<table>
<thead>
<tr>
<th>Our Services</th>
<th>Oracle Partnership</th>
<th>Oracle Specialized</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Business Intelligence</td>
<td>• Oracle Platinum Partner</td>
<td>• EBS Financial Management</td>
</tr>
<tr>
<td>• EPM-Hyperion</td>
<td>• Pillar Partner</td>
<td>• EBS Supply Chain Management</td>
</tr>
<tr>
<td>• Fusion Middleware</td>
<td>• Business Intelligence</td>
<td>• EBS Human Capital Management</td>
</tr>
<tr>
<td>• Managed Services</td>
<td>• Hyperion</td>
<td>• BI Applications</td>
</tr>
<tr>
<td>• E-Business Suite</td>
<td>• SOA</td>
<td>• BI Foundation</td>
</tr>
<tr>
<td>• Oracle University</td>
<td>• Oracle University Approved Education Center</td>
<td>• Service-Oriented Architecture</td>
</tr>
<tr>
<td>• Project Advisory Services</td>
<td>• Oracle University Reseller</td>
<td>• Public Sector</td>
</tr>
<tr>
<td></td>
<td>• Oracle Accelerator Implementer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Certified OnDemand Implementer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Small Business Strategy Council</td>
<td></td>
</tr>
</tbody>
</table>

Oracle Titan Award Winner 2011 & 2009
2011 Inc. Top Small Company Workplaces
2012 Inc. 5000 Fastest Growing Companies
2012 Best & Brightest Companies to Work For
ORACLE BUSINESS INTELLIGENCE

Common Enterprise Information Model

- Common Metadata Foundation across all Data Sources
- Common Security, Access Control, Authorization, Auditing
- Common Request Generation and Optimized Data Access Services
- Common Clustering, Workload Management, & Deployment
- Common Systems & Operational Lifecycle Management
TIP #1 – DIG INTO WHAT’S NEW
WHAT ISN’T NEW???

• Refined look and feel with high-fidelity charting
• Powerful interface for every type of user
• On-the-fly, interactive analytics with animated transitions and master-detail linking
• Plus scorecards, report wizards and more
BI PUBLISHER’S NEW ONLINE LAYOUT BUILDER

- DHTML BI Publisher Builder
- New page-oriented report layout editor
- Tool ribbon design
- Interactive drag & drop, cursor control, chart preview
- Instant preview
  - PDF, HTML, RTF, Excel, PPT
- Rich layout charts, tables, rich text, crosstab, images, header & footer, repeating, page break
ORACLE SCORECARD AND STRATEGY MANAGEMENT

- Integrated BI component
  - KPIs as core metadata
  - Thresholds, owners, history
  - Linked objectives & initiatives
- Strategy visualization
  - Strategy Maps and Trees
  - Cause and Effects
  - Watchlists and Annotations
- Any methodology
  - Balanced, six sigma, Baldridge
- **Write-Back and Mobile support**
  - Coming soon
OBIEE 11G FEATURES FOR ESSBASE
And Hyperion users

• Essbase as a data source
• Oracle Answers as a front-end for Essbase, HFM
• Integration of Essbase and relational data into drill-through models
• Oracle BI Repository as a data source for Essbase Studio
• Access to OBIEE dashboards & reporting

• Also, Essbase now included in the Oracle Business Intelligence Foundation Suite
OBIEE 11G FEATURES FOR ESSBASE

The latest...

- Essbase as an OBIEE aggregate persistence target
  - Embedded Essbase Studio facilities - automatically create and populate OBIEE aggregates into ASO cubes
- Better integrated into installation (OBIFS)
- Better integration with Enterprise Manager
- Outline imports are handled better
  - Hierarchies better maintained
  - Parent-Child hierarchies supported
- Alias tables and User-Defined Attributes (UDAs) supported
TIP #2 – LEARN THE ARCHITECTURE AND TERMINOLOGY
Oracle BI Domain
- The overall Oracle BI EE system

WebLogic Domain
- Set of WebLogic instances servicing one or more J2EE applications

Admin Server (WebLogic)
- Provides management of both the WebLogic and BI Domain; Only one (1) per WebLogic Domain

