

Container Management with Red Hat

CloudForms with OpenShift

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AGENDA

- Red Hat Management
- Managing Container
 - Hybrid
 - Inventory & Reporting
 - Security Scan
 - Monitoring
 - Compliance
 - Chargeback
- Roadmap

RED HAT MANAGEMENT

SATELLITE

BUILD A TRUSTED & SECURE RED HAT ENVIRONMENT

Manage the Red Hat Lifecycle
Provision & Configure at Scale
Standardize Your Environment



CLOUDFORMS

DELIVER SERVICES ACROSS YOUR HYBRID CLOUD

Hybrid Cloud Management
Self-Service Provisioning
Policy-driven Compliance



ANSIBLE

AUTOMATE YOUR IT PROCESSES & DEPLOYMENTS

Simple & powerful language
No agents to install
Scale with **Ansible Tower**



INSIGHTS

PREVENT CRITICAL ISSUES BEFORE THEY OCCUR

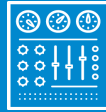
Continuous Insights
Verified Knowledge
Proactive Resolution



MANAGING CONTAINER

OPENSIFT HYBRID MANAGEMENT

RED HAT®
CLOUDFORMS



Monitoring



Policy



Inventory &
Chargeback



Unified Hybrid
Management



CONTAINERS

Red Hat® OpenShift Container Platform

RED HAT® JBOSS®
MIDDLEWARE



VIRTUALIZATION

VMware®

Microsoft® Hyper-V

Red Hat Virtualization



PRIVATE CLOUD

Red Hat OpenStack® Platform



