1. VOA VM Performance Cover

2. VOA VM Performance Overview

This report provides an overview of the performance of virtual machines running in your Software Defined Datacenter (SDDC). Sharing resources provides very efficient usage of expensive compute and storage hardware. But how can you ensure that all VMs are getting the resources they need to satisfy application demands?

VMware vSphere provides the best hypervisor available with advanced features to guarantee resource availability and tuning to deliver the best possible performance. With vRealize Operations, it is easy to get complete visibility into performance and avoid resource bottlenecks for business-critical applications.

This report helps you find and address contention for resources, storage latency and network issues.

3. VOA Report Performance Compute

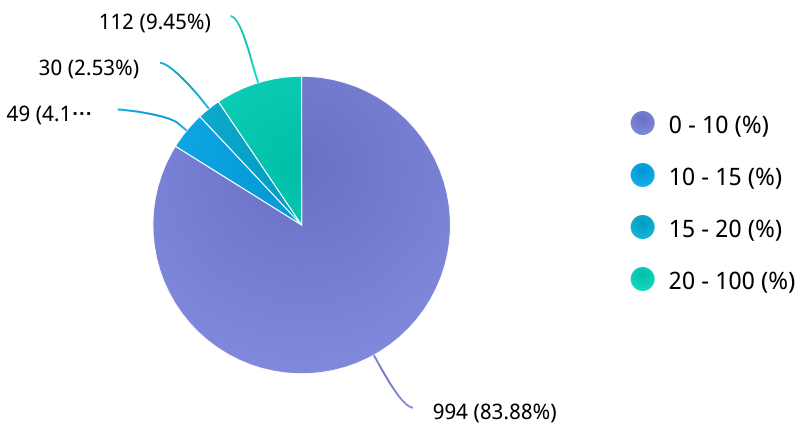
Resource Contention

The starting point for any performance SLA, benchmark or analysis is the compute layer. The best metric for measuring overall performance for virtual machines is contention. Contention percentage for the previous 7 days, shown in these graphs, measures the overall delay in providing resources to VMs. The higher the percentage, the longer VMs have to wait for CPU and memory requests to complete. So, lower contention percentages are better!

This section can serve as a baseline for your SDDC. As you grow and mature your SDDC, you can leverage Custom Groups and Policies to manage performance tiers. You can also fine tune Alerts and Automated Remediation as you better understand your organizations performance requirements.

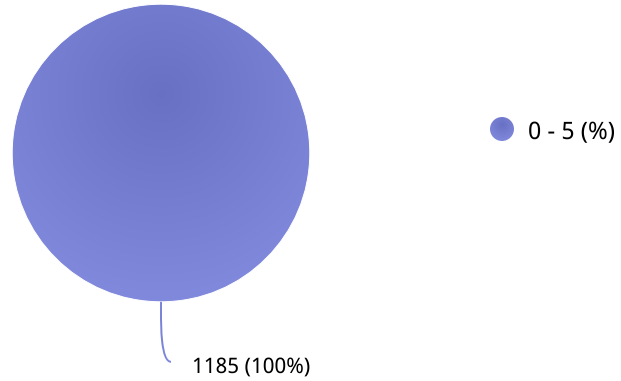
vCPU Contention (%) Distribution

vCPU Contention



vRAM Contention %

vRAM Contention



4. VOA Report Performance Storage

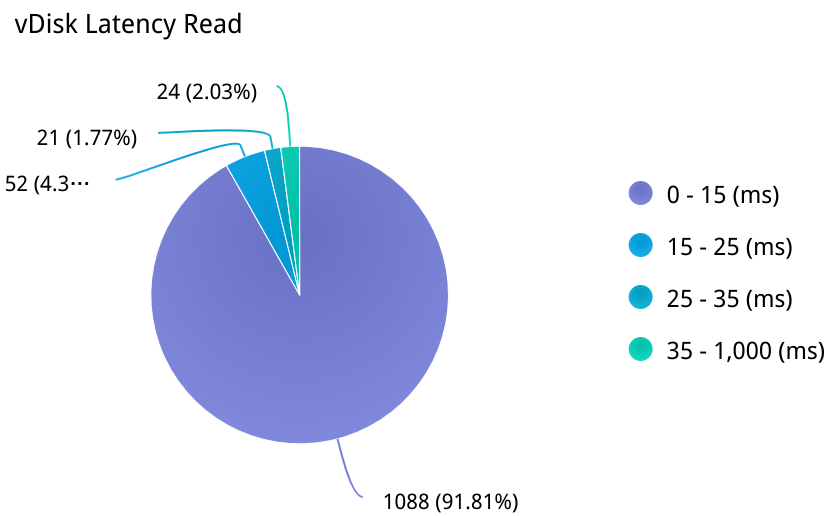
Storage Latency

If compute represents your brain, then storage could represent your diet! If you don't eat well, the brain becomes sluggish and foggy. So it goes with VMs and storage; faster, more responsive storage provides data the compute tier needs to process requests.

