Oracle Virtual Machine Qualification Note
Oracle FLEXCUBE Universal Banking
Release 14.1.0.0.0
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FINANCIAL SERVICES

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1. Introduction

1.1 <u>Scope</u>

This document outlines the steps for installation of oracle vm server, oracle vm manager.

Oracle VM to create a server pool, and managing the resources of the machine creating multiple Virtual machines.

1.2 <u>Introduction to Oracle VM</u>

Oracle VM is a platform that provides a fully equipped environment for better leveraging the benefits of virtualization technology. Oracle VM enables you to deploy operating systems and application software within a supported virtualization environment.

1.3 <u>Advantages</u>

- Faster Application Deployment with VM Templates
- Leading Price/Performance
- Included Advanced High Availability and Secure Live Migration Features
- Physical-to-Virtual / Virtual-to-Virtual Machine Conversion
- Virtualization and Management: Zero license costs, zero license keys
- Linux and Windows Support
- Official Certification Based On Real-World Testing
- Affordable, Full-Stack Enterprise-Class Support

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The requirement is to create virtual machines on a single physical server, and managing the same using Oracle VM manager.

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3. Installation of Oracle VM Server

3.1 Pre installation Tasks and Requirements

3.1.1 Hardware Requirements

Oracle VM Server supports computers with x86 (i686) and x86_64 processors. This includes all Intel Pentium Pro or newer, and all AMD Athlon/Duron processors and newer. At least a Pentium 4 or Athlon CPU is recommended.

For hardware virtualized (unmodified) guest operating systems (for example, Microsoft Windows), a CPU with hardware virtualization support is required. This includes some Intel Pentium D, Core, Core2 and Xeon models, and some AMD Athlon and Opteron models. This feature may also need to be enabled in the BIOS. Please refer to your processor documentation for information on whether your processor supports hardware virtualization and how to enable it in the BIOS. A dual core CPU or multiple CPUs are recommended to run multiple guests. The minimum memory requirement is 1GB RAM, although it is recommended you have a computer with at least 2GB RAM. Guest memory requirements vary for each guest operating system. You should perform your own memory sizing for guest operating systems.

3.1.2 Software Requirements

There are no prerequisite software requirements.

3.1.3 Network Requirements

It is recommended that you install Oracle VM Server on a machine with a static IP address. If your machines use DHCP you should configure your DHCP server to assign static DHCP addresses. This makes sure your host always receives the same IP address. The behavior of the Oracle VM Server host is undefined if used in an environment where your IP address may change due to DHCP lease expiry.

If your computer uses a static IP address, select whether you want to enable IPv4 and/or IPv6 support. Enter the IP address and prefix (netmask) for your computer. IPv4 details must be entered if you are performing an installation using an NFS drive. IPv4 support is enabled by default.

Select whether you want to enable the network configuration each time you boot the computer. This is enabled by default.

4. Installation of Oracle VM Manager

4.1 Pre installation Tasks and Requirements

4.1.1 Hardware Requirements for Oracle VM Manager

Items	Minimum Value
Memory	2 GB
Processor Speed	1.83 GHz*1
Swap Space	2 GB
Hard Disk Space	4 GB

4.1.2 Software Requirements

Before you install Oracle VM Manager, ensure that your computer meets the following minimum software requirements:

- Operating System
- Web Browser
- The libaio.rpm File
- Port 8888 and 8899

4.1.3 Operating System

Oracle VM Manager works on both of the following operating systems:

- Oracle Enterprise Linux 4 Update 5 or later
- Red Hat Enterprise Linux Release 4 or later

4.1.4 Web Browser

Web browsers supported by Oracle VM Manager:

- Mozilla Firefox 1.5 or later
- Microsoft Internet Explorer 6.0 or later

4.1.5 The libaio.rpm File

Oracle Database $10g$ Express Edition (Oracle XE) is used as the management data repository for Oracle VM Manager. As a result, you must ensure that the $libaio.rpm$ package is installed. Find $libaio.rpm$ from the ISO packages of Oracle Enterprise Linux. The $libaio$ version varies depending on the Oracle Enterprise Linux version. For Oracle Enterprise Linux 4 Update 5, the $libaio$ version is libaio-0.3.105-2.