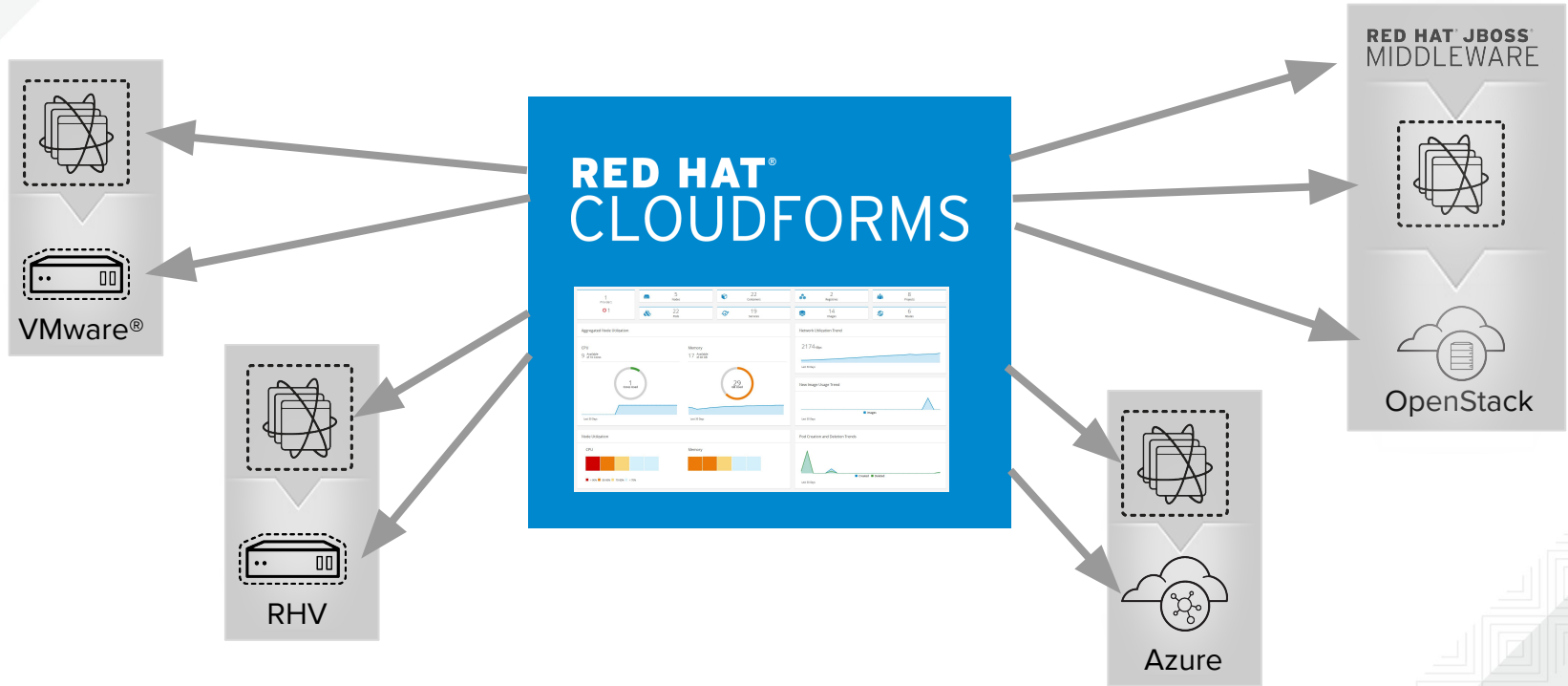
PUBLIC CLOUD

Amazon® Web Services

Microsoft Azure

Google® Cloud

OPENSIFT HYBRID MANAGEMENT



* Tech Preview

DASHBOARD

1 Providers
1

5 Nodes

22 Containers

2 Registries

8 Projects

22 Pods

19 Services

14 Images

6 Routes

Aggregated Node Utilization

CPU

9 Available of 10 Cores



Memory

17 Available of 46 GB



Network Utilization Trend

2174 KBps

Last 30 Days

New Image Usage Trend

Last 30 Days

Node Utilization

CPU



Memory



Pod Creation and Deletion Trends

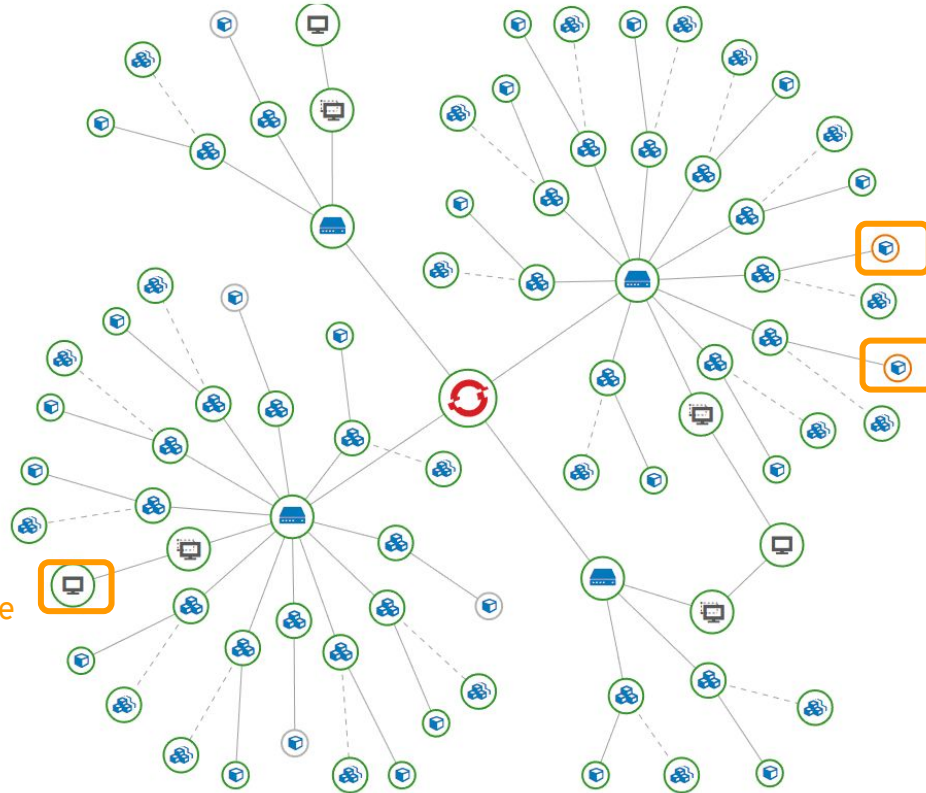
Last 30 Days

How many pods?
How many Images?
How many Pods created/deleted trend?
Do I still have some resources?

Topology View

- Searchable
- Clickable
- Filterable

Underlying Infrastructure



Highlighted Containers with issues

INVENTORY, DRILL-DOWN

How many pods for this project?
How many Images?
What are these images?

cicd (Summary)

Properties	
Name	cicd
Display name	CI/CD
Creation timestamp	Thu, 02 Feb 2017 18:23:40 +0000
Resource version	548745

Relationships	
Containers Provider	OpenShift Container Platform
Routes	4
Container Services	7
Replicators	6
Pods	6
Nodes	2
Container Images	5
Container Templates	0

