# Nutanix Sizing Bill of Materials (BOM)

**Opportunity:** SherritO&G-NetApp takeout-NX-Scalar

**Design Scenario:** Tech Summit Team 42 Challenge

**Date:** 11-Apr-18

**Author:** Brian Parks

**BOM Id:** e408981c-c700-4f99-b052-b9d404098826

**Sizer Build:** 3.0.20.0

## Scenario Objectives:

*Executive Summary:*

To investigate replacement of Sherritt Oil, Gas, and Power IT infrastructure with Nutanix technology.

*Requirements:*

Initial sizing derived from rvtools output.

Added separate nodes to accommodate dedicated Cisco phone system production servers.

This configuration increases the storage capacity to provide more buffer.

StorageTotal Storage (TB)Used StorageUnused Storage

SAS Aggregate14122

SAS Aggregate3012.517.5

Total 442519.5

*Constraints:*

Not provided

*Assumptions:*

Not provided

*Risks:*

Not provided

*Description:*

Not provided

The Nutanix Sizer calculator has generated this Bill of Material

## Disclaimer:

The results generated or scenarios described in this report are estimates and should only be used as a guide to evaluate the benefit or feasibility of a future purchase of Nutanix products. The actual results realized as a result of a purchase and use of Nutanix products will vary and there is no guarantee that you will actually realize the results forecast in this report. There may be additional unaccounted for issues related to the use and deployment of Nutanix products that are not or cannot be accounted for on this report. Any estimate provided in this report is not and should not be interpreted as either a promise of or contract for a given level of performance. This scenario is sized using manual sizing option.



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## Datacenter Summary

| | |
|---|---|
| Clusters | 1 |
| Nodes | 9 |
| Rackspace | 7 |

## Datacenter Details

### Cluster-1

| Workloads | Type | Workload Details | Cluster Parameters |
|---|---|---|---|
| Medium CPU Medium RAM | Server Virtualization | VMs - 21<br>Server Profile Type - Medium<br>vCPU - 4<br>RAM (GiB) - 2<br>vCPU/Core - 6<br>Cold Data (GiB) - 20<br>Hot Data (GiB) - 6 | Block Awareness - Off<br>Compression (All Flash) - On<br>Compression (Hybrid) - On<br>Container Compression - 50%<br>Encrypted Storage used for VM data - Off<br>Erasure Coding - Off<br>Cluster Failover Capacity - Not able to calculate<br>Container Replication Factor - 2 |
| Large CPU Large RAM | Server Virtualization | VMs - 2<br>Server Profile Type - Large<br>vCPU - 21<br>RAM (GiB) - 4<br>vCPU/Core - 6<br>Cold Data (GiB) - 10<br>Hot Data (GiB) - 2 | Block Awareness - Off<br>Compression (All Flash) - On<br>Compression (Hybrid) - On<br>Container Compression - 50%<br>Encrypted Storage used for VM data - Off<br>Erasure Coding - Off<br>Cluster Failover Capacity - Not able to calculate<br>Container Replication Factor - 2 |
| Small CPU Small RAM | Server Virtualization | VMs - 104<br>Server Profile Type - Small<br>vCPU - 2<br>RAM (GiB) - 2<br>vCPU/Core - 6<br>Cold Data (GiB) - 20<br>Hot Data (GiB) - 6 | Block Awareness - Off<br>Compression (All Flash) - On<br>Compression (Hybrid) - On<br>Container Compression - 50%<br>Encrypted Storage used for VM data - Off<br>Erasure Coding - Off<br>Cluster Failover Capacity - Not able to calculate<br>Container Replication Factor - 2 |

| Model | Nodes | Blocks |
|---|---|---|
| **NX-1075S-G5 | 3 | 3 |
| NX-3060-G6 | 4 | 1 |



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| | | |
|---|---|---|
| NX-3060-G6 | 2 | 1 |



