

# CLOUDFORMS MANAGEMENT FOR VMWARE ENVIRONMENTS

DATASHEET

## INTRODUCTION

Organizations using VMware virtualization platforms often face challenges related to provisioning and managing virtual resources. Fulfilling new service requests require long, manual processes that consume excessive time and resources. Likewise, ongoing management requires IT personnel to commit the majority of their day-to-day time on management tasks that offer little differentiating value to the business.

Red Hat CloudForms helps VMware customers accelerate service delivery and reduce the time spent on low-value tasks by providing self-service ordering with complete life-cycle management, including automated provisioning. Service requests submitted via Red Hat CloudForms can be delivered in minutes – not days or weeks – without manual intervention.

Red Hat CloudForms also gives IT operations teams the visibility and control they need to ensure security, performance, and capacity for all virtual machines (VMs) in their VMware environments. Red Hat CloudForms continuously monitors VMware infrastructure and automatically enforces policies to ensure VMs are compliant with corporate, industry, or government requirements. This reduces the risk associated with VMware environments and frees resources from day-to-day management tasks. The result is reduced costs and time spent provisioning and managing VMware infrastructure, which lets more resources be applied to more critical business functions.

## SELF-SERVICE WITH COMPLETE LIFE-CYCLE MANAGEMENT

Red Hat CloudForms provides a web-based, self-service catalog where IT services may be requested. Services are first defined by the IT team and loaded into the service catalog. Multiple service catalogs can be created, and each service catalog can be segmented according to users, roles, or segments, providing a different experience for the various customers or users who access the self-service portal. Users of the self-service catalog can be presented a dialog to further customize their request.

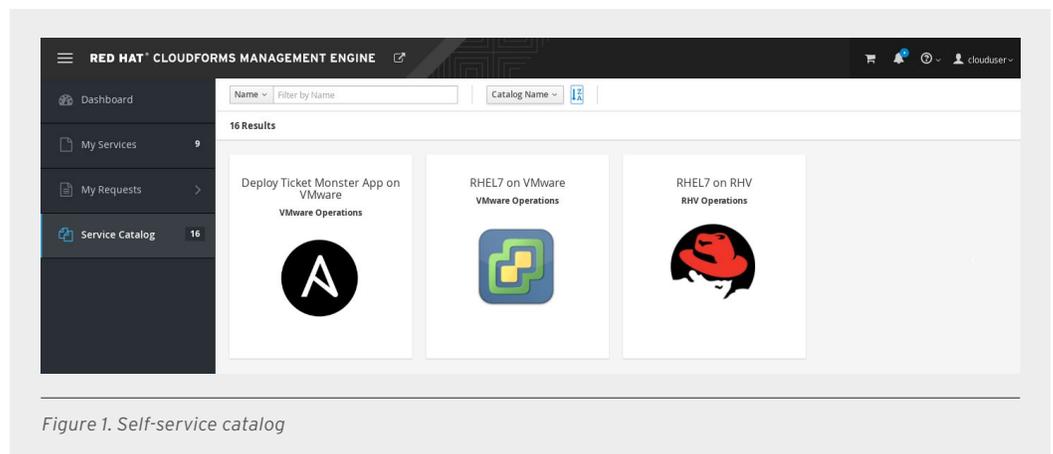


Figure 1. Self-service catalog



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Once an IT service has been requested, Red Hat CloudForms connects directly to the VMware infrastructure to automatically provision the service. Red Hat CloudForms can provision VMs by cloning existing instances or by provisioning them from a template.

Red Hat CloudForms then further customizes the VM by remotely executing configuration tasks using native methods or by executing an Ansible playbook. Red Hat CloudForms may even be integrated with third-party configuration management solutions – such as Puppet or Chef – to apply a specific configuration. These changes, determined by the selections made during self-service, ensure that the software environment within the VM is configured exactly as needed by the requester.

Finally, Red Hat CloudForms provides complete life-cycle management of VMs. Red Hat CloudForms can take snapshots of VMs, reconfigure them, add disks or networks, scale them up or down, and migrate or retire them as needed. Retired VMs can be archived as required by regulations or purged in order to free resources.

