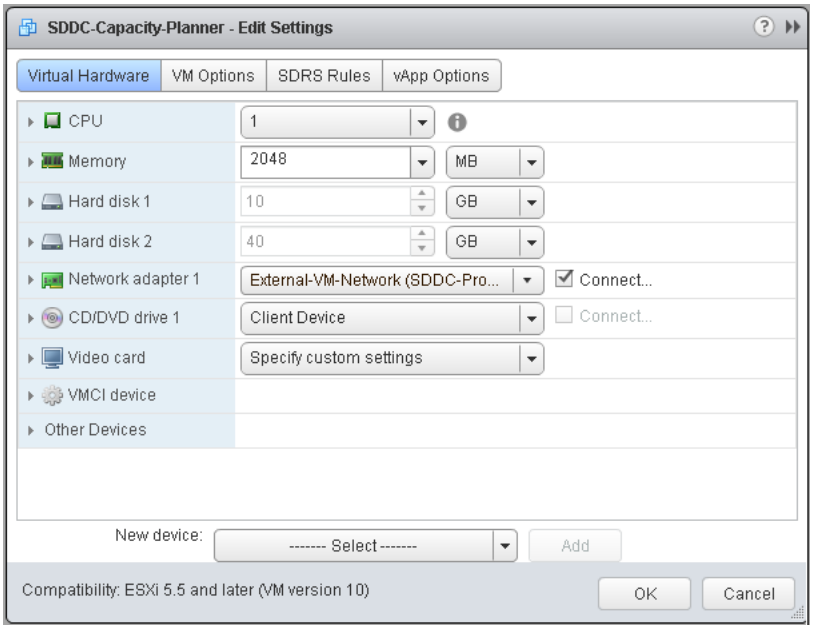
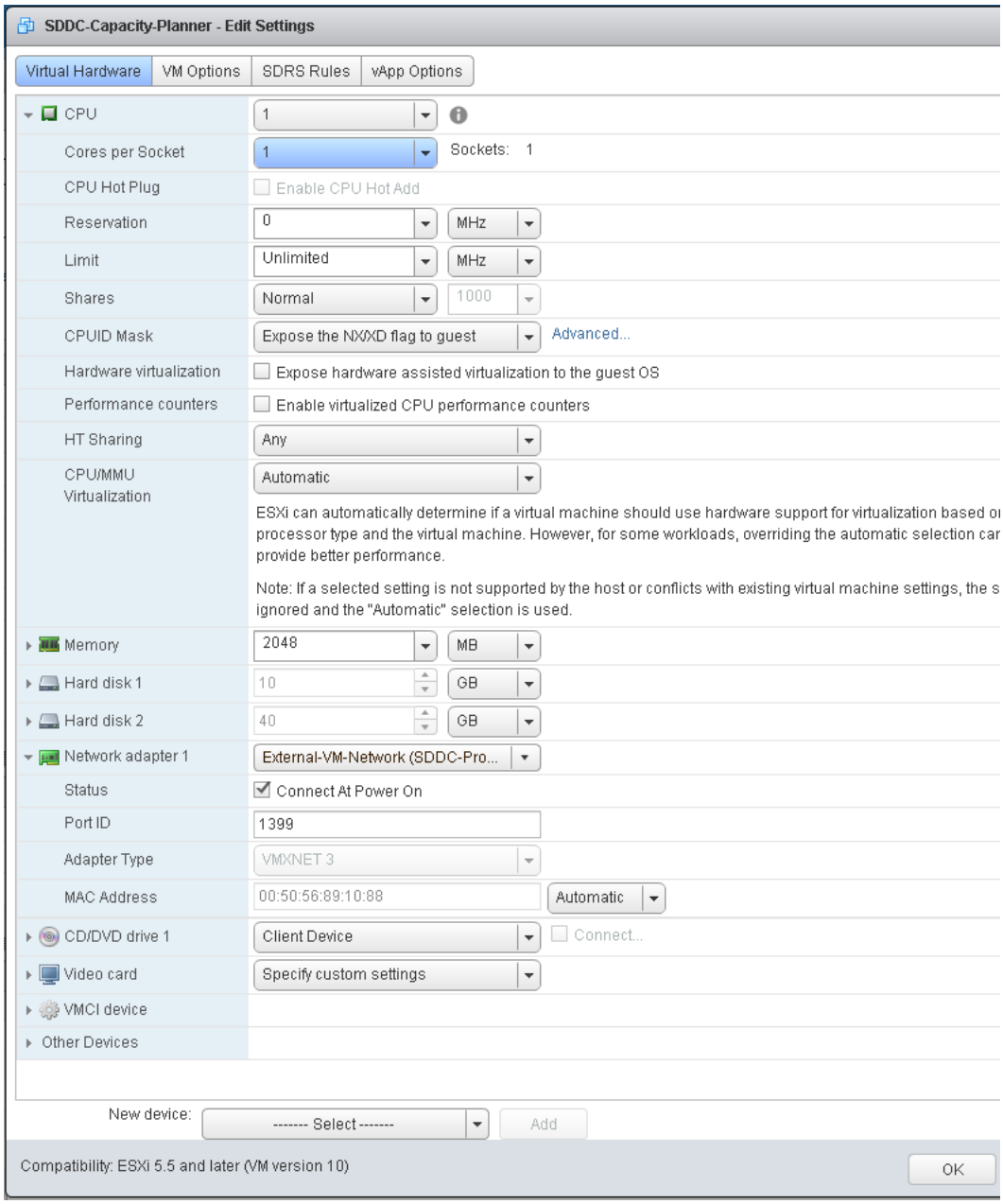
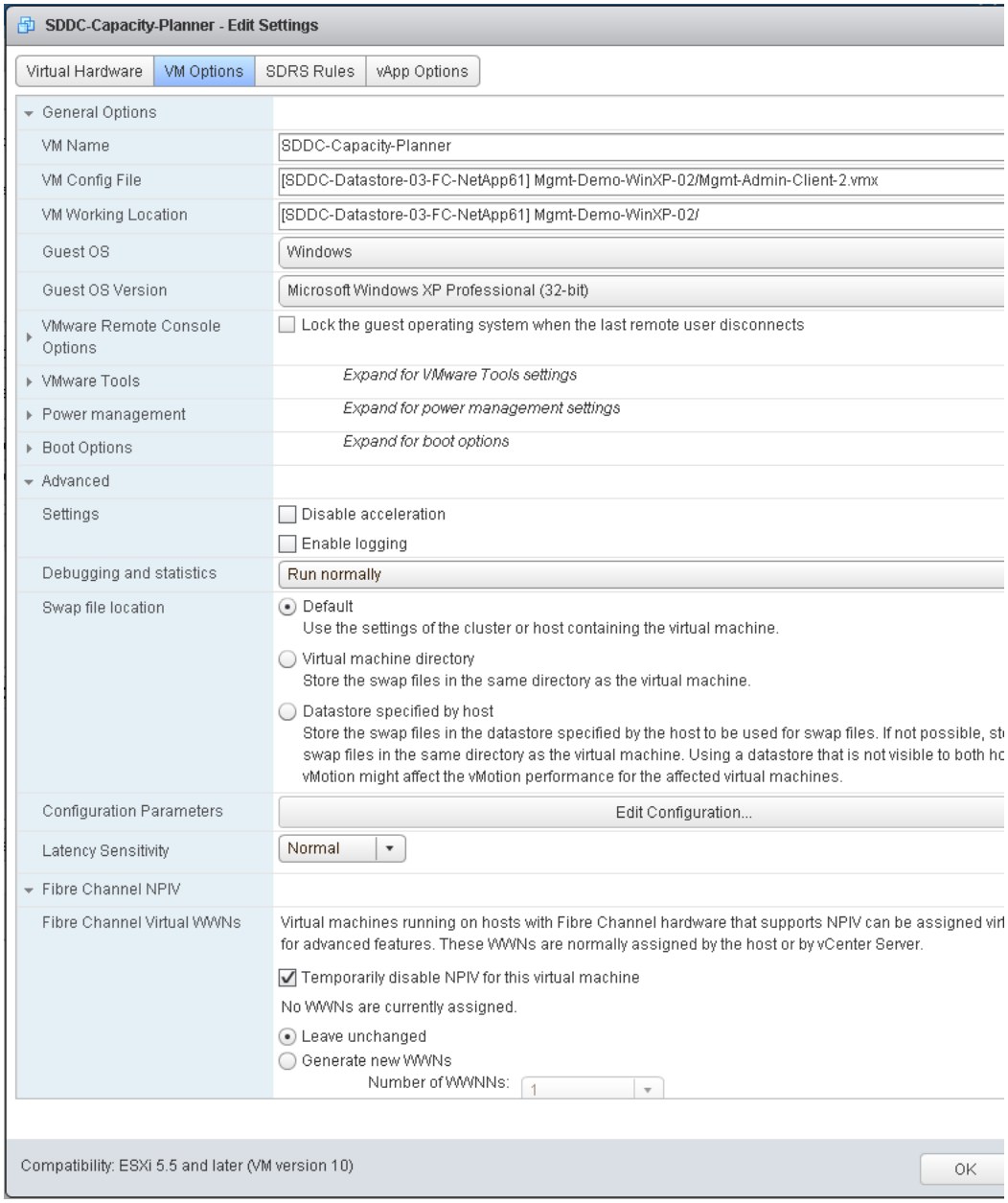
Part 1

Chapter 1: VM – It Is Not What You Think!

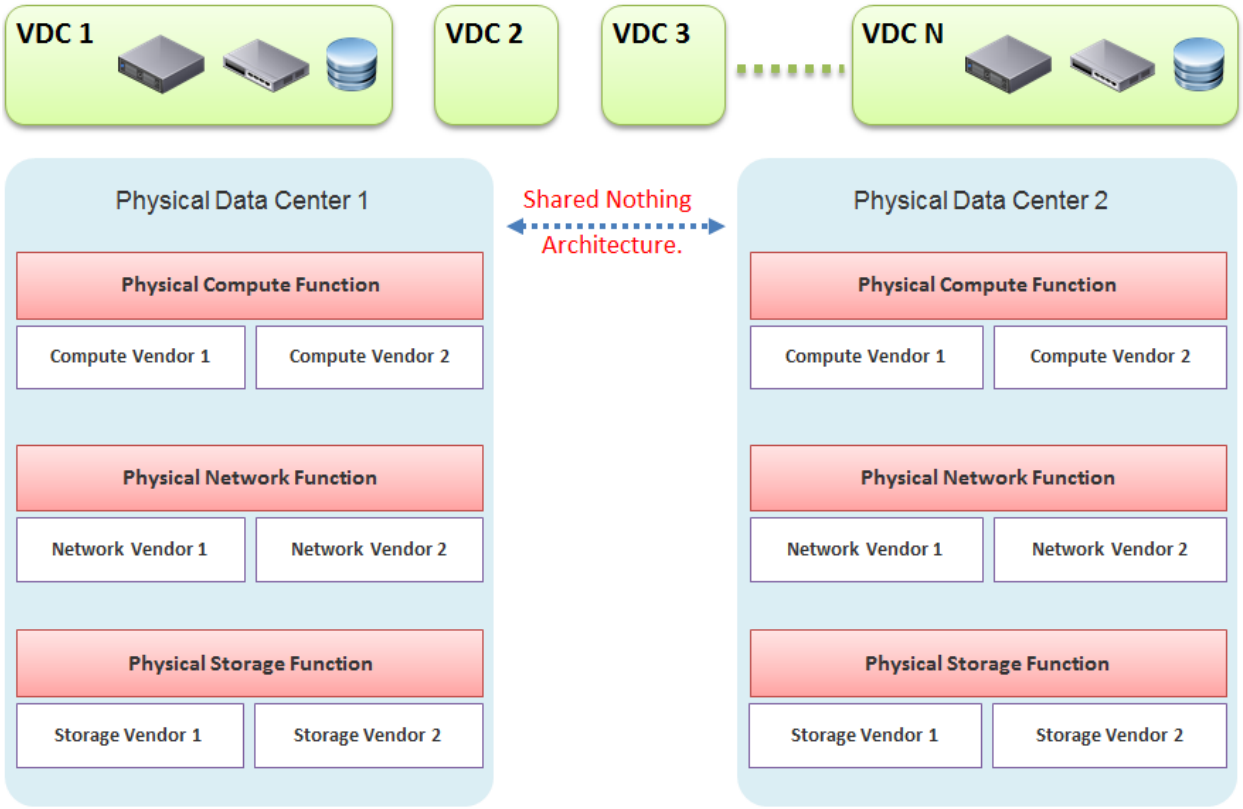

Hardware Partitioning
e.g. LPAR, LDOM
App
App
OS
OS
HW
OS Partitioning
e.g. Linux Container
App
App
OS
HW
Virtual Machines
e.g. vSphere, Hyper-V
App
App
OS
OS
VMM
VMM
Hypervisor
HW

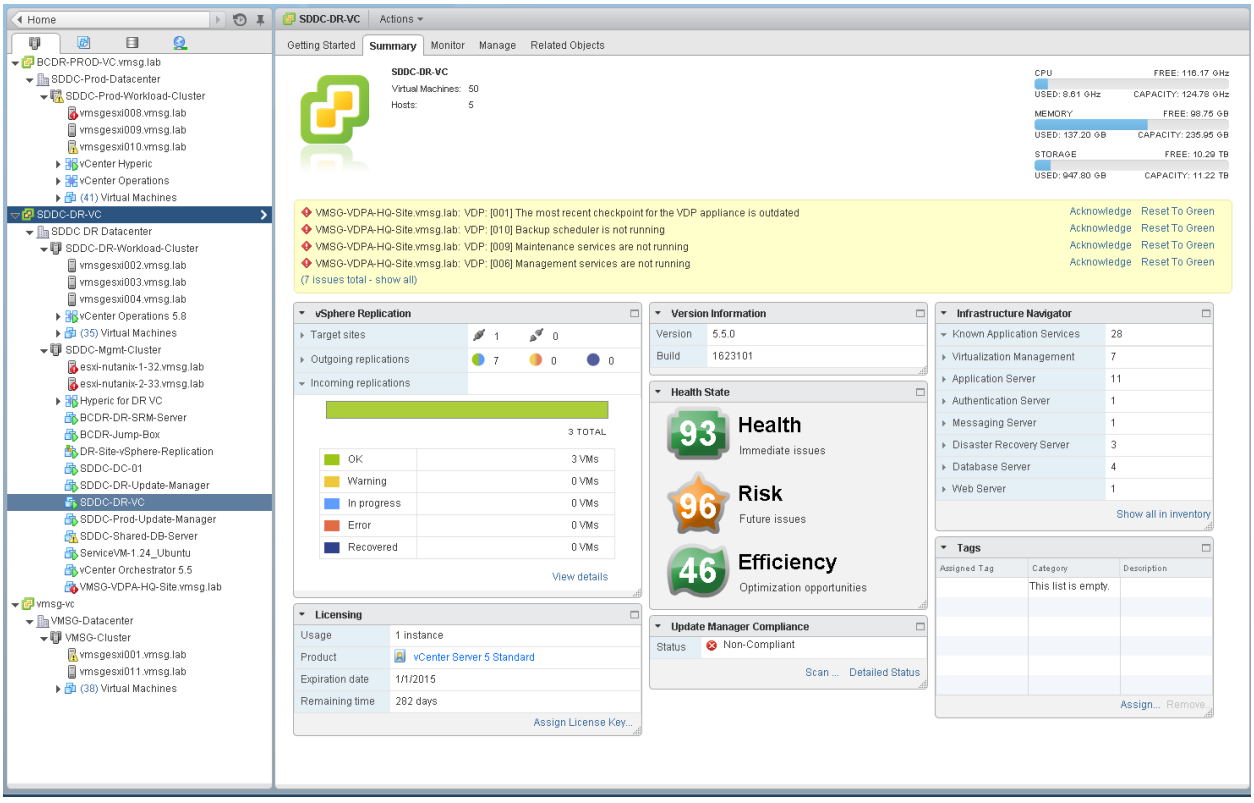

SDDC-Capacity-Planner - Edit Settings
Virtual Hardware
VM Options
SDRS Rules
vApp Options
CPU
1
Memory
2048
MB
Hard disk 1
10
GB
Hard disk 2
40
GB
Network adapter 1
External-VM-Network (SDDC-Pro...
Connect...
CD/DVD drive 1
Client Device
Connect...
Video card
Specify custom settings
VMCI device
Other Devices
New device:
------- Select -------
Add
Compatibility: ESXi 5.5 and later (VM version 10)
OK
Cancel

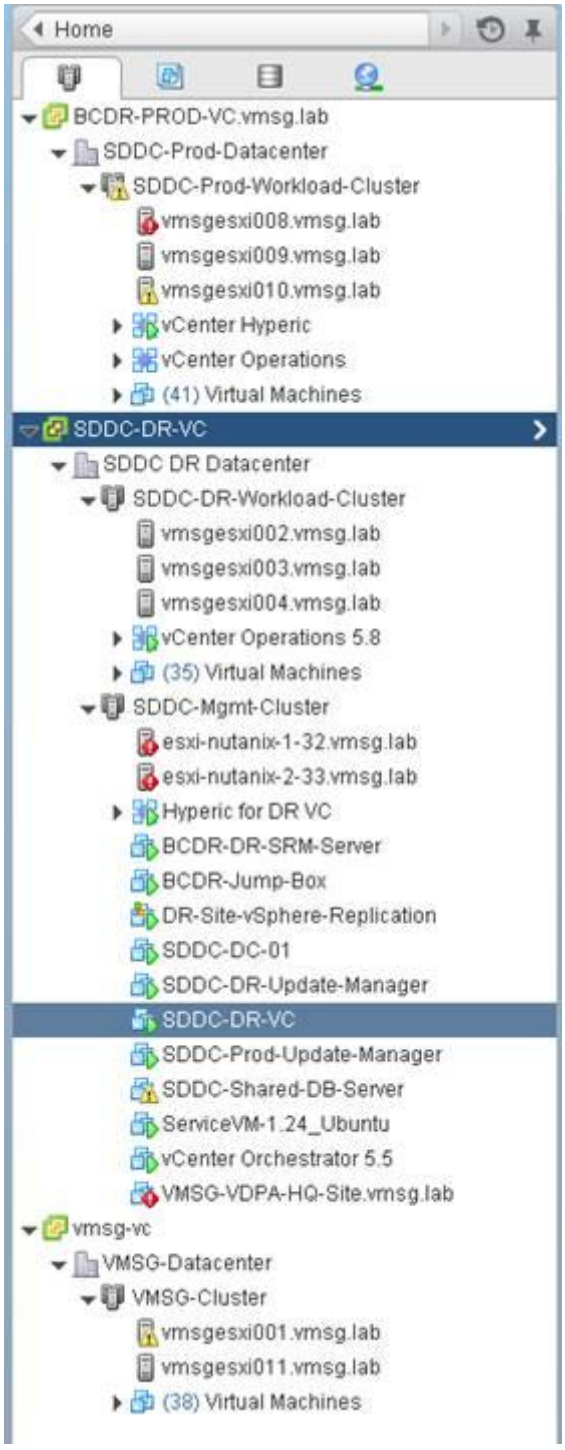

SDDC-Capacity-Planner - Edit Settings
Virtual Hardware
VM Options
SDRS Rules
vApp Options
CPU
1
Cores per Socket
1
Sockets: 1
CPU Hot Plug
Enable CPU Hot Add
Reservation
0
MHz
Limit
Unlimited
MHz
Shares
Normal
1000
CPUID Mask
Expose the NX/XD flag to guest
Advanced...
Hardware virtualization
Expose hardware assisted virtualization to the guest OS
Performance counters
Enable virtualized CPU performance counters
HT Sharing
Any
CPU/MMU Virtualization
Automatic
ESXi can automatically determine if a virtual machine should use hardware support for virtualization based o
processor type and the virtual machine. However, for some workloads, overriding the automatic selection car
provide better performance.
Note: If a selected setting is not supported by the host or conflicts with existing virtual machine settings, the s
ignored and the "Automatic" selection is used.
Memory
2048
MB
Hard disk 1
10
GB
Hard disk 2
40
GB
Network adapter 1
External-VM-Network (SDDC-Pro...
Status
Connect At Power On
Port ID
1399
Adapter Type
VMXNET 3
MAC Address
00:50:56:89:10:88
Automatic
CD/DVD drive 1
Client Device
Connect...
Video card
Specify custom settings
VMCI device
Other Devices
New device:
------- Select -------
Add
Compatibility: ESXi 5.5 and later (VM version 10)
OK

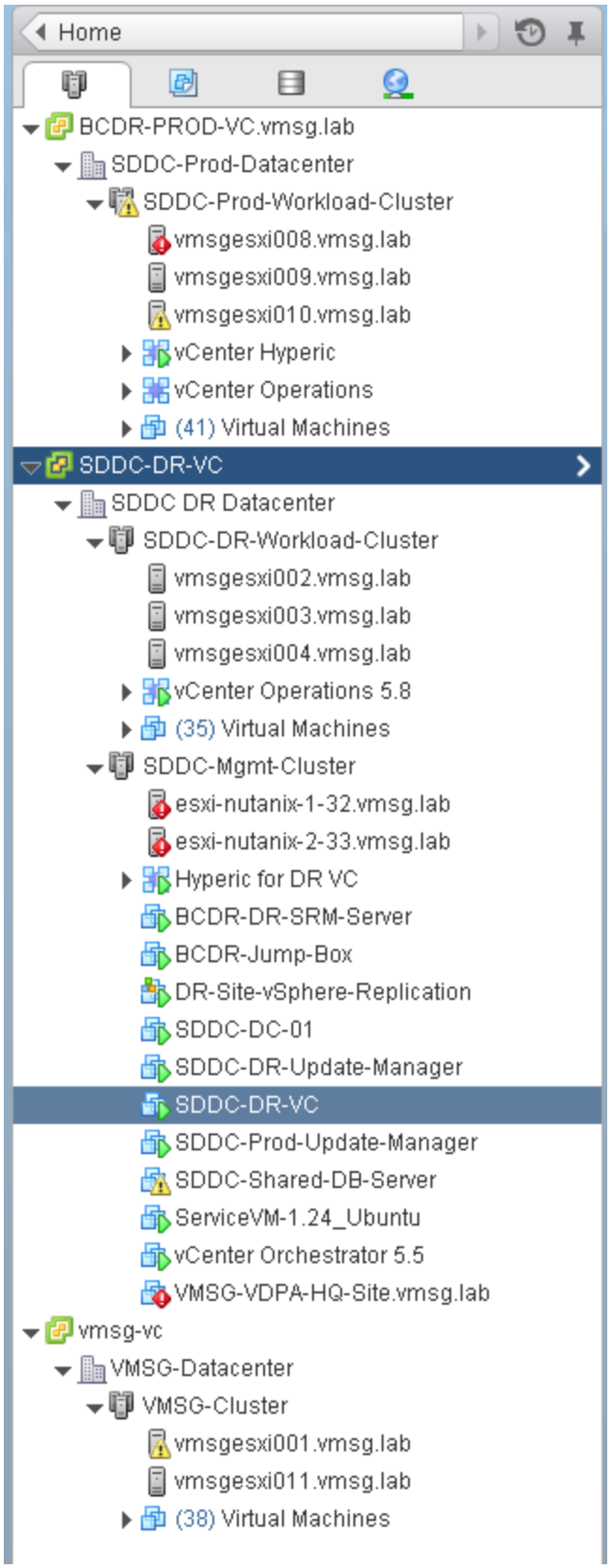

SDDC-Capacity-Planner - Edit Settings
Virtual Hardware
VM Options
SDRS Rules
vApp Options
General Options
VM Name
SDDC-Capacity-Planner
VM Config File
[SDDC-Datastore-03-FC-NetApp61] Mgmt-Demo-WinXP-02/Mgmt-Admin-Client-2.vmx
VM Working Location
[SDDC-Datastore-03-FC-NetApp61] Mgmt-Demo-WinXP-02/
Guest OS
Windows
Guest OS Version
Microsoft Windows XP Professional (32-bit)
VMware Remote Console Options
Lock the guest operating system when the last remote user disconnects
VMware Tools
Expand for VMware Tools settings
Power management
Expand for power management settings
Boot Options
Expand for boot options
Advanced
Settings
Disable acceleration
Enable logging
Debugging and statistics
Run normally
Swap file location
Default
Use the settings of the cluster or host containing the virtual machine.
Virtual machine directory
Store the swap files in the same directory as the virtual machine.
Datastore specified by host
Store the swap files in the datastore specified by the host to be used for swap files. If not possible, st
swap files in the same directory as the virtual machine. Using a datastore that is not visible to both ho
vMotion might affect the vMotion performance for the affected virtual machines.
Configuration Parameters
Edit Configuration...
Latency Sensitivity
Normal
Fibre Channel NPIV
Fibre Channel Virtual WWNs
Virtual machines running on hosts with Fibre Channel hardware that supports NPIV can be assigned virt
for advanced features. These WWNs are normally assigned by the host or by vCenter Server.
Temporarily disable NPIV for this virtual machine
No WWNs are currently assigned.
Leave unchanged
Generate new WWNs
Number of WWNNs:
1
Compatibility: ESXi 5.5 and later (VM version 10)
OK

Chapter 2: Software-Defined Data Centers






Home
BCDR-PROD-VC.vmsg.lab
SDDC-Prod-Datacenter
SDDC-Prod-Workload-Cluster
vmsgesxi008.vmsg.lab
vmsgesxi009.vmsg.lab
vmsgesxi010.vmsg.lab
vCenter Hyperic
vCenter Operations
(41) Virtual Machines
SDDC-DR-VC
SDDC DR Datacenter
SDDC-DR-Workload-Cluster
vmsgesxi002.vmsg.lab
vmsgesxi003.vmsg.lab
vmsgesxi004.vmsg.lab
vCenter Operations 5.8
(35) Virtual Machines
SDDC-Mgmt-Cluster
esxi-nutanix-1-32.vmsg.lab
esxi-nutanix-2-33.vmsg.lab
Hyperic for DR VC
BCDR-DR-SRM-Server
BCDR-Jump-Box
DR-Site-vSphere-Replication
SDDC-DC-01
SDDC-DR-Update-Manager
SDDC-DR-VC
SDDC-Prod-Update-Manager
SDDC-Shared-DB-Server
ServiceVM-1.24_Ubuntu
vCenter Orchestrator 5.5
VMSG-VDPA-HQ-Site.vmsg.lab
vmsg-vc
VMSG-Datacenter
VMSG-Cluster
vmsgesxi001.vmsg.lab
vmsgesxi011.vmsg.lab
(38) Virtual Machines


Home
BCDR-PROD-VC.vmsg.lab
SDDC-Prod-Datacenter
SDDC-Prod-Workload-Cluster
vmsgesxi008.vmsg.lab
vmsgesxi009.vmsg.lab
vmsgesxi010.vmsg.lab
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vmsgesxi003.vmsg.lab
vmsgesxi004.vmsg.lab
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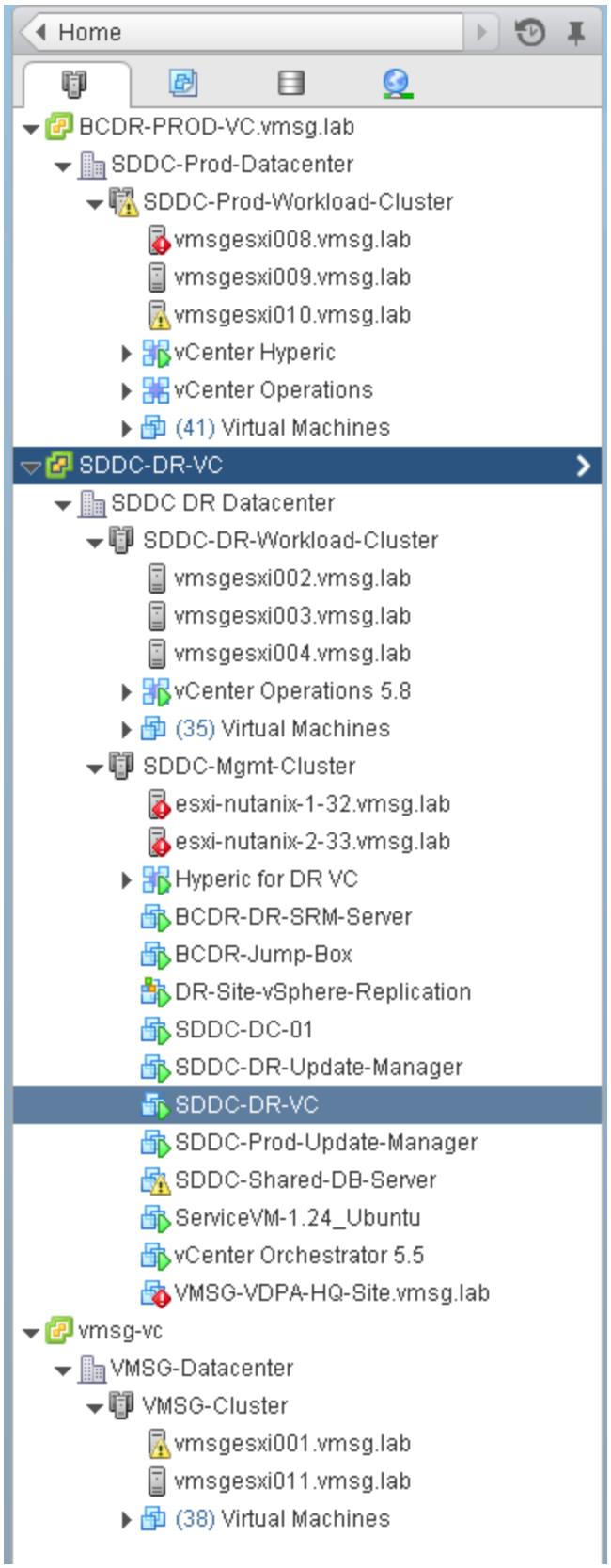
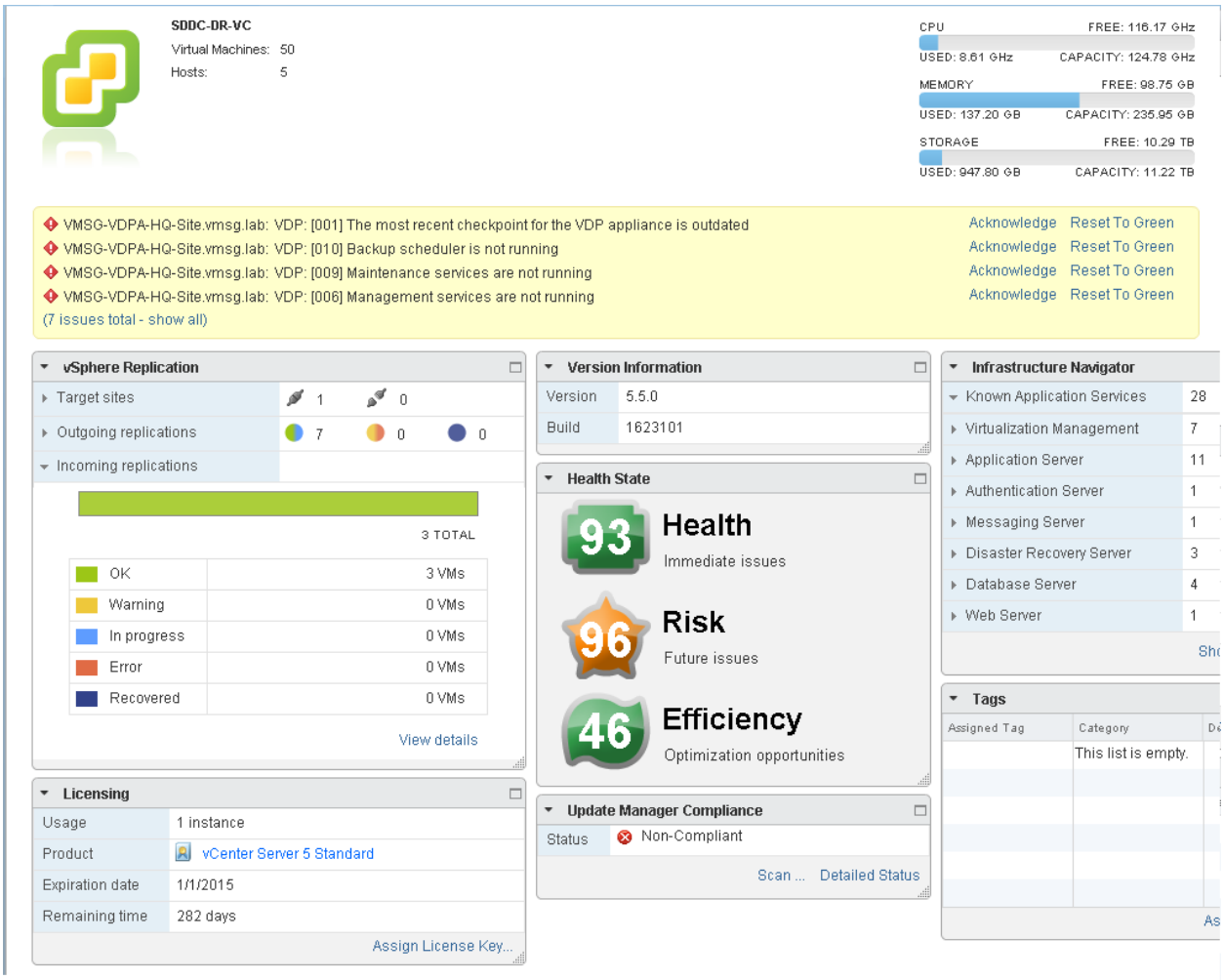
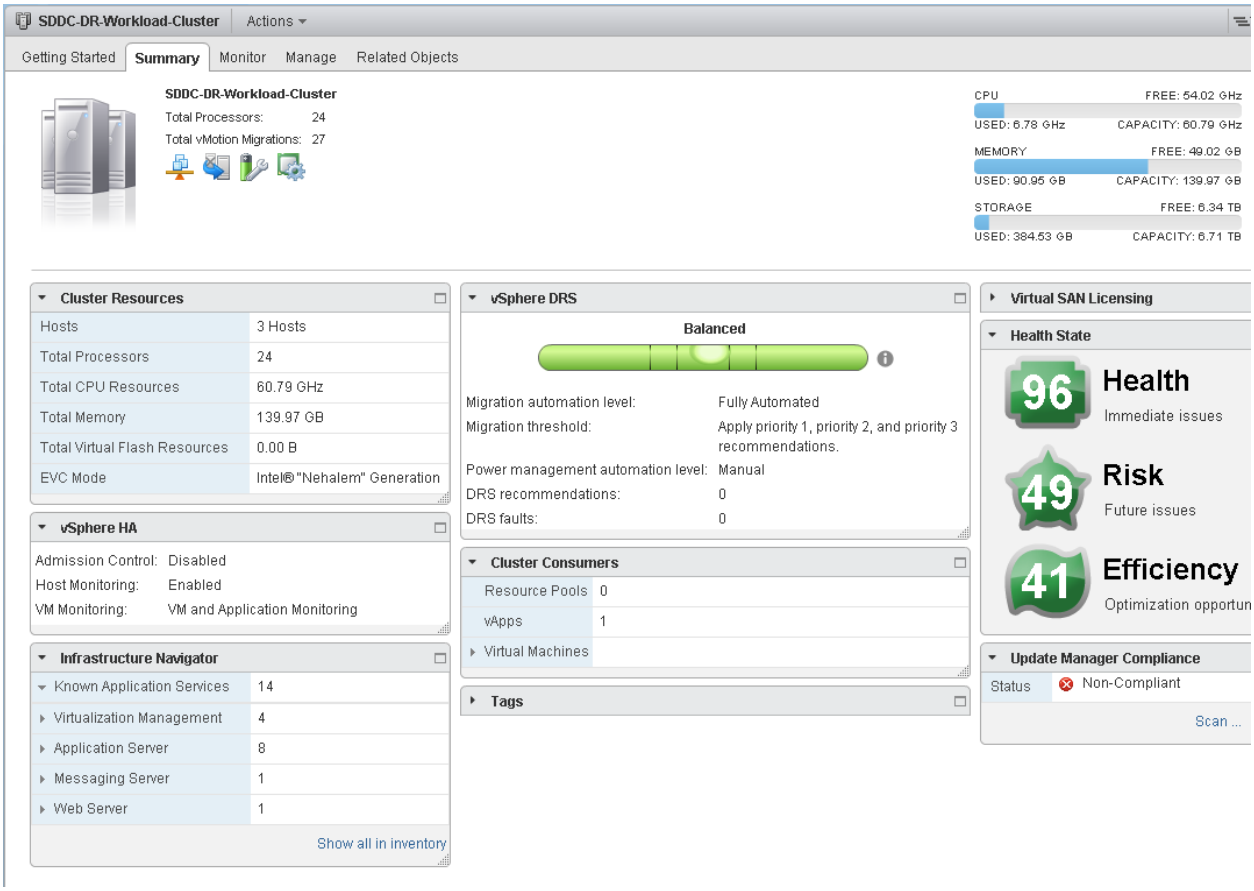
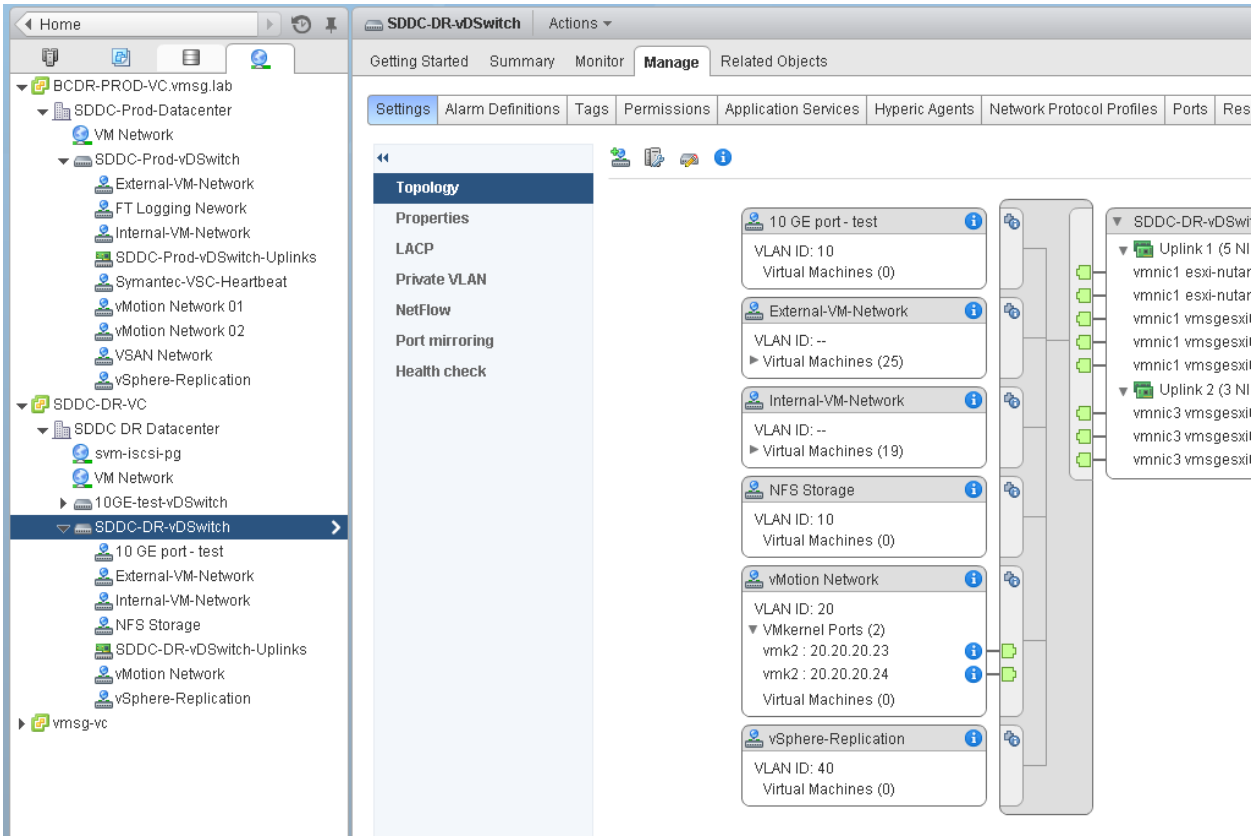
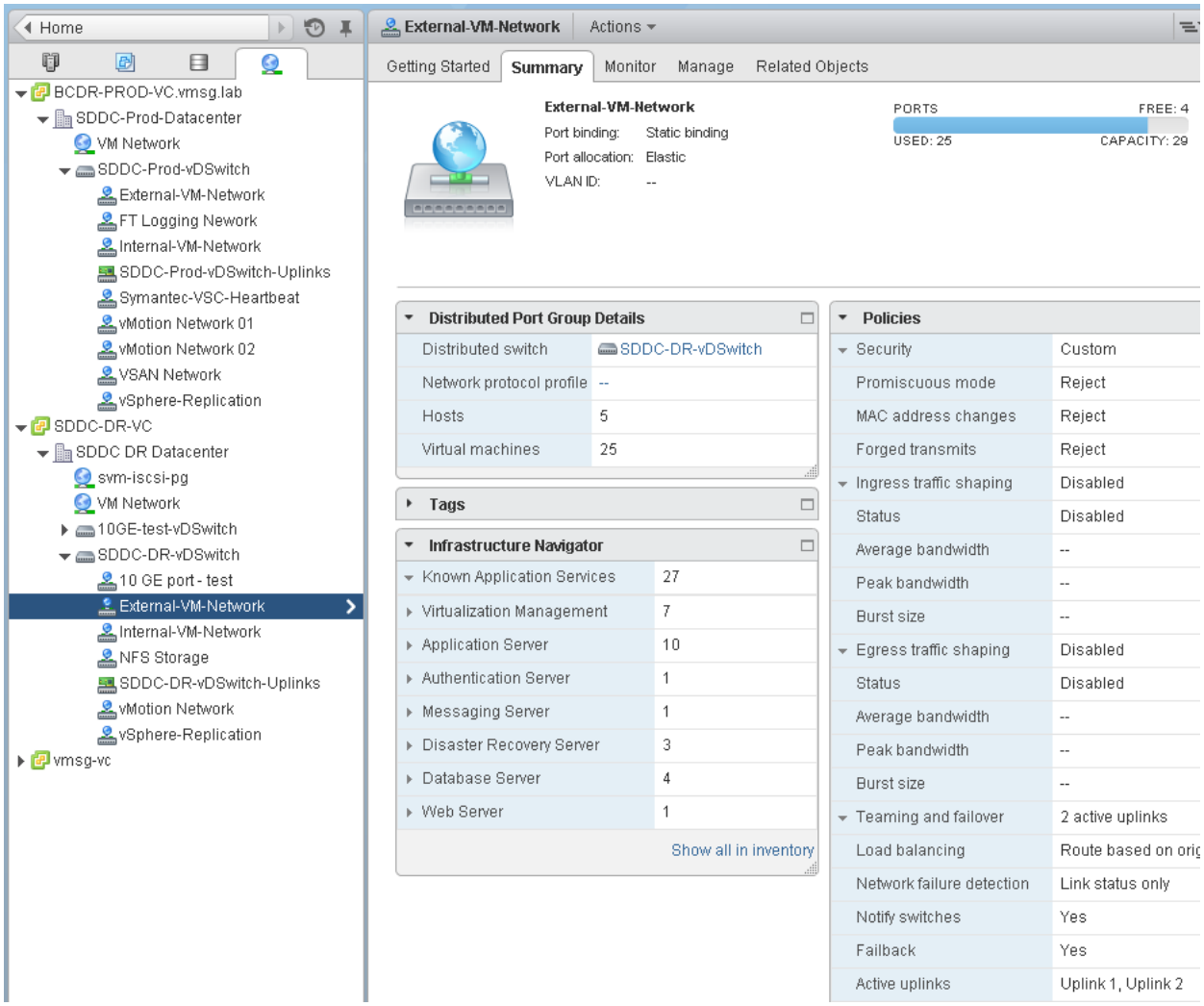
SDDC-DR-VC
SDDC-Prod-Update-Manager
SDDC-Shared-DB-Server
ServiceVM-1.24_Ubuntu
vCenter Orchestrator 5.5
VMSG-VDPA-HQ-Site.vmsg.lab
vmsg-vc
VMSG-Datacenter
VMSG-Cluster
vmsgesxi001.vmsg.lab
vmsgesxi011.vmsg.lab
(38) Virtual Machines

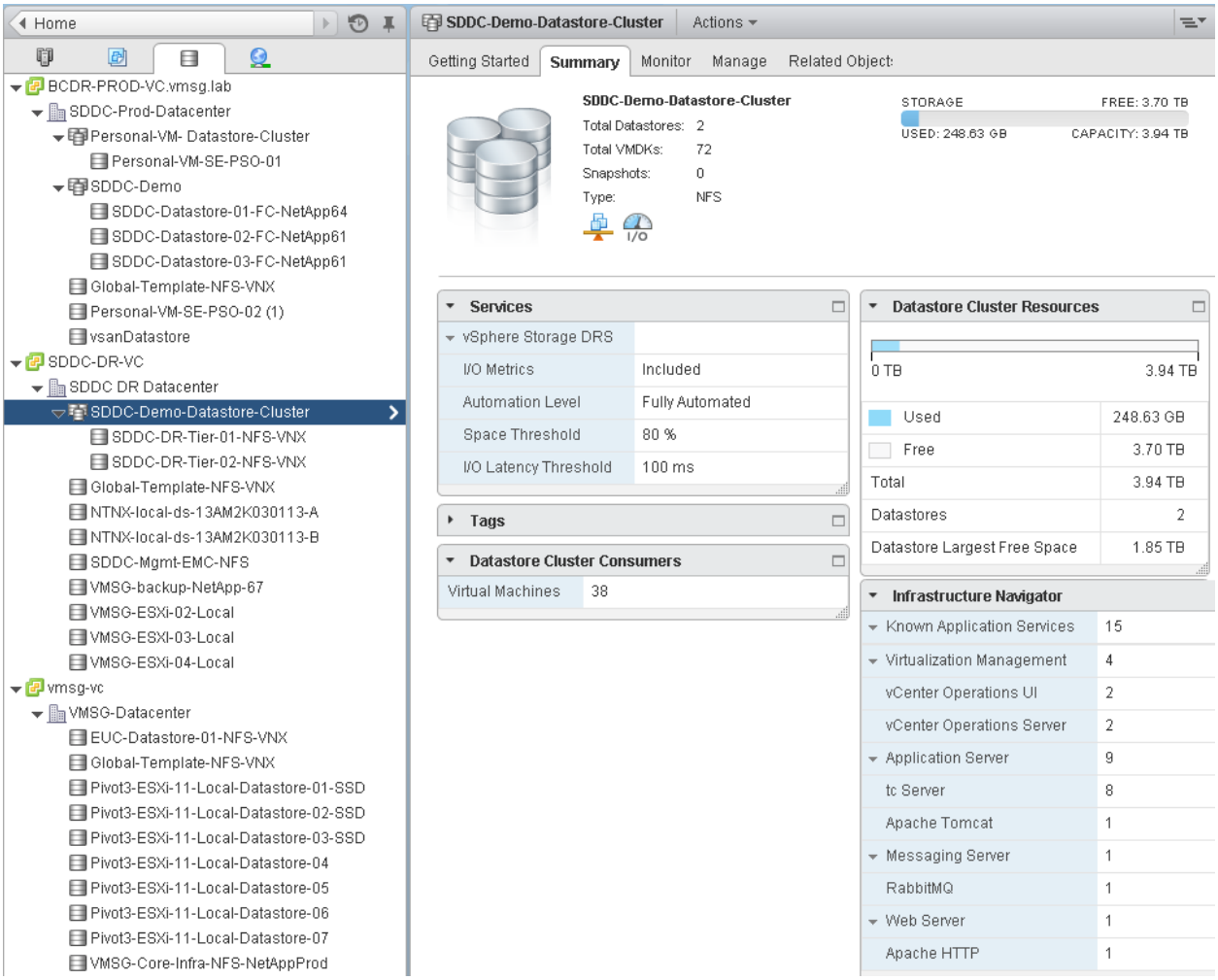

Home
BCDR-PROD-VC.vmsg.lab
SDDC-Prod-Datacenter
SDDC-Prod-Workload-Cluster
vmsgesxi008.vmsg.lab
vmsgesxi009.vmsg.lab
vmsgesxi010.vmsg.lab
vCenter Hyperic
vCenter Operations
(41) Virtual Machines
SDDC-DR-VC
SDDC DR Datacenter
SDDC-DR-Workload-Cluster
vmsgesxi002.vmsg.lab
vmsgesxi003.vmsg.lab
vmsgesxi004.vmsg.lab
vCenter Operations 5.8
(35) Virtual Machines
SDDC-Mgmt-Cluster
esxi-nutanix-1-32.vmsg.lab
esxi-nutanix-2-33.vmsg.lab
Hyperic for DR VC
BCDR-DR-SRM-Server
BCDR-Jump-Box
DR-Site-vSphere-Replication
SDDC-DC-01
SDDC-DR-Update-Manager
SDDC-DR-VC
SDDC-Prod-Update-Manager
SDDC-Shared-DB-Server
ServiceVM-1.24_Ubuntu
vCenter Orchestrator 5.5
VMSG-VDPA-HQ-Site.vmsg.lab
vmsg-vc
VMSG-Datacenter
VMSG-Cluster
vmsgesxi001.vmsg.lab
vmsgesxi011.vmsg.lab
(38) Virtual Machines

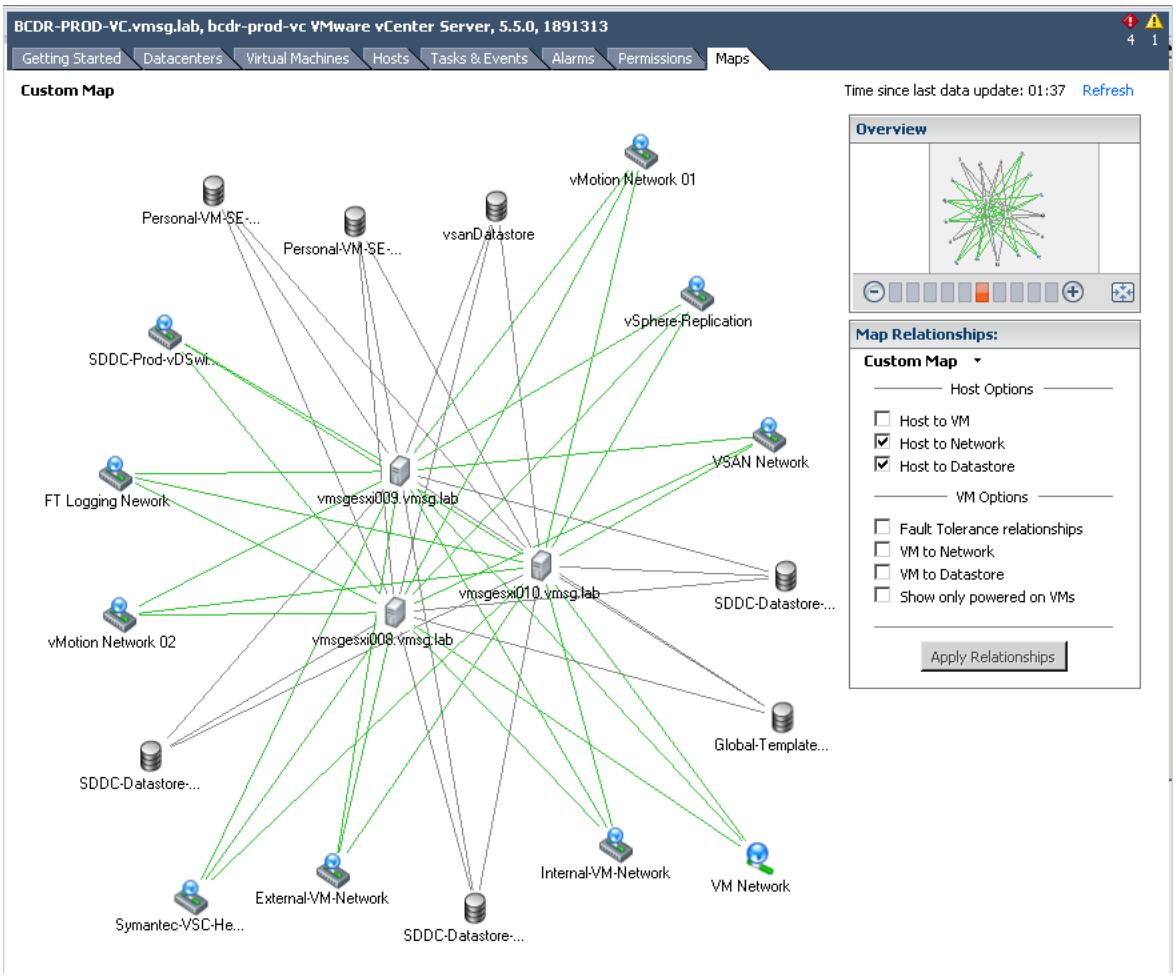

SDDC-DR-VC
Virtual Machines: 50
Hosts: 5
CPU FREE: 116.17 GHz
USED: 8.61 GHz CAPACITY: 124.78 GHz
MEMORY FREE: 98.75 GB
USED: 137.20 GB CAPACITY: 235.95 GB
STORAGE FREE: 10.29 TB
USED: 947.80 GB CAPACITY: 11.22 TB
VMSG-VDPA-HQ-Site.vmsg.lab: VDP: [001] The most recent checkpoint for the VDP appliance is outdated
VMSG-VDPA-HQ-Site.vmsg.lab: VDP: [010] Backup scheduler is not running
VMSG-VDPA-HQ-Site.vmsg.lab: VDP: [009] Maintenance services are not running
VMSG-VDPA-HQ-Site.vmsg.lab: VDP: [006] Management services are not running
Acknowledge Reset To Green
Acknowledge Reset To Green
Acknowledge Reset To Green
Acknowledge Reset To Green
(7 issues total - show all)
vSphere Replication
Target sites 1 0
Outgoing replications 7 0 0
Incoming replications
3 TOTAL
OK 3 VMs
Warning 0 VMs
In progress 0 VMs
Error 0 VMs
Recovered 0 VMs
View details
Licensing
Usage 1 instance
Product vCenter Server 5 Standard
Expiration date 1/1/2015
Remaining time 282 days
Assign License Key...
Version Information
Version 5.5.0
Build 1623101
Health State
93 Health
Immediate issues
96 Risk
Future issues
46 Efficiency
Optimization opportunities
Update Manager Compliance
Status Non-Compliant
Scan ... Detailed Status
Infrastructure Navigator
Known Application Services 28
Virtualization Management 7
Application Server 11
Authentication Server 1
Messaging Server 1
Disaster Recovery Server 3
Database Server 4
Web Server 1
Tags
Assigned Tag
Category
This list is empty.


SDDC-DR-Workload-Cluster
Actions
Getting Started
Summary
Monitor
Manage
Related Objects
SDDC-DR-Workload-Cluster
Total Processors: 24
Total vMotion Migrations: 27
CPU
FREE: 54.02 GHz
USED: 6.78 GHz
CAPACITY: 60.79 GHz
MEMORY
FREE: 49.02 GB
USED: 90.95 GB
CAPACITY: 139.97 GB
STORAGE
FREE: 6.34 TB
USED: 384.53 GB
CAPACITY: 6.71 TB
Cluster Resources
Hosts 3 Hosts
Total Processors 24
Total CPU Resources 60.79 GHz
Total Memory 139.97 GB
Total Virtual Flash Resources 0.00 B
EVC Mode Intel® "Nehalem" Generation
vSphere HA
Admission Control: Disabled
Host Monitoring: Enabled
VM Monitoring: VM and Application Monitoring
Infrastructure Navigator
Known Application Services 14
Virtualization Management 4
Application Server 8
Messaging Server 1
Web Server 1
Show all in inventory
vSphere DRS
Balanced
Migration automation level: Fully Automated
Migration threshold: Apply priority 1, priority 2, and priority 3 recommendations.
Power management automation level: Manual
DRS recommendations: 0
DRS faults: 0
Cluster Consumers
Resource Pools 0
vApps 1
Virtual Machines
Tags
Virtual SAN Licensing
Health State
96
Health
Immediate issues
49
Risk
Future issues
41
Efficiency
Optimization opportun
Update Manager Compliance
Status Non-Compliant
Scan ...


Home
BCDR-PROD-VC.vmsg.lab
SDDC-Prod-Datacenter
VM Network
SDDC-Prod-vDSwitch
External-VM-Network
FT Logging Nework
Internal-VM-Network
SDDC-Prod-vDSwitch-Uplinks
Symantec-VSC-Heartbeat
vMotion Network 01
vMotion Network 02
VSAN Network
vSphere-Replication
SDDC-DR-VC
SDDC DR Datacenter
svm-iscsi-pg
VM Network
10GE-test-vDSwitch
SDDC-DR-vDSwitch
10 GE port - test
External-VM-Network
Internal-VM-Network
NFS Storage
SDDC-DR-vDSwitch-Uplinks
vMotion Network
vSphere-Replication
vmsg-vc
SDDC-DR-vDSwitch
Actions
Getting Started
Summary
Monitor
Manage
Related Objects
Settings
Alarm Definitions
Tags
Permissions
Application Services
Hyperic Agents
Network Protocol Profiles
Ports
Topology
Properties
LACP
Private VLAN
NetFlow
Port mirroring
Health check
10 GE port - test
VLAN ID: 10
Virtual Machines (0)
External-VM-Network
VLAN ID: --
Virtual Machines (25)
Internal-VM-Network
VLAN ID: --
Virtual Machines (19)
NFS Storage
VLAN ID: 10
Virtual Machines (0)
vMotion Network
VLAN ID: 20
VMkernel Ports (2)
vmk2 : 20.20.20.23
vmk2 : 20.20.20.24
Virtual Machines (0)
vSphere-Replication
VLAN ID: 40
Virtual Machines (0)
SDDC-DR-vDSwi
Uplink 1 (5 NI
vmnic1 esxi-nutar
vmnic1 esxi-nutar
vmnic1 vmsgesxil
vmnic1 vmsgesxil
vmnic1 vmsgesxil
Uplink 2 (3 NI
vmnic3 vmsgesxil
vmnic3 vmsgesxil
vmnic3 vmsgesxil


Home
BCDR-PROD-VC.vmsg.lab
SDDC-Prod-Datacenter
VM Network
SDDC-Prod-vDSwitch
External-VM-Network
FT Logging Nework
Internal-VM-Network
SDDC-Prod-vDSwitch-Uplinks
Symantec-VSC-Heartbeat
vMotion Network 01
vMotion Network 02
VSAN Network
vSphere-Replication
SDDC-DR-VC
SDDC DR Datacenter
svm-iscsi-pg
VM Network
10GE-test-vDSwitch
SDDC-DR-vDSwitch
10 GE port - test
External-VM-Network
Internal-VM-Network
NFS Storage
SDDC-DR-vDSwitch-Uplinks
vMotion Network
vSphere-Replication
vmsg-vc
External-VM-Network
Actions
Getting Started
Summary
Monitor
Manage
Related Objects
External-VM-Network
Port binding: Static binding
Port allocation: Elastic
VLAN ID: --
PORTS FREE: 4
USED: 25 CAPACITY: 29
Distributed Port Group Details
Distributed switch SDDC-DR-vDSwitch
Network protocol profile --
Hosts 5
Virtual machines 25
Tags
Infrastructure Navigator
Known Application Services 27
Virtualization Management 7
Application Server 10
Authentication Server 1
Messaging Server 1
Disaster Recovery Server 3
Database Server 4
Web Server 1
Show all in inventory
Policies
Security Custom
Promiscuous mode Reject
MAC address changes Reject
Forged transmits Reject
Ingress traffic shaping Disabled
Status Disabled
Average bandwidth --
Peak bandwidth --
Burst size --
Egress traffic shaping Disabled
Status Disabled
Average bandwidth --
Peak bandwidth --
Burst size --
Teaming and failover 2 active uplinks
Load balancing Route based on orig
Network failure detection Link status only
Notify switches Yes
Failback Yes
Active uplinks Uplink 1, Uplink 2


Home
BCDR-PROD-VC.vmsg.lab
SDDC-Prod-Datacenter
Personal-VM- Datastore-Cluster
Personal-VM-SE-PSO-01
SDDC-Demo
SDDC-Datastore-01-FC-NetApp64
SDDC-Datastore-02-FC-NetApp61
SDDC-Datastore-03-FC-NetApp61
Global-Template-NFS-VNX
Personal-VM-SE-PSO-02 (1)
vsanDatastore
SDDC-DR-VC
SDDC DR Datacenter
SDDC-Demo-Datastore-Cluster
SDDC-DR-Tier-01-NFS-VNX
SDDC-DR-Tier-02-NFS-VNX
Global-Template-NFS-VNX
NTNX-local-ds-13AM2K030113-A
NTNX-local-ds-13AM2K030113-B
SDDC-Mgmt-EMC-NFS
VMSG-backup-NetApp-67
VMSG-ESXi-02-Local
VMSG-ESXi-03-Local
VMSG-ESXi-04-Local
vmsg-vc
VMSG-Datacenter
EUC-Datastore-01-NFS-VNX
Global-Template-NFS-VNX
Pivot3-ESXi-11-Local-Datastore-01-SSD
Pivot3-ESXi-11-Local-Datastore-02-SSD
Pivot3-ESXi-11-Local-Datastore-03-SSD
Pivot3-ESXi-11-Local-Datastore-04
Pivot3-ESXi-11-Local-Datastore-05
Pivot3-ESXi-11-Local-Datastore-06
Pivot3-ESXi-11-Local-Datastore-07
VMSG-Core-Infra-NFS-NetAppProd
SDDC-Demo-Datastore-Cluster
Actions
Getting Started
Summary
Monitor
Manage
Related Objects
SDDC-Demo-Datastore-Cluster
Total Datastores: 2
Total VMDKs: 72
Snapshots: 0
Type: NFS
I/O
STORAGE
FREE: 3.70 TB
USED: 248.63 GB
CAPACITY: 3.94 TB
Services
vSphere Storage DRS
I/O Metrics
Included
Automation Level
Fully Automated
Space Threshold
80 %
I/O Latency Threshold
100 ms
Tags
Datastore Cluster Consumers
Virtual Machines
38
Datastore Cluster Resources
0 TB
3.94 TB
Used
248.63 GB
Free
3.70 TB
Total
3.94 TB
Datastores
2
Datastore Largest Free Space
1.85 TB
Infrastructure Navigator
Known Application Services
15
Virtualization Management
4
vCenter Operations UI
2
vCenter Operations Server
2
Application Server
9
tc Server
8
Apache Tomcat
1
Messaging Server
1
RabbitMQ
1
Web Server
1
Apache HTTP
1



Object & Relation

- ESXi Host
- Cluster
- Data Center
- Resource Pool
- Folder
- vCenter
- vSwitch
- Distributed vSwitch
- vApp
- vmnic
- Port Group
- Datastore
- Datastore group
- Agent VM
- Devices
- … many others

Events

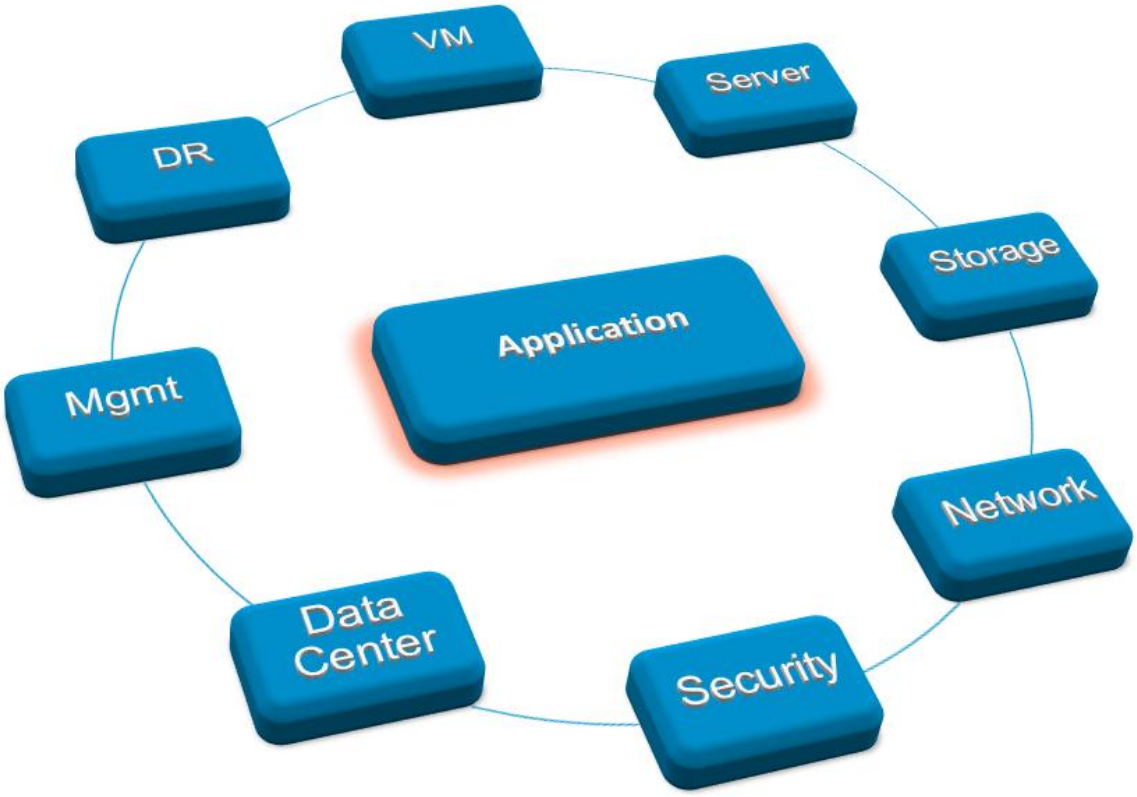
- vMotion
- DRS
- DPM
- Storage vMotion
- Maintenance mode
- VM Provisioning
- Storage IOC kicks in
- Network IOC kicks in
- Hot Add
- Hot Remove
- Network LBT
- Each object in vCloud Suite triggers many events

Counters

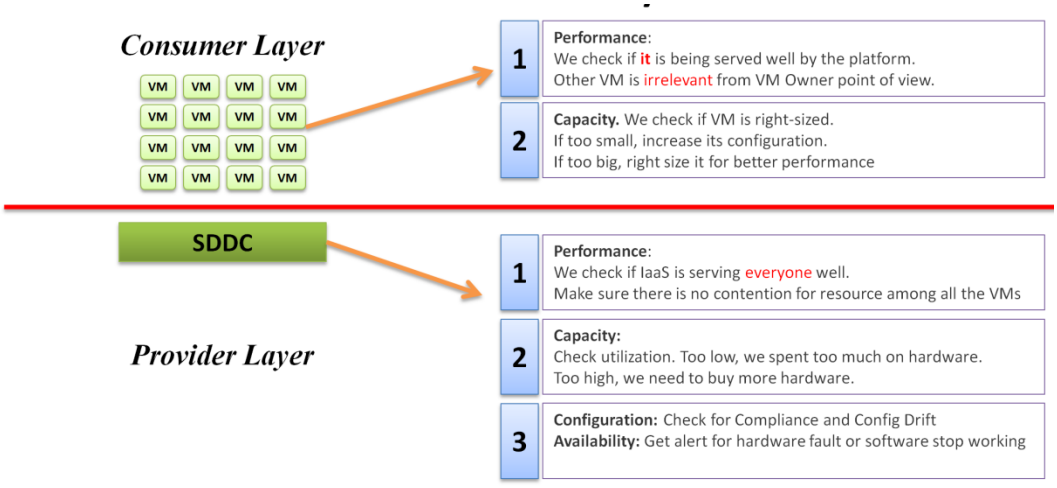
- CPU Ready
- CPU Latency
- Co-Stop
- Ballooning
- KAVG
- Memory compression
- TPS
- vSphere Replication
- >100 counters has no physical equivalent…

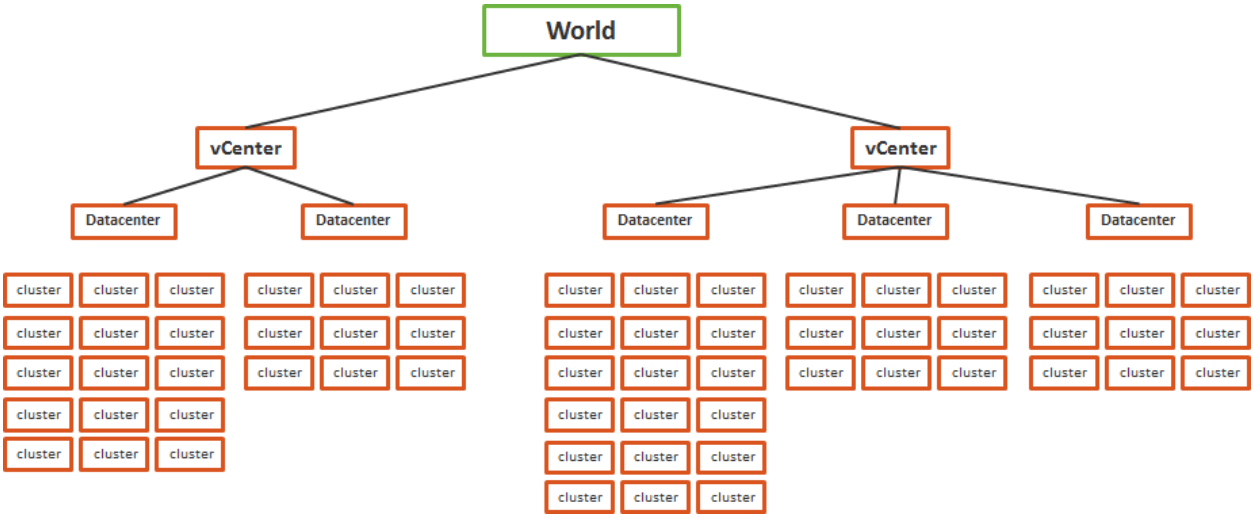
Properties

- Share
- Limit
- Reservation
- Fault Tolerant
- HA
- Master
- VM
- Boot order
- Licensing
- vSphere Replication
- Each object in vCloud Suite has many properties

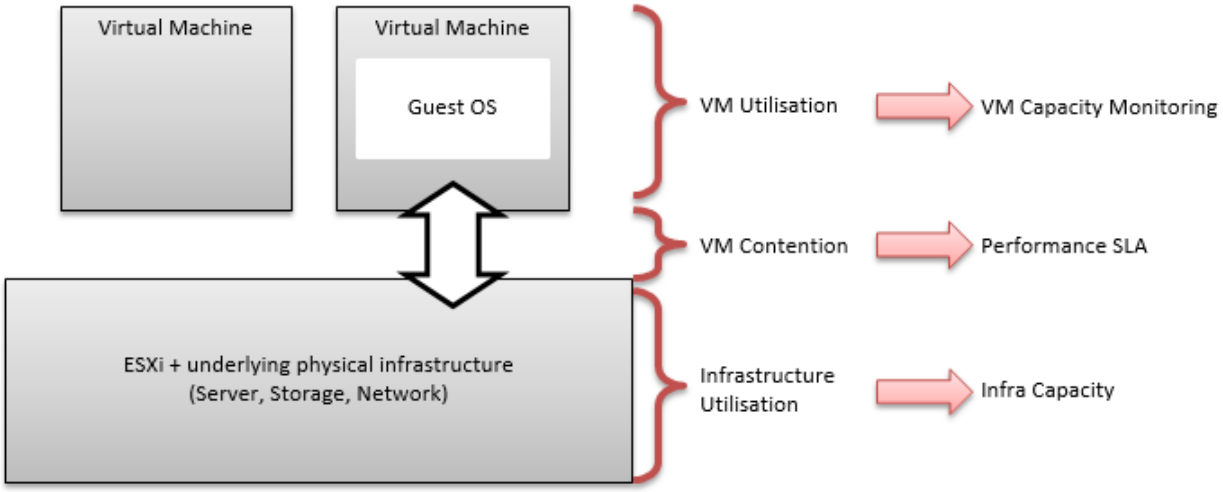


Chapter 3: SDDC Management





Chapter 4: Performance Monitoring

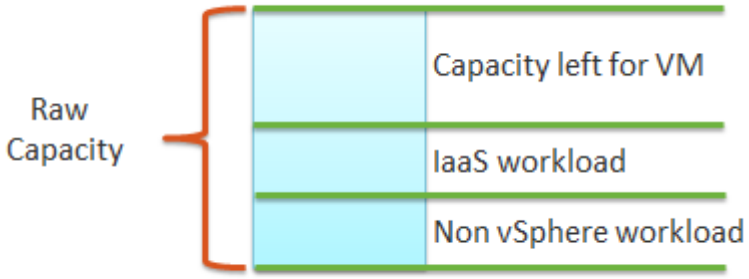


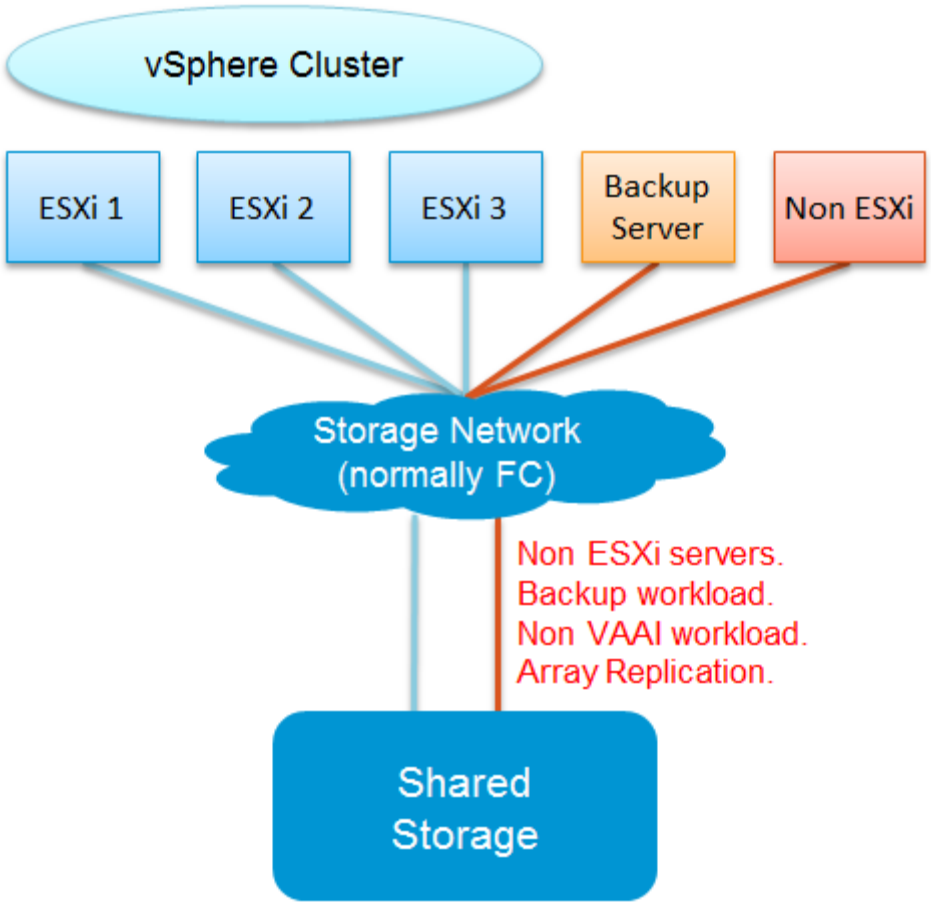
Service Tier	Purpose	Compute	Storage
1 (highest)	Production	No oversubscription. As a result, there is no need for reservation. All hosts are identical in specification.	All Flash
2	Production Non Production	~2 times oversubscription for CPU and ~1.5 times for RAM. An ESXi host with 36 cores, 72 threads and 256 GB RAM may run 72 vCPUs and 384 GB vRAM.	Hybrid, but with Class E SSD.
3 (lowest)	Non Production	~3 times oversubscription for CPU and ~2 times for RAM.	Hybrid, with Class C SSD

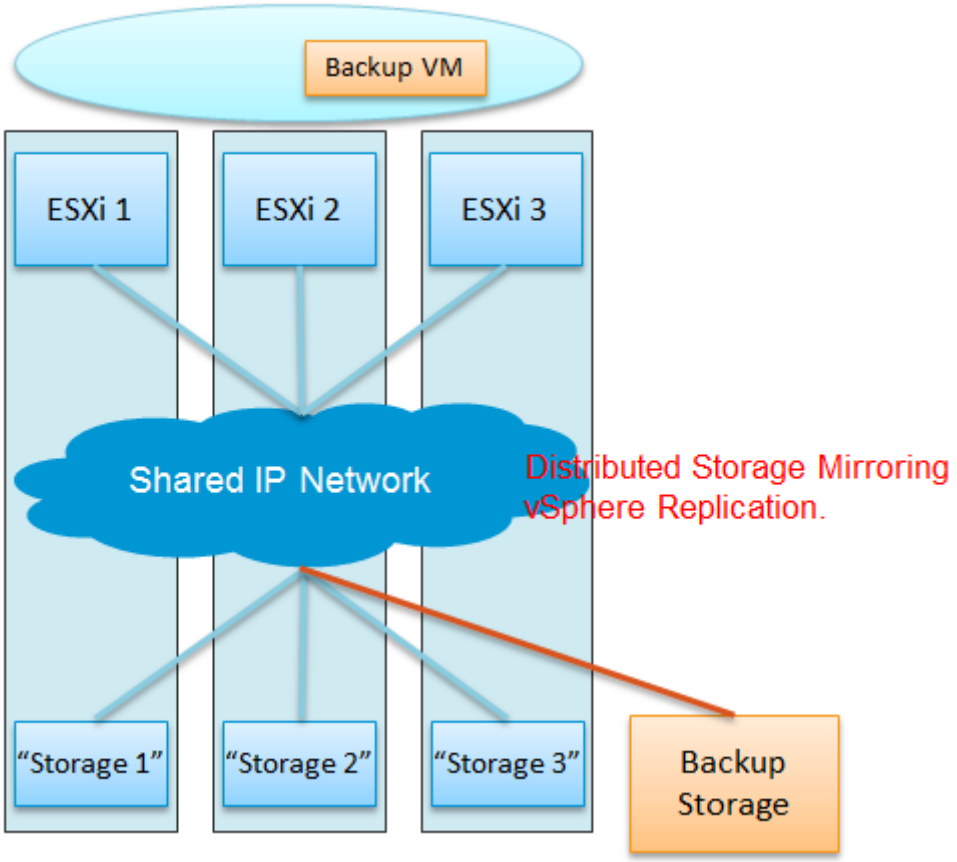
Service Tier	CPU	RAM	Network	Storage
1 (highest)	<1% CPU Contention	0% RAM Contention	0 drop packet	10 ms latency
2	<3% CPU Contention	5% RAM Contention	0 drop packet	20 ms latency
3 (lowest)	<13% CPU Contention	10% RAM Contention	0 drop packet	30 ms latency

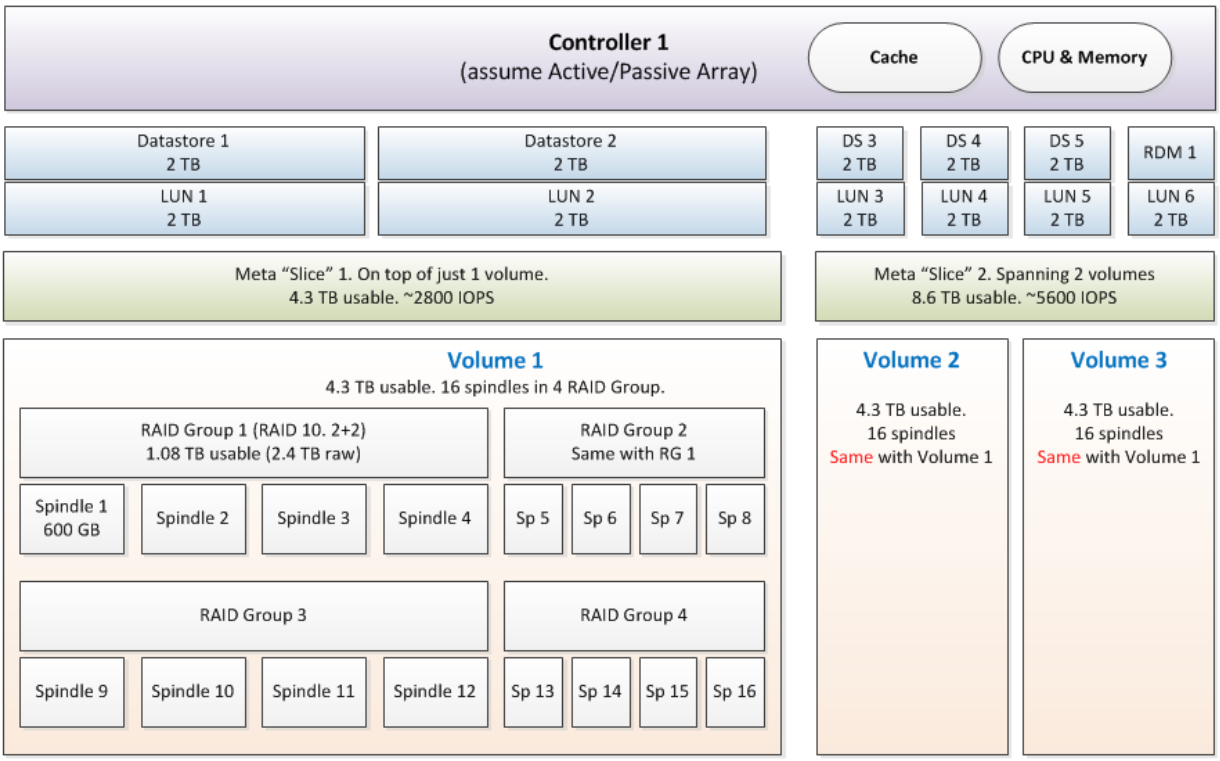
Component	SLA
CPU	<2% CPU Contention
RAM	<1% RAM Contention
Disk	<15 ms disk latency
PCoIP	<1% packet loss

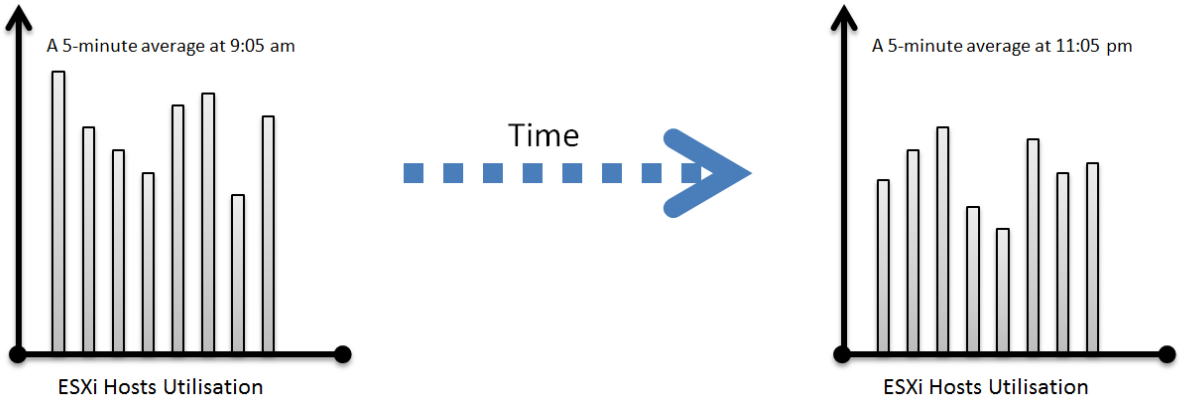
Chapter 5: Capacity Monitoring

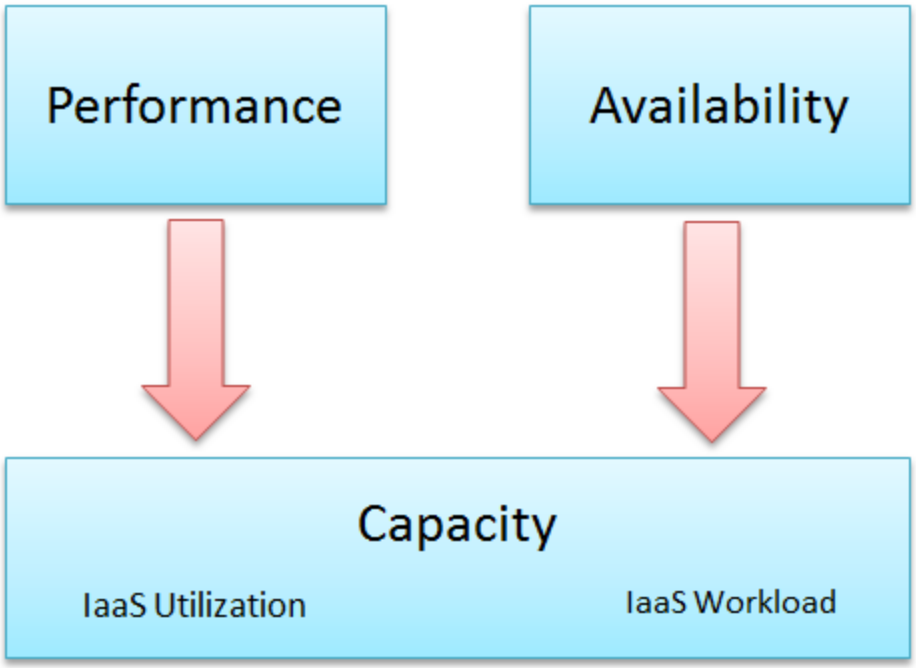





Backup VM
ESXi 1
ESXi 2
ESXi 3
Shared IP Network
Distributed Storage Mirroring
vSphere Replication.
“Storage 1”
“Storage 2”
“Storage 3”
Backup
Storage


Controller 1
(assume Active/Passive Array)
Cache
CPU & Memory
Datastore 1
2 TB
LUN 1
2 TB
Datastore 2
2 TB
LUN 2
2 TB
DS 3
2 TB
LUN 3
2 TB
DS 4
2 TB
LUN 4
2 TB
DS 5
2 TB
LUN 5
2 TB
RDM 1
LUN 6
2 TB
Meta "Slice" 1. On top of just 1 volume.
4.3 TB usable. ~2800 IOPS
Meta "Slice" 2. Spanning 2 volumes
8.6 TB usable. ~5600 IOPS
Volume 1
4.3 TB usable. 16 spindles in 4 RAID Group.
RAID Group 1 (RAID 10. 2+2)
1.08 TB usable (2.4 TB raw)
RAID Group 2
Same with RG 1
Spindle 1
600 GB
Spindle 2
Spindle 3
Spindle 4
Sp 5
Sp 6
Sp 7
Sp 8
RAID Group 3
RAID Group 4
Spindle 9
Spindle 10
Spindle 11
Spindle 12
Sp 13
Sp 14
Sp 15
Sp 16
Volume 2
4.3 TB usable.
16 spindles
Same with Volume 1
Volume 3
4.3 TB usable.
16 spindles
Same with Volume 1


A 5-minute average at 9:05 am
Time
A 5-minute average at 11:05 pm
ESXi Hosts Utilisation
ESXi Hosts Utilisation

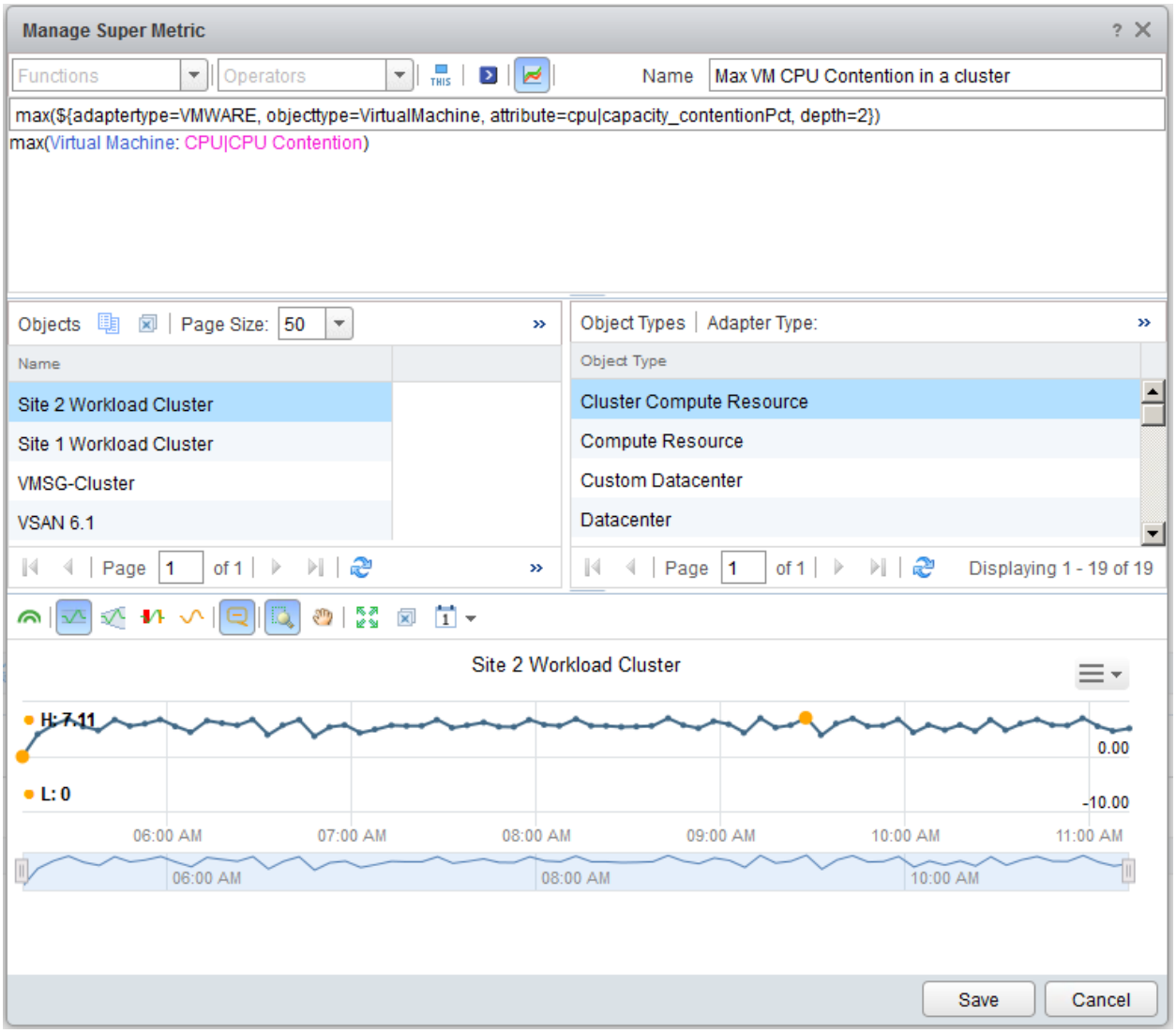


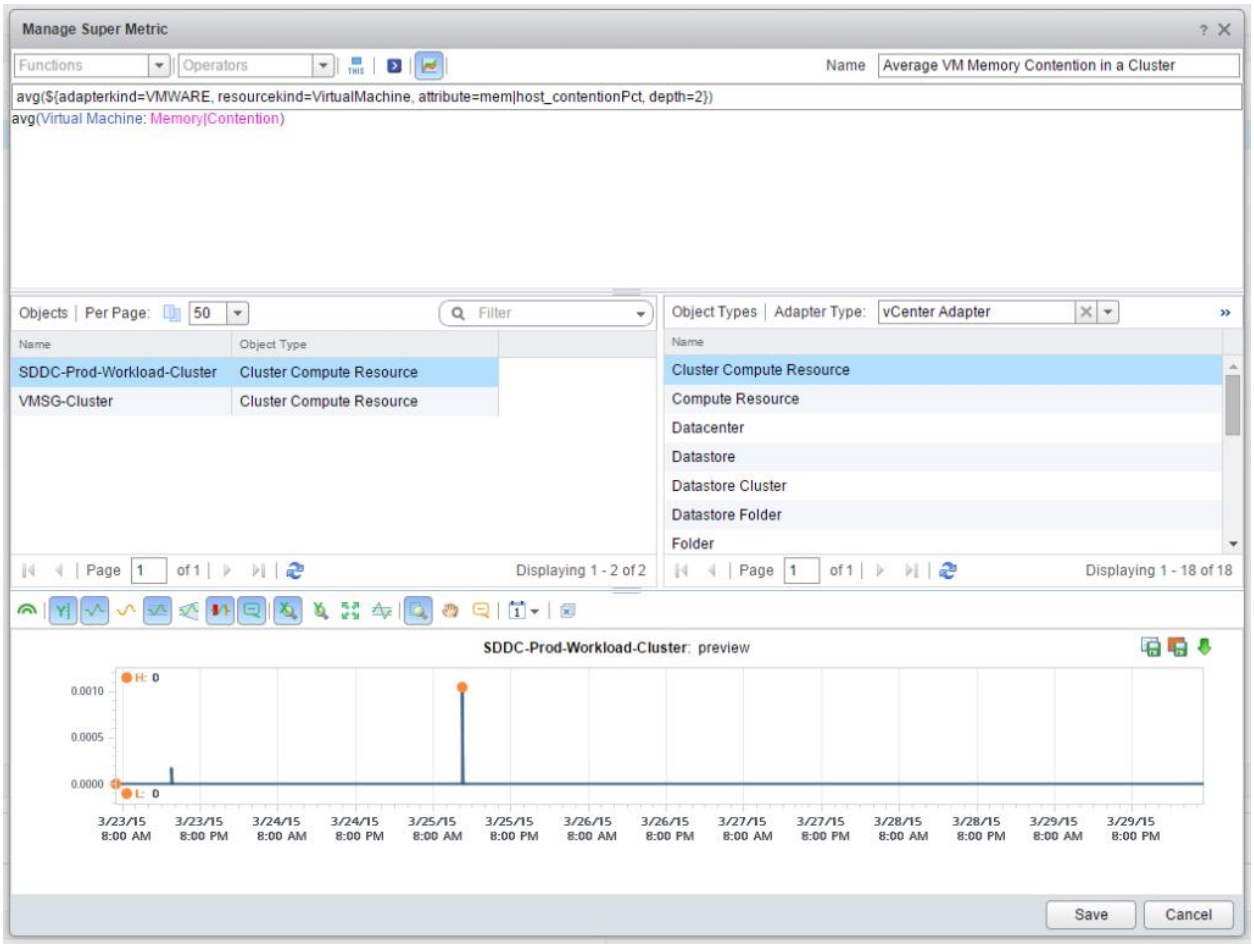
Service Tier	vSphere HA	Max Cluster Size	Max No of VM
1 (highest)	2 HA Host (N+2)	8 nodes	15 VM per host 100 VM per cluster
2	1 HA Host (N+1)	12 nodes	30 VM per host 250 VM per cluster
3 (lowest)	1 HA Host (N+1)	16 nodes	60 VM per host 750 VM per cluster

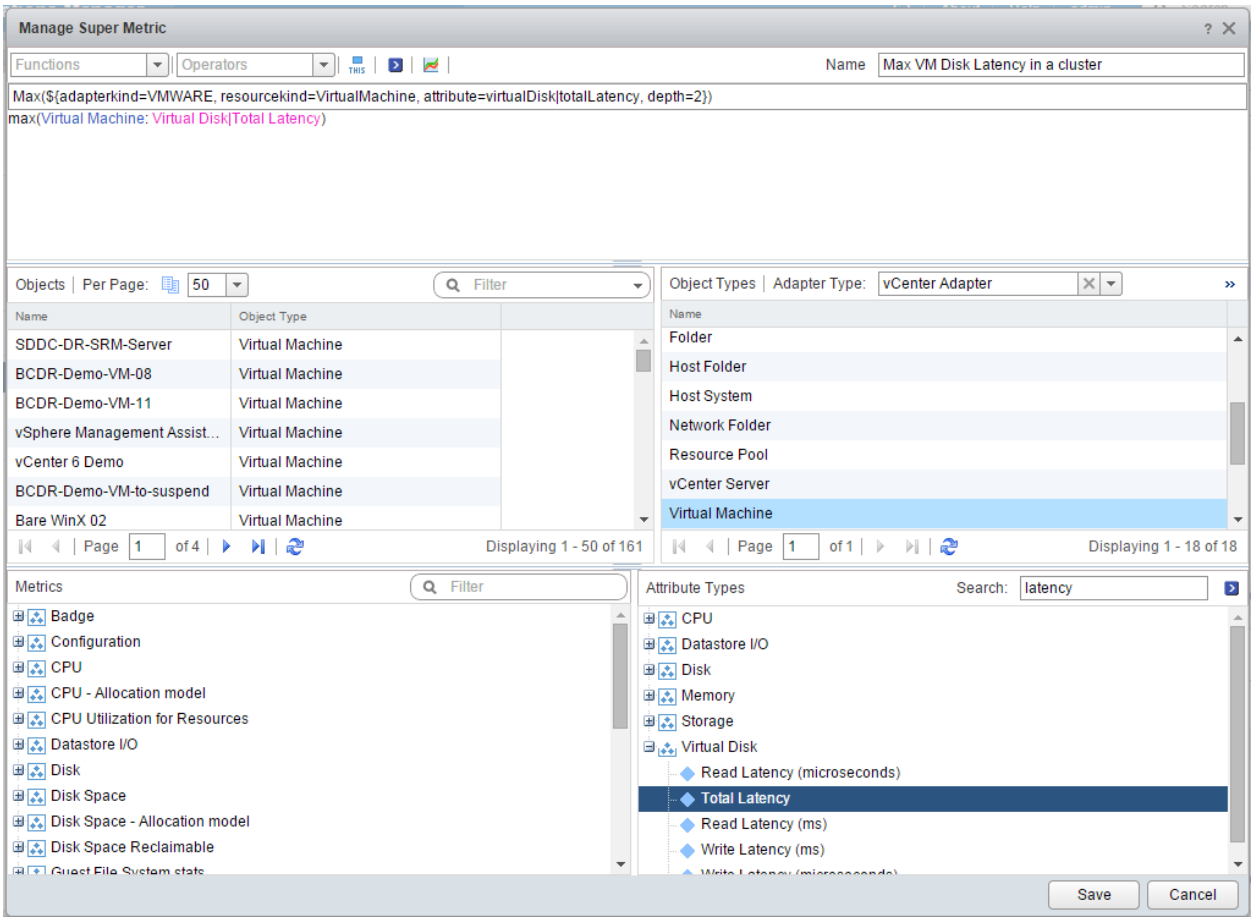
Service Tier	No of copies	Disk Failure Tolerance	Snapshot
1 (highest)	2 copies	2 disk failure	Every 2 hours
2	1 copy	1 disk failure	Every 12 hours
3 (lowest)	1 copy	1 disk failure	Upon request

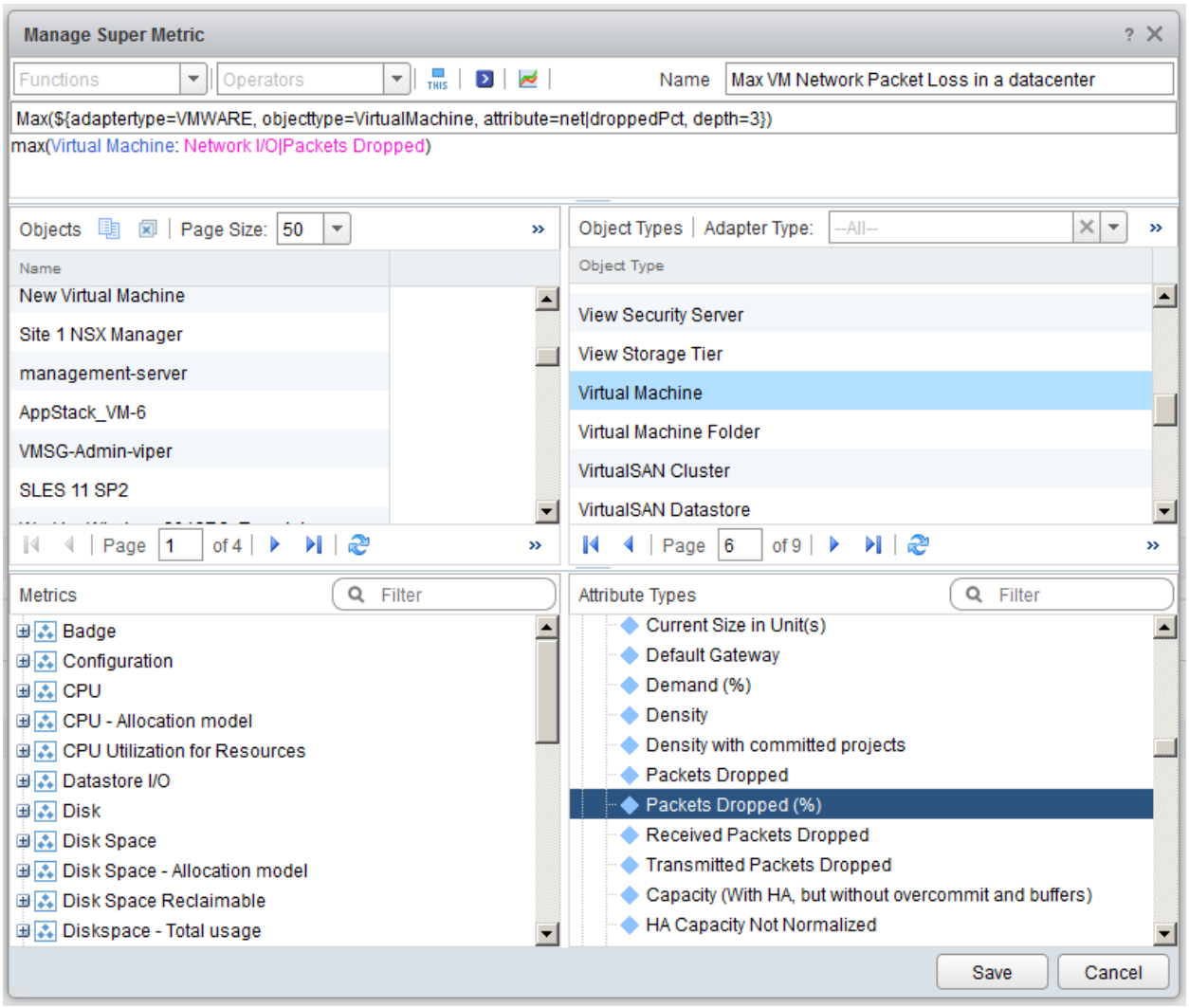
Part 2

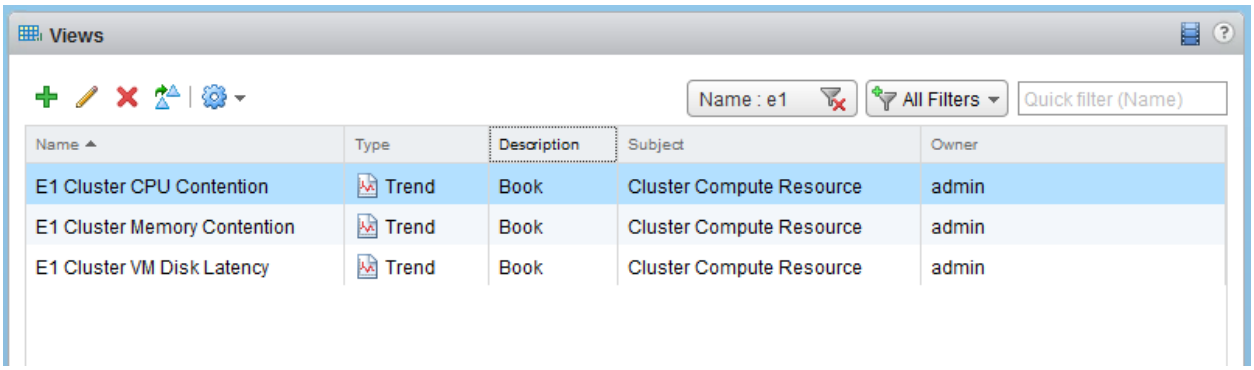
Chapter 6: Performance-Monitoring Dashboards

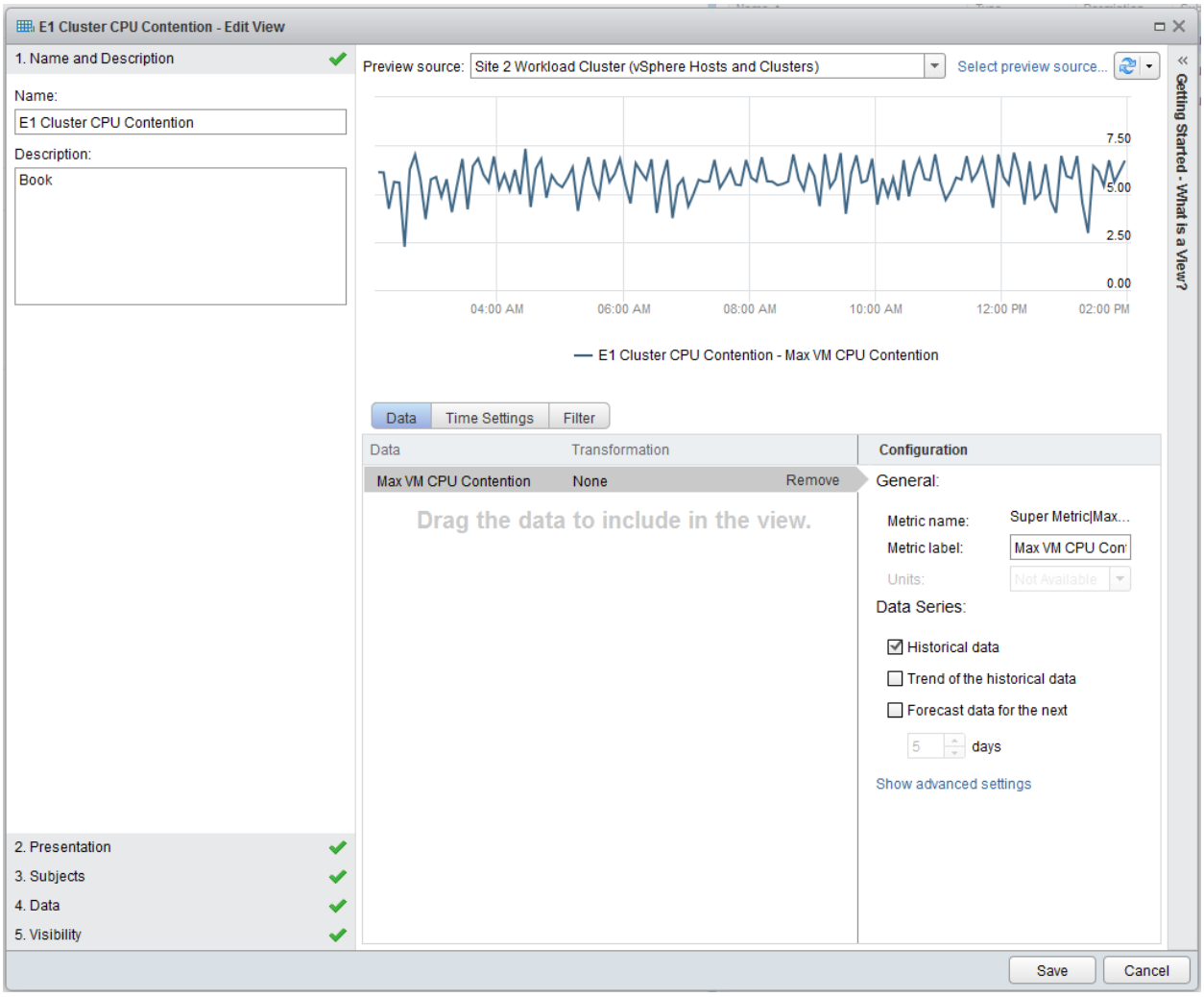


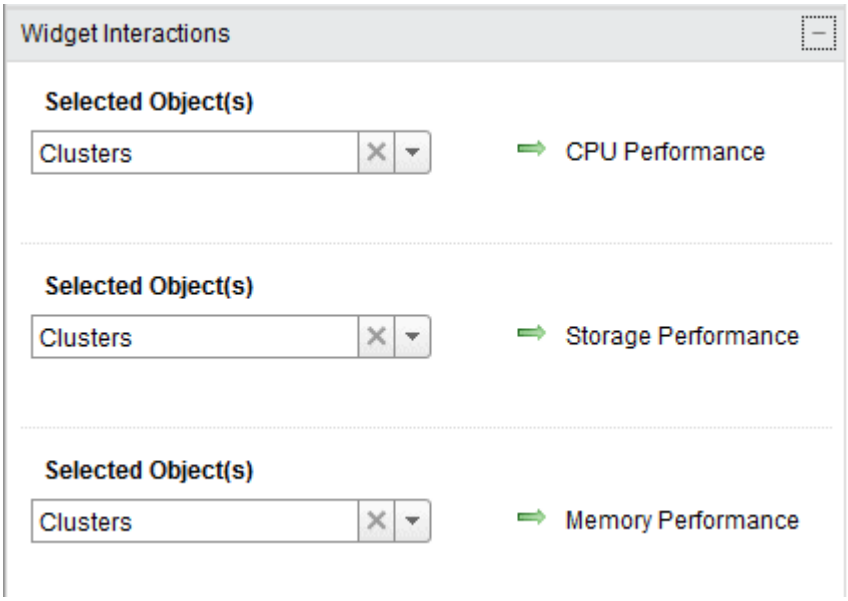

Manage Super Metric
Functions
Operators
Name
Average VM Memory Contention in a Cluster
avg(${adapterkind=VMWARE, resourcekind=VirtualMachine, attribute=mem|host_contentionPct, depth=2})
avg(Virtual Machine: Memory|Contention)
Objects | Per Page: 50
Filter
Name
Object Type
SDDC-Prod-Workload-Cluster
Cluster Compute Resource
VMSG-Cluster
Cluster Compute Resource
Page 1 of 1
Displaying 1 - 2 of 2
Object Types | Adapter Type: vCenter Adapter
Name
Cluster Compute Resource
Compute Resource
Datacenter
Datastore
Datastore Cluster
Datastore Folder
Folder
Page 1 of 1
Displaying 1 - 18 of 18
SDDC-Prod-Workload-Cluster: preview
H: 0
L: 0
0.0010
0.0005
0.0000
3/23/15 8:00 AM
3/23/15 8:00 PM
3/24/15 8:00 AM
3/24/15 8:00 PM
3/25/15 8:00 AM
3/25/15 8:00 PM
3/26/15 8:00 AM
3/26/15 8:00 PM
3/27/15 8:00 AM
3/27/15 8:00 PM
3/28/15 8:00 AM
3/28/15 8:00 PM
3/29/15 8:00 AM
3/29/15 8:00 PM
Save
Cancel

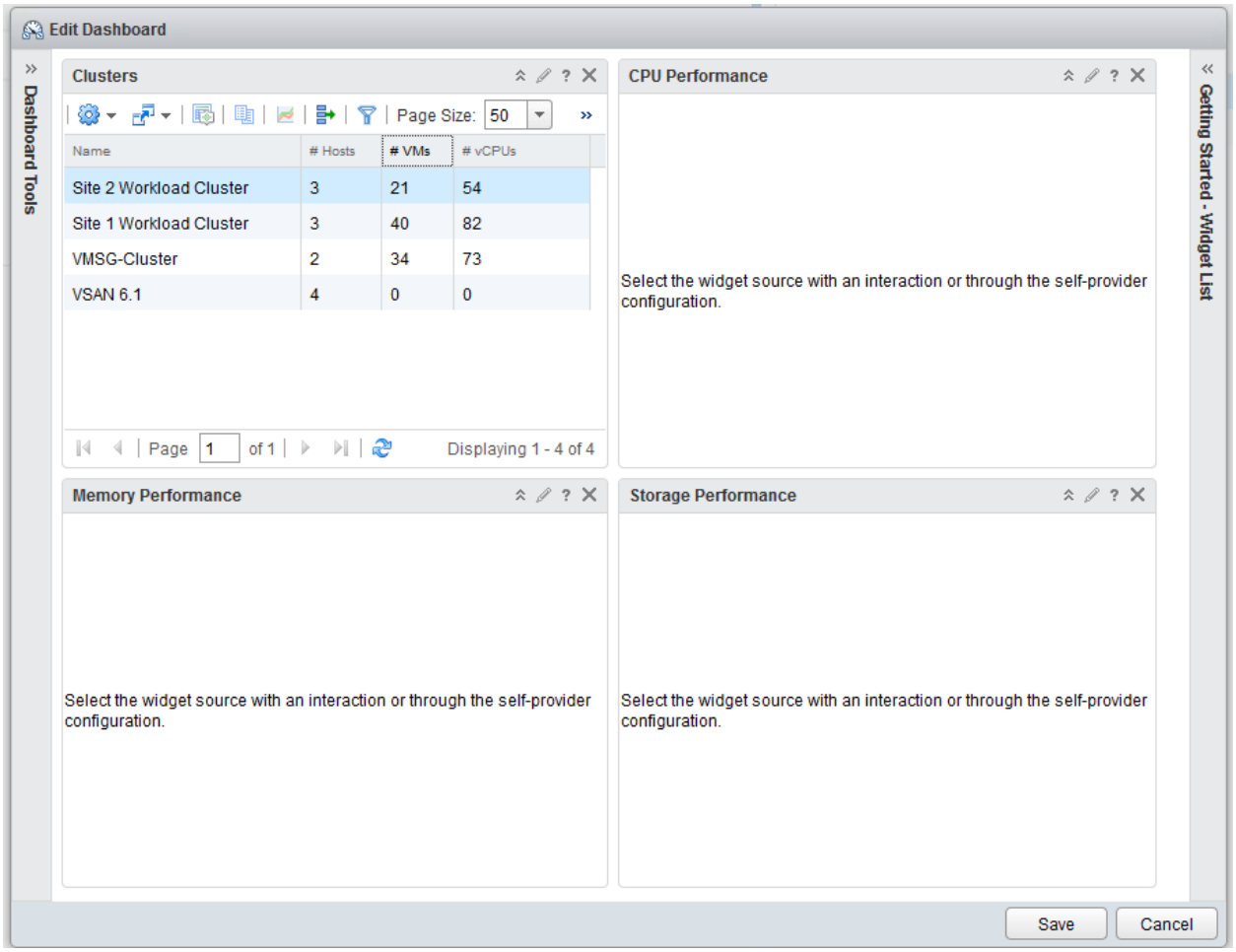

Manage Super Metric
Functions
Operators
Name
Max VM Disk Latency in a cluster
Max(${adapterkind=VMWARE, resourcekind=VirtualMachine, attribute=virtualDisk|totalLatency, depth=2})
max(Virtual Machine: Virtual Disk|Total Latency)
Objects | Per Page: 50
Filter
Name
Object Type
SDDC-DR-SRM-Server
Virtual Machine
BCDR-Demo-VM-08
Virtual Machine
BCDR-Demo-VM-11
Virtual Machine
vSphere Management Assist...
Virtual Machine
vCenter 6 Demo
Virtual Machine
BCDR-Demo-VM-to-suspend
Virtual Machine
Bare WinX 02
Virtual Machine
Page 1 of 4
Displaying 1 - 50 of 161
Object Types | Adapter Type: vCenter Adapter
Name
Folder
Host Folder
Host System
Network Folder
Resource Pool
vCenter Server
Virtual Machine
Page 1 of 1
Displaying 1 - 18 of 18
Metrics
Filter
Badge
Configuration
CPU
CPU - Allocation model
CPU Utilization for Resources
Datastore I/O
Disk
Disk Space
Disk Space - Allocation model
Disk Space Reclaimable
Attribute Types
Search: latency
CPU
Datastore I/O
Disk
Memory
Storage
Virtual Disk
Read Latency (microseconds)
Total Latency
Read Latency (ms)
Write Latency (ms)
Save
Cancel

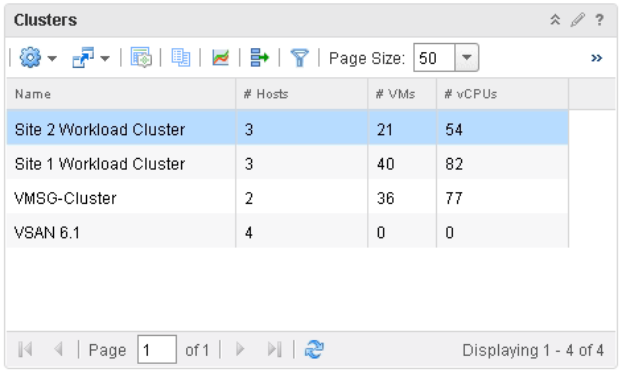

Manage Super Metric
Functions
Operators
THIS
Name
Max VM Network Packet Loss in a datacenter
Max(${adaptertype=VMWARE, objecttype=VirtualMachine, attribute=net|droppedPct, depth=3})
max(Virtual Machine: Network I/O|Packets Dropped)
Objects
Page Size: 50
Name
New Virtual Machine
Site 1 NSX Manager
management-server
AppStack_VM-6
VMSG-Admin-viper
SLES 11 SP2
Page 1 of 4
Object Types
Adapter Type:
--All--
Object Type
View Security Server
View Storage Tier
Virtual Machine
Virtual Machine Folder
VirtualSAN Cluster
VirtualSAN Datastore
Page 6 of 9
Metrics
Filter
Badge
Configuration
CPU
CPU - Allocation model
CPU Utilization for Resources
Datastore I/O
Disk
Disk Space
Disk Space - Allocation model
Disk Space Reclaimable
Diskspace - Total usage
Attribute Types
Filter
Current Size in Unit(s)
Default Gateway
Demand (%)
Density
Density with committed projects
Packets Dropped
Packets Dropped (%)
Received Packets Dropped
Transmitted Packets Dropped
Capacity (With HA, but without overcommit and buffers)
HA Capacity Not Normalized
Save
Cancel

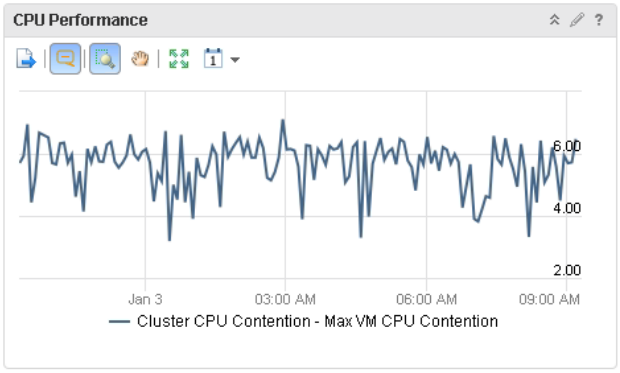

Views
Name : e1
All Filters
Quick filter (Name)
Name
Type
Description
Subject
Owner
E1 Cluster CPU Contention
Trend
Book
Cluster Compute Resource
admin
E1 Cluster Memory Contention
Trend
Book
Cluster Compute Resource
admin
E1 Cluster VM Disk Latency
Trend
Book
Cluster Compute Resource
admin

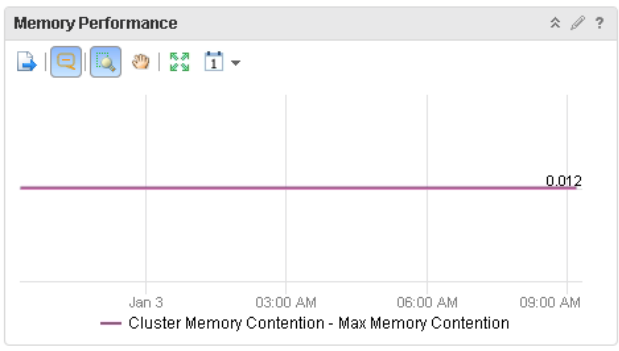

E1 Cluster CPU Contention - Edit View
1. Name and Description
Name:
E1 Cluster CPU Contention
Description:
Book
2. Presentation
3. Subjects
4. Data
5. Visibility
Preview source:
Site 2 Workload Cluster (vSphere Hosts and Clusters)
Select preview source...
7.50
5.00
2.50
0.00
04:00 AM
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM
E1 Cluster CPU Contention - Max VM CPU Contention
Data
Time Settings
Filter
Data
Transformation
Configuration
Max VM CPU Contention
None
Remove
Drag the data to include in the view.
General:
Metric name:
Super Metric|Max...
Metric label:
Max VM CPU Con
Units:
Not Available
Data Series:
Historical data
Trend of the historical data
Forecast data for the next
5
days
Show advanced settings
Getting Started - What is a View?
Save
Cancel

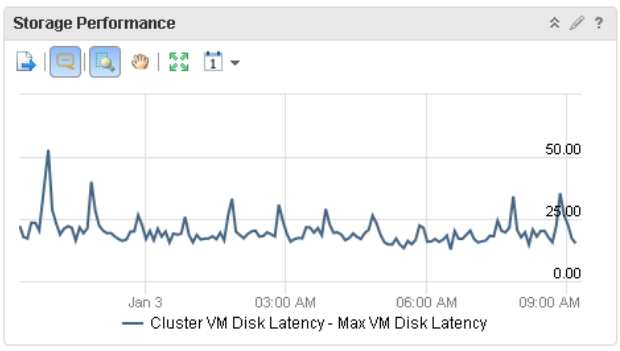

Widget Interactions
Selected Object(s)
Clusters
CPU Performance
Selected Object(s)
Clusters
Storage Performance
Selected Object(s)
Clusters
Memory Performance

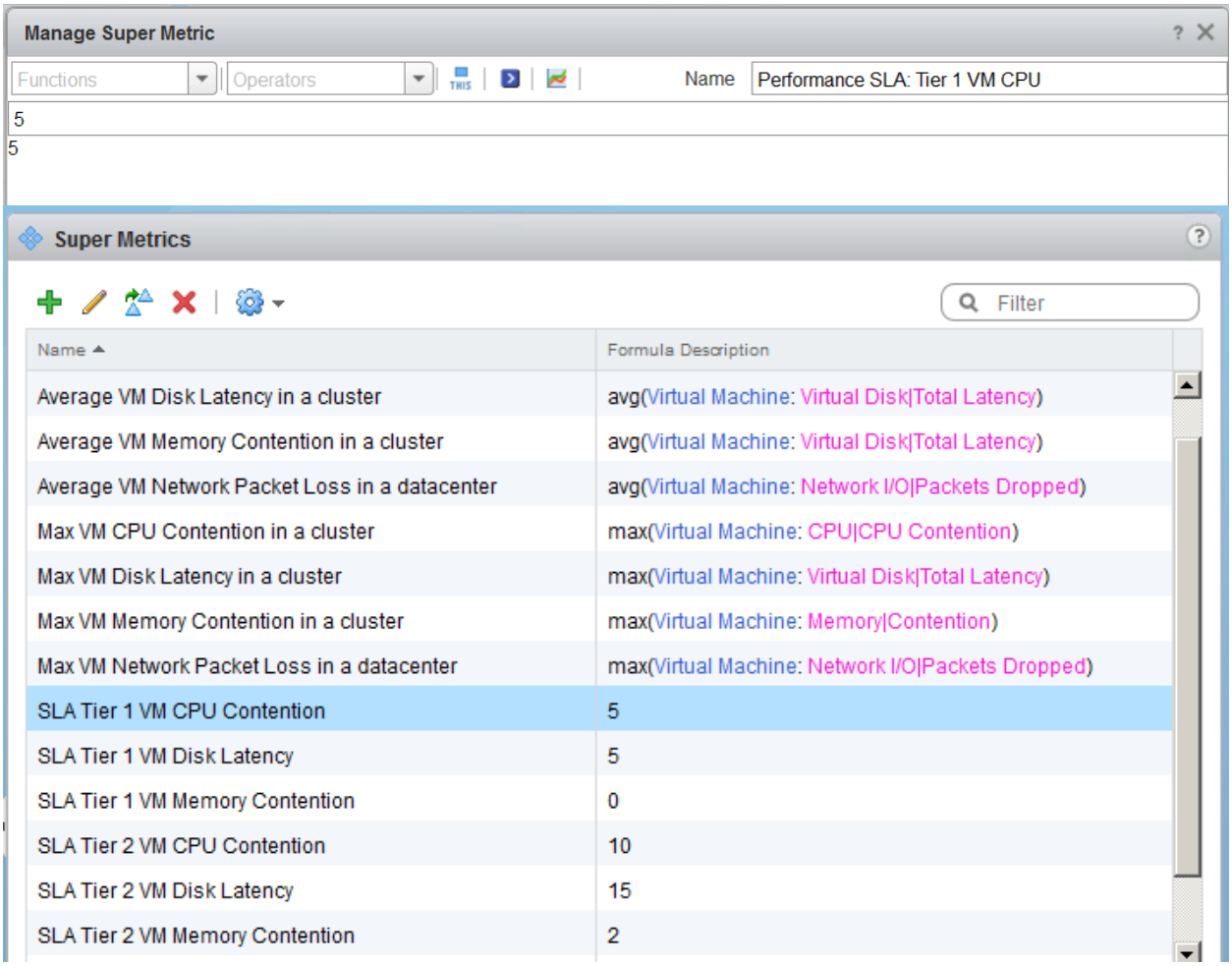

Edit Dashboard
Dashboard Tools
Clusters
Page Size: 50
Name
Hosts
VMs
vCPUs
Site 2 Workload Cluster 3 21 54
Site 1 Workload Cluster 3 40 82
VMSG-Cluster 2 34 73
VSAN 6.1 4 0 0
Page 1 of 1
Displaying 1 - 4 of 4
CPU Performance
Select the widget source with an interaction or through the self-provider configuration.
Memory Performance
Select the widget source with an interaction or through the self-provider configuration.
Storage Performance
Select the widget source with an interaction or through the self-provider configuration.
Getting Started - Widget List
Save
Cancel

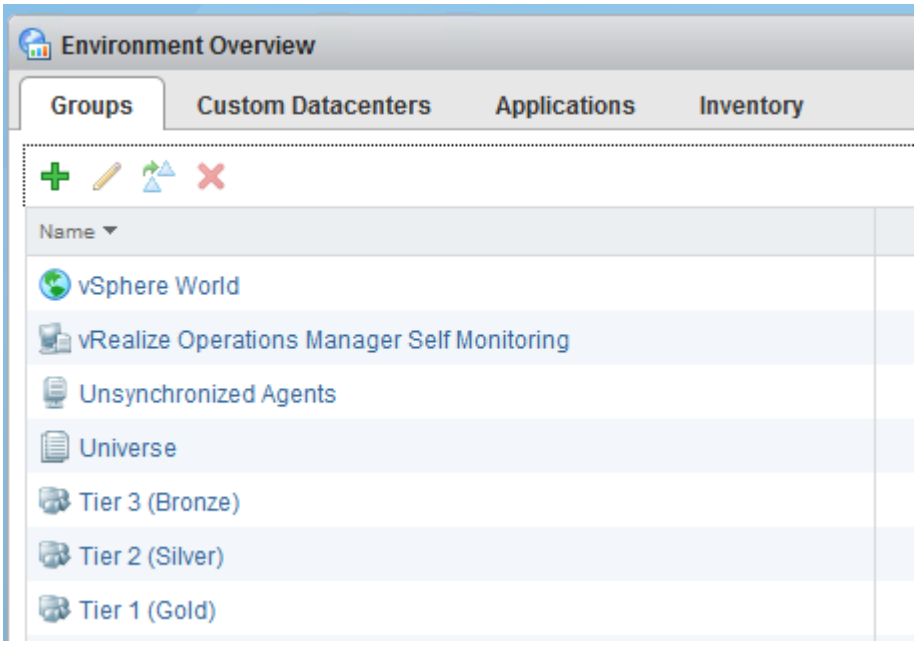

Clusters
Page Size: 50
Name
Hosts
VMs
vCPUs
Site 2 Workload Cluster 3 21 54
Site 1 Workload Cluster 3 40 82
VMSG-Cluster 2 36 77
VSAN 6.1 4 0 0
Page 1 of 1
Displaying 1 - 4 of 4

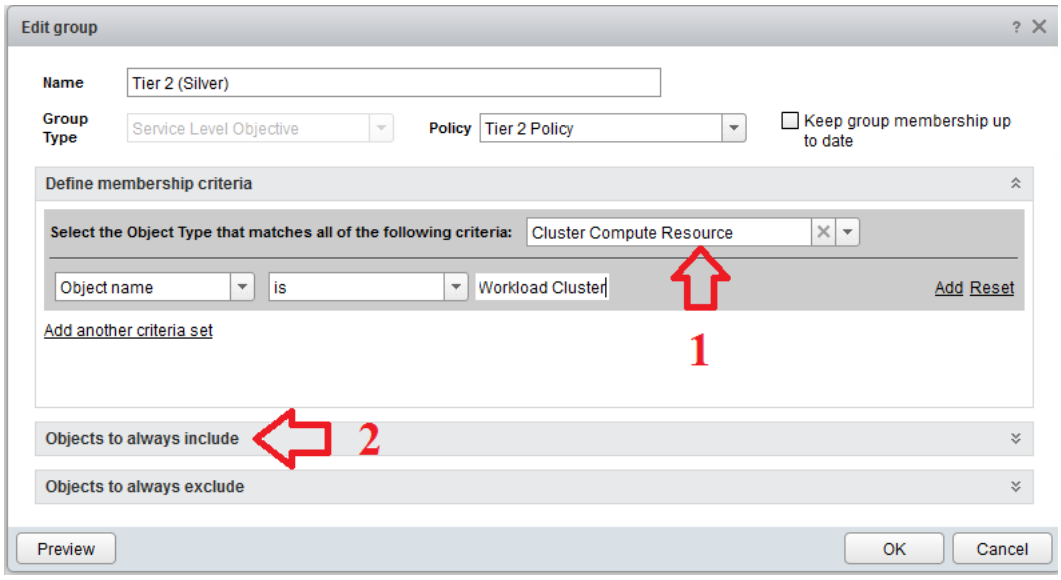

CPU Performance
6.00
4.00
2.00
Jan 3
03:00 AM
06:00 AM
09:00 AM
Cluster CPU Contention - Max VM CPU Contention

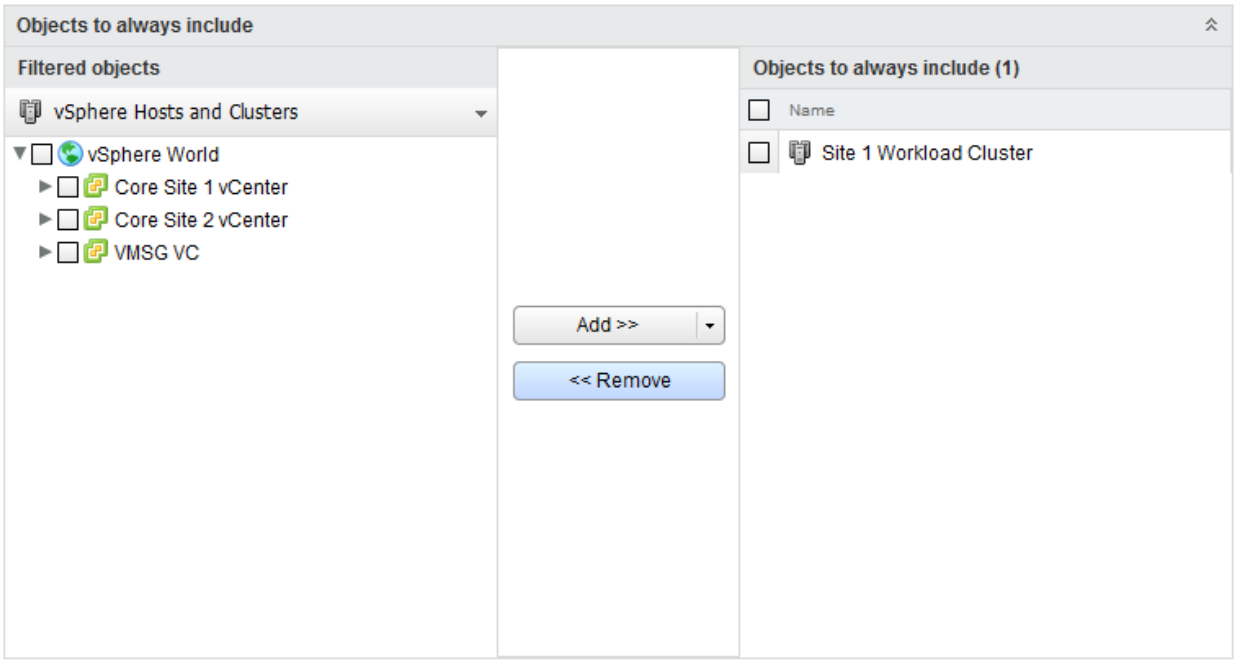

Memory Performance
0.012
Jan 3
03:00 AM
06:00 AM
09:00 AM
Cluster Memory Contention - Max Memory Contention

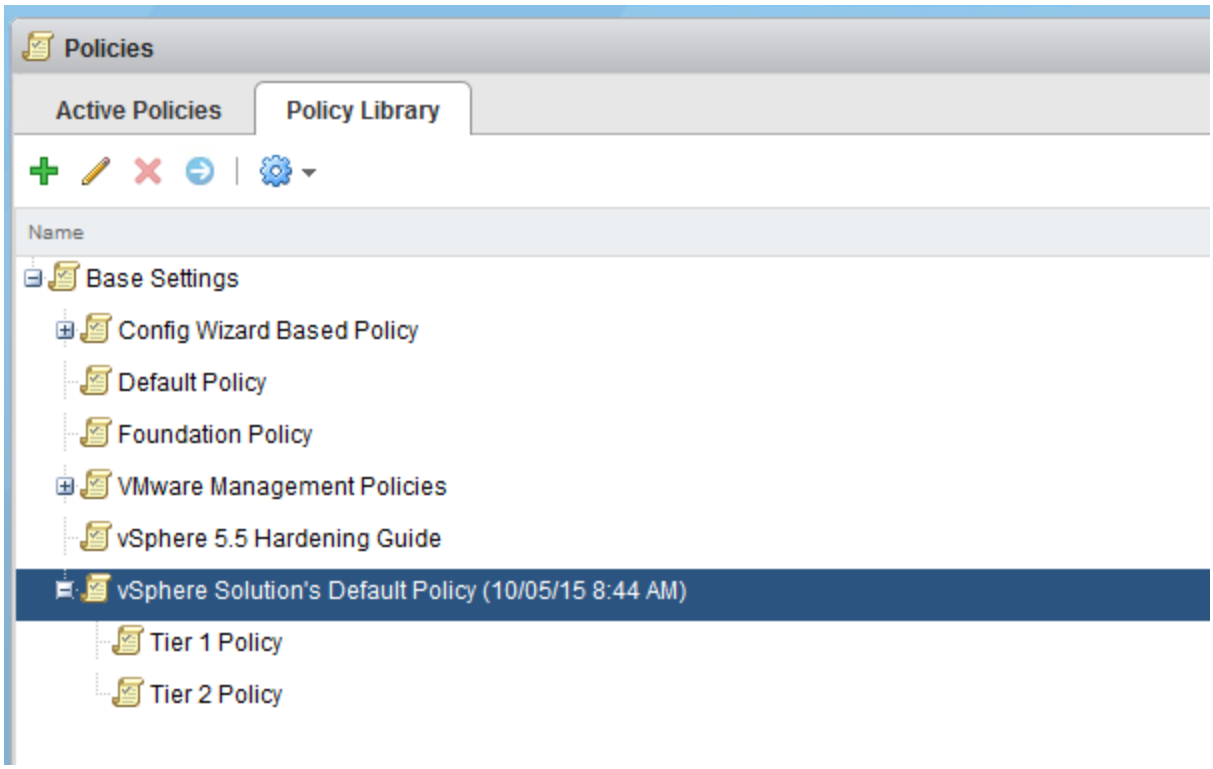

Storage Performance
50.00
25.00
0.00
Jan 3
03:00 AM
06:00 AM
09:00 AM
Cluster VM Disk Latency - Max VM Disk Latency

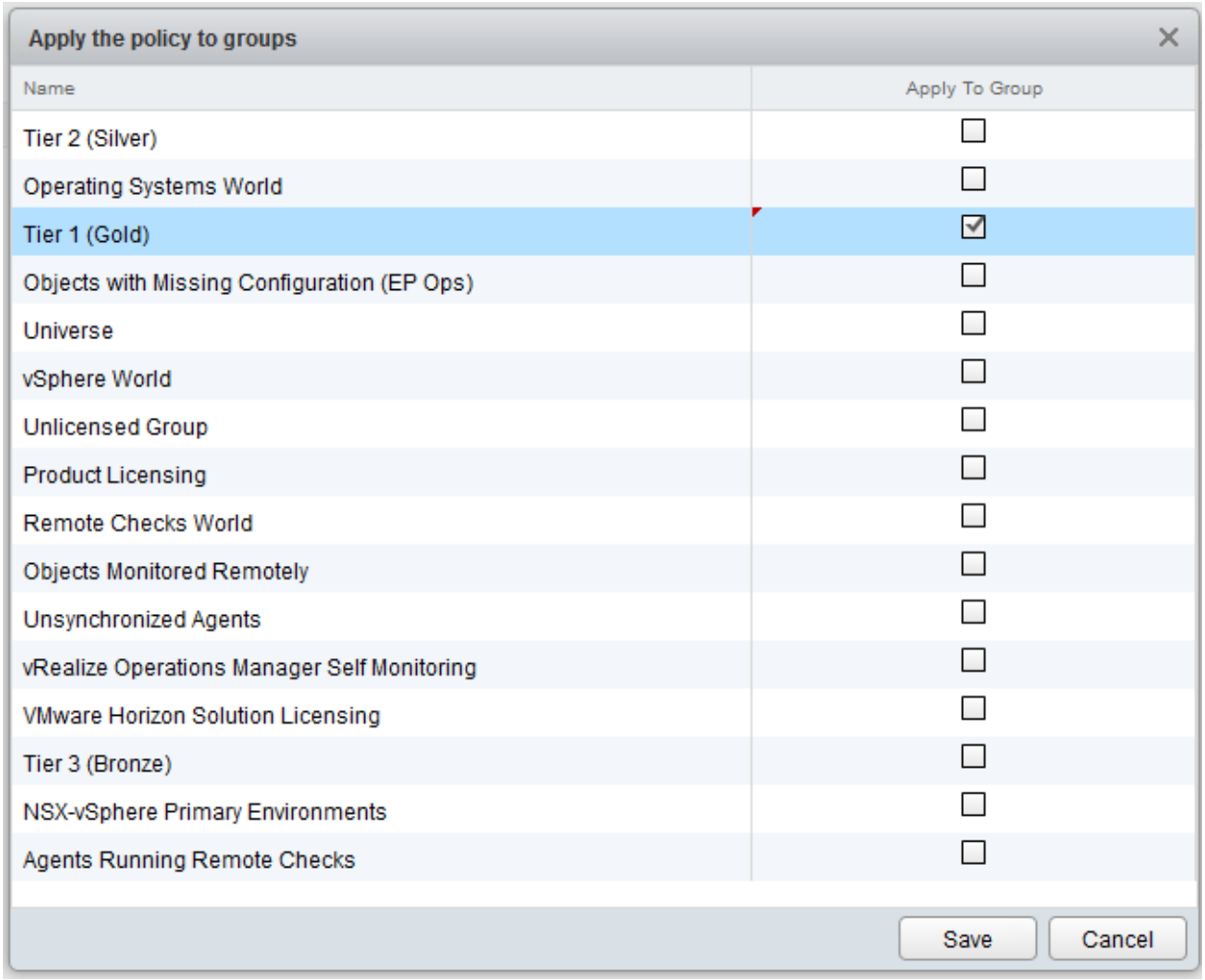

Manage Super Metric
Functions
Operators
Name
Performance SLA: Tier 1 VM CPU
5
5
Super Metrics
Filter
Name
Formula Description
Average VM Disk Latency in a cluster
avg(Virtual Machine: Virtual Disk|Total Latency)
Average VM Memory Contention in a cluster
avg(Virtual Machine: Virtual Disk|Total Latency)
Average VM Network Packet Loss in a datacenter
avg(Virtual Machine: Network I/O|Packets Dropped)
Max VM CPU Contention in a cluster
max(Virtual Machine: CPU|CPU Contention)
Max VM Disk Latency in a cluster
max(Virtual Machine: Virtual Disk|Total Latency)
Max VM Memory Contention in a cluster
max(Virtual Machine: Memory|Contention)
Max VM Network Packet Loss in a datacenter
max(Virtual Machine: Network I/O|Packets Dropped)
SLA Tier 1 VM CPU Contention
5
SLA Tier 1 VM Disk Latency
5
SLA Tier 1 VM Memory Contention
0
SLA Tier 2 VM CPU Contention
10
SLA Tier 2 VM Disk Latency
15
SLA Tier 2 VM Memory Contention
2

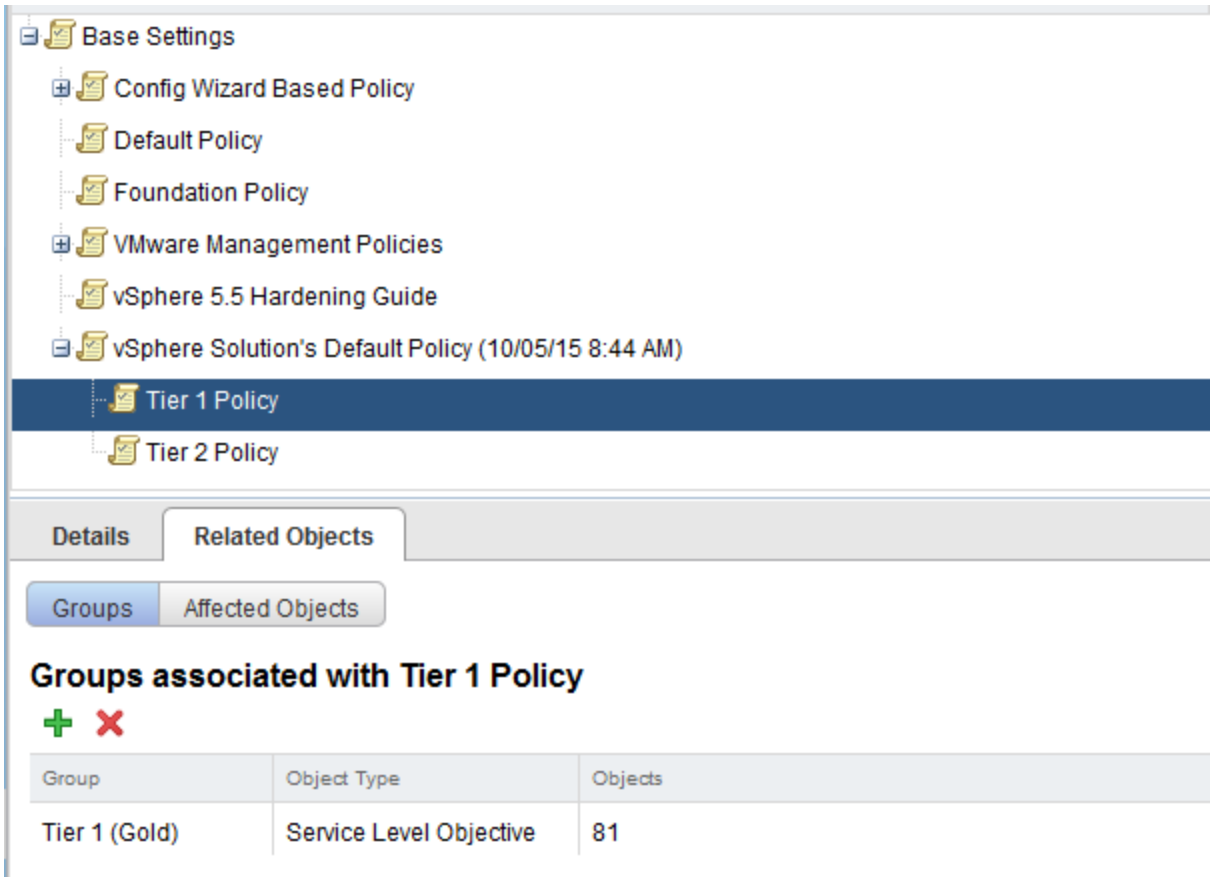

Environment Overview
Groups
Custom Datacenters
Applications
Inventory
Name
vSphere World
vRealize Operations Manager Self Monitoring
Unsynchronized Agents
Universe
Tier 3 (Bronze)
Tier 2 (Silver)
Tier 1 (Gold)

