

Microsoft SQL Server
Solution Brief

Bring Web-Scale Engineering and Enterprise Availability to Your Database Environment

“Nutanix has been a success at Bauer Built for three reasons: converged simplicity, expanding our growth potential, and saving us time and money. The ability of the system to seamlessly slip into our infrastructure and replace our entire rack server infrastructure allowed us to implement the solution in a quick and efficient manner. It has also simplified support on our virtualized environment.”

– Charlie Kavaloski,
IT Director, Bauer Built, Inc.



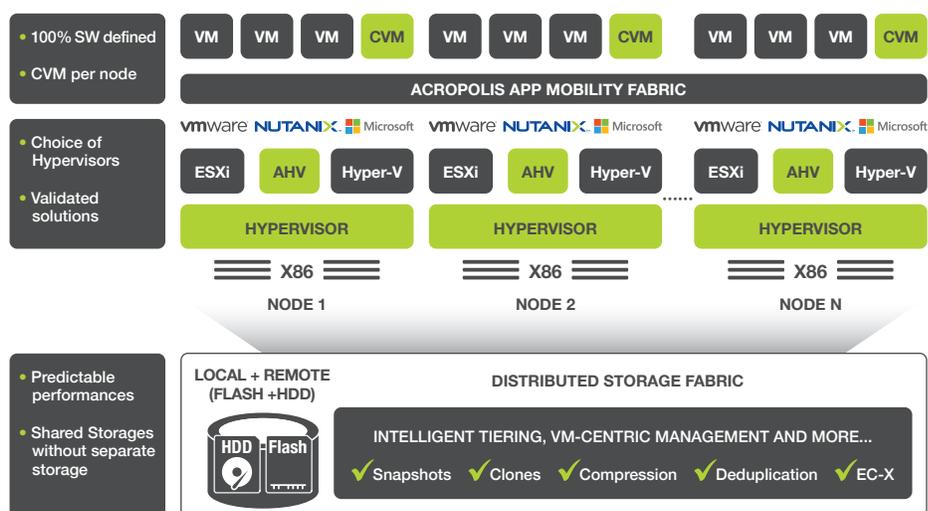
As one of the fastest growing database platforms, Microsoft SQL Server deployments are becoming increasingly critical to organizations. They are used in everything from departmental databases to business-critical workloads, including ERP, CRM, and BI. At the same time, enterprises are virtualizing SQL Server to consolidate their datacenter footprint, control costs, and accelerate provisioning. These trends of delivering SQL Server databases as dynamic, virtualized services make it essential to select the right server and storage architecture.

NEED FOR SPEED, SCALE, AND SIMPLICITY

For virtualized deployments, server and storage infrastructure need to deliver on the performance and availability needs of SQL Server-based workloads, while remaining simple to deploy, manage, and scale.

Database performance has long been the primary criteria for selecting infrastructure. Multicore processors and large system memory capacity have now moved the performance conversation away from compute to the storage system. Storage solutions that support virtualized SQL Server VMs need to handle a dynamic mix of transactional (OLTP) and analytical (OLAP) databases, along with their unique storage I/O profiles and active data sets. This requires efficiently delivering random and sequential read/write at high performance, across sizable amounts of active or hot data.

In addition to performance, both compute and storage need to easily scale — while maintaining performance — to accommodate new and existing databases. Unlike traditional SAN architectures, scaling should eliminate complex provisioning, on-going management tasks, and constant tuning of performance parameters.



To ensure IT organizations are delivering on their promise of protecting data and keeping critical SQL Server VMs available, IT infrastructure must build on the concept of Microsoft AlwaysOn Availability Groups. The infrastructure should be able to take frequent snapshots of the SQL Server VMs along with their databases, and replicate them to secondary systems for disaster recovery — without requiring administrators and DBAs to constantly monitor and manage the processes. Unfortunately, data protection and availability are often unfulfilled requirements for critical applications because of their cost and increased complexity.

WEB-SCALE ENGINEERING FOR SQL SERVER

Whether upgrading existing infrastructure or deploying new environments, Nutanix Xtreme Computing Platform is the ideal solution for virtualized SQL Server deployments. Nutanix Xtreme Computing Platform provides the ability to:

- Consolidate all types of SQL Server databases and VMs onto a single converged platform with excellent performance;
- Run Microsoft SQL Server with other critical workloads, without sacrificing performance or reliability;
- Remove the complexity and reduce the costs of traditional storage;
- Eliminate planned downtime and protect against unplanned issues to deliver continuous availability of critical databases; and
- Keep pace with rapidly growing business needs, without the upfront investments or disruptive forklift upgrades.