### POLICY AND COMPLIANCE ENFORCEMENT

Once Red Hat CloudForms is connected to the VMware infrastructure, it automatically discovers VMs and other virtual resources in the environment by requesting a complete inventory of the infrastructure. This discovery process is ongoing, which allows Red Hat CloudForms to bring new VMs under management, even if they were not provisioned through Red Hat CloudForms.

Using this comprehensive view of the VMware environment, Red Hat CloudForms can track relationships between VMs and particular VMs' genealogy. It can capture and record VMware infrastructure and VM instance events and provide alerts when VMs are changed or reconfigured. Finally, it can perform a SmartState Analysis, capturing detailed data about the VM, including operating system details, installed software, configuration parameters, and configured user accounts.

Data from the VMware infrastructure, VMs, and SmartState Analysis allows Red Hat CloudForms to perform ongoing checks to ensure VMs are compliant with defined corporate, industry, or regulatory policies. These policies are defined in Red Hat CloudForms as specific VM conditions or events and the actions that should be taken when that condition or event is encountered. Actions may be anything from raising an alert to automatically rectifying the situation. Red Hat CloudForms continuously monitors VM conditions and events in order to ensure action is taken whenever an out-of-policy situation arises.

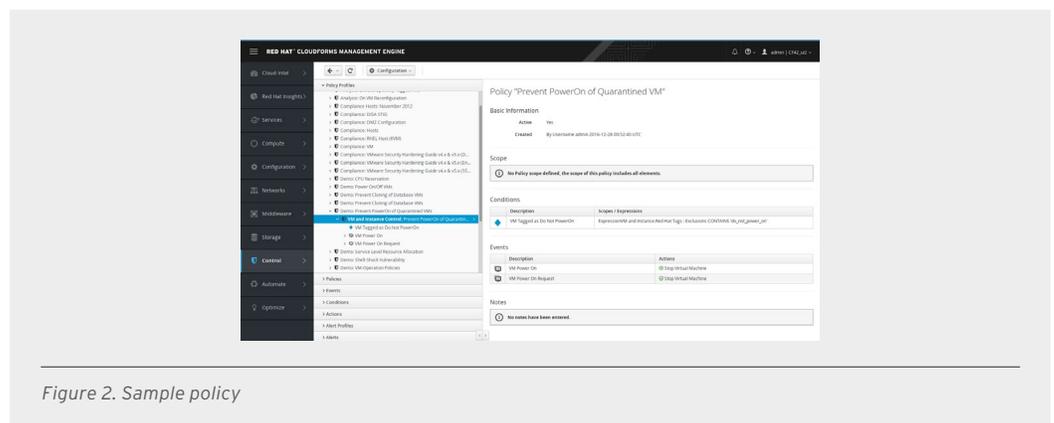


Figure 2. Sample policy

One specific area of enforcement for Red Hat CloudForms is quotas. Quotas are limits that can be set for resources such as CPUs, memory, storage, networking, or even complete VMs. Quotas can be applied to individual users, groups, or tenants and ensure that virtual resources are managed fairly – thereby ensuring user accessibility to the VMware infrastructure.

### OPERATIONAL EFFICIENCY

With Red Hat CloudForms’ comprehensive view of the VMware infrastructure and detailed VM data, IT operations teams can gain greater insight and control over the VMware environment. Red Hat CloudForms can identify performance issues – such as bottlenecks – and correct VMs based on their observed resource use. By capturing infrastructure as well as VM events and resources over time, Red Hat CloudForms provides capacity and utilization reports that can inform plans for future VMware infrastructure growth. The reports can also be used to provide chargeback amounts to the various users, groups, or tenants based on their VMware resource use.

