



Platform VM Orchestrator (VMO)

The real challenge facing virtualization users is how to effectively manage their virtual environment. Virtualization introduces new management challenges and complexity to the data center. To maximize the ROI promised by virtualization, users need tools specifically built for managing enterprise virtualization deployments. Platform VMO is the only such virtualization solution that meets the scale and dynamic computing requirements of enterprise datacenters.

Platform VM Orchestrator (VMO) provides automated VM delivery and management of virtual environments.

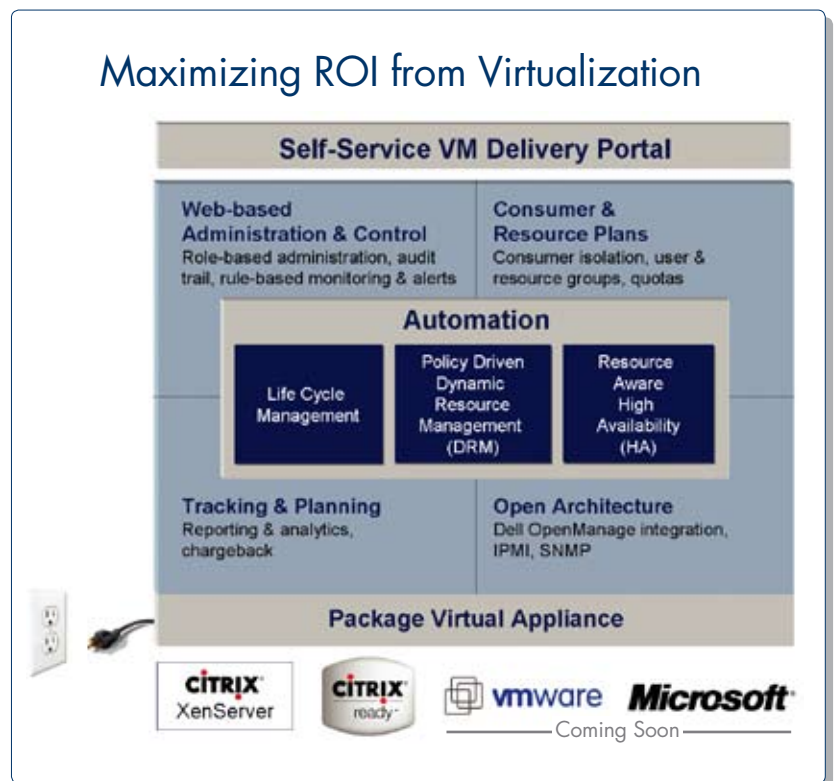
PLATFORM VMO HELPS:

Increase administrative responsiveness by allowing users to fulfill their own requests. Platform VMO's self-service virtual machine delivery portal allows users to create and manage their own virtual machines, eliminating the need for administrator intervention, saving time and money.

Automate administrative tasks to achieve optimal resource utilization, availability and power consumption. The automation provided by Platform VMO takes advantage of the flexibility of virtualization to help meet changing business demands and different service levels, while reducing the need for hands on administration and greatly reducing administrative costs.

Continue to maximize your investment in enterprise systems management tools. Platform VMO can provide a complete audit trail of virtualization events to other management tools, such as Dell™ OpenManage, to allow users to monitor their virtualization environment from a central location using tools they are familiar with.

Eliminate the silos of traditional IT deployment. Platform VMO provides the ability for multiple departments and/or companies to share the same virtual infrastructure, but maintain isolation for security and chargeback purposes.



AUTOMATED VM DELIVERY AND MANAGEMENT

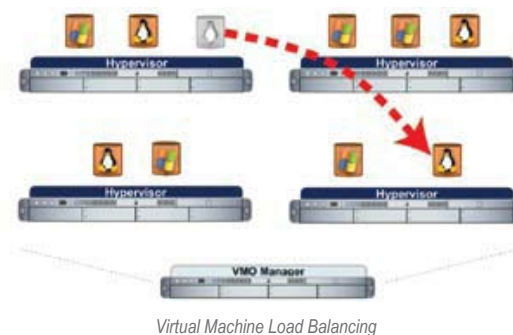
Automation

The automation provided by Platform VMO is designed to simplify administration by reducing the amount of hands-on management required from an administrator.

