ODTUG
Kscope16
CHICAGO, ILLINOIS · JUNE 26-30
PLEASE FILL OUT YOUR EVALUATIONS

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# Preparing for BI 12c Upgrade

ODTUG Kscope 16

Dan Vlamis and Arthur Dayton

Monday, June 27, 2016

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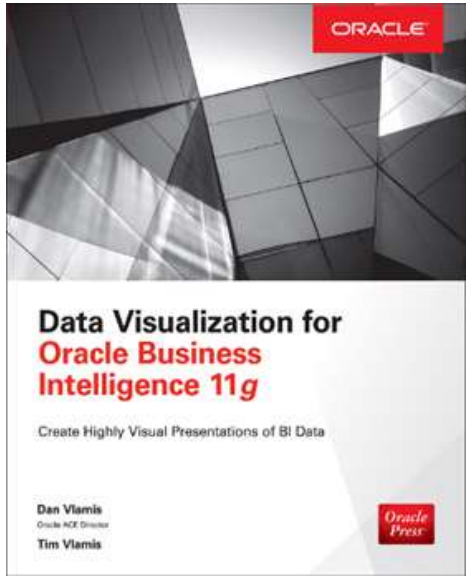
# Vlamis Software Solutions

- 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



ORACLE EDUCATION RESELLER

ORACLE Gold Partner
Specialized
Oracle Business Intelligence
Foundation Suite 11g

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# Vlamis Involvement in Presentations

| Presenter | Time | Location | Title |
|---|---|---|---|
| Dan Vlamis & Arthur Dayton | Mon 8:30 AM | Mayfair | Upgrading to Oracle Business Intelligence 12c |
| Dan Vlamis & Tim Vlamis | Mon 4:30 PM | Mayfair | Data Visualization for Oracle Business Intelligence |
| Tim Vlamis | Tues 8:30 AM | Missouri | Clustering Data with Oracle Data Mining: The Easiest Place to Start in Predictive Analytics |
| Arthur Dayton | Tues 11:15 AM | Superior A | Data Discovery Best Practices with Visual Analyzer – Hands On Lab |
| Tim Vlamis & Dan Vlamis | Tues 2:00 PM | Mayfair | Visual Analyzer and Best Practices for Data Discovery through Data Visualization |

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# Dan Vlamis and Arthur Dayton

- Dan
  - 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
- Arthur
  - Senior Consultant at Vlamis Software Solutions
  - 10+ years developing financial accounting and business intelligence solutions with Oracle software
  - Adjunct Professor University of Nebraska College of Information Systems and Quantitative Analysis
  - MS Management Information Systems University Of Nebraska
  - BA Accounting University of Denver

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# Presentation Agenda

- What's new in OBIEE 12c?
- Overview of OBIEE 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

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# OBIEE 12c (12.2.1.0.0)

- 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
  - ***VA brought up to date with 12.2.1.1 release
  - ***ODBC sources supported for data mashups
- 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)

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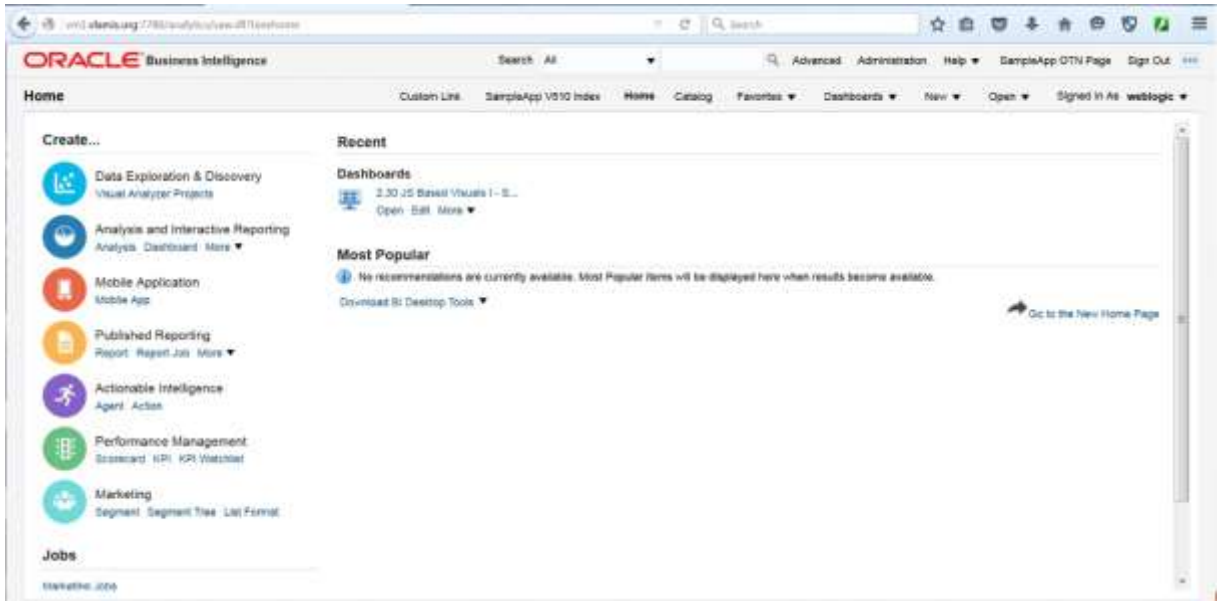
# 12.2.1 End-User Enhancements