Smart Management	
Red Hat Tags	No Red Hat Tags have been assigned

Name	
	gogs-1-e50px
	jenkins-1-6hc03
	nexus-1-fahrd
	postgresql-gogs-1-l4tip
	postgresql-sonarqube-1-wt31z
	sonarqube-1-m6klm

		Name	Provider	Ready	Operating System	Kernel Version	Runtime Version
<input type="checkbox"/>		ocp-node-1.lab.example.com	OpenShift Container Platform	True	Employee SKU	3.10.0-514.6.1.el7.x86_64	docker://1.10.3
<input type="checkbox"/>		ocp-node-2.lab.example.com	OpenShift Container Platform	True	Employee SKU	3.10.0-514.6.1.el7.x86_64	docker://1.10.3

IMAGE - INVENTORY, SCAN

rhsc/postgresql-95-rhel7 (Summary) (Names with "postgres")

Properties	
Name	rhsc/postgresql-95-rhel7
Tag	latest
Image Id	docker-pullable://registry.access.redhat.com/rhsc/postgresql-95-rhel7@sha256:5fd5ddd41ed4a90ede969c72125ef64d3c34fb16f55ce2f90697f778ada9d4f2
Full Name	registry.access.redhat.com/rhsc/postgresql-95-rhel7:latest@sha256:5fd5ddd41ed4a90ede969c72125ef64d3c34fb16f55ce2f90697f778ada9d4f2
Operating System Distribution	redhat
Product Type	Linux
Product Name	Red Hat Enterprise Linux Server release 7.3 (Maipo)
Architecture	amd64
Author	
Command	run-postgresql
Entrypoint	container-entrypoint
Docker Version	1.10.3
Exposed Ports	5432/tcp
Size	100610845

Compliance	
Status	✘ Non-Compliant as of 2 Months Ago
History	🔄 Available

Relationships	
Containers Provider	OpenShift Container Platform
Image Registry	registry.access.redhat.com
Projects	1
Pods	17
Containers	17
Nodes	2

Smart Management	
Red Hat Tags	No Red Hat Tags have been assigned

Configuration	
Packages	207
OpenSCAP Results	412
OpenSCAP HTML	Available
Last scan	Sun, 29 Jan 2017 03:42:07 +0000

OpenSCAP Failed Rules Summary	
High	1

Which project is using this image?
 What is inside this image?
 Is this image secured?

	Name	Vendor	Version	Release
	acl		2.2.51	12.el7
	audit-libs		2.6.5	3.el7
	audit-libs-python		2.6.5	3.el7
	basesystem		10.0	7.el7

Automatically generated XCCDF from OVAL file: com.redhat.rhsa-RHEL7.xml

This file has been generated automatically from the conditions file.

Evaluation Characteristics

Target machine	manages:mp:scan-4404c	CPE Platforms	Addresses
Benchmark	Amiscom.redhat.rhsa-RHEL7-0,Amis02		277,0,1
URLs			10,1,2,3
Benchmark ID	xccdf_com.redhat.rhsa_benchmark_generated:AC02		249,0,0,0,0,1
Started at	2018-12-08T17:02:45		149,0,0,0,42,48,40,1,502
Finished at	2018-12-08T17:02:45		10,0,0,0,0,0,0,0,0
Performed by			32,42,0,0,1,05,02

Compliance and Scoring

The target system did not satisfy the conditions of 21 rules. Please review rule results and consider applying remediation.

Rule results: 277 passed 0 failed

Severity of failed rules: 11 medium 1 high

Scoring system	Score	Basic	Maximum	Percent
urn:xccdf:scoring:default	94,729218	100,000000	100,000000	94.7%

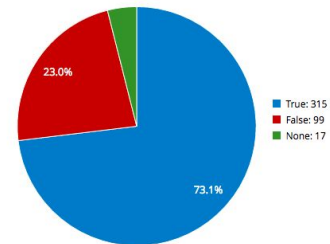
REPORTING

- Out-of-the-box
- Customizable
- History
- Graphics
- Exportable
- Centralized

Containers Reports

	Name	Primary (Record) Filter	Secondary (Display) Filter	Sort By	Chart	User	EVM Group
	Nodes By Capacity	No	No	Yes	No		
	Nodes By CPU Usage	No	No	Yes	No		
	Nodes By Memory Usage	No	No	Yes	No		
	Recently Discovered Pods	No					
	Number of Nodes per CPU Cores	No					
	Pods per Ready Status	No					
	Projects by Number of Pods	No					
	Projects By CPU Usage	No					
	Demo - Projects By Memory Usage	No					
	Pod counts For Container Images by Project	Yes					
	Number of Images per Node	No					

Saved Report "Pods per Ready Status - Wed, 12 Apr 2017 17:03:34 +0000"



# Pods per Ready Status	Ready Condition Status
mynodejsapp-1-vj3ln	False
rails-postgresql-example-1-1bgnz	False
tasks-1-zcbs6	False
dancer-mysql-example-1-0kt5c	False
jenkins-1-141rn	False
postgresql-sonarqube-1-dg3h	False
jenkins-1-82xf4	False

MONITORING: CLUSTERS, NODES, PROJECTS...