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1. Before installing `libaio.rpm`, check if it is already installed. Enter the following command:

 # /bin/rpm -q libaio.i386

4.1.6 <u>Port 8888 and 8899</u>

Ensure that port numbers 8888 and 8899 are available. To verify if these ports are available, enter the following commands:

 # netstat -na |grep 8888

 # netstat -na |grep 8899

If the ports are available, no response is given.

4.1.7 <u>Other checks: Passwords and ports</u>

The following checks need to be performed:

1521: A fresh installation may not really pose a problem with ports such as 1521 (Oracle DB Express Edition that is installed on the system) but if we are carrying out the installation again, we might want to check it once more.

8080: Default HTTP port for Oracle Database 10g Express Edition.

Passwords: We will be asked to fill passwords for SYS, SYSTEM, OVS (Oracle VM Manager Schema), OC4J (admin password required), SMTP address for our mail server, and email address and password for the admin account for Oracle VM Manager

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5. Oracle Virtual Machine Description

The components of Oracle VM are:

Oracle VM Manager

Provides the user interface, which is a standard ADF (Application Development Framework) web application, to manage Oracle VM Server Manage virtual machine lifecycle, including creating virtual machines from installation media or from a virtual machine template, deleting, powering off, uploading, deployment and live migration of virtual machines. Manages resources, including ISO files, virtual machine templates and sharable hard disks.

Oracle VM Server

A self-contained virtualization environment designed to provide a lightweight, secure, server- based platform for running virtual machines. Oracle VM Server is based upon an updated version of the underlying Xen hypervisor technology, and includes Oracle VM Agent.

Oracle VM Agent

Installed with Oracle VM Server. It communicates with Oracle VM Manager for management of virtual machines.

Oracle VM Architecture
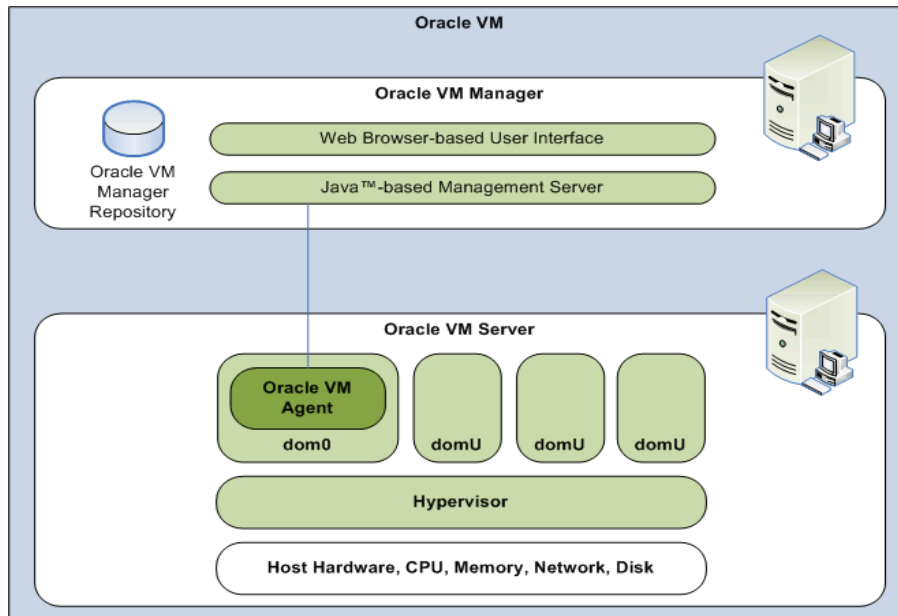
6. Managing Oracle VM Manager

As root, enter one of the following commands to start or stop Oracle VM Manager:

- To check the status of Oracle Containers for J2EE:

 # /sbin/service oc4j status

- To start Oracle VM Manager:

 # /sbin/service oc4j start

Note: If you chose to start Oracle Database 10g Express Edition manually when installing Oracle VM Manager, start Oracle Database 10g Express Edition first.