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| Product Code | Quantity | Product Description |
|---|---|---|
| **NX-1175S-G5 | 3 | NX-1175S-G5 , 1 Node<br>Nutanix Hardware Platform<br>-1 x 1 x C-CPU-2650v4(Intel Xeon Processor 2.2GHz 12-core Broadwell E5-2650 v4 30M Cache)<br>-1 x 4 x C-MEM-16GB-DDR4-2400(16GB DDR4-2400 Memory Module),<br>-1 x 2 x C-HDD-2TB-3.5-S(2TB 3.5-S" HDD),<br>-1 x 2 x C-SSD-480GB-3.5-E(480GB 3.5-E" SSD),<br>-1 x 1 x C-NIC-10G-2(10GbE Dual SFP+ Network Adapter),<br>-Foundation - Hypervisor Agnostic Installer<br>-Controller VM<br>-Prism Management |
| NX-3460-G6 | 1 | NX-3460-G6 , 4 Nodes<br>Nutanix Hardware Platform<br>-4 x 2 x C-CPU-4114(Intel Skylake Processor 2.2 GHz 10-core Skylake 4114 CPU)<br>-4 x 12 x C-MEM-32R4-26A(32GB DDR4 2666MHz Memory Module),<br>-4 x 4 x C-HDD-2TB-2.5(2TB 2.5" HDD),<br>-4 x 2 x C-SSD-1920GB-2.5-E(1920 GB 2.5-E" SSD),<br>-4 x 2 x C-NIC-10GSFP2-A(10GbE Dual SFP+ Network Adapter),<br>-Foundation - Hypervisor Agnostic Installer<br>-Controller VM<br>-Prism Management |
| NX-3260-G6 | 1 | NX-3260-G6 , 2 Nodes<br>Nutanix Hardware Platform<br>-2 x 2 x C-CPU-4114(Intel Skylake Processor 2.2 GHz 10-core Skylake 4114 CPU)<br>-2 x 12 x C-MEM-32R4-26A(32GB DDR4 2666MHz Memory Module),<br>-2 x 4 x C-HDD-2TB-2.5(2TB 2.5" HDD),<br>-2 x 2 x C-SSD-1920GB-2.5-E(1920 GB 2.5-E" SSD),<br>-2 x 2 x C-NIC-10GSFP2-A(10GbE Dual SFP+ Network Adapter),<br>-Foundation - Hypervisor Agnostic Installer<br>-Controller VM<br>-Prism Management |

***The NX-1075S-G5 can run application VMs on AHV and ESX only.*
*For information on Witness VM, please visit: https://portal.nutanix.com/#/page/static/supportTools*

## Recommended

| | | |
|---|---|---|
| CNS-INST-1-NC | 9 | OFFERING: Nutanix cluster deployment, per node basis.<br>DELIVERED BY: Nutanix GSO |



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| | | |
|---|---|---|
| EDU-C-ADM-OLPLUS | 2 | CUSTOMER COURSE: Nutanix Platform Administration course (Online Plus)<br>DELIVERY: Online Plus (self-paced online plus guided experience and hosted labs)<br>FOCUS: Platform Administration, prepares for NPP certification<br>PRICED: per student |



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## Sizing Details

### Workload Details

| Workload Name | Workload Type | Profile Type | VMs | Cores | RAM (TiB) | HDD (TiB) | SSD (TiB) |
|---|---|---|---|---|---|---|---|
| Medium CPU Medium RAM | Server Virtualization | Medium | 21 | 14.0 | 0.04 | 0.41 | 0.12 |
| Small CPU Small RAM | Server Virtualization | Small | 104 | 34.69 | 0.2 | 2.03 | 0.61 |
| Large CPU Large RAM | Server Virtualization | Large | 2 | 7.0 | 0.01 | 0.02 | 0.0 |
| **Total** | | | | 55.69 | 0.25 | 2.46 | 0.74 |

### BOM Details

| Capacity Calculations | Cores | RAM (TiB) | HDD (TiB) | SSD (TiB) |
|---|---|---|---|---|
| Raw Capacity | 161.18 | 2.44 | 54.57 | 22.26 |
| Compression Savings | | | 2.46 | 0.74 |
| RF Overhead | | | -2.46 | -0.74 |
| CVM Overhead | -36.0 | -0.25 | -6.61 | -6.47 |
| Workload Total | -55.69 | -0.25 | -2.46 | -0.74 |
| Usable Capacity RF2 | 69.49 | 1.94 | 22.75 | 8.86 |
| Usable Capacity RF3 | 69.49 | 1.94 | 15.17 | 5.91 |
| Usage Percentage | 56.89 | 20.43 | 16.63 | 20.39 |