Managed Server (WebLogic)
- Contains deployed J2EE BI application

Node Manager (WebLogic)
- Daemon process that provides remote server start, stop and restart capabilities in addition to monitoring

Oracle BI System Components
- BI Server, Presentation Server, Scheduler, Cluster Controller and Java host

Oracle BI J2EE Components
- BI Publisher, BI Office, Action Framework Service, BI SAW Bridge Plug-in, Security, Web Services for SOA
DO AN INSTALLATION...SOME SUGGESTIONS

• WebLogic is standard/required/built-in
  • BI is installed within a WLS domain

• Repositories need to be built first (Rep. Creation Util.)
  • Minimally, the MDS and BIPLATFORM schemas are needed
  • Multiple relational databases supported

• Installer Options:
  • “Simple” – For development machines/laptops only; Combines Admin and Managed Servers; cannot be “scaled out”
  • “Enterprise” - Includes configuration steps; generally used when doing primary server installs
  • “Software Only” - Configuration is separate; generally used when scaling out or adding component

• For sizing & capacity planning, see Doc ID 1323646.1
ORACLE BI DIRECTORY STRUCTURE

- **Middleware Home**
  - FMW_Home
    - *Top level location for installation*

- **BI Oracle Home**
  - FMW_Home\Oracle_BI1
    - *Contains core Oracle BI components and template files used by the configuration phase of the install process*

- **Common Oracle Home**
  - FMW_Home\oracle_Common
    - *Contains general Oracle files*

- **WebLogic Server**
  - FMW_Home\wlserver_10.3
    - *Contains the Oracle WebLogic Server binaries*
CONFIGURATION SUGGESTIONS

- A separate web server (Oracle HTTP Server, etc.) is recommended for HTTP compression & caching
  - WebLogic’s embedded web server is not optimal
  - Install and configure OHS 11.1.1.X
    - Enable compression / caching by editing the `httpd.conf` file

- Multiple RPDs only supported with multiple WLS domains
  - For development environments, there is an unsupported workaround to house multiple RPDs and Presentation Catalogs within a single domain
    - **Send me an email if you’re interested in this**
  - An alternative is to merge repositories/catalogs as before or multiple WLS domains
UPGRADING, DEPLOYING, PATCHING

• There is an “upgrade assistant”
  • Upgrades RPD and Presentation Catalog
  • Actually deploys everything…need a working BI 11g environment
  • Ports users from RPD into WebLogic
    • No longer are users in the RPD
    • As a result, whenever migrating environments, one must migrate the Identity Store, Credential Store and Policy Store (more on this in a moment)

• Additional Merging, Patching and Validation facilities exist
  • Run Catalog (runcat) - Utility to patch existing catalog (not documented)
    • Commands: Tag, Diff, Inject, CreatePatch, ApplyPatch
  • patchrpd utility
  • Other XML utilities:
    • biserverxmlgen / biserverxmlexec / biserverxmlcli
    • validaterpd - validates metadata without Admin Tool
SECURITY

- Role-based access control model
- Security Providers:
  - Authentication Provider
  - Policy Store Provider
  - Credential Store Provider
- Defined in terms of:
  - Application Roles that are mapped to directory server groups and users
  - Security Policy
TIP #3 – DON’T IGNORE YOUR DATA WAREHOUSE DESIGN
CORE DW & BI MODELING PRINCIPLES

1. Target a business process or subject area
2. Solidify the level of detail or grain
   • By default, capture lowest level of detail
   • Allows for drill-down; makes BI “operational”
   • Summarized for special cases only – instead, utilize aggregates
3. Identify the dimensions by which data needs to be analyzed
   • How to “slice and dice” the data
4. Identify the metrics to be included for analysis
   • What numbers and calculations are we looking for
MODEL STAR OR SNOWFLAKE SCHEMAS

• Snowflake Schema
  • A common form of a dimensional model
  • Different hierarchies in a dimension can be extended into their own dimensional tables
    • Therefore, a dimension can have more than a single dimension table.

