

OBIEE 12c Migration

2016 BIWA Summit

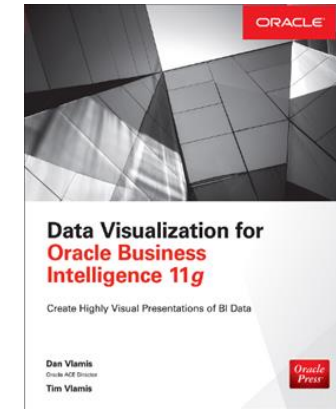
BIWA Summit 2016

Brian Terry and Dan VlamiS

Tuesday, January 26, 2016

VlamiS Software Solutions

- VlamiS Software founded in 1992 in Kansas City, Missouri
- Developed more than 200 Oracle BI systems
- Specializes in ORACLE-based:
 - Data Warehousing
 - Business Intelligence
 - Data Mining and Predictive Analytics
 - Data Visualization
- Expert presenter at major Oracle conferences
- www.vlamiS.com (blog, papers, newsletters, services)
- Co-authors of book “Data Visualization for OBI 11g”
- Co-author of book “Oracle Essbase & Oracle OLAP”
- Oracle University Partner
- Oracle Gold Partner



 EDUCATION RESELLER

 Gold Partner

Specialized
Oracle Business Intelligence
Foundation Suite 11g



Dan VlamiS and Brian Terry

■ Dan VlamiS



- Founded VlamiS Software Solutions in 1993
- 25+ years in business intelligence, dimensional modeling
- Oracle ACE Director
- Developer for IRI (expert in Oracle OLAP and related)
- BA Computer Science Brown University

■ Brian Terry

- 30+ Years Experience in Software / Hardware
- 5th Year at VlamiS
- 11 Years at Oracle
- Activities: Analytics / Visualization / Physical Computing and Analytics



Vlamiis Involvement in Presentations

Presenter	Time	Location	Title
Dan Vlamiis and Brian Terry	Tues 2:40 PM	Rm 104	Preparing for BI 12c Upgrade
Tim Vlamiis and Arthur Dayton	Tues 4:30 PM	Rm 102	Visual Analyzer and Best Practices for Data Discovery
Mark Hornick (Oracle) and Tim Vlamiis	Wed 9:00 AM	Bldg 500 HoL	Scaling R to New Heights with Oracle Database
Maury Carollo (AMC) and Cathye Pendley	Wed 2:20 PM	Rm 104	BI Movie Magic: Maps, Graphs, and BI Dashboards at AMC Theatres
Dan Vlamiis and Mike Caskey	Wed 4:30 PM	Auditorium	Analytic Views - Bringing Star Queries into the Twenty-First Century



Presentation Agenda

- Overview of Migration Steps
- Pre-Migration Activities
- Migration Workflow (OBIEE 12c installation)
- Post Migration Steps (OBIEE / BI Publisher)
- Administration Differences
- Baseline Validation Tool (BVT) Overview
 - BVT Example
 - BVT Automation for repeatable regression testing



Migration Overview

- Analyze and prepare the existing 11g system in preparation for migration to 12c
- Understand what is migrated and how
- Define a test plan to validate the migration
- Test a sample migration on a representative subset of the existing 11g system
- Perform the migration
 - Can be part of an initial OBIEE 12c installation or can be performed in an existing 12c environment*
- Perform post migration steps

* This presentation will focus on migration as part of an OBIEE 12c install



Pre Migration Steps

- Analyze and Prepare the 11g System
 - Name and size of the repository
 - Name and size of the BI presentation catalog
 - Existing security model details
 - Data sources
 - Scheduled jobs
 - Links to external systems

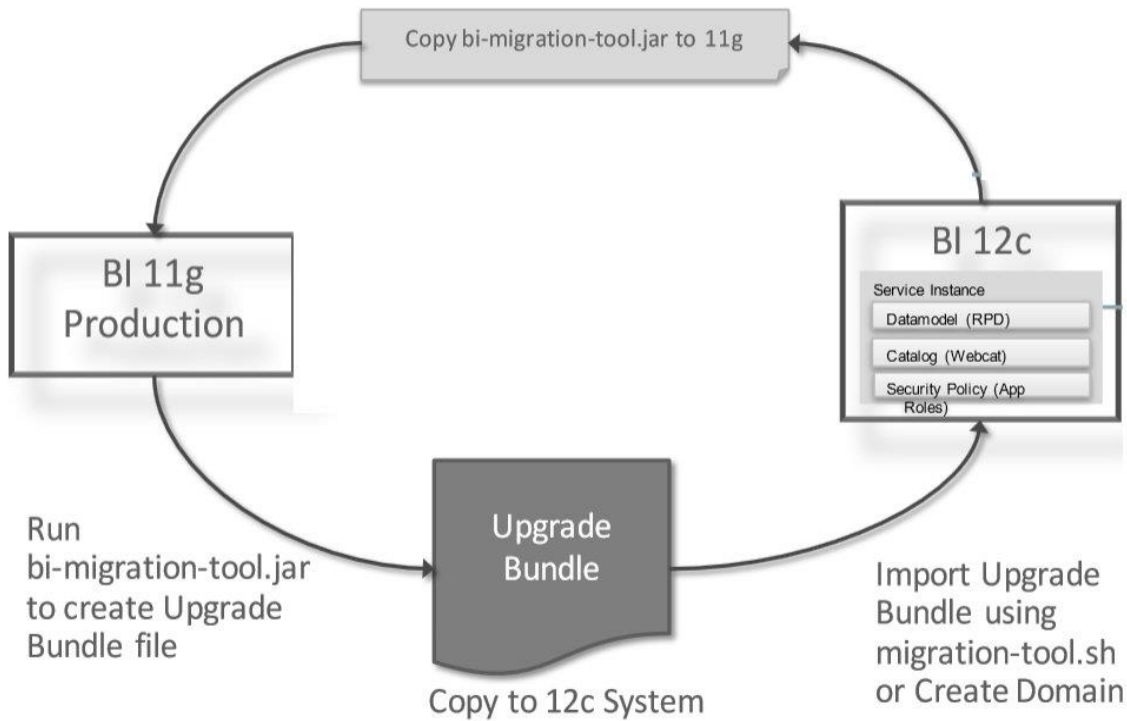


Migration Workflow (phase 1)