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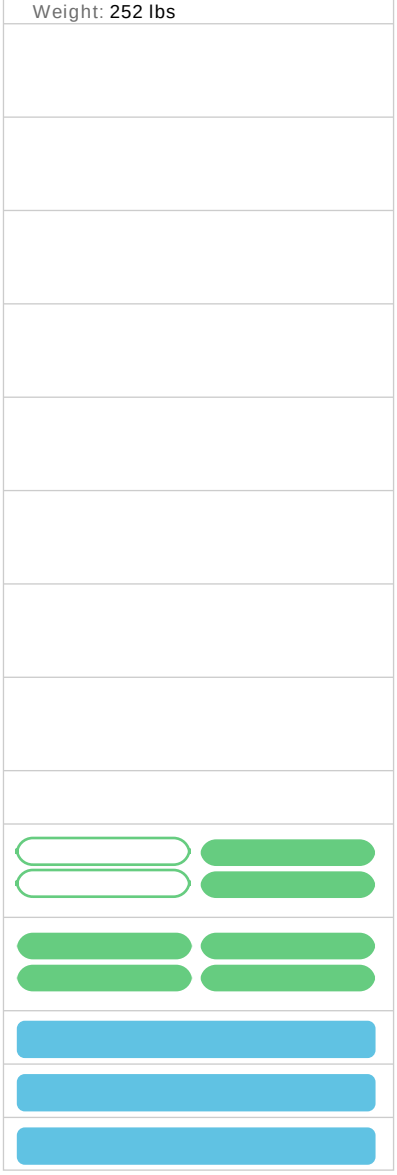
## Rack Layout

Rack Unit: 7 U
Typical Power: 3,150 Watts
Typical Thermal: 10,740 BTU/Hr
Weight: 252 lbs



**Legends**

- NX-1175S-G5
- NX-3460-G6
- NX-3260-G6



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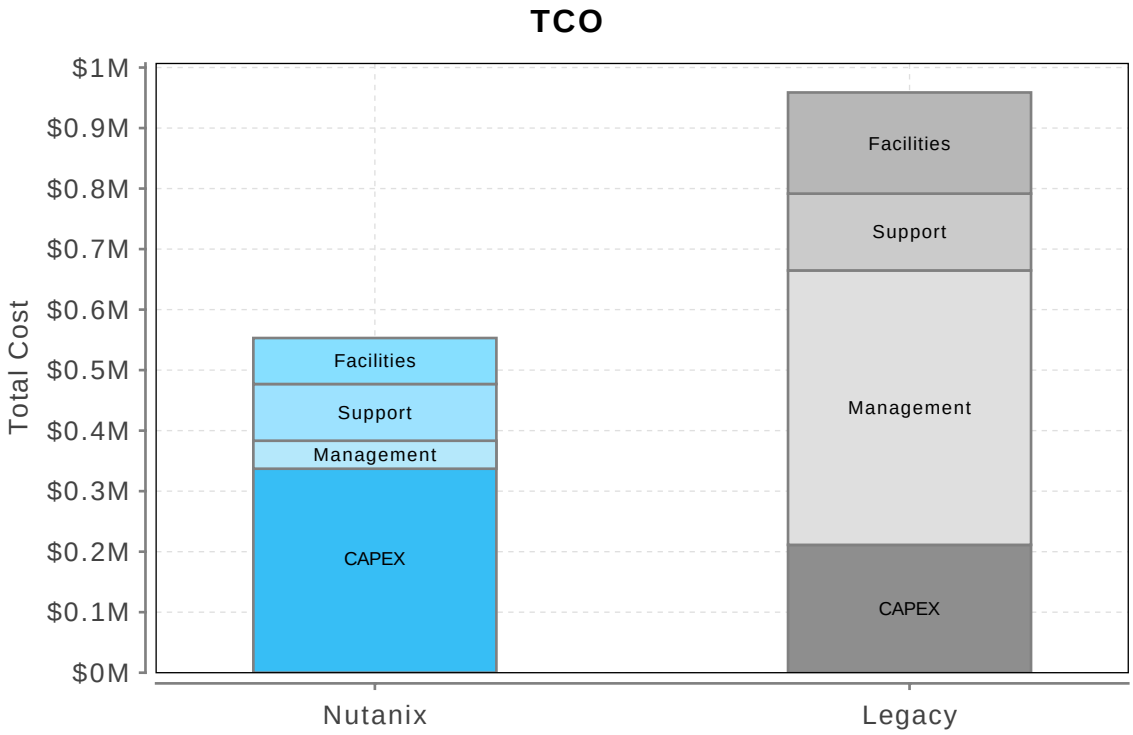
## Financial Analysis

