Oracle Business Intelligence 11*g*
Most complete. Most integrated.

ORACLE®

OBIEE 11g – Technical Architecture

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Types of Installation

- **Simple Install**
  - Installs with the default settings on a single computer
  - Managed Server is not installed
  - Reduced memory footprint
  - Targeted especially for demonstration, evaluation, and PoC
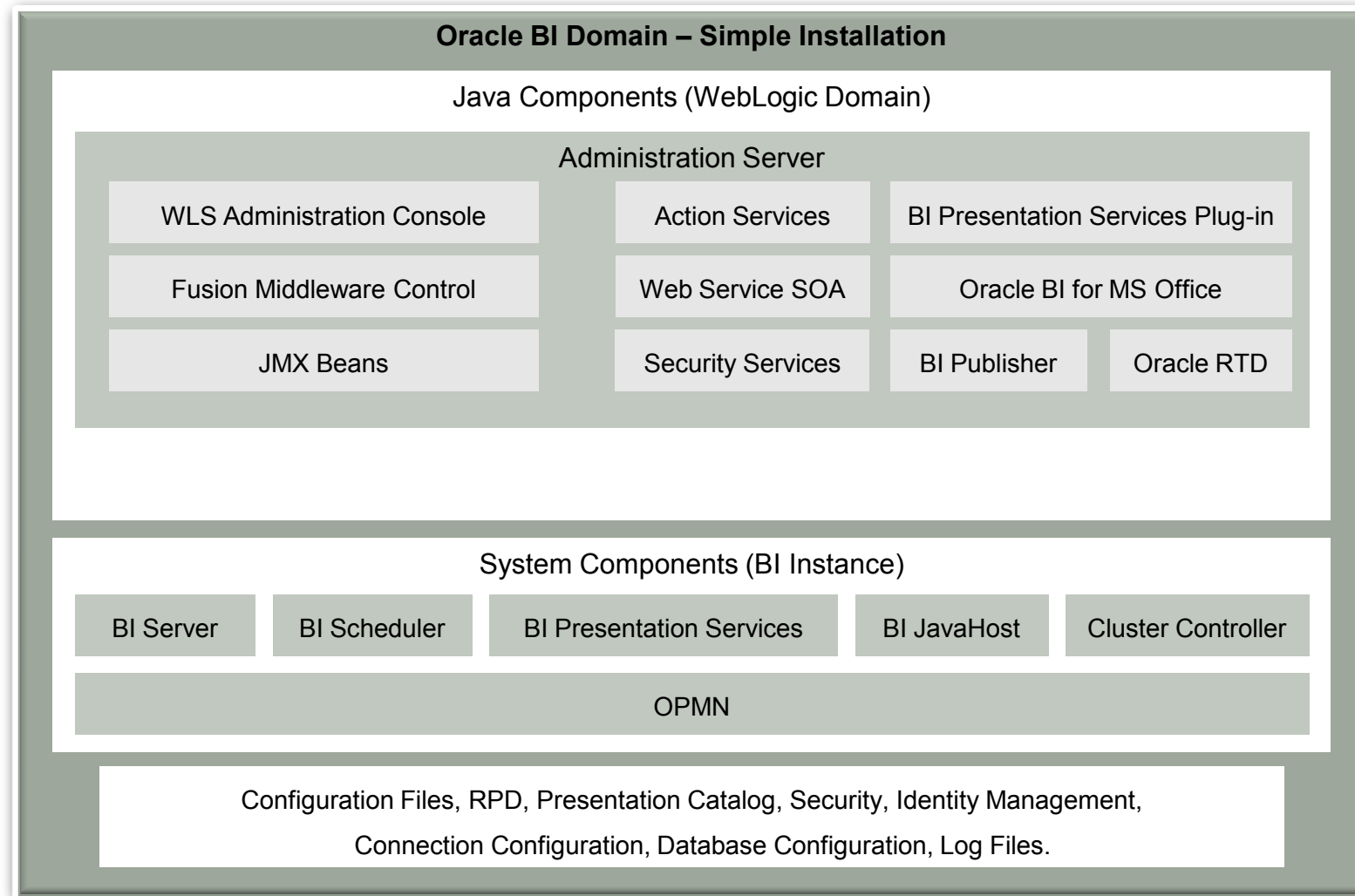- **Enterprise Install**
  - Enterprise deployment
  - Or scale out an existing enterprise
  - More control over installation
- **Software Only Install**
  - Installs software binary files in a Middleware home for later configuration
  - Useful if your goal is to have multiple domains or products share a common Middleware home

Oracle BI 11g – High Level Architecture
Simple Installation

Oracle BI Domain – Simple Installation

Java Components (WebLogic Domain)

Administration Server

WLS Administration Console	Action Services	BI Presentation Services Plug-in
Fusion Middleware Control	Web Service SOA	Oracle BI for MS Office
JMX Beans	Security Services	BI Publisher / Oracle RTD

System Components (BI Instance)

| BI Server | BI Scheduler | BI Presentation Services | BI JavaHost | Cluster Controller |

OPMN

Configuration Files, RPD, Presentation Catalog, Security, Identity Management, Connection Configuration, Database Configuration, Log Files.

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Enterprise Installation

Oracle BI Domain – Enterprise Installation

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Fusion Middleware Control

JMX Beans

Managed Server

Action Services

BI Presentation Services Plug-in

Web Service SOA

Oracle BI for MS Office

Security Services

BI Publisher

Oracle RTD

Node Manager

System Components (BI Instance)

BI Server

BI Scheduler

BI Presentation Services

BI JavaHost

Cluster Controller

OPMN

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Enterprise Installation

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Administration Server
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Managed Server
- Action Services
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Node Manager

System Components (BI Instance)
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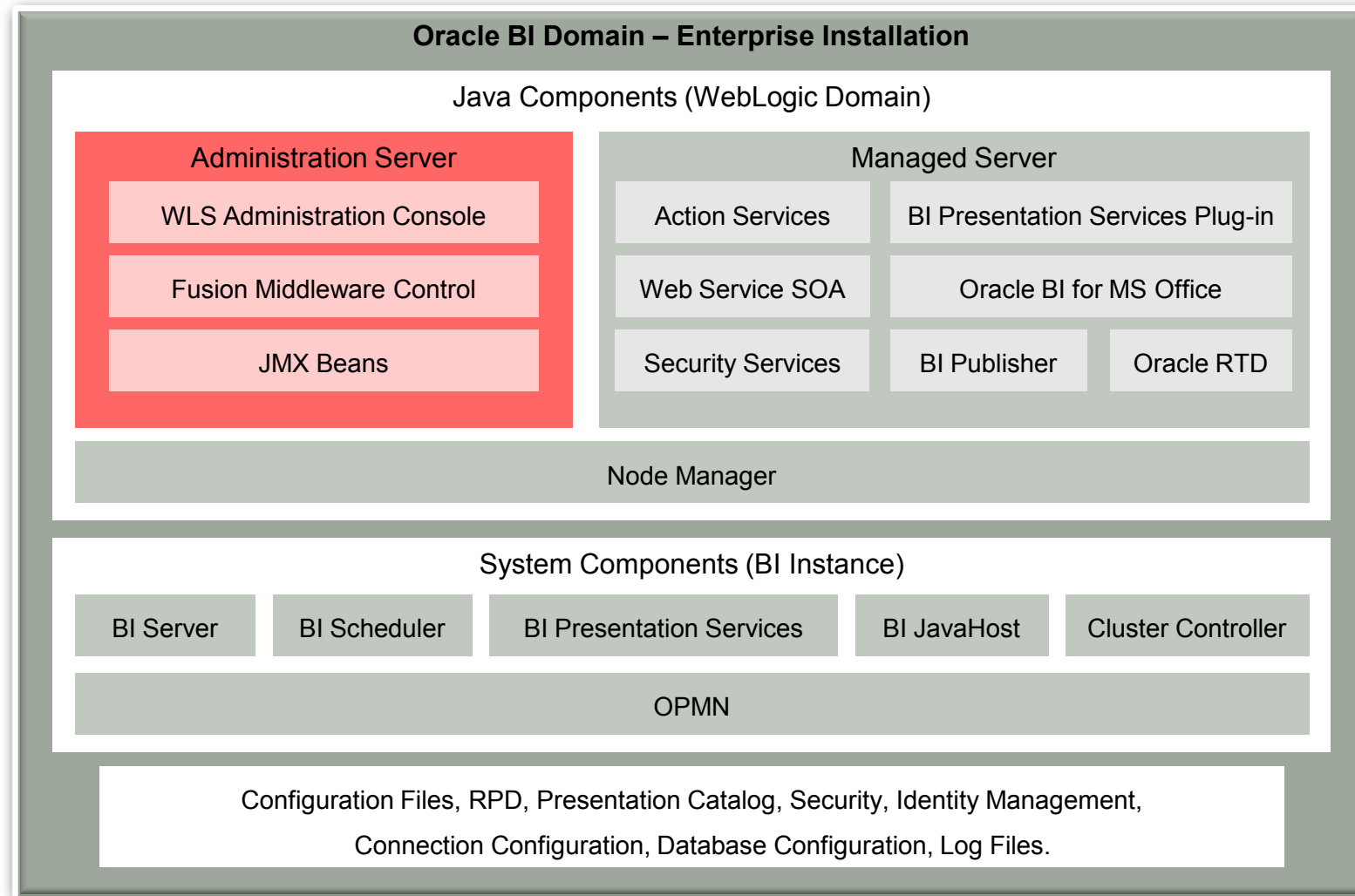
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Oracle Business Intelligence Components

- **Java Components (WebLogic Domain)**
  - Deployed as JEE applications
  - To service SOAP, HTTP, and other forms of requests

- **System Components (BI Instance)**
  - Deployed as server processes
  - Provide the core services that enable OBI

- **Other Domain Contents**
  - Includes all the necessary software, metadata, configuration files, RPD files, Oracle BI Presentation Catalog, and connection and database configuration information that are required to run an Oracle Business Intelligence system

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ORACLE
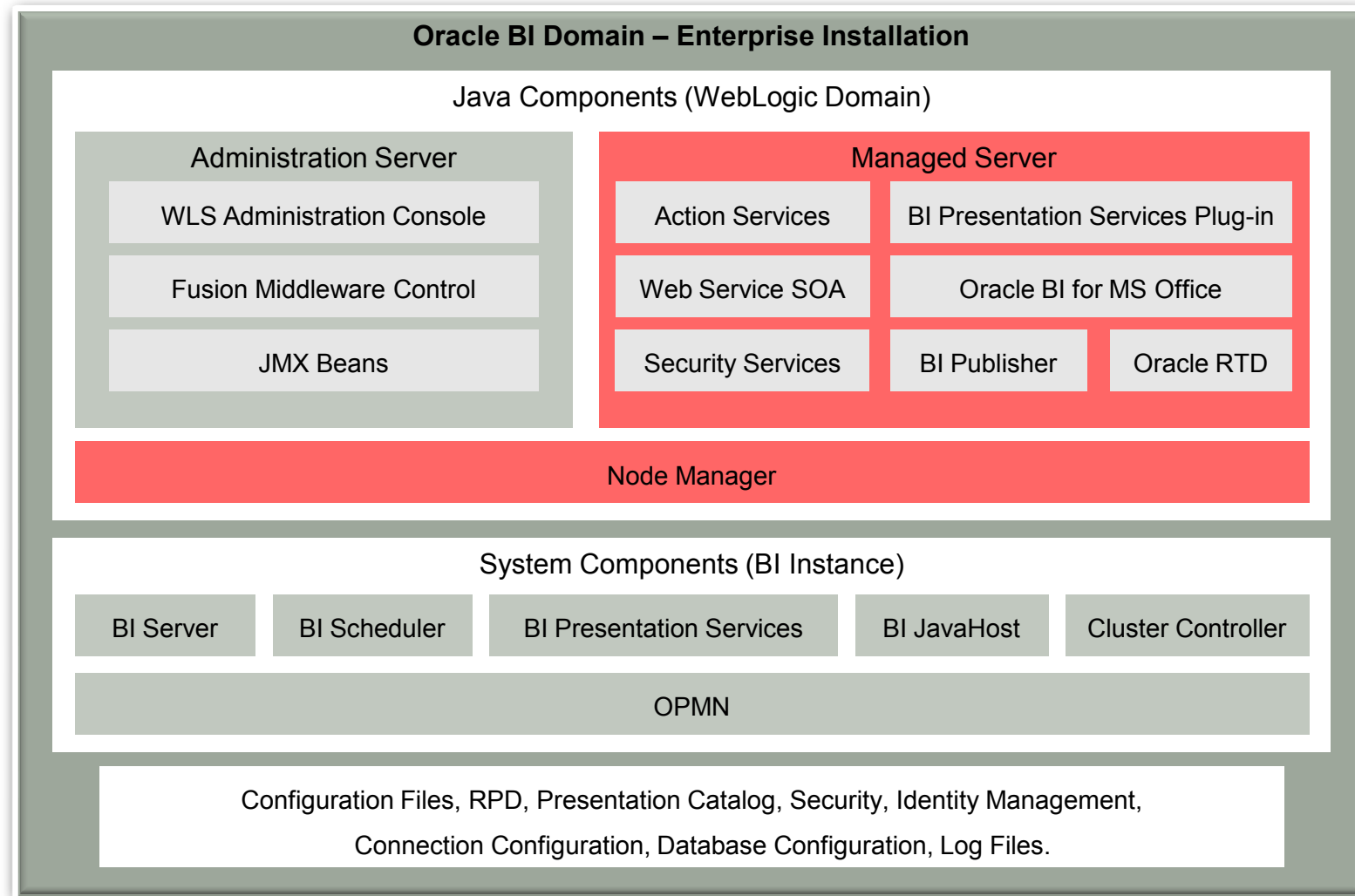
Oracle Business Intelligence Components
Administration Server

Components for administering the system

- **WebLogic Server Administration Console**
    - Monitoring the health and performance of JEE servers
    - Configuring WebLogic server domains
    - Stopping and starting JEE servers
    - Viewing JEE server logs
    - Managing users in the LDAP Server of the WebLogic Server
- **Fusion Middleware Control**
    - Starting, stopping, and restarting all system components and Managed Servers
    - Configuring preferences and defaults
    - Scaling out of system components
    - Providing high availability configuration and status of system components
    - Managing performance and monitoring system metrics
    - Performing diagnostics and logging
- **JMX Mbeans**
    - Provides programmatic access for managing a BI domain

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Managed Server

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System Components (BI Instance)

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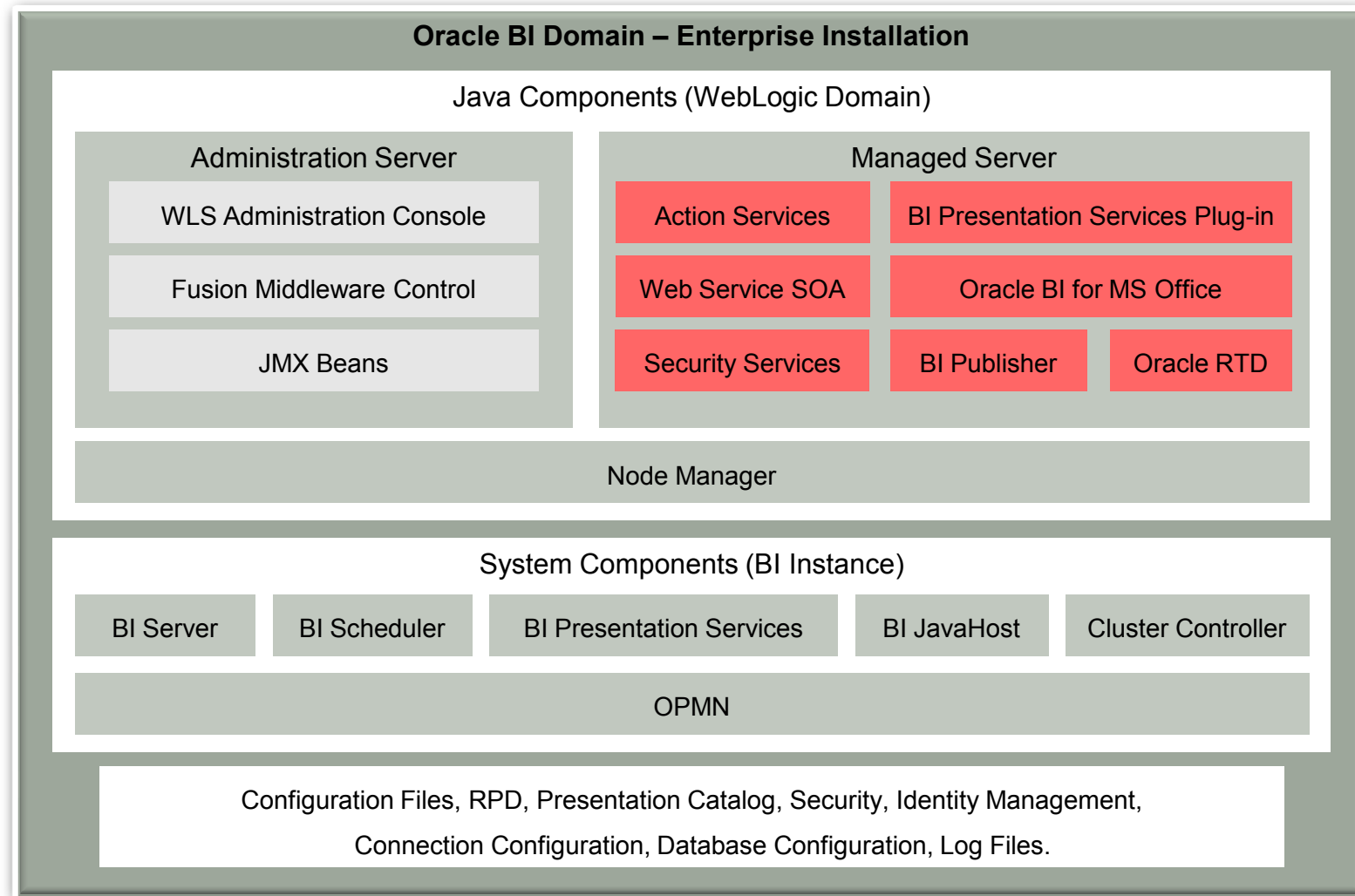
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Oracle Business Intelligence Components
Managed Server and Node Manager

- **Managed Server**
  - Provides run-time environment for the Java-based services and applications within the system

- **Node Manager**
  - Process management services for the Administration Server and Managed Server processes

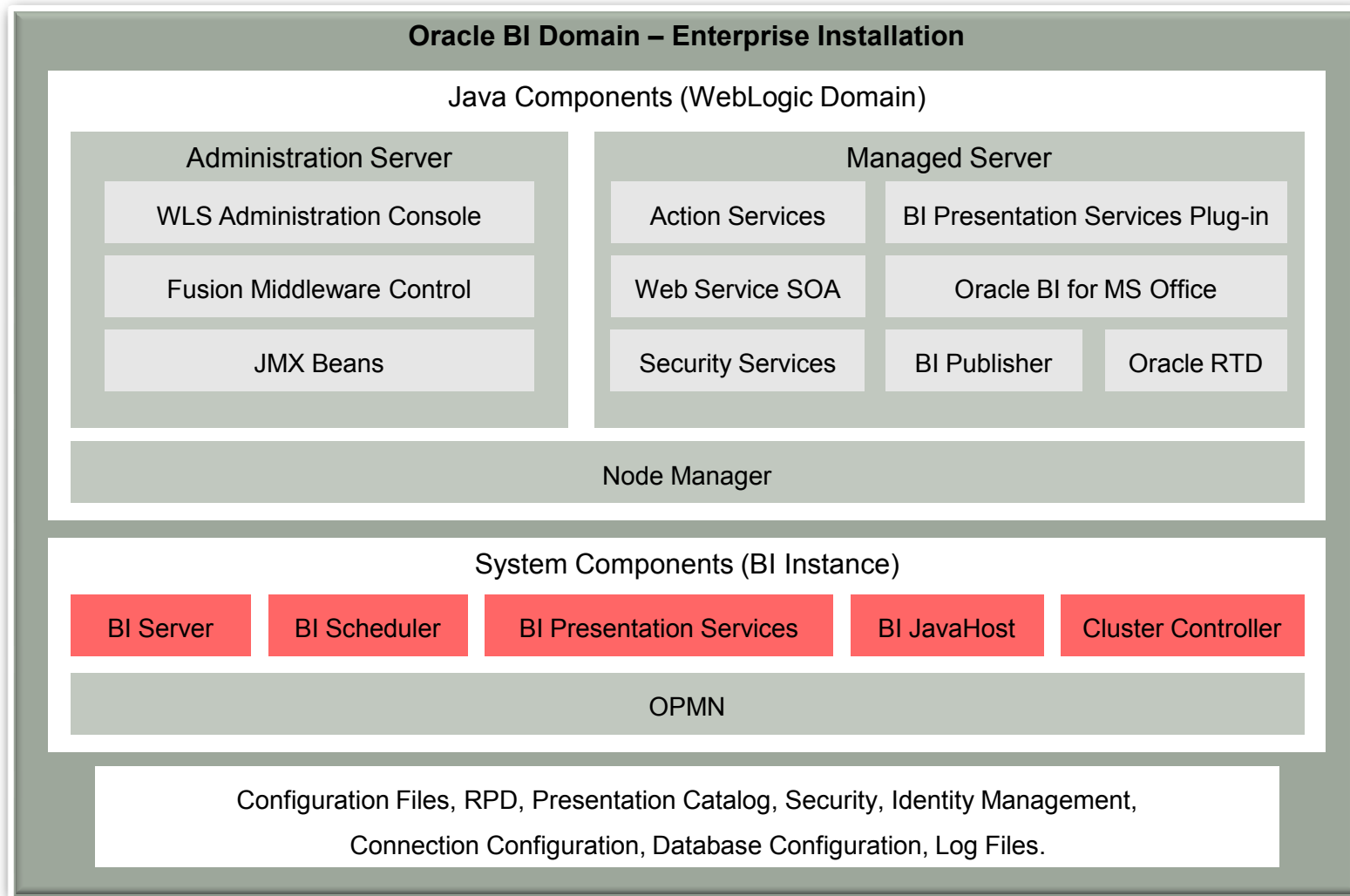# Oracle BI 11g – High Level Architecture
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Node Manager

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BI Server

BI Scheduler

BI Presentation Services

BI JavaHost

Cluster Controller

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Oracle Business Intelligence Components
Managed Server Components

- **Oracle BI Presentation Services Plug-in**
  - Routes HTTP and SOAP requests to Oracle BI Presentation Services
- **Oracle BI Action Services**
  - Web services required by the Action Framework
- **Oracle BI Security Services**
  - Integration of the Oracle BI Server with the Oracle Fusion Middleware security platform
- **Oracle BI for Microsoft Office**
  - Integration between Oracle Business Intelligence and Microsoft Office products
- **Oracle BI Publisher**
  - Enterprise reporting solution for authoring, managing, and delivering all types of highly formatted documents
- **Oracle Real-Time Decisions (Oracle RTD)**
  - Analytics software solutions allowing companies to make better decisions in real time
- **Oracle BI SOA Services**
  - Invoke OBI functionality from Business Process Execution Language (BPEL) processes

Oracle BI 11g – High Level Architecture
Enterprise Installation

Oracle BI Domain – Enterprise Installation
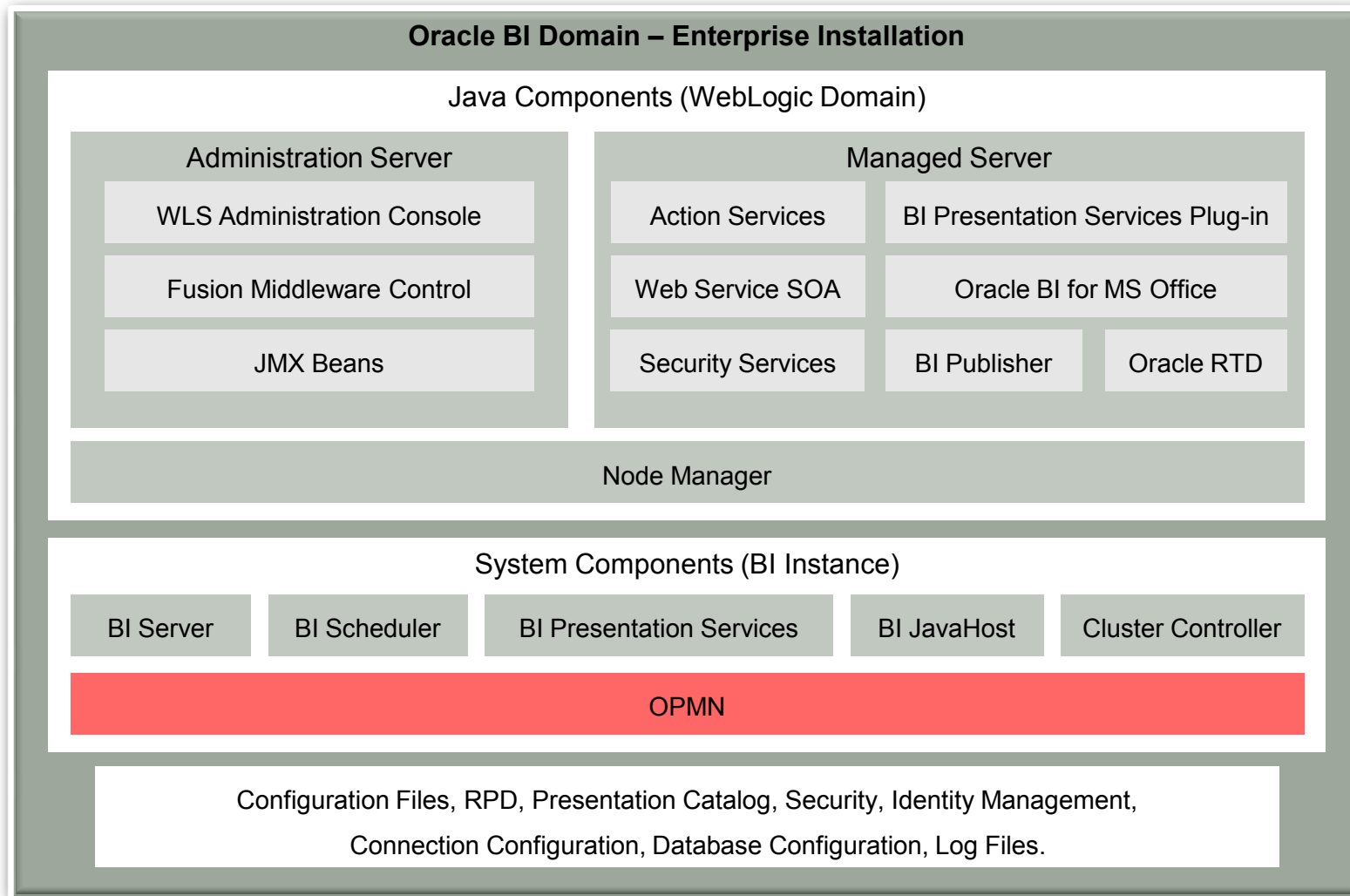
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Oracle Business Intelligence Components
System Components

System components are deployed as non-JEE components (C++ and J2SE)

- **Oracle BI Server**
  - Query and data access capabilities at the heart of OBI
  - Provides services for accessing and managing the enterprise semantic model (.rpd)

- **Oracle BI Presentation Services**
  - Framework and interface for the presentation of BI data to Web clients

- **Oracle BI Scheduler**
  - Scheduling for analyses to be delivered to users at specified times

- **Oracle BI JavaHost**
  - Supports various components such as Java tasks for Oracle BI Scheduler, Oracle BI Publisher, and graph generation
  - Also enables Oracle BI Server query access to Hyperion Financial Management and Oracle OLAP data sources

- **Oracle BI Cluster Controller**
  - Distributes requests to the BI Server
  - Ensuring requests are evenly load-balanced across all BI Server process in the BI domain

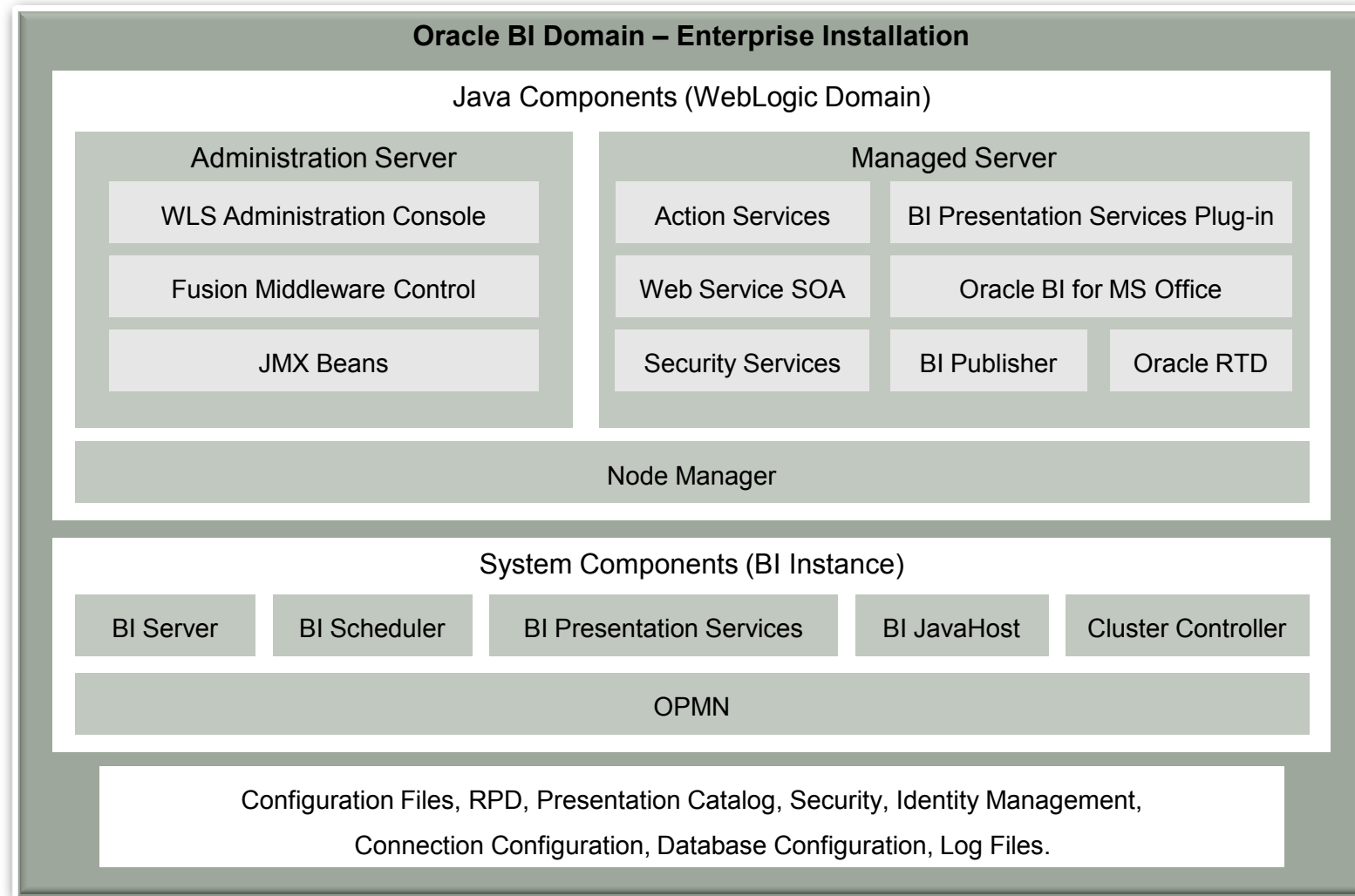# Oracle BI 11g – High Level Architecture
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Oracle Business Intelligence Components
Oracle Process Manager and Notification Server (OPMN)

- **OPMN**
  - Manage system components for Oracle Business Intelligence (for advanced users)
  - Supports both local and distributed process management
- **OPMN and Fusion Middleware Control**
  - Fusion Middleware Control is the recommended approach for starting, stopping, and viewing the status of components
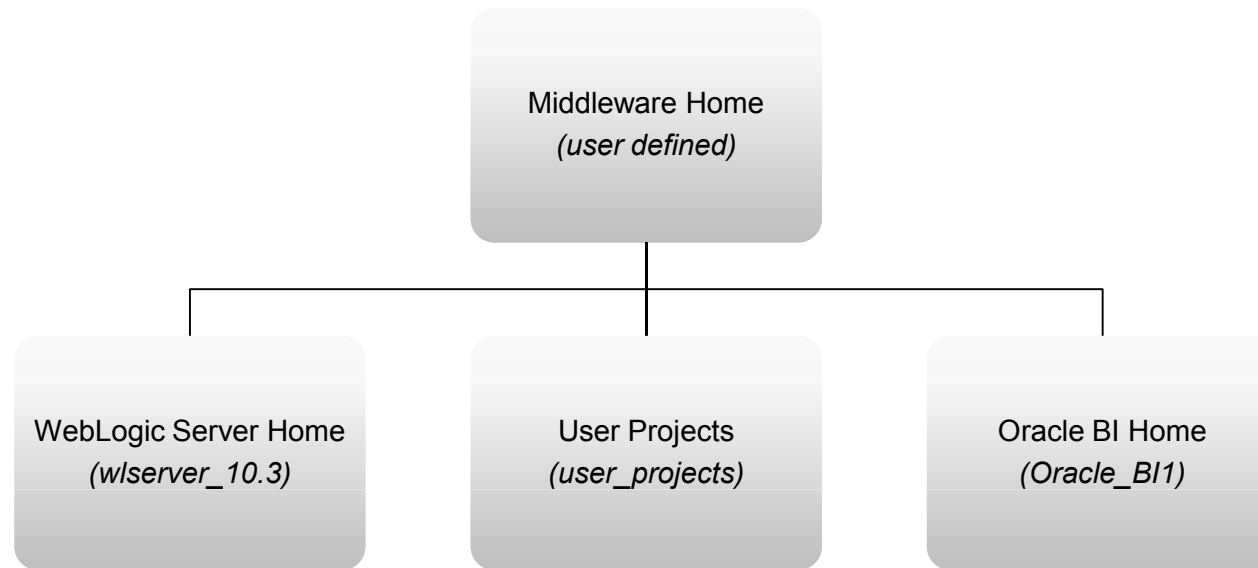 - OPMN is suitable only for advanced users

Oracle BI 11g – High Level Architecture
Enterprise Installation

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Java Components (WebLogic Domain)

Administration Server

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Node Manager

System Components (BI Instance)

BI Server	BI Scheduler	BI Presentation Services	BI JavaHost	Cluster Controller

OPMN

Configuration Files, RPD, Presentation Catalog, Security, Identity Management, Connection Configuration, Database Configuration, Log Files.

Oracle Business Intelligence
Basic Directory Structure

```
                    ┌──────────────────────┐
                    │   Middleware Home    │
                    │    (user defined)    │
                    └──────────┬───────────┘
          ┌────────────────────┼────────────────────┐
┌─────────┴──────────┐ ┌───────┴──────────┐ ┌────────┴─────────┐
│ WebLogic Server Home│ │  User Projects   │ │  Oracle BI Home  │
│   (wlserver_10.3)   │ │ (user_projects)  │ │   (Oracle_BI1)   │
└────────────────────┘ └──────────────────┘ └──────────────────┘
```

- **WebLogic Server home**
  - WebLogic Server home
  - Contains Java components

- **User Projects**
  - contains product domains (including one or more Oracle Business Intelligence domains), Administration Server, and one or more Managed Servers

- **Oracle BI Home**
  - Contains all the binary files (read-only) that are specific to Oracle Business Intelligence

Oracle Business Intelligence Components
Some Useful Directories of the BI Instance

- Repository
  - %Middleware Home%\instances\instance1\bifoundation\OracleBIServerComponent\
    coreapplication_obis1\repository

- Web Catalog
  - %Middleware Home%\instances\instance1\bifoundation\OracleBIPresentationServerComponent\
    coreapplication_obis1\catalog

- NQSConfig.ini
  - %Middleware Home%\instances\instance1\config\OracleBIServerComponent\
    coreapplication_obis1\repository

- instanceconfig.ini
  - %Middleware Home%\instances\instance1\config\OracleBIPresentationServerComponent\
    coreapplication_obis1\catalog

- BI Server Logs (nqserver.log, nqquery.log)
  - %Middleware Home%\instances\instance1\diagnostics\logs\OracleBIPresentationServerComponent\
    coreapplication_obis1

Oracle Business Intelligence
Quick Performance Tip (for Simple Install)

Try tuning some of the startup parameters located in two files in the directory:

- %Middleware Home%\user_projects\domains\bifoundation_domain\bin

- **setDomainEnv.cmd**
  - set XMX_SUN_64BIT=**1536**
  - if "%JAVA_VENDOR%"=="Sun" (
    set WLS_MEM_ARGS_64BIT=-Xms**1024**m -Xmx**1536**m
    set WLS_MEM_ARGS_32BIT=-Xms256m -Xmx512m
) else (
    set WLS_MEM_ARGS_64BIT=-Xms**1024**m -Xmx**1536**m
    set WLS_MEM_ARGS_32BIT=-Xms512m -Xmx512m
)
  - set MEM_MAX_PERM_SIZE_64BIT=-XX:MaxPermSize=**1536**m

- **setOBIDomainEnv.cmd**
  - if "%SVR_GRP%"=="obi" (
    @REM set memory args depending on java vendor
    if "%JAVA_VENDOR%"=="Sun" (
    set MEM_ARGS=-Xms**1024**m -Xmx**1536**m -XX:MaxPermSize=**1536**m
)
    if "%JAVA_VENDOR%"=="Oracle" (
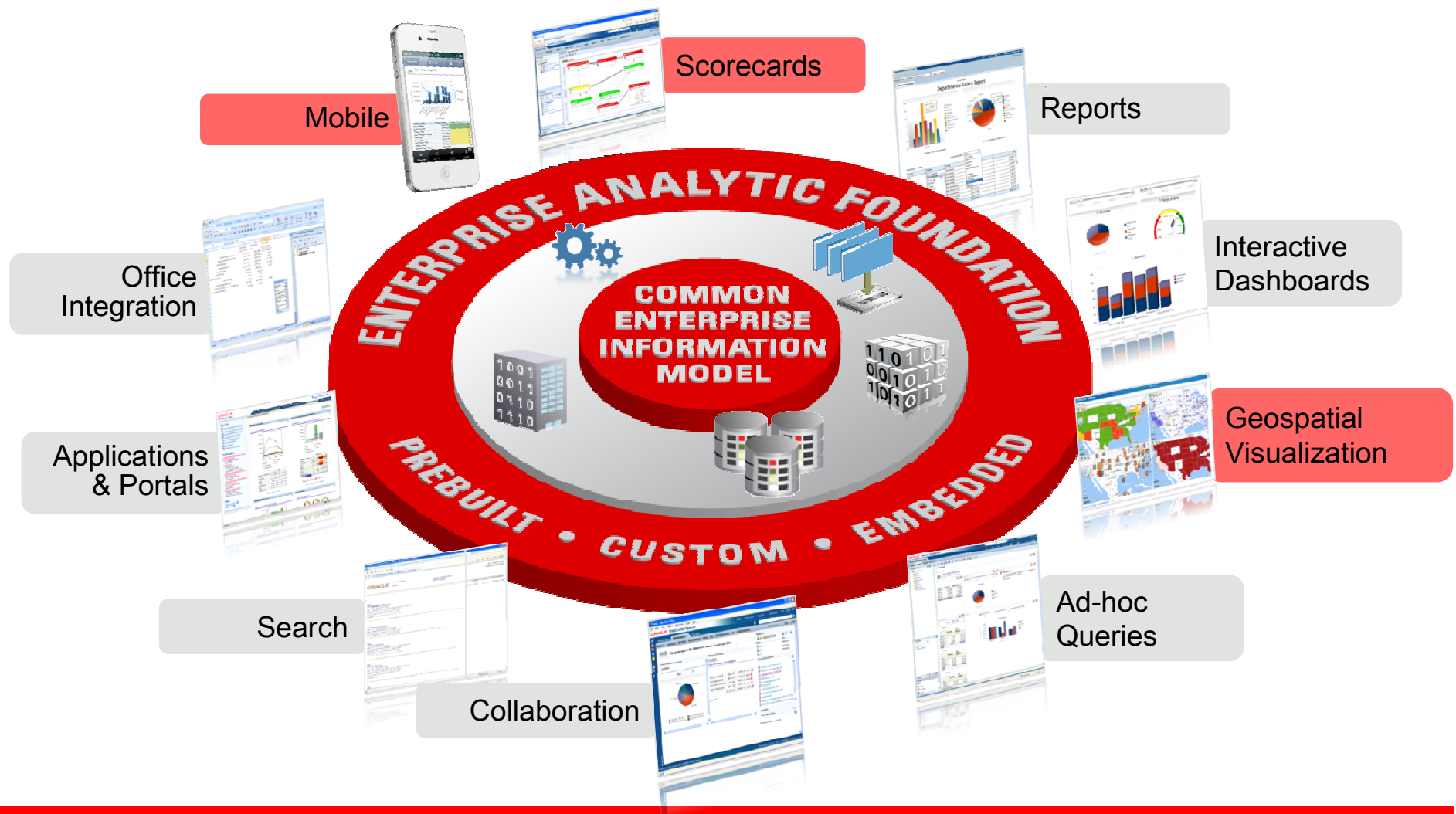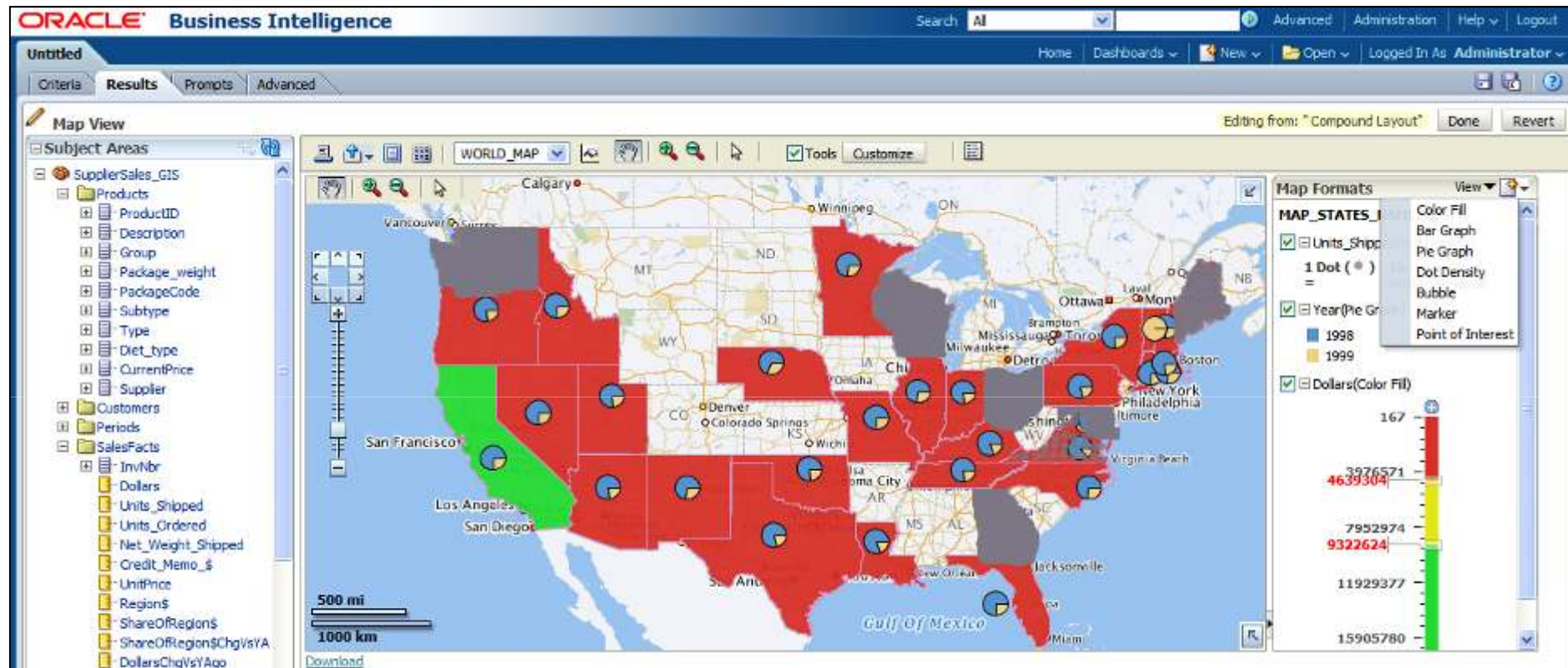   set SERVER_MEM_ARGS=-Xms**1024**m -Xmx**1536**m
)

New Visualizations

Oracle Business Intelligence
New Features

Scorecards

Mobile

Reports

ENTERPRISE ANALYTIC FOUNDATION

COMMON ENTERPRISE INFORMATION MODEL

PREBUILT • CUSTOM • EMBEDDED

Office Integration

Interactive Dashboards

Applications & Portals

Geospatial Visualization

Search

Ad-hoc Queries

Collaboration

ORACLE

Interactive Spatial Visualization

- Many mapping visualizations
- Multiple layers
- Interactive map controls

Oracle Scorecard and Strategy Management
Strategy Management & Goal Setting

- Integrated BI component
  - KPIs as core metadata
  - Thresholds, owners, history
  - Auto-generated interactive analyses
  - Linked objectives & initiatives

- Automatic detection
  - KPI alerts triggered by thresholds

- Strategy visualization
  - Strategy Maps and Trees
  - Cause and Effects
  - Watchlists
  - Annotations & override

- All methodologies
  - Balanced scorecard, six sigma, Baldrige
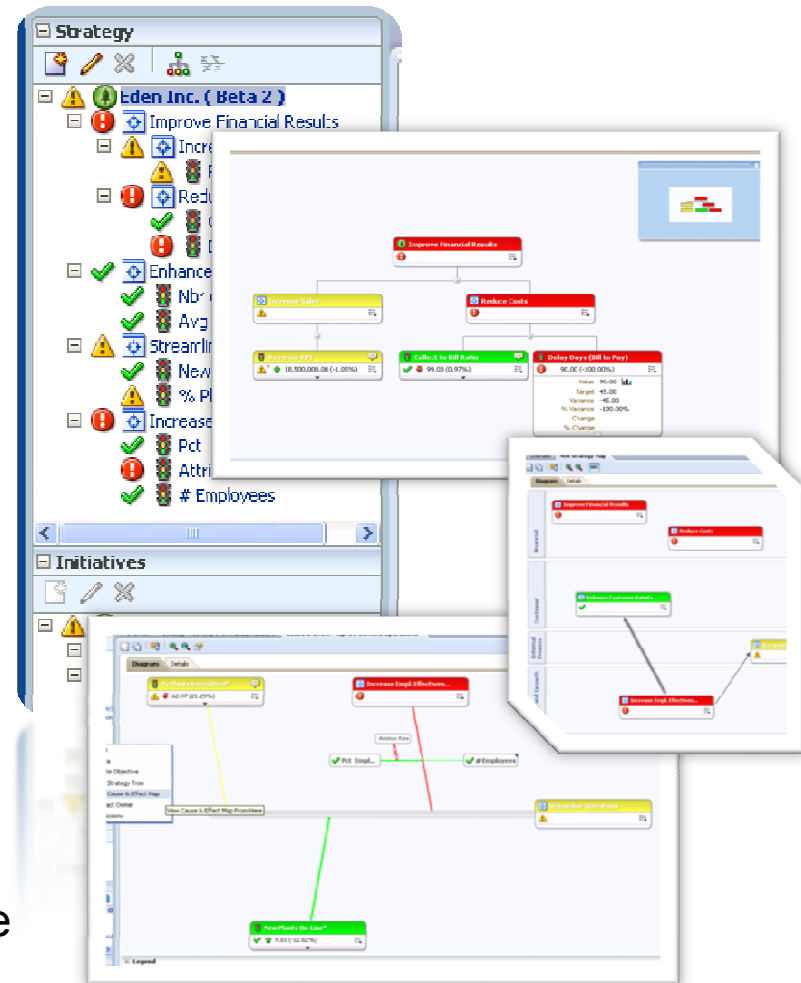
Oracle Business Intelligence Mobile

- Content dynamically optimized for target devices
  - Collapsing a multi-column Dashboard into a single column
  - Segmenting out into smaller pieces for widget-style consumption

- Fully Integrated
  - Integrated security
  - Leverages SSL and SSO