- Zoom-in
- History
- Clickable

Options

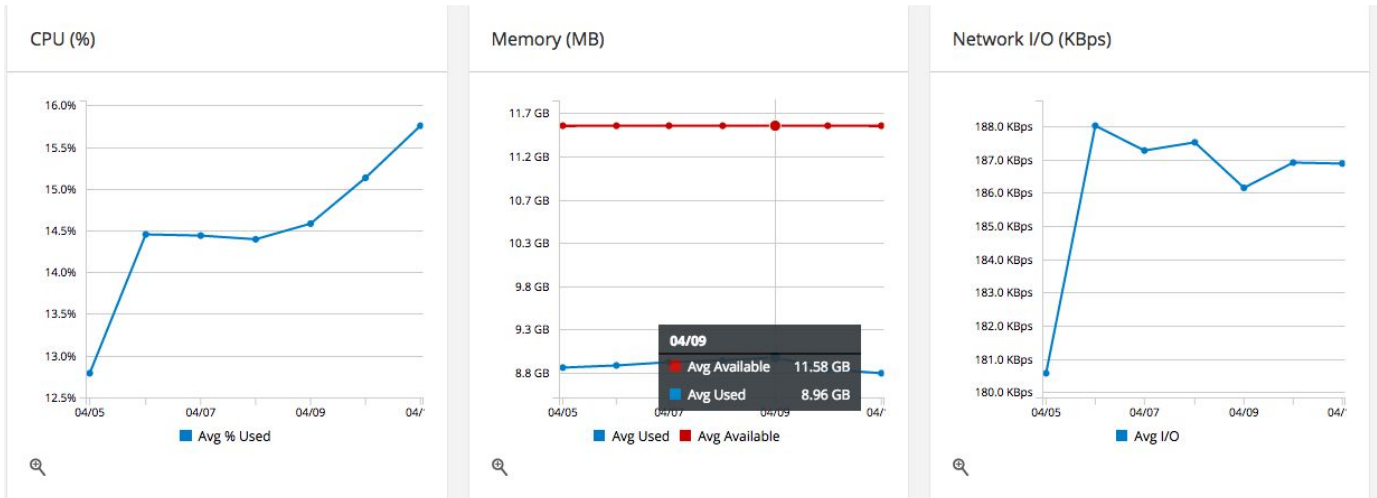
Interval

Date

Show back

Time Profile UTC

* Daily charts only include days for which all 24 hours of data has been collected.



CHARGEBACK/SHOWBACK

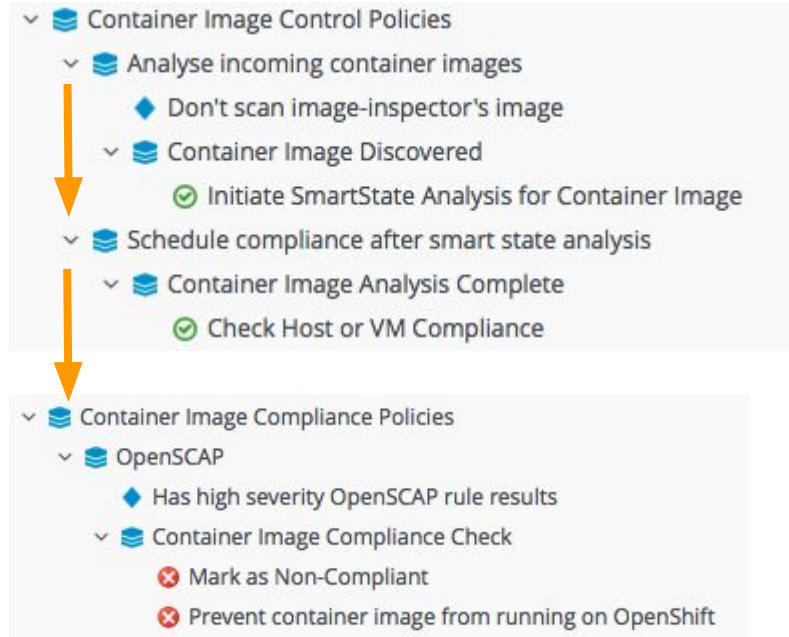
Saved Report "My Chargeback Report - Wed May 11
16:29:45 UTC 2016"