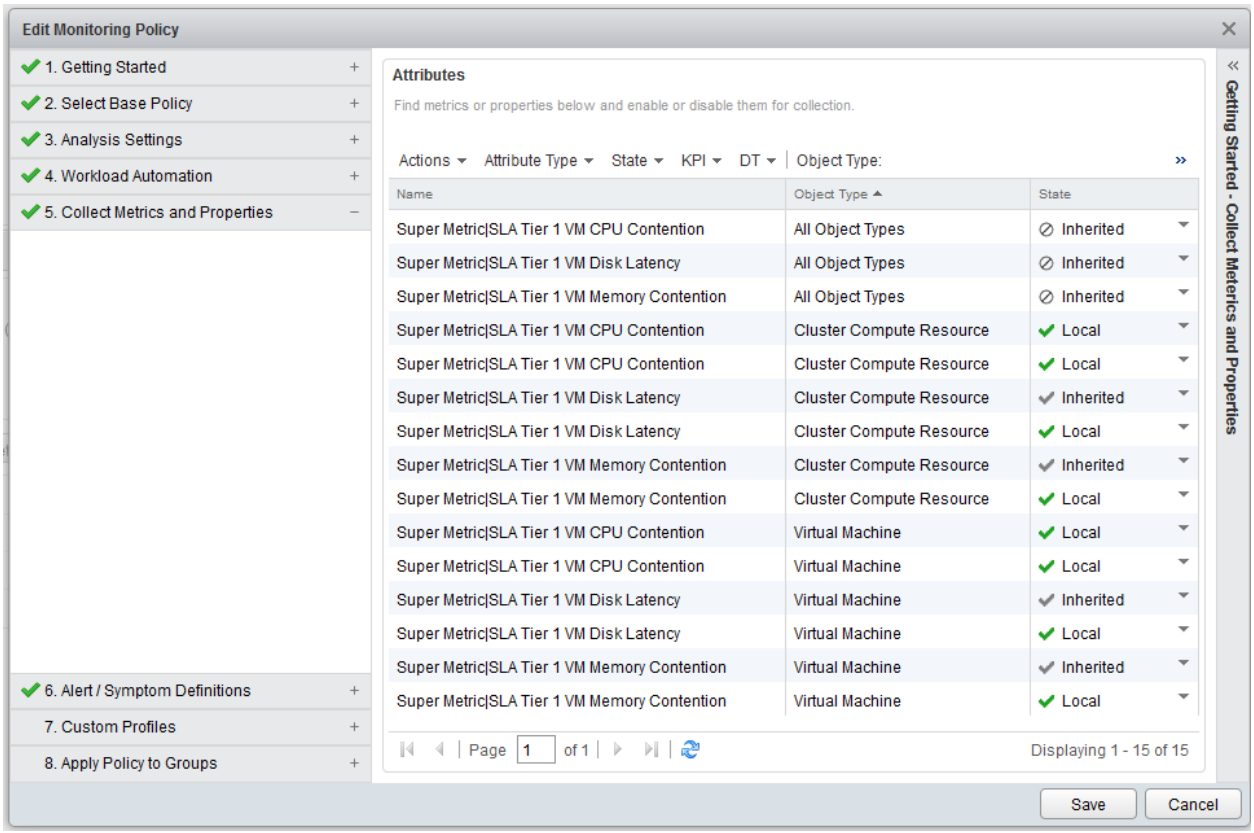

Edit group
Name
Tier 2 (Silver)
Group Type
Service Level Objective
Policy
Tier 2 Policy
Keep group membership up to date
Define membership criteria
Select the Object Type that matches all of the following criteria:
Cluster Compute Resource
Object name
is
Workload Cluster
Add
Reset
Add another criteria set
1
Objects to always include
2
Objects to always exclude
Preview
OK
Cancel

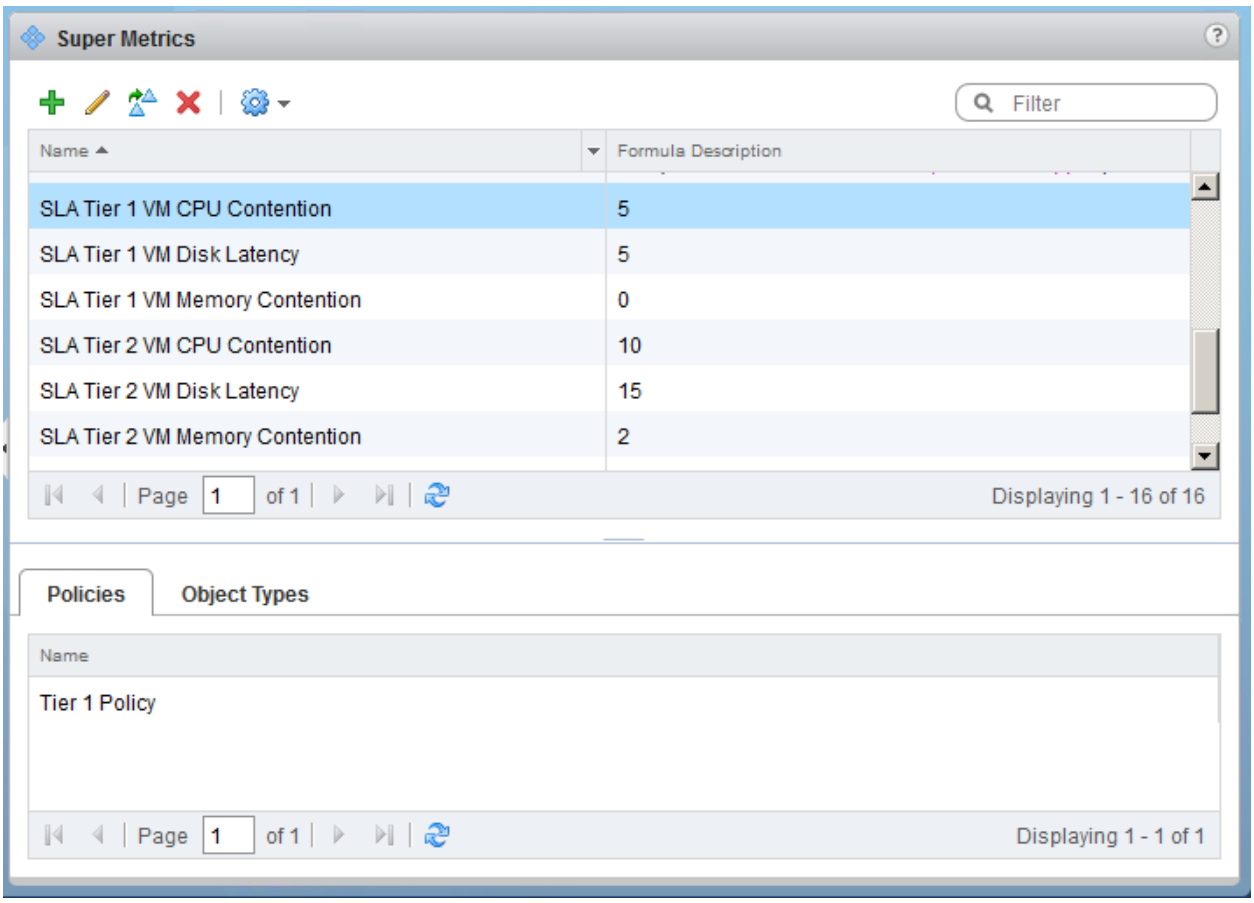

Objects to always include
Filtered objects
vSphere Hosts and Clusters
vSphere World
Core Site 1 vCenter
Core Site 2 vCenter
VMSG VC
Add >>
<< Remove
Objects to always include (1)
Name
Site 1 Workload Cluster

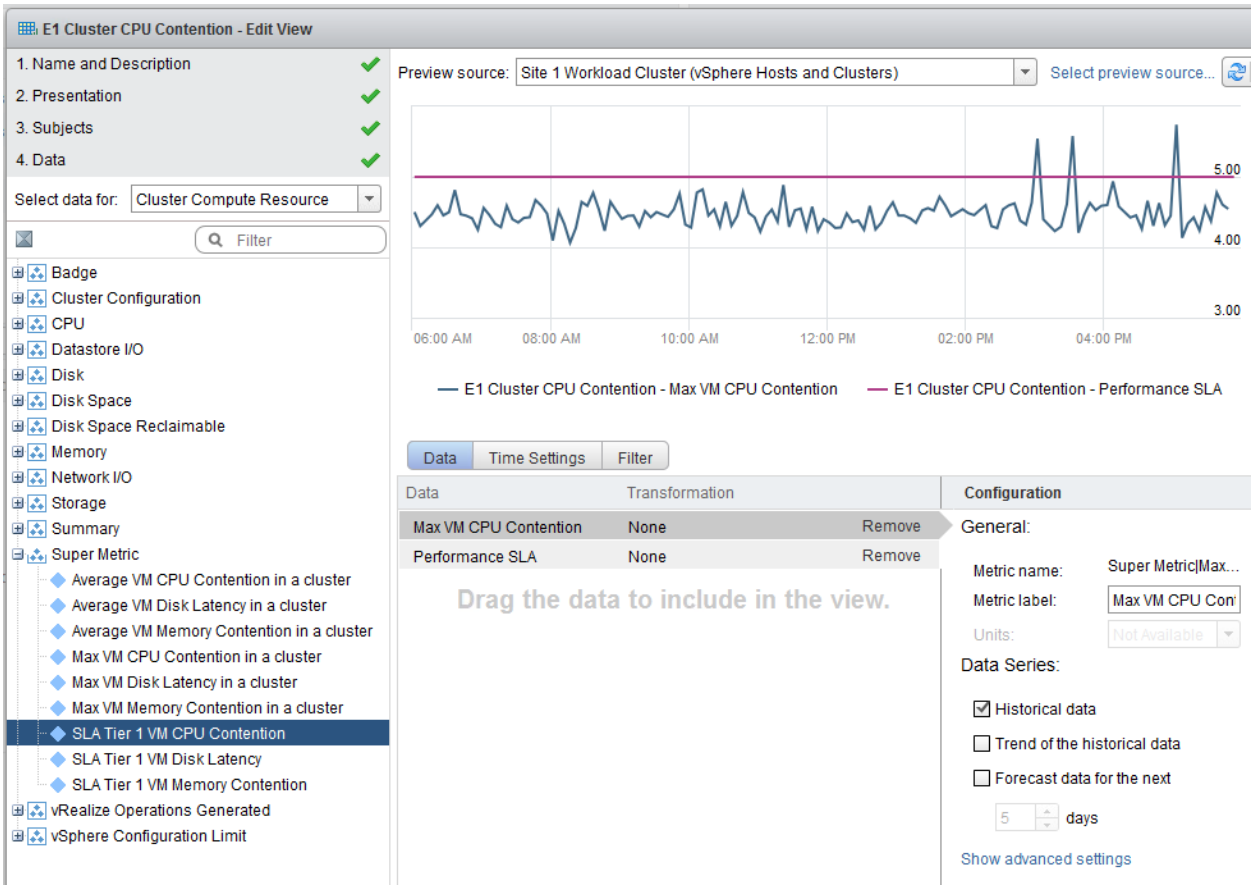

Policies
Active Policies
Policy Library
Name
Base Settings
Config Wizard Based Policy
Default Policy
Foundation Policy
VMware Management Policies
vSphere 5.5 Hardening Guide
vSphere Solution's Default Policy (10/05/15 8:44 AM)
Tier 1 Policy
Tier 2 Policy

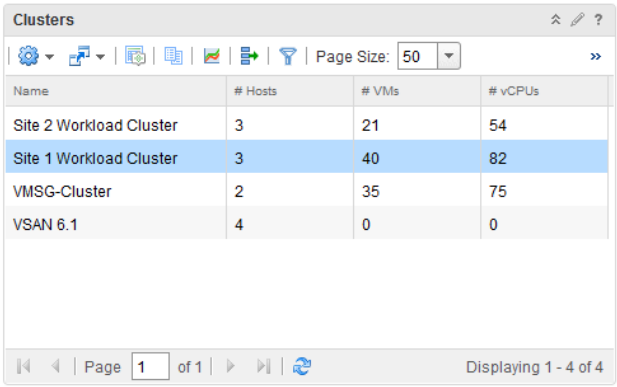

Apply the policy to groups
Name
Apply To Group
Tier 2 (Silver)
Operating Systems World
Tier 1 (Gold)
Objects with Missing Configuration (EP Ops)
Universe
vSphere World
Unlicensed Group
Product Licensing
Remote Checks World
Objects Monitored Remotely
Unsynchronized Agents
vRealize Operations Manager Self Monitoring
VMware Horizon Solution Licensing
Tier 3 (Bronze)
NSX-vSphere Primary Environments
Agents Running Remote Checks
Save
Cancel

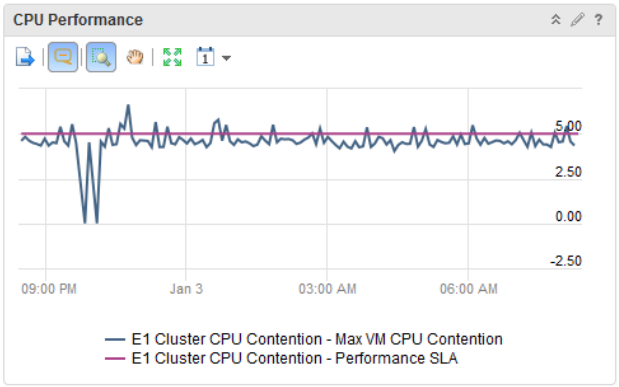

Base Settings
Config Wizard Based Policy
Default Policy
Foundation Policy
VMware Management Policies
vSphere 5.5 Hardening Guide
vSphere Solution's Default Policy (10/05/15 8:44 AM)
Tier 1 Policy
Tier 2 Policy
Details
Related Objects
Groups
Affected Objects
Groups associated with Tier 1 Policy
Group
Object Type
Objects
Tier 1 (Gold)
Service Level Objective
81

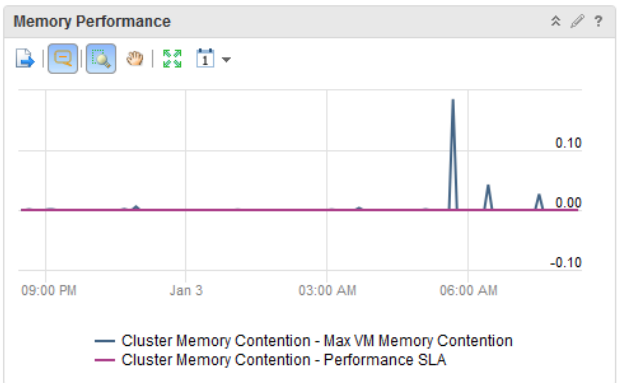

Edit Monitoring Policy
1. Getting Started
2. Select Base Policy
3. Analysis Settings
4. Workload Automation
5. Collect Metrics and Properties
6. Alert / Symptom Definitions
7. Custom Profiles
8. Apply Policy to Groups
Attributes
Find metrics or properties below and enable or disable them for collection.
Actions
Attribute Type
State
KPI
DT
Object Type:
Name
Object Type
State
Super Metric|SLA Tier 1 VM CPU Contention | All Object Types | Inherited
Super Metric|SLA Tier 1 VM Disk Latency | All Object Types | Inherited
Super Metric|SLA Tier 1 VM Memory Contention | All Object Types | Inherited
Super Metric|SLA Tier 1 VM CPU Contention | Cluster Compute Resource | Local
Super Metric|SLA Tier 1 VM CPU Contention | Cluster Compute Resource | Local
Super Metric|SLA Tier 1 VM Disk Latency | Cluster Compute Resource | Inherited
Super Metric|SLA Tier 1 VM Disk Latency | Cluster Compute Resource | Local
Super Metric|SLA Tier 1 VM Memory Contention | Cluster Compute Resource | Inherited
Super Metric|SLA Tier 1 VM Memory Contention | Cluster Compute Resource | Local
Super Metric|SLA Tier 1 VM CPU Contention | Virtual Machine | Local
Super Metric|SLA Tier 1 VM CPU Contention | Virtual Machine | Local
Super Metric|SLA Tier 1 VM Disk Latency | Virtual Machine | Inherited
Super Metric|SLA Tier 1 VM Disk Latency | Virtual Machine | Local
Super Metric|SLA Tier 1 VM Memory Contention | Virtual Machine | Inherited
Super Metric|SLA Tier 1 VM Memory Contention | Virtual Machine | Local
Page 1 of 1
Displaying 1 - 15 of 15
Save
Cancel
Getting Started - Collect Metrics and Properties

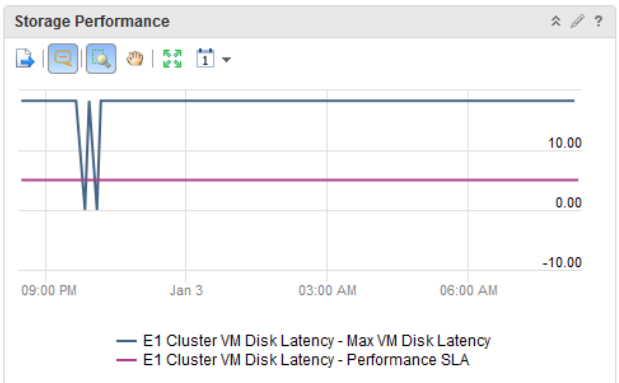

Super Metrics
Filter
Name
Formula Description
SLA Tier 1 VM CPU Contention
5
SLA Tier 1 VM Disk Latency
5
SLA Tier 1 VM Memory Contention
0
SLA Tier 2 VM CPU Contention
10
SLA Tier 2 VM Disk Latency
15
SLA Tier 2 VM Memory Contention
2
Page 1 of 1
Displaying 1 - 16 of 16
Policies
Object Types
Name
Tier 1 Policy
Page 1 of 1
Displaying 1 - 1 of 1

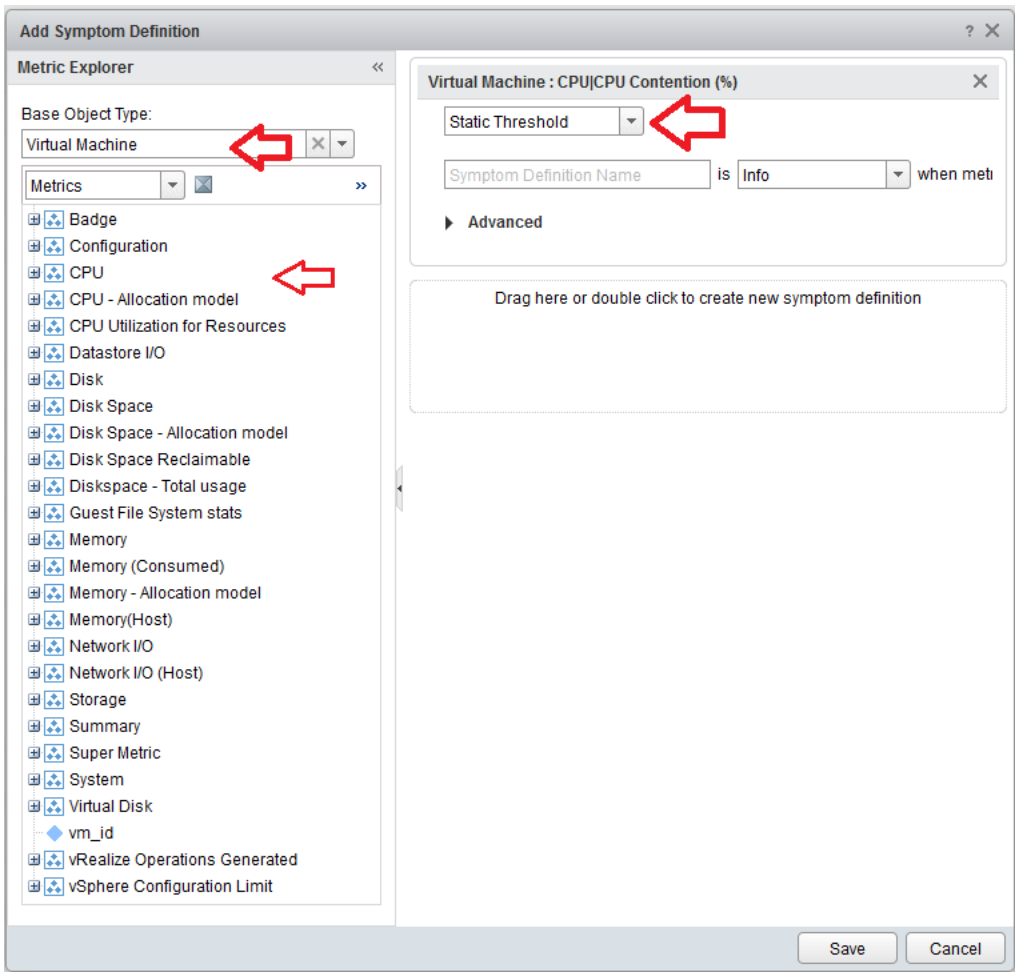

E1 Cluster CPU Contention - Edit View
1. Name and Description
2. Presentation
3. Subjects
4. Data
Select data for: Cluster Compute Resource
Filter
Badge
Cluster Configuration
CPU
Datastore I/O
Disk
Disk Space
Disk Space Reclaimable
Memory
Network I/O
Storage
Summary
Super Metric
Average VM CPU Contention in a cluster
Average VM Disk Latency in a cluster
Average VM Memory Contention in a cluster
Max VM CPU Contention in a cluster
Max VM Disk Latency in a cluster
Max VM Memory Contention in a cluster
SLA Tier 1 VM CPU Contention
SLA Tier 1 VM Disk Latency
SLA Tier 1 VM Memory Contention
vRealize Operations Generated
vSphere Configuration Limit
Preview source: Site 1 Workload Cluster (vSphere Hosts and Clusters)
Select preview source...
5.00
4.00
3.00
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM
04:00 PM
E1 Cluster CPU Contention - Max VM CPU Contention
E1 Cluster CPU Contention - Performance SLA
Data
Time Settings
Filter
Data
Transformation
Max VM CPU Contention
None
Remove
Performance SLA
None
Remove
Drag the data to include in the view.
Configuration
General:
Metric name:
Super Metric|Max...
Metric label:
Max VM CPU Con
Units:
Not Available
Data Series:
Historical data
Trend of the historical data
Forecast data for the next
5
days
Show advanced settings

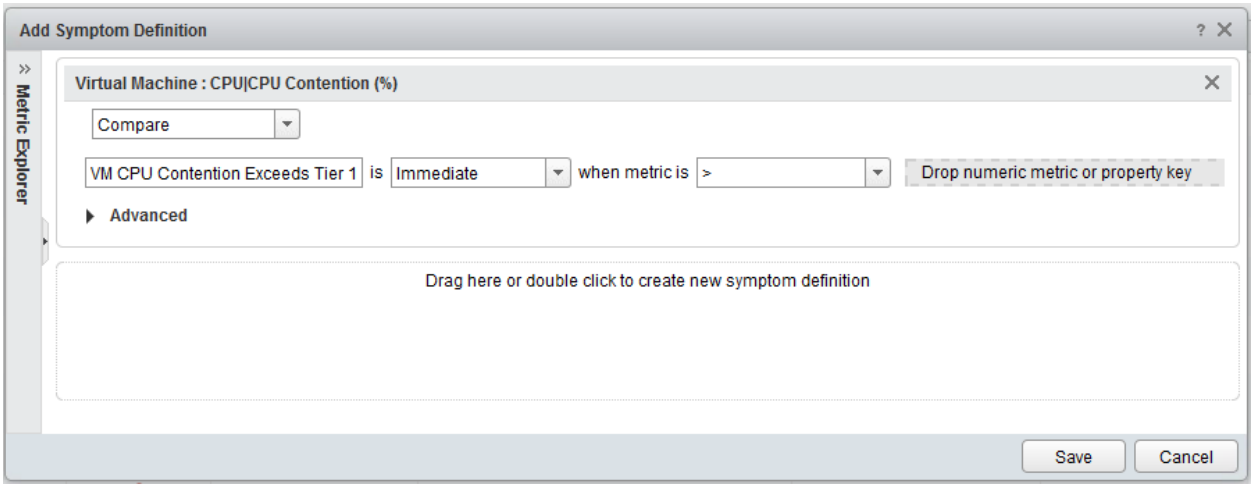

Clusters
Page Size: 50
Name
Hosts
VMs
vCPUs
Site 2 Workload Cluster
3
21
54
Site 1 Workload Cluster
3
40
82
VMSG-Cluster
2
35
75
VSAN 6.1
4
0
0
Page 1 of 1
Displaying 1 - 4 of 4

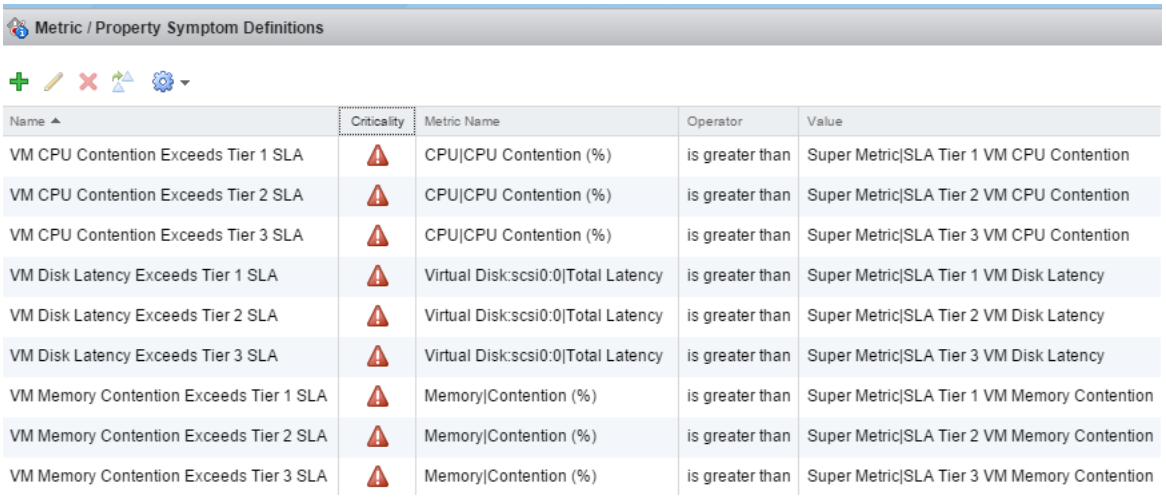

CPU Performance
5.00
2.50
0.00
-2.50
09:00 PM
Jan 3
03:00 AM
06:00 AM
E1 Cluster CPU Contention - Max VM CPU Contention
E1 Cluster CPU Contention - Performance SLA

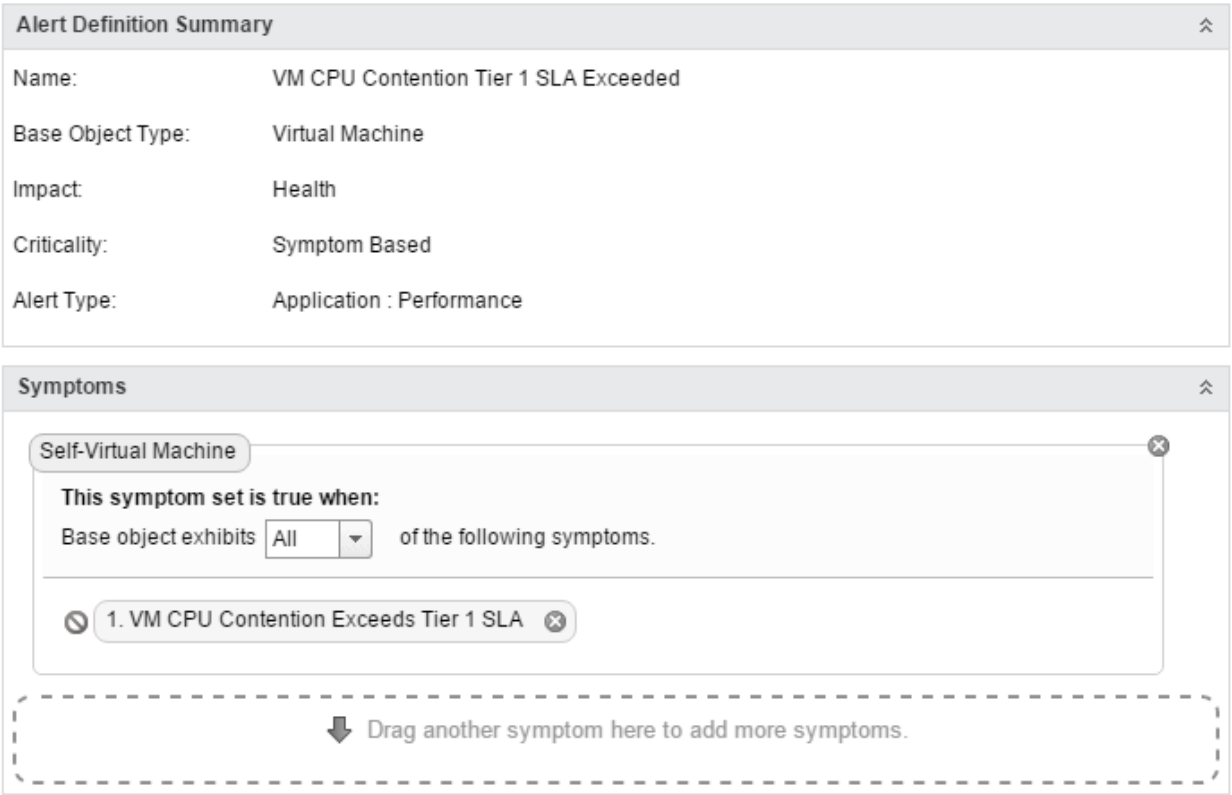

Memory Performance
0.10
0.00
-0.10
09:00 PM
Jan 3
03:00 AM
06:00 AM
Cluster Memory Contention - Max VM Memory Contention
Cluster Memory Contention - Performance SLA

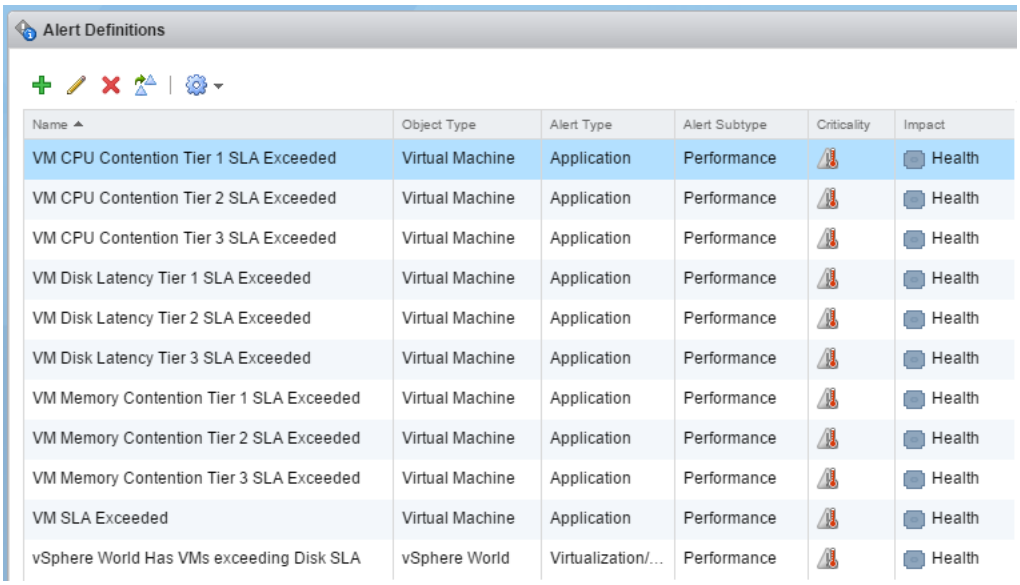

Storage Performance
10.00
0.00
-10.00
09:00 PM
Jan 3
03:00 AM
06:00 AM
E1 Cluster VM Disk Latency - Max VM Disk Latency
E1 Cluster VM Disk Latency - Performance SLA

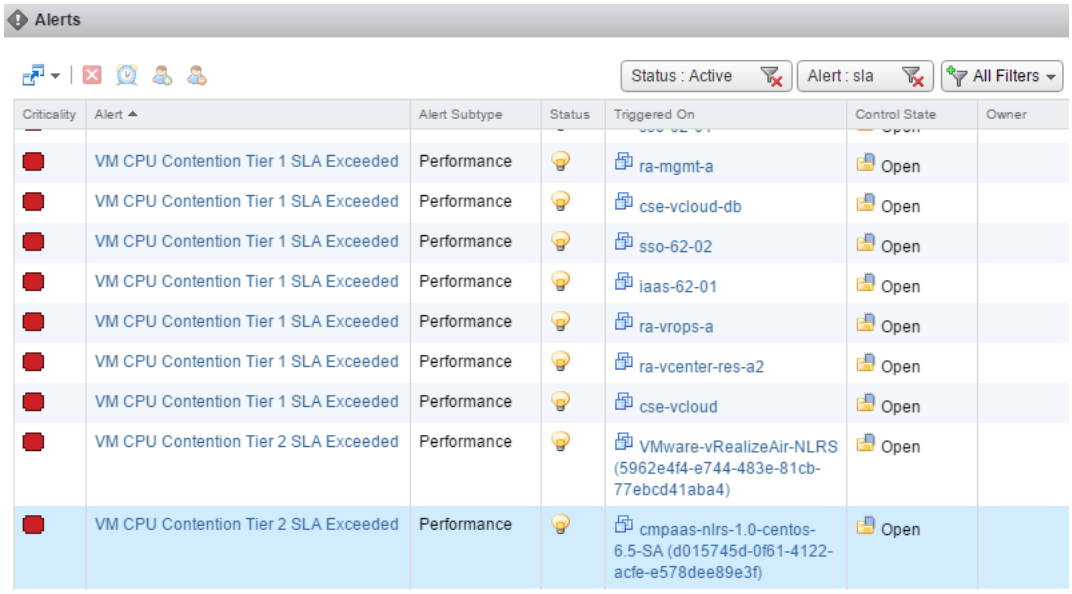

Add Symptom Definition
Metric Explorer
Base Object Type:
Virtual Machine
Metrics
Badge
Configuration
CPU
CPU - Allocation model
CPU Utilization for Resources
Datastore I/O
Disk
Disk Space
Disk Space - Allocation model
Disk Space Reclaimable
Diskspace - Total usage
Guest File System stats
Memory
Memory (Consumed)
Memory - Allocation model
Memory(Host)
Network I/O
Network I/O (Host)
Storage
Summary
Super Metric
System
Virtual Disk
vm_id
vRealize Operations Generated
vSphere Configuration Limit
Virtual Machine : CPU|CPU Contention (%)
Static Threshold
Symptom Definition Name
is
Info
when meti
Advanced
Drag here or double click to create new symptom definition
Save
Cancel

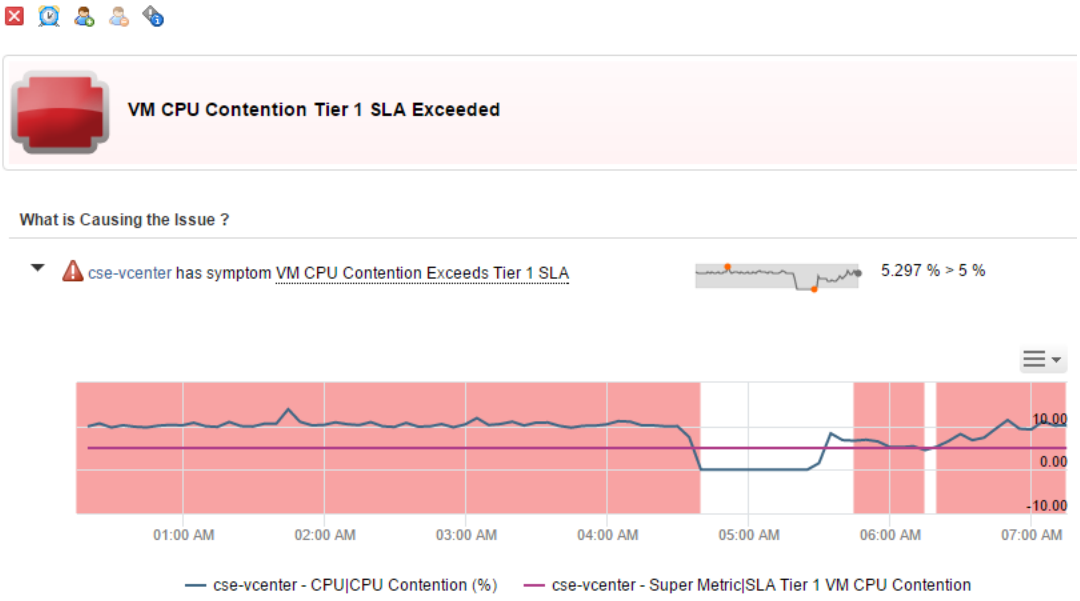

Add Symptom Definition
Metric Explorer
Virtual Machine : CPU|CPU Contention (%)
Compare
VM CPU Contention Exceeds Tier 1
is
Immediate
when metric is
>
Drop numeric metric or property key
Advanced
Drag here or double click to create new symptom definition
Save
Cancel


Metric / Property Symptom Definitions
Name
Criticality
Metric Name
Operator
Value
VM CPU Contention Exceeds Tier 1 SLA
CPU|CPU Contention (%)
is greater than
Super Metric|SLA Tier 1 VM CPU Contention
VM CPU Contention Exceeds Tier 2 SLA
CPU|CPU Contention (%)
is greater than
Super Metric|SLA Tier 2 VM CPU Contention
VM CPU Contention Exceeds Tier 3 SLA
CPU|CPU Contention (%)
is greater than
Super Metric|SLA Tier 3 VM CPU Contention
VM Disk Latency Exceeds Tier 1 SLA
Virtual Disk:scsi0:0|Total Latency
is greater than
Super Metric|SLA Tier 1 VM Disk Latency
VM Disk Latency Exceeds Tier 2 SLA
Virtual Disk:scsi0:0|Total Latency
is greater than
Super Metric|SLA Tier 2 VM Disk Latency
VM Disk Latency Exceeds Tier 3 SLA
Virtual Disk:scsi0:0|Total Latency
is greater than
Super Metric|SLA Tier 3 VM Disk Latency
VM Memory Contention Exceeds Tier 1 SLA
Memory|Contention (%)
is greater than
Super Metric|SLA Tier 1 VM Memory Contention
VM Memory Contention Exceeds Tier 2 SLA
Memory|Contention (%)
is greater than
Super Metric|SLA Tier 2 VM Memory Contention
VM Memory Contention Exceeds Tier 3 SLA
Memory|Contention (%)
is greater than
Super Metric|SLA Tier 3 VM Memory Contention


Alert Definition Summary
Name:
VM CPU Contention Tier 1 SLA Exceeded
Base Object Type:
Virtual Machine
Impact:
Health
Criticality:
Symptom Based
Alert Type:
Application : Performance
Symptoms
Self-Virtual Machine
This symptom set is true when:
Base object exhibits
All
of the following symptoms.
1. VM CPU Contention Exceeds Tier 1 SLA
Drag another symptom here to add more symptoms.


Alert Definitions
Name
Object Type
Alert Type
Alert Subtype
Criticality
Impact
VM CPU Contention Tier 1 SLA Exceeded
Virtual Machine
Application
Performance
Health
VM CPU Contention Tier 2 SLA Exceeded
Virtual Machine
Application
Performance
Health
VM CPU Contention Tier 3 SLA Exceeded
Virtual Machine
Application
Performance
Health
VM Disk Latency Tier 1 SLA Exceeded
Virtual Machine
Application
Performance
Health
VM Disk Latency Tier 2 SLA Exceeded
Virtual Machine
Application
Performance
Health
VM Disk Latency Tier 3 SLA Exceeded
Virtual Machine
Application
Performance
Health
VM Memory Contention Tier 1 SLA Exceeded
Virtual Machine
Application
Performance
Health
VM Memory Contention Tier 2 SLA Exceeded
Virtual Machine
Application
Performance
Health
VM Memory Contention Tier 3 SLA Exceeded
Virtual Machine
Application
Performance
Health
VM SLA Exceeded
Virtual Machine
Application
Performance
Health
vSphere World Has VMs exceeding Disk SLA
vSphere World
Virtualization/...
Performance
Health


Alerts
Status : Active
Alert : sla
All Filters
Criticality
Alert
Alert Subtype
Status
Triggered On
Control State
Owner
VM CPU Contention Tier 1 SLA Exceeded
Performance
ra-mgmt-a
Open
VM CPU Contention Tier 1 SLA Exceeded
Performance
cse-vcloud-db
Open
VM CPU Contention Tier 1 SLA Exceeded
Performance
sso-62-02
Open
VM CPU Contention Tier 1 SLA Exceeded
Performance
iaas-62-01
Open
VM CPU Contention Tier 1 SLA Exceeded
Performance
ra-vrops-a
Open
VM CPU Contention Tier 1 SLA Exceeded
Performance
ra-vcenter-res-a2
Open
VM CPU Contention Tier 1 SLA Exceeded
Performance
cse-vcloud
Open
VM CPU Contention Tier 2 SLA Exceeded
Performance
VMware-vRealizeAir-NLRS (5962e4f4-e744-483e-81cb-77ebcd41aba4)
Open
VM CPU Contention Tier 2 SLA Exceeded
Performance
cmpaas-nlrs-1.0-centos-6.5-SA (d015745d-0f61-4122-acfe-e578dee89e3f)
Open



Top-20 VM with CPU Contention

Top 15 Highest Utilization

Utilization Index	Objects
4.57	VS-CirrusVcs-01
4.4	vDemo-vCenter-01
4.08	Site 2 Log Insight
3.76	Site 1 Log Insight
3.63	VS-Win7-01
3.18	core-site-2-vc
3.08	VMSG-Admin-Iwan

Top-20 VM with Memory Contention

Top 15 Highest Utilization

Utilization Index	Objects
0.012	Hadoop1-ComputeMaster-0
0.006	Hadoop1-Client-0
0	Windows 10 Home edition
0	SRM-Demo-VM-Photon-Micro
0	Hadoop1-Worker-0
0	Site 2 vSphere Replication
0	vRealize Infrastructure Navig...

Top-20 VM with Disk Latency

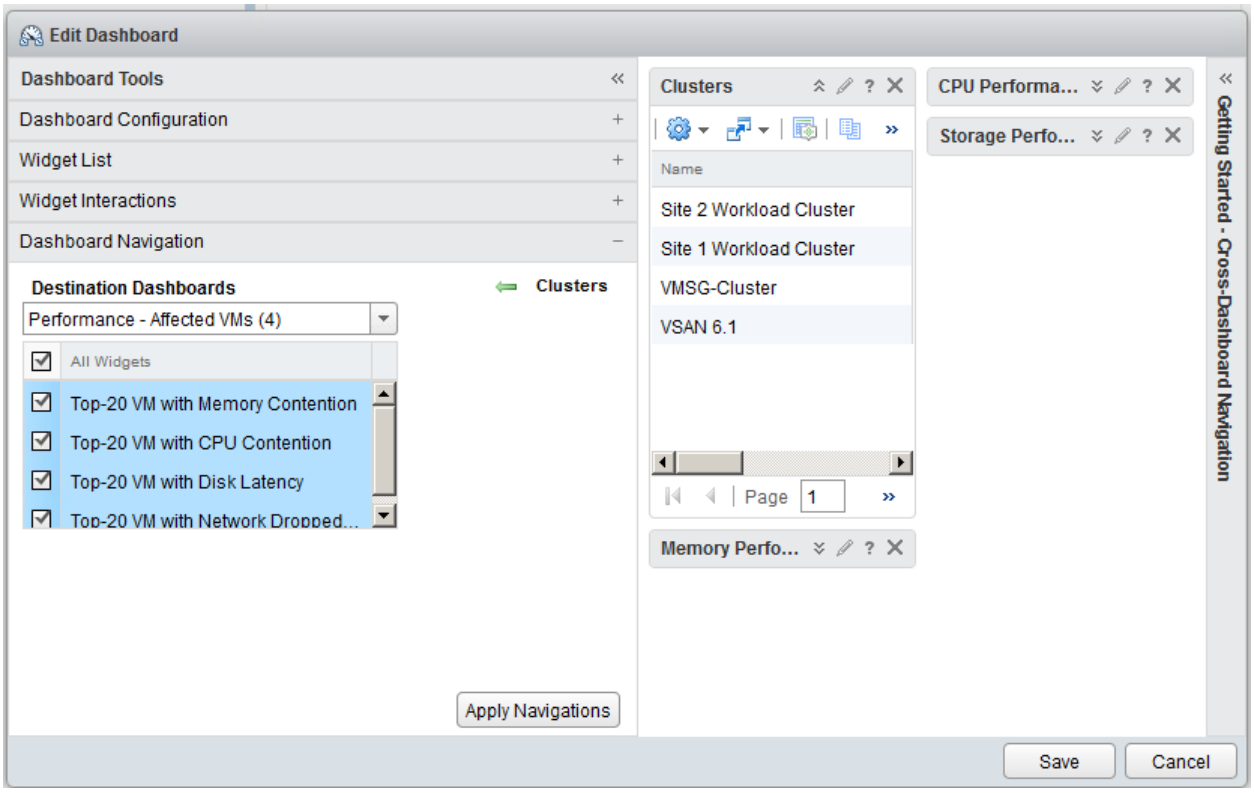
Top 15 Highest Utilization

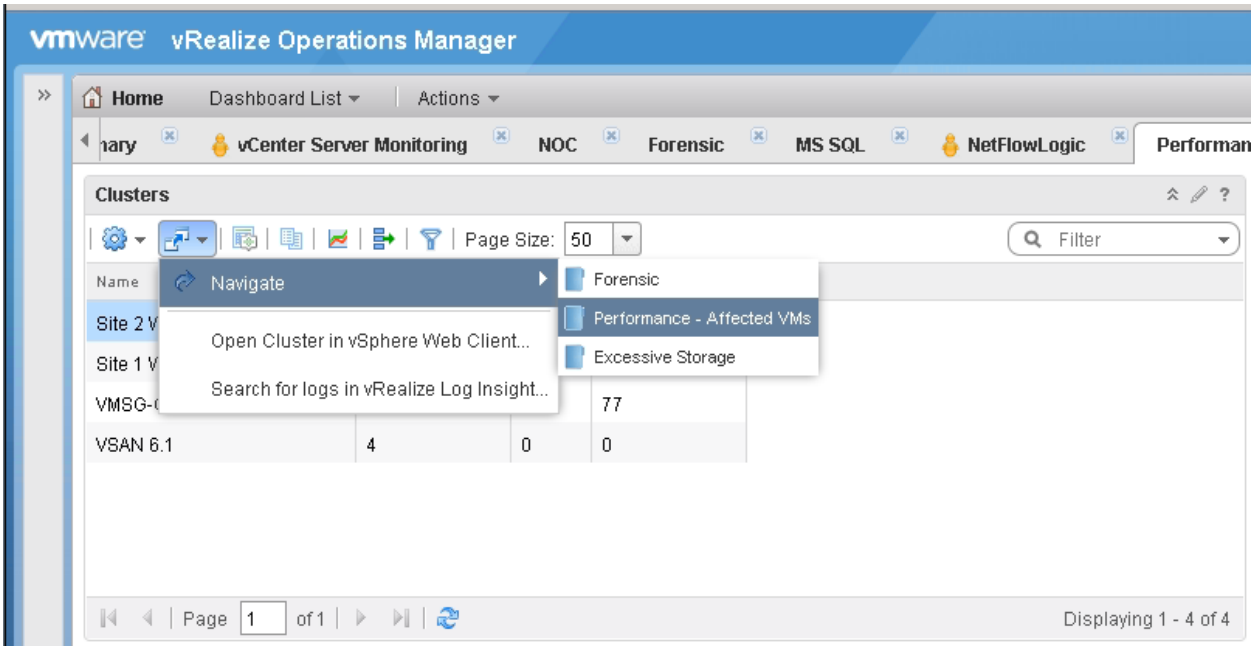
Utilization Index	Objects
18.69	vRealize Operations 6.1
15.75	core-site-1-vc
15.05	EUC_Nov_20152
14.57	vRealize Ops 6.1 Clustered
8.36	core-site-2-vc
7.54	VMSG-VC
4.93	management-server

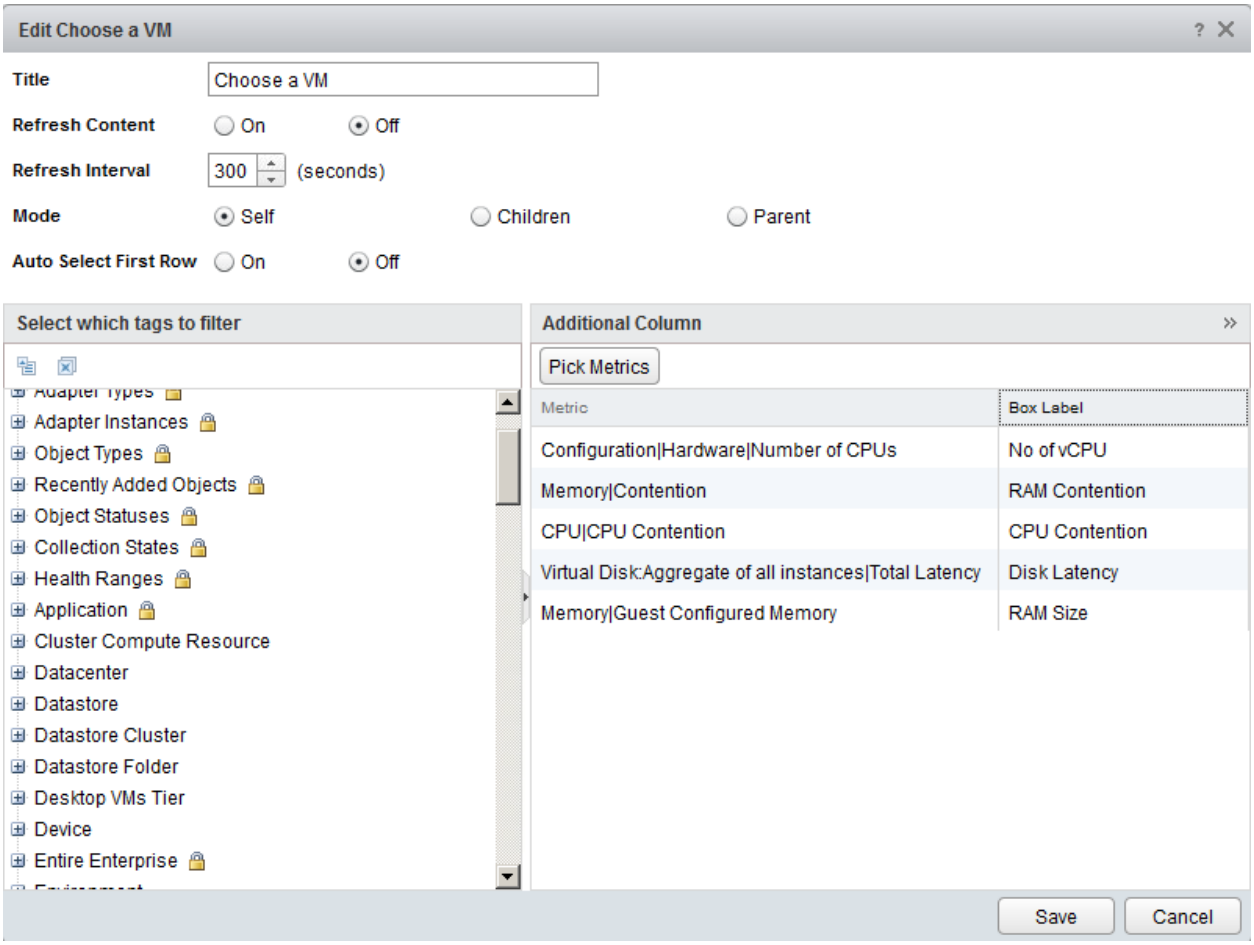
Top-20 VM with Network Dropped Packet

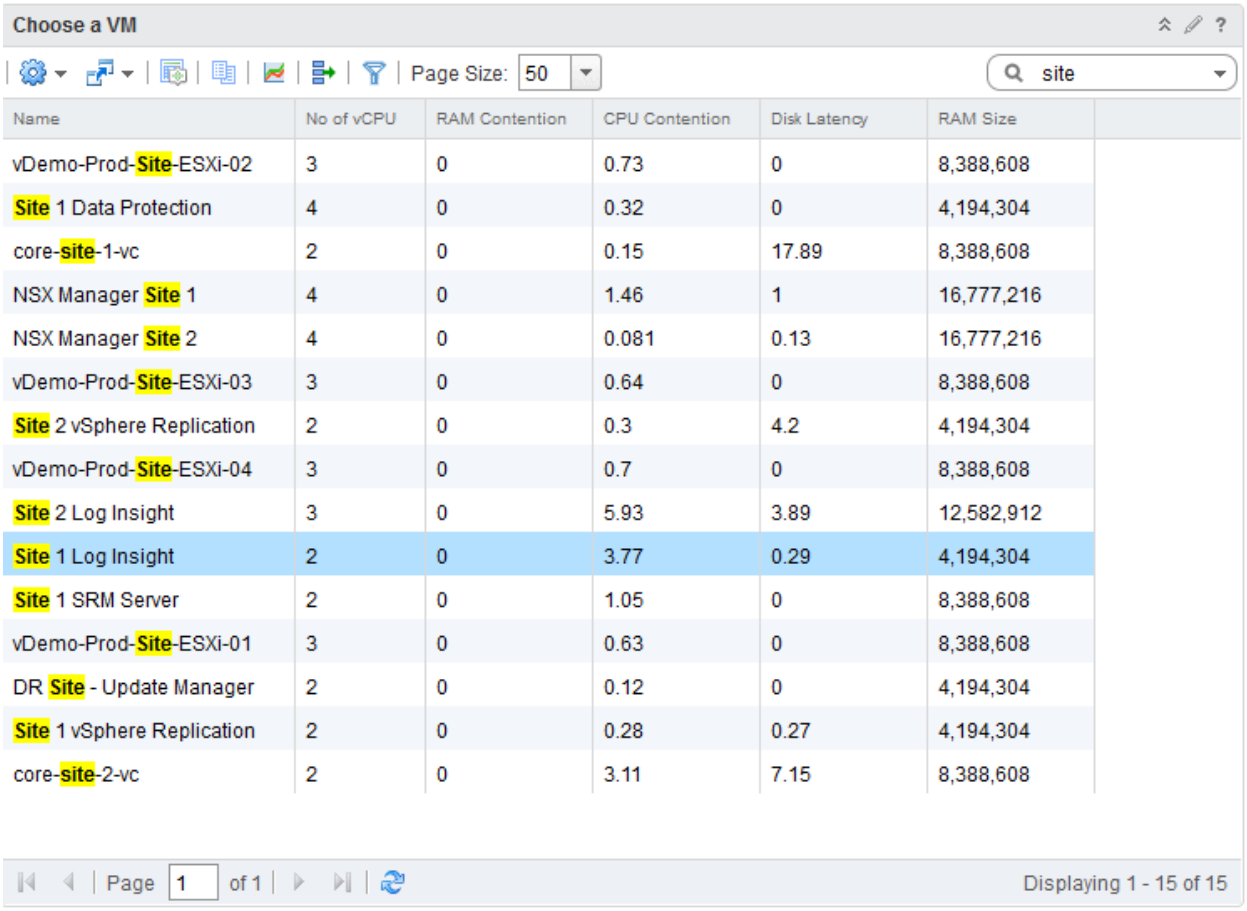
Top 15 Highest Utilization

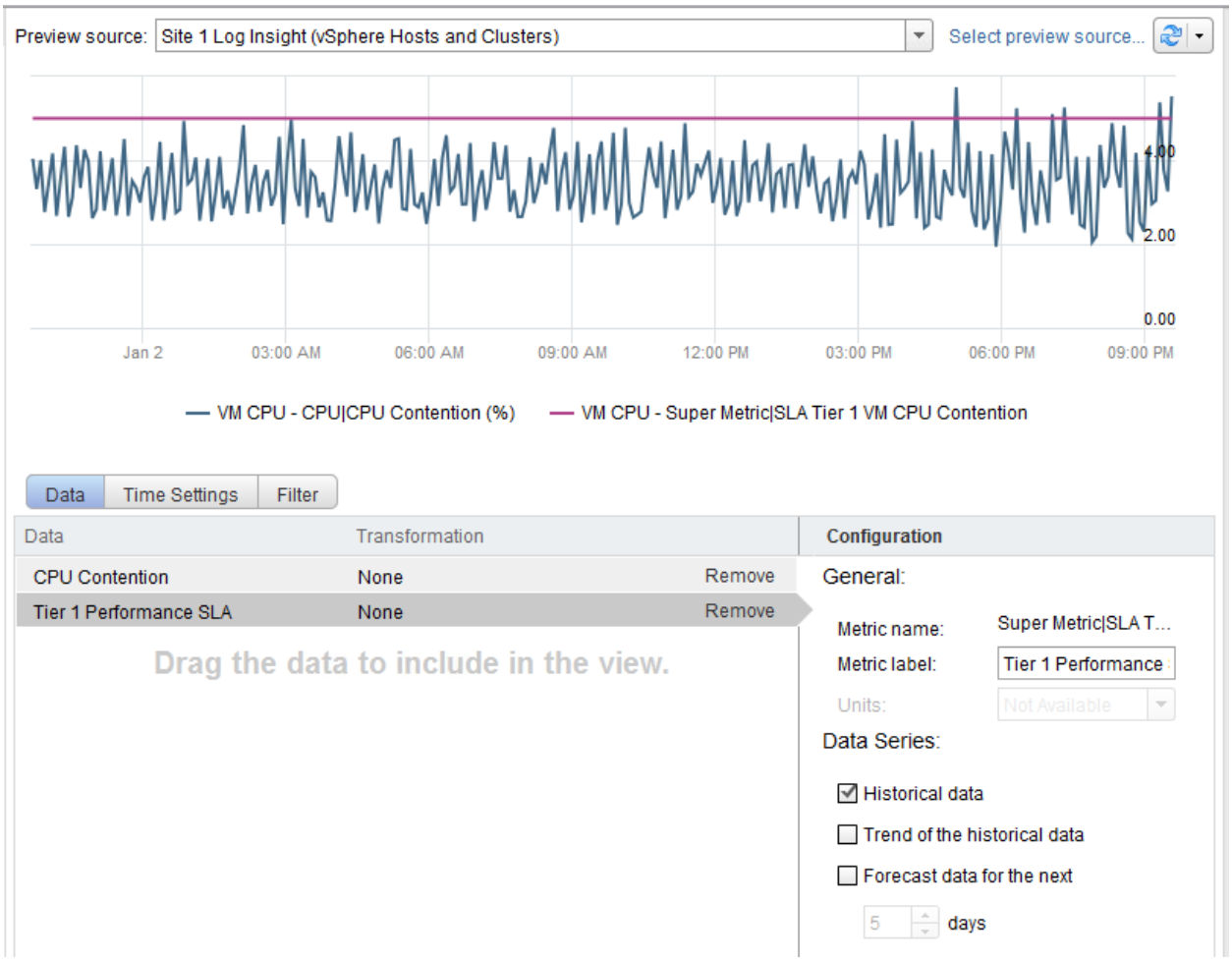
Utilization Index	Objects
100	Windows 10 Home edition
100	vDemo-Prod-Site-ESXi-04
100	vDemo-Prod-Site-ESXi-02
100	vDemo-Prod-Site-ESXi-03
74.91	VS-CirrusDem-02
73.97	VMSG-App-Volume-Manager
54.92	SDDC-vRA7-IaaS


Edit Dashboard
Dashboard Tools
Dashboard Configuration
Widget List
Widget Interactions
Dashboard Navigation
Destination Dashboards
Clusters
Performance - Affected VMs (4)
All Widgets
Top-20 VM with Memory Contention
Top-20 VM with CPU Contention
Top-20 VM with Disk Latency
Top-20 VM with Network Dropped...
Apply Navigations
Clusters
Name
Site 2 Workload Cluster
Site 1 Workload Cluster
VMSG-Cluster
VSAN 6.1
Page 1
CPU Performa...
Storage Perfo...
Memory Perfo...
Getting Started - Cross-Dashboard Navigation
Save
Cancel


vmware vRealize Operations Manager
Home
Dashboard List
Actions
vCenter Server Monitoring
NOC
Forensic
MS SQL
NetFlowLogic
Clusters
Page Size: 50
Filter
Name
Navigate
Forensic
Performance - Affected VMs
Excessive Storage
Open Cluster in vSphere Web Client...
Search for logs in vRealize Log Insight...
VSAN 6.1
4
0
0
77
Page 1 of 1
Displaying 1 - 4 of 4


Edit Choose a VM
Title
Choose a VM
Refresh Content
On
Off
Refresh Interval
300
(seconds)
Mode
Self
Children
Parent
Auto Select First Row
On
Off
Select which tags to filter
Adapter Instances
Object Types
Recently Added Objects
Object Statuses
Collection States
Health Ranges
Application
Cluster Compute Resource
Datacenter
Datastore
Datastore Cluster
Datastore Folder
Desktop VMs Tier
Device
Entire Enterprise
Additional Column
Pick Metrics
Metric
Box Label
Configuration|Hardware|Number of CPUs
No of vCPU
Memory|Contention
RAM Contention
CPU|CPU Contention
CPU Contention
Virtual Disk:Aggregate of all instances|Total Latency
Disk Latency
Memory|Guest Configured Memory
RAM Size
Save
Cancel


Choose a VM
Page Size: 50
site
Name
No of vCPU
RAM Contention
CPU Contention
Disk Latency
RAM Size
vDemo-Prod-Site-ESXi-02 3 0 0.73 0 8,388,608
Site 1 Data Protection 4 0 0.32 0 4,194,304
core-site-1-vc 2 0 0.15 17.89 8,388,608
NSX Manager Site 1 4 0 1.46 1 16,777,216
NSX Manager Site 2 4 0 0.081 0.13 16,777,216
vDemo-Prod-Site-ESXi-03 3 0 0.64 0 8,388,608
Site 2 vSphere Replication 2 0 0.3 4.2 4,194,304
vDemo-Prod-Site-ESXi-04 3 0 0.7 0 8,388,608
Site 2 Log Insight 3 0 5.93 3.89 12,582,912
Site 1 Log Insight 2 0 3.77 0.29 4,194,304
Site 1 SRM Server 2 0 1.05 0 8,388,608
vDemo-Prod-Site-ESXi-01 3 0 0.63 0 8,388,608
DR Site - Update Manager 2 0 0.12 0 4,194,304
Site 1 vSphere Replication 2 0 0.28 0.27 4,194,304
core-site-2-vc 2 0 3.11 7.15 8,388,608
Page 1 of 1
Displaying 1 - 15 of 15


Preview source: Site 1 Log Insight (vSphere Hosts and Clusters)
Select preview source...
4.00
2.00
0.00
Jan 2
03:00 AM
06:00 AM
09:00 AM
12:00 PM
03:00 PM
06:00 PM
09:00 PM
VM CPU - CPU|CPU Contention (%)
VM CPU - Super Metric|SLA Tier 1 VM CPU Contention
Data
Time Settings
Filter
Data
Transformation
Configuration
CPU Contention
None
Remove
Tier 1 Performance SLA
None
Remove
Drag the data to include in the view.
General:
Metric name:
Super Metric|SLA T...
Metric label:
Tier 1 Performance
Units:
Not Available
Data Series:
Historical data
Trend of the historical data
Forecast data for the next
5
days

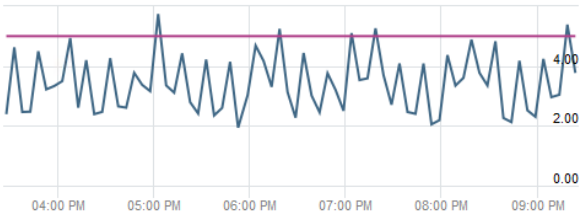
Choose a VM

Page Size: 50

Name	No of vCPU	RAM Contention	CPU Contention	Disk La
vDemo-Prod-Site-ESXi-02	3	0	0.73	0
Site 1 Data Protection	4	0	0.32	0
core-site-1-vc	2	0	0.15	17.89
NSX Manager Site 1	4	0	1.46	1
NSX Manager Site 2	4	0	0.081	0.13
vDemo-Prod-Site-ESXi-03	3	0	0.64	0
Site 2 vSphere Replication	2	0	0.3	4.2
vDemo-Prod-Site-ESXi-04	3	0	0.7	0
Site 2 Log Insight	3	0	5.93	3.89
Site 1 Log Insight	2	0	3.77	0.29
Site 1 SRM Server	2	0	1.05	0
vDemo-Prod-Site-ESXi-01	3	0	0.63	0
DR Site - Update Manager	2	0	0.12	0
Site 1 vSphere Replication	2	0	0.28	0.27
core-site-2-vc	2	0	3.11	7.15

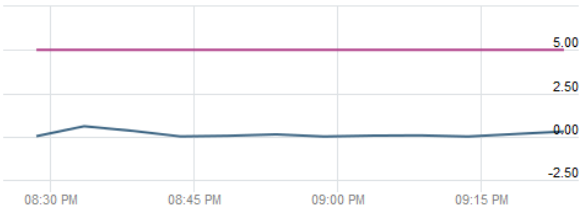
Page 1 of 1 Displaying 1 - 15 of 15

VM CPU Contention



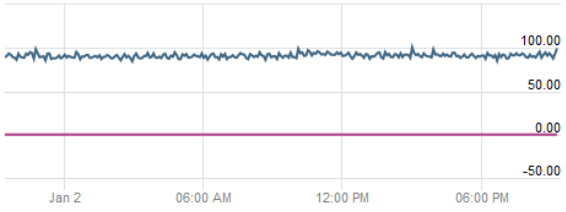
VM CPU - CPU|CPU Contention (%)
VM CPU - Super Metric|SLA Tier 1 VM CPU Contention

VM Disk Latency



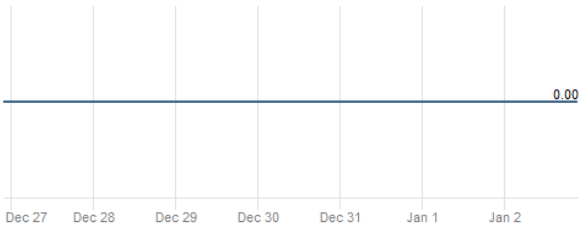
VM Disk Latency - Disk Latency (ms)
VM Disk Latency - Super Metric|SLA Tier 1 VM Disk Latency

VM Network

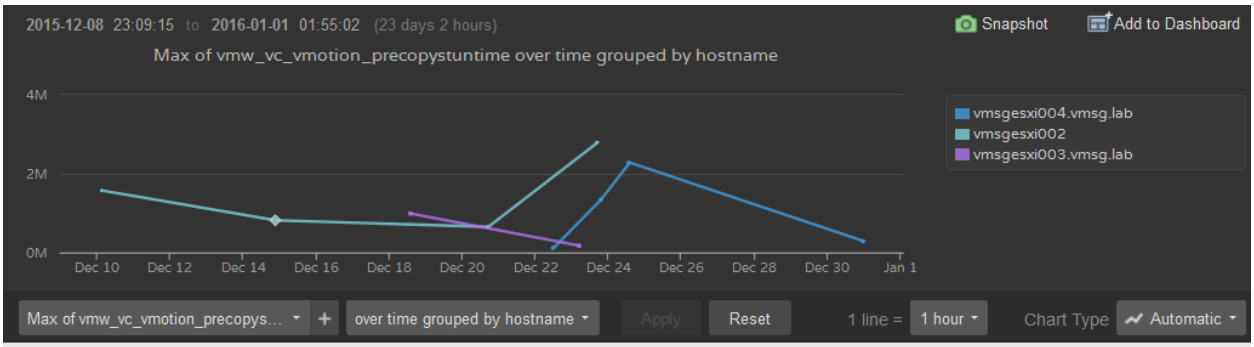


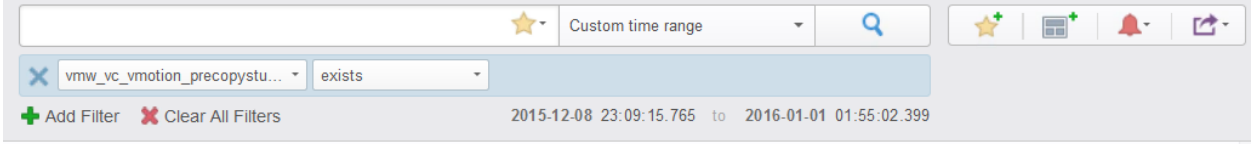
VM Network - Network I/O|Received Packets Dropped
VM Network - Network I/O|Transmitted Packets Dropped

VM RAM



VM RAM - Memory|Contention (%)





Events | **Field Table** | Event Types | Event Trends

1 to 13 out of 13 events | Columns (11 Hidden) | Sort: Newest First

timestamp	vmw_cluster	hostname	vMotion pre-copy Stun Time
2015-12-31 00:15:30.583	Site 2 Workload Cluster	vmsgesxi004.vmsg.lab	283159
2015-12-31 00:14:32.830	Site 2 Workload Cluster	vmsgesxi004.vmsg.lab	216860
2015-12-31 00:14:17.758	Site 2 Workload Cluster	vmsgesxi004.vmsg.lab	75048
2015-12-24 14:16:12.629	Site 2 Workload Cluster	vmsgesxi004.vmsg.lab	2230344
2015-12-24 14:15:26.330	Site 2 Workload Cluster	vmsgesxi004.vmsg.lab	2285267

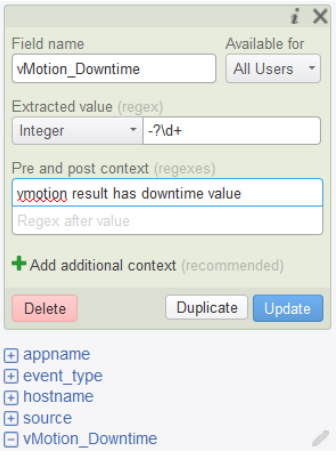
2015-10-15 03:08:13.624
2015-10-14T19:08:13.625Z vmsgesxi009.vmsg.lab Vpxa: verbose vpxa[2FA58B70] [Originator@6876 sub=vpxaMoVMotion opID=task-internal-1-55e83917-e9-74-da-63-bf-21] [MIGRATE] (1444849658469502) vmotion result has downtime value 1100519
source event_type hostname appname vmw_esxi_severity vmw_opid vMotion_Downtime

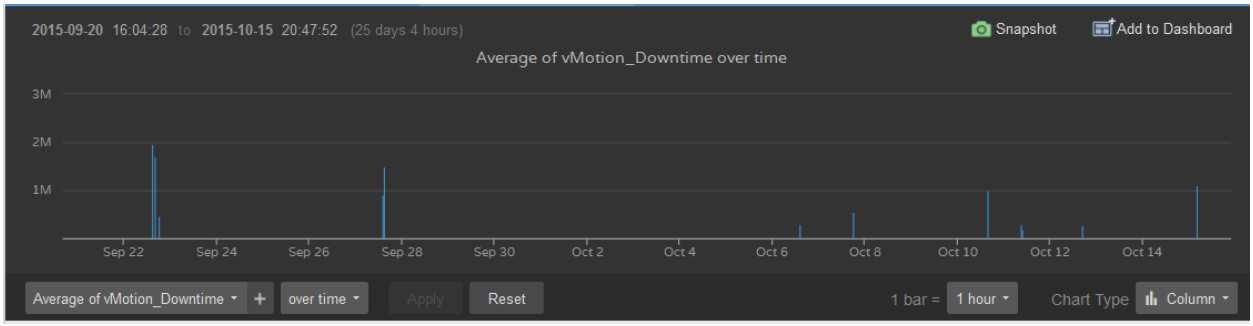
2015-10-12 16:21:42.876
2015-10-12T08:18:33.452Z vmsgesxi008.vmsg.lab Vpxa: verbose vpxa[FFC27A60] [Originator@6876 sub=vpxaMoVMotion opID=29CDCA91-000002CC-f-67-14-b1] [MIGRATE] (1444638095028193) vmotion result has downtime value 266677
source event_type hostname appname vmw_esxi_severity vmw_opid vMotion_Downtime

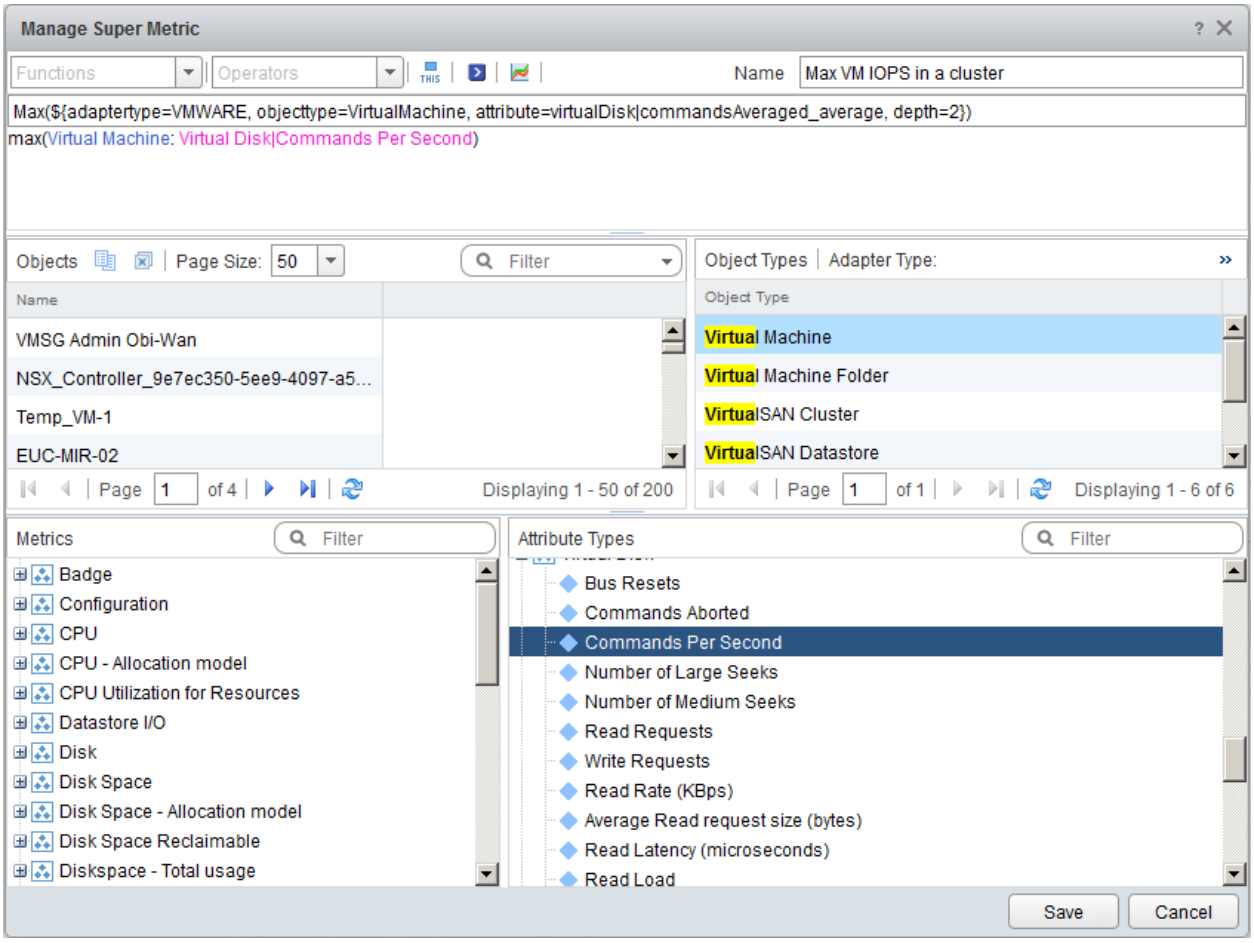
2015-10-11 09:03:14.355
2015-10-11T01:03:14.367Z vmsgesxi009.vmsg.lab Vpxa: verbose vpxa[2F9F5B70] [Originator@6876 sub=vpxaMoVMotion opID=task-internal-1-55e83917-24-69-ff-33-21-c7] [MIGRATE] (1444525358542515) vmotion result has downtime value 186037
source event_type hostname appname vmw_esxi_severity vmw_opid vMotion_Downtime

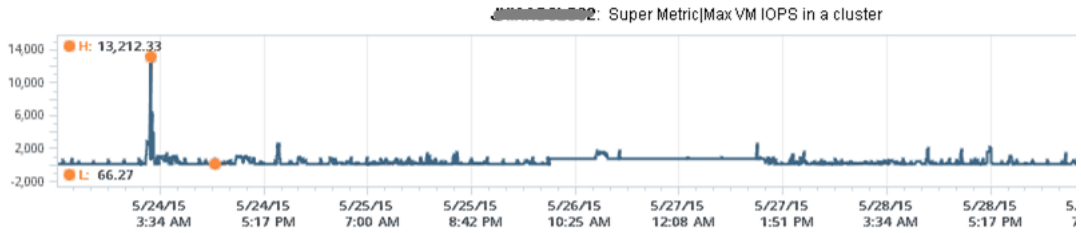
2015-10-11 08:58:32.808
2015-10-11T00:58:32.827Z vmsgesxi009.vmsg.lab Vpxa: verbose vpxa[2F9B3B70] [Originator@6876 sub=vpxaMoVMotion opID=task-internal-1-55e83917-e7-c7-ae-a2-6b-66] [MIGRATE] (1444525058259012) vmotion result has downtime value 172812
source event_type hostname appname vmw_esxi_severity vmw_opid vMotion_Downtime

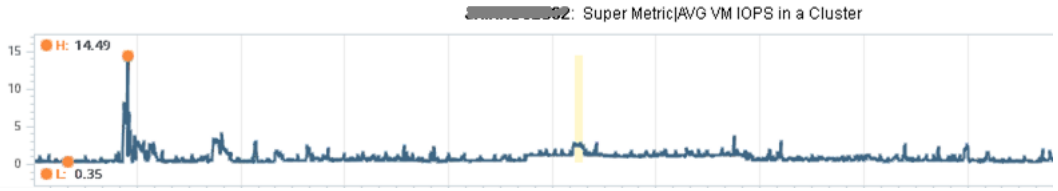
2015-10-11
2015-10-11T00:58:18.876Z vmsgesxi009.vmsg.lab Vpxa: verbose vpxa[2F869B70] [Originator@6876

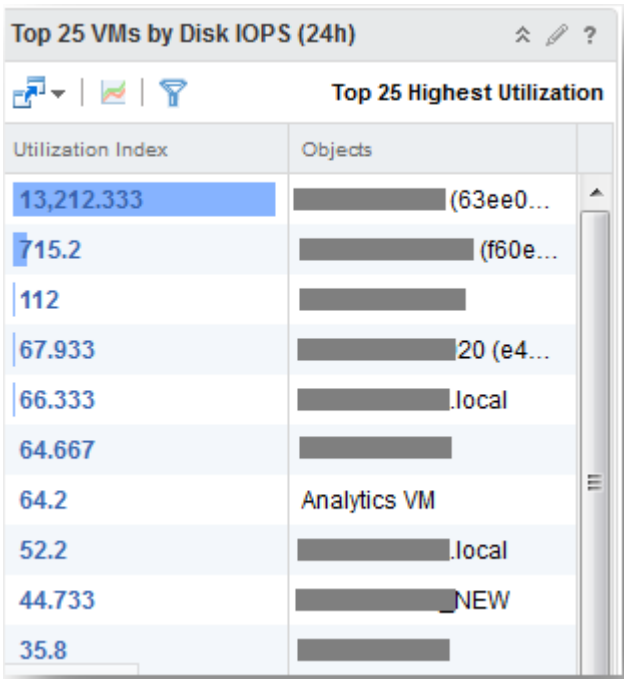


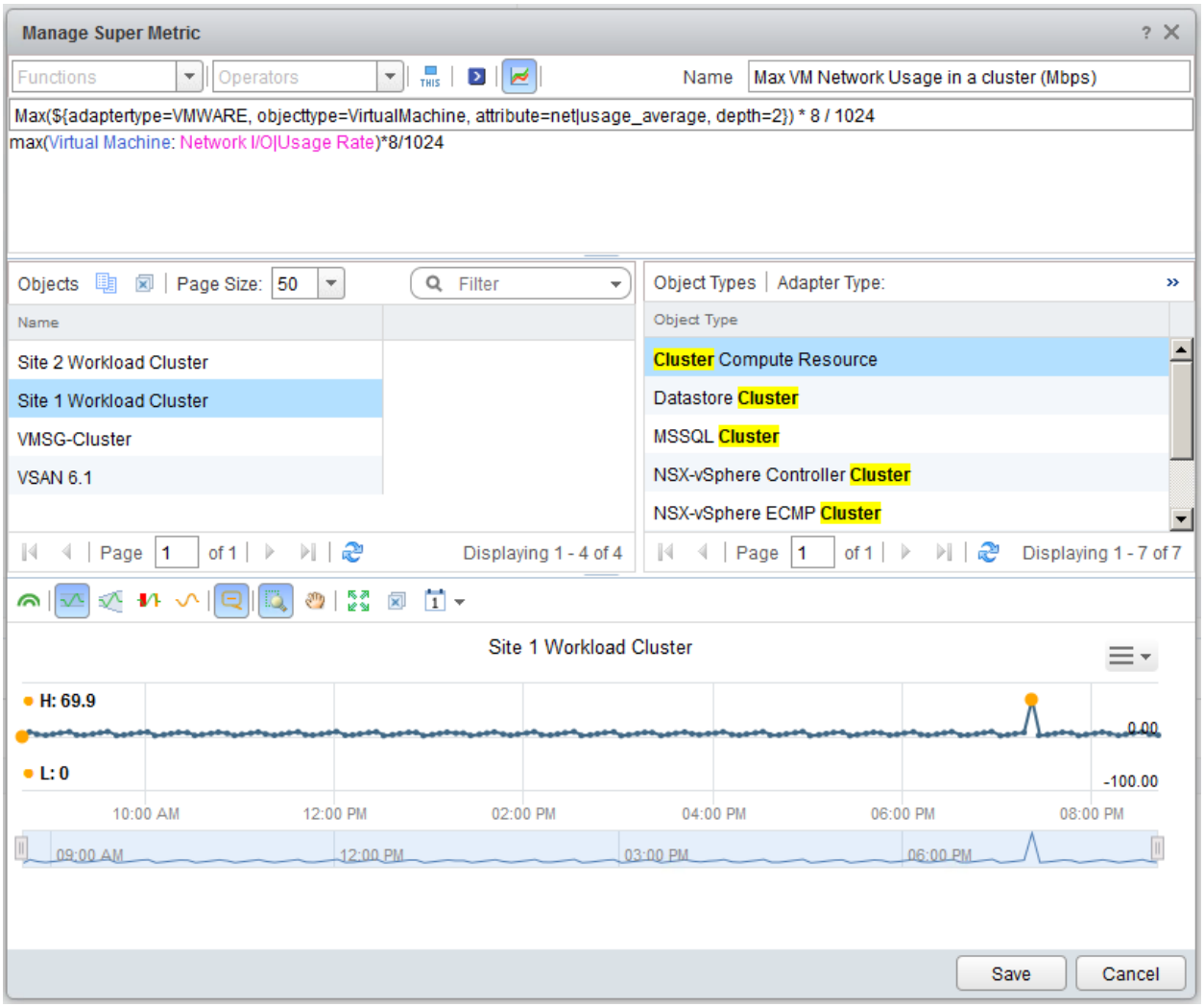



Manage Super Metric
Functions
Operators
THIS
Name
Max VM IOPS in a cluster
Max(${adaptertype=VMWARE, objecttype=VirtualMachine, attribute=virtualDisk|commandsAveraged_average, depth=2})
max(Virtual Machine: Virtual Disk|Commands Per Second)
Objects
Page Size: 50
Filter
Name
VMSG Admin Obi-Wan
NSX_Controller_9e7ec350-5ee9-4097-a5...
Temp_VM-1
EUC-MIR-02
Page 1 of 4
Displaying 1 - 50 of 200
Object Types | Adapter Type:
Object Type
Virtual Machine
Virtual Machine Folder
VirtualSAN Cluster
VirtualSAN Datastore
Page 1 of 1
Displaying 1 - 6 of 6
Metrics
Filter
Badge
Configuration
CPU
CPU - Allocation model
CPU Utilization for Resources
Datastore I/O
Disk
Disk Space
Disk Space - Allocation model
Disk Space Reclaimable
Diskspace - Total usage
Attribute Types
Filter
Bus Resets
Commands Aborted
Commands Per Second
Number of Large Seeks
Number of Medium Seeks
Read Requests
Write Requests
Read Rate (KBps)
Average Read request size (bytes)
Read Latency (microseconds)
Read Load
Save
Cancel

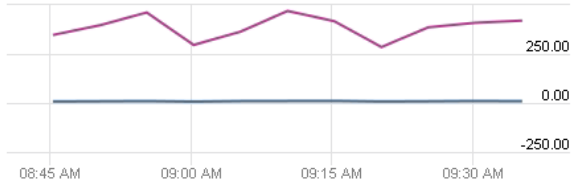

[redacted]: Super Metric|Max VM IOPS in a cluster
H: 13,212.33
L: 66.27
14,000
10,000
6,000
2,000
-2,000
5/24/15 3:34 AM
5/24/15 5:17 PM
5/25/15 7:00 AM
5/25/15 8:42 PM
5/26/15 10:25 AM
5/27/15 12:08 AM
5/27/15 1:51 PM
5/28/15 3:34 AM
5/28/15 5:17 PM


[redacted]: Super Metric|AVG VM IOPS in a Cluster
H: 14.49
L: 0.35
15
10
5
0


Top 25 VMs by Disk IOPS (24h)
Top 25 Highest Utilization
Utilization Index
Objects
13,212.333
(63ee0...
715.2
(f60e...
112
67.933
20 (e4...
66.333
.local
64.667
64.2
Analytics VM
52.2
.local
44.733
_NEW
35.8

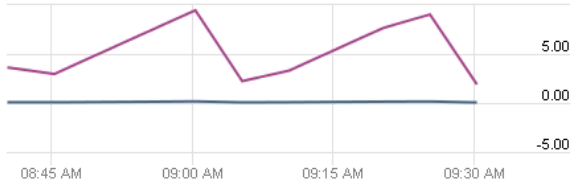

Manage Super Metric
Functions
Operators
THIS
Name
Max VM Network Usage in a cluster (Mbps)
Max(${adaptertype=VMWARE, objecttype=VirtualMachine, attribute=net|usage_average, depth=2}) * 8 / 1024
max(Virtual Machine: Network I/O|Usage Rate)*8/1024
Objects
Page Size: 50
Filter
Name
Site 2 Workload Cluster
Site 1 Workload Cluster
VMSG-Cluster
VSAN 6.1
Page 1 of 1
Displaying 1 - 4 of 4
Object Types
Adapter Type:
Object Type
Cluster Compute Resource
Datastore Cluster
MSSQL Cluster
NSX-vSphere Controller Cluster
NSX-vSphere ECMP Cluster
Page 1 of 1
Displaying 1 - 7 of 7
Site 1 Workload Cluster
H: 69.9
L: 0
0.00
-100.00
10:00 AM
12:00 PM
02:00 PM
04:00 PM
06:00 PM
08:00 PM
09:00 AM
12:00 PM
03:00 PM
06:00 PM
Save
Cancel

VM IOPS in a cluster



Cluster VM IOPS - Average IOPS
Cluster VM IOPS - Maximum IOPS

VM Network Usage in a cluster (Mbps)



VM Network Usage in a cluster - Average Usage (Mbps)
VM Network Usage in a cluster - Maximum Usage (Mbps)

Top-20 VM IOPS

Top 15 Highest Utilization

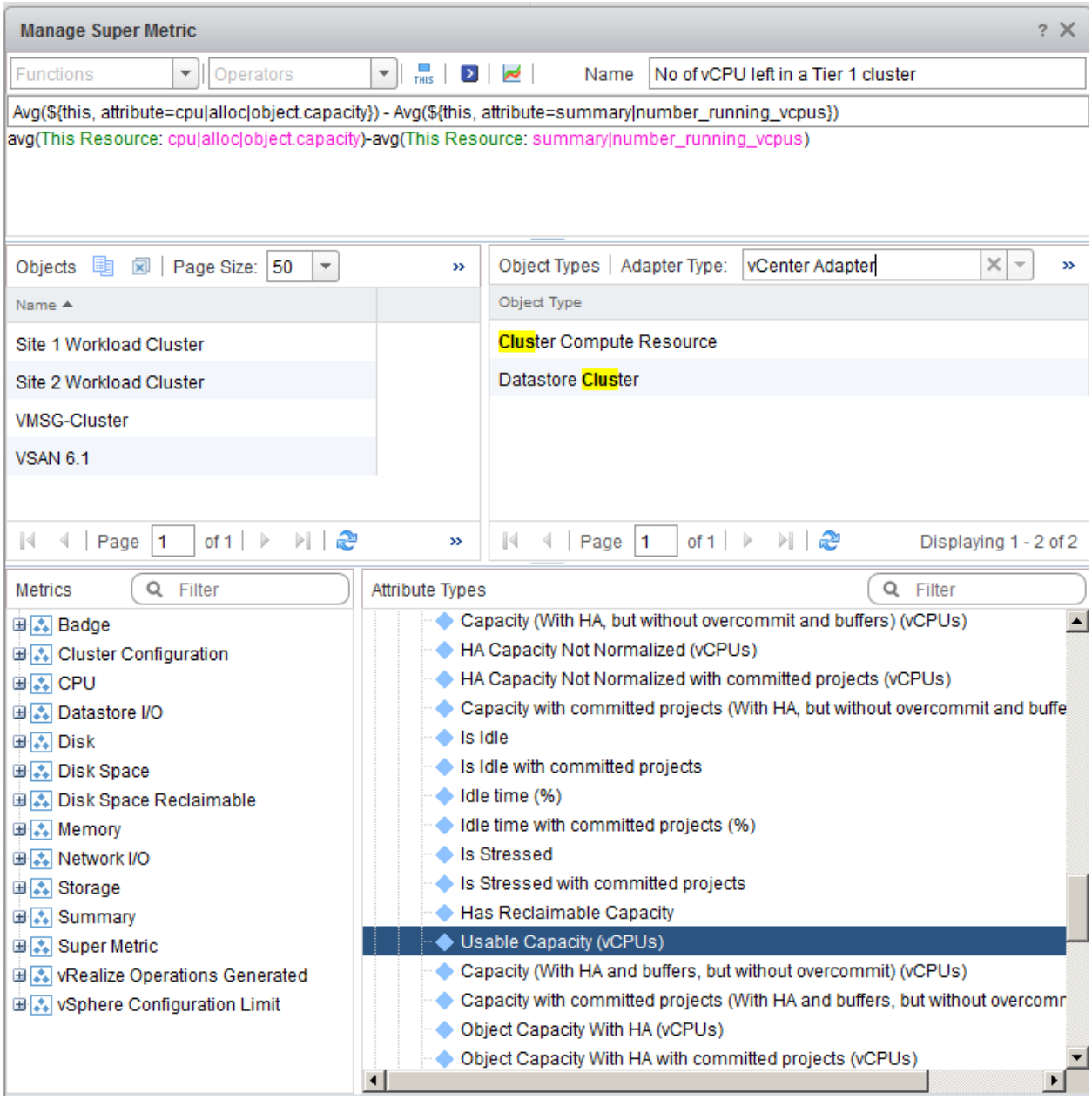
Utilization Index	Objects
347	Site 1 Data Protection
49.6	NSX_Controller_0d4eeda9-2348-4...
49.53	NSX_Controller_28371594-b316-4...
49.2	NSX_Controller_9e7ec350-5ee9-40...
16.2	Site 1 Log Insight
5.6	VS-CirrusEsx-01
4.33	Site 1 SRM Server

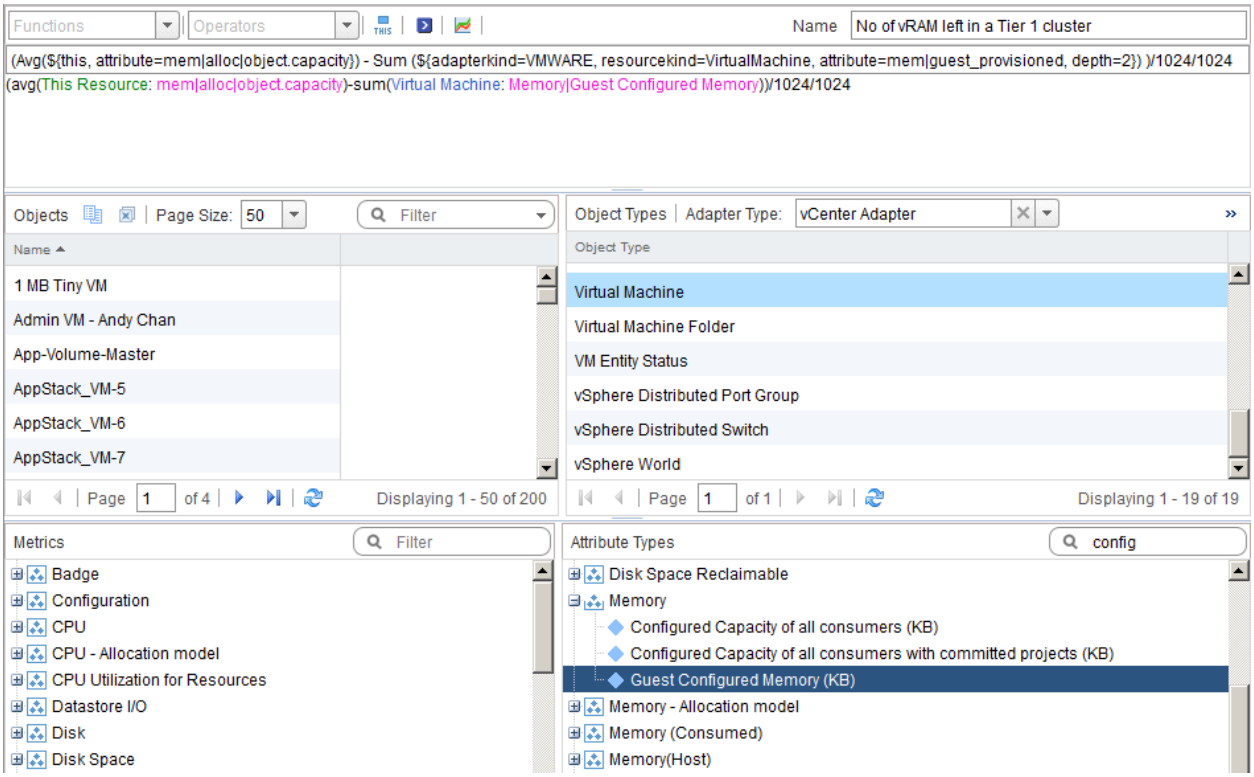
Top-20 VM Network Usage (KBps)

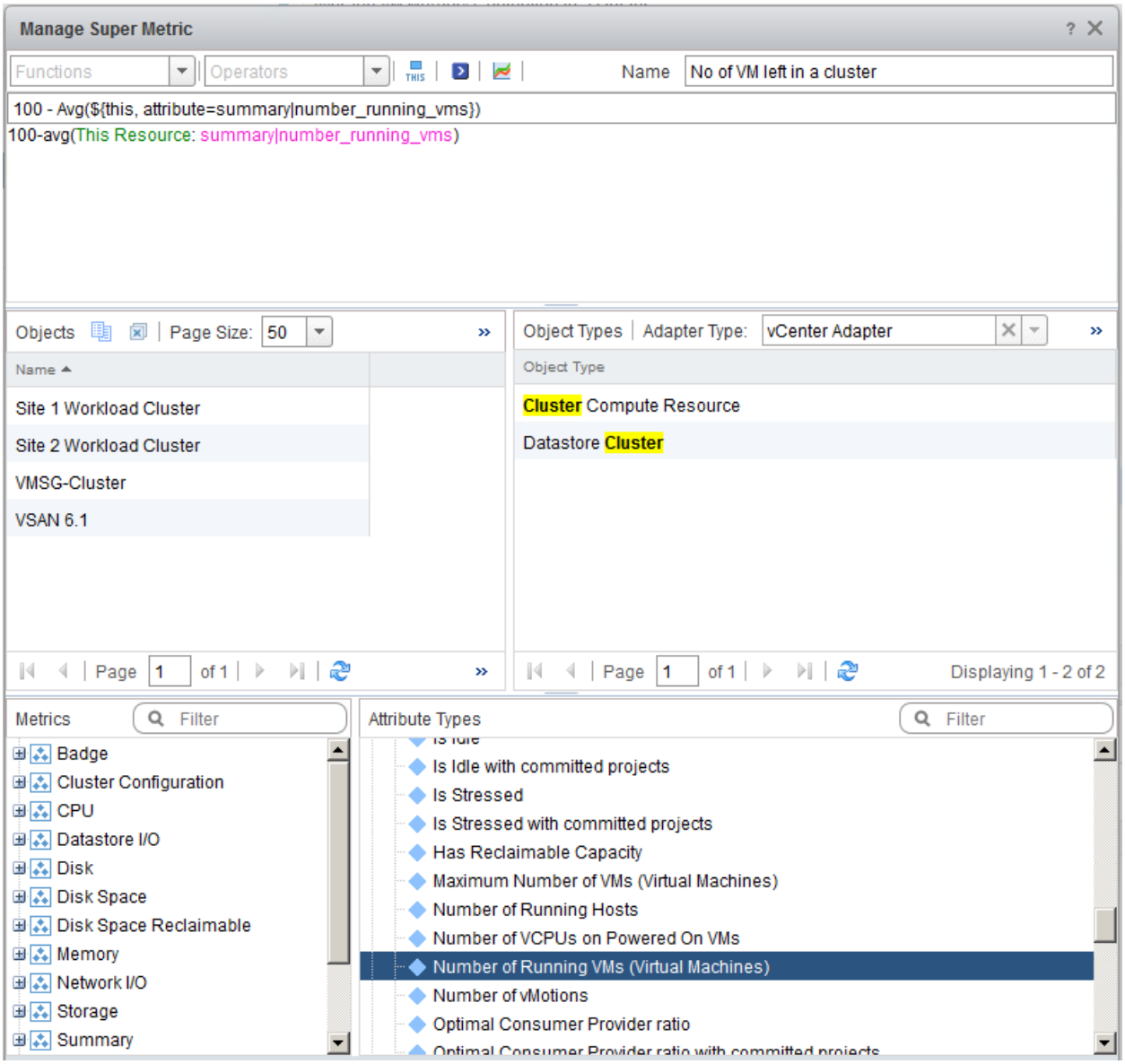
Top 15 Highest Utilization

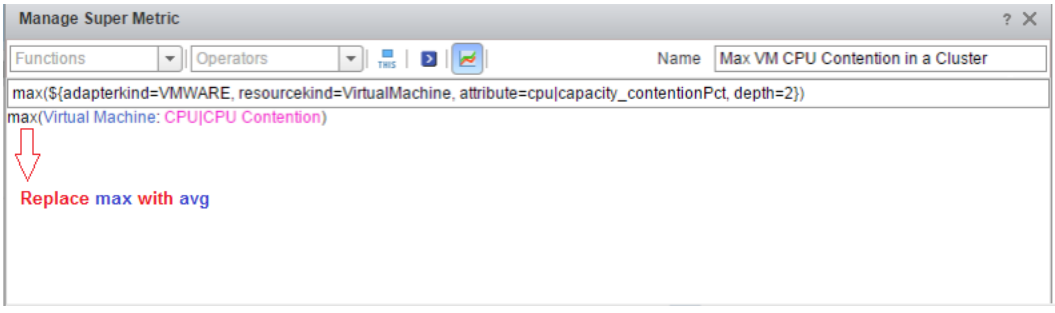
Utilization Index	Objects
464.13	NSX_Controller_0d4eeda9-2348-4...
263.67	NSX_Controller_28371594-b316-4...
244.2	NSX_Controller_9e7ec350-5ee9-40...
241.67	Site 1 vSphere Replication
42.8	VS-CirrusEsx-01
20.27	Mgmt Shared DB
18	Site 1 Data Protection

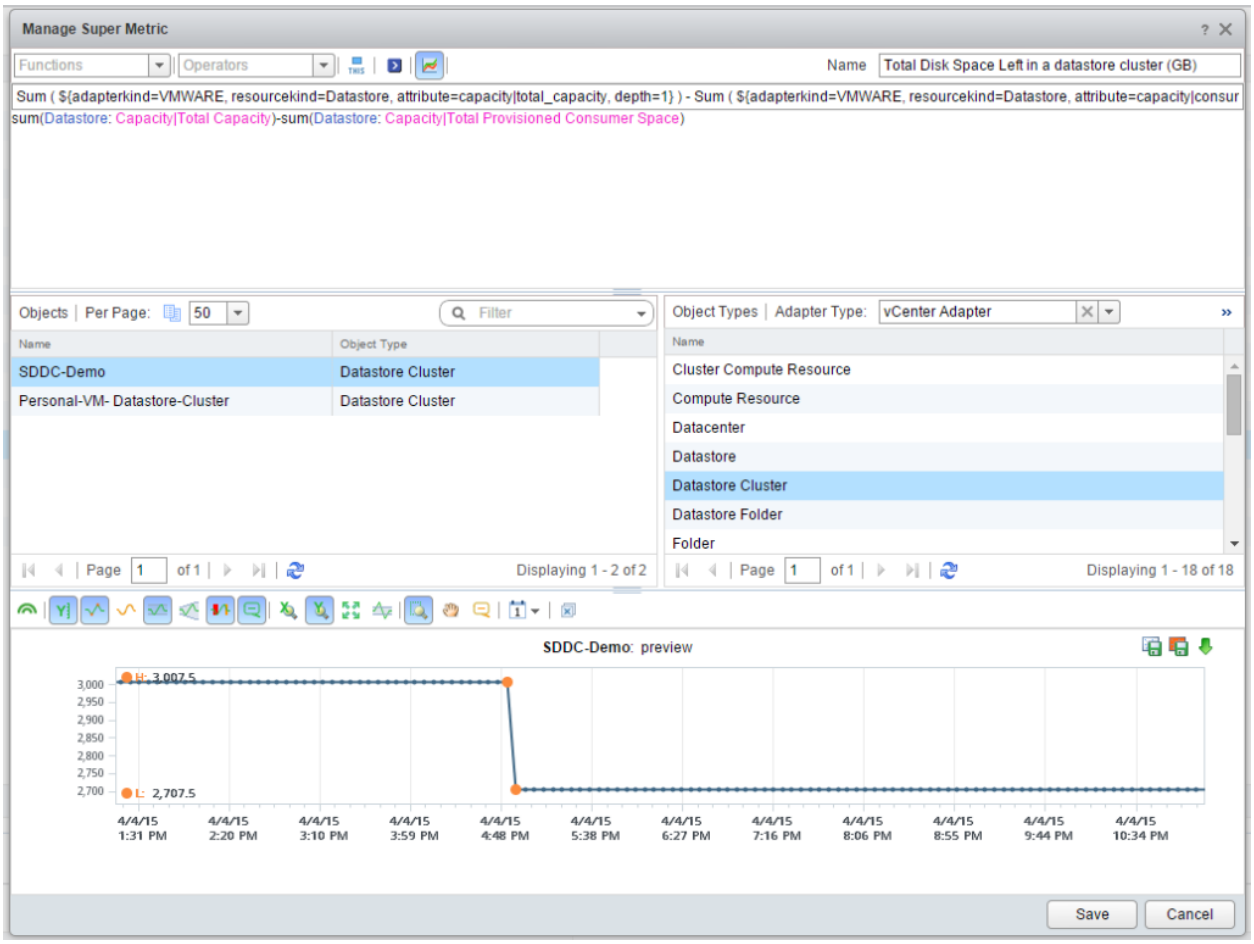
Chapter 7: Capacity-Monitoring Dashboards

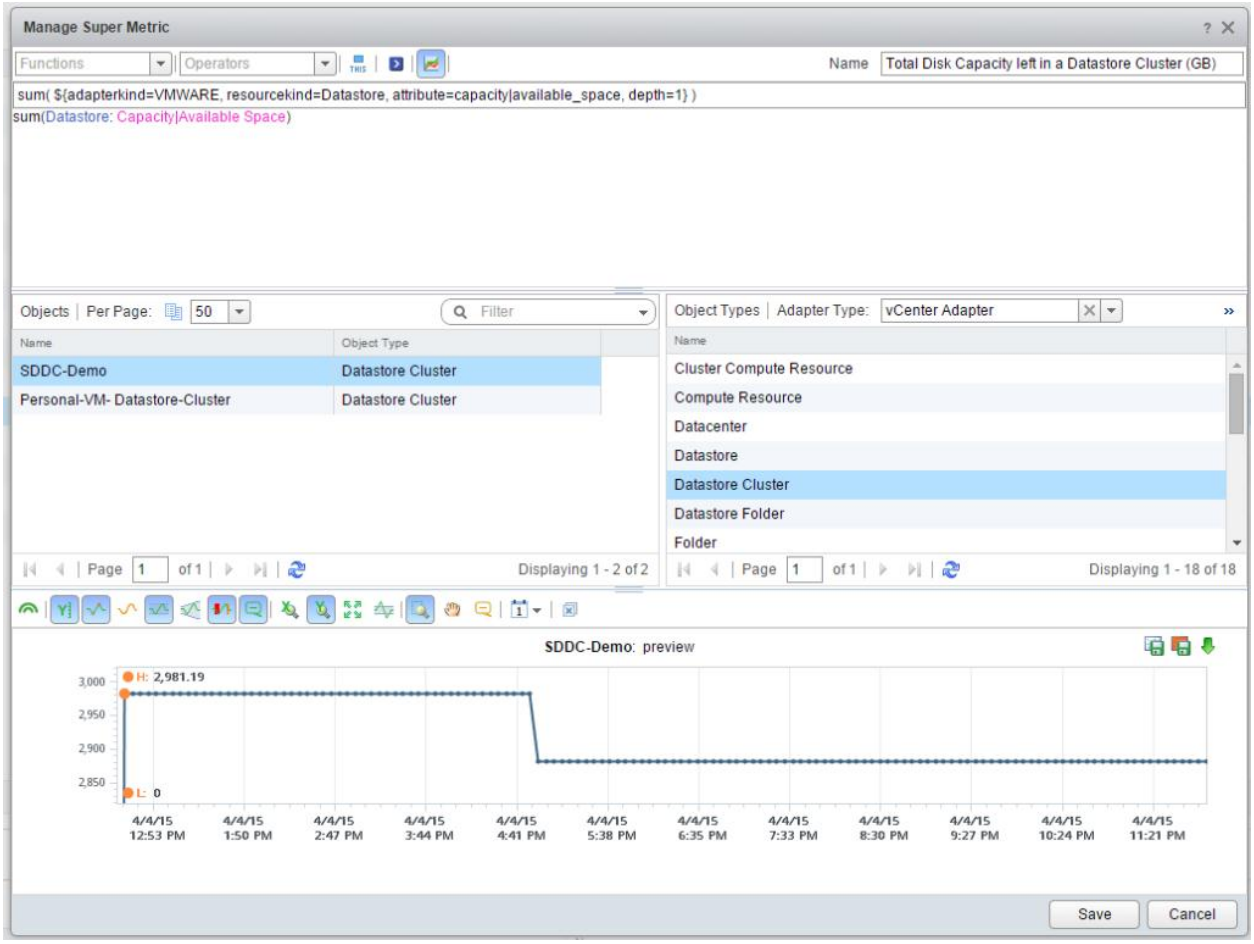


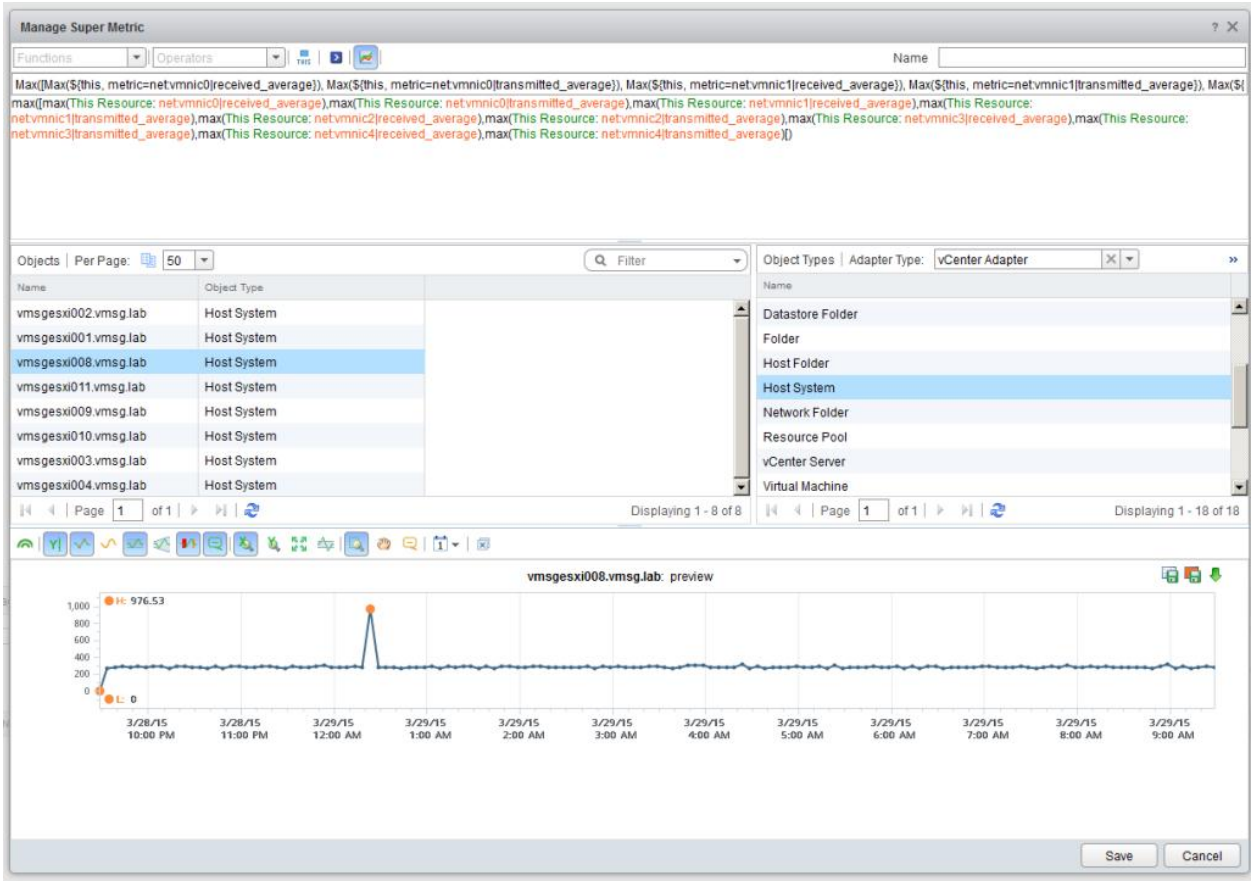

Functions
Operators
Name
No of vRAM left in a Tier 1 cluster
(Avg(${this, attribute=mem|alloc|object.capacity}) - Sum (${adapterkind=VMWARE, resourcekind=VirtualMachine, attribute=mem|guest_provisioned, depth=2}))/1024/1024
(avg(This Resource: mem|alloc|object.capacity)-sum(Virtual Machine: Memory|Guest Configured Memory))/1024/1024
Objects
Page Size: 50
Filter
Name
1 MB Tiny VM
Admin VM - Andy Chan
App-Volume-Master
AppStack_VM-5
AppStack_VM-6
AppStack_VM-7
Page 1 of 4
Displaying 1 - 50 of 200
Object Types
Adapter Type: vCenter Adapter
Object Type
Virtual Machine
Virtual Machine Folder
VM Entity Status
vSphere Distributed Port Group
vSphere Distributed Switch
vSphere World
Page 1 of 1
Displaying 1 - 19 of 19
Metrics
Filter
Badge
Configuration
CPU
CPU - Allocation model
CPU Utilization for Resources
Datastore I/O
Disk
Disk Space
Attribute Types
config
Disk Space Reclaimable
Memory
Configured Capacity of all consumers (KB)
Configured Capacity of all consumers with committed projects (KB)
Guest Configured Memory (KB)
Memory - Allocation model
Memory (Consumed)
Memory(Host)

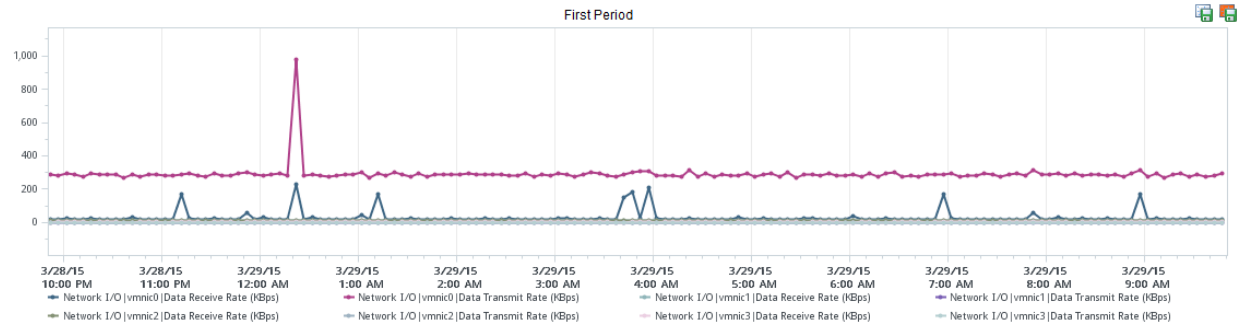

Manage Super Metric
Functions
Operators
Name
No of VM left in a cluster
100 - Avg(${this, attribute=summary|number_running_vms})
100-avg(This Resource: summary|number_running_vms)
Objects
Page Size:
50
Name
Site 1 Workload Cluster
Site 2 Workload Cluster
VMSG-Cluster
VSAN 6.1
Page
1
of 1
Object Types
Adapter Type:
vCenter Adapter
Object Type
Cluster Compute Resource
Datastore Cluster
Page
1
of 1
Displaying 1 - 2 of 2
Metrics
Filter
Badge
Cluster Configuration
CPU
Datastore I/O
Disk
Disk Space
Disk Space Reclaimable
Memory
Network I/O
Storage
Summary
Attribute Types
Filter
Is Idle with committed projects
Is Stressed
Is Stressed with committed projects
Has Reclaimable Capacity
Maximum Number of VMs (Virtual Machines)
Number of Running Hosts
Number of VCPUs on Powered On VMs
Number of Running VMs (Virtual Machines)
Number of vMotions
Optimal Consumer Provider ratio


Manage Super Metric
Functions
Operators
Name
Max VM CPU Contention in a Cluster
max(${adapterkind=VMWARE, resourcekind=VirtualMachine, attribute=cpu|capacity_contentionPct, depth=2})
max(Virtual Machine: CPU|CPU Contention)
Replace max with avg


Manage Super Metric
Functions
Operators
Name
Total Disk Space Left in a datastore cluster (GB)
Sum (${adapterkind=VMWARE, resourcekind=Datastore, attribute=capacity|total_capacity, depth=1}) - Sum (${adapterkind=VMWARE, resourcekind=Datastore, attribute=capacity|consur
sum(Datastore: Capacity|Total Capacity)-sum(Datastore: Capacity|Total Provisioned Consumer Space)
Objects | Per Page: 50
Filter
Name
Object Type
SDDC-Demo
Datastore Cluster
Personal-VM- Datastore-Cluster
Datastore Cluster
Page 1 of 1
Displaying 1 - 2 of 2
Object Types | Adapter Type: vCenter Adapter
Name
Cluster Compute Resource
Compute Resource
Datacenter
Datastore
Datastore Cluster
Datastore Folder
Folder
Page 1 of 1
Displaying 1 - 18 of 18
SDDC-Demo: preview
H: 3,007.5
L: 2,707.5
3,000
2,950
2,900
2,850
2,800
2,750
2,700
4/4/15 1:31 PM
4/4/15 2:20 PM
4/4/15 3:10 PM
4/4/15 3:59 PM
4/4/15 4:48 PM
4/4/15 5:38 PM
4/4/15 6:27 PM
4/4/15 7:16 PM
4/4/15 8:06 PM
4/4/15 8:55 PM
4/4/15 9:44 PM
4/4/15 10:34 PM
Save
Cancel


Manage Super Metric
Functions
Operators
Name
Total Disk Capacity left in a Datastore Cluster (GB)
sum(${adapterkind=VMWARE, resourcekind=Datastore, attribute=capacity|available_space, depth=1})
sum(Datastore: Capacity|Available Space)
Objects | Per Page: 50
Filter
Name
Object Type
SDDC-Demo
Datastore Cluster
Personal-VM- Datastore-Cluster
Datastore Cluster
Page 1 of 1
Displaying 1 - 2 of 2
Object Types | Adapter Type: vCenter Adapter
Name
Cluster Compute Resource
Compute Resource
Datacenter
Datastore
Datastore Cluster
Datastore Folder
Folder
Page 1 of 1
Displaying 1 - 18 of 18
SDDC-Demo: preview
H: 2,981.19
L: 0
3,000
2,950
2,900
2,850
4/4/15 12:53 PM
4/4/15 1:50 PM
4/4/15 2:47 PM
4/4/15 3:44 PM
4/4/15 4:41 PM
4/4/15 5:38 PM
4/4/15 6:35 PM
4/4/15 7:33 PM
4/4/15 8:30 PM
4/4/15 9:27 PM
4/4/15 10:24 PM
4/4/15 11:21 PM
Save
Cancel





Functions | Operators | THIS | Name: Max vmnic utilization in a host

Max ([Max(${this, metric=net:vmnic0|received_average}), Max(${this, metric=net:vmnic0|transmitted_average}), Max(${this, metric=net:vmnic1|receive

```
max([max(This Resource: net:vmnic0|received_average),max(This Resource: net:vmnic0|transmitted_average),max(This Resource: net:vmnic1|received_average),max(This Resource: net:vmnic1|transmitted_average),max(This Resource: net:vmnic2|received_average),max(This Resource: net:vmnic2|transmitted_average),max(This Resource: net:vmnic3|received_average),max(This Resource: net:vmnic3|transmitted_average)])*8/1024
```

Functions | Operators | THIS | Name: Max vmnic utilisation at Cluster level

Max(${adaptertype=VMWARE, objecttype=HostSystem, attribute=Super Metric|sm_078d7de5-1d67-4303-a6a1-50f5c22717da, depth=1})

max(Host System: Super Metric|Max vmnic utilization in a host)

Objects | Page Size: 50

Name

172.16.100.32
172.16.100.33
172.16.100.35
172.16.100.36
vmsgesxi001.vmsg.lab
vmsgesxi002.vmsg.lab
vmsgesxi003.vmsg.lab
vmsgesxi004.vmsg.lab

Page 1 of 1

Object Types | Adapter Type: vCenter Adapter

Object Type

Host Folder
Host System

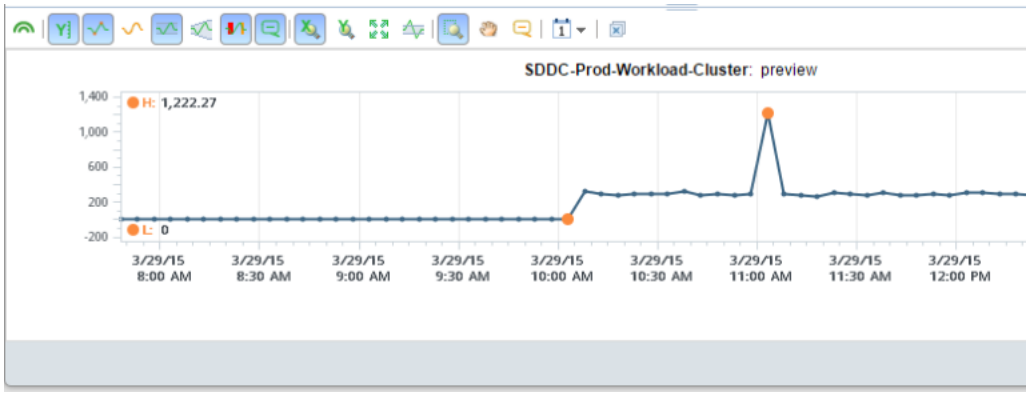
Page 1 of 1 | Displaying 1 - 2 of 2

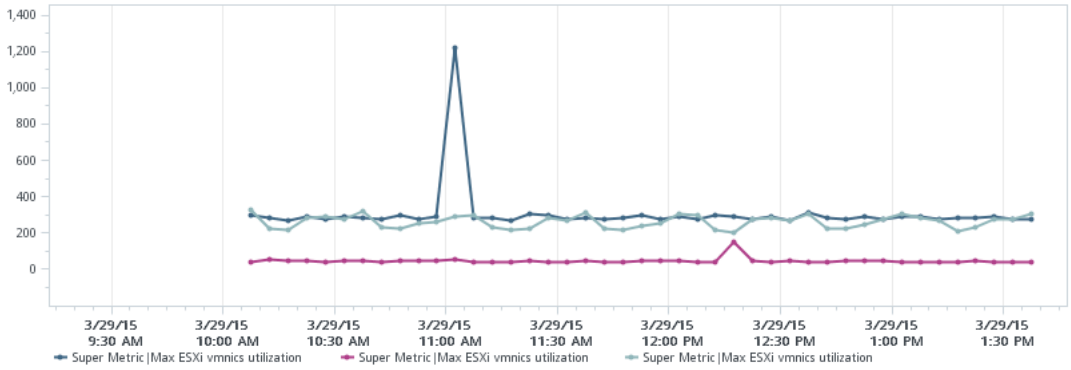
Metrics | Filter

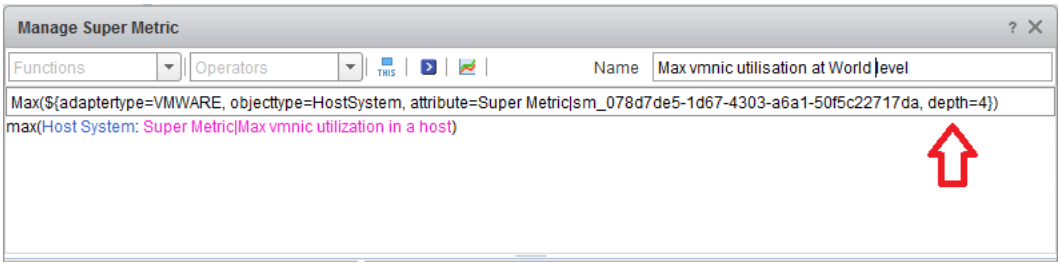
Badge
Configuration
CPU
CPU Utilization for Resources
Datastore I/O
Disk
Disk Space
Disk Space Reclaimable
Hardware
Memory
Network I/O

Attribute Types | Filter

Storage Path
Summary
Super Metric
Max vmnic utilization in a host
Max VM IOPS in a cluster
System
vRealize Operations Generated
vRealize Operations Manager Generated Properties
VCM
vFlash Module
vSphere Configuration Limit




1,400
1,200
1,000
800
600
400
200
0
3/29/15 9:30 AM
3/29/15 10:00 AM
3/29/15 10:30 AM
3/29/15 11:00 AM
3/29/15 11:30 AM
3/29/15 12:00 PM
3/29/15 12:30 PM
3/29/15 1:00 PM
3/29/15 1:30 PM
Super Metric|Max ESXi vmnics utilization
Super Metric|Max ESXi vmnics utilization
Super Metric|Max ESXi vmnics utilization


Manage Super Metric
Functions
Operators
THIS
Name
Max vmnic utilisation at World level
Max(${adaptertype=VMWARE, objecttype=HostSystem, attribute=Super Metric|sm_078d7de5-1d67-4303-a6a1-50f5c22717da, depth=4})
max(Host System: Super Metric|Max vmnic utilization in a host)

Tier 2 Clusters

Page Size: 50

Name	No of Hosts	No of VMs	No of vCPUs
Site 2 Workload Cluster	3	37	54
Site 1 Workload Cluster	3	79	82
VMSG-Cluster	2	65	77
VSAN 6.1	4	5	0

Page 1 of 1 | Displaying 1 - 4 of 4

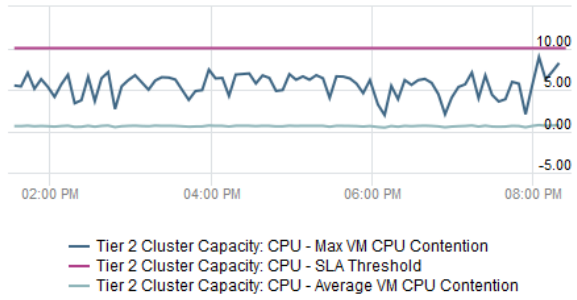
Tier 2 Datastore clusters

Page Size: 50

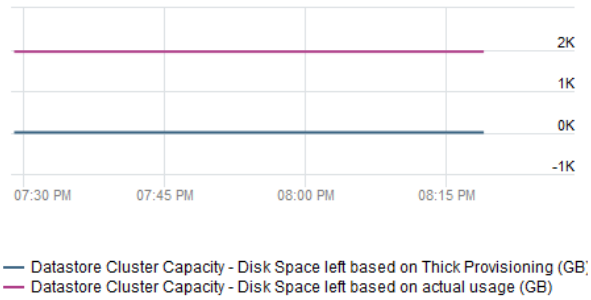
Name	Space left (GB): Thick Provisioning	Space left (GB): Thin
SM Datastore cluster	0	3.81
Site 1 Datastore Cluster	0	1,947.54

Page 1 of 1 | Displaying 1 - 2 of 2

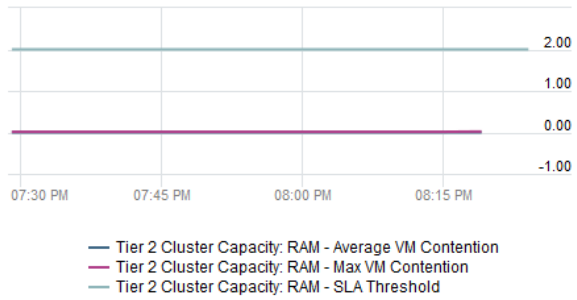
CPU portion



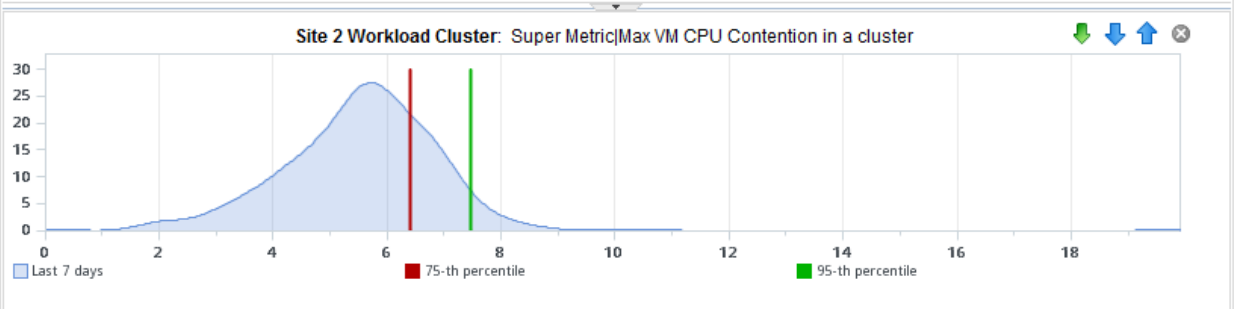
Storage portion

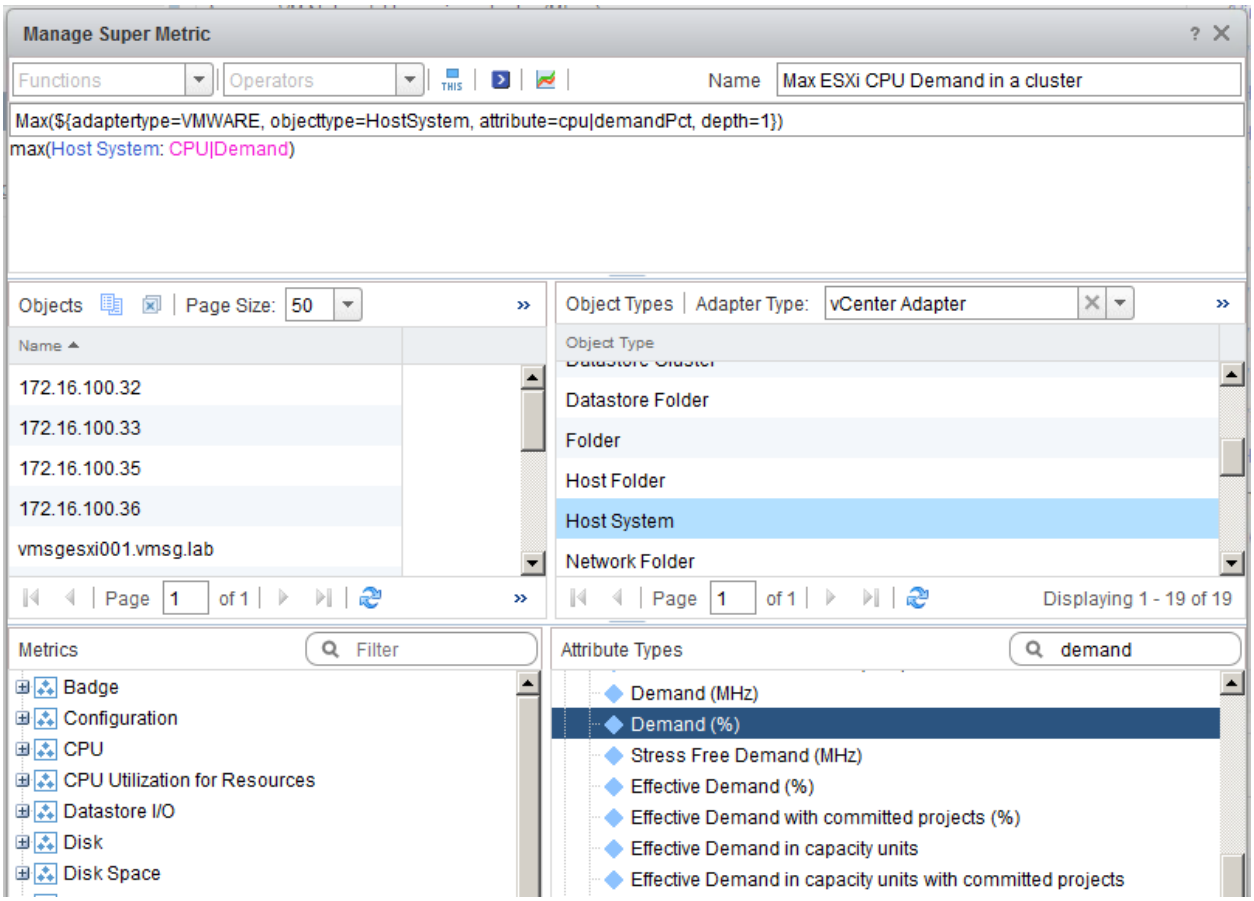


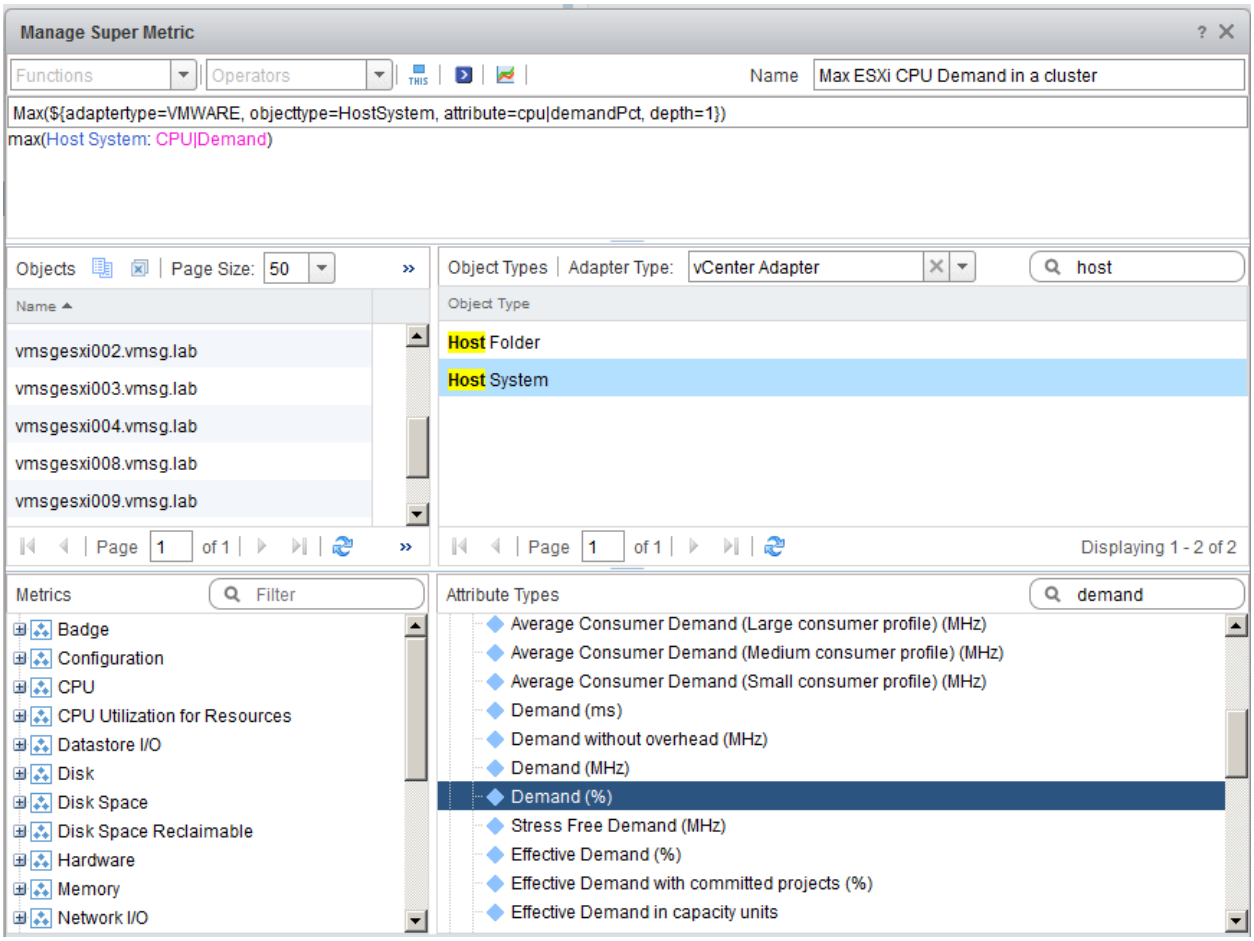
RAM portion

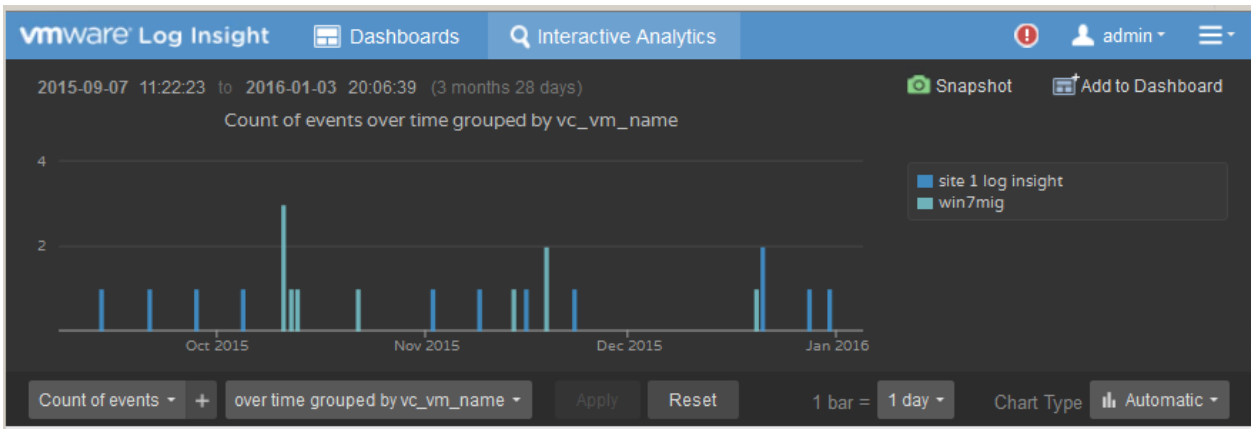


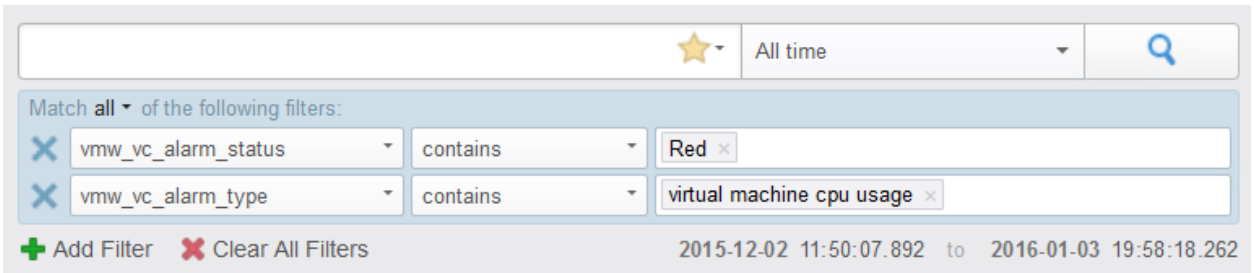
Forensics

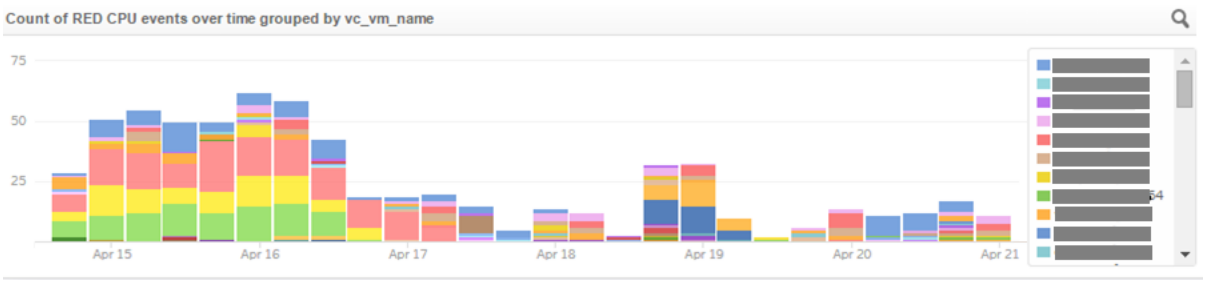



Manage Super Metric
Functions
Operators
Name
Max ESXi CPU Demand in a cluster
Max(${adaptertype=VMWARE, objecttype=HostSystem, attribute=cpu|demandPct, depth=1})
max(Host System: CPU|Demand)
Objects
Page Size: 50
Name
172.16.100.32
172.16.100.33
172.16.100.35
172.16.100.36
vmsgesxi001.vmsg.lab
Page 1 of 1
Object Types
Adapter Type: vCenter Adapter
Object Type
Datastore Folder
Folder
Host Folder
Host System
Network Folder
Page 1 of 1
Displaying 1 - 19 of 19
Metrics
Filter
Badge
Configuration
CPU
CPU Utilization for Resources
Datastore I/O
Disk
Disk Space
Attribute Types
demand
Demand (MHz)
Demand (%)
Stress Free Demand (MHz)
Effective Demand (%)
Effective Demand with committed projects (%)
Effective Demand in capacity units
Effective Demand in capacity units with committed projects


Manage Super Metric
Functions
Operators
THIS
Name
Max ESXi CPU Demand in a cluster
Max(${adaptertype=VMWARE, objecttype=HostSystem, attribute=cpu|demandPct, depth=1})
max(Host System: CPU|Demand)
Objects
Page Size: 50
Name
vmsgesxi002.vmsg.lab
vmsgesxi003.vmsg.lab
vmsgesxi004.vmsg.lab
vmsgesxi008.vmsg.lab
vmsgesxi009.vmsg.lab
Page 1 of 1
Object Types
Adapter Type: vCenter Adapter
host
Object Type
Host Folder
Host System
Page 1 of 1
Displaying 1 - 2 of 2
Metrics
Filter
Badge
Configuration
CPU
CPU Utilization for Resources
Datastore I/O
Disk
Disk Space
Disk Space Reclaimable
Hardware
Memory
Network I/O
Attribute Types
demand
Average Consumer Demand (Large consumer profile) (MHz)
Average Consumer Demand (Medium consumer profile) (MHz)
Average Consumer Demand (Small consumer profile) (MHz)
Demand (ms)
Demand without overhead (MHz)
Demand (MHz)
Demand (%)
Stress Free Demand (MHz)
Effective Demand (%)
Effective Demand with committed projects (%)
Effective Demand in capacity units


vmware Log Insight
Dashboards
Interactive Analytics
admin
2015-09-07 11:22:23 to 2016-01-03 20:06:39 (3 months 28 days)
Snapshot
Add to Dashboard
Count of events over time grouped by vc_vm_name
4
2
site 1 log insight
win7mig
Oct 2015
Nov 2015
Dec 2015
Jan 2016
Count of events
over time grouped by vc_vm_name
Apply
Reset
1 bar = 1 day
Chart Type
Automatic


All time
Match all of the following filters:
vmw_vc_alarm_status
contains
Red
vmw_vc_alarm_type
contains
virtual machine cpu usage
Add Filter
Clear All Filters
2015-12-02 11:50:07.892 to 2016-01-03 19:58:18.262



Events | **Field Table** | Event Types | Event Trends — **1** to **22** out of **22** events — Columns (13 Hidden) — Sort: Newest First

timestamp	vc_vm_name	vmw_cluster	vmw_host	vmw_vcenter
2015-12-30 22:06:19.675	Site 1 Log Insight	VMSG-Cluster	vmsgesxi011.vmsg.lab	VMSG VC
2015-12-27 18:05:18.015	Site 1 Log Insight	VMSG-Cluster	vmsgesxi011.vmsg.lab	VMSG VC
2015-12-20 15:43:38.512	Site 1 Log Insight			
2015-12-20 15:11:17.588	Site 1 Log Insight			
2015-12-19 21:44:44.835	Win7Mig			
2015-11-22 18:05:03.926	Site 1 Log Insight			
2015-11-18 22:27:56.081	Win7Mig			
2015-11-18 18:39:52.401	Win7Mig			

New group

Name Large VM (4 vCPU or more)

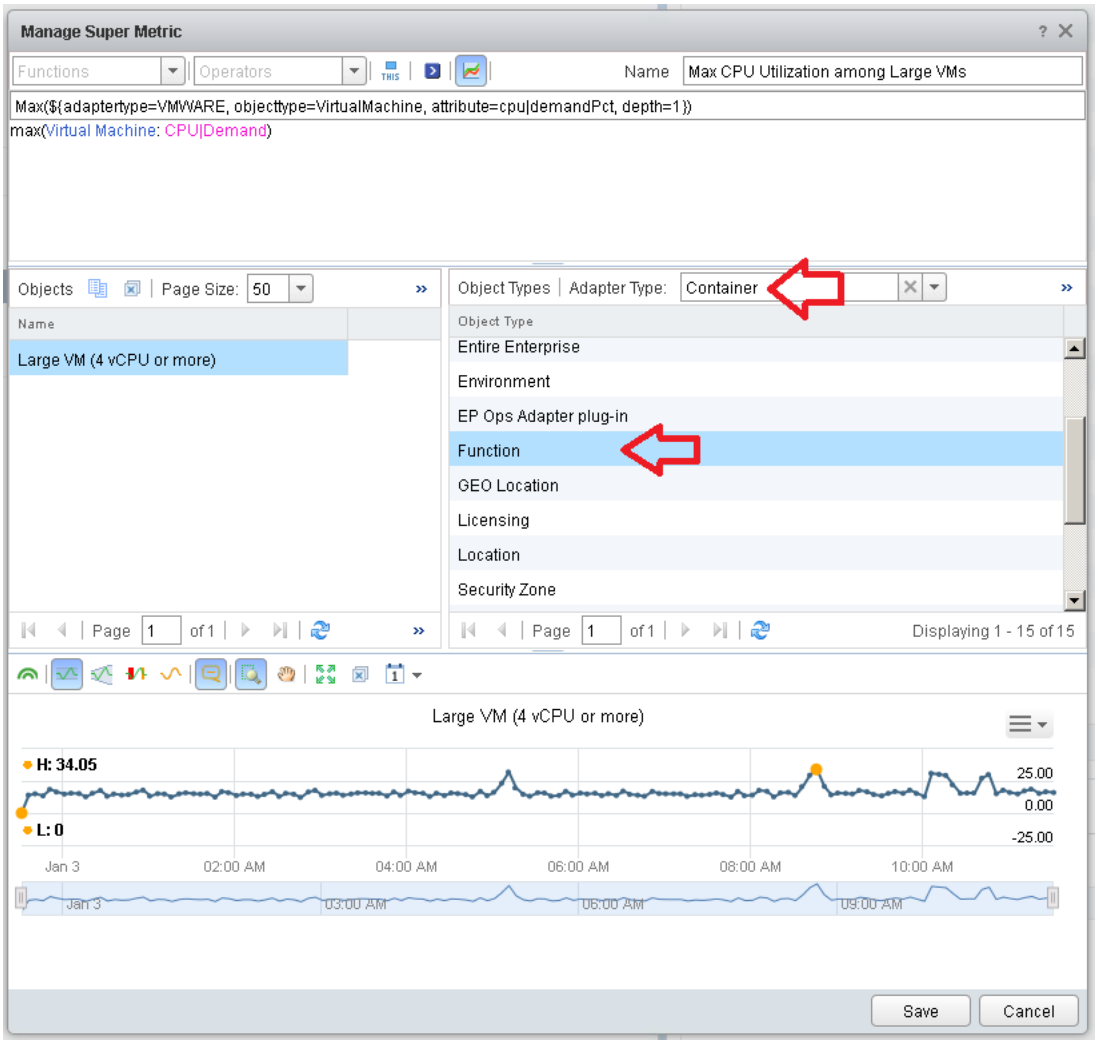
Group Type Function **Policy** --Select-- ☑ Keep group membership up to date