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

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# OBIEE 12c Intro Demo

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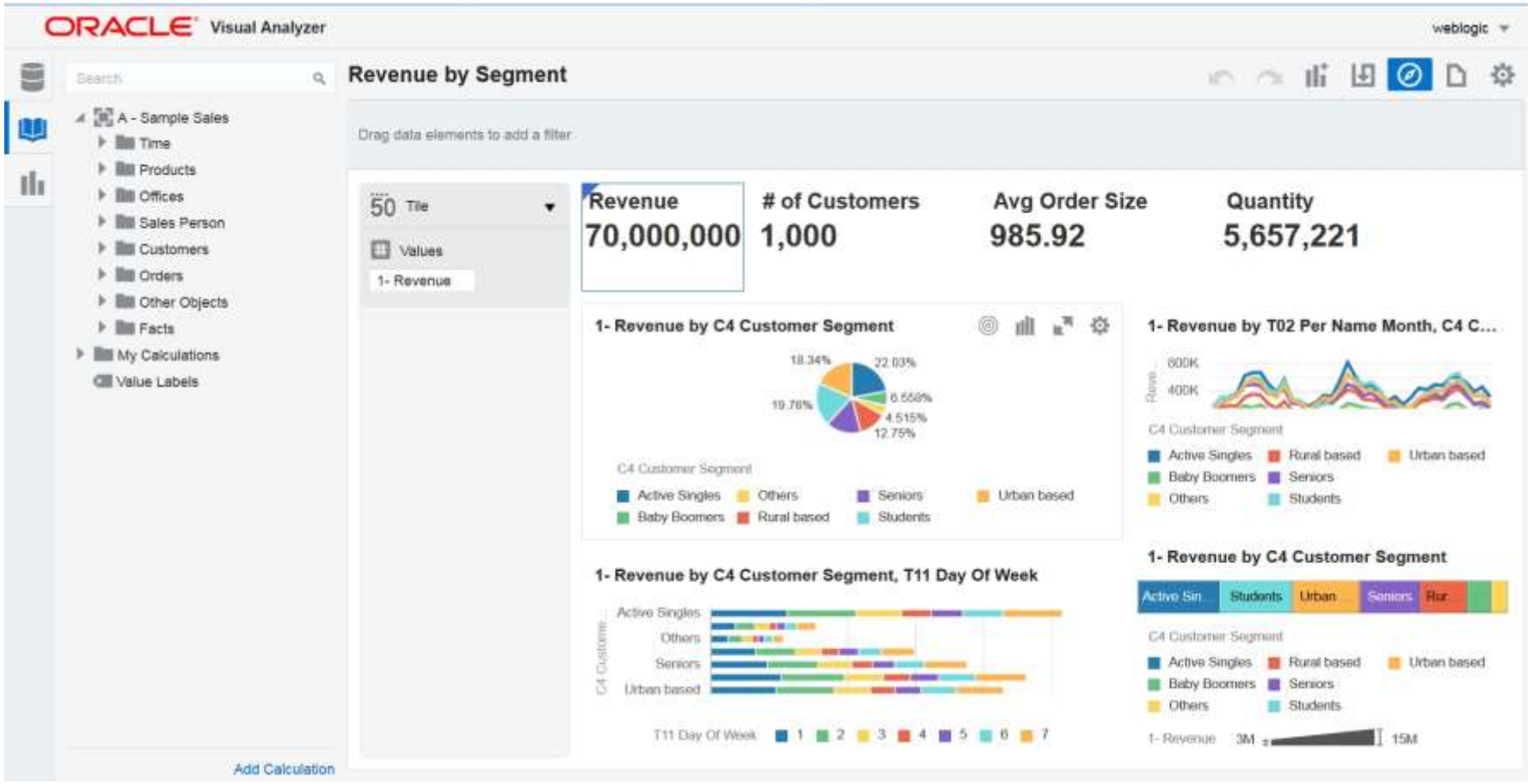
# 12.2.1 End-User Enhancements

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

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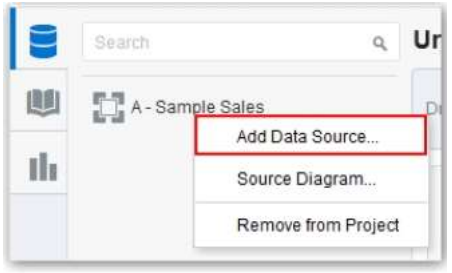
# 12.2.1 End-User Enhancements

- 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

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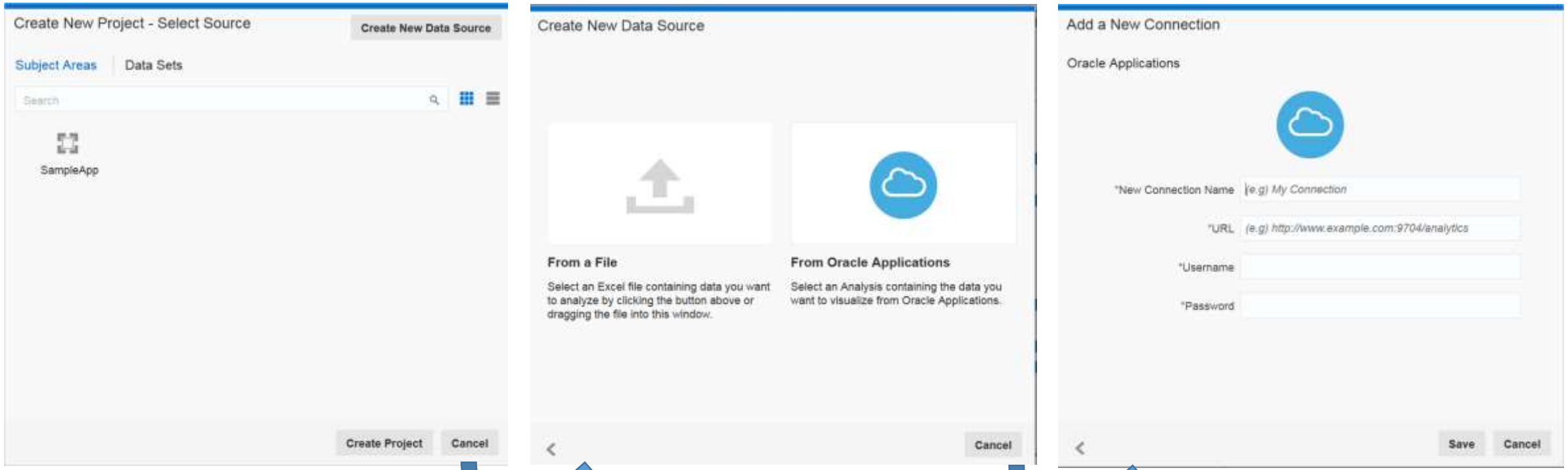
# Enhancements in VA

- New option in VA to source data sets from Fusion SaaS applications (user specifies URL and login info) or external sources