- Image Based
- Project Based
- Flexible Rates
- Exportable
- Emailed

Date Range	Project Name	CPU Used Cost	CPU Used	Memory Used Cost	Memory Used	Network I/O Used Cost	Network I/O Used	Total Cost
05/10/2016	default	\$3.00	0.059 Cores	\$5.24	6.1 GB	\$36.00	275 KBps	\$44.24
05/10/2016	default							
05/10/2016	hello-world	\$1.00	0.004 Cores	\$0.77	921.4 MB	\$12.00	0 KBps	\$13.77
05/10/2016	openshift-infra	\$3.01	12.321 Cores	\$67.68	79.3 GB	\$67.05	8,412 KBps	\$137.74
05/10/2016	openshift-infra							
05/10/2016	test	\$3.00	0.036 Cores	\$4.47	5.2 GB	\$36.00	20 KBps	\$43.47
05/10/2016	test							
2016-05-10 00:00:00 UTC								
Totals:		\$10.01	12.420 Cores	\$78.16	91.6 GB	\$151.05	8,706 KBps	\$239.23
All Rows								
Totals:		\$10.01	12.420 Cores	\$78.16	91.6 GB	\$151.05	8,706 KBps	\$239.23

POLICY & COMPLIANCE

- Centralized
- Automated
- Customisable
- Embedded
- Event Based



ROADMAP

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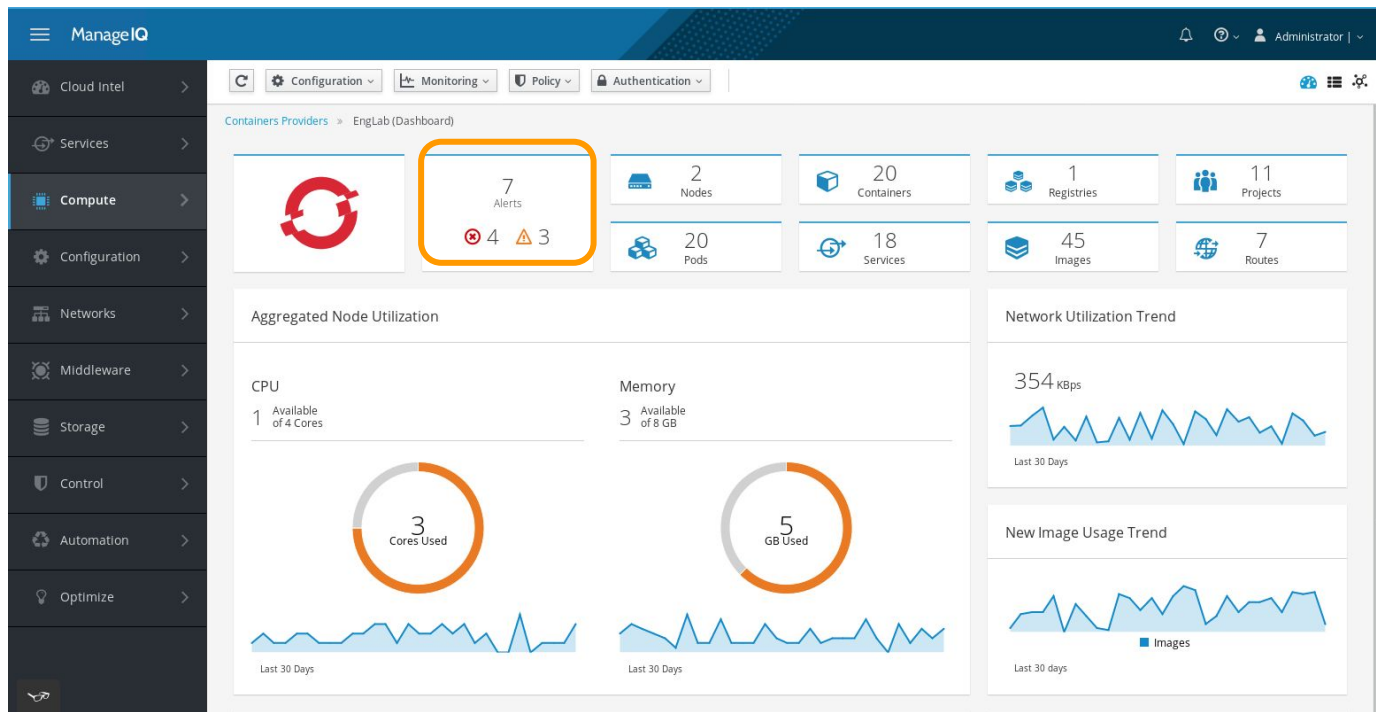
CLOUDFORMS 4.6