- To stop Oracle VM Manager:

 # /sbin/service oc4j stop

- Alternatively, use the following command:

 # /etc/init.d/oc4j [status|start|stop]

- You can also use the Services dialog to start and stop OC4J. From the Applications menu, select System Settings, then select Server Settings and locate Services.Or by running the following command in a terminal to use the Services dialog:

 # /usr/bin/system-config-services

In the Service Configuration window, select oc4j to check the status, and start or stop it.

6.1 Oracle VM Agent Command-Line Tool

The ovs-agent command-line tool enables you to configure and control Oracle VM Agent.

6.2 Configuring Oracle VM Agent

Oracle VM Agent is configured during installation. A default user is created with the username admin, and the password you set during installation.

You can change the default configuration with the Oracle VM Agent configuration script, ovs-agent. To configure Oracle VM Agent:

- As root, run the Oracle VM Agent configuration script:

service ovs-agent configure

- Restart Oracle VM Agent for the configuration changes to take effect.

service ovs-agent restart

6.3   Starting Oracle VM Agent

- Oracle VM Agent is started automatically when the computer starts. To manually start Oracle VM Agent, enter

service ovs-agent start

- Alternatively, if Oracle VM Agent is already running, you can stop and restart it with the command

service ovs-agent restart

6.4   Stopping Oracle VM Agent

- To stop Oracle VM Agent, enter

service ovs-agent stop

Note:

When Oracle VM Agent is stopped, Oracle VM Manager cannot manage the Oracle VM Server or the guests running on it.

If you shut down or restart the Oracle VM Agent on an HA-enabled Oracle VM Server on which guests are running you are prompted to:

- Migrate or Power Off the guest(s) using Oracle VM Manager. When the guests have been migrated or Powered Off, the Oracle VM Agent shuts down.
- Shut down the guest(s) and shut down Oracle VM Agent.
- Cancel the shutdown operation.

6.5   Monitoring Oracle VM Agent

To get information on the Oracle VM Agent daemon, enter

service ovs-agent status

Information on the Oracle VM Agent daemon is displayed.

7. Creation of Server Pool

After installation, you can log in to Oracle VM Manager, and follow the Wizard to create a server pool containing only one physical server which will act as the Server Pool Master, the Virtual Machine Server, and the Utility Server.To create a server pool by following the Wizard:

On the Server Information page, enter the server information, including:

- Server Host/IP

Enter the host name, or IP address of the Oracle VM Server that will act as the Server Pool Master, the Virtual Machine Server, and the Utility Server. For example, enter:

- Server Name

Name the Server Pool Master. This must be unique.

- Agent Password

Enter the password for accessing Oracle VM Agent installed on the Server Pool Master.

- Server Username

Enter the user name used for the Utility Server.

- Server Password

Enter the password used for the Utility Server.

- Server Location

The location of the physical server.

- After entering the parameters, click Test Connection to verify the connection to the server. If you can access the server successfully, click Next to proceed to the next page.
- Confirm the server pool name, or enter a new name. Click Next.
- Confirm the information you have entered.

After creating the server pool. We can add Virtual Machine Servers and Utility Servers, or add more users to the server pool