Policy Driven Dynamic Resource Management (DRM)

Intelligent Virtual Machine Placement: Platform VMO automatically determines the best host to start a virtual machine based on the resource requirements of the virtual machine and runtime host metrics such as CPU utilization, CPU speed and available memory. When starting a virtual machine, administrators have the choice of accepting Platform VMO's recommended host placement or choosing one of the other available hosts.

Load Balancing: Using its built-in policy engine, Platform VMO can be configured to automatically and continually monitor the load of managed hosts. If a host reaches a certain load threshold, Platform VMO can take action. The action can vary from notifying an administrator via email to automatically live-migrating virtual machines to alternative hosts with free resources.



Configurable policies: Platform VMO policies can be defined for a Platform VMO Cluster (all hosts under Platform VMO management), individual Consumers, hosts and virtual machines. Supported by the same built-in policy engine, all policies share similar characteristics. Each policy has a run interval that controls how often the policy is enforced, multiple rules with thresholds and actions, and optionally an email notification.

Virtualization
is about much more
than hypervisors.

High Availability (HA)

Resource Aware High Availability: In virtualized environments, the implication of physical server host failure is significant. However, it is generally not cost effective to target 100% availability through full hardware redundancy of every host. Platform VMO implements a solution that provides a tradeoff between recovery time and cost. In Platform VMO, administrators decide which virtual machines they want protected. In the event of host failure, Platform VMO automatically restarts and optimally places virtual machines onto other hosts that have free resources.



Resource Aware High Availability

VMO Management Server Failover: Multiple VMO Management Servers can be configured in Platform VMO to ensure management of the virtual environment is never lost. In the event of failure of the currently active VMO Management Server, a new VMO Management Server is elected from those standing by. Administrators are never at risk of losing control of the management of their virtual environment.

Self-service VM Delivery Portal

Self-service virtual machine management allows end-users to request and manage their own virtual machines. This frees administrators from the routine tasks of virtual machine creation and management and allows them to focus on value-added tasks such as architecting and growing the virtual environment.

User Roles: Platform VMO supports two types of users; administrators and end-users. An administrator is allowed full access to all of the capabilities of Platform VMO while an end-user has restricted access.

Virtual Machine and Virtual Machine Template

Access Permissions: An administrator can grant end-users access permission to virtual machines and virtual machine templates. This allows users to create and manage their own virtual machines.

Single Console for All Users: The same web-based console is used for both administrators and end-users. End-users see a limited view of the capabilities of Platform VMO.



Self Service Portal

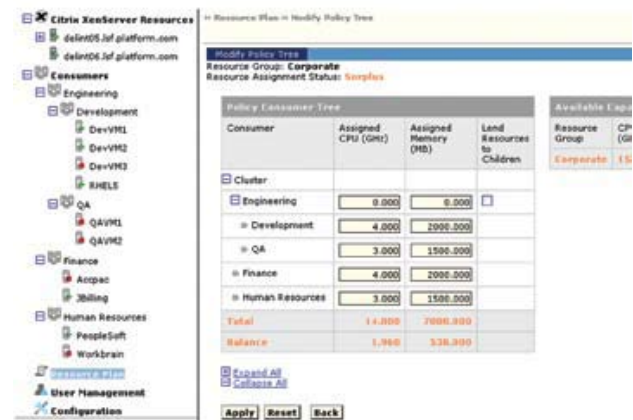
Web-based Administration and Control

Web Console: Administrators and authorized users can access their virtual environment via a web console from the office, home or on the road – anywhere. There is no client to install and no operating system dependence.

Role-based administration: In Platform VMO top-level administrators are called Cluster Administrators. Cluster Administrators have full access to everything in Platform VMO, including physical resources. Platform VMO also supports delegated administrators called Consumer Administrators. Consumer Administrators have complete administrative control over their Consumer. However, they are limited to the resources and templates that the Cluster Administrator has assigned them. This allows the Cluster Administrator to delegate control to Consumers without worry that they will take over the virtual environment.

Audit trail: Platform VMO provides a complete audit trail of events relating to hosts and virtual machines. This audit trail includes the date and time an event occurred, the user that triggered the event (including Platform VMO itself), the type of event (information, warning, error) and a description of the event. With Platform VMO's audit trail administrators can quickly troubleshoot problems with hosts and virtual machines.

Consumer and Resource Plans



Consumer & Resource Plans

Resource Groups: Resource Groups are a collection of physical servers running hypervisors that are pooled together to provide physical resources to virtual machines.

Consumers: Consumers provide a logical boundary for users' virtual machines. Consumers also provide a security boundary. The virtual machines assigned to one Consumer are hidden from another. Typically, Consumers are mapped to an organization's logical boundaries, such as: departments or projects. In the case of a hosting company, each Consumer might represent a different end customer.

Resource Plans: In Platform VMO the physical resources (CPU and memory) provided by a Resource Group can be mapped, or allocated, to different Consumers. This is done with Resource Plans. Resource Plans provide the quota of resource available to a Consumer to run virtual machines. This allows multiple Consumers to share one virtual environment.

Quotas: In Platform VMO users can be assigned to Consumers. Consumers are allocated a specific amount of CPU and memory they can use. This resource allocation defines the quota of resource a user has to run virtual machines.

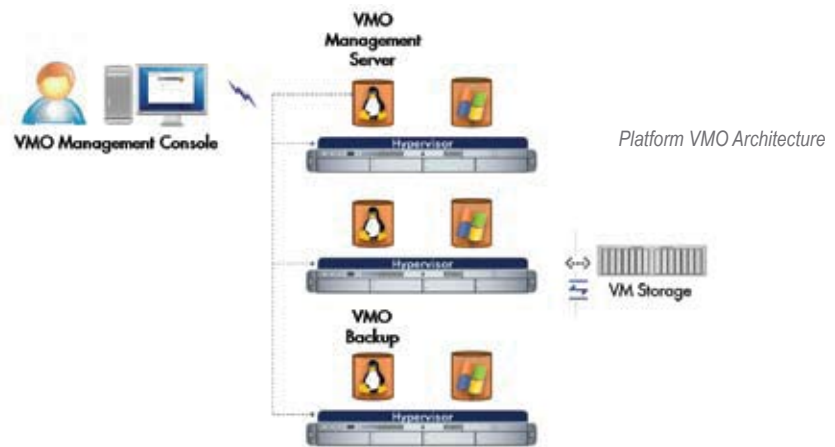
Tracking and Planning

Reporting and Analytics: The host utilization data used by Platform VMO to drive policies can also be drawn in charts using Platform VMO's flexible reporting engine. Analysis of the data related to hosts over a period of time can be used to help plan for the future of the virtualization environment.

Chargeback: Draw Consumer allocation and usage charts to understand how consumers are using the resources they've been assigned. Export Consumer allocation and usage data for import into a billing system and charge users appropriately for their use of the virtualization environment.

System Requirements

VMO Management Server Virtual Appliance Configuration	
Virtual Hardware	
Number of virtual CPUs	1
Virtual memory	1 GB
Virtual hard disk	1 x 8 GB disk
Virtual NIC	1 NIC (DHCP)
Software	
CentOS 4.5 (32-bit)	
XenServer Tools	
Platform VMO Management Server v4, includes: Platform EGO 1.9 JRE 1.5.0_08 Apache Tomcat 5.5.9 Apache Derby 10.1	
Platform VMO Management Server setup scripts	
Platform VMO v4 documentation	



VMO Management Console	
OS	Browser
Windows	IE 6+, Firefox 1.5+
Linux	Mozilla Firefox 2.0.0.6
(other browsers may work but have not been verified)	

Open Architecture

Systems management tools integration: The events relating to host and virtual machine activity logged by Platform VMO can be easily forwarded to 3rd party systems management tools, such as Dell OpenManage, via SNMP. This allows users to leverage Platform VMO to manage their virtualization environment but still leverage their existing tools for monitoring.

Packaged Virtual Appliance

VMO Management Server as a Virtual Appliance: Installation of Platform VMO is simplified through the packaging of the VMO Management Server as a pre-configured Citrix XenServer virtual appliance. Users can simply download the appliance and import it as a virtual machine into their Citrix XenServer environment with minimal preparation. The VMO Management Server runs harmoniously with other virtual machines on Citrix XenServer.

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Platform™

Platform Computing is a pioneer and the global leader in High Performance Computing (HPC) management software. The company delivers integrated software solutions that enable organizations to improve time-to-results and reduce computing costs. Many of the world's largest companies rely on Platform to accelerate compute or data intensive applications and manage cluster and grid systems. Platform has over 2,000 global customers and strategic relationships with Dell™, HP, IBM®, Intel®, Microsoft®, Red Hat® and SAS®, along with the industry's broadest support for HPC applications. Building on 16 years of market leadership, Platform continues to define the HPC market. Visit www.platform.com.

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