- OpenShift Template Provisioning from Catalog of Service
- Alerts Dashboard and Life-cycle (*Tech Preview*)
- Dynamic Metrics: retrieve and graph any metrics directly from OpenShift
- CloudForms Running on OpenShift as a Container Application
 - Install with Red Hat OpenShift 3.7 (using Ansible)
 - Install via an OpenShift Template
 - Multiple Container: higher scalability, built-in health check.
- Ansible Modules to Configure CloudForms (Manage Providers, Manage Users, Manage Policies)

CLOUDFORMS 4.6

- Integration with Log aggregation User Interface (Kibana) for Clusters and Nodes
- Integration with Cockpit for advanced Nodes troubleshooting.
- Chargeback by Allocation leveraging Container resource limits.
- Metering Reports on Container Images and Projects (Hours).
Exportable in csv, txt or pdf format.
- More out-of-the-box reports: Security Compliance, Projects Quota
- Off-line OpenScap Scan support.

ALERT MANAGEMENT (Tech Preview)



ALERT MANAGEMENT (Tech Preview)

Monitor > Alerts > All Alerts

Severity Filter by Severity Severity !?

5 Results Active filters: Provider Name: OpenShift Cluster 00 Clear All Filters

Severity	Message	Owner	Time	Action	User	Note
Warning	vm-48-93.eng.L... OpenShift Clus...	All hawkular	2016-12-14 06:48:11	01d 00h 3...	Unassigned	
SOP Associated link configured by OP Admin						
History						
Time	Action	User	Note			
2016-12-14 07:20:49						
2016-12-14 07:40:18						
2016-12-12 02:29:42						
2016-12-12 01:52:30						

vm-48-99.eng.lab.tlv.redhat.com:3000/alerts._list/show?name=OpenShift Cluster 00&severity=Error#

Assign Alert

Message: All hawkular

Owner: Administrator Acknowledge

Note: Can you please take a look

Cancel OK

Add Note

Message: All hawkular

Owner: Unassigned

Note: Interesting

Cancel OK

DYNAMIC METRICS

The screenshot displays the Red Hat CloudForms Management Engine interface. The left sidebar contains navigation options: Cloud Intel, Red Hat Insights, Services, Compute (selected), Configuration, Networks, Middleware, Storage, Control, Automation, and Optimize. The main content area shows the '35cmqe-podified' resource with a 'Monitoring' tab selected. The title is '35cmqe-podified (Ad hoc Metrics)'. Below the title, there are controls for 'Set Tenant' (System), a 'component' filter dropdown (set to 'Filter by component...'), and buttons for 'Apply Filters' and 'View Graph'. The results section shows '156 Results' with a table of metrics. The 'cluster/cpu/usage_rate' metric is highlighted, showing a value of 648.00. A trend graph for this metric is visible, showing a relatively flat line with a slight upward trend. Below the graph, there are 'Tags' for the selected metric: descriptor_name: cpu/usage_rate, group_id: /cpu/usage_rate, and type: cluster. A second table of metrics is shown below, including cluster/memory/limit, cluster/memory/request, cluster/memory/usage, machine/cmqe-podified-master.qa.lab.tlv.redhat.com/cpu/limit, and machine/cmqe-podified-master.qa.lab.tlv.redhat.com/cpu/node_capacity.

Component	Most Recent	Value
cluster/cpu/limit	09:52:30 2017-04-24	0.00
cluster/cpu/request	09:52:30 2017-04-24	200.00
cluster/cpu/usage_rate	09:52:30 2017-04-24	648.00
cluster/memory/limit	09:52:30 2017-04-24	8.25 Gbytes
cluster/memory/request	09:52:30 2017-04-24	3.97 Gbytes
cluster/memory/usage	09:52:30 2017-04-24	5.05 Gbytes
machine/cmqe-podified-master.qa.lab.tlv.redhat.com/cpu/limit	09:52:30 2017-04-24	0.00
machine/cmqe-podified-master.qa.lab.tlv.redhat.com/cpu/node_capacity	09:52:30 2017-04-24	4.00 k



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