Overview

HPE Cloud Optimizer

Unified performance and capacity optimization for Physical, Virtual and Cloud environments

Cloud Optimizer (CO) is a unified capacity management and performance tool that enables you to monitor, troubleshoot, and optimize hybrid cloud and virtualized datacenter environments. Easy to setup and install, the unified dashboard of CO provides comprehensive insights into capacity, performance, and health. With this consolidated insight, you can optimize your infrastructure, quickly solve virtualization and cloud performance issues, and plan for future growth..

Key product highlights

Make your infrastructure more efficient: Improve workloads performance in virtual environments

- Monitoring virtual and cloud workloads is a different ask because of shared usage scenarios - improve your application and workload performance by monitoring resource allocations, entitlements and usage
- Identify unorganized growth or sprawl - many VMs created and left unused causing storage and CPU/memory resource allocation issues

Performance Monitoring: Monitor your virtual and hybrid cloud environments

- Govern and raise alert on resource usage in environments varying from vSphere & HyperV to Helion OpenStack & Amazon.
- Readily integrate with HPE Operations Bridge for event management and remediation

Real-time view inside VMs: troubleshoot performance issues faster

- Drill-down into guest OS with the HPE compute sensor (light-weight agent) to get real-time view of workload processes, logs, OS for troubleshooting

Capacity management: Fix allocation problems

- Reclaim over-allocated vCPU, memory from VMs using the right-sizing analysis reports
- Reclaim storage lost to old snapshots - usually a good 30% of spaced used in most datacenters

Waste reclamation: Detect invisible lost resources

- Reclaim orphaned virtual disks (otherwise invisible), either to delete and regain space, or to attach with a running VM and resume operations

Capacity planning: What-if modelling

- Obtain best - fit forecast trends for resource usage and activity
- Simulate expansion, additions, maintenance to identify risk to business

Business planning: Capacity planning based on business data statistics

- Analyze business data and obtain trends, correlate with usage data to predict infrastructure capacity needs for future business plans

Highly integration friendly

- Employ CO's REST APIs for usage metering data, VM placement advice, VM & cloud capacity analytics
- Integrations available with
    - HPE OneView, for giving enclosure view, enclosure capacity and performance insights
    - HPE Cloud Service Automation, for intelligent VM provisioning and subscription health, forecast views
    - HPE IT Business Analytics, for usage metering - charge-back and show-back reports
    - HPE Operations Bridge, for operations monitoring and correlation, Ops Bridge Reporter for health reporting
    - HPE Operations Analytics, for big-data analytics and log-analytics based troubleshooting and cause-finding

Supported virtual and Cloud environments

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Cloud Optimizer supports VMware vSphere, Microsoft Windows HyperV, KVM, OpenStack (also Helion OpenStack), Amazon EC2 and Xen (open-source). Refer to HPE Operations Center product support matrix **here** for details and latest updates.

Supported Virtual Machines

All (MS Windows and RH/CentOS Linux) guest operating systems supported by the hypervisor.

Supported Operating Systems

HPE Cloud Optimizer is available as a ready-made virtual appliance. So all you need to do is to deploy the virtual appliance to your vCenter server. If virtual appliance is not preferred or if the environment is Hyper-V or other, CO is supported to be installed on the following Operating Systems:

- RHEL 6.4/6.5 (64-bit)
- CentOS 6.4/6.5 (64-bit)
    - Virtual appliance runs with CentOS 6.5
- Oracle Enterprise Linux 6.5 (64-bit)

Cloud Optimizer's compute-sensor is supported and tested to run on the following guest OS platforms

- Windows Server 2008 SP2 (64-bit)
- Windows Server 2008 R2 (64-bit)
- Windows Server 2008 Core (64-bit)
- Windows Server 2008 Core R2 (64-bit)
- Windows Server 2012 (64-bit)
- Windows 2012 R2 Core (64-bit)
- Windows 8 (64-bit)
- Windows 7 (64-bit)
- RHEL (64-bit) - 6.3, 6.4, 6.5, 7
- CentOS (64-bit) - 6.3, 6.4, 6.5
- Oracle Linux (64-bit) - 6.3, 6.4, 6.5
- Debian (64-bit) - 6, 7
- Ubuntu (64-bit) - 12.04, 13.10, 13.04

