vSAN Performance Evaluation Checklist

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Checklist

The following is a performance checklist to guide you through some best practices related to getting the best possible results from a performance proof-of-concept on vSAN

Before you Start

The following is a performance checklist to guide you through some best practices related to getting the best possible results from a performance proof-of-concept on vSAN. You should, first of all, determine the desired outcome.

Does the customer wish to see the maximum IOPS, the minimum latency, the maximum throughput or even if vSAN can achieve a higher VM consolidation ratio?

You need to document the success criteria for the benchmark test. Get agreement on this matter before proceeding.

HCIBench fling site			
KB 2092190			
Click here for an example of how performance can be boosted with an additional disk group.			
The latest caching guidelines can be found on the virtual blocks blog here.			
Please read this performance guidelines blog which contains some very relevant information about the trade offs that are needed for performance testing.			

This completes the 'Before you start tasks' section.

Host Based Tasks after vSAN is Deployed

Some additional tuning might be required on the hosts. Here are some guidelines:

KB 2114803			
Performance Best Practices Guide for vSphere 8			
KB 1030265			
KB 2051814			

Choosing An Appropriate Policy to Test

You may want to test performance with different policies. Here are some guidelines on policies:

This completes the policy selection section.

Choosing Data Services

You may want to test performance with different data services.

Here are some options on data services:

This completes the data services section

Prepping for the HCIBench Benchmark

Download the HCIBench OVA			
Download the HCIBench User Guide			
https://download3.vmware.com/software/vmw-tools/hcibench/HCIBench_User_Guide_1.6.5.pdf			

This completes the benchmark prep section.

Initial Functional Test -HCIBench Easy Run

vsanperformance@vmware.com			
vsanperformance@vmware.com			

EASY RUN might be just what you need for your performance benchmark. However, you can also reuse the EASY RUN results to fine-tune your next benchmark run.

Success Criteria

- What do you want to achieve from this benchmark?
- What is the customer's success criteria?

The success criteria are based on a number of things – achieving

1. Max IOPS,
2. Max Throughput,
3. Minimum Latency,
4. a mixture of IOPS, TPUT and Latency or
5. VM Consolidation Ratio.

Depending on your priority on achieving 1, 2, 3, 4 or 5, the configuration may be different.

> For example, VDI desktop VMs may only have a single VMDK per VM, and since these generally do not generate many IOPS, you should be able to deploy many of these VMs and still achieve minimum latency. OLTP may require many VMDKs per VM, so you might only need to deploy a few of these VMs to achieve maximum IOPS. More IOPS and Throughput can be achieved with more VMs and more VMDKs. The trade-off is always IOPS and Throughput versus Latency – the more IO you wish to drive to a datastore, the higher the latency can become. Outstanding IO (called 'Number of Threads per Disk' in HCIBench) is also an incredibly important factor when it comes to performance benchmarks. It can help to generate more IOPS and Throughput by making sure that the IO queue is always filled, but the downside is that the more IO that is allowed to queue up, the higher the latency will be.

Note down the success criteria once agreed with the customer.

All of this is a balance, as you try to figure out how much you can push the system. Please read this performance guidelines blog which contains some very relevant information.

HCI Bench - Further Tuning

For a more advanced performance benchmark, the following steps can be considered.

HCIBench User Guide https://core.vmware.com/resource/vsan-support-insight			

This complete the approach to performance testing of vSAN with HCIBench.

Need Help?

Where to get Help?

In the ' **Before you start tasks** ' section, we mentioned that you should have informed the vSAN POC team before attempting any sort of vSAN benchmark. Normally this engagement is via your vSAN Specialist SE, who can seek SABU help if necessary. This team can give you guidance based on the many benchmarking efforts that they have already carried out. They should always be consulted first for advice if the benchmark is not performing as expected.

For issues with HCIbench, reach out to vsanperformance@vmware.com .

For other issues encountered during the POC, such as device or controller issues, it is recommended that a ticket is raised with GSS. Remember to capture the appropriate logs, etc, before opening a ticket so you can get a speedy resolution.

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