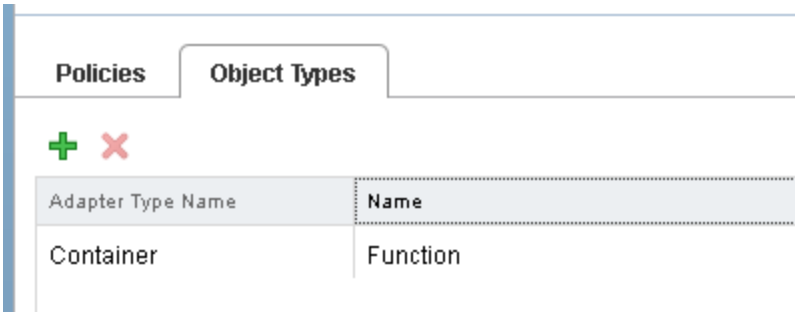
Define membership criteria

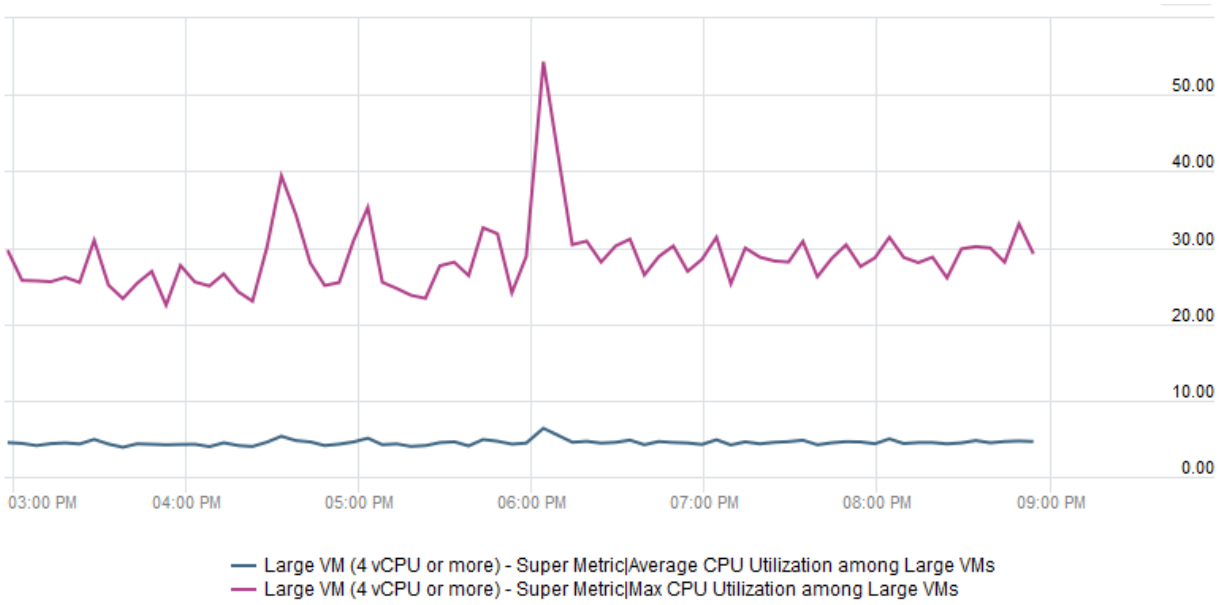
Select the Object Type that matches all of the following criteria: Virtual Machine

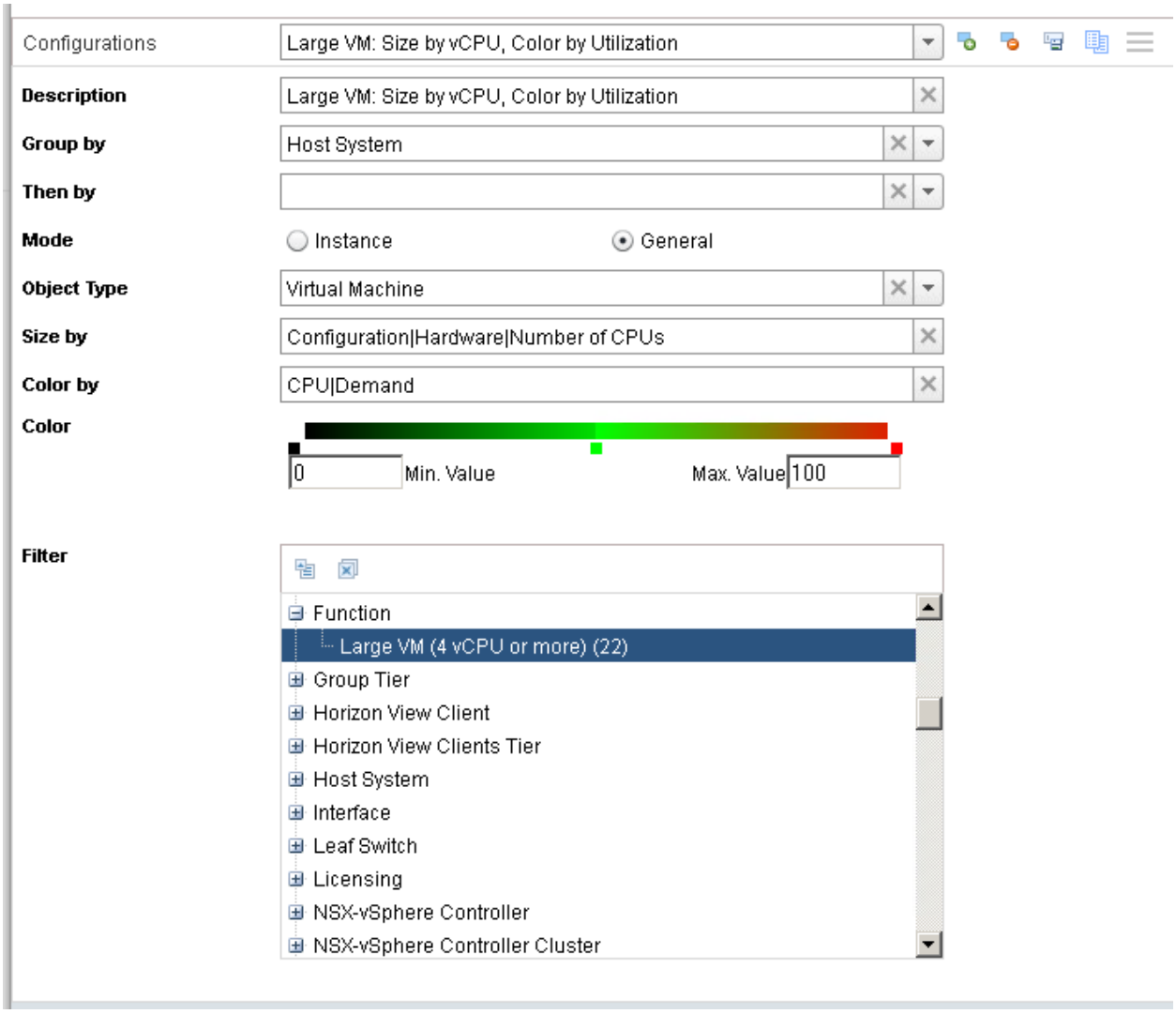
Properties | Configuration|Hardware|Number of | is greater than | 3.0 | Add Reset

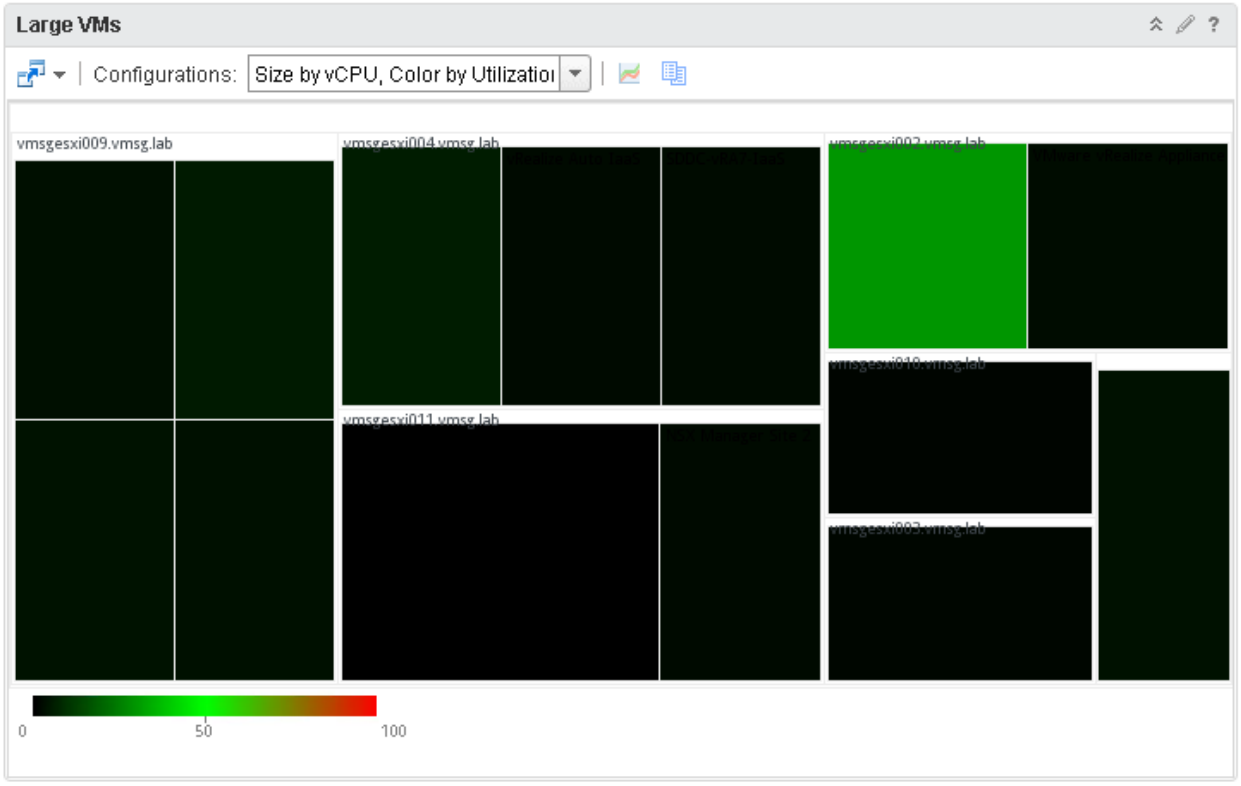
Add another criteria set

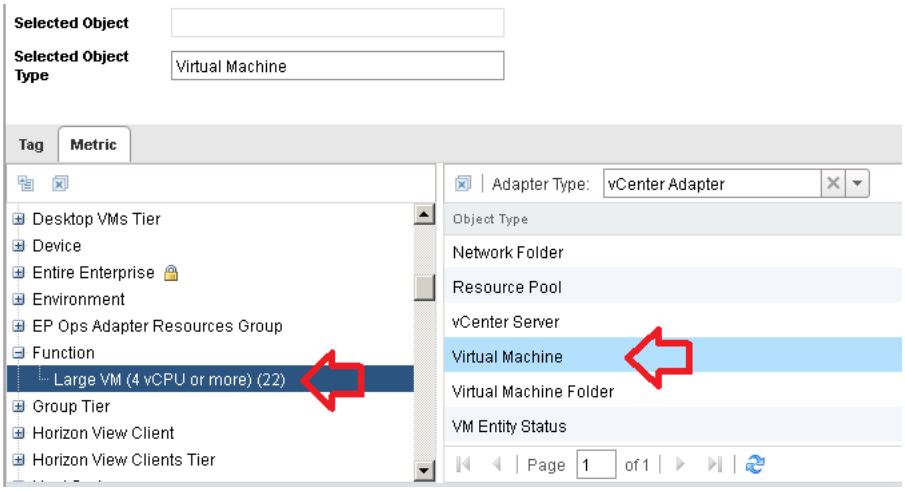

Manage Super Metric
Functions
Operators
Name
Max CPU Utilization among Large VMs
Max(${adaptertype=VMWARE, objecttype=VirtualMachine, attribute=cpu|demandPct, depth=1})
max(Virtual Machine: CPU|Demand)
Objects
Page Size: 50
Name
Large VM (4 vCPU or more)
Page 1 of 1
Object Types
Adapter Type: Container
Object Type
Entire Enterprise
Environment
EP Ops Adapter plug-in
Function
GEO Location
Licensing
Location
Security Zone
Page 1 of 1
Displaying 1 - 15 of 15
Large VM (4 vCPU or more)
H: 34.05
L: 0
25.00
0.00
-25.00
Jan 3
02:00 AM
04:00 AM
06:00 AM
08:00 AM
10:00 AM
Jan 3
03:00 AM
06:00 AM
09:00 AM
Save
Cancel


Policies
Object Types
Adapter Type Name
Name
Container
Function


50.00
40.00
30.00
20.00
10.00
0.00
03:00 PM
04:00 PM
05:00 PM
06:00 PM
07:00 PM
08:00 PM
09:00 PM
Large VM (4 vCPU or more) - Super Metric|Average CPU Utilization among Large VMs
Large VM (4 vCPU or more) - Super Metric|Max CPU Utilization among Large VMs


Configurations
Large VM: Size by vCPU, Color by Utilization
Description
Large VM: Size by vCPU, Color by Utilization
Group by
Host System
Then by
Mode
Instance
General
Object Type
Virtual Machine
Size by
Configuration|Hardware|Number of CPUs
Color by
CPU|Demand
Color
0
Min. Value
Max. Value
100
Filter
Function
Large VM (4 vCPU or more) (22)
Group Tier
Horizon View Client
Horizon View Clients Tier
Host System
Interface
Leaf Switch
Licensing
NSX-vSphere Controller
NSX-vSphere Controller Cluster


Large VMs
Configurations:
Size by vCPU, Color by Utilizatio
vmsgesxi009.vmsg.lab
vmsgesxi004.vmsg.lab
vmsgesxi011.vmsg.lab
0
50
100

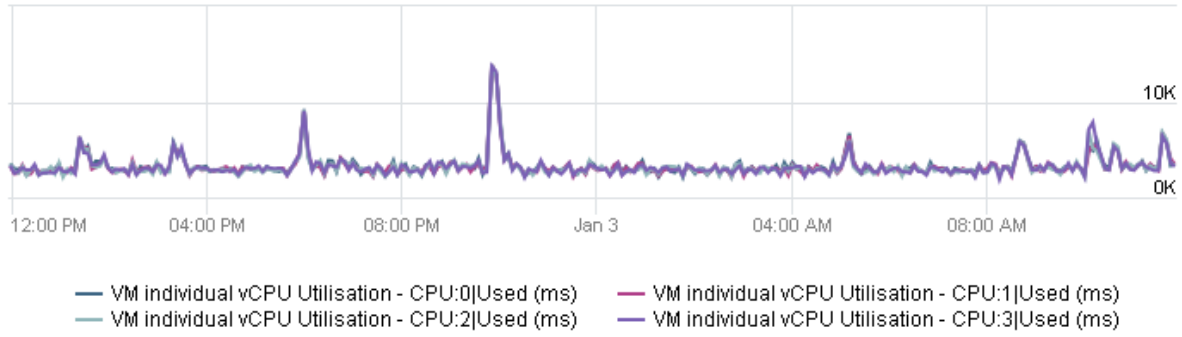

Selected Object
Selected Object Type
Virtual Machine
Tag
Metric
Adapter Type:
vCenter Adapter
Desktop VMs Tier
Device
Entire Enterprise
Environment
EP Ops Adapter Resources Group
Function
Large VM (4 vCPU or more) (22)
Group Tier
Horizon View Client
Horizon View Clients Tier
Object Type
Network Folder
Resource Pool
vCenter Server
Virtual Machine
Virtual Machine Folder
VM Entity Status
Page
1
of 1

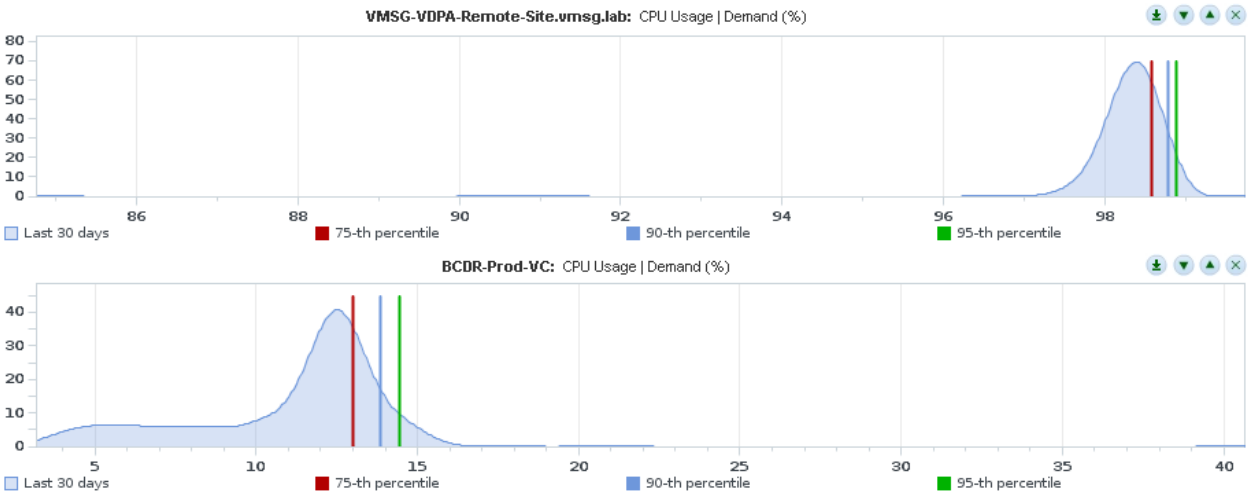
Top 15 Large VM CPU Utilization

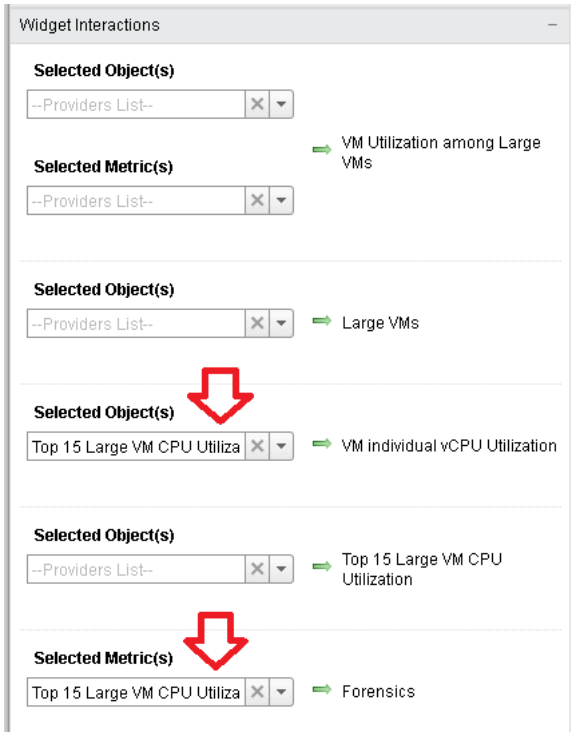
Top 15 Highest Utilization

Utilization Index	Objects
17.37	vRealize Ops 6.1 Clustered
6.05	SDDC-vRA7-Appliance
4.75	Site 1 Data Protection
4.19	NSX_Controller_0d4eeda9-2348-492f-9293-e01fdf3b6ecd
3.62	NSX_Controller_28371594-b316-474e-a3fe-aa7119d61f59
3.45	VMware vRealize Appliance
3.33	NSX_Controller_9e7ec350-5ee9-4097-a57b-62a328bef96a
3.3	NSX Manager Site 1
2.25	SDDC-vRA7-IaaS

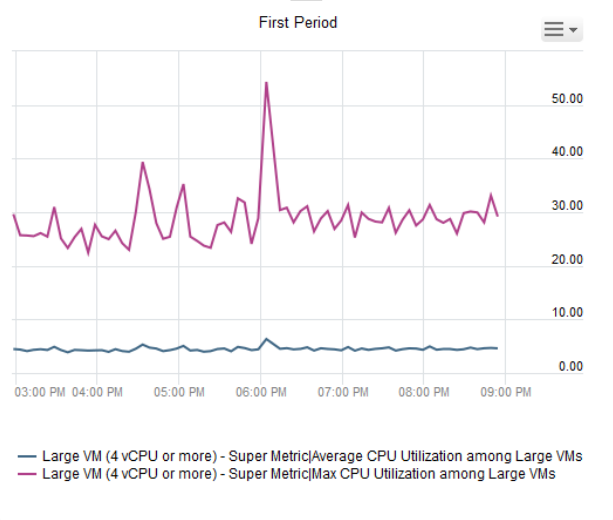
VM individual vCPU Utilization




VMSG-VDPA-Remote-Site.vmsg.lab: CPU Usage | Demand (%)
80
70
60
50
40
30
20
10
0
86
88
90
92
94
96
98
Last 30 days
75-th percentile
90-th percentile
95-th percentile
BCDR-Prod-VC: CPU Usage | Demand (%)
40
30
20
10
0
5
10
15
20
25
30
35
40
Last 30 days
75-th percentile
90-th percentile
95-th percentile


Widget Interactions
Selected Object(s)
--Providers List--
VM Utilization among Large VMs
Selected Metric(s)
--Providers List--
Selected Object(s)
--Providers List--
Large VMs
Selected Object(s)
Top 15 Large VM CPU Utiliza
VM individual vCPU Utilization
Selected Object(s)
--Providers List--
Top 15 Large VM CPU Utilization
Selected Metric(s)
Top 15 Large VM CPU Utiliza
Forensics

VM Utilization among Large VMs



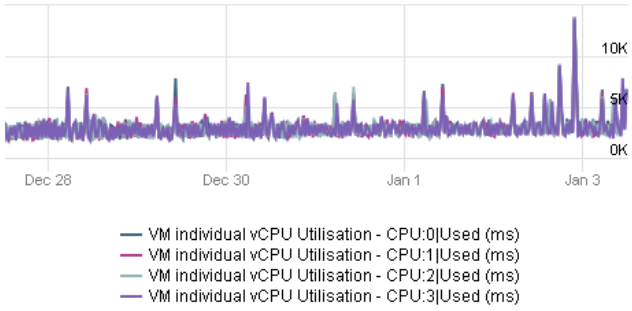
Large VMs

Top 15 Large VM CPU Utilization

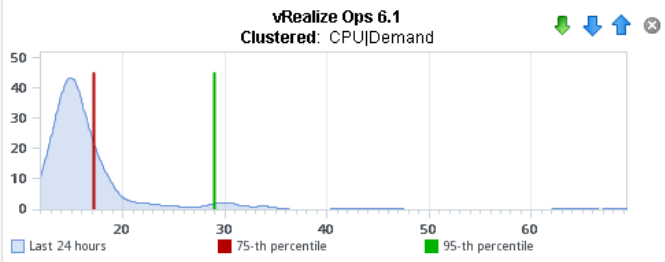
Top 15 Highest Utilization

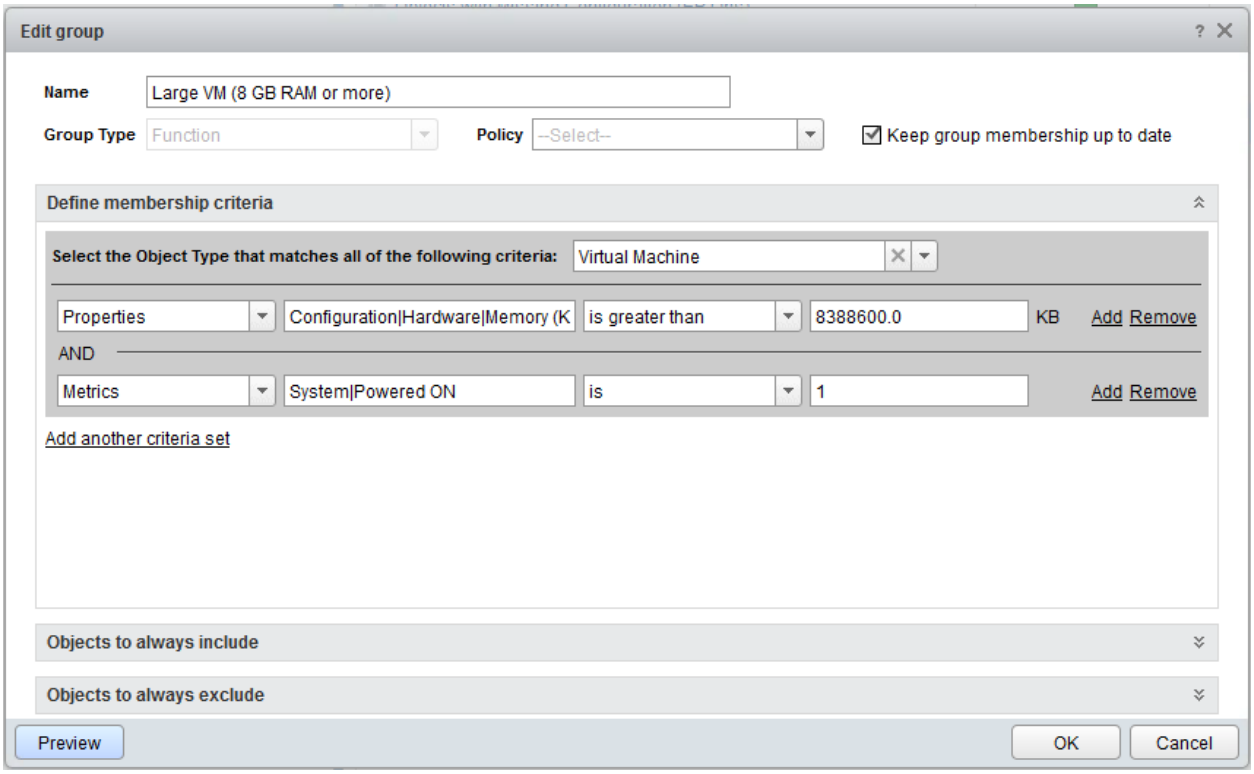
Utilization Index	Objects
17.37	vRealize Ops 6.1 Clustered
6.05	SDDC-vRA7-Appliance
4.75	Site 1 Data Protection
4.19	NSX_Controller_0d4eeda9-23...
3.62	NSX_Controller_28371594-b3...
3.45	VMware vRealize Appliance
3.33	NSX_Controller_9e7ec350-5ee...
3.3	NSX Manager Site 1
2.25	SDDC-vRA7-IaaS
2.12	vRealize Auto IaaS
1.97	NSX Manager Site 2
1.33	management-server
0.89	VS-CirrusEsx-01
0.059	VMSG-Rest-Server-02

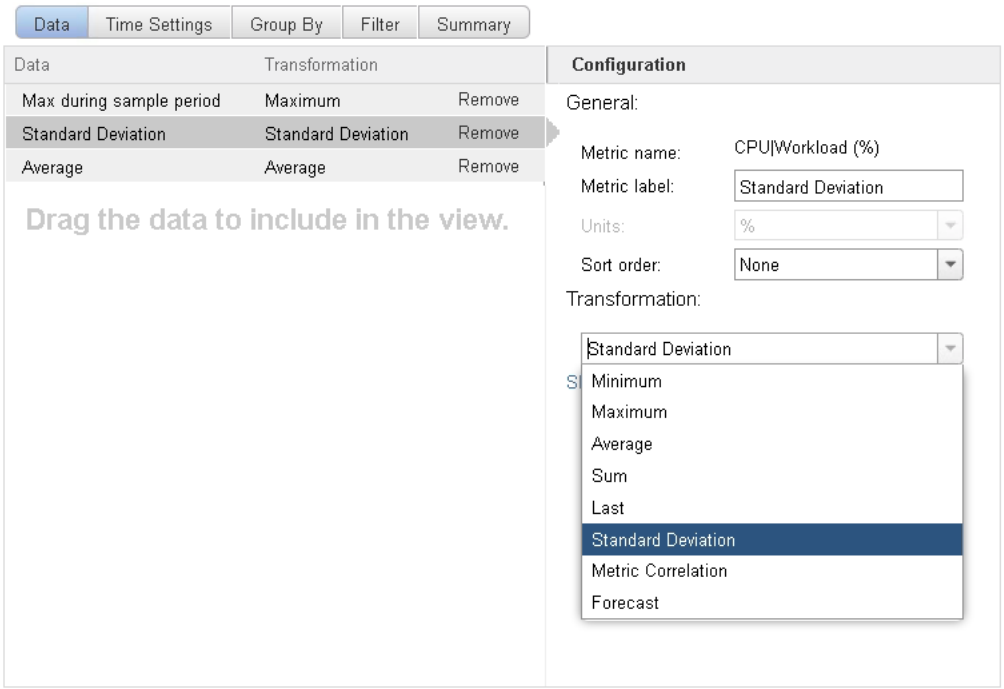
VM individual vCPU Utilization

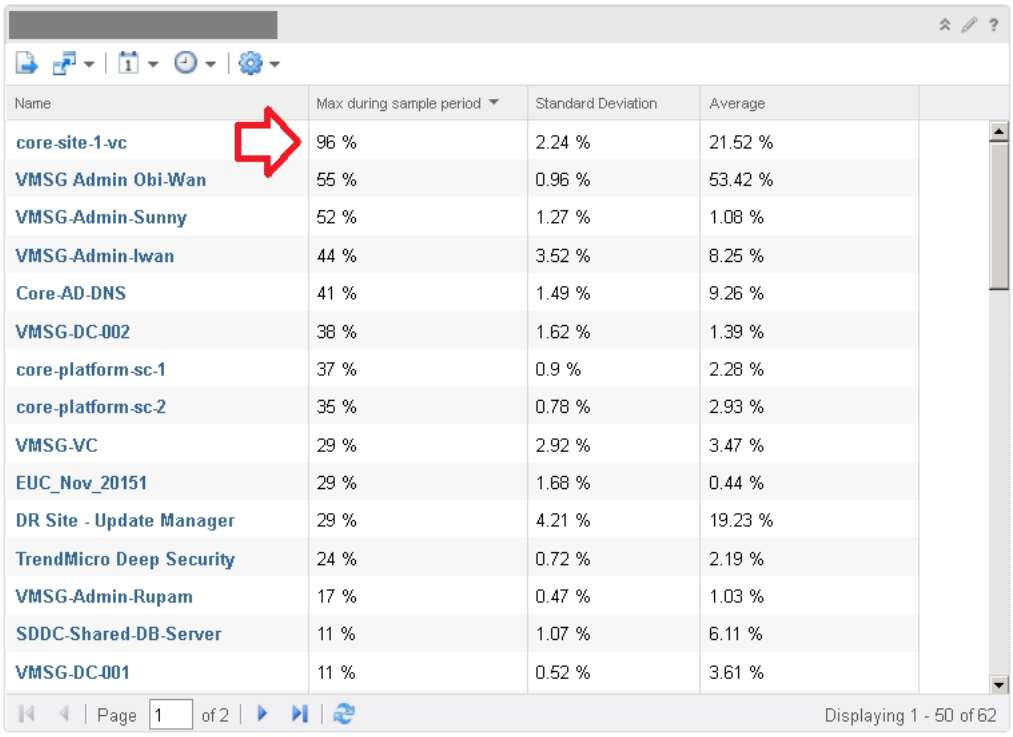


Forensics



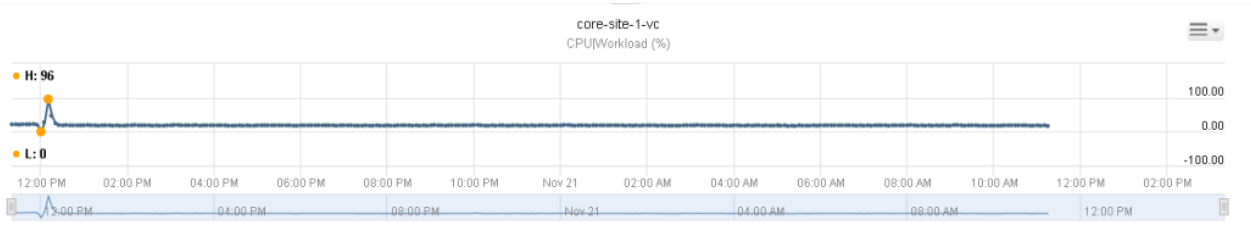

Edit group
Name
Large VM (8 GB RAM or more)
Group Type
Function
Policy
--Select--
Keep group membership up to date
Define membership criteria
Select the Object Type that matches all of the following criteria:
Virtual Machine
Properties
Configuration|Hardware|Memory (K
is greater than
8388600.0
KB
Add
Remove
AND
Metrics
System|Powered ON
is
1
Add
Remove
Add another criteria set
Objects to always include
Objects to always exclude
Preview
OK
Cancel


Data
Time Settings
Group By
Filter
Summary
Data
Transformation
Max during sample period
Maximum
Remove
Standard Deviation
Standard Deviation
Remove
Average
Average
Remove
Drag the data to include in the view.
Configuration
General:
Metric name:
CPU|Workload (%)
Metric label:
Standard Deviation
Units:
%
Sort order:
None
Transformation:
Standard Deviation
Minimum
Maximum
Average
Sum
Last
Standard Deviation
Metric Correlation
Forecast



Name	Max during sample period	Standard Deviation	Average
core-site-1-vc	96 %	2.24 %	21.52 %
VMSG Admin Obi-Wan	55 %	0.96 %	53.42 %
VMSG-Admin-Sunny	52 %	1.27 %	1.08 %
VMSG-Admin-Iwan	44 %	3.52 %	8.25 %
Core-AD-DNS	41 %	1.49 %	9.26 %
VMSG-DC-002	38 %	1.62 %	1.39 %
core-platform-sc-1	37 %	0.9 %	2.28 %
core-platform-sc-2	35 %	0.78 %	2.93 %
VMSG-VC	29 %	2.92 %	3.47 %
EUC_Nov_20151	29 %	1.68 %	0.44 %
DR Site - Update Manager	29 %	4.21 %	19.23 %
TrendMicro Deep Security	24 %	0.72 %	2.19 %
VMSG-Admin-Rupam	17 %	0.47 %	1.03 %
SDDC-Shared-DB-Server	11 %	1.07 %	6.11 %
VMSG-DC-001	11 %	0.52 %	3.61 %

Page 1 of 2 | Displaying 1 - 50 of 62



Data | Time Settings | Group By | Filter | Summary

Data	Transformation	
RAM size	Last	Remove
Consumed	Maximum	Remove
Consumed (Std Dev)	Standard Deviation	Remove
Active	Maximum	Remove
Active (Std Dev)	Standard Deviation	Remove

Drag the data to include in the view.

Configuration

General:

Metric name: Memory|Guest C...

Metric label: RAM size

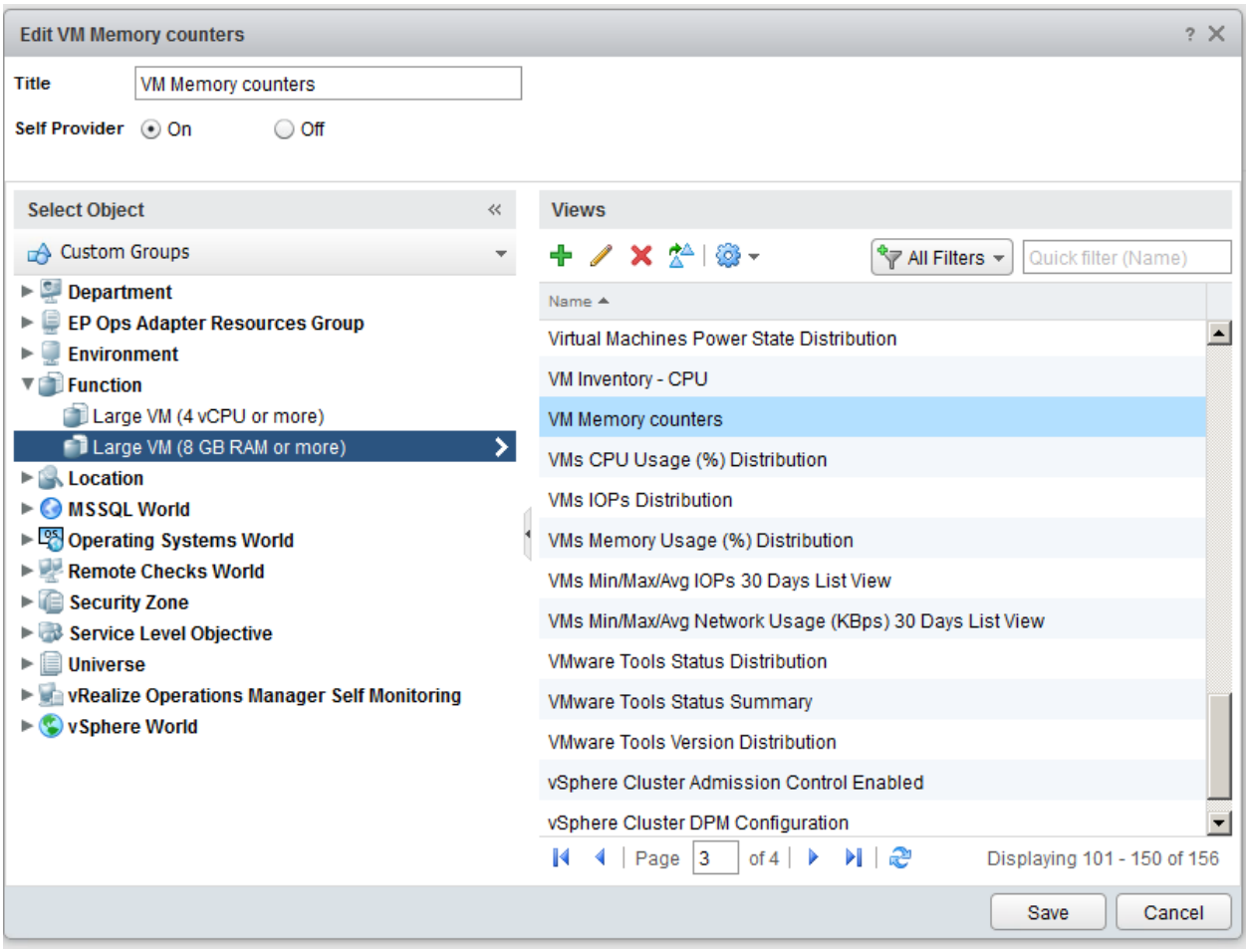
Units: GB

Sort order: None

Transformation:

Last

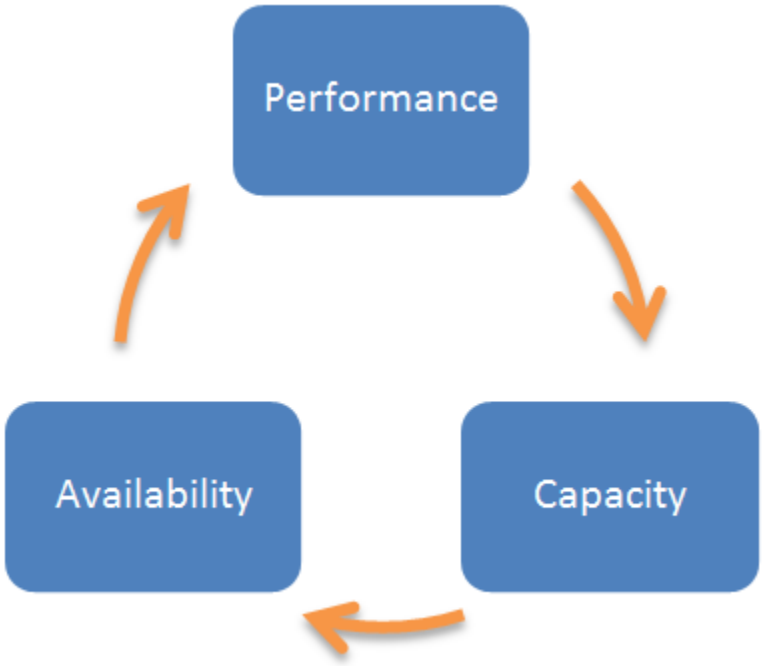
Show advanced settings

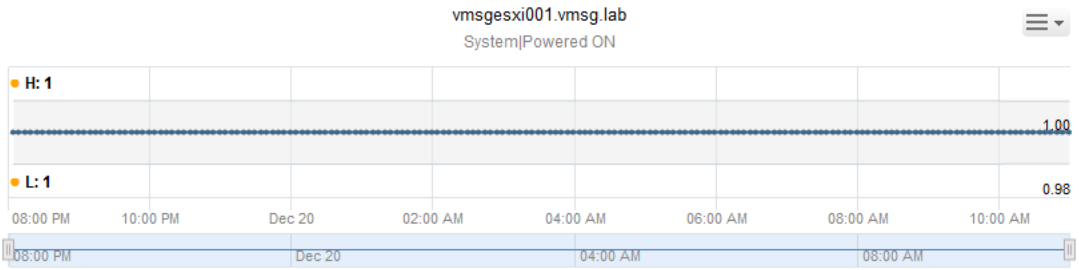

Edit VM Memory counters
Title
VM Memory counters
Self Provider
On
Off
Select Object
Custom Groups
Department
EP Ops Adapter Resources Group
Environment
Function
Large VM (4 vCPU or more)
Large VM (8 GB RAM or more)
Location
MSSQL World
Operating Systems World
Remote Checks World
Security Zone
Service Level Objective
Universe
vRealize Operations Manager Self Monitoring
vSphere World
Views
All Filters
Quick filter (Name)
Name
Virtual Machines Power State Distribution
VM Inventory - CPU
VM Memory counters
VMs CPU Usage (%) Distribution
VMs IOPs Distribution
VMs Memory Usage (%) Distribution
VMs Min/Max/Avg IOPs 30 Days List View
VMs Min/Max/Avg Network Usage (KBps) 30 Days List View
VMware Tools Status Distribution
VMware Tools Status Summary
VMware Tools Version Distribution
vSphere Cluster Admission Control Enabled
vSphere Cluster DPM Configuration
Page 3 of 4
Displaying 101 - 150 of 156
Save
Cancel

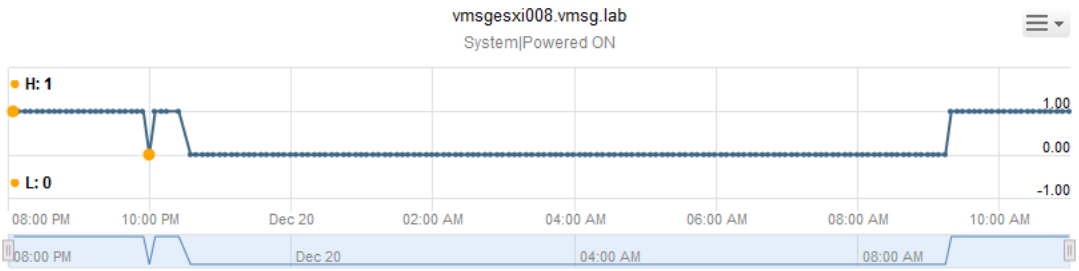
Large VMs: Memory Usage

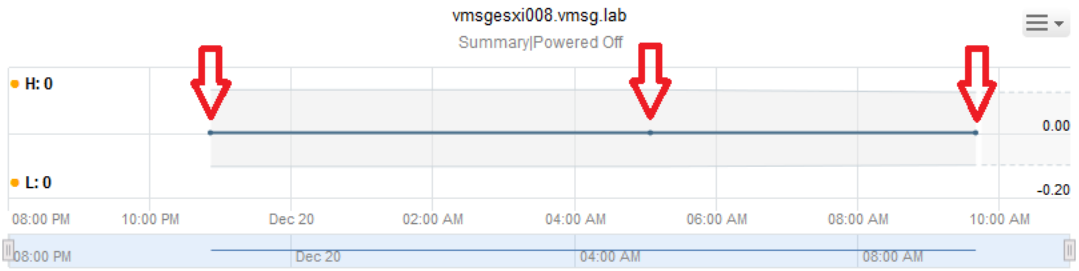
Name	RAM size	Consumed	Consumed (Std Dev)	Active	Active (Std Dev)
SDDC-vRA7-Appliance	18 GB	17.97 GB	270.43 MB	5.74 GB	323.83 MB
vRealize Auto IaaS	16 GB	10.89 GB	3.01 GB	13.36 GB	432.45 MB
NSX Manager Site 1	16 GB	13.1 GB	100.72 MB	2.38 GB	240.91 MB
NSX Manager Site 2	16 GB	15.66 GB	15.54 MB	2.63 GB	224.61 MB
vRealize Ops 6.1 Clustered	16 GB	15.2 GB	342.48 MB	9.85 GB	771.54 MB
VMware vRealize Appliance	16 GB	9.16 GB	182.89 MB	4.52 GB	341.51 MB
SDDC-vRA7-IaaS	16 GB	11.85 GB	794.08 MB	5.06 GB	198.4 MB
Site 2 Log Insight	12 GB	11.89 GB	22.23 MB	8.76 GB	912.21 MB
management-server	8 GB	2.09 GB	176.57 KB	0.4 GB	51.66 MB
VMSG-App-Volume-Manager	8 GB	8 GB	0 KB	1 GB	105.99 MB
vDemo-Prod-Site-ESXi-02	8 GB	0.96 GB	9.62 MB	0.31 GB	48.92 MB
core-site-1-vc	8 GB	7.61 GB	35.47 MB	5.19 GB	208.67 MB
vRealize Operations 6.1	8 GB	7.93 GB	22.07 MB	5.32 GB	213.91 MB
VS-CirrusEsx-01	8 GB	1.3 GB	12.99 MB	0.34 GB	51.41 MB
vDemo-Prod-Site-ESXi-03	8 GB	1.12 GB	11.67 MB	0.31 GB	50.63 MB
VMSG-VC	8 GB	7.36 GB	72.21 MB	3.5 GB	359.36 MB
VS-CirrusDem-03	8 GB	1.58 GB	14.95 MB	0.39 GB	50.15 MB
vDemo-Prod-Site-ESXi-04	8 GB	1.13 GB	13.3 MB	0.31 GB	46.54 MB
vDemo-vCenter-01	8 GB	7.92 GB	2.24 MB	3.61 GB	152.52 MB
Site 1 SRM Server	8 GB	1.61 GB	137.4 MB	0.37 GB	59.84 MB
vDemo-Prod-Site-ESXi-01	8 GB	0.82 GB	5.04 MB	0.3 GB	47.41 MB

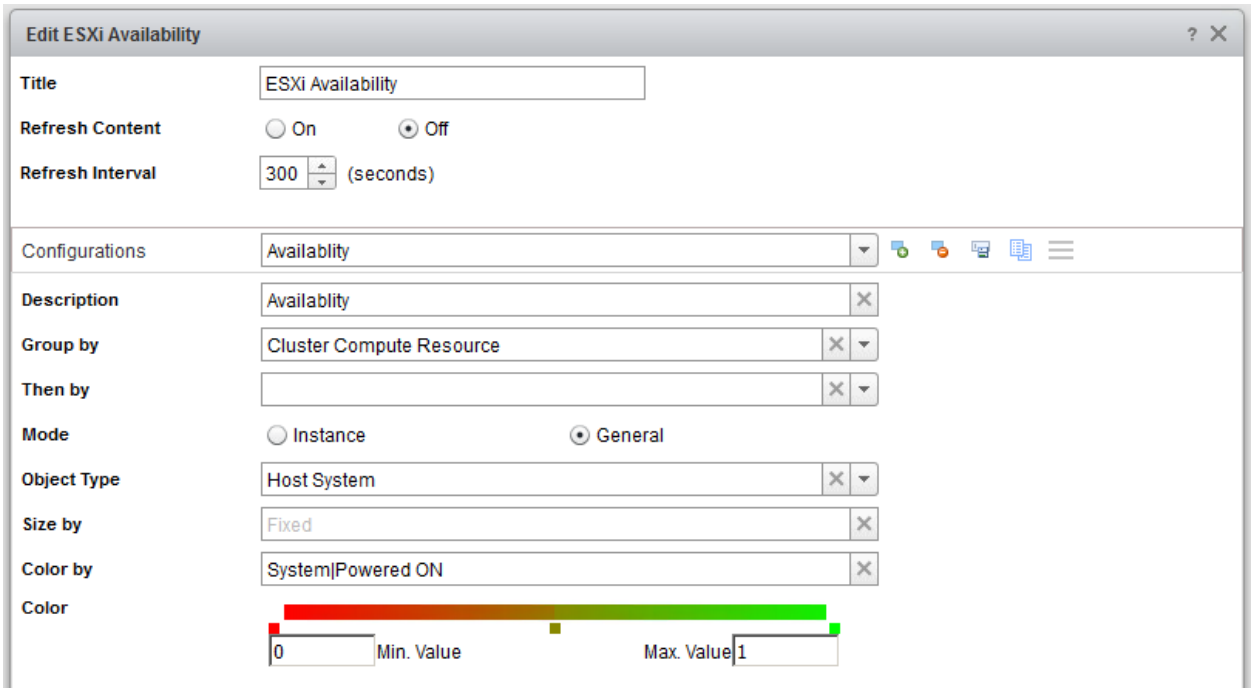
Chapter 8: Specific-Purpose Dashboards

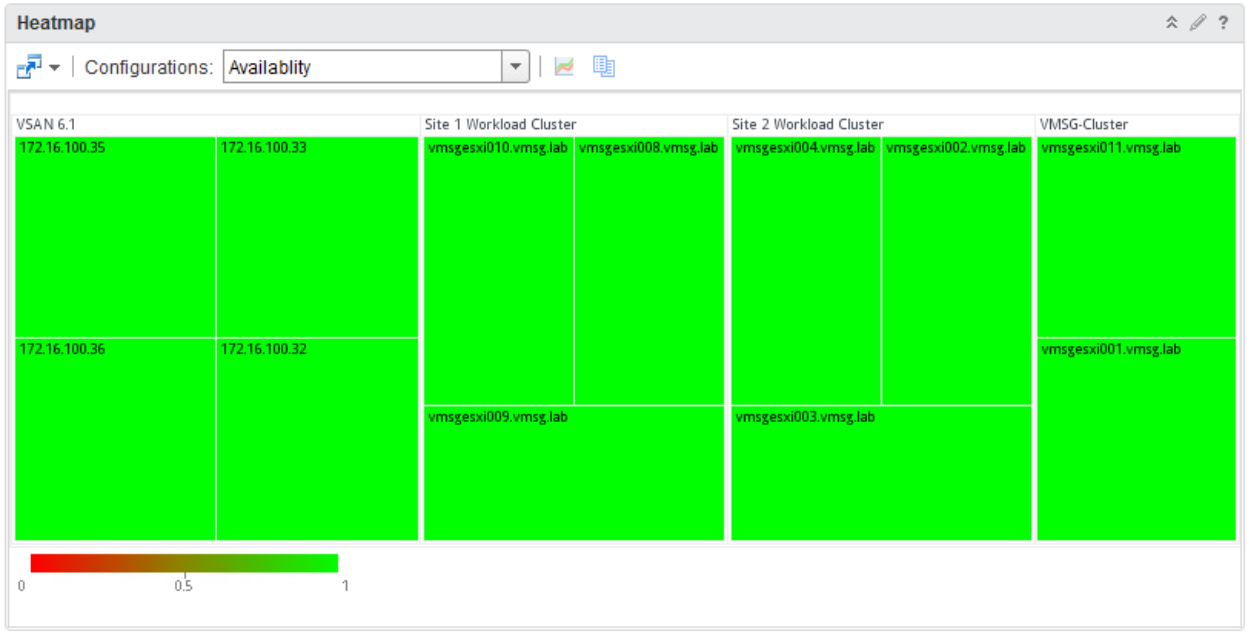


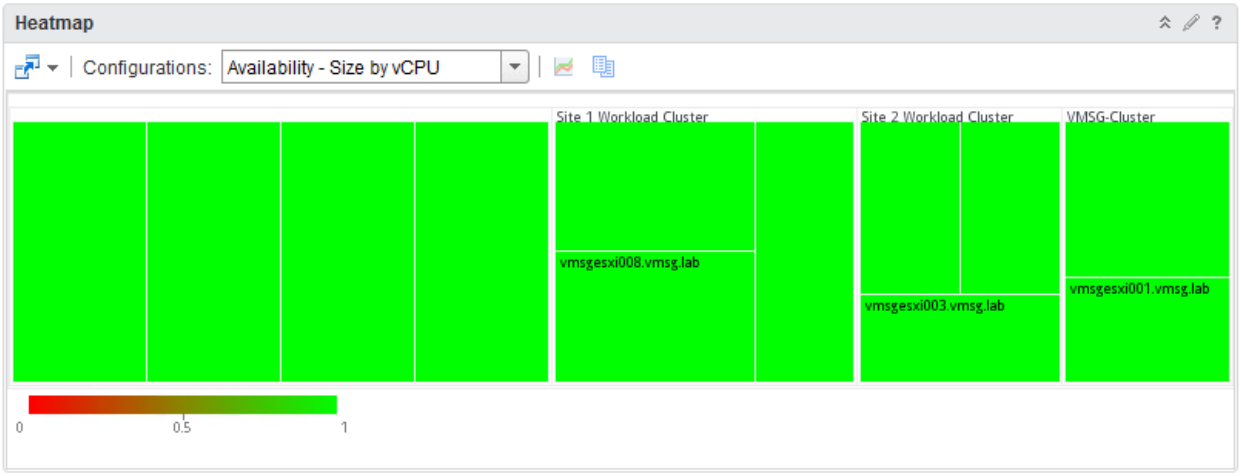


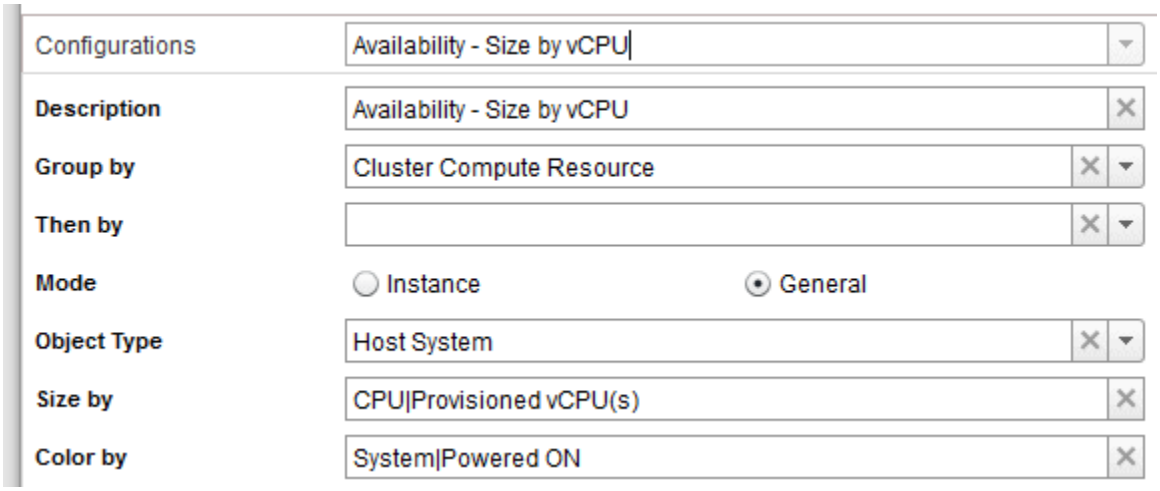




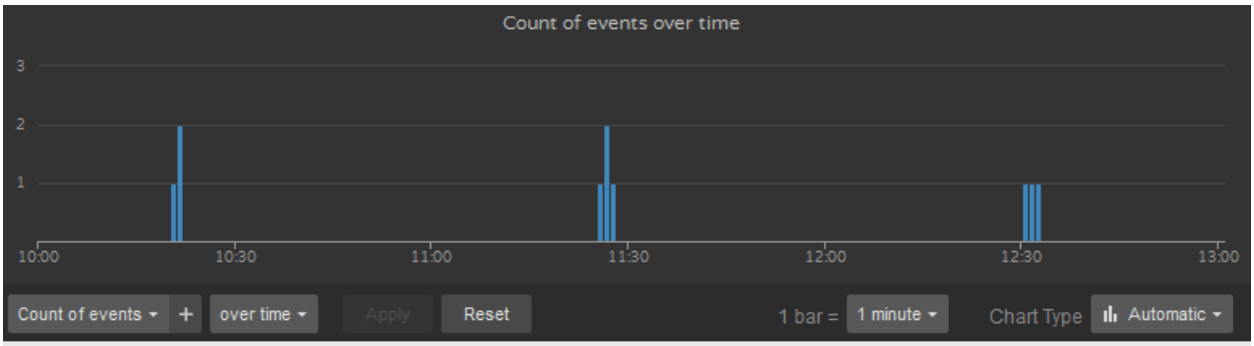

Edit ESXi Availability
Title
ESXi Availability
Refresh Content
On
Off
Refresh Interval
300
(seconds)
Configurations
Availablity
Description
Availablity
Group by
Cluster Compute Resource
Then by
Mode
Instance
General
Object Type
Host System
Size by
Fixed
Color by
System|Powered ON
Color
0
Min. Value
Max. Value
1


Heatmap
Configurations:
Availablity
VSAN 6.1
Site 1 Workload Cluster
Site 2 Workload Cluster
VMSG-Cluster
172.16.100.35
172.16.100.33
172.16.100.36
172.16.100.32
vmsgesxi010.vmsg.lab
vmsgesxi008.vmsg.lab
vmsgesxi009.vmsg.lab
vmsgesxi004.vmsg.lab
vmsgesxi002.vmsg.lab
vmsgesxi003.vmsg.lab
vmsgesxi011.vmsg.lab
vmsgesxi001.vmsg.lab
0
0.5
1


Heatmap
Configurations:
Availability - Size by vCPU
Site 1 Workload Cluster
Site 2 Workload Cluster
VMSG-Cluster
vmsgesxi008.vmsg.lab
vmsgesxi003.vmsg.lab
vmsgesxi001.vmsg.lab
0
0.5
1


Configurations
Availability - Size by vCPU
Description
Availability - Size by vCPU
Group by
Cluster Compute Resource
Then by
Mode
Instance
General
Object Type
Host System
Size by
CPU|Provisioned vCPU(s)
Color by
System|Powered ON


VSAN - Magnetic Disk Errors (%)
0
172.16.100.32 _NAA.5000C...
0.01
172.16.100.32 _naa.5000c5...
0.01
172.16.100.32 _naa.5000c5...
0.01
172.16.100.32 _naa.5000c5...
0
172.16.100.33 _NAA.5000C...
0.01
172.16.100.33 _naa.5000c5...
0.01
172.16.100.33 _naa.5000c5...
0.01
172.16.100.33 _naa.5000c5...
0
172.16.100.35 _NAA.5000C...
0.01
172.16.100.35 _naa.5000c5...
0.01
172.16.100.35 _naa.5000c5...
0.01
172.16.100.35 _naa.5000c5...
0
172.16.100.36 _NAA.5000C...
0.01
172.16.100.36 _naa.5000c5...
0.01
172.16.100.36 _naa.5000c5...
0.01
172.16.100.36 _naa.5000c5...



5000c5007edde0f3 | Custom time range

Add Filter | 2015-12-28 10:00:00.000 to 2015-12-28 13:00:00.000

Events | Field Table | **Event Types** | Event Trends | 1 to 4 out of 4 event types | View | Sort: Most Common First

3 2015-12-27T21:32:49.640Z supermicro-esxi-2.vmsg.lab vmkernel: cpu22:33400)NMP: nmp_ResetDeviceLogThrottling:3345: last error status from device naa.5000c5007edde0f3 repeated 1 times

3 events of this type (Expand)

3 2015-12-27T21:31:50.651Z supermicro-esxi-2.vmsg.lab vmkernel: cpu25:33491)NMP: nmp_ThrottleLogForDevice:3178: Cmd 0x85 (0x43a641340b40, 6258212) to dev "naa.5000c5007edde0f3" on path "vmhba2:C0:T3:L0" Failed: H:0x0 D:0x2 P:0x0 Valid sense data: 0x5 0x20 0x0. Act:NONE

3 events of this type (Expand)

3 2015-12-27T21:31:35.606Z supermicro-esxi-2.vmsg.lab vmkernel: cpu20:6258213)PLOG: PLOGOpenDevice:3577: Disk handle open failure for device naa.5000c5007edde0f3:2, status:Busy

3 events of this type (Expand)

1 2015-12-27T20:26:50.908Z supermicro-esxi-2.vmsg.lab vmkernel: cpu0:33490)ScsiDeviceIO: 2629: Cmd(0x439e247ae9c0) 0x85, CmdSN 0x101938 from world 6253250 to dev "naa.5000c5007edde0f3" failed H:0x0 D:0x2 P:0x0 Valid sense data: 0x5 0x20 0x0.

1 event of this type (Expand)

Super Metrics

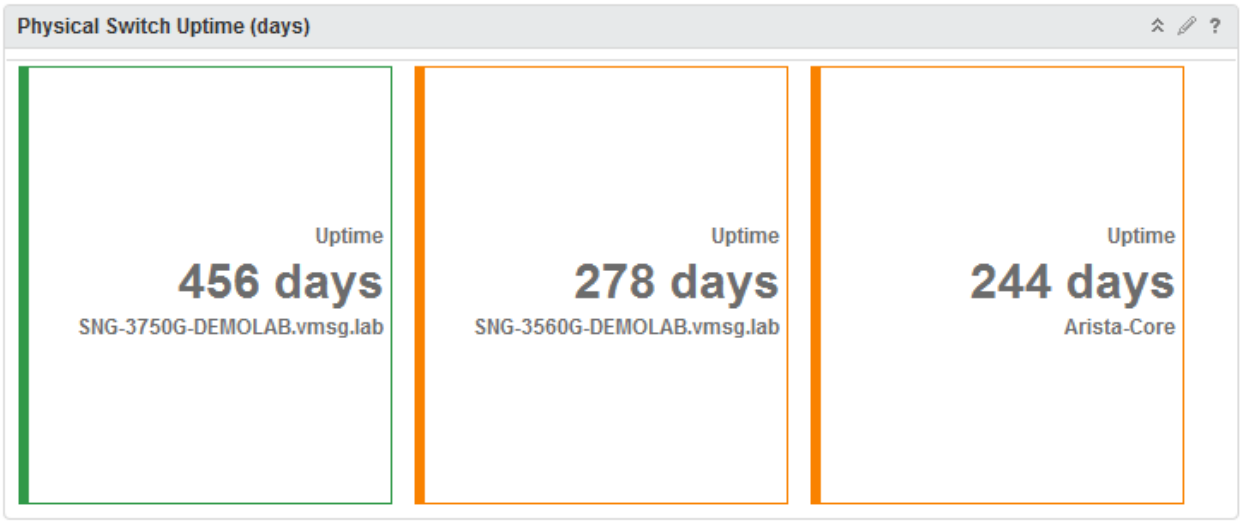
Filter

Name	Formula Description
No of vRAM left in a Tier 1 cluster	(avg(This Resource: mem|alloc|object.capacity)-sum(Virtua...
Physical Switch uptime (day)	avg(This Resource: general|sysUpTime)/100/3600/24
SLA Tier 1 VM CPU Contention	5
SLA Tier 1 VM Disk Latency	5

Page 2 of 2 | Displaying 21 - 34 of 34

Policies | **Object Types**

Adapter Type Name	Name
NetworkAdapter	Spine Switch
NetworkAdapter	Leaf Switch



Layout Mode	○ Fixed Size	◉ Fixed View	**Show Object Name**	◉ On	○ Off
Box Height	--Select-- (px)		**Show Metric Unit**	◉ On	○ Off
Box Columns	3		**Show Sparkline**	○ On	◉ Off
Round Decimals	0		**Visual Theme**	◉ New	○ Old
Label Size	12		**Period Length**	--Not Selected--	
Value Size	28				

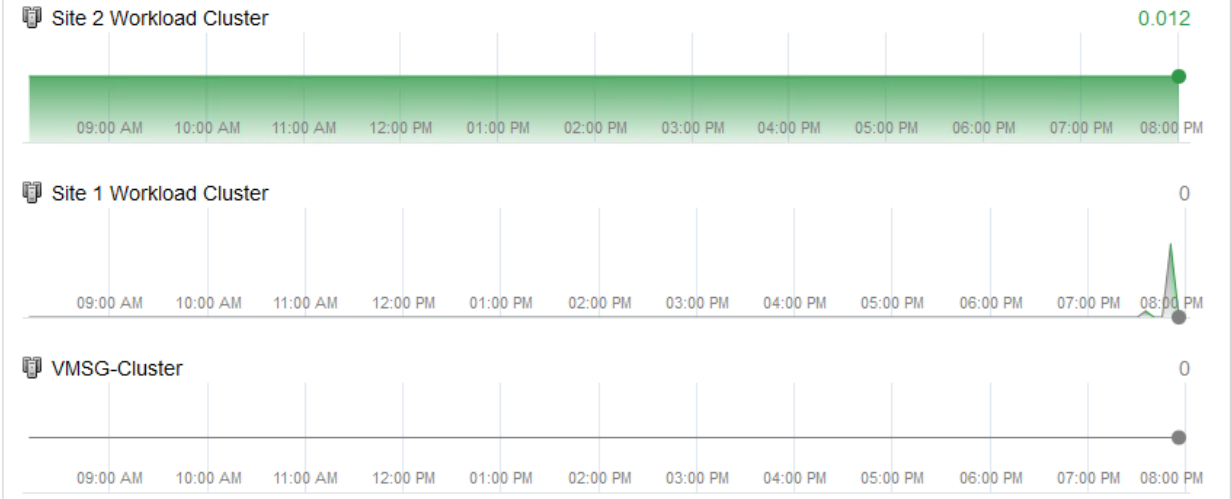
Object	Metric	Box Label	Measurement Unit
SNG-3750G-DEMOLAB.vmsg.lab	Super Metric|Physical Switch uptime (day)	Uptime	days
SNG-3560G-DEMOLAB.vmsg.lab	Super Metric|Physical Switch uptime (day)	Uptime	days
Arista-Core	Super Metric|Physical Switch uptime (day)	Uptime	days

Drag And Drop To Change Order

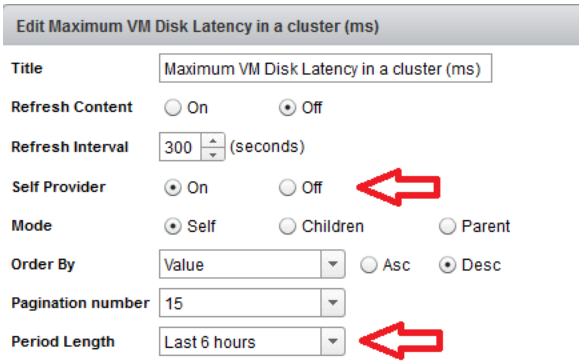
Color Method	Yellow Bound	Orange Bound	Red Bound
Custom	400	300	200
Custom	400	300	200
Custom	400	300	200

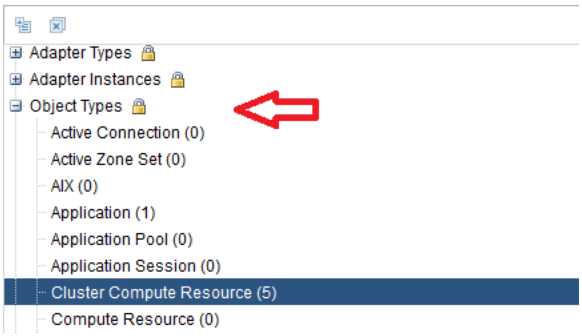
Maximum VM CPU Contention in the cluster

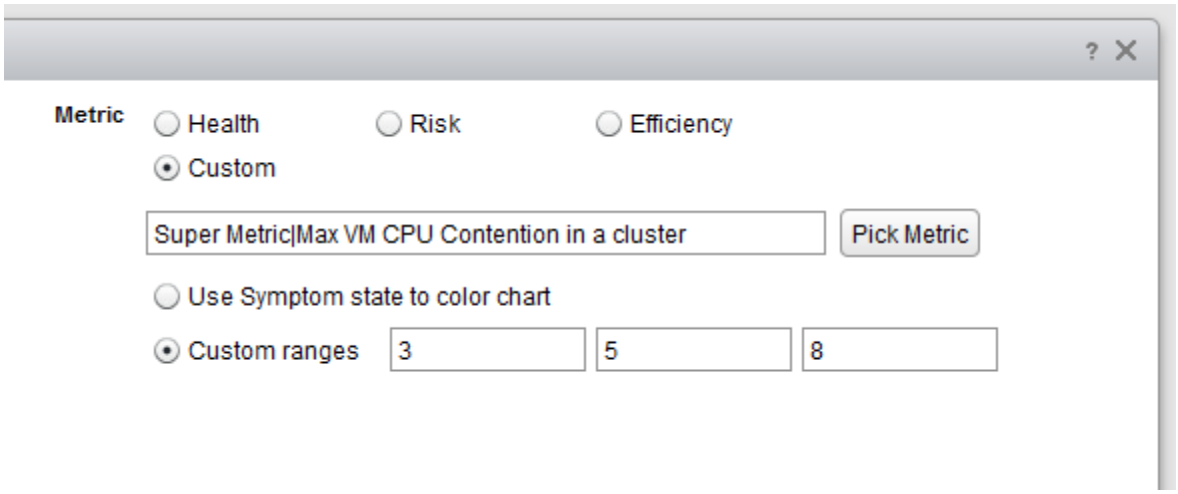
Maximum VM Memory Contention in a cluster (%)

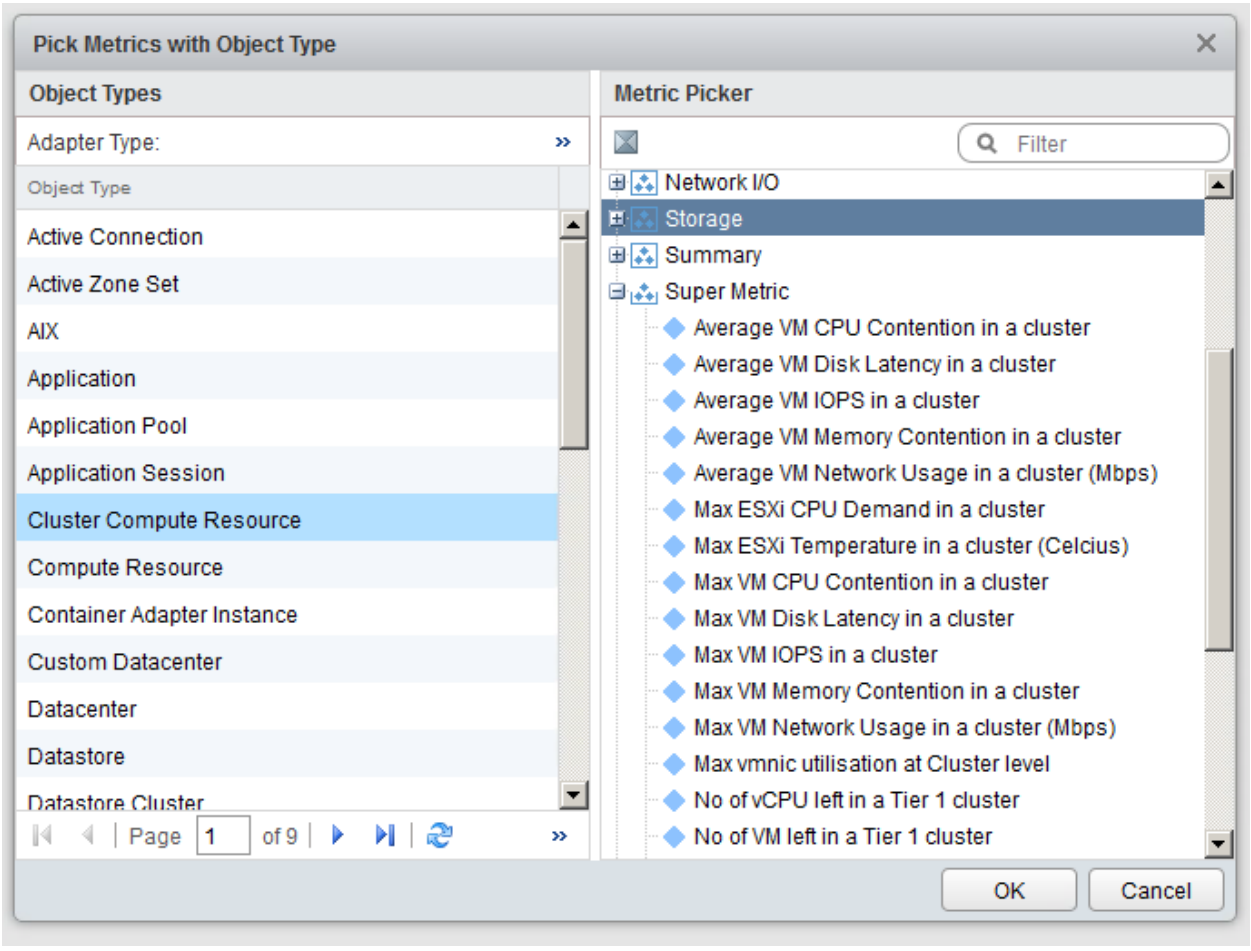


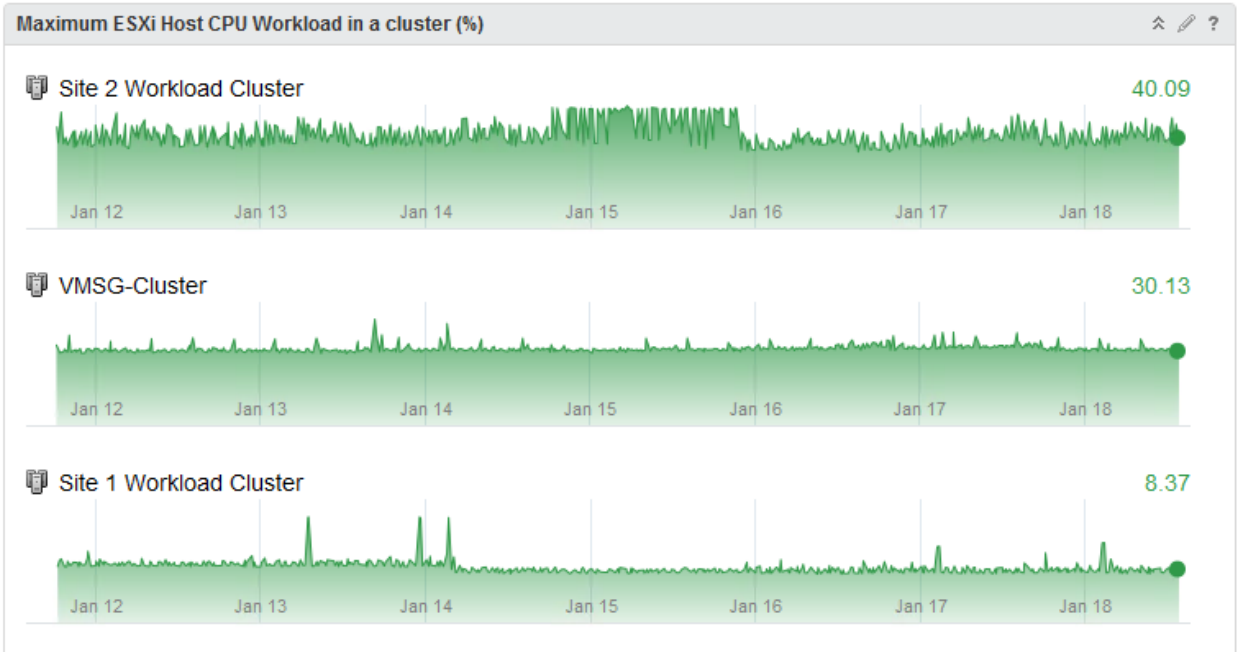

Maximum VM Disk Latency in a cluster (ms)
Site 2 Workload Cluster
28.17
03:00 PM
04:00 PM
05:00 PM
06:00 PM
07:00 PM
Site 1 Workload Cluster
22.2
03:00 PM
04:00 PM
05:00 PM
06:00 PM
07:00 PM
VMSG-Cluster
20.93
03:00 PM
04:00 PM
05:00 PM
06:00 PM
07:00 PM

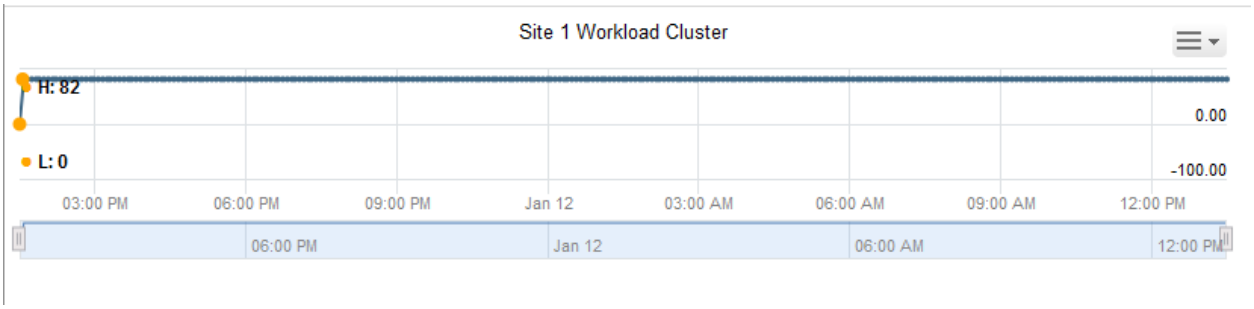

Edit Maximum VM Disk Latency in a cluster (ms)
Title
Maximum VM Disk Latency in a cluster (ms)
Refresh Content
On
Off
Refresh Interval
300
(seconds)
Self Provider
On
Off
Mode
Self
Children
Parent
Order By
Value
Asc
Desc
Pagination number
15
Period Length
Last 6 hours

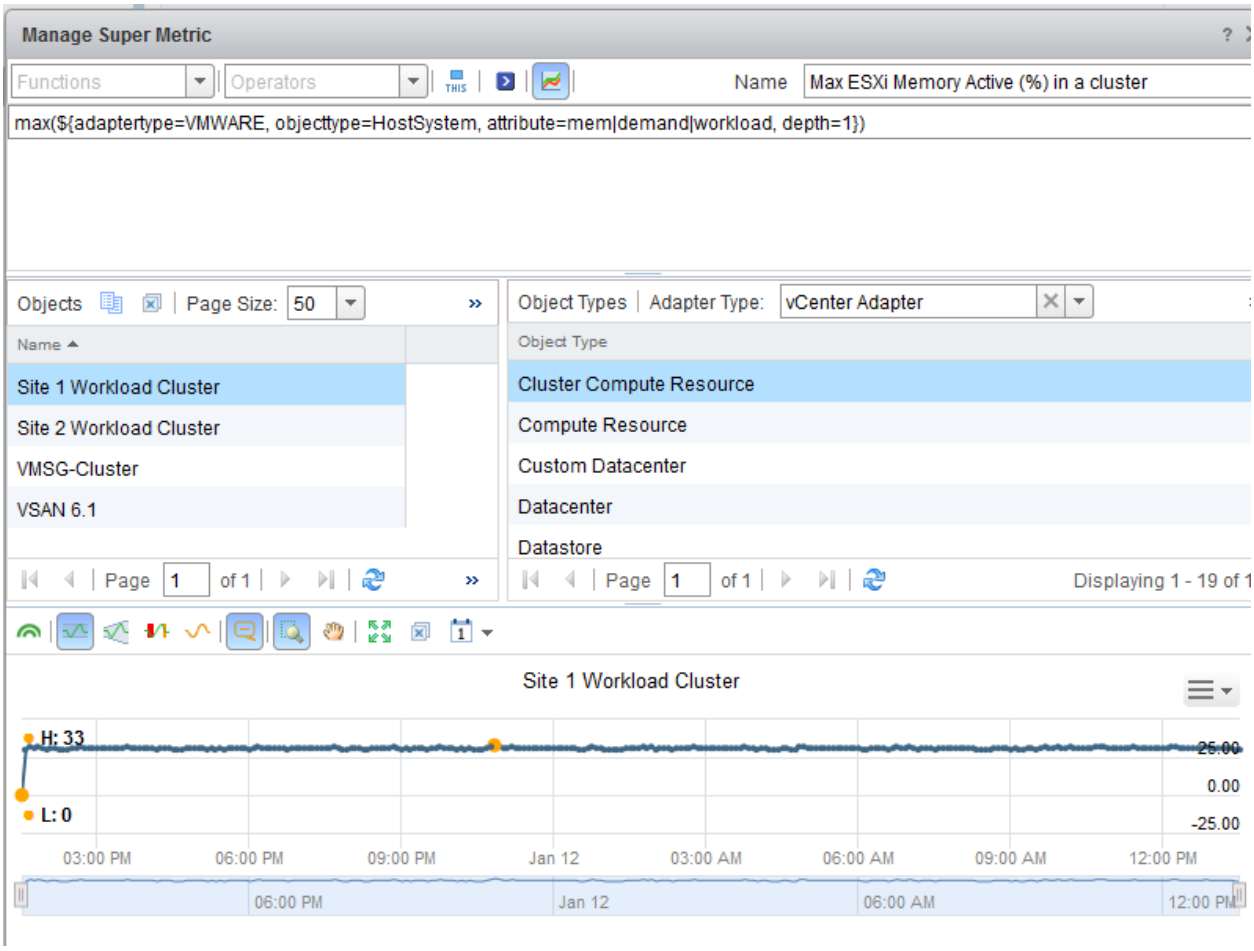

Adapter Types
Adapter Instances
Object Types
Active Connection (0)
Active Zone Set (0)
AIX (0)
Application (1)
Application Pool (0)
Application Session (0)
Cluster Compute Resource (5)
Compute Resource (0)

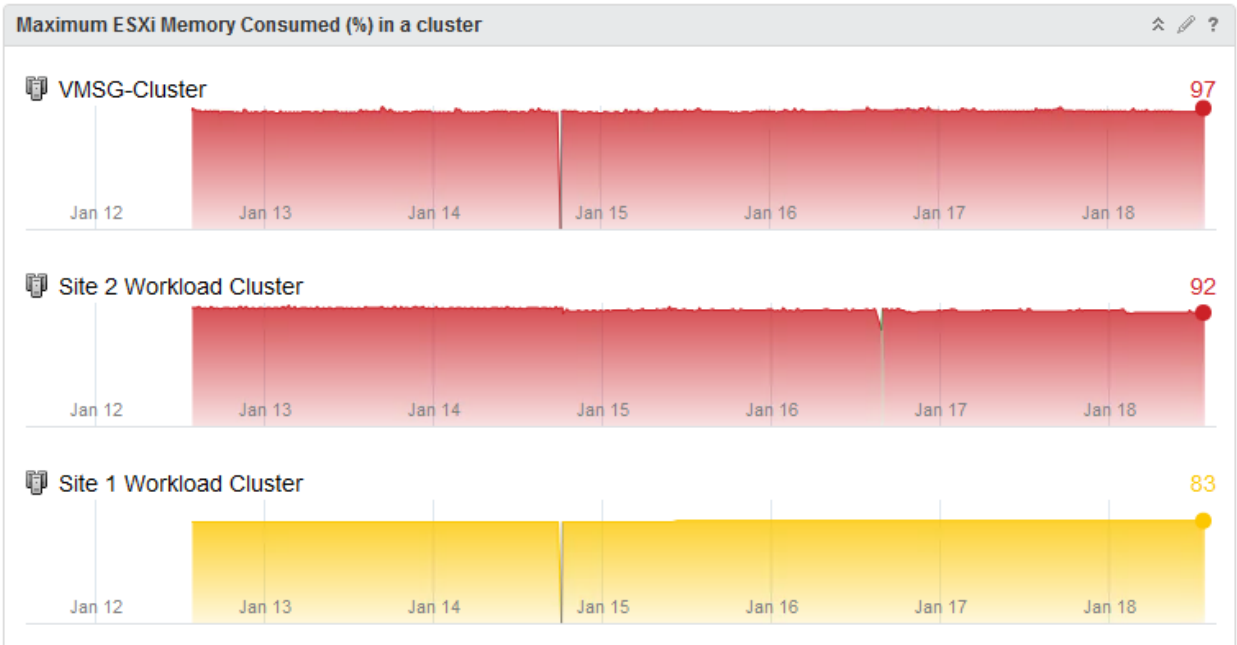

Metric
Health
Risk
Efficiency
Custom
Super Metric|Max VM CPU Contention in a cluster
Pick Metric
Use Symptom state to color chart
Custom ranges
3
5
8


Pick Metrics with Object Type
Object Types
Adapter Type:
Object Type
Active Connection
Active Zone Set
AIX
Application
Application Pool
Application Session
Cluster Compute Resource
Compute Resource
Container Adapter Instance
Custom Datacenter
Datacenter
Datastore
Datastore Cluster
Page 1 of 9
Metric Picker
Filter
Network I/O
Storage
Summary
Super Metric
Average VM CPU Contention in a cluster
Average VM Disk Latency in a cluster
Average VM IOPS in a cluster
Average VM Memory Contention in a cluster
Average VM Network Usage in a cluster (Mbps)
Max ESXi CPU Demand in a cluster
Max ESXi Temperature in a cluster (Celcius)
Max VM CPU Contention in a cluster
Max VM Disk Latency in a cluster
Max VM IOPS in a cluster
Max VM Memory Contention in a cluster
Max VM Network Usage in a cluster (Mbps)
Max vmnic utilisation at Cluster level
No of vCPU left in a Tier 1 cluster
No of VM left in a Tier 1 cluster
OK
Cancel

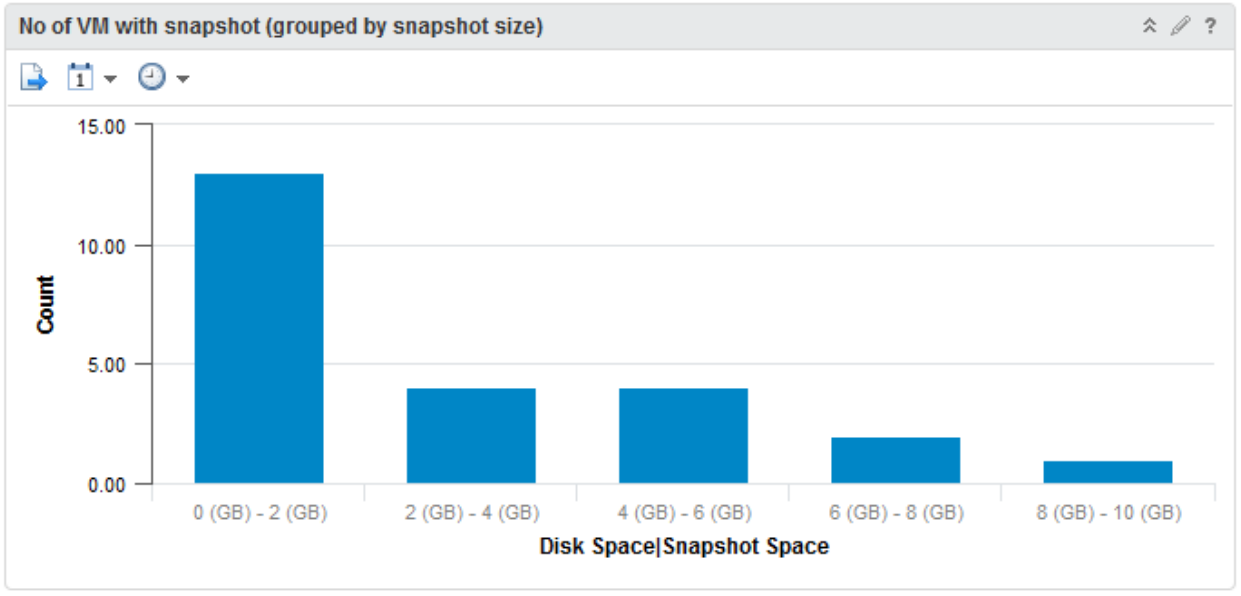

Maximum ESXi Host CPU Workload in a cluster (%)
Site 2 Workload Cluster
40.09
Jan 12
Jan 13
Jan 14
Jan 15
Jan 16
Jan 17
Jan 18
VMSG-Cluster
30.13
Jan 12
Jan 13
Jan 14
Jan 15
Jan 16
Jan 17
Jan 18
Site 1 Workload Cluster
8.37
Jan 12
Jan 13
Jan 14
Jan 15
Jan 16
Jan 17
Jan 18


Site 1 Workload Cluster
H: 82
L: 0
0.00
-100.00
03:00 PM
06:00 PM
09:00 PM
Jan 12
03:00 AM
06:00 AM
09:00 AM
12:00 PM
06:00 PM
Jan 12
06:00 AM
12:00 PM


Manage Super Metric
Functions
Operators
Name
Max ESXi Memory Active (%) in a cluster
max(${adaptertype=VMWARE, objecttype=HostSystem, attribute=mem|demand|workload, depth=1})
Objects
Page Size: 50
Name
Site 1 Workload Cluster
Site 2 Workload Cluster
VMSG-Cluster
VSAN 6.1
Page 1 of 1
Object Types
Adapter Type: vCenter Adapter
Object Type
Cluster Compute Resource
Compute Resource
Custom Datacenter
Datacenter
Datastore
Page 1 of 1
Displaying 1 - 19 of 1
Site 1 Workload Cluster
H: 33
L: 0
25.00
0.00
-25.00
03:00 PM
06:00 PM
09:00 PM
Jan 12
03:00 AM
06:00 AM
09:00 AM
12:00 PM


Maximum ESXi Memory Consumed (%) in a cluster
VMSG-Cluster
97
Site 2 Workload Cluster
92
Site 1 Workload Cluster
83
Jan 12
Jan 13
Jan 14
Jan 15
Jan 16
Jan 17
Jan 18


Maximum ESXi Memory Active (%) in a cluster
VMSG-Cluster
43
Jan 12
Jan 13
Jan 14
Jan 15
Jan 16
Jan 17
Jan 18
Site 2 Workload Cluster
39
Jan 12
Jan 13
Jan 14
Jan 15
Jan 16
Jan 17
Jan 18
Site 1 Workload Cluster
31
Jan 12
Jan 13
Jan 14
Jan 15
Jan 16
Jan 17
Jan 18

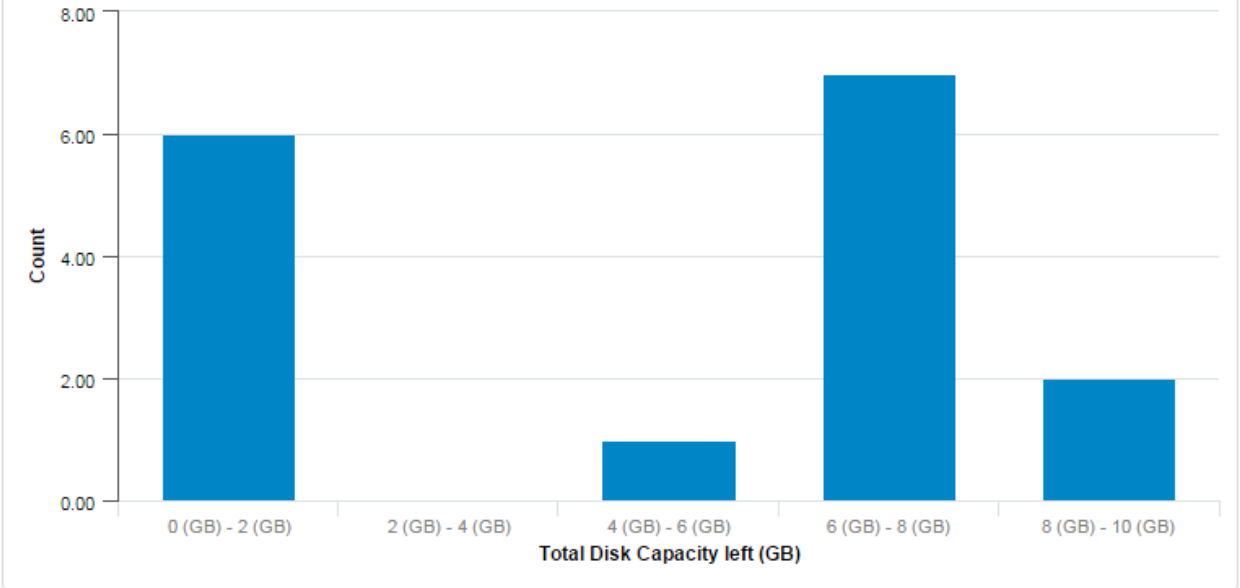

No of VM with snapshot (grouped by snapshot size)
15.00
10.00
5.00
0.00
Count
0 (GB) - 2 (GB)
2 (GB) - 4 (GB)
4 (GB) - 6 (GB)
6 (GB) - 8 (GB)
8 (GB) - 10 (GB)
Disk Space|Snapshot Space

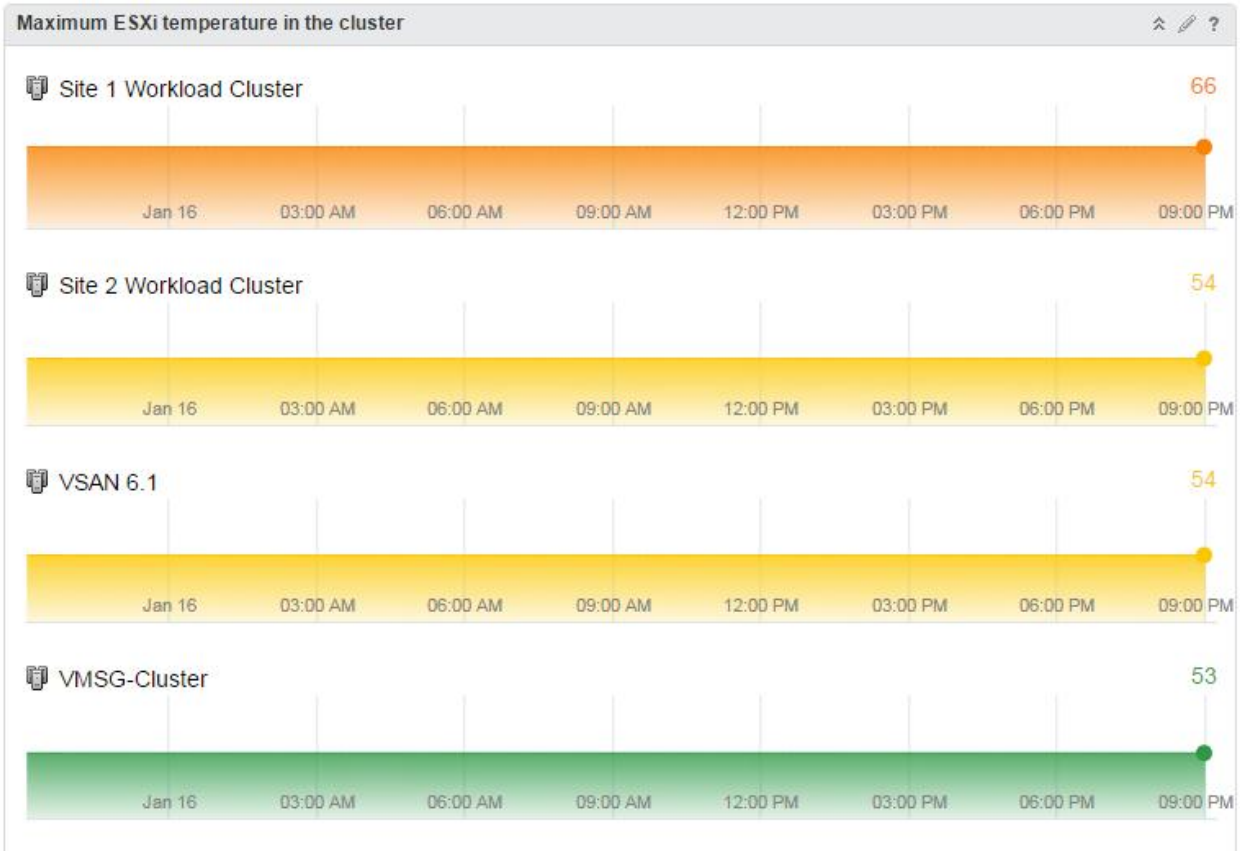
Top 25 VMs by Snapshot Disk Usage (GB)

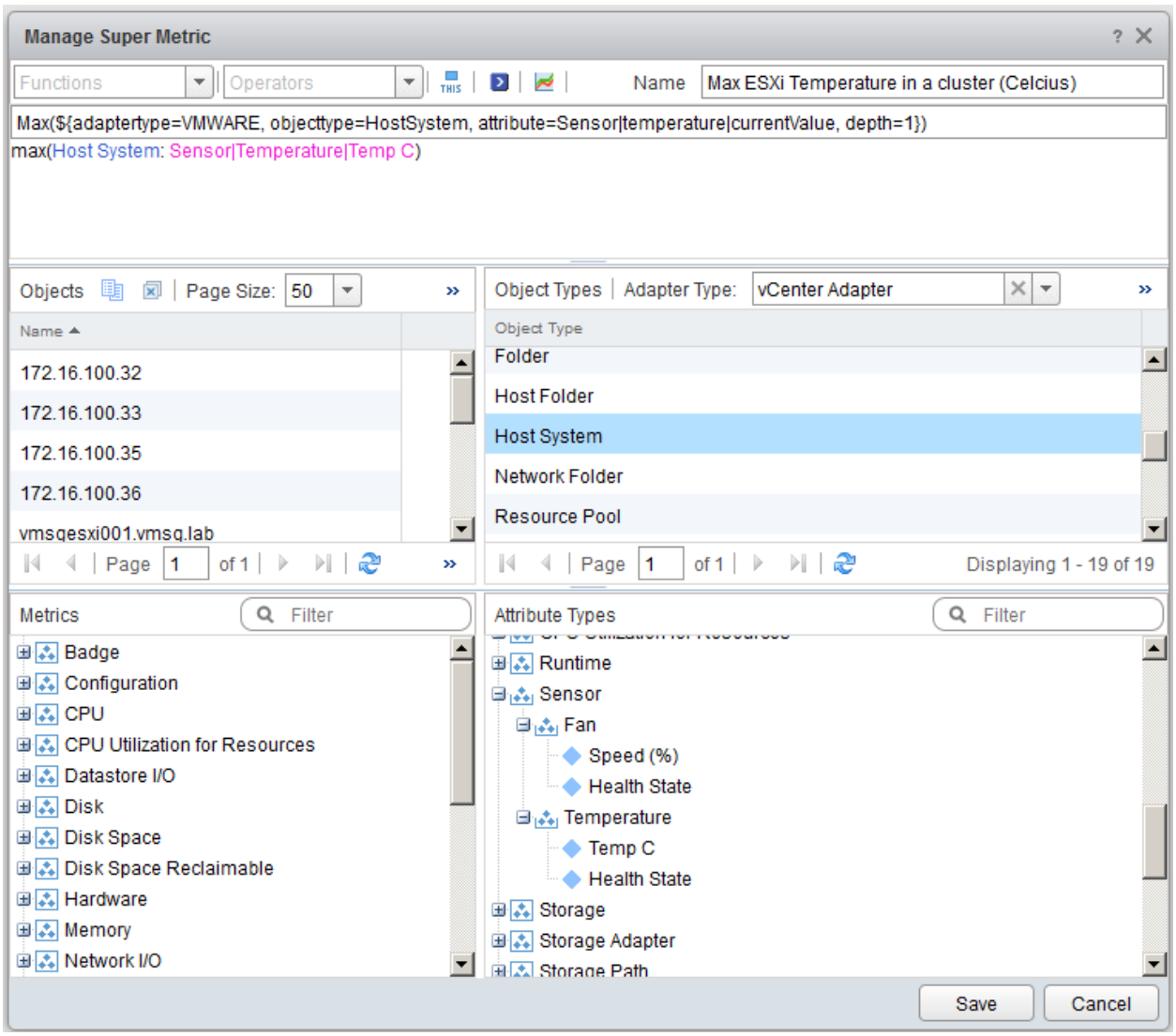
Top 25 Highest Utilization

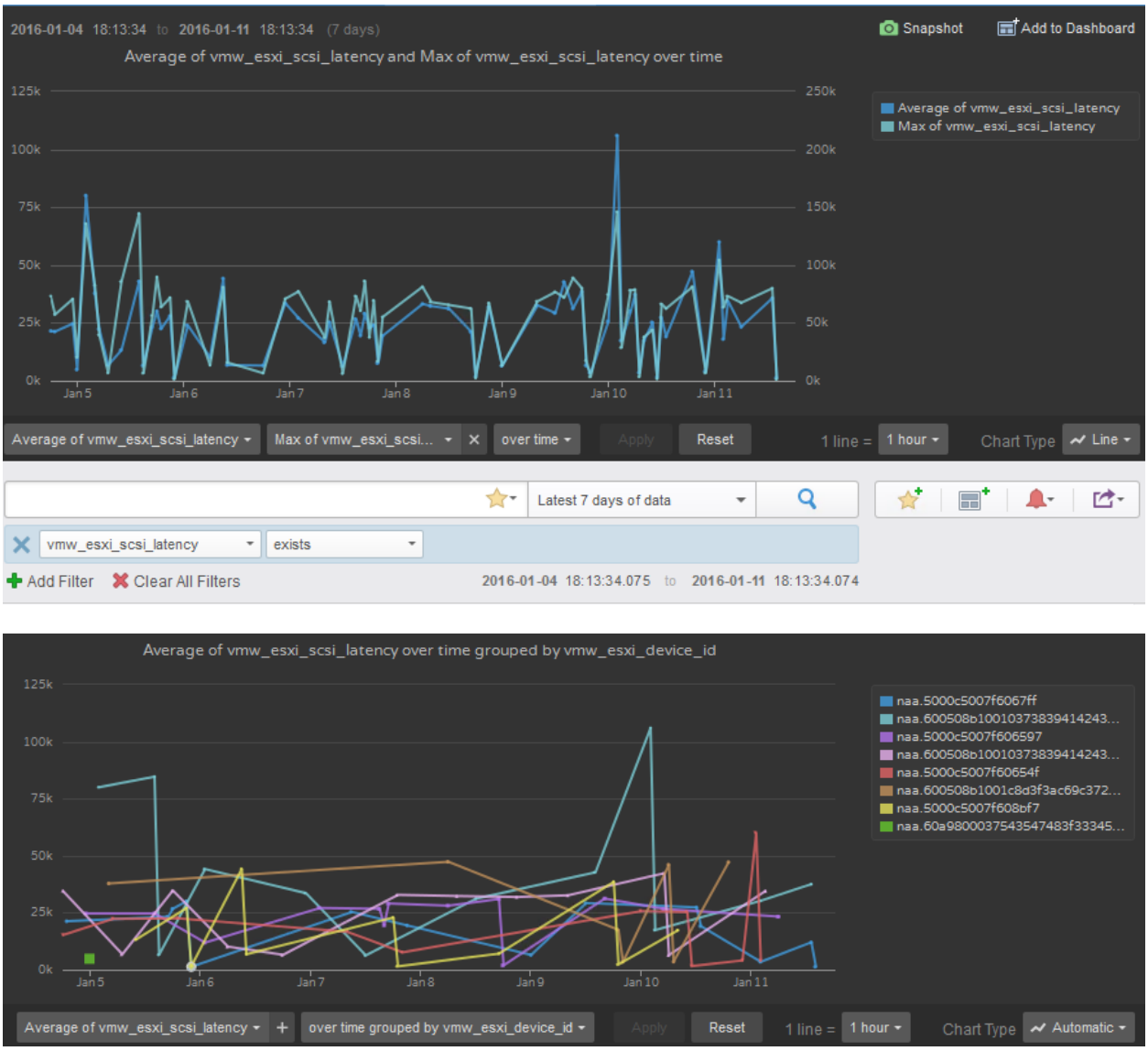
Utilization Index	Objects
48.53	VS-UNPEsx-01
34.93	VS-UNPWeb-01
25.02	CMP
21.1	VS-UNPAds-01
20.18	VS-UNPVra-01
16.37	vRealize Auto IaaS
15.55	Mgmt Shared DB
12.5	VS-UNPVcs-01
9.55	VS-CirrusDem-02
7.96	VS-UNPVro-01
7.58	VS-CirrusVcs-01
7.42	SDDC-Symantec-Oracle-01

No of VM that are running ouf of space

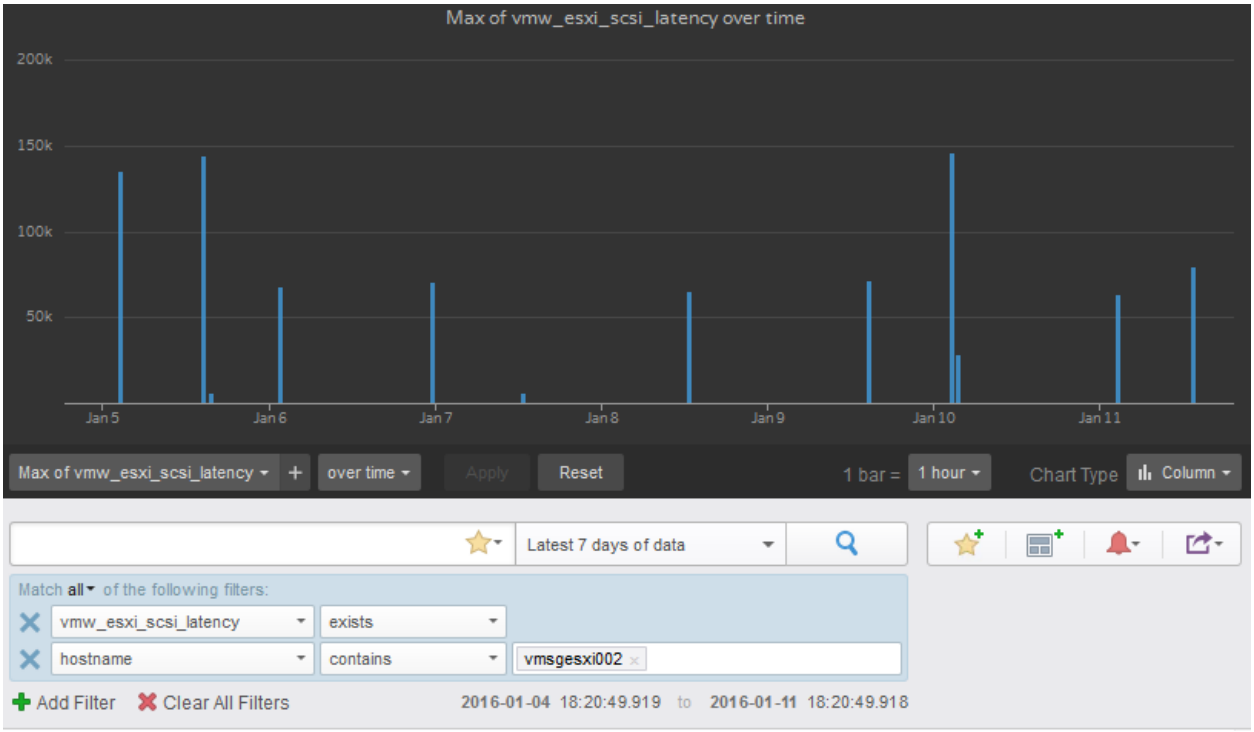


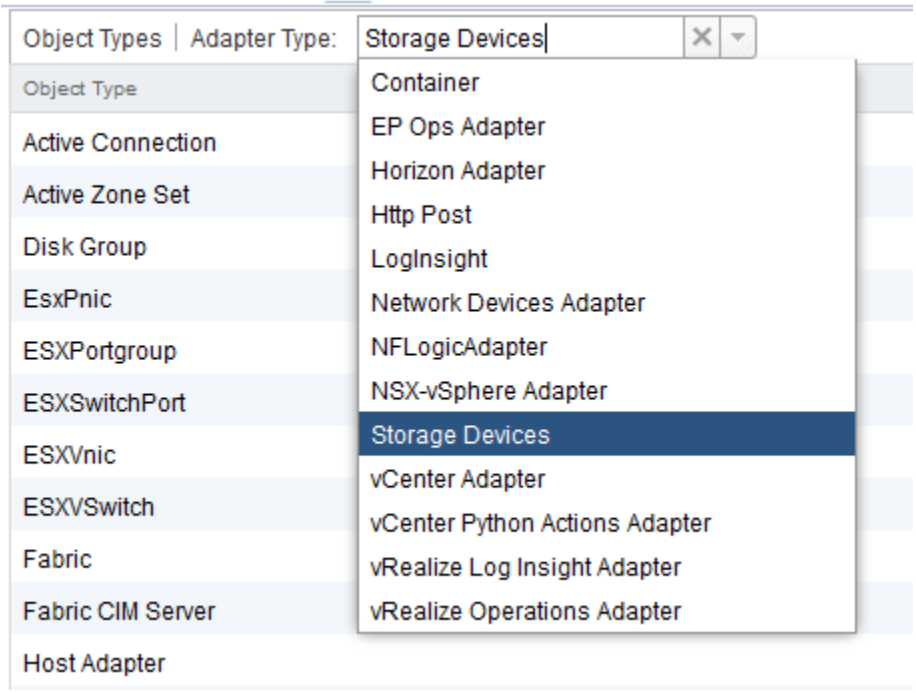

Maximum ESXi temperature in the cluster
Site 1 Workload Cluster
66
Jan 16
03:00 AM
06:00 AM
09:00 AM
12:00 PM
03:00 PM
06:00 PM
09:00 PM
Site 2 Workload Cluster
54
Jan 16
03:00 AM
06:00 AM
09:00 AM
12:00 PM
03:00 PM
06:00 PM
09:00 PM
VSAN 6.1
54
Jan 16
03:00 AM
06:00 AM
09:00 AM
12:00 PM
03:00 PM
06:00 PM
09:00 PM
VMSG-Cluster
53
Jan 16
03:00 AM
06:00 AM
09:00 AM
12:00 PM
03:00 PM
06:00 PM
09:00 PM

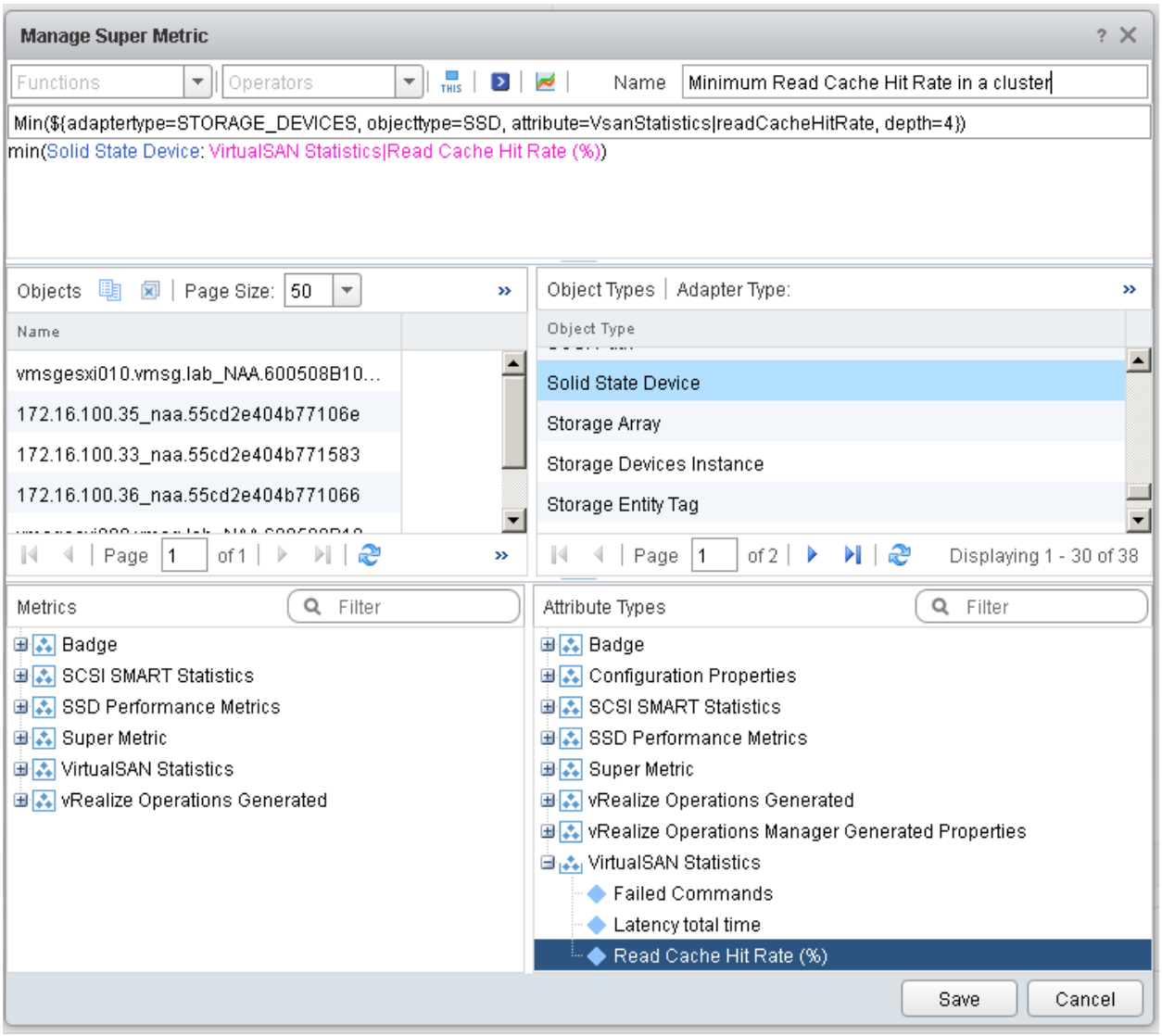

Manage Super Metric
Functions
Operators
THIS
Name
Max ESXi Temperature in a cluster (Celcius)
Max(${adaptertype=VMWARE, objecttype=HostSystem, attribute=Sensor|temperature|currentValue, depth=1})
max(Host System: Sensor|Temperature|Temp C)
Objects
Page Size: 50
Name
172.16.100.32
172.16.100.33
172.16.100.35
172.16.100.36
vmsgesxi001.vmsg.lab
Page 1 of 1
Object Types
Adapter Type: vCenter Adapter
Object Type
Folder
Host Folder
Host System
Network Folder
Resource Pool
Page 1 of 1
Displaying 1 - 19 of 19
Metrics
Filter
Badge
Configuration
CPU
CPU Utilization for Resources
Datastore I/O
Disk
Disk Space
Disk Space Reclaimable
Hardware
Memory
Network I/O
Attribute Types
Filter
Runtime
Sensor
Fan
Speed (%)
Health State
Temperature
Temp C
Health State
Storage
Storage Adapter
Storage Path
Save
Cancel

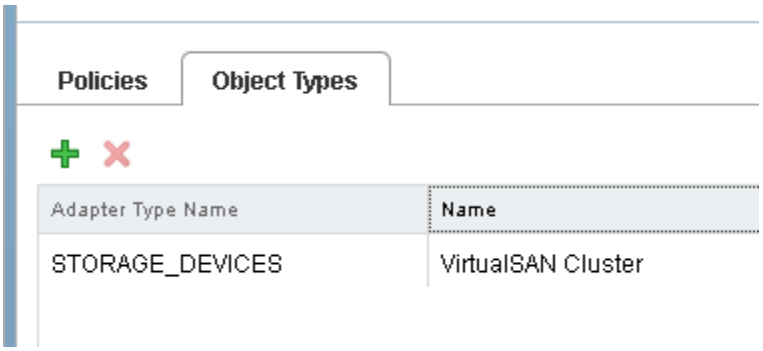

2016-01-04 18:13:34 to 2016-01-11 18:13:34 (7 days)
Snapshot
Add to Dashboard
Average of vmw_esxi_scsi_latency and Max of vmw_esxi_scsi_latency over time
125k
100k
75k
50k
25k
0k
250k
200k
150k
100k
50k
0k
Jan 5
Jan 6
Jan 7
Jan 8
Jan 9
Jan 10
Jan 11
Average of vmw_esxi_scsi_latency
Max of vmw_esxi_scsi_latency
Average of vmw_esxi_scsi_latency
Max of vmw_esxi_scsi...
over time
Apply
Reset
1 line =
1 hour
Chart Type
Line
Latest 7 days of data
vmw_esxi_scsi_latency
exists
Add Filter
Clear All Filters
2016-01-04 18:13:34.075 to 2016-01-11 18:13:34.074

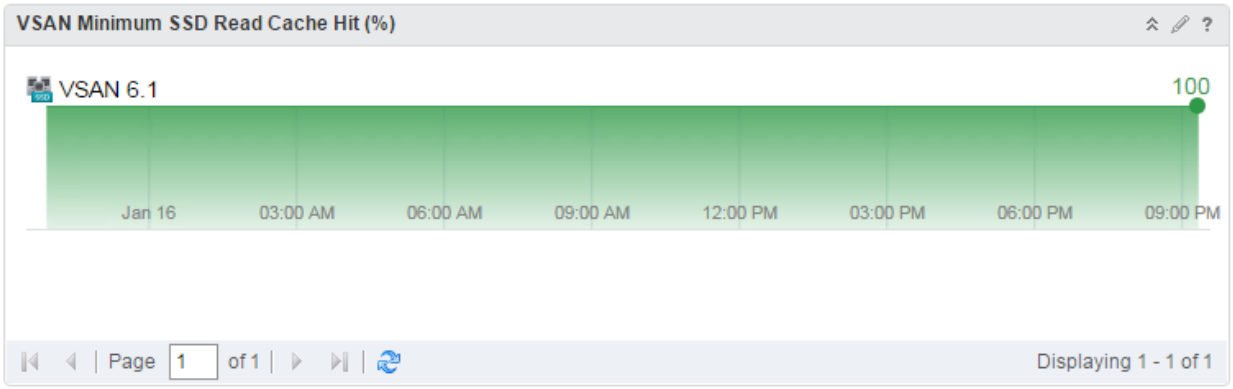
Average of vmw_esxi_scsi_latency over time grouped by vmw_esxi_device_id
125k
100k
75k
50k
25k
0k
Jan 5
Jan 6
Jan 7
Jan 8
Jan 9
Jan 10
Jan 11
naa.5000c5007f6067ff
naa.600508b10010373839414243...
naa.5000c5007f606597
naa.600508b10010373839414243...
naa.5000c5007f60654f
naa.600508b1001c8d3f3ac69c372...
naa.5000c5007f608bf7
naa.60a9800037543547483f33345...
Average of vmw_esxi_scsi_latency
over time grouped by vmw_esxi_device_id
Apply
Reset
1 line =
1 hour
Chart Type
Automatic

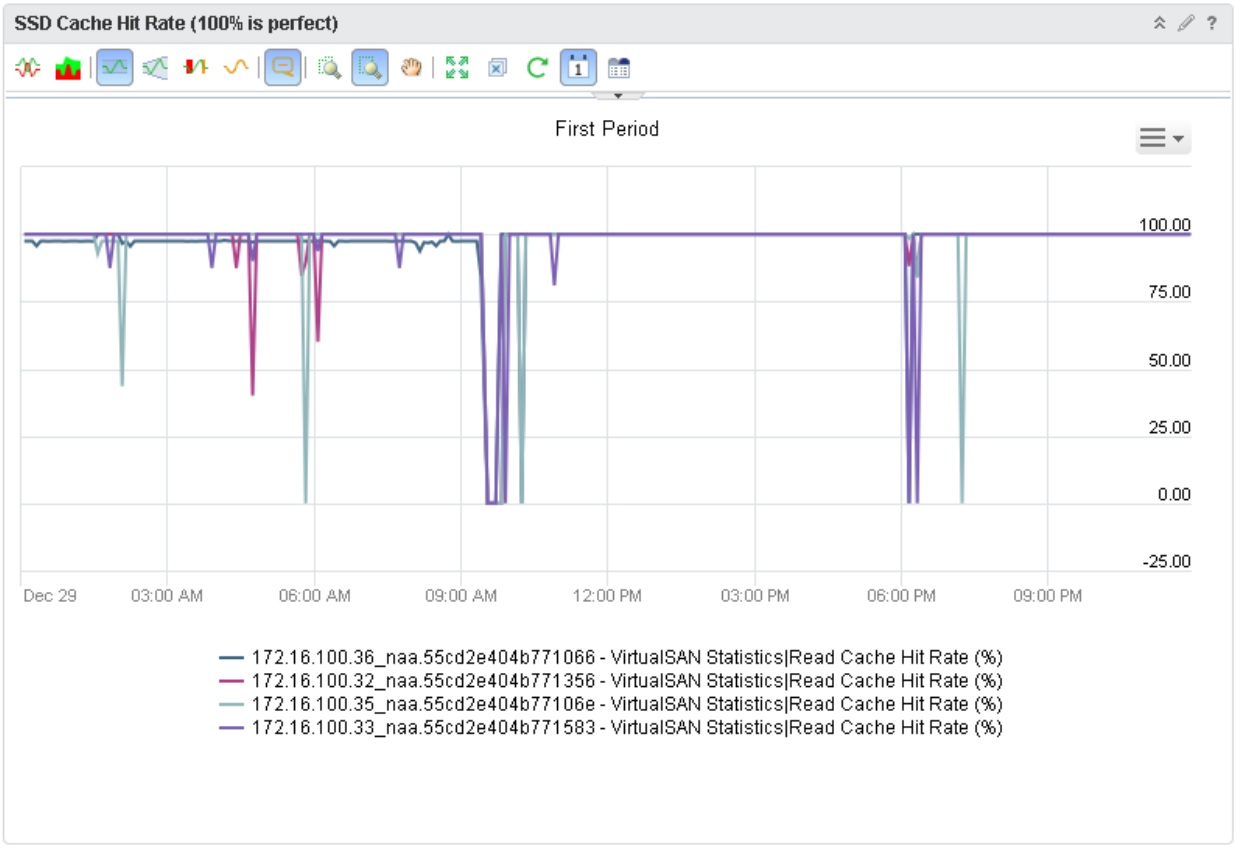

Max of vmw_esxi_scsi_latency over time
200k
150k
100k
50k
Jan 5
Jan 6
Jan 7
Jan 8
Jan 9
Jan 10
Jan 11
Max of vmw_esxi_scsi_latency
over time
Apply
Reset
1 bar = 1 hour
Chart Type
Column
Latest 7 days of data
Match all of the following filters:
vmw_esxi_scsi_latency
exists
hostname
contains
vmsgesxi002
Add Filter
Clear All Filters
2016-01-04 18:20:49.919 to 2016-01-11 18:20:49.918


Object Types
Adapter Type:
Storage Devices
Object Type
Active Connection
Active Zone Set
Disk Group
EsxPnic
ESXPortgroup
ESXSwitchPort
ESXVnic
ESXVSwitch
Fabric
Fabric CIM Server
Host Adapter
Container
EP Ops Adapter
Horizon Adapter
Http Post
LogInsight
Network Devices Adapter
NFLogicAdapter
NSX-vSphere Adapter
Storage Devices
vCenter Adapter
vCenter Python Actions Adapter
vRealize Log Insight Adapter
vRealize Operations Adapter


Manage Super Metric
Functions
Operators
THIS
Name
Minimum Read Cache Hit Rate in a cluster
Min(${adaptertype=STORAGE_DEVICES, objecttype=SSD, attribute=VsanStatistics|readCacheHitRate, depth=4})
min(Solid State Device: VirtualSAN Statistics|Read Cache Hit Rate (%))
Objects
Page Size:
50
Name
vmsgesxi010.vmsg.lab_NAA.600508B10...
172.16.100.35_naa.55cd2e404b77106e
172.16.100.33_naa.55cd2e404b771583
172.16.100.36_naa.55cd2e404b771066
Page
1
of 1
Object Types
Adapter Type:
Object Type
Solid State Device
Storage Array
Storage Devices Instance
Storage Entity Tag
Page
1
of 2
Displaying 1 - 30 of 38
Metrics
Filter
Badge
SCSI SMART Statistics
SSD Performance Metrics
Super Metric
VirtualSAN Statistics
vRealize Operations Generated
Attribute Types
Filter
Badge
Configuration Properties
SCSI SMART Statistics
SSD Performance Metrics
Super Metric
vRealize Operations Generated
vRealize Operations Manager Generated Properties
VirtualSAN Statistics
Failed Commands
Latency total time
Read Cache Hit Rate (%)
Save
Cancel


Policies
Object Types
Adapter Type Name
Name
STORAGE_DEVICES
VirtualSAN Cluster


VSAN Minimum SSD Read Cache Hit (%)
VSAN 6.1
100
Jan 16
03:00 AM
06:00 AM
09:00 AM
12:00 PM
03:00 PM
06:00 PM
09:00 PM
Page 1 of 1
Displaying 1 - 1 of 1


SSD Cache Hit Rate (100% is perfect)
First Period
100.00
75.00
50.00
25.00
0.00
-25.00
Dec 29
03:00 AM
06:00 AM
09:00 AM
12:00 PM
03:00 PM
06:00 PM
09:00 PM
172.16.100.36_naa.55cd2e404b771066 - VirtualSAN Statistics|Read Cache Hit Rate (%)
172.16.100.32_naa.55cd2e404b771356 - VirtualSAN Statistics|Read Cache Hit Rate (%)
172.16.100.35_naa.55cd2e404b77106e - VirtualSAN Statistics|Read Cache Hit Rate (%)
172.16.100.33_naa.55cd2e404b771583 - VirtualSAN Statistics|Read Cache Hit Rate (%)

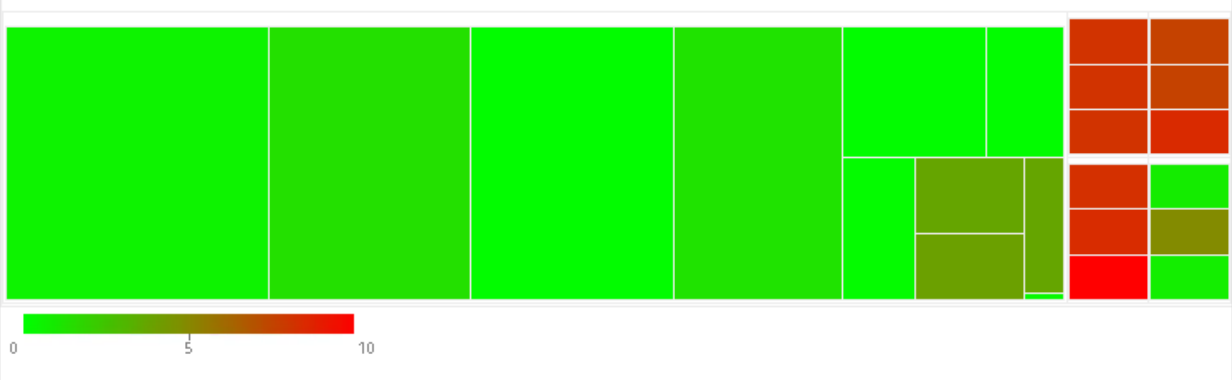
Magnetic Disk Latency (ms)

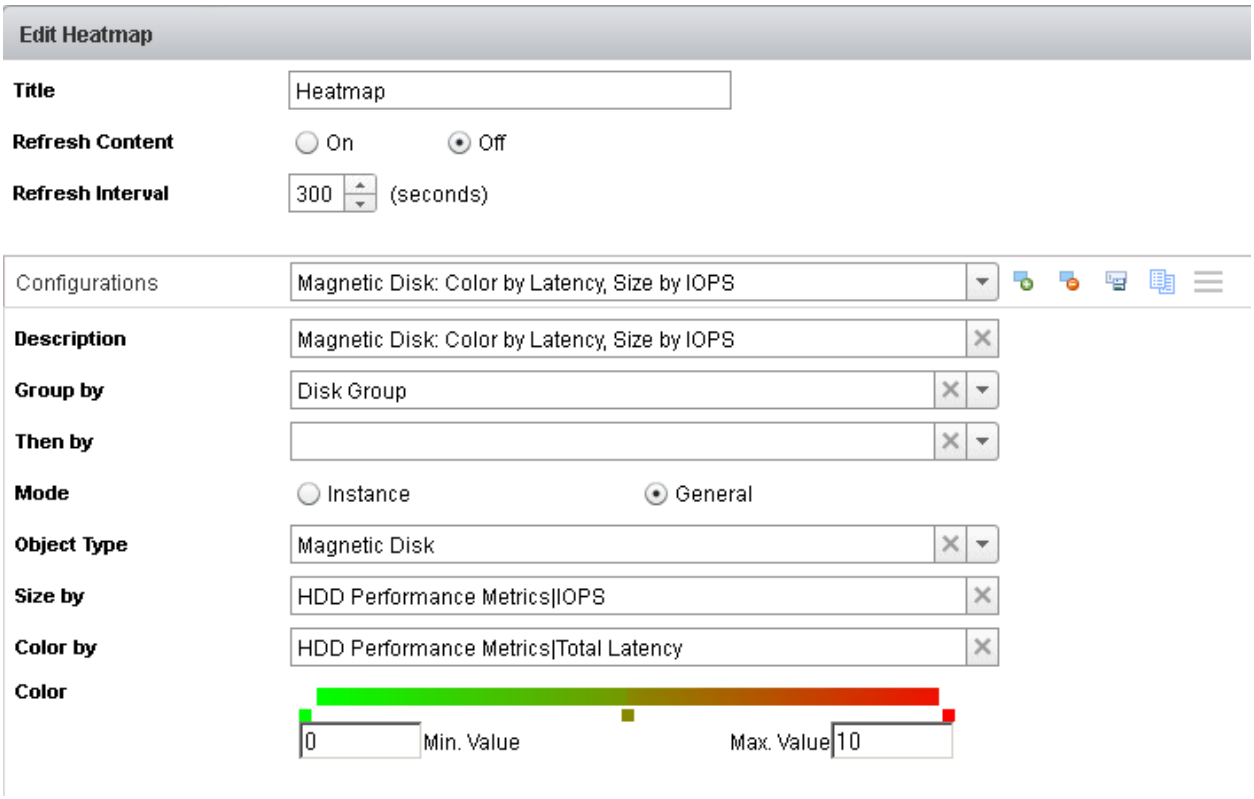
Total Latency 0	Total Latency 0.4	Total Latency 0.5	Total Latency 0.5
Total Latency 0.7	Total Latency 0.3	Total Latency 4	Total Latency 4.1
Total Latency 3.9	Total Latency 0.3	Total Latency 0.8	Total Latency 4.7
Total Latency 0.7	Total Latency 4.1	Total Latency 0.6	Total Latency 0.1

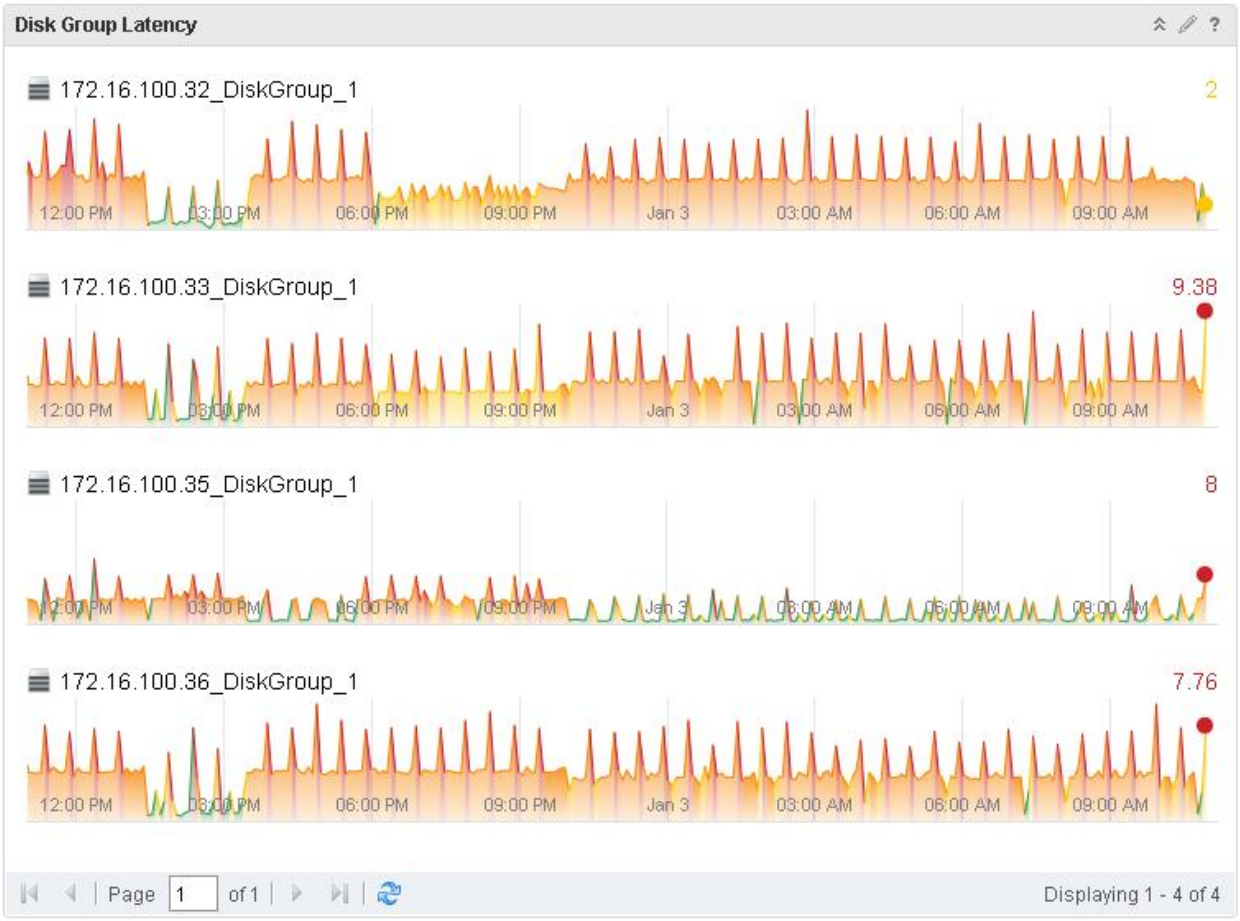
Object: 172.16.100.35_naa.5000c5007edf2bbb
Metric: HDD Performance Metrics|Total Latency

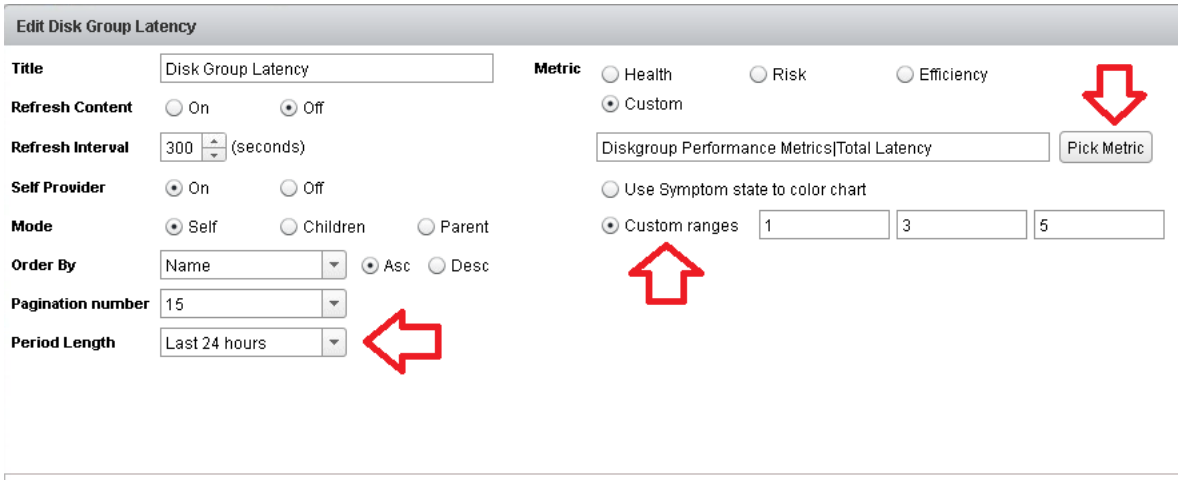
Heatmap

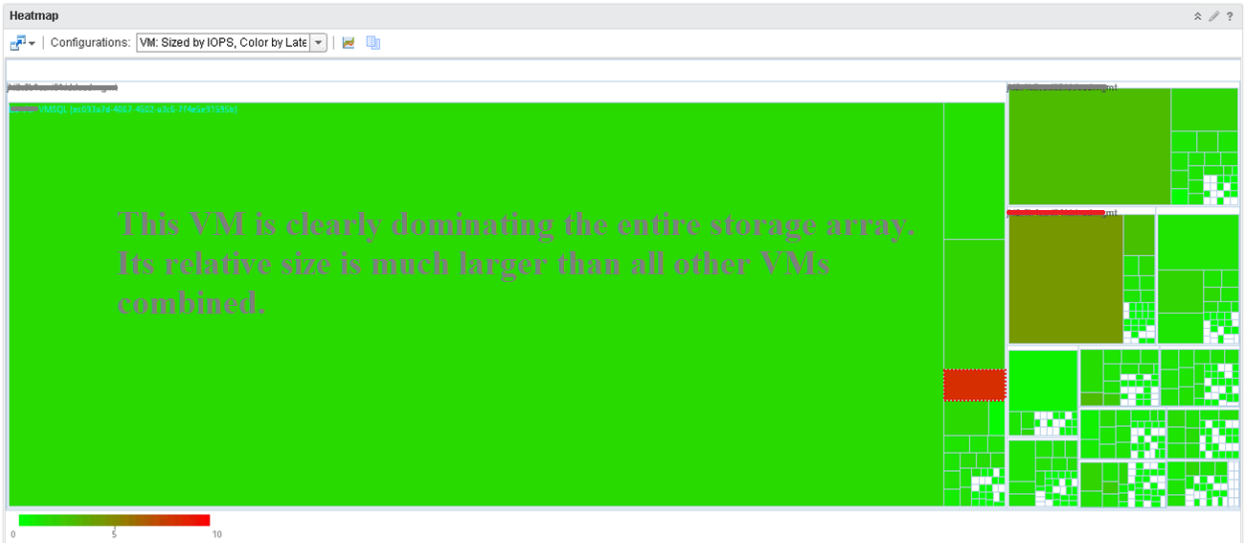
Configurations: Magnetic Disk: Color by Latency,

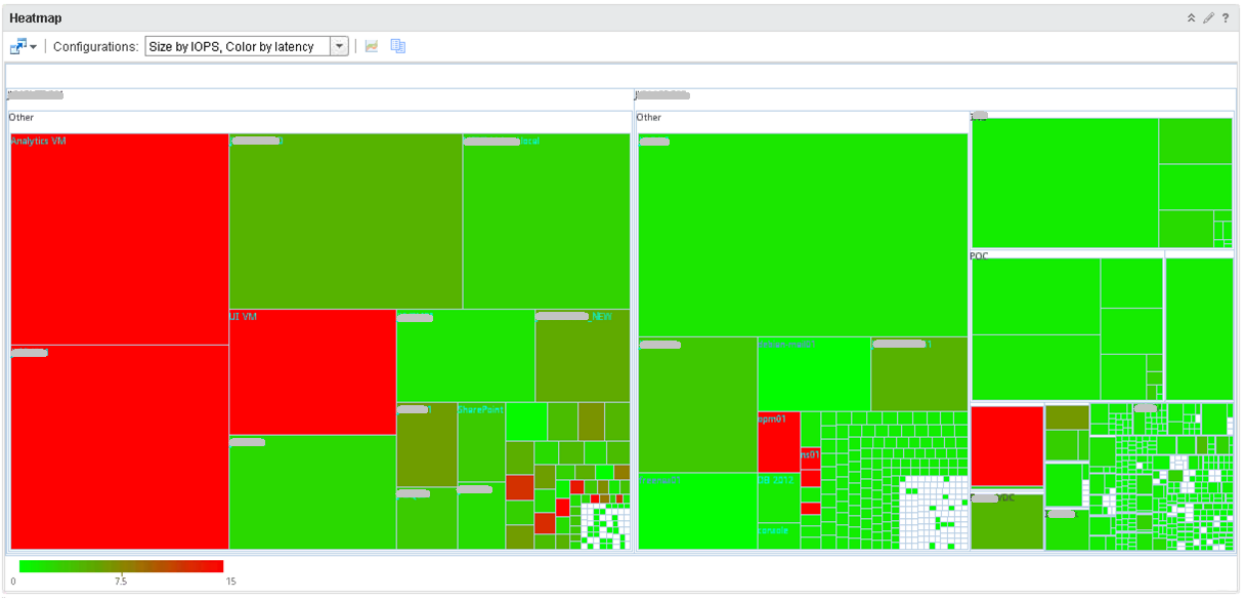


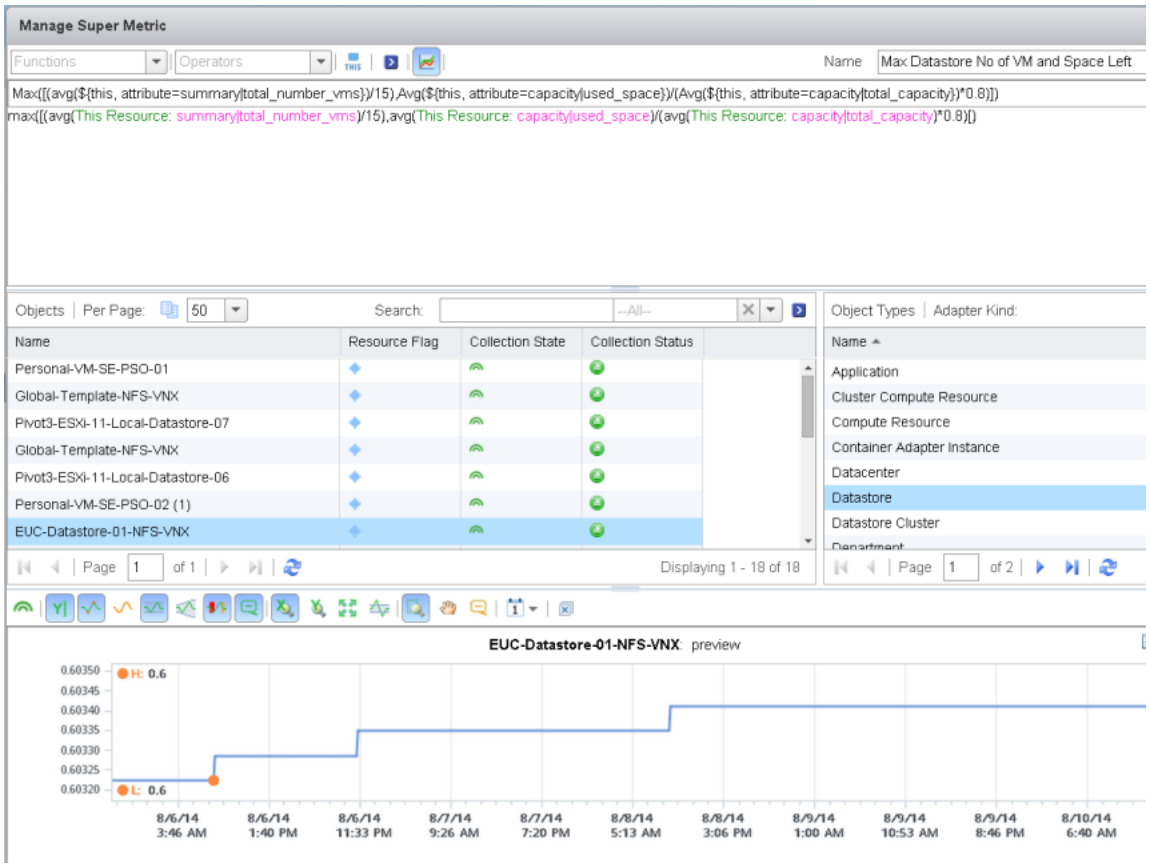

Edit Heatmap
Title
Heatmap
Refresh Content
On
Off
Refresh Interval
300
(seconds)
Configurations
Magnetic Disk: Color by Latency, Size by IOPS
Description
Magnetic Disk: Color by Latency, Size by IOPS
Group by
Disk Group
Then by
Mode
Instance
General
Object Type
Magnetic Disk
Size by
HDD Performance Metrics|IOPS
Color by
HDD Performance Metrics|Total Latency
Color
0
Min. Value
Max. Value
10

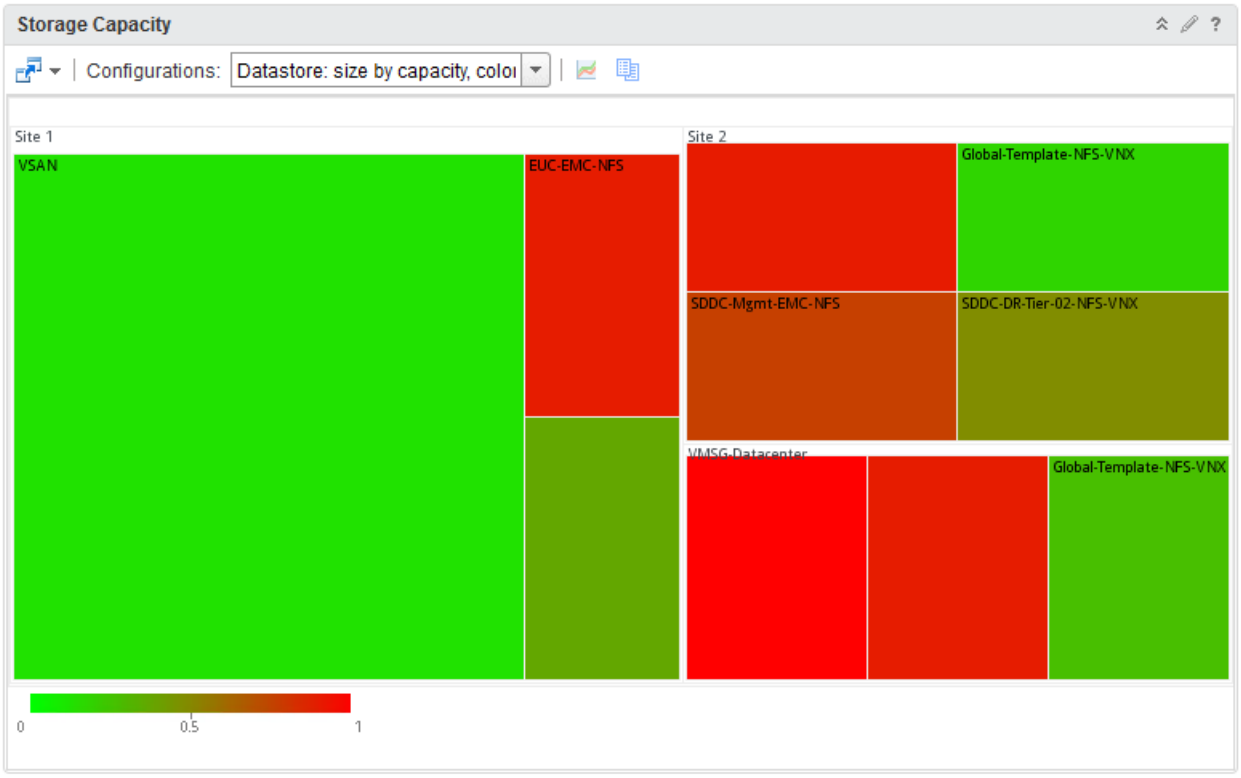

Disk Group Latency
172.16.100.32_DiskGroup_1
2
12:00 PM
03:00 PM
06:00 PM
09:00 PM
Jan 3
03:00 AM
06:00 AM
09:00 AM
172.16.100.33_DiskGroup_1
9.38
12:00 PM
03:00 PM
06:00 PM
09:00 PM
Jan 3
03:00 AM
06:00 AM
09:00 AM
172.16.100.35_DiskGroup_1
8
12:00 PM
03:00 PM
06:00 PM
09:00 PM
Jan 3
03:00 AM
06:00 AM
09:00 AM
172.16.100.36_DiskGroup_1
7.76
12:00 PM
03:00 PM
06:00 PM
09:00 PM
Jan 3
03:00 AM
06:00 AM
09:00 AM
Page 1 of 1
Displaying 1 - 4 of 4