Cloud Optimizer's physical server collector is supported and tested to run on the following physical server platforms

- Windows Server 2008 SP2 (64-bit)
- Windows Server 2008 R2 (64-bit)
- Windows Server 2008 Core (64-bit)
- Windows Server 2008 Core R2 (64-bit)
- Windows Server 2012 (64-bit)
- Windows 2012 R2 Core (64-bit)
- Windows 8 (64-bit)
- Windows 7 (64-bit)
- RHEL (64-bit) - 6.3, 6.4, 6.5, 7
- CentOS (64-bit) - 6.3, 6.4, 6.5
- Oracle Linux (64-bit) - 6.3, 6.4, 6.5
- Debian (64-bit) - 6, 7
- Ubuntu (64-bit) - 12.04, 13.10, 13.04
- SLES 11 SP3

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The collector for getting metrics from MS Hyper-V and MS SCVMM systems is supported on the following platforms:

- Windows Server 2012 R2

Refer to HPE Operations Center product support matrix **here** for latest updates.

Software Pre-Requisites

- CO installs on Linux, there's no support for other platforms.
- For virtual appliance deployment, VMware vCenter is required
- To monitor VMware entities, vCenter statistics logging expectations -
  - vCenter must be set up to log level-2 statistics at 5-minute and 30-minute intervals
- vCenter user permissions: To be able to collect all metrics needed by CO from VMware vSphere entities, the user connecting to vCenter must have the following permissions at **a minimum**
  - Read-only user
  - Datastore: "Browse Datastore"
  - Session: "Validate Session"
- To monitor HyperV servers, a collector must be installed on a Windows machine (VM or physical server)
- For media installation to a supported Linux server, no additional requirements as long as the full install of the supported OS / distribution is used.
- Please refer to **Cloud Optimizer documentation** for all latest updates.

Installation Server Requirements

NOTE: Instance count includes the total number of VMs and hosts - both powered off and powered on - in the monitored environment.

The Installation Server must meet the following minimum requirements:

- 2 vCPU (upto 1000 instances), 4 vCPU (up to 3500 instances) and 8 vCPU (up to 10000 instances)
- 4 GB RAM (upto 1000 instances), 16 GB (up to 3500 instances) and 25 GB (up to 10000 instances)
- Disk space - 67GB or more
- Network with 100 Mbit/s or higher
- Virtual Appliance installation comes pre-sized - installation option allows setting environment size

To scale beyond 10000 instances the proposed way is to have multiple Cloud Optimizer instances connected to HPE Operations Bridge as the central console.

Software Licensing

HPE Cloud Optimizer licensing is calculated by operating system instances. A license entitlement is used for each VM and Host for which data collection is done. Licenses are available as permanent and 1-year term entitlements.

Cloud Optimizer is also sold as part of the IT Operation Management solution suites - **Operations Bridge Suite** and the **Cloud Orchestration Suite**. These may be offered alternatively for a customer who prefers the end-to-end integrated solution offerings from HPE.

When integrating with HPE OneView, CO for OneView 'server' licenses can be used for OneView managed blade and rack servers

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(In this circumstance, VMs are not counted). More details in the 'Licensing' section below.

Software Editions

HPE Cloud Optimizer is available in 2 editions. CO runs as a fully functional premium edition software during evaluation period of 60 days from first install.

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Express Edition

- Powerful Web Interface
- Performance Dashboards & Reports
- Alerts
- Integration to HPE Operations Bridge (OM/OMi)

Premium Edition

- Express edition capabilities
- Real time Guest OS drill down
- Capacity Dashboards & Reports
- Capacity Forecasting
- Capacity Modeling
- Business groups based forecast, metric analysis
- Resource Optimization, Right Sizing, Placements
- Meter resource allocations
- Integration to HPE Cloud Service Automation (CSA)
- Integration to HPE IT Business Analytics
- Integration to HPE OneView

NOTE: Do not mix Express and Premium edition licenses on a single CO server instance. For HPE Ops Bridge (OMi/OM) customers, HPE Cloud Optimizer offers a 'monitoring-only' mode which does not need any CO licenses. CO provides monitoring for the virtual environments via the smart alerts dispatched to the OM/OMi event console. This mode offers limited UI functionality (to add or remove the virtualization technology targets).