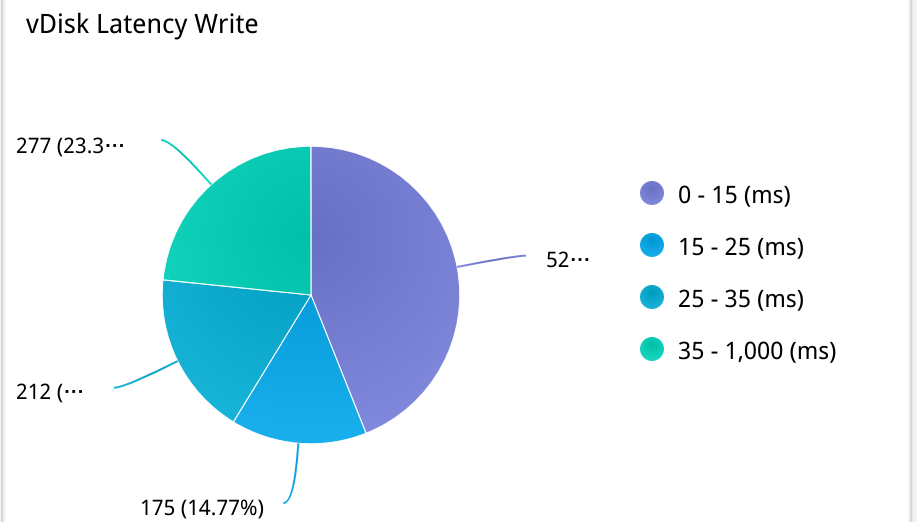
The best metric for measuring over-all performance of a VM's storage is latency.

These graphs show the maximum read and write latency over the past 7 days as indicators of overall storage performance. Depending on the application, one or both of these could impact performance.

