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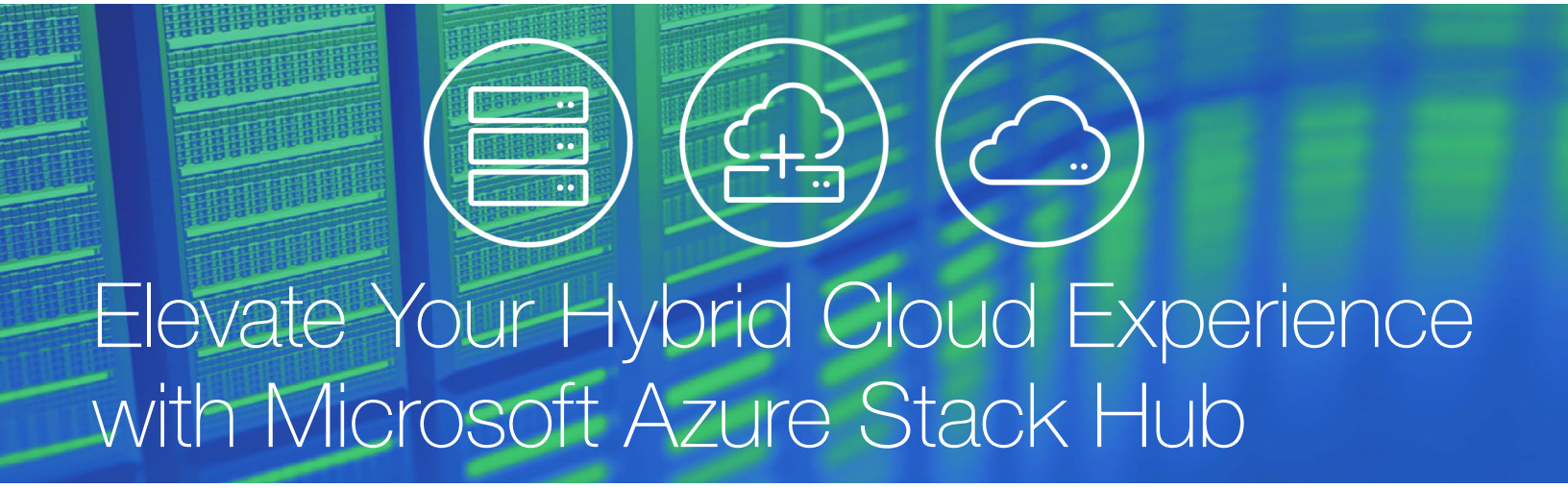
SOLUTION OVERVIEW



Elevate Your Hybrid Cloud Experience with Microsoft Azure Stack Hub

All organizations are being challenged to modernize and digitally transform. Pressures to deliver new services, the rising demand for digital engagement, cost reductions, and the need to ensure the safety and security of data and critical systems are driving adoption. Technology can provide the means for massive transformation; however, few technologies match the ability of cloud computing to aid in developing and deploying new competencies quickly and at scale. Cloud computing has revolutionized the modern enterprise by enabling organizations to reinvent the ways they operate, far more effectively than any other information technology (IT) model.

Cloud computing enables rapid development and provides scalable and flexible infrastructure, while ensuring continuity and disaster recovery. Microsoft® Azure®, a leading provider of cloud services, continues to see strong adoption rates in the public cloud. So much so that organizations were eager to bring the many cloud capabilities of Microsoft Azure to on-premises data centers, creating private cloud environments. This paved the way for a hybrid approach that merges the two using both public and private per the needs of the application, cost, and security requirements. Microsoft Azure Stack Hub is an extension of Microsoft Azure that combines the flexibility of cloud computing with the performance and control of on-premises environments.

