Oracle Linux Virtualization Manager

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Safe Harbor

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Oracle Is Committed to Open Source

Platinum Member of The Linux Foundation

Platinum Member of Cloud Native Computing Foundation

10 Oracle Organizations with 1000+ developers and 300+ repos on GitHub
Oracle Linux Directions
Building open cloud infrastructure for the enterprise

Cloud
Easy and quick on-boarding to Cloud with the same stack on-premises or in the cloud

Linux Kernel
Optimization for the most demanding Oracle workloads and Oracle Engineered Systems

Containers and Virtualization
Acceleration of your apps deployment and service delivery, simplified and integrated management

Security
Ksplice zero-downtime security update, compliance and SELinux
<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping for more than 12 years</td>
<td></td>
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<tr>
<td>Powers Oracle Cloud &amp; Engineered Systems</td>
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<tr>
<td>Tens of thousands of enterprises supported</td>
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<tr>
<td>Over 10 million Docker hub downloads</td>
<td></td>
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<tr>
<td>Linux Foundation Platinum board member</td>
<td></td>
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<tr>
<td>Cloud Native Computing Foundation Platinum member</td>
<td></td>
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</tbody>
</table>

Oracle Linux
Truly Open Operating System

- Free to use, free to distribute and free to update
- ISOs are publicly available, free errata
- Kernel source code is published in a public GIT repository with all
- Truly open business practices
  - Customers choose which systems to cover by support subscriptions
  - No complicated migration from free to paid
  - No restrictive contracts or agreements
Oracle is a Complete Full-Service Linux Vendor

- **Product Development and Bug Fixes**
  - Engineering and Product Management

- **Enterprise – Level 24x7 Support**
  - Support and Consulting

- **Customer Certifications**
  - Training & Knowledgebase Development

- **ISV / IHV Support**
  - Partner Services and Certifications
Ksplice Live Patching

Security First

- Rapidly patch zero-day vulnerabilities with no downtime
  - Kernels (Oracle and non-Oracle kernels)
  - Hypervisors (KVM, Xen and QEMU)
  - Critical user space packages (glibc and openssl)
- Keep critical systems patched with no downtime
- Apply updates without rebooting
- Configured by default for Oracle Linux instances in Oracle Cloud
- Proven: 1 million+ patches delivered
Ksplice Known Exploit Detection
Released in April 2019

• As CVEs are patched, Ksplice adds ‘tripwires’ to code that fire when erroneous conditions trigger
• Reports attempted exploitations of a known attack vector
• Enables system admins to monitor systems for suspicious activity
  ➢ Default is to log exploit attempt to syslog; email alerts can also be set
  ➢ You can take specific action for specific tripwires (report, ignore)
KVM Hypervisor Enhanced with Oracle Linux
Oracle’s Standard Server Virtualization Technology

- KVM hypervisor performance and security enhancements in Oracle Linux 7 with Unbreakable Enterprise Kernel (UEK) Release 5
- Zero down time security patching for hypervisor, kernel, and user space packages
- VirtIO drivers 1.1.3 delivered to support Microsoft Windows guests
  Working on VirtIO Drivers 2.0 to bring the existing drivers up to date with upstream in terms of bug fixes and enhancements
- Strong user community and Large partner ecosystem
KVM Helps Customers’ Cloud Journey

Customers looking for an Enterprise Management Solution

- Multi KVM hypervisor management
- Storage Management
- Network Management
- Cloud Ready
- Full Support
oVirt Project

- oVirt open-source distributed virtualization solution
- Provides large scale, centralized management for server virtualization
- Based on leading performance, scalability and security infrastructure technologies
- Focus on KVM for best integration/performance
- Focus on ease of use/deployment
- Full featured software targeted to support enterprise infrastructures
Oracle Linux Virtualization Manager 4.2.8

- Based on oVirt 4.2.8
- Integrated, tested and supported by Oracle
- Available on ULN and Oracle Yum:
- Full [Documentation Library](http://yum.oracle.com/repo/OracleLinux/OL7/ovirt42/x86_64/index.html)
  - Release Note
  - Installation Guide
  - Getting Started Guide

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Oracle Linux Virtualization Manager 4.2.8

• Key Oracle VM 3.4 features carry forward

<table>
<thead>
<tr>
<th>VM Management</th>
<th>VM HA, Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live Migration</td>
<td>RestAPI</td>
</tr>
<tr>
<td>Storage, Networking</td>
<td>Virtual Appliances</td>
</tr>
<tr>
<td>Status, Alerts</td>
<td>Maintenance</td>
</tr>
</tbody>
</table>

• New feature support in the 4.2.8 GA release:
  ➢ Snapshots for improved Backup and Restore functionality
  ➢ Role Based Access

• Contribute upstream to further enhance oVirt
Oracle Linux Virtualization Manager

Solution Overview

Oracle Linux Virtualization Manager

Guest OS Support
- Oracle Linux 5/6/7
- RHEL 5/6/7
- CentOS 5/6/7
- Windows Desktop 7, 8, 10

