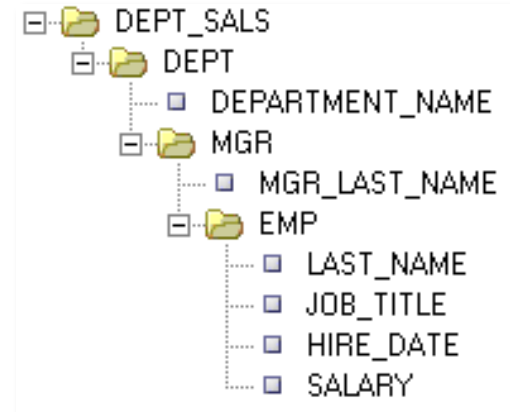
Sub Templates: Use Cases

- RTF sub templates
 - Re-use common layouts such as header/footer
Starting with 11.1.1.3 style templates should be used instead.
 - Internationalized address block
- XSL sub templates
 - Transformations for complex chart requirements
 - Dynamically apply formatting to a portion of data
(e.g. sub scripting / super scripting / chemical formula)
 - Print formatted XHTML data – convert to FO using sub template
(as used in Oracle Contracts)

RTF Template Best Practices

Performance Considerations: XPATH Concepts

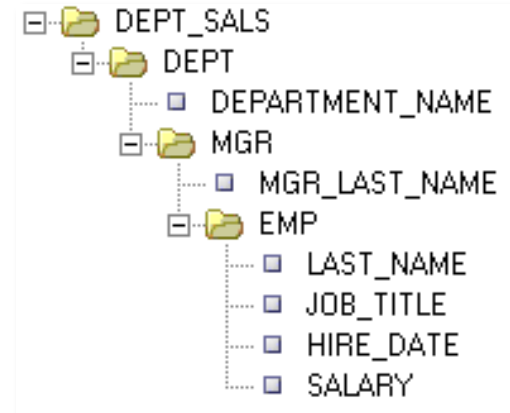
- BI Publisher uses XPATH to access data elements
- DEPARTMENT_NAME is inserted as `<?DEPARTMENT_NAME?>`
- `<?DEPARTMENT_NAME?>` is translated to the XPATH `./ /DEPARTMENT_NAME`
- `./ /DEPARTMENT_NAME` searches for DEPARTMENT_NAME in the complete sub-tree starting from current context



RTF Template Best Practices

Performance Considerations: XPATH Tuning

- For small documents the search time is negligible
- For large datasets use the full relative path
 - Instead of `<?for-each: DEPT?>`
use `<?for-each: /DEPT_SALS/DEPT?>`
 - Instead of `<?DEPARTMENT_NAME?>`
use `<? ./DEPARTMENT_NAME?>`
- Large documents may not fit into memory and the search may require disk access





RTF Template Best Practices

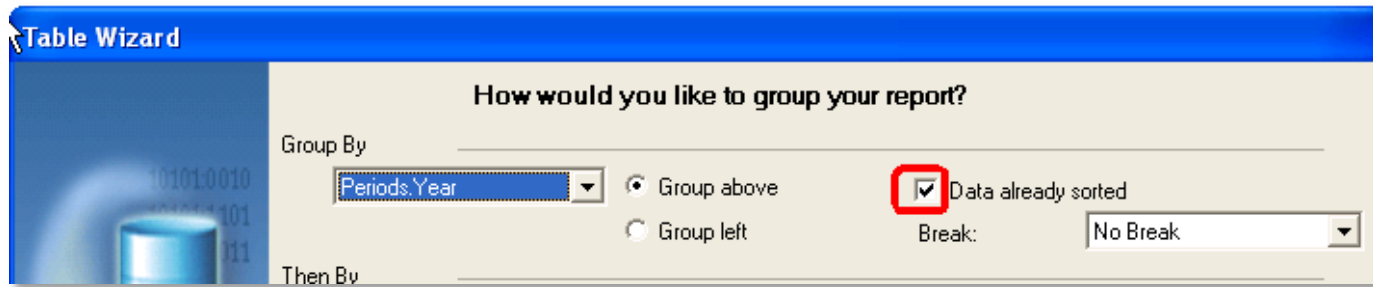
Performance Considerations: XPATH Tuning & Tables

- XPATH Tuning
 - Start with the outer loops and outer most data access
 - Reducing full tree searches will provide bigger improvements than optimizing access in a small subset of the data
 - Fixing the XPATH in a single for-each loop may be all the performance tuning you need to do
- Tables
 - Large tables that span hundreds of pages consume considerable server resources. If possible group the data and create a table inside each grouping

RTF Template Best Practices

Performance Considerations: Grouping

- Better to Sort data in the data model
- Group By <?for-each-group?> will force the XSL engine to sort data
- Checking “Data already sorted” option in the Table Wizard will not re-sort data (good thing)



Template Best Practices

Summary

- Use tables (layout grids) to place data fields precisely
- Optimize your data structure for interactivity if necessary
- Use form fields and word styles for clarity
- Don't overcomplicate your templates
- Use sub templates for re-use and complex code
- Performance optimization
 - Optimize the XPATH
 - Focus optimization on outer loops
 - Sort in the data base and use “group-adjacent” in the template

Resources

- Certification matrix (11.1.1.x)
<http://www.oracle.com/technetwork/middleware/bi-enterprise-edition/bi-11gr1certmatrix-166168.xls>
- High availability white paper
<http://www.oracle.com/technetwork/middleware/bi-publisher/bip-cluster-deployment-366859.pdf>
- Sizing Spreadsheet for BI Publisher Enterprise 10g
My Oracle Support Note - 948841.1
- Sub-templates white paper
<http://www.oracle.com/technetwork/middleware/bi-publisher/overview/bip-subtemplate-1-132933.pdf>
- QUARTZ Scheduling (clustering) wiki page
<http://wiki.opensymphony.com/display/QRTZ1/ConfigJDBCJobStoreClustering>
- CPU Ratings
http://www.spec.org/cpu2006/results/cpu2006.html#SPECint_rate

More Good Stuff

BI Publisher Demo Pod: Moscone South, Right - SR-287

What	Where	When
32020: Building Reports and Data Models in BI Publisher 11g (HANDS ON LAB)	Marriott Marquis - Salon 5/6	Wed 1:15–2:15 pm
16762: Become a Reporting Superstar with BI Publisher Best Practices	Moscone West Room 2000	Wed 5-6 pm
15010: BI Publisher: Anatomy of a Template	Moscone West Room 2000	Thr 1:30 – 2:30 pm

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Oracle Technology Network

<http://www.oracle.com/technetwork/middleware/bi-publisher/overview/index.html>

Oracle BI Publisher Blog

from pixel-perfect to interactive reporting...

Forum: BI Publisher

Covers Oracle BI Publisher (formerly XML Publisher)



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