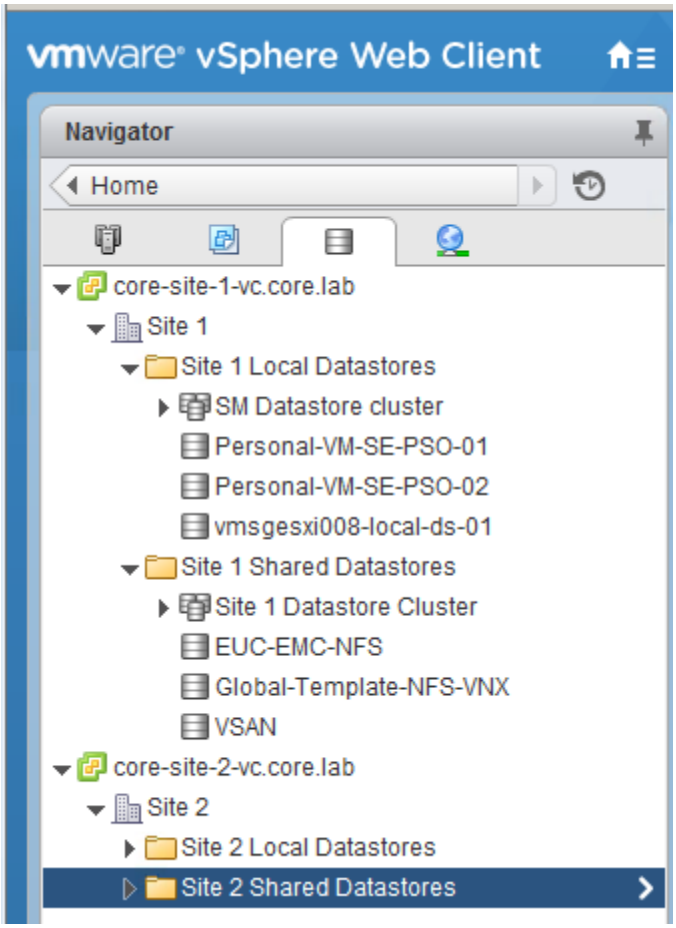

Edit Disk Group Latency
Title
Disk Group Latency
Refresh Content
On
Off
Refresh Interval
300
(seconds)
Self Provider
On
Off
Mode
Self
Children
Parent
Order By
Name
Asc
Desc
Pagination number
15
Period Length
Last 24 hours
Metric
Health
Risk
Efficiency
Custom
Diskgroup Performance Metrics|Total Latency
Pick Metric
Use Symptom state to color chart
Custom ranges
1
3
5

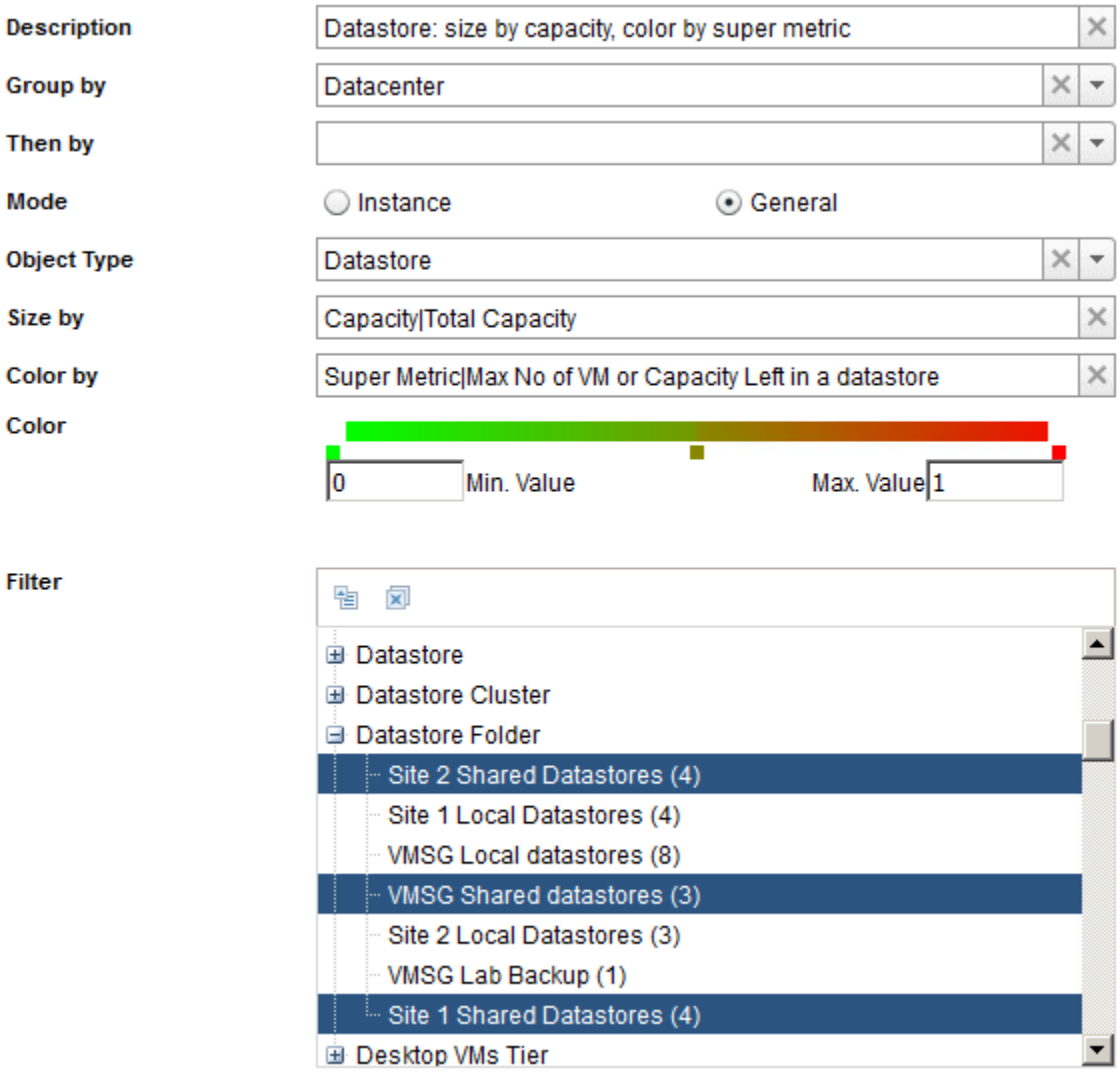

Heatmap
Configurations:
VM: Sized by IOPS, Color by Late
This VM is clearly dominating the entire storage array. Its relative size is much larger than all other VMs combined.
0
5
10

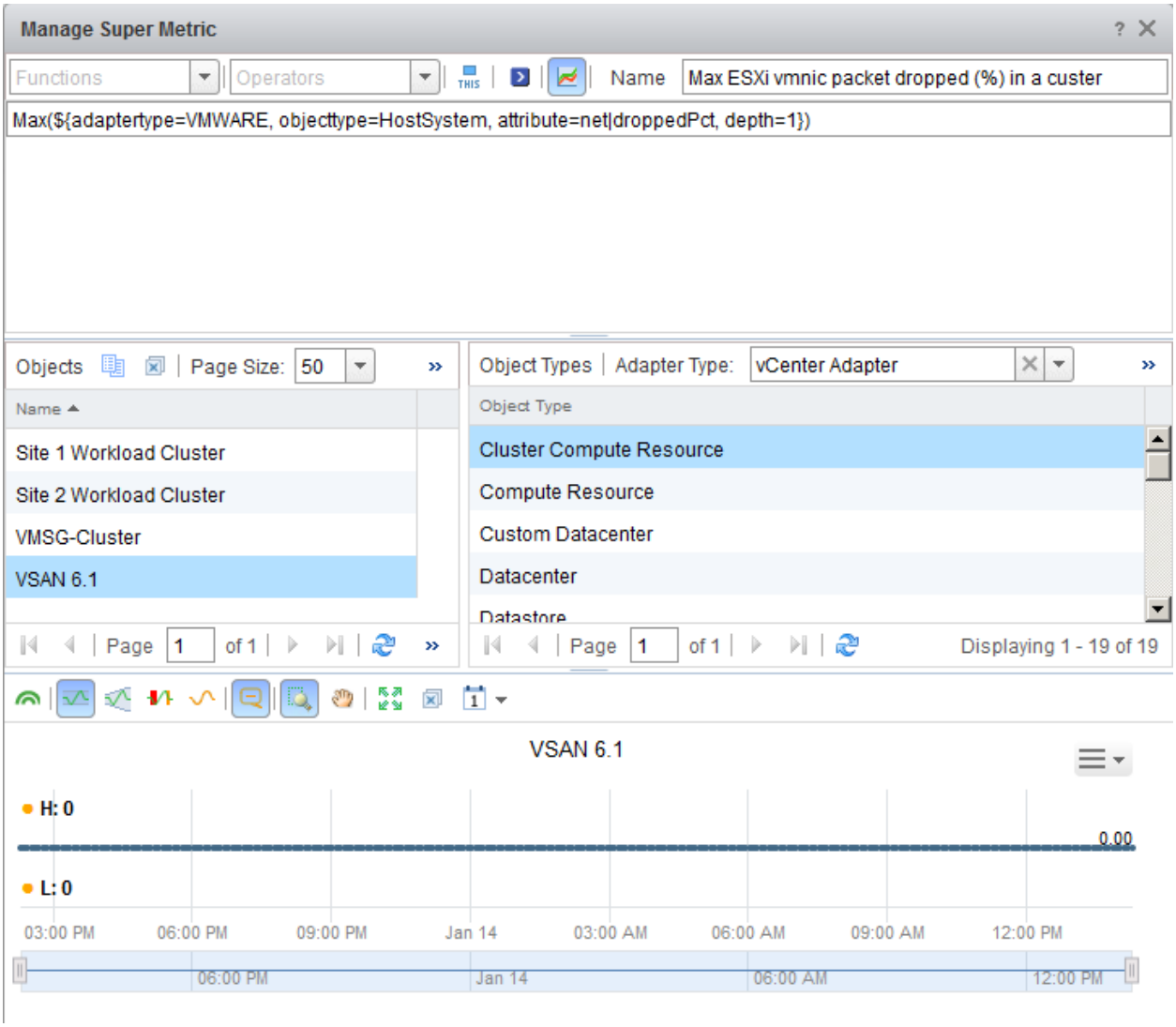

Heatmap
Configurations:
Size by IOPS, Color by latency
Other
Other
Analytics VM
LB VM
NEW
SharePoint
POC
0
7.5
15

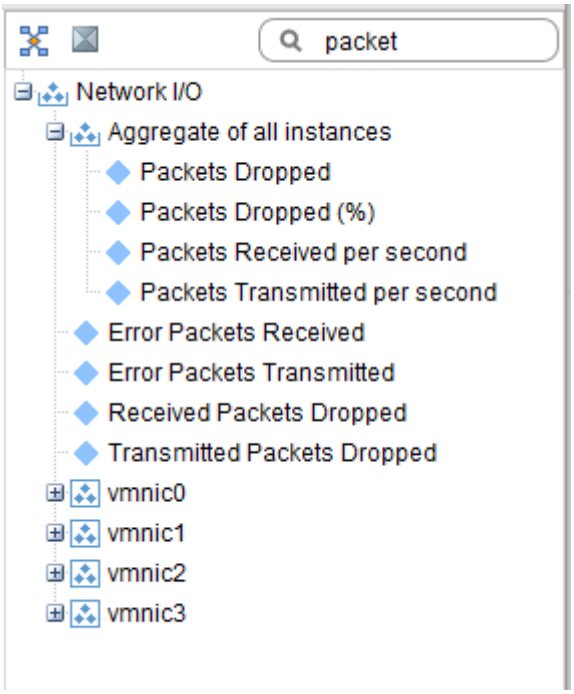

Manage Super Metric
Functions
Operators
Name
Max Datastore No of VM and Space Left
Max{[(avg(${this, attribute=summary|total_number_vms})/15),Avg(${this, attribute=capacity|used_space})/(Avg(${this, attribute=capacity|total_capacity})*0.8)]}
max{[(avg(This Resource: summary|total_number_vms)/15),avg(This Resource: capacity|used_space)/(avg(This Resource: capacity|total_capacity)*0.8)]}
Objects | Per Page: 50
Search:
--All--
Name
Resource Flag
Collection State
Collection Status
Personal-VM-SE-PSO-01
Global-Template-NFS-VNX
Pivot3-ESXi-11-Local-Datastore-07
Global-Template-NFS-VNX
Pivot3-ESXi-11-Local-Datastore-06
Personal-VM-SE-PSO-02 (1)
EUC-Datastore-01-NFS-VNX
Page 1 of 1
Displaying 1 - 18 of 18
Object Types | Adapter Kind:
Name
Application
Cluster Compute Resource
Compute Resource
Container Adapter Instance
Datacenter
Datastore
Datastore Cluster
Page 1 of 2
EUC-Datastore-01-NFS-VNX preview
H: 0.6
L: 0.6
0.60350
0.60345
0.60340
0.60335
0.60330
0.60325
0.60320
8/6/14 3:46 AM
8/6/14 1:40 PM
8/6/14 11:33 PM
8/7/14 9:26 AM
8/7/14 7:20 PM
8/8/14 5:13 AM
8/8/14 3:06 PM
8/9/14 1:00 AM
8/9/14 10:53 AM
8/9/14 8:46 PM
8/10/14 6:40 AM


Storage Capacity
Configurations:
Datastore: size by capacity, colo
Site 1
VSAN
EUC-EMC-NFS
Site 2
Global-Template-NFS-VNX
SDDC-Mgmt-EMC-NFS
SDDC-DR-Tier-02-NFS-VNX
VMSG-Datacenter
Global-Template-NFS-VNX
0
0.5
1


vmware vSphere Web Client
Navigator
Home
core-site-1-vc.core.lab
Site 1
Site 1 Local Datastores
SM Datastore cluster
Personal-VM-SE-PSO-01
Personal-VM-SE-PSO-02
vmsgesxi008-local-ds-01
Site 1 Shared Datastores
Site 1 Datastore Cluster
EUC-EMC-NFS
Global-Template-NFS-VNX
VSAN
core-site-2-vc.core.lab
Site 2
Site 2 Local Datastores
Site 2 Shared Datastores


Description
Datastore: size by capacity, color by super metric
Group by
Datacenter
Then by
Mode
Instance
General
Object Type
Datastore
Size by
Capacity|Total Capacity
Color by
Super Metric|Max No of VM or Capacity Left in a datastore
Color
0
Min. Value
Max. Value
1
Filter
Datastore
Datastore Cluster
Datastore Folder
Site 2 Shared Datastores (4)
Site 1 Local Datastores (4)
VMSG Local datastores (8)
VMSG Shared datastores (3)
Site 2 Local Datastores (3)
VMSG Lab Backup (1)
Site 1 Shared Datastores (4)
Desktop VMs Tier


Manage Super Metric
Functions
Operators
THIS
Name
Max ESXi vmnic packet dropped (%) in a custer
Max(${adaptertype=VMWARE, objecttype=HostSystem, attribute=net|droppedPct, depth=1})
Objects
Page Size: 50
Name
Site 1 Workload Cluster
Site 2 Workload Cluster
VMSG-Cluster
VSAN 6.1
Page 1 of 1
Object Types
Adapter Type: vCenter Adapter
Object Type
Cluster Compute Resource
Compute Resource
Custom Datacenter
Datacenter
Datastore
Page 1 of 1
Displaying 1 - 19 of 19
VSAN 6.1
H: 0
0.00
L: 0
03:00 PM
06:00 PM
09:00 PM
Jan 14
03:00 AM
06:00 AM
09:00 AM
12:00 PM
06:00 PM
Jan 14
06:00 AM
12:00 PM



Top-20 VM with packet dropped

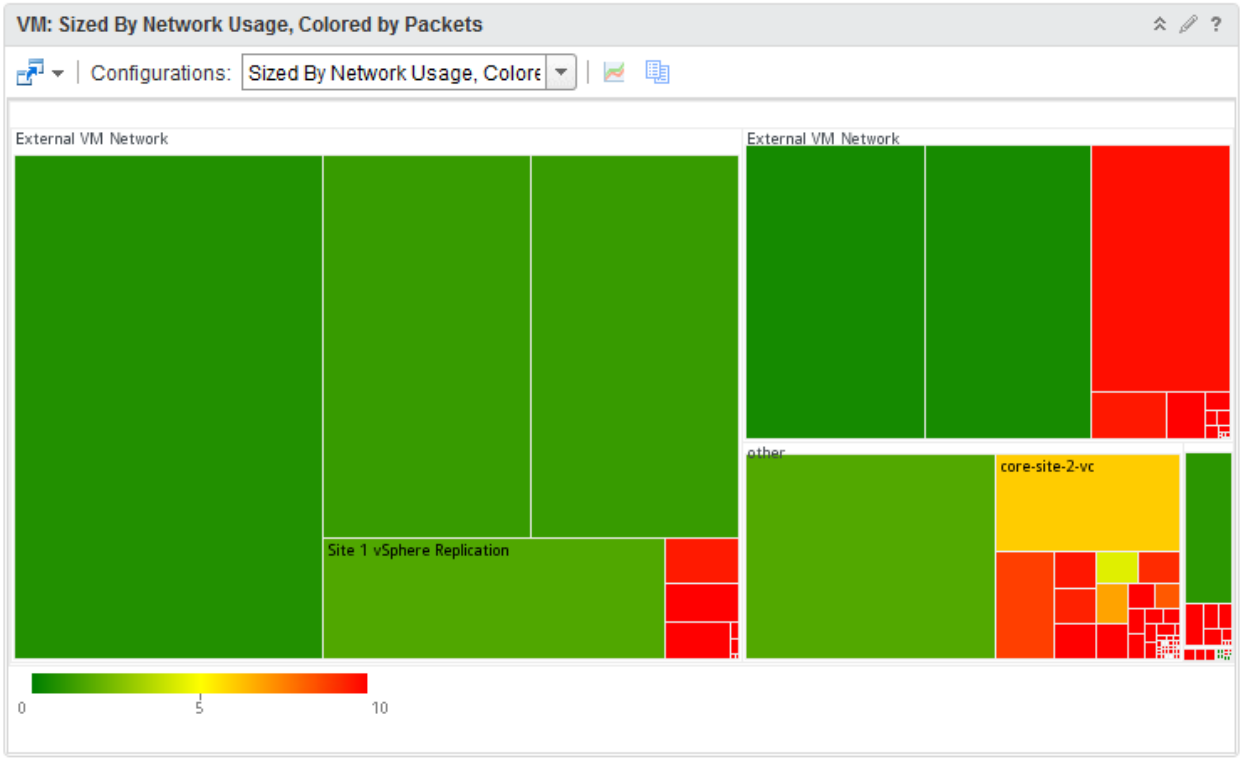
Top 20 Highest Utilization

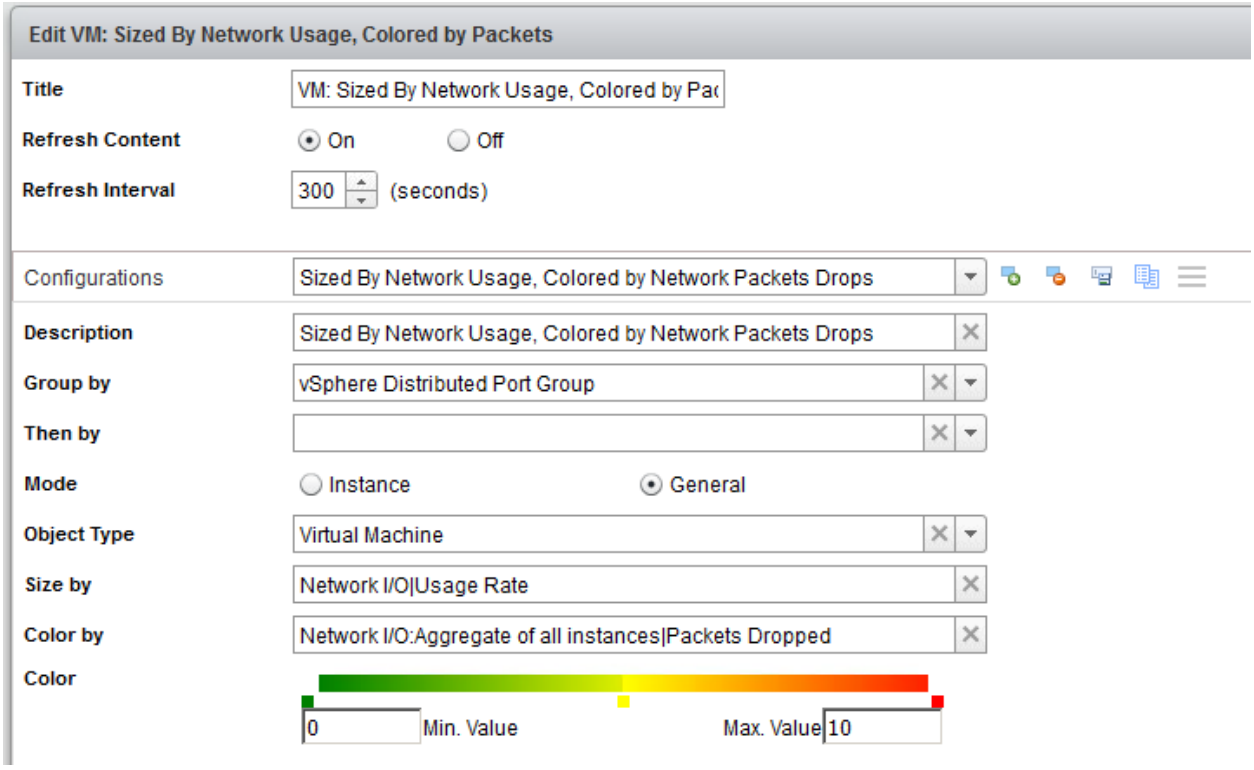
Utilization Index	Objects
100	Windows 10 Home edition
74.53	VS-CirrusDem-02
74.02	VMSG-App-Volume-Manager
55.72	SDDC-vRA7-IaaS
50.95	CTO006
50.87	CTO008
50.14	vRA7004
50	Win2012 Template
50	vDemo-Prod-Site-ESXi-04
50	vDemo-Prod-Site-ESXi-02
50	Hadoop1-Client-0

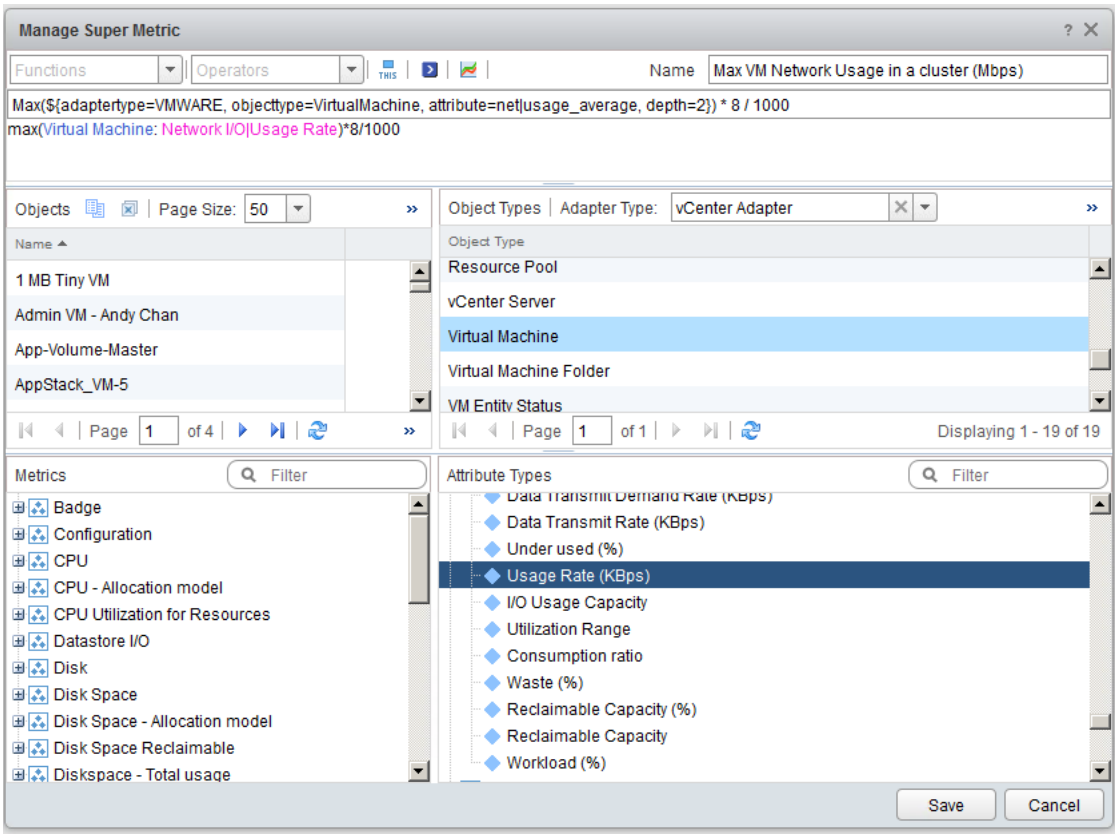
Top-20 ESXi with packet dropped

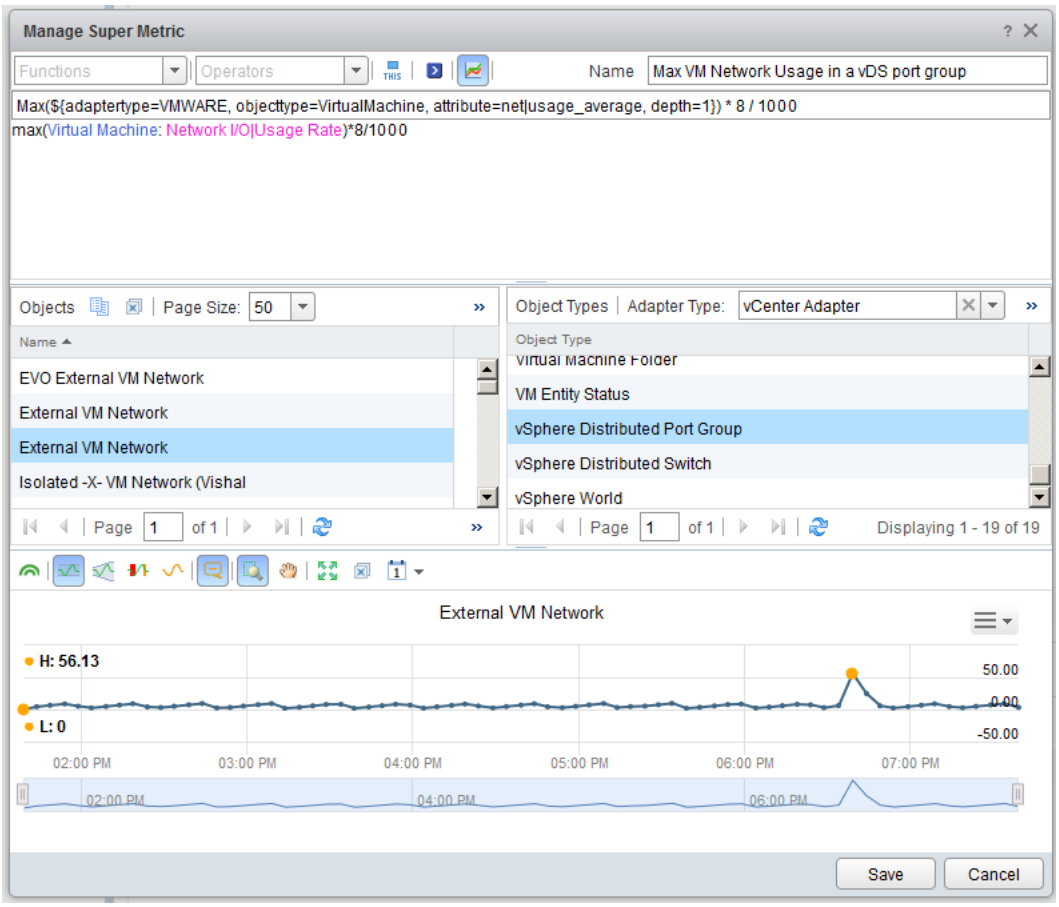
Top 20 Highest Utilization

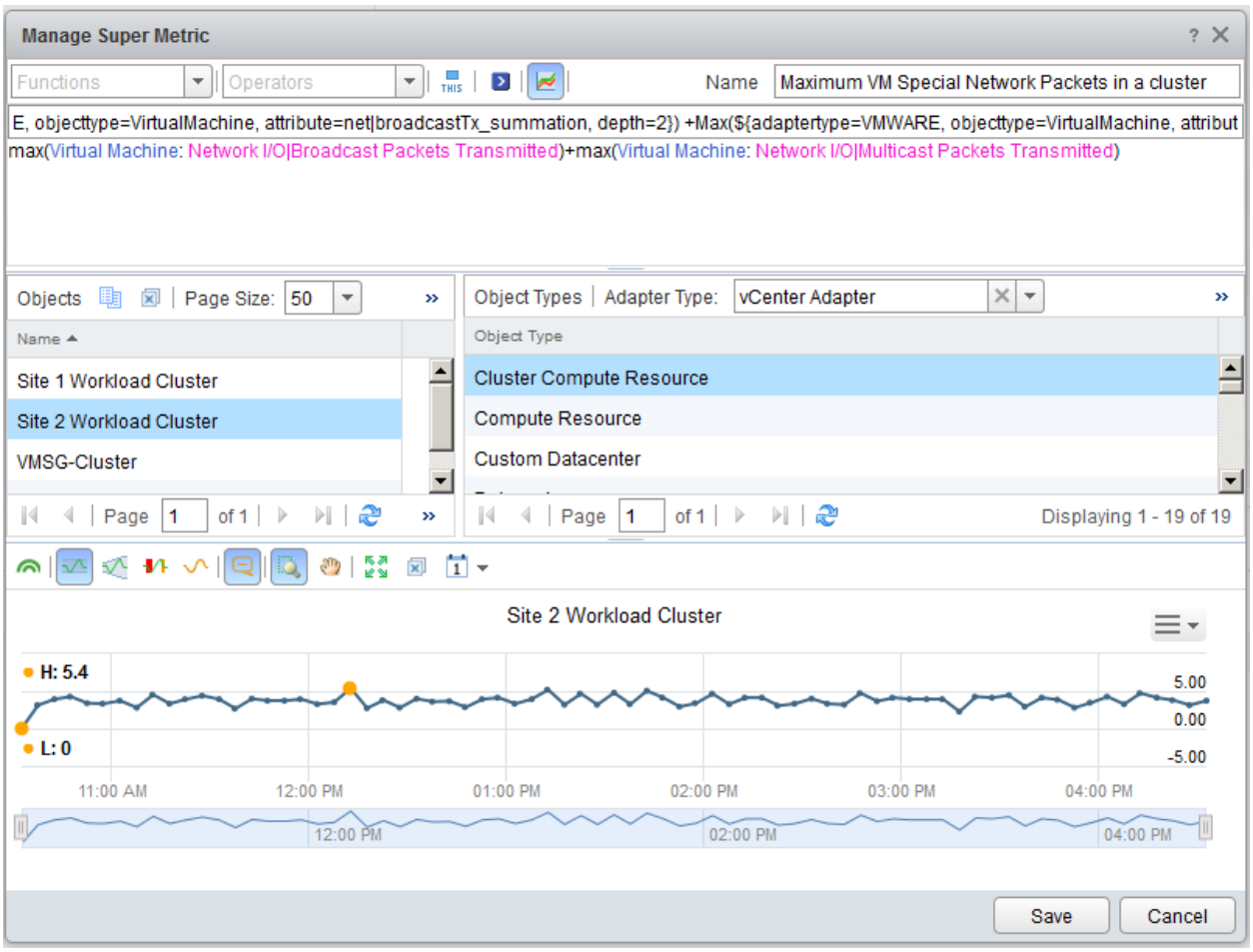
Utilization Index	Objects
0	vmsgesxi008.vmsg.lab
0	vmsgesxi003.vmsg.lab
0	vmsgesxi004.vmsg.lab
0	172.16.100.35
0	vmsgesxi011.vmsg.lab
0	vmsgesxi009.vmsg.lab
0	172.16.100.33
0	vmsgesxi001.vmsg.lab
0	vmsgesxi002.vmsg.lab
0	172.16.100.32
0	vmsgesxi010.vmsg.lab

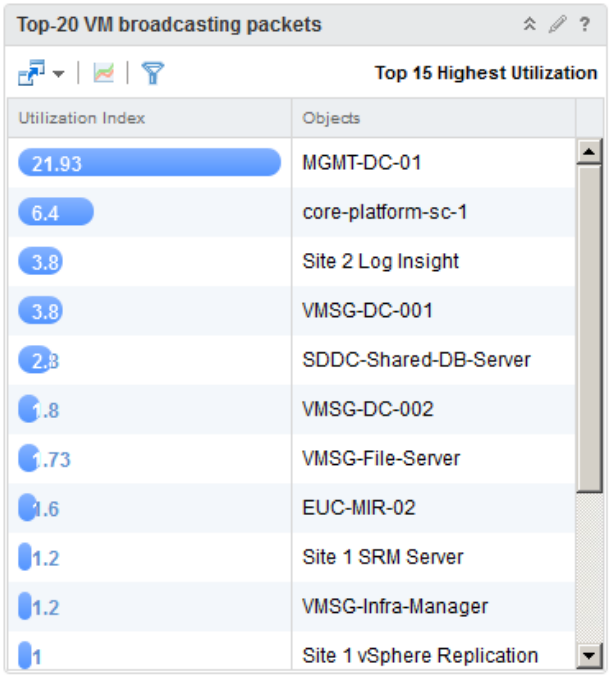

VM: Sized By Network Usage, Colored by Packets
Configurations:
Sized By Network Usage, Colore
External VM Network
External VM Network
Site 1 vSphere Replication
other
core-site-2-vc
0
5
10

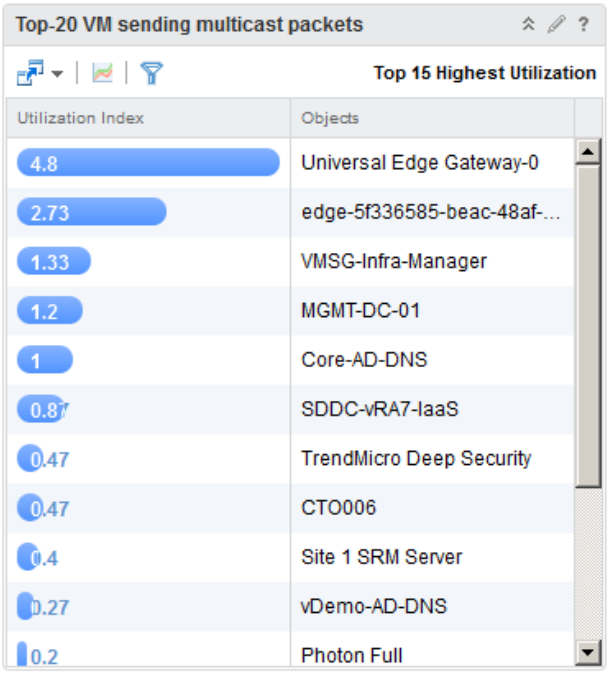

Edit VM: Sized By Network Usage, Colored by Packets
Title
VM: Sized By Network Usage, Colored by Pac
Refresh Content
On
Off
Refresh Interval
300
(seconds)
Configurations
Sized By Network Usage, Colored by Network Packets Drops
Description
Sized By Network Usage, Colored by Network Packets Drops
Group by
vSphere Distributed Port Group
Then by
Mode
Instance
General
Object Type
Virtual Machine
Size by
Network I/O|Usage Rate
Color by
Network I/O:Aggregate of all instances|Packets Dropped
Color
0
Min. Value
Max. Value
10


Manage Super Metric
Functions
Operators
THIS
Name
Max VM Network Usage in a cluster (Mbps)
Max(${adaptertype=VMWARE, objecttype=VirtualMachine, attribute=net|usage_average, depth=2}) * 8 / 1000
max(Virtual Machine: Network I/O|Usage Rate)*8/1000
Objects
Page Size: 50
Name
1 MB Tiny VM
Admin VM - Andy Chan
App-Volume-Master
AppStack_VM-5
Page 1 of 4
Object Types
Adapter Type: vCenter Adapter
Object Type
Resource Pool
vCenter Server
Virtual Machine
Virtual Machine Folder
VM Entity Status
Page 1 of 1
Displaying 1 - 19 of 19
Metrics
Filter
Badge
Configuration
CPU
CPU - Allocation model
CPU Utilization for Resources
Datastore I/O
Disk
Disk Space
Disk Space - Allocation model
Disk Space Reclaimable
Diskspace - Total usage
Attribute Types
Filter
Data Transmit Rate (KBps)
Under used (%)
Usage Rate (KBps)
I/O Usage Capacity
Utilization Range
Consumption ratio
Waste (%)
Reclaimable Capacity (%)
Reclaimable Capacity
Workload (%)
Save
Cancel

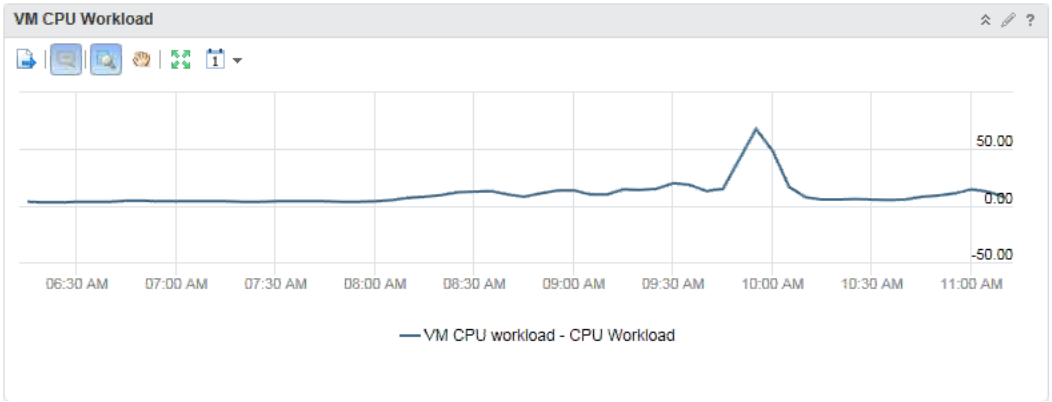

Manage Super Metric
Functions
Operators
Name
Max VM Network Usage in a vDS port group
Max(${adaptertype=VMWARE, objecttype=VirtualMachine, attribute=net|usage_average, depth=1}) * 8 / 1000
max(Virtual Machine: Network I/O|Usage Rate)*8/1000
Objects
Page Size: 50
Name
EVO External VM Network
External VM Network
External VM Network
Isolated -X- VM Network (Vishal
Page 1 of 1
Object Types
Adapter Type: vCenter Adapter
Object Type
VM Entity Status
vSphere Distributed Port Group
vSphere Distributed Switch
vSphere World
Page 1 of 1
Displaying 1 - 19 of 19
External VM Network
H: 56.13
L: 0
50.00
0.00
-50.00
02:00 PM
03:00 PM
04:00 PM
05:00 PM
06:00 PM
07:00 PM
Save
Cancel

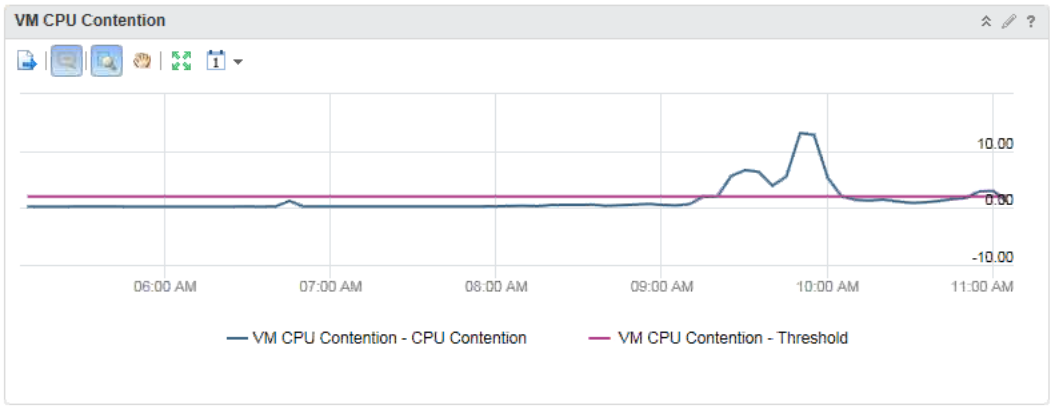

Manage Super Metric
Functions
Operators
THIS
Name
Maximum VM Special Network Packets in a cluster
E, objecttype=VirtualMachine, attribute=net|broadcastTx_summation, depth=2}) +Max(${adaptertype=VMWARE, objecttype=VirtualMachine, attribut
max(Virtual Machine: Network I/O|Broadcast Packets Transmitted)+max(Virtual Machine: Network I/O|Multicast Packets Transmitted)
Objects
Page Size:
50
Name
Site 1 Workload Cluster
Site 2 Workload Cluster
VMSG-Cluster
Page
1
of 1
Object Types
Adapter Type:
vCenter Adapter
Object Type
Cluster Compute Resource
Compute Resource
Custom Datacenter
Page
1
of 1
Displaying 1 - 19 of 19
Site 2 Workload Cluster
H: 5.4
L: 0
5.00
0.00
-5.00
11:00 AM
12:00 PM
01:00 PM
02:00 PM
03:00 PM
04:00 PM
12:00 PM
02:00 PM
04:00 PM
Save
Cancel

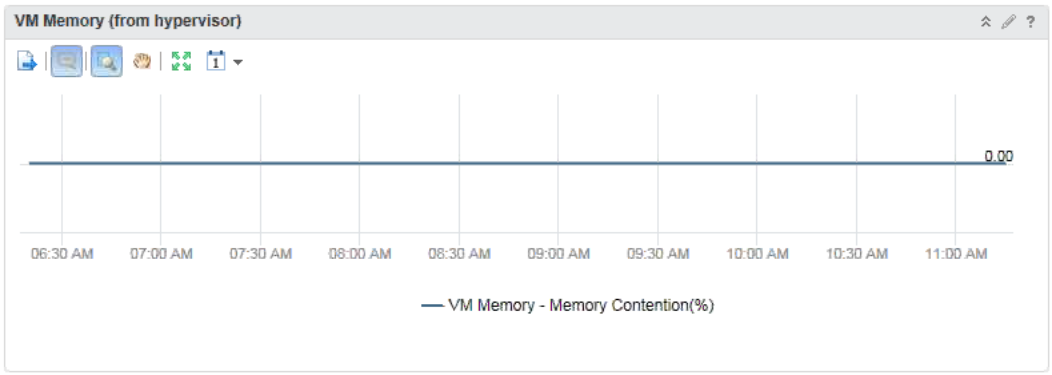

Top-20 VM broadcasting packets
Top 15 Highest Utilization
Utilization Index
Objects
21.93
MGMT-DC-01
6.4
core-platform-sc-1
3.8
Site 2 Log Insight
3.8
VMSG-DC-001
2.8
SDDC-Shared-DB-Server
1.8
VMSG-DC-002
1.73
VMSG-File-Server
1.6
EUC-MIR-02
1.2
Site 1 SRM Server
1.2
VMSG-Infra-Manager
1
Site 1 vSphere Replication

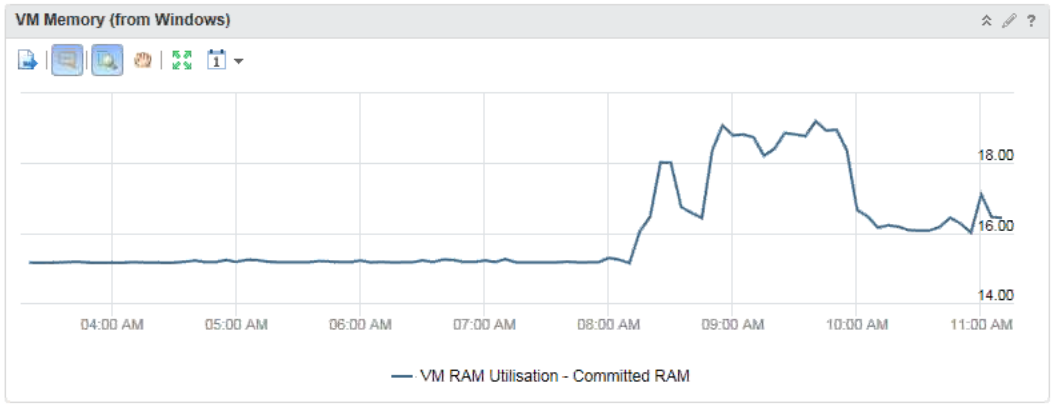

Top-20 VM sending multicast packets
Top 15 Highest Utilization
Utilization Index
Objects
4.8
Universal Edge Gateway-0
2.73
edge-5f336585-beac-48af-...
1.33
VMSG-Infra-Manager
1.2
MGMT-DC-01
1
Core-AD-DNS
0.87
SDDC-vRA7-IaaS
0.47
TrendMicro Deep Security
0.47
CTO006
0.4
Site 1 SRM Server
0.27
vDemo-AD-DNS
0.2
Photon Full

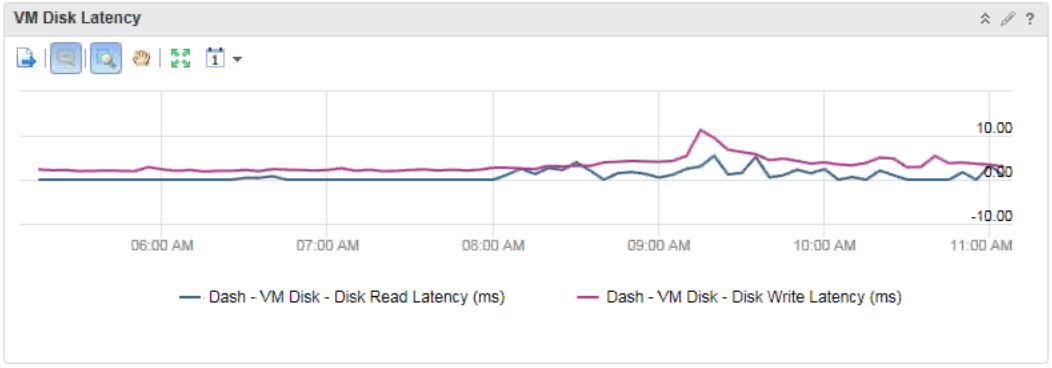
VMware VDI Data	Tools
vSphere	vRealize Operations
vSphere Tasks, Events, Alarms	Log Insight
ESXi logs	Log Insight
vCenter Server, vCenter Database	vRealize Operations for vCenter, Log Insight
Horizon Servers	vRealize Operations with EP Agent, Log Insight
View Event Database	Log Insight
F5 (Load Balancer)	vRealize Operations (Blue Medora)
F5 logs	Log Insight
Storage (e.g. VSAN, EMC)	vRealize Operations
Storage logs	Log Insight
TrendMicro Deep Security appliance	vRealize Operations
TrendMicro logs	Log Insight
Horizon View	vRealize Operations (for View)
Zero Client logs	Log Insight
Physical switches	vRealize Operations (Network MP), Log Insight

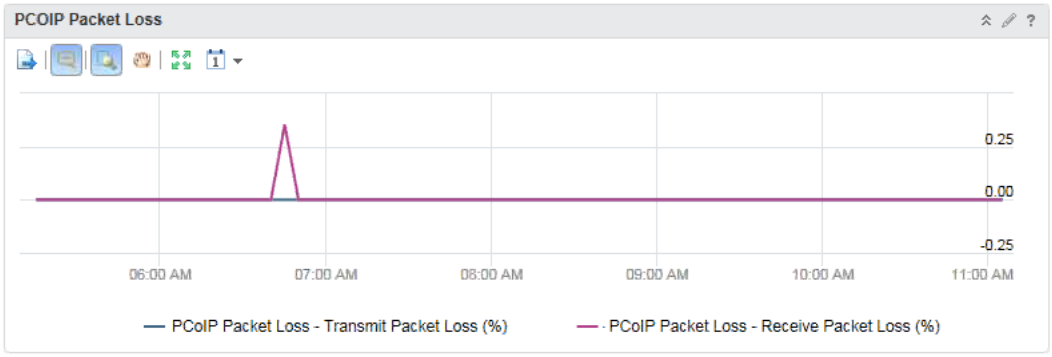


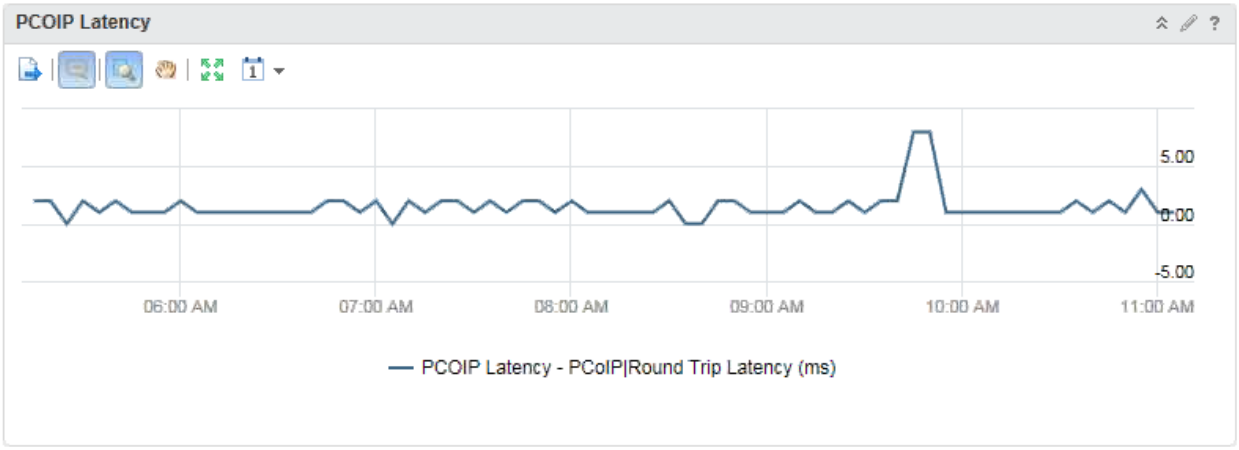

VM CPU Contention
10.00
0.00
-10.00
06:00 AM
07:00 AM
08:00 AM
09:00 AM
10:00 AM
11:00 AM
VM CPU Contention - CPU Contention
VM CPU Contention - Threshold


VM Memory (from hypervisor)
0.00
06:30 AM
07:00 AM
07:30 AM
08:00 AM
08:30 AM
09:00 AM
09:30 AM
10:00 AM
10:30 AM
11:00 AM
VM Memory - Memory Contention(%)


VM Memory (from Windows)
18.00
16.00
14.00
04:00 AM
05:00 AM
06:00 AM
07:00 AM
08:00 AM
09:00 AM
10:00 AM
11:00 AM
VM RAM Utilisation - Committed RAM

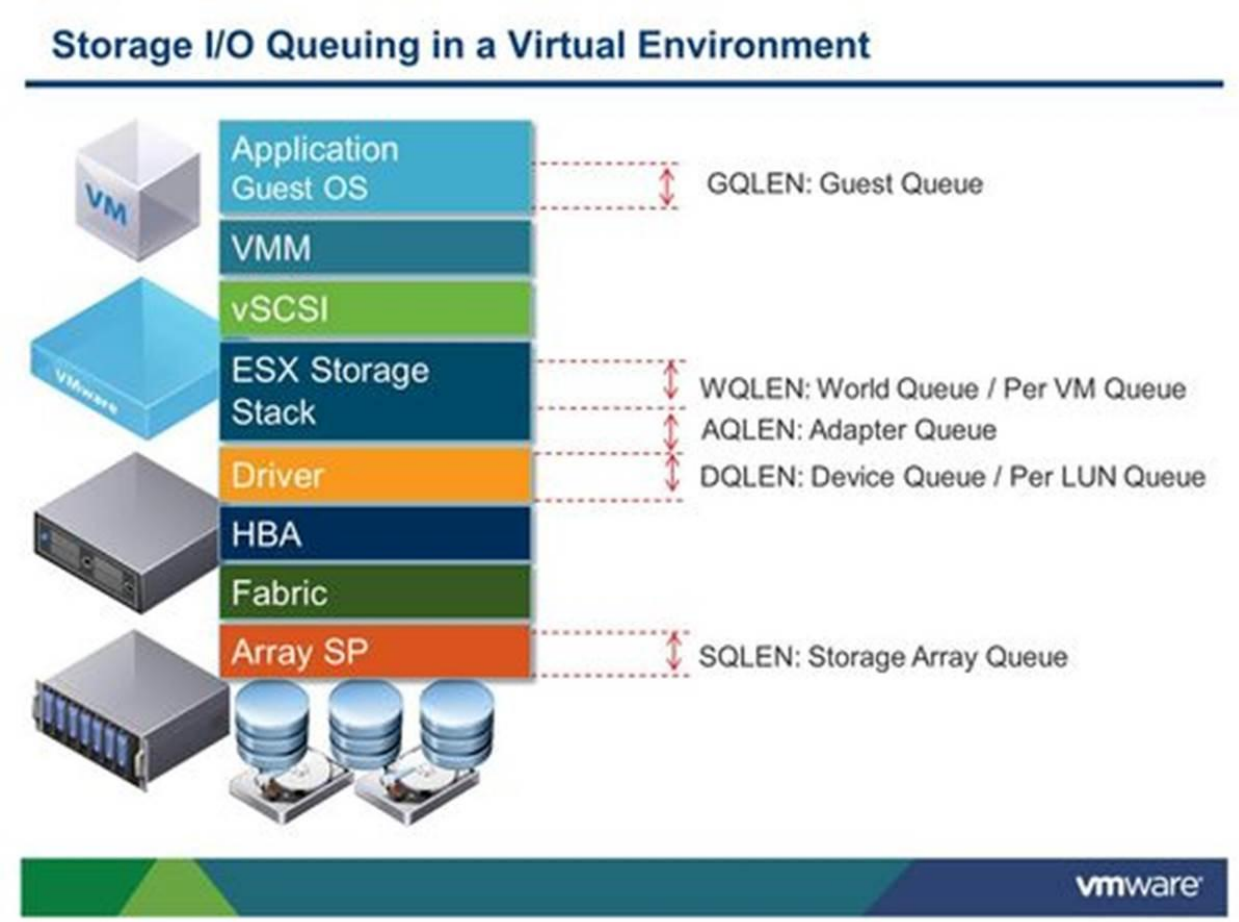

VM Disk Latency
10.00
0.00
-10.00
06:00 AM
07:00 AM
08:00 AM
09:00 AM
10:00 AM
11:00 AM
Dash - VM Disk - Disk Read Latency (ms)
Dash - VM Disk - Disk Write Latency (ms)

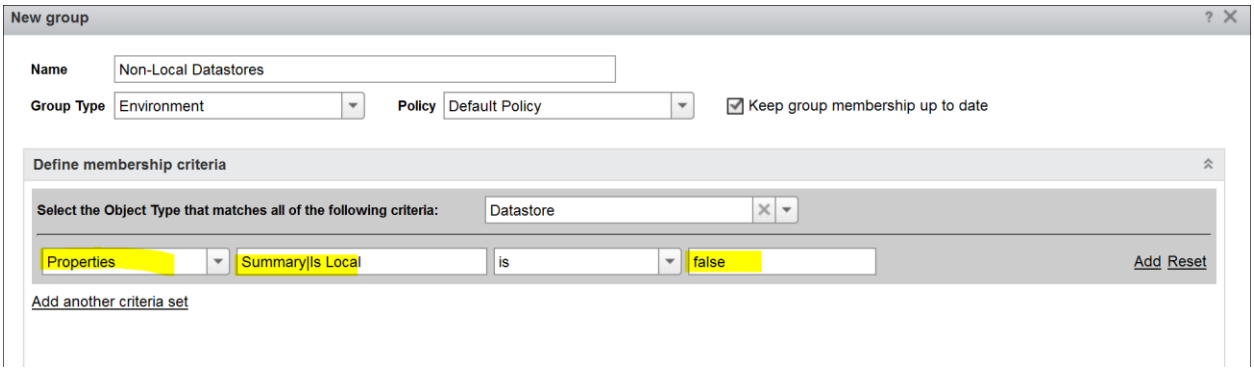




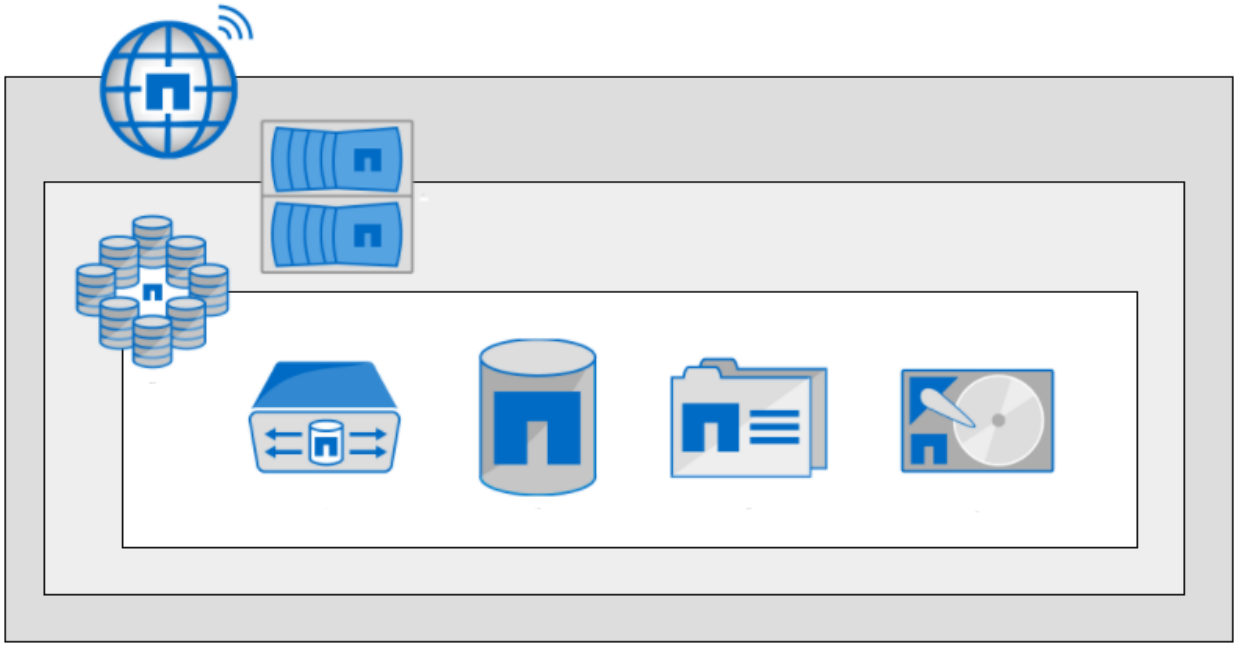
VM RAM key counters (default to last 1 day)

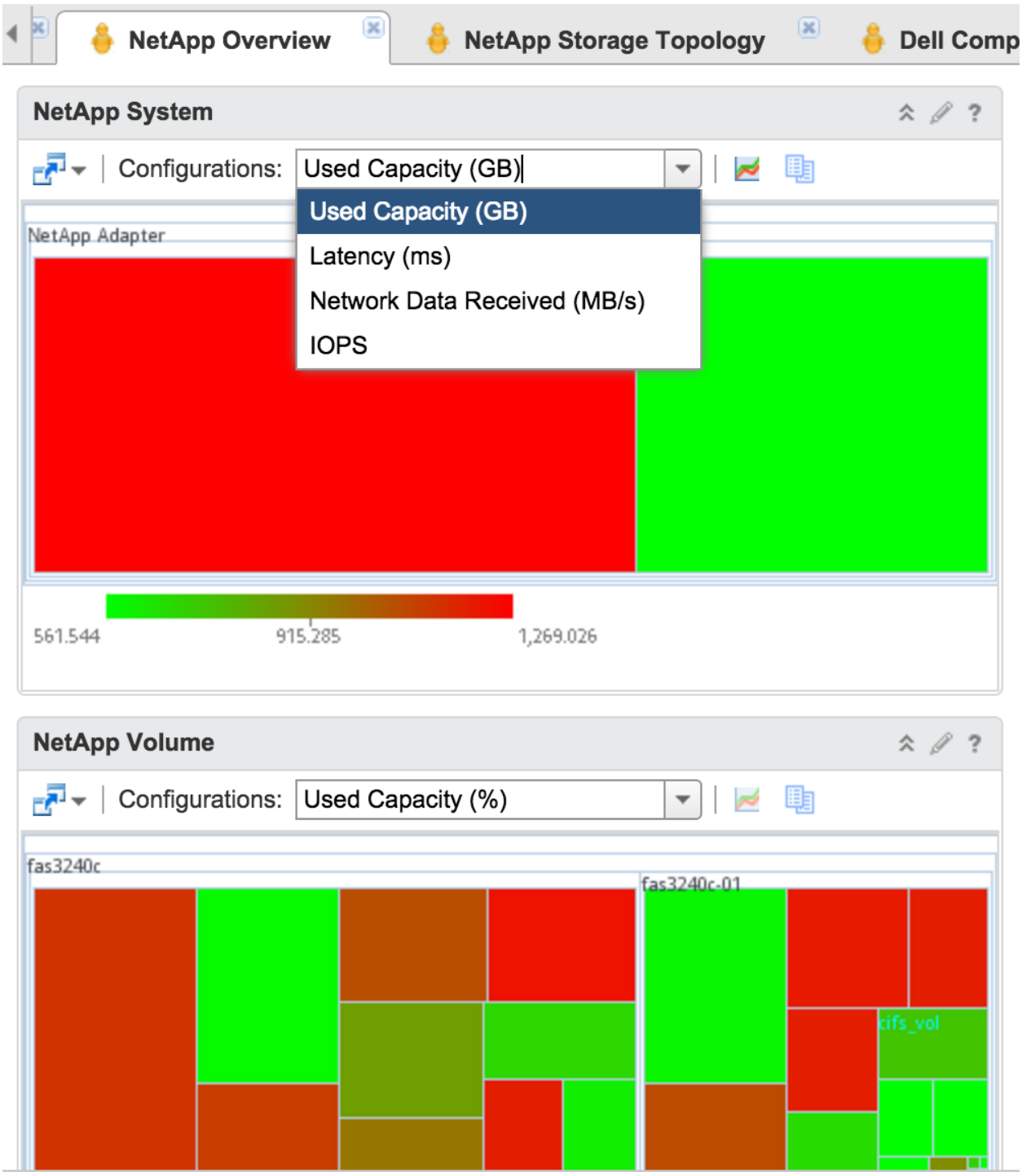
User Name	VM Name	Min Available RAM (MB)	Max Committed RAM (%)	Last Committed RAM (%)	Last Available RAM (MB)
[redacted].ga	\ 007	4,672	20.81	18.36	5,286
[redacted]a	\ 225	5,571	15.49	12.05	6,193
[redacted]y	\ 348	3,690	28.77	20.76	4,812
[redacted]ou	\ 205	5,963	13.37	12.82	6,033
[redacted]tal	\ 492	4,336	23.29	20.68	4,716
[redacted]s	\ 391	3,842	26.36	26.3	3,859
[redacted]z	\ 056	4,174	24.52	22.49	4,415
[redacted]vc	\ 283	11,499	15.13	12.24	12,647
[redacted]t	\ 068	4,821	20.25	19	4,995
[redacted]sy	\ 408	1,556	41.05	41.05	1,556
[redacted]sh	\ 264	5,042	18.96	16.57	5,375
[redacted]cw	\ 268	5,329	16.94	15.45	5,664
[redacted]n	\ 089	3,224	32.49	31.33	3,406
[redacted]sy	\ 434	9,009	24.7	21.04	9,635

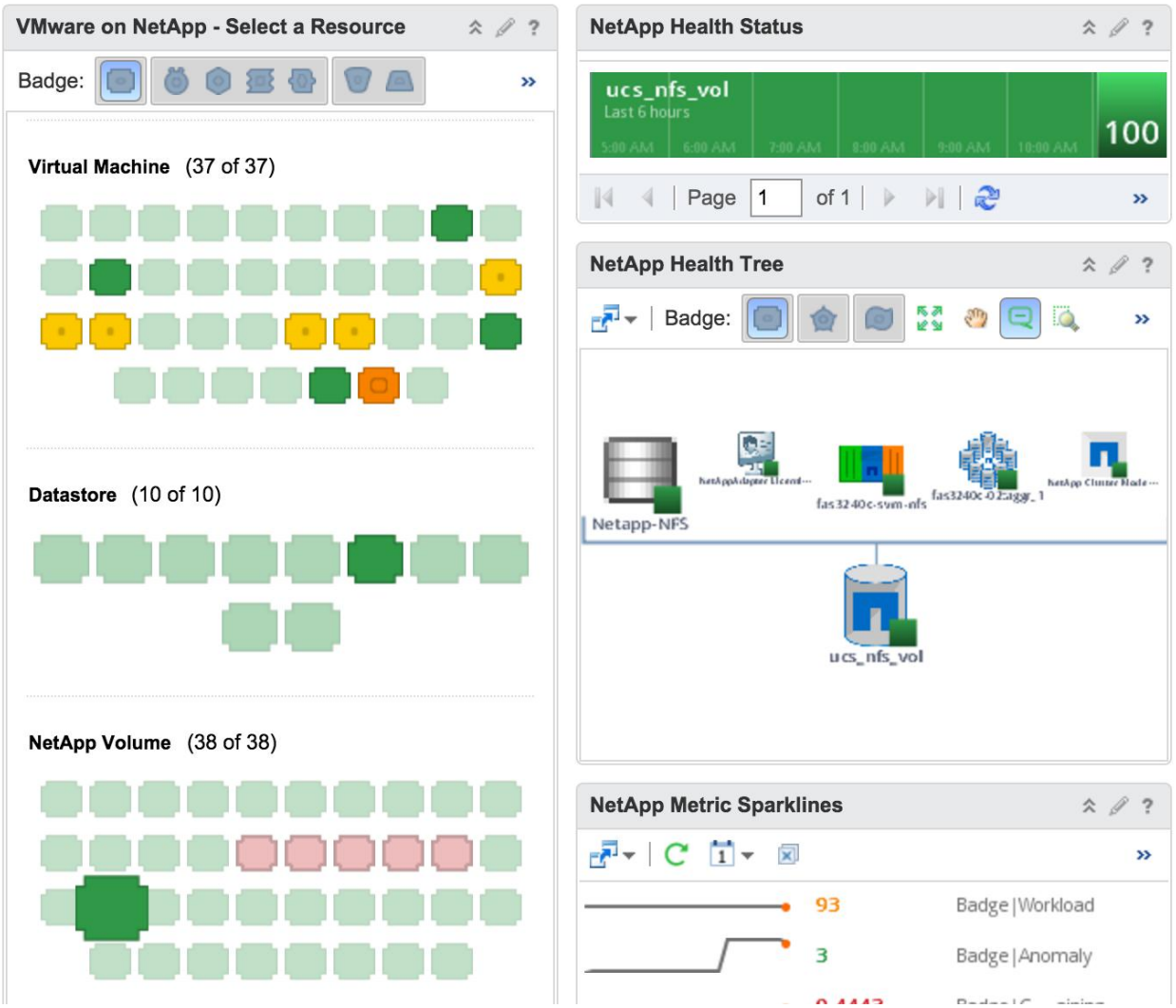


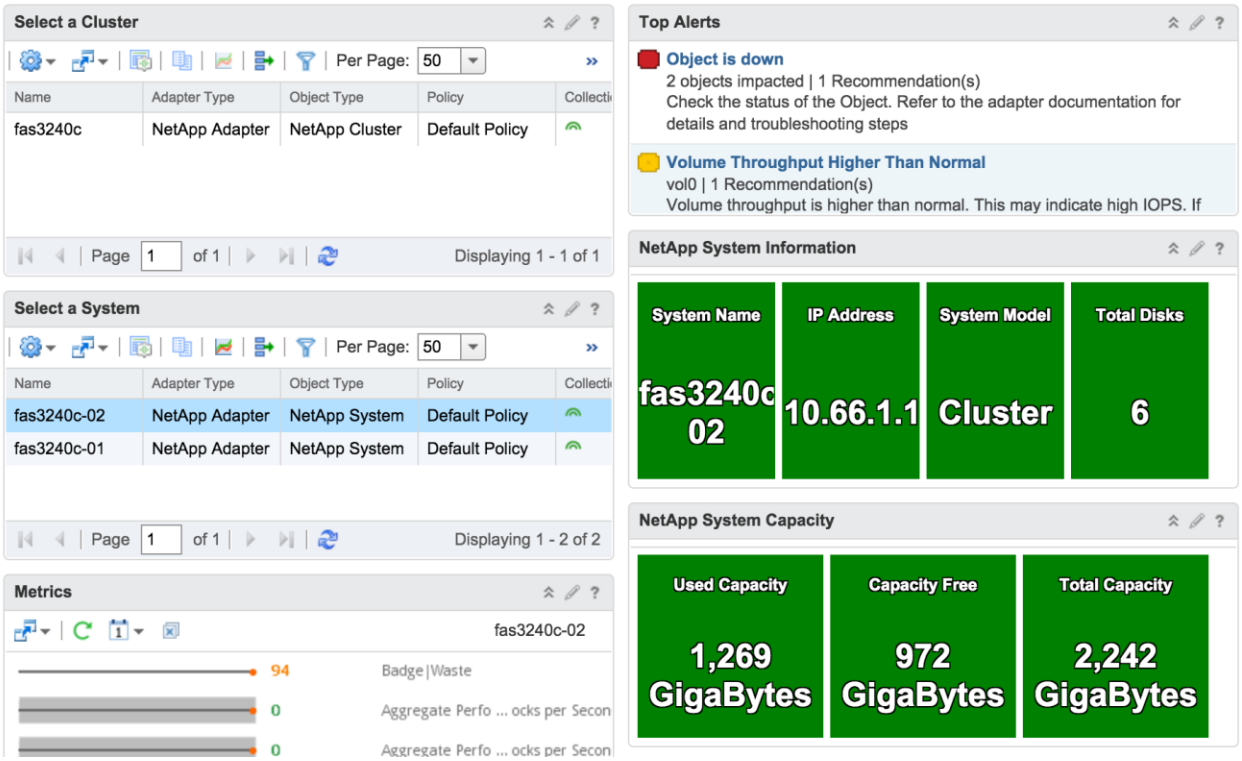


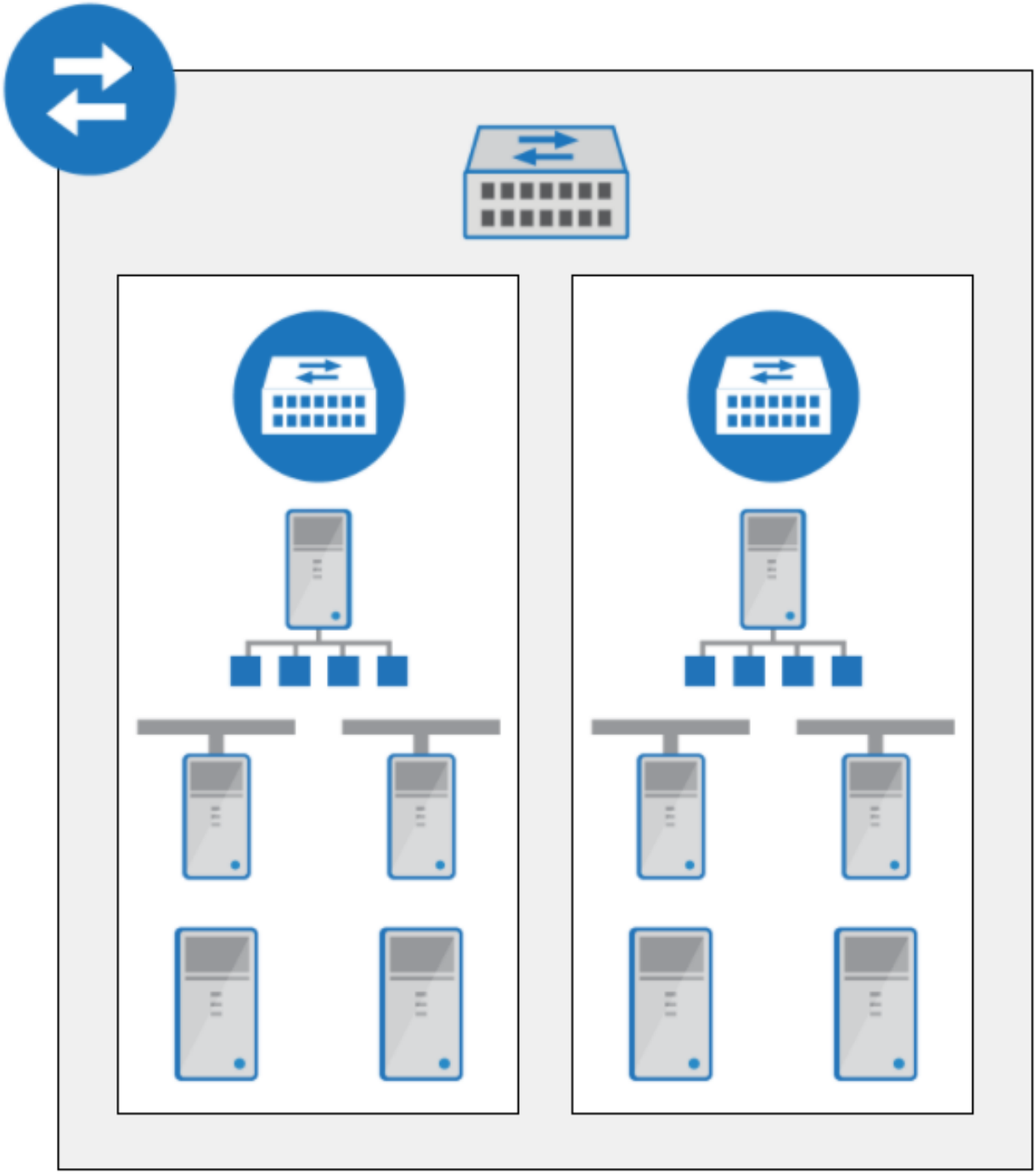
Chapter 9: Infrastructure Monitoring Using Blue Medora

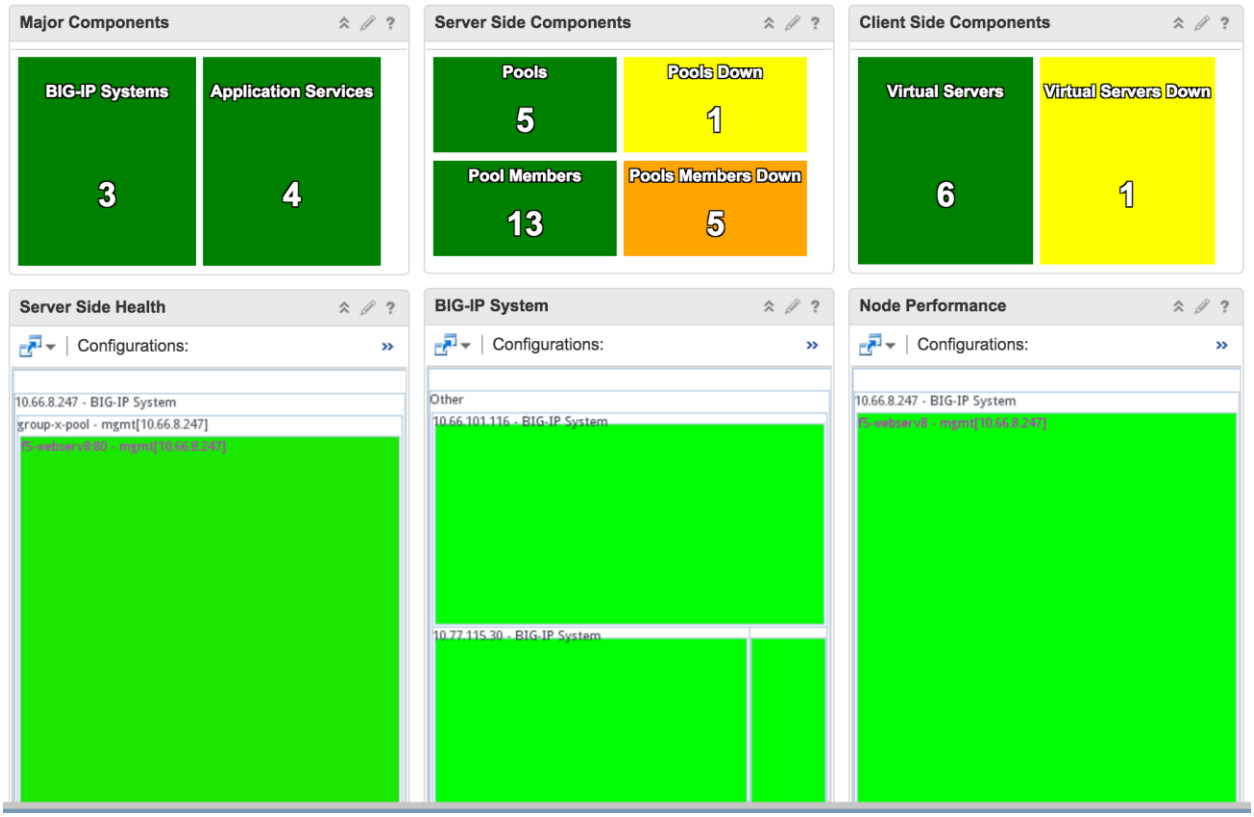



NetApp Overview
NetApp Storage Topology
Dell Comp
NetApp System
Configurations:
Used Capacity (GB)
Used Capacity (GB)
Latency (ms)
Network Data Received (MB/s)
IOPS
NetApp Adapter
561.544
915.285
1,269.026
NetApp Volume
Configurations:
Used Capacity (%)
fas3240c
fas3240c-01
ifs_vol


VMware on NetApp - Select a Resource
Badge:
Virtual Machine (37 of 37)
Datastore (10 of 10)
NetApp Volume (38 of 38)
NetApp Health Status
ucs_nfs_vol
Last 6 hours
100
Page 1 of 1
NetApp Health Tree
Badge:
Netapp-NFS
ucs_nfs_vol
NetApp Metric Sparklines
93
Badge | Workload
3
Badge | Anomaly


Select a Cluster
Per Page: 50
Name
Adapter Type
Object Type
Policy
fas3240c
NetApp Adapter
NetApp Cluster
Default Policy
Page 1 of 1
Displaying 1 - 1 of 1
Select a System
Per Page: 50
Name
Adapter Type
Object Type
Policy
fas3240c-02
NetApp Adapter
NetApp System
Default Policy
fas3240c-01
NetApp Adapter
NetApp System
Default Policy
Page 1 of 1
Displaying 1 - 2 of 2
Metrics
fas3240c-02
94
Badge|Waste
0
Aggregate Perfo ... ocks per Secon
0
Aggregate Perfo ... ocks per Secon
Top Alerts
Object is down
2 objects impacted | 1 Recommendation(s)
Check the status of the Object. Refer to the adapter documentation for details and troubleshooting steps
Volume Throughput Higher Than Normal
vol0 | 1 Recommendation(s)
Volume throughput is higher than normal. This may indicate high IOPS. If
NetApp System Information
System Name
fas3240c02
IP Address
10.66.1.1
System Model
Cluster
Total Disks
6
NetApp System Capacity
Used Capacity
1,269 GigaBytes
Capacity Free
972 GigaBytes
Total Capacity
2,242 GigaBytes




Major Components
BIG-IP Systems
3
Application Services
4
Server Side Components
Pools
5
Pools Down
1
Pool Members
13
Pools Members Down
5
Client Side Components
Virtual Servers
6
Virtual Servers Down
1
Server Side Health
Configurations:
10.66.8.247 - BIG-IP System
group-x-pool - mgmt[10.66.8.247]
BIG-IP System
Configurations:
Other
10.66.101.116 - BIG-IP System
10.77.115.30 - BIG-IP System
Node Performance
Configurations:
10.66.8.247 - BIG-IP System

BIG-IP Systems

Per Page: 50 | Filter

Name	Collection State	Collection Status
10.66.8.247 - BIG-IP System		
10.77.115.30 - BIG-IP System		

Page 1 of 1 | Displaying 1 - 3 of 3

Scoreboard

CPU Usage	Memory Usage
7 %	34 %
LTM Client Connections	**LTM Client Requests**
0	0 per second

Top Alerts

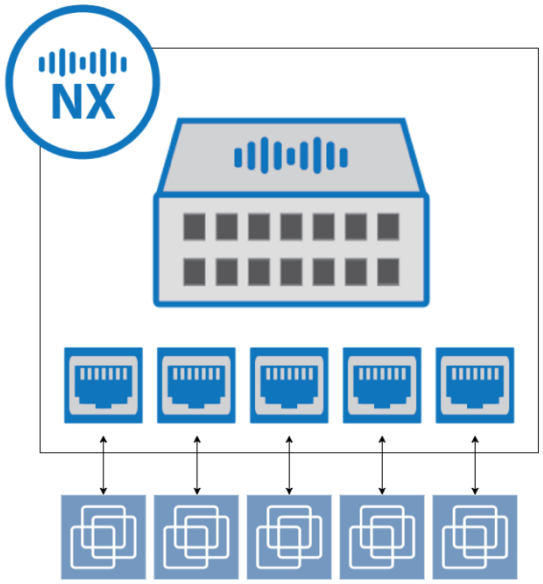
F5 BIG-IP Node Unchecked State
5 objects impacted | 1 Recommendation(s)
Add Health Monitors to the Node Configuration that F5 should use to monitor the health of the Node.

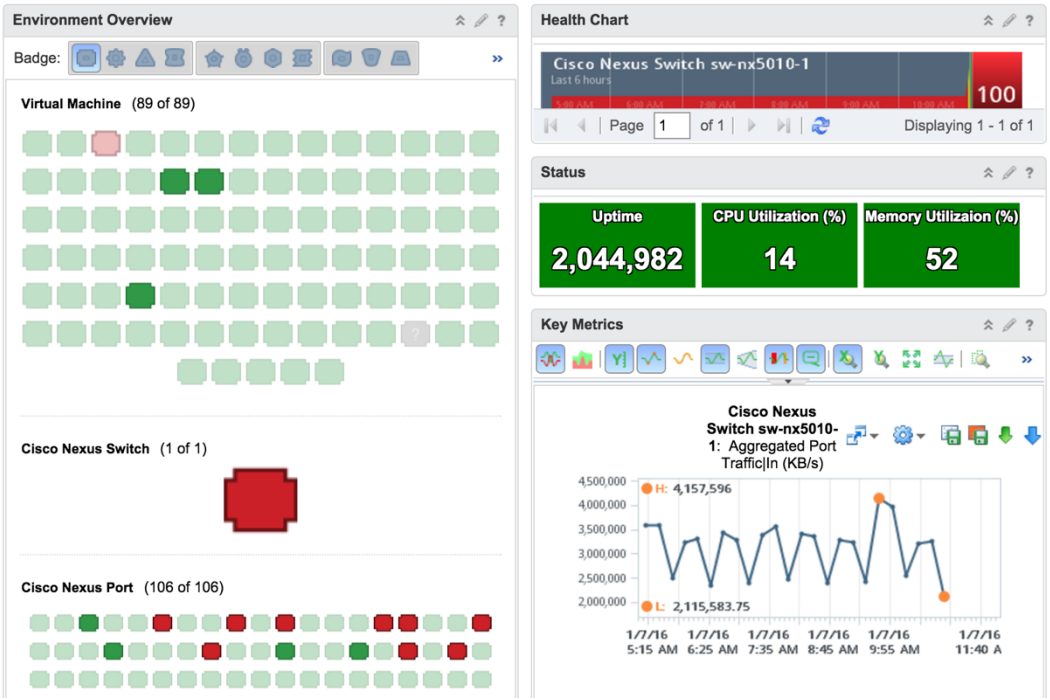
BIG-IP System Health

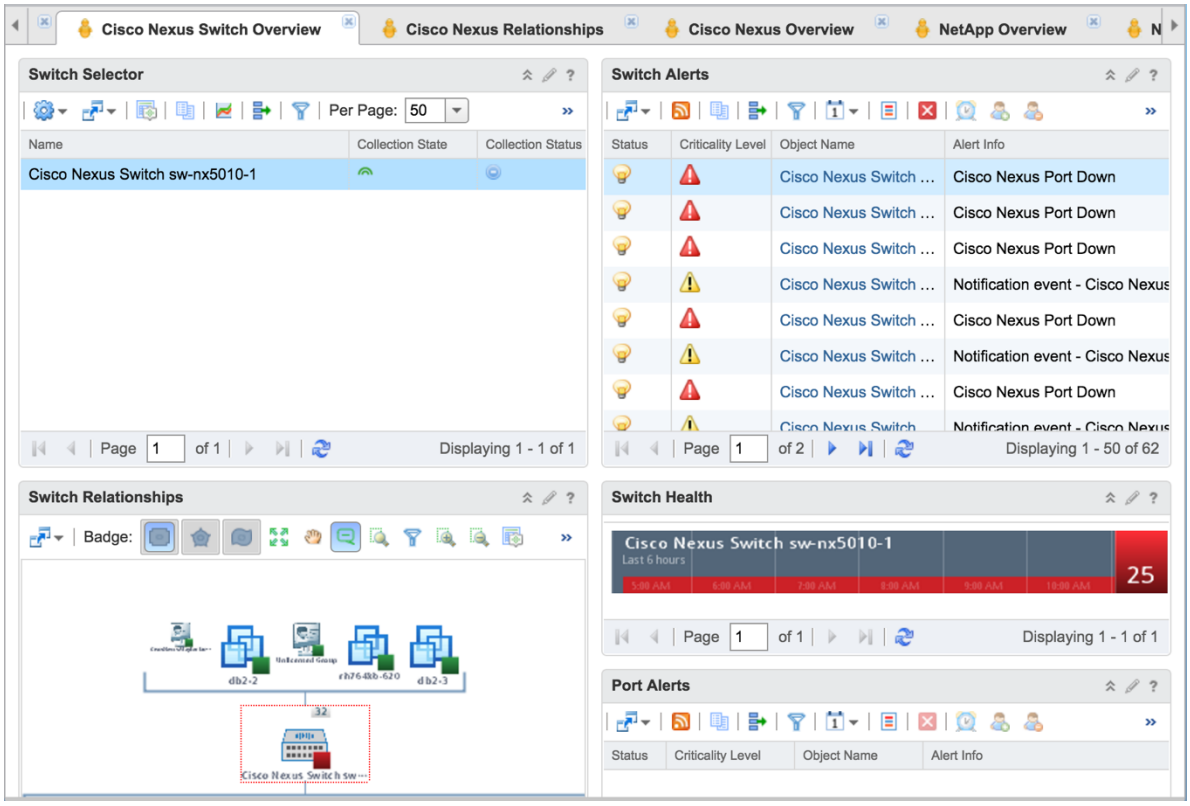
Page 1 of 1 | Displaying 1 - 1 of 1

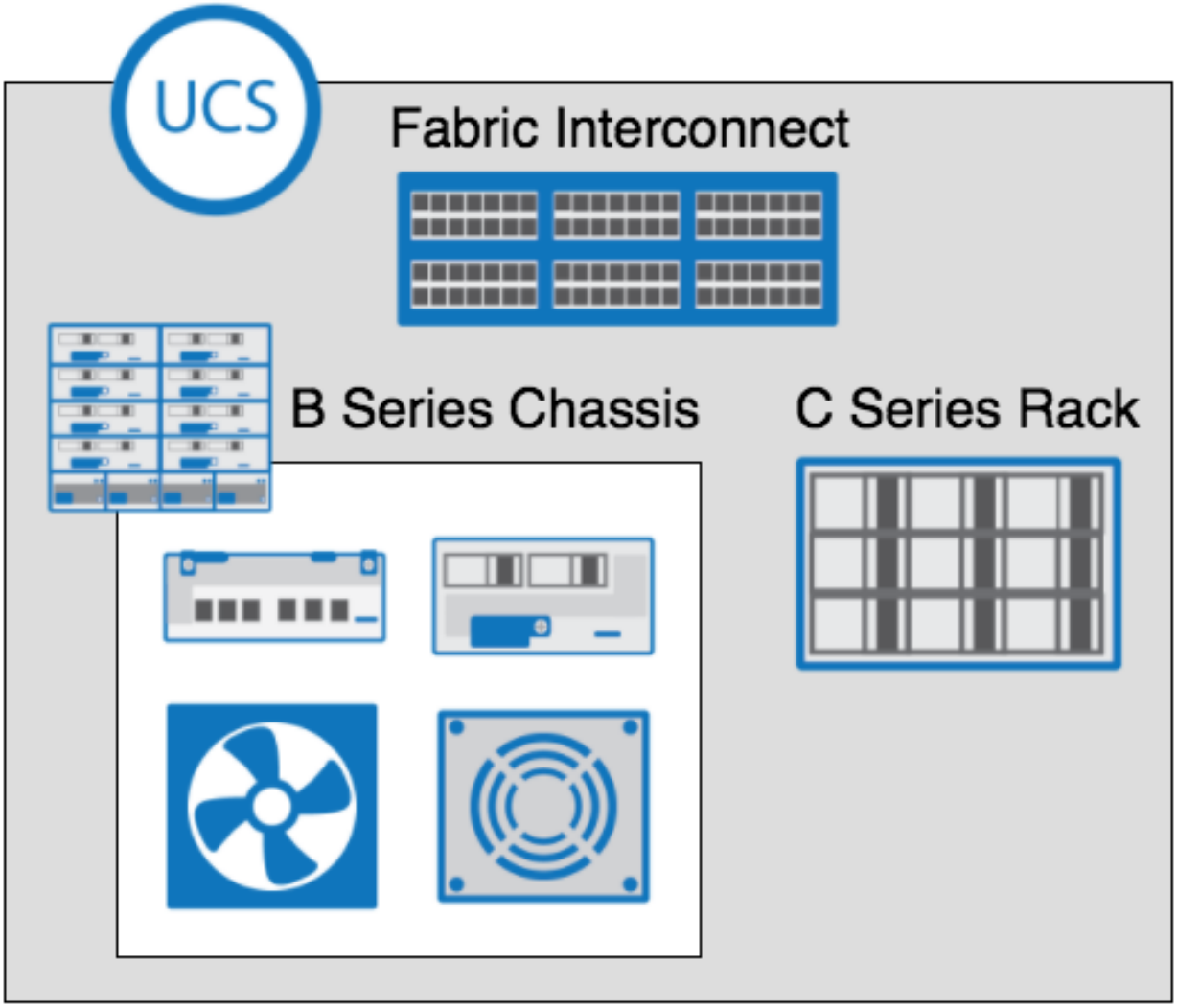
Property List

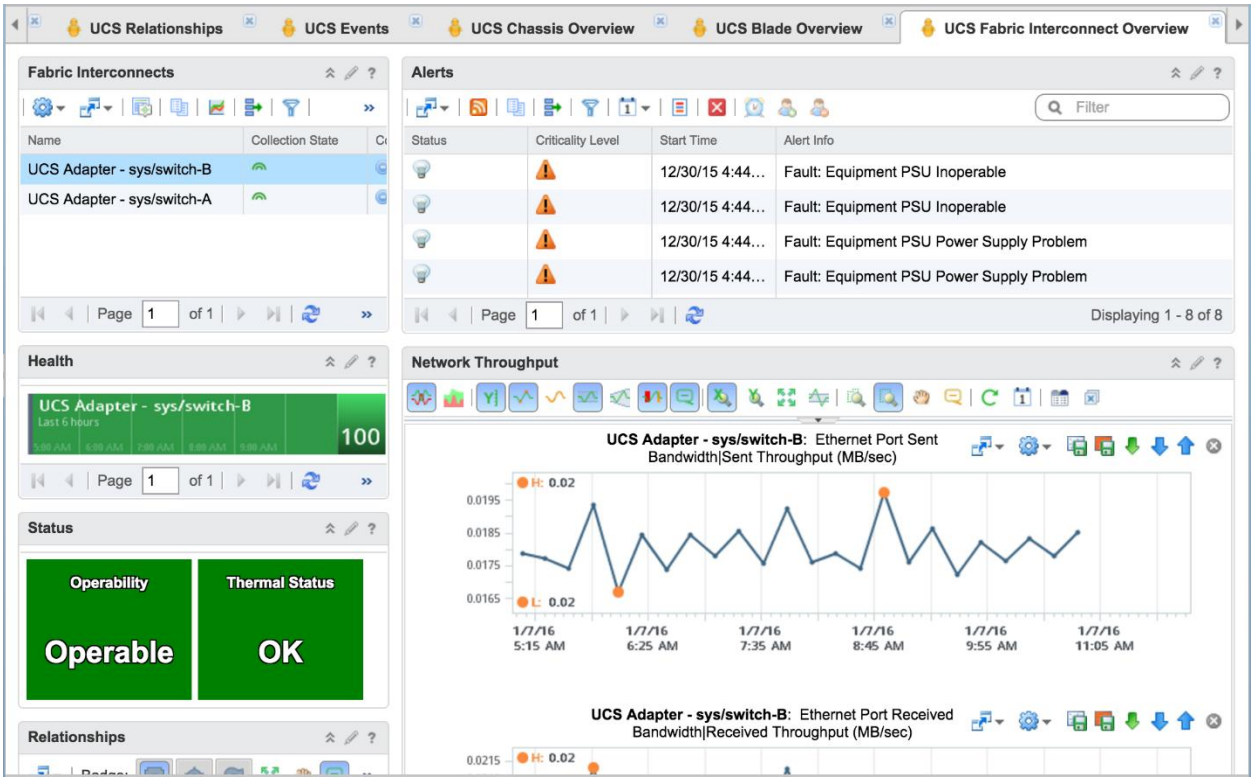
Object Name	Property Name	Value
10.77.115.30 - BIG-...	Platform	Z100
10.77.115.30 - BIG-...	Self Device	bigip-ltm-dmz1.bluemedora.localnet
10.77.115.30 - BIG-...	Chassis Serial Number	4235e310-9a0c-8694-6f7e7231660e
10.77.115.30 - BIG-...	Product	Virtual Edition

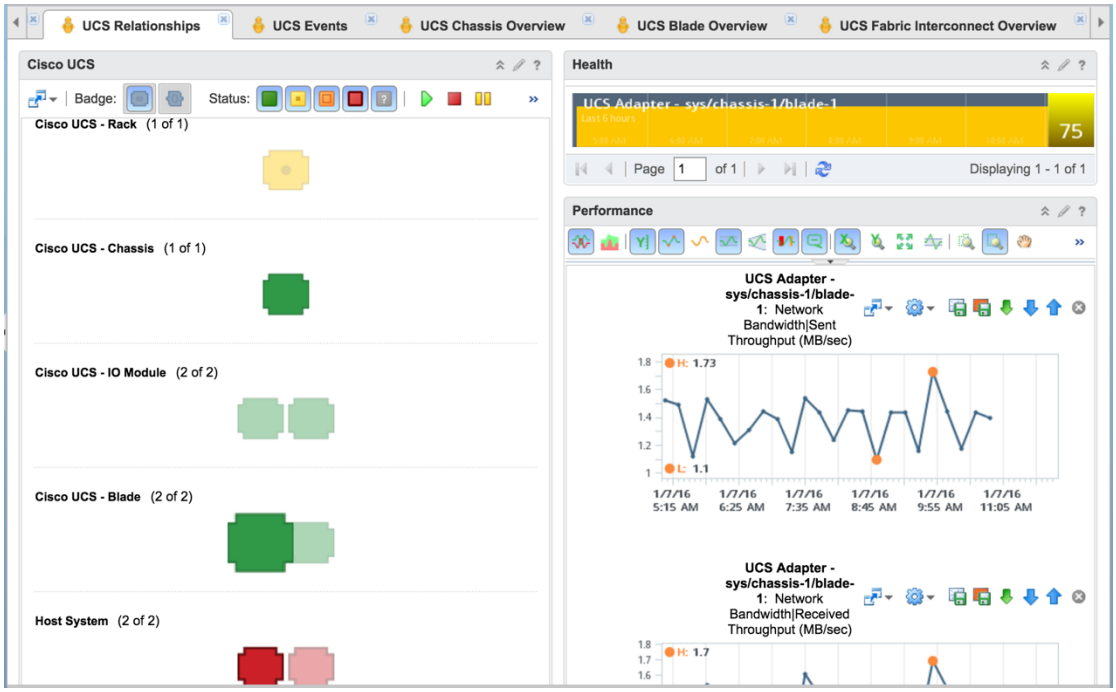

NX

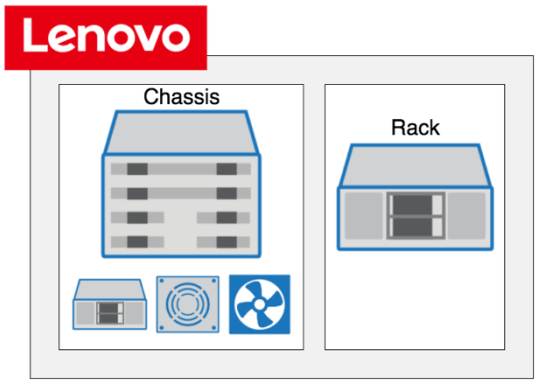

Environment Overview
Badge:
Virtual Machine (89 of 89)
Cisco Nexus Switch (1 of 1)
Cisco Nexus Port (106 of 106)
Health Chart
Cisco Nexus Switch sw-nx5010-1
Last 6 hours
100
Page 1 of 1
Displaying 1 - 1 of 1
Status
Uptime
2,044,982
CPU Utilization (%)
14
Memory Utilizaion (%)
52
Key Metrics
Cisco Nexus Switch sw-nx5010-1: Aggregated Port Traffic|In (KB/s)
H: 4,157,596
L: 2,115,583.75
4,500,000
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1/7/16 5:15 AM
1/7/16 6:25 AM
1/7/16 7:35 AM
1/7/16 8:45 AM
1/7/16 9:55 AM
1/7/16 11:40 A

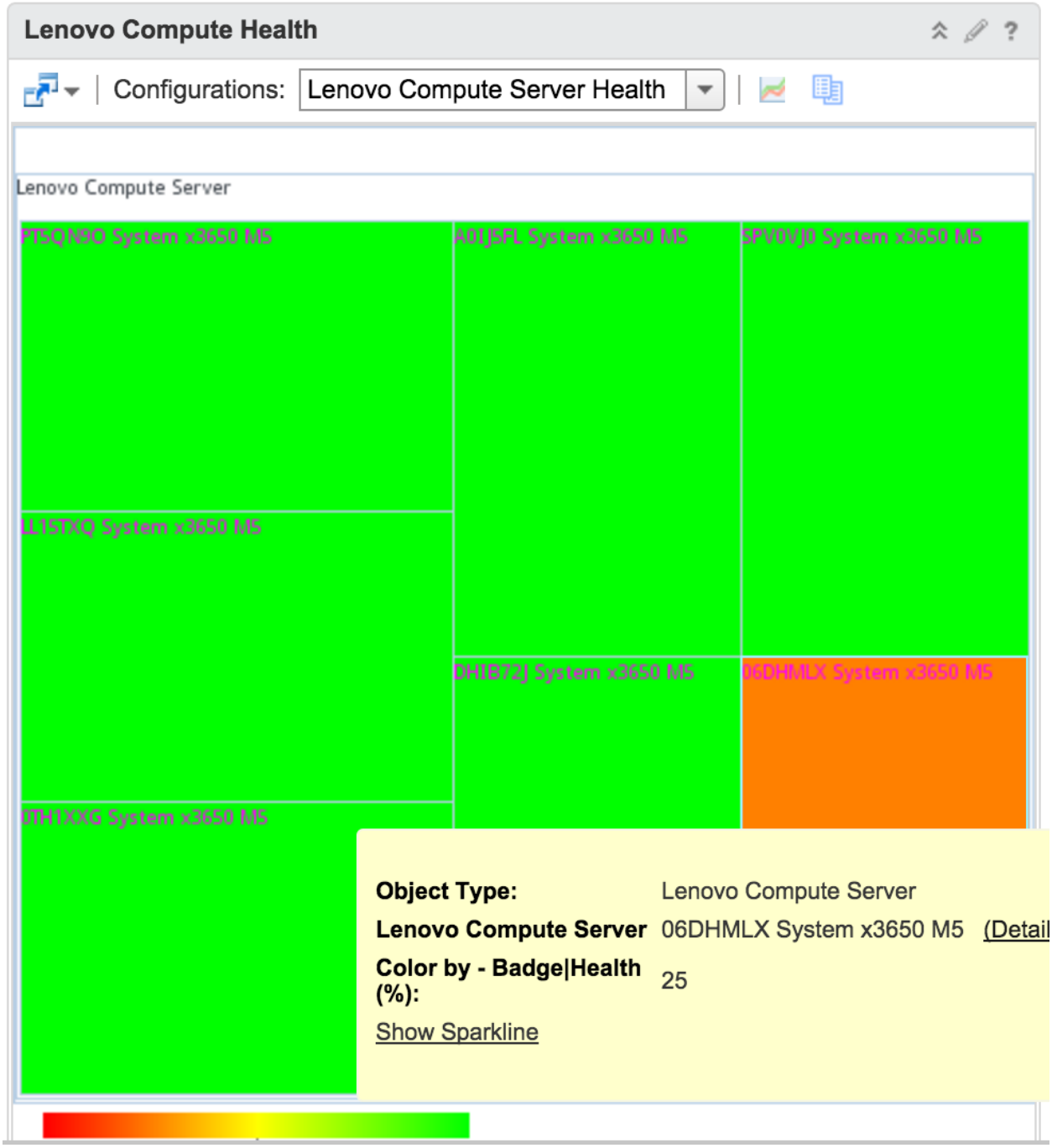

Cisco Nexus Switch Overview
Cisco Nexus Relationships
Cisco Nexus Overview
NetApp Overview
Switch Selector
Per Page: 50
Name
Collection State
Collection Status
Cisco Nexus Switch sw-nx5010-1
Page 1 of 1
Displaying 1 - 1 of 1
Switch Alerts
Status
Criticality Level
Object Name
Alert Info
Cisco Nexus Switch ...
Cisco Nexus Port Down
Notification event - Cisco Nexus
Page 1 of 2
Displaying 1 - 50 of 62
Switch Relationships
Badge:
db2-2
db2-3
Switch Health
Cisco Nexus Switch sw-nx5010-1
Last 6 hours
25
Page 1 of 1
Displaying 1 - 1 of 1
Port Alerts
Status
Criticality Level
Object Name
Alert Info

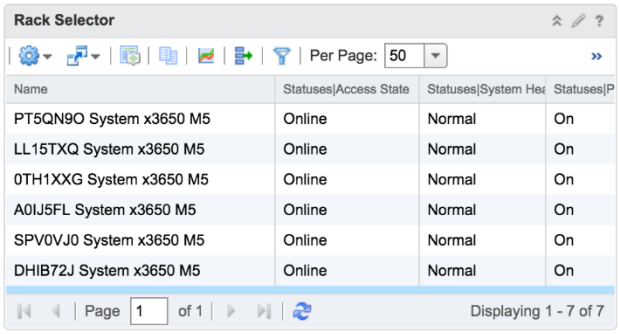

UCS
Fabric Interconnect
B Series Chassis
C Series Rack

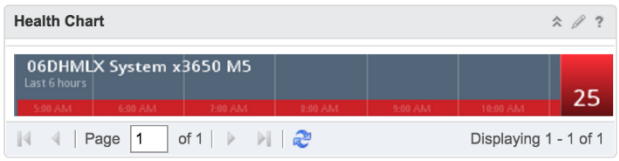

UCS Relationships
UCS Events
UCS Chassis Overview
UCS Blade Overview
UCS Fabric Interconnect Overview
Fabric Interconnects
Name
Collection State
UCS Adapter - sys/switch-B
UCS Adapter - sys/switch-A
Page 1 of 1
Alerts
Filter
Status
Criticality Level
Start Time
Alert Info
12/30/15 4:44...
Fault: Equipment PSU Inoperable
Fault: Equipment PSU Inoperable
Fault: Equipment PSU Power Supply Problem
Fault: Equipment PSU Power Supply Problem
Page 1 of 1
Displaying 1 - 8 of 8
Health
UCS Adapter - sys/switch-B
Last 6 hours
100
Page 1 of 1
Status
Operability
Operable
Thermal Status
OK
Relationships
Network Throughput
UCS Adapter - sys/switch-B: Ethernet Port Sent Bandwidth|Sent Throughput (MB/sec)
H: 0.02
L: 0.02
0.0195
0.0185
0.0175
0.0165
1/7/16 5:15 AM
1/7/16 6:25 AM
1/7/16 7:35 AM
1/7/16 8:45 AM
1/7/16 9:55 AM
1/7/16 11:05 AM
UCS Adapter - sys/switch-B: Ethernet Port Received Bandwidth|Received Throughput (MB/sec)
0.0215
H: 0.02

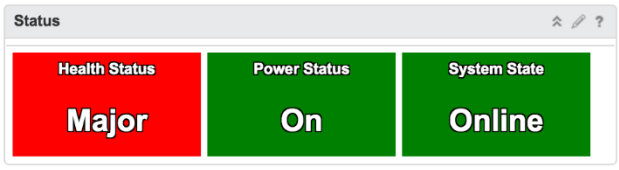

UCS Relationships
UCS Events
UCS Chassis Overview
UCS Blade Overview
UCS Fabric Interconnect Overview
Cisco UCS
Badge:
Status:
Cisco UCS - Rack (1 of 1)
Cisco UCS - Chassis (1 of 1)
Cisco UCS - IO Module (2 of 2)
Cisco UCS - Blade (2 of 2)
Host System (2 of 2)
Health
UCS Adapter - sys/chassis-1/blade-1
Last 6 hours
75
Page 1 of 1
Displaying 1 - 1 of 1
Performance
UCS Adapter - sys/chassis-1/blade-1: Network Bandwidth|Sent Throughput (MB/sec)
H: 1.73
L: 1.1
1.8
1.6
1.4
1.2
1
1/7/16 5:15 AM
1/7/16 6:25 AM
1/7/16 7:35 AM
1/7/16 8:45 AM
1/7/16 9:55 AM
1/7/16 11:05 AM
UCS Adapter - sys/chassis-1/blade-1: Network Bandwidth|Received Throughput (MB/sec)
H: 1.7
1.8
1.7
1.6


Lenovo
Chassis
Rack


Lenovo Compute Health
Configurations:
Lenovo Compute Server Health
Lenovo Compute Server
FT5QN9O System x3650 M5
A01JEFL System x3650 M5
SPV0VJ0 System x3650 M5
LL15TXQ System x3650 M5
DHIB72J System x3650 M5
06DHMLX System x3650 M5
DTH1XXG System x3650 M5
Object Type:
Lenovo Compute Server
Lenovo Compute Server
06DHMLX System x3650 M5
(Detail
Color by - Badge|Health (%):
25
Show Sparkline

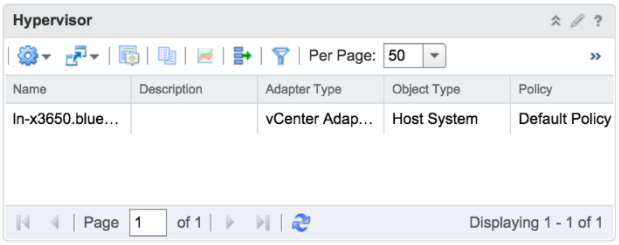

Rack Selector
Per Page: 50
Name
Statuses|Access State
Statuses|System Hea
Statuses|P
PT5QN9O System x3650 M5
Online
Normal
On
LL15TXQ System x3650 M5
Online
Normal
On
0TH1XXG System x3650 M5
Online
Normal
On
A0IJ5FL System x3650 M5
Online
Normal
On
SPV0VJ0 System x3650 M5
Online
Normal
On
DHIB72J System x3650 M5
Online
Normal
On
Page 1 of 1
Displaying 1 - 7 of 7

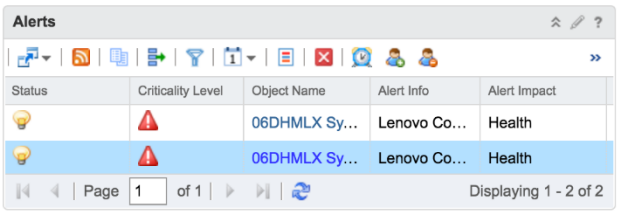

Health Chart
06DHMLX System x3650 M5
Last 6 hours
25
Page 1 of 1
Displaying 1 - 1 of 1

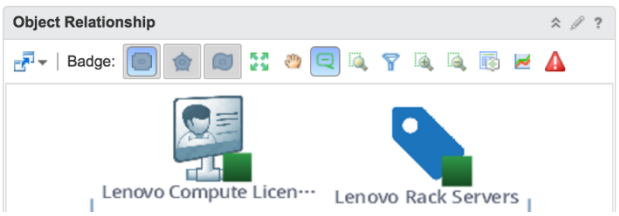

Status
Health Status
Major
Power Status
On
System State
Online

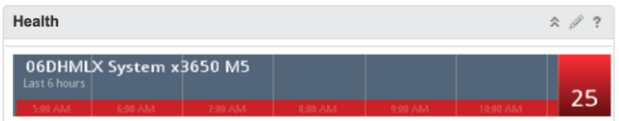

Lenovo Compute
Badge:
Status:
Datastore (34 of 34)
Lenovo Compute Server (7 of 7)

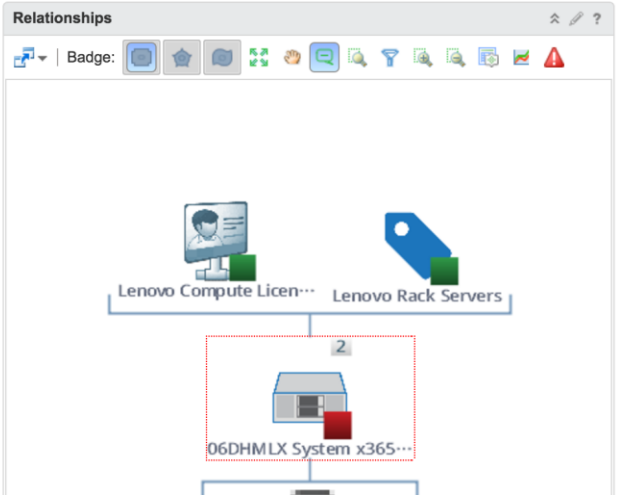
Status

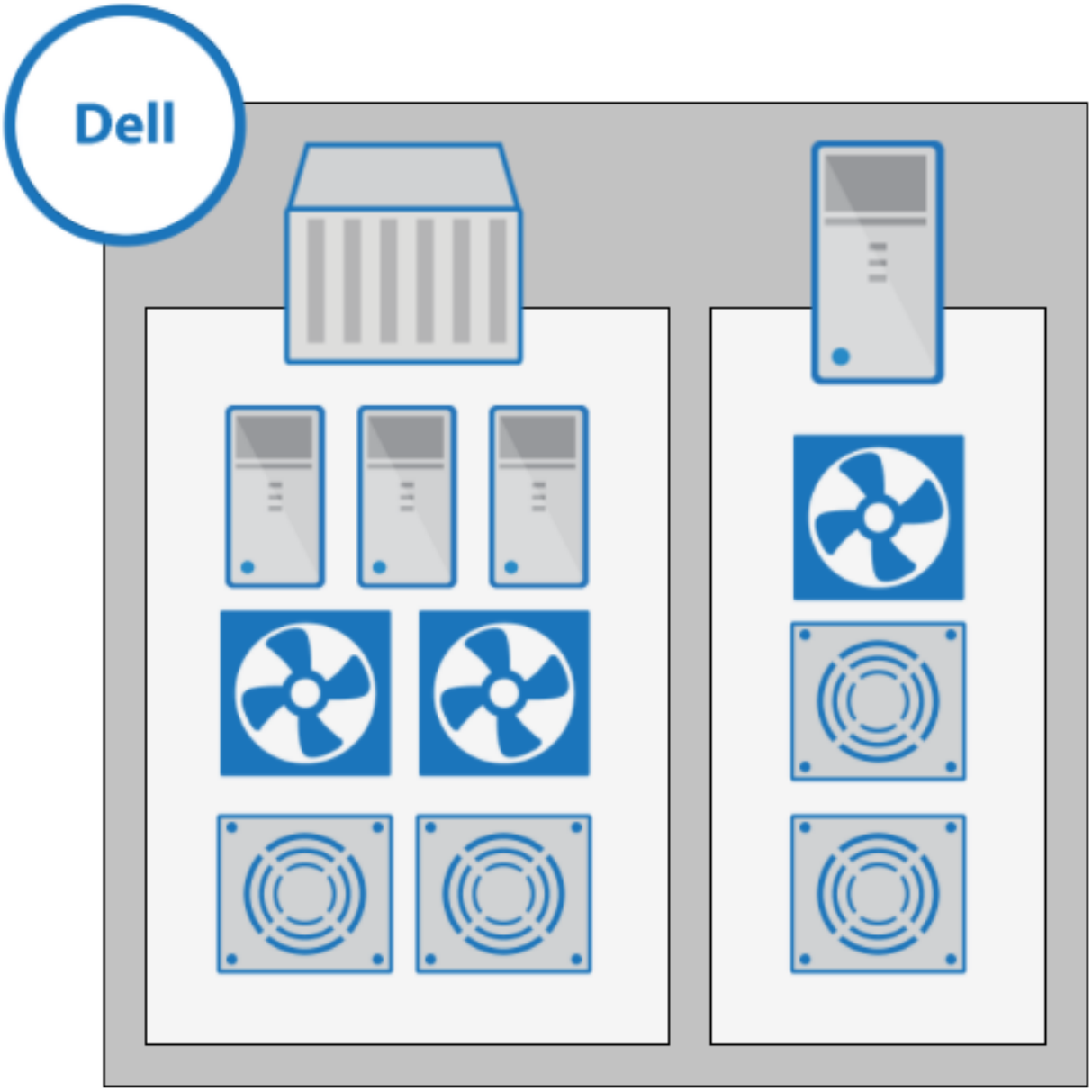

Hypervisor
Per Page: 50
Name
Description
Adapter Type
Object Type
Policy
In-x3650.blue…
vCenter Adap…
Host System
Default Policy
Page 1 of 1
Displaying 1 - 1 of 1

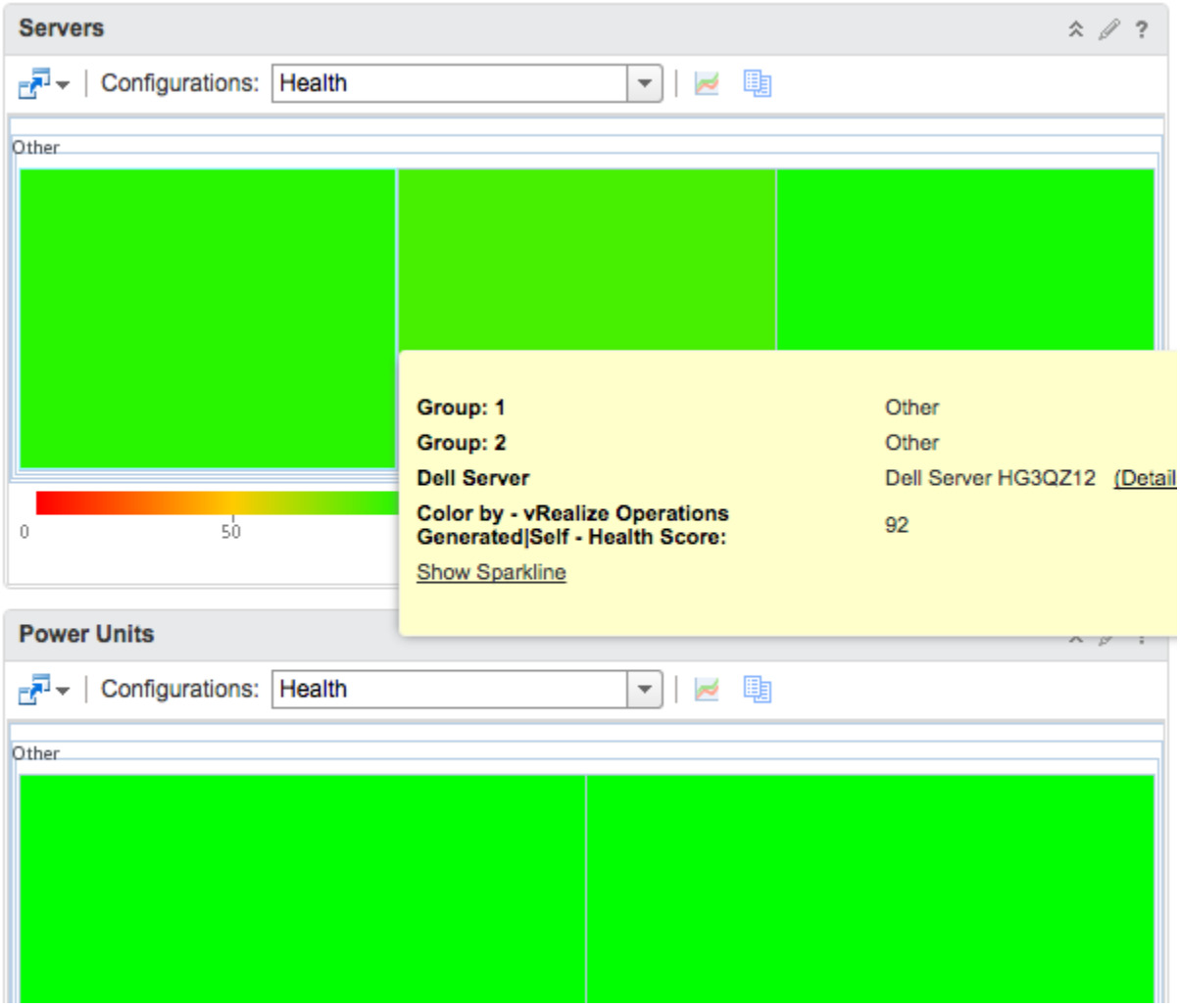

Alerts
Status
Criticality Level
Object Name
Alert Info
Alert Impact
06DHMLX Sy…
Lenovo Co…
Health
06DHMLX Sy…
Lenovo Co…
Health
Page 1 of 1
Displaying 1 - 2 of 2

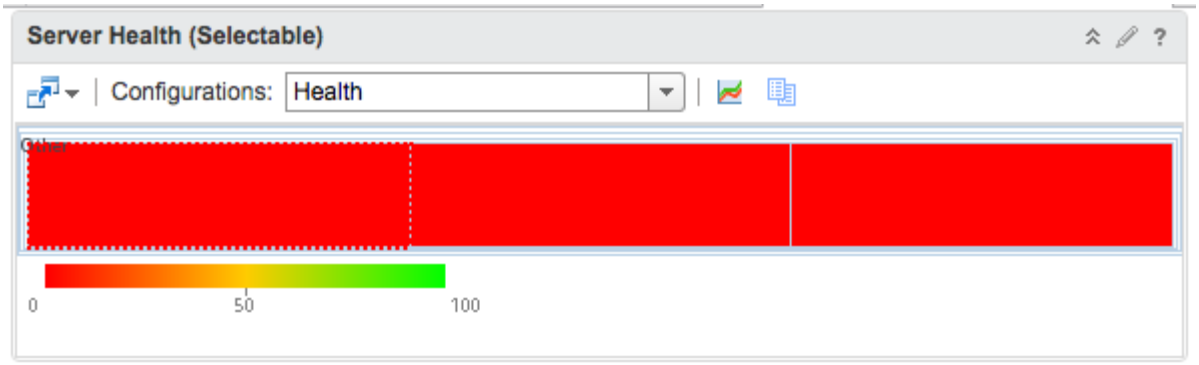

Object Relationship
Badge:
Lenovo Compute Licen…
Lenovo Rack Servers

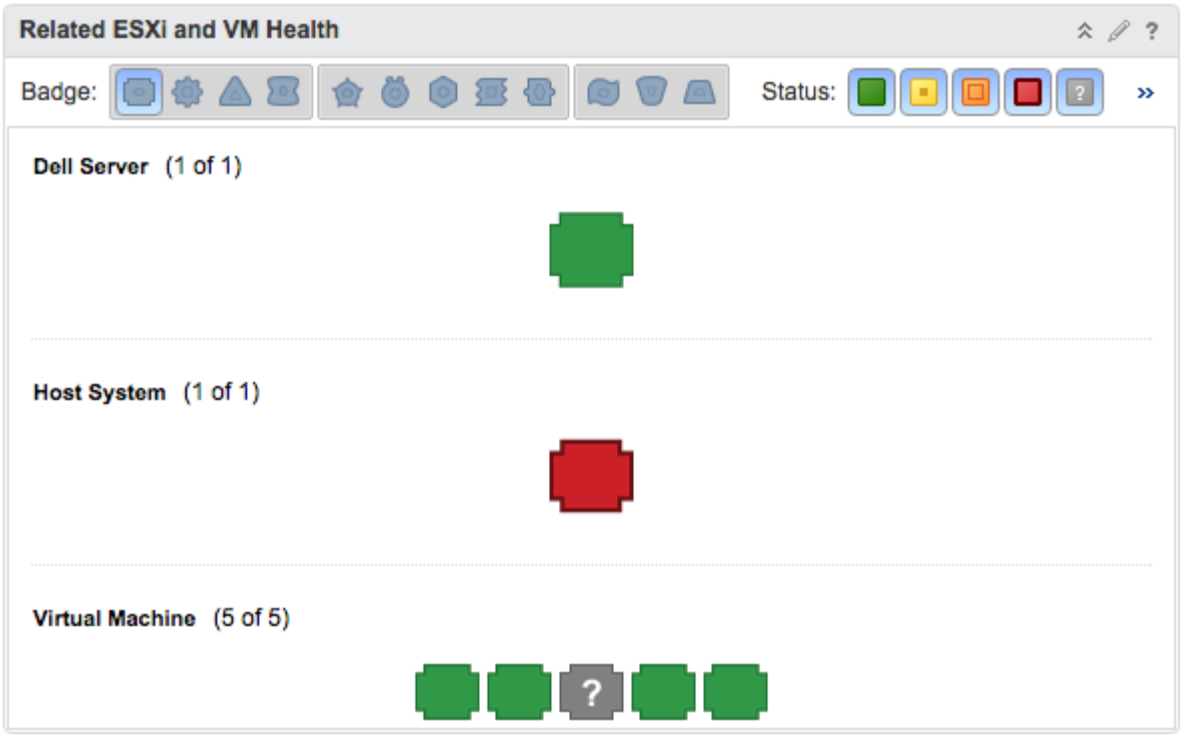

Health
06DHMLX System x3650 M5
Last 6 hours
25
Page 1 of 1
Displaying 1 - 1 of 1

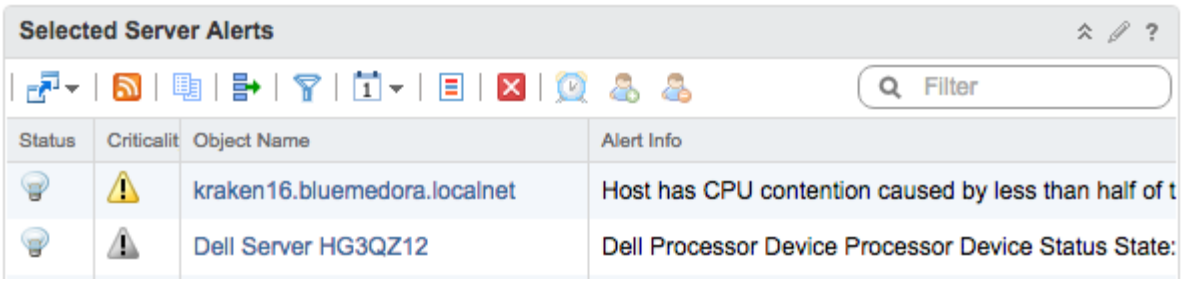

Relationships
Badge:
Lenovo Compute Licen…
Lenovo Rack Servers
2
06DHMLX System x365…


Dell

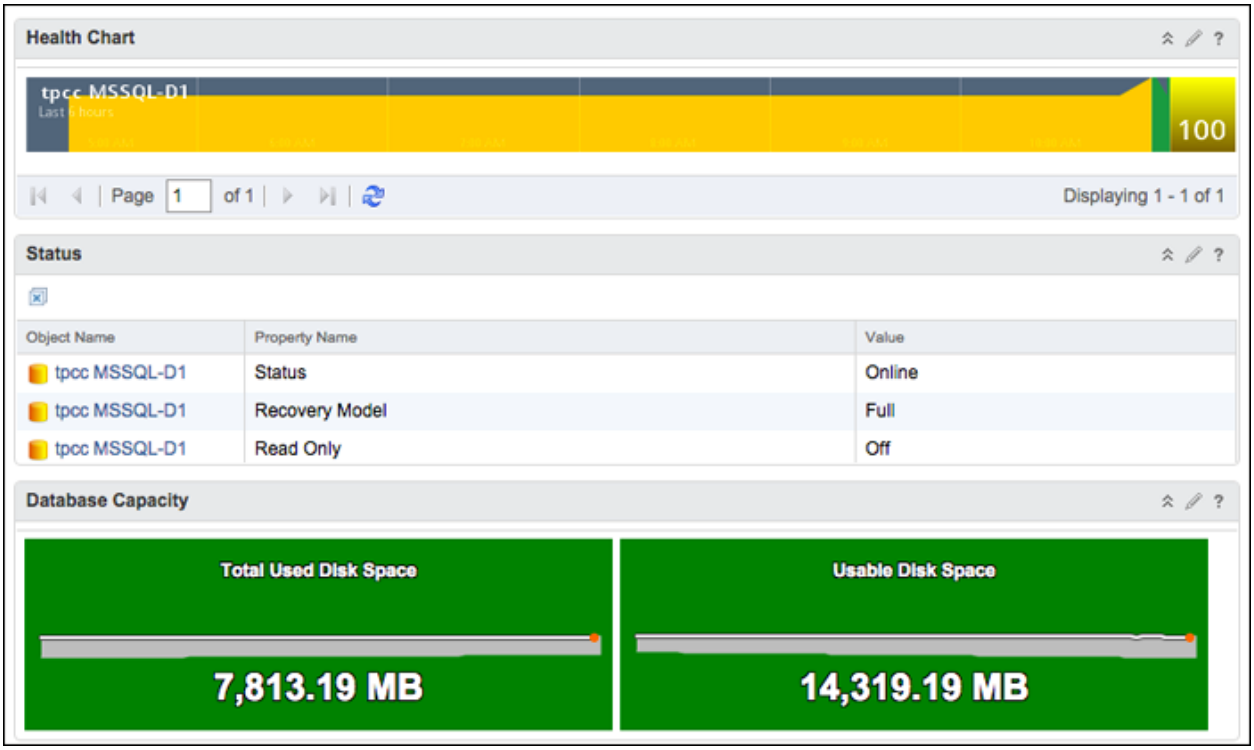

Servers
Configurations:
Health
Other
0
50
Group: 1
Other
Group: 2
Other
Dell Server
Dell Server HG3QZ12
(Detail
Color by - vRealize Operations Generated|Self - Health Score:
92
Show Sparkline
Power Units
Configurations:
Health
Other

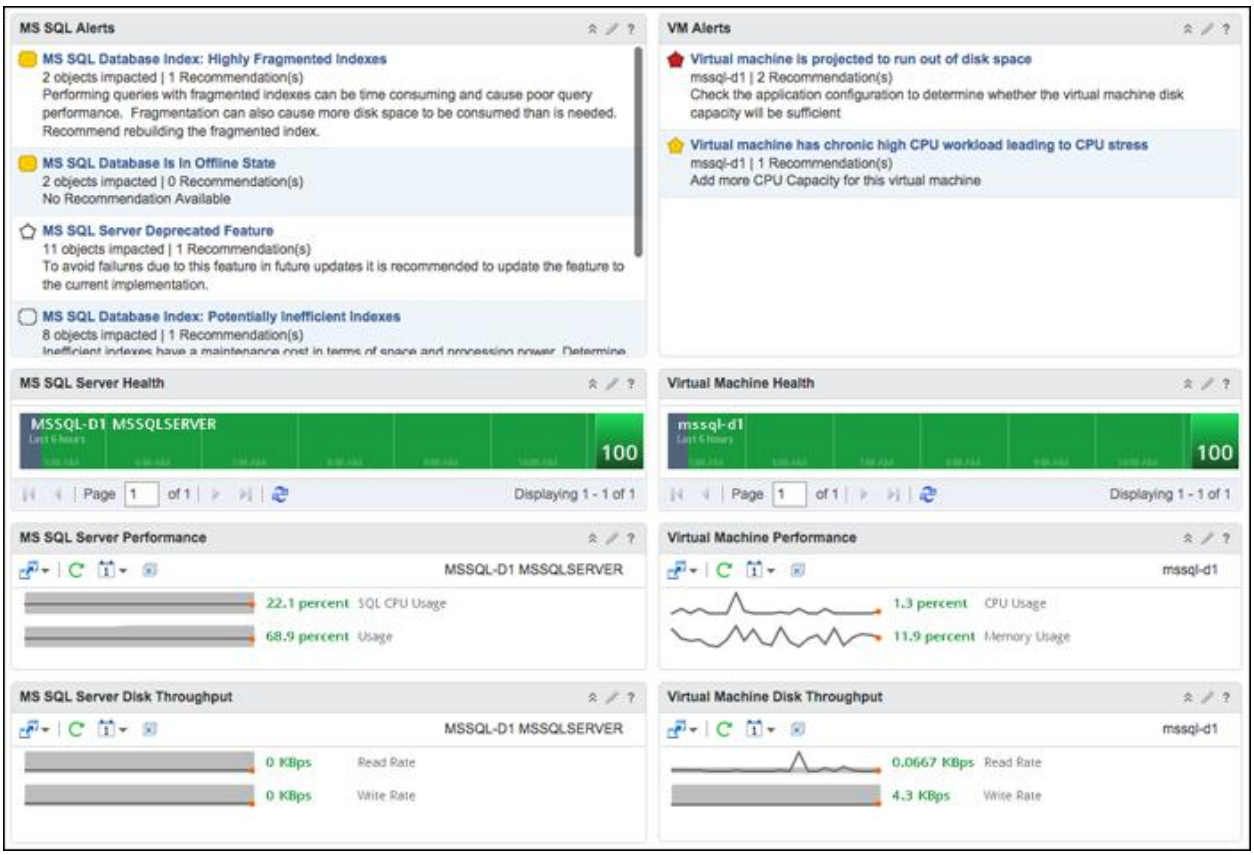

Server Health (Selectable)
Configurations:
Health
0
50
100


Related ESXi and VM Health
Badge:
Status:
Dell Server (1 of 1)
Host System (1 of 1)
Virtual Machine (5 of 5)

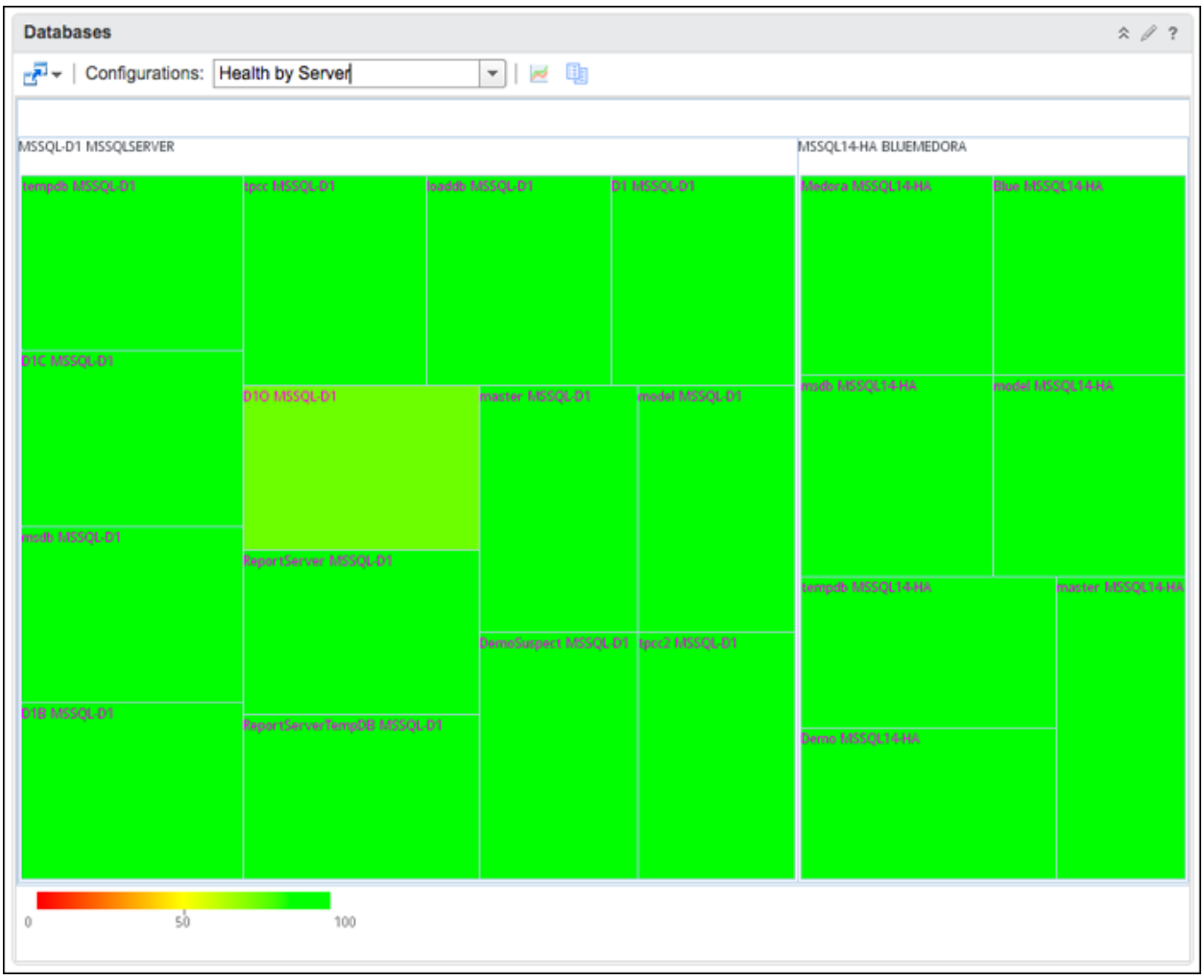

Selected Server Alerts
Filter
Status
Criticalit
Object Name
Alert Info
kraken16.bluemedora.localnet
Host has CPU contention caused by less than half of t
Dell Server HG3QZ12
Dell Processor Device Processor Device Status State:

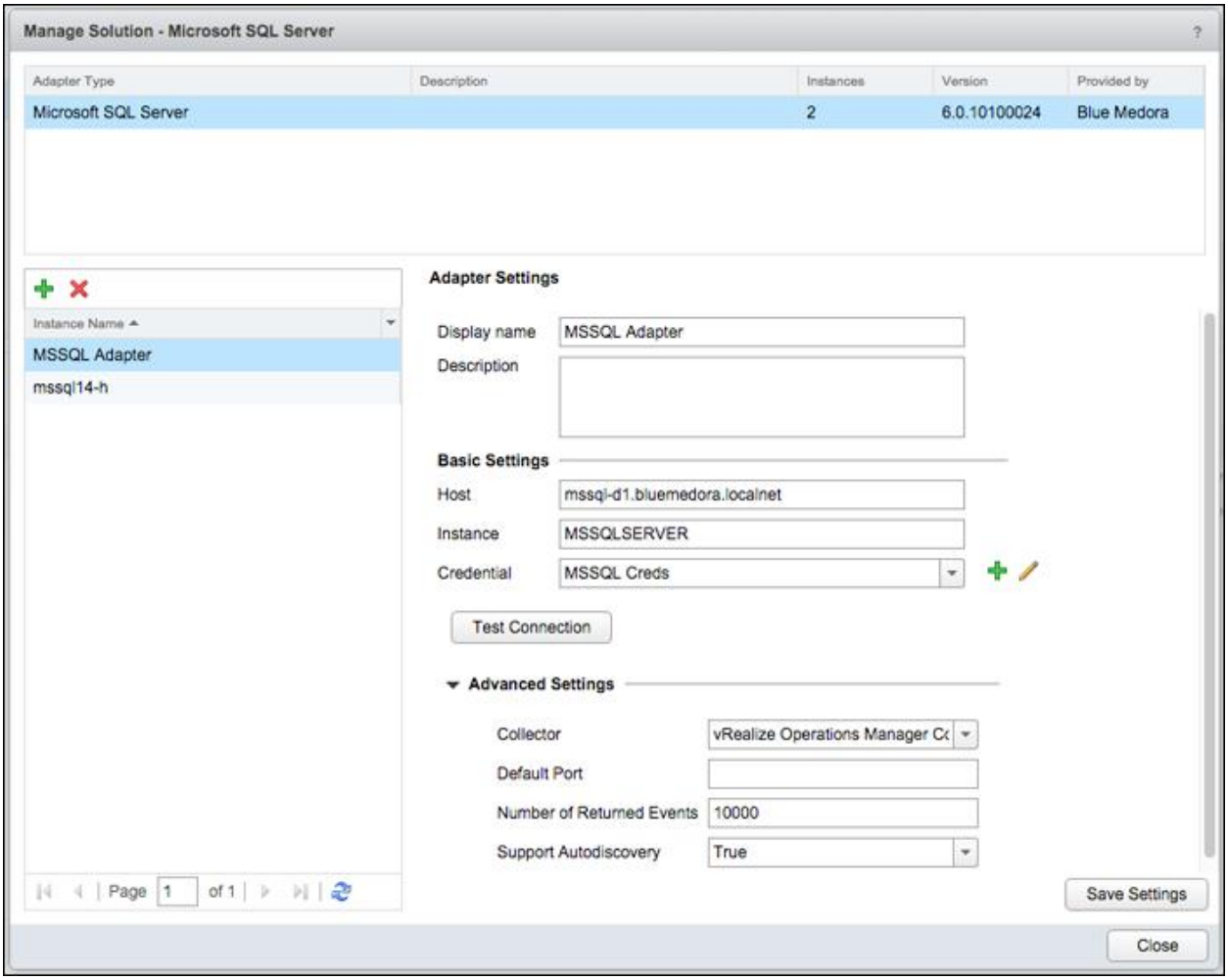
Chapter 10: Application Monitoring using Blue Medora

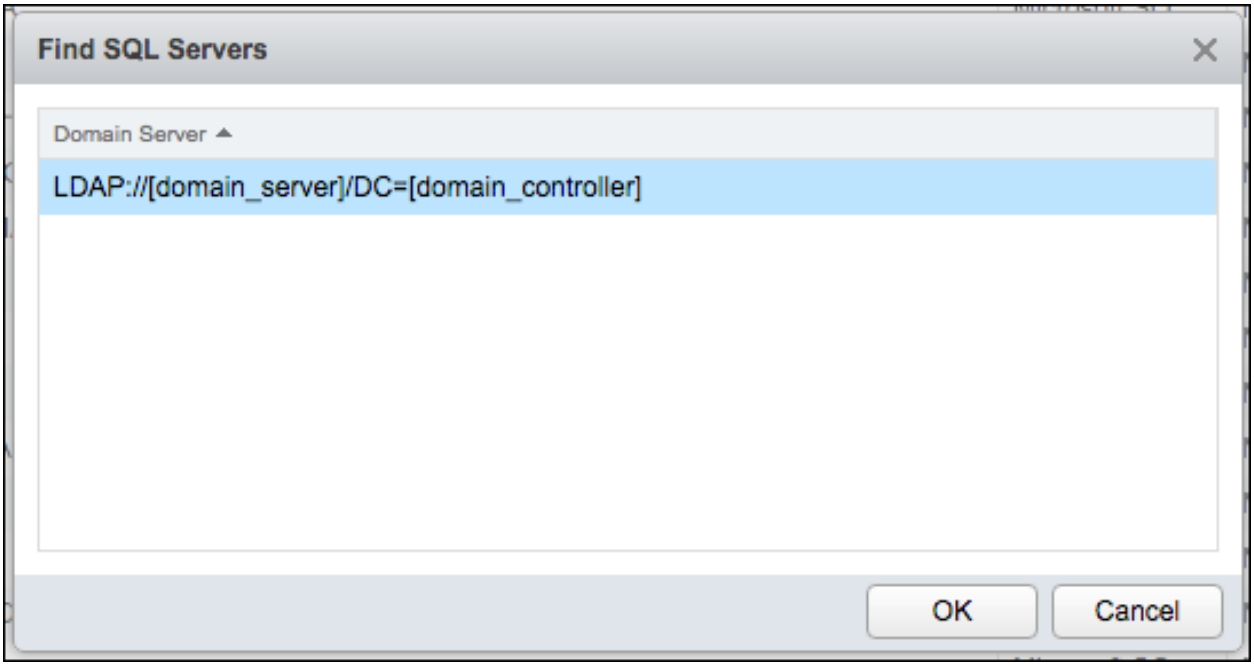


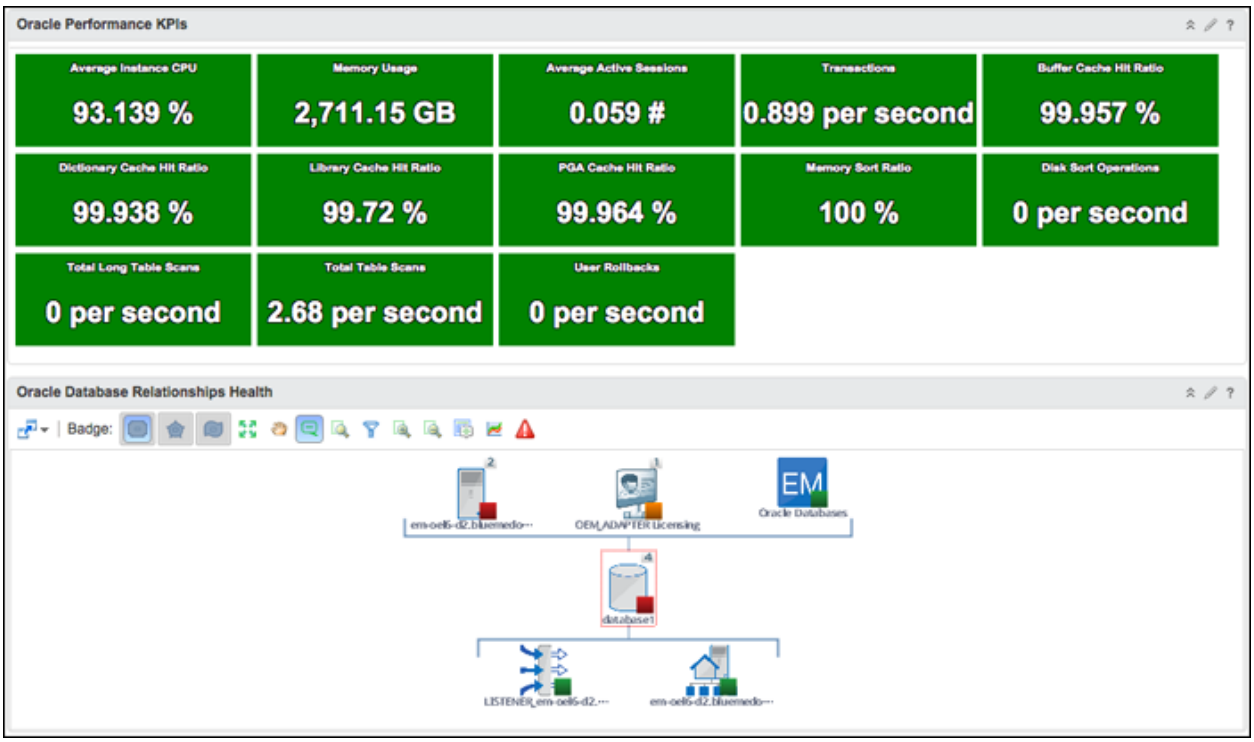


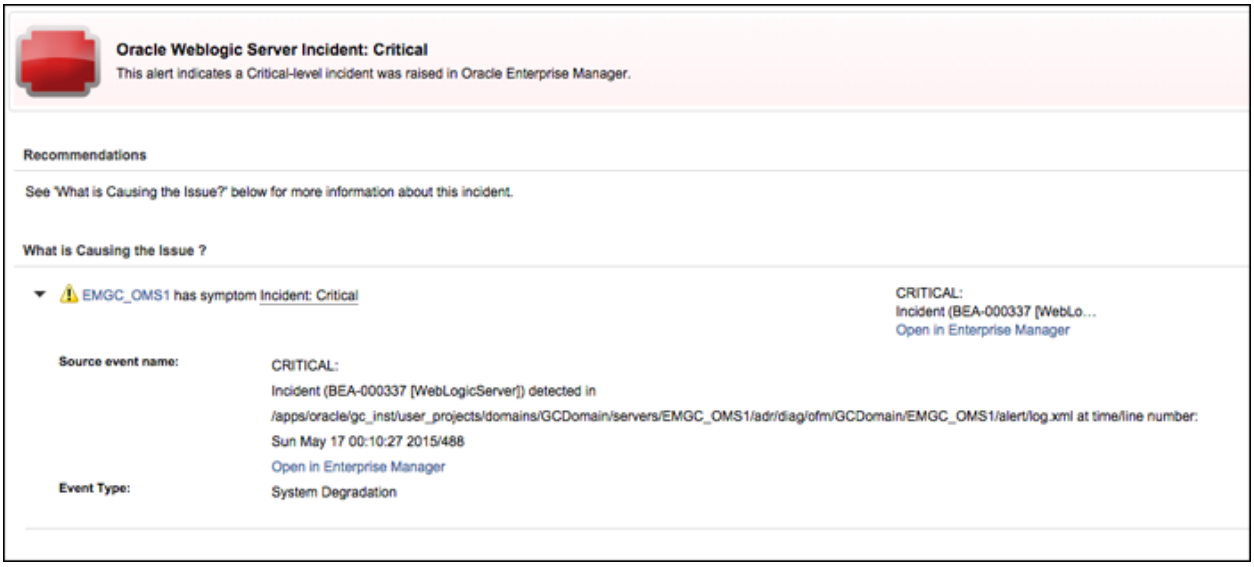
Criticality	Alert	Alert Type	Alert Subtype	Status
	MS SQL Database Is In Offline State	Application	Configuration	
	MS SQL Database Index: Highly Fragmented Indexes	Application	Configuration	
	MS SQL Database Index: Highly Fragmented Indexes	Application	Configuration	
	MS SQL Server Deprecated Feature	Application	Configuration	
	MS SQL Database Index: Unused Maintained Indexes	Application	Configuration	