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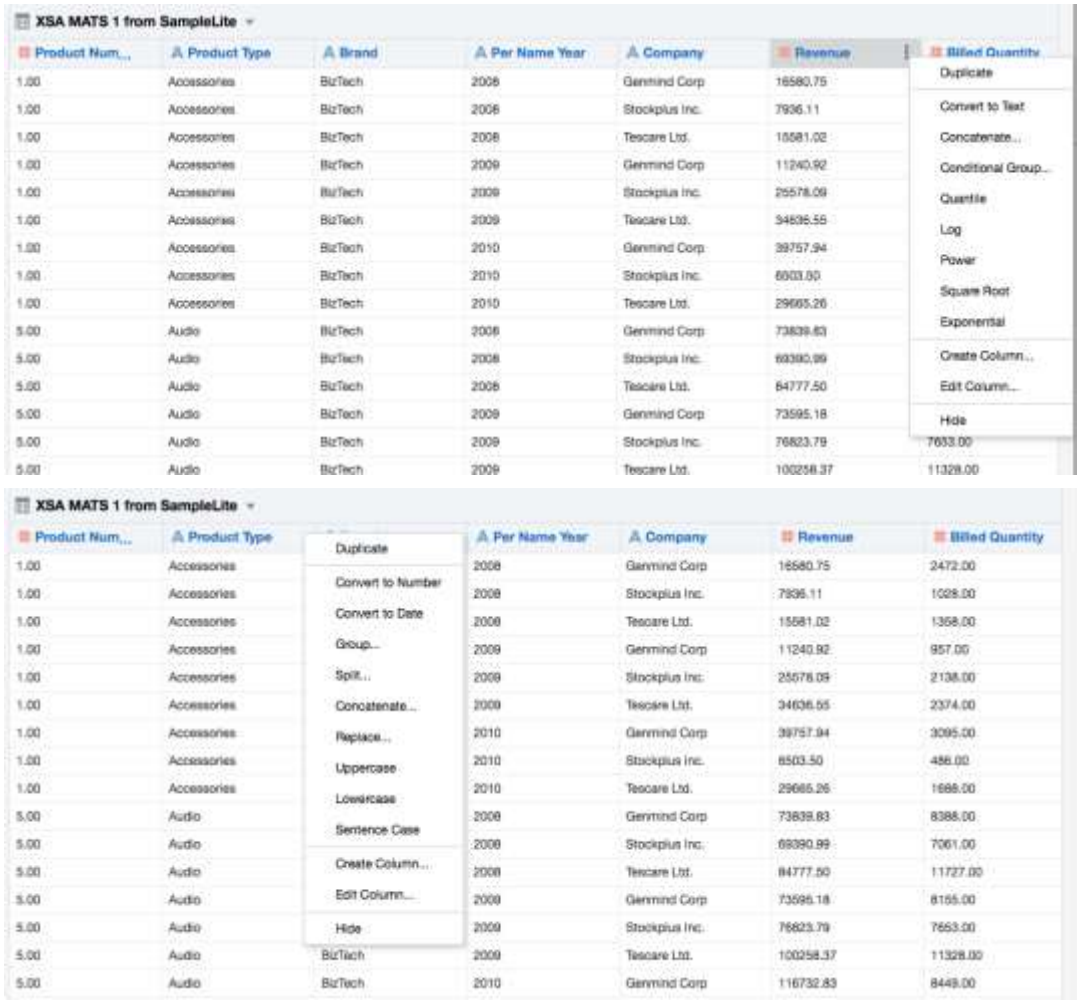
# Enhancements in VA

- Data Wrangling
  - Can now use data stage to modify a data set after upload
  - Options vary based on column type

  Examples:
    - Duplicate
    - Apply formulas
    - Create new columns from expressions
    - Concatenate

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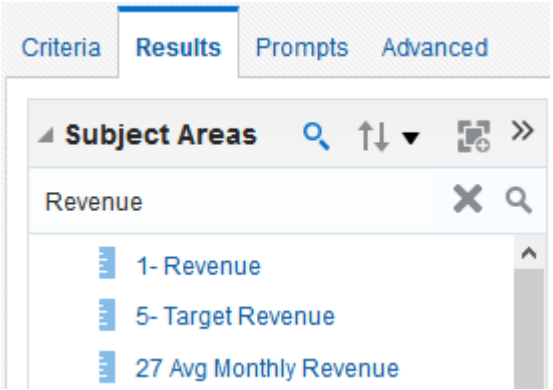
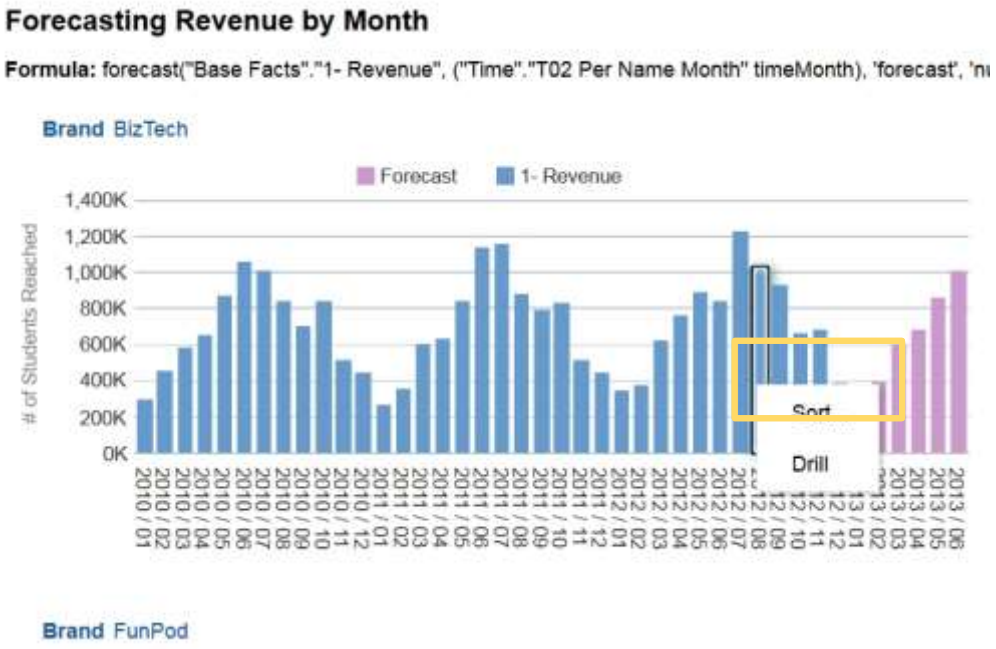
# 12.2.1 End-User Enhancements