Oracle BI 11g -> 12c Upgrade Flow

Overall Steps

1. Install FMW Binaries
2. Install OBIEE 12c Binaries
3. Copy Migration Tool to Existing 11g system and Run against it
4. Copy upgrade bundle (.jar) back to 12c system and run config.sh* or migration tool to integrate the migrated objects



* You can use configuration tool if new domain, or use migration tool if existing domain



Migration Steps: Install 12c Software

- 12c Installation Steps:
 - Ensure system certification and platform prerequisites are met
 - Ensure latest supported JDK is available
 - Install Fusion Middleware Infrastructure (java -jar command *–not traditional OUI*)
 - BI Installer is an executable program
 - Install OBIEE 12c in *Same Home* as FMW infrastructure
 - Run the OBIEE installation program – this will lay down the OBIEE binaries



Migration Steps: Run Migration Tool

- 12c Migration is an out of place migration (i.e. fresh install, not an overlay of existing environments)
 - Copy the migration tool from the OBIEE 12c installation tree to the existing 11g system (this is a command line tool)

Located in:

```
[ORACLE_HOME]/user_projects/domains/bi/bitools/bin/migration-tool.sh
```

- Run the migration tool against the 11g system – this will produce a BI Archive File (jar) that includes the RPD, Webcat, Security and other information packaged up.
- Copy the jar file to a location on the new OBIEE 12c system (it will be used during the configuration of the OBIEE 12c environment)



Migration Tool Example

```
java -jar /scratch/jifarra/installs/oracle-home-latest/bi/migration-tool/jlib/bi-migration-tool.jar out /scratch/jifarra/installs/11g-20150316-1521/Oracle_BI1 /scratch/jifarra/installs/11g-20150316-1521/user_projects/domains/bifoundation_domain /tmp/migration-tool-test/test_export.jar
```

Parameter	Description
<code>/scratch/jifarra/installs/oracle-home-latest/bi/migration-tool/jlib/bi-migration-tool.jar</code>	The location where the BI Migration Tool is copied.
<code>/scratch/jifarra/installs/11g-20150316-1521/Oracle_BI1</code>	The path where the Oracle home directory is located.
<code>/scratch/jifarra/installs/11g-20150316-1521/user_projects/domains/bifoundation_domain</code>	The path where the Domain home directory is located.
<code>/tmp/migration-tool-test/test_export.jar</code>	The location where the export bundle is created.

This is copied to the 12c system



Migration Steps: Configure OBIEE 12c

- The OBIEE 12c configuration is accomplished with the config tool

`(config.sh - Linux / config.bat -MS Windows)`

- As OBIEE is configured into a new Weblogic domain, the following information is required)
 - Domain Dir
 - Domain Name
 - Admin Credentials
 - Database connect info
(RCU is run here and requires account with DBA privs to run)
 - Choice of Initial Application
 - Sample App (new from built-in templates)
 - The JAR file you created from the migration tool from 11g

At this point the configuration wizard will run and produce a working new (or migrated) OBIEE 12c instance

Note: if you have already configured a 12c system (i.e. you already have your domain built) you can use a migration script against your jar instead of the config tool



Post Migration steps for OBIEE

- Manual Operations (optional depending on environment)
 - Migrate Catalog Groups
 - Migrate WLS Security Config Settings / Log configurations etc. from your 11g system
 - Migrate your database connect information
 - Configure Usage tracking
 - Add BI Roles



Post Migration steps for BI Publisher

- Migrate BI Publisher Configuration
- Migrate scheduler jobs and history
- Configure passwords for BI Publisher data sources
- BI Publisher Upgrade Tool

Location:

```
ORACLE_HOME\bi\modules\oracle.bi.publisher\BIP12CUpgrade.zip
```

Syntax:

```
sh BIP12CUpgrade.sh PATH_TO_ORACLE_HOME  
-export_configuration <Source_BIPDomain_Path>  
<Export_BIP_Directory_Path>
```

```
sh BIP12CUpgrade.sh PATH_TO_ORACLE_HOME  
-import_configuration <Export_BIP_Directory_Path>  
/export_bip <Target_BIPData_Repository_Path>
```



BI 12c Administration Differences

- Startup / Shutdown are different (no more opmnctl*)
 - Different Locations for scripts

```
(UNIX) DOMAIN_HOME/bin/startManagedWebLogic.sh
      managed_server_name admin_url
(Windows) DOMAIN_HOME\bin\startManagedWebLogic.cmd
      managed_server_name admin_url
```

- Start up application scripts for components

```
startApplication(appName, [options])
stopApplication(appName, [options])
```

*System components are now managed by Weblogic Management Framework



BI 12c Administration Differences

- Single location for WLST

In previous releases, you invoked WLST from different locations, depending on whether you were using the commands for Oracle WebLogic Server, system components, or Java components such as Oracle SOA Suite. In this release, you invoke WLST from:

```
(UNIX) ORACLE_HOME/oracle_common/common/bin/wlst.sh
```

```
(Windows) ORACLE_HOME\oracle_common\common\bin\wlst.cmd
```



BI 12c Administration Differences

- Oracle Home redefined (no middleware home)
- Oracle Web Cache is not a part of Fusion Middleware
- Moving from test to production carried out in a different way
- New commands for process control
- Single enterprise install
(provides both Admin Server and Managed Server)
- Changes to scaling out (simplified clustering)
- New reorganized documentation format



BI 12c Administration Differences

- Moving Between Environments dev-test-prod
(metadata (content, data model and authorization))
 - Requires file system privileges
 - Commands run in offline only
 - Read-only for export (source system unchanged)
 - Uses WLST Scripting
 - BI deployments exist in different domains

May be used for:

- Move system to different hardware
- Move to a different operating system
- Move to a different physical location