Oracle Linux KVM Server - 7.6

Oracle Linux KVM Server - 7.6

Oracle Linux KVM Server – 7.7
Oracle Linux Virtualization Manager Setup

Quick Setup

Simple Yum install process:

1. Install Oracle Linux 7 Update 6 on the host machine.
2. `# yum install https://yum.oracle.com/repo/OracleLinux/OL7/ovirt42/x86_64/ovirt-release42.rpm`
3. `# yum install ovirt-engine`
4. Run the engine-setup command to configure Oracle Linux Virtualization Manager
5. Answer the 15 questions (manager DNS name, Admin password, Data Warehouse location, etc) – or simply select all of the defaults

➤ Up and running in 10 minutes
OLVM Technology Preview Features

Full support to be added in later phases

• Self Hosted Engine (HA)
• Gluster Storage
• Foreman and Spacewalk integration
• Virt-v2v
• Software Defined Networking
• Datawarehouse migration to remote server
• moVirt
• oVirt Node
• SR-IOV
Oracle Linux KVM Ecosystem

Server, Storage and ISVs

• x86 server certification:
  – Covered by the existing Oracle Linux HCL
    https://linux.oracle.com/hardware-certifications

• Storage Certification:
  – HCL storage certifications will not be required. Similar to Oracle Linux, there is no need to test storage solutions with Oracle Linux KVM

• ISV certifications
  – Oracle Linux KVM certifications
  – OLVM/oVirt certifications
OLVM – REST API

• Execute all tasks in the Admin Portal and even more
• HTTP Actions
  • GET
  • PUT
  • POST
  • DELETE
• Automate provisioning/Administration through scripting or Integrations
• No differences between oVirt and OLVM
OLVM – Enterprise Manager integration
EM 13.4 adds support for OLVM
## Oracle VM vs Oracle Linux Virtualization

<table>
<thead>
<tr>
<th>Feature</th>
<th>Oracle VM</th>
<th>Oracle Linux Virtualization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypervisor</td>
<td>Xen</td>
<td>KVM</td>
</tr>
<tr>
<td>Manager</td>
<td>Oracle</td>
<td>Open Source</td>
</tr>
<tr>
<td>Parallel job operation</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Multiple user control</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Snapshot</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Advanced features (SR-IOV, moVirt, etc)</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>HA and LM without Manager</td>
<td>Yes</td>
<td>No (Self Hosted Engine)</td>
</tr>
<tr>
<td>Solaris Guest support</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Full CLI</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Automated Manager DB backups</td>
<td>Yes</td>
<td>No (scripting solutions)</td>
</tr>
</tbody>
</table>
Value of Oracle Linux Virtualization

• Oracle software certifications
• Oracle Ksplice support
  • Zero down time security patching for hypervisor, kernel, and user space packages
• Oracle Enterprise Manager integration – single pane of glass management
  • Oracle Linux
  • Oracle Virtualization
  • Oracle Products (Database, Middleware and Applications)
• Rapid application deployment with Templates and Virtual Appliances
Oracle Linux Virtualization Manager

Next Oracle targets

- oVirt releases and community expansion
- Applications and Virtual Appliances
- Ecosystem
- Migrations
Oracle Linux Images for Oracle Cloud Infrastructure

Same OS on Cloud and On-Premise

August 2019 Updated Images

Oracle Linux 7.7
Kernel version: kernel-uek-4.14.35-1902.4.8.el7uek.x86_6

Oracle Linux 7.7 GPU
Kernel version: kernel-uek-4.14.35-1902.4.8.el7uek.x86_64
Fix for CVE-2019-1125 (Oracle Linux 7.6 2019.08.02 image)
CUDA version: 10.1-10.1.168-1
cuDNN version: 7.3.1

Oracle Linux 6.10
Kernel version: kernel-uek-4.1.12-124.30.1.el6uek.x86_64
Fix for CVE-2019-1125 (Oracle Linux 7.6 2019.08.02 image)
Oracle Linux KVM in Oracle Cloud Infrastructure

Oracle's Standard Server Virtualization Technology

Oracle Linux KVM image can be deployed faster directly from Oracle Cloud Infrastructure (OCI) console

- Launch latest KVM image from OCI image catalog
OLVM to OCI

- Same hypervisor on-premise and in Cloud
- Migration tools:
  - Documented APIs
  - Oracle utilities
  - Partner utilities
Oracle Linux and Virtualization for Open Cloud Infrastructure

Thousands of customers running Oracle Linux and Virtualization today

**Best Subscription Value**
- World-class software
- Designed for the enterprise
- No additional, expensive add-ons
- World-class support, consulting & training

**Strategic Differentiation**
- Zero-downtime kernel updates with Ksplice
- Diagnostics and tracing with DTrace
- Integration with latest Cloud technologies: Docker, Kubernetes, KVM, Xen, …

**Truly Open**
- Always free to use, distribute and update
- Source code published and ISOs publicly available
- All errata is publicly available

**The Only Linux and Virtualization Distros Recommended for Oracle Products**
- Oracle Development’s standard
- Comprehensive testing across the stack
- Pre-configured Linux containers and VM templates for rapid deployment of products