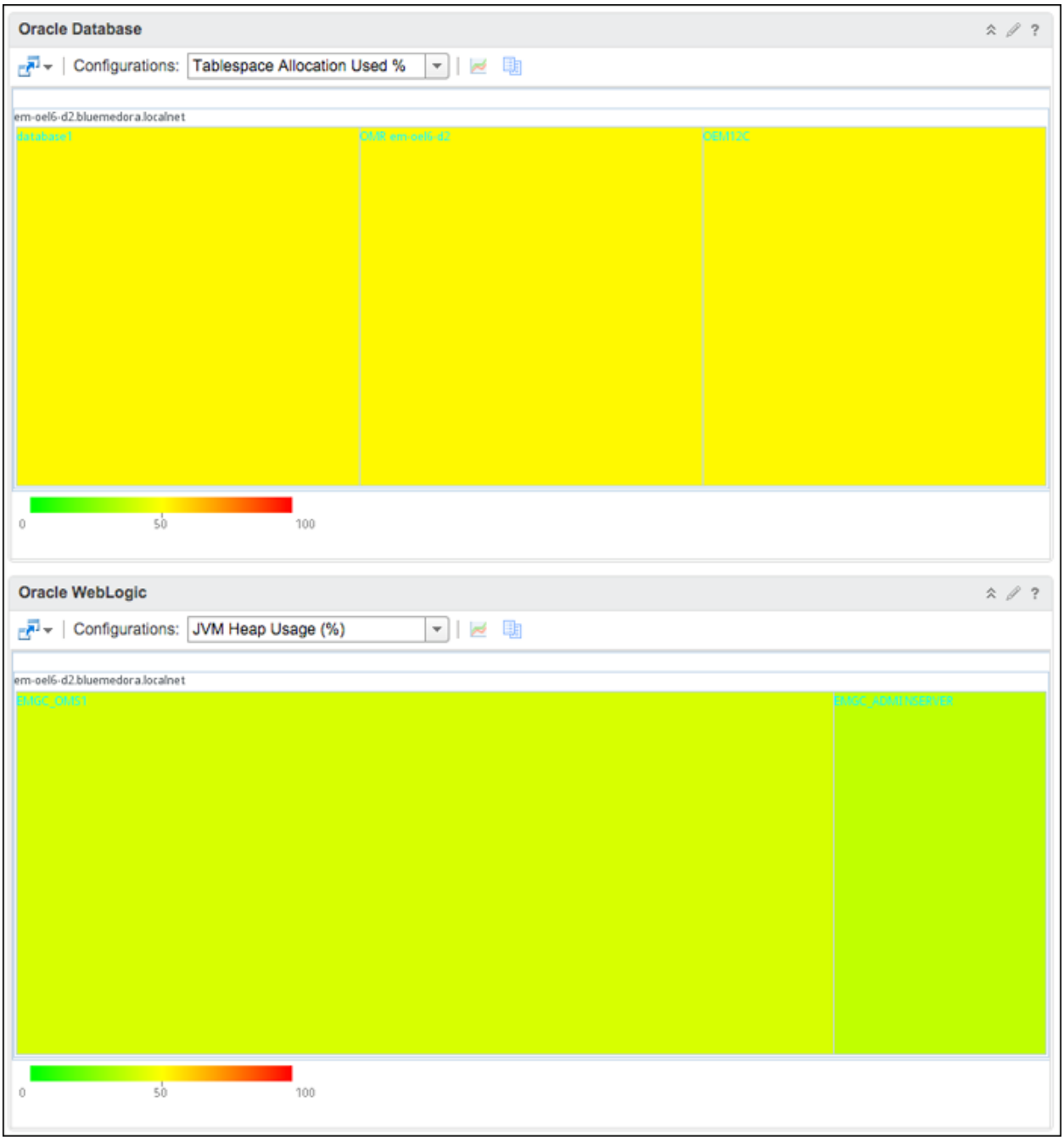

Databases
Configurations:
Health by Server
MSSQL-D1 MSSQLSERVER
MSSQL14-HA BLUEMEDORA
0
50
100

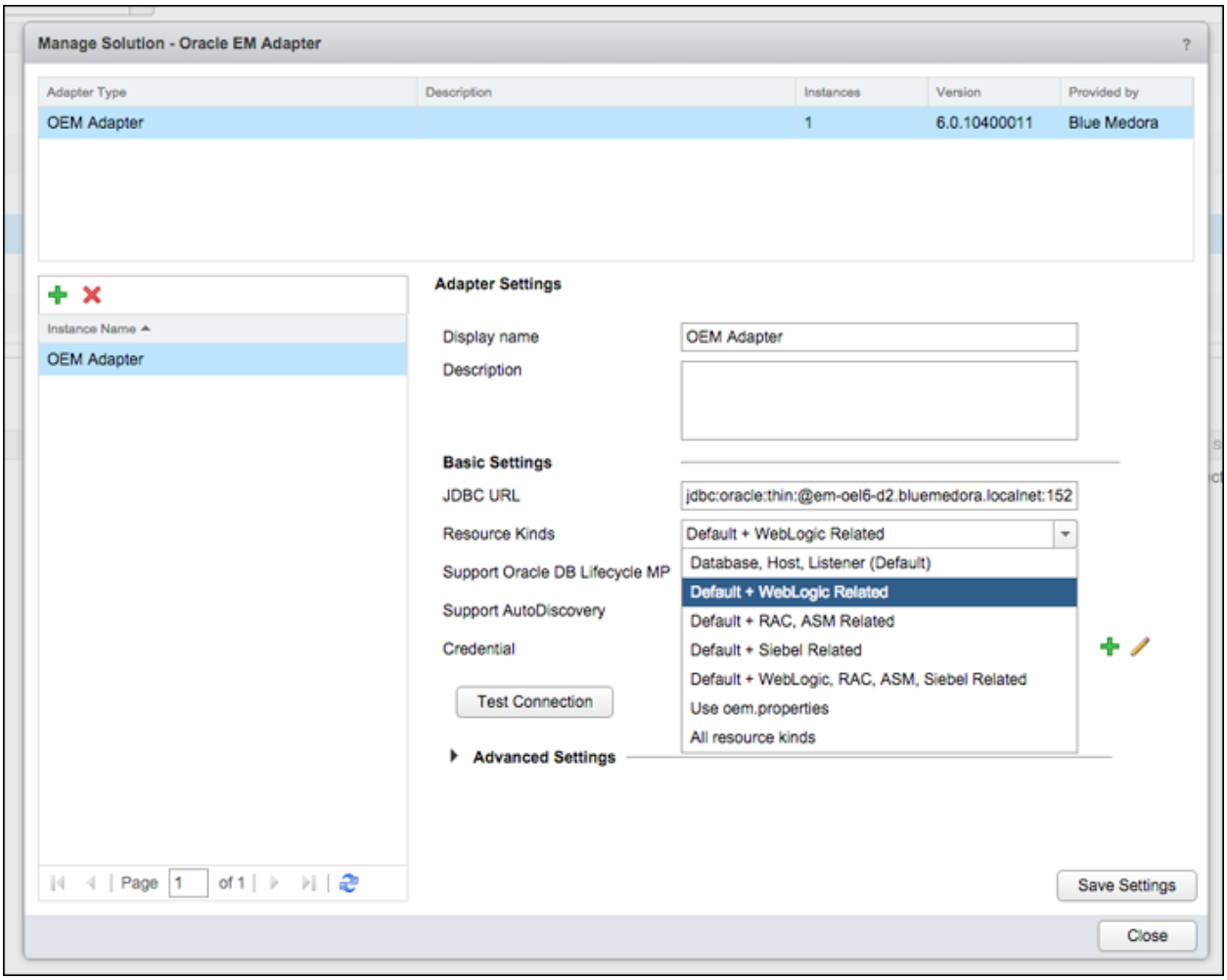

Manage Solution - Microsoft SQL Server
Adapter Type
Description
Instances
Version
Provided by
Microsoft SQL Server
2
6.0.10100024
Blue Medora
Instance Name
MSSQL Adapter
mssql14-h
Page 1 of 1
Adapter Settings
Display name
MSSQL Adapter
Description
Basic Settings
Host
mssql-d1.bluemedora.localnet
Instance
MSSQLSERVER
Credential
MSSQL Creds
Test Connection
Advanced Settings
Collector
vRealize Operations Manager C(
Default Port
Number of Returned Events
10000
Support Autodiscovery
True
Save Settings
Close


Find SQL Servers
Domain Server
LDAP://[domain_server]/DC=[domain_controller]
OK
Cancel

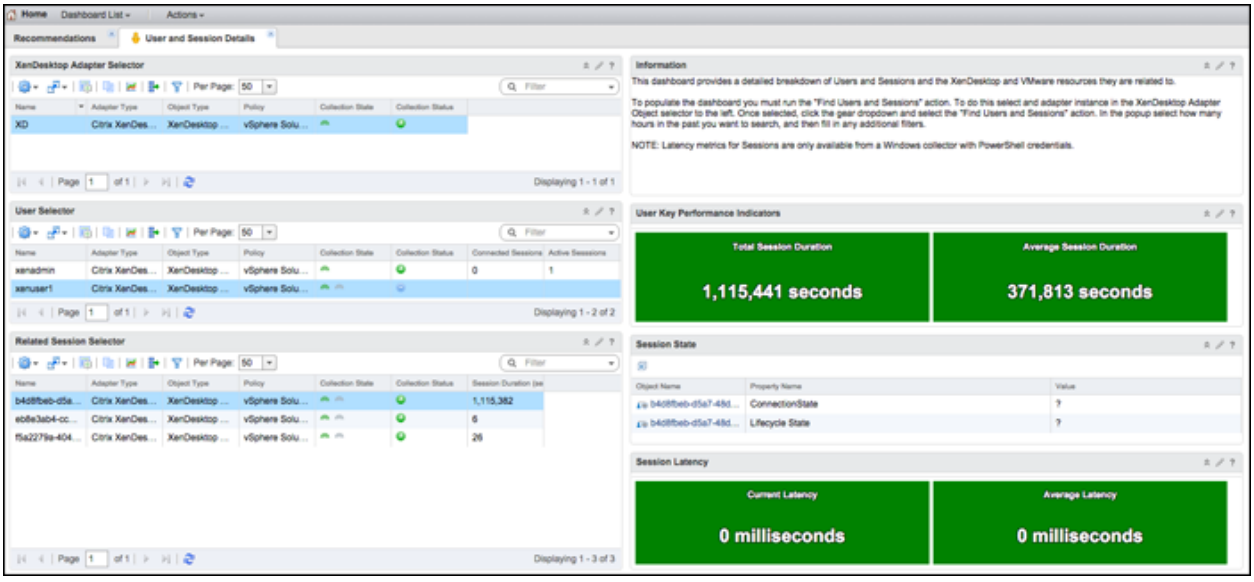

Oracle Performance KPIs
Average Instance CPU
93.139 %
Memory Usage
2,711.15 GB
Average Active Sessions
0.059 #
Transactions
0.899 per second
Buffer Cache Hit Ratio
99.957 %
Dictionary Cache Hit Ratio
99.938 %
Library Cache Hit Ratio
99.72 %
PGA Cache Hit Ratio
99.964 %
Memory Sort Ratio
100 %
Disk Sort Operations
0 per second
Total Long Table Scans
0 per second
Total Table Scans
2.68 per second
User Rollbacks
0 per second
Oracle Database Relationships Health
Badge:
em-oel6-d2.bluemedo···
OEM_ADAPTER Licensing
Oracle Databases
database1
LISTENER_em-oel6-d2.···
em-oel6-d2.bluemedo···


Oracle Weblogic Server Incident: Critical
This alert indicates a Critical-level incident was raised in Oracle Enterprise Manager.
Recommendations
See 'What is Causing the Issue?' below for more information about this incident.
What is Causing the Issue ?
EMGC_OMS1 has symptom Incident: Critical
CRITICAL:
Incident (BEA-000337 [WebLo...
Open in Enterprise Manager
Source event name:
CRITICAL:
Incident (BEA-000337 [WebLogicServer]) detected in
/apps/oracle/gc_inst/user_projects/domains/GCDomain/servers/EMGC_OMS1/adr/diag/ofm/GCDomain/EMGC_OMS1/alert/log.xml at time/line number:
Sun May 17 00:10:27 2015/488
Open in Enterprise Manager
Event Type:
System Degradation

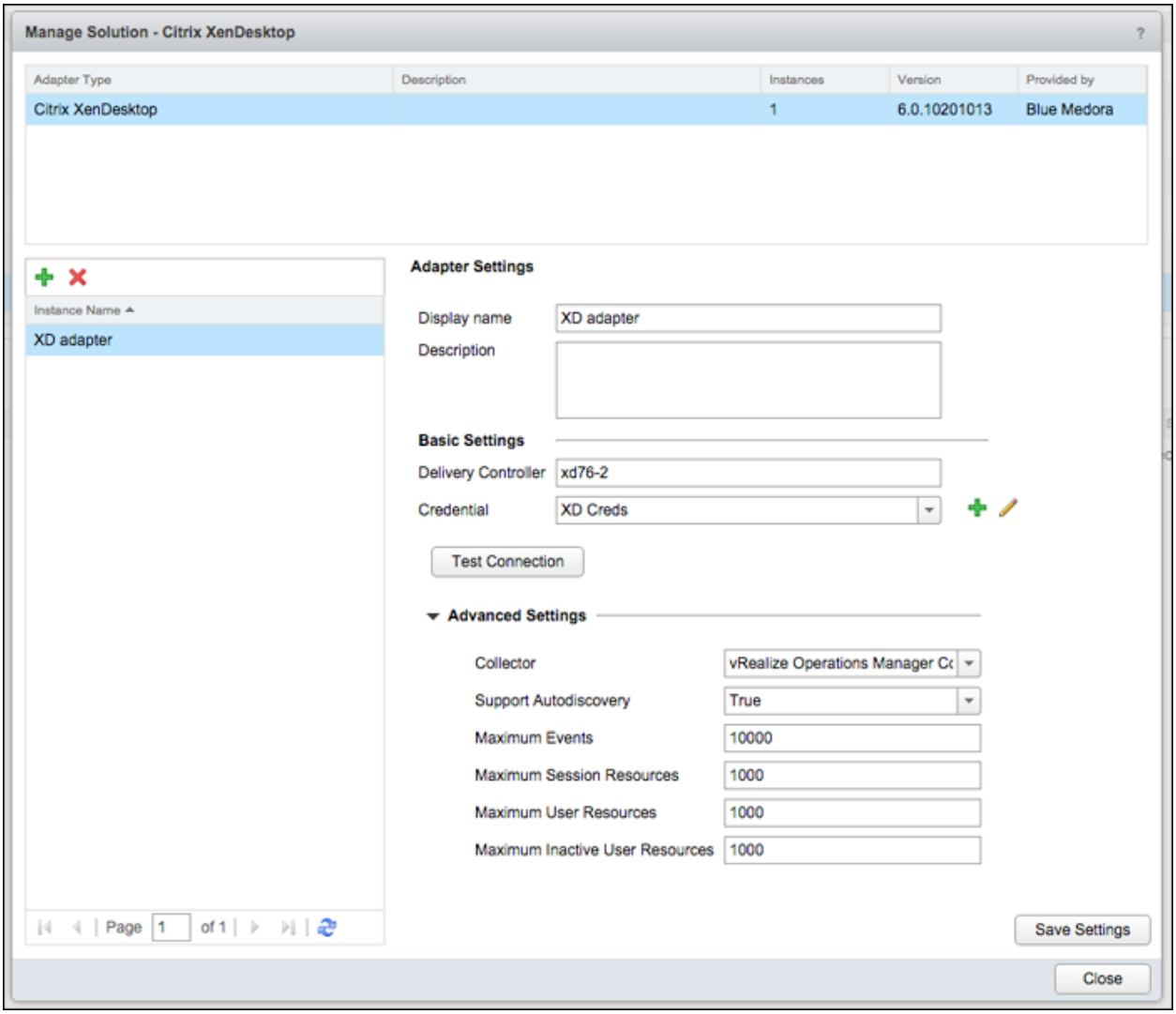

Oracle Database
Configurations:
Tablespace Allocation Used %
em-oel6-d2.bluemedora.localnet
database1
OMR em-oel6-d2
OEM12C
0
50
100
Oracle WebLogic
Configurations:
JVM Heap Usage (%)
em-oel6-d2.bluemedora.localnet
EMGC_OMS1
EMGC_ADMINSERVER
0
50
100




```
#minimum trailing time (from 'now') to query in minutes, default is 1min
minQueryWindow=1

#allowedResourceKinds  Oracle EM Target Types to collect
allowedResourceKinds=host,oracle_database,oracle_listener

#resourceUpStatuses
resourceUpStatuses=Target Up

#schema that contains OEM objects
schema=SYSMAN

#number of records to fetch at a time when reading data
mainFetchSize=500
```


Home
Dashboard List
Actions
Recommendations
User and Session Details
XenDesktop Adapter Selector
Information
This dashboard provides a detailed breakdown of Users and Sessions and the XenDesktop and VMware resources they are related to.
To populate the dashboard you must run the "Find Users and Sessions" action. To do this select and adapter instance in the XenDesktop Adapter Object selector to the left. Once selected, click the gear dropdown and select the "Find Users and Sessions" action. In the popup select how many hours in the past you want to search, and then fill in any additional filters.
NOTE: Latency metrics for Sessions are only available from a Windows collector with PowerShell credentials.
User Selector
User Key Performance Indicators
Total Session Duration
1,115,441 seconds
Average Session Duration
371,813 seconds
Related Session Selector
Session State
Session Latency
Current Latency
0 milliseconds
Average Latency
0 milliseconds

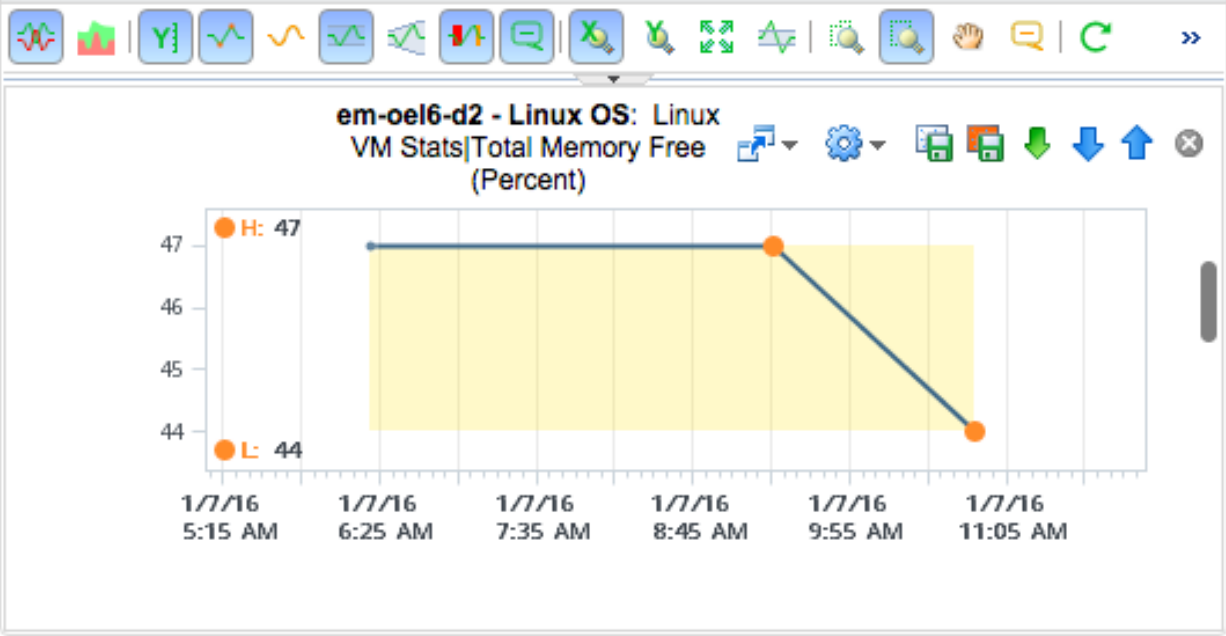

Sites
Configurations:
Session Count by Effective
XenDesktop Site
0
50
100
Machine Catalogs
Configurations:
Session Count by Health
XenDesktop Catalog
0
50
100
VDA Machines
Configurations:
Session Count by Effective
XenDesktop VDA Machine
0
50
100

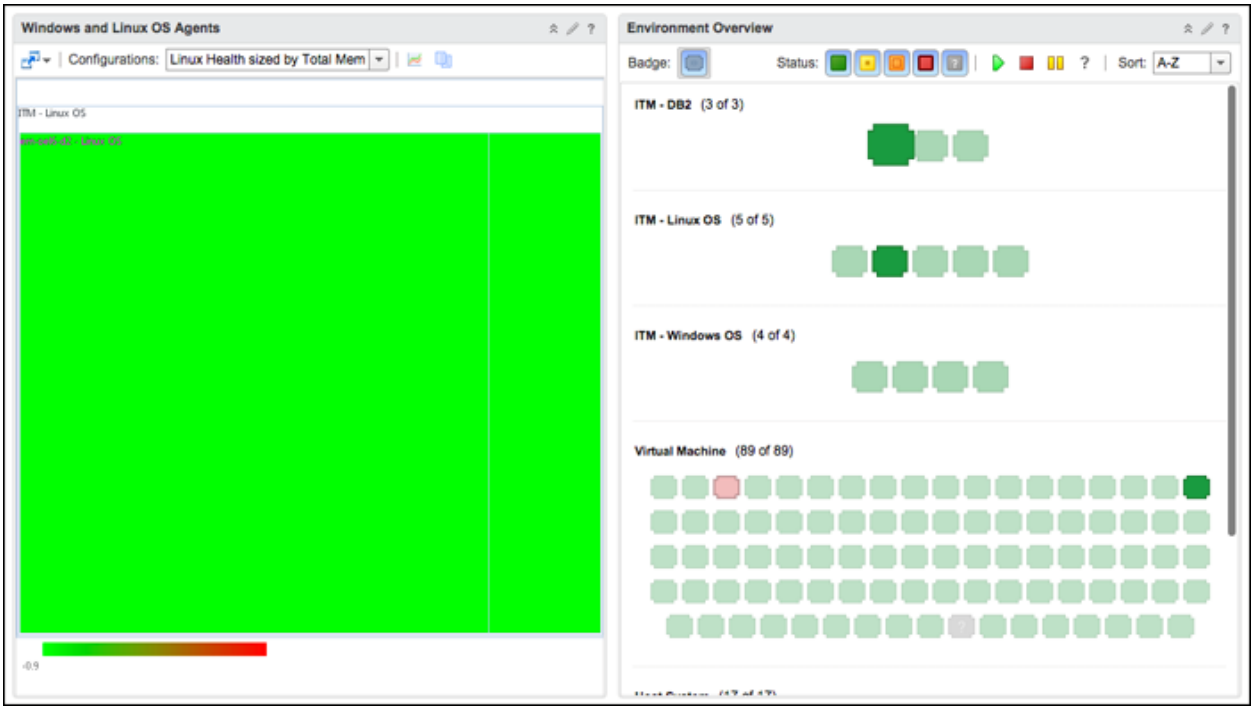

Manage Solution - Citrix XenDesktop
Adapter Type
Description
Instances
Version
Provided by
Citrix XenDesktop
1
6.0.10201013
Blue Medora
Instance Name
XD adapter
Page 1 of 1
Adapter Settings
Display name
XD adapter
Description
Basic Settings
Delivery Controller
xd76-2
Credential
XD Creds
Test Connection
Advanced Settings
Collector
vRealize Operations Manager Cc
Support Autodiscovery
True
Maximum Events
10000
Maximum Session Resources
1000
Maximum User Resources
1000
Maximum Inactive User Resources
1000
Save Settings
Close

Memory KPIs

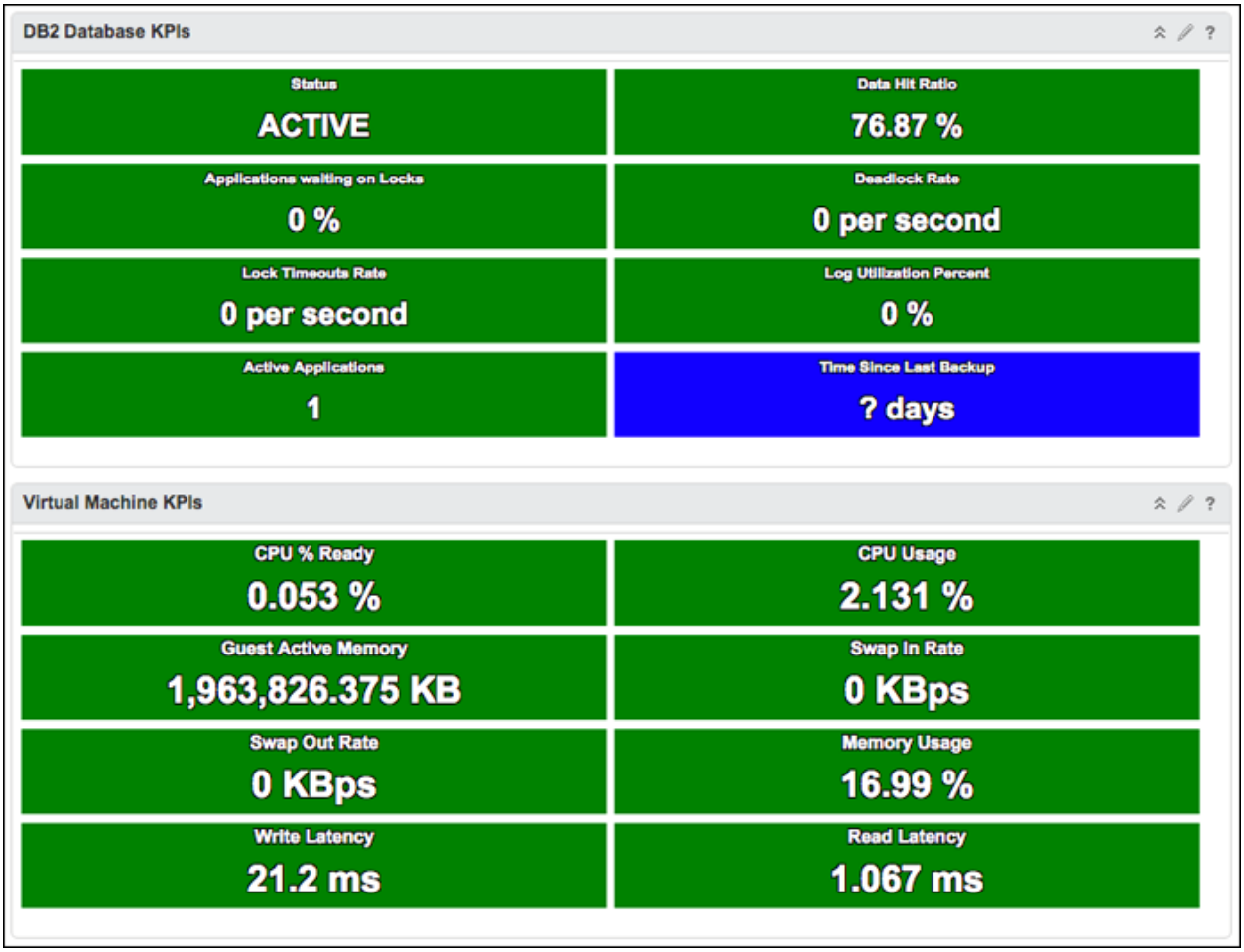
Free Memory	Used Memory
44 %	89 %
Free Swap Space	**Used Swap Space**
43 %	57 %
Cached Memory	**Free Virtual Storage**
32 %	18 %

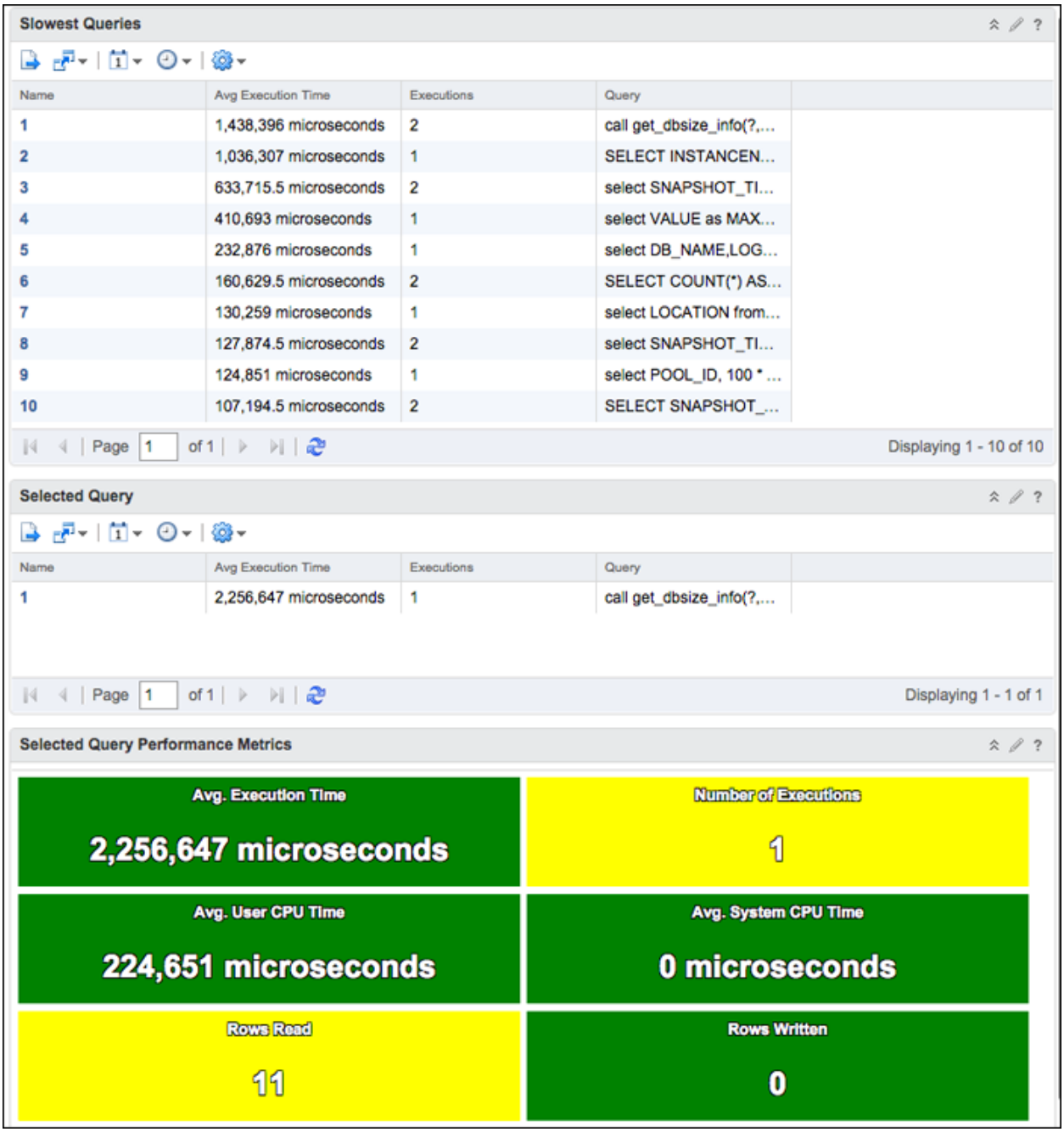
Memory KPI Graphs






```
#
Linux OS | Linux CPU      | P | 5
Linux OS | Linux Disk     | P | 5
Linux OS | Linux VM Stats | X | 5
#
Summarization and Pruning Agent | KSY CONNECTIVITY             | X | 5
Summarization and Pruning Agent | KSY NODE FAILURES            |   | 5
Summarization and Pruning Agent | KSY SUMMARIZATION CONFIG     | X | 5
Summarization and Pruning Agent | KSY SUMMARIZATION STATISTICS | X | 5
Summarization and Pruning Agent | KSY TABLE STATISTICS         |   | 5
#
```


DB2 Database KPIs
Status
ACTIVE
Data Hit Ratio
76.87 %
Applications waiting on Locks
0 %
Deadlock Rate
0 per second
Lock Timeouts Rate
0 per second
Log Utilization Percent
0 %
Active Applications
1
Time Since Last Backup
? days
Virtual Machine KPIs
CPU % Ready
0.053 %
CPU Usage
2.131 %
Guest Active Memory
1,963,826.375 KB
Swap In Rate
0 KBps
Swap Out Rate
0 KBps
Memory Usage
16.99 %
Write Latency
21.2 ms
Read Latency
1.067 ms



Slowest Queries

Name	Avg Execution Time	Executions	Query
1	1,438,396 microseconds	2	call get_dbsize_info(?,...
2	1,036,307 microseconds	1	SELECT INSTANCEN...
3	633,715.5 microseconds	2	select SNAPSHOT_TI...
4	410,693 microseconds	1	select VALUE as MAX...
5	232,876 microseconds	1	select DB_NAME,LOG...
6	160,629.5 microseconds	2	SELECT COUNT(*) AS...
7	130,259 microseconds	1	select LOCATION from...
8	127,874.5 microseconds	2	select SNAPSHOT_TI...
9	124,851 microseconds	1	select POOL_ID, 100 * ...
10	107,194.5 microseconds	2	SELECT SNAPSHOT_...

Page 1 of 1 Displaying 1 - 10 of 10

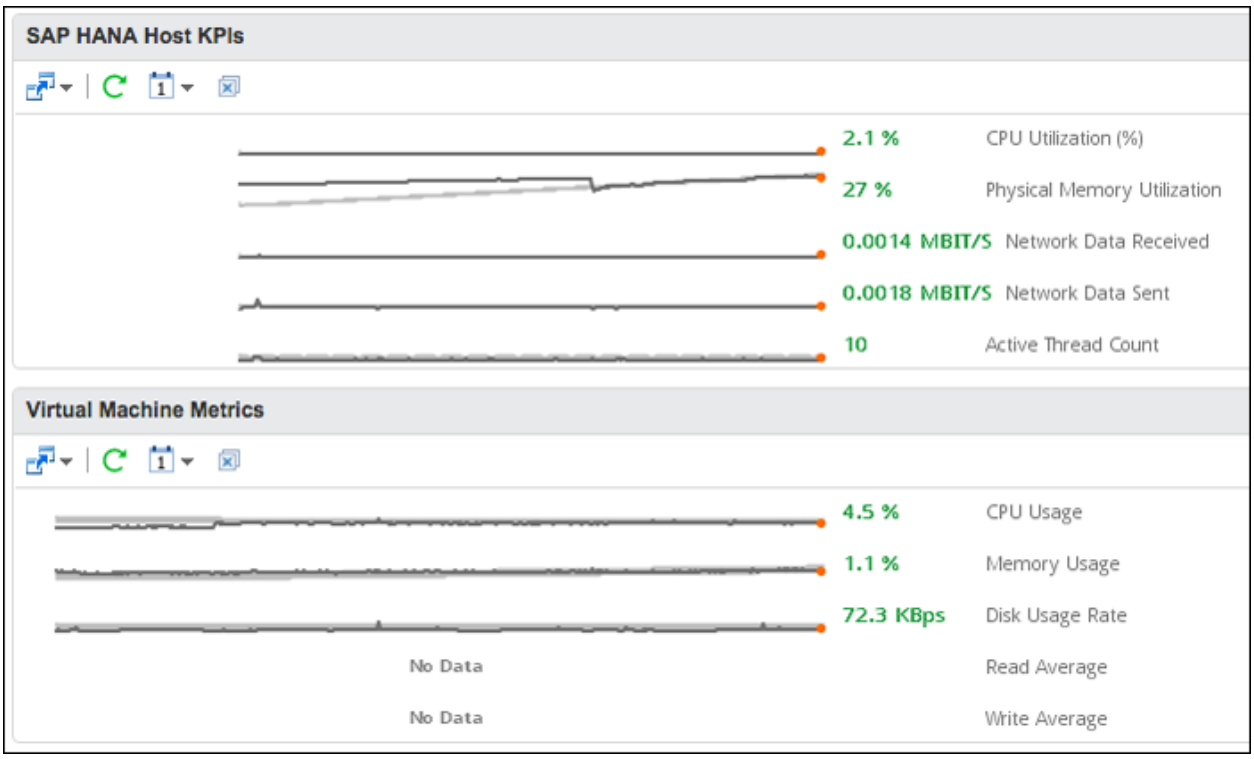
Selected Query

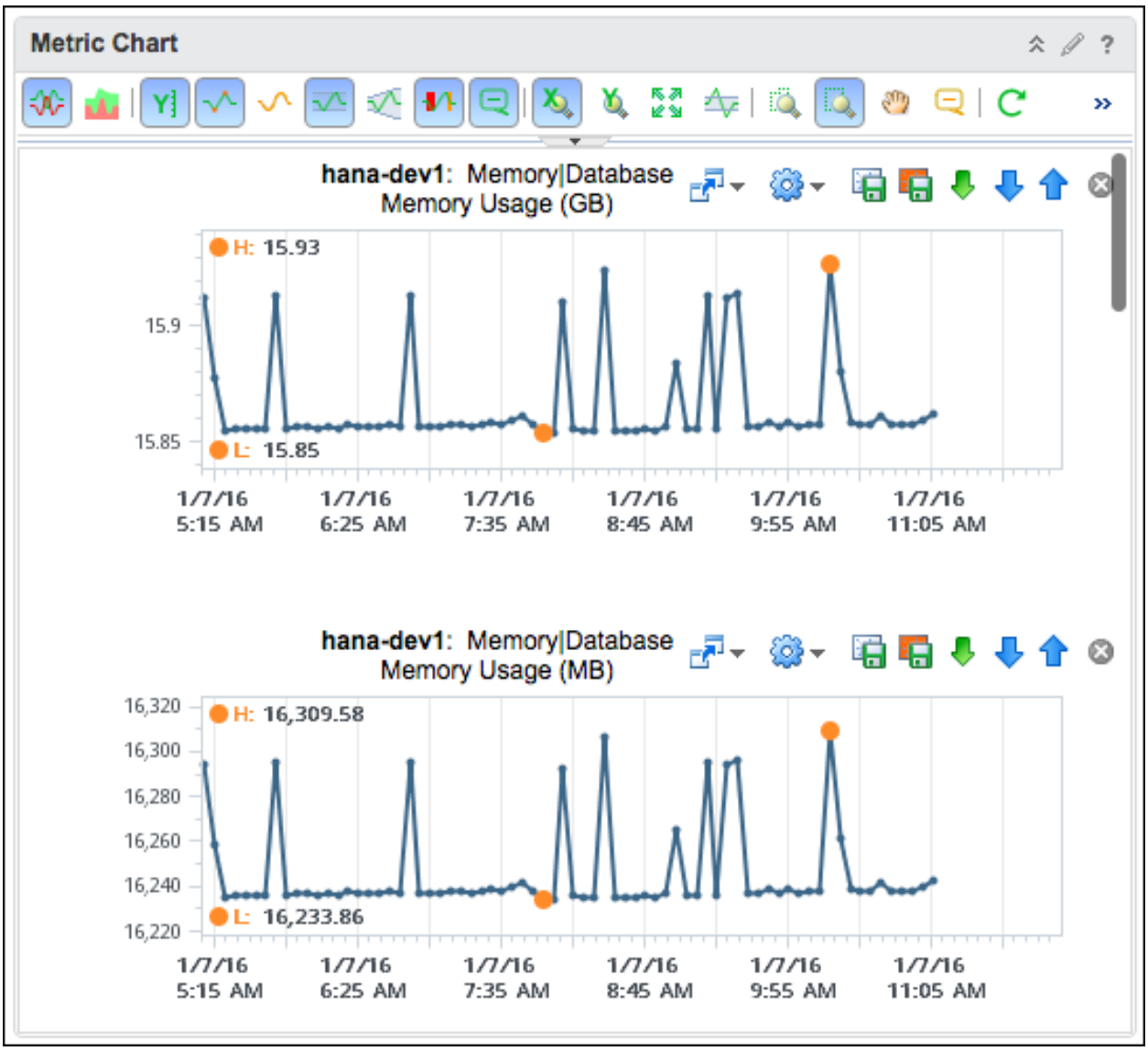
Name	Avg Execution Time	Executions	Query
1	2,256,647 microseconds	1	call get_dbsize_info(?,...

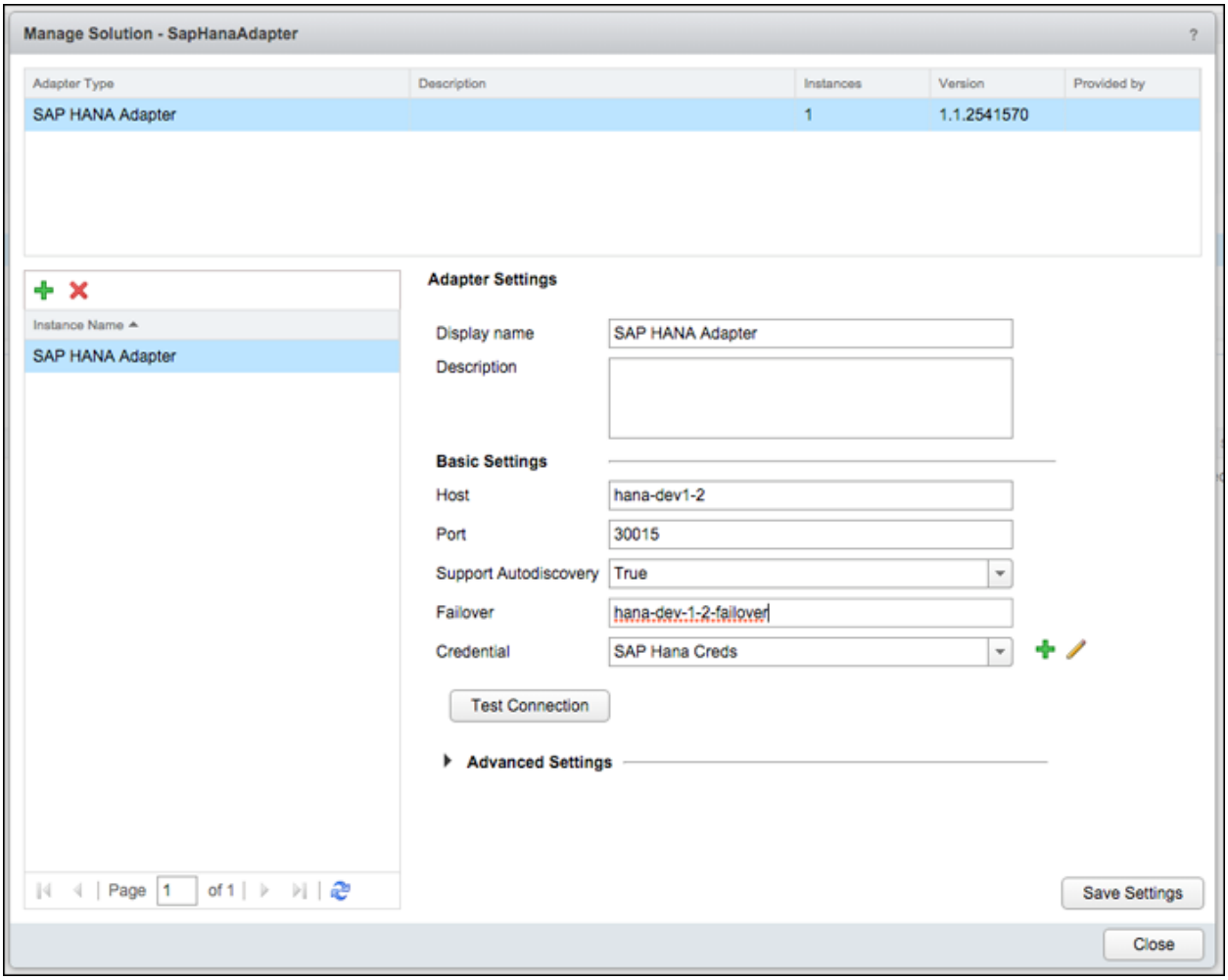
Page 1 of 1 Displaying 1 - 1 of 1

Selected Query Performance Metrics

Avg. Execution Time	Number of Executions
2,256,647 microseconds	1
Avg. User CPU Time	**Avg. System CPU Time**
224,651 microseconds	0 microseconds
Rows Read	**Rows Written**
11	0

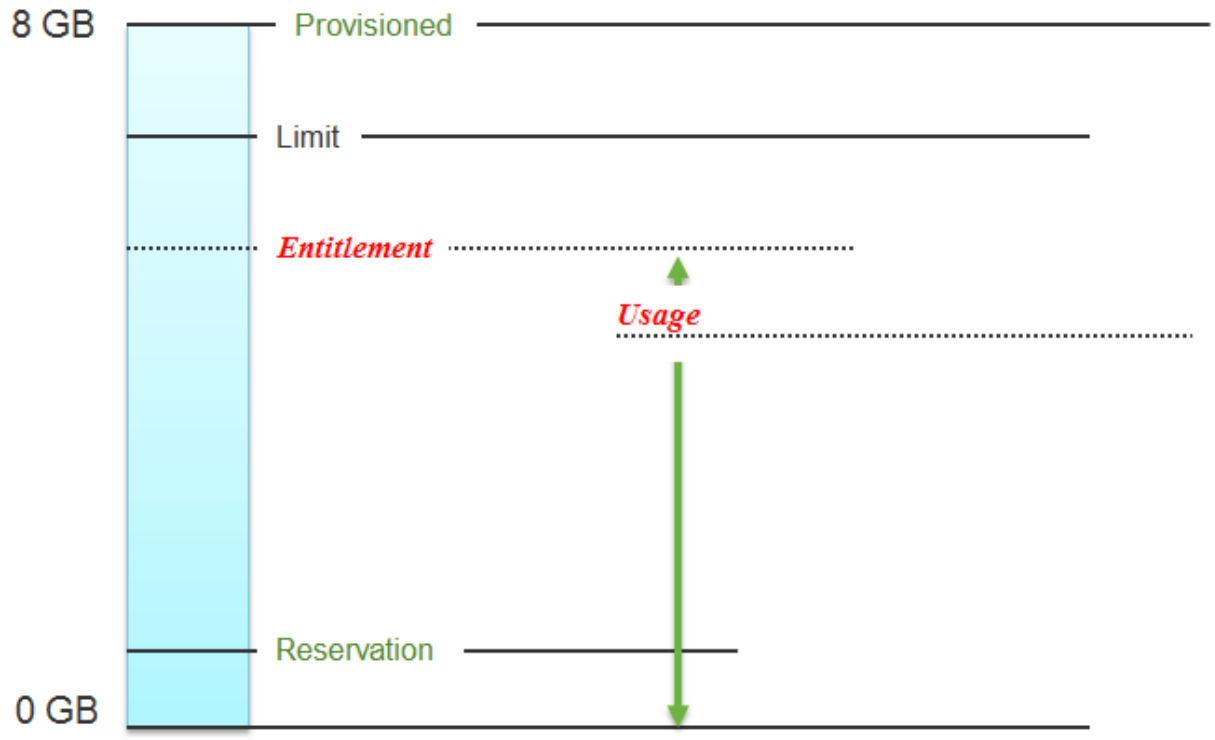

SAP HANA Host KPIs
2.1 %
CPU Utilization (%)
27 %
Physical Memory Utilization
0.0014 MBIT/S
Network Data Received
0.0018 MBIT/S
Network Data Sent
10
Active Thread Count
Virtual Machine Metrics
4.5 %
CPU Usage
1.1 %
Memory Usage
72.3 KBps
Disk Usage Rate
No Data
Read Average
No Data
Write Average

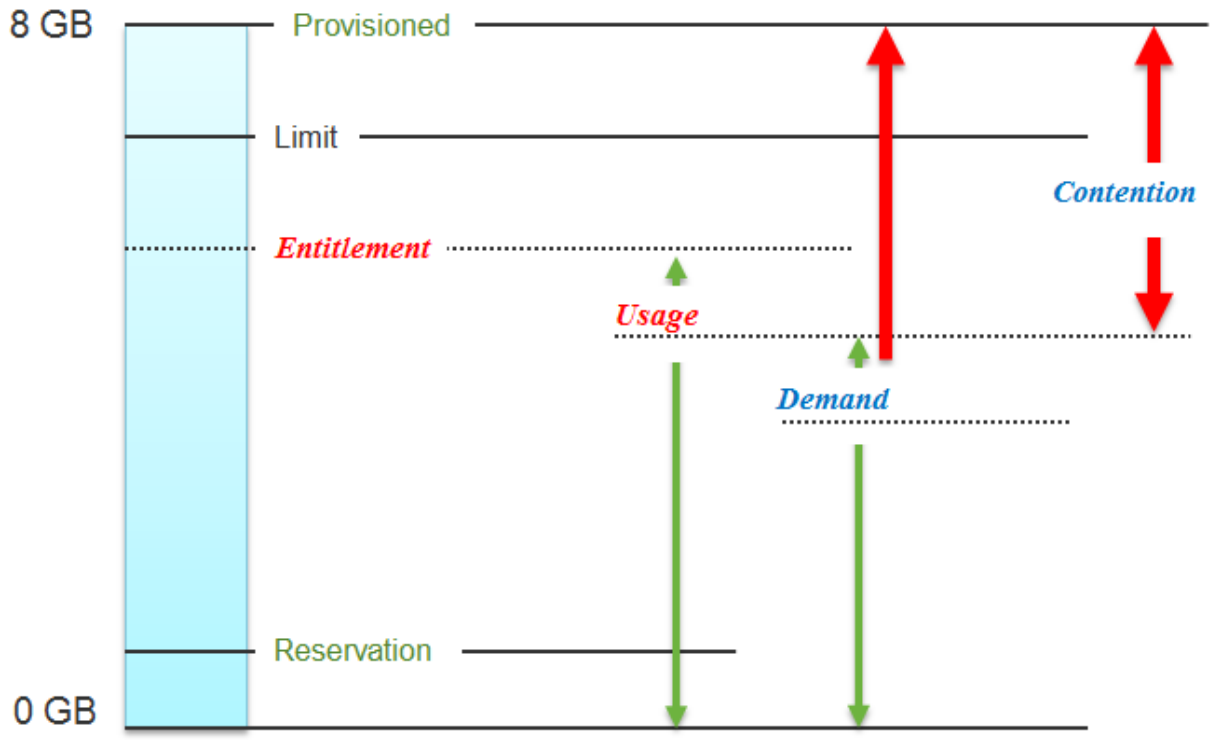

Metric Chart
hana-dev1: Memory|Database
Memory Usage (GB)
H: 15.93
15.9
15.85
L: 15.85
1/7/16 5:15 AM
1/7/16 6:25 AM
1/7/16 7:35 AM
1/7/16 8:45 AM
1/7/16 9:55 AM
1/7/16 11:05 AM
hana-dev1: Memory|Database
Memory Usage (MB)
16,320
16,300
16,280
16,260
16,240
16,220
H: 16,309.58
L: 16,233.86
1/7/16 5:15 AM
1/7/16 6:25 AM
1/7/16 7:35 AM
1/7/16 8:45 AM
1/7/16 9:55 AM
1/7/16 11:05 AM

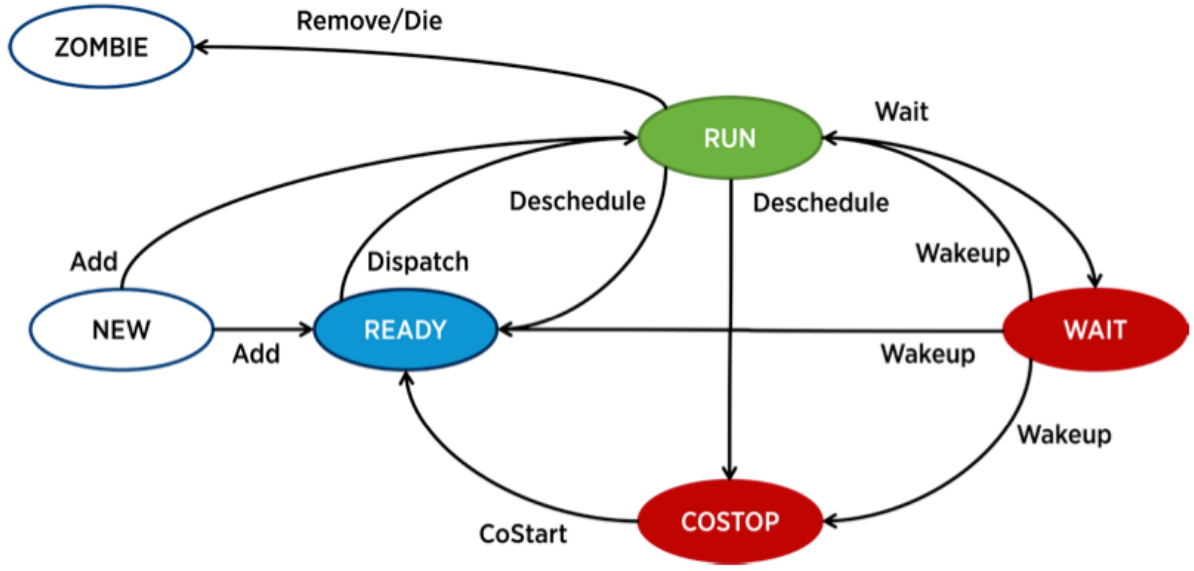

Manage Solution - SapHanaAdapter
Adapter Type
Description
Instances
Version
Provided by
SAP HANA Adapter
1
1.1.2541570
Instance Name
SAP HANA Adapter
Page 1 of 1
Adapter Settings
Display name
SAP HANA Adapter
Description
Basic Settings
Host
hana-dev1-2
Port
30015
Support Autodiscovery
True
Failover
hana-dev-1-2-failover
Credential
SAP Hana Creds
Test Connection
Advanced Settings
Save Settings
Close

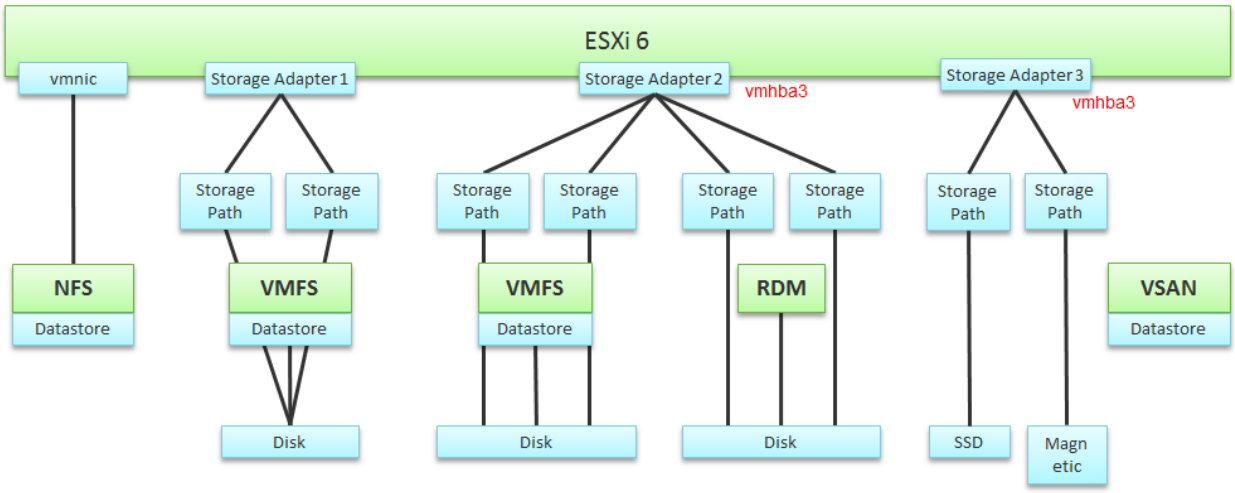
Part 3

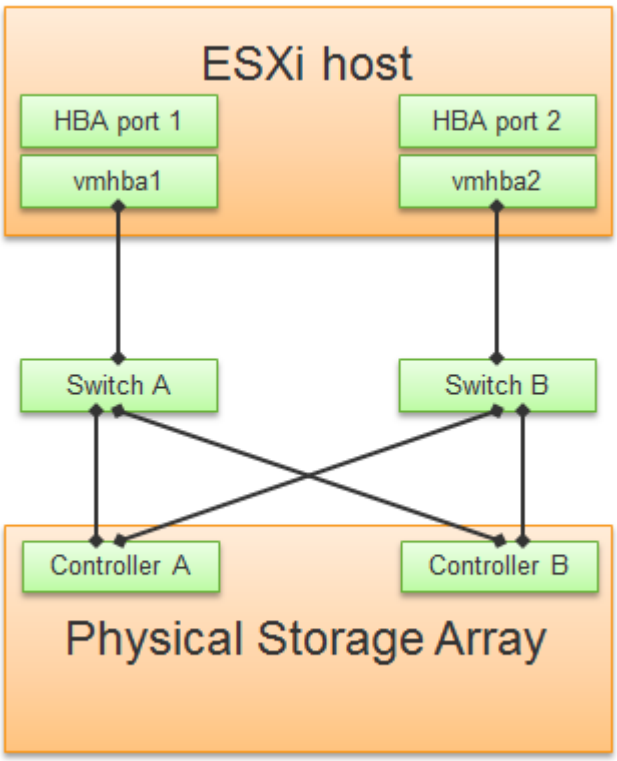
Chapter 11: SDDC Key Counters

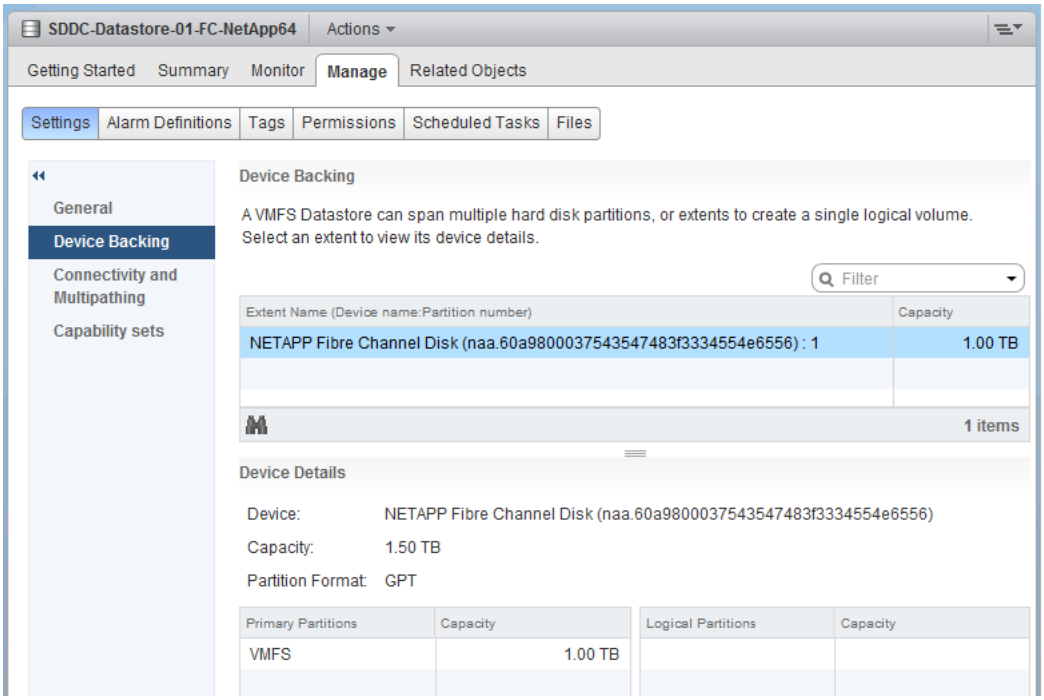


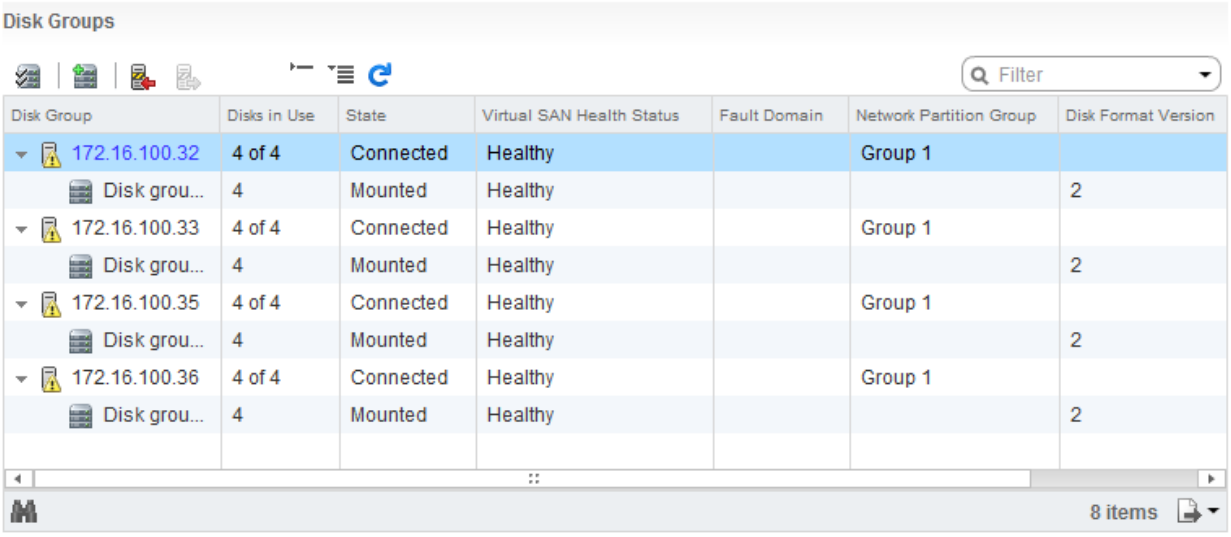

8 GB
Provisioned
Limit
Entitlement
Usage
Contention
Demand
Reservation
0 GB

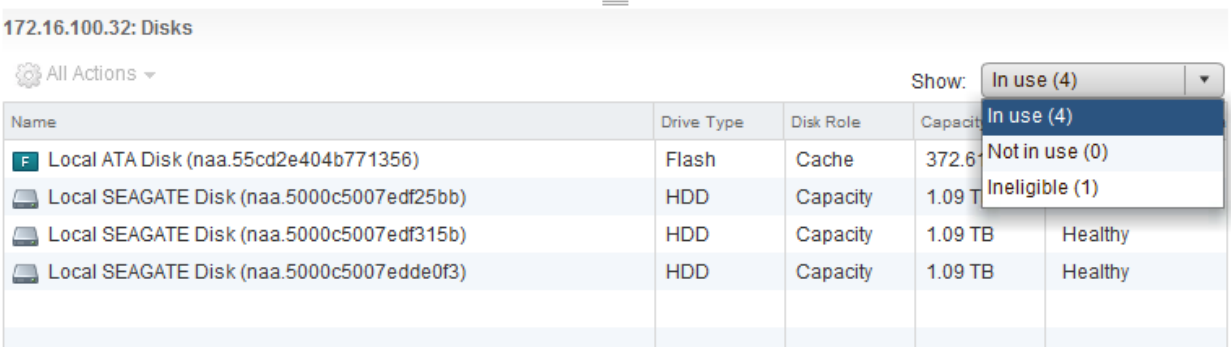

ZOMBIE
Remove/Die
RUN
Wait
Deschedule
Deschedule
Add
Dispatch
Wakeup
NEW
READY
WAIT
Add
Wakeup
Wakeup
CoStart
COSTOP

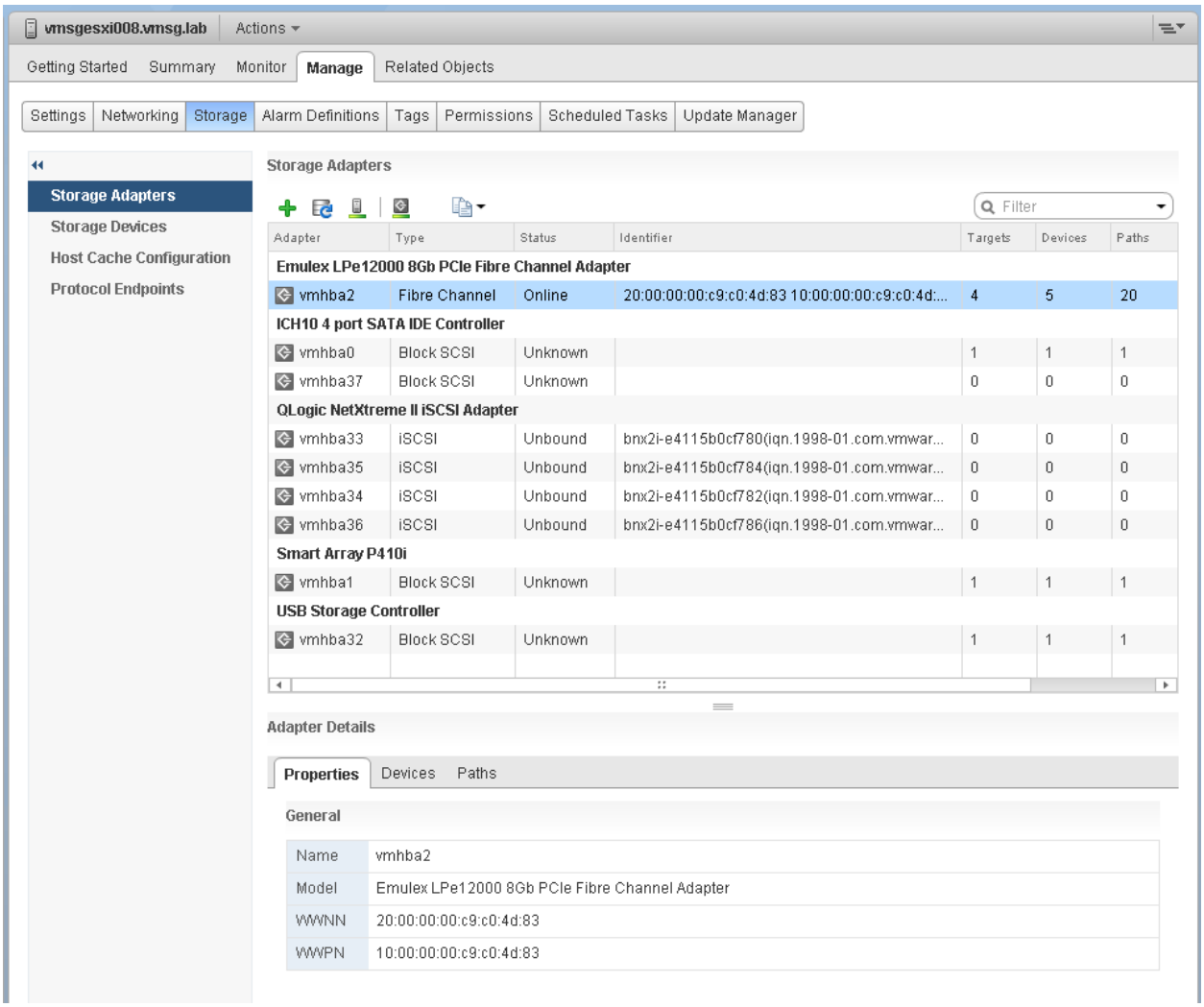

ESXi 6
vmnic
Storage Adapter 1
Storage Adapter 2
vmhba3
Storage Adapter 3
vmhba3
Storage Path
Storage Path
Storage Path
Storage Path
Storage Path
Storage Path
Storage Path
Storage Path
NFS
Datastore
VMFS
Datastore
VMFS
Datastore
RDM
VSAN
Datastore
Disk
Disk
Disk
SSD
Magn etic


ESXi host
HBA port 1
HBA port 2
vmhba1
vmhba2
Switch A
Switch B
Controller A
Controller B
Physical Storage Array


SDDC-Datastore-01-FC-NetApp64
Actions
Getting Started
Summary
Monitor
Manage
Related Objects
Settings
Alarm Definitions
Tags
Permissions
Scheduled Tasks
Files
General
Device Backing
Connectivity and Multipathing
Capability sets
Device Backing
A VMFS Datastore can span multiple hard disk partitions, or extents to create a single logical volume.
Select an extent to view its device details.
Filter
Extent Name (Device name:Partition number)
Capacity
NETAPP Fibre Channel Disk (naa.60a98000375435474 83f3334554e6556) : 1
1.00 TB
1 items
Device Details
Device: NETAPP Fibre Channel Disk (naa.60a98000375435474 83f3334554e6556)
Capacity: 1.50 TB
Partition Format: GPT
Primary Partitions
Capacity
Logical Partitions
Capacity
VMFS
1.00 TB


Disk Groups
Filter
Disk Group
Disks in Use
State
Virtual SAN Health Status
Fault Domain
Network Partition Group
Disk Format Version
172.16.100.32
4 of 4
Connected
Healthy
Group 1
Disk grou...
4
Mounted
Healthy
2
172.16.100.33
4 of 4
Connected
Healthy
Group 1
Disk grou...
4
Mounted
Healthy
2
172.16.100.35
4 of 4
Connected
Healthy
Group 1
Disk grou...
4
Mounted
Healthy
2
172.16.100.36
4 of 4
Connected
Healthy
Group 1
Disk grou...
4
Mounted
Healthy
2
8 items


172.16.100.32: Disks
All Actions
Show:
In use (4)
In use (4)
Not in use (0)
Ineligible (1)
Name
Drive Type
Disk Role
Capacity
Local ATA Disk (naa.55cd2e404b771356)
Flash
Cache
Local SEAGATE Disk (naa.5000c5007edf25bb)
HDD
Capacity
Local SEAGATE Disk (naa.5000c5007edf315b)
HDD
Capacity
1.09 TB
Healthy
Local SEAGATE Disk (naa.5000c5007edde0f3)
HDD
Capacity
1.09 TB
Healthy


vmsgesxi008.vmsg.lab
Actions
Getting Started
Summary
Monitor
Manage
Related Objects
Settings
Networking
Storage
Alarm Definitions
Tags
Permissions
Scheduled Tasks
Update Manager
Storage Adapters
Storage Devices
Host Cache Configuration
Protocol Endpoints
Storage Adapters
Filter
Adapter
Type
Status
Identifier
Targets
Devices
Paths
Emulex LPe12000 8Gb PCIe Fibre Channel Adapter
vmhba2
Fibre Channel
Online
20:00:00:00:c9:c0:4d:83 10:00:00:00:c9:c0:4d:...
4
5
20
ICH10 4 port SATA IDE Controller
vmhba0
Block SCSI
Unknown
1
1
1
vmhba37
Block SCSI
Unknown
0
0
0
QLogic NetXtreme II iSCSI Adapter
vmhba33
iSCSI
Unbound
bnx2i-e4115b0cf780(iqn.1998-01.com.vmwar...
0
0
0
vmhba35
iSCSI
Unbound
bnx2i-e4115b0cf784(iqn.1998-01.com.vmwar...
0
0
0
vmhba34
iSCSI
Unbound
bnx2i-e4115b0cf782(iqn.1998-01.com.vmwar...
0
0
0
vmhba36
iSCSI
Unbound
bnx2i-e4115b0cf786(iqn.1998-01.com.vmwar...
0
0
0
Smart Array P410i
vmhba1
Block SCSI
Unknown
1
1
1
USB Storage Controller
vmhba32
Block SCSI
Unknown
1
1
1
Adapter Details
Properties
Devices
Paths
General
Name
vmhba2
Model
Emulex LPe12000 8Gb PCIe Fibre Channel Adapter
WWNN
20:00:00:00:c9:c0:4d:83
WWPN
10:00:00:00:c9:c0:4d:83

Storage Adapters

Adapter	Type	Status	Identifier	Targets	Devices	Paths
LSI Logic Fusion-MPT 12GSAS SAS3008 PCI-Express						
vmhba2	Block SCSI	Unknown		5	5	5
Wellsburg AHCI Controller						
vmhba39	Block SCSI	Unknown		0	0	0
vmhba0	Block SCSI	Unknown		0	0	0
vmhba1	Block SCSI	Unknown		0	0	0
vmhba32	Block SCSI	Unknown		0	0	0
vmhba38	Block SCSI	Unknown		0	0	0
vmhba33	Block SCSI	Unknown		0	0	0
vmhba34	Block SCSI	Unknown		0	0	0
vmhba35	Block SCSI	Unknown		0	0	0
vmhba36	Block SCSI	Unknown		0	0	0
vmhba37	Block SCSI	Unknown		0	0	0

Adapter Details

Properties | Devices | Paths

General

Name	vmhba2
Model	LSI Logic Fusion-MPT 12GSAS SAS3008 PCI-Express

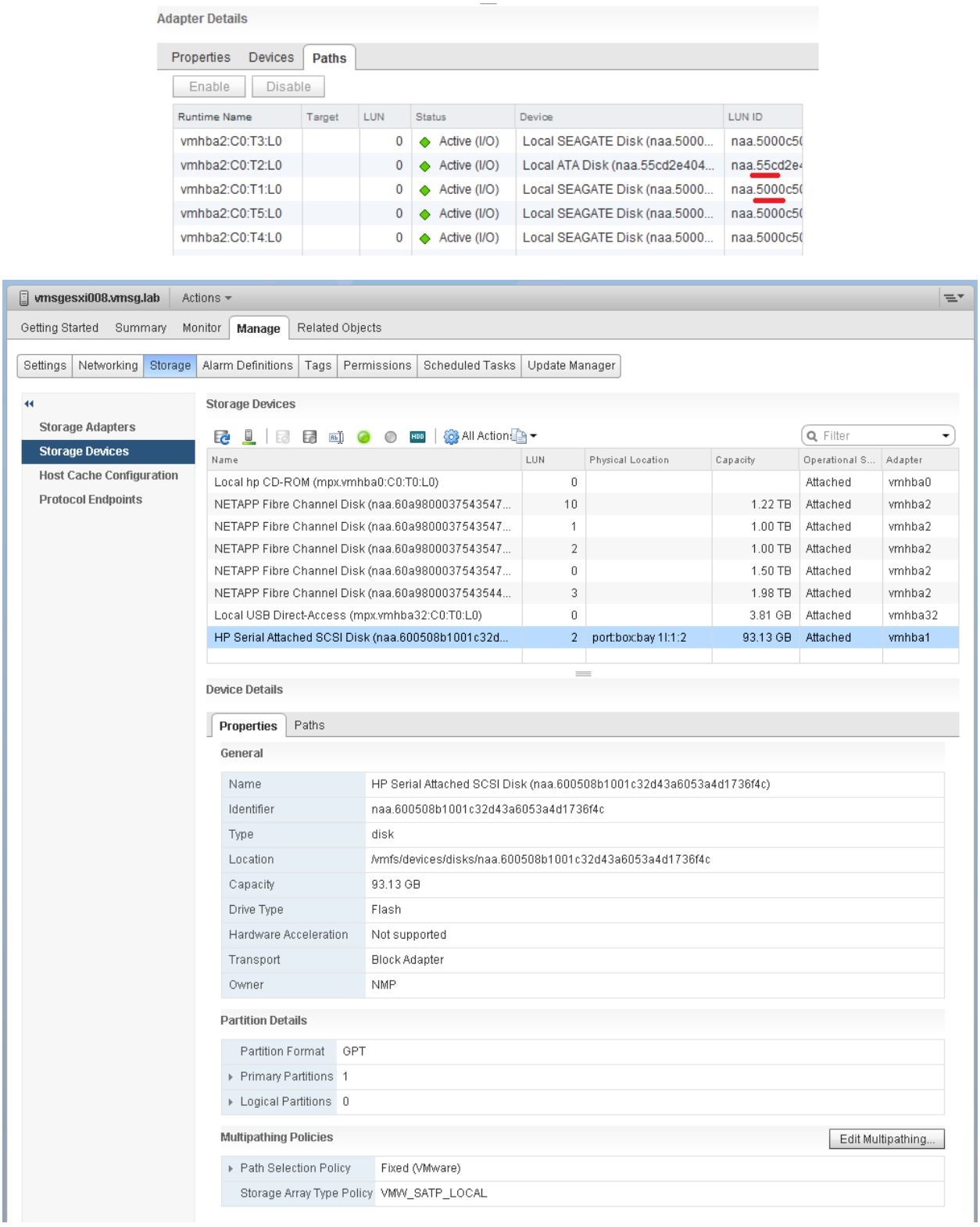
Adapter Details

Properties | Devices | Paths

All Actions

Filter

Name	Type	Capacity	Operational State	Hardware Acceleration	Drive Type
Local SEAGATE Disk (naa.5000...	disk	279.40 GB	Attached	Unknown	HDD
Local ATA Disk (naa.55cd2e404...	disk	372.61 GB	Attached	Not supported	Flash
Local SEAGATE Disk (naa.5000...	disk	1.09 TB	Attached	Not supported	HDD
Local SEAGATE Disk (naa.5000...	disk	1.09 TB	Attached	Unknown	HDD
Local SEAGATE Disk (naa.5000...	disk	1.09 TB	Attached	Unknown	HDD


Adapter Details
Properties
Devices
Paths
Enable
Disable
Runtime Name
Target
LUN
Status
Device
LUN ID
vmhba2:C0:T3:L0
0
Active (I/O)
Local SEAGATE Disk (naa.5000...
naa.5000c5(
vmhba2:C0:T2:L0
0
Active (I/O)
Local ATA Disk (naa.55cd2e404...
naa.55cd2e4
vmhba2:C0:T1:L0
0
Active (I/O)
Local SEAGATE Disk (naa.5000...
naa.5000c5(
vmhba2:C0:T5:L0
0
Active (I/O)
Local SEAGATE Disk (naa.5000...
naa.5000c5(
vmhba2:C0:T4:L0
0
Active (I/O)
Local SEAGATE Disk (naa.5000...
naa.5000c5(
vmsgesxi008.vmsg.lab
Actions
Getting Started
Summary
Monitor
Manage
Related Objects
Settings
Networking
Storage
Alarm Definitions
Tags
Permissions
Scheduled Tasks
Update Manager
Storage Adapters
Storage Devices
Host Cache Configuration
Protocol Endpoints
Storage Devices
All Actions
Filter
Name
LUN
Physical Location
Capacity
Operational S...
Adapter
Local hp CD-ROM (mpx.vmhba0:C0:T0:L0)
0
Attached
vmhba0
NETAPP Fibre Channel Disk (naa.60a9800037543547...
10
1.22 TB
Attached
vmhba2
NETAPP Fibre Channel Disk (naa.60a9800037543547...
1
1.00 TB
Attached
vmhba2
NETAPP Fibre Channel Disk (naa.60a9800037543547...
2
1.00 TB
Attached
vmhba2
NETAPP Fibre Channel Disk (naa.60a9800037543547...
0
1.50 TB
Attached
vmhba2
NETAPP Fibre Channel Disk (naa.60a9800037543544...
3
1.98 TB
Attached
vmhba2
Local USB Direct-Access (mpx.vmhba32:C0:T0:L0)
0
3.81 GB
Attached
vmhba32
HP Serial Attached SCSI Disk (naa.600508b1001c32d...
2
port:box:bay 1I:1:2
93.13 GB
Attached
vmhba1
Device Details
Properties
Paths
General
Name
HP Serial Attached SCSI Disk (naa.600508b1001c32d43a6053a4d1736f4c)
Identifier
naa.600508b1001c32d43a6053a4d1736f4c
Type
disk
Location
/vmfs/devices/disks/naa.600508b1001c32d43a6053a4d1736f4c
Capacity
93.13 GB
Drive Type
Flash
Hardware Acceleration
Not supported
Transport
Block Adapter
Owner
NMP
Partition Details
Partition Format
GPT
Primary Partitions
1
Logical Partitions
0
Multipathing Policies
Edit Multipathing...
Path Selection Policy
Fixed (VMware)
Storage Array Type Policy
VMW_SATP_LOCAL

Storage Devices

All Action

Filter

Name	LUN	Type	Capacity	Operational S...	Hardware Accelera...	Drive Type	Adapter
Local ATA Disk (naa.55cd2e404b771356)	0	disk	372.61 GB	Attached	Not supported	Flash	vmhba2
Local SEAGATE Disk (naa.5000c5007f6067ff)	0	disk	279.40 GB	Attached	Unknown	HDD	vmhba2
Local SEAGATE Disk (naa.5000c5007edf315b)	0	disk	1.09 TB	Attached	Unknown	HDD	vmhba2
Local SEAGATE Disk (naa.5000c5007edf25bb)	0	disk	1.09 TB	Attached	Unknown	HDD	vmhba2
Local SEAGATE Disk (naa.5000c5007edde0f3)	0	disk	1.09 TB	Attached	Unknown	HDD	vmhba2

Device Details

Properties | Paths

General

Name	Local ATA Disk (naa.55cd2e404b771356)
Identifier	naa.55cd2e404b771356
Type	disk
Location	/vmfs/devices/disks/naa.55cd2e404b771356
Capacity	372.61 GB
Drive Type	Flash
Hardware Acceleration	Not supported
Transport	Block Adapter
Owner	NMP

Partition Details

Partition Format	GPT
▸ Primary Partitions	2
▸ Logical Partitions	0

Multipathing Policies

Edit Multipathing...

▸ Path Selection Policy	Fixed (VMware)
Storage Array Type Policy	VMW_SATP_LOCAL

Partition Details

Partition Format	GPT
▾ Primary Partitions	

Primary Partitions	Capacity
VSAN metadata	2.00 MB
Virsto	372.61 GB

▸ Logical Partitions	0

Storage Devices

All Action

Filter

Name	LUN	Physical Location	Capacity	Operational S...	Adapter
Local hp CD-ROM (mpx.vmhba0:C0:T0:L0)	0			Attached	vmhba0
NETAPP Fibre Channel Disk (naa.60a9800037543547...	10		1.22 TB	Attached	vmhba2
NETAPP Fibre Channel Disk (naa.60a9800037543547...	1		1.00 TB	Attached	vmhba2
NETAPP Fibre Channel Disk (naa.60a9800037543547...	2		1.00 TB	Attached	vmhba2
NETAPP Fibre Channel Disk (naa.60a9800037543547...	0		1.50 TB	Attached	vmhba2
NETAPP Fibre Channel Disk (naa.60a9800037543544...	3		1.98 TB	Attached	vmhba2
Local USB Direct-Access (mpx.vmhba32:C0:T0:L0)	0		3.81 GB	Attached	vmhba32
HP Serial Attached SCSI Disk (naa.600508b1001c32d...	2	port:box:bay 1I:1:2	93.13 GB	Attached	vmhba1

Device Details

Properties | Paths

Enable | Disable

Runtime Name	Status	Device	Target	Name
vmhba2:C0:T3:L3	Active (I/O)	NETAPP Fibre Channel Disk (n...	50:0a:09:80:8d:31:4e:46 50:0a:...	vmhba2:C0:T3:L3
vmhba2:C0:T2:L3	Active	NETAPP Fibre Channel Disk (n...	50:0a:09:80:8d:31:4e:46 50:0a:...	vmhba2:C0:T2:L3
vmhba2:C0:T1:L3	Active (I/O)	NETAPP Fibre Channel Disk (n...	50:0a:09:80:8d:31:4e:46 50:0a:...	vmhba2:C0:T1:L3
vmhba2:C0:T0:L3	Active	NETAPP Fibre Channel Disk (n...	50:0a:09:80:8d:31:4e:46 50:0a:...	vmhba2:C0:T0:L3

Storage Devices

All Action

Filter

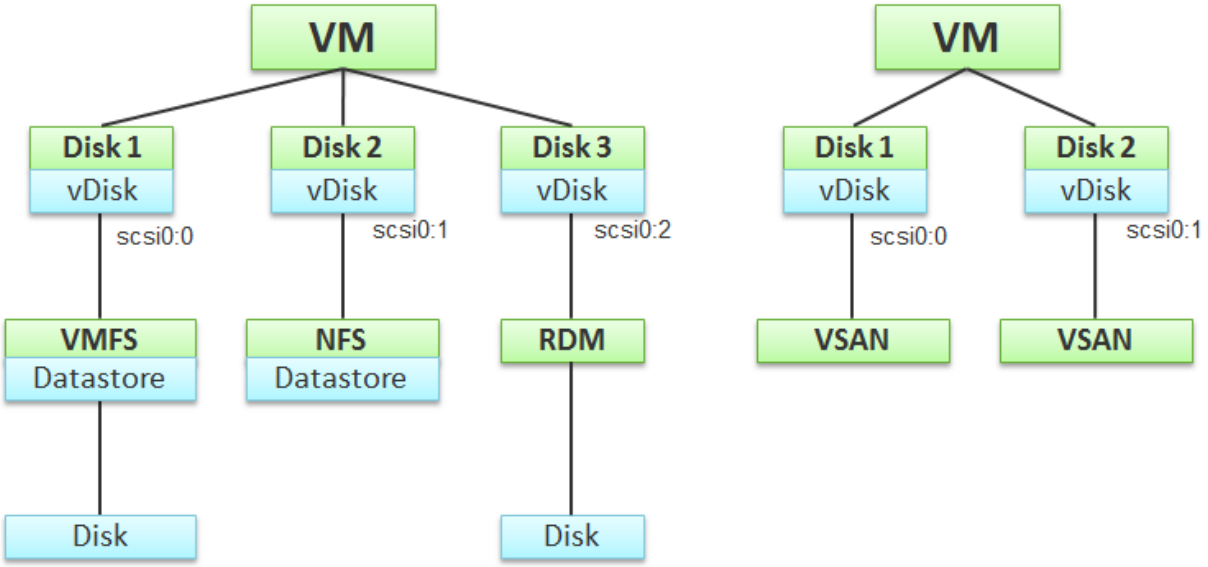
Name	LUN	Type	Capacity	Operati...	Hardware Accelera...	Drive Type	Adapter
Local SEAGATE Disk (naa.5000c5007ee31797)	0	disk	1.09 ...	Attach...	Unknown	HDD	vmhba2
Local SEAGATE Disk (naa.5000c5007f60654f)	0	disk	279....	Attach...	Unknown	HDD	vmhba2
Local SEAGATE Disk (naa.5000c5007ee27887)	0	disk	1.09 ...	Attach...	Not supported	HDD	vmhba2
Local ATA Disk (naa.55cd2e404b771583)	0	disk	372....	Attach...	Not supported	Flash	vmhba2
Local SEAGATE Disk (naa.5000c5007edd51eb)	0	disk	1.09 ...	Attach...	Unknown	HDD	vmhba2

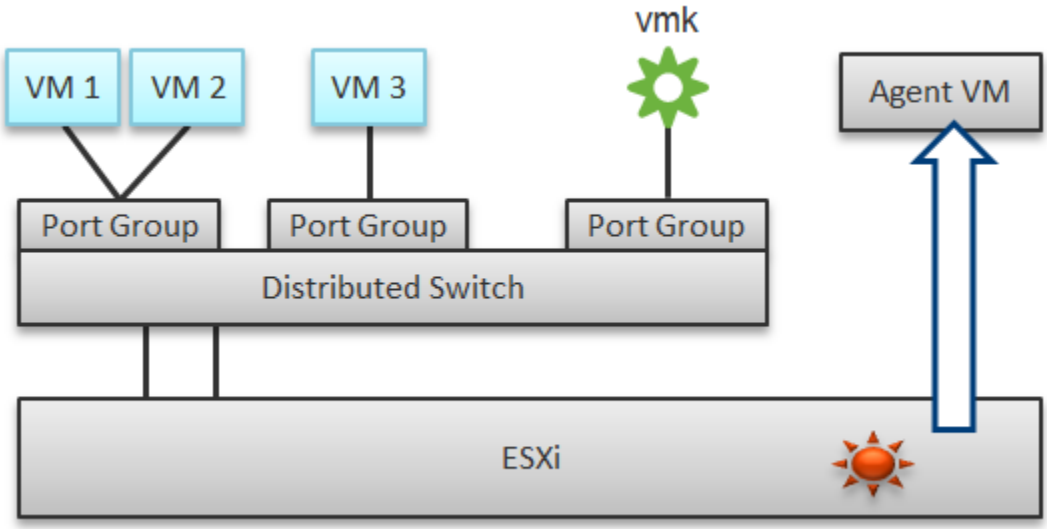
Device Details

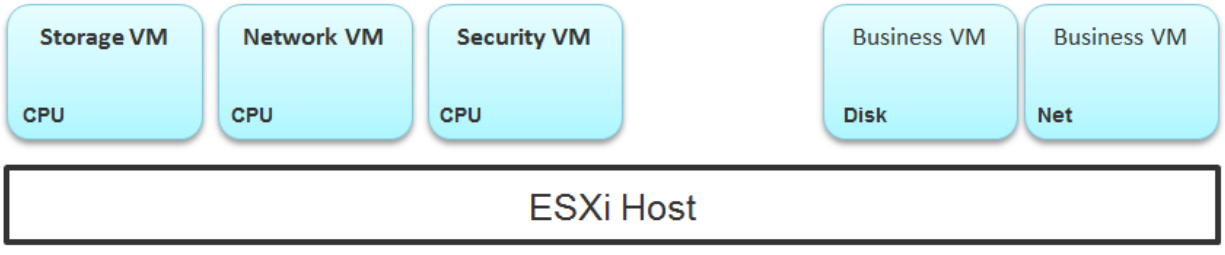
Properties | Paths

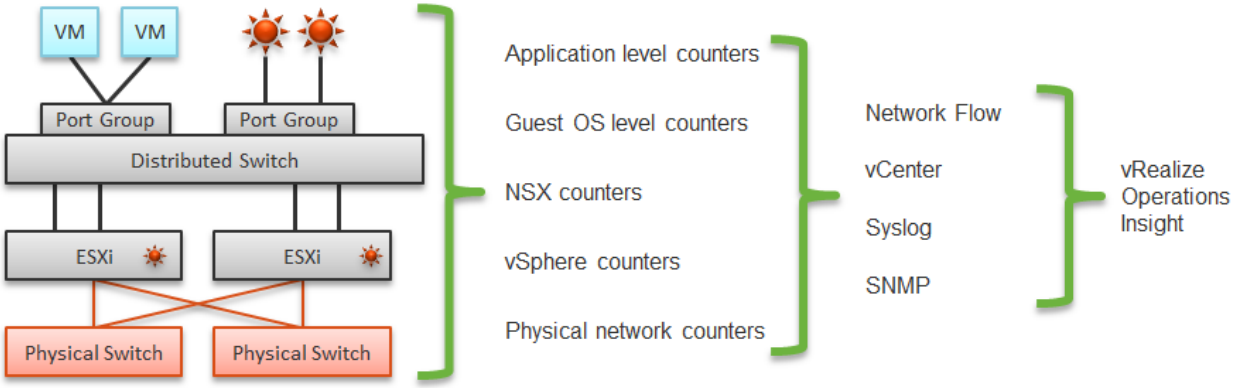
Enable | Disable

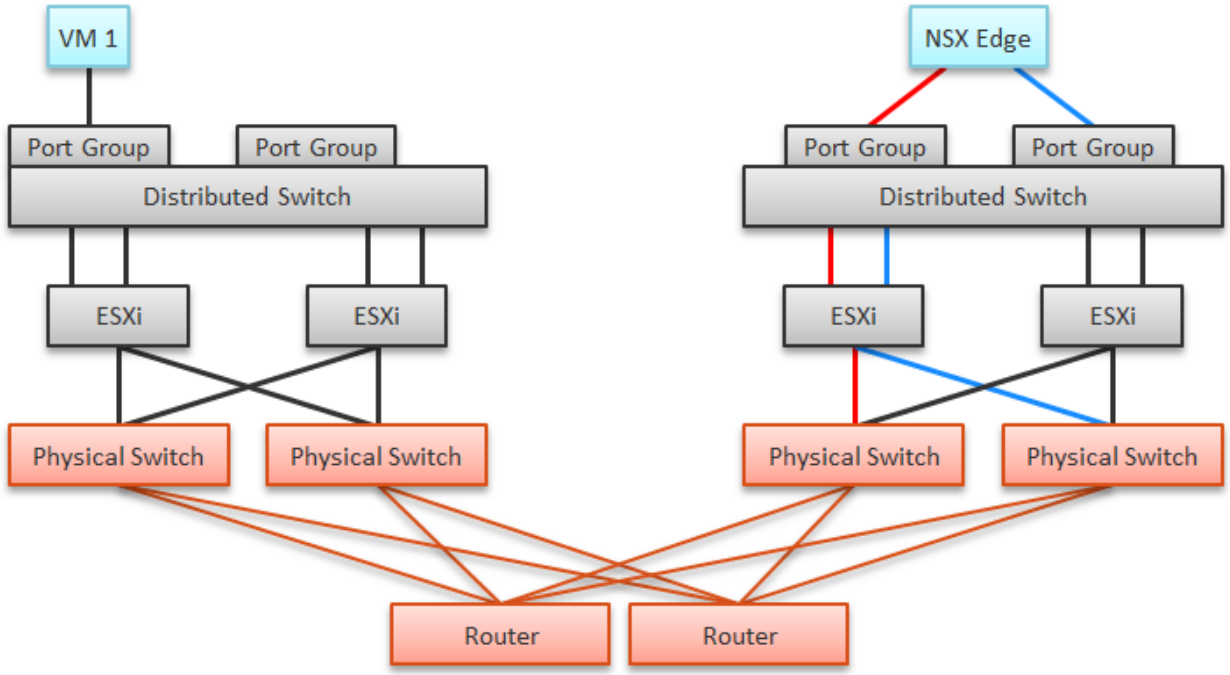
Runtime Name	Status	Device	Target	Name	Preferred 1 ▲
vmhba2:C0:T2:L0	Active (I/O)	Local ATA Disk (naa.55cd2e404b77...		vmhba2:C0:T2:L0	*

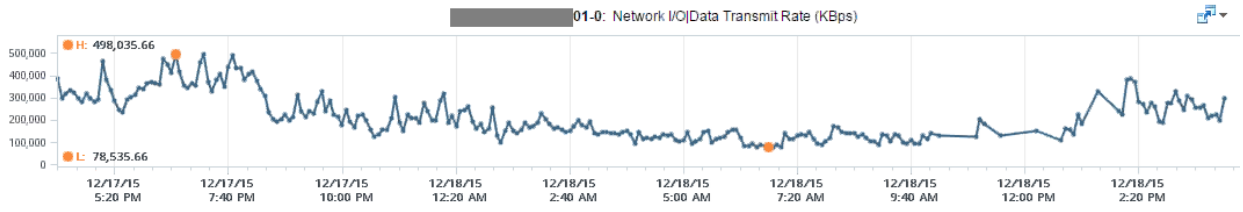

VM
Disk 1
vDisk
Disk 2
vDisk
Disk 3
vDisk
scsi0:0
scsi0:1
scsi0:2
VMFS
Datastore
NFS
Datastore
RDM
Disk
Disk
VM
Disk 1
vDisk
Disk 2
vDisk
scsi0:0
scsi0:1
VSAN
VSAN

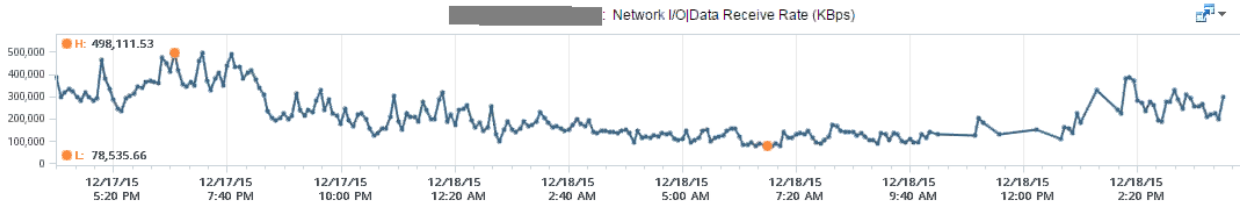

vmk
VM 1
VM 2
VM 3
Agent VM
Port Group
Port Group
Port Group
Distributed Switch
ESXi

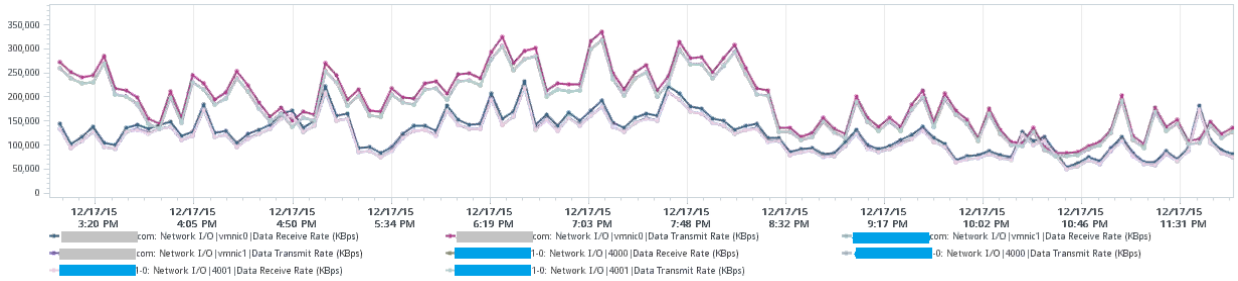

Storage VM
CPU
Network VM
CPU
Security VM
CPU
Business VM
Disk
Business VM
Net
ESXi Host

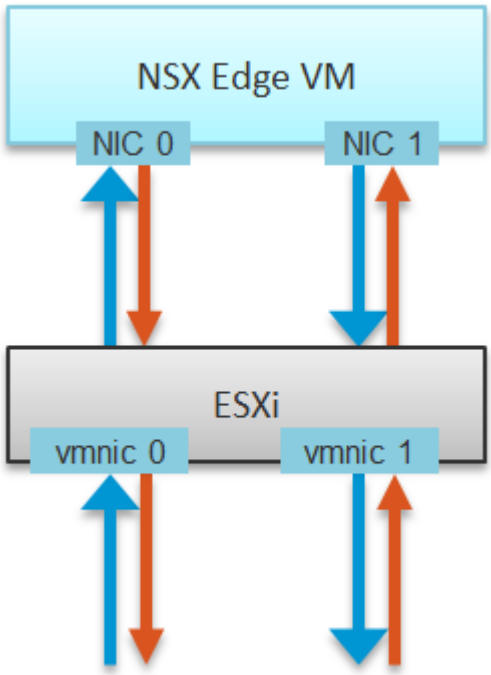

VM
VM
Port Group
Port Group
Distributed Switch
ESXi
ESXi
Physical Switch
Physical Switch
Application level counters
Guest OS level counters
NSX counters
vSphere counters
Physical network counters
Network Flow
vCenter
Syslog
SNMP
vRealize Operations Insight

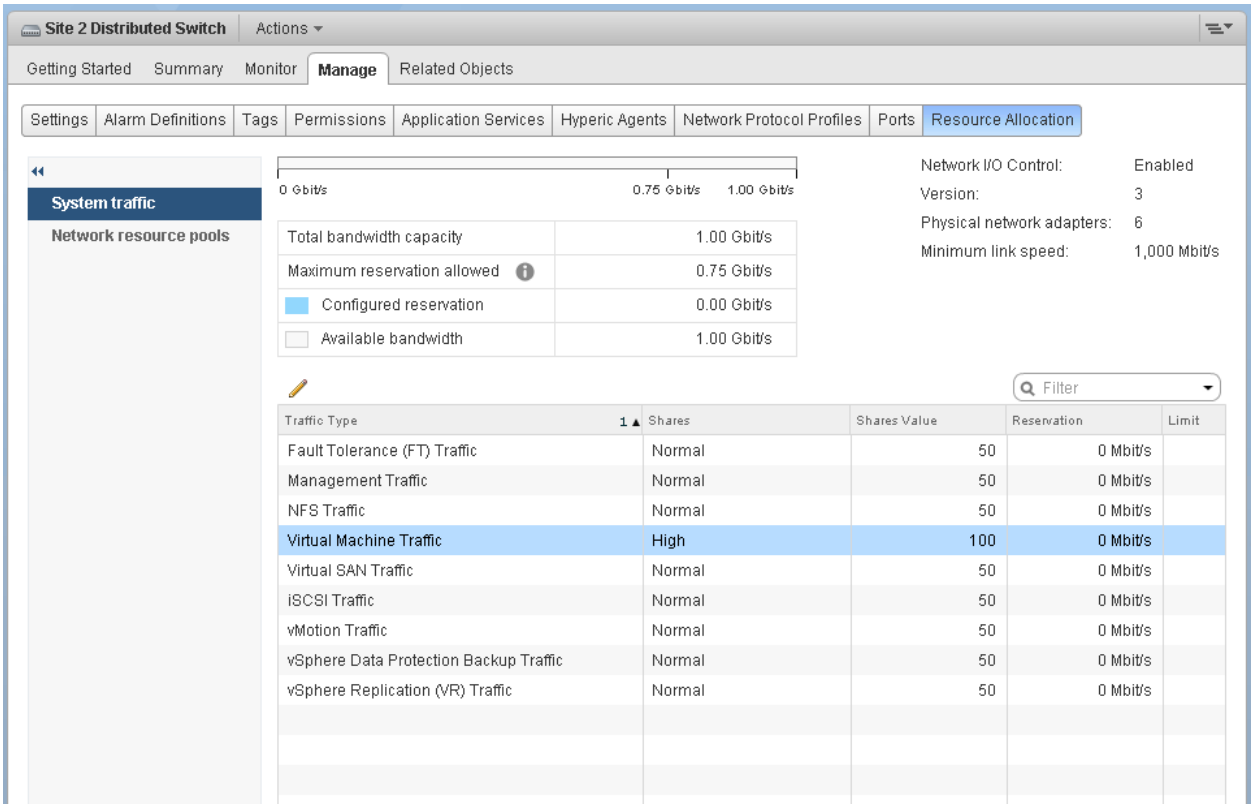

VM 1
NSX Edge
Port Group
Port Group
Distributed Switch
Port Group
Port Group
Distributed Switch
ESXi
ESXi
ESXi
ESXi
Physical Switch
Physical Switch
Physical Switch
Physical Switch
Router
Router

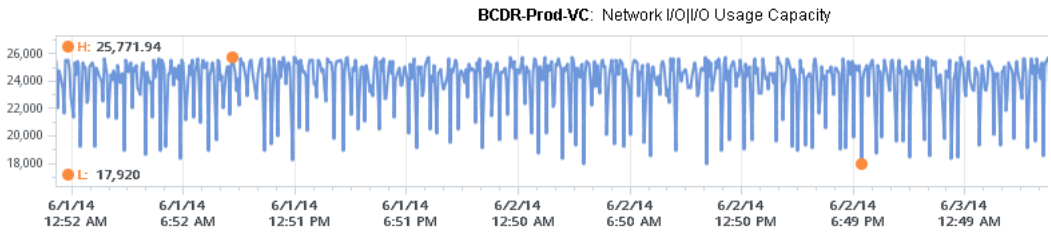

[redacted]01-0: Network I/O|Data Transmit Rate (KBps)
H: 498,035.66
L: 78,535.66
500,000
400,000
300,000
200,000
100,000
0
12/17/15 5:20 PM
12/17/15 7:40 PM
12/17/15 10:00 PM
12/18/15 12:20 AM
12/18/15 2:40 AM
12/18/15 5:00 AM
12/18/15 7:20 AM
12/18/15 9:40 AM
12/18/15 12:00 PM
12/18/15 2:20 PM

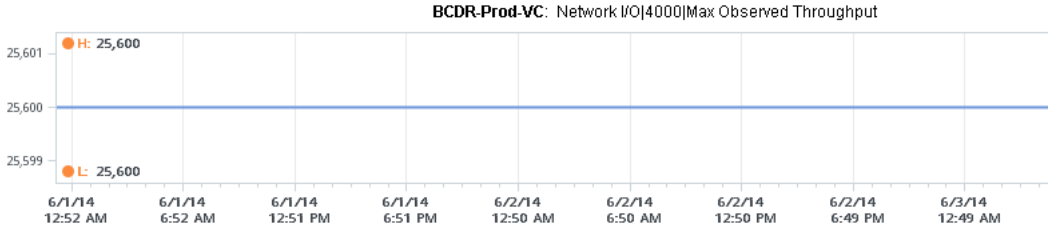

[redacted]: Network I/O|Data Receive Rate (KBps)
H: 498,111.53
L: 78,535.66
500,000
400,000
300,000
200,000
100,000
0
12/17/15 5:20 PM
12/17/15 7:40 PM
12/17/15 10:00 PM
12/18/15 12:20 AM
12/18/15 2:40 AM
12/18/15 5:00 AM
12/18/15 7:20 AM
12/18/15 9:40 AM
12/18/15 12:00 PM
12/18/15 2:20 PM

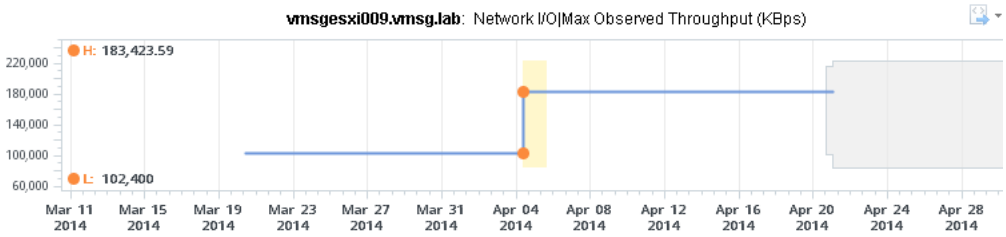

350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
12/17/15 3:20 PM
12/17/15 4:05 PM
12/17/15 4:50 PM
12/17/15 5:34 PM
12/17/15 6:19 PM
12/17/15 7:03 PM
12/17/15 7:48 PM
12/17/15 8:32 PM
12/17/15 9:17 PM
12/17/15 10:02 PM
12/17/15 10:46 PM
12/17/15 11:31 PM
com: Network I/O | vmnic0 | Data Receive Rate (KBps)
com: Network I/O | vmnic1 | Data Transmit Rate (KBps)
1-0: Network I/O | 4001 | Data Receive Rate (KBps)
com: Network I/O | vmnic0 | Data Transmit Rate (KBps)
1-0: Network I/O | 4000 | Data Receive Rate (KBps)
1-0: Network I/O | 4001 | Data Transmit Rate (KBps)
com: Network I/O | vmnic1 | Data Receive Rate (KBps)
-0: Network I/O | 4000 | Data Transmit Rate (KBps)

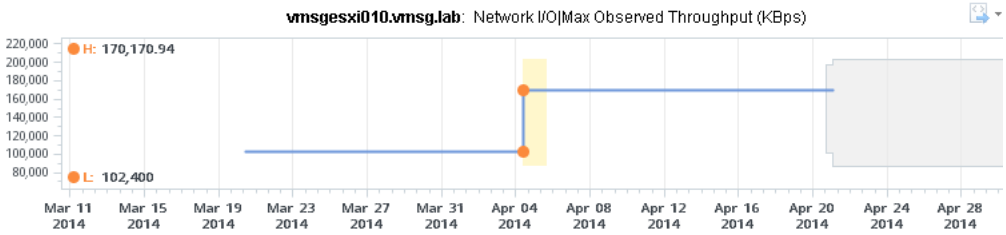

NSX Edge VM
NIC 0
NIC 1
ESXi
vmnic 0
vmnic 1

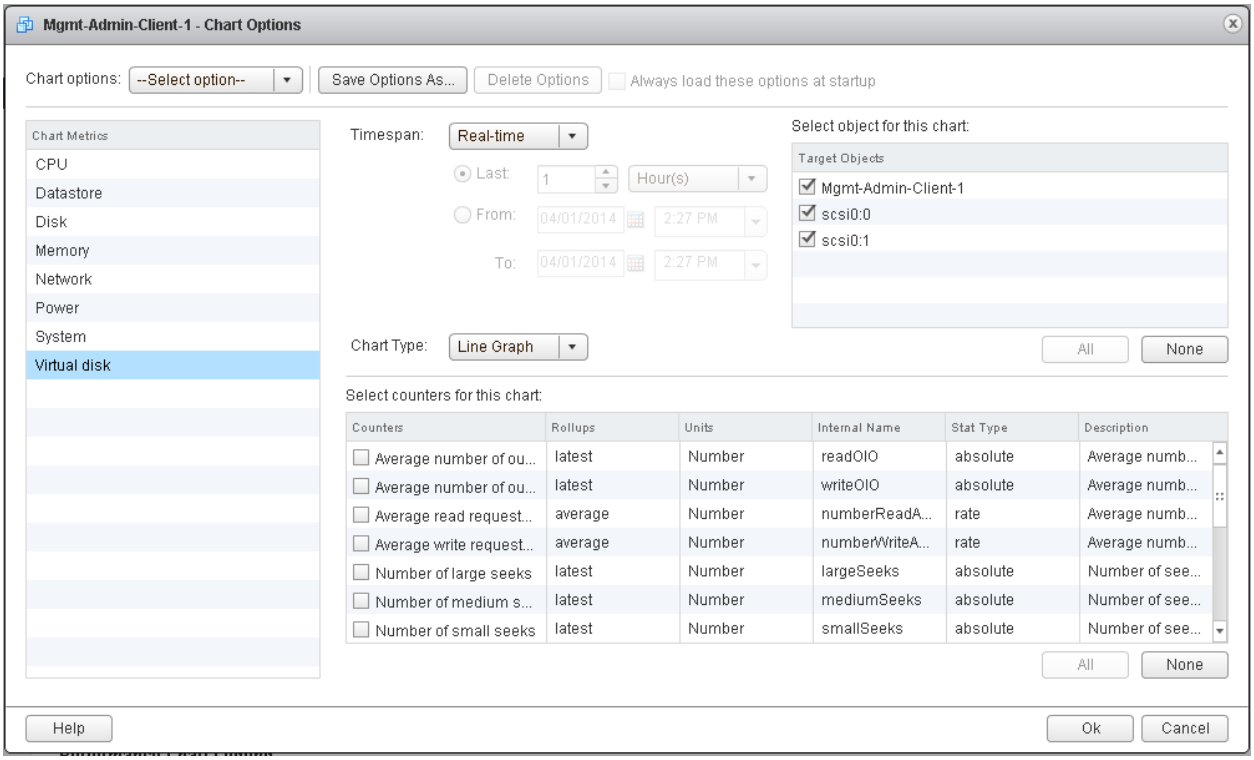

Site 2 Distributed Switch
Actions
Getting Started
Summary
Monitor
Manage
Related Objects
Settings
Alarm Definitions
Tags
Permissions
Application Services
Hyperic Agents
Network Protocol Profiles
Ports
Resource Allocation
System traffic
Network resource pools
0 Gbit/s
0.75 Gbit/s
1.00 Gbit/s
Total bandwidth capacity 1.00 Gbit/s
Maximum reservation allowed 0.75 Gbit/s
Configured reservation 0.00 Gbit/s
Available bandwidth 1.00 Gbit/s
Network I/O Control: Enabled
Version: 3
Physical network adapters: 6
Minimum link speed: 1,000 Mbit/s
Filter
Traffic Type
Shares
Shares Value
Reservation
Limit
Fault Tolerance (FT) Traffic Normal 50 0 Mbit/s
Management Traffic Normal 50 0 Mbit/s
NFS Traffic Normal 50 0 Mbit/s
Virtual Machine Traffic High 100 0 Mbit/s
Virtual SAN Traffic Normal 50 0 Mbit/s
iSCSI Traffic Normal 50 0 Mbit/s
vMotion Traffic Normal 50 0 Mbit/s
vSphere Data Protection Backup Traffic Normal 50 0 Mbit/s
vSphere Replication (VR) Traffic Normal 50 0 Mbit/s

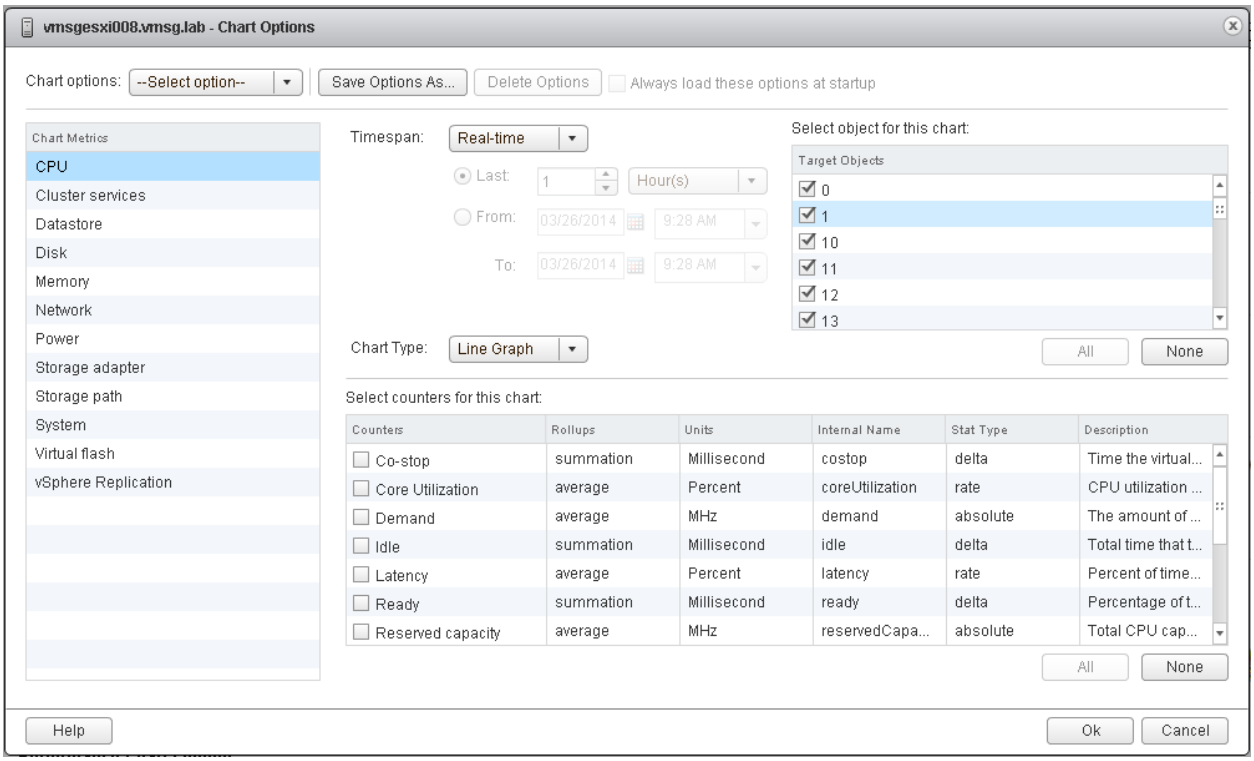

BCDR-Prod-VC: Network I/O|I/O Usage Capacity
H: 25,771.94
L: 17,920
26,000
24,000
22,000
20,000
18,000
6/1/14 12:52 AM
6/1/14 6:52 AM
6/1/14 12:51 PM
6/1/14 6:51 PM
6/2/14 12:50 AM
6/2/14 6:50 AM
6/2/14 12:50 PM
6/2/14 6:49 PM
6/3/14 12:49 AM


BCDR-Prod-VC: Network I/O|4000|Max Observed Throughput
H: 25,600
L: 25,600
25,601
25,600
25,599
6/1/14 12:52 AM
6/1/14 6:52 AM
6/1/14 12:51 PM
6/1/14 6:51 PM
6/2/14 12:50 AM
6/2/14 6:50 AM
6/2/14 12:50 PM
6/2/14 6:49 PM
6/3/14 12:49 AM

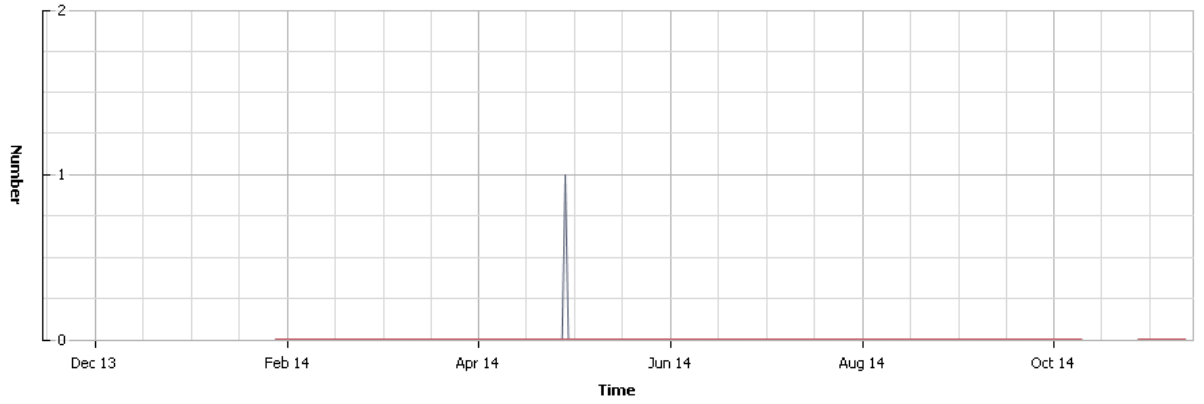

vmsgesxi009.vmsg.lab: Network I/O|Max Observed Throughput (KBps)
H: 183,423.59
L: 102,400
220,000
180,000
140,000
100,000
60,000
Mar 11 2014
Mar 15 2014
Mar 19 2014
Mar 23 2014
Mar 27 2014
Mar 31 2014
Apr 04 2014
Apr 08 2014
Apr 12 2014
Apr 16 2014
Apr 20 2014
Apr 24 2014
Apr 28 2014


vmsgesxi010.vmsg.lab: Network I/O|Max Observed Throughput (KBps)
H: 170,170.94
L: 102,400
220,000
200,000
180,000
160,000
140,000
120,000
100,000
80,000
Mar 11 2014
Mar 15 2014
Mar 19 2014
Mar 23 2014
Mar 27 2014
Mar 31 2014
Apr 04 2014
Apr 08 2014
Apr 12 2014
Apr 16 2014
Apr 20 2014
Apr 24 2014
Apr 28 2014


Mgmt-Admin-Client-1 - Chart Options
Chart options: --Select option-- Save Options As... Delete Options Always load these options at startup
Chart Metrics
CPU
Datastore
Disk
Memory
Network
Power
System
Virtual disk
Timespan: Real-time
Last: 1 Hour(s)
From: 04/01/2014 2:27 PM
To: 04/01/2014 2:27 PM
Select object for this chart:
Target Objects
Mgmt-Admin-Client-1
scsi0:0
scsi0:1
Chart Type: Line Graph
All None
Select counters for this chart:
Counters Rollups Units Internal Name Stat Type Description
Average number of ou... latest Number readOIO absolute Average numb...
Average number of ou... latest Number writeOIO absolute Average numb...
Average read request... average Number numberReadA... rate Average numb...
Average write request... average Number numberWriteA... rate Average numb...
Number of large seeks latest Number largeSeeks absolute Number of see...
Number of medium s... latest Number mediumSeeks absolute Number of see...
Number of small seeks latest Number smallSeeks absolute Number of see...
All None
Help Ok Cancel

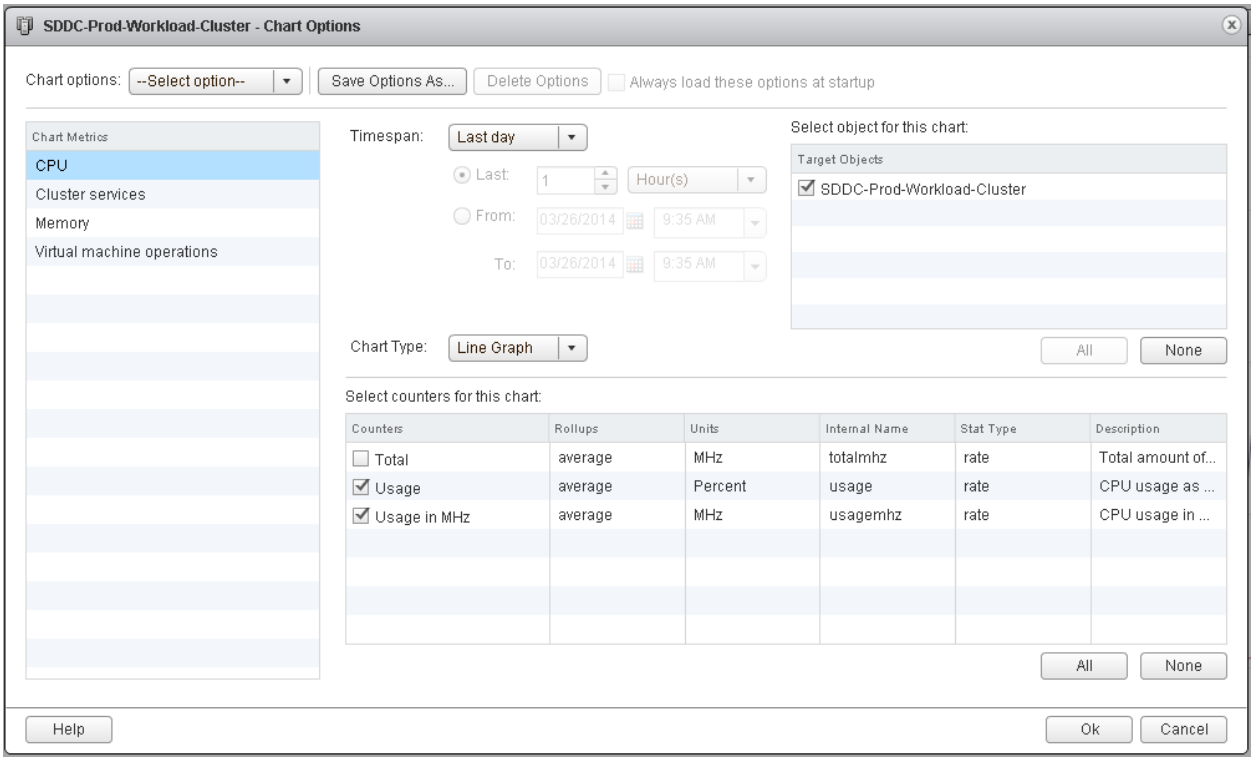


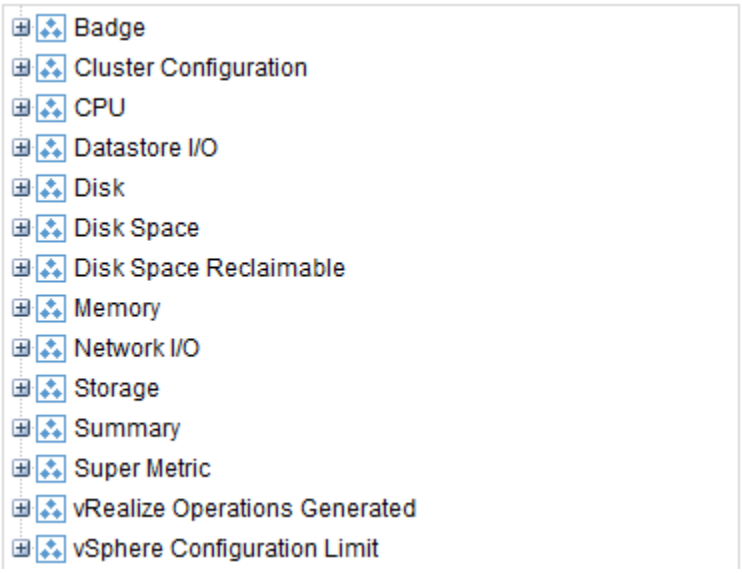
Cluster services/Past year, 11/15/2013 9:37:11 AM - 11/15/2014 9:37:11 AM Chart Options... Switch to: Default



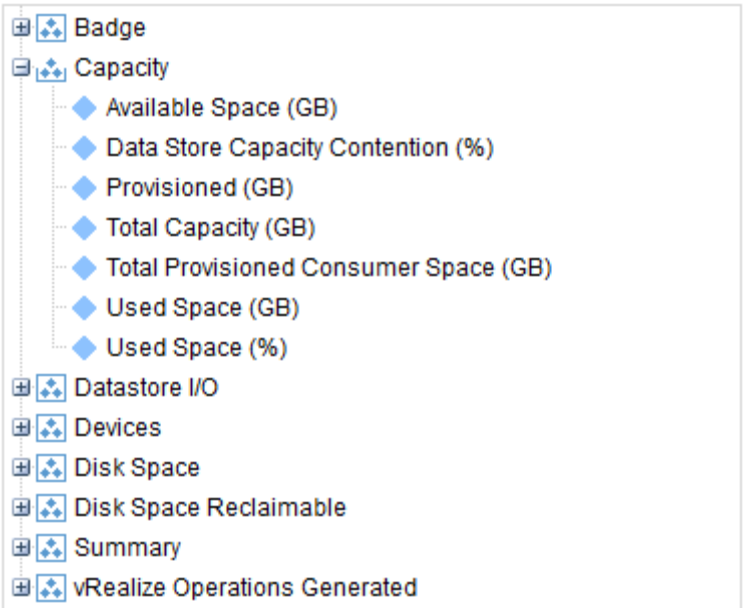
Performance Chart Legend

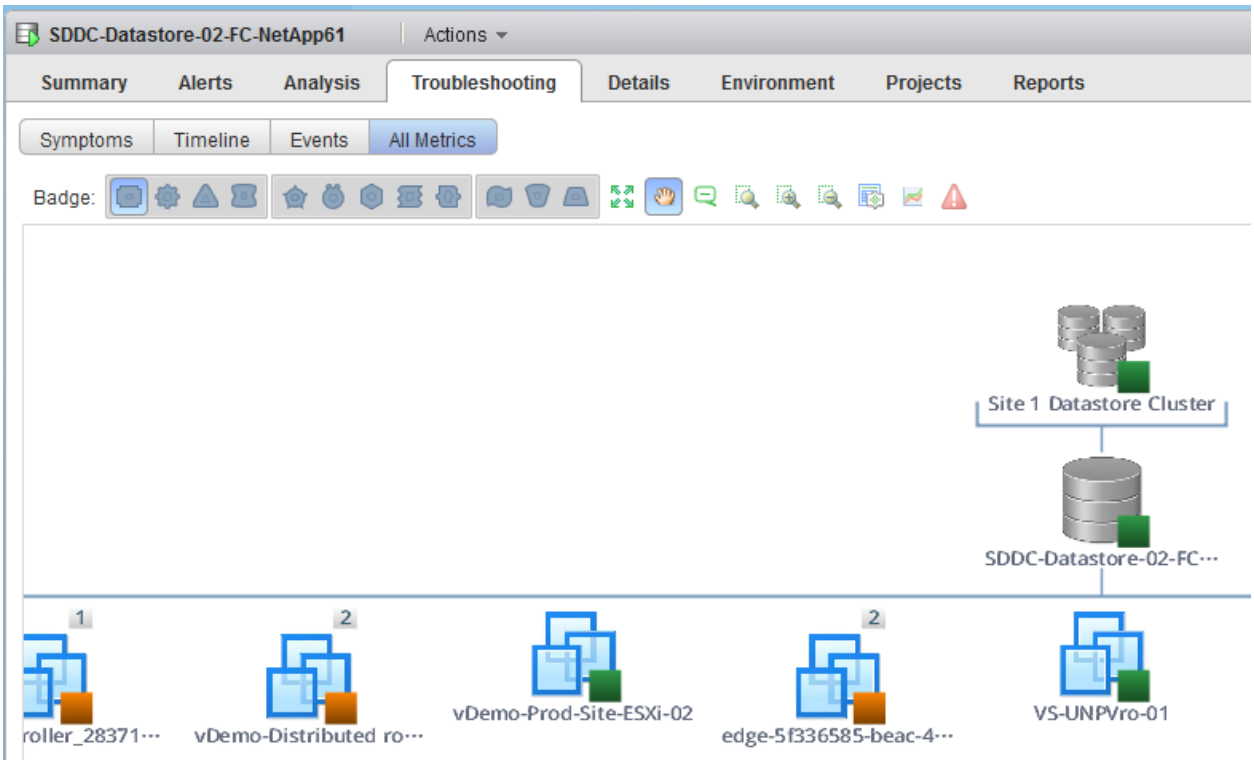
Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	vmsgesxi002.vmsg.lab	CPU fairness	Latest	Number	0	1	0	0.004
	vmsgesxi002.vmsg.lab	Memory fairness	Latest	Number	0	0	0	0

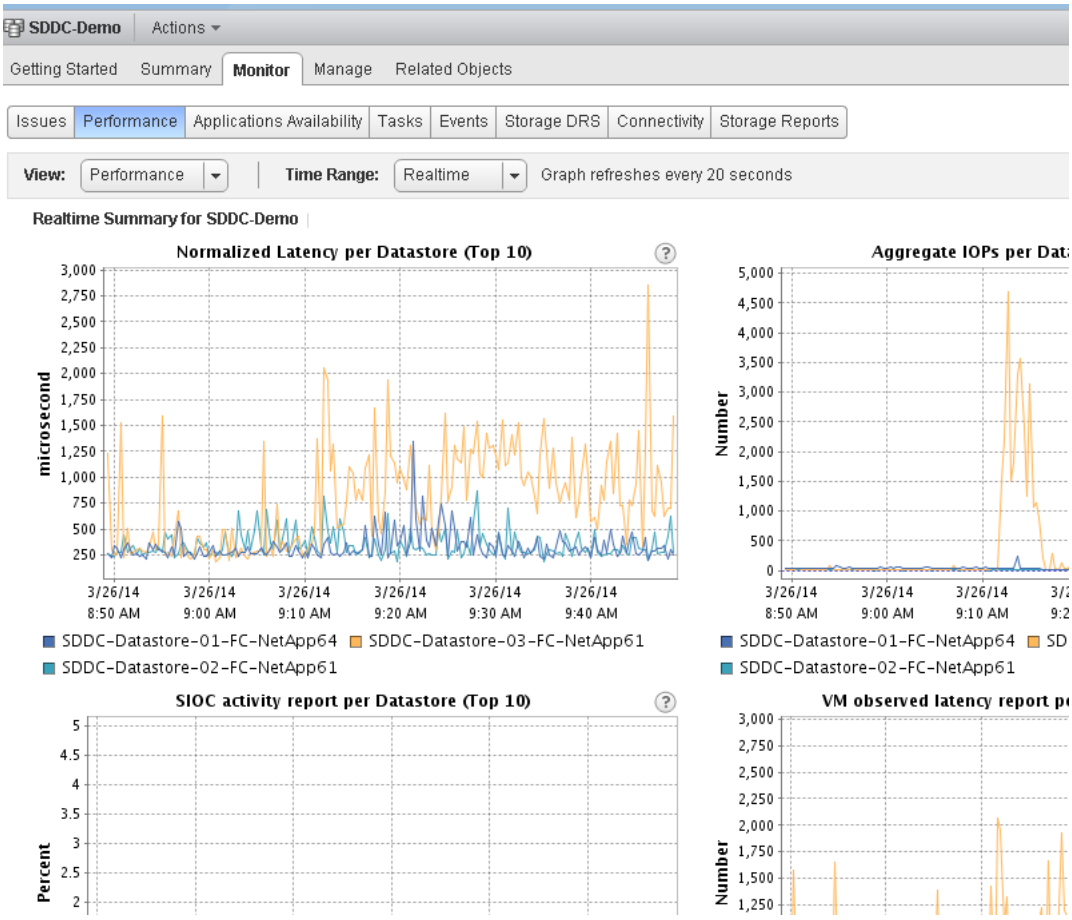

SDDC-Prod-Workload-Cluster - Chart Options
Chart options:
--Select option--
Save Options As...
Delete Options
Always load these options at startup
Chart Metrics
CPU
Cluster services
Memory
Virtual machine operations
Timespan:
Last day
Last:
1
Hour(s)
From:
03/26/2014
9:35 AM
To:
03/26/2014
9:35 AM
Select object for this chart:
Target Objects
SDDC-Prod-Workload-Cluster
Chart Type:
Line Graph
All
None
Select counters for this chart:
Counters
Rollups
Units
Internal Name
Stat Type
Description
Total
average
MHz
totalmhz
rate
Total amount of...
Usage
average
Percent
usage
rate
CPU usage as ...
Usage in MHz
average
MHz
usagemhz
rate
CPU usage in ...
All
None
Help
Ok
Cancel

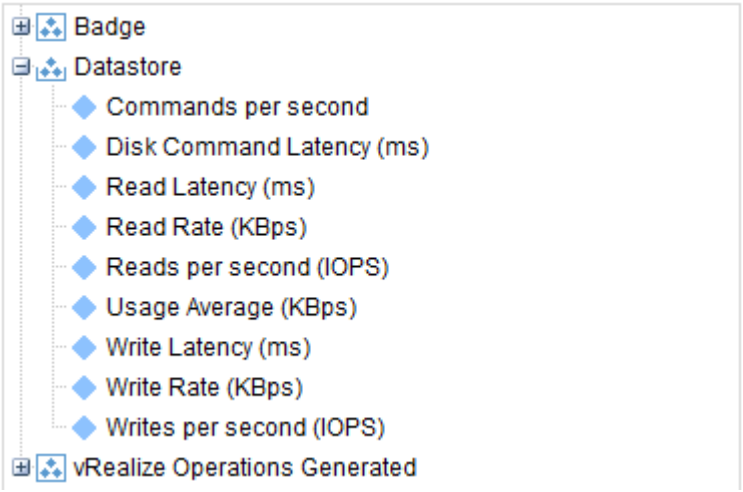

Badge
Cluster Configuration
CPU
Datastore I/O
Disk
Disk Space
Disk Space Reclaimable
Memory
Network I/O
Storage
Summary
Super Metric
vRealize Operations Generated
vSphere Configuration Limit

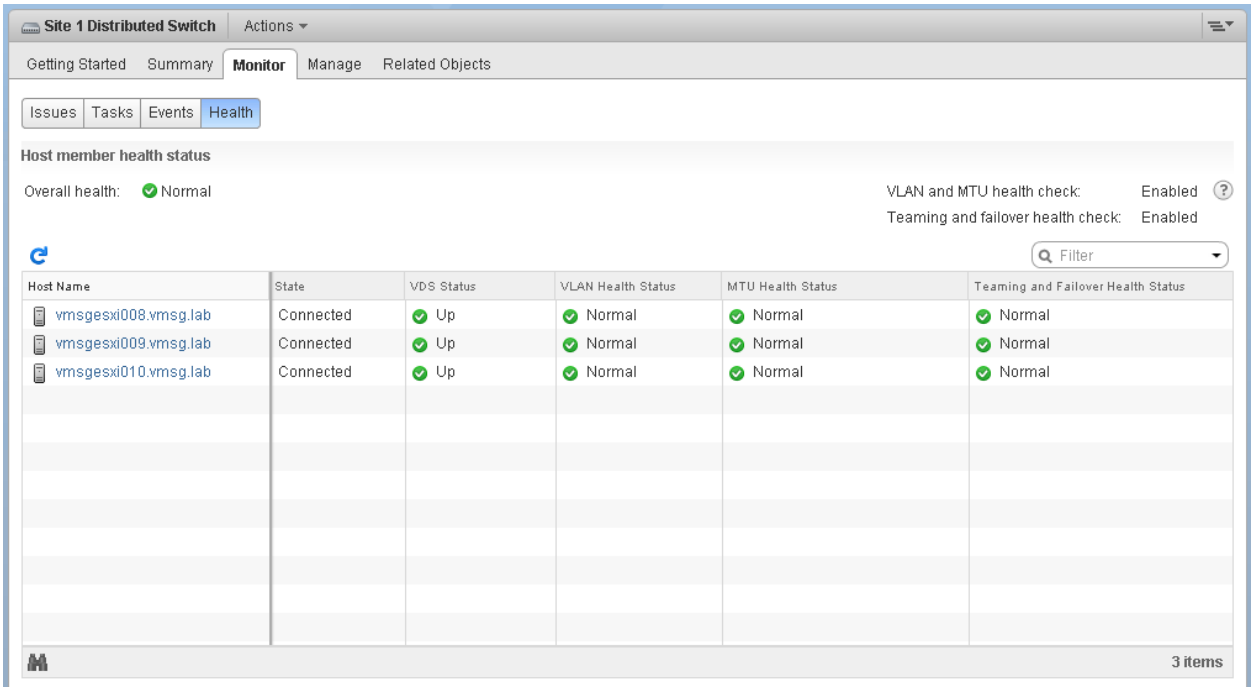

SDDC-Datastore-01-FC-NetApp64
Actions
Getting Started
Summary
Monitor
Manage
Related Objects
Issues
Performance
Health
Tasks
Events
View:
Performance
Time Range:
Realtime
Graph refreshes every 20 seconds
Realtime Summary for SDDC-Datastore-01-FC-NetApp64
Storage I/O Control Normalized Latency
microsecond
550
500
450
400
350
300
250
200
150
100
12/25/15 5:05 PM
12/25/15 5:15 PM
12/25/15 5:25 PM
12/25/15 5:35 PM
12/25/15 5:45 PM
12/25/15 5:55 PM
SDDC-Datastore-01-FC-NetApp64
Storage I/O Control Aggreg
num
700
600
500
400
300
200
100
0
12/25/15 5:05 PM
12/25/15 5:15 PM
12/25/15 5:25 PM
12/25
5:35
SDDC-Datastore-01-FC-N
Storage I/O Control Activity
Percent
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
12/25/15 5:05 PM
12/25/15 5:15 PM
12/25/15 5:25 PM
12/25/15 5:35 PM
12/25/15 5:45 PM
12/25/15 5:55 PM
SDDC-Datastore-01-FC-NetApp64
Average Device Latency per Ho
ms
12/25/15 5:05 PM
12/25/15 5:15 PM
12/25/15 5:25 PM
12/25/1
5:35 PM
vmsgesxi008.vmsg.lab
vmsgesxi009.vmsg.
Max Queue Depth per Host (Top 10)
32.5
32
31.5
31
30.5
Read IOPs per Host (Top
100
90
80
70

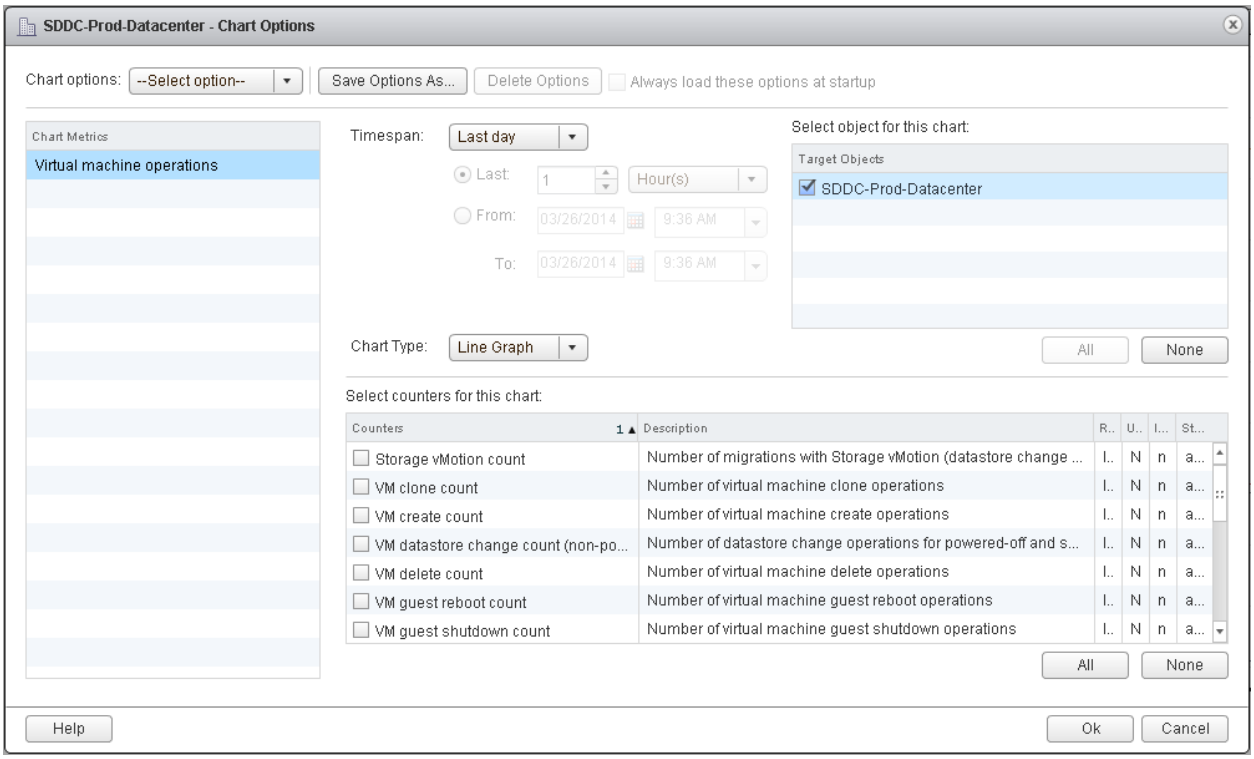

Badge
Capacity
Available Space (GB)
Data Store Capacity Contention (%)
Provisioned (GB)
Total Capacity (GB)
Total Provisioned Consumer Space (GB)
Used Space (GB)
Used Space (%)
Datastore I/O
Devices
Disk Space
Disk Space Reclaimable
Summary
vRealize Operations Generated


SDDC-Datastore-02-FC-NetApp61
Actions
Summary
Alerts
Analysis
Troubleshooting
Details
Environment
Projects
Reports
Symptoms
Timeline
Events
All Metrics
Badge:
Site 1 Datastore Cluster
SDDC-Datastore-02-FC···
1
2
2
roller_28371···
vDemo-Distributed ro···
vDemo-Prod-Site-ESXi-02
edge-5f336585-beac-4···
VS-UNPVro-01

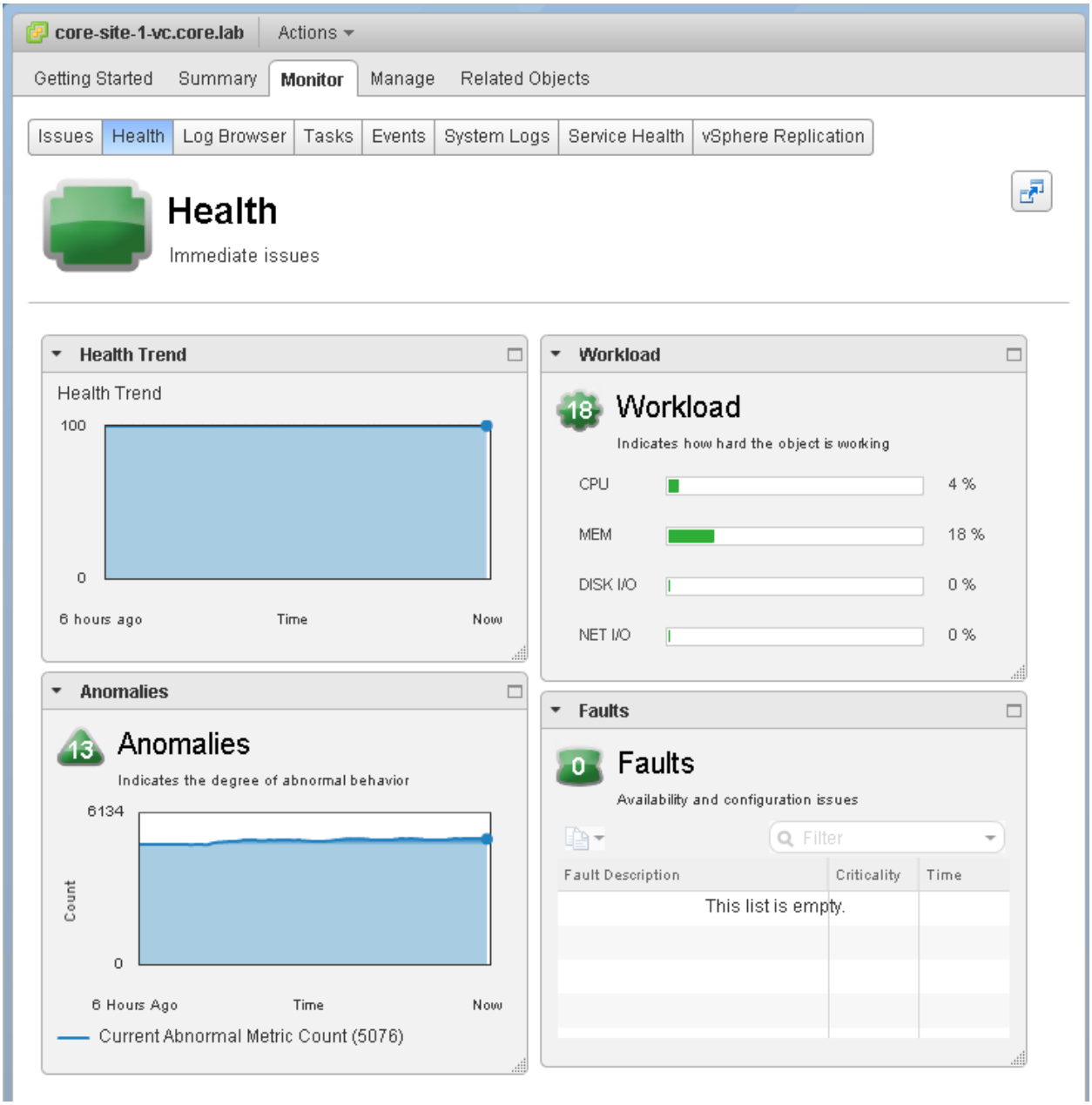

SDDC-Demo
Actions
Getting Started
Summary
Monitor
Manage
Related Objects
Issues
Performance
Applications Availability
Tasks
Events
Storage DRS
Connectivity
Storage Reports
View:
Performance
Time Range:
Realtime
Graph refreshes every 20 seconds
Realtime Summary for SDDC-Demo
Normalized Latency per Datastore (Top 10)
microsecond
3,000
2,750
2,500
2,250
2,000
1,750
1,500
1,250
1,000
750
500
250
3/26/14 8:50 AM
3/26/14 9:00 AM
3/26/14 9:10 AM
3/26/14 9:20 AM
3/26/14 9:30 AM
3/26/14 9:40 AM
SDDC-Datastore-01-FC-NetApp64
SDDC-Datastore-03-FC-NetApp61
SDDC-Datastore-02-FC-NetApp61
Aggregate IOPs per Dat
Number
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
3/26/14 8:50 AM
3/26/14 9:00 AM
3/26/14 9:10 AM
SDDC-Datastore-01-FC-NetApp64
SDDC-Datastore-02-FC-NetApp61
SIOC activity report per Datastore (Top 10)
Percent
5
4.5
4
3.5
3
2.5
2
VM observed latency report pe
Number
3,000
2,750
2,500
2,250
2,000
1,750
1,500
1,250


Badge
Datastore
Commands per second
Disk Command Latency (ms)
Read Latency (ms)
Read Rate (KBps)
Reads per second (IOPS)
Usage Average (KBps)
Write Latency (ms)
Write Rate (KBps)
Writes per second (IOPS)
vRealize Operations Generated

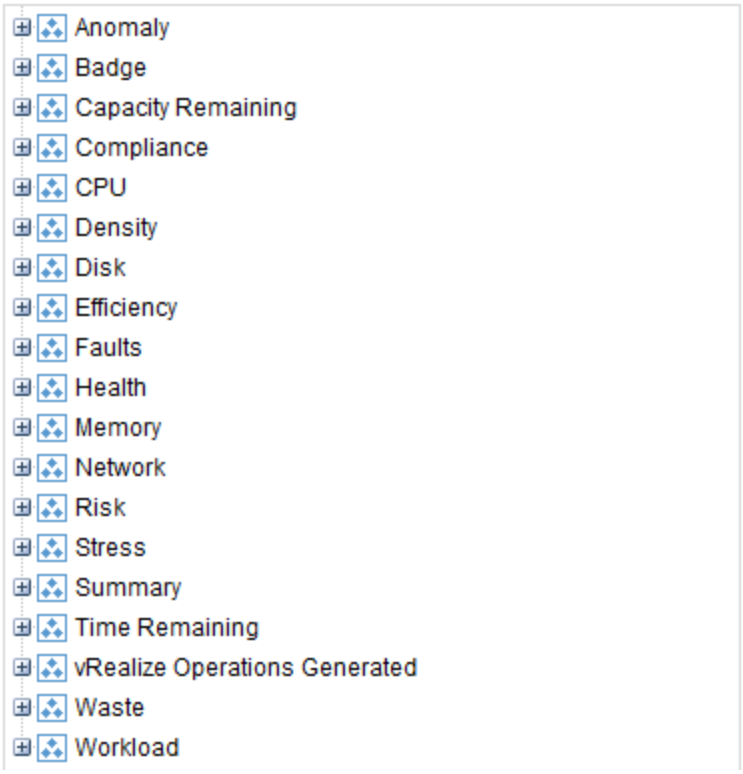

Site 1 Distributed Switch
Actions
Getting Started
Summary
Monitor
Manage
Related Objects
Issues
Tasks
Events
Health
Host member health status
Overall health:
Normal
VLAN and MTU health check:
Enabled
Teaming and failover health check:
Enabled
Filter
Host Name
State
VDS Status
VLAN Health Status
MTU Health Status
Teaming and Failover Health Status
vmsgesxi008.vmsg.lab
Connected
Up
Normal
Normal
Normal
vmsgesxi009.vmsg.lab
Connected
Up
Normal
Normal
Normal
vmsgesxi010.vmsg.lab
Connected
Up
Normal
Normal
Normal
3 items

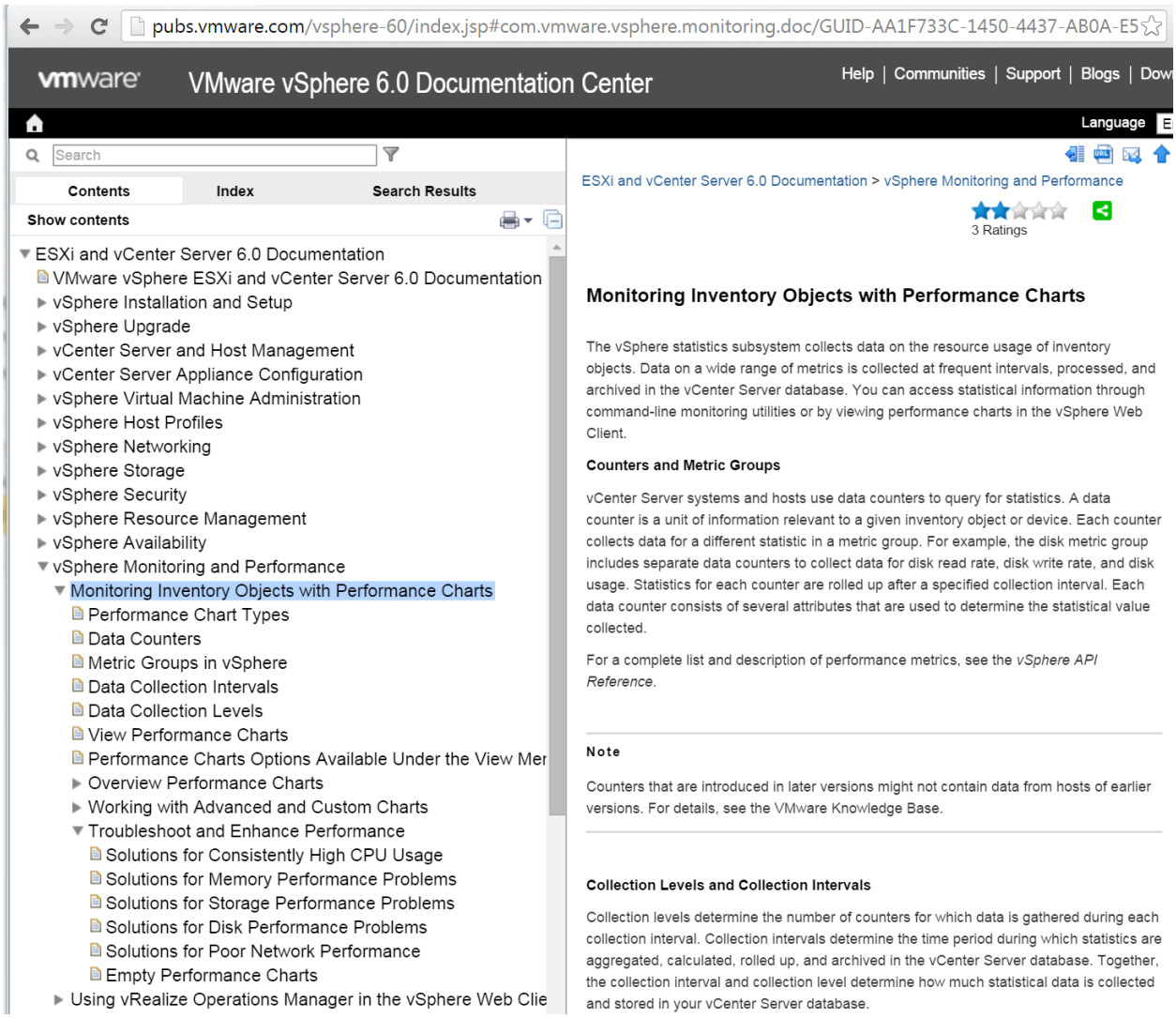

SDDC-Prod-Datacenter - Chart Options
Chart options:
--Select option--
Save Options As...
Delete Options
Always load these options at startup
Chart Metrics
Virtual machine operations
Timespan:
Last day
Last:
1
Hour(s)
From:
03/26/2014
9:36 AM
To:
03/26/2014
9:36 AM
Select object for this chart:
Target Objects
SDDC-Prod-Datacenter
Chart Type:
Line Graph
All
None
Select counters for this chart:
Counters
Description
Storage vMotion count
Number of migrations with Storage vMotion (datastore change ...
VM clone count
Number of virtual machine clone operations
VM create count
Number of virtual machine create operations
VM datastore change count (non-po...
Number of datastore change operations for powered-off and s...
VM delete count
Number of virtual machine delete operations
VM guest reboot count
Number of virtual machine guest reboot operations
VM guest shutdown count
Number of virtual machine guest shutdown operations
All
None
Help
Ok
Cancel

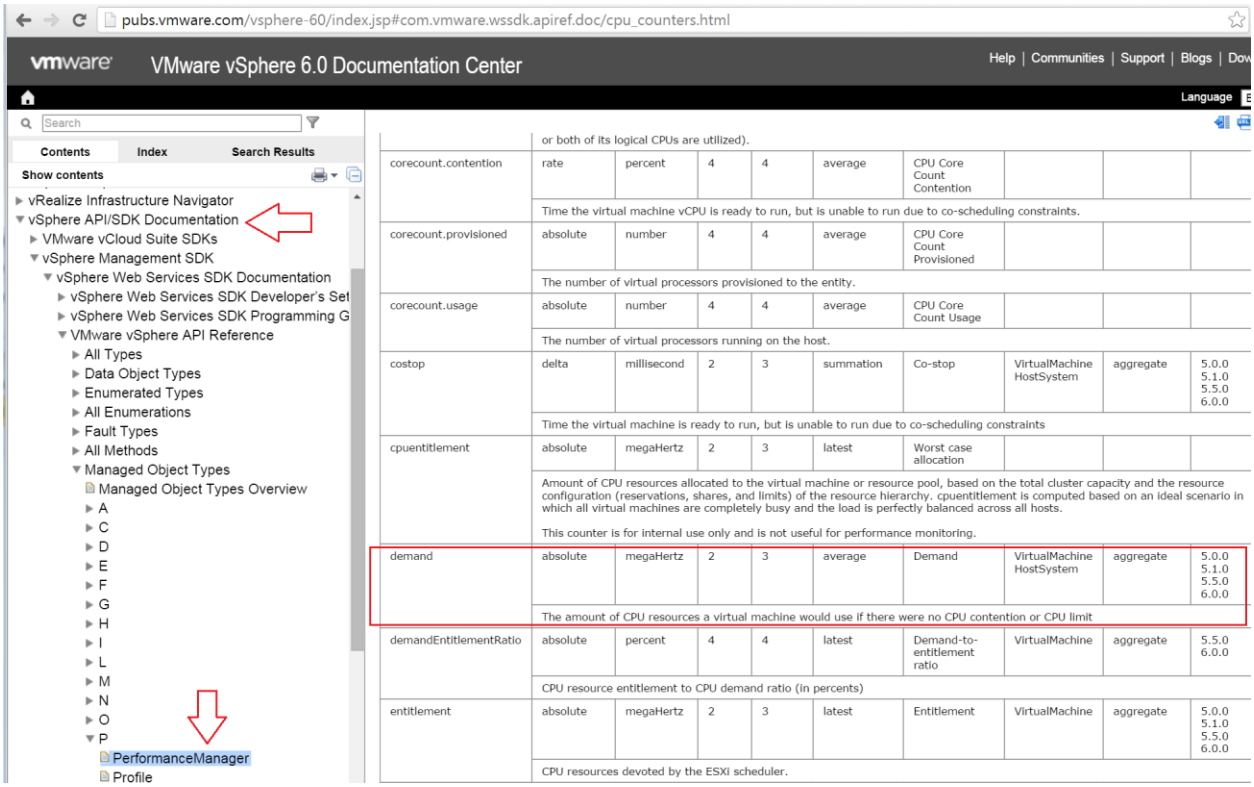

Badge
CPU
Datastore I/O
Disk
Disk Space
Disk Space Reclaimable
Memory
Network I/O
Storage
Summary
vRealize Operations Generated
vSphere Configuration Limit


core-site-1-vc.core.lab
Actions
Getting Started
Summary
Monitor
Manage
Related Objects
Issues
Health
Log Browser
Tasks
Events
System Logs
Service Health
vSphere Replication
Health
Immediate issues
Health Trend
Health Trend
100
0
6 hours ago
Time
Now
Workload
18
Workload
Indicates how hard the object is working
CPU
4 %
MEM
18 %
DISK I/O
0 %
NET I/O
0 %
Anomalies
13
Anomalies
Indicates the degree of abnormal behavior
6134
Count
0
6 Hours Ago
Time
Now
Current Abnormal Metric Count (5076)
Faults
0
Faults
Availability and configuration issues
Filter
Fault Description
Criticality
Time
This list is empty.