BI 12c Administration Differences

- To move from a Test to a Production Environment
 - Options:
 - export all (all users / datasources same between systems)
 - export without folder content (user acceptance testing)
 - export without connection pool credentials (test to prod)

```
exportServiceInstance(domainHome, serviceInstanceKey, workDir,  
exportDir, applicationName=None, applicationDesc=None,  
applicationVersion=None, includeCatalogRuntimeInfo=false,  
includeCredentials=None)
```

Creates a BI Archive (.bar) file



BI 12c Administration Differences

Example move from a Test to a Production environment

`exportServiceInstance`

```
( '/u01/Oracle/Middleware/Oracle_Home/user_projects/domains/bi',  
'ssi', '/u01/workDir', '/u01/exportDir', applicationName=None,  
applicationDesc=None,  
applicationVersion=None, includeCatalogRuntimeInfo=false,  
includeCredentials=None)
```

`importServiceInstance`

```
( '/u01/Oracle/Middleware/Oracle_Home/  
user_projects/domains/bi','ssi','/u01/exportDir/ssi.bar')
```



Reorganized Documentation

ORACLE Help Center | Middleware | Search products | Welcome Brian

< Middleware

Get Started

Tasks

Deploy

Learn More

Books

Oracle Fusion Middleware 12c (12.2.1)

Oracle Business Intelligence - Tasks

[Get Started](#)

Release Notes
[Release Notes for Oracle BI](#)
[All Fusion Middleware release notes](#)

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Migrate BI EE from an 11g Release
[Migrate Oracle Business Intelligence](#)

<http://docs.oracle.com/middleware/1221/bisuite/index.html>

(click Books link to get New Features in Version 12.2.1 section)



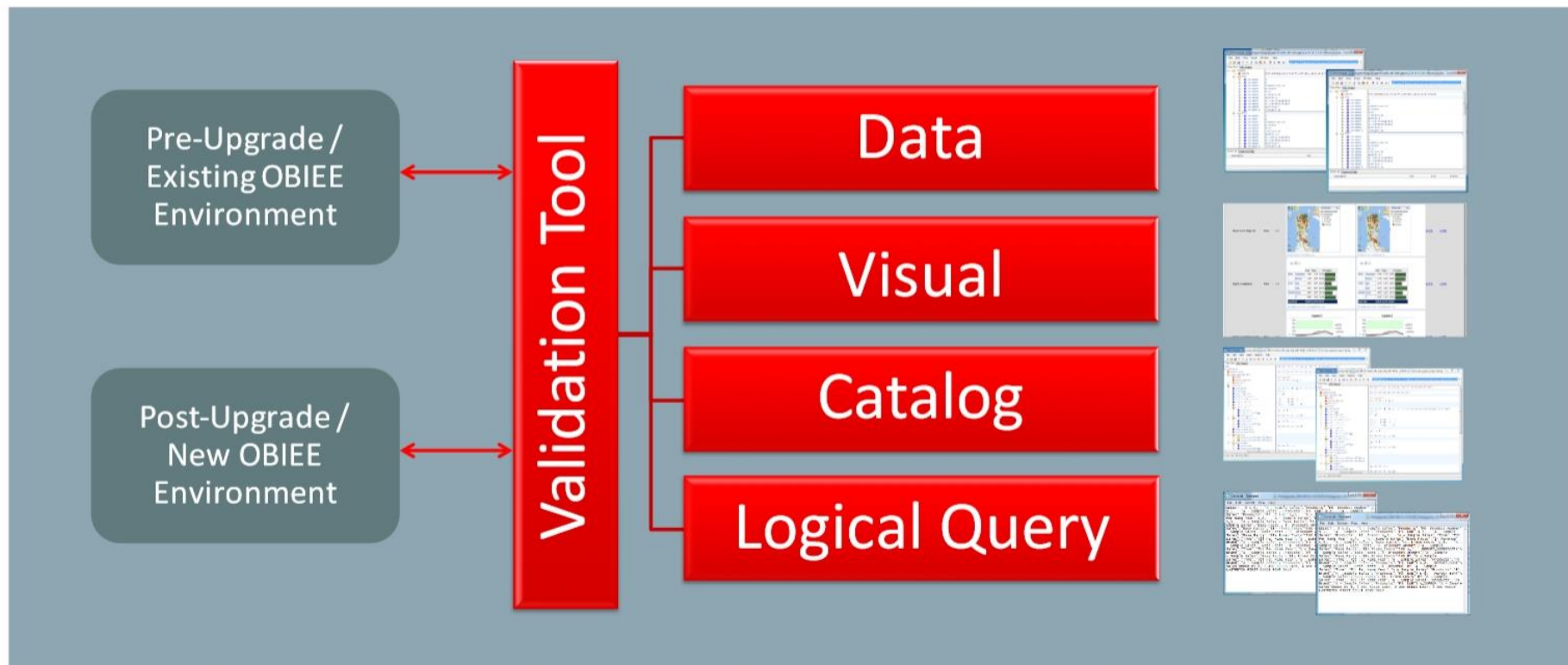
Summary of Differences

- OBIEE 12c technical architecture and administration has evolved to:
 - Simplify Installation
 - Align with Oracle Fusion Middleware architecture in general
 - Simplify Migration from earlier releases
 - Establish baselines and support regression testing strategies
 - Simplify daily operations (e.g. startup / shutdown)
 - Simplify movement of environments (lifecycle support)



Baseline Validation Tool (BVT)

BVT is a command line utility to perform regression testing against any two Presentation catalogs





BVT Plug-ins

- **Catalog Plug-in**
 - compares metadata on catalog objects
- **UI Plug-in**
 - shows side by side results of analyses/dashboards
 - allows setting of thresholds for tolerance and scoring
 - includes links to each result
- **Reports Plug-in**
 - exports reports to .csv / compares them (answers / composer)
- **Logical Query Plug-in**
 - downloads and saves logical queries
 - identifies changes
- **Dashboard Plug-in**
 - exports analyses results to XML and compares them
 - supports setting up “prompt paths”



BVT Characteristics

BVT enables the creation of a baseline set of data that is then able to be compared with data from another (or the same) system that may be the result of an upgrade, patch or migration, or any change.

