

ORACLE WEBLOGIC SERVER ON ORACLE DATABASE APPLIANCE

KEY FEATURES

- Fully integrated database appliance
- Simple installation, provisioning and configuration
- Oracle Database, Enterprise Edition
- Oracle Real Application Clusters or Oracle Real Application Clusters One Node
- Oracle WebLogic Server 11g (10.3.6) and 12c (12.1.1 and 12.1.2)
- Oracle Traffic Director 11g (10.3.7)
- Oracle Enterprise Manager
- Oracle Automatic Storage Management
- Oracle Linux
- Oracle VM

KEY BENEFITS

- World's most popular database
- World's #1 Application Server
- High Availability integration solutions with Oracle Database and Oracle WebLogic Server
- No planned and unplanned downtime
- High performance with runtime connection load balancing support
- Fast, reliable, and scalable layer-7 software load balancing with Oracle Traffic Director integrated with Oracle WebLogic Server
- Ease of deployment and management
- Single-vendor support
- Capacity-on-demand licensing

Oracle WebLogic Server on Oracle Database Appliance 2.9 offers a complete solution for building and deploying enterprise Java EE applications in a fully integrated system of software, servers, storage, and networking that delivers highly available database and WebLogic services. Built with world's most popular database, Oracle Database and the industry's best application server, Oracle WebLogic Server, and with its One-Button deployment capability, it delivers the combined high availability and simplicity. It reduces IT cost with the unique capacity-on-demand software licensing model.

For fully redundant system, storage, Oracle Database Appliance Manager information, please refer to the [Oracle Database Appliance data sheet](#).

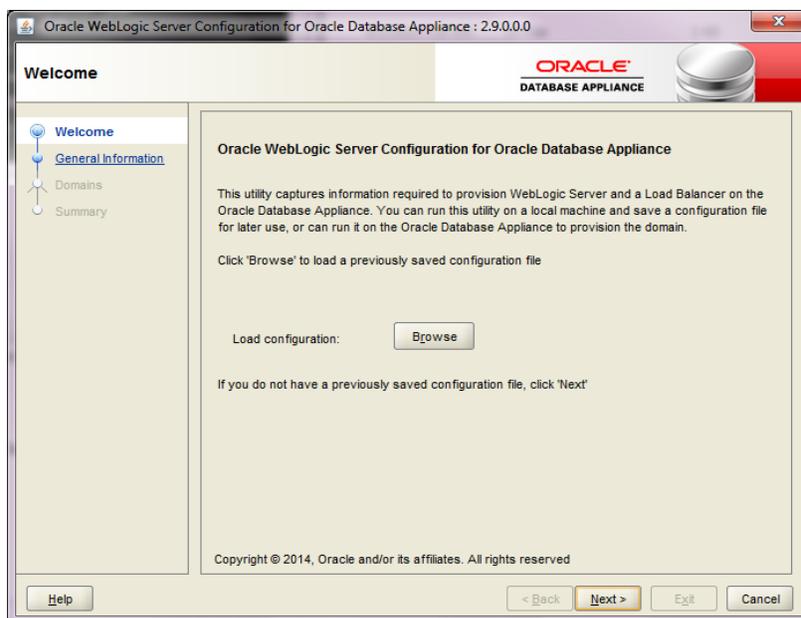
Oracle WebLogic Server on Oracle Database Appliance provides:

- Highly available WebLogic Server with multi domain and multi cluster options that provide the foundation for customers to build and deploy enterprise Java EE applications with support for new features in WebLogic 11g (10.3.6) and 12c (12.1.1 and 12.1.2).
- Simple, reliable, affordable platform for deploying end-to-end solutions leveraging not only Oracle Database Real Application Clusters, but also WebLogic and the software load balancer for customers' Java EE and Database investments.

Oracle WebLogic Server Configuration for Oracle Database Appliance

Oracle Database Appliance supports WebLogic Server clusters. By downloading and installing Oracle Virtual Machine (OVM) templates that include WebLogic Server and Oracle Traffic Director, you can quickly configure and provision a high-availability WebLogic domain using the Oracle WebLogic Server Configuration for Oracle Database Appliance utility.

The configuration utility provides an easy way to create and configure a single WebLogic domain with a cluster to serve your business applications, and configure Oracle Traffic Director, a software load balancer that can efficiently balance incoming requests to WebLogic cluster. The configuration utility can be ran on a local Windows or Linux client to create and save a configuration for later use, or it can be ran on Oracle Database Appliance to provision a WebLogic cluster.



- **Oracle WebLogic Server** can be provisioned on Oracle Database Appliance with the options of multi domains and multi clusters. The WebLogic services such as data sources and JMS destinations can be configured during the wizard driven provisioning process.
- **Oracle WebLogic data sources** could be configured as an option with the choice of generic data source, multi data source and GridLink data source that provide the middle tier database connectivity solution for Oracle database enterprise edition of single instance, Oracle Real Application Clusters or Oracle Real Application Clusters One Node.
- **Oracle WebLogic JMS** destination configuration could be selected as an option during the provisioning process to set up the sample Topics or Queues for easy deployment.
- **Oracle Traffic Director**, the layer 7 software load balancer could be configured as a fast, reliable, and scalable solution for balancing HTTP traffic across back-end WebLogic origin servers. The group of Oracle Traffic Director Instances provides the active-passive solution for high availability of balancing the services.

Oracle WebLogic Server on Oracle Database Appliance Virtual Machine Configuration

On Oracle Database Appliance, each VM hosts its own Oracle Enterprise Linux operating system in addition to any installed Oracle software products or applications, such as WebLogic Server. The amount of heap space that is available for each product or application's JVM is less than the amount of MEM that is allocated to the VM since, for example, the operating system has a memory footprint.

For Oracle WebLogic Server, each VM has one managed server or the Admin server configured. By default, it allocates 4GB of memory, 3GB of Java Heap to the managed server and 2GB of memory, 512MB of Java Heap for the Admin server. The WebLogic managed server has 4vCPU and the Admin server has 2vCPU allocated as the default.

For Oracle Traffic Director, each VM has one server instance or the Admin server configured. By default, it allocates 6GB of the memory for the server instance and 1GB of memory for the Admin server. The Admin instance has 4vCPU and the Admin server has 2vCPU allocated as

the default.

WebLogic Server and Oracle Traffic Director VM Resource Allocation

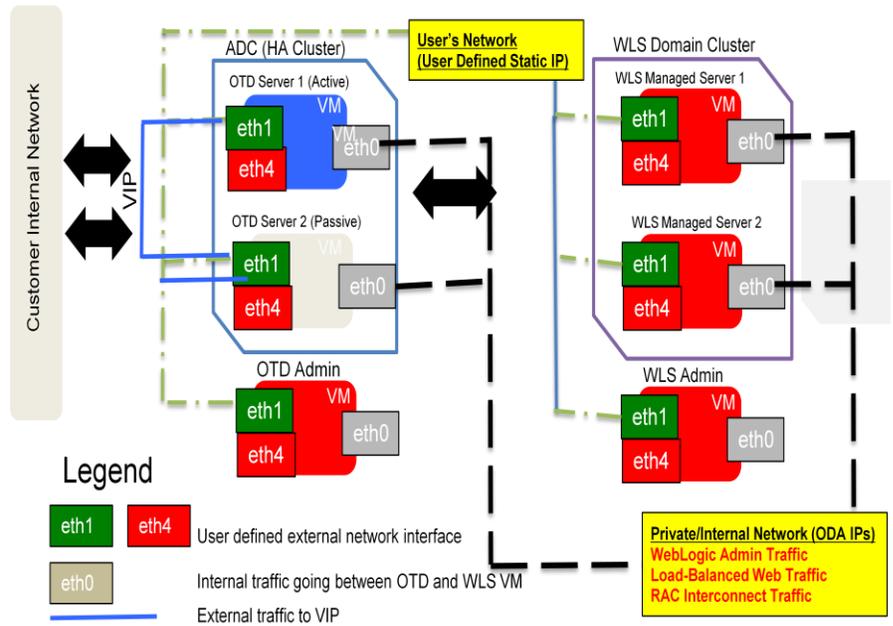
VM	vCPU	MEM	JVM Heap
Oracle Traffic Director Admin Server	2	1GB	N/A
Oracle Traffic Director Server Instances	4	6GB	N/A
WebLogic Admin Server	2	2GB	512MB
WebLogic Managed Server	4	6GB	3GB

Oracle WebLogic Server on Oracle Database Appliance VM Topology and VM layouts

Oracle WebLogic Server on Oracle Database Appliance provides the following ways to route traffics:

- External traffic directly comes to any of the VM through either the 'Red' or 'Green' interface, what we call in the configuration topology as 'eth0 or eth4' as shown below.
- External traffic comes to a VIP address through the either the 'Red' or 'Green' interface to any one of the Oracle Traffic Director VM. Here, the traffic is highlighted in blue because it can fail over to one of the two Oracle Traffic Director VMs as shown below.
- Internal traffic goes between Oracle Traffic Director and WebLogic Server VMs through the 'Grey' interface as shown below. This traffic will contain the request that Oracle Traffic Director received in the external interface and will proxy to the back-end WebLogic Server VMs through the internal 'grey' interface.

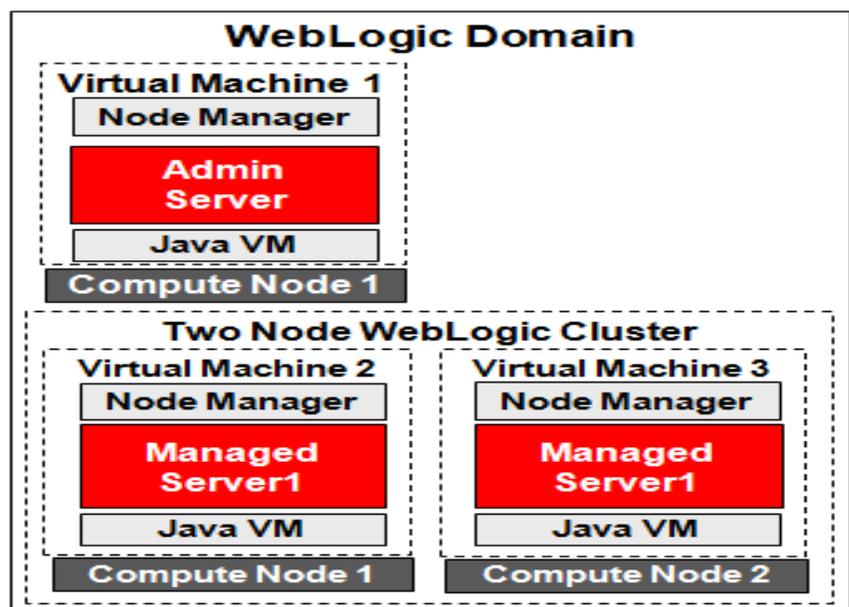
Oracle WebLogic Server on Oracle Database Appliance VM Topology



Oracle WebLogic Server on Oracle Database Appliance VM and cluster layout

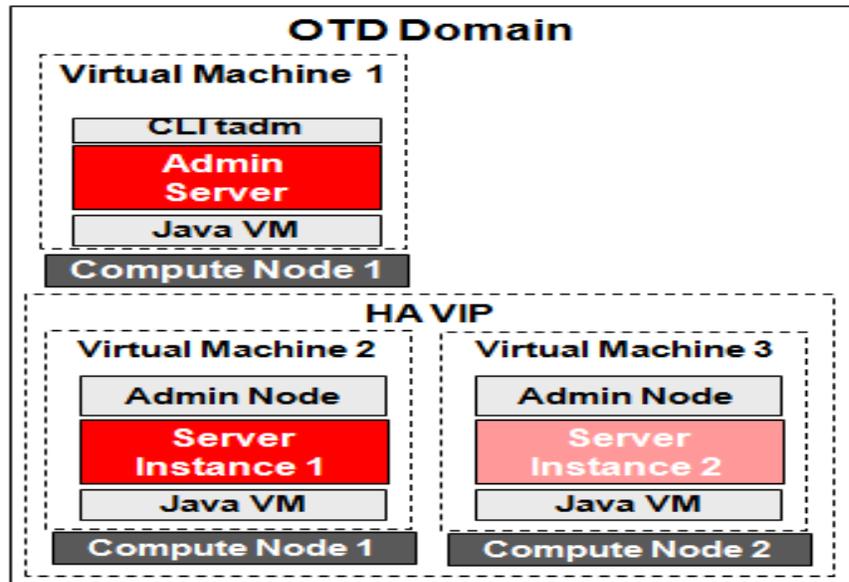
Oracle WebLogic cluster is set up using Unicast protocol. Each WebLogic managed server is configured running in one VM on separate compute node. For a two node cluster, it has one managed servers per compute node as shown below. For a four node cluster, it has two managed servers per compute node; and for eight node cluster, it has four managed servers per compute node.

The whole server migration is not set up as default; but it can be configured post provisioning.



Oracle Traffic Director on Oracle Database Appliance VM and failover group layout

Oracle Traffic Director failover group is set up using round-robin load distribution method for HTTP requests to the origin WebLogic servers. Two Oracle Traffic Director instances grouped by a virtual IP address (VIP), to provide high availability in active-passive mode. Requests are received at the VIP and routed to the Oracle Traffic Director instance that is designated as the primary instance. If the primary instance is not reachable, requests are routed to the backup instance.

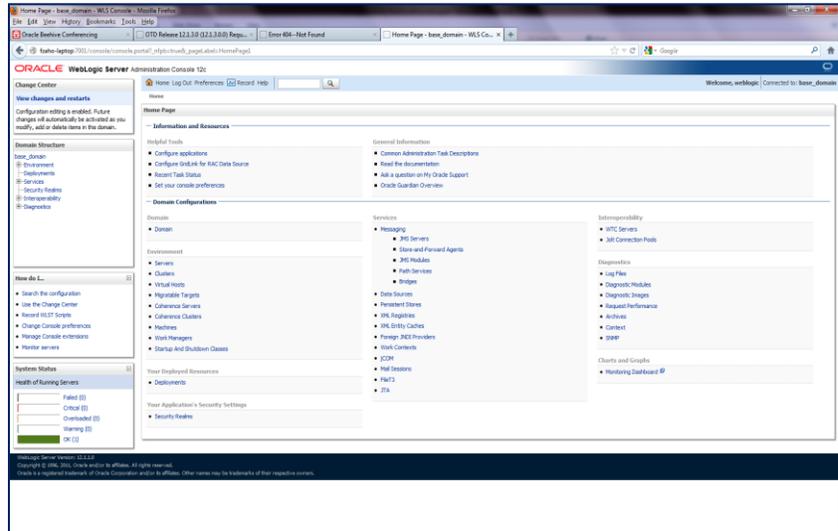


Oracle WebLogic Server and Traffic Director Management

On Oracle Database Appliance, the initial configuration and provisioning process using WebLogic Server Configuration utility is intended to provide a starting point for the WebLogic domain to easily set up a environment for ready deployment. Once provisioned, the domain can be customized as needed and the VMs can be administered as you would on any other Linux VM. This means that you can transfer configuration and log files to and from the machine as needed, and use the WebLogic Scripting Tool (WLST) and the WebLogic Server Administration Console to customize the domain, server, and WebLogic services.

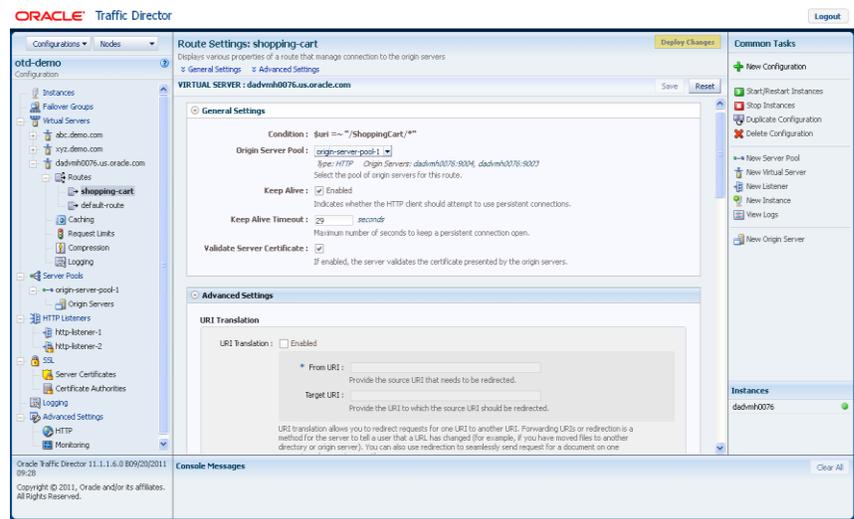
With using WebLogic Admin Console, the domain, cluster, servers can be further managed; and the services such as data sources and JMS server can be configured to fit into the customer environment and the application needs.

Both WebLogic transaction log and JMS persistent data can be stored in Oracle Database which is configured on Oracle Database Appliance for internal WebLogic usages.



Oracle Traffic Director also can be managed and configured post provisioning using Oracle Traffic Director Admin Console or the rich CLI commands.

With using Oracle Traffic Director Admin Console, the server instances can be further managed, the failover group and the relationship between Admin server and server instances can be further configured.



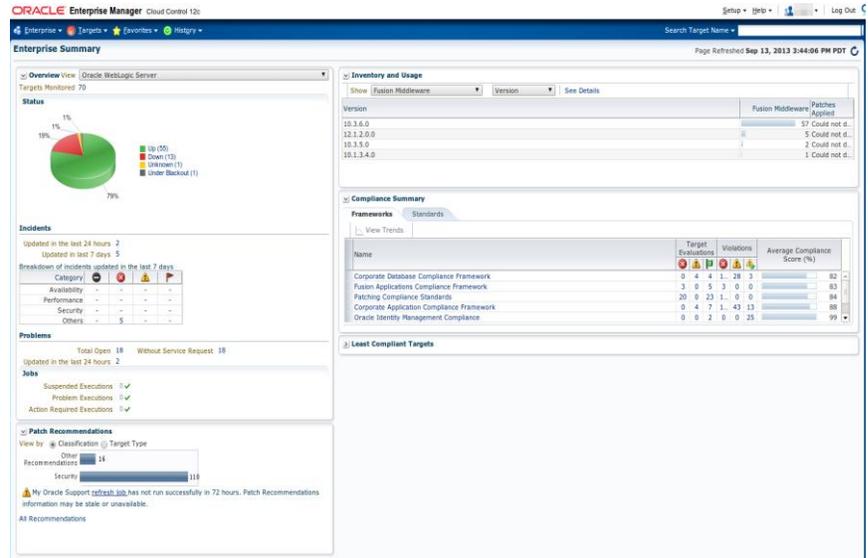
Oracle Enterprise Manager Cloud Control can be used externally managing Oracle WebLogic Server, Oracle Traffic Director and Oracle Database; which provides the industry's only complete, integrated, and business-driven enterprise cloud management solution. Oracle Enterprise Manager creates business value from IT by leveraging the built-in management capabilities of the Oracle stack for traditional and cloud environments, enabling customers to achieve unprecedented efficiency gains while dramatically increasing service levels.

The key capabilities of Enterprise Manager include:

- A complete cloud lifecycle management solution enabling you to quickly set up,

manage, and support enterprise clouds and traditional Oracle IT environments from applications to disk

- Maximum return on IT management investment through the best solutions for intelligent management of the Oracle stack and engineered systems with real-time integration of Oracle's knowledge base with each customer environment
- Best service levels for traditional and cloud applications through business-driven application management



Summary

Oracle WebLogic Server on Oracle Database Appliance provides a complete solution to deploy your database, WebLogic Server, Oracle Traffic Director and applications. With using its powerful provisioning and configuration tool, it significantly simplifies the process to set up a customer environment to deploy enterprise applications. It gives the capability of reliable services with Oracle Database Real Application Clusters and Oracle WebLogic cluster. Customer's IT investment could be reduced with its capacity-on-demand licensing model for both Oracle Database and WebLogic Server.

Contact Us

For more information about Oracle WebLogic Server on Oracle Database Appliance, visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.



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