• Star Schema (recommended)
  • The most common form of dimensional model
  • Each dimension is represented by a single dimension table
If you don’t have any, the Oracle Business Analytics Warehouse Data Model Reference (Version 7.9.6) is a good start.
All Dimension tables need primary keys
  - With few exceptions, these ought to be surrogate keys
  - Natural keys must still exist as attributes and be used by ETL
  - A “dummy” (blank/zero/placeholder) record is recommended for each dimension
    - Allows for fact records to have a value for each dimension

All Fact tables must have foreign keys to dimensions
  - These also must be indexed:
    - Standard, Bitmap or Bitmap-Join Indexes (stores rowid for PK as well)
    - **NOTE:** If Bitmap or Bitmap-Join Indexes are implemented and STAR_TRANSFORMATION_ENABLED=TRUE, the database will force sub-queries against the dimensions before the fact

Partitioning will almost always help

Materialized views are good choice for aggregates
TIP #4 – ALLOCATE ENOUGH TIME FOR ORACLE BI REPOSITORY DESIGN
AT A HIGH-LEVEL...

The OBIEE Model

User Requests

Presentation Catalog

Business Models

Physical Models

Data Sources

Logical Queries

Role-Based Subject Areas

- Logical Queries
- Role-Based Subject Areas

Data Sources

- Star Schemas
- OLAP

User Requests

- User Requests
- Presentation Catalog
- Business Models
- Physical Models
- Data Sources

Logical Queries

- Logical Queries
- Role-Based Subject Areas

Physical Models

- Physical Models
- Star Schemas
- OLAP

Role-Based Subject Areas

- Role-Based Subject Areas
- Logical Queries

Business Models

- Business Models
- Logical Queries
- Physical Models

Physical Models

- Physical Models
- Business Models
- Data Sources

Logical Queries

- Logical Queries
- Business Models
- Physical Models

Data Sources

- Data Sources
- Physical Models
- Business Models

Most Important!!
HELPFUL RPD UTILITIES

• For building and maintaining models and subject areas…
  1. Replace Columns or Table in Logical Table Sources
  2. Rename Wizard
  3. Update Physical Layer
  4. Remove Unused Physical Objects

• For metadata documentation…
  1. Repository Documentation (delimited output)
  2. Generate Metadata Dictionary (will need to configure online access)

• For deploying changes…
  1. Generate Deployment File
ANOTHER OPTION – NEW IN 11G

• Creating Subject Areas for Logical Stars, Snowflakes
  • Steps:
    1. Select Business Model
    2. Right mouse-click to get pop-up menu
    3. Select “Create Subject Areas for Logical Stars and Snowflakes” option
  • For every fact table in the BMM, subject area is created with the related dimensions
ADDITIONAL CONSIDERATIONS

• Externalize Metadata Objects
  • Needed for localization
  • Can also be used to adjust terminology ongoing, or for different user groups, different organizations and different installs

• Lookup Tables (new in 11g)
  • Generally used for translations of dimension data

• Set Up “Usage Tracking”
  • Much documentation online
  • Invaluable in understanding what reports and dashboards are actually being used, as well as performance
TIP #5 - TAKE FULL ADVANTAGE OF USER EXPERIENCE ENHANCEMENTS
SIMPLE SLIDERS, INSTEAD OF PROMPTS
ENABLED CHART ZOOMING

- Edit the properties of a chart and check the 'Zoom and Scroll' property in the Canvas tab
- Then, the Zoom option is available along the lower left side of the chart (see below)
TIP #6 – MAKE BI INTERACTIVE
USE THE ACTION FRAMEWORK

- **Agents** - Enable you to automate your business processes
  - The new generation of iBots from 10g
  - Provide event-driven alerting, scheduled content publishing, and conditional event-driven actions
    - Various subscription and recipient options
    - Complex layered triggering requirements can be implemented
  - Alerts can be delivered to: (1) Alerts section of Home page, (2) 1st page of My Dashboard, (3) on any dashboard page, (4) within the dialog displayed from the Alerts! button in the global header, and (5) specified delivery devices – phones, etc.

- **Actions** - Enable navigation or invoking of services or other requests
MASTER-DETAIL LINKING

• First, pick a driving column (report element) on the “Master” to initiate the event, *also specifying a channel name*

• Second, have the “Detail” analyses listening
  • It’s possible to list multiple even channels here, too
MASTER-DETAIL EVENTS
MASTER-DETAIL MAPS

- Maps are useful with master-detail linking as well
MAPS - LOCATION DATA VISUALIZATION

- Available as OOTB in 11g
  - Different than analytics which require Oracle Spatial (e.g. # of customers within XX miles)
- "Location Intelligence"
  - Manage location-based assets, people and property
  - Optimize territories, map resources
  - Monitor and optimize infrastructure
- Great examples online
GOOGLE MAPS

• Google Maps can be used as background maps in Map Views (11.1.1.5+)
  • MapViewer now supports Google Maps tiles as a built-in map tile layer
  • Appears as background map in Map Data Administration
  • Can be used seamlessly as background map; must obtain a Google Maps API key

• When To Use…
  ✓ You have locations with Lat/Long coordinates or geo-coded addresses
  ✓ You don’t have GIS resources to provide base maps
  ✓ You simply want to try out maps at your organization to see how well they are adopted and used before expanding scope
TIP #7 – IMPROVE THE PRESENTATION
PRESENTATION CUSTOMIZATIONS

- Colors, Images and wording can all be adjusted
  - Replace the Oracle logo
  - Replace “Business Intelligence” and base messages
- Default locations
  - **Skins** - FMW_Home\Oracle_BI1\bifoundation\web\app\res\sk_blafp
  - **Styles** - FMW_Home\Oracle_BI1\bifoundation\web\app\res\s_blafp
  - **Messages** - FMW_Home\Oracle_BI1\bifoundation\web\msgdb
- To do this, copy these directories and the WEB-INF directory
  (FMW_Home\instances\instance1\bifoundation\OracleBIPresentationServer\coreapplication_obi_ps1\analyticsRes) to a new location to modify and you’ll need to deploy a new application from WLS console
  - Additional configurations are needed before deploying; do not modify in default locations since they will be overwritten with upgrades
- Good Oracle White Paper: “Customizing Oracle Business Intelligence Enterprise Edition 11g”
ENSURE INHERITANCE WITHIN DASHBOARDS

- Have “Report Link” settings inherit across dashboards
- Improve manageability
TIP #8 – CONSIDER ALL OF YOUR USERS
BI COMPOSER

1. Turn Accessibility Mode "On"

2. You’ll notice the options change, and “Analysis” now mean something different

3. Here, a wizard-driven reporting option is available
TIP #9 - UTILIZE METRICS FOR SYSTEM PERFORMANCE
MONITORING PERFORMANCE

- Via Enterprise Manager
- Under the AdminServer
CACHE MANAGEMENT

- OBIEE turns it on by default for new installs
- Cache status is stored in nqsconfig.ini
- To enable or disable cache, navigate to Capacity Management > Performance
- Required to restart services after change
11G DEMONSTRATION
TIP #10 – FINALLY, BE ITERATIVE!
BI IS A PROCESS... an **Evolution!**

- Gather **Data** Assets
- Derive **Strategies**
- Consolidate **Information**
- Analyze and Report **Insights**
- Take **Action**
WHERE TO FIND MORE…HOW TO DIG IN

• OBIEE Documentation
  • http://download.oracle.com/docs/cd/E21764_01/bi.htm

• 11g Examples
  • http://www.oracle.com/technetwork/middleware/bi-foundation/obiee-samples-167534.html

• 11g SampleApp107
  • http://www.oracle.com/technetwork/middleware/bi-foundation/obiee-samples-167534.html
  • VirtualBox image also available here

• Next Steps…
  1. Install and configure 11g…less than a day!!!
  2. Install the sample applications (above)
RECAP

• Tip #1 – Dig into What’s New in 11g
• Tip #2 – Learn the Architecture and Terminology
• Tip #3 – Don’t Ignore Your Data Warehouse Design
• Tip #4 – Allocate Enough Time for Oracle BI Repository Design
• Tip #5 - Take Full Advantage of User Experience Enhancements
• Tip #6 – Make BI Interactive
• Tip #7 – Improve the Presentation
• Tip #8 – Consider All of Your Users
• Tip #9 – Utilize Metrics for System Performance
• Tip #10 – Finally, Be Iterative!
Questions?
Comments?
THANK YOU

Patrick Callahan
pcallahan@ASTCorporation.com
888.278.0002 x246