- A way to perform automated regression testing on any two compatible Oracle BIEE environments
- Works within and across 11g and 12c versions
- Works on Linux and Windows
- A way to instill confidence when performing an upgrade, migration or significant change to an existing environment

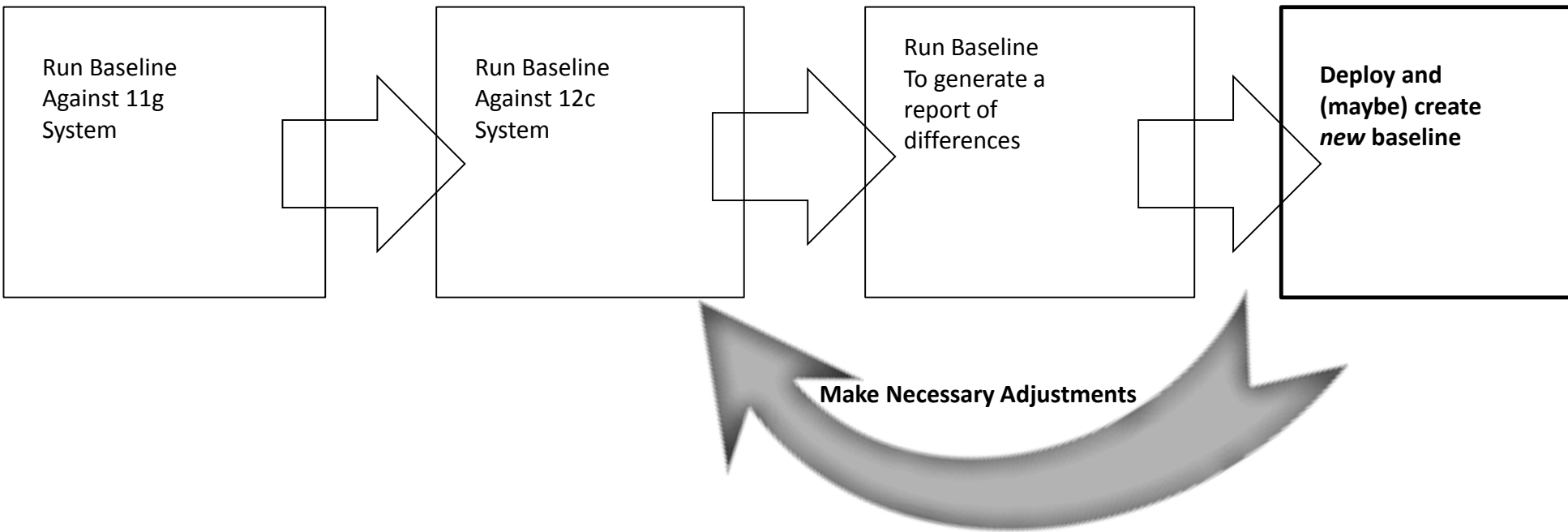


Baseline Validation Tool

- Determine regression test methodology
 - Select sample set of analyses, dashboards etc. to establish your baseline
 - Determine frequency to run regressions
- Use BVT to execute your regression test strategy
 - BVT is a command line tool
(many modes based on command line parameters)
 - Run 3 Times:
 - First Run to establish base line against existing system (e.g. 11g)
 - Second Run against a patched or new version system (e.g. 12c)
 - Third Run to generate reports from the output of the first two runs
 - Iterate as necessary to correct anomalies or inconsistencies



Baseline Workflow (BVT)





BVT Governed by XML Configuration File

- BVT plug-in architecture / tests are optioned by XML config. file entries

```
<Tests>
  <TestPlugin name="com.oracle.biee.bvt.plugin.catalog" enabled="true">
    <Test name="GetCatalogTest" enabled="true">
      <Parameter name="CatalogRoot" value="/shared/01. QuickStart"/>
    </Test>
  </TestPlugin>
  <TestPlugin name="com.oracle.biee.bvt.plugin.ui" enabled="true">
    <Parameter name="CatalogRoot" value="/shared/01. QuickStart"/>
    <!-- how many threads to spawn to load reports, should be greater than 0, less than 50 -->
    <Parameter name="ThreadQueueSize" value="4" />
    <!-- Timeout for loading each report in MSecs should be between 5 secs and 10 mins -->
    <Parameter name="ThreadTimeout" value="60000" />
    <!-- Which BrowserType to use to load reports, Firefox, InternetExplorer. Leave empty for default browser -->
    <Parameter name="BrowserType" value="InternetExplorer"/>
    <Test name="FindNotRenderedComponents" enabled="false">
      <!-- ScoreThreshold should be between 0.00 and 1.00 -->
      <Parameter name="ScoreThreshold" value="0.95"/>
      <Parameter name="DisabledPluginImageTemplate" value=""/>
    </Test>
    <Test name="FindReportSnapshotDifferences" enabled="true">
      <!-- ScoreThreshold should be between 0.00 and 1.00 -->
      <Parameter name="ScoreThreshold" value="0.95"/>
    </Test>
    <Test name="FindDashboardSnapshotDifferences" enabled="true">
      <Parameter name="PromptInputFile" value="DashboardPrompts.txt" />
      <Parameter name="ScoreThreshold" value="0.95"/>
    </Test>
  </TestPlugin>
```