Nutanix delivers invisible infrastructure for next-generation enterprise computing, elevating IT to focus on the applications and services that power their business.The company's software-driven Xtreme Computing Platform natively converges compute, virtualization and storage into a single solution to drive simplicity in the datacenter.Using Nutanix, customers benefit from predictable performance, linear scalability and cloud-like infrastructure consumption.

The calculations presented below compare traditional three-tier (SAN + server) with NutanixThe TCO analysis of traditional three-tier vs Nutanix compares typical costs required for mid-large size enterprises.expenditures includes storage, compute, networking and software costs. Operating expenses include support, facilities,and management costs (deployment, provisioning, on-going, troubleshooting, scaling.) For management costs, calculations were based on hours/month required per task and these assumptions were confirmed by IDC'sindustry averages for three-tier. Calculations are based list pricing with assumptions madeon typical discount rates in industry. Prices werederived from published vendor price lists and vendor quotes.The Nutanix TCO methodology has been validated and certified by IDC.

Nutanix is projecting a 42% savings over 5 years compared to a traditional three-tier (SAN + server) architecture.



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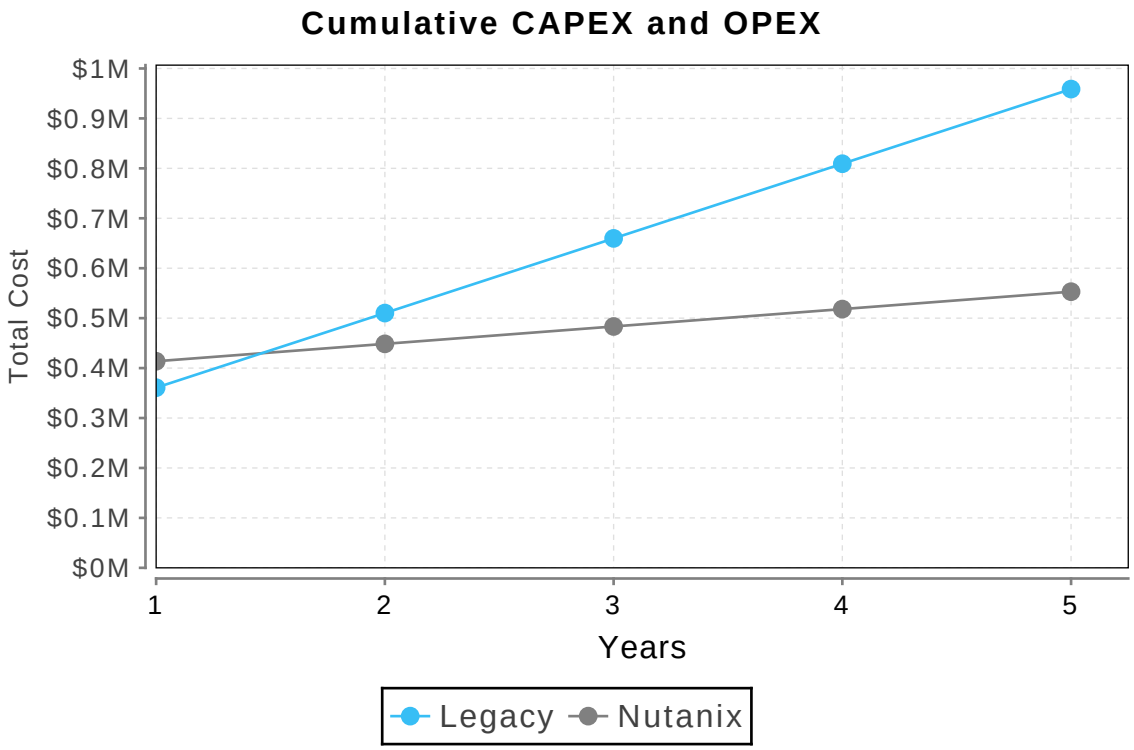
## Financial Analysis