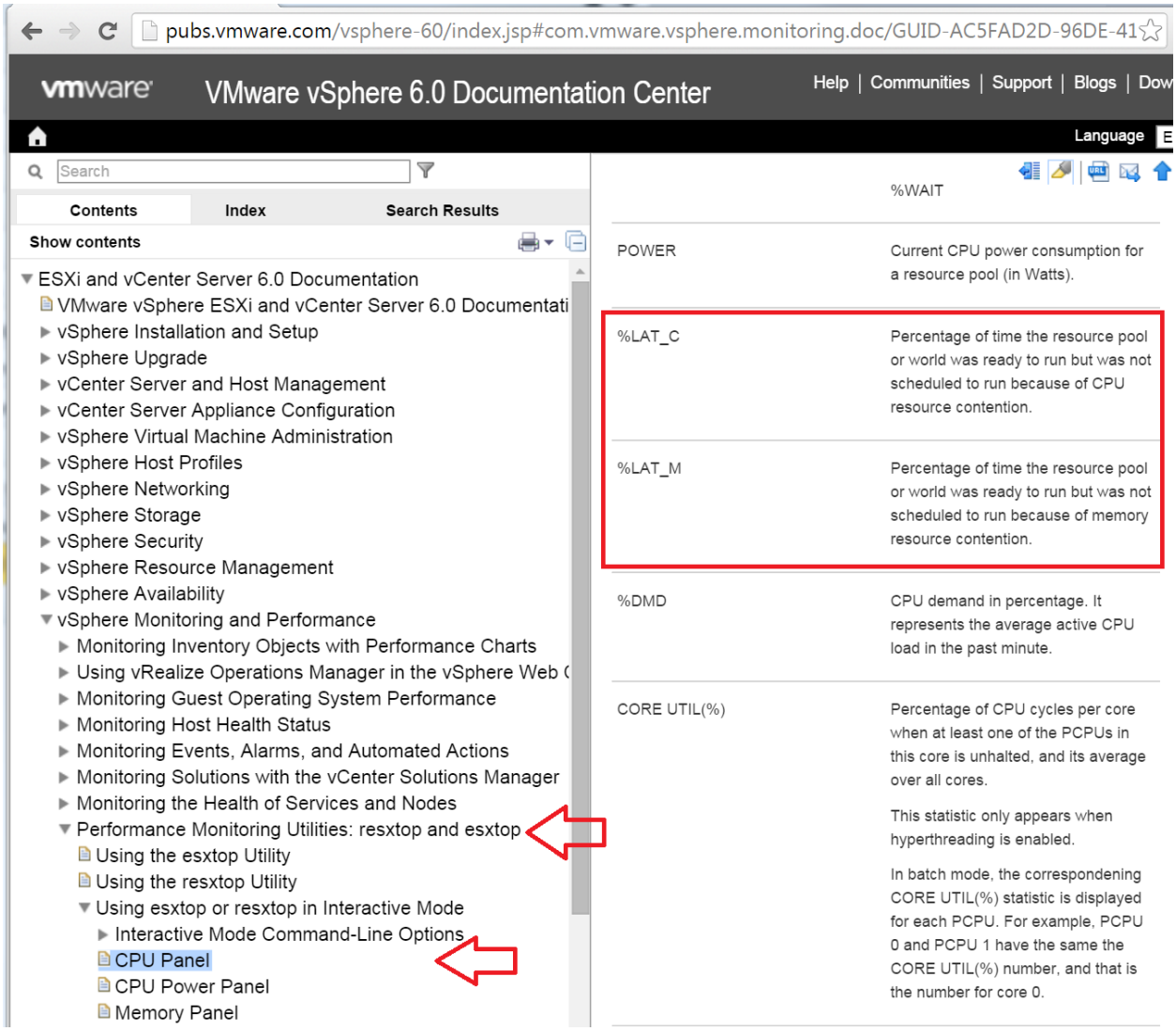

Badge
CPU
Datastore I/O
Disk
Disk Space
Disk Space Reclaimable
Instance Generated
Memory
Network I/O
Summary
vRealize Operations Generated
vSphere Configuration Limit

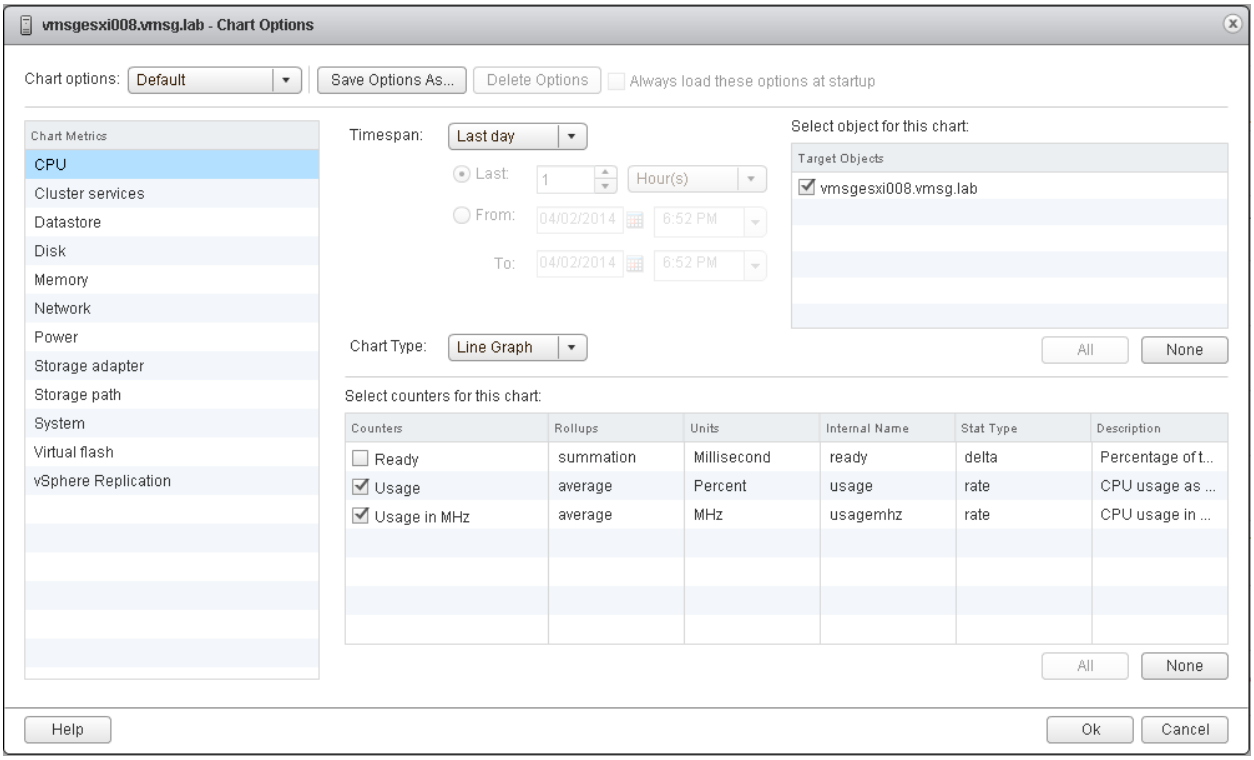

Anomaly
Badge
Capacity Remaining
Compliance
CPU
Density
Disk
Efficiency
Faults
Health
Memory
Network
Risk
Stress
Summary
Time Remaining
vRealize Operations Generated
Waste
Workload


pubs.vmware.com/vsphere-60/index.jsp#com.vmware.vsphere.monitoring.doc/GUID-AA1F733C-1450-4437-AB0A-E5
vmware
VMware vSphere 6.0 Documentation Center
Help | Communities | Support | Blogs | Dow
Language
Search
Contents
Index
Search Results
Show contents
ESXi and vCenter Server 6.0 Documentation
VMware vSphere ESXi and vCenter Server 6.0 Documentation
vSphere Installation and Setup
vSphere Upgrade
vCenter Server and Host Management
vCenter Server Appliance Configuration
vSphere Virtual Machine Administration
vSphere Host Profiles
vSphere Networking
vSphere Storage
vSphere Security
vSphere Resource Management
vSphere Availability
vSphere Monitoring and Performance
Monitoring Inventory Objects with Performance Charts
Performance Chart Types
Data Counters
Metric Groups in vSphere
Data Collection Intervals
Data Collection Levels
View Performance Charts
Performance Charts Options Available Under the View Mer
Overview Performance Charts
Working with Advanced and Custom Charts
Troubleshoot and Enhance Performance
Solutions for Consistently High CPU Usage
Solutions for Memory Performance Problems
Solutions for Storage Performance Problems
Solutions for Disk Performance Problems
Solutions for Poor Network Performance
Empty Performance Charts
Using vRealize Operations Manager in the vSphere Web Clie
ESXi and vCenter Server 6.0 Documentation > vSphere Monitoring and Performance
3 Ratings
Monitoring Inventory Objects with Performance Charts
The vSphere statistics subsystem collects data on the resource usage of inventory objects. Data on a wide range of metrics is collected at frequent intervals, processed, and archived in the vCenter Server database. You can access statistical information through command-line monitoring utilities or by viewing performance charts in the vSphere Web Client.
Counters and Metric Groups
vCenter Server systems and hosts use data counters to query for statistics. A data counter is a unit of information relevant to a given inventory object or device. Each counter collects data for a different statistic in a metric group. For example, the disk metric group includes separate data counters to collect data for disk read rate, disk write rate, and disk usage. Statistics for each counter are rolled up after a specified collection interval. Each data counter consists of several attributes that are used to determine the statistical value collected.
For a complete list and description of performance metrics, see the vSphere API Reference.
Note
Counters that are introduced in later versions might not contain data from hosts of earlier versions. For details, see the VMware Knowledge Base.
Collection Levels and Collection Intervals
Collection levels determine the number of counters for which data is gathered during each collection interval. Collection intervals determine the time period during which statistics are aggregated, calculated, rolled up, and archived in the vCenter Server database. Together, the collection interval and collection level determine how much statistical data is collected and stored in your vCenter Server database.



	or both of its logical CPUs are utilized).								
corecount.contention	rate	percent	4	4	average	CPU Core Count Contention			
	Time the virtual machine vCPU is ready to run, but is unable to run due to co-scheduling constraints.								
corecount.provisioned	absolute	number	4	4	average	CPU Core Count Provisioned			
	The number of virtual processors provisioned to the entity.								
corecount.usage	absolute	number	4	4	average	CPU Core Count Usage			
	The number of virtual processors running on the host.								
costop	delta	millisecond	2	3	summation	Co-stop	VirtualMachine HostSystem	aggregate	5.0.0 5.1.0 5.5.0 6.0.0
	Time the virtual machine is ready to run, but is unable to run due to co-scheduling constraints								
cpuentitlement	absolute	megaHertz	2	3	latest	Worst case allocation			
	Amount of CPU resources allocated to the virtual machine or resource pool, based on the total cluster capacity and the resource configuration (reservations, shares, and limits) of the resource hierarchy. cpuentitlement is computed based on an ideal scenario in which all virtual machines are completely busy and the load is perfectly balanced across all hosts. This counter is for internal use only and is not useful for performance monitoring.								
demand	absolute	megaHertz	2	3	average	Demand	VirtualMachine HostSystem	aggregate	5.0.0 5.1.0 5.5.0 6.0.0
	The amount of CPU resources a virtual machine would use if there were no CPU contention or CPU limit								
demandEntitlementRatio	absolute	percent	4	4	latest	Demand-to-entitlement ratio	VirtualMachine	aggregate	5.5.0 6.0.0
	CPU resource entitlement to CPU demand ratio (in percents)								
entitlement	absolute	megaHertz	2	3	latest	Entitlement	VirtualMachine	aggregate	5.0.0 5.1.0 5.5.0 6.0.0
	CPU resources devoted by the ESXi scheduler.								


pubs.vmware.com/vsphere-60/index.jsp#com.vmware.vsphere.monitoring.doc/GUID-AC5FAD2D-96DE-41
vmware
VMware vSphere 6.0 Documentation Center
Help | Communities | Support | Blogs | Dow
Language
Search
Contents
Index
Search Results
Show contents
ESXi and vCenter Server 6.0 Documentation
VMware vSphere ESXi and vCenter Server 6.0 Documentati
vSphere Installation and Setup
vSphere Upgrade
vCenter Server and Host Management
vCenter Server Appliance Configuration
vSphere Virtual Machine Administration
vSphere Host Profiles
vSphere Networking
vSphere Storage
vSphere Security
vSphere Resource Management
vSphere Availability
vSphere Monitoring and Performance
Monitoring Inventory Objects with Performance Charts
Using vRealize Operations Manager in the vSphere Web
Monitoring Guest Operating System Performance
Monitoring Host Health Status
Monitoring Events, Alarms, and Automated Actions
Monitoring Solutions with the vCenter Solutions Manager
Monitoring the Health of Services and Nodes
Performance Monitoring Utilities: resxtop and esxtop
Using the esxtop Utility
Using the resxtop Utility
Using esxtop or resxtop in Interactive Mode
Interactive Mode Command-Line Options
CPU Panel
CPU Power Panel
Memory Panel
%WAIT
POWER
Current CPU power consumption for a resource pool (in Watts).
%LAT_C
Percentage of time the resource pool or world was ready to run but was not scheduled to run because of CPU resource contention.
%LAT_M
Percentage of time the resource pool or world was ready to run but was not scheduled to run because of memory resource contention.
%DMD
CPU demand in percentage. It represents the average active CPU load in the past minute.
CORE UTIL(%)
Percentage of CPU cycles per core when at least one of the PCPUs in this core is unhalted, and its average over all cores.
This statistic only appears when hyperthreading is enabled.
In batch mode, the correspondening CORE UTIL(%) statistic is displayed for each PCPU. For example, PCPU 0 and PCPU 1 have the same the CORE UTIL(%) number, and that is the number for core 0.



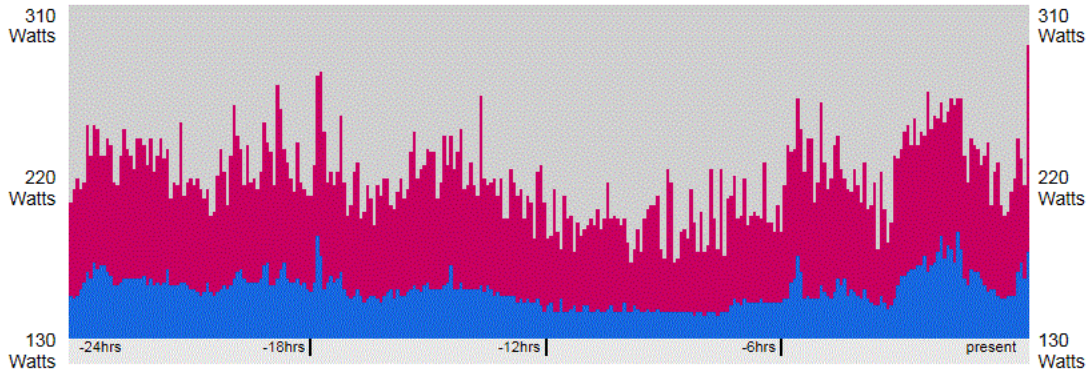
Chapter 12: CPU Counters

Description	Rollup	Units	Internal Name	Collection Level
☐ Swap wait	Summation	Millisecond	swapwait	3
☐ Idle	Summation	Millisecond	idle	2
☐ Run	Summation	Millisecond	run	2
☐ Used	Summation	Millisecond	used	3
☐ Max limited	Summation	Millisecond	maxlimited	2
☐ Co-stop	Summation	Millisecond	costop	2
☐ Ready	Summation	Millisecond	ready	1
☐ Readiness	Average	Percent	readiness	4
☐ Wait	Summation	Millisecond	wait	3
☐ System	Summation	Millisecond	system	3
☐ Demand-to-entitlement ratio	Latest	Percent	demandEntitlemen...	4
☑ Usage in MHz	Average	MHz	usagemhz	1
☐ Overlap	Summation	Millisecond	overlap	3
☐ Demand	Average	MHz	demand	2
☐ Latency	Average	Percent	latency	2
☐ Entitlement	Latest	MHz	entitlement	2
☑ Usage	Average	Percent	usage	1

Power Meter

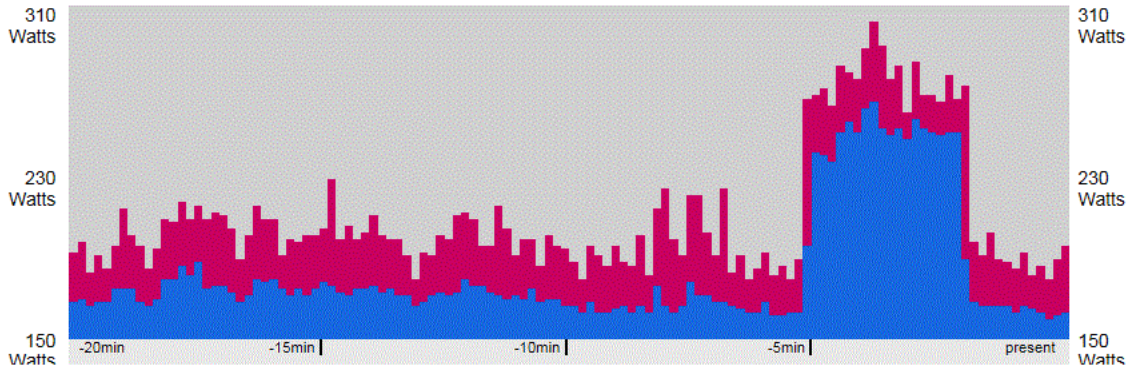
24-Hour History Graph

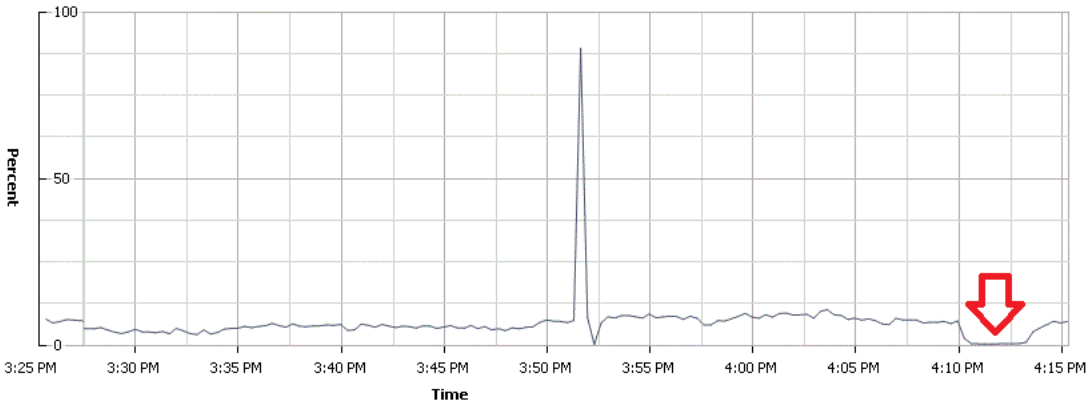
Power consumption over the past 24 hours at five-minute intervals.



20-Minute History Graph

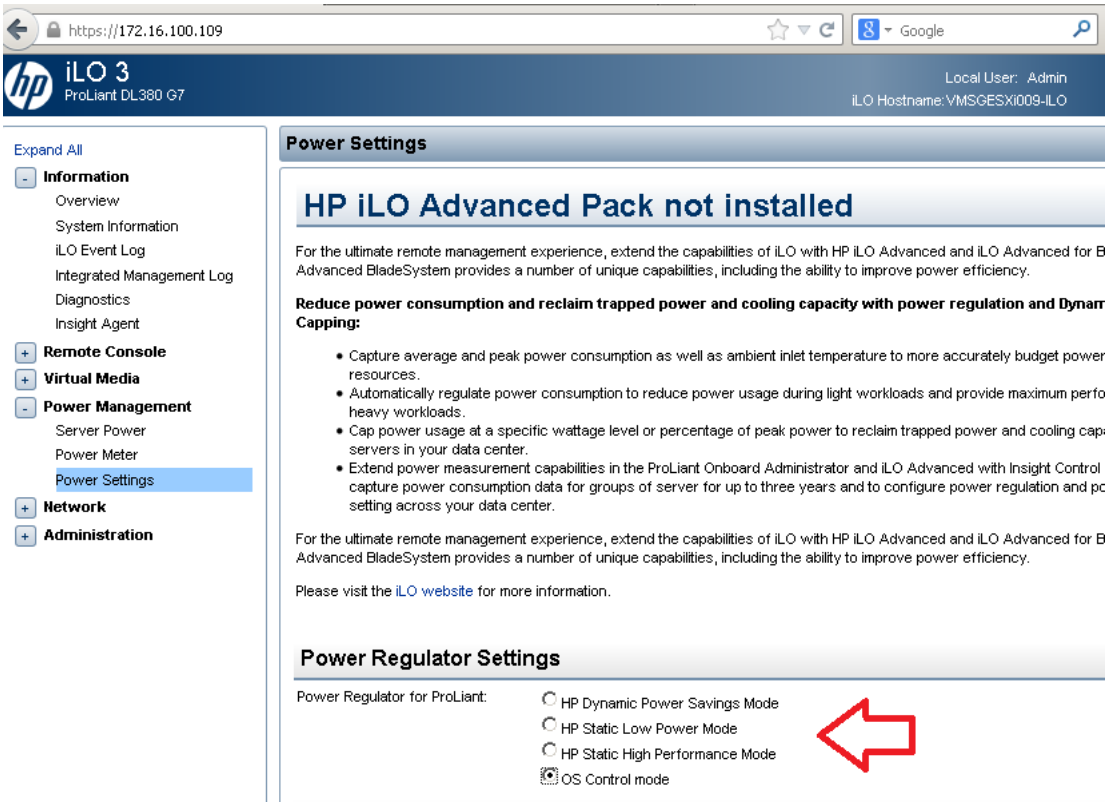
Power consumption over the past 20 minutes at ten-second intervals.

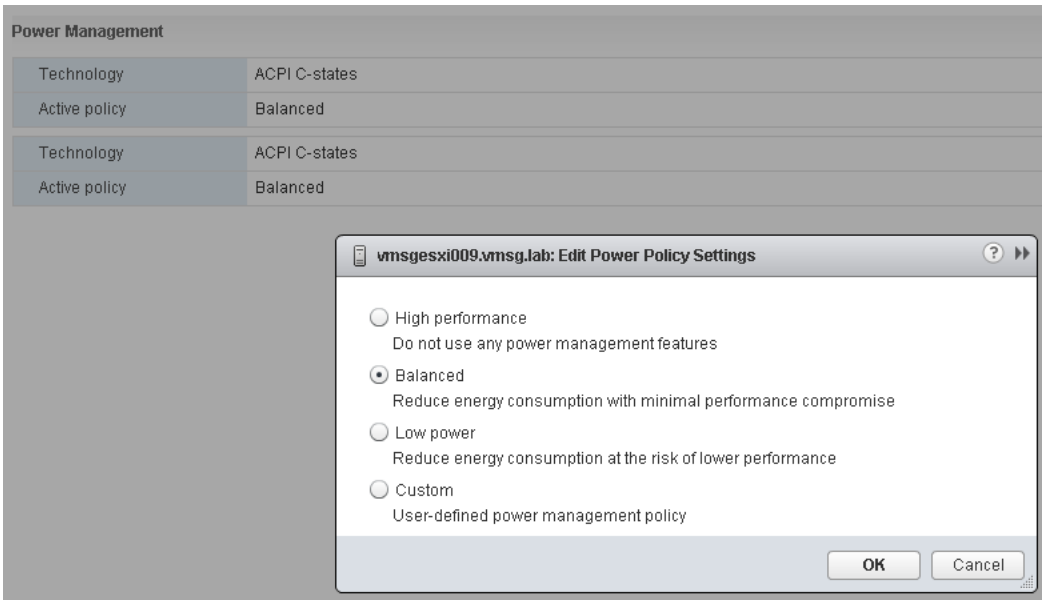


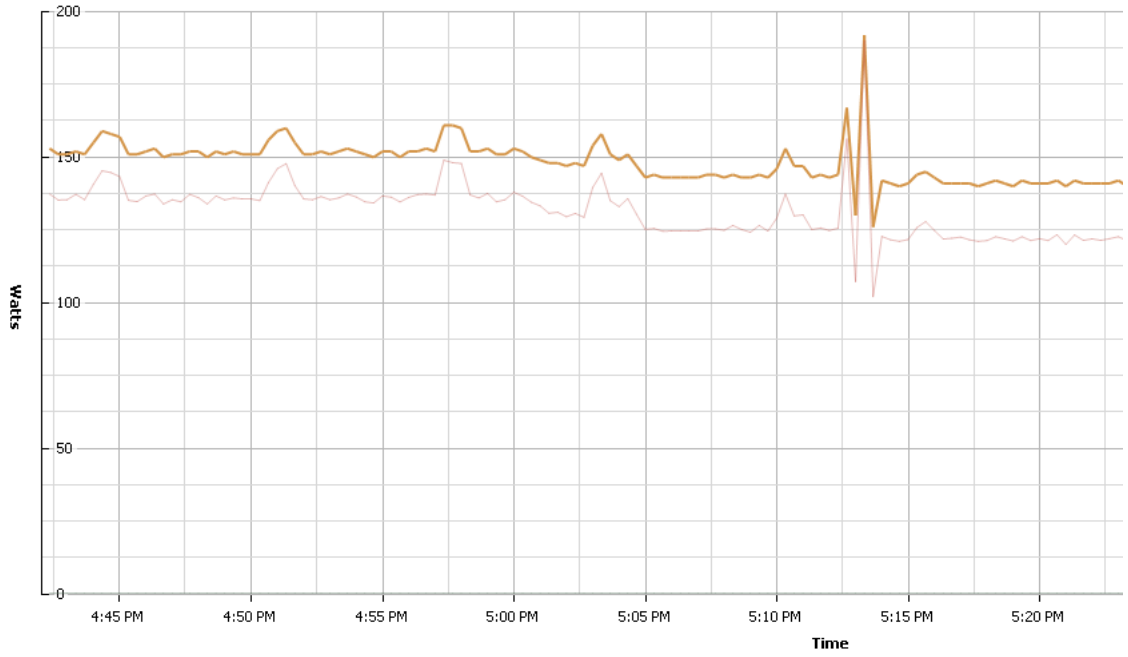


Performance Chart Legend

Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
■	[illegible]	Latency	Average	Percent	6.93	89.23	0	6.409


https://172.16.100.109
Google
iLO 3
ProLiant DL380 G7
Local User: Admin
iLO Hostname: VMSGESXi009-ILO
Expand All
Information
Overview
System Information
iLO Event Log
Integrated Management Log
Diagnostics
Insight Agent
Remote Console
Virtual Media
Power Management
Server Power
Power Meter
Power Settings
Network
Administration
Power Settings
HP iLO Advanced Pack not installed
For the ultimate remote management experience, extend the capabilities of iLO with HP iLO Advanced and iLO Advanced for B
Advanced BladeSystem provides a number of unique capabilities, including the ability to improve power efficiency.
Reduce power consumption and reclaim trapped power and cooling capacity with power regulation and Dynam
Capping:
Capture average and peak power consumption as well as ambient inlet temperature to more accurately budget power resources.
Automatically regulate power consumption to reduce power usage during light workloads and provide maximum perfo heavy workloads.
Cap power usage at a specific wattage level or percentage of peak power to reclaim trapped power and cooling capa servers in your data center.
Extend power measurement capabilities in the ProLiant Onboard Administrator and iLO Advanced with Insight Control capture power consumption data for groups of server for up to three years and to configure power regulation and pc setting across your data center.
For the ultimate remote management experience, extend the capabilities of iLO with HP iLO Advanced and iLO Advanced for B
Advanced BladeSystem provides a number of unique capabilities, including the ability to improve power efficiency.
Please visit the iLO website for more information.
Power Regulator Settings
Power Regulator for ProLiant:
HP Dynamic Power Savings Mode
HP Static Low Power Mode
HP Static High Performance Mode
OS Control mode

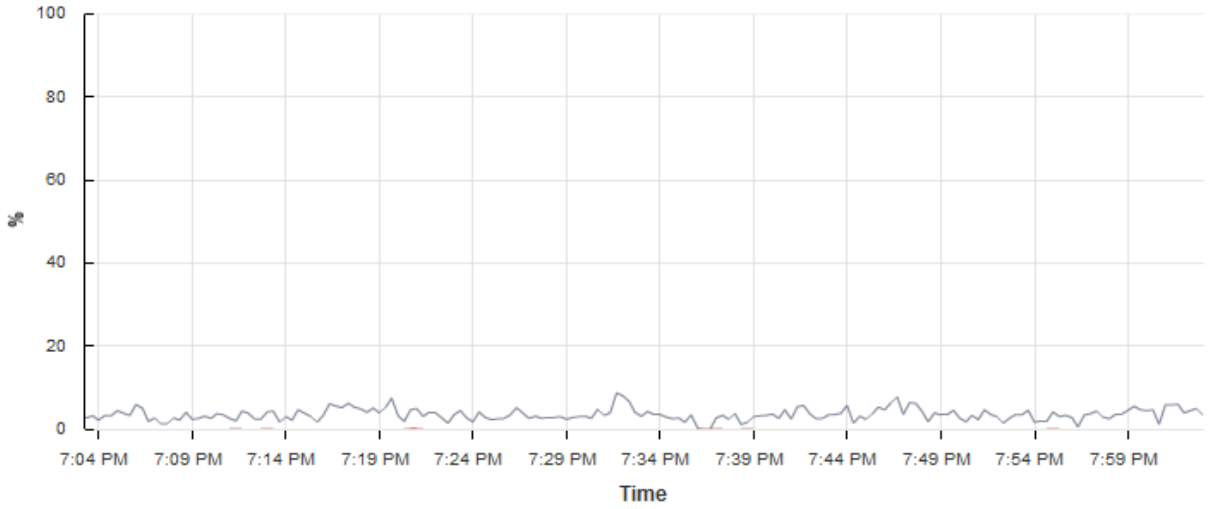

Power Management
Technology
ACPI C-states
Active policy
Balanced
Technology
ACPI C-states
Active policy
Balanced
vmsgesxi009.vmsg.lab: Edit Power Policy Settings
High performance
Do not use any power management features
Balanced
Reduce energy consumption with minimal performance compromise
Low power
Reduce energy consumption at the risk of lower performance
Custom
User-defined power management policy
OK
Cancel



Performance Chart Legend

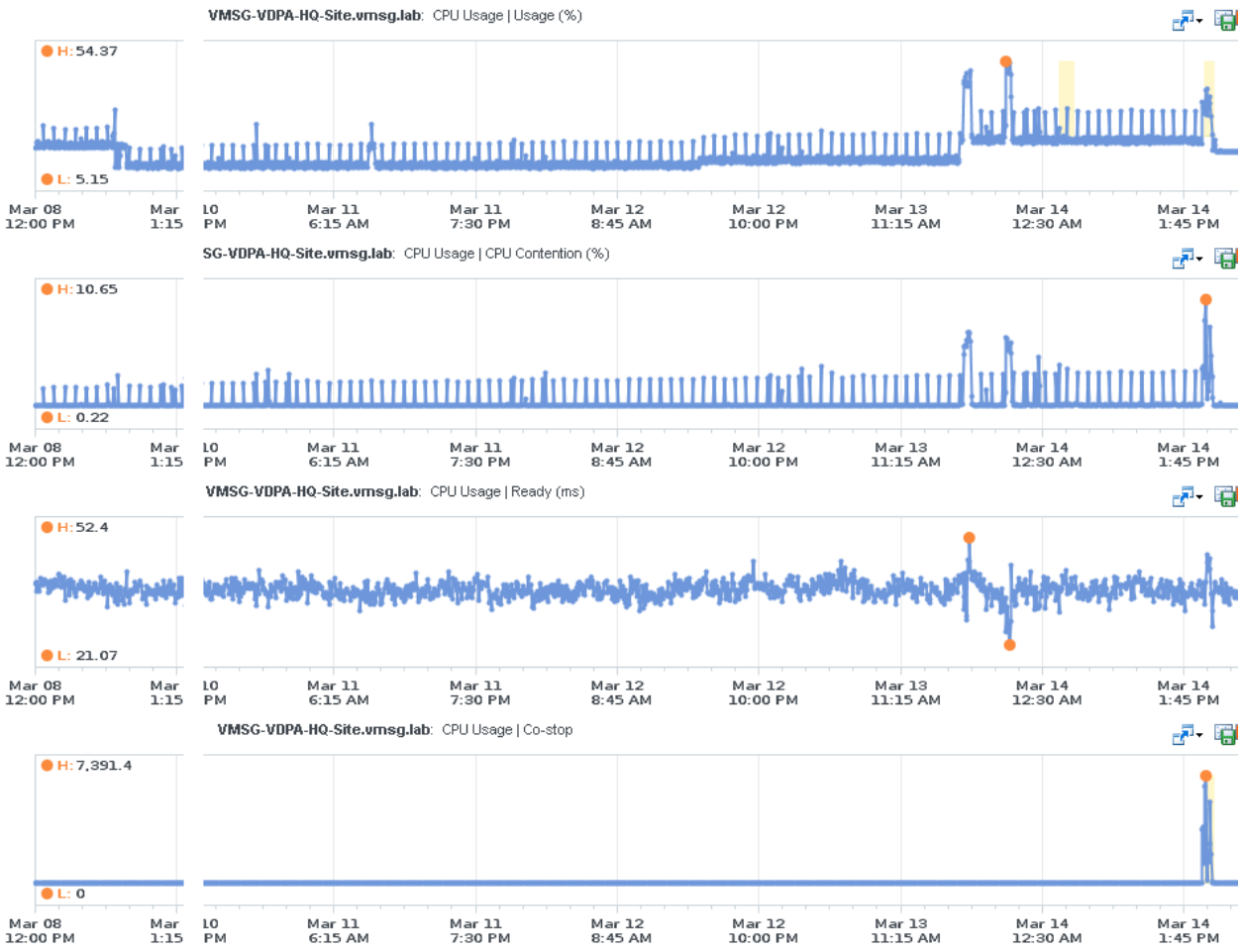
Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	vmsgesxi008.vmsg.lab	Cap	Average	Watts	0	0	0	0
	vmsgesxi008.vmsg.lab	Energy usage	Summation	Joule	2859	3851	2531	2933.006
	vmsgesxi008.vmsg.lab	Usage	Average	Watts	142	192	126	146.239

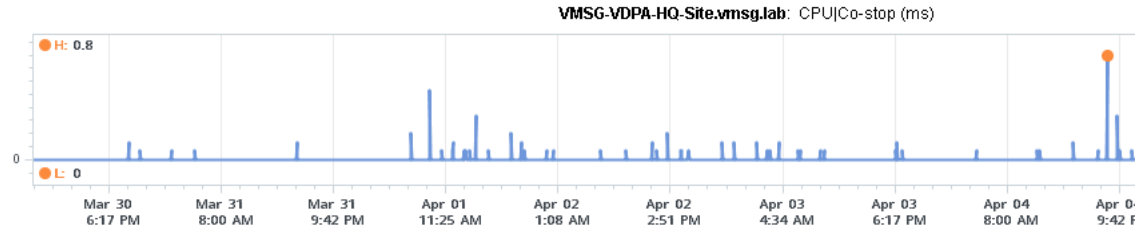
CPU/Real-time, 12/29/2015 7:03:20 PM - 12/29/2015 8:03:00 PM Chart Options View: Default

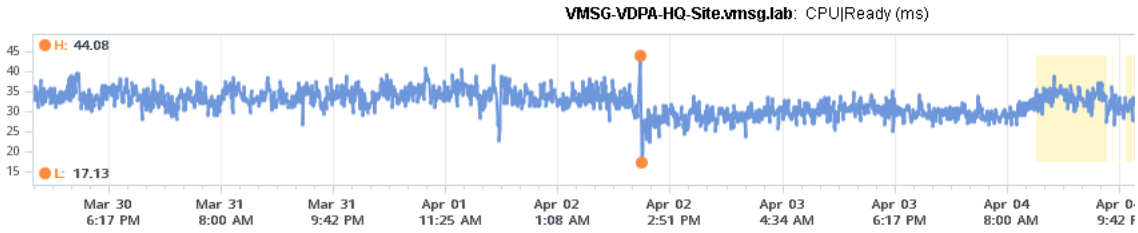


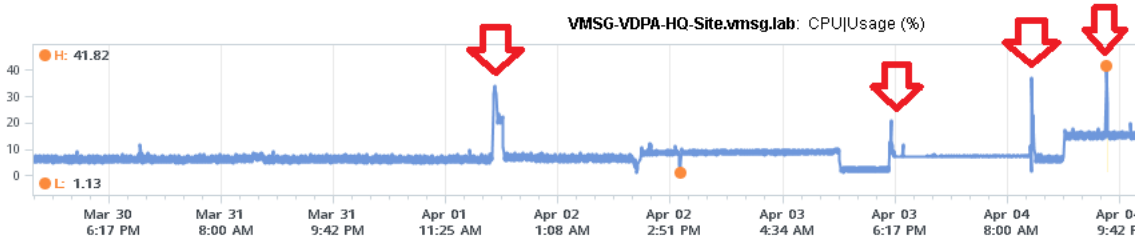
Performance Chart Legend

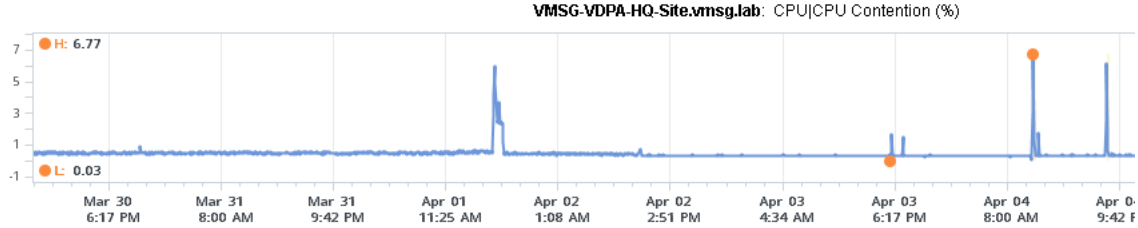
Key	Object	Measurement	Rollup 1 ▲	Units	Maximum	Minimum	Average
	Site 1 Log Insight	Latency	Average	%	8.69	0.04	3.51
	Site 1 Log Insight	Readiness	Average	%	0.07	0	0.025

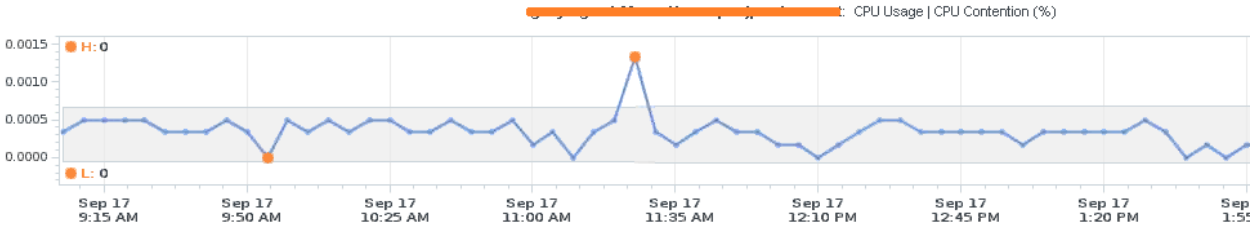

VMSG-VDPA-HQ-Site.vmsg.lab: CPU Usage | Usage (%)
H: 54.37
L: 5.15
Mar 08 12:00 PM
Mar 1:15
l0 PM
Mar 11 6:15 AM
Mar 11 7:30 PM
Mar 12 8:45 AM
Mar 12 10:00 PM
Mar 13 11:15 AM
Mar 14 12:30 AM
Mar 14 1:45 PM
SG-VDPA-HQ-Site.vmsg.lab: CPU Usage | CPU Contention (%)
H: 10.65
L: 0.22
VMSG-VDPA-HQ-Site.vmsg.lab: CPU Usage | Ready (ms)
H: 52.4
L: 21.07
VMSG-VDPA-HQ-Site.vmsg.lab: CPU Usage | Co-stop
H: 7,391.4
L: 0

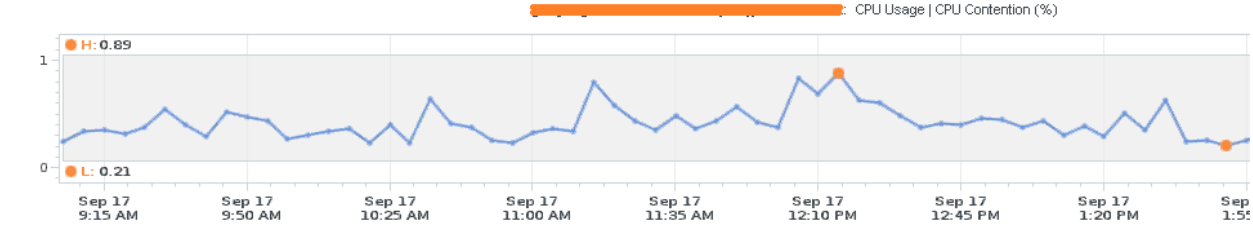

VMSG-VDPA-HQ-Site.vmsg.lab: CPU|Co-stop (ms)
H: 0.8
L: 0
0
Mar 30 6:17 PM
Mar 31 8:00 AM
Mar 31 9:42 PM
Apr 01 11:25 AM
Apr 02 1:08 AM
Apr 02 2:51 PM
Apr 03 4:34 AM
Apr 03 6:17 PM
Apr 04 8:00 AM

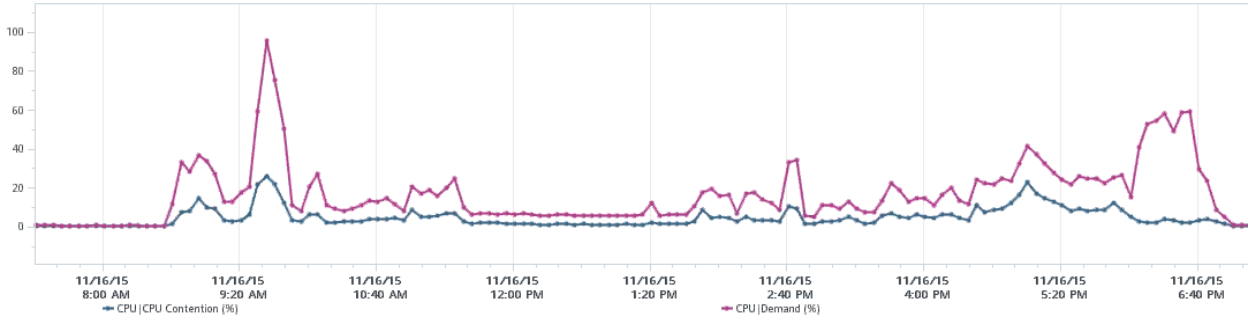

VMSG-VDPA-HQ-Site.vmsg.lab: CPU|Ready (ms)
H: 44.08
L: 17.13
45
40
35
30
25
20
15
Mar 30 6:17 PM
Mar 31 8:00 AM
Mar 31 9:42 PM
Apr 01 11:25 AM
Apr 02 1:08 AM
Apr 02 2:51 PM
Apr 03 4:34 AM
Apr 03 6:17 PM
Apr 04 8:00 AM

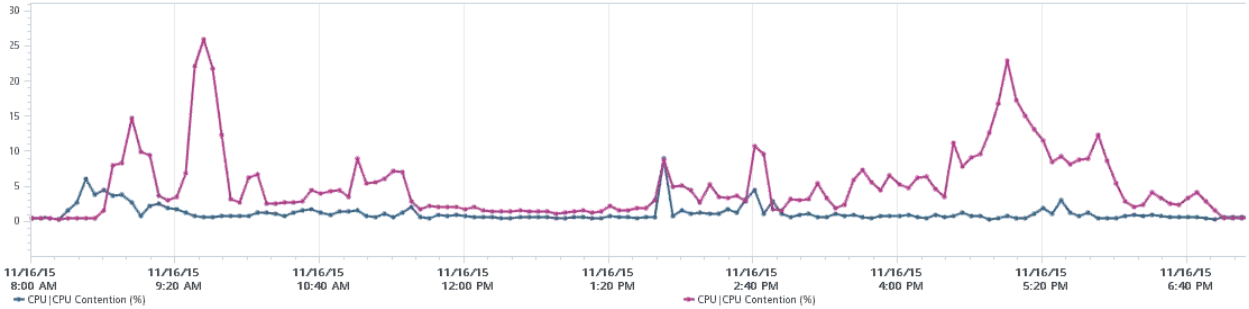

VMSG-VDPA-HQ-Site.vmsg.lab: CPU|Usage (%)
H: 41.82
L: 1.13
40
30
20
10
0
Mar 30 6:17 PM
Mar 31 8:00 AM
Mar 31 9:42 PM
Apr 01 11:25 AM
Apr 02 1:08 AM
Apr 02 2:51 PM
Apr 03 4:34 AM
Apr 03 6:17 PM
Apr 04 8:00 AM

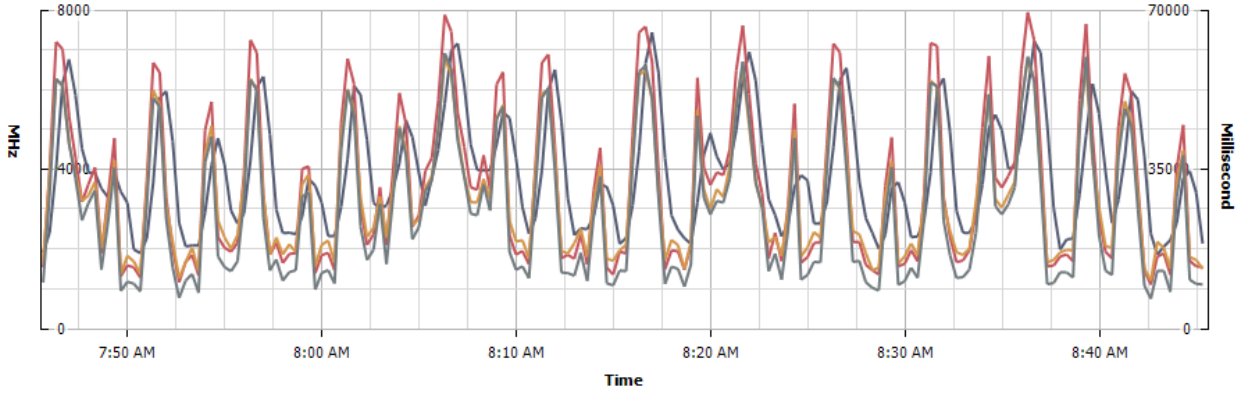

VMSG-VDPA-HQ-Site.vmsg.lab: CPU|CPU Contention (%)
H: 6.77
L: 0.03
7
5
3
1
-1
Mar 30 6:17 PM
Mar 31 8:00 AM
Mar 31 9:42 PM
Apr 01 11:25 AM
Apr 02 1:08 AM
Apr 02 2:51 PM
Apr 03 4:34 AM
Apr 03 6:17 PM
Apr 04 8:00 AM


: CPU Usage | CPU Contention (%)
H: 0
L: 0
0.0015
0.0010
0.0005
0.0000
Sep 17 9:15 AM
Sep 17 9:50 AM
Sep 17 10:25 AM
Sep 17 11:00 AM
Sep 17 11:35 AM
Sep 17 12:10 PM
Sep 17 12:45 PM
Sep 17 1:20 PM


: CPU Usage | CPU Contention (%)
H: 0.89
L: 0.21
1
0
Sep 17 9:15 AM
Sep 17 9:50 AM
Sep 17 10:25 AM
Sep 17 11:00 AM
Sep 17 11:35 AM
Sep 17 12:10 PM
Sep 17 12:45 PM
Sep 17 1:20 PM

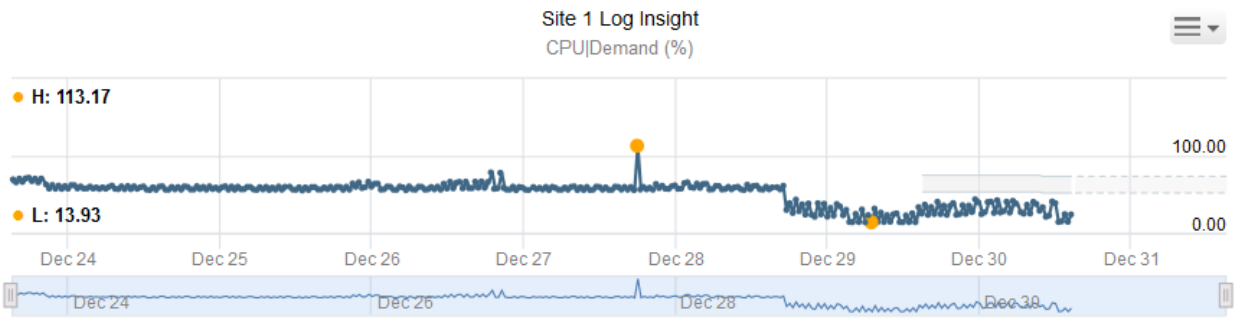


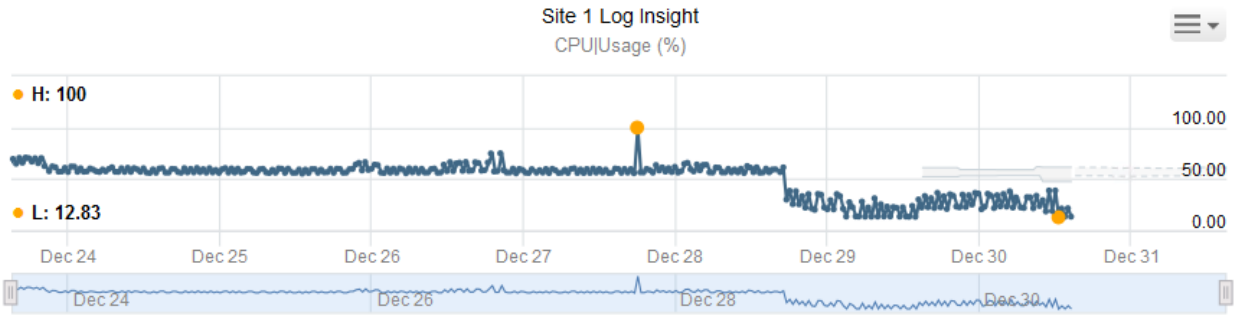


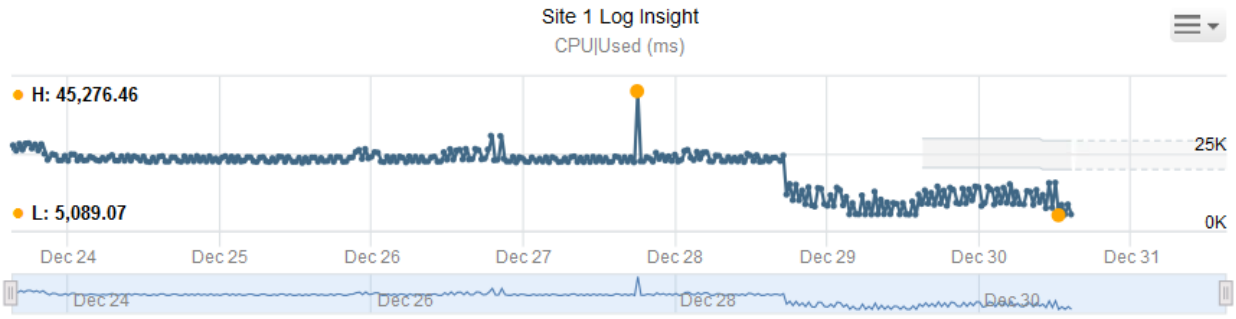


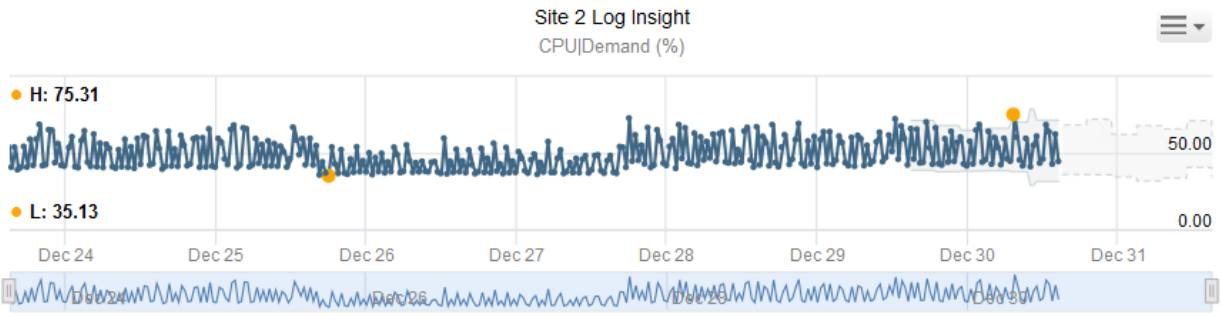
Performance Chart Legend

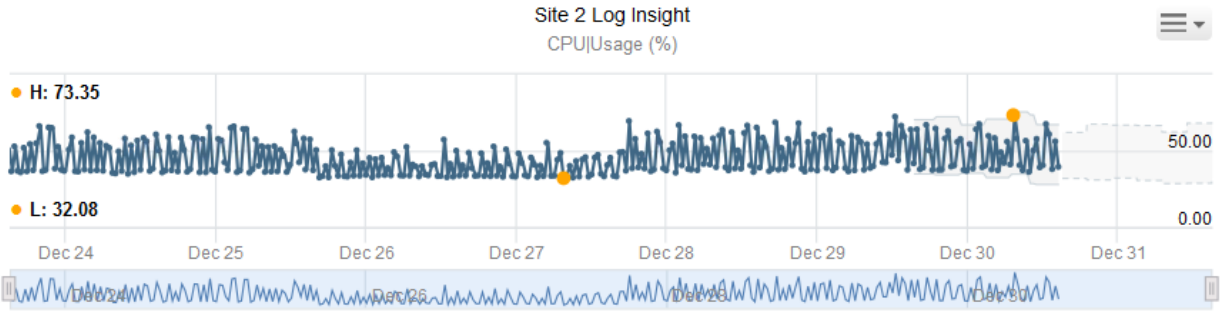
Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	Site 2 Log Insight	Demand	Average	MHz	2131	7459	1853	3923.267
	Site 2 Log Insight	Usage in MHz	Average	MHz	1538	7961	1096	3585.172
	Site 2 Log Insight	Run	Summation	Millisecond	13053	59539	10508	29386.178
	Site 2 Log Insight	Used	Summation	Millisecond	9634	60652	6490	26153.333

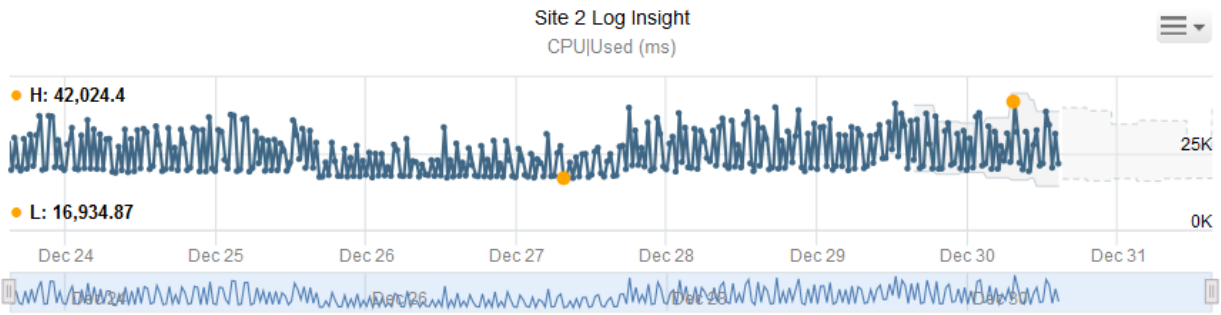

Site 1 Log Insight
CPU|Demand (%)
H: 113.17
L: 13.93
100.00
0.00
Dec 24
Dec 25
Dec 26
Dec 27
Dec 28
Dec 29
Dec 30
Dec 31

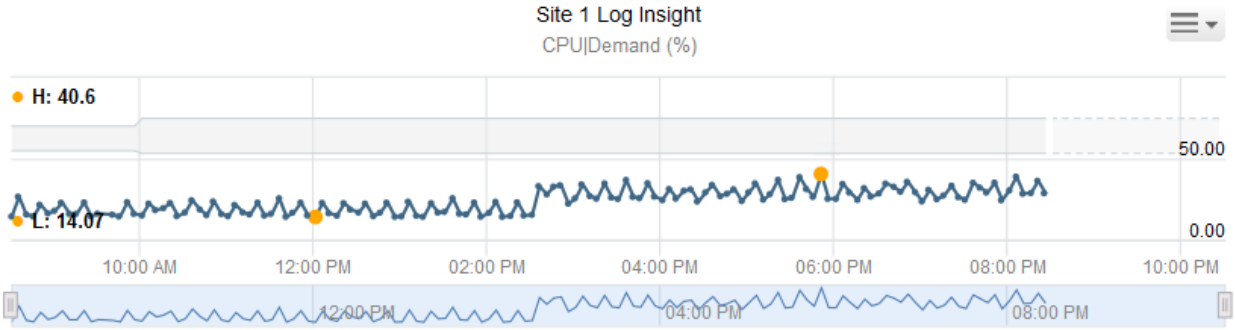

Site 1 Log Insight
CPU|Usage (%)
H: 100
L: 12.83
100.00
50.00
0.00
Dec 24
Dec 25
Dec 26
Dec 27
Dec 28
Dec 29
Dec 30
Dec 31

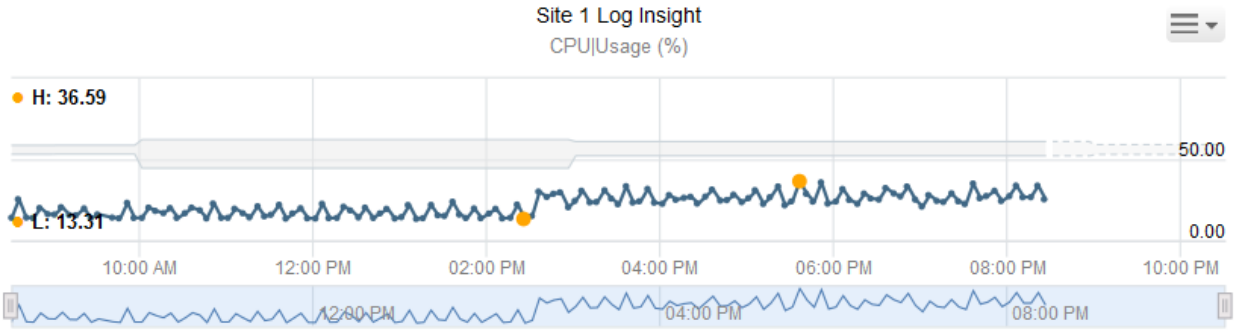

Site 1 Log Insight
CPU|Used (ms)
H: 45,276.46
L: 5,089.07
25K
0K
Dec 24
Dec 25
Dec 26
Dec 27
Dec 28
Dec 29
Dec 30
Dec 31

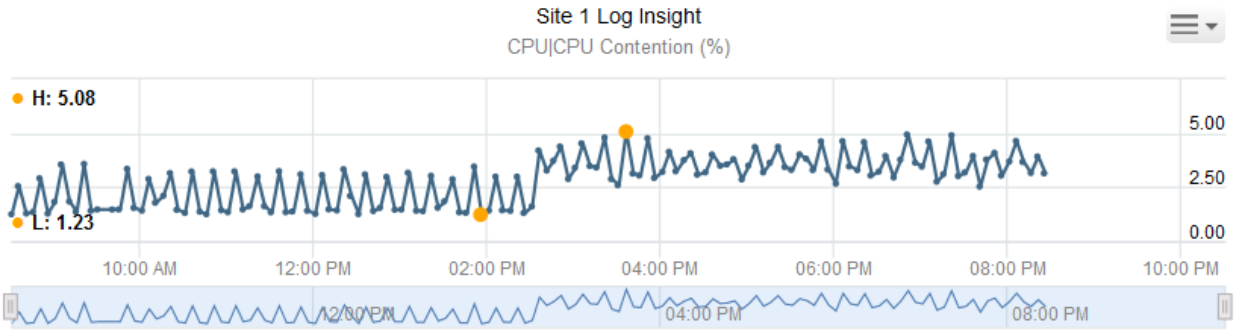

Site 2 Log Insight
CPU|Demand (%)
H: 75.31
L: 35.13
50.00
0.00
Dec 24
Dec 25
Dec 26
Dec 27
Dec 28
Dec 29
Dec 30
Dec 31

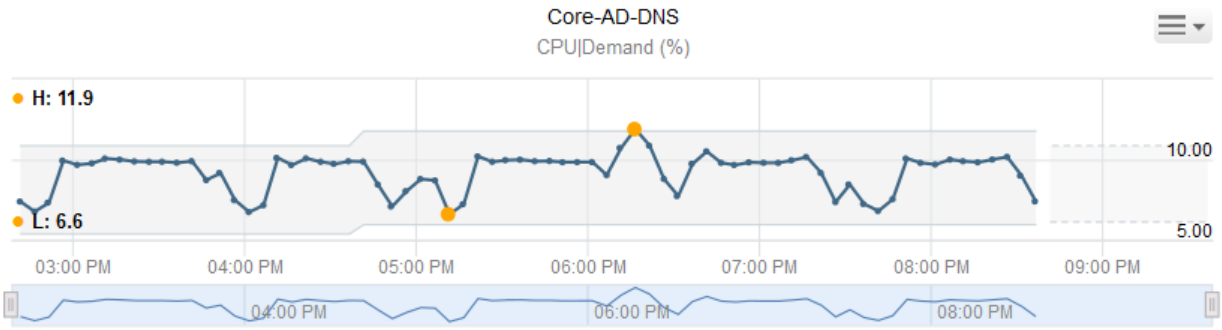

Site 2 Log Insight
CPU|Usage (%)
H: 73.35
L: 32.08
50.00
0.00
Dec 24
Dec 25
Dec 26
Dec 27
Dec 28
Dec 29
Dec 30
Dec 31

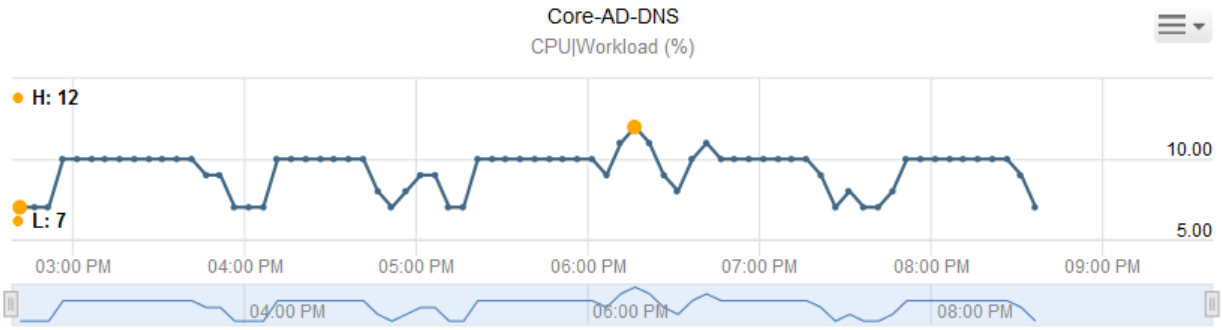

Site 2 Log Insight
CPU|Used (ms)
H: 42,024.4
L: 16,934.87
25K
0K
Dec 24
Dec 25
Dec 26
Dec 27
Dec 28
Dec 29
Dec 30
Dec 31

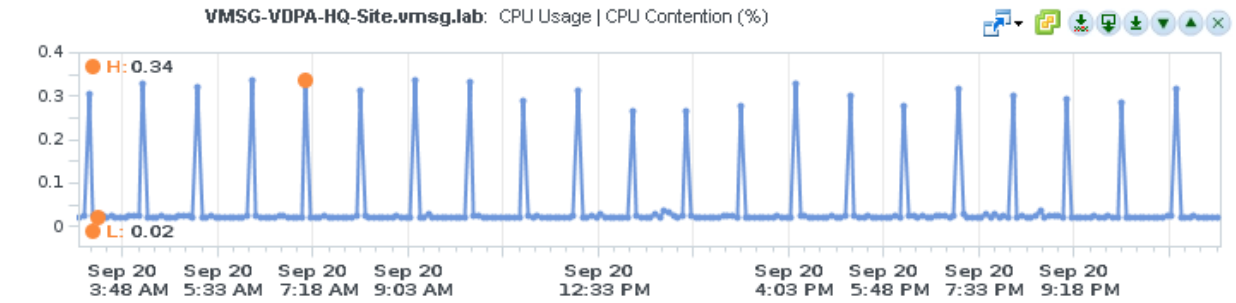

Site 1 Log Insight
CPU|Demand (%)
H: 40.6
L: 14.07
50.00
0.00
10:00 AM
12:00 PM
02:00 PM
04:00 PM
06:00 PM
08:00 PM
10:00 PM
12:00 PM
04:00 PM
08:00 PM

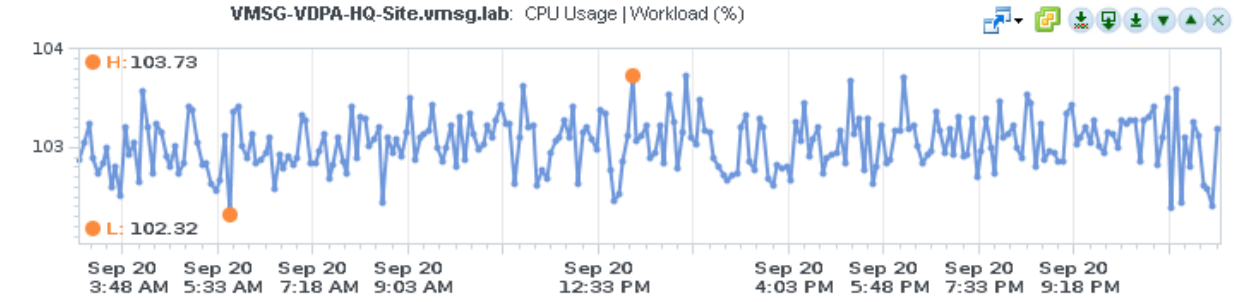

Site 1 Log Insight
CPU|Usage (%)
H: 36.59
L: 13.31
50.00
0.00
10:00 AM
12:00 PM
02:00 PM
04:00 PM
06:00 PM
08:00 PM
10:00 PM
12:00 PM
04:00 PM
08:00 PM

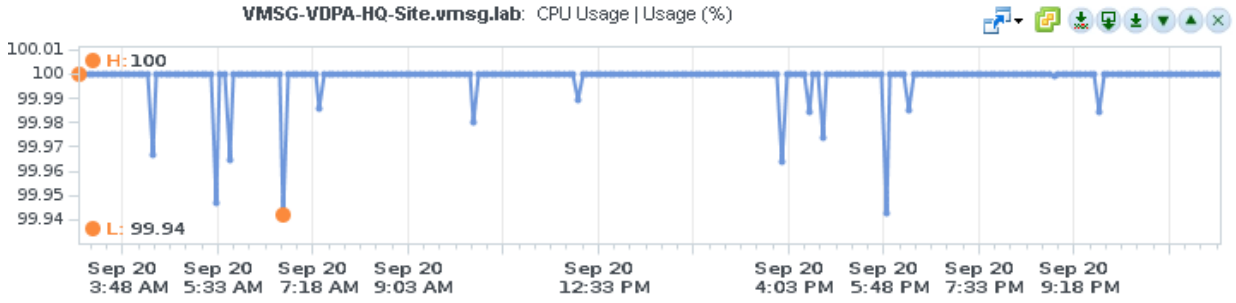

Site 1 Log Insight
CPU|CPU Contention (%)
H: 5.08
L: 1.23
5.00
2.50
0.00
10:00 AM
12:00 PM
02:00 PM
04:00 PM
06:00 PM
08:00 PM
10:00 PM
12:00 PM
04:00 PM
08:00 PM


Core-AD-DNS
CPU|Demand (%)
H: 11.9
L: 6.6
10.00
5.00
03:00 PM
04:00 PM
05:00 PM
06:00 PM
07:00 PM
08:00 PM
09:00 PM
04:00 PM
06:00 PM
08:00 PM

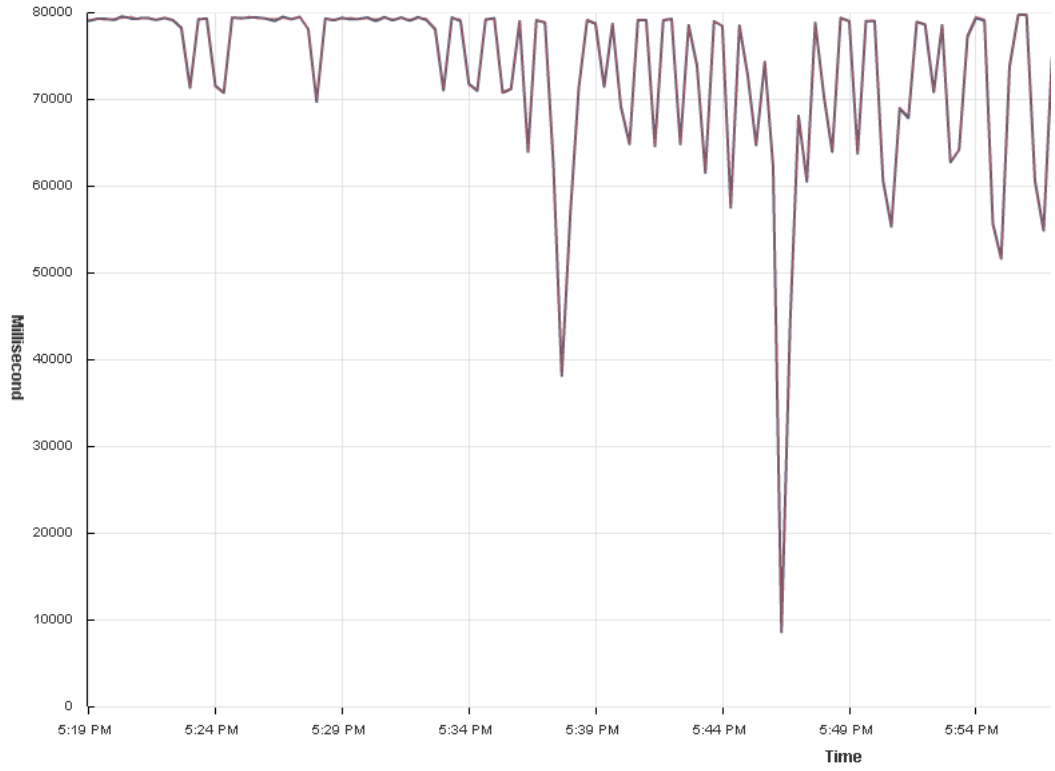

Core-AD-DNS
CPU|Workload (%)
H: 12
L: 7
10.00
5.00
03:00 PM
04:00 PM
05:00 PM
06:00 PM
07:00 PM
08:00 PM
09:00 PM
04:00 PM
06:00 PM
08:00 PM


VMSG-VDPA-HQ-Site.vmsg.lab: CPU Usage | CPU Contention (%)
0.4
0.3
0.2
0.1
0
H: 0.34
L: 0.02
Sep 20 3:48 AM
Sep 20 5:33 AM
Sep 20 7:18 AM
Sep 20 9:03 AM
Sep 20 12:33 PM
Sep 20 4:03 PM
Sep 20 5:48 PM
Sep 20 7:33 PM
Sep 20 9:18 PM


VMSG-VDPA-HQ-Site.vmsg.lab: CPU Usage | Workload (%)
104
103
H: 103.73
L: 102.32
Sep 20 3:48 AM
Sep 20 5:33 AM
Sep 20 7:18 AM
Sep 20 9:03 AM
Sep 20 12:33 PM
Sep 20 4:03 PM
Sep 20 5:48 PM
Sep 20 7:33 PM
Sep 20 9:18 PM


VMSG-VDPA-HQ-Site.vmsg.lab: CPU Usage | Usage (%)
100.01
100
99.99
99.98
99.97
99.96
99.95
99.94
H: 100
L: 99.94
Sep 20 3:48 AM
Sep 20 5:33 AM
Sep 20 7:18 AM
Sep 20 9:03 AM
Sep 20 12:33 PM
Sep 20 4:03 PM
Sep 20 5:48 PM
Sep 20 7:33 PM
Sep 20 9:18 PM

CPU/Real-time, 4/3/2014 5:19:00 PM - 4/3/2014 6:18:40 PM Chart Options

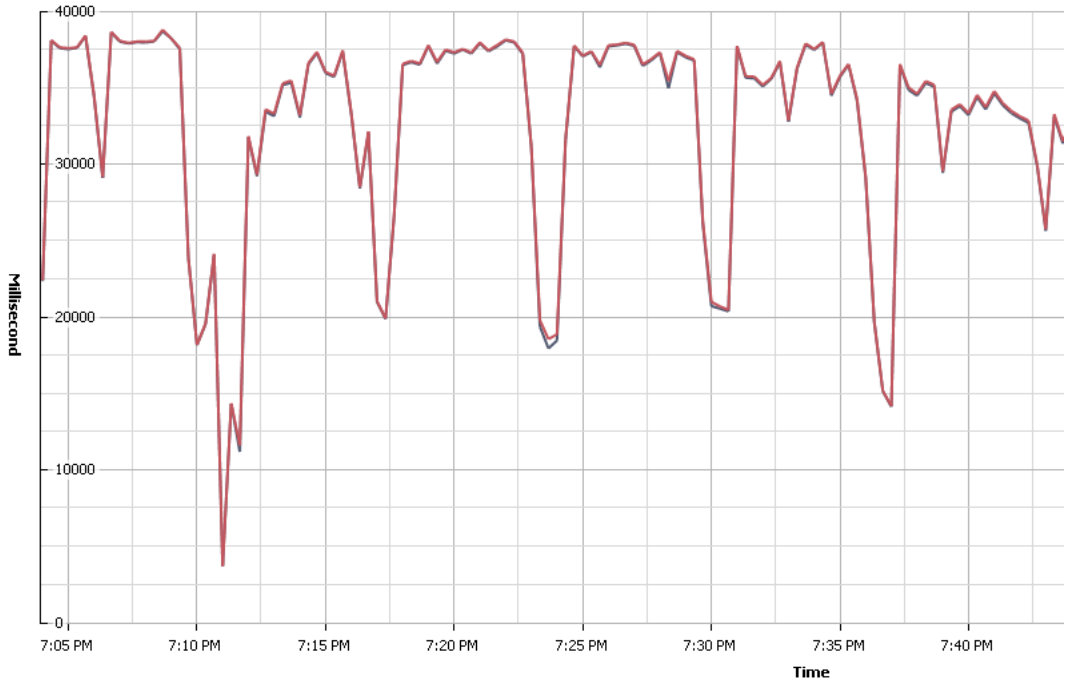


Performance Chart Legend

Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	VMSG-VDPA-HQ-Site.vmsg.lab	Idle	Summation	Millisecond	79793	79872	8588	73395.911
	VMSG-VDPA-HQ-Site.vmsg.lab	Wait	Summation	Millisecond	79766	79807	8607	73418.983

CPU/Real-time, 4/12/2014 7:03:54 PM - 4/12/2014 8:03:54 PM Chart Options...

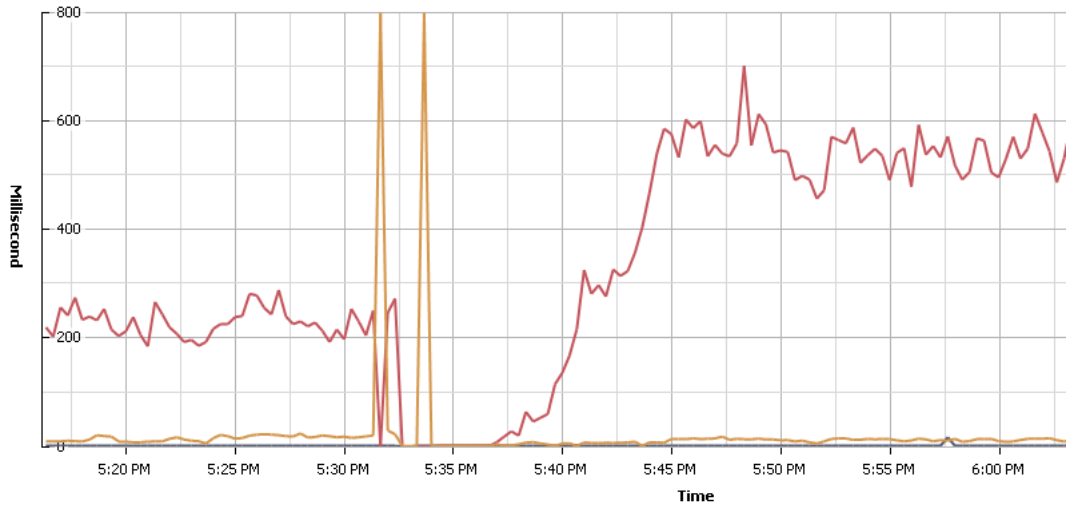
Graph refreshes every 20 seconds



Performance Chart Legend

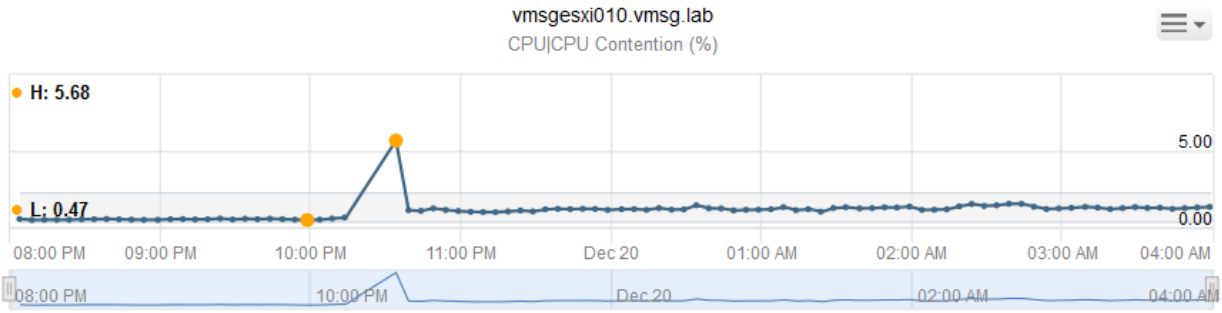
Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	BCDR-Prod-VC	Idle	Summation	Millisecond	28533	38737	3683	31403.506
	BCDR-Prod-VC	Wait	Summation	Millisecond	28721	38836	3689	31537.689

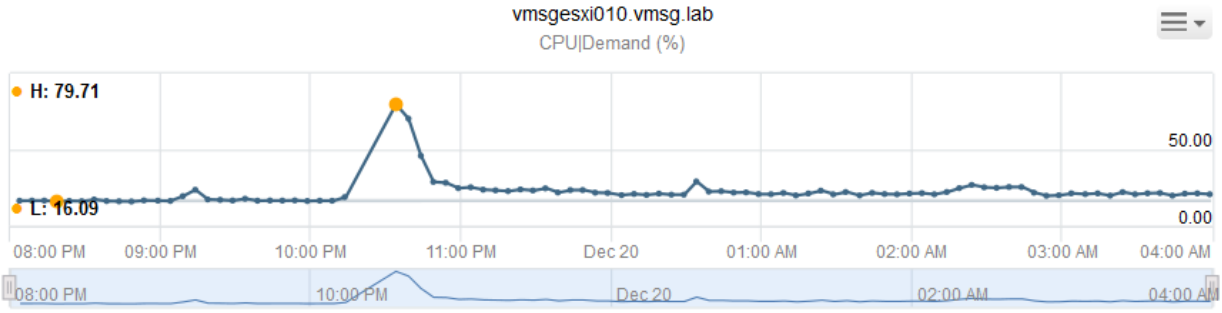
Description	Rollup	Units	Internal Name	Collection Level
☐ Utilization	Average	Percent	utilization	2
☐ Used	Summation	Millisecond	used	3
☐ Idle	Summation	Millisecond	idle	2
☐ Core Utilization	Average	Percent	coreUtilization	2
☑ Usage	Average	Percent	usage	1
☐ Co-stop	Summation	Millisecond	costop	2
☐ Readiness	Average	Percent	readiness	4
☐ Latency	Average	Percent	latency	2
☐ Demand	Average	MHz	demand	2
☐ Swap wait	Summation	Millisecond	swapwait	3
☐ Total capacity	Average	MHz	totalCapacity	2
☑ Usage in MHz	Average	MHz	usagemhz	1
☐ Reserved capacity	Average	MHz	reservedCapacity	2
☐ Wait	Summation	Millisecond	wait	3
☐ Ready	Summation	Millisecond	ready	1

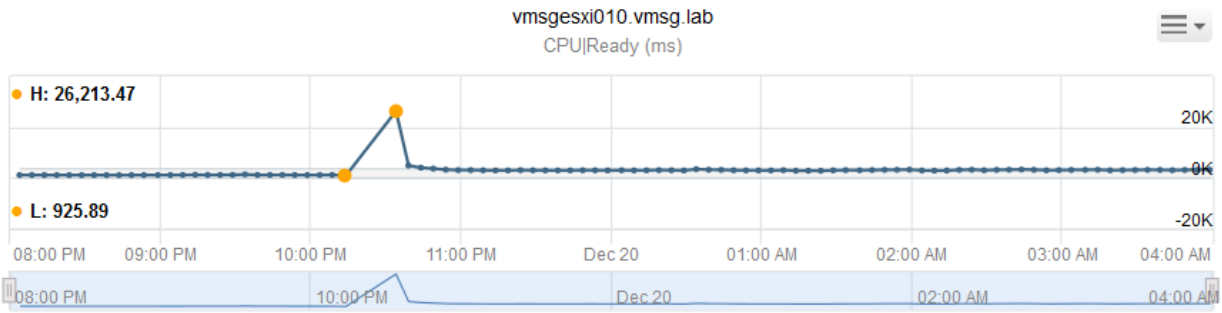


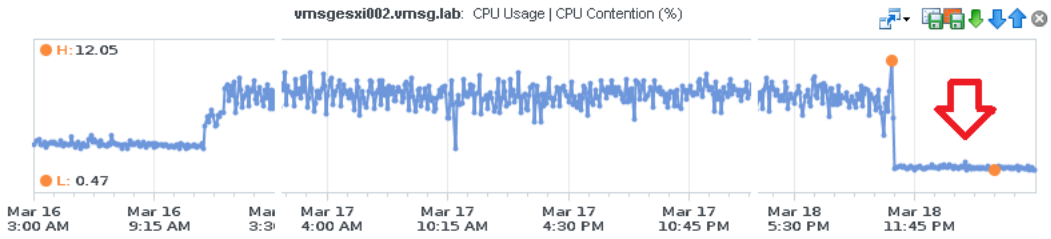
Performance Chart Legend

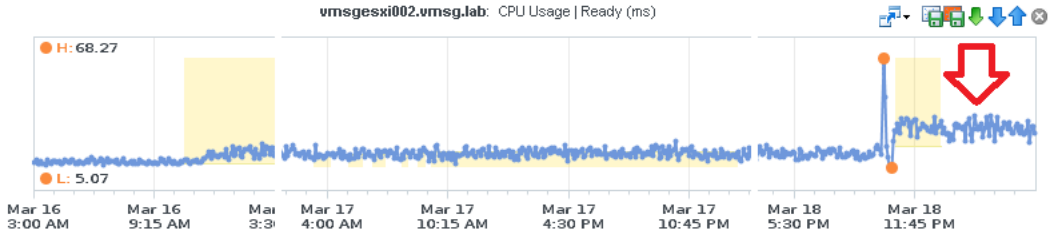
Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	vmsgesxi009.vm...	Co-stop	Summation	Millisecond	0	16	0	0.101
	vmsgesxi009.vm...	Ready	Summation	Millisecond	583	702	0	387.793
	vmsgesxi009.vm...	Latency	Average	Percent	1.61	100	0	2.46

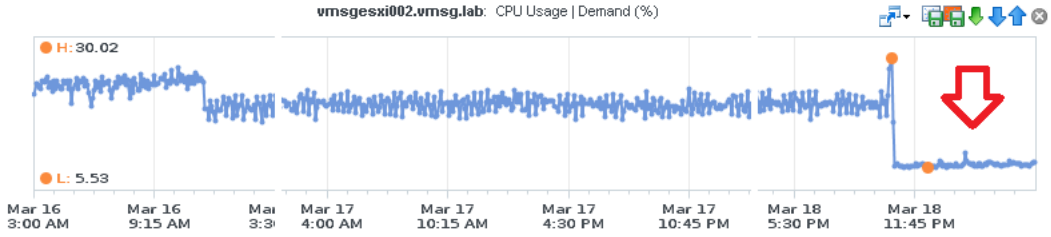


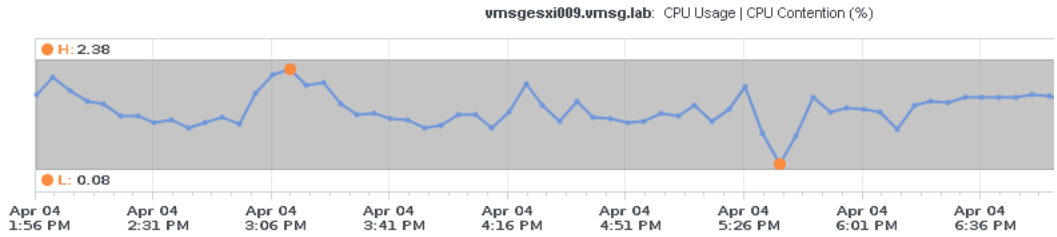


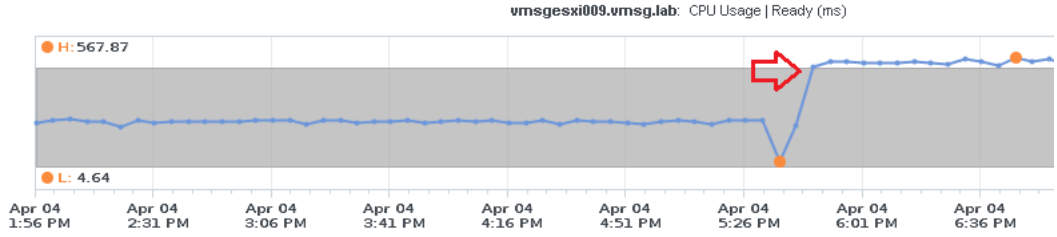


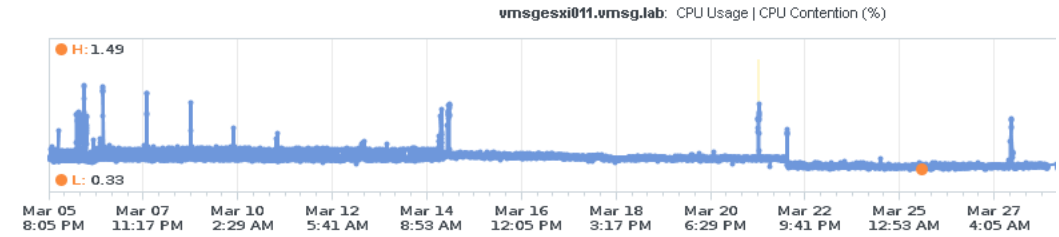

vmsgesxi002.vmsg.lab: CPU Usage | CPU Contention (%)
H: 12.05
L: 0.47
Mar 16 3:00 AM
Mar 16 9:15 AM
Mar 17 4:00 AM
Mar 17 10:15 AM
Mar 17 4:30 PM
Mar 17 10:45 PM
Mar 18 5:30 PM
Mar 18 11:45 PM

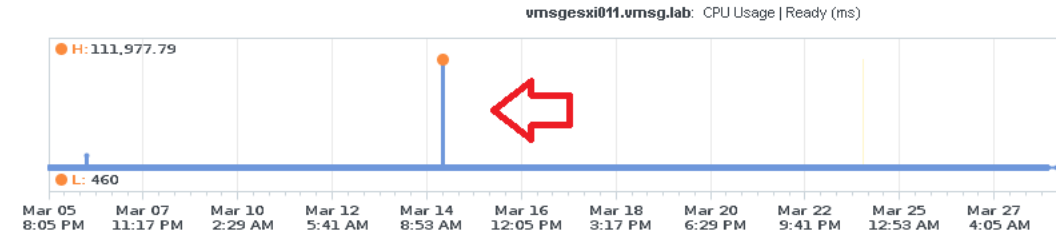

vmsgesxi002.vmsg.lab: CPU Usage | Ready (ms)
H: 68.27
L: 5.07
Mar 16 3:00 AM
Mar 16 9:15 AM
Mar 17 4:00 AM
Mar 17 10:15 AM
Mar 17 4:30 PM
Mar 17 10:45 PM
Mar 18 5:30 PM
Mar 18 11:45 PM

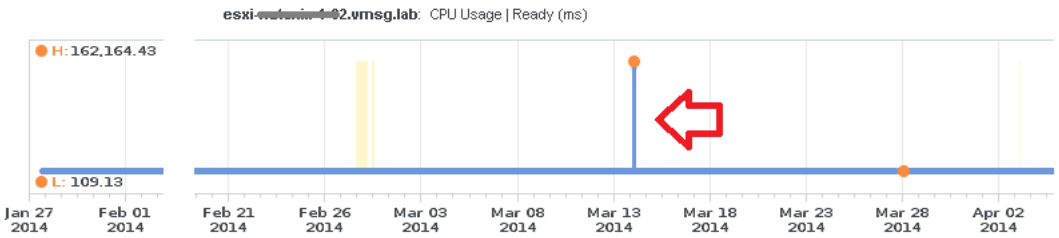

vmsgesxi002.vmsg.lab: CPU Usage | Demand (%)
H: 30.02
L: 5.53
Mar 16 3:00 AM
Mar 16 9:15 AM
Mar 17 4:00 AM
Mar 17 10:15 AM
Mar 17 4:30 PM
Mar 17 10:45 PM
Mar 18 5:30 PM
Mar 18 11:45 PM

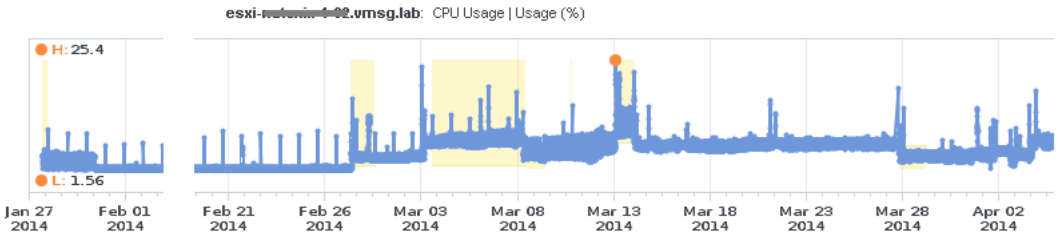

vmsgesxi009.vmsg.lab: CPU Usage | CPU Contention (%)
H: 2.38
L: 0.08
Apr 04 1:56 PM
Apr 04 2:31 PM
Apr 04 3:06 PM
Apr 04 3:41 PM
Apr 04 4:16 PM
Apr 04 4:51 PM
Apr 04 5:26 PM
Apr 04 6:01 PM
Apr 04 6:36 PM

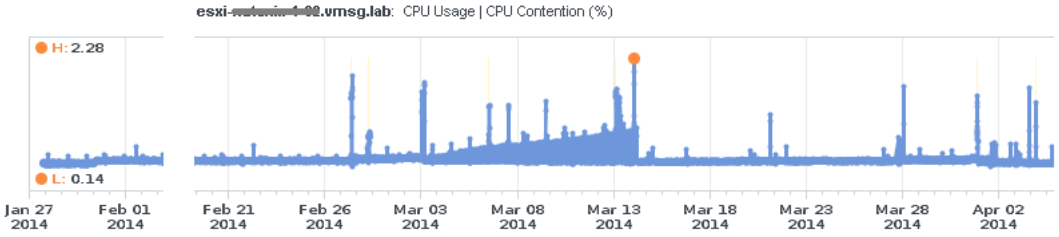

vmsgesxi009.vmsg.lab: CPU Usage | Ready (ms)
H: 567.87
L: 4.64
Apr 04 1:56 PM
Apr 04 2:31 PM
Apr 04 3:06 PM
Apr 04 3:41 PM
Apr 04 4:16 PM
Apr 04 4:51 PM
Apr 04 5:26 PM
Apr 04 6:01 PM
Apr 04 6:36 PM

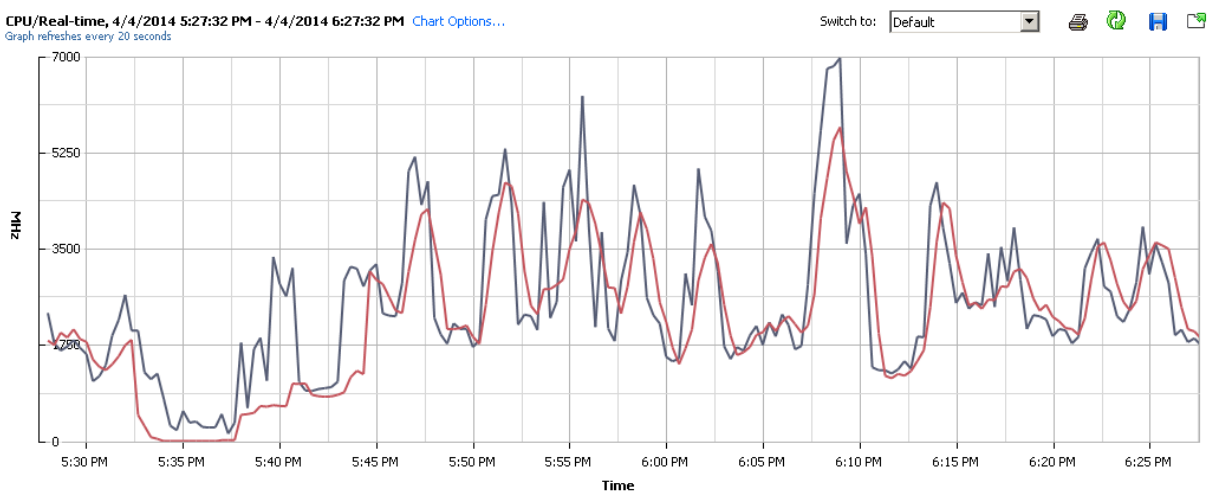

vmsgesxi011.vmsg.lab: CPU Usage | CPU Contention (%)
H: 1.49
L: 0.33
Mar 05 8:05 PM
Mar 07 11:17 PM
Mar 10 2:29 AM
Mar 12 5:41 AM
Mar 14 8:53 AM
Mar 16 12:05 PM
Mar 18 3:17 PM
Mar 20 6:29 PM
Mar 22 9:41 PM
Mar 25 12:53 AM
Mar 27 4:05 AM


vmsgesxi011.vmsg.lab: CPU Usage | Ready (ms)
H: 111,977.79
L: 460
Mar 05 8:05 PM
Mar 07 11:17 PM
Mar 10 2:29 AM
Mar 12 5:41 AM
Mar 14 8:53 AM
Mar 16 12:05 PM
Mar 18 3:17 PM
Mar 20 6:29 PM
Mar 22 9:41 PM
Mar 25 12:53 AM
Mar 27 4:05 AM


esxi-[redacted].vmsg.lab: CPU Usage | Ready (ms)
H: 162,164.43
L: 109.13
Jan 27 2014
Feb 01 2014
Feb 21 2014
Feb 26 2014
Mar 03 2014
Mar 08 2014
Mar 13 2014
Mar 18 2014
Mar 23 2014
Mar 28 2014
Apr 02 2014

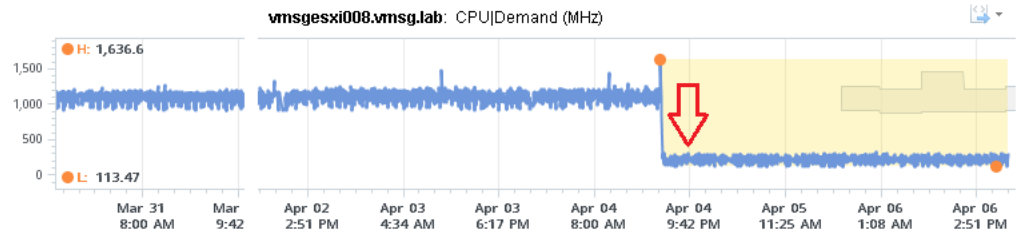

esxi-[redacted].vmsg.lab: CPU Usage | Usage (%)
H: 25.4
L: 1.56
Jan 27 2014
Feb 01 2014
Feb 21 2014
Feb 26 2014
Mar 03 2014
Mar 08 2014
Mar 13 2014
Mar 18 2014
Mar 23 2014
Mar 28 2014
Apr 02 2014

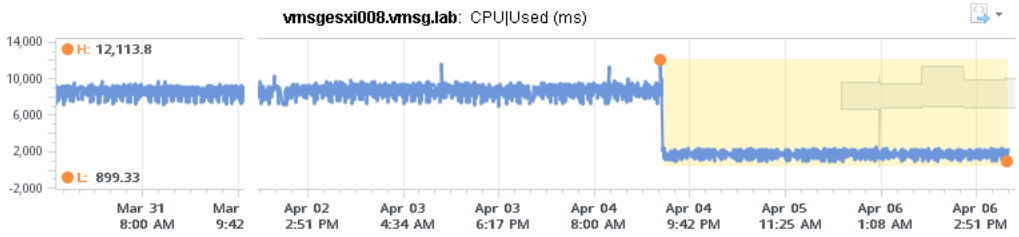

esxi-[redacted].vmsg.lab: CPU Usage | CPU Contention (%)
H: 2.28
L: 0.14
Jan 27 2014
Feb 01 2014
Feb 21 2014
Feb 26 2014
Mar 03 2014
Mar 08 2014
Mar 13 2014
Mar 18 2014
Mar 23 2014
Mar 28 2014
Apr 02 2014

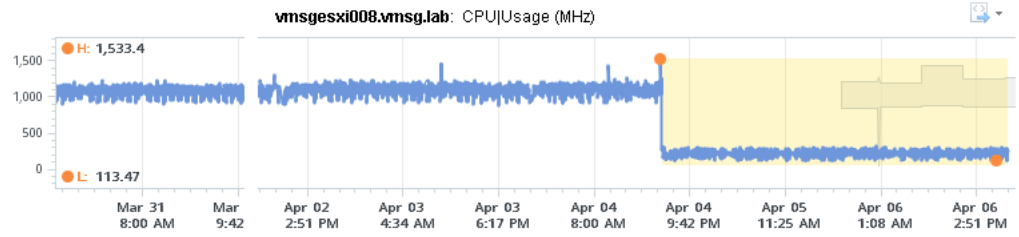


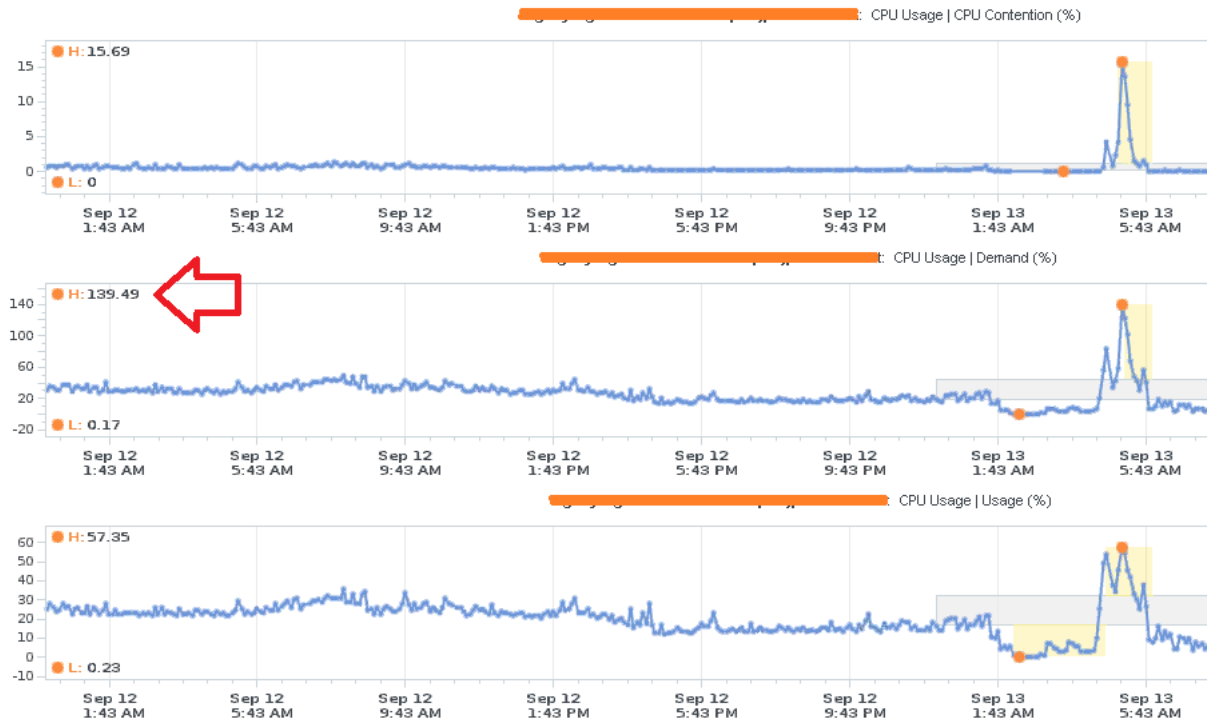
Performance Chart Legend

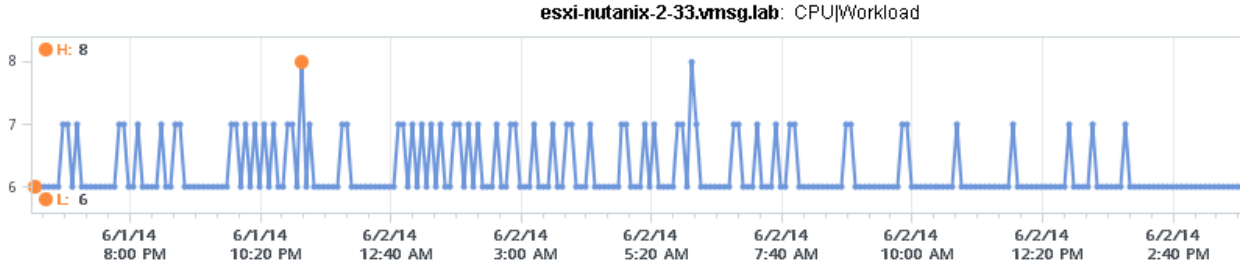
Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	vmsgesxi009.vm...	Usage in MHz	Average	MHz	1756	6992	139	2507.439
	vmsgesxi009.vm...	Demand	Average	MHz	1877	5728	0	2289.5

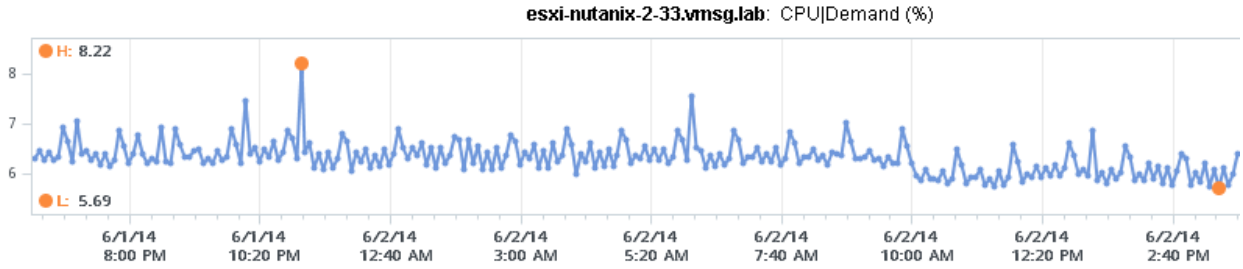


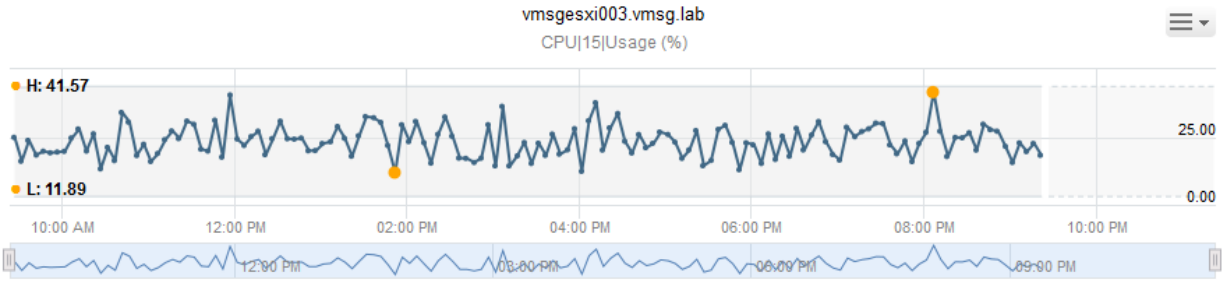


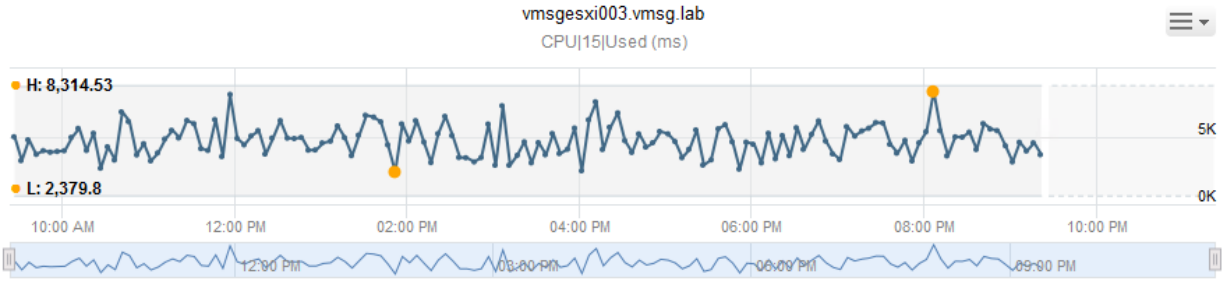



[redacted]: CPU Usage | CPU Contention (%)
H: 15.69
L: 0
15
10
5
0
Sep 12 1:43 AM
Sep 12 5:43 AM
Sep 12 9:43 AM
Sep 12 1:43 PM
Sep 12 5:43 PM
Sep 12 9:43 PM
Sep 13 1:43 AM
Sep 13 5:43 AM
[redacted]: CPU Usage | Demand (%)
H: 139.49
L: 0.17
140
100
60
20
-20
Sep 12 1:43 AM
Sep 12 5:43 AM
Sep 12 9:43 AM
Sep 12 1:43 PM
Sep 12 5:43 PM
Sep 12 9:43 PM
Sep 13 1:43 AM
Sep 13 5:43 AM
[redacted]: CPU Usage | Usage (%)
H: 57.35
L: 0.23
60
50
40
30
20
10
0
-10
Sep 12 1:43 AM
Sep 12 5:43 AM
Sep 12 9:43 AM
Sep 12 1:43 PM
Sep 12 5:43 PM
Sep 12 9:43 PM
Sep 13 1:43 AM
Sep 13 5:43 AM


esxi-nutanix-2-33.vmsg.lab: CPU|Workload
H: 8
L: 6
8
7
6
6/1/14 8:00 PM
6/1/14 10:20 PM
6/2/14 12:40 AM
6/2/14 3:00 AM
6/2/14 5:20 AM
6/2/14 7:40 AM
6/2/14 10:00 AM
6/2/14 12:20 PM
6/2/14 2:40 PM

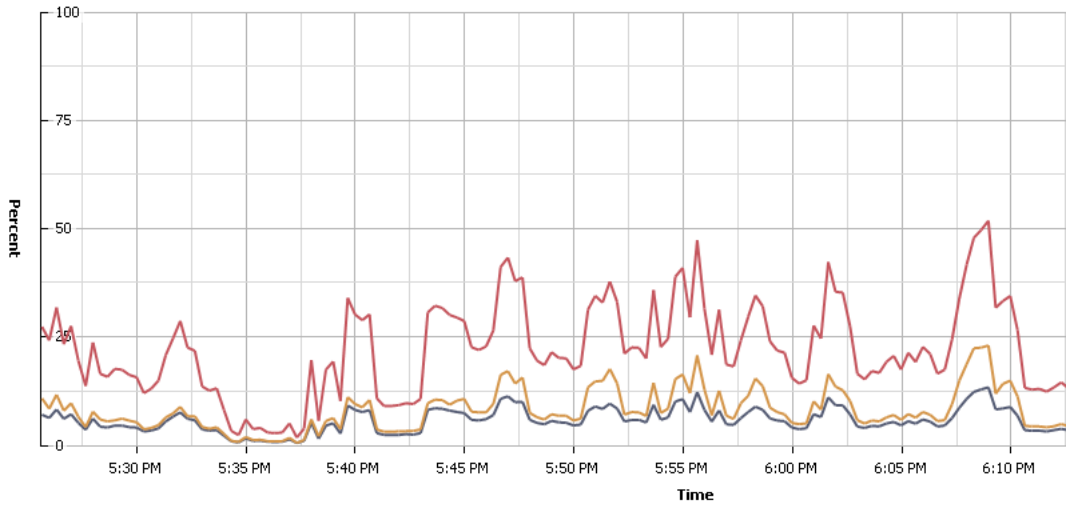

esxi-nutanix-2-33.vmsg.lab: CPU|Demand (%)
H: 8.22
L: 5.69
8
7
6
6/1/14 8:00 PM
6/1/14 10:20 PM
6/2/14 12:40 AM
6/2/14 3:00 AM
6/2/14 5:20 AM
6/2/14 7:40 AM
6/2/14 10:00 AM
6/2/14 12:20 PM
6/2/14 2:40 PM





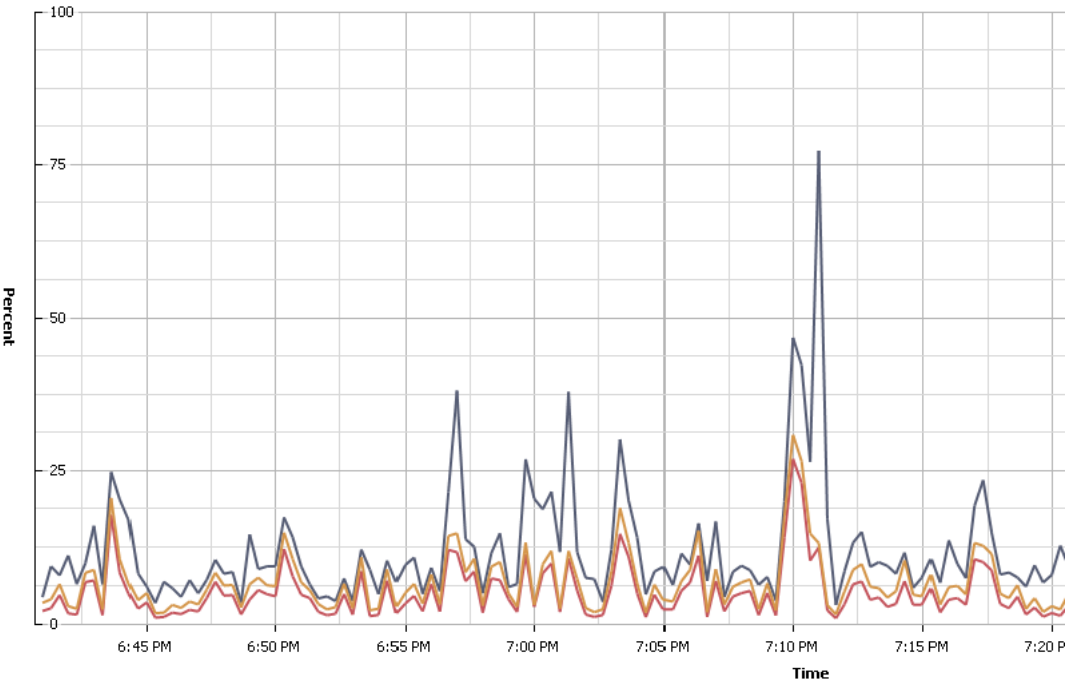
Performance Chart Legend

Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	vmsgesxi008.vmsg.lab	Idle	Summation	Millisecond	239491	272963	193363	236386.13
	vmsgesxi008.vmsg.lab	Used	Summation	Millisecond	515	19504	515	3605.439
	vmsgesxi008.vmsg.lab	Wait	Summation	Millisecond	0	215551	0	110535.71



Performance Chart Legend

Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	vmsgesxi009.vm...	Utilization	Average	Percent	7.6	13.32	0.43	5.894
	vmsgesxi009.vm...	Core Utilization	Average	Percent	29.88	51.86	1.69	22.88
	vmsgesxi009.vm...	Usage	Average	Percent	10.72	23	0.45	8.313



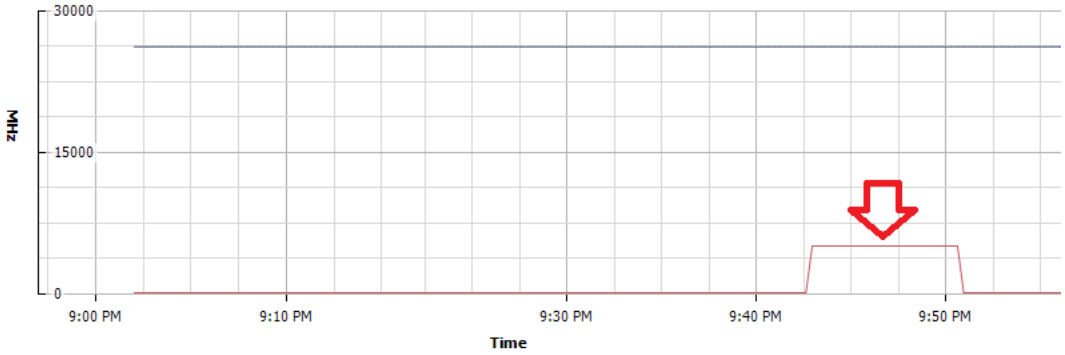
Performance Chart Legend

Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	0	Core Utilization	Average	Percent	14.72	77.41	2.5	11.32
	0	Usage	Average	Percent	8.07	26.91	0.82	4.838
	0	Utilization	Average	Percent	10.56	30.84	1.46	6.526

CPU/Real-time, 12/31/2015 8:56:56 PM - 12/31/2015 9:56:56 PM Chart Options...

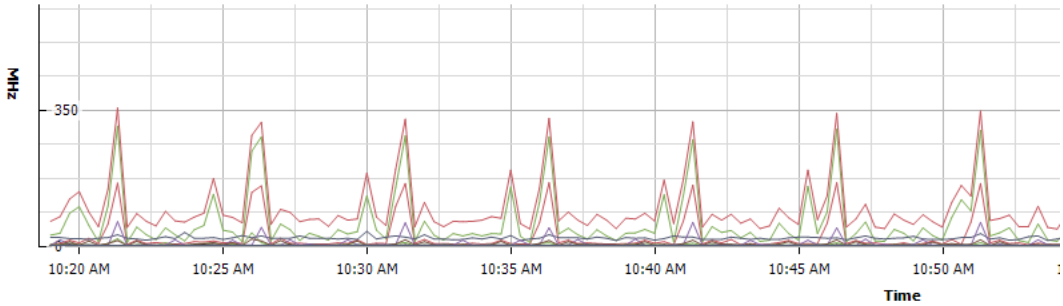
Switch to: CPU

Graph refreshes every 20 seconds



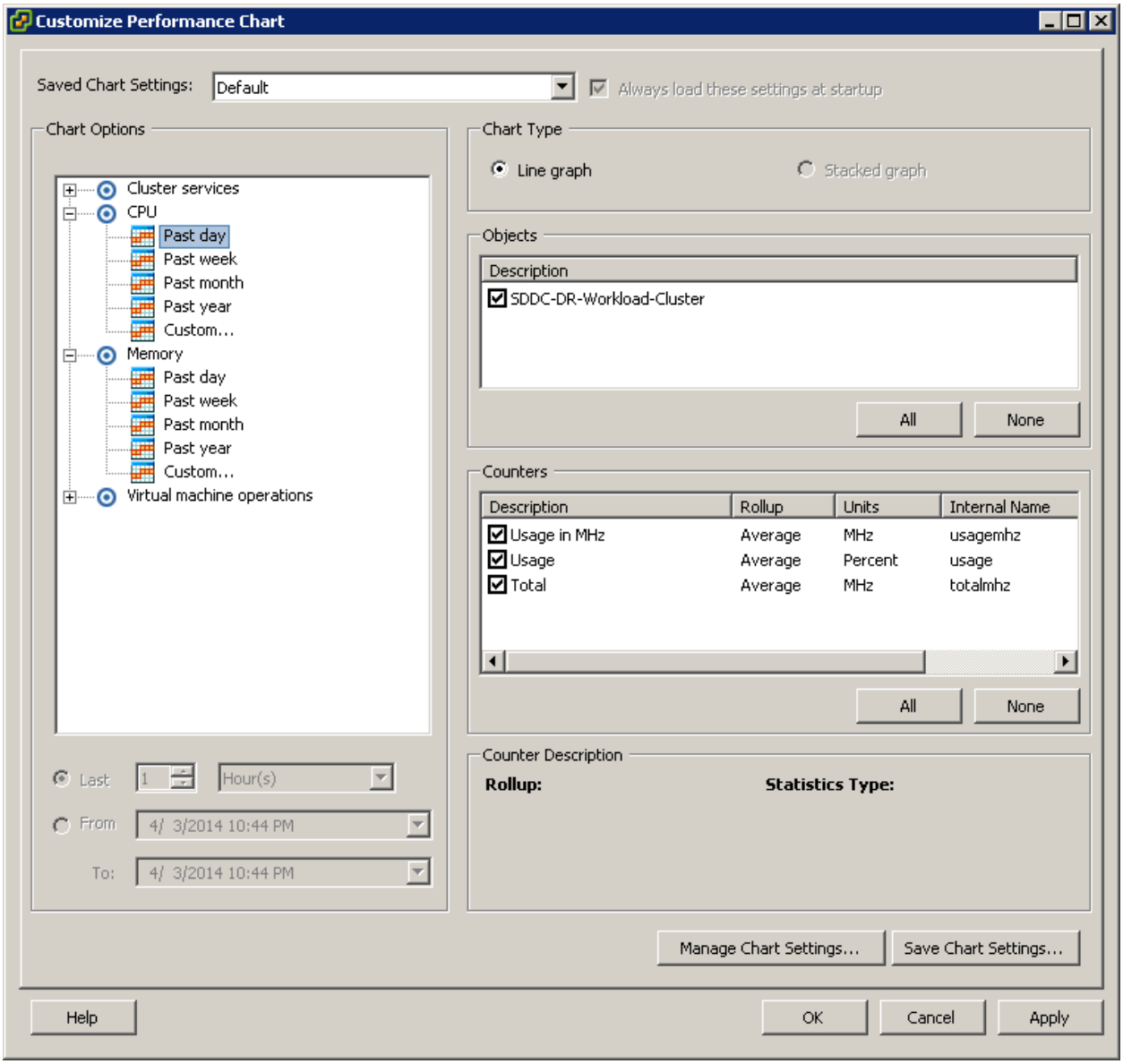
Performance Chart Legend

Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	vmsgesxi008.vmsg.lab	Total capacity	Average	MHz	26218	26218	26218	26218
	vmsgesxi008.vmsg.lab	Reserved capacity	Average	MHz	0	5000	0	666.667

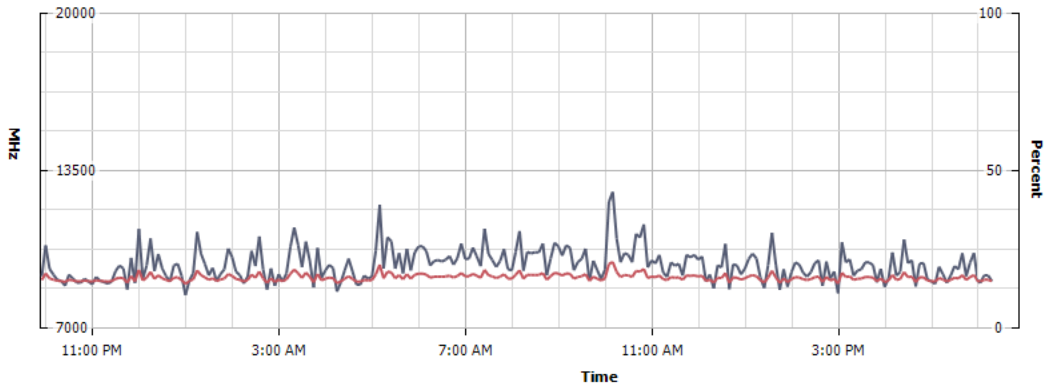


Performance Chart Legend

Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	host/vim/vimuser/terminal/ssh	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/vim/vmvisor/wsman	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/vim/vimuser/terminal/shell	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/vim/vmvisor/vsanvpd **VSAN**	Resource CPU usage (Average)	Average	MHz	0	2	0	0.25
	host/vim/vmvisor/vsantraced	Resource CPU usage (Average)	Average	MHz	0	1	0	0.017
	host/vim/vmvisor/vobd	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/vim/vmvisor/vmkeventd	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/vim/vmvisor/vvold	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/vim/vmvisor/sioc	Resource CPU usage (Average)	Average	MHz	0	1	0	0.044
	host/vim/vmvisor/vprobed	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/vim/vmvisor/osfsd **OSFS**	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/vim/vmvisor/nfsgssd	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/vim/vmvisor/likewise	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/vim/vmvisor/hostd	Resource CPU usage (Average)	Average	MHz	5	566	2	24.889
	host/vim/vmvisor/ntpd	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/vim/vmvisor/lacpd	Resource CPU usage (Average)	Average	MHz	0	1	0	0.028
	host/vim	Resource CPU usage (Average)	Average	MHz	14	606	8	64.111
	host/system/svmotion	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/vim/vmvisor/dcui	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/system/ft	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/system/drivers	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/vim/vmvisor/ddecomd	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/system/kernel	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/vim/vmvisor/snmpd	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/system	Resource CPU usage (Average)	Average	MHz	22	62	13	20.022
	host	Resource CPU usage (Average)	Average	MHz	49	653	43	103.378
	host/vim/vmvisor/memScrubber	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/vim/vmci	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/vim/vmvisor/logging	Resource CPU usage (Average)	Average	MHz	0	33	0	2.367
	host/vim/vmvisor/init	Resource CPU usage (Average)	Average	MHz	1	102	0	7.128
	host/vim/vmvisor/vmkdevmgr	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/vim/vmvisor/domd **CLOMD**	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/system/vmotion	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/vim/vmvisor/vpxa **VPXA**	Resource CPU usage (Average)	Average	MHz	0	17	0	3.856
	host/vim/vmvisor/aam	Resource CPU usage (Average)	Average	MHz	2	2	0	0.561
	host/vim/vmvisor/dhdient	Resource CPU usage (Average)	Average	MHz	0	0	0	0
	host/vim/vmvisor/vsandevicemonitord	Resource CPU usage (Average)	Average	MHz	0	0	0	0

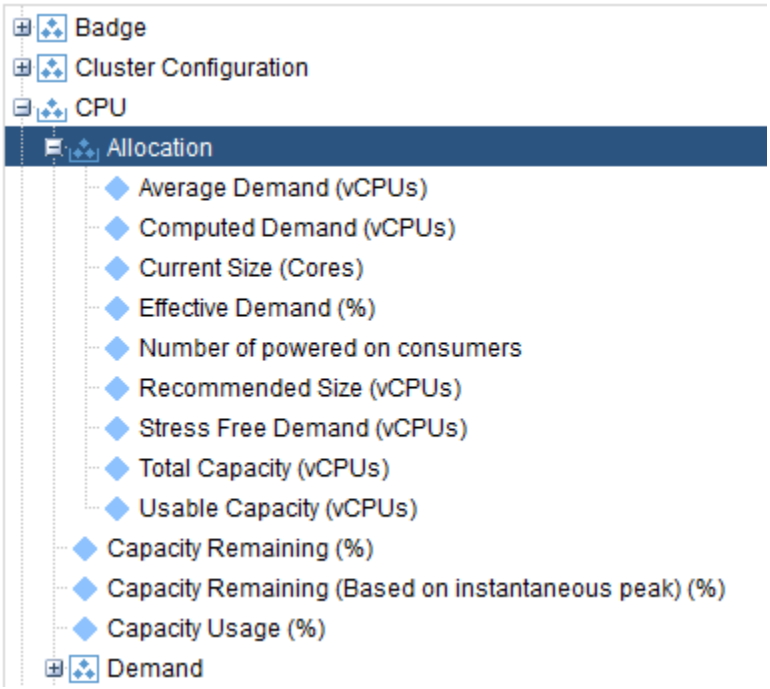

Customize Performance Chart
Saved Chart Settings:
Default
Always load these settings at startup
Chart Options
Cluster services
CPU
Past day
Past week
Past month
Past year
Custom...
Memory
Past day
Past week
Past month
Past year
Custom...
Virtual machine operations
Last
1
Hour(s)
From
4/ 3/2014 10:44 PM
To:
4/ 3/2014 10:44 PM
Chart Type
Line graph
Stacked graph
Objects
Description
SDDC-DR-Workload-Cluster
All
None
Counters
Description
Rollup
Units
Internal Name
Usage in MHz
Average
MHz
usagemhz
Usage
Average
Percent
usage
Total
Average
MHz
totalmhz
All
None
Counter Description
Rollup:
Statistics Type:
Manage Chart Settings...
Save Chart Settings...
Help
OK
Cancel
Apply

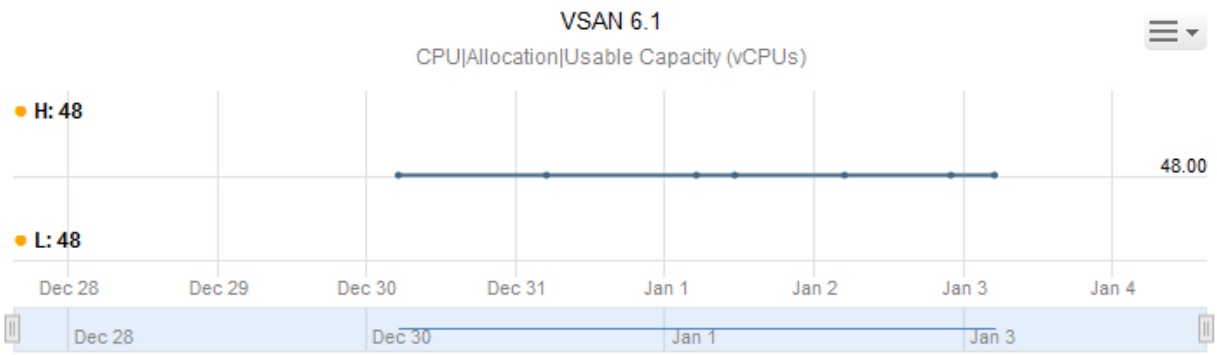
CPU/Past day, 12/30/2015 9:53:17 PM - 12/31/2015 9:53:17 PM Chart Options...