vDisk Read Latency Max 7 Day



vDisk Write Latency Max 7 Day



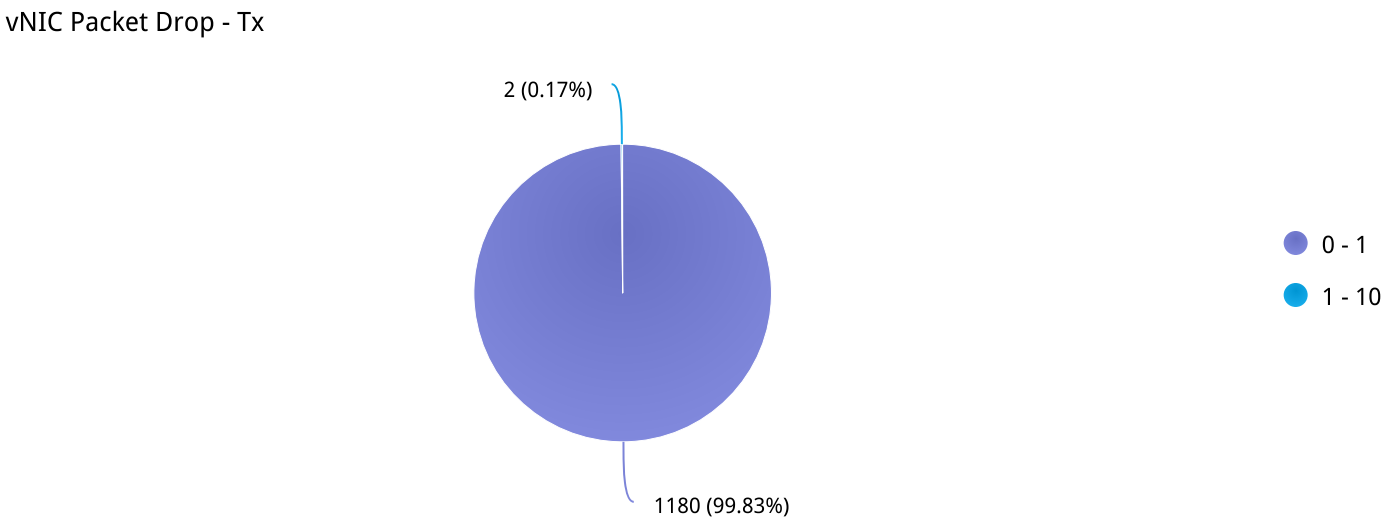
5. VOA Report Performance Network

Network Packet Drop

Continuing on the theme of personal health, where compute represents the brain and storage represents diet, we could round this out with the network representing exercise to keep your heart in shape. The network is a big "heart" pumping the blood (data) throughout your SDDC.

In most cases, network capacity and throughput are rarely an issue in the SDDC. However, you should keep an eye on Packet Drop at the vSwitch, Host and Virtual Machine layers. Packet Drop at the vNIC layer happens without any indication at the physical layer and can easily be caused by the default E1000 vNIC being used instead of the more capable VMXNET3 vNIC, which combats packet drop at the virtual layer. The chart show the maximum packet drop over the past 7 days.

vNIC Packet Drop - Tx



6. VOA VM Performance TopN Graphs

The previous report pages provide a high level view of potential performance bottlenecks in your SDDC.

The next pages give you some starting points for troubleshooting specific VMs that are impacted by these bottlenecks.
The top 10 VMs for each performance category will be provided so that you can see where you need to focus attention, as a start to improving performance in your SDDC with vRealize Operations.

If you want to get more detail about a particular VM, check out the Performance and Troubleshooting dashboards in vRealize Operations, which give you step-by-step help in identifying and resolving VM performance problems.

7. VOA Report Performance Compute TOP10

Top 10 - Compute

These charts show the top 10 virtual machines with CPU or memory contention. As a starting point, focus on vCPU Contention % above 15-20% and vRAM Contention % above 10-15%.

Top 10 VMs with vCPU Contention %

Contention	Objects
42.3	GVAPQVP2
10.7	GVAPQVP1
8.9	HOUPWM2
8.5	HOUDC2
7.8	HOUPART1
7.2	HOULXPBIGIP2
5.2	HOULXDKFK2
5.1	RDMPXADR01

Top 10 VMs with vRAM Contention %

Contention	Objects
0	GVALXPBIGIP1
0	VIT-CHGVACPLAB_MDS
0	HOULXDRED3
0	LDNLXPRISK4
0	LDNLXPNETAPPSC
0	GVAPHSEC1
0	HOULXPPWR1
0	eptlsp

8. VOA Report Performance Storage TOP10

Top 10 - Storage

These charts show the top 10 virtual machines impacted by storage latency. Depending on the application, a good starting point is to address latency above 10ms. The Troubleshoot Datastores dashboard in vRealize Operations is very helpful in resolving latency issues.

Storage Read Latency

Read Latency	Objects
33	RDMPMARVIN1
24.4	EPTPXAM2019
17.9	RDMPXADR01
17.3	RDMCAS2
16.7	RDMPXADR02
14.1	MOSPMARVIN1
13.3	EPTPWM
11.2	RDMPXAM2019

Storage Write Latency

Write Latency	Objects
18.3	HOULXPKFK9
16.2	GVAPQVP1
16.1	VIT-RUMOS-CT1
15.1	houlxpcmpp1
14.3	HOULXDKFK4
13.9	LDNES1
13.3	HOUPCTX2
12.3	HOULXPFEE2

9. VOA Report Performance Network TOP10

Top 10 - Network

Below you will see the top 10 VMs for network packet drop. As a starting point, focus on packet drop greater than 100 packets (although 0 is optimal). Also confirm the vNIC type (the paravirtualized vNIC VMXNET3 is the recommended vNIC type and has the ability to adjust the Rx/Tx buffer size, which can eliminate packet drop at the virtual layer)

Network Tx Packet Drop

Transmitted Packets Dropped	Objects
0.1	LDNDDKR01
0.1	RDMDC1
0	GVALXPBIGIP1
0	VIT-CHGVACPLAB_MDS
0	HOULXDRED3
0	LDNLXPRISK4
0	LDNLXPNETAPPSC
0	GVAPHSEC1
0	HOULXPRWP1