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## Assumptions used for Financial Analysis

| Sales Discounts | |
|---|---|
| Hardware | 35.00% |
| Software | 35.00% |
| Support | 35.00% |

| Additional Capex | |
|---|---|
| Software Edition | Pro |
| Hypervisor cost per socket: vSphere | $2875.00 |
| 10GbE Cost per Port | $500.00 |
| 1GbE Cost per Port | $100.00 |

| Additional Opex | |
|---|---|
| Support Level | Production |
| kWh Cost(Power & Cooling) | $0.11 |
| Rack Space per U per Month | $50.00 |
| Management overhead for FTE per year | $60000.00 |
| Management node to FTE ratio (n:1) | 600.00 |



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## Nutanix Services Offers

| | | |
|---|---|---|
| Support Services | - ProSupport (Minimum)<br>- ProSupport Plus<br>- Nutanix Nutanix SW Support<br>- Term: 3 or 5 years (POS) | - Labor: On-Site<br>- 2, 4, 8 & NBD Response<br>- Remote Tech Support: 24X7 |
| Optional Support Services | - Proactive Maintenance<br>- Health Checks<br>- KYHD | - Onsite Diagnosis<br>- Dark Site Support |
| Deployment Service | - Greenfield- Onsite Implementation services –EDT (Required)<br>- Brownfield - Remote Implementation services - RIS | |
| Education Service | - Web Based<br>- Online Instructor led<br>- Classroom | |
| Consulting Services | - Performance Assessment<br>- Data Migration Services<br>- Virtualization & Private/Public Cloud Consulting Services | - Business Continuity and DR Services<br>- RCS – Remote Consulting Services |

### Note:

1. Design scenario is sized for 32 node clusters. These can be increased by customer to 48 or 64 node clusters based on what Hypervisor allows.
2. In Citrix XenDesktop and VMware View deployments ONE node in a cluster is required for dedicated management VMs for example vCenter and SQL Server for VMware View deployment, and XD Admin and Connection Broker for XenDesktop deployment.



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## Our Technology

- Unlike traditional arrays, Nutanix allows for perfect linear scalability. The much lower initial investment enables a quick payback period.The overall spend is also reduced since Moore's Law ensures declining costs relative to VM density.

- Since Nutanix is managed out of the box by the virtualization administrator, no additional storage administration is required. The 2U Nutanix footprint also minimizes power, cooling and rack space footprint. Nutanix's VM-level replication enables optimized Disaster Recovery (as opposed to replicating entire LUNs for traditional arrays).

- Nutanix's distributed file system combines local tiered storage with synchronous data replication throughout multiple nodes within a cluster, thereby allowing virtual machines to access data locally and survive node failures, distributing both compute and storage workloads among the remaining nodes in the cluster.

- It is often hard to put a cost on downtime. But storage arrays, despite having dual storage controllers, all too often do go down as a result of firmware upgrades, multiple drive failures, LUN attachment failures, human error, etc. Google built its infrastructure knowing that the commodity hardware would fail, and compensated by utilizing a distributed file system with data replicated on multiple servers. Rather than utilize ancient (1987) RAID technology, Nutanix incorporates the same type of distributed file system and data replication capabilities of GFS. The result is a similarly incredibly resilient architecture where the phrase, "The SAN is down" no longer is ever stated.

- Convergence implies the elimination of redundant hardware. Conventional converged infrastructure solutions that incorporate both servers and storage arrays do not consolidate any hardware whatsoever. They merely juxtapose the servers and arrays in the same racks or chasses and stick them at the end of a network we're they're subject to performance degradation from multiple hops and from network latency. Nutanix eliminates all of proprietary and disparate storage components and instead.



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