Nutanix Xtreme Computing Platform brings the benefits and economics of web-scale architectures from companies, such as Google, Facebook, and Amazon, to the enterprise through its Distributed Storage Fabric (DSF). This 100% software-defined approach works with VMware vSphere, Microsoft Hyper-V, and Acropolis Hypervisor; takes just 60-minutes to deploy; and delivers low-latency storage performance for any virtualized SQL Server workload.

DSF leverages storage control VMs that run on each Nutanix node to form a single shared storage pool that is accessible by all VMs in the system. This storage pool appears as a datastore or shared volume for VMware vSphere, Microsoft Hyper-V, or Acropolis Hypervisor. There is no need to deal with the complexity of managing separate storage systems with the burdensome tasks of provisioning LUNs, storage networking setup, and managing VMs placement in storage.

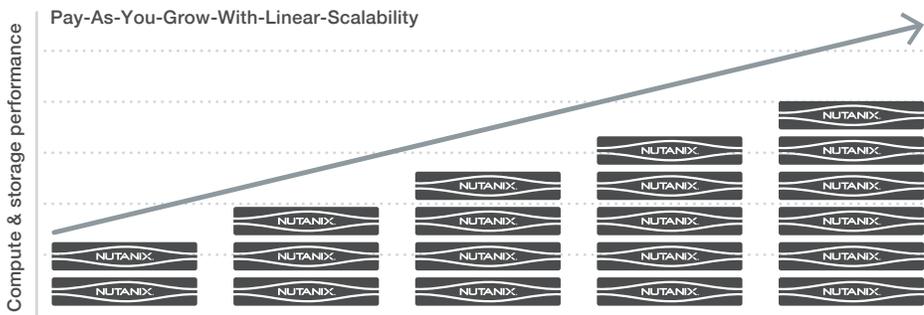
For high performance, the hyperconverged Nutanix solution serves active data associated with local SQL Server VMs from local storage, including from local SSDs. DSF also enables local VMs on a Nutanix node to transparently access storage capacity across the platform. This strategy eliminates overprovisioning by delivering the right combination of high random read/write I/O and excellent sequential throughput for critical transactional and analytical workloads. Additional capacity optimization is done via features such as thin provisioning, deduplication, and compression. This increases the effective capacity to accommodate larger databases with more active data.

“Power, space, and cooling are large factors when deploying a new infrastructure. The Nutanix solution ‘checked the box’ on each of these areas with ease. The scalability and high performance features of the solution added value to our purchase decision.”

– Adam Dickerson,
Sr. Systems Analyst, AT&T Inc

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Growing an environment with the patented Nutanix architecture is as simple as adding additional nodes to the existing system. This process takes just minutes and results in linear scaling of performance and capacity. Read more about the award-winning web-scale Acropolis architecture in the Nutanix Technical Reports.



Because the Xtreme Computing Platform is built for virtualization, all management is done at the VM and virtual disk level. Using VM-centric policies for snapshot-based backups, Nutanix is able to complement Microsoft SQL Server 2012 AlwaysOn Availability Groups. For backup and archiving, months worth of space-efficient snapshots of critical databases can be stored locally or on a secondary system, eliminating the need for external backup storage. Policies can be set to efficiently replicate VMs over the WAN to another Nutanix system to protect against more catastrophic disasters. Nutanix integrates with VMware Site Recovery Manager and enabling automated failover of complex applications involving groups of SQL Server and Nutanix XCP also helps accelerate time to production and reporting, and improves software quality for test/development and reporting environments. With Nutanix, different teams can create and run full functioning copies of SQL Server environments in minutes using VM-level cloning or replication on the same or to a separate Nutanix system. This gives individuals their own high-performance environments for testing, development, reporting, training, or quality assurance.

PARTNER FOR SUCCESS

Nutanix is committed to customer success. In addition to delivering the industry's leading converged infrastructure solution, Nutanix offers a wide range of services, including SQL Server deployment, disaster recovery design, as well as custom services tailored to customers' needs. To meet interoperability and performance needs, Nutanix collaborates closely with Microsoft on key product validation and integration efforts.

Contact your Nutanix representative or authorized reseller for more information, and continue the conversation on the Nutanix Next online community (next.nutanix.com).

Key Benefits

Nutanix Xtreme Computing Platform delivers a turnkey infrastructure solution for Microsoft applications. Run Microsoft SQL Server alongside other virtualized applications and benefit from:

- › Higher performance and scalability: Start small and scale databases as your needs grow, but without the concessions of traditional infrastructure.
- › Improved availability: Keep key databases protected and running with frequent, easy-to-restore backups, and affordable, simple disaster recovery.
- › Reduced operational complexity: Leverage simple, consumer-grade management, VM-centric operations, and unprecedented insight into application and storage performance.



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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. Learn more at www.nutanix.com or follow us on [Twitter@nutanix](https://twitter.com/nutanix).

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