NUTANIX
Your Enterprise Cloud Platform

Customer Competitive Brief

Dell EMC VxRail 4.7

What Differentiates Nutanix Technology?

Enterprise Cloud Platform

The Nutanix Enterprise Cloud combines the agility and simplicity of the public cloud, with the security and control you need in a private cloud. Built on the industry's leading hyperconverged infrastructure (HCI) technology, it integrates compute, storage, native virtualization and networking in a full-stack solution that runs nearly any application. While other vendors are just low value infrastructure providers, Nutanix is a trusted partner that can accelerate your organizations digital transformation.

Modern Webscale Engineering Design

Other HCI vendors have taken a backward looking approach with a focus on replicating legacy SAN capabilities in a new software defined model on top of commodity servers. This carries forward legacy design principles and the issues caused by it. Nutanix employs a forward looking modern approach that enables massively scalable, software defined, operationally efficient, self healing systems similar to technologies pioneered by webscale cloud providers such as Google, Amazon, and Facebook.

Native Integration & Seamless Experience

Other HCI vendors have created full stack solutions by bundling existing products and tools and/or bolting on new acquisitions resulting in complex and fragmented experiences. The Nutanix Enterprise Cloud delivers natively integrated features and capabilities that remove complexity by design and enable a fundamentally different simple and seamless user experience.

Simple By Design

Other vendors claim simplicity, but can't deliver because they haven't taken a new approach where simple is by design. Nutanix delivers true operational simplicity. Prism provides a simple, yet comprehensive, consumer-grade 1-click management experience and eliminates the need for specialized IT teams, allowing IT to be a business enabler, rather than a cost center.

Freedom and Choice

Nutanix Enterprise Cloud OS software empowers IT teams to use best-of-breed technology without being locked into a single vendor. Nutanix supports all popular hypervisors and runs on a wide variety of hardware platforms so that IT can manage their datacenters using the platforms and tools of their choice. Nutanix melds private and public cloud operations for powerful hybrid clouds with your choice of public cloud provider.

Power Any Workload

The Nutanix Enterprise Cloud provides the performance, resilience and scalability to power all workloads – virtualized, container-based and bare metal. IT managers and application teams can improve operational efficiency and reduce the number of point solutions with built-in services, including native file and object services, block storage capabilities, integrated application marketplace, and more. Some of the worlds largest companies are running their mission critical apps on the Nutanix Enterprise Cloud.

Industry Leading Quality

Nutanix delivers industry leading product quality and has consistently maintained a metric of less than 2% customer found defects and less than 0.5% unique customer found defects over time. This is the result of a rigorous closed loop product quality system which allows automated and intelligent feedback for our developers, allowing them to develop new features while focusing on continuous product improvement. The result is a platform that 'just works'.

World Class Support

You'll love the Nutanix support experience, with a 90+ Net Promoter Score (NPS), a 97% Customer Satisfaction rating and winner of 4 Omega NorthFace Scoreboard Awards. We use a different organizational approach based on the Site Reliability Engineering principles developed by Google. Experts answer the first call and see most issues through to completion without handoff enabling a highly efficient path to issue resolution and a delightful support experience.

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Key Differentiators

Cloud Inspired Virtualization

As customers look to deploy apps in public clouds, they generally care about the resources required to run those apps and they don't necessarily know or care what the underlying hypervisor is. Nutanix has taken the same approach by making the hypervisor a zero cost, seamless part of the stack and effectively invisible. For customers that still see hypervisors as a separate product and see value in paying for one, we eliminate vendor lock in and offer customer choice of any leading hypervisor and a consistent and seamless management experience for multi-hypervisor environments.

Future Proof Data I/O Stack

In a world of 5ms to 20ms latency, data doesn't need to be local to the application, but as we rapidly shift to a world of new ultra low latency flash devices, having that flash as close to the application as possible (i.e. data locality) becomes a fundamental aspect of modern system design. That's why the Nutanix AOS architecture keeps reads and primary writes local. VxRail takes a legacy design approach and spreads data throughout specific disk groups on specific nodes. Data reads are retrieved in a round robin from those disk groups and must traverse the network, which uses the network extensively. This interference worsens with larger cluster sizes making scaling difficult, which cannot deliver sub 5ms latency.

Enterprise Data Resiliency

Nutanix ensures RF compliance by immediately replicating data when there is a node or disk failure as well as during periods of maintenance. Nutanix can maintain RF due to its fine grained/ tuned metadata implementation. With VxRail/vSAN running FTT1 (RF2 equivalent), node or disk failures can cause the system to drop to RF1 levels for components for an hour by default. Decreasing the timeout value could cause other issues, per VMware documentation. Also, 3-node VxRail clusters cannot self-heal like a Nutanix 3-node cluster can. Would you be comfortable with a single copy of your data for extended periods of time?