BVT Automation Example

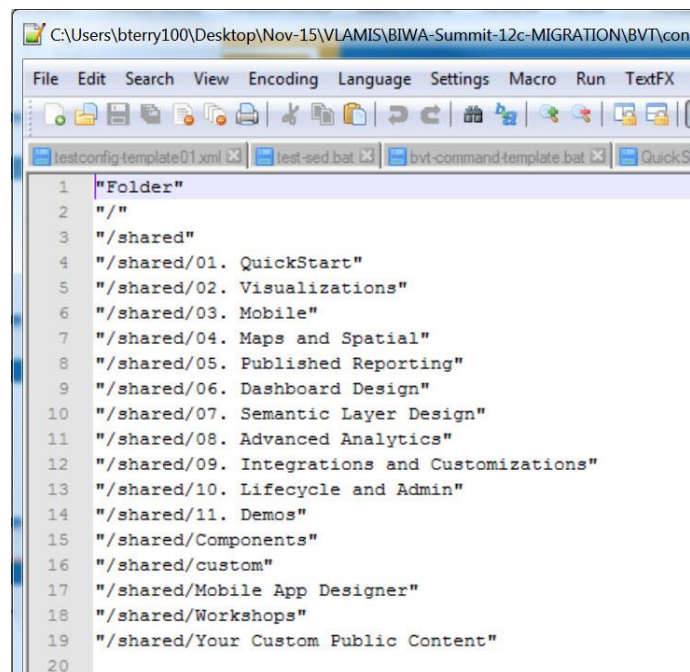
- BVT command line tool can be scripted to run against separate folders for improved granularity
- Example – Shared folder tree in SampleApp 506
 - Use **runcat.sh** to generate a list of folders – output to a file
 - Use text editing and cmd line tools to build custom BVT script with the following characteristics
 - Generated Custom *Result* Directories based on catalog folder names
 - Generated BVT *folder specific* config files
 - Generated .txt files containing customized BVT commands:
Pre/Post/Comparison



runcat.sh

```
runcat.sh -cmd report -offline  
/app/oracle/biee/instances/instance1/SampleAppWebcat -  
forceoutputFile /home/oracle/Desktop/folders01.txt -excelFormat -  
distinct -type Folder -recursionDepth 3 -fields "Folder"
```

Output folder List



```
C:\Users\btery100\Desktop\Nov-15\VLAMIS\BIWA-Summit-12c-MIGRATION\BVT\conf  
File Edit Search View Encoding Language Settings Macro Run TextFX  
testconfig-template01.xml test-seed.bat bvt-command-template.bat QuickS  
1 "Folder"  
2 "/"  
3 "/shared"  
4 "/shared/01. QuickStart"  
5 "/shared/02. Visualizations"  
6 "/shared/03. Mobile"  
7 "/shared/04. Maps and Spatial"  
8 "/shared/05. Published Reporting"  
9 "/shared/06. Dashboard Design"  
10 "/shared/07. Semantic Layer Design"  
11 "/shared/08. Advanced Analytics"  
12 "/shared/09. Integrations and Customizations"  
13 "/shared/10. Lifecycle and Admin"  
14 "/shared/11. Demos"  
15 "/shared/Components"  
16 "/shared/custom"  
17 "/shared/Mobile App Designer"  
18 "/shared/Workshops"  
19 "/shared/Your Custom Public Content"  
20
```



Generate Custom Config (xml) Files

- Text tools will perform a global replace of config file *template* to customize the following properties:
 - Customize the root folder for running the BVT
 - Alter Generic Pre/Post Upgrade name to *folder specific*
 - Generate *folder specific* Result Directories

```
sed s:---:"/shared/01. QuickStart":g <testconfig-  
template01.xml >QuickStart.xml  
sed -i s:+++:"QuickStart":g QuickStart.xml
```

sed is a *nix stream editor

Great *nix command line tools for Windows: <http://sourceforge.net/projects/unxutils/>



Template Conversion

From This:

```
<Deployment name="PreUpgrade+++" description="First Test Target">
  • • •
<Deployment name="PostUpgrade+++" description="Second Test Target">
  • • •
<Tests>
  <TestPlugin name="com.oracle.biee.bvt.plugin.catalog" enabled="true">
    <Test name="GetCatalogTest" enabled="true">
      <Parameter name="CatalogRoot" value="---"/>
    </Test>
  </TestPlugin>
```

To This:

```
<Deployment name="PreUpgradeQuickStart" description="First Test Target">
  • • •
<Deployment name="PostUpgradeQuickStart" description="Second Test Target">
  • • •
<Tests>
  <TestPlugin name="com.oracle.biee.bvt.plugin.catalog" enabled="true">
    <Test name="GetCatalogTest" enabled="true">
      <Parameter name="CatalogRoot" value="/shared/01. QuickStart"/>
    </Test>
  </TestPlugin>
```



Example Script

“all folders”
batch file

```

1 sed s:---:"/shared/01. QuickStart":g <testconfig-template01.xml >QuickStart.xml
2 sed s:---:"/shared/02. Visualizations":g <testconfig-template01.xml >Visualizations.xml
3 sed s:---:"/shared/03. Mobile":g <testconfig-template01.xml >Mobile.xml
4 sed s:---:"/shared/04. Maps and Spatial":g <testconfig-template01.xml >Maps_and_Spatial.xml
5 sed s:---:"/shared/05. Published Reporting":g <testconfig-template01.xml >Published_Reporting.xml
6 sed s:---:"/shared/06. Dashboard Design":g <testconfig-template01.xml >Dashboard_Design.xml
7 sed s:---:"/shared/07. Semantic Layer Design":g <testconfig-template01.xml >
  Semantic_Layer_Design.xml
8 sed s:---:"/shared/08. Advanced Analytics":g <testconfig-template01.xml >Advanced_Analytics.xml
9 sed s:---:"/shared/09. Integrations and Customizations":g <testconfig-template01.xml >
  Integrations_and_Customizations.xml
10 sed s:---:"/shared/10. Lifecycle and Admin":g <testconfig-template01.xml >Lifecycle_and_Admin.xml
11 sed s:---:"/shared/11. Demos":g <testconfig-template01.xml >Demos.xml
12 sed s:---:"/shared/Components":g <testconfig-template01.xml >Components.xml
13 sed s:---:"/shared/custom":g <testconfig-template01.xml >custom.xml
14 sed s:---:"/shared/Mobile App Designer":g <testconfig-template01.xml >Mobile_App_Designer.xml
15 sed s:---:"/shared/Workshops":g <testconfig-template01.xml >Workshops.xml
16 sed s:---:"/shared/Your Custom Public Content":g <testconfig-template01.xml >
  Your_Custom_Public_Content.xml
17 sed -i s:++:"QuickStart":g QuickStart.xml
18 sed -i s:++:"Visualizations":g Visualizations.xml
19 sed -i s:++:"Mobile":g Mobile.xml
20 sed -i s:++:"Maps and Spatial":g Maps_and_Spatial.xml
21 sed -i s:++:"Published Reporting":g Published_Reporting.xml
22 sed -i s:++:"Dashboard Design":g Dashboard_Design.xml
23 sed -i s:++:"Semantic Layer Design":g Semantic_Layer_Design.xml
24 sed -i s:++:"Advanced Analytics":g Advanced_Analytics.xml