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8. Basic steps to create a new Virtual Machine
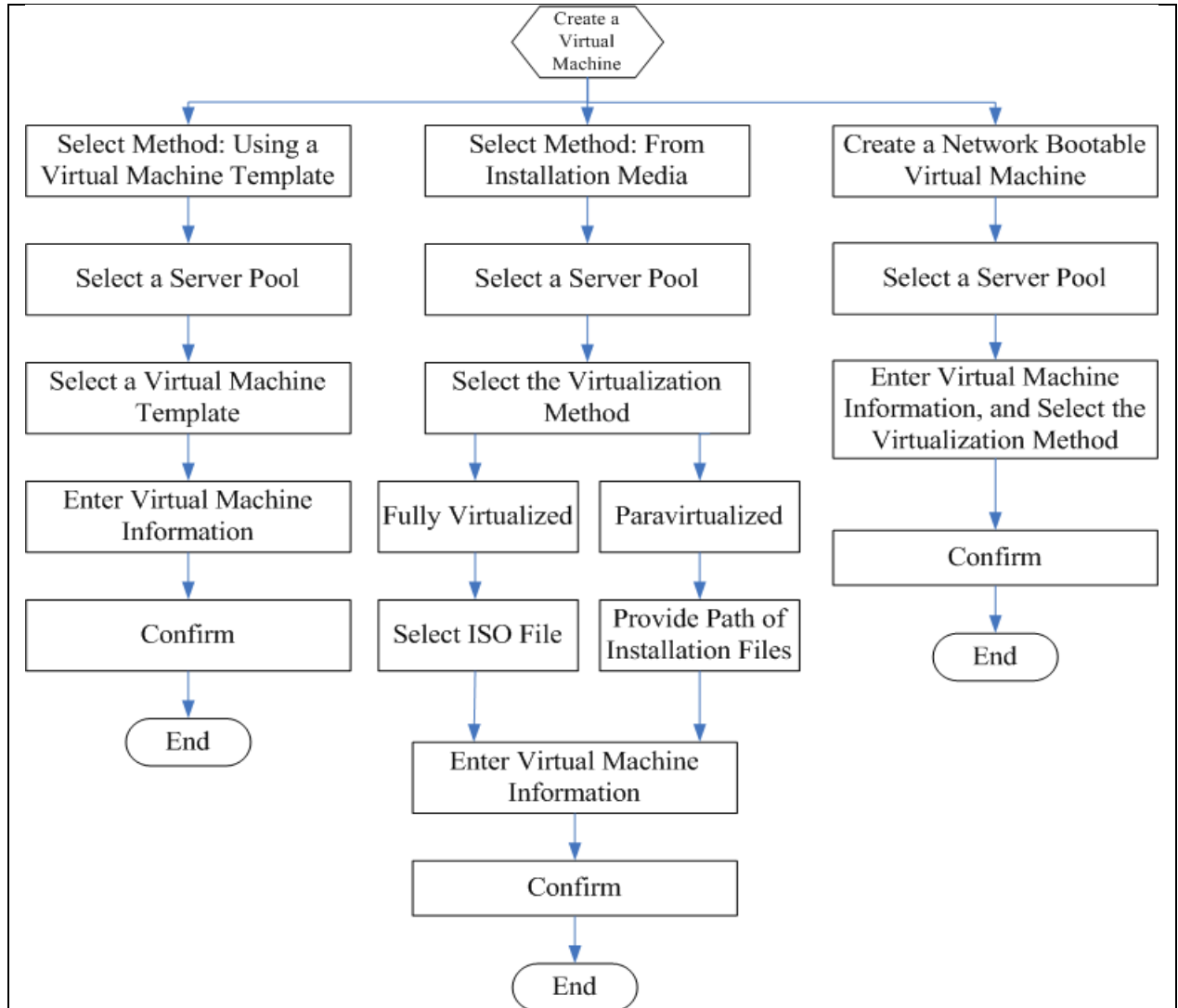
Typically, a virtual machine template can contain:

- An operating system
- The basic configuration, such as the number of cores, the amount of memory, the size of disk, and so on
- Preinstalled applications

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9. Observations

- With the exception of sharing the computing resources, each virtual machine is independent. Problems with an application on one virtual machine do not affect other virtual machines on the same hardware platform. Virtual machines are similar to separate physical servers. Each has its own distinct hostnames, IP addresses, and configurations.

- The Oracle VM Server is Open Source and is based on the Xen™ 3.1 hypervisor. It includes a self-contained installation of Oracle Enterprise Linux 5, and enhanced versions of Xen™ hypervisor components.

- Oracle VM Manager is an easy to use browser-based management tool that allows users to manage VMs across various physical machines and enables operations such as creating a VM, cloning a VM, sharing a VM, configuring a VM and booting a VM.

- The value of Memory Size can be changed as per requirement.

- Virtual disks can be created as and when required.

- We cannot name a VM with spaces.

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