Modern Approach to Failure Handling

For VxRail, In a hybrid configuration, if the SSD fails the entire disk group goes down. In an all-flash configuration with dedupe and compression, if any device fails, the entire disk group goes down. Replacement of the device triggers a rebuild of the entire disk group. Nutanix rebuilds only the data on the failed device, and are rebuilt in an efficient distributed operation, using all drives and nodes in the cluster.

All Flash Performance on Hybrid

In a hybrid configuration, VxRail uses flash as a read/write cache. The flash can never be used for persistent data and does not contribute to the capacity of the datastore. There is no intelligent distributed tiering of SDD and HDDs and effectively no new technology innovation. Nutanix uses SSD for persistent storage and specific types of resources (e.g. SSD, HDD, etc.) are pooled together and form a cluster wide storage tier. This means that any node within the cluster can leverage the full tier capacity, regardless if it is local or not. All data I/O is served by the SSD pool which will always offer the highest performance, even on a hybrid configuration.

Simplified Control Plane

Nutanix management is built into the distributed system. It is fully resilient, scales with the cluster, and does not require separate infrastructure. Prism is designed to be simple like an iPhone. The learning curve is very low and customers immediately love the simplified management experience and 1-click operations. VxRail still requires up to 8 different management consoles for their full stack.

Full Feature Hybrid

VxRail requires an all flash configuration to utilize advanced storage features like deduplication, compression and erasure coding. Nutanix offers flexibility with our platform allowing customers to free up storage with our data efficiency features, even on hybrid configurations.

Shouldn't your platform choice deliver a fundamentally better experience than you have today?

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What Dell EMC Will Tell You…

In-Kernel is Superior to the CVM

We use VMDirectPath I/O Pass-through which provides direct access to the disk controller and excellent performance. VMware released an ESG paper that demonstrated SQL running in a single VM driving over 1M IOPs (circa 2012) with low latency so there is no concern over a CVM providing high performance.

vSAN's in-kernel architecture round robins read requests over the data copies in the cluster. How does in-kernel provide better performance when 50% (ftt=1) or 66% (ftt=2) of the reads leave the kernel and go over the network? Without data locality, in-kernel architectures have zero benefit.

Nutanix Requires You to Learn a New Management Tool

vSAN does not eliminate the need for separate off cluster management infrastructure that adds cost/complexity around sizing, HA, expansion, hardware LCM, upgrades, etc. vSAN requires up to 8 different management consoles that fail to simplify management. Nutanix Prism is an elegant, simple and modern interface built with the hybrid cloud in mind. Nutanix takes the time to implement all technology into a single HTML5 management plane, even with technology that we've gained via acquisition.

vSAN Has Lower Resource Overhead

VMware claims vSAN has 10% CPU/RAM overhead. There are public examples of vSAN consuming over 40% system CPU. Also, this overhead is just for the lightweight kernel module. If you include overhead for other components outside the kernel (vCenter, vRealize Log Insight, VxRAIL manager, RPVM, VDP, ESRA, vRO, vRA, etc.) you will get much closer to an apples to apples comparison, while our resources required are quite low in comparison.
Disk groups have significant memory over head associated with them (see KB 2113954) and can require as much or even more memory as a CVM.

vSAN also needs 30% free storage to accommodate any rebalancing events, and can have serious impact to an environment if there is a node failure and the space requirement isn't met.

Nutanix is Shifting Away from Appliances, Dell Relationship Is "Uncertain"

This is popular FUD from Dell EMC, which is interesting since Dell EMC sales reps continue to close quota on Dell XC (powered by Nutanix). Nutanix and Dell have renewed the OEM relationship in 2017, and Nutanix continues to ship and support appliances, now on our Gen 6 release. The true value is not in the hardware and Nutanix will continue to give customers the choice to run on several top server platforms.

VxRail is a Co-Engineered Appliance with a Single Support Organization

Actual integration between Dell EMC and VMware is minimal, and the product has been repackaged several times. Under the guise of a single product, VxRAIL is still several products (VxRail Manager, vSphere ESXi, vCenter, vSAN, vRealize Log Insight, vSphere Replication and Recover Point), just sold together. Dell EMC support organization currently has a Net Promoter Score of ~38, compared to Nutanix NPS of over 90, along with a Customer Satisfaction rating of 9.6 and winner of 4 Omega NorthFace Scoreboard Awards.