- Enhanced subject area pane – including search through metadata




- Right-click all graphs and cells

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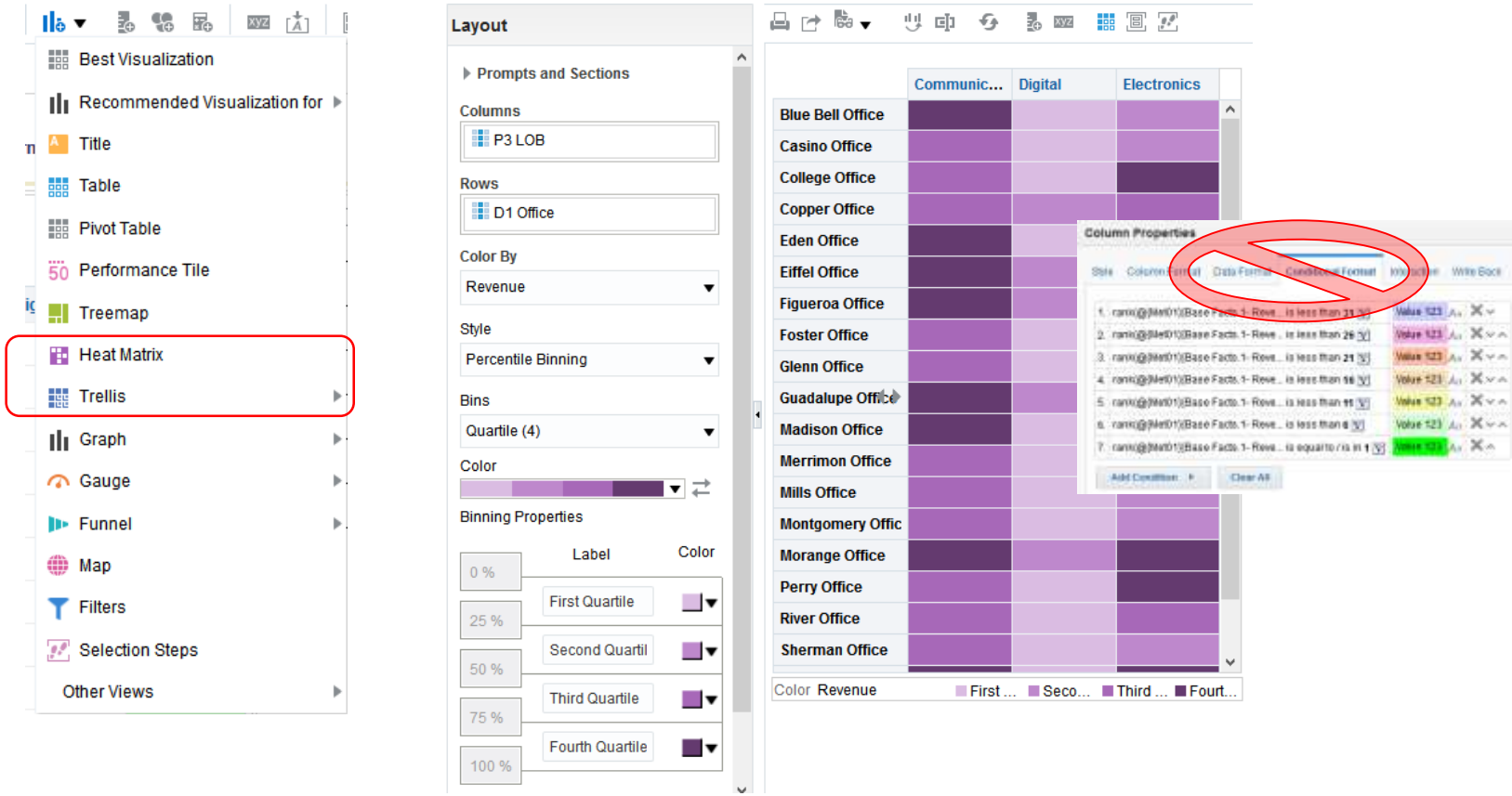
# 12.2.1 End-User Enhancements

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

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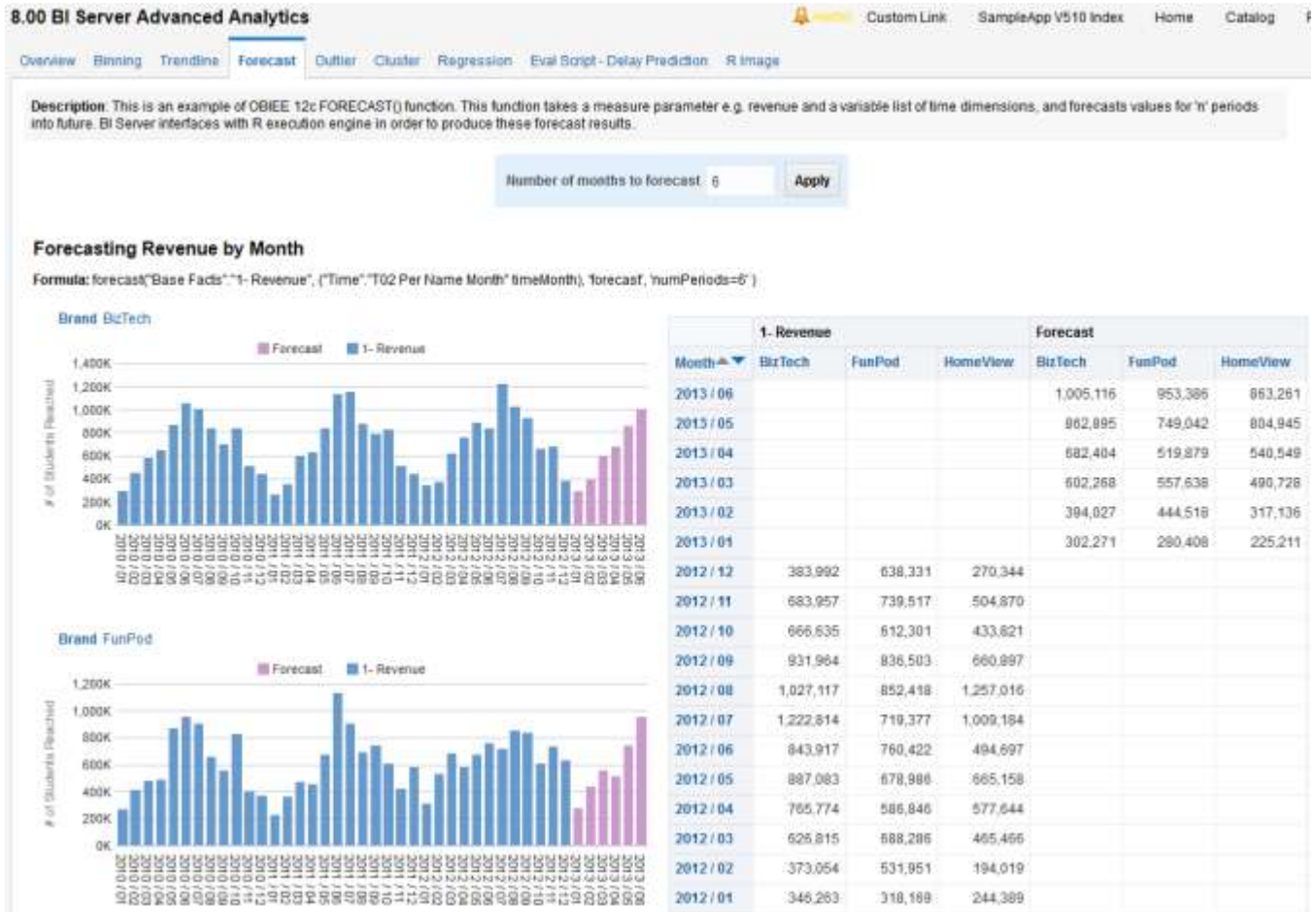
# 12.2.1 End-User Enhancements