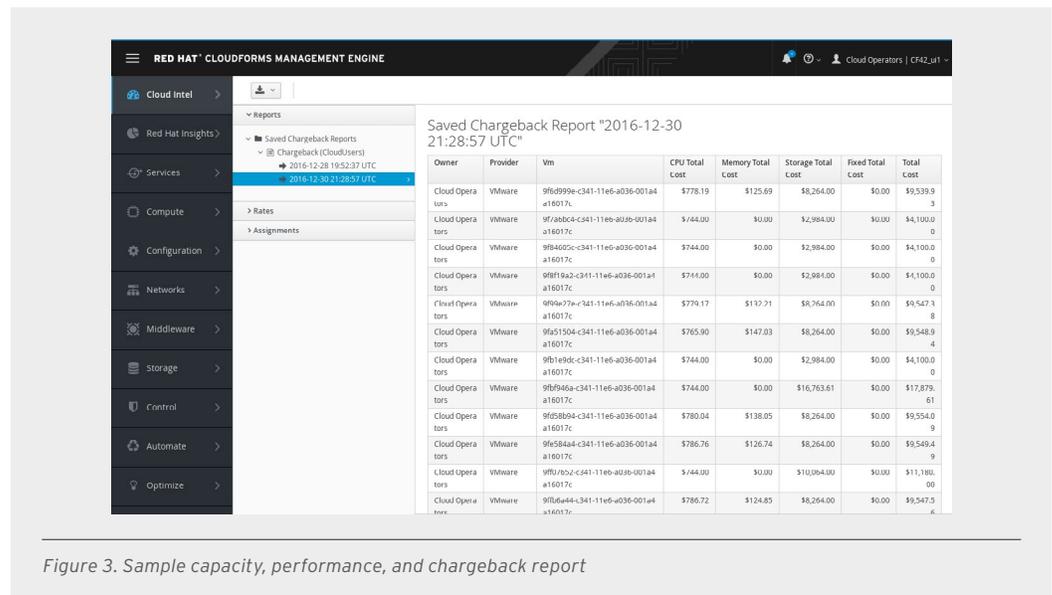
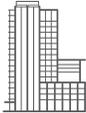


Figure 3. Sample capacity, performance, and chargeback report

Red Hat CloudForms also gives IT operations teams the control they require to fully administer and troubleshoot issues. Operators have access to VMware host and VM power operations and have the ability to retire VMs. When detailed analysis of a host or VM is required, Red Hat CloudForms can draw on its recorded data to perform a drift analysis, pinpointing the changes that have happened over time. An administrator can then access the VM directly using a built-in remote console to correct the issue.

### CONCLUSION

Red Hat CloudForms provides a complete management platform for VMware environments, including a self-service portal backed by automated provisioning and configuration. Automated policy enforcement ensures that VMs are compliant, while comprehensive operational insights allow IT operations teams have the visibility they need to manage their VMware environment.



**ABOUT RED HAT**

Red Hat is the world's leading provider of open source software solutions, using a community-powered approach to provide reliable and high-performing cloud, Linux, middleware, storage, and virtualization technologies. Red Hat also offers award-winning support, training, and consulting services. As a connective hub in a global network of enterprises, partners, and open source communities, Red Hat helps create relevant, innovative technologies that liberate resources for growth and prepare customers for the future of IT.

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**RED HAT CLOUDFORMS CAPABILITIES FOR VMWARE**

CloudForms form factor	VMware Virtual Appliance (OVA Format, 700MB)
Managed VMware infrastructure	VMware vCenter Server 5.0 and later
Discoverable VMware inventory	Hosts, VMs, networks, virtual switches, disks/volumes, Datastores
Continuous discovery	Yes, including VMware resources provisioned outside of Red Hat CloudForms
Event capture	Infrastructure and VM-specific events with event timeline
Alerts capture	VMware alarms, VM reconfiguration, and VM value change
Metrics capture	VM count, CPU count, CPU utilization, memory utilization, disk utilization, network IO
SmartState Analysis	Yes, using the VMware Virtual Disk Development Kit (VDDK) for Windows or Linux® guests
Provisioning	VM-to-VM, Template-to-VM
Policy enforcement	Host and VM enforcement
Compliance check	Host and VM compliance
Orchestration	Provision a single VM or multiple VMs, including the application stack, with Ansible by Red Hat or third-party tools
Optimization	Right-size recommendations, capacity planning, bottleneck identification
Operations	Snapshot creation and removal, VM migration, VM power operations, VM retirement
Reconfiguration	Add/remove CPU, add/remove memory, add/remove disk
Reporting	Capacity and utilization, trending, performance, chargeback
Chargeback	Multiple rate cards per tenant, group or user; fixed and variable rates for CPU, memory, storage, and networking; multicurrency support
Troubleshooting	Host and VM drift comparison, relationship tracking