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Feature and Capability Comparison

Enterprise Storage, Clustering and Scalability	NUTANIX	VXRAIL
Max Cluster Size	Unlimited	64 nodes
Min 1-Node Configuration	✓	✗
Min 2-Node Configuration	✓	✓
Mix Different Capacity Nodes in Cluster	✓	✓
Mix Different CPU Chipsets in Cluster	✓	✓
Mix Hybrid / All-Flash Nodes in Cluster	✓	✗
VM-centric Snapshots and Clones	✓	✓
Shadow Clones	✓	✗
Deduplication	✓	✓
Compression	✓	✓
Erasure Coding	✓	✓
File Storage Services	✓	✗
Block Storage Services	✓	✓
Object Storage Services	✓	✗
Intelligent Tiering in Software	✓	✗
Database Copy Data Management	✓	✗
Pin VM To Flash Tier	✓	✗
Automatic Cluster Storage Rebalance	✓	✓
1-Click Node Addition/Removal	✓	✓
One-to-many witness VM for ROBO sites	✓	✗

Did you know?

vSAN/VxRail hybrid (SSD/HDD) storage clusters cannot use space efficiency features. Those features are allowed on all-flash clusters only.

Did you know?

vSAN/VxRail dedup is at the disk group level. So if you have multiple disk groups per node, your data is not deduplicated!

Did you know?

vSAN/VxRail requires a witness for each ROBO site and witness require up to 1.5Mbps bandwidth and <500ms RTT. Nutanix can use a single witness for 100s of ROBO sites and has no latency or bandwidth restrictions.

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	NUTANIX	VXRAIL
Resiliency, Data Protection and Disaster Recovery		
Automatic Disk Failure Recovery	✓	✓
Recovery Efficiency Scales With Cluster Size	✓	✗
Replication Factor 2 and 3	✓	✓
1-Click RF2 to RF3 Conversion	✓	✓
Crash Consistent Snapshots	✓	✓
Native VSS Provider	✓	✓
Native Async Replication & DR	✓	✗
Native Near-Sync Replication & DR (1 minute RPO)	✓	✗
Native Synchronous Replication & DR	✓	✗
Native Multiple Site DR (many to many)	✓	✗
Native DR Runbook Automation and Workflows	✓	✗
DR-as-a-Service (DR to Cloud)	✓	VMware Site Recovery
Backup to Public Cloud	✓	✓
Cross Hypervisor Backup and DR	✓	✗
Self Service Restore	✓	✗
Virtualization		
Native Built-in Virtualization (AHV)	✓	✗
vSphere ESXi	✓	✓
Hyper-V	✓	✗
Xen Server	✓	✗
1-Click Hypervisor Conversion	✓	✗

Did you know?

For vSAN/VxRail, If any disk fails with dedup and compression enabled, the entire disk group will taken offline!

Did you know?

Some vSAN/VxRail Replication features are not native and are limited to vSphere Replication, Dell EMC Avamar, or Cloud DR, which are separate products with separate management stacks!

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	NUTANIX	VXRAIL
Networking and Security		
Network Visualization	✓	vRealize Network Insight
Network Automation	✓	NSX
Service Insertion and Chaining	✓	NSX
Microsegmentation	✓	NSX
Self Encrypting Drives	✓	✓
Native Software Encryption	✓	✓
Native Key Management	✓	✗
STIGs with Auto Self Healing Baseline	✓	✗
Industry Standard Security Certs	✓	✓
2-Factor Auth and RBAC	✓	✓
Application Automation, Orchestration, and Governance		
Customizable Blueprints	✓	vRealize Automation
Application Lifecycle Management	✓	vRealize Automation
Cross Cloud Deployment Target	✓	vRealize Automation
Self Service Provisioning / Marketplace	✓	vRealize Automation
1-Click Oracle and Postgres SQL Install	✓	✗
1-Click DB Clone/Restore/Refresh	✓	✗
Cloud Cost Analytics and Optimization	✓	vRealize Business for Cloud
Intelligent Consumption Planning	✓	vRealize Business for Cloud
1-Click Compliance Remediation	✓	✗

Did you know?

While the VMware ecosystem has the ability to provide some of these features, they are separate products, with separate installations, management stacks and costs!

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	NUTANIX	VXRAIL
Management and Operations		
Built-in Management (no mgmt. cluster)	✓	✗
Local Cluster Management	✓	✓
Multi-Cluster Management	✓	✓
Multi-Hypervisor Management	✓	✗
1-Click Storage OS Updates	✓	✓
1-Click Hypervisor Updates	✓	✓
1-Click Hardware Firmware Updates	✓	✓
1-Click Centralized Multi-Cluster Up-grades	✓	✗
1-Click Capacity Planning	✓	Analytical Consulting Engine
Just In Time Forecasting	✓	✗
1-Click VM Right Sizing	✓	✗
1-Click Performance Monitoring	✓	✗
1-Click Operational Insights	✓	✗
Customizable Dashboard	✓	✓
Google Like Search	✓	✗
Scheduled Reporting	✓	✗
Rest API	✓	✓
Support		
Customer Satisfaction over 95%	✓	✗
Net Promoter Score over 90	✓	✗

Did you know?

VMware's basic hypervisor management stack is fractured between a limited Flex-based GUI and a limited HTML5 GUI!

Did you know?

VMware's ecosystem might enable some of these features, however they are not 1-click and native!