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




| | 1- Revenue | | | Forecast | | |
|---|---|---|---|---|---|---|
| Month | 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 | 433,621 | | | |
| 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 | 318,189 | 244,389 | | | |

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# 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

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# 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

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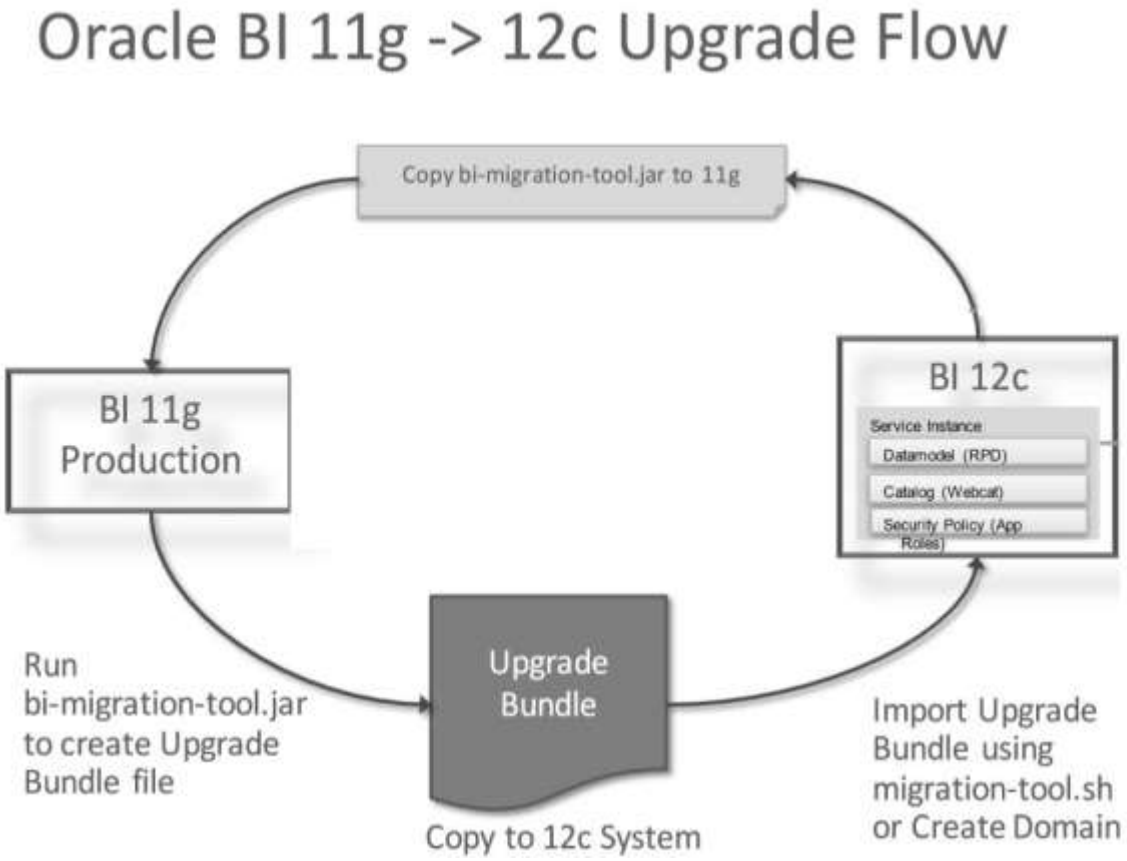
# Migration Workflow (phase 1)