```

Specific Example (single folder)

```

1
2 #CONVERT TEMPLATE XML TO FOLDER SPECIFIC XML
3 sed s:---:"/shared/01. QuickStart":g <testconfig-template01.xml >QuickStart.xml
4
5 #ALTER FOLDER SPECIFIC NAME FOR PRE-POST RUN RESULTS DIRECTORY
6 sed -i s:++:"QuickStart":g QuickStart.xml
7
8 #GENERATE FOLDER SPECIFIC BVT COMMANDS FROM COMMAND TEMPLATE
9 sed s:++:"QuickStart":g <bvt-command-template.bat >QuickStart-bvt.bat

```



Generate Custom BVT Commands

The Following Commands are generated so you can either paste them to a command line or incorporate them into a batch/shell script

```
sed s:++:"QuickStart":g <bvt-command-  
template.bat >QuickStart-bvt.txt
```

Converts from This:

```
<PRE UPGRADE COMMAND use:> bin\obibvt -deployment PreUpgrade+++ -config +++.xml  
<POST UPGRADE COMMAND use:> bin\obibvt -deployment PostUpgrade+++ -config +++.xml  
<COMPARE RESULTS COMMAND use:> bin\obibvt -compareresults Results_+++\PreUpgrade+++ Results_+++\PostUpgrade+++ -config +++  
.xml |
```

To This:

```
<PRE UPGRADE COMMAND use:> bin\obibvt -deployment PreUpgradeQuickStart -config QuickStart.xml  
<POST UPGRADE COMMAND use:> bin\obibvt -deployment PostUpgradeQuickStart -config QuickStart.xml  
<COMPARE RESULTS COMMAND use:> bin\obibvt -compareresults Results_QuickStart\PreUpgradeQuickStart  
Results_QuickStart\PostUpgradeQuickStart -config QuickStart.xml |
```



END OF PRESENTATION

- SPARE PARTS BELOW
- Addl slides of Whats New



OBIEE Major Releases

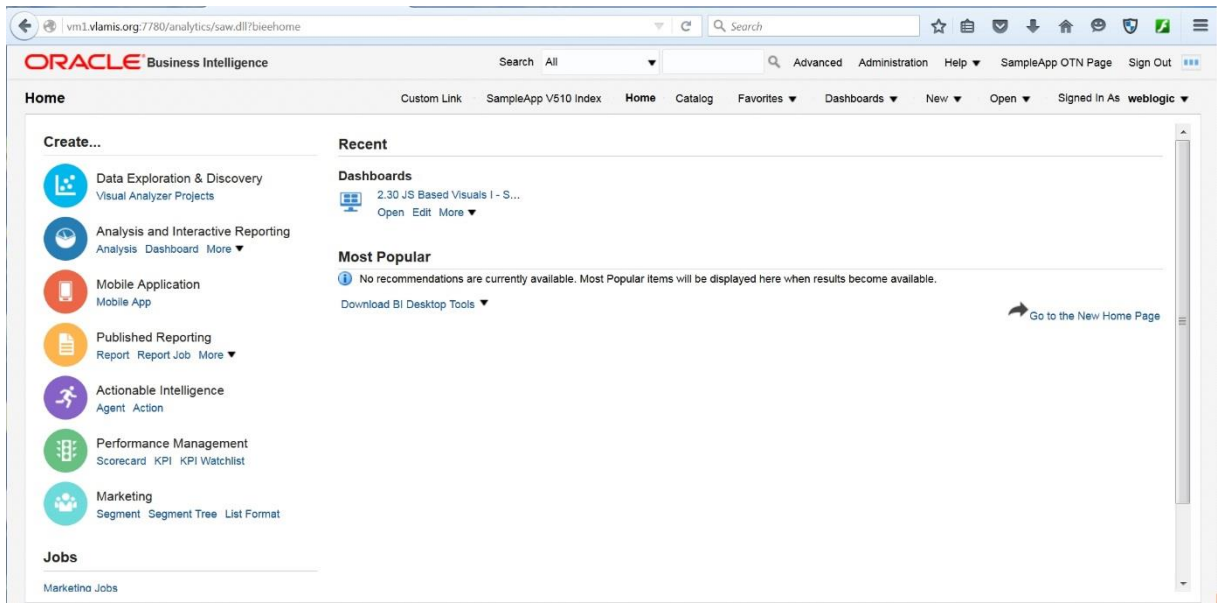
- 11.1.1.3 (August 2010)
 - Huge release with major new functionality
- 11.1.1.5 (May 2011)
 - BIWA TechCast May 25: [Oracle BI 11.1.1.5 Released - Changes and New Features](#)
 - Platform for BI Apps 7.9.6.3 to migrate to OBIEE 11g
 - Introduction of BI Mobile (iPad only)
 - OLAP integration
 - 64-bit Admin Tool, separate install
- 11.1.1.6 (February 2012)
 - BIWA TechCast Feb 29: [Oracle BI 11.1.1.6 New Features](#)
 - Platform for Exalytics (announced Oct 2011)
 - TimesTen integration
 - New features mostly for Exalytics
- 11.1.1.6.2 and 11.1.1.6.2 BP1 (May 2012 and June 2012)
 - BIWA TechCast Aug 1: [Oracle BI 11.1.1.6.2 BP1 New Features](#)
 - BI Mobile rewrite
 - Trellis Views
- 11.1.1.7 (April 2013)
 - BIWA TechCast Apr 5 [Oracle BI 11.1.1.7 New Features](#)
 - Freeze headers/scroll bars for tables and pivot tables
 - View and manipulate BI content in SmartView in Excel and enhanced export
 - New Oracle R Enterprise (ORE) integration and capabilities
- 11.1.1.9 (May 2015)
 - BIWA TechCast Jun 4, 2015 [Oracle BI 11.1.1.9 New Features IOUG BIWA SIG TechCast](#)
 - Control # decimal places on scores in OSSM
 - Search in Subject Areas pane
 - New Treemap view
 - Global variables and Save Column As choice in Criteria tab
- 12.2.1 (October 2015) **Prior release presentations at www.vlamiS.com**