Microsoft Azure Stack Delivers on the Promise of a True Hybrid Model

Initial hybrid cloud solutions attracted early adopters and delivered on some of the promised benefits, but fell short due to limitations in their architecture, inconsistency between clouds, or complexity of operation. Microsoft Azure Stack Hub .was introduced in 2016, and was designed to solve many of the shortcomings of traditional cloud solutions. As the first truly consistent cloud service based on Azure source code, the hybrid cloud design enables an organization to consume the Microsoft Azure cloud services inside their own datacenters in exactly the same way they consume Azure cloud services in the public cloud with absolute parity.

The Hybrid Cloud Movement

96 percent of enterprises are using cloud solutions to provide IT services[1]

77 percent of enterprise workloads reside in public or private clouds[1]

87 percent of enterprises have a hybrid-cloud strategy, up from 55% two years ago[1]

[1] RightScale. "RightScale 2018 State of the Cloud Report." 2018. https://assets.rightscale.com/uploads/pdfs/RightScale-2018-State-of-the-Cloud-Report.pdf.

Azure Stack Hub extends Microsoft Azure to your data center and enables you to work with Azure platform–consistent services on-premises. Microsoft Azure Stack Hub provides businesses with the same infrastructure and services available with Azure, like infrastructure as a Service (IaaS), Platform as a Service (PaaS), virtualization, software defined networking (SDN), software defined storage (SDS); all of which are deployed in an automated way using modern DevOps methods and tools. Bringing this level of agility and innovation to on-premises environments is accelerate cloud adoption.

A Consistent Application Environment

Traditional IT infrastructure and legacy private cloud solutions required that each application installation be built and tested separately for each environment. Even if DevOps tools worked within the environment, there was little assurance that code written for the development environment would work for production or between production environments. Microsoft Azure Stack Hub solves this issue with a consistent environment between all Azure Clouds, public or private. Applications can run on multiple clouds with reliability in function and performance and without the need for different tools and pipelines for each cloud environment.

This consistency and interoperability is possible because Microsoft Azure Stack Hub is a copy of Azure running on specifically designed, tested, and certified hardware. Microsoft has engineered Microsoft Azure Stack Hub from Azure source code and worked with solution providers to methodically develop the hardware infrastructure needed to maximize its potential. Hence, the solution delivers Azure services in a highly reliable and redundant manner, with the ability to operate anywhere you need it.

Data Governance and Compliance

Businesses operate in complex environments with increasingly more requirements for data governance and compliance. As data is the fuel that powers digital transformation, it must be governed appropriately. The Azure Stack Hub on-premises, private cloud solution enables control of where data resides, ensuring it is within the boundaries set by governing agencies. The ability to intelligently manage data management decisions and authority is critical to infrastructure solutions in certain environments. Microsoft Azure tools and services allow for tight control in subscriptions, defining hierarchies, managing permissions, role-based access control (RBAC), and more easing the burden of cobbling together a solution with traditional IT infrastructure.

In the same way, Microsoft Azure Stack Hub takes compliance requirements seriously and offers Azure Security and Compliance Blueprints (ASCB). This collection of documents and templates helps customers with cloud-based architectures to develop compliance solutions and implementing controls. In addition, the ASCB Customer Responsibility Matrix (CRM) assists customers in developing and documenting the controls needed for regulatory compliance.

Why Organizations Need Hybrid Cloud Deployments

- Data Governance/ Compliance
- Security
- Data Proximity
- Disconnected and Edge Operations

Azure Stack Security Approach

Microsoft Azure Stack Hub security is based on an Assume Breach and Hardened by default methodology. By assuming breach, the infrastructure is organized in such a way that internal trust is virtually eliminated; therefore, a failure of security in any area will not affect another. This provides a sealed environment that reduces the effective radius of a possible security breach and allows response teams to rapidly restore normal operation without the need to address a larger cascading failure. Even the administrator cannot maliciously attack the stack as they are never granted administrative rights to the system.

Hardened by default ensures that no additional configurations are needed post-installation. Upon delivery, the Microsoft Azure Stack