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

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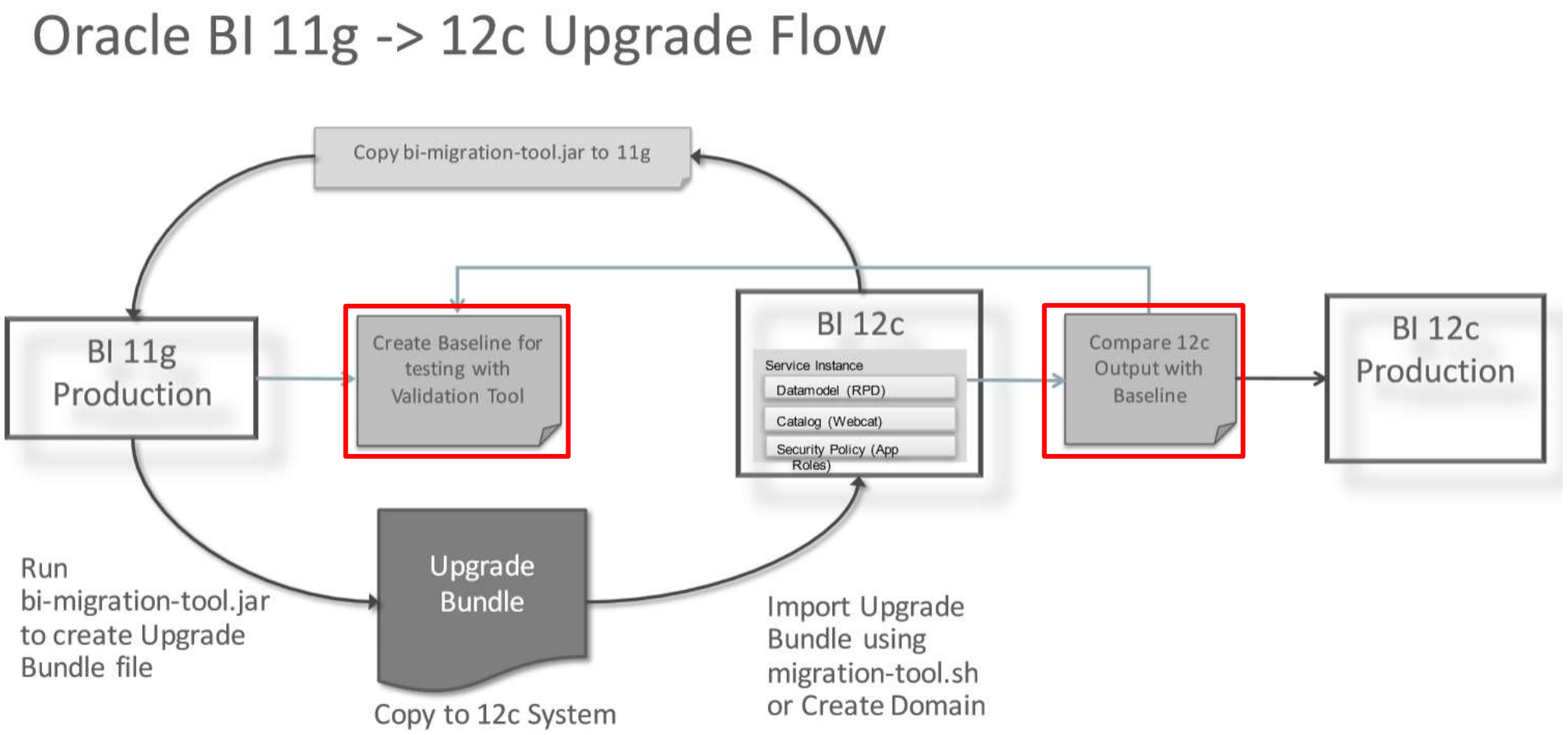
# Migration Workflow (phase 2)

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# 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

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# 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)

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# Migration Steps: Configure OBIEE 12c

- 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

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# 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

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# 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>
```

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# OBI 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

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# OBI 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
```

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# OBI 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

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# OBI 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

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# OBI 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

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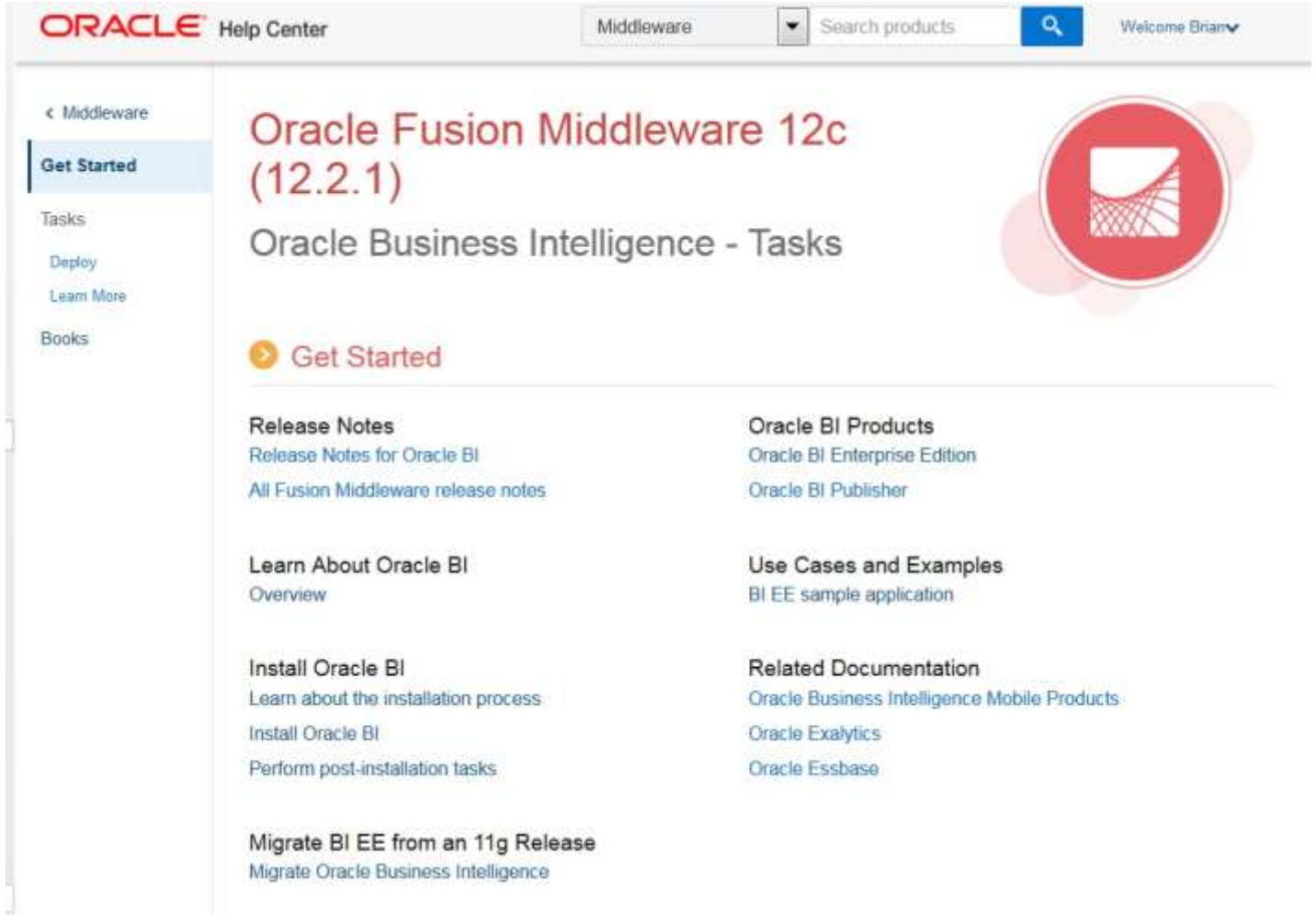
# Reorganized Documentation




http://docs.oracle.com/middleware/1221/bisuite/index.html
(click Books link to get New Features in Version 12.2.1 section)

