By Nutanix X-Ray

Test Infrastructure Lifecycle

Content

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About X-Ray

Test Infrastructure Life Cycle

Enterprise clouds leverage hyper-converged infrastructure technologies, mixing compute and storage resources into systems which are then shared by multiple application workloads. When architecting these infrastructures, it is important to test different real-world datacenter scenarios to understand how controlled and uncontrolled situations affect consistent application performance.

X-Ray models and tests typical datacenter scenarios that mirror the infrastructure lifecycle requirements including: pure infrastructure and application performance, performance while using infrastructure data protection features, performance scaling capabilities, and implications of failure scenarios. As shown below, tests have been categorized into typical phases of the infrastructure lifecycle.

Infrastructure Life Cycle Phase	Related Tests
Infrastructure Performance Measure raw infrastructure performance.	Four Corner Microbenchmark Throughput Scalability
Application Performance Model application-specific workloads and measure performance.	VDI Scalability OLTP Simulator
Data Protection Measure effects of data protection features on application workload performance.	Snapshot Impact VM Clone Impact
Infrastructure Resiliency Measure effects of unplanned infrastructure failure events on running applications.	Sequential Node Failure Rolling Upgrade Extended Node Failure
Infrastructure Scalability Measure effects of introducing new application workloads on infrastructure running existing workloads.	Database Colocation HCI Workflow

Testing Summary

Test Scenarios	Test Result Name	Systems Tested
Big Data Ingestion	Big Data Ingestion on Non-Nutanix - phx-xray12	phx-xray12 (4-Node Non-Nutanix 7.0.2 on ESXi)

Target System Details

phx-xray12

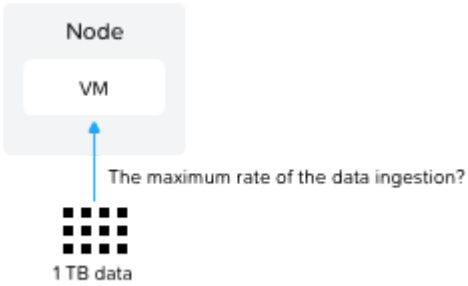
Cluster Version	Nodes	Usable Capacity
7.0.2	4	14.55 TiB

Node ID	Hypervisor Version	CPU	RAM	Attached Storage
phx-xray12-2.eng.nutanix.com	7.0.2	2 x Intel(R) Xeon(R) CPU E5-2660 v3 @ 2.60GHz Cores - 20	255.89 GiB	2 x INTEL SSDSC2BX80 745.21 GiB SSD 4 x ST91000640NS 931.51 GiB HDD
phx-xray12-1.eng.nutanix.com	7.0.2	2 x Intel(R) Xeon(R) CPU E5-2680 v3 @ 2.50GHz Cores - 24	511.89 GiB	2 x INTEL SSDSC2BX80 745.21 GiB SSD 4 x ST91000640NS 931.51 GiB HDD
phx-xray12-4.eng.nutanix.com	7.0.2	2 x Intel(R) Xeon(R) CPU E5-2660 v3 @ 2.60GHz Cores - 20	255.89 GiB	2 x INTEL SSDSC2BX48 447.13 GiB SSD 4 x ST91000640NS 931.51 GiB HDD
phx-xray12-3.eng.nutanix.com	7.0.2	2 x Intel(R) Xeon(R) CPU E5-2660 v3 @ 2.60GHz Cores - 20	255.89 GiB	2 x INTEL SSDSC2BX80 745.21 GiB SSD 4 x ST91000640NS 931.51 GiB HDD

Big Data Ingestion

Test Description - (Big Data Ingestion)

This test demonstrates how quickly a single host can ingest a large amount of data. Shorter ingestion times indicate better performance.



How X-Ray runs the test

Test Requirements
vCPU: 4 vCPU per VM.
RAM: 4 GB per VM.
Cluster storage: 1 TB per VM.
IP addresses: one per VM.
Setup
Deploy the VM template.
Clone one VM on a node.
Measurement
Start the ingestion workload.
Wait until 1 TB of data is ingested.

Big Data Ingestion on vSAN- Test Result Details

Target : phx-xray12 (4 node vSAN 7.0.2 on ESXi)

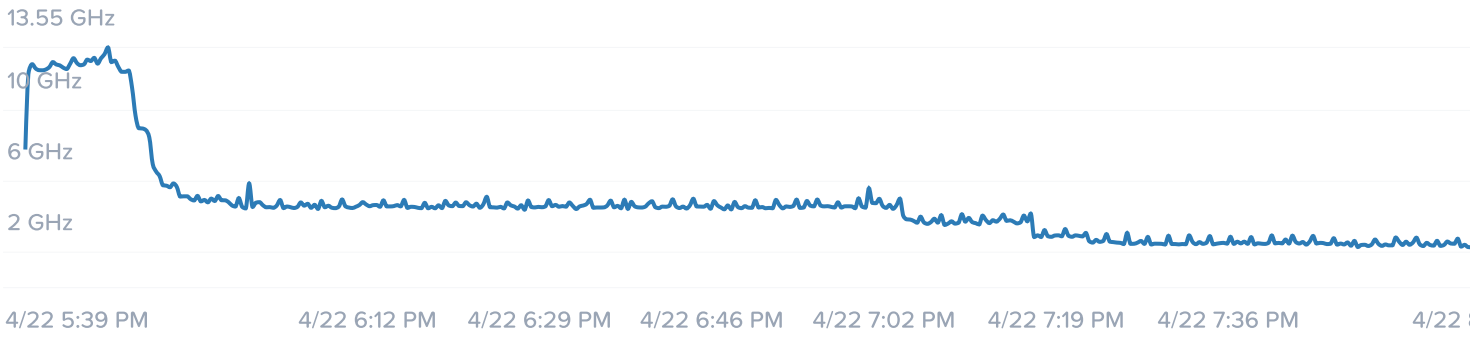
Preset:

No data found

Start Time	RunTime	Result
4/22/2022, 5:36:39 PM JST	3 h	Completed

BigData Ingestion I/O Throughput

Cluster CPU Usage



Cluster Network Bandwidth Received

Cluster Network Bandwidth Transmitted