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Licensing

OS Instance Licenses (general)

Applicable to all environments, sold in pack of 50 units.

Express Edition		
Tier/50 pack Units	**Perpetual**	**1 Year Term**
1-4999 Tier/50 OS Instance Pack	A8B06AAE	A8A94AAE
5000-9999 Tier/50 OS Instance Pack	A8B07AAE	A8A95AAE
10000+ Tier/50 OS Instance Pack	A8B08AAE	A8A96AAE

Premium Edition			
Tier/50 pack Units	**Perpetual**	**Express to Premium Upgrade (Perpetual)**	**1 Year Term**
1-4999 Tier/50 OS Instance Pack	A8B12AAE	A8B09AAE	A8A97AAE
5000-9999 Tier/50 OS Instance Pack	A8B13AAE	A8B10AAE	A8A98AAE
10000+ Tier/50 OS Instance Pack	A8B14AAE	A8B11AAE	A8A99AAE

Cloud Optimizer Monitoring Only Edition

HPE Cloud Optimizer's "Monitoring Only" mode offers virtualization performance metrics collection & event forwarding to HPE Operations Bridge.
This mode -

- is used as a replacement for the VI SPI and VI Management Pack for intel-x86 architecture based virtualized environments
- only does event forwarding, does not have the Cloud Optimizer graphical UI (except for the Admin page)
- does not require Cloud Optimizer licenses, but requires Operations Bridge node license [previously a Target connector license was required]

"Cloud Optimizer for OneView" *Server* licenses (for OneView deals)

"HPE Cloud Optimizer for OneView" SKUs listed below can be sold with HPE OneView advanced licenses. This Server license applies for each HPE OneView managed server and covers all VMs running on the server at no additional cost entitling CO premium functionality. For all servers and VMs not managed by OneView, the regular SKUs with OS instance licensing applies.

Price List	SKU to use	Description
FS	M5R19A	HPE ICOEM CO for HPE OV LTU
FS	M5R19AAE	HPE ICOEM CO for HPE OV E-LTU

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8S	HM610A1 #TM2 (HP SW Enterprise Standard 1yr Support)	1 Yr 24x7 Support from HP Software
8S	HM610A3 #TM2 (HP SW Enterprise Standard 3yr Support)	3 Yr 24x7 Support from HP Software

Example

If customer has the following

- 10 HPE Proliant G8 blades managed by OneView running 45 VMs
- 2 non-HPE blades managing 20 VMs
- 2 HPE Proliant G6 rack mounts (not managed by OV) running 8 VMs
- All are ESXi servers attached to vCenter

Then from Cloud Optimizer side the number of licenses needed is -

- 10 CO physical server licenses (only OneView managed servers are counted for CO's "server" license entitlement)
- 32 CO OS instance LTUs - actually in this case, 1 50-Pack SKU needs to be taken

Support

NOTE: Support is NOT bundled with the license and must be ordered separately. This is not the case with the 1-year term license which does come with 1-year support contract bundled.

For more information on HPE Cloud Optimizer software go to **http://www.hpe.com/software/cloudoptimizer**

- Direct link to QuickSpecs with detailed product specifications, ordering information and more: **http://www.hp.com/go/QuickSpecs**
- Cloud Optimizer blog article **search listings** @ HPE Enterprise Business Community blogs
- Cloud Optimizer Youtube Playlist: **https://www.youtube.com/playlist?list=PLtS6YX0YOX4fsM5fnJcUfDF9R9bJRaZW5**

Summary of Changes

Date	Version History	Action	Description of Change:
08-Jul-2016	Version 1	Creation	Document Created, and reviewed

Sign up for updates

c05183790- 15640 - Worldwide - V1 - 08-Jul-2016