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# 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)

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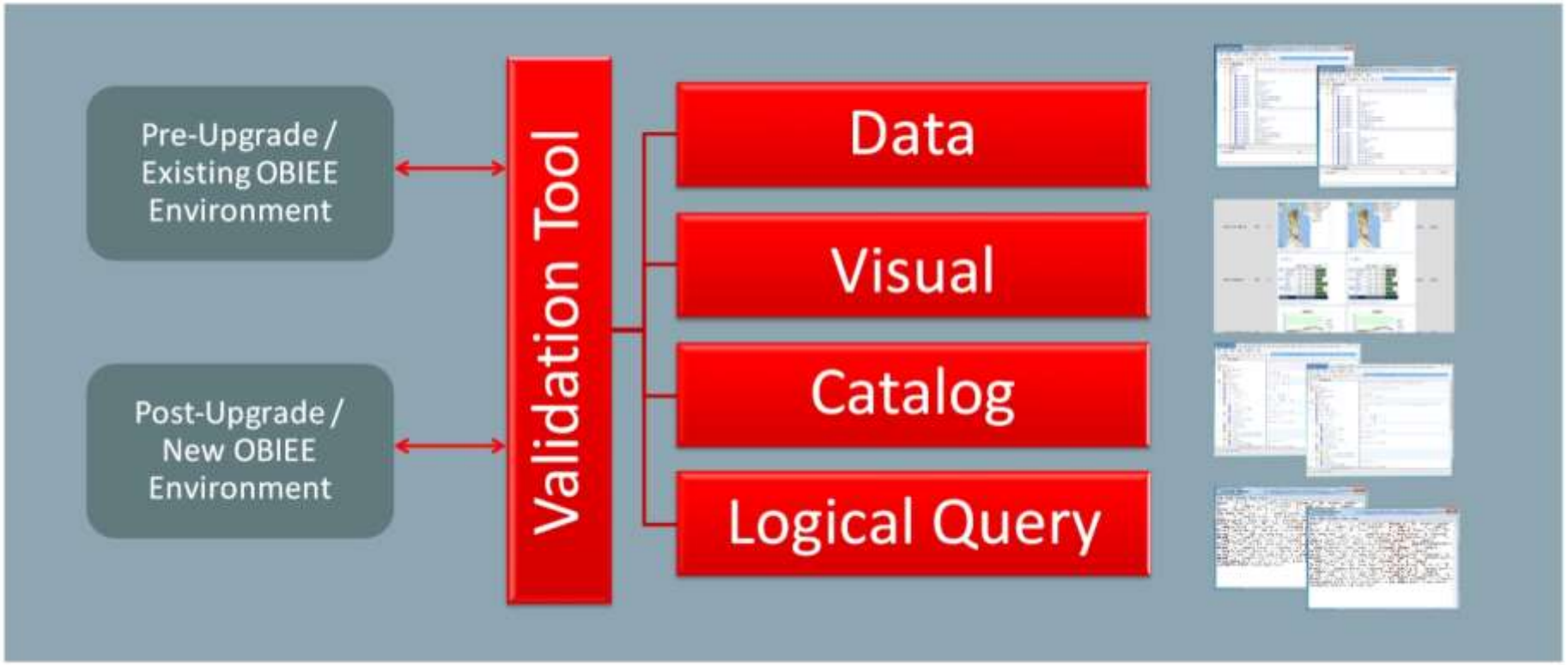
# Baseline Validation Tool (BVT)

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

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# 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

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# 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

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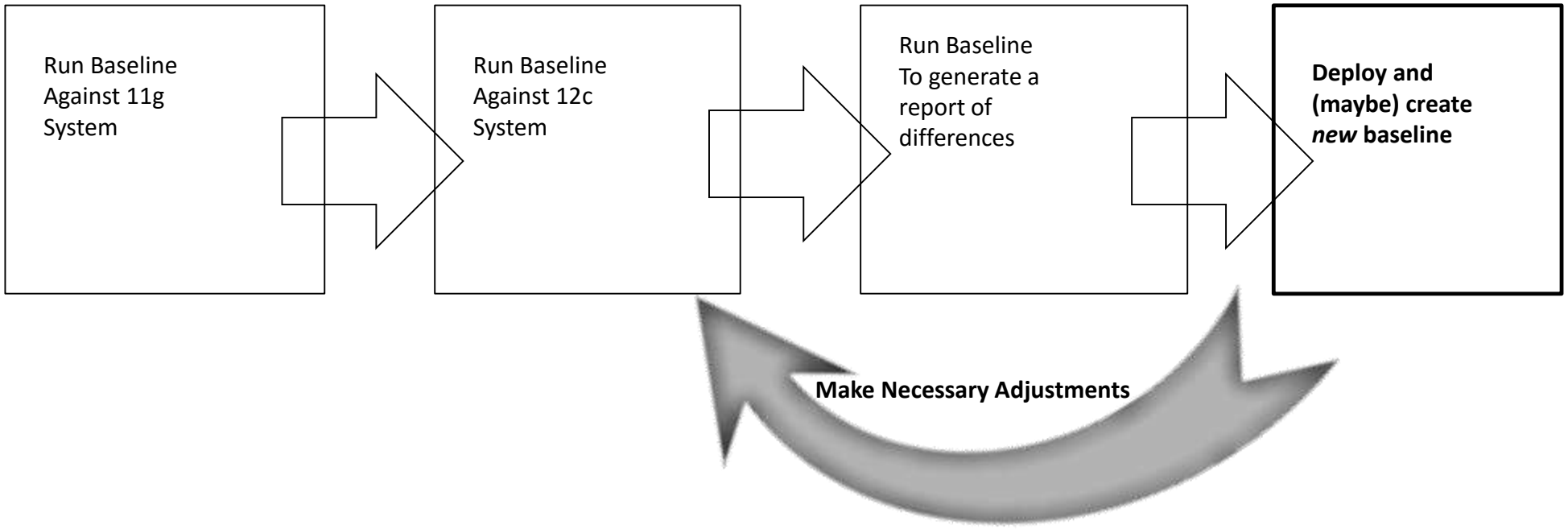
# Baseline Workflow (BVT)

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# 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>
```

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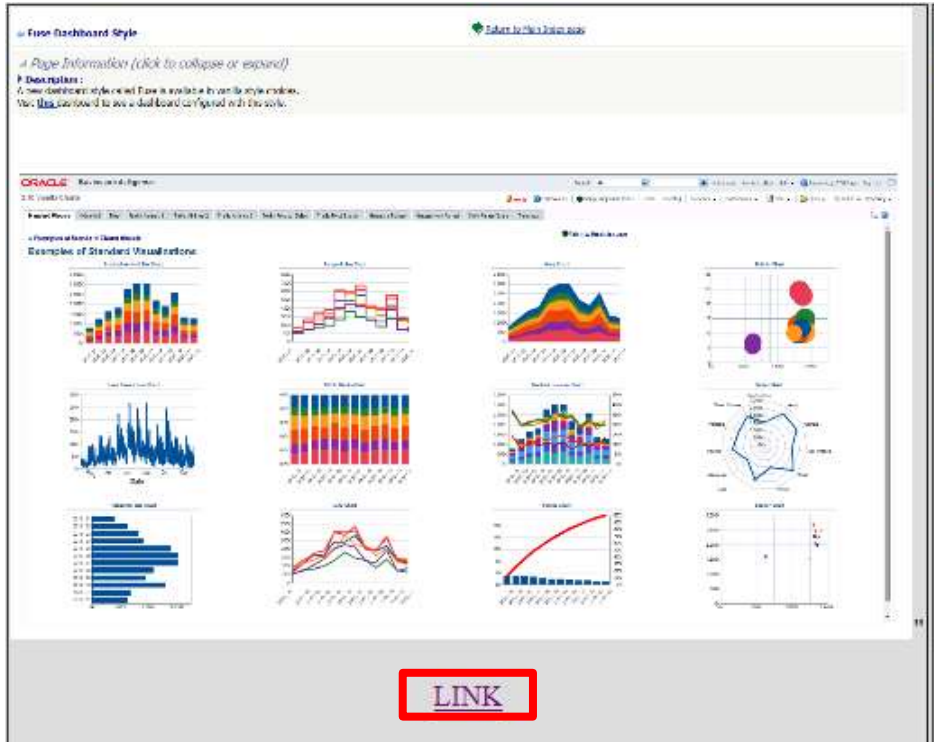
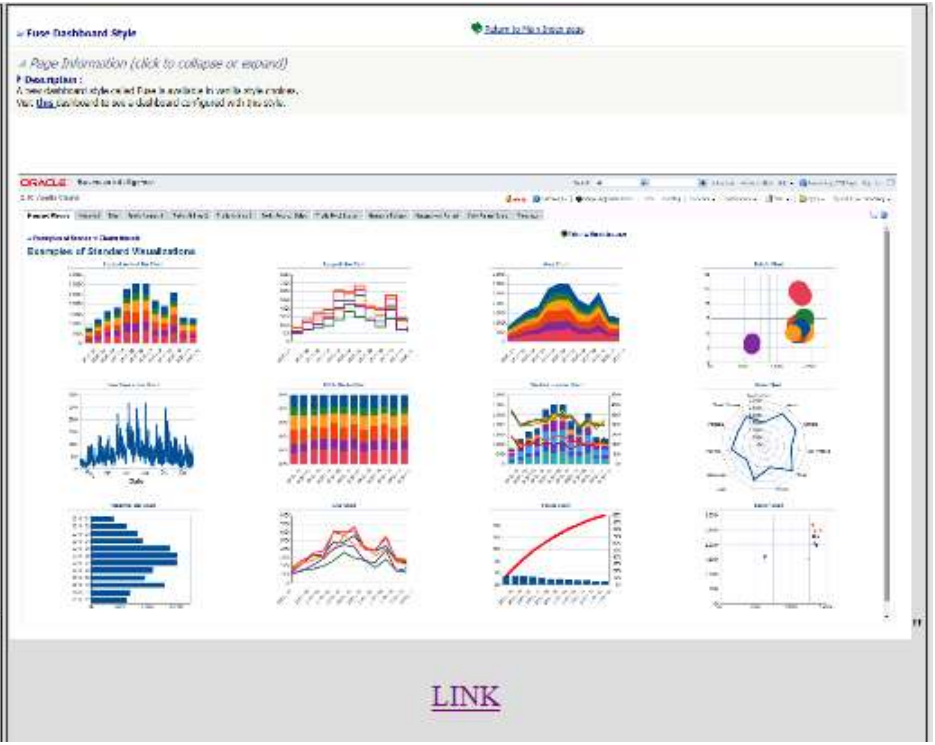
# Baseline Validation Tool Report

UI Comparison: visual inspection and links to actual results

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# Upgrading is like moving

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# General Advice

- Begin with an objective evaluation of current system
  - Move everything as is or clean up first?
  - Two competing philosophies
    - “If it’s worth doing, it’s worth doing right”
    - “The perfect is the enemy of the good”
- Hire movers or rent a van and do-it-yourself?
- We recommend a phased approach
  - Evaluation phase
  - Planning phase
  - Stand up new environment and transfer
  - Testing phase
  - Training and mentoring

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# Quickstart Method to Upgrade

- Upgrade with Roadmap in 2 weeks
- Evaluate issues may run into in upgrade
- Include some training up front
- Develop plan for handling any issues with reports
- Use BVT to detect differences 11g vs 12c
- See data with new Visual Analyzer front end and develop plan to capitalize in adhoc
- Develop plan for cleaning up old reports

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# Oracle Cloud Test Drive

- **Free** to try Oracle BICS, Oracle Advanced Analytics
- Go to www.vlamis.com/tdcloud
- Runs on Oracle Cloud
- Test Drives for:
  - Oracle BICS
  - Oracle Advanced Analytics (initially Oracle Data Mining)
  - More test drives to be added
- Once sign up, you can access for 24 hours
- Click by click script included, but can go “off road”
- Faster and easier than official Oracle “trial web account”

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# Key Takeaways

- 11g->12c much better than 10g->11g
- Discuss problems up front – inventory of system
- Use BVT to detect differences – eases upgrades
- BVT can be used for DEV -> TEST -> PROD as well
- Can use Data Visualization ($) for better adhoc experience and data mashup
- A little bit of help can save a lot of time

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PLEASE FILL OUT YOUR EVALUATIONS