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12.2.1 End-User Enhancements

- Alta UI skin focuses on content – clean page design
- Redesigned classic BI home page – consistent with other Oracle products





12.2.1 End-User Enhancements

- New Visual Analyzer data visualizations ease data exploration – new interface. Does cost extra.

The screenshot displays the Oracle Visual Analyzer interface for a dashboard titled "Revenue by Segment". The top navigation bar includes the Oracle logo, the product name "Visual Analyzer", and a user profile "weblogic". A search bar is located on the left side of the dashboard. The main content area is divided into several sections:

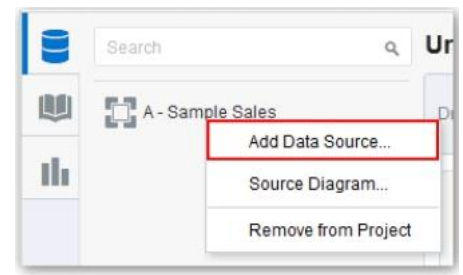
- Summary Metrics:** Four key metrics are displayed in a row: Revenue (70,000,000), # of Customers (1,000), Avg Order Size (985.92), and Quantity (5,657,221).
- 1- Revenue by C4 Customer Segment:** A pie chart showing the distribution of revenue across seven customer segments: Active Singles (18.34%), Others (19.76%), Seniors (6.558%), Urban based (12.75%), Rural based (4.515%), Students (22.03%), and Baby Boomers.
- 1- Revenue by T02 Per Name Month, C4 C...:** A line chart showing revenue trends over time for different customer segments.
- 1- Revenue by C4 Customer Segment, T11 Day Of Week:** A horizontal stacked bar chart showing revenue by day of the week for each customer segment.
- 1- Revenue by C4 Customer Segment:** A horizontal stacked bar chart showing revenue by customer segment.

The interface includes a sidebar with a tree view of data sources (A - Sample Sales, Time, Products, Offices, Sales Person, Customers, Orders, Other Objects, Facts, My Calculations, Value Labels) and a filter panel on the right with a "Values" section containing "1- Revenue".

12.2.1 End-User Enhancements

- Data mashup capabilities – no RPD modifications

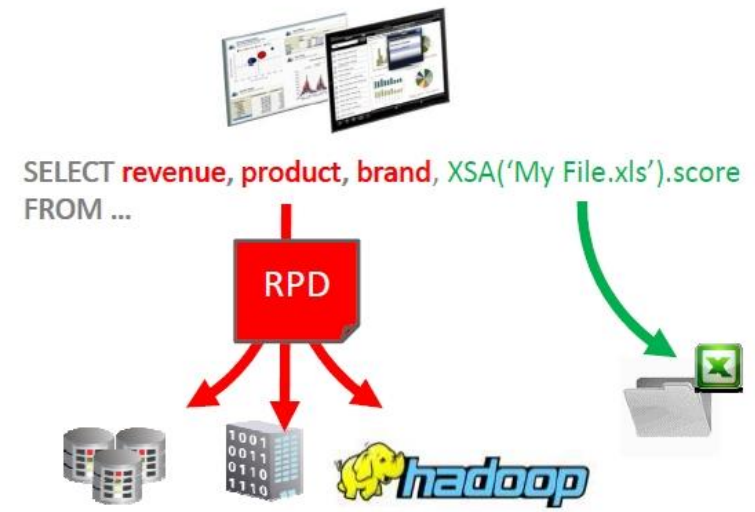
Add your own data files



Example: Upload a File

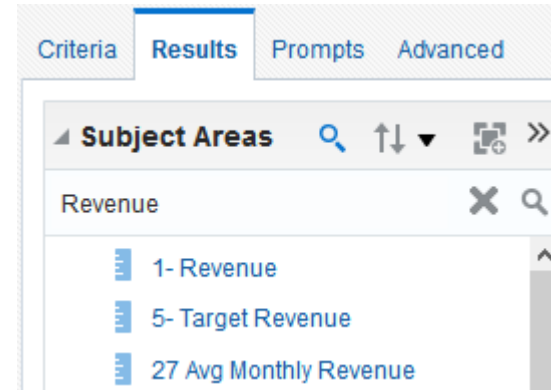


Access your data directly from an analysis w/o any RPD dependencies



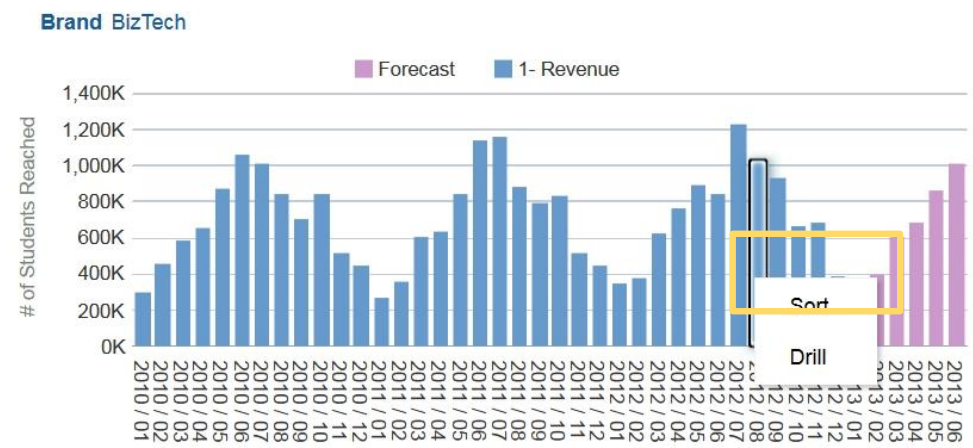
12.2.1 End-User Enhancements

- Enhanced subject area pane – including search through metadata
- Right-click all graphs and cells



