VersaStack Solution for Microsoft SQL Server
Database Acceleration

Challenges
Microsoft SQL Server databases form the core of many applications involving mission-critical, online transaction processing (OLTP), data warehousing, batch processing, business intelligence, complex queries for report generation, and online analytical processing (OLAP). The challenge for IT and database administrators is to meet business objectives while providing greater performance to meet the needs of growing amounts of data at a lower cost.

Microsoft stopped supporting a major database version, SQL Server 2005 in April 2016. Microsoft no longer provides automatic fixes, updates, or online technical assistance for this version. Without Microsoft support, customers will no longer receive security updates that protect their servers from harmful viruses, spyware, and other malicious software. This change will affect those Microsoft customers who have deployed SQL Server 2005 in their data centers. Customers will likely need to migrate to a new platform and new version of SQL Server or face the risk of operating without support.
VersaStack Solution Is Your Best Choice for Microsoft SQL Server Workloads

The VersaStack™ Solution is an integrated system platform that brings together Cisco UCS® Integrated Infrastructure (Cisco Unified Computing System™ [Cisco UCS] servers, Cisco Nexus® switches, and Cisco UCS Director management and orchestration software) and IBM storage systems built with IBM Spectrum Virtualize. VersaStack forms integrated infrastructure building blocks to host your SQL Server workloads. It provides faster delivery of solution applications, greater reliability, easier management, simplified installation, and lower IT infrastructure costs.

VersaStack is a pretested, validated, and optimized integrated infrastructure solution for SQL Server database environments (See Figure 1). Backed by industry-leading Cisco® Validated Designs and IBM Redbooks, it accelerates the deployment of SQL Server databases, whether they are running on a single node or on one or more replicas. VersaStack—with Cisco UCS Director and Cisco UCS Manager automating and orchestrating hardware deployment—is well suited for nearly all SQL Server workloads.

Whether you are running new or existing SQL Server workloads, VersaStack for Microsoft SQL Server with VMware provides a prevalidated end-to-end tested and documented reference architecture to meet your needs from the data center to the edge (see Figure 2). The entire infrastructure, including computing, networking, and storage resources, is tested using a VMware vSphere virtualization environment. Your initial and ongoing SQL Server deployments will proceed faster and more smoothly because all steps are detailed in Cisco Validated Designs blueprints. In addition, ongoing automation and deployment with Cisco UCS Manager and Cisco Director software help ensure consistent server provisioning and deployment, eliminating configuration drift and bringing up new nodes in minutes, not days.
Figure 2: VersaStack for Edge or Data Center SQL Server Workloads

VersaStack Solution Includes Cisco UCS Servers for the Entire Range of Microsoft SQL Server Workloads

Cisco UCS is innovative server architecture with record-breaking SQL Server database performance. Cisco UCS holds five world performance records on SQL Server applications and workloads and more than 100 overall world-record performance benchmarks. In addition, Cisco UCS servers, powered by Intel® Xeon® processors, stretch your SQL Server database budget even further because machines that have four or more processors have full-core multipliers. Cisco UCS offers numerous configurations above four cores, allowing you to choose and optimize your SQL Server costs while increasing overall performance.

Cisco UCS management and revolutionary service profiles enable you to easily, quickly, and accurately scale infrastructure to handle workload fluctuations, eliminating configuration drift and allowing you to deploy new nodes in minutes, not days. As an example, in a VersaStack SQL Server deployment, a duplicate node can be brought up in minutes, not hours or days.

For instance, in a traditional data center, if a SQL Server (physical server or virtualized server) node fails, normally a long process is required to deploy and provision a new server and bring that node up again. In some data centers, bringing up new server node may take days.
With VersaStack, however, you can easily re-create an exact copy of a failed SQL Server node in minutes. The service profile of the failed node (rack or blade) is instantiated on a new, spare node. In moments, an exact copy of the failed node (with the same Universally Unique Identifier [UUID], MAC address, World Wide Name [WWN], World Wide Port Name [WWPN], BIOS, firmware, etc.) is deployed. SQL Server identifies that the failed node is now back in the cluster, because all of its hardware attributes are identical to those of the failed node.

VersaStack Solution Offers a Choice of IBM SQL Server Storage Options

Because of the versatility and price flexibility of IBM storage systems such as IBM FlashSystem V9000, IBM Storwize V7000, and IBM Storwize V5000, VersaStack can address high-performance, high-capacity, high-growth, and cost-sensitive storage requirements. FlashSystem V9000 offers the highest levels of performance with robust software-defined storage capabilities for database acceleration, analytics, and other business applications running on the SQL Server database. Storwize V7000 is best suited for medium-size to large enterprises seeking a hybrid storage technology (hard disk and solid-state disk [SSD]). For smaller environments, the Storwize V5000 hybrid storage system offers an attractive entry-level solution, especially when paired with Cisco UCS Mini.

With VersaStack, you don’t need to make any trade-offs in the way that you deploy applications. You can run mixed workloads, enable data center consolidation, accelerate applications, and reduce costs. VersaStack configured with IBM FlashSystem V9000 can achieve extremely fast response times for SQL Server database read and write operations, providing nearly real-time access to critical data with predictable, sustained performance for OLTP and fast batch processing. IBM Storwize V7000 and V5000 with hybrid storage options provide compelling solutions well suited for cost-sensitive Microsoft SQL workloads.

For More Information
www.cisco.com/go/versastack
www.ibm.com/versastack
VersaStack SQL Server Redbook: