

ORACLE VIRTUAL ASSEMBLY BUILDER

KEY FEATURES AND BENEFITS

FEATURES

- Lightweight GUI Studio environment to capture and package entire application topologies into collection of software appliances
- Server-side multi-user Deployer for deploying to multiple target platforms and managing assembly lifecycle
- Capture and create single-function VM appliances
- Package lightweight customized Linux distribution
- Drag-and-drop visual interface to create complex topologies
- Automatic configuration of late-binding parameters upon virtual machine startup
- Horizontally scale deployed apps with single command
- Command line interface enables scripting of all actions enabled in Studio
- Command line and Web Services APIs to conduct all Deployer operations

BENEFITS

- Intelligent physical to virtual transformation for complete multi-tier application topology
- Standardized building blocks reduces configuration errors
- Rapid deployment of entire application environment
- Flexibility to quickly customize assemblies for unique deployment
- Reduced manual operations through automated startup and configuration of all software components
- Hide complexity of interacting with virtual environment
- Easily incorporate into broader administration lifecycle via command line scripting interface and Web Services APIs

Oracle Virtual Assembly Builder

Oracle Virtual Assembly Builder makes it possible for administrators to quickly configure and provision entire multi-tier application topologies onto virtualized and cloud environments. It provides a framework for capturing the configuration of existing software components and packaging them as self-contained building blocks known as appliances. These appliances can then be easily connected to form application blueprints known as assemblies. This innovative approach makes it practical for complex enterprise applications to easily be customized and provisioned in their entirety with minimal to no manual intervention onto virtualized and cloud environments.

Situation

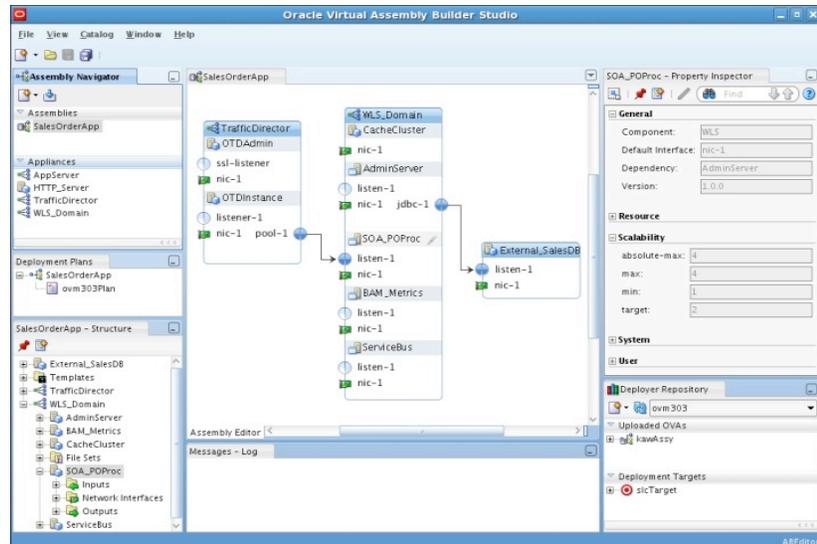
Multi-tier enterprise applications are increasingly being deployed in virtualized server environments to realize the benefits of consolidation and flexibility. However, administrators still follow the same time-consuming practices for installing, configuring, and deploying all software (operating system, database, middleware, applications, etc.) in virtual machines that have traditionally been prescribed for physical environments. Virtualized deployment of enterprise applications requires a new approach. Software components must be pre-configured in the form of software appliances. These appliances must be easily customizable to suit the unique requirements of the particular deployment. Just like building blocks, these appliances could be combined and wired together to create blueprints for complex multi-tier enterprise application topologies. Once created, these application blueprints must then be quickly instantiated into a collection of interrelated virtual machines running on a virtualized pool of servers, with all virtual machine instances configured and wired to communicate with each other automatically. Oracle Virtual Assembly Builder uniquely combines all the capabilities necessary to enable this transformation and meet the needs of the virtualized data center.

Improve operational efficiency without sacrificing flexibility

Provisioning complete multi-tier application environments for development, testing, or production use can be complicated and time-consuming for administrators. Furthermore, deploying applications on virtualized resources involves the added task of configuring the operating system and all the software multiple times in all the

virtual machines.

Oracle Virtual Assembly Builder Studio is a graphical tool intended for use by application administrators to quickly create and configure entire multi-tier application topologies and provision them onto virtualized resources. This can be accomplished in one of two ways: (a) capturing the configuration of an existing reference application environment and packaging all its components into a collection of customized software appliances, or (b) starting with pre-created, general purpose software appliances representing the various components in an application topology.



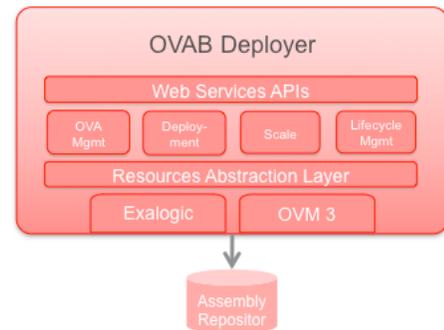
Following the capture process, administrators use the Studio tool to create the application blueprint, or assembly, that represents the complete canonical topology for the multi-tier application. The administrator would then be able to customize this assembly for multiple unique deployments of this complete application environment onto available virtualized resources.

Automating the process of capturing the configurations of existing software components and packaging them into self-contained software appliances reduces the otherwise manual effort required to install and configure all the software into multiple virtual machines. Furthermore, incorporating additional metadata into each software appliance provides intelligence about starting up and configuring late-binding parameters for those components upon virtual machine startup. This allows appliances to be treated like standardized building blocks that can be connected to each other to form assemblies, thus reducing time and eliminating errors associated with making multiple components work with each other. Because each appliance exposes a small set of configurable properties, assemblies can be uniquely customized, thus providing flexibility for administrators to deploy multiple application instances using the same base blueprint contained in the assembly.

This capture and configuration process can also be conducted using a powerful scripting interface, thus allowing administrators to automate the lifecycle of assemblies and incorporate them into a broader process flow involving additional data center components.

Oracle Virtual Assembly Builder Deployer complements the Studio by providing a robust server-side application that is designed for handling concurrent access by multiple users to conduct all deployment and lifecycle operations against assemblies created in the Studio.

Through role-based access control, users can access and share assembly archives within the Deployer repository. All assembly archives uploaded by users are versioned upon upload and are stored in industry standard Archive (OVA) format.



Users can then conduct deployment, scale, and all lifecycle operations against assemblies deployed from within the repository either via the Web Services APIs or a command line client utility.

Assembly deployment is automatically done into the appropriate resource pool via the resource connector, and all appliances within the assembly are instantiated as a collection of inter-connected virtual machines running on the resource pool.

Introspect

Capture configuration metadata for individual software components or collectively capture metadata for multiple distributed components.

Target components may reside locally or remotely on multiple distributed systems that could either be physical or virtual.

Can be scripted using command line interface.

Assemble

Visual drag-and-drop interface for creating complex assemblies using appliances maintained in a navigation catalog.

Establish relationships and connections between appliances using a wiring tool that automatically checks for protocol compatibility.

Create connections from appliances to external resources (e.g. database, security provider, messaging, etc.) not included within assembly.

Package

Automatically create bootable virtual machine disk images with configurable metadata that allow for deploy-time customization of the software component contained in the appliance.

Package a customized operating system distribution (e.g. Linux) into the appliance along with the software component.

Include additional application binaries and configuration scripts to further customization of the appliances.

Can be scripted using command line interface.

Deploy

Discover resource pools available on virtualized environment by establishing authenticated connection directly with the virtual machine manager.

One-step staging of all appliance disk images and deployment of entire assembly onto resource pool.

Create customized deployment plans for assemblies that override base configuration properties for appliances within the assembly.

Deployment-specific customization through automatic fix-up of late-binding properties within appliances.

Scale appliance instances after initial deployment of the assembly and automatically wire the newly deployed instances into the existing assembly.

Can be scripted using command line interface or conducted via Web Services APIs.

Supported Platforms

For specific requirements and versions, refer to the following documentation hub: oracle.com/technology/documentation/index.html

Supported Platforms	
Software	
Runtime Platforms	• Linux
Introspection Platforms	• Linux
Deployment Platforms	• Oracle VM 3.0
Appliance Guest	• Oracle Enterprise Linux
Appliances	<ul style="list-style-type: none"> • Oracle Traffic Director • Oracle HTTP Server • Oracle Web Cache • Oracle WebLogic Server • Oracle Coherence*Web • Oracle SOA Suite • Oracle Service Bus • Oracle Tuxedo • Oracle Database (RAC, single instance) • Generic Appliances • External Appliances (“black-box” appliances)

What’s New with Oracle Virtual Assembly Builder 11.1.1.6.0

- Separate single-user Studio application for appliance and assembly creation, and a server-side multi-user Deployer application for assembly deployment and lifecycle management.
- Assembly archives stored in industry standard Oracle Virtual Archive (OVA) format with appliance and assembly metadata described using OVF standard.

RELATED PRODUCTS

Oracle WebLogic Server packaged to run Java applications within a pre-configured virtual appliance.

Oracle WebLogic Suite provides the essential foundation for application grid; a flexible IT approach that leverages pooling, sharing, and dynamic adjustment of resources at the application infrastructure level, resulting in efficiency gains and superior performance and scalability.

Other Oracle Fusion Middleware offerings come together to form a complete and integrated set of capabilities to meet various business scenarios.

Oracle VM is server virtualization software for x86 servers that fully supports both Oracle and non-Oracle applications, and delivers more efficient performance.

RELATED PRODUCTS

Use Oracle Virtual Assembly Builder with the following Oracle products:

- Oracle Traffic Director
 - Oracle HTTP Server
 - Oracle Web Cache
 - Oracle WebLogic Server
 - Oracle Coherence
 - Oracle SOA Suite
 - Oracle Service Bus
 - Oracle Tuxedo
 - Oracle Database
- Support for multiple virtual network interfaces per appliance instance that can be mapped to multiple virtual networks available in the resource pools.
 - Appliances can be mapped to either local or external shared storage volumes.
 - Ability to deploy appliances with zero initial instances, but can subsequently instantiate new appliance instances to the deployed assembly.
 - Ability to supply custom late binding properties as part of deployment plan that can be utilized by custom configuration scripts upon appliance deployment.
 - Custom Appliance allows the packaging of any application or collection of applications into an appliance, with the ability to configure them using the custom late binding and custom script capabilities.
 - Anti-affinity option that spreads out the deployment of multiple appliances instances across multiple physical servers to avoid single points of failure.
 - Revised and more streamlined Studio GUI and IDE experience.
 - Integration with Oracle Enterprise Manager Software Library for direct exchange of assemblies between Studio and Enterprise Manager.

Contact Us

For more information about Oracle Virtual Assembly Builder, please visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.



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