Forecasting Revenue by Month

Formula: forecast("Base Facts"."1- Revenue", ("Time"."T02 Per Name Month" timeMonth), 'forecast', 'n'



Brand FunPod

12.2.1 End-User Enhancements

- Improved view rendering using HTML 5 – including new Heat Matrix view type

The screenshot displays a BI tool interface with three main panels:

- Visualization Selection Panel:** A list of visualization types including Best Visualization, Recommended Visualization for, Title, Table, Pivot Table, Performance Tile, Treemap, **Heat Matrix** (highlighted with a red box), Trellis, Graph, Gauge, Funnel, Map, Filters, and Selection Steps.
- Layout Panel:** Configuration options for the visualization, including:
 - Columns:** P3 LOB
 - Rows:** D1 Office
 - Color By:** Revenue
 - Style:** Percentile Binning
 - Bins:** Quartile (4)
 - Color:** A color scale legend for Revenue.
 - Binning Properties:** A table defining quartile labels and colors.
- Heat Matrix View:** A grid showing data for various offices across three categories: Communic..., Digital, and Electronics. A **Column Properties** dialog is open over the 'Digital' column, with the **Conditional Format** tab selected and circled in red. The dialog lists conditions for the 'rank@'(Met01)'(Base Facts-1-Reve...' field.



12.2.1 End-User Enhancements

- Improved methods of creating groups, calculated items and measures

The image shows two overlapping dialog boxes from a software application. The 'New Calculated Measure' dialog is on the left, and the 'Insert Function' dialog is on the right. The 'New Calculated Measure' dialog has tabs for 'Column Formula' and 'Bins'. It includes fields for 'Folder Heading', 'Column Heading', a checkbox for 'Contains HTML Markup', and a dropdown for 'Aggregation Rule (Totals Row)'. Below these is a tree view of 'Subject Areas' with 'A - Sample Sales' expanded to show sub-areas like 'Time', 'Products', 'Offices', 'Sales Person', 'Customers', 'Orders', 'Other Objects', and 'Facts'. The 'Insert Function' dialog shows a list of functions under 'Analytics', with 'Evaluate Script' selected. It displays the function's syntax: `EVALUATE_SCRIPT(script_file_path, output_column_name, options, [runtime_binded_column_options])`. It also includes a 'Where' section with explanatory text, an 'Example' of the function call, and a 'Description' of the function's purpose. Both dialogs have 'OK' and 'Cancel' buttons at the bottom.



12.2.1 End-User Enhancements

- Improved analytic capabilities – new pre-built functions and add custom R scripts

8.00 BI Server Advanced Analytics Alerts! Custom Link SampleApp V510 Index Home Catalog

Overview Binning Trendline **Forecast** Outlier Cluster Regression Eval Script - Delay Prediction R Image

Description: This is an example of OBIEE 12c FORECAST() function. This function takes a measure parameter e.g. revenue and a variable list of time dimensions, and forecasts values for 'n' periods into future. BI Server interfaces with R execution engine in order to produce these forecast results.

Number of months to forecast: **Apply**

Forecasting Revenue by Month
 Formula: forecast("Base Facts"."1- Revenue", ("Time"."T02 Per Name Month" timeMonth), forecast, 'numPeriods=6')

Brand BizTech

Brand FunPod

Month	1- Revenue			Forecast		
	BizTech	FunPod	HomeView	BizTech	FunPod	HomeView
2013 / 06				1,005,116	953,386	863,261
2013 / 05				862,895	749,042	804,945
2013 / 04				682,404	519,879	540,549
2013 / 03				602,268	557,638	490,728
2013 / 02				394,027	444,518	317,136
2013 / 01				302,271	280,408	225,211
2012 / 12	383,992	638,331	270,344			
2012 / 11	683,957	739,517	504,870			
2012 / 10	666,635	612,301	433,821			
2012 / 09	931,964	836,503	660,897			
2012 / 08	1,027,117	852,418	1,257,016			
2012 / 07	1,222,814	719,377	1,009,184			
2012 / 06	843,917	760,422	494,697			
2012 / 05	887,083	678,986	665,158			
2012 / 04	765,774	586,846	577,644			
2012 / 03	626,815	688,286	465,466			
2012 / 02	373,054	531,951	194,019			
2012 / 01	346,263	318,169	244,389			



OBIEE 12.2.1 Extra Thoughts

- Much Cleaner Interface for the users
 - Visual analyzer and Mashups empower users to explore their data
 - Trend Analysis and Clustering directly available for users
 - New Ask/Search capability in VA home screen
- Additional Analytic tools integrated (e.g. R)
 - Call R functions directly
- Simpler installation for the Administrator
 - Fast, simple installation
 - Out of Place Migration (no impact to 11g environments)
 - Migration utility easily migrates 11g Webcat, RPD, and security scheme to new environment
- Preparing for 12c
 - Baseline Validation Tool (works back to 11.1.1.7.1)



12.2.1 Admin and Development

- Baseline Validation Tool eases migration and migration worry-free migration from 11g
- Migration: BAR files simplify application content backup and migration

- **Creating the BAR File from Current Environment:**

***exportServiceInstance**(domainHome, serviceInstanceKey, workDir, exportDir, applicationName=None, applicationDesc=None, applicationVersion=None, includeCatalogRuntimeInfo=false, includeCredentials=None)*



- **Importing the BAR file in Target environment:**

***importServiceInstance**(domainHome, serviceInstanceKey, barfile)*

- No More GUIDs
- No more OPMN (startup / shutdown – much cleaner)