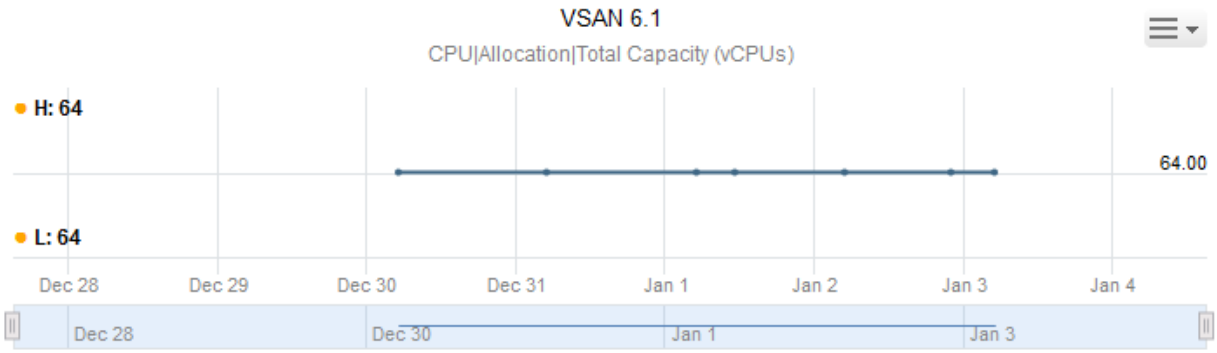


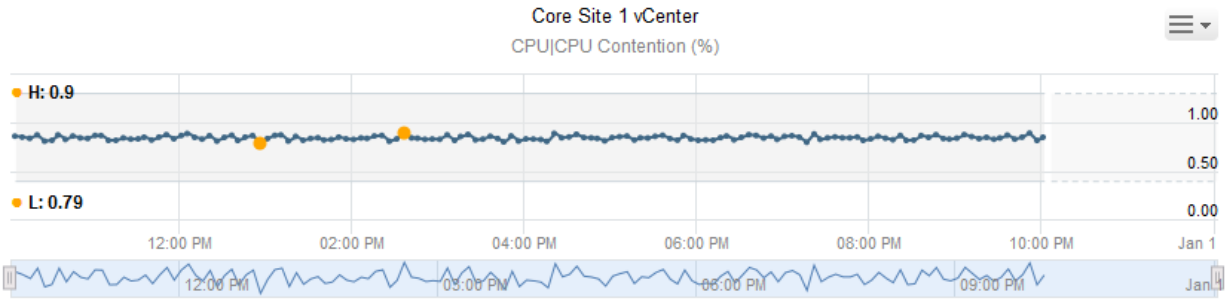
Performance Chart Legend

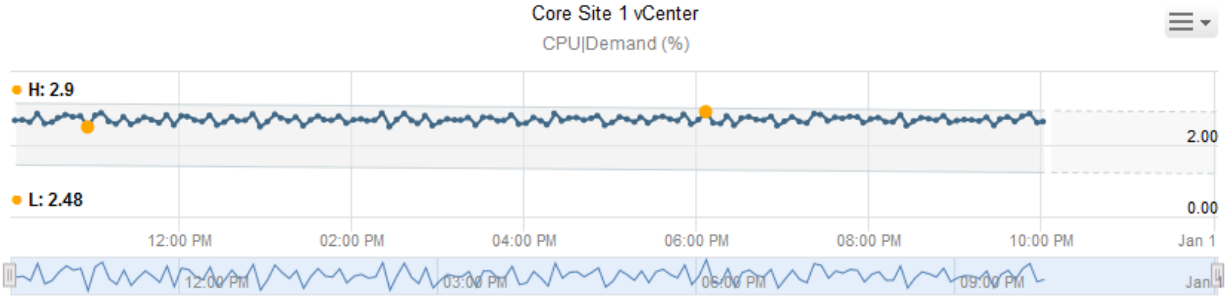
Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	Site 2 Workload Cluster	Usage in MHz	Average	MHz	8891	12598	8321	9554.074
	Site 2 Workload Cluster	Usage	Average	Percent	14.62	20.72	13.68	15.71



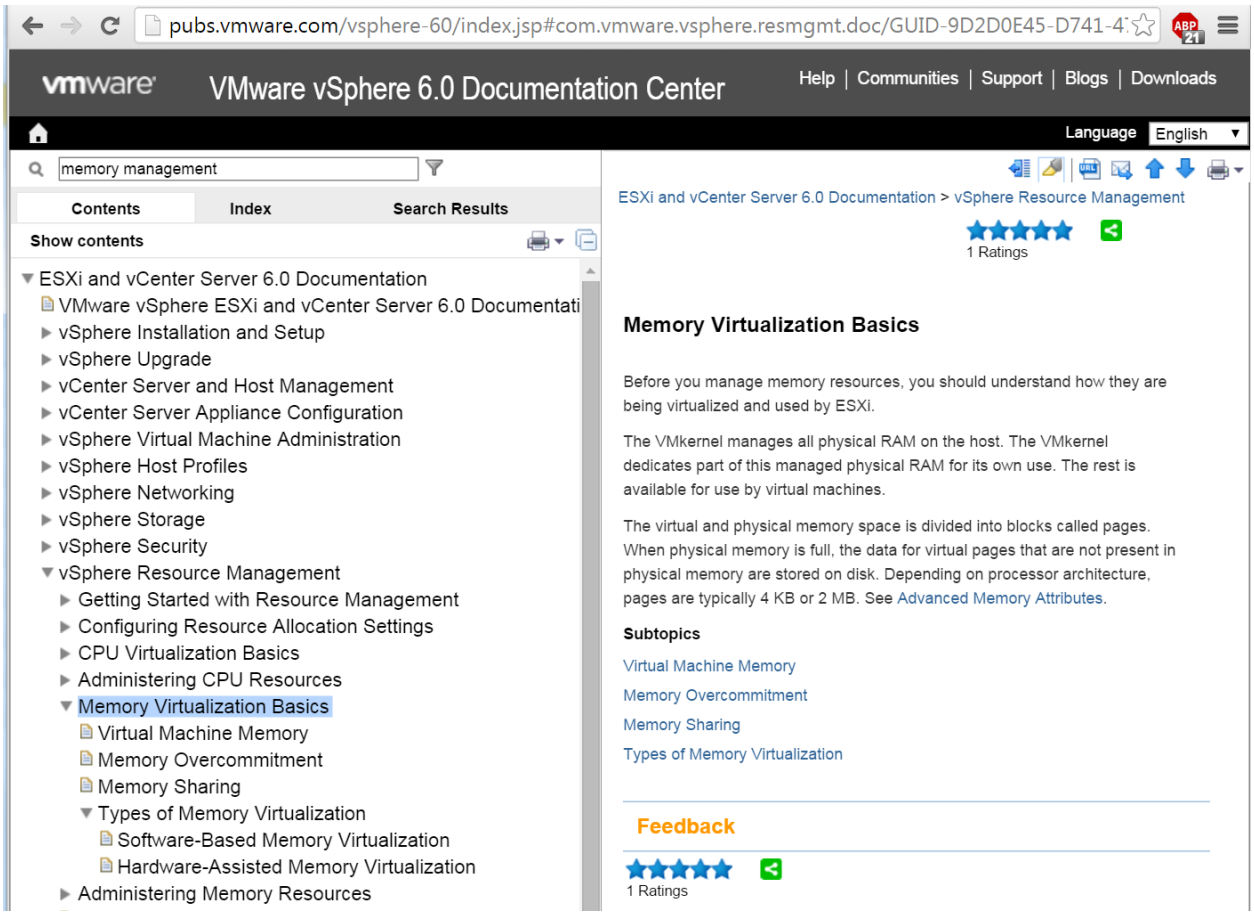

VSAN 6.1
CPU|Allocation|Usable Capacity (vCPUs)
H: 48
L: 48
48.00
Dec 28
Dec 29
Dec 30
Dec 31
Jan 1
Jan 2
Jan 3
Jan 4

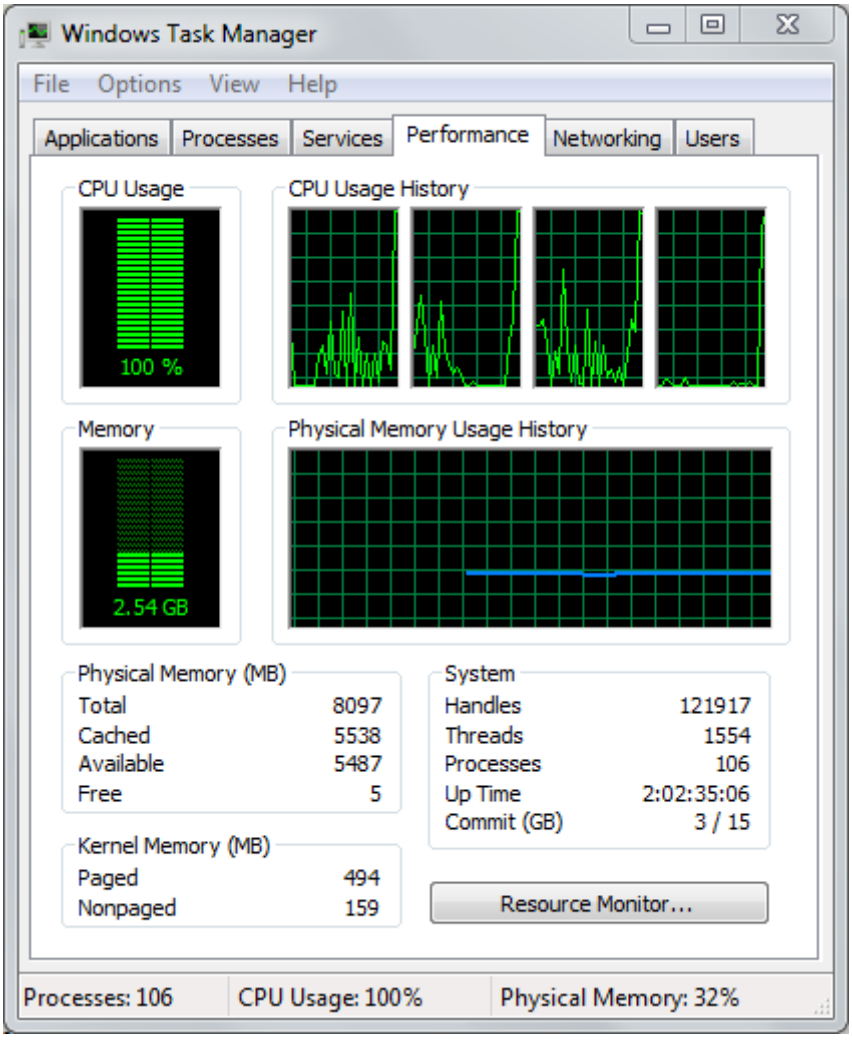

VSAN 6.1
CPU|Allocation|Total Capacity (vCPUs)
H: 64
L: 64
64.00
Dec 28
Dec 29
Dec 30
Dec 31
Jan 1
Jan 2
Jan 3
Jan 4

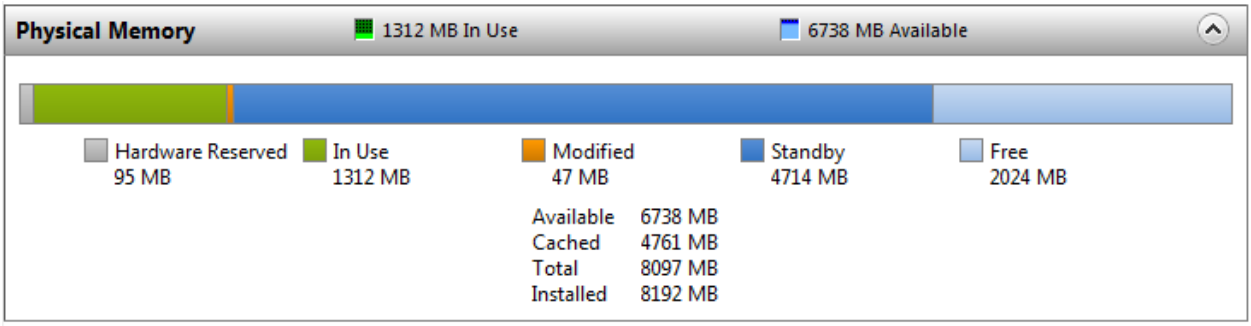

Core Site 1 vCenter
CPU|CPU Contention (%)
H: 0.9
L: 0.79
1.00
0.50
0.00
12:00 PM
02:00 PM
04:00 PM
06:00 PM
08:00 PM
10:00 PM
Jan 1

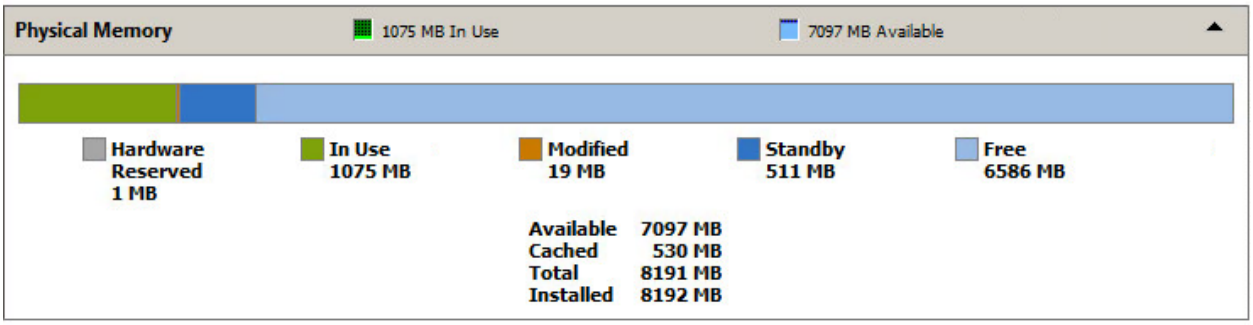

Core Site 1 vCenter
CPU|Demand (%)
H: 2.9
L: 2.48
2.00
0.00
12:00 PM
02:00 PM
04:00 PM
06:00 PM
08:00 PM
10:00 PM
Jan 1

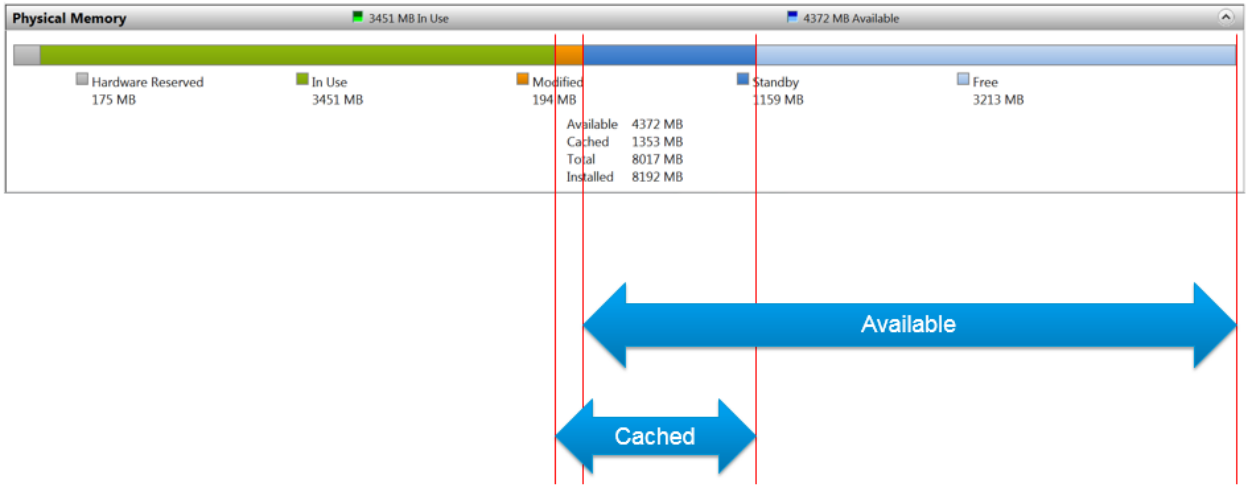
Chapter 13: Memory Counters

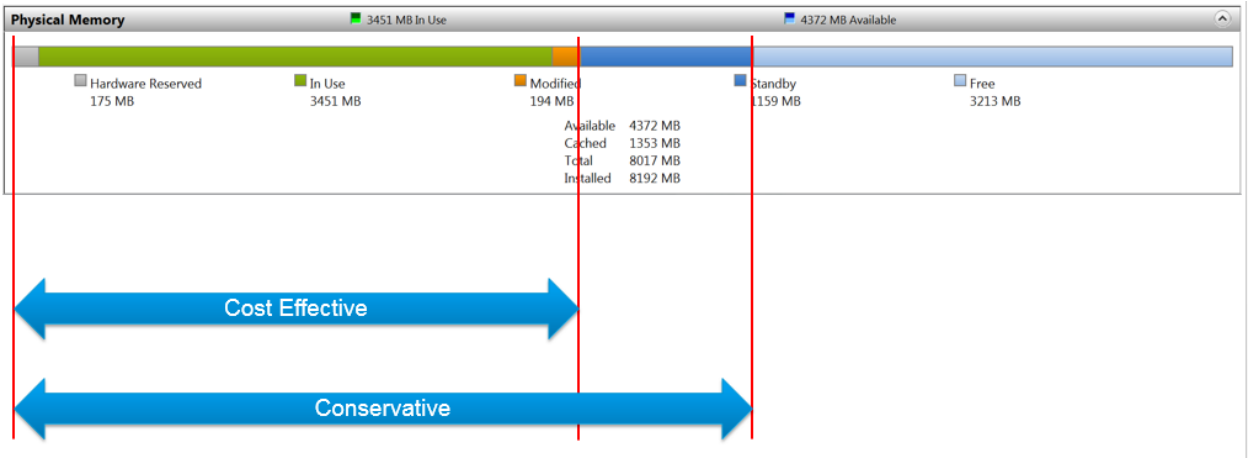


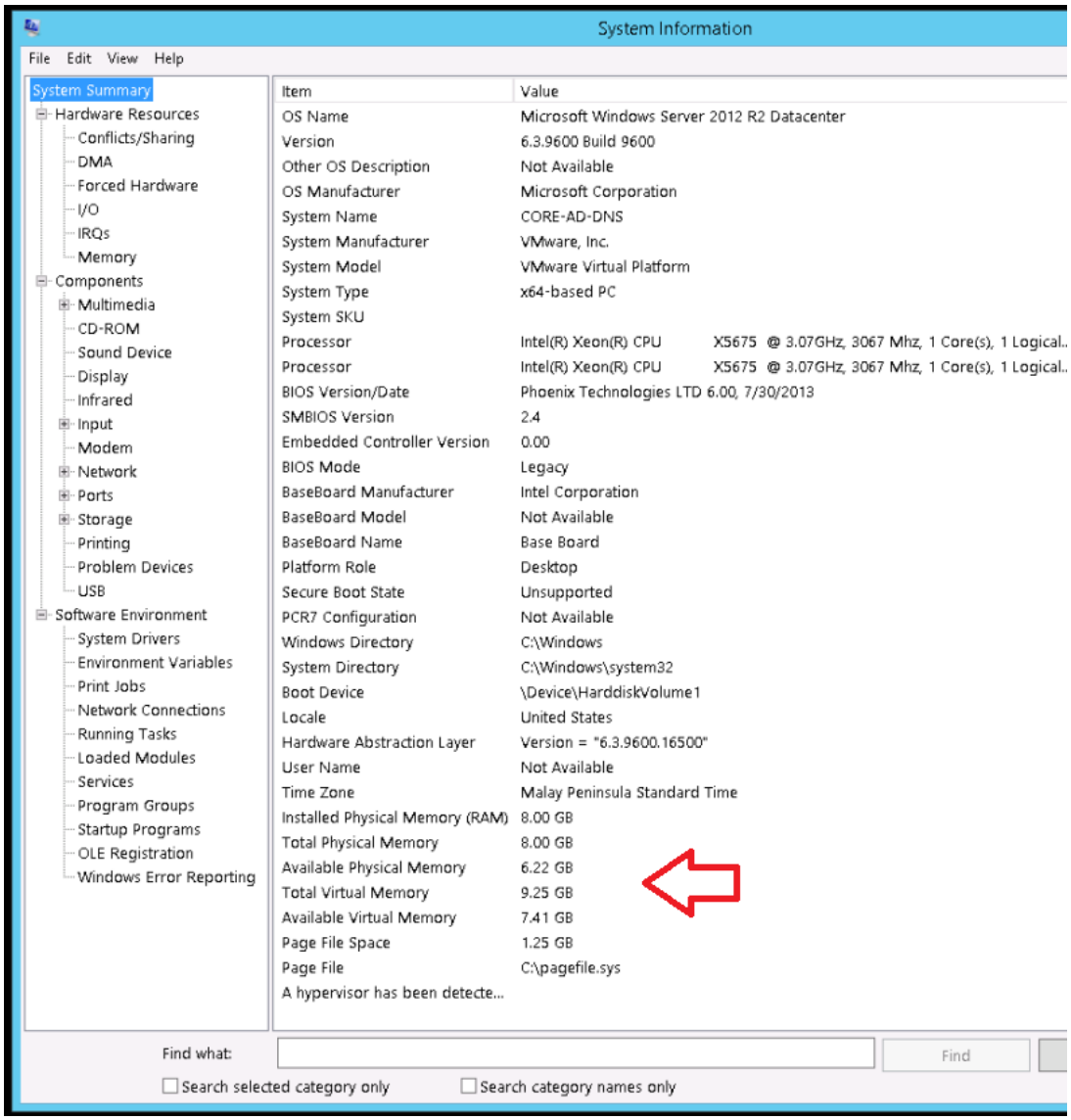

Windows Task Manager
File Options View Help
Applications Processes Services Performance Networking Users
CPU Usage
100 %
CPU Usage History
Memory
2.54 GB
Physical Memory Usage History
Physical Memory (MB)
Total 8097
Cached 5538
Available 5487
Free 5
Kernel Memory (MB)
Paged 494
Nonpaged 159
System
Handles 121917
Threads 1554
Processes 106
Up Time 2:02:35:06
Commit (GB) 3 / 15
Resource Monitor...
Processes: 106
CPU Usage: 100%
Physical Memory: 32%

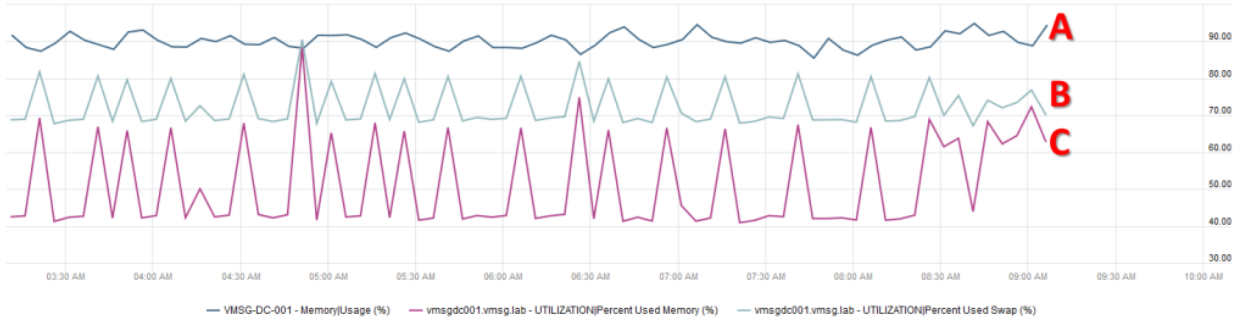

Physical Memory
1312 MB In Use
6738 MB Available
Hardware Reserved 95 MB
In Use 1312 MB
Modified 47 MB
Standby 4714 MB
Free 2024 MB
Available 6738 MB
Cached 4761 MB
Total 8097 MB
Installed 8192 MB


Physical Memory
1075 MB In Use
7097 MB Available
Hardware Reserved 1 MB
In Use 1075 MB
Modified 19 MB
Standby 511 MB
Free 6586 MB
Available 7097 MB
Cached 530 MB
Total 8191 MB
Installed 8192 MB

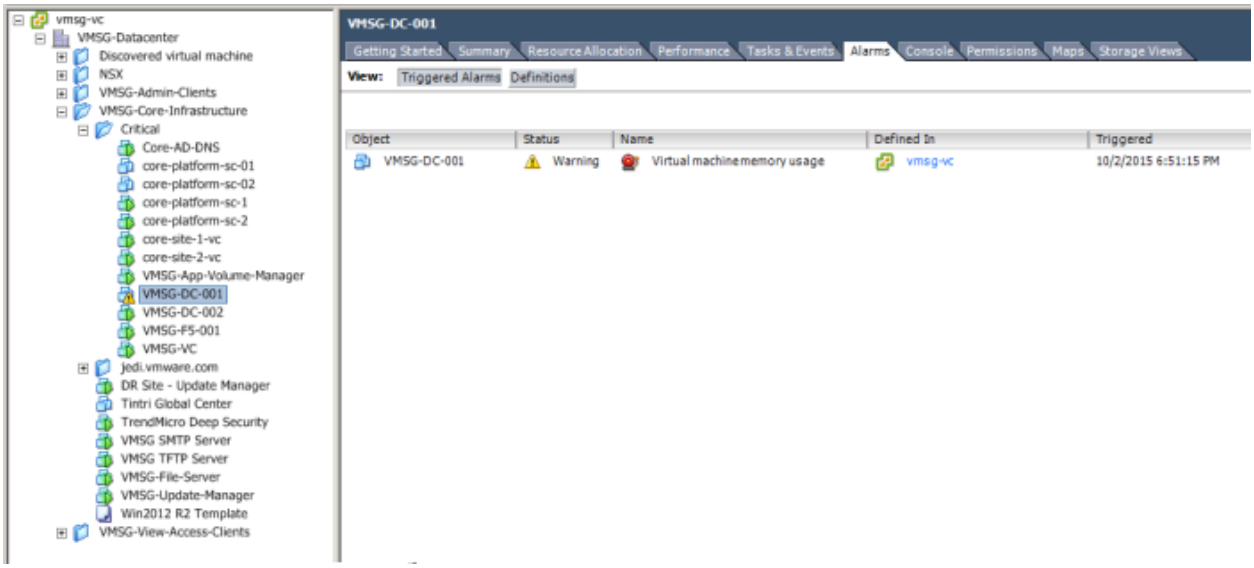

Physical Memory
3451 MB In Use
4372 MB Available
Hardware Reserved 175 MB
In Use 3451 MB
Modified 194 MB
Standby 1159 MB
Free 3213 MB
Available 4372 MB
Cached 1353 MB
Total 8017 MB
Installed 8192 MB
Available
Cached

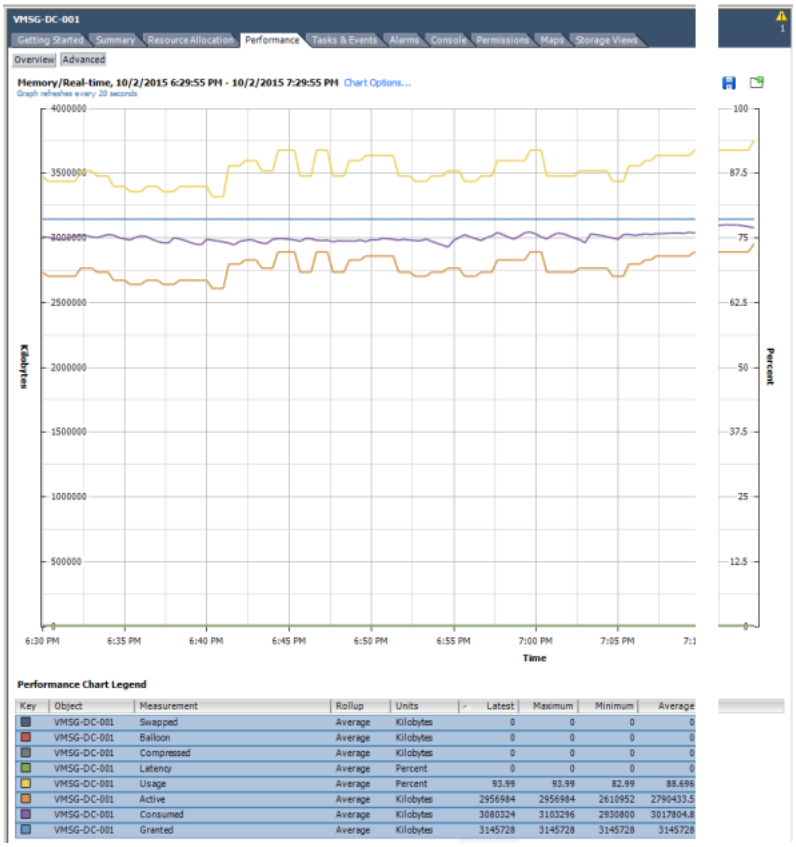

Physical Memory
3451 MB In Use
4372 MB Available
Hardware Reserved 175 MB
In Use 3451 MB
Modified 194 MB
Standby 1159 MB
Free 3213 MB
Available 4372 MB
Cached 1353 MB
Total 8017 MB
Installed 8192 MB
Cost Effective
Conservative



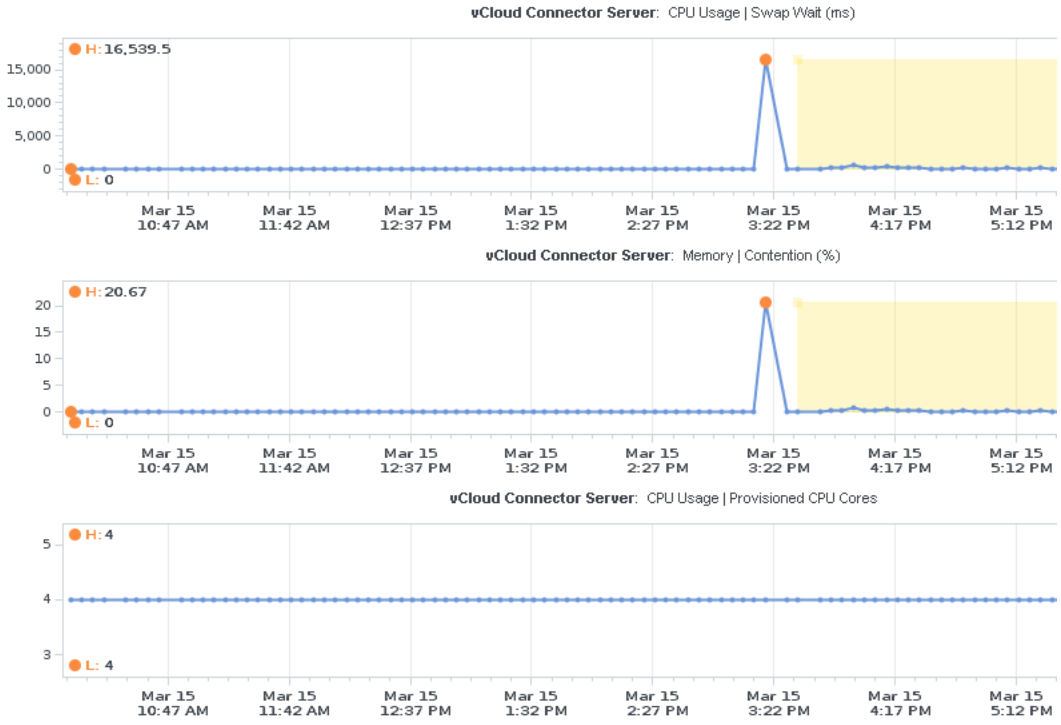


A is Memory Usage from vCenter.
B is Memory Swap Used from Windows 2008 R2.
C is Memory Used from Windows 2008 R2.

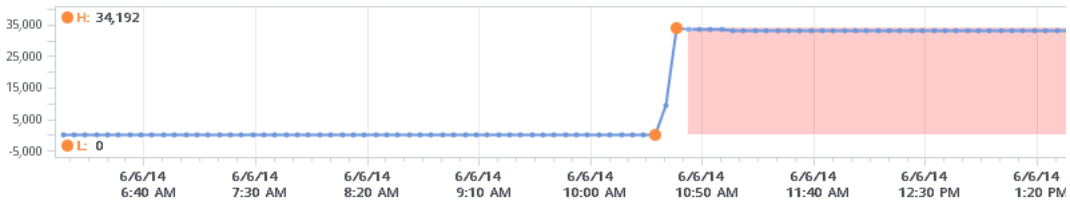

vmsg-vc
VMSG-Datacenter
Discovered virtual machine
NSX
VMSG-Admin-Clients
VMSG-Core-Infrastructure
Critical
Core-AD-DNS
core-platform-sc-01
core-platform-sc-02
core-platform-sc-1
core-platform-sc-2
core-site-1-vc
core-site-2-vc
VMSG-App-Volume-Manager
VMSG-DC-001
VMSG-DC-002
VMSG-F5-001
VMSG-VC
jedi.vmware.com
DR Site - Update Manager
Tintri Global Center
TrendMicro Deep Security
VMSG SMTP Server
VMSG TFTP Server
VMSG-File-Server
VMSG-Update-Manager
Win2012 R2 Template
VMSG-View-Access-Clients
VMSG-DC-001
Getting Started
Summary
Resource Allocation
Performance
Tasks & Events
Alarms
Console
Permissions
Maps
Storage Views
View:
Triggered Alarms
Definitions
Object
Status
Name
Defined In
Triggered
VMSG-DC-001
Warning
Virtual machine memory usage
vmsg-vc
10/2/2015 6:51:15 PM


VMSG-DC-001
Getting Started
Summary
Resource Allocation
Performance
Tasks & Events
Alarms
Console
Permissions
Maps
Storage Views
Overview
Advanced
Memory/Real-time, 10/2/2015 6:29:55 PM - 10/2/2015 7:29:55 PM
Chart Options...
Graph refreshes every 20 seconds
Kilobytes
Percent
Time
6:30 PM
6:35 PM
6:40 PM
6:45 PM
6:50 PM
6:55 PM
7:00 PM
7:05 PM
Performance Chart Legend
Key
Object
Measurement
Rollup
Units
Latest
Maximum
Minimum
Average
VMSG-DC-001 Swapped Average Kilobytes 0 0 0 0
VMSG-DC-001 Balloon Average Kilobytes 0 0 0 0
VMSG-DC-001 Compressed Average Kilobytes 0 0 0 0
VMSG-DC-001 Latency Average Percent 0 0 0 0
VMSG-DC-001 Usage Average Percent 93.99 93.99 82.99 88.696
VMSG-DC-001 Active Average Kilobytes 2956984 2956984 2610952 2790433.5
VMSG-DC-001 Consumed Average Kilobytes 3080324 3103296 2930800 3017804.8
VMSG-DC-001 Granted Average Kilobytes 3145728 3145728 3145728 3145728

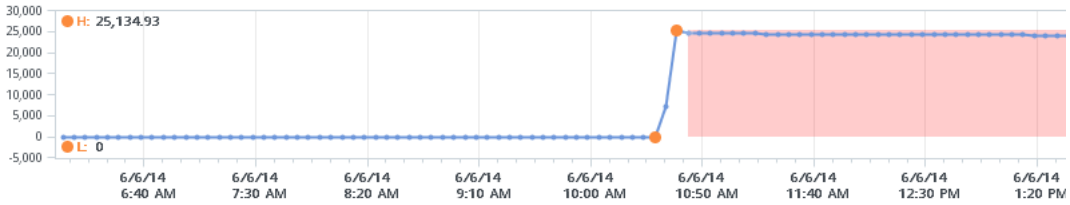
Description	Rollup	Units	Internal Name	Collection Level
☐ Memory saved by zipping	Latest	Kilobytes	zipSaved	2
☐ Decompression rate	Average	KBps	decompressionRate	2
☐ Swapped	Average	Kilobytes	swapped	2
☐ Overhead touched	Average	Kilobytes	overheadTouched	4
☑ Balloon	Average	Kilobytes	vmmemctl	1
☑ Active	Average	Kilobytes	active	2
☐ Shared	Average	Kilobytes	shared	2
☐ Entitlement	Average	Kilobytes	entitlement	2
☐ Host cache used for swapping	Average	Kilobytes	llSwapUsed	4
☐ Active write	Average	Kilobytes	activewrite	2
☐ Reserved overhead	Average	Kilobytes	overheadMax	2
☐ Zipped memory	Latest	Kilobytes	zipped	2
☐ Swap out	Average	Kilobytes	swapout	2
☐ Compressed	Average	Kilobytes	compressed	2
☐ Balloon target	Average	Kilobytes	vmmemctltarget	2
☐ Latency	Average	Percent	latency	2
☐ Swap in rate	Average	KBps	swapinRate	1
☐ Swap in rate from host cache	Average	KBps	llSwapInRate	2
☐ Overhead	Average	Kilobytes	overhead	1
☑ Consumed	Average	Kilobytes	consumed	1
☐ Zero	Average	Kilobytes	zero	2
☐ Swap in	Average	Kilobytes	swapin	2
☐ Compression rate	Average	KBps	compressionRate	2
☐ Swap target	Average	Kilobytes	swaptarget	2
☐ Swap out rate to host cache	Average	KBps	llSwapOutRate	2
☐ Swap out rate	Average	KBps	swapoutRate	1
☑ Granted	Average	Kilobytes	granted	2
☐ Usage	Average	Percent	usage	1



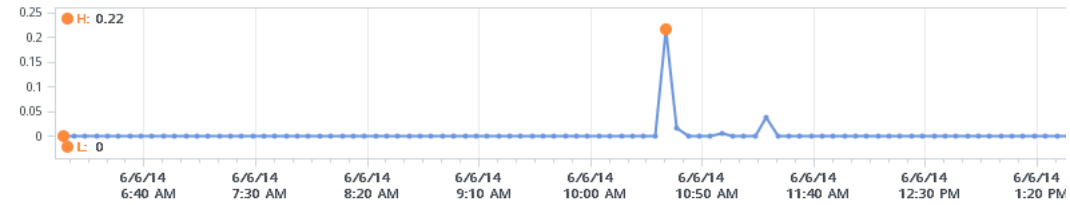
SDDC-vESXi-02: Memory|Swapped (KB)



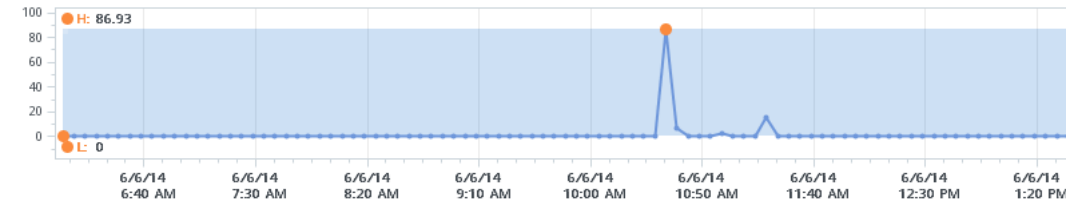
SDDC-vESXi-02: Memory|Zipped (KB)



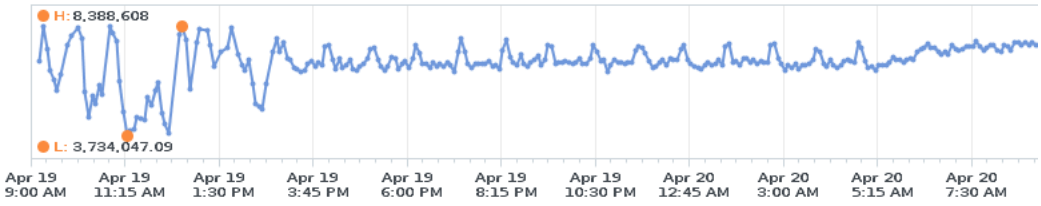
SDDC-vESXi-02: Memory|Contention (%)



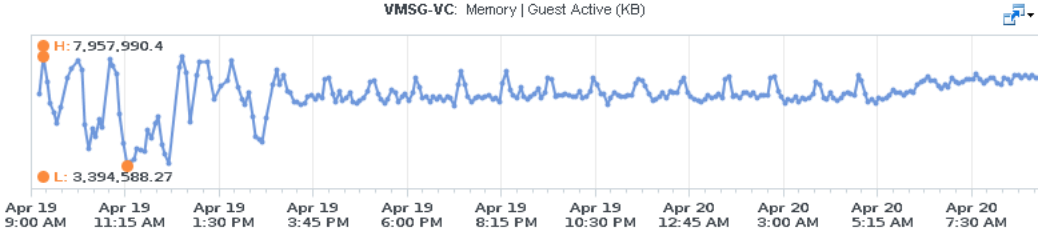
SDDC-vESXi-02: CPU|Swap Wait (ms)



VMSG-VC: Memory | Guest Demand (KB)

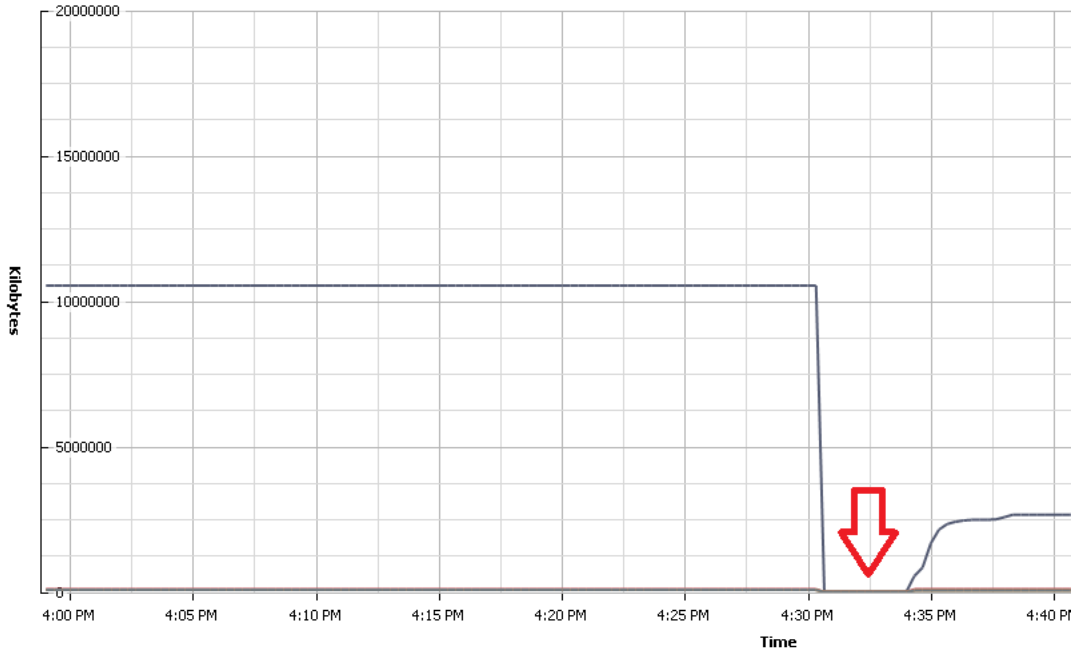


VMSG-VC: Memory | Guest Active (KB)



Memory/Real-time, 4/25/2014 3:58:48 PM - 4/25/2014 4:58:48 PM Chart Options...

Graph refreshes every 20 seconds



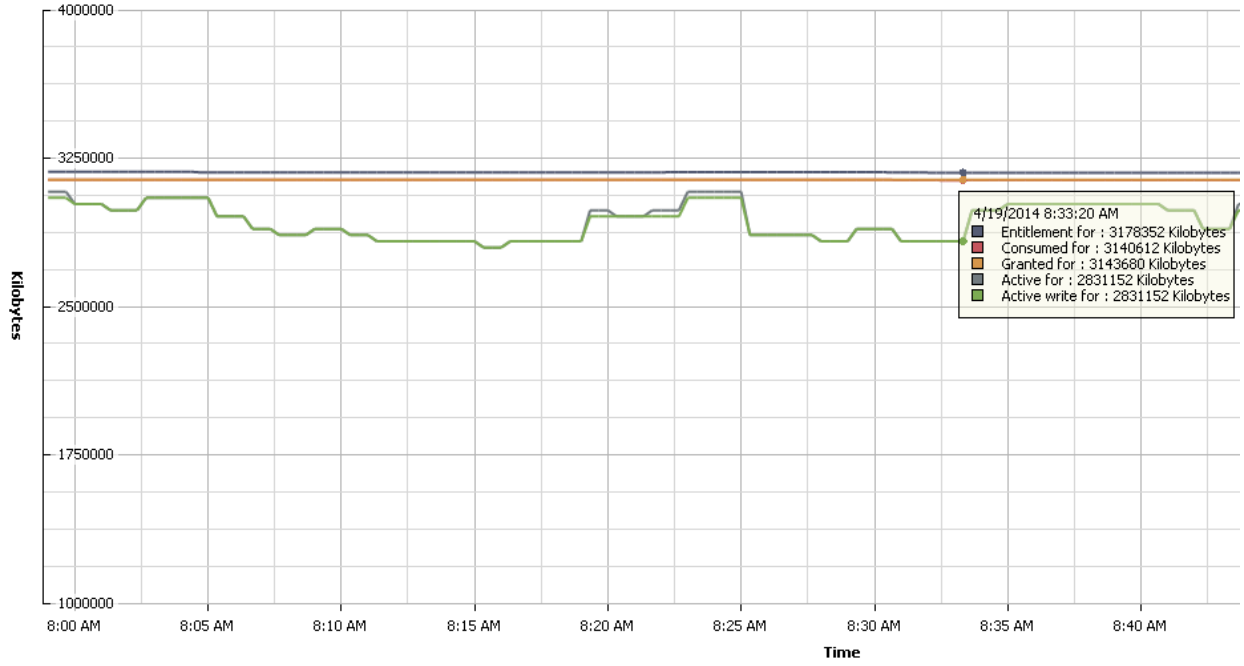
Performance Chart Legend

Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	Log Insight 1.5	Entitlement	Average	Kilobytes	8996204	10557620	0	7616549.9
	Log Insight 1.5	Reserved overhead	Average	Kilobytes	92604	92604	0	92604
	Log Insight 1.5	Overhead touched	Average	Kilobytes	63796	70152	0	62887.077
	Log Insight 1.5	Overhead	Average	Kilobytes	63796	70152	0	62887.077

Memory/Real-time, 4/19/2014 7:58:48 AM - 4/19/2014 8:58:48 AM Chart Options...

Swil

Graph refreshes every 20 seconds

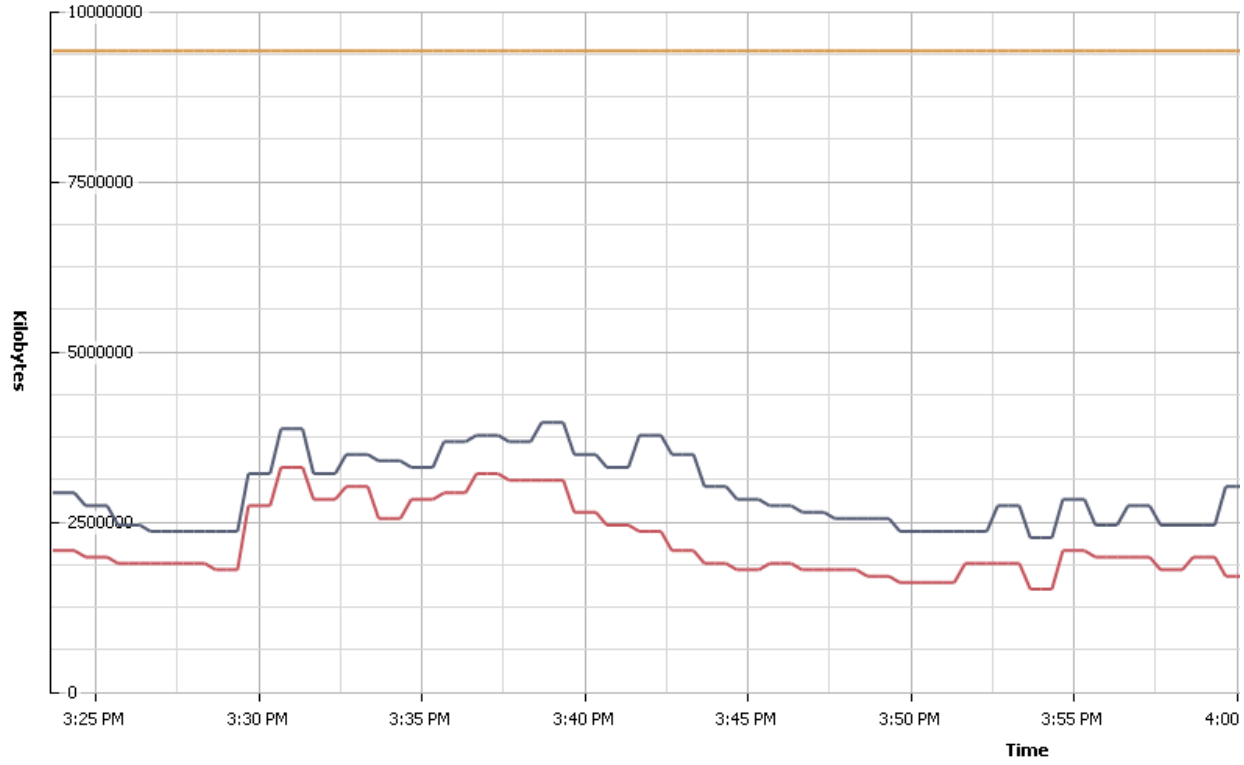


Performance Chart Legend

Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	VMSG-VC	Entitlement	Average	Kilobytes	3178440	3184072	3177640	3180151.9
	VMSG-VC	Consumed	Average	Kilobytes	3140396	3143680	3139836	3142351.4
	VMSG-VC	Granted	Average	Kilobytes	3143680	3143680	3143680	3143680
	VMSG-VC	Active	Average	Kilobytes	2768240	3082812	2768240	2920981.3
	VMSG-VC	Active write	Average	Kilobytes	2768240	3051356	2768240	2916612.4

Memory/Real-time, 4/25/2014 3:23:35 PM - 4/25/2014 4:23:35 PM Chart Options...

Graph refreshes every 20 seconds

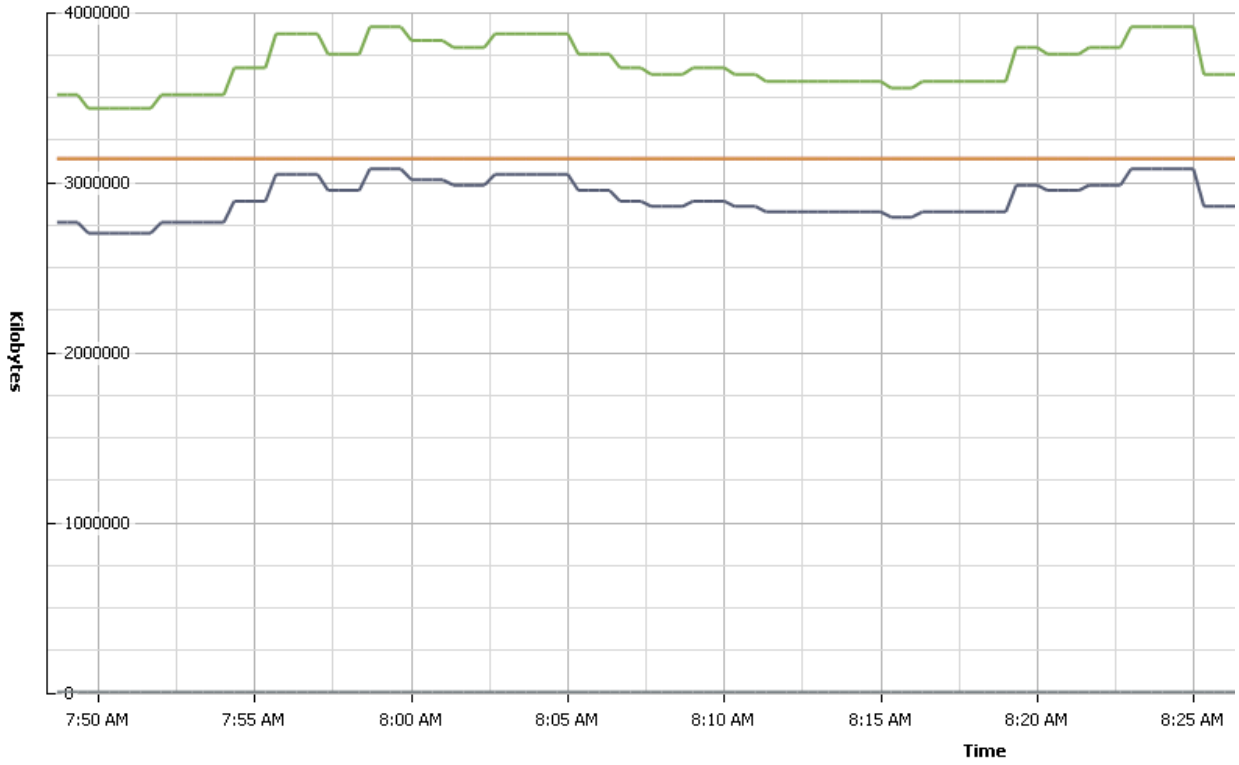


Performance Chart Legend

Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	Analytics VM	Active	Average	Kilobytes	3586128	3963616	2264924	3001546.3
	Analytics VM	Active write	Average	Kilobytes	2170552	3303012	1509948	2075130.4
	Analytics VM	Consumed	Average	Kilobytes	9431040	9431040	9431040	943104(

Memory/Real-time, 4/19/2014 7:48:21 AM - 4/19/2014 8:48:21 AM Chart Options...

Graph refreshes every 20 seconds

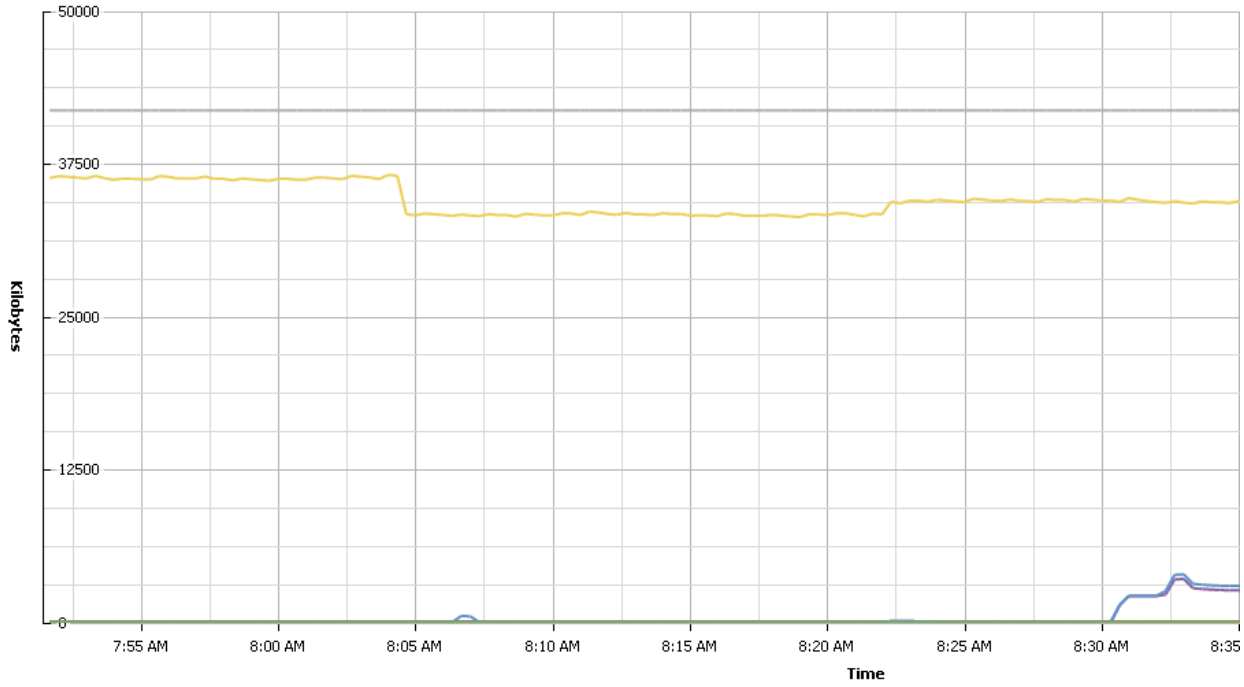


Performance Chart Legend

Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	VMSG-VC	Active	Average	Kilobytes	2988440	3082812	2705324	2920107.6
	VMSG-VC	Granted	Average	Kilobytes	3143680	3143680	3143680	3143680
	VMSG-VC	Consumed	Average	Kilobytes	3141224	3143680	3139836	3142858.7
	VMSG-VC	Balloon	Average	Kilobytes	0	0	0	0
	VMSG-VC	Usage	Average	Percent	94.99	97.99	85.99	92.818

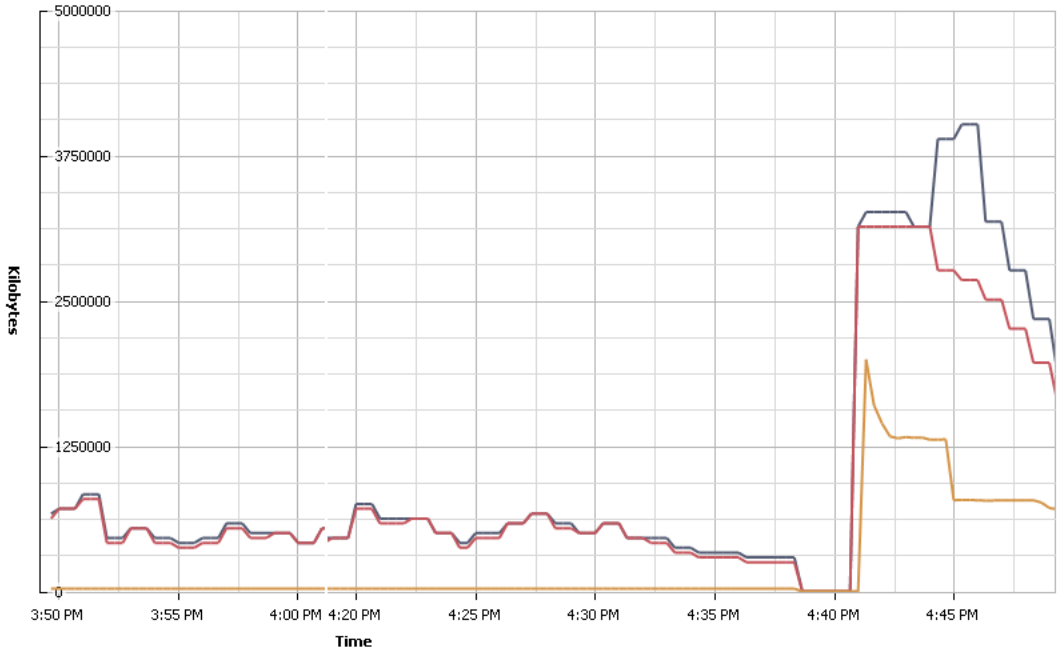
Memory/Real-time, 4/19/2014 7:51:26 AM - 4/19/2014 8:51:26 AM Chart Options...

Graph refreshes every 20 seconds



Performance Chart Legend

Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	VMSG-VC	Swapped	Average	Kilobytes	0	0	0	0
	VMSG-VC	Balloon	Average	Kilobytes	0	0	0	0
	VMSG-VC	Zipped memory	Latest	Kilobytes	0	0	0	0
	VMSG-VC	Compressed	Average	Kilobytes	0	0	0	0
	VMSG-VC	Latency	Average	Percent	0	0	0	0
	VMSG-VC	Zero	Average	Kilobytes	2260	3560	0	858.089
	VMSG-VC	Shared	Average	Kilobytes	2628	3940	0	978.889
	VMSG-VC	Overhead	Average	Kilobytes	34508	36672	33212	34585.222
	VMSG-VC	Reserved overhead	Average	Kilobytes	41960	41960	41960	41960

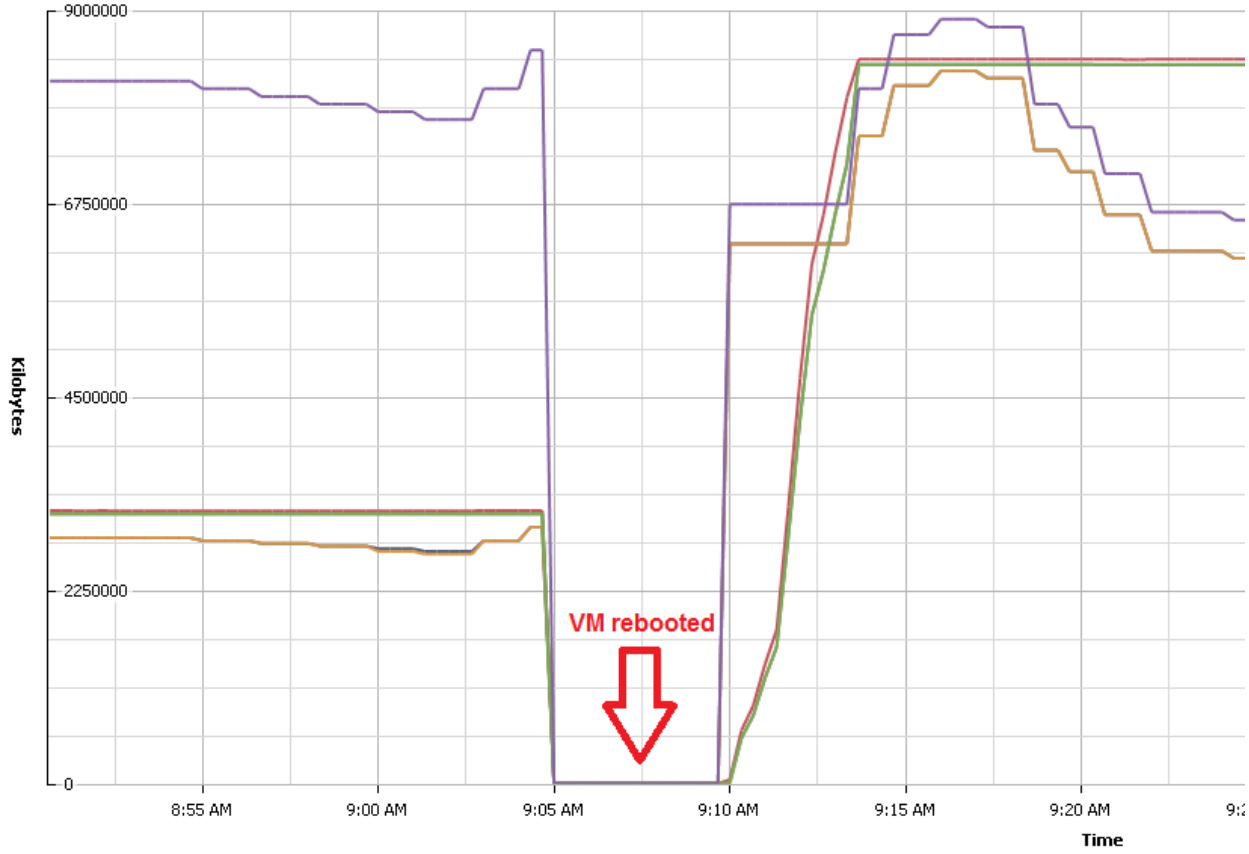


Performance Chart Legend

Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	Chargeback 2.6	Active	Average	Kilobytes	1887436	4026528	0	879832.20
	Chargeback 2.6	Active write	Average	Kilobytes	1635776	3145728	0	780429.54
	Chargeback 2.6	Zero	Average	Kilobytes	709140	2000076	0	173843.86

Memory/Real-time, 4/19/2014 8:50:36 AM - 4/19/2014 9:50:36 AM Chart Options...

Graph refreshes every 20 seconds

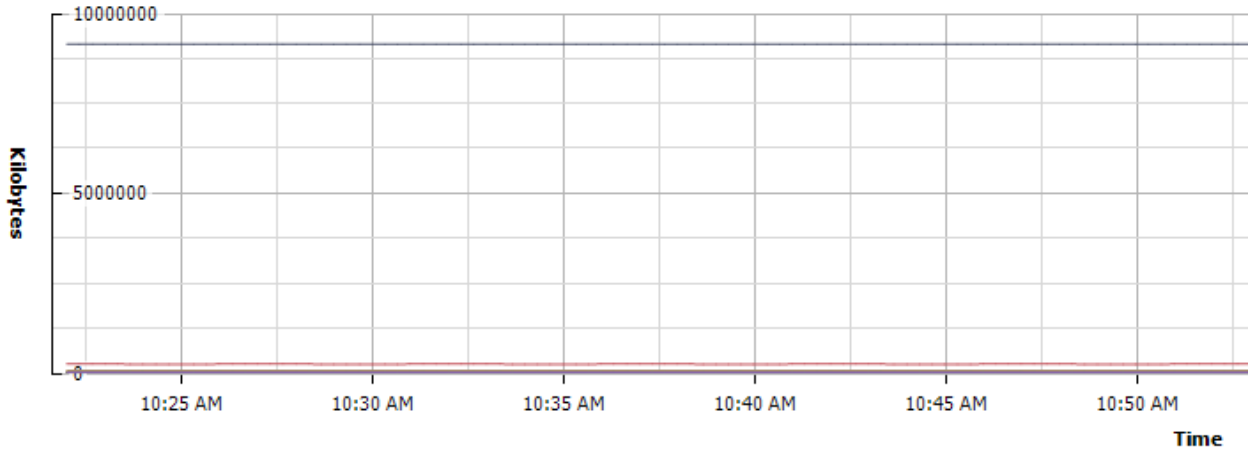


Performance Chart Legend

Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	VMSG-VC	Active	Average	Kilobytes	6543112	8304720	0	5299183.5
	VMSG-VC	Entitlement	Average	Kilobytes	8392616	8446440	0	6742643.0
	VMSG-VC	Active write	Average	Kilobytes	6543112	8304720	0	5281198.8
	VMSG-VC	Consumed	Average	Kilobytes	8329072	8382312	0	6664725.1
	VMSG-VC	Granted	Average	Kilobytes	8382464	8382464	0	6680093.2
	VMSG-VC	Usage	Average	Percent	77.99	98.99	0	77.73

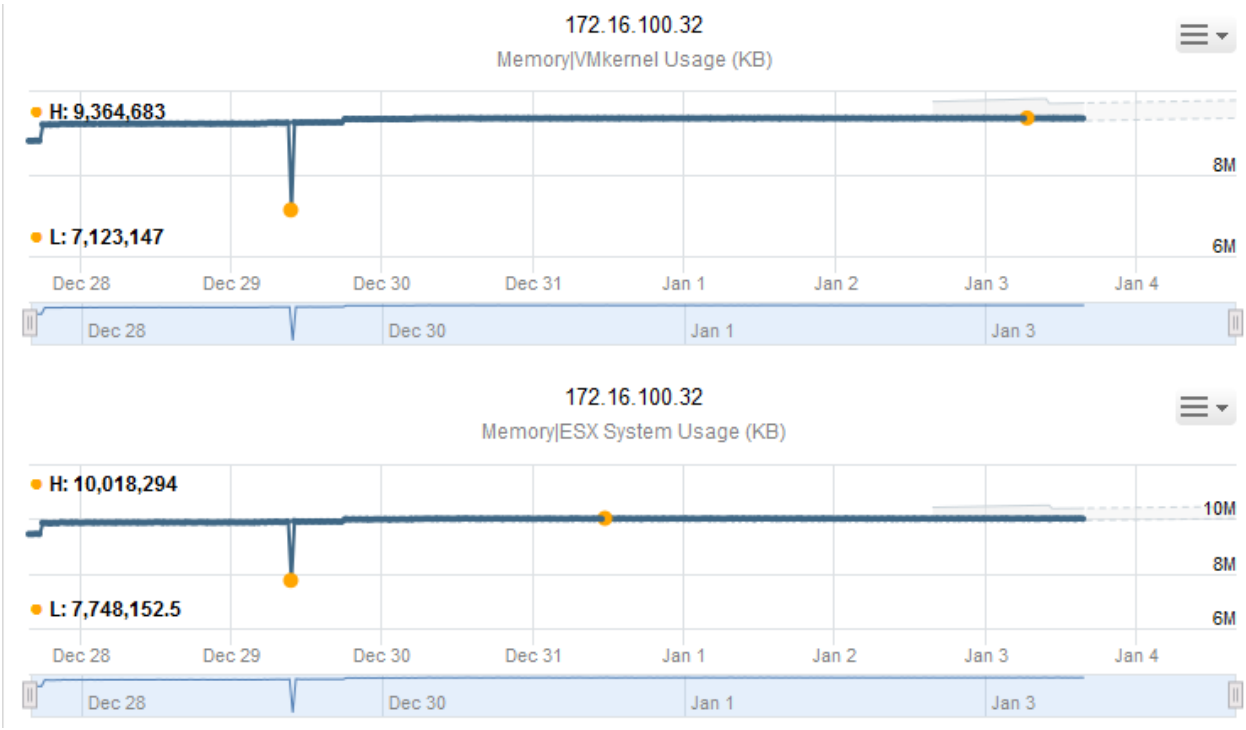
Description	Rollup	Units	Internal Name	Collection Level
☐ VMFS Working Set	Latest	TB	vmfs.pbc.workingSet	4
☐ Swap in from host cache	Average	Kilobytes	llSwapIn	4
☐ Latency	Average	Percent	latency	2
☐ Swap out to host cache	Average	Kilobytes	llSwapOut	4
☑ Swap used	Average	Kilobytes	swapused	2
☐ Maximum VMFS Working Set	Latest	TB	vmfs.pbc.workingSetMax	4
☐ VMFS PB Cache Size	Latest	Megabytes	vmfs.pbc.size	4
☐ Maximum VMFS PB Cache Size	Latest	Megabytes	vmfs.pbc.sizeMax	4
☐ Reserved capacity	Average	Megabytes	reservedCapacity	2
☐ Swap out rate to host cache	Average	KBps	llSwapOutRate	2
☐ Shared	Average	Kilobytes	shared	2
☐ Swap in rate from host cache	Average	KBps	llSwapInRate	2
☑ Active	Average	Kilobytes	active	2
☐ VMFS PB Cache Capacity Miss Ratio	Latest	Percent	vmfs.pbc.capMissRatio	4
☐ Overhead	Average	Kilobytes	overhead	1
☐ VMFS PB Cache Overhead	Latest	Kilobytes	vmfs.pbc.overhead	4
☐ Total capacity	Average	Megabytes	totalCapacity	2
☐ Zero	Average	Kilobytes	zero	2
☐ State	Latest	Number	state	2
☐ Heap free	Average	Kilobytes	heapfree	4
☑ Consumed	Average	Kilobytes	consumed	1
☐ Used by VMkernel	Average	Kilobytes	sysUsage	2
☑ Shared common	Average	Kilobytes	sharedcommon	2
☐ Low free threshold	Average	Kilobytes	lowfreethreshold	2
☐ Swap out rate	Average	KBps	swapoutRate	1
☐ Swap in	Average	Kilobytes	swapin	2
☐ Host cache used for swapping	Average	Kilobytes	llSwapUsed	4
☐ Compression rate	Average	KBps	compressionRate	2
☐ Decompression rate	Average	KBps	decompressionRate	2
☐ Compressed	Average	Kilobytes	compressed	2
☑ Granted	Average	Kilobytes	granted	2
☐ Swap out	Average	Kilobytes	swapout	2
☐ Swap in rate	Average	KBps	swapinRate	1
☐ Heap	Average	Kilobytes	heap	4
☐ Unreserved	Average	Kilobytes	unreserved	2
☐ Usage	Average	Percent	usage	1
☑ Balloon	Average	Kilobytes	vmmemctl	1
☐ Active write	Average	Kilobytes	activewrite	2

System/Real-time, 12/28/2015 10:21:37 AM - 12/28/2015 11:21:37 AM Chart Options...
Graph refreshes every 20 seconds



Performance Chart Legend

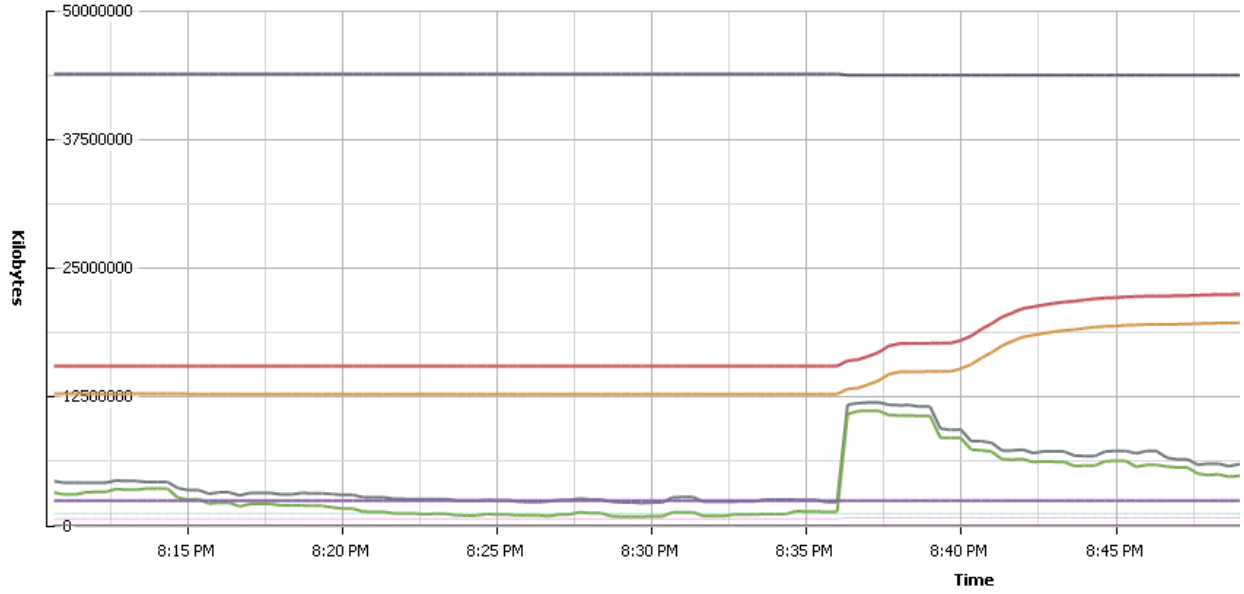
Key	Object	Measurement	Rollup	Units	Latest	Maximum
	host/system/kernel	Resource memory consumed	Latest	Kilobytes	9177200	9177692
	host/vim	Resource memory consumed	Latest	Kilobytes	239532	241088
	host/vim/vmvisor/hostd	Resource memory consumed	Latest	Kilobytes	49548	49820
	host/vim/vmvisor/init	Resource memory consumed	Latest	Kilobytes	23816	23816
	host/vim/vmvisor/vpxa	Resource memory consumed	Latest	Kilobytes	18580	19952
	host/vim/vmvisor/sioc	Resource memory consumed	Latest	Kilobytes	13344	13344
	host/vim/vmvisor/aam	Resource memory consumed	Latest	Kilobytes	12268	12268
	host/vim/vmvisor/domd	Resource memory consumed	Latest	Kilobytes	11524	11524
	host/vim/vmvisor/logging	Resource memory consumed	Latest	Kilobytes	10880	10880
	host/vim/vmvisor/osfsd	Resource memory consumed	Latest	Kilobytes	6244	6244
	host/vim/vmvisor/vsantraced	Resource memory consumed	Latest	Kilobytes	4120	4120
	host/vim/vmvisor/vsanvpd	Resource memory consumed	Latest	Kilobytes	3196	3196
	host/vim/vmvisor/dcui	Resource memory consumed	Latest	Kilobytes	2956	2956
	host/vim/vmvisor/vmkdevmgr	Resource memory consumed	Latest	Kilobytes	2944	2944
	host/vim/vmvisor/vobd	Resource memory consumed	Latest	Kilobytes	2604	2604
	host/vim/vmvisor/vmkeventd	Resource memory consumed	Latest	Kilobytes	2556	2556
	host/vim/vmvisor/lacpd	Resource memory consumed	Latest	Kilobytes	1164	1164
	host/vim/vimuser/terminal/shell	Resource memory consumed	Latest	Kilobytes	756	756
	host/vim/vmvisor/vvold	Resource memory consumed	Latest	Kilobytes	0	0
	host/vim/vmvisor/vsandevicemonitord	Resource memory consumed	Latest	Kilobytes	0	0
	host/vim/vmvisor/ntpd	Resource memory consumed	Latest	Kilobytes	0	0
	host/vim/vmvisor/memScrubber	Resource memory consumed	Latest	Kilobytes	0	0
	host/vim/vmci	Resource memory consumed	Latest	Kilobytes	0	0
	host/system/vmotion	Resource memory consumed	Latest	Kilobytes	0	0
	host/system/drivers	Resource memory consumed	Latest	Kilobytes	0	0
	host/vim/vmvisor/likewise	Resource memory consumed	Latest	Kilobytes	0	0
	host/vim/vmvisor/snmpd	Resource memory consumed	Latest	Kilobytes	0	0
	host/system/svmotion	Resource memory consumed	Latest	Kilobytes	0	0
	host/vim/vimuser/terminal/ssh	Resource memory consumed	Latest	Kilobytes	0	0
	host/system/ft	Resource memory consumed	Latest	Kilobytes	0	0


172.16.100.32
Memory|VMkernel Usage (KB)
H: 9,364,683
L: 7,123,147
8M
6M
Dec 28
Dec 29
Dec 30
Dec 31
Jan 1
Jan 2
Jan 3
Jan 4
Dec 28
Dec 30
Jan 1
Jan 3

172.16.100.32
Memory|ESX System Usage (KB)
H: 10,018,294
L: 7,748,152.5
10M
8M
6M
Dec 28
Dec 29
Dec 30
Dec 31
Jan 1
Jan 2
Jan 3
Jan 4
Dec 28
Dec 30
Jan 1
Jan 3

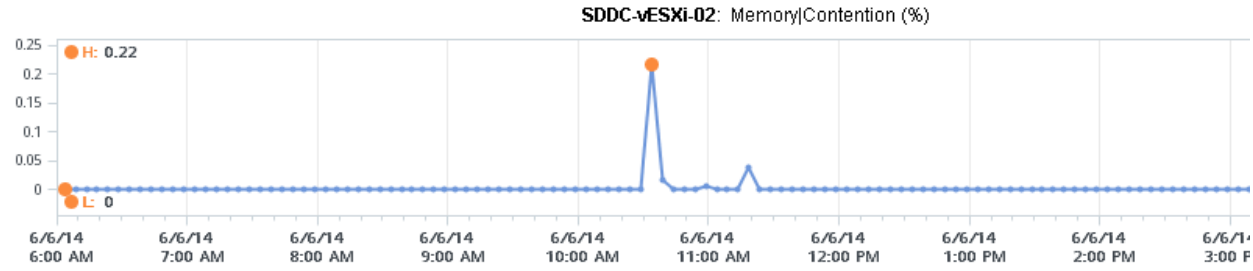
Memory/Real-time, 4/7/2014 8:10:25 PM - 4/7/2014 9:10:25 PM Chart Options...

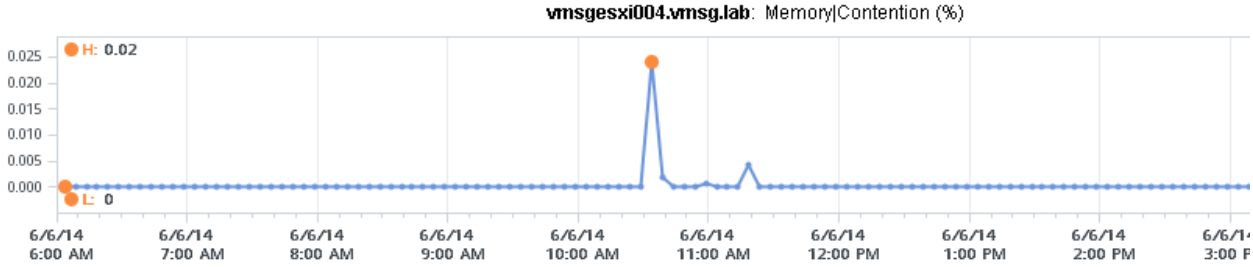
Graph refreshes every 20 seconds

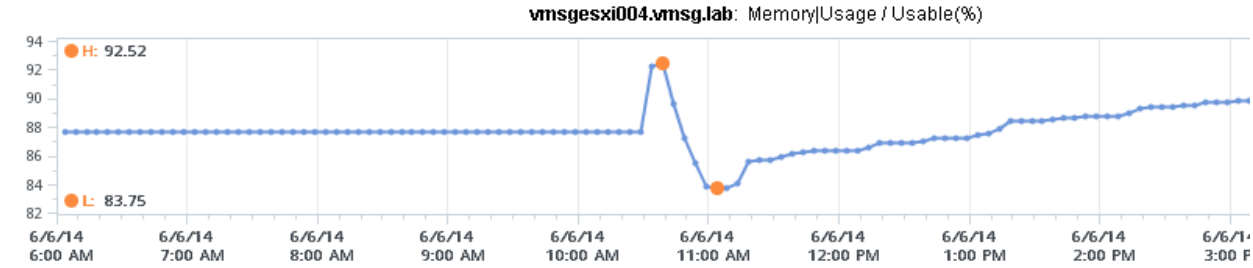


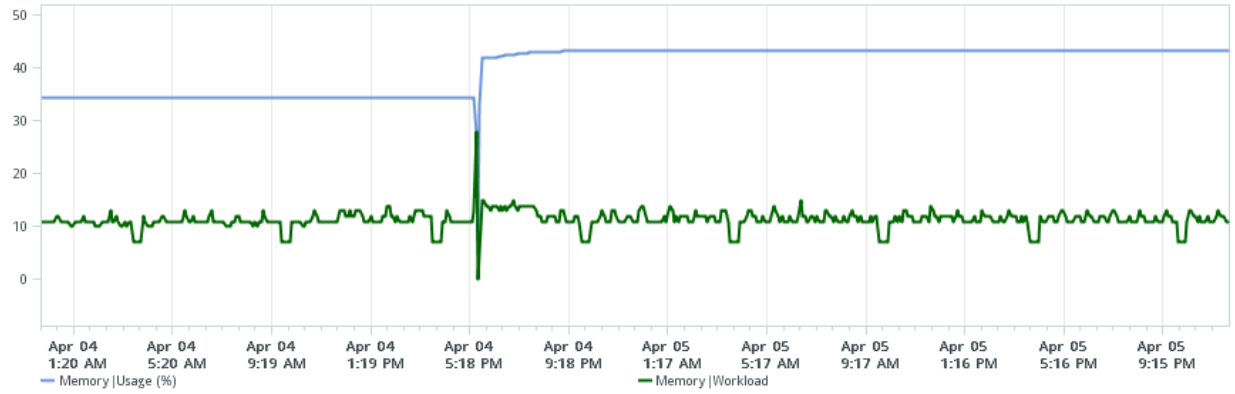
Performance Chart Legend

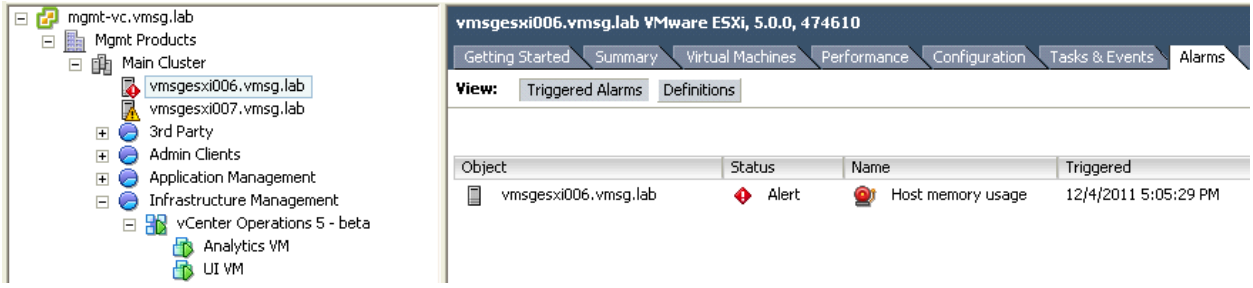
Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	vmsgesxi003.vmsg.lab	Unreserved	Average	Kilobytes	43812616	43920100	43810000	43857795.
	vmsgesxi003.vmsg.lab	Consumed	Average	Kilobytes	23018372	23018372	15504752	19147503.
	vmsgesxi003.vmsg.lab	Granted	Average	Kilobytes	20242240	20242240	12781472	16394229.
	vmsgesxi003.vmsg.lab	Active	Average	Kilobytes	4959112	11954088	2162440	4511757.1
	vmsgesxi003.vmsg.lab	Active write	Average	Kilobytes	3837136	11157172	840632	3369740.6
	vmsgesxi003.vmsg.lab	Used by VMkernel	Average	Kilobytes	2390668	2393368	2385972	2389435.2
	vmsgesxi003.vmsg.lab	Low free threshold	Average	Kilobytes	1129892	1129892	1129892	1129892
	vmsgesxi003.vmsg.lab	Overhead	Average	Kilobytes	729896	735232	631360	689947.6
	vmsgesxi003.vmsg.lab	Heap free	Average	Kilobytes	29605	29605	29604	29604.994
	vmsgesxi003.vmsg.lab	Heap	Average	Kilobytes	14336	14336	14336	14336
	vmsgesxi003.vmsg.lab	Shared	Average	Kilobytes	2588	2588	1612	1734.067
	vmsgesxi003.vmsg.lab	Zero	Average	Kilobytes	1832	1832	1540	1588.4
	vmsgesxi003.vmsg.lab	Shared common	Average	Kilobytes	1568	1568	884	969.489
	vmsgesxi003.vmsg.lab	Usage	Average	Percent	45.74	45.74	30.81	38.045
	vmsgesxi003.vmsg.lab	Balloon	Average	Kilobytes	0	0	0	0
	vmsgesxi003.vmsg.lab	Latency	Average	Percent	0	0	0	0

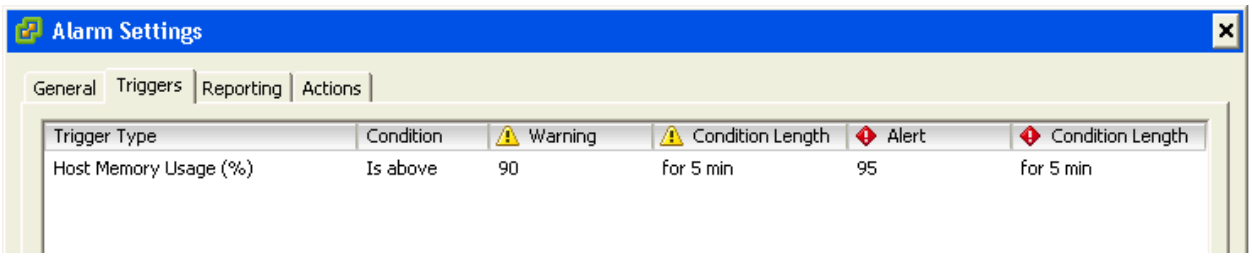

SDDC-vESXi-02: Memory|Contention (%)
H: 0.22
L: 0
0.25
0.2
0.15
0.1
0.05
0
6/6/14 6:00 AM
6/6/14 7:00 AM
6/6/14 8:00 AM
6/6/14 9:00 AM
6/6/14 10:00 AM
6/6/14 11:00 AM
6/6/14 12:00 PM
6/6/14 1:00 PM
6/6/14 2:00 PM

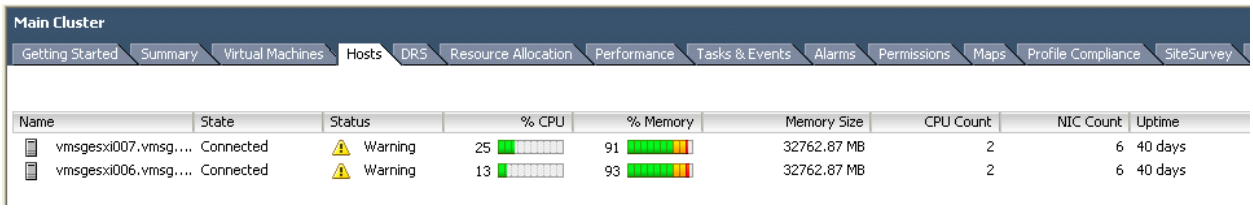

vmsgesxi004.vmsg.lab: Memory|Contention (%)
H: 0.02
L: 0
0.025
0.020
0.015
0.010
0.005
0.000
6/6/14 6:00 AM
6/6/14 7:00 AM
6/6/14 8:00 AM
6/6/14 9:00 AM
6/6/14 10:00 AM
6/6/14 11:00 AM
6/6/14 12:00 PM
6/6/14 1:00 PM
6/6/14 2:00 PM

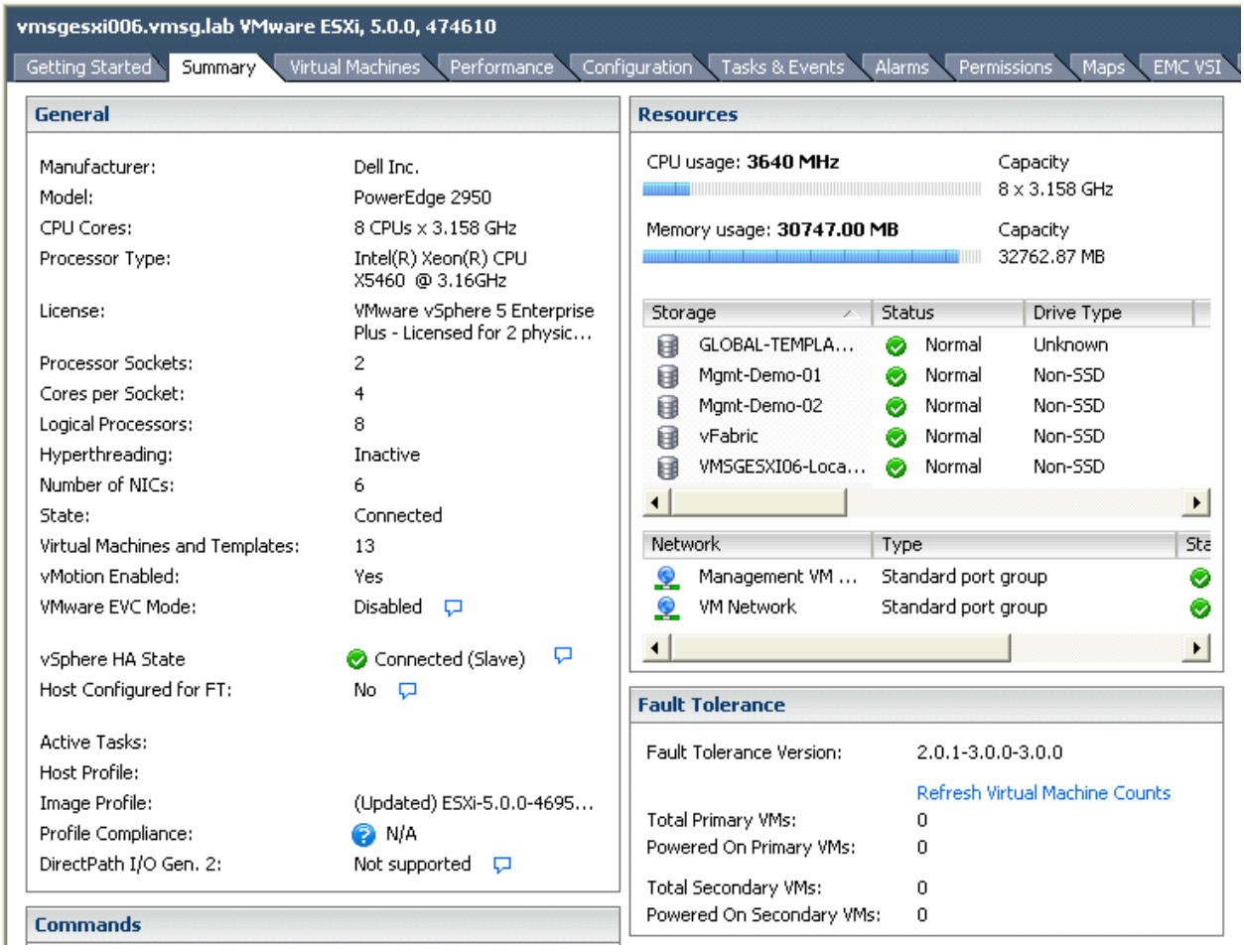

vmsgesxi004.vmsg.lab: Memory|Usage / Usable(%)
H: 92.52
L: 83.75
94
92
90
88
86
84
82
6/6/14 6:00 AM
6/6/14 7:00 AM
6/6/14 8:00 AM
6/6/14 9:00 AM
6/6/14 10:00 AM
6/6/14 11:00 AM
6/6/14 12:00 PM
6/6/14 1:00 PM
6/6/14 2:00 PM

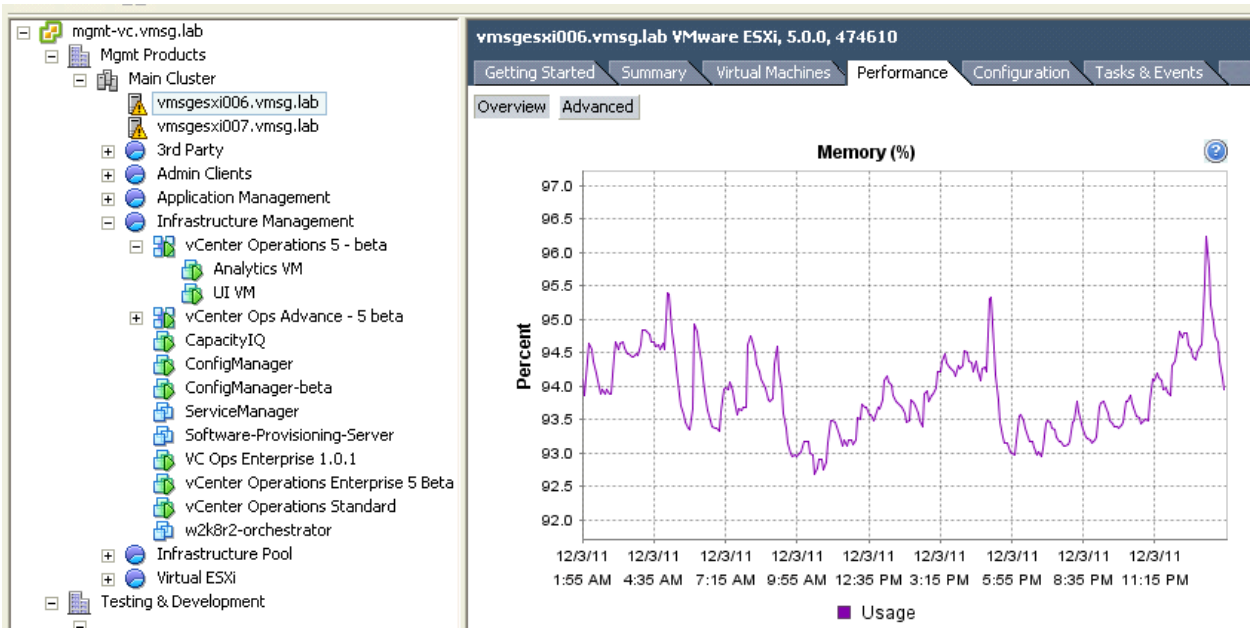

50
40
30
20
10
0
Apr 04 1:20 AM
Apr 04 5:20 AM
Apr 04 9:19 AM
Apr 04 1:19 PM
Apr 04 5:18 PM
Apr 04 9:18 PM
Apr 05 1:17 AM
Apr 05 5:17 AM
Apr 05 9:17 AM
Apr 05 1:16 PM
Apr 05 5:16 PM
Apr 05 9:15 PM
Memory |Usage (%)
Memory |Workload

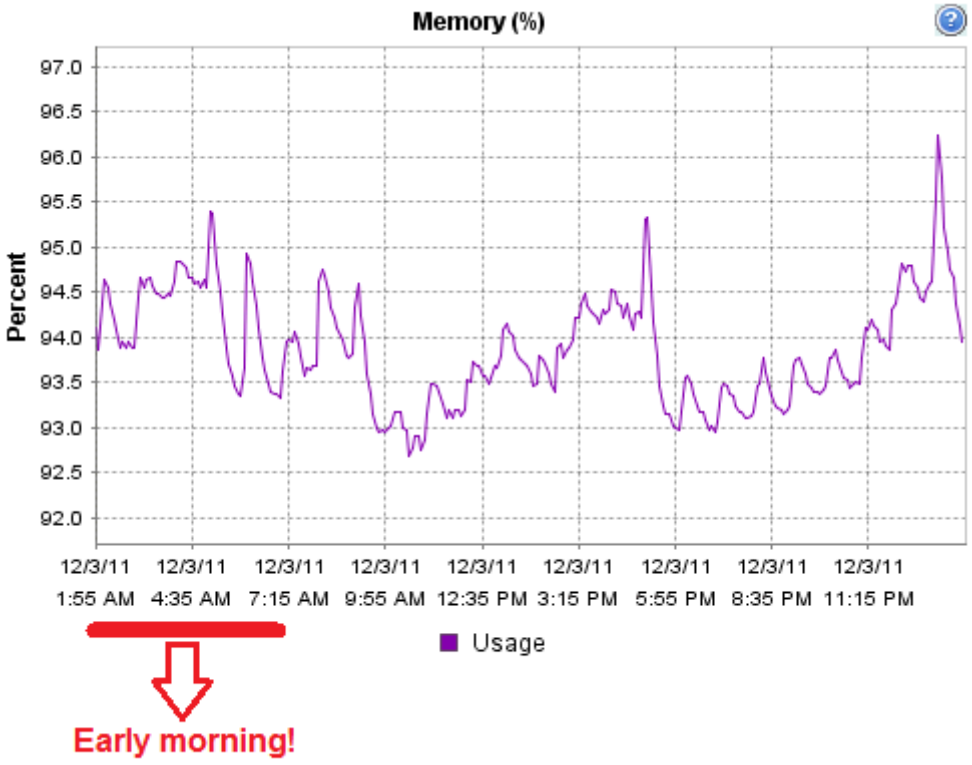

mgmt-vc.vmsg.lab
Mgmt Products
Main Cluster
vmsgesxi006.vmsg.lab
vmsgesxi007.vmsg.lab
3rd Party
Admin Clients
Application Management
Infrastructure Management
vCenter Operations 5 - beta
Analytics VM
UI VM
vmsgesxi006.vmsg.lab VMware ESXi, 5.0.0, 474610
Getting Started
Summary
Virtual Machines
Performance
Configuration
Tasks & Events
Alarms
View:
Triggered Alarms
Definitions
Object
Status
Name
Triggered
vmsgesxi006.vmsg.lab
Alert
Host memory usage
12/4/2011 5:05:29 PM

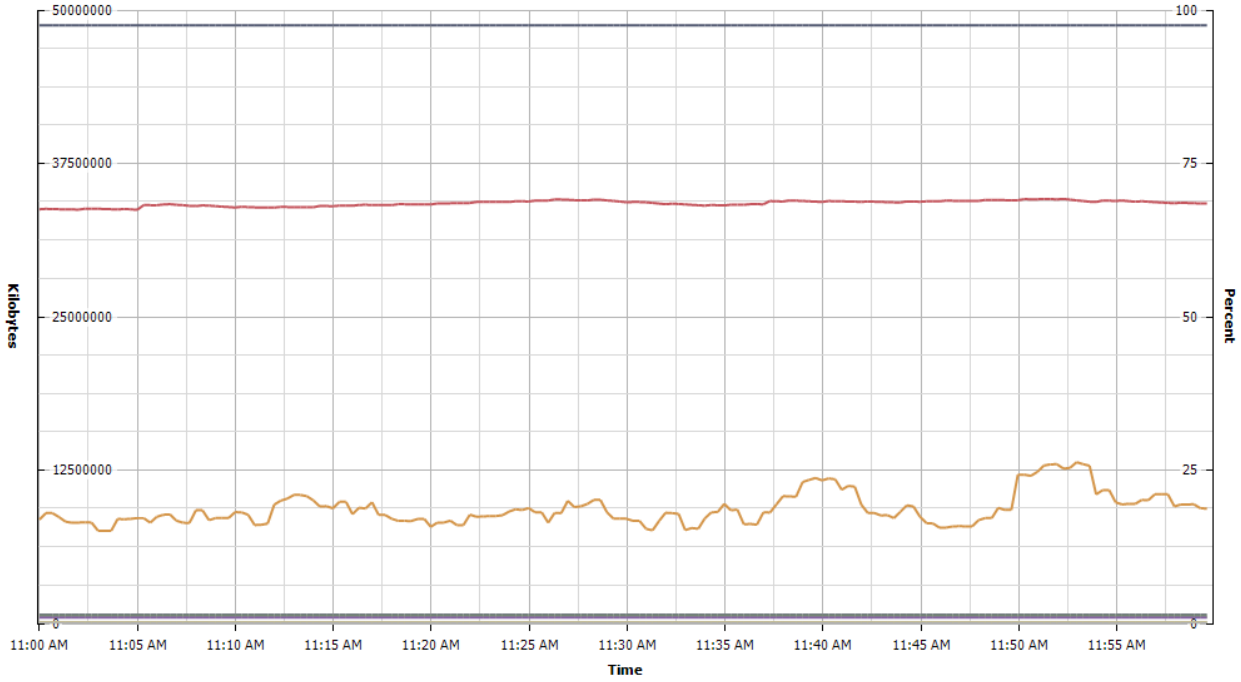

Alarm Settings
General
Triggers
Reporting
Actions
Trigger Type
Condition
Warning
Condition Length
Alert
Condition Length
Host Memory Usage (%)
Is above
90
for 5 min
95
for 5 min


Main Cluster
Getting Started
Summary
Virtual Machines
Hosts
DRS
Resource Allocation
Performance
Tasks & Events
Alarms
Permissions
Maps
Profile Compliance
SiteSurvey
Name
State
Status
% CPU
% Memory
Memory Size
CPU Count
NIC Count
Uptime
vmsgesxi007.vmsg....
Connected
Warning
25
91
32762.87 MB
2
6
40 days
vmsgesxi006.vmsg....
Connected
Warning
13
93
32762.87 MB
2
6
40 days


vmsgesxi006.vmsg.lab VMware ESXi, 5.0.0, 474610
Getting Started
Summary
Virtual Machines
Performance
Configuration
Tasks & Events
Alarms
Permissions
Maps
EMC VSI
General
Manufacturer:
Dell Inc.
Model:
PowerEdge 2950
CPU Cores:
8 CPUs x 3.158 GHz
Processor Type:
Intel(R) Xeon(R) CPU X5460 @ 3.16GHz
License:
VMware vSphere 5 Enterprise Plus - Licensed for 2 physic...
Processor Sockets:
2
Cores per Socket:
4
Logical Processors:
8
Hyperthreading:
Inactive
Number of NICs:
6
State:
Connected
Virtual Machines and Templates:
13
vMotion Enabled:
Yes
VMware EVC Mode:
Disabled
vSphere HA State
Connected (Slave)
Host Configured for FT:
No
Active Tasks:
Host Profile:
Image Profile:
(Updated) ESXi-5.0.0-4695...
Profile Compliance:
N/A
DirectPath I/O Gen. 2:
Not supported
Commands
Resources
CPU usage: 3640 MHz
Capacity
8 x 3.158 GHz
Memory usage: 30747.00 MB
Capacity
32762.87 MB
Storage
Status
Drive Type
GLOBAL-TEMPLA...
Normal
Unknown
Mgmt-Demo-01
Normal
Non-SSD
Mgmt-Demo-02
Normal
Non-SSD
vFabric
Normal
Non-SSD
VMSGESXI06-Loca...
Normal
Non-SSD
Network
Type
Management VM ...
Standard port group
VM Network
Standard port group
Fault Tolerance
Fault Tolerance Version:
2.0.1-3.0.0-3.0.0
Refresh Virtual Machine Counts
Total Primary VMs:
0
Powered On Primary VMs:
0
Total Secondary VMs:
0
Powered On Secondary VMs:
0

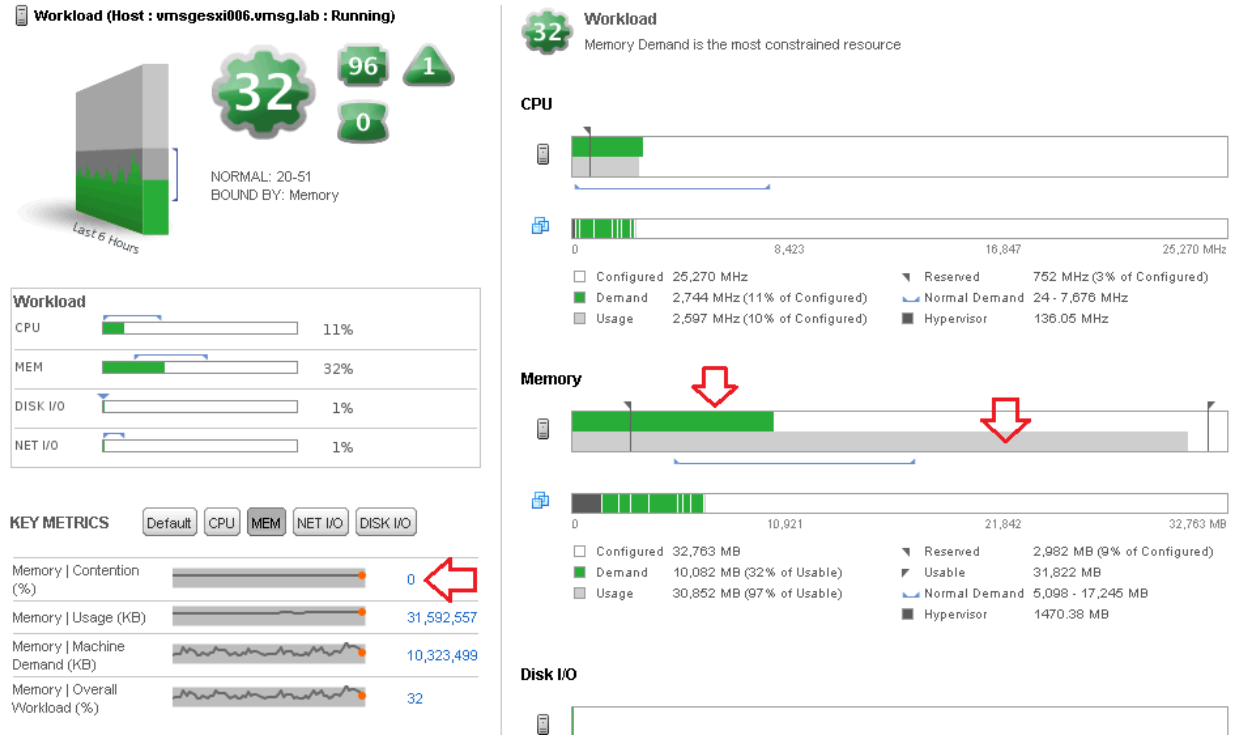

mgmt-vc.vmsg.lab
Mgmt Products
Main Cluster
vmsgesxi006.vmsg.lab
vmsgesxi007.vmsg.lab
3rd Party
Admin Clients
Application Management
Infrastructure Management
vCenter Operations 5 - beta
Analytics VM
UI VM
vCenter Ops Advance - 5 beta
CapacityIQ
ConfigManager
ConfigManager-beta
ServiceManager
Software-Provisioning-Server
VC Ops Enterprise 1.0.1
vCenter Operations Enterprise 5 Beta
vCenter Operations Standard
w2k8r2-orchestrator
Infrastructure Pool
Virtual ESXi
Testing & Development
vmsgesxi006.vmsg.lab VMware ESXi, 5.0.0, 474610
Getting Started
Summary
Virtual Machines
Performance
Configuration
Tasks & Events
Overview
Advanced
Memory (%)
Percent
97.0
96.5
96.0
95.5
95.0
94.5
94.0
93.5
93.0
92.5
92.0
12/3/11 1:55 AM
12/3/11 4:35 AM
12/3/11 7:15 AM
12/3/11 9:55 AM
12/3/11 12:35 PM
12/3/11 3:15 PM
12/3/11 5:55 PM
12/3/11 8:35 PM
12/3/11 11:15 PM
Usage

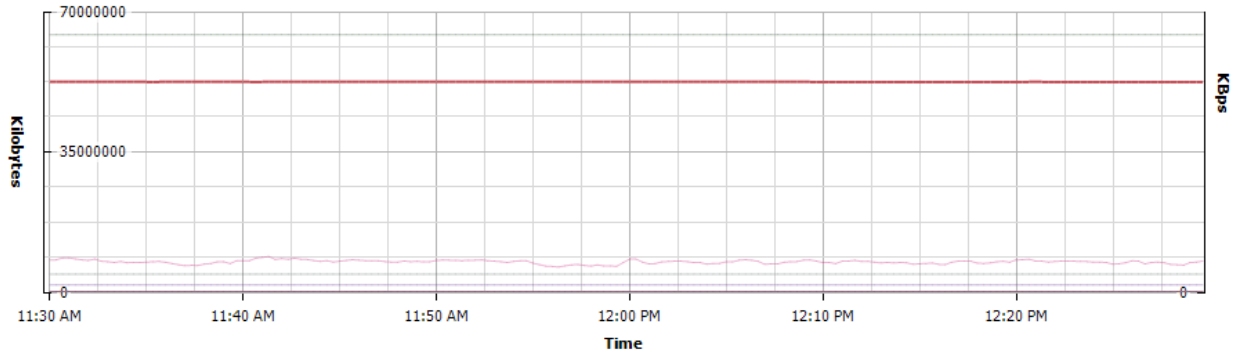

Memory (%)
Percent
97.0
96.5
96.0
95.5
95.0
94.5
94.0
93.5
93.0
92.5
92.0
12/3/11 1:55 AM
12/3/11 4:35 AM
12/3/11 7:15 AM
12/3/11 9:55 AM
12/3/11 12:35 PM
12/3/11 3:15 PM
12/3/11 5:55 PM
12/3/11 8:35 PM
12/3/11 11:15 PM
Usage
Early morning!



Performance Chart Legend

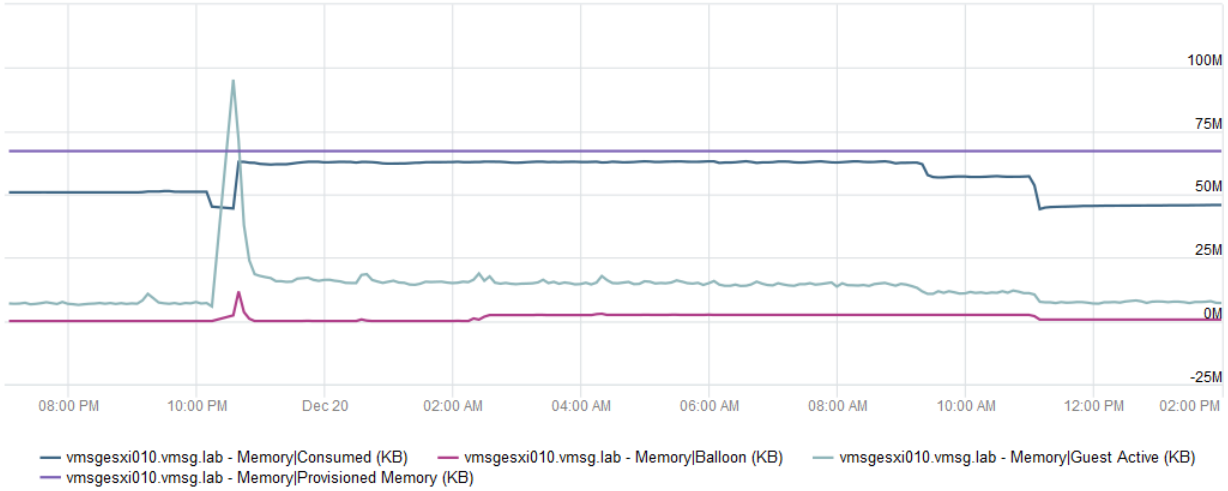
Key	Measurement	Units	Latest	Maximum	Minimum	Average
	Granted	Kilobytes	48813920	48817760	48807744	48813736.
	Consumed	Kilobytes	34261104	34637476	33747028	34270111.
	Active	Kilobytes	9355512	13137084	7521244	9310725.2
	Balloon	Kilobytes	681280	681280	681280	681280
	Swap out	Kilobytes	498292	498292	498292	498292
	Swap in	Kilobytes	452880	452880	452880	452880
	Compressed	Kilobytes	42860	42860	42860	42860
	Swap used	Kilobytes	39164	39164	39164	39164
	Latency	Percent	0	0	0	0

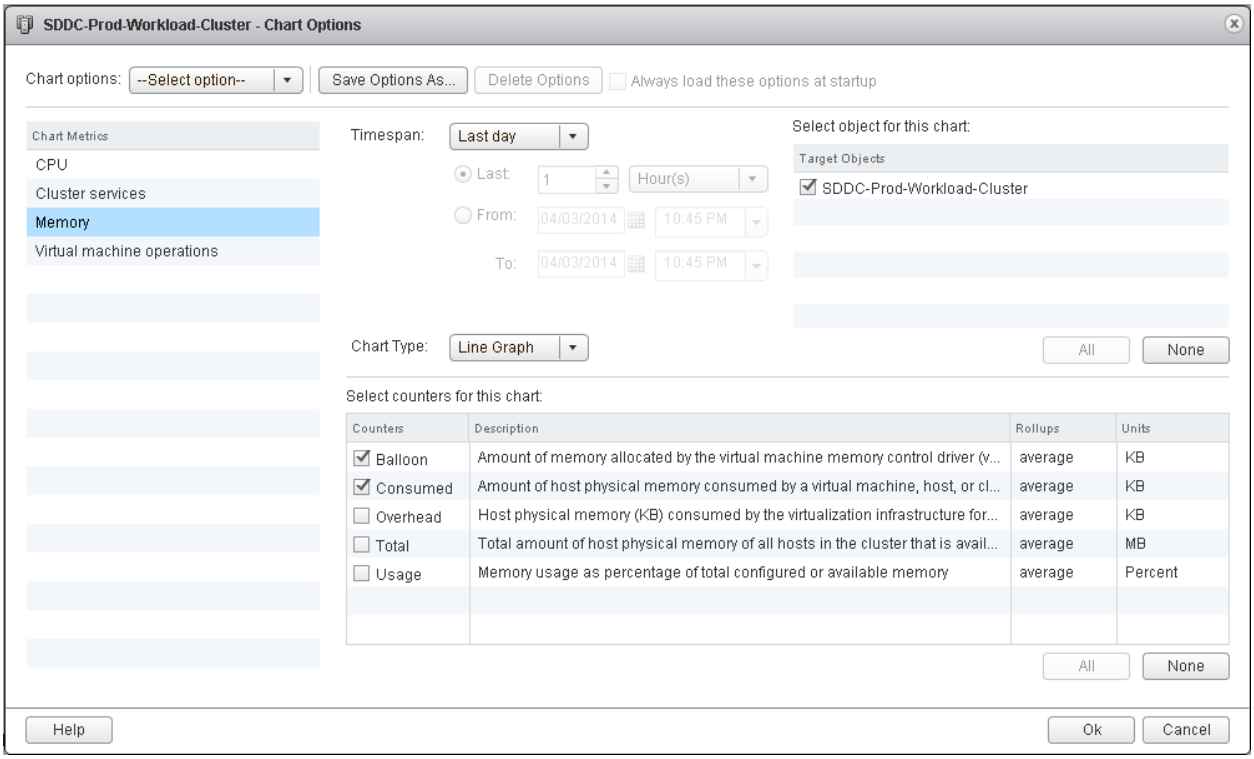


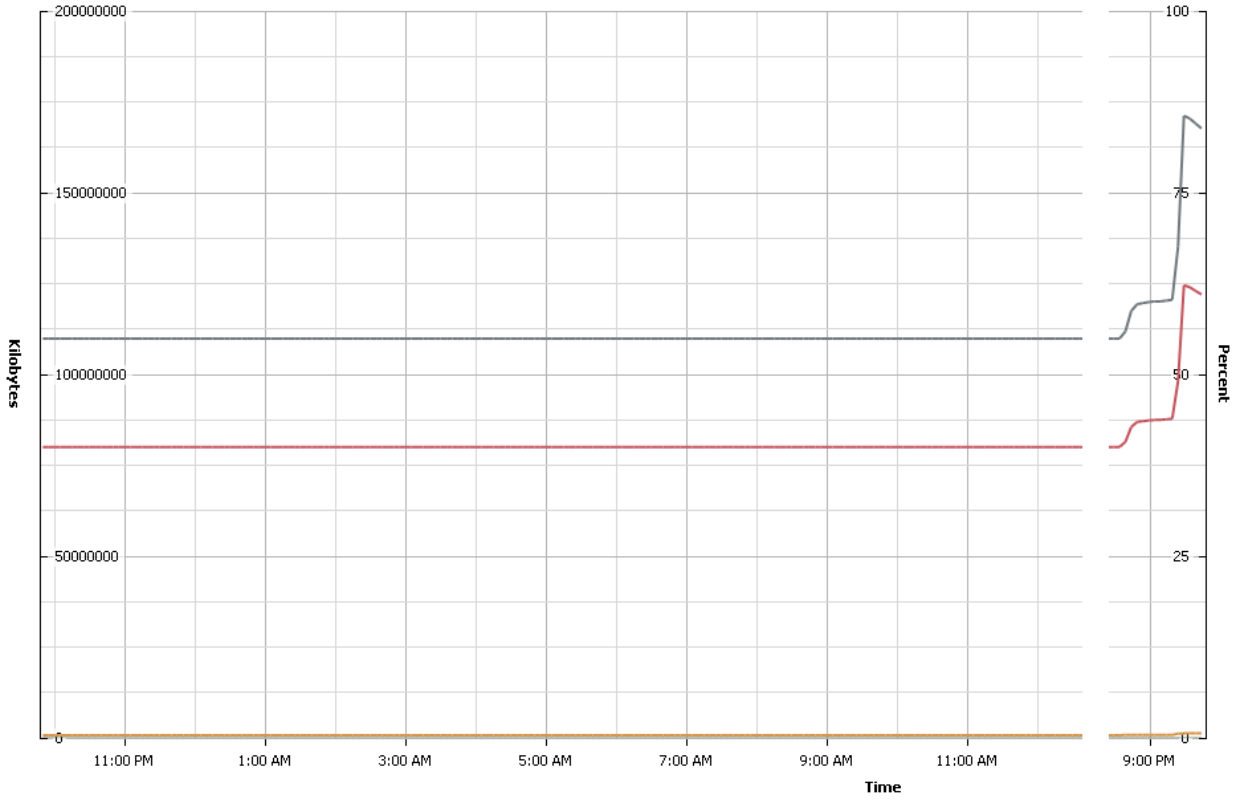


Performance Chart Legend

Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	vmsgesxi010.vmsg.lab	Granted	Average	Kilobytes	64434492	64438628	64422288	64430725.622
	vmsgesxi010.vmsg.lab	Consumed	Average	Kilobytes	52574392	52631132	52561012	52591456.867
	vmsgesxi010.vmsg.lab	Active	Average	Kilobytes	7680004	8835916	6175808	7463572.311
	vmsgesxi010.vmsg.lab	Swap out	Average	Kilobytes	4413004	4413004	4413004	4413004
	vmsgesxi010.vmsg.lab	Swap in	Average	Kilobytes	1649720	1649720	1649644	1649680.2
	vmsgesxi010.vmsg.lab	Compressed	Average	Kilobytes	25480	25480	25480	25480
	vmsgesxi010.vmsg.lab	Swap out rate	Average	KBps	0	0	0	0
	vmsgesxi010.vmsg.lab	Swap in rate	Average	KBps	0	0	0	0
	vmsgesxi010.vmsg.lab	Decompression rate	Average	KBps	0	0	0	0
	vmsgesxi010.vmsg.lab	Compression rate	Average	KBps	0	0	0	0
	vmsgesxi010.vmsg.lab	Balloon	Average	Kilobytes	0	0	0	0

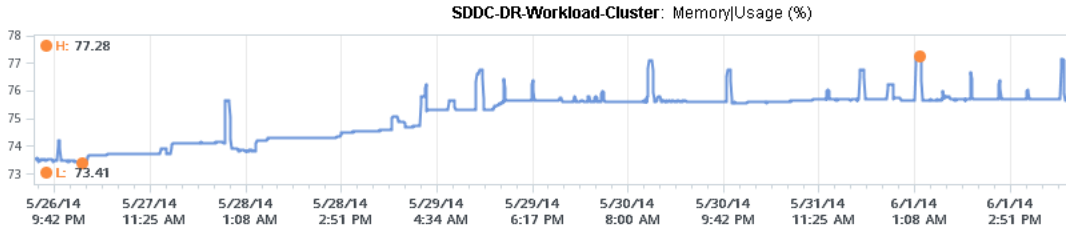

100M
75M
50M
25M
0M
-25M
08:00 PM
10:00 PM
Dec 20
02:00 AM
04:00 AM
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM
vmsgesxi010.vmsg.lab - Memory|Consumed (KB)
vmsgesxi010.vmsg.lab - Memory|Balloon (KB)
vmsgesxi010.vmsg.lab - Memory|Guest Active (KB)
vmsgesxi010.vmsg.lab - Memory|Provisioned Memory (KB)

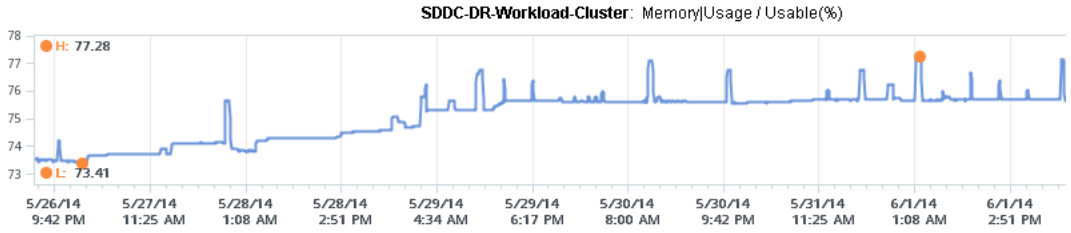

SDDC-Prod-Workload-Cluster - Chart Options
Chart options:
--Select option--
Save Options As...
Delete Options
Always load these options at startup
Chart Metrics
CPU
Cluster services
Memory
Virtual machine operations
Timespan:
Last day
Last:
1
Hour(s)
From:
04/03/2014
10:45 PM
To:
04/03/2014
10:45 PM
Select object for this chart:
Target Objects
SDDC-Prod-Workload-Cluster
Chart Type:
Line Graph
All
None
Select counters for this chart:
Counters
Description
Rollups
Units
Balloon
Amount of memory allocated by the virtual machine memory control driver (v...
average
KB
Consumed
Amount of host physical memory consumed by a virtual machine, host, or cl...
average
KB
Overhead
Host physical memory (KB) consumed by the virtualization infrastructure for...
average
KB
Total
Total amount of host physical memory of all hosts in the cluster that is avail...
average
MB
Usage
Memory usage as percentage of total configured or available memory
average
Percent
All
None
Help
Ok
Cancel

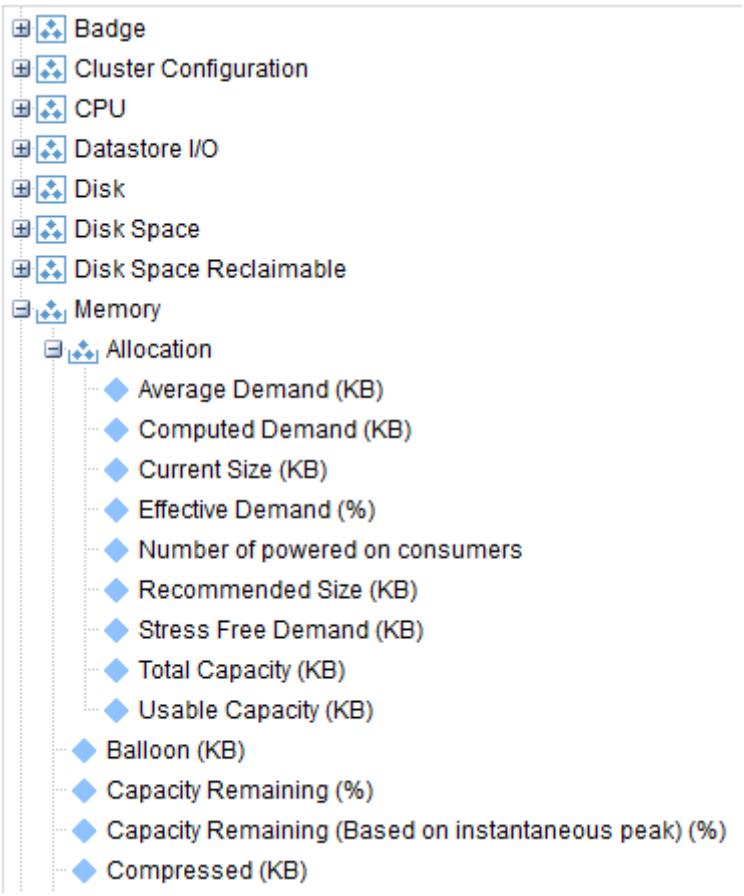


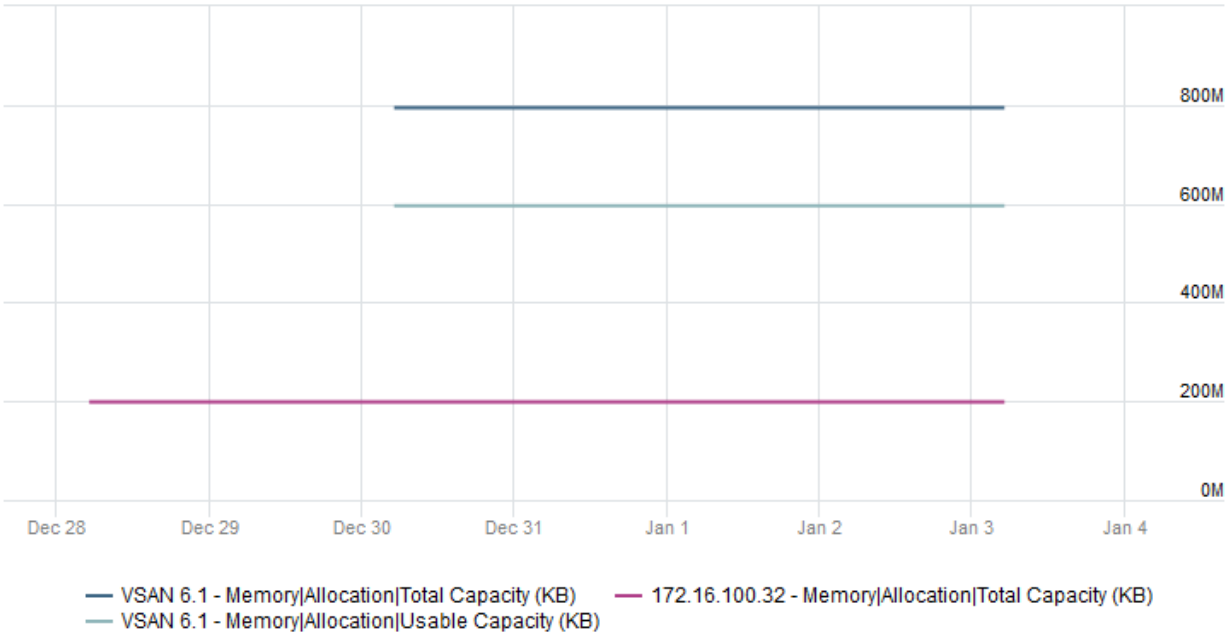
Performance Chart Legend

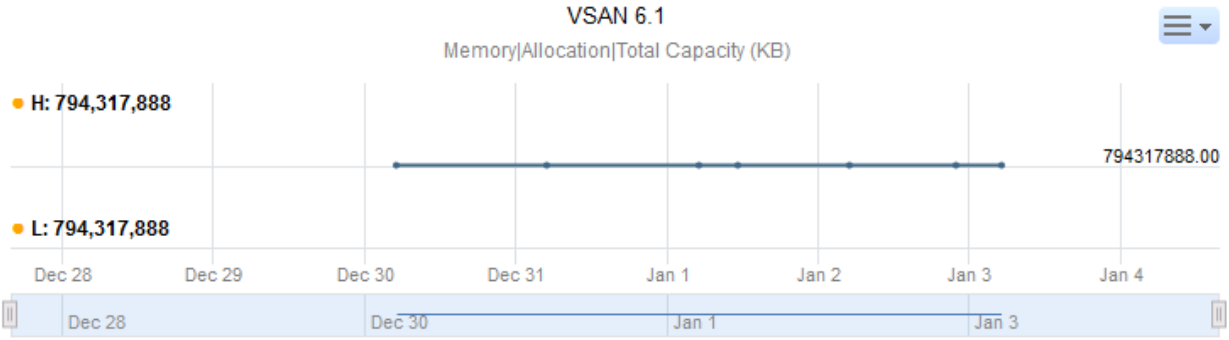
Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	SDDC-DR-Workl...	Consumed	Average	Kilobytes	122085127	124635239	80052455	80930698.
	SDDC-DR-Workl...	Overhead	Average	Kilobytes	1108708	1108708	616136	627676.78
	SDDC-DR-Workl...	Usage	Average	Percent	83.93	85.67	54.96	55.564
	SDDC-DR-Workl...	Balloon	Average	Kilobytes	0	33712	0	117.056

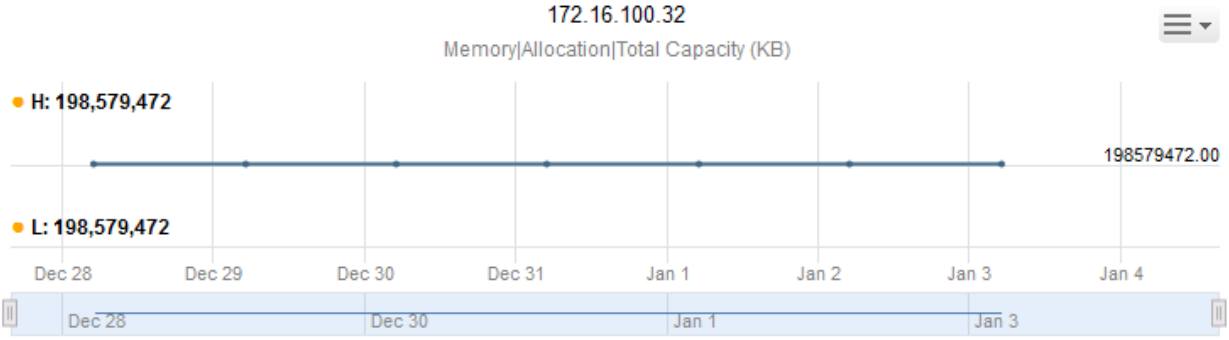




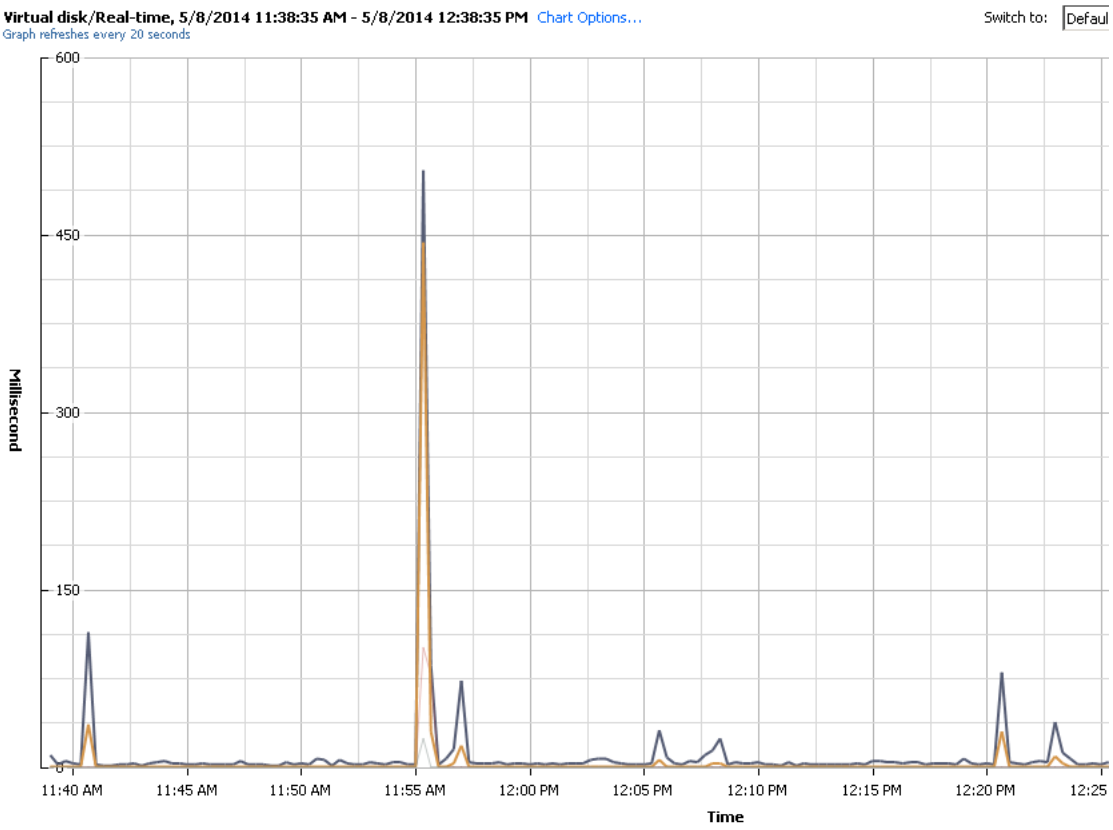

Badge
Cluster Configuration
CPU
Datastore I/O
Disk
Disk Space
Disk Space Reclaimable
Memory
Allocation
Average Demand (KB)
Computed Demand (KB)
Current Size (KB)
Effective Demand (%)
Number of powered on consumers
Recommended Size (KB)
Stress Free Demand (KB)
Total Capacity (KB)
Usable Capacity (KB)
Balloon (KB)
Capacity Remaining (%)
Capacity Remaining (Based on instantaneous peak) (%)
Compressed (KB)


800M
600M
400M
200M
0M
Dec 28
Dec 29
Dec 30
Dec 31
Jan 1
Jan 2
Jan 3
Jan 4
VSAN 6.1 - Memory|Allocation|Total Capacity (KB)
172.16.100.32 - Memory|Allocation|Total Capacity (KB)
VSAN 6.1 - Memory|Allocation|Usable Capacity (KB)


VSAN 6.1
Memory|Allocation|Total Capacity (KB)
H: 794,317,888
794317888.00
L: 794,317,888
Dec 28
Dec 29
Dec 30
Dec 31
Jan 1
Jan 2
Jan 3
Jan 4
Dec 28
Dec 30
Jan 1
Jan 3


172.16.100.32
Memory|Allocation|Total Capacity (KB)
H: 198,579,472
198579472.00
L: 198,579,472
Dec 28
Dec 29
Dec 30
Dec 31
Jan 1
Jan 2
Jan 3
Jan 4
Dec 28
Dec 30
Jan 1
Jan 3

Chapter 14: Storage Counters



Performance Chart Legend

Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	scsi0:1	Write latency	Average	Millisecond	2	505	1	8.839
	scsi0:1	Read latency	Average	Millisecond	0	101	0	0.994
	scsi0:1	Average number of outstanding write requests	Latest	Number	0	148	0	1.128
	scsi0:1	Average number of outstanding read requests	Latest	Number	0	8	0	0.044

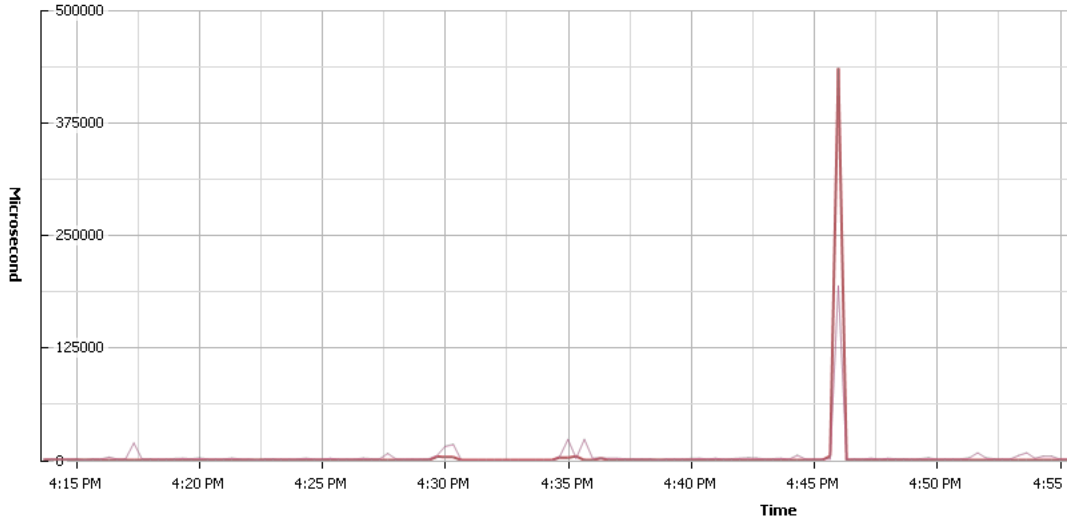
Description	Rollup	Units	Internal Name	Collection Level
☐ Number of large seeks	Latest	Number	largeSeeks	4
☐ Number of medium seeks	Latest	Number	mediumSeeks	4
☐ Number of small seeks	Latest	Number	smallSeeks	4
☐ Write Latency (us)	Latest	Microsecond	writeLatencyUS	4
☐ Read Latency (us)	Latest	Microsecond	readLatencyUS	4
☐ Read workload metric	Latest	Number	readLoadMetric	2
☐ Average number of outstanding read requests	Latest	Number	readOIO	2
☑ Write latency	Average	Millisecond	totalWriteLatency	1
☐ Average write requests per second	Average	Number	numberWriteAvera...	1
☐ Write request size	Latest	Number	writeIOSize	4
☐ Read request size	Latest	Number	readIOSize	4
☐ Write workload metric	Latest	Number	writeLoadMetric	2
☐ Average number of outstanding write requests	Latest	Number	writeOIO	2
☑ Read latency	Average	Millisecond	totalReadLatency	1
☐ Read rate	Average	KBps	read	2
☐ Write rate	Average	KBps	write	2
☐ Average read requests per second	Average	Number	numberReadAvera...	1

Description	Rollup	Units	Internal Name	Collection Level
☐ Read rate	Average	KBps	read	2
☐ Highest latency	Latest	Millisecond	maxTotalLatency	3
☐ Average write requests per ...	Average	Number	numberWriteAvera...	1
☐ Write rate	Average	KBps	write	2
☐ Average read requests per ...	Average	Number	numberReadAvera...	1
☑ Read latency	Average	Millisecond	totalReadLatency	1
☑ Write latency	Average	Millisecond	totalWriteLatency	1

Description	Rollup	Units	Internal Name	Collection Level
☐ Average write requests per second	Average	Number	numberWriteAveraged	1
☐ Highest latency	Latest	Millisecond	maxTotalLatency	1
☐ Commands issued	Summation	Number	commands	2
☐ Average read requests per second	Average	Number	numberReadAveraged	1
☐ Read requests	Summation	Number	numberRead	3
☐ Average commands issued per second	Average	Number	commandsAveraged	2
☐ Write requests	Summation	Number	numberWrite	3
☐ Write rate	Average	KBps	write	2
☐ Commands aborted	Summation	Number	commandsAborted	2
☐ Usage	Average	KBps	usage	1
☐ Read rate	Average	KBps	read	2
☐ Bus resets	Summation	Number	busResets	2

Virtual disk/Real-time, 4/25/2014 4:13:33 PM - 4/25/2014 5:13:33 PM Chart Options...

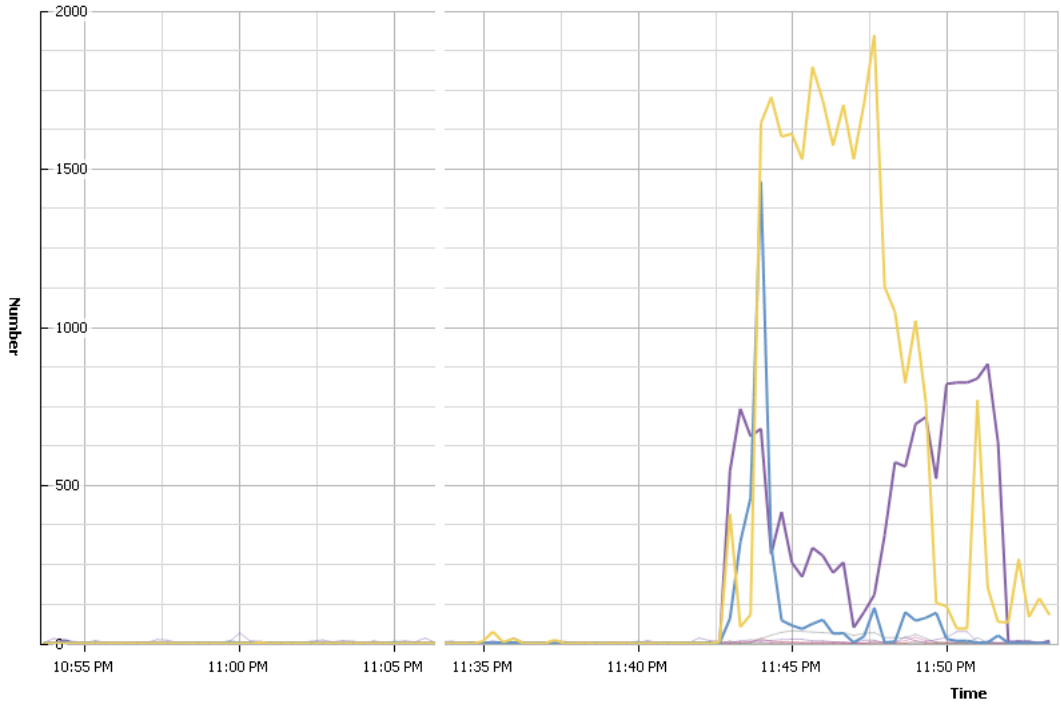
Graph refreshes every 20 seconds



Performance Chart Legend

Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	scsi0:0	Read latency	Average	Millisecond	0	436	0	2.738
	scsi0:0	Read Latency (us)	Latest	Microsecond	0	436140	0	2761.137
	scsi0:0	Write latency	Average	Millisecond	1	194	0	3.131
	scsi0:0	Write Latency (us)	Latest	Microsecond	1369	194044	0	3578.077

Virtual disk/Real-time, 5/3/2014 10:53:33 PM - 5/3/2014 11:53:33 PM Chart Options...
Graph refreshes every 20 seconds

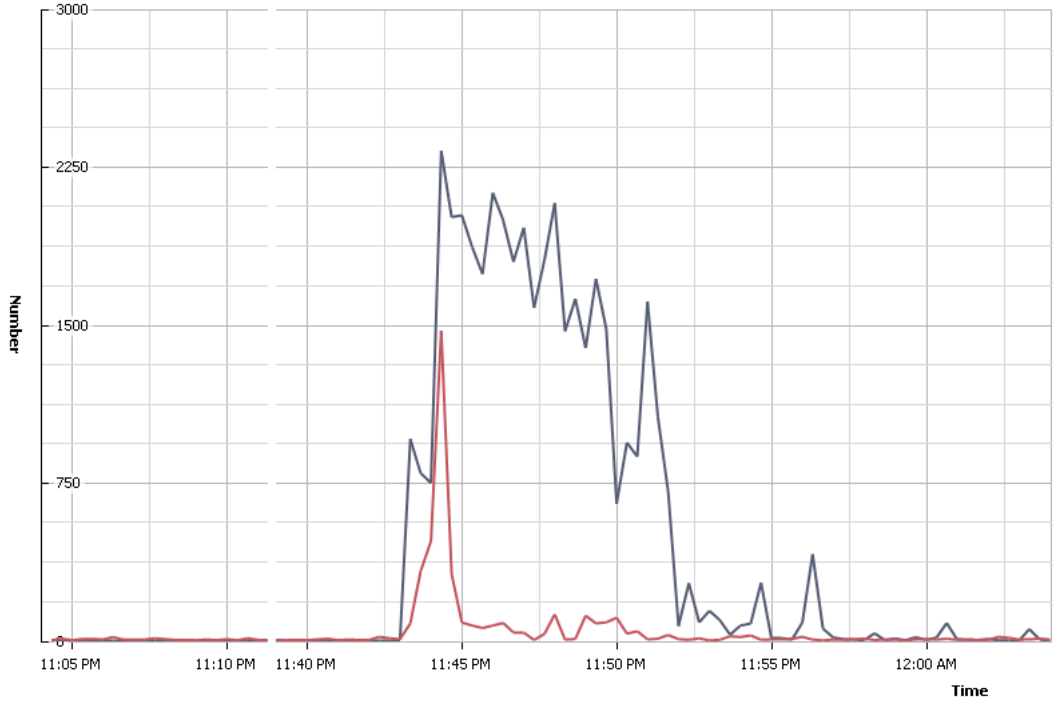


Performance Chart Legend

Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	scsi0:1	Average number of outstanding write requests	Latest	Number	0	0	0	0
	scsi0:0	Average number of outstanding write requests	Latest	Number	0	16	0	0.389
	scsi0:1	Average number of outstanding read requests	Latest	Number	0	20	0	0.622
	scsi0:0	Average number of outstanding read requests	Latest	Number	2	40	0	2.961
	scsi0:1	Average write requests per second	Average	Number	3	42	1	6.344
	scsi0:1	Average read requests per second	Average	Number	8	885	0	74.661
	scsi0:0	Average write requests per second	Average	Number	1	1463	0	21.05
	scsi0:0	Average read requests per second	Average	Number	90	1927	0	153.161

Datastore/Real-time, 5/3/2014 11:04:00 PM - 5/4/2014 12:04:00 AM Chart Options...

Graph refreshes every 20 seconds

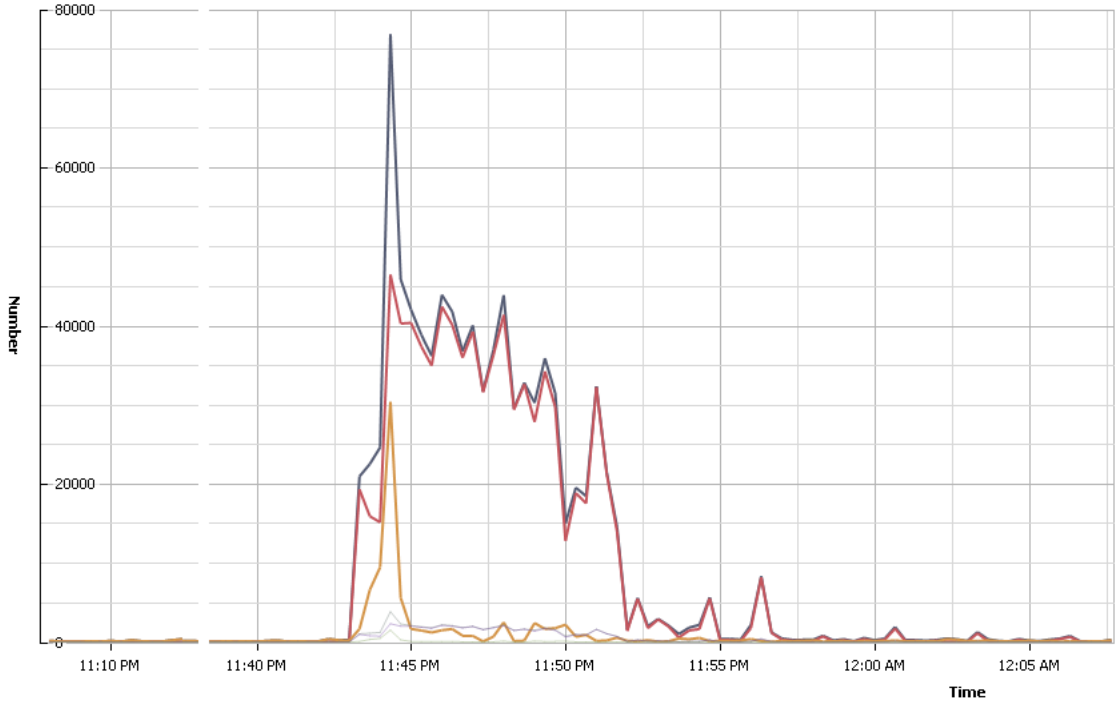


Performance Chart Legend

Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	SDDC-Datastore...	Average read requests per second	Average	Number	1	2331	0	230.867
	SDDC-Datastore...	Average write requests per second	Average	Number	6	1476	2	28.039

Disk/Real-time, 5/3/2014 11:07:42 PM - 5/4/2014 12:07:42 AM Chart Options...

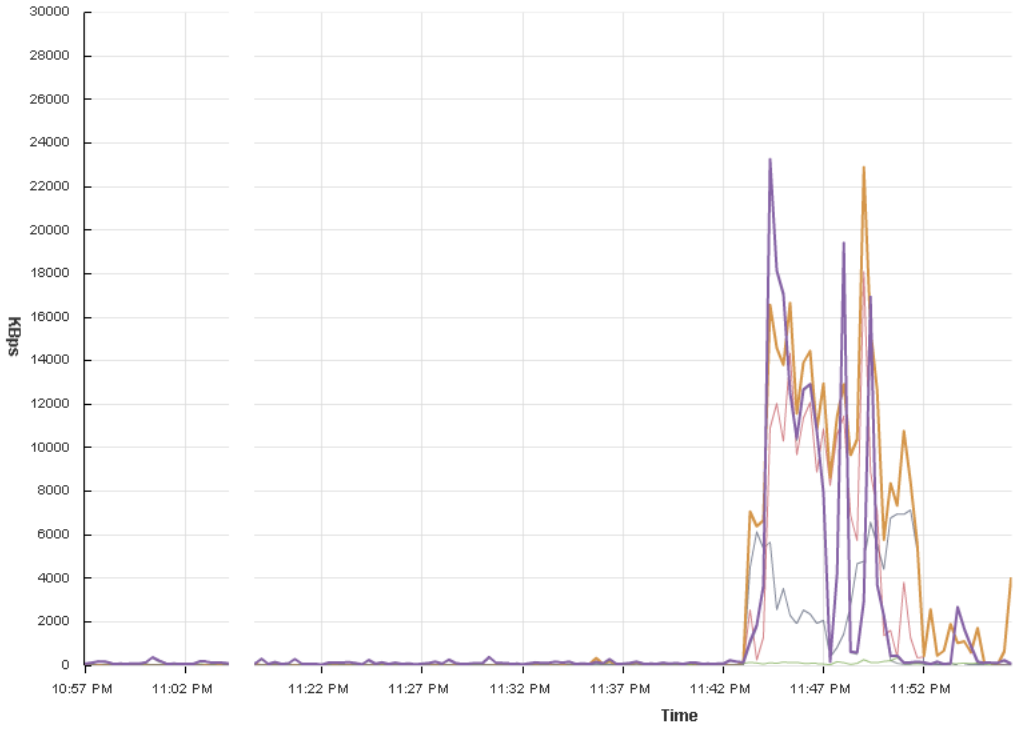
Graph refreshes every 20 seconds



Performance Chart Legend

Key	Object	Measurement	Rollup	Maximum	Minimum	Average
	NETAPP Fibre Channel Disk (naa.60a98000375435474833334554e6548)	Commands issued	Summation	76966	40	5197.817
	NETAPP Fibre Channel Disk (naa.60a98000375435474833334554e6548)	Read requests	Summation	46531	0	4630.517
	NETAPP Fibre Channel Disk (naa.60a98000375435474833334554e6548)	Write requests	Summation	30435	40	567.3
	NETAPP Fibre Channel Disk (naa.60a98000375435474833334554e6548)	Average commands issued per second	Average	3848	2	259.433
	NETAPP Fibre Channel Disk (naa.60a98000375435474833334554e6548)	Average read requests per second	Average	2326	0	231.267
	NETAPP Fibre Channel Disk (naa.60a98000375435474833334554e6548)	Average write requests per second	Average	1521	2	27.911

Virtual disk/Real-time, 5/3/2014 10:57:00 PM - 5/3/2014 11:56:20 PM Chart Options

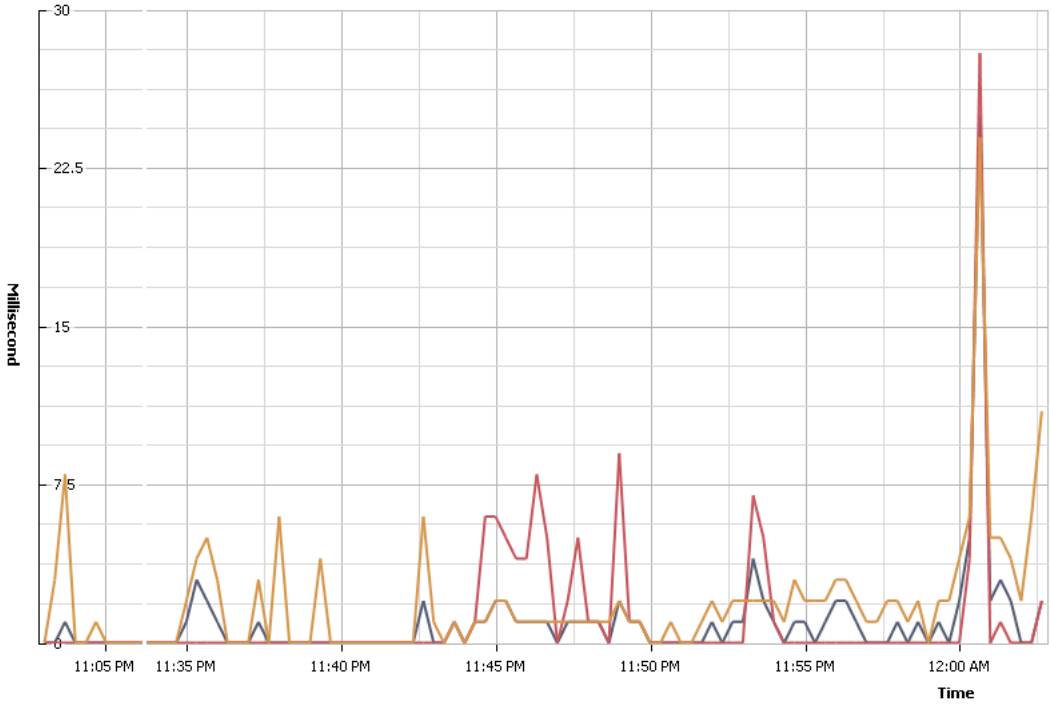


Performance Chart Legend

Key	Object	1 ▲	Measurement	Rollup	Units	Maximum	Minimum	Average
	BCDR-Prod-VC		Write rate	Average	KBps	23253	38	1160
	BCDR-Prod-VC		Read rate	Average	KBps	22894	0	1743.676
	scsi0:0		Read rate	Average	KBps	18115	0	1126.771
	scsi0:0		Write rate	Average	KBps	23123	3	1066.363
	scsi0:1		Write rate	Average	KBps	346	27	93.223
	scsi0:1		Read rate	Average	KBps	7146	0	616.799

Datastore/Real-time, 5/3/2014 11:02:49 PM - 5/4/2014 12:02:49 AM Chart Options...

Graph refreshes every 20 seconds

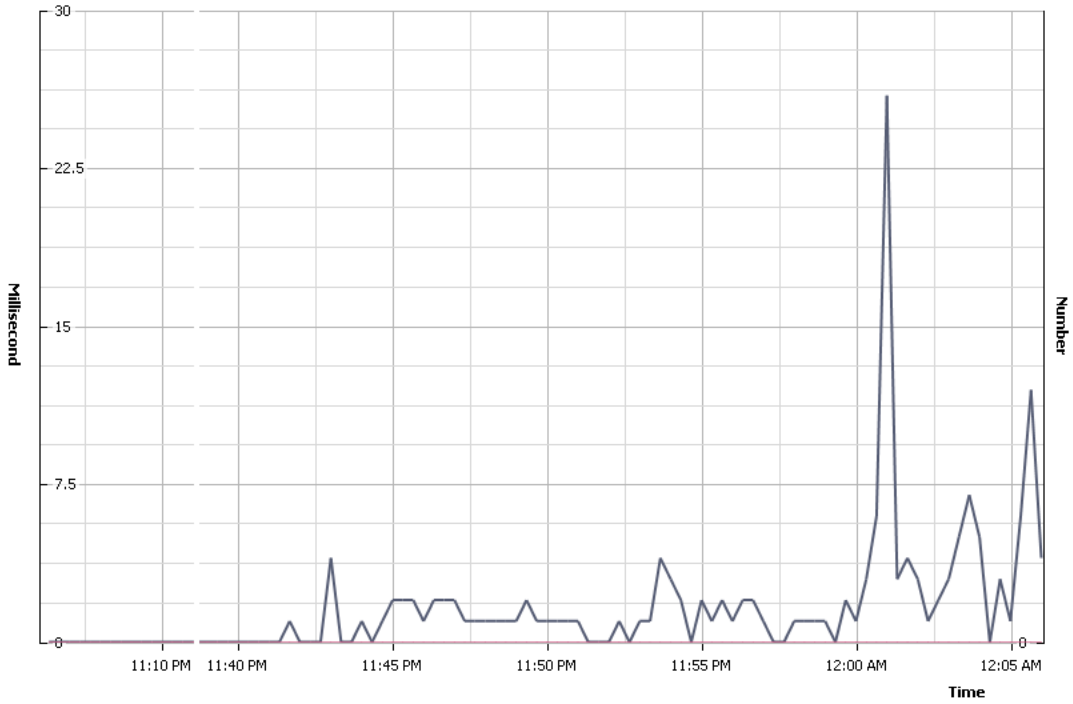


Performance Chart Legend

Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	BCDR-Prod-VC	Highest latency	Latest	Millisecond	2	25	0	0.539
	SDDC-Datastore...	Write latency	Average	Millisecond	2	28	0	0.611
	SDDC-Datastore...	Read latency	Average	Millisecond	11	24	0	1.278

Disk/Real-time, 5/3/2014 11:06:02 PM - 5/4/2014 12:06:02 AM Chart Options...

Graph refreshes every 20 seconds



Performance Chart Legend

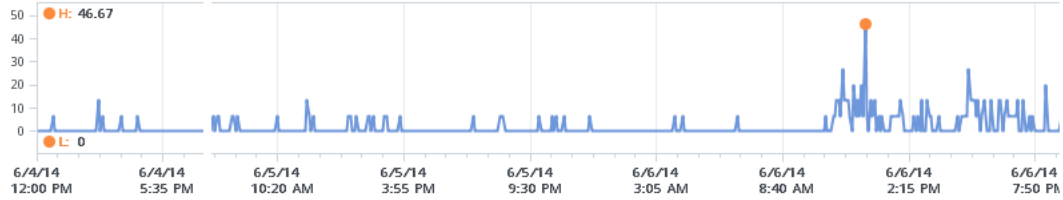
Key	Object	Measurement	Rollup	Units	Maximum	Minimum	Average
	BCDR-Prod-VC	Highest latency	Latest	Millisecond	26	0	1.017
	NETAPP Fibre Channel Disk (naa.60a9800037543547483f3334554e6548)	Bus resets	Summation	Number	0	0	0
	NETAPP Fibre Channel Disk (naa.60a9800037543547483f3334554e6548)	Commands aborted	Summation	Number	0	0	0

Description	Rollup	Units	Internal Name	Collection Level
Read latency	Average	Millisecond	totalReadLatency	2
Average write requests per second	Average	Number	numberWriteAveraged	2
Average commands issued per second	Average	Number	commandsAveraged	2
Highest latency	Latest	Millisecond	maxTotalLatency	3
Read rate	Average	KBps	read	2
Average read requests per second	Average	Number	numberReadAveraged	2
Write rate	Average	KBps	write	2
Write latency	Average	Millisecond	totalWriteLatency	2

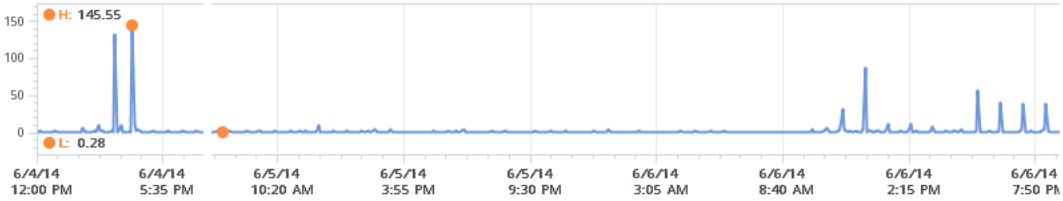
Description	Rollup	Units	Internal Name	Collection Level
Read rate	Average	KBps	read	3
Read latency	Average	Millisecond	totalReadLatency	3
Write latency	Average	Millisecond	totalWriteLatency	3
Write rate	Average	KBps	write	3
Average read requests per second	Average	Number	numberReadAveraged	3
Average write requests per second	Average	Number	numberWriteAveraged	3
Average commands issued per second	Average	Number	commandsAveraged	3
Highest latency	Latest	Millisecond	maxTotalLatency	3

Description	Rollup	Units	Internal Name	Collection Level
Storage I/O Control normalized latency	Average	Microsecond	sizeNormalizedDatastoreLatency	1
Storage DRS datastore outstanding write requests	Latest	Number	datastoreWriteOIO	1
Storage DRS datastore normalized read latency	Latest	Number	datastoreNormalReadLatency	2
Storage I/O Control datastore maximum queue depth	Latest	Number	datastoreMaxQueueDepth	1
Write rate	Average	KBps	write	2
Datastore latency observed by VMs	Latest	Number	datastoreVMObservedLatency	1
Storage DRS datastore read I/O rate	Latest	Number	datastoreReadIops	1
Average write requests per second	Average	Number	numberWriteAveraged	1
Write latency	Average	Millisecond	totalWriteLatency	1
Storage DRS datastore bytes read	Latest	Number	datastoreReadBytes	2
Storage DRS datastore read workload metric	Latest	Number	datastoreReadLoadMetric	4
Storage DRS datastore write workload metric	Latest	Number	datastoreWriteLoadMetric	4
Storage I/O Control aggregated IOPS	Average	Number	datastoreIops	1
Read latency	Average	Millisecond	totalReadLatency	1
Storage DRS datastore bytes written	Latest	Number	datastoreWriteBytes	2
Storage DRS datastore write I/O rate	Latest	Number	datastoreWriteIops	1
Read rate	Average	KBps	read	2
Storage DRS datastore outstanding read requests	Latest	Number	datastoreReadOIO	1
Storage DRS datastore normalized write latency	Latest	Number	datastoreNormalWriteLatency	2
Average read requests per second	Average	Number	numberReadAveraged	1
Storage I/O Control active time percentage	Average	Percent	siocActiveTimePercentage	1
Highest latency	Latest	Millisecond	maxTotalLatency	3

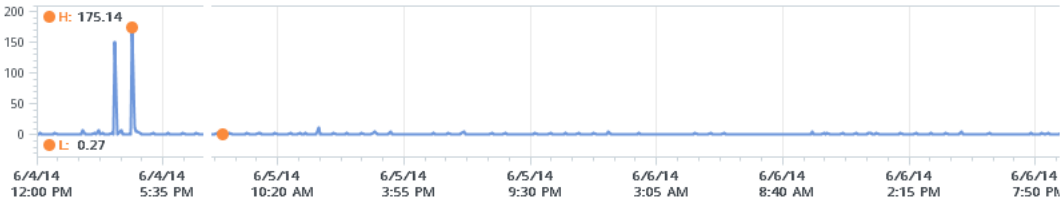
vmsgesxi004.vmsg.lab: Datastore I/O|Aggregate of all instances|siocActiveTimePercentage_average



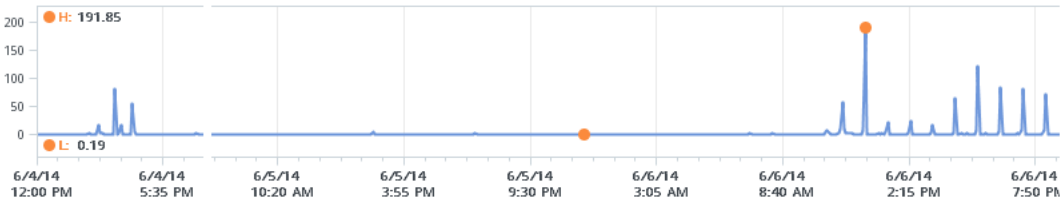
vmsgesxi004.vmsg.lab: Datastore I/O|Aggregate of all instances|Disk Command Latency (ms)



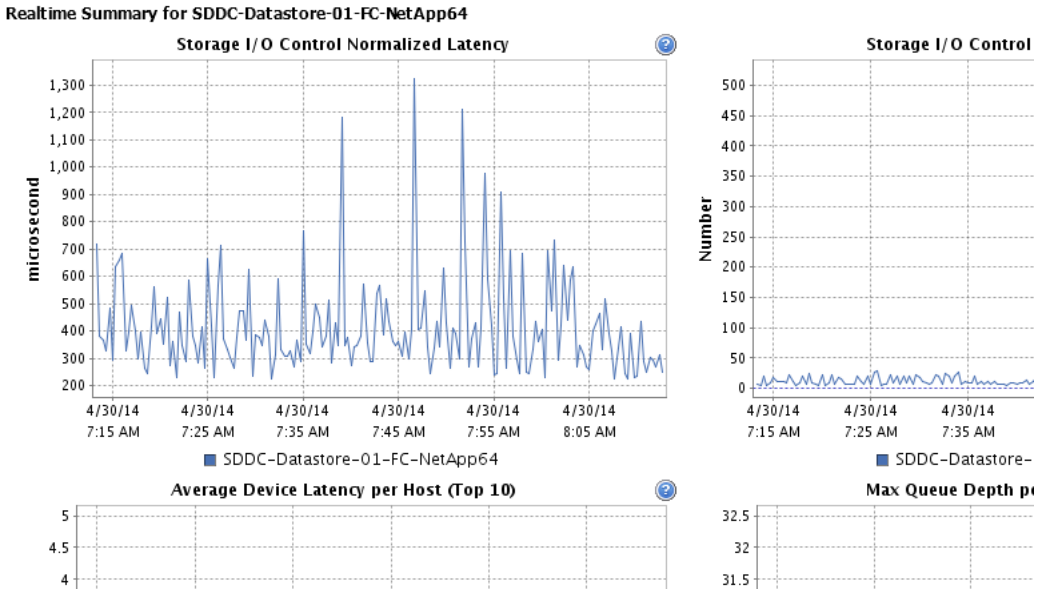
vmsgesxi004.vmsg.lab: Datastore I/O|SDDC-DR-Tier-02-NFS-VNX|Disk Command Latency (ms)



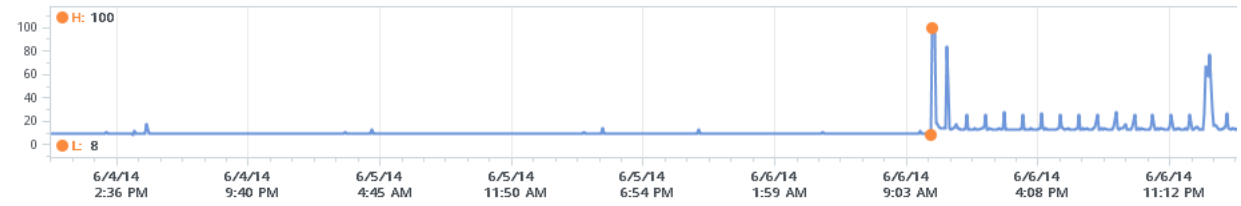
vmsgesxi004.vmsg.lab: Datastore I/O|SDDC-DR-Tier-01-NFS-VNX|Disk Command Latency (ms)



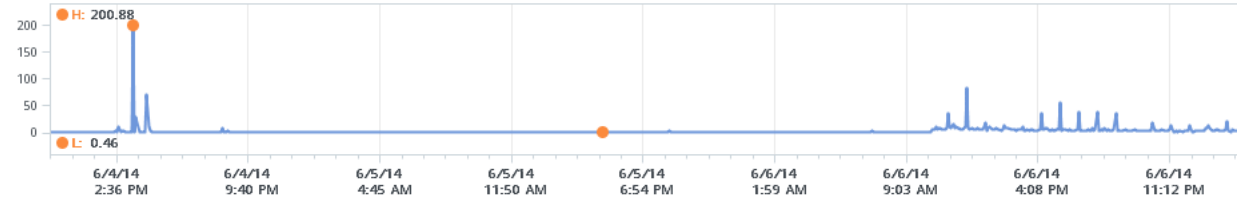
Description	Rollup	Units	Internal Name	Collection Level
☐ Queue command latency	Average	Millisecond	queueLatency	2
☑ Write rate	Average	KBps	write	2
☐ Bus resets	Summation	Number	busResets	2
☐ Write latency	Average	Millisecond	totalWriteLatency	2
☐ Average commands issued per second	Average	Number	commandsAveraged	2
☐ Kernel read latency	Average	Millisecond	kernelReadLatency	2
☐ Queue write latency	Average	Millisecond	queueWriteLatency	2
☐ Read requests	Summation	Number	numberRead	3
☐ Average write requests per second	Average	Number	numberWriteAveraged	1
☐ Physical device command latency	Average	Millisecond	deviceLatency	1
☐ Write requests	Summation	Number	numberWrite	3
☐ Maximum queue depth	Average	Number	maxQueueDepth	1
☐ Commands aborted	Summation	Number	commandsAborted	2
☐ Kernel command latency	Average	Millisecond	kernelLatency	2
☑ Read rate	Average	KBps	read	2
☐ Physical device write latency	Average	Millisecond	deviceWriteLatency	2
☐ Read latency	Average	Millisecond	totalReadLatency	2
☐ Average read requests per second	Average	Number	numberReadAveraged	1
☑ Highest latency	Latest	Millisecond	maxTotalLatency	1
☐ Commands issued	Summation	Number	commands	2
☐ Physical device read latency	Average	Millisecond	deviceReadLatency	2
☐ Queue read latency	Average	Millisecond	queueReadLatency	2
☐ Kernel write latency	Average	Millisecond	kernelWriteLatency	2
☐ Command latency	Average	Millisecond	totalLatency	3
☑ Usage	Average	KBps	usage	1



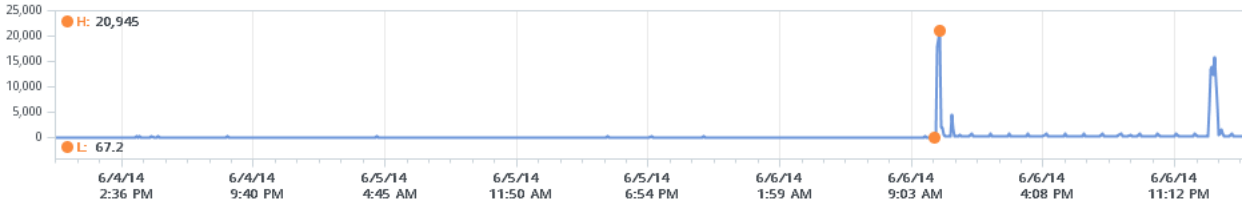
SDDC-DR-Tier-01-NFS-VNX: Datastore I/O|Workload



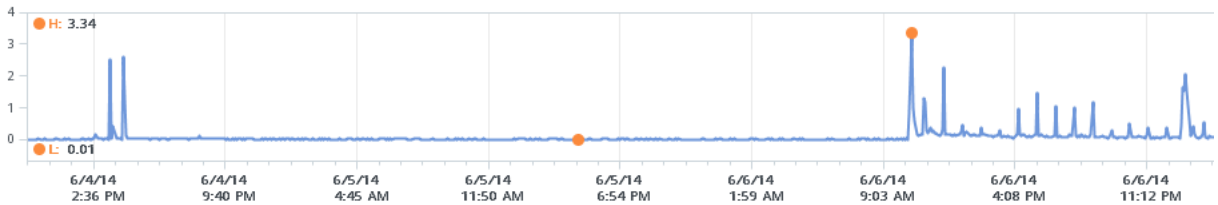
SDDC-DR-Tier-01-NFS-VNX: Datastore I/O|Disk Command Latency (ms)

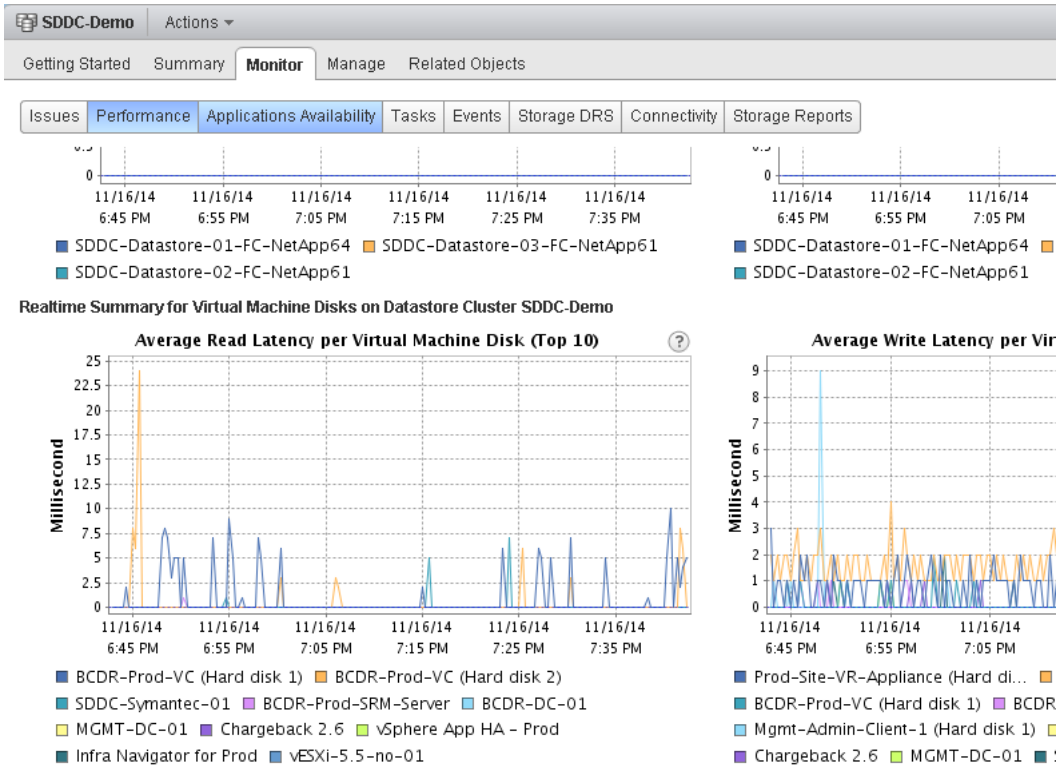


SDDC-DR-Tier-01-NFS-VNX: Datastore I/O|Usage Average(KBps)



SDDC-DR-Tier-01-NFS-VNX: Datastore I/O|Outstanding IO requests




SDDC-Demo
Actions
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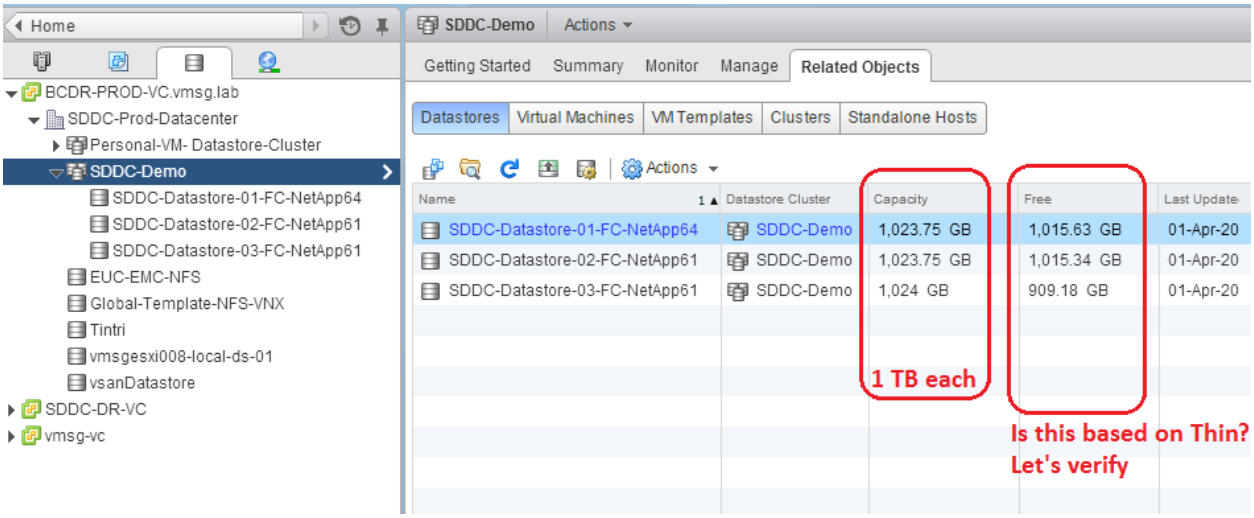
Related Objects
Issues
Performance
Applications Availability
Tasks
Events
Storage DRS
Connectivity
Storage Reports
11/16/14 6:45 PM
11/16/14 6:55 PM
11/16/14 7:05 PM
11/16/14 7:15 PM
11/16/14 7:25 PM
11/16/14 7:35 PM
SDDC-Datastore-01-FC-NetApp64
SDDC-Datastore-03-FC-NetApp61
SDDC-Datastore-02-FC-NetApp61
Realtime Summary for Virtual Machine Disks on Datastore Cluster SDDC-Demo
Average Read Latency per Virtual Machine Disk (Top 10)
Millisecond
BCDR-Prod-VC (Hard disk 1)
BCDR-Prod-VC (Hard disk 2)
SDDC-Symantec-01
BCDR-Prod-SRM-Server
BCDR-DC-01
MGMT-DC-01
Chargeback 2.6
vSphere App HA - Prod
Infra Navigator for Prod
vESXi-5.5-no-01
Average Write Latency per Vir
Prod-Site-VR-Appliance (Hard di...
BCDR-Prod-VC (Hard disk 1)
Mgmt-Admin-Client-1 (Hard disk 1)


Home
BCDR-PROD-VC.vmsg.lab
SDDC-Prod-Datacenter
Personal-VM- Datastore-Cluster
SDDC-Demo
SDDC-Datastore-01-FC-NetApp64
SDDC-Datastore-02-FC-NetApp61
SDDC-Datastore-03-FC-NetApp61
EUC-EMC-NFS
Global-Template-NFS-VNX
Tintri
vmsgesxi008-local-ds-01
vsanDatastore
SDDC-DR-VC
vmsg-vc
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Actions
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Datastores
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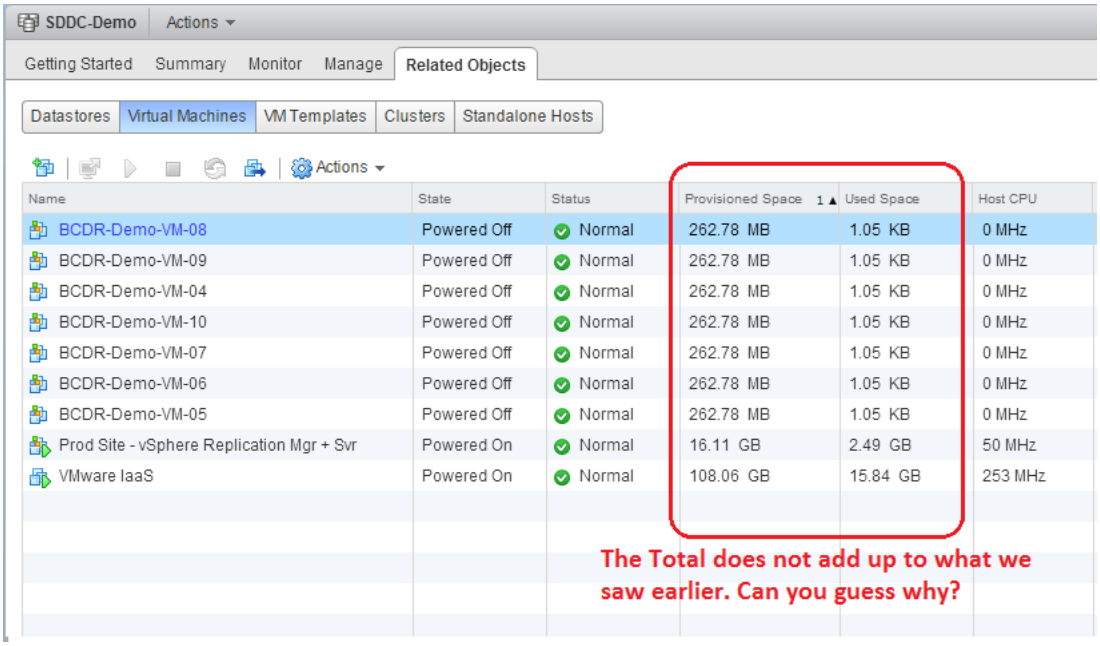
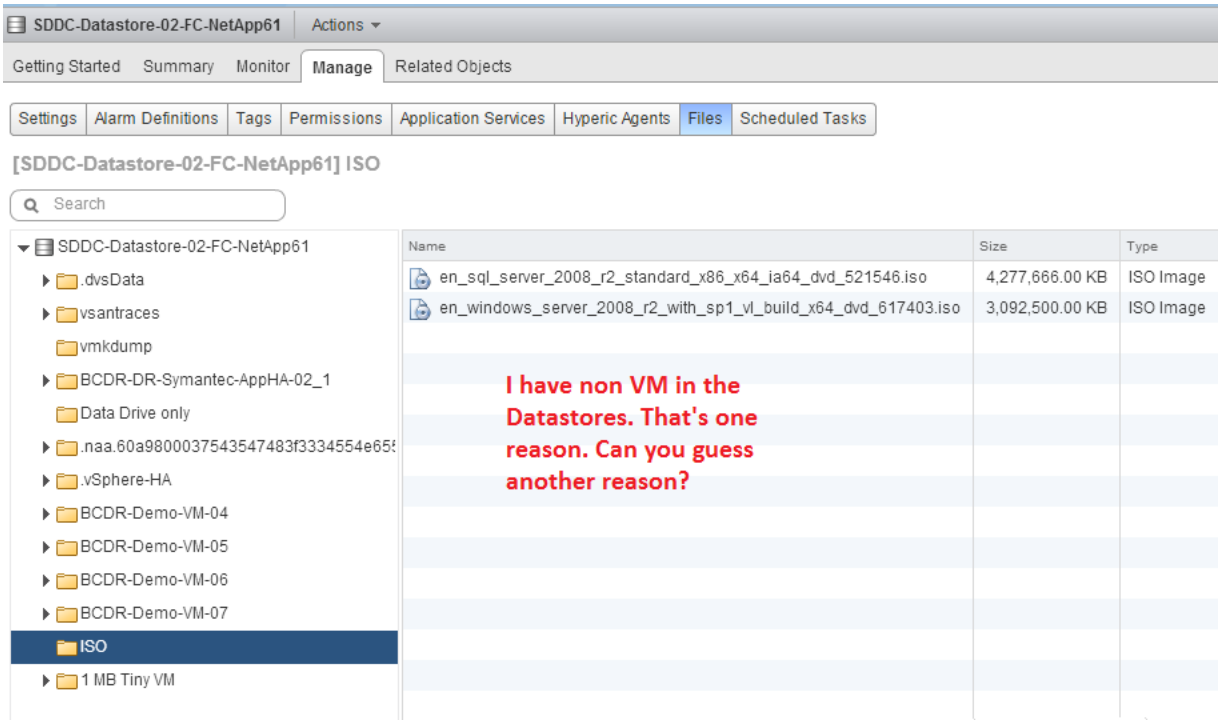
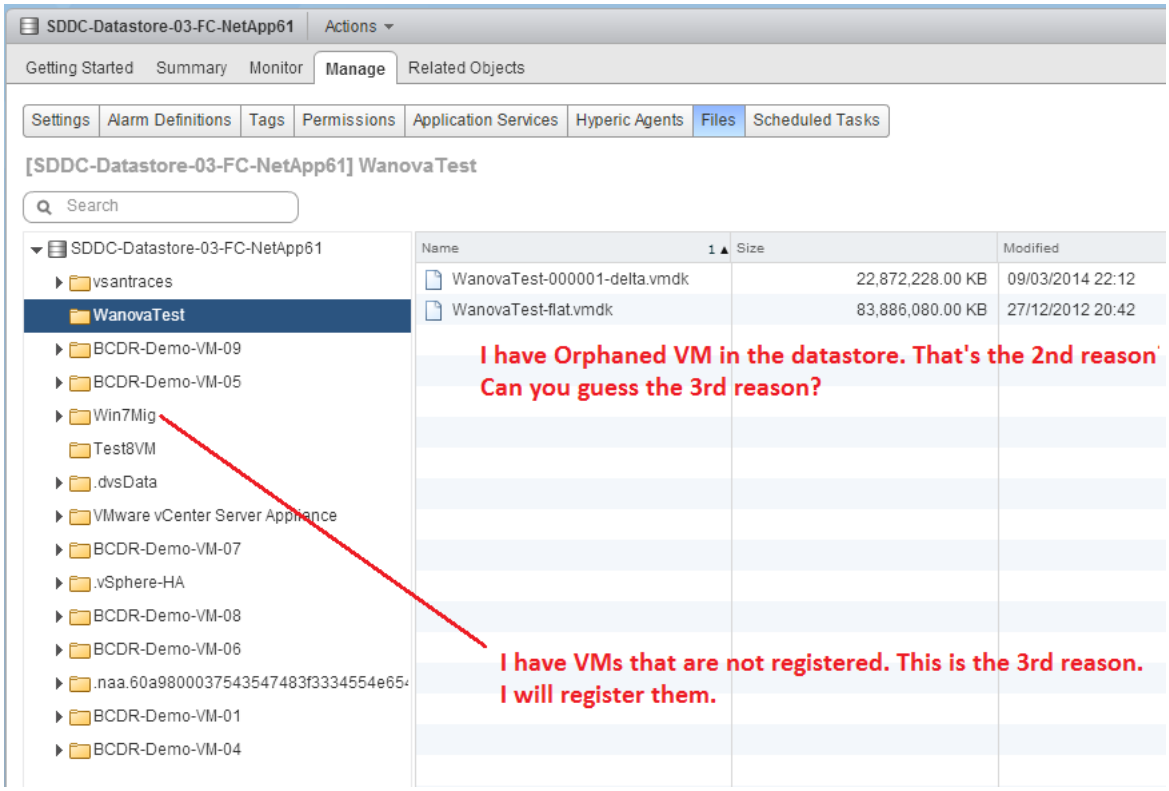
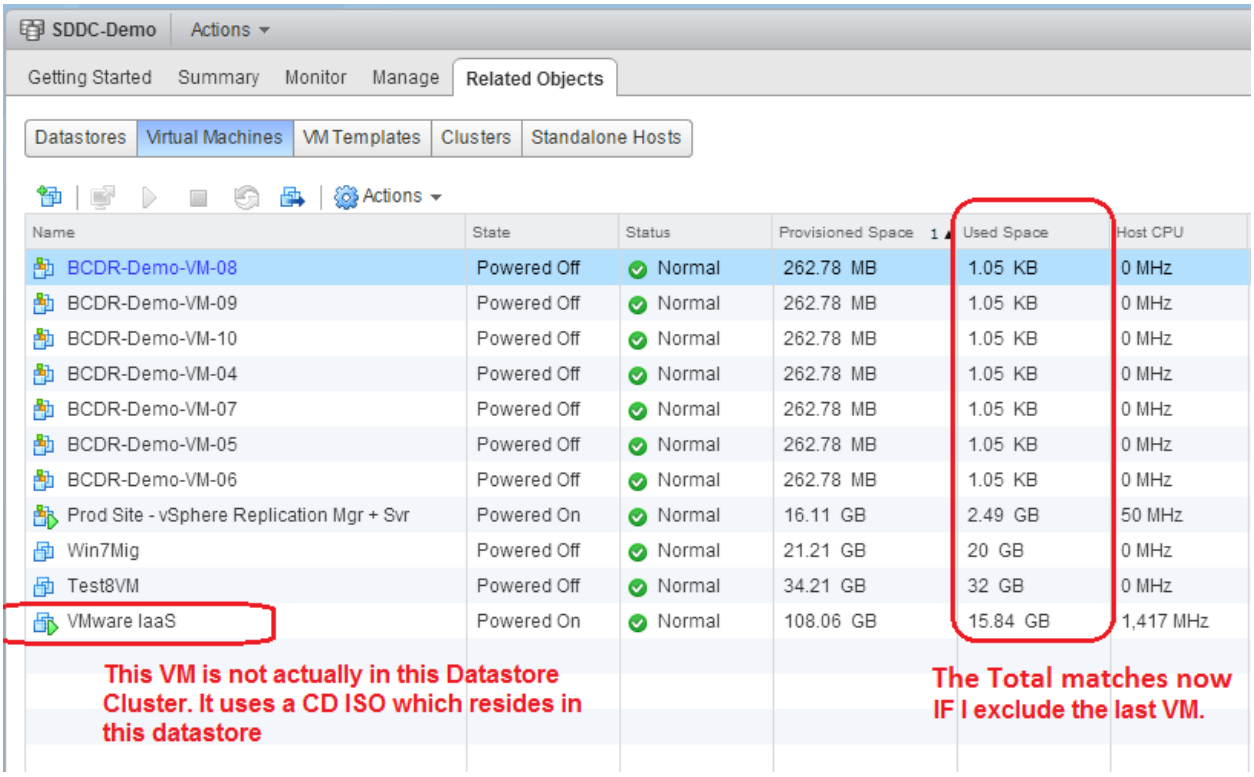
VM Templates
Clusters
Standalone Hosts
Actions
Name
Datastore Cluster
Capacity
Free
Last Update
SDDC-Datastore-01-FC-NetApp64
SDDC-Demo
1,023.75 GB
1,015.63 GB
01-Apr-20
SDDC-Datastore-02-FC-NetApp61
SDDC-Demo
1,023.75 GB
1,015.34 GB
01-Apr-20
SDDC-Datastore-03-FC-NetApp61
SDDC-Demo
1,024 GB
909.18 GB
01-Apr-20
1 TB each
Is this based on Thin?
Let's verify


SDDC-Demo
Actions
Getting Started
Summary
Monitor
Manage
Related Objects
Datastores
Virtual Machines
VM Templates
Clusters
Standalone Hosts
Actions
Name
State
Status
Provisioned Space
Used Space
Host CPU
BCDR-Demo-VM-08 Powered Off Normal 262.78 MB 1.05 KB 0 MHz
BCDR-Demo-VM-09 Powered Off Normal 262.78 MB 1.05 KB 0 MHz
BCDR-Demo-VM-04 Powered Off Normal 262.78 MB 1.05 KB 0 MHz
BCDR-Demo-VM-10 Powered Off Normal 262.78 MB 1.05 KB 0 MHz
BCDR-Demo-VM-07 Powered Off Normal 262.78 MB 1.05 KB 0 MHz
BCDR-Demo-VM-06 Powered Off Normal 262.78 MB 1.05 KB 0 MHz
BCDR-Demo-VM-05 Powered Off Normal 262.78 MB 1.05 KB 0 MHz
Prod Site - vSphere Replication Mgr + Svr Powered On Normal 16.11 GB 2.49 GB 50 MHz
VMware IaaS Powered On Normal 108.06 GB 15.84 GB 253 MHz
The Total does not add up to what we saw earlier. Can you guess why?


SDDC-Datastore-02-FC-NetApp61
Actions
Getting Started
Summary
Monitor
Manage
Related Objects
Settings
Alarm Definitions
Tags
Permissions
Application Services
Hyperic Agents
Files
Scheduled Tasks
[SDDC-Datastore-02-FC-NetApp61] ISO
Search
SDDC-Datastore-02-FC-NetApp61
.dvsData
vsantraces
vmkdump
BCDR-DR-Symantec-AppHA-02_1
Data Drive only
.naa.60a98000375435474837334554e65
.vSphere-HA
BCDR-Demo-VM-04
BCDR-Demo-VM-05
BCDR-Demo-VM-06
BCDR-Demo-VM-07
ISO
1 MB Tiny VM
Name
Size
Type
en_sql_server_2008_r2_standard_x86_x64_ia64_dvd_521546.iso 4,277,666.00 KB ISO Image
en_windows_server_2008_r2_with_sp1_vl_build_x64_dvd_617403.iso 3,092,500.00 KB ISO Image
I have non VM in the Datastores. That's one reason. Can you guess another reason?


SDDC-Datastore-03-FC-NetApp61
Actions
Getting Started
Summary
Monitor
Manage
Related Objects
Settings
Alarm Definitions
Tags
Permissions
Application Services
Hyperic Agents
Files
Scheduled Tasks
[SDDC-Datastore-03-FC-NetApp61] WanovaTest
Search
SDDC-Datastore-03-FC-NetApp61
vsantraces
WanovaTest
BCDR-Demo-VM-09
BCDR-Demo-VM-05
Win7Mig
Test8VM
.dvsData
VMware vCenter Server Appliance
BCDR-Demo-VM-07
.vSphere-HA
BCDR-Demo-VM-08
BCDR-Demo-VM-06
.naa.60a980003754354748 3f3334554e65
BCDR-Demo-VM-01
BCDR-Demo-VM-04
Name
Size
Modified
WanovaTest-000001-delta.vmdk
22,872,228.00 KB
09/03/2014 22:12
WanovaTest-flat.vmdk
83,886,080.00 KB
27/12/2012 20:42
I have Orphaned VM in the datastore. That's the 2nd reason
Can you guess the 3rd reason?
I have VMs that are not registered. This is the 3rd reason.
I will register them.


SDDC-Demo
Actions
Getting Started
Summary
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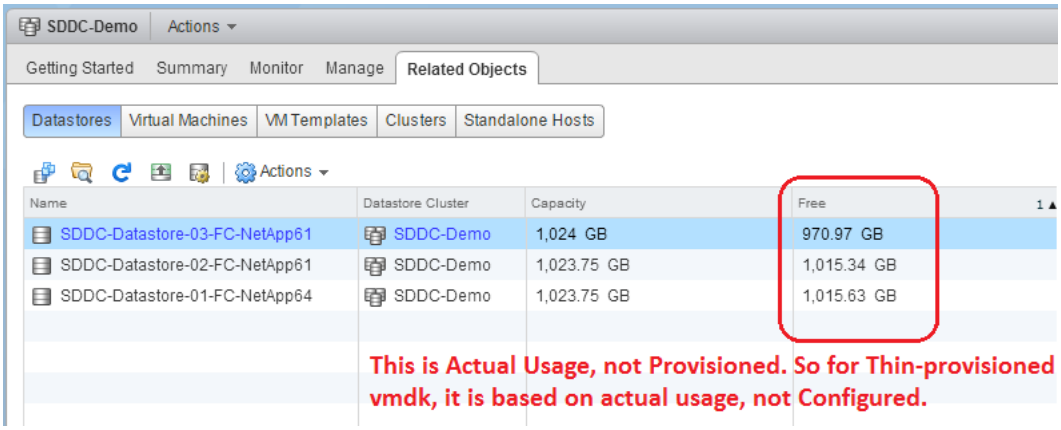
Related Objects
Datastores
Virtual Machines
VM Templates
Clusters
Standalone Hosts
Actions
Name
State
Status
Provisioned Space
Used Space
Host CPU
BCDR-Demo-VM-08 Powered Off Normal 262.78 MB 1.05 KB 0 MHz
BCDR-Demo-VM-09 Powered Off Normal 262.78 MB 1.05 KB 0 MHz
BCDR-Demo-VM-10 Powered Off Normal 262.78 MB 1.05 KB 0 MHz
BCDR-Demo-VM-04 Powered Off Normal 262.78 MB 1.05 KB 0 MHz
BCDR-Demo-VM-07 Powered Off Normal 262.78 MB 1.05 KB 0 MHz
BCDR-Demo-VM-05 Powered Off Normal 262.78 MB 1.05 KB 0 MHz
BCDR-Demo-VM-06 Powered Off Normal 262.78 MB 1.05 KB 0 MHz
Prod Site - vSphere Replication Mgr + Svr Powered On Normal 16.11 GB 2.49 GB 50 MHz
Win7Mig Powered Off Normal 21.21 GB 20 GB 0 MHz
Test8VM Powered Off Normal 34.21 GB 32 GB 0 MHz
VMware IaaS Powered On Normal 108.06 GB 15.84 GB 1,417 MHz
This VM is not actually in this Datastore Cluster. It uses a CD ISO which resides in this datastore
The Total matches now IF I exclude the last VM.


SDDC-Demo
Actions
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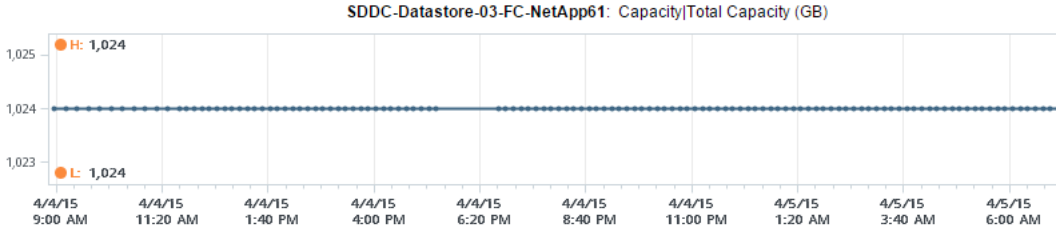
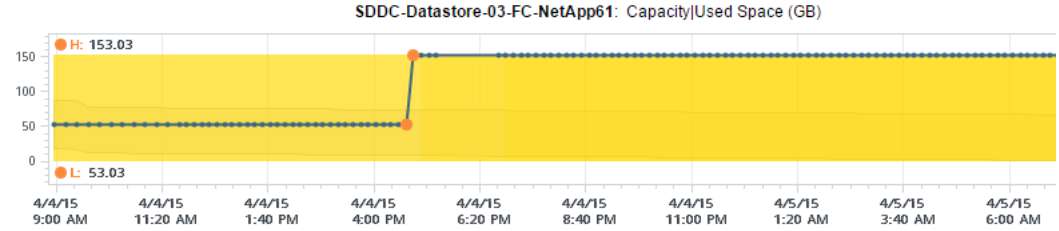
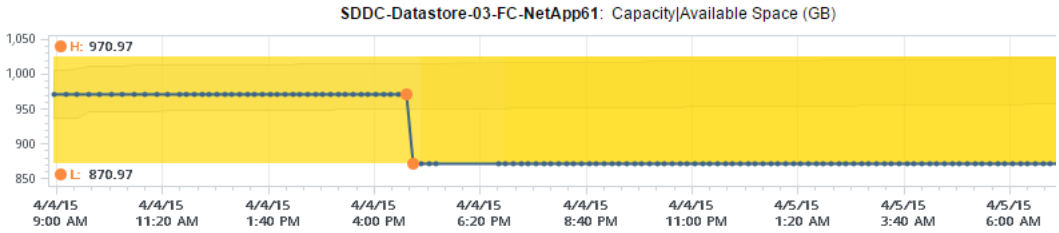
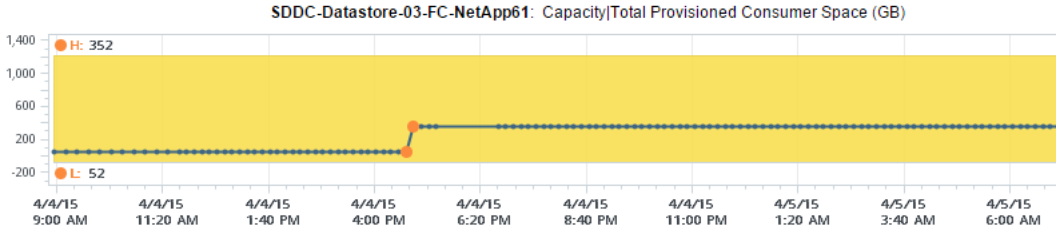
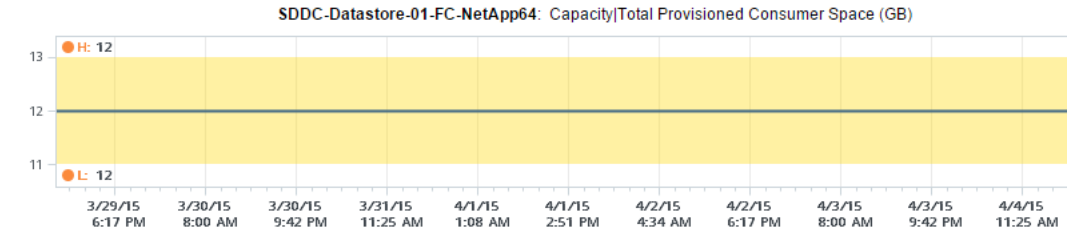
Virtual Machines
VM Templates
Clusters
Standalone Hosts
Actions
Name
Datastore Cluster
Capacity
Free
SDDC-Datastore-03-FC-NetApp61
SDDC-Demo
1,024 GB
970.97 GB
SDDC-Datastore-02-FC-NetApp61
SDDC-Demo
1,023.75 GB
1,015.34 GB
SDDC-Datastore-01-FC-NetApp64
SDDC-Demo
1,023.75 GB
1,015.63 GB
This is Actual Usage, not Provisioned. So for Thin-provisioned vmdk, it is based on actual usage, not Configured.

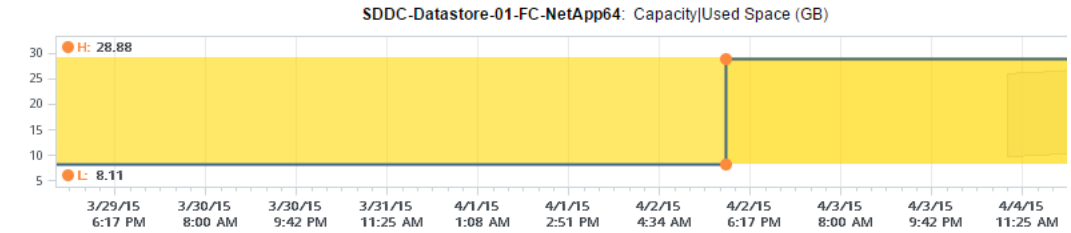

SDDC-Datastore-03-FC-NetApp61: Capacity|Total Capacity (GB)
H: 1,024
L: 1,024
1,025
1,024
1,023
4/4/15 9:00 AM
4/4/15 11:20 AM
4/4/15 1:40 PM
4/4/15 4:00 PM
4/4/15 6:20 PM
4/4/15 8:40 PM
4/4/15 11:00 PM
4/5/15 1:20 AM
4/5/15 3:40 AM
4/5/15 6:00 AM

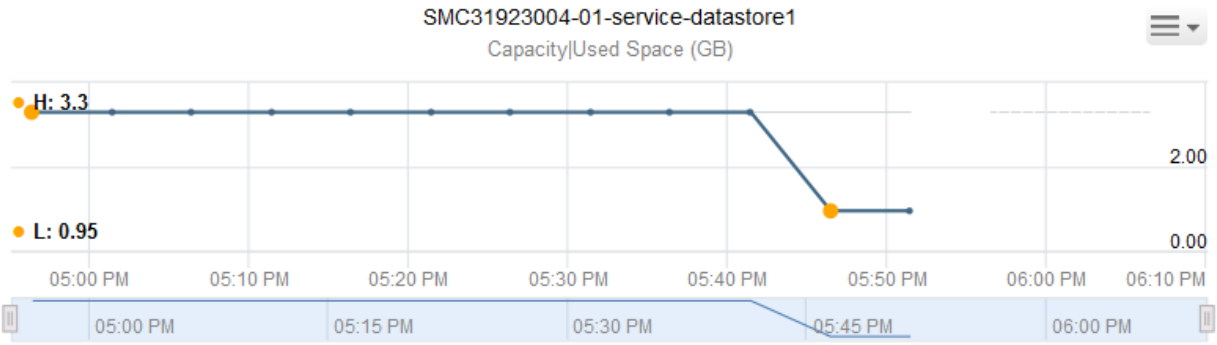

SDDC-Datastore-03-FC-NetApp61: Capacity|Used Space (GB)
H: 153.03
L: 53.03
150
100
50
0
4/4/15 9:00 AM
4/4/15 11:20 AM
4/4/15 1:40 PM
4/4/15 4:00 PM
4/4/15 6:20 PM
4/4/15 8:40 PM
4/4/15 11:00 PM
4/5/15 1:20 AM
4/5/15 3:40 AM
4/5/15 6:00 AM

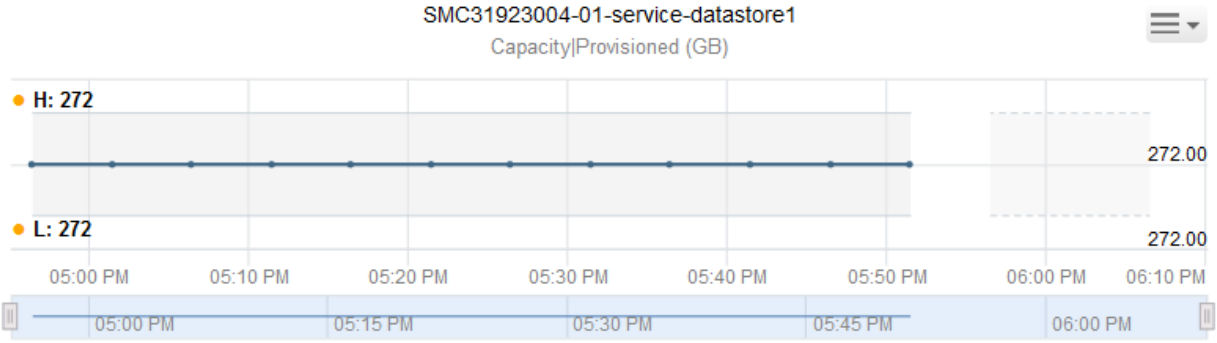

SDDC-Datastore-03-FC-NetApp61: Capacity|Available Space (GB)
H: 970.97
L: 870.97
1,050
1,000
950
900
850
4/4/15 9:00 AM
4/4/15 11:20 AM
4/4/15 1:40 PM
4/4/15 4:00 PM
4/4/15 6:20 PM
4/4/15 8:40 PM
4/4/15 11:00 PM
4/5/15 1:20 AM
4/5/15 3:40 AM
4/5/15 6:00 AM


SDDC-Datastore-03-FC-NetApp61: Capacity|Total Provisioned Consumer Space (GB)
H: 352
L: 52
1,400
1,000
600
200
-200
4/4/15 9:00 AM
4/4/15 11:20 AM
4/4/15 1:40 PM
4/4/15 4:00 PM
4/4/15 6:20 PM
4/4/15 8:40 PM
4/4/15 11:00 PM
4/5/15 1:20 AM
4/5/15 3:40 AM
4/5/15 6:00 AM


SDDC-Datastore-01-FC-NetApp64: Capacity|Total Provisioned Consumer Space (GB)
H: 12
L: 12
13
12
11
3/29/15 6:17 PM
3/30/15 8:00 AM
3/30/15 9:42 PM
3/31/15 11:25 AM
4/1/15 1:08 AM
4/1/15 2:51 PM
4/2/15 4:34 AM
4/2/15 6:17 PM
4/3/15 8:00 AM
4/3/15 9:42 PM
4/4/15 11:25 AM


SDDC-Datastore-01-FC-NetApp64: Capacity|Used Space (GB)
H: 28.88
L: 8.11
30
25
20
15
10
5
3/29/15 6:17 PM
3/30/15 8:00 AM
3/30/15 9:42 PM
3/31/15 11:25 AM
4/1/15 1:08 AM
4/1/15 2:51 PM
4/2/15 4:34 AM
4/2/15 6:17 PM
4/3/15 8:00 AM
4/3/15 9:42 PM
4/4/15 11:25 AM


SMC31923004-01-service-datastore1
Capacity|Used Space (GB)
H: 3.3
L: 0.95
2.00
0.00
05:00 PM
05:10 PM
05:20 PM
05:30 PM
05:40 PM
05:50 PM
06:00 PM
06:10 PM
05:00 PM
05:15 PM
05:30 PM
05:45 PM
06:00 PM

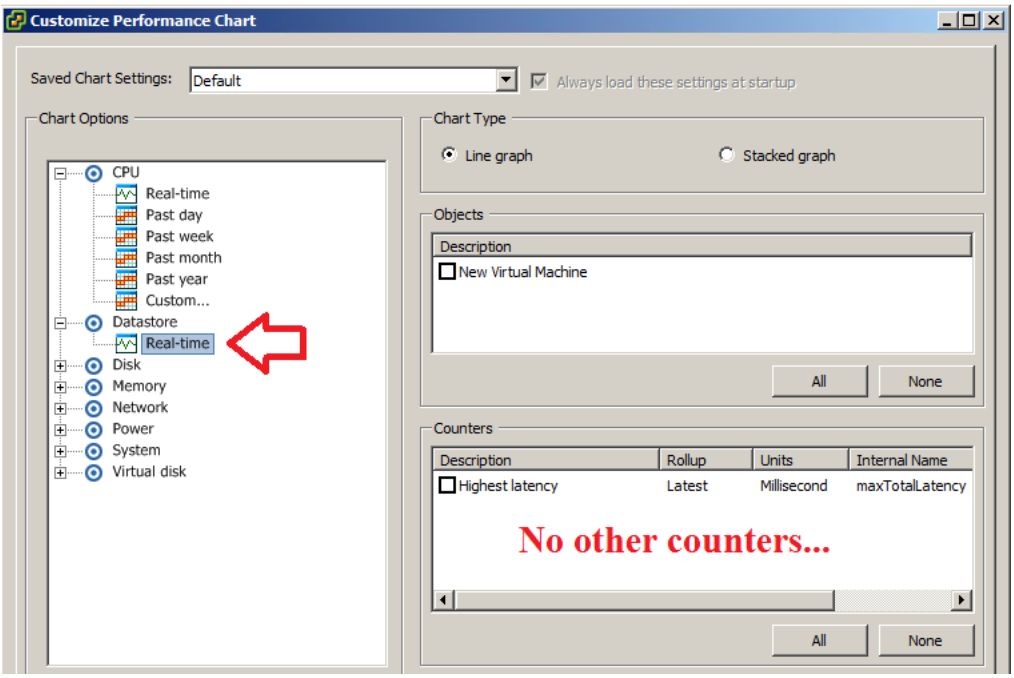

SMC31923004-01-service-datastore1
Capacity|Provisioned (GB)
H: 272
L: 272
272.00
272.00
05:00 PM
05:10 PM
05:20 PM
05:30 PM
05:40 PM
05:50 PM
06:00 PM
06:10 PM
05:00 PM
05:15 PM
05:30 PM
05:45 PM
06:00 PM

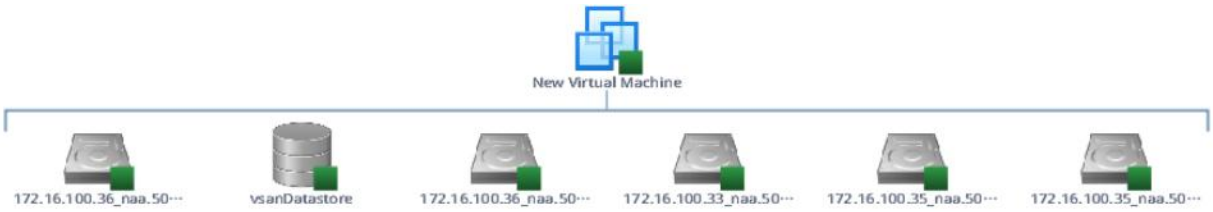
Attributes

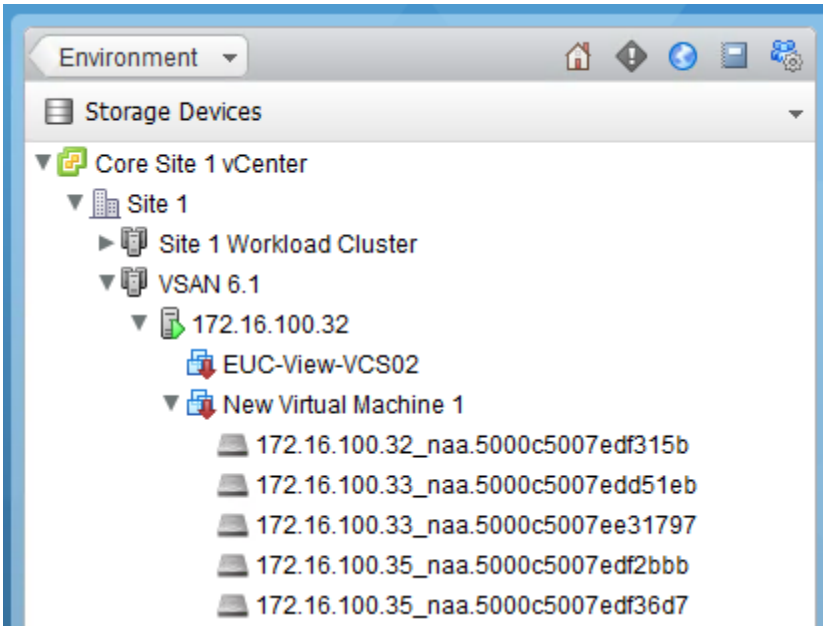
Find metrics or properties below and enable or disable them for collection.

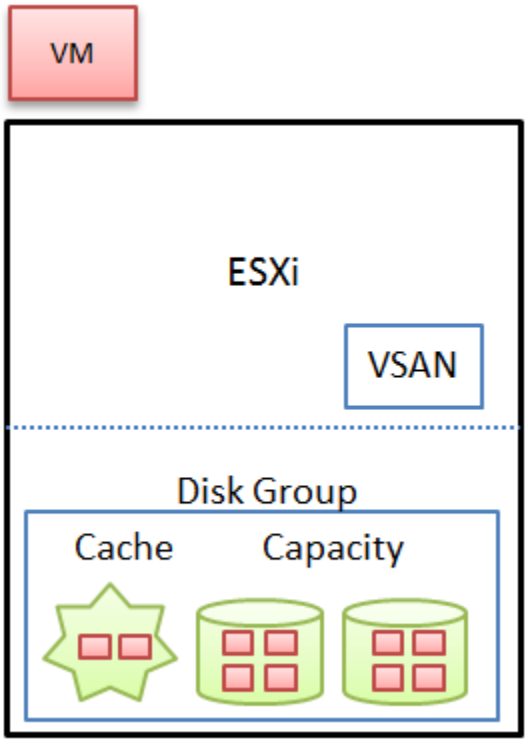
Actions | Attribute Type | State | KPI | DT | Object Type: Datastore Cluster | Page Size:

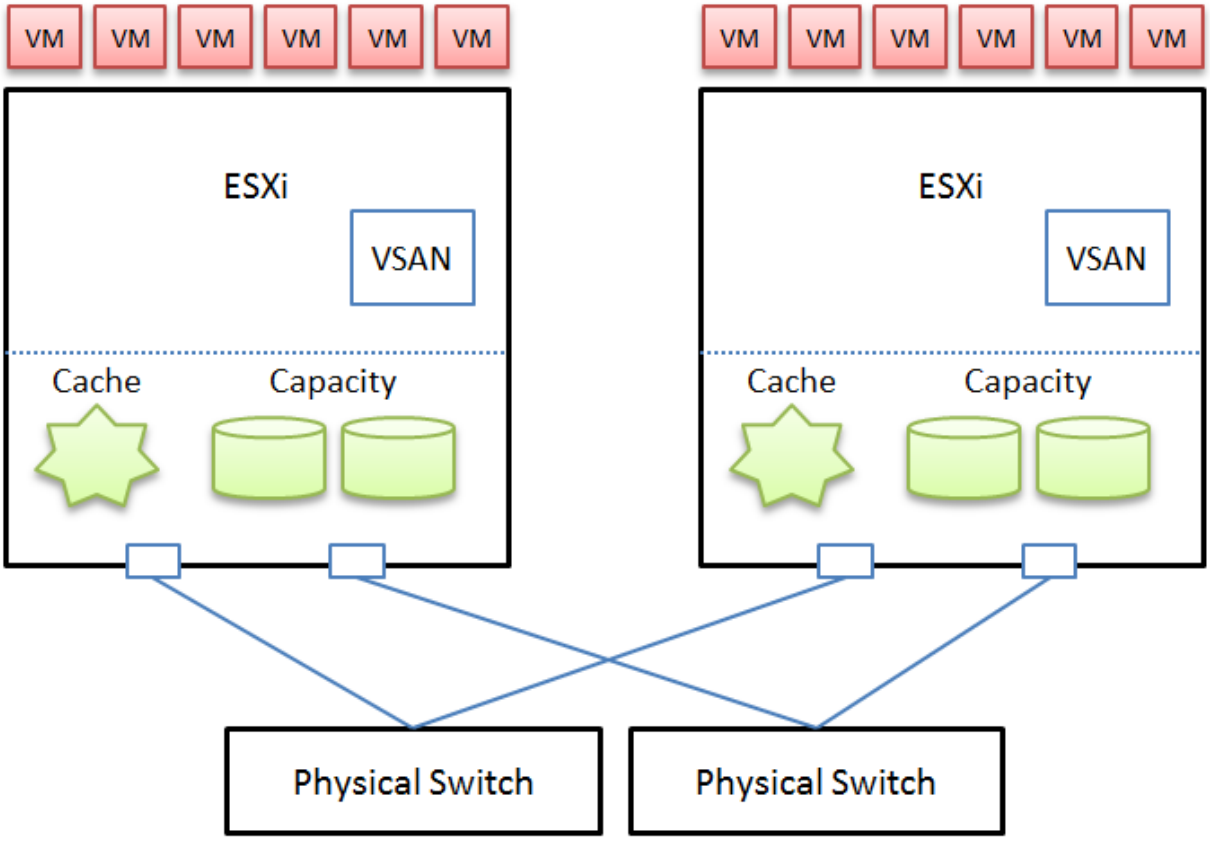
Name	Type	Object Type	State
Datastore|Read Rate (KBps)	Metric	Datastore Cluster	Inherited
Datastore|Reads per second (IOPS)	Metric	Datastore Cluster	Inherited
Datastore|Usage Average (KBps)	Metric	Datastore Cluster	Inherited
Datastore|Write Latency (ms)	Metric	Datastore Cluster	Inherited
Datastore|Write Rate (KBps)	Metric	Datastore Cluster	Inherited
Datastore|Writes per second (IOPS)	Metric	Datastore Cluster	Inherited
Disk Space|Capacity (GB)	Metric	Datastore Cluster	Local
Disk Space|Freespace (GB)	Metric	Datastore Cluster	Local
Disk Space|Snapshot Space (GB)	Metric	Datastore Cluster	Local
Disk Space|Total used (GB)	Metric	Datastore Cluster	Local
Disk Space|Virtual Machine used (GB)	Metric	Datastore Cluster	Local
vRealize Operations Generated|Alert Count Critical	Metric	Datastore Cluster	Inherited

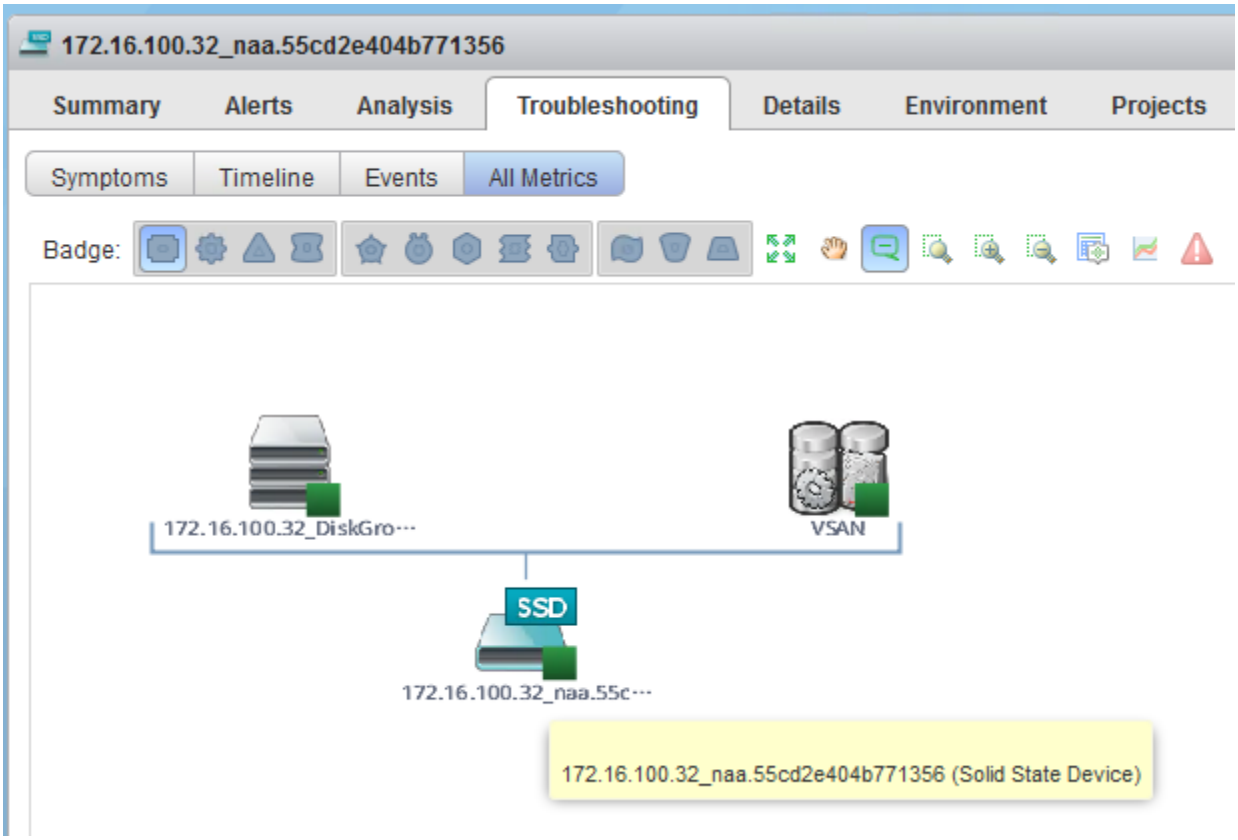


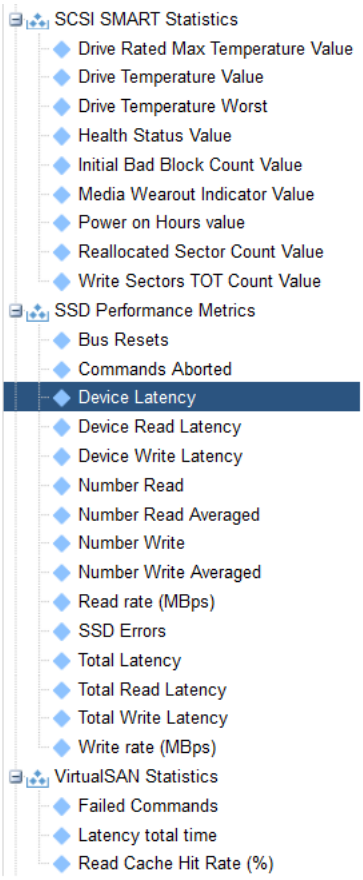


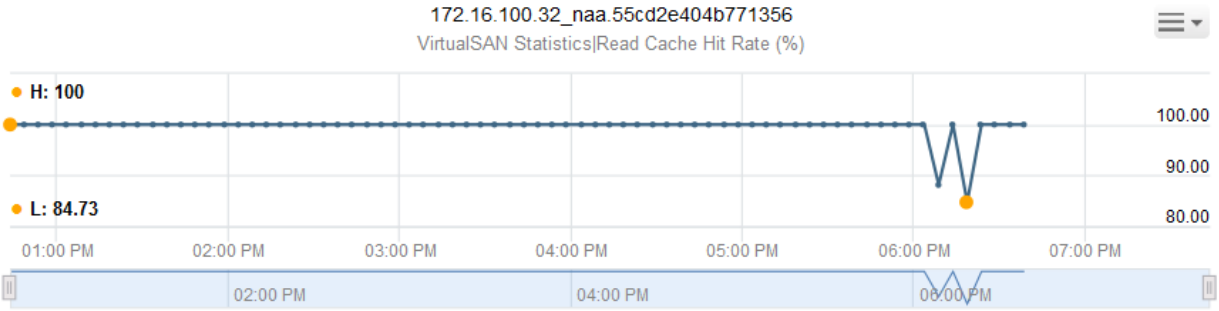

Environment
Storage Devices
Core Site 1 vCenter
Site 1
Site 1 Workload Cluster
VSAN 6.1
172.16.100.32
EUC-View-VCS02
New Virtual Machine 1
172.16.100.32_naa.5000c5007edf315b
172.16.100.33_naa.5000c5007edd51eb
172.16.100.33_naa.5000c5007ee31797
172.16.100.35_naa.5000c5007edf2bbb
172.16.100.35_naa.5000c5007edf36d7

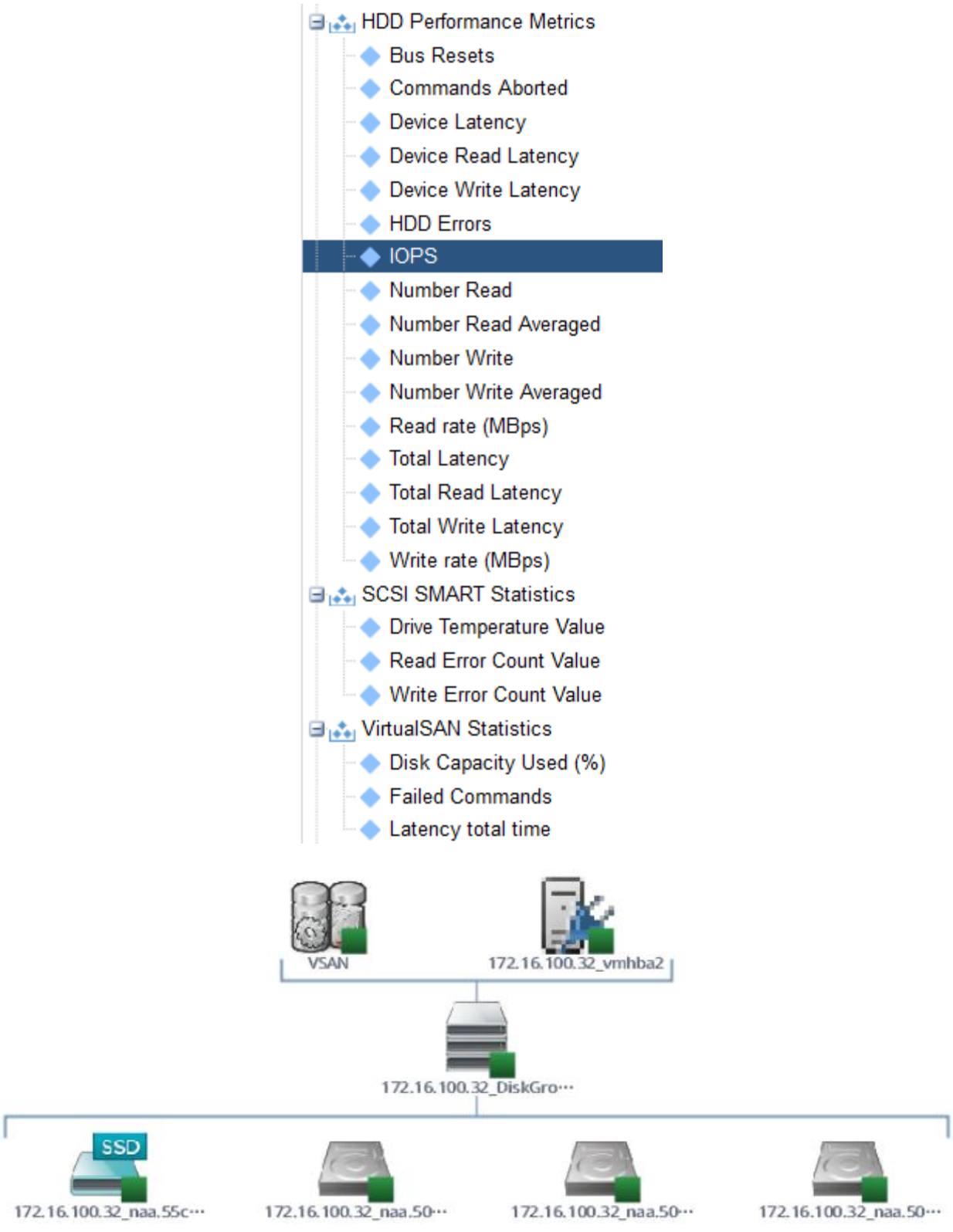

VM
ESXi
VSAN
Disk Group
Cache
Capacity


VM
VM
VM
VM
VM
VM
ESXi
VSAN
Cache
Capacity
VM
VM
VM
VM
VM
VM
ESXi
VSAN
Cache
Capacity
Physical Switch
Physical Switch

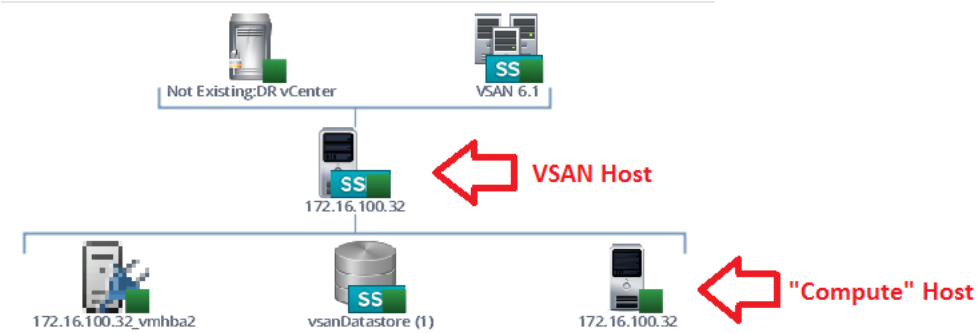

172.16.100.32_naa.55cd2e404b771356
Summary
Alerts
Analysis
Troubleshooting
Details
Environment
Projects
Symptoms
Timeline
Events
All Metrics
Badge:
172.16.100.32_DiskGro···
VSAN
SSD
172.16.100.32_naa.55c···
172.16.100.32_naa.55cd2e404b771356 (Solid State Device)


SCSI SMART Statistics
Drive Rated Max Temperature Value
Drive Temperature Value
Drive Temperature Worst
Health Status Value
Initial Bad Block Count Value
Media Wearout Indicator Value
Power on Hours value
Reallocated Sector Count Value
Write Sectors TOT Count Value
SSD Performance Metrics
Bus Resets
Commands Aborted
Device Latency
Device Read Latency
Device Write Latency
Number Read
Number Read Averaged
Number Write
Number Write Averaged
Read rate (MBps)
SSD Errors
Total Latency
Total Read Latency
Total Write Latency
Write rate (MBps)
VirtualSAN Statistics
Failed Commands
Latency total time
Read Cache Hit Rate (%)


172.16.100.32_naa.55cd2e404b771356
VirtualSAN Statistics|Read Cache Hit Rate (%)
H: 100
L: 84.73
100.00
90.00
80.00
01:00 PM
02:00 PM
03:00 PM
04:00 PM
05:00 PM
06:00 PM
07:00 PM
02:00 PM
04:00 PM
06:00 PM

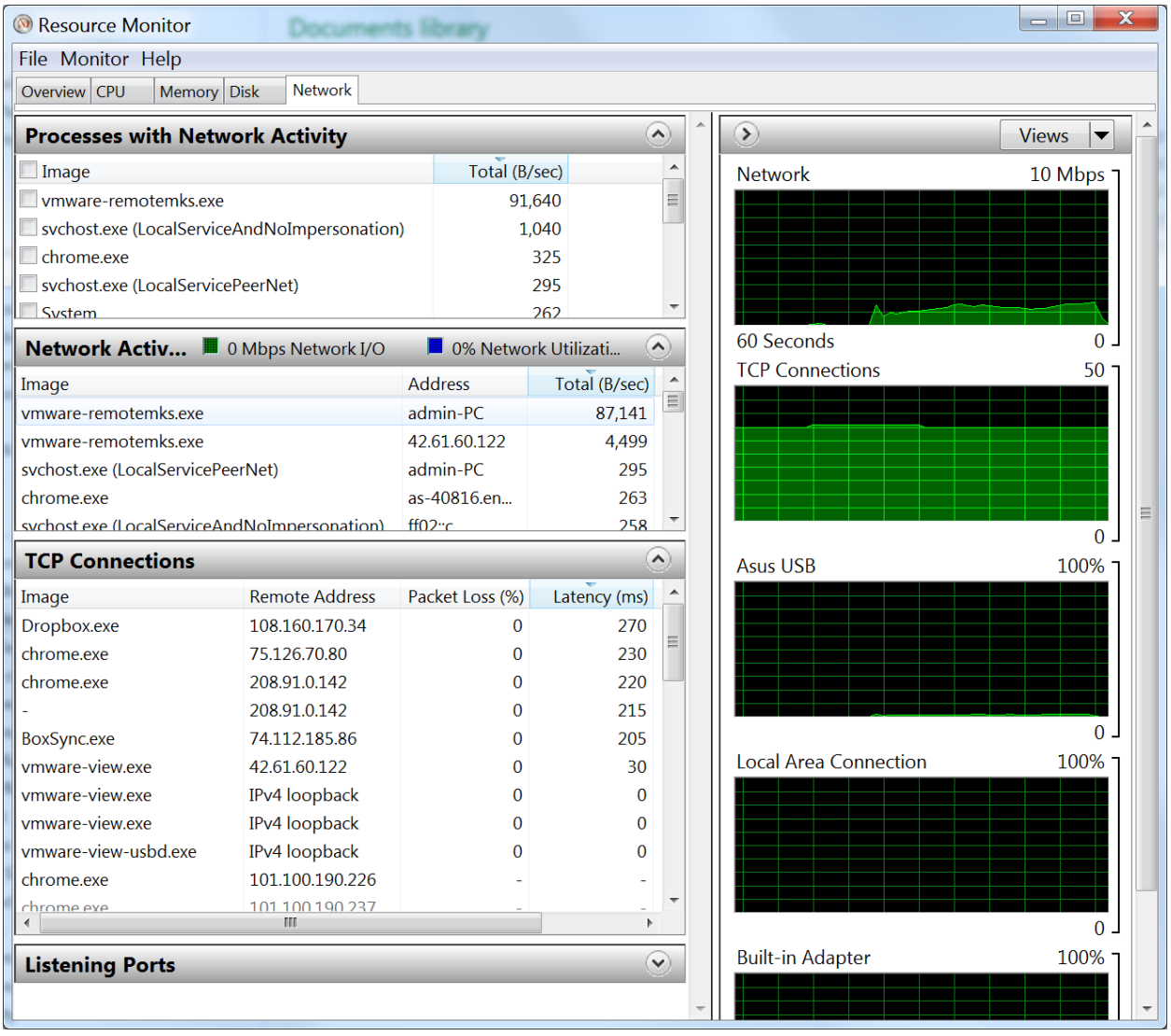

HDD Performance Metrics
Bus Resets
Commands Aborted
Device Latency
Device Read Latency
Device Write Latency
HDD Errors
IOPS
Number Read
Number Read Averaged
Number Write
Number Write Averaged
Read rate (MBps)
Total Latency
Total Read Latency
Total Write Latency
Write rate (MBps)
SCSI SMART Statistics
Drive Temperature Value
Read Error Count Value
Write Error Count Value
VirtualSAN Statistics
Disk Capacity Used (%)
Failed Commands
Latency total time
VSAN
172.16.100.32_vmhba2
172.16.100.32_DiskGro···
SSD
172.16.100.32_naa.55c···
172.16.100.32_naa.50···
172.16.100.32_naa.50···
172.16.100.32_naa.50···

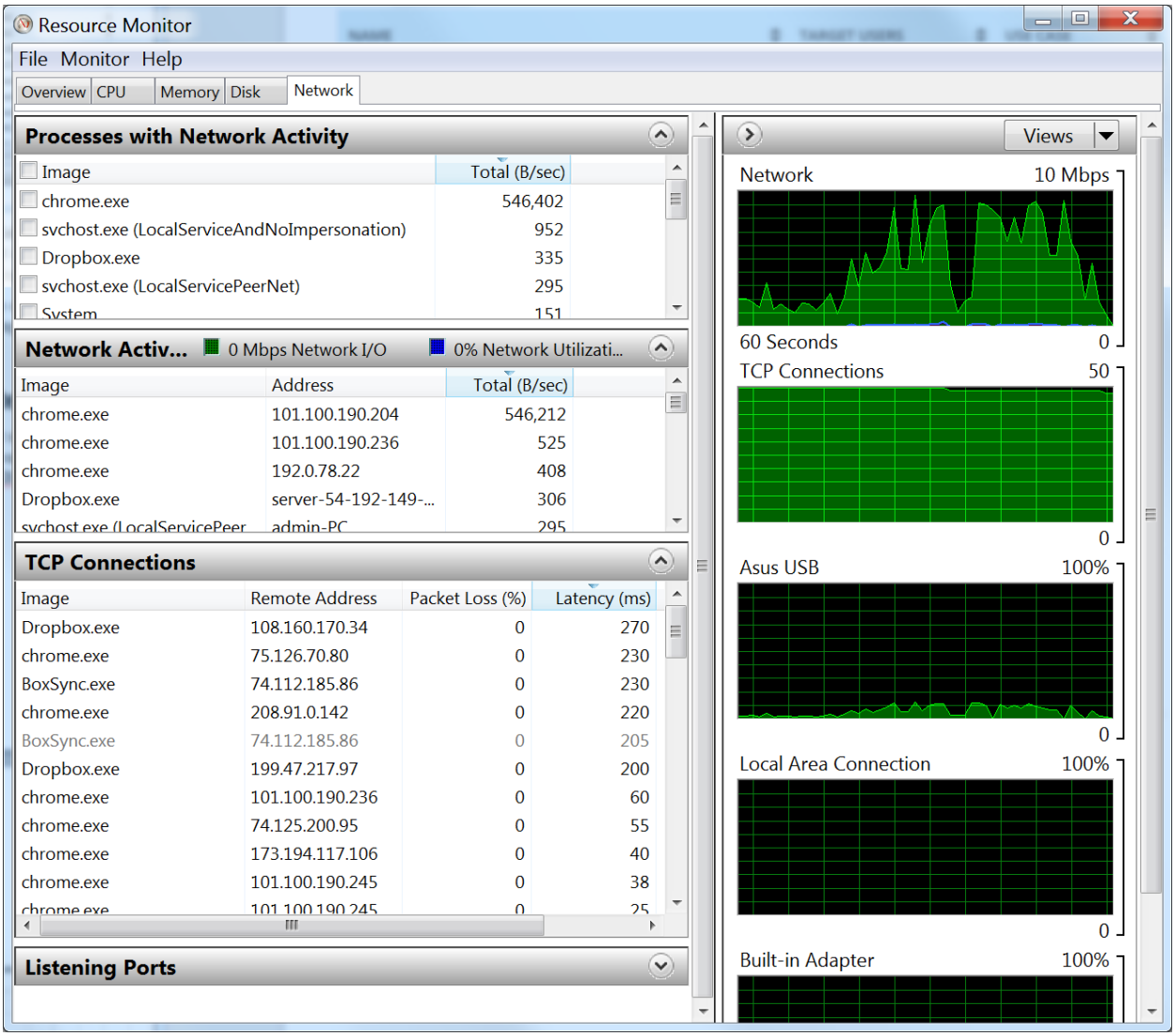
- Derived Statistics
  - DiskGroup Throughput Demand (MBps)
  - DiskGroup Throughput Usage (MBps)
- Diskgroup Performance Metrics
- Storage
- Summary
- Throughput
- VirtualSAN Statistics
  - DiskGroup Capacity Used (%)
  - DiskGroup Capacity Used (GB)



- Derived Statistics
- Disk Space
- Disk Space Per DiskGroup
- Host Specific Metrics
  - 172.16.100.32
    - Host Throughput (KBps)
    - Maximum Host Throughput (KBps)
    - Read Cached Latency (ms)
    - Read Latency (ms)
    - Write Latency (ms)
  - 172.16.100.33
  - 172.16.100.35
  - 172.16.100.36
- Performance Statistics
- Summary
- Throughput
- Throughput Per DiskGroup

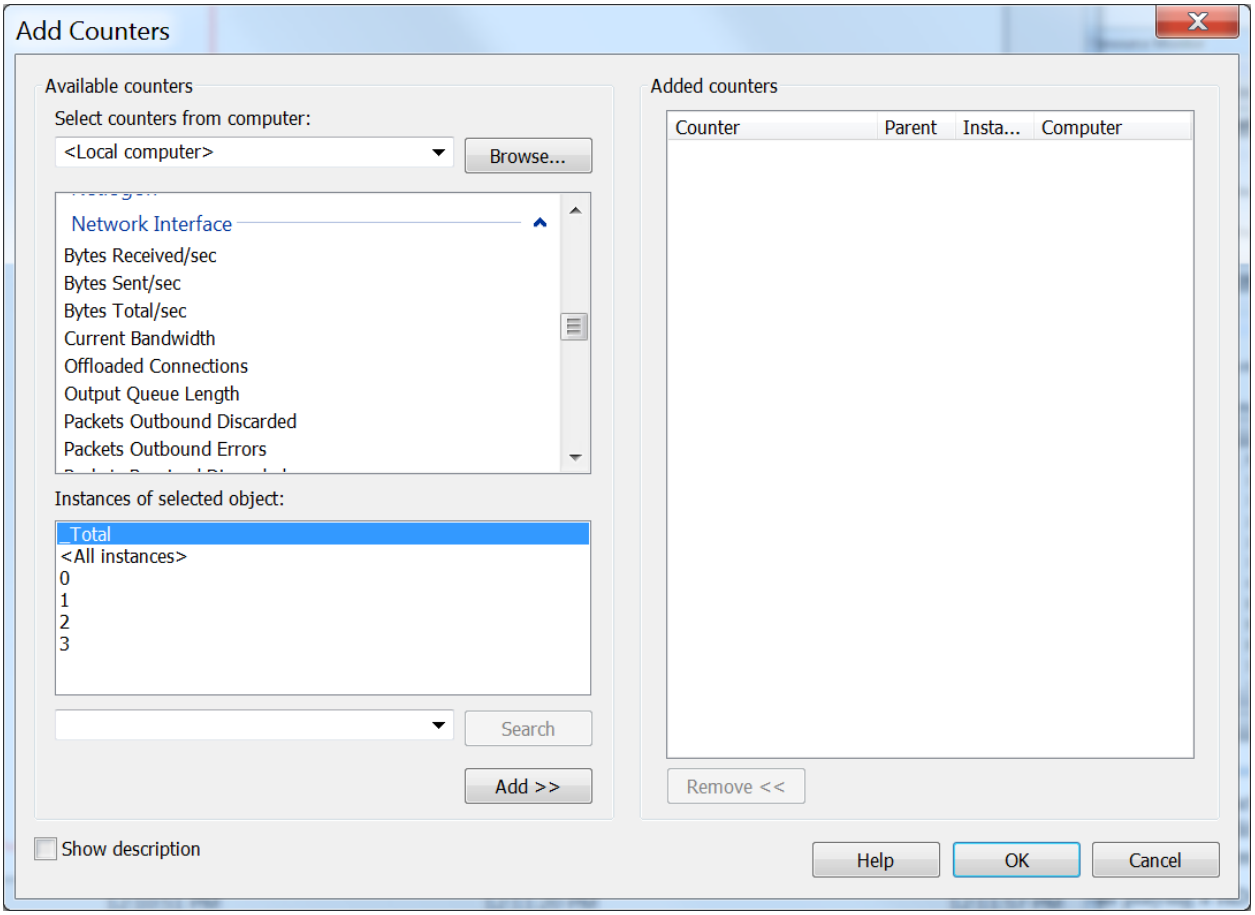
Chapter 15: Network Counters

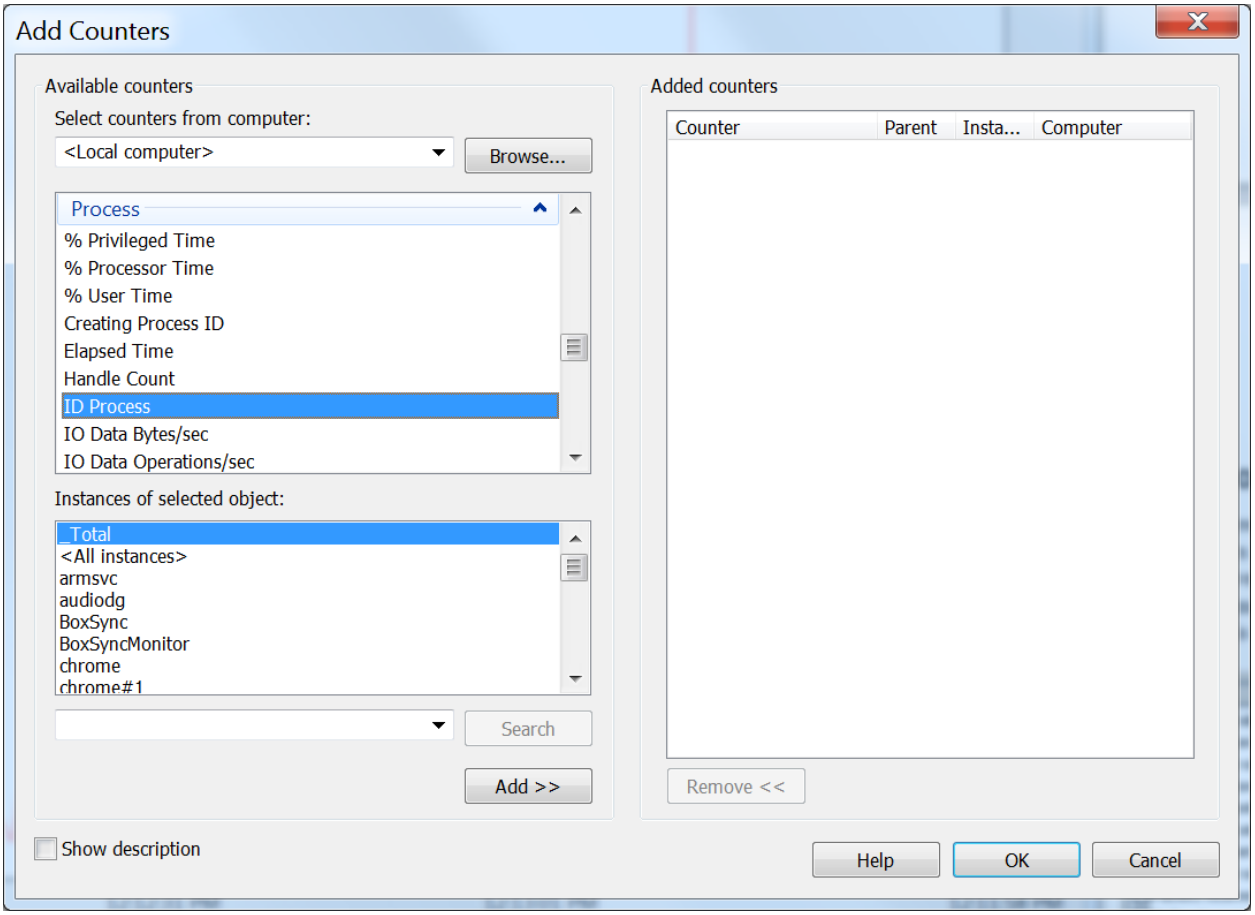




TCP Connections

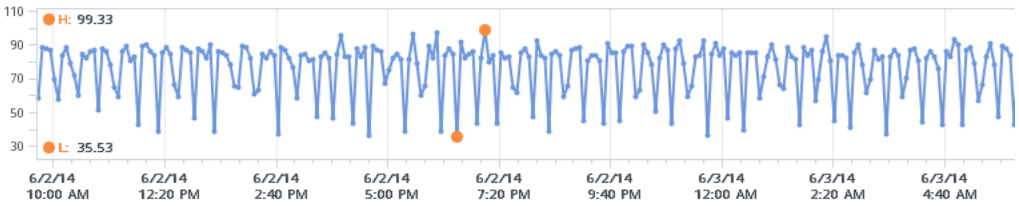
Image	PID	Remote Address	Remote Port	Packet Loss (%)	Latency (ms)	Send (B/sec)	Receive (B/sec)	Total (B/sec)
Dropbox.exe	4496	108.160.170.34	443	0	260	7	11	18
Dropbox.exe	4496	52.1.47.141	443	0	245	190	29	219
BoxSync.exe	3480	74.112.185.86	443	0	230	0	0	0
chrome.exe	4332	75.126.70.80	443	0	230	46	15	61
chrome.exe	4332	208.91.0.142	443	0	220	0	9	9
Dropbox.exe	4496	199.47.217.97	443	0	200	0	0	0
chrome.exe	4332	101.100.190.236	443	0	60	0	0	0
chrome.exe	4332	74.125.200.95	443	0	55	0	0	0
chrome.exe	4332	173.194.117.106	443	0	40	0	0	0
chrome.exe	4332	101.100.190.245	443	0	38	0	0	0
vmware-view.exe	7524	42.61.60.122	443	0	30	9	25	34
chrome.exe	4332	101.100.190.245	443	0	25	0	0	0
chrome.exe	4332	101.100.190.204	443	0	20	0	0	0
chrome.exe	4332	101.100.190.222	443	0	15	218	205	423
chrome.exe	4332	192.0.78.22	443	0	10	8	32	39
chrome.exe	4332	101.100.190.207	443	0	10	0	0	0
chrome.exe	4332	101.100.190.251	443	0	10	0	0	0
chrome.exe	4332	101.100.190.211	443	0	5	0	0	0


Add Counters
Available counters
Select counters from computer:
<Local computer>
Browse...
Network Interface
Bytes Received/sec
Bytes Sent/sec
Bytes Total/sec
Current Bandwidth
Offloaded Connections
Output Queue Length
Packets Outbound Discarded
Packets Outbound Errors
Instances of selected object:
_Total
<All instances>
0
1
2
3
Search
Add >>
Added counters
Counter
Parent
Insta...
Computer
Remove <<
Show description
Help
OK
Cancel

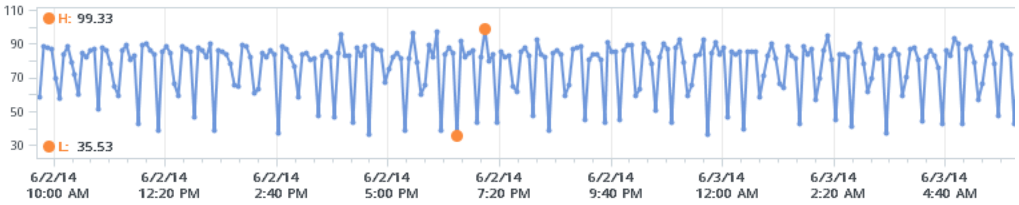


Description	Rollup	Units	Internal Name	Collection Level
Data receive rate	Average	KBps	bytesRx	2
Broadcast receives	Summation	Number	broadcastRx	2
Data transmit rate	Average	KBps	transmitted	2
Multicast transmits	Summation	Number	multicastTx	2
Packets transmitted	Summation	Number	packetsTx	2
Data receive rate	Average	KBps	received	2
Transmit packets dropped	Summation	Number	droppedTx	2
Data transmit rate	Average	KBps	bytesTx	2
Packets received	Summation	Number	packetsRx	2
Multicast receives	Summation	Number	multicastRx	2
Usage	Average	KBps	usage	1
Broadcast transmits	Summation	Number	broadcastTx	2
Receive packets dropped	Summation	Number	droppedRx	2

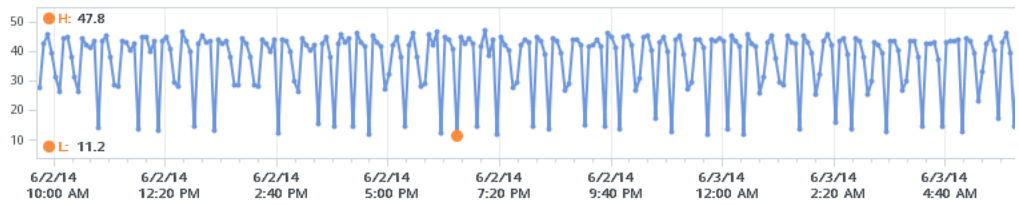
BCDR-Prod-VC: Network I/O|Usage Rate



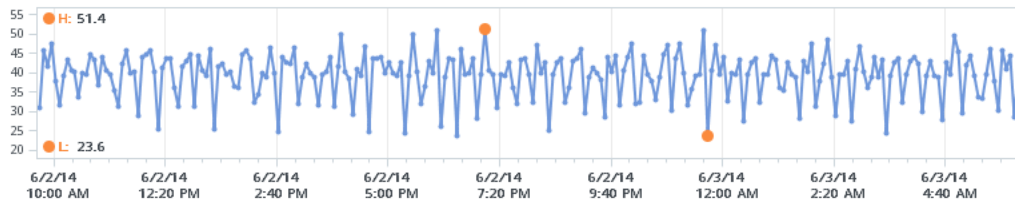
BCDR-Prod-VC: Network I/O|4000|Usage Rate



BCDR-Prod-VC: Network I/O|4000|bytesRx (KBps)



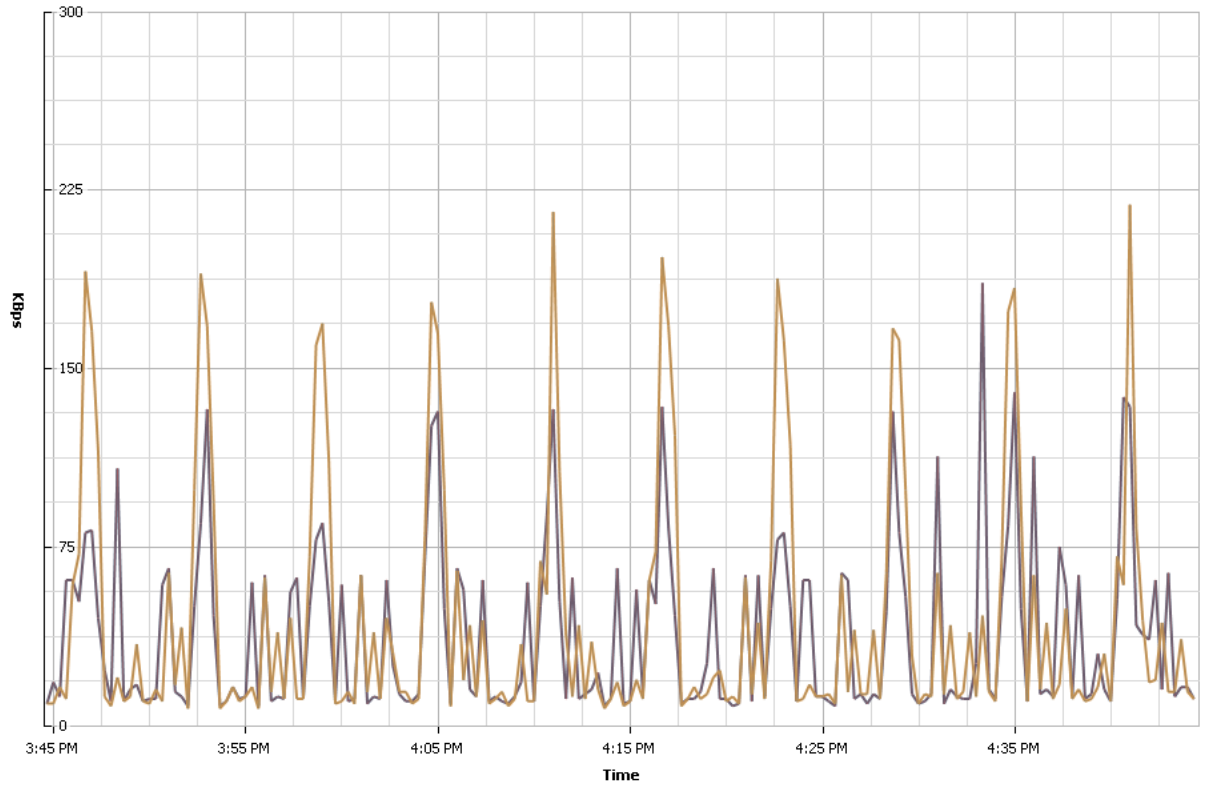
BCDR-Prod-VC: Network I/O|4000|bytesTx (KBps)



Network/Real-time, 5/8/2014 3:44:31 PM - 5/8/2014 4:44:31 PM Chart Options...

Graph refreshes every 20 seconds

Switch to: Default



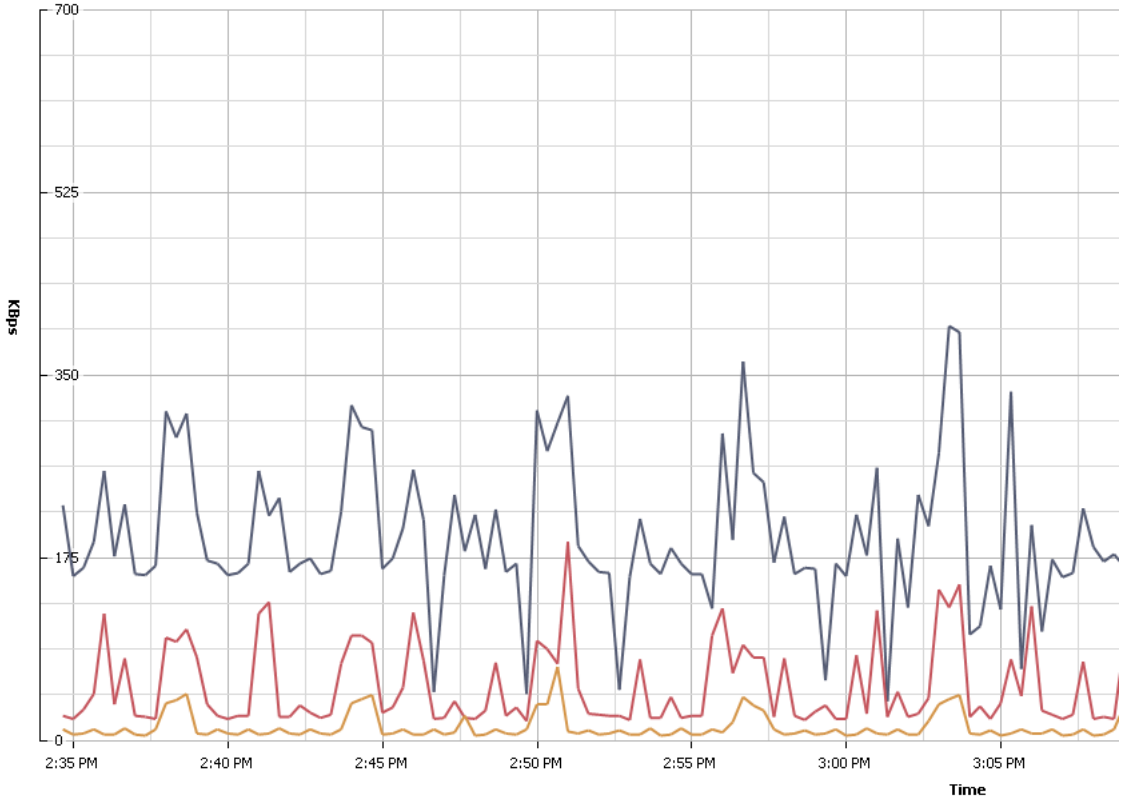
Performance Chart Legend

Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	BCDR-Prod-VC	Data transmit rate	Average	KBps	11	186	8	38.372
	BCDR-Prod-VC	Data transmit rate	Average	KBps	11	186	8	38.372
	BCDR-Prod-VC	Data receive rate	Average	KBps	11	219	7	44.661
	BCDR-Prod-VC	Data receive rate	Average	KBps	11	219	7	44.661

Description	Rollup	Units	Internal Name	Collection Level
Multicast receives	Summation	Number	multicastRx	2
Usage	Average	KBps	usage	1
Data receive rate	Average	KBps	bytesRx	2
Multicast transmits	Summation	Number	multicastTx	2
Unknown protocol frames	Summation	Number	unknownProtos	2
Data transmit rate	Average	KBps	transmitted	2
Packet receive errors	Summation	Number	errorsRx	2
Packet transmit errors	Summation	Number	errorsTx	2
Packets transmitted	Summation	Number	packetsTx	2
Data receive rate	Average	KBps	received	2
Transmit packets dropped	Summation	Number	droppedTx	2
Receive packets dropped	Summation	Number	droppedRx	2
Packets received	Summation	Number	packetsRx	2
Broadcast receives	Summation	Number	broadcastRx	2
Data transmit rate	Average	KBps	bytesTx	2
Broadcast transmits	Summation	Number	broadcastTx	2

Network/Real-time, 5/8/2014 2:33:55 PM - 5/8/2014 3:33:55 PM Chart Options...

Graph refreshes every 20 seconds

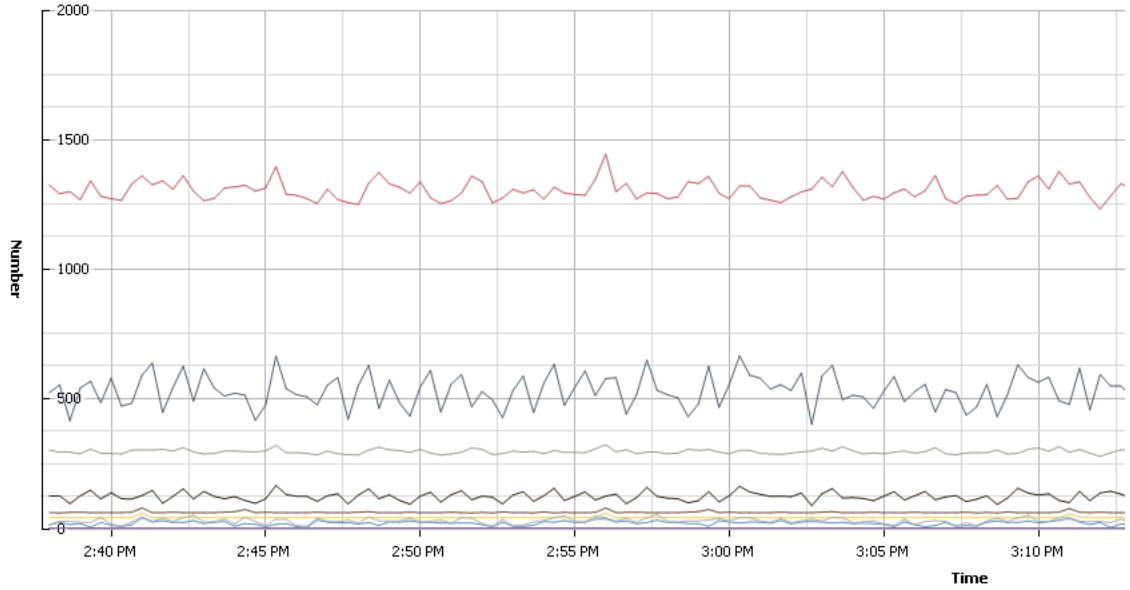


Performance Chart Legend

Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	vmsgesxi009.vmsg.lab	Usage	Average	KBps	653	653	36	204.33
	vmnic3	Usage	Average	KBps	430	430	18	59.872
	vmnic0	Usage	Average	KBps	25	74	4	12.413

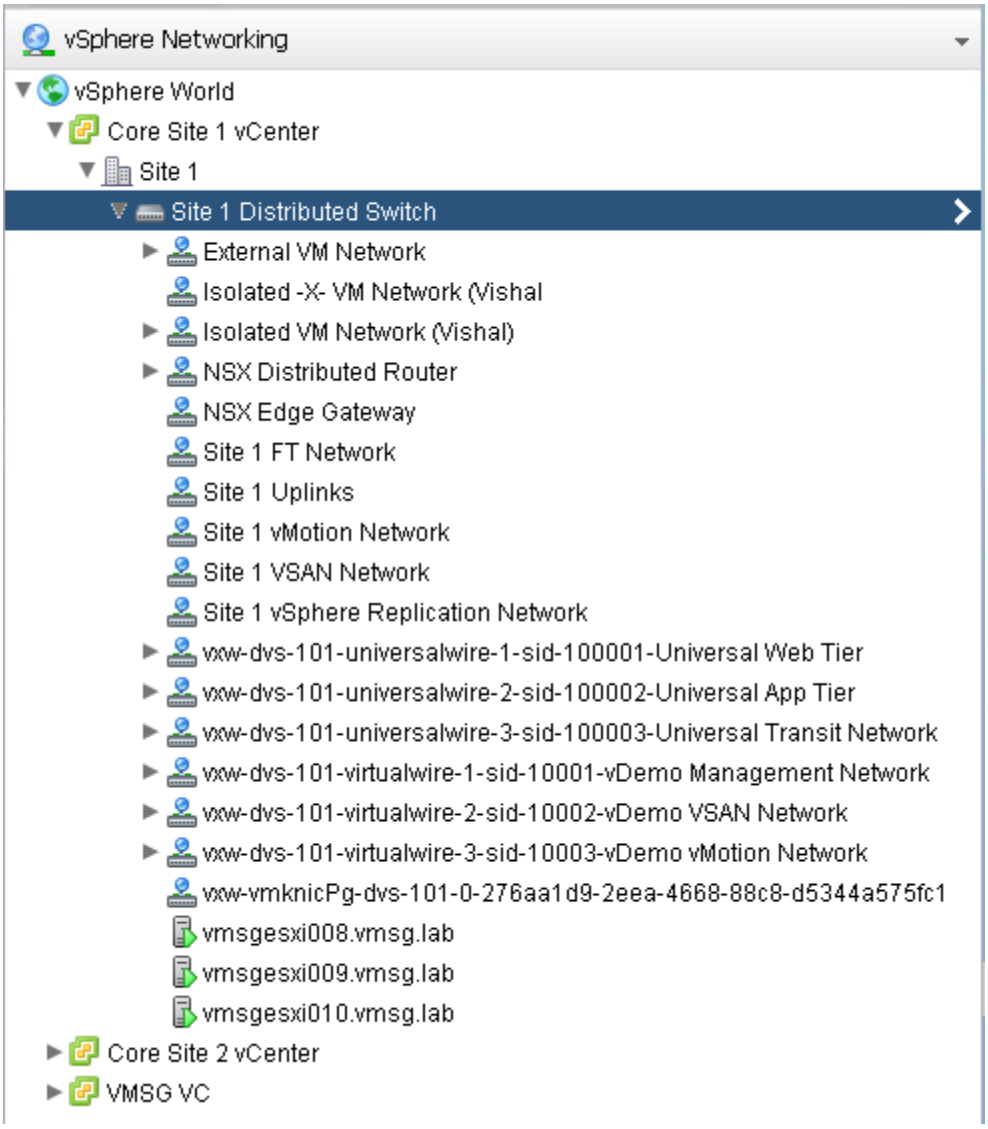
Network/Real-time, 5/8/2014 2:37:46 PM - 5/8/2014 3:37:46 PM Chart Options...

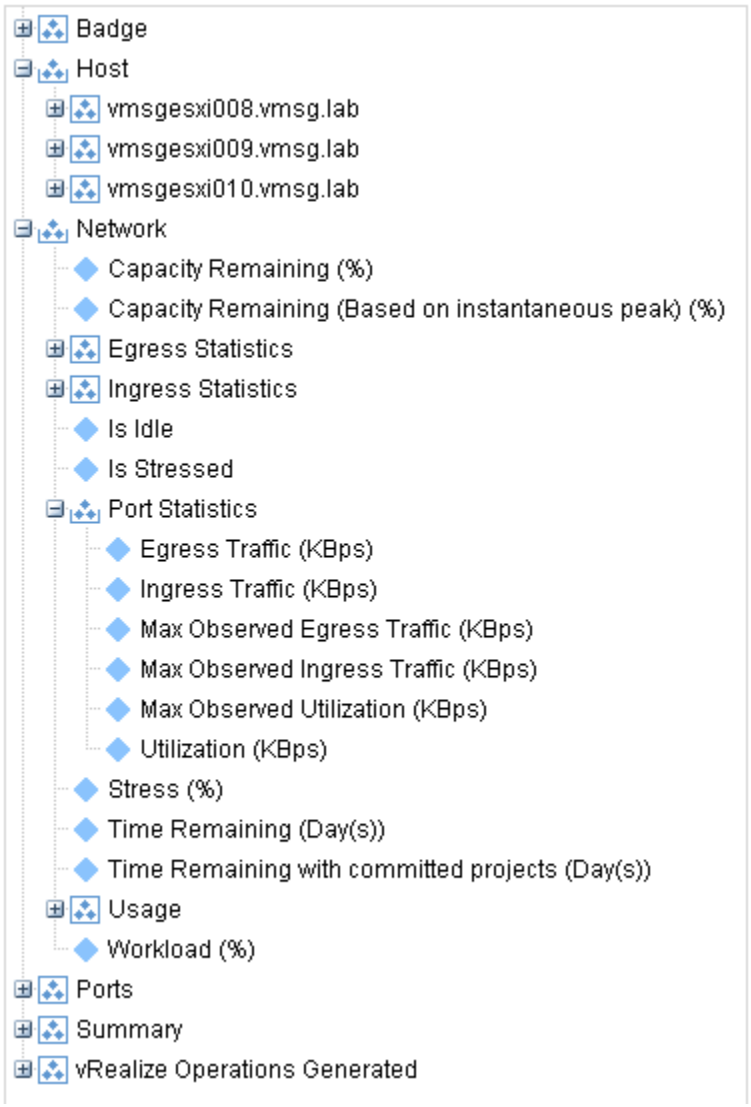
Graph refreshes every 20 seconds

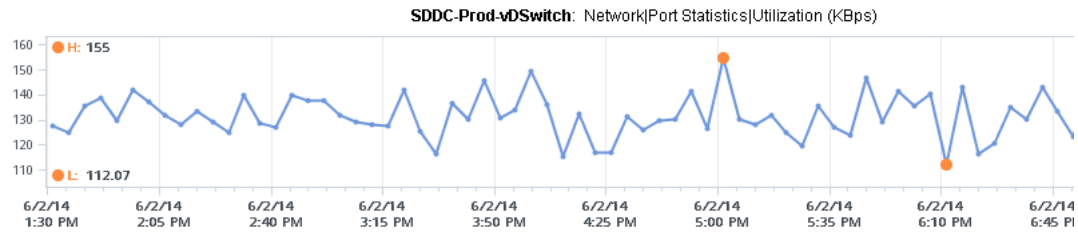


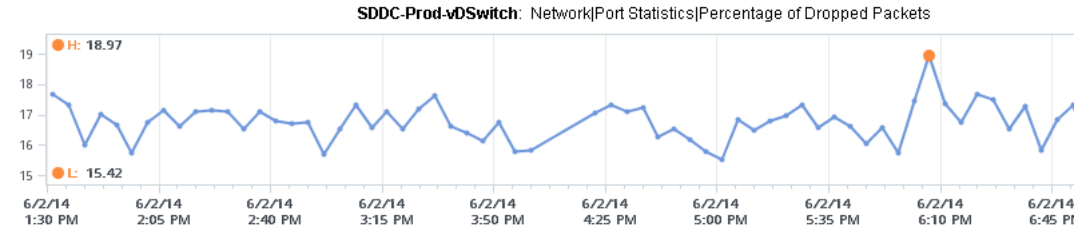
Performance Chart Legend

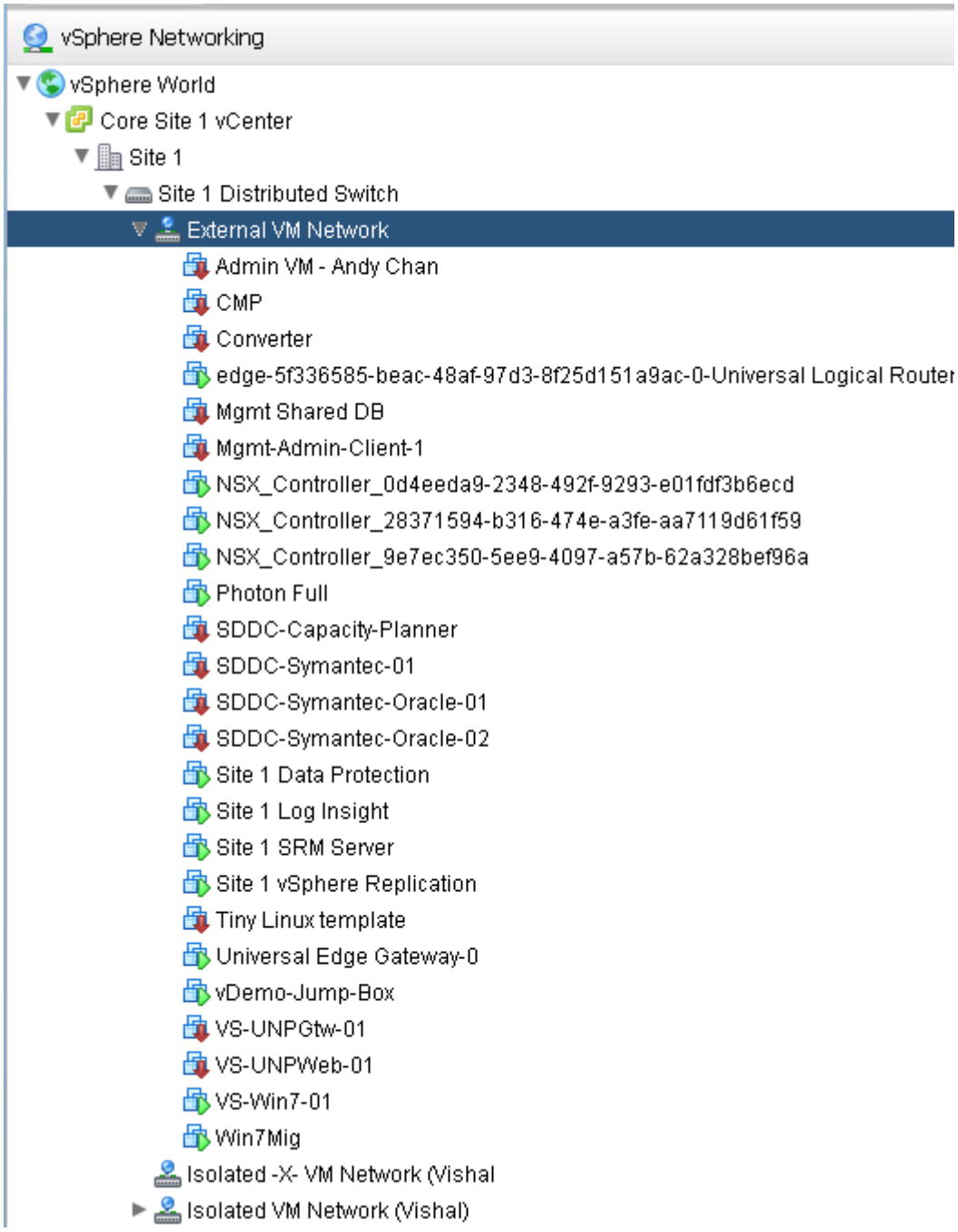
Key	Object	Measurement	Rollup	Units	Latest	Maximum	Minimum	Average
	vmnic1	Receive packets dropped	Summation	Number	0	0	0	0
	vmnic1	Unknown protocol frames	Summation	Number	0	0	0	0
	vmnic1	Transmit packets dropped	Summation	Number	0	0	0	0
	vmsgesxi009.vmsg.lab	Unknown protocol frames	Summation	Number	0	0	0	0
	vmsgesxi009.vmsg.lab	Transmit packets dropped	Summation	Number	0	0	0	0
	vmsgesxi009.vmsg.lab	Receive packets dropped	Summation	Number	0	0	0	0
	vmnic1	Broadcast transmits	Summation	Number	23	42	2	20.411
	vmnic1	Multicast transmits	Summation	Number	40	58	39	40.439
	vmsgesxi009.vmsg.lab	Broadcast transmits	Summation	Number	55	67	8	30.267
	vmsgesxi009.vmsg.lab	Multicast transmits	Summation	Number	62	78	58	61.311
	vmnic1	Broadcast receives	Summation	Number	104	165	87	122.994
	vmnic1	Multicast receives	Summation	Number	268	354	263	294.733
	vmsgesxi009.vmsg.lab	Broadcast receives	Summation	Number	505	680	401	535.444
	vmsgesxi009.vmsg.lab	Multicast receives	Summation	Number	1191	1533	1171	1300.656

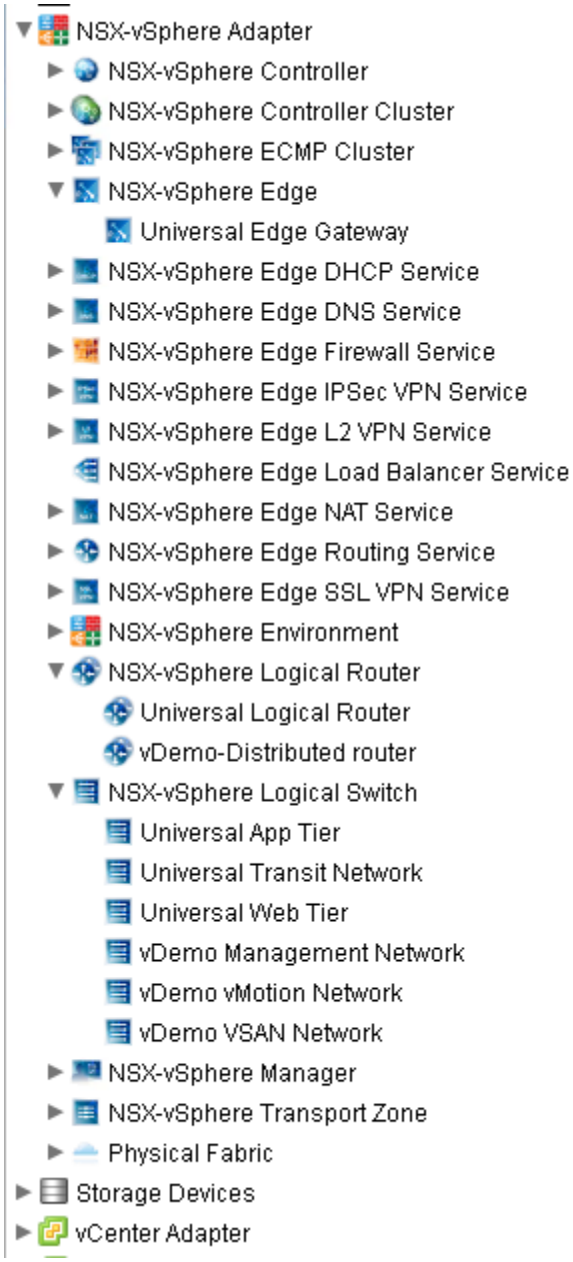

vSphere Networking
vSphere World
Core Site 1 vCenter
Site 1
Site 1 Distributed Switch
External VM Network
Isolated -X- VM Network (Vishal
Isolated VM Network (Vishal)
NSX Distributed Router
NSX Edge Gateway
Site 1 FT Network
Site 1 Uplinks
Site 1 vMotion Network
Site 1 VSAN Network
Site 1 vSphere Replication Network
vxw-dvs-101-universalwire-1-sid-100001-Universal Web Tier
vxw-dvs-101-universalwire-2-sid-100002-Universal App Tier
vxw-dvs-101-universalwire-3-sid-100003-Universal Transit Network
vxw-dvs-101-virtualwire-1-sid-10001-vDemo Management Network
vxw-dvs-101-virtualwire-2-sid-10002-vDemo VSAN Network
vxw-dvs-101-virtualwire-3-sid-10003-vDemo vMotion Network
vxw-vmknicPg-dvs-101-0-276aa1d9-2eea-4668-88c8-d5344a575fc1
vmsgesxi008.vmsg.lab
vmsgesxi009.vmsg.lab
vmsgesxi010.vmsg.lab
Core Site 2 vCenter
VMSG VC

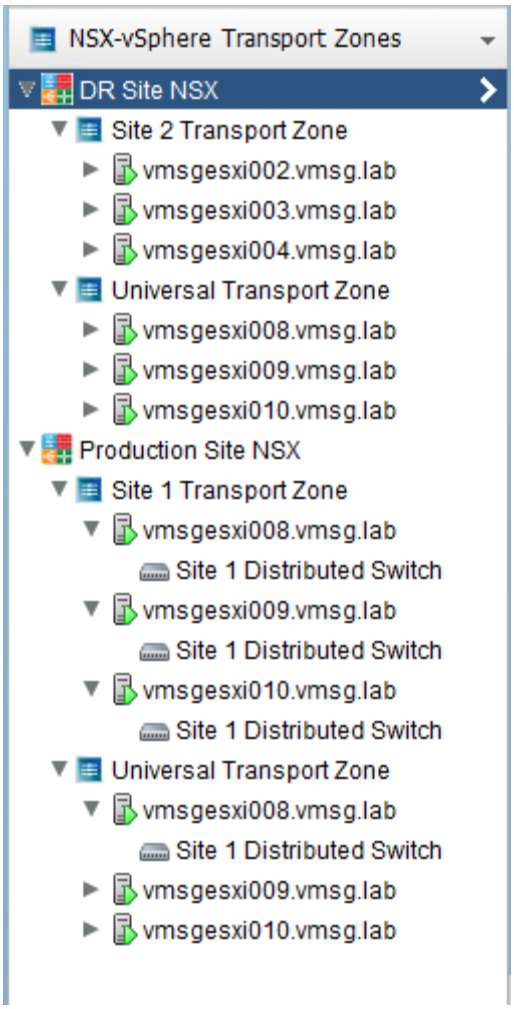

Badge
Host
vmsgesxi008.vmsg.lab
vmsgesxi009.vmsg.lab
vmsgesxi010.vmsg.lab
Network
Capacity Remaining (%)
Capacity Remaining (Based on instantaneous peak) (%)
Egress Statistics
Ingress Statistics
Is Idle
Is Stressed
Port Statistics
Egress Traffic (KBps)
Ingress Traffic (KBps)
Max Observed Egress Traffic (KBps)
Max Observed Ingress Traffic (KBps)
Max Observed Utilization (KBps)
Utilization (KBps)
Stress (%)
Time Remaining (Day(s))
Time Remaining with committed projects (Day(s))
Usage
Workload (%)
Ports
Summary
vRealize Operations Generated

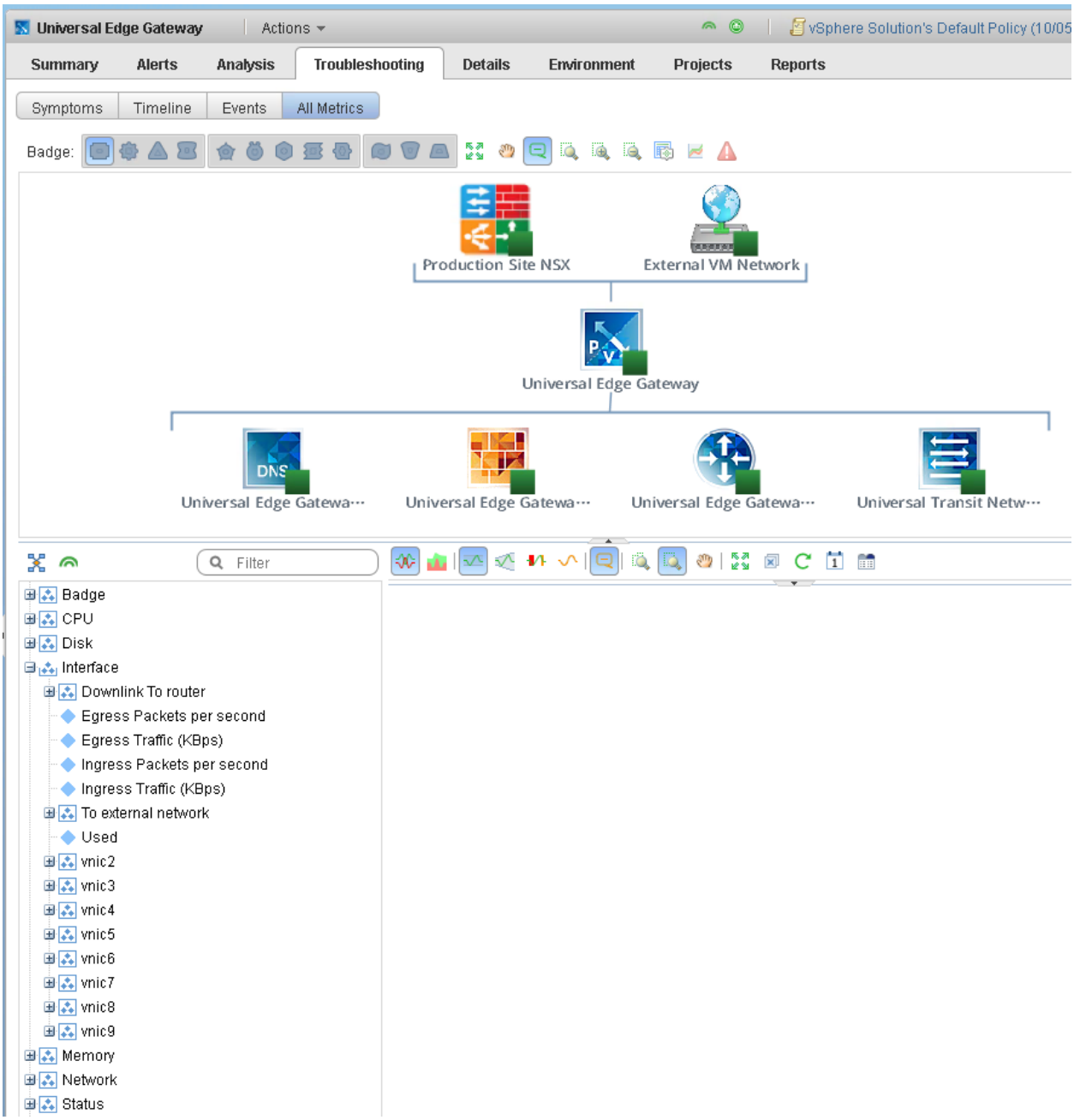

SDDC-Prod-vDSwitch: Network|Port Statistics|Utilization (KBps)
160
150
140
130
120
110
H: 155
L: 112.07
6/2/14 1:30 PM
6/2/14 2:05 PM
6/2/14 2:40 PM
6/2/14 3:15 PM
6/2/14 3:50 PM
6/2/14 4:25 PM
6/2/14 5:00 PM
6/2/14 5:35 PM
6/2/14 6:10 PM
6/2/14 6:45 PM

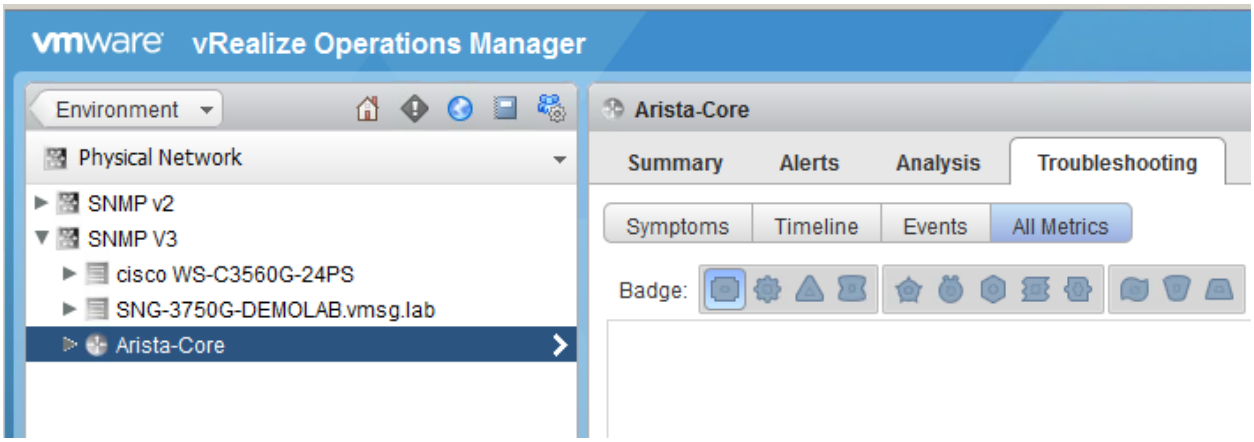

SDDC-Prod-vDSwitch: Network|Port Statistics|Percentage of Dropped Packets
19
18
17
16
15
H: 18.97
L: 15.42
6/2/14 1:30 PM
6/2/14 2:05 PM
6/2/14 2:40 PM
6/2/14 3:15 PM
6/2/14 3:50 PM
6/2/14 4:25 PM
6/2/14 5:00 PM
6/2/14 5:35 PM
6/2/14 6:10 PM
6/2/14 6:45 PM

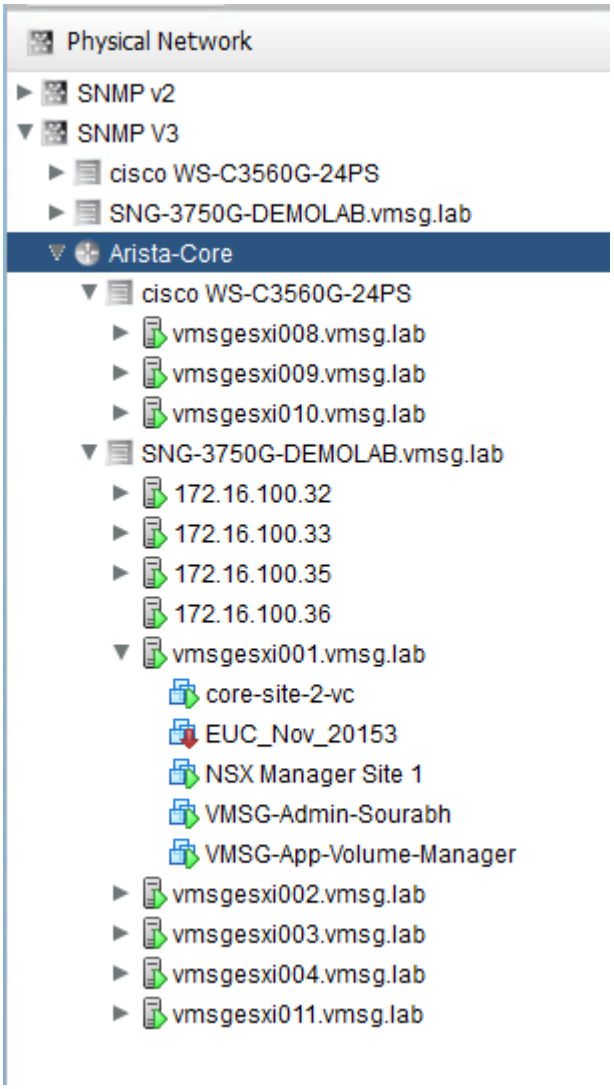

vSphere Networking
vSphere World
Core Site 1 vCenter
Site 1
Site 1 Distributed Switch
External VM Network
Admin VM - Andy Chan
CMP
Converter
edge-5f336585-beac-48af-97d3-8f25d151a9ac-0-Universal Logical Router
Mgmt Shared DB
Mgmt-Admin-Client-1
NSX_Controller_0d4eeda9-2348-492f-9293-e01fdf3b6ecd
NSX_Controller_28371594-b316-474e-a3fe-aa7119d61f59
NSX_Controller_9e7ec350-5ee9-4097-a57b-62a328bef96a
Photon Full
SDDC-Capacity-Planner
SDDC-Symantec-01
SDDC-Symantec-Oracle-01
SDDC-Symantec-Oracle-02
Site 1 Data Protection
Site 1 Log Insight
Site 1 SRM Server
Site 1 vSphere Replication
Tiny Linux template
Universal Edge Gateway-0
vDemo-Jump-Box
VS-UNPGtw-01
VS-UNPWeb-01
VS-Win7-01
Win7Mig
Isolated -X- VM Network (Vishal
Isolated VM Network (Vishal)

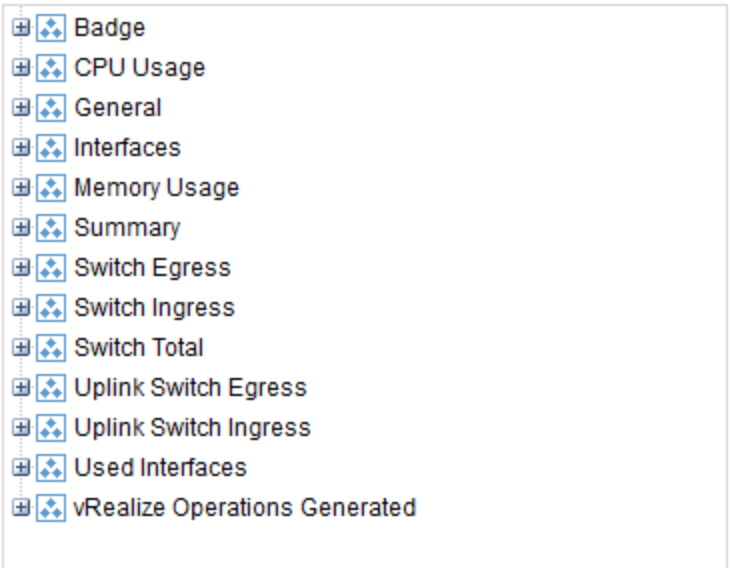

NSX-vSphere Adapter
NSX-vSphere Controller
NSX-vSphere Controller Cluster
NSX-vSphere ECMP Cluster
NSX-vSphere Edge
Universal Edge Gateway
NSX-vSphere Edge DHCP Service
NSX-vSphere Edge DNS Service
NSX-vSphere Edge Firewall Service
NSX-vSphere Edge IPSec VPN Service
NSX-vSphere Edge L2 VPN Service
NSX-vSphere Edge Load Balancer Service
NSX-vSphere Edge NAT Service
NSX-vSphere Edge Routing Service
NSX-vSphere Edge SSL VPN Service
NSX-vSphere Environment
NSX-vSphere Logical Router
Universal Logical Router
vDemo-Distributed router
NSX-vSphere Logical Switch
Universal App Tier
Universal Transit Network
Universal Web Tier
vDemo Management Network
vDemo vMotion Network
vDemo VSAN Network
NSX-vSphere Manager
NSX-vSphere Transport Zone
Physical Fabric
Storage Devices
vCenter Adapter


NSX-vSphere Transport Zones
DR Site NSX
Site 2 Transport Zone
vmsgesxi002.vmsg.lab
vmsgesxi003.vmsg.lab
vmsgesxi004.vmsg.lab
Universal Transport Zone
vmsgesxi008.vmsg.lab
vmsgesxi009.vmsg.lab
vmsgesxi010.vmsg.lab
Production Site NSX
Site 1 Transport Zone
vmsgesxi008.vmsg.lab
Site 1 Distributed Switch
vmsgesxi009.vmsg.lab
Site 1 Distributed Switch
vmsgesxi010.vmsg.lab
Site 1 Distributed Switch
Universal Transport Zone
vmsgesxi008.vmsg.lab
Site 1 Distributed Switch
vmsgesxi009.vmsg.lab
vmsgesxi010.vmsg.lab


Universal Edge Gateway
Actions
vSphere Solution's Default Policy (10/05
Summary
Alerts
Analysis
Troubleshooting
Details
Environment
Projects
Reports
Symptoms
Timeline
Events
All Metrics
Badge:
Production Site NSX
External VM Network
Universal Edge Gateway
Universal Edge Gatewa···
Universal Edge Gatewa···
Universal Edge Gatewa···
Universal Transit Netw···
Filter
Badge
CPU
Disk
Interface
Downlink To router
Egress Packets per second
Egress Traffic (KBps)
Ingress Packets per second
Ingress Traffic (KBps)
To external network
Used
vnic2
vnic3
vnic4
vnic5
vnic6
vnic7
vnic8
vnic9
Memory
Network
Status


vmware vRealize Operations Manager
Environment
Physical Network
SNMP v2
SNMP V3
cisco WS-C3560G-24PS
SNG-3750G-DEMOLAB.vmsg.lab
Arista-Core
Arista-Core
Summary
Alerts
Analysis
Troubleshooting
Symptoms
Timeline
Events
All Metrics
Badge:


Physical Network
SNMP v2
SNMP V3
cisco WS-C3560G-24PS
SNG-3750G-DEMOLAB.vmsg.lab
Arista-Core
cisco WS-C3560G-24PS
vmsgesxi008.vmsg.lab
vmsgesxi009.vmsg.lab
vmsgesxi010.vmsg.lab
SNG-3750G-DEMOLAB.vmsg.lab
172.16.100.32
172.16.100.33
172.16.100.35
172.16.100.36
vmsgesxi001.vmsg.lab
core-site-2-vc
EUC_Nov_20153
NSX Manager Site 1
VMSG-Admin-Sourabh
VMSG-App-Volume-Manager
vmsgesxi002.vmsg.lab
vmsgesxi003.vmsg.lab
vmsgesxi004.vmsg.lab
vmsgesxi011.vmsg.lab


Badge
CPU Usage
General
Interfaces
Memory Usage
Summary
Switch Egress
Switch Ingress
Switch Total
Uplink Switch Egress
Uplink Switch Ingress
Used Interfaces
vRealize Operations Generated


Badge
CPU Usage
General
Interfaces
Egress Capacity (Mbps)
Egress Traffic (Mbps)
Egress Traffic %
Ethernet1
Admin Status
Egress Capacity (Mbps)
Egress Dropped Packets (discards/s)
Egress Dropped Packets %
Egress Exception Packets (errors/s)
Egress Non-Unicast Packets (packets/s)
Egress Traffic (Mbps)
Egress Traffic %
Egress Unicast Packets (packets/s)
Ingress Capacity (Mbps)
Ingress Dropped Packets (discards/s)
Ingress Dropped Packets %
Ingress Exception Packets (errors/s)
Ingress Non-Unicast Packets (packets/s)
Ingress Traffic (Mbps)
Ingress Traffic %
Ingress Unicast Packets (packets/s)
Is Uplink
MTU
Operation Status
Operational Status Code
Speed (Mbps)
Switch Interface Egress
Switch Interface Ingress
Switch Interface Total
Total Capacity (Mbps)
Total Egress (Mbps)
Total Ingress (Mbps)
Total Traffic (Mbps)
Ethernet10
Ethernet11