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# Managing Oracle Business Intelligence Enterprise Edition using Enterprise Manager Cloud Control 12c

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## Executive Overview

Oracle Business Intelligence tools and technology provide a broad set of capabilities for reporting, analysis, modeling, forecasting and it is the only solution that makes BI actionable by providing business users the ability to initiate actions directly from their dashboards. Oracle Business Intelligence 11g is an Enterprise Class product through its tight integration with core Fusion Middleware components as fundamental building blocks of the product architecture.

User-centric BI has moved information systems from the hands of developers into the hands of the masses making BI a mission critical system where reliability, availability and serviceability are some of the main considerations. As companies want to consolidate to enterprise BI solutions, systems management, scalability, performance, integration into the existing IT environment and rock solid security become critically important.

Large-scale enterprise BI systems must deliver mission-critical scalability and performance, and this typically means multiple physical servers to manage. Oracle Enterprise Manager Cloud Control BI Management Pack addresses these needs through unified systems management, superior performance and scalability, and comprehensive security and identity administration that all work with your choice of IT environment. This enables consistent diagnostics and troubleshooting, and easy configuration management of the distributed system topology over its complete lifecycle.

## Introduction

### Oracle Business Intelligence Enterprise Edition

#### **Key Benefits**

- Simplifies BI tools infrastructure
- Integrates BI foundation with IT architecture
- Offers consistent view of information and single source
- Improves customer choice for BI solutions

#### **Key Features**

- Rich Interactive Dashboards
- Easy to use ad hoc query and analysis
- Pixel perfect Enterprise Reporting
- Highly Scalable Multidimensional OLAP server
- Unified environment for transparent access to relational, OLAP and unstructured data
- Powerful geospatial mapping and visualization
- Integrated Scorecard and Strategy Management
- Ability to act on insight by invoking business processes from within BI
- Common Enterprise Information Model
- Proactive detection and Alerts
- Advanced Enterprise reporting and publishing

Oracle Business Intelligence Enterprise Edition 11g (OBIEE) is a comprehensive business intelligence platform that delivers a full range of capabilities—including interactive dashboards, ad hoc queries, notifications and alerts, enterprise and financial reporting, scorecard and strategy management, business process invocation, search and collaboration, mobile, integrated systems management and more. OBIEE 11g is based on a proven web service-oriented unified architecture that integrates with an organization's existing information technology (IT) infrastructure for the lowest total cost of ownership (TCO) and highest return on investment (ROI).

Oracle Business Intelligence Foundation suite is a complete, open, and integrated solution for all of your enterprise BI needs. The Oracle Business Intelligence Foundation suite includes the following products: Oracle Business Intelligence Enterprise Edition, Oracle Business Intelligence Publisher, Oracle Essbase, Oracle Scorecard and Strategy Management, and Oracle Essbase Analytics Link.

Evolve your IT into a role of business enabler by standardizing on a single, scalable business intelligence (BI) platform that connects people with information – anytime, on any device—and accelerates decision making. Oracle BI tools and technology provide a broad set of capabilities for reporting, analysis, modeling, forecasting and it is the only solution that makes BI actionable by providing business users the ability to initiate actions directly from their dashboards.

## Oracle Enterprise Manager 12c

### Key New Capabilities

- Complete cloud lifecycle management. Discover existing IT assets and plan how to transform them into clouds using Consolidation Planner.
- Guided cloud setup wizard. Define a rich set of self service cloud services, including infrastructure-as-a-service (IaaS) and platform-as-a-service (PaaS), which includes database-as-a-service (DbaaS) and middleware-as-a-service (MWaaS). You can also meter and charge back for consumption of cloud services.
- Integrated cloud stack management. Manage the entire application-to disk stack from a single pane of glass. And a zero overhead instrumentation enables you to gain a comprehensive perspective of your IT operations.
- Business-driven application management. Serve mission critical applications while integrating IT and the business

Oracle Enterprise Manager 12c is Oracle's integrated enterprise IT management product, providing the industry's first complete cloud lifecycle management solution. With Oracle Enterprise Manager 12c, you can create self-service IT, simplify and automate IT operations, and manage applications in a way that delivers maximum business value. With Oracle Enterprise Manager, now you can monitor and manage your complete Oracle IT infrastructure from a single console. Oracle Enterprise Manager 12c's business-driven application management capabilities allow you to quickly set up, manage and support enterprise clouds as well as traditional Oracle environments—from applications-to-disk, helping you to achieve:

- Best service levels for traditional and cloud applications through management from a business perspective including Oracle Fusion Applications
- Maximum return on IT management investment through the best solutions for intelligent management of the Oracle stack and engineered systems
- Unmatched customer support experience through real-time integration of Oracle's knowledgebase with each customer environment.

## BI Management Pack

### Key Benefits

#### Reduce Costs

- Automated discovery and tracking of Business Intelligence configurations
- Reduce mean time to resolution

#### Improve Service Levels

- Proactive monitoring of end-user performance and availability
- Monitor key Oracle Business Intelligence performance metrics

#### Align with Business Demands

- Make optimization decisions based on clearly defined KPI's
- Create Service Level Agreements and Dashboards

### Key Features

- Real-time performance and availability monitoring
- Key configuration and information collection
- Built-in reports for problem diagnosis, trend analysis and capacity planning

For a quick overview of the pack, please check out the following video:

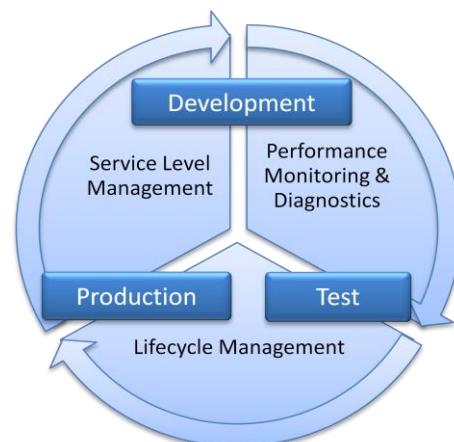
<http://www.youtube.com/watch?v=L4n2p4TomIQ>

### A Centralized Systems Management Solution for Oracle BI EE and Oracle BI Applications

Oracle Business Intelligence Management Pack is a comprehensive, integrated management solution in Oracle Enterprise Manager that helps you achieve high levels of performance and availability, and reduce the costs of managing your Oracle Business Intelligence Enterprise Edition applications.

The Oracle Enterprise Manager Business Intelligence Management Pack provides an integrated solution for ensuring the performance and availability of Oracle Business Intelligence Enterprise Edition (Oracle BI EE). Using the management pack, you can receive proactive alerts on impending problems for the application, examine run-time statistics to troubleshoot and tune performance, compare configurations across different environments, and keep track of configuration changes to avoid configuration-related problems.

You can use the management pack with other Oracle Enterprise Manager Management packs and plug-ins to achieve end-to-end management of the entire application environment, including both Oracle and non-Oracle databases, operating systems, storage, and network devices.



## Background

With OBIEE 11g, Fusion Middleware Control (FMWC), a java app installed along with the WebLogic Admin Server, is bundled along with the BIEE and is used to control a single Oracle BI Domain. FMWC uses Mbeans extensively to monitor and control the various BI components. Every BI Instance has its own version of FMWC and is installed in the same domain. Though this works fine in the most of the cases, if the box running OBI and FMWC goes down, then this causes a Single Point Of Failure (SPOF).

OBI Management Pack for monitoring OBIEE 11g was introduced in EMCC 12cR2. This helps in managing various OBI instances spread in an enterprise and offers a lot many more features that help in managing different facets of OBIEE in an Enterprise. Also, SPOF is avoided as EM runs in a different environment than the one in which OBIEE is running.

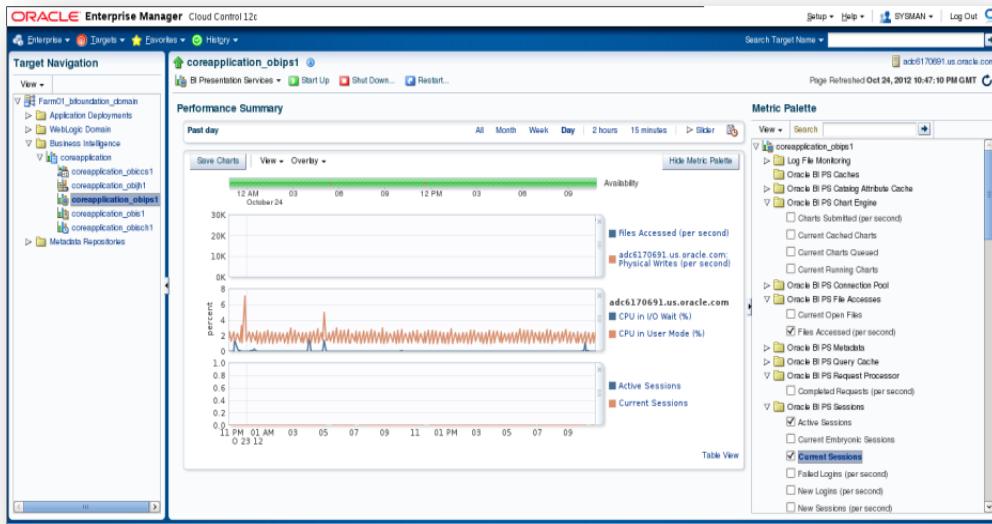
Earlier, the Business Intelligence Management Pack was introduced in Enterprise Manager Grid Control 10g release 10.2.0.4 for monitoring OBIEE 10g instances.

## Features

### Application Performance Management

With the Business Intelligence Management Pack, you can proactively monitor your Oracle BI environment from both systems & end-user perspectives. A wide range of out-of-box performance metrics are collected for the monitored Oracle BI targets allowing you to set up alerts based on thresholds, view current and historical performance information using graphs and reports, and diagnose performance problems by identify bottlenecks.

You can view detailed key query statistics about dashboard usage through Dashboard Reports in two key areas, failed reports and resource consumption by top consuming reports and their end users, which enables you to see the origin of disproportionate resource consumption. In addition to usage trending, these reports can help you diagnose performance problems by showing you a complete listing of failed dashboards along with the error code/message and SQL statements associated with the failed queries and a breakdown of dashboard response time based on database time, compile time and overall time for end-user queries.



## Configuration Management

Key configuration management tasks like keeping track of configuration changes, taking snapshots to store configurations, and comparing and searching component configurations for the monitored Oracle BI targets are now possible with the BI Management Pack.

To ensure that the configurations of all critical Oracle BI components in your production environment are consistent with your staging or test environments, you can use Configuration Snapshots to save working configurations into the Management Repository or into an external XML file as a gold image. This gold image can then be compared with the active configuration in the test or staging environments, or against any historical snapshot. Configuration comparisons also simplify investigations into why components that are presumed to be identical are behaving differently and helps to ensure the consistency of configurations in your application environment – thus reducing “configuration drift”. To diagnose performance problems that may be related to system configuration changes, you can use Business Intelligence Management Pack’s Configuration History tool to keep track of all configuration changes to locate the root cause of performance problems.

Configuration Management is also useful in achieving regulatory compliance (like SOX, HIPAA) cost effectively, as it could be extremely tedious and error prone to try to keep track of changes manually.

**Result for job CONFIGURATION COMPARISON JOB SAT JUL 28 21:07:34 PDT 2012**

**Comparison Job Details**

Comparison Template: No Template

Target Type	Result	First Target	Second Target
Oracle BI Instance	Different	/bi_essbase_bifound/bi_dashboard_bifoundation_domain/bifoundation_domain/BusinessIntelligence (Oracle BI Instance)	/bi_essbase_bifound/bi_dashboard_bifoundation_domain/bifoundation_domain/BusinessIntelligence (Oracle BI Instance)
Oracle BI Cluster Controller	Different	/bi_essbase_bifound/bi_dashboard_bifoundation_domain/bifoundation_domain/BusinessIntelligence	/bi_essbase_bifound/bi_dashboard_bifoundation_domain/bifoundation_domain/BusinessIntelligence
Oracle BI JavaHost	Different	/bi_essbase_bifound/bi_dashboard_bifoundation_domain/instance1/coreapplication_ohj1	/bi_essbase_bifound/bi_dashboard_bifoundation_domain/instance1/coreapplication_ohj1
Oracle BI Scheduler	Different	/bi_essbase_bifound/bi_dashboard_bifoundation_domain/instance1/coreapplication_ohsch1	/bi_essbase_bifound/bi_dashboard_bifoundation_domain/instance1/coreapplication_ohsch1
Oracle BI Presentation Server	Left Only	/bi_essbase_bifound	/bi_essbase_bifound
Oracle BI Server	Left Only	/bi_essbase_bifound	/bi_essbase_bifound
Oracle BI Presentation Server	Right Only	/bi_dashboard_bifoundation_domain/instance1/coreapplication_ohips1	/bi_dashboard_bifoundation_domain/instance1/coreapplication_ohips1
Oracle BI Presentation Server	Right Only	/bi_dashboard_bifoundation_domain/instance1/coreapplication_ohips2	/bi_dashboard_bifoundation_domain/instance1/coreapplication_ohips2
Oracle BI Server	Right Only	/bi_dashboard_bifoundation_domain/instance1/coreapplication_ohsi1	/bi_dashboard_bifoundation_domain/instance1/coreapplication_ohsi1
Oracle BI Server	Right Only	/bi_dashboard_bifoundation_domain/instance1/coreapplication_ohsi2	/bi_dashboard_bifoundation_domain/instance1/coreapplication_ohsi2

## Incident Management - Events and Incidents

An event is a significant occurrence on a managed target that typically indicates something has occurred outside normal operating conditions--they provide a uniform way to indicate that something of interest has occurred in an environment managed by Enterprise Manager. An incident is a significant event or set of related significant events that need to be managed because it can potentially impact your business applications. These incidents typically need to be tracked, assigned to appropriate personnel, and resolved as quickly as possible. You perform these incident management operations through Incident Manager, an intuitive UI within Enterprise Manager that provides in one location, the ability to search, view, manage, and resolve incidents and problems impacting your environment.

Incident rules and rule sets can automate the creation of incidents based on important events, perform notification actions such as sending e-mail or opening helpdesk tickets, perform operations to manage the incident workflow lifecycle such as changing incident ownership, priority, or escalation level. In addition, Incident Management provides the root cause analysis for the problem that is reported. There are out-of-box rule sets for incident creation and event clearing based on typical scenarios and also you can create your own copies of out-of-box rule sets and then subscribe to them.

The screenshot shows the Oracle Enterprise Manager Incident Manager interface. The top navigation bar includes 'coreapplication' (with a help icon), 'Business Intelligence Instance', 'Start Up', 'Shut Down...', 'Restart...', and a timestamp 'Page Refreshed Feb 13, 2013 11:04:24 PM PST'. The main title is 'Incident Manager: All open incidents'. On the left, there's a sidebar with 'Views' (Standard, My open incidents and problems, Unassigned incidents, Unacknowledged incidents, Escalated incidents, All open incidents, Unassigned problems, All open problems, Events without incidents) and 'Views For Filtering' (General, Events, My Oracle Support Knowledge, Updates, Related Events And Incidents). The central area is titled 'Incident List' with a table header: Target, Priority, Status, Last Updated, Owner, Adm/Escal/Type, Category. Below the table, a message states: 'Agent is Unreachable (REASON = unable to connect to the agent at https://[REDACTED]/end/main/ [Connection timed out]). Host is unreachable (REASON = Ping timed out).'. The 'General' tab is selected, showing 'Incident Details' (ID: 4603, Target: [REDACTED]/foundation\_domain/instance1/coreapplication\_objh1 (Oracle BI JavaHost), Incident Created: Feb 12, 2013 1:56:38 AM PST, Last Updated: Feb 12, 2013 2:03:38 AM PST, Summary: Agent is Unreachable (REASON = unable to connect to the agent at https://[REDACTED]/end/main/ [Connection timed out]). Host is unreachable (REASON = Ping timed out).), Internal Event Status (Name: Agent Availability, Event Type: Target Availability, Category: Availability). The 'Tracking' section shows Escalated: No, Priority: None, Status: New. A note says: 'Last Incident created by rule (Name = Incident management Ruleset for all targets, Incident creation Comment Rule for target down.; Owner = ); on Feb 12, 2013 1:56:38 AM PST. This incident will be automatically cleared when the underlying issue is resolved.' The 'Guided Resolution' section includes 'Diagnostics' (View topology, View recent configuration changes) and 'Guided Diagnostics and Resolution'. The 'Reason' section shows a table with columns: Target, Target Type, Root-cause Analysis Status, Reported at, Severity, Message, Incident ID. One row is listed: [REDACTED] Agent, Complete, Feb 12, 2013 1:58:54, Agent is Unreachable (REASON = unable to connect to the agent at https://[REDACTED]), 4610.

## Blackouts, Alerts and Notifications

Enterprise Manager comes with a bundle of performance and health metrics that enable automated monitoring of application targets in your environment. When a metric reaches the predefined warning or critical threshold, an alert is generated and the administrator is notified. However, there are occasions when you want to perform maintenance work on your OBI targets, and not want any alerts to be generated while you are bringing them down. In this case, you can schedule a blackout and suspend monitoring of the targets. Data collection activity is suspended on the monitored targets during a blackout. Enterprise Manager allows you to define new blackouts; view the status of existing blackouts; and edit, stop, and delete blackouts that are not required.

The notification system allows you to notify Enterprise Manager Administrators when specific incidents, events, or problems arise. You can also perform actions such as executing operating system commands (including scripts) and PL/SQL procedures when specific incidents, events, or problems occur. This capability allows you to automate IT practices. For example, if an incident (such as monitoring of the operational (up/down) status of a OBI target) arises, you may want the notification system to automatically open an in-house trouble-ticket using an OS script so that the appropriate IT staff can respond in a timely manner. By specifying an outgoing mail server, you can get emails that notify you of issues in your system in a timely fashion.

## Lifecycle Management

Lifecycle Management is a comprehensive solution that helps system, and application administrators automate the processes required to manage the lifecycle of Oracle technology. It eliminates manual and time-consuming tasks related to discovery, initial provisioning, patching, configuration management, and ongoing change management. In addition, the solution provides compliance frameworks for reporting and managing industry and regulatory

compliance standards. Finally, all of the on-premise instrumentation can be connected in real-time to My Oracle Support for complete communication between Oracle and customers.

## Service Level Management

The pack's service level management capabilities help you define service level objectives (SLO) based on business requirements, model the end-to-end service down to the system components it depends on, monitor performance against these goals, and report on service level agreement (SLA) compliance to key stakeholders.

This screenshot shows a table titled 'Failed Dashboards in Last 24 Hours'. The table has columns for Error Code, Error Message, Repository, Subject Area, Start Time, End Time, and View Log Messages. There are four entries in the table:

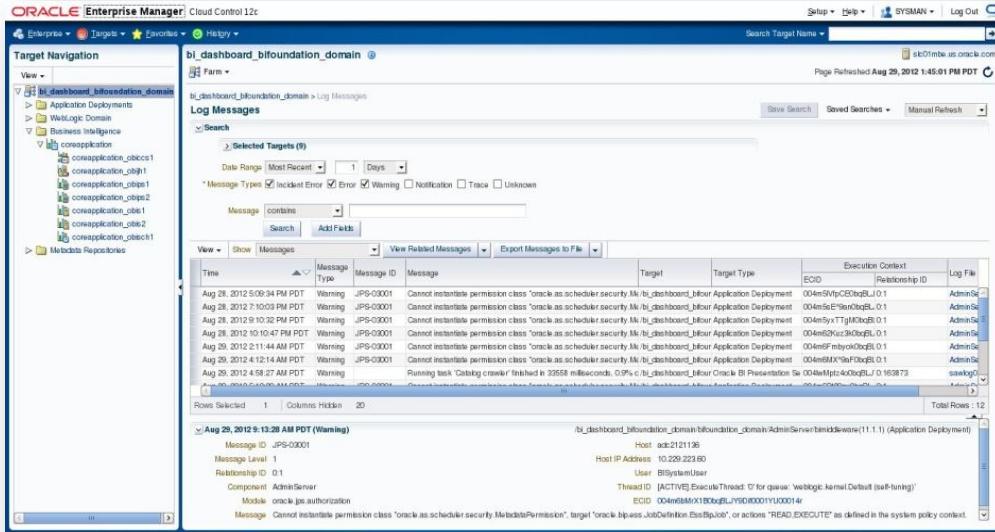
Error Code	Error Message	Repository	Subject Area	Start Time	End Time	View Log Messages
3	Star	05 - TimesTen Sample	Aug 15, 2012 10:20:28 PM PST	Aug 15, 2012 10:20:29 PM PST		<a href="#">View Log Messages</a>
3	Star	04 - Olap Sample	Aug 15, 2012 10:10:24 PM PST	Aug 15, 2012 10:10:26 PM PST		<a href="#">View Log Messages</a>
3	Star	03 - Essbase Integration	Aug 15, 2012 10:09:04 PM PST	Aug 15, 2012 10:09:07 PM PST		<a href="#">View Log Messages</a>
3	Star	03 - Essbase Integration	Aug 15, 2012 10:09:04 PM PST	Aug 15, 2012 10:09:07 PM PST		<a href="#">View Log Messages</a>

This screenshot shows a table titled 'Top Dashboards by Resource Usage in Last 7 Days'. The table has columns for Dashboard, Total Time (HH:MM:SS), Database Time (HH:MM:SS), Compile Time (HH:MM:SS), Total Logical Requests, Failed Logical Requests, and View Log Messages. There are eight entries in the table:

Dashboard	Total Time (HH:MM:SS)	Database Time (HH:MM:SS)	Compile Time (HH:MM:SS)	Total Logical Requests	Failed Logical Requests	View Log Messages
jshared8, Source Specific Features/_portal/8.3 Oracle OLAP	00:00:05	00:00:04	00:00:01	2	1	<a href="#">View Log Messages</a>
jshared3, Analysis and Dashboards/_portal/3.0 Mobility	00:00:04	00:00:02	00:00:02	6	0	<a href="#">View Log Messages</a>
jshared8, Source Specific Features/_portal/8.2 Oracle Essbase	00:00:03	00:00:01	00:00:02	6	3	<a href="#">View Log Messages</a>
jshared7, Server Features/_portal/7.2 Logical Aggregations	00:00:01	00:00:00	00:00:01	2	0	<a href="#">View Log Messages</a>
jshared3, Analysis and Dashboards/_portal/3.0 Report Visuals	00:00:00	00:00:00	00:00:00	3	0	<a href="#">View Log Messages</a>
jshared8, Source Specific Features/_portal/8.6 Oracle TimesTen	00:00:00	00:00:00	00:00:00	1	1	<a href="#">View Log Messages</a>
jshared8, Source Specific Features/_portal/8.1 Oracle DB	00:00:00	00:00:00	00:00:00	1	0	<a href="#">View Log Messages</a>
jshared2, Functional Examples/_portal/2.10 Descriptive Stats	00:00:00	00:00:00	00:00:00	1	0	<a href="#">View Log Messages</a>
jshared3, Analysis and Dashboards/_portal/3.6 Segmentation	00:00:00	00:00:00	00:00:00	1	0	<a href="#">View Log Messages</a>
jshared6, Published Reporting/_portal/6.1 Published Reporting	00:00:00	00:00:00	00:00:00	4	0	<a href="#">View Log Messages</a>

## Log Viewer and Monitoring

You can centrally search logs generated by WebLogic and Oracle Business Intelligence components. You can perform structured log searches based on log properties such as time, severity, or Execution Context ID (ECID). You can also download log files or export messages to a file. This feature provides ready access to log files no matter where they are stored on the file system. You can register for patterns in the log files and get notified when the pattern is recognized in the log files.



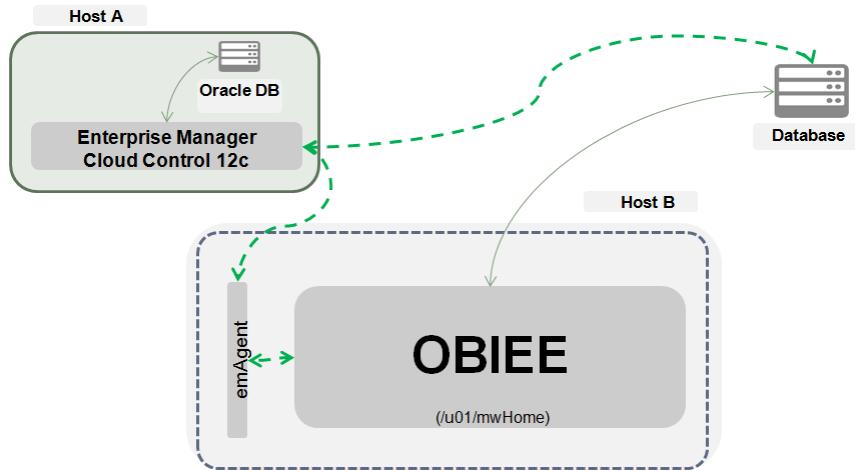
## Licensed Targets

The following OBIEE targets are licensed with the Oracle Business Intelligence Management Pack for Enterprise Manager 12c:

Oracle BI EE 10g	Oracle BI EE 11g
Oracle BI Analytics Server	Oracle BI Instance
Oracle BI Cluster Controller	Oracle BI Cluster Controller
Oracle BI Presentation Server	Oracle BI Java Host
Oracle BI Scheduler	Oracle BI Presentation Server
Oracle BI Suite Enterprise Edition	Oracle BI Server
Oracle BI Data Warehouse	Oracle BI Scheduler
Administration Console (DAC)	Oracle BI Suite Enterprise Edition
Server	Oracle Essbase Server
Hosts Running BI Components	Oracle Essbase Application

## Setup & Enabling the Pack

A sample setup with EMCC running its own dedicated machine (Host A) with an instance of OBIEE running in another machine (Host B) is shown below. EMCC communicates with the OBIEE using its emAgent deployed onto Host B. The emAgent collects the metrics from Host A and uploads them into the repository at EMCC during the scheduled configuration collection jobs. OBIEE's MDS schema is on an Oracle database that can be running on another host or on an Exadata machine which in turn can be monitored from the EMCC.



The Business Intelligence Management Pack is bundled along with the Fusion Middleware plugin. The features licensed under the OBIEE Management Pack are part of the FMW plugin. However, the pack needs to be enabled for the user to make use of certain advanced and licensed features.

## Discovering Targets

For discovering OBIEE targets using Oracle Business Intelligence Management pack in Oracle Enterprise Manager 12c, please refer to the below link (that is, Chapter 12 : 'Discovering and Monitoring Oracle Business Intelligence Instance and Oracle Essbase' in 'Oracle® Enterprise Manager Cloud Control Getting Started with Oracle Fusion Middleware Management Plug-in Release 12.1.0.5') : [http://docs.oracle.com/cd/E24628\\_01/install.121/e24215/bi\\_plugin.htm](http://docs.oracle.com/cd/E24628_01/install.121/e24215/bi_plugin.htm)

## Conclusion

The Business Intelligence Management Pack leverages Oracle Enterprise Manager's broad set of capabilities to provide a centralized systems management solution for Oracle BI EE, Oracle BI Applications, Essbase Server and Essbase Applications. OBI Management Pack encompasses out-of-the-box availability and performance monitoring, robust diagnostics, configuration management, lifecycle management, application performance management, and service level management across the OBIEE stack. Operational system management for Oracle BI 11g is delivered through the OBI Management Pack for Enterprise Manager.



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**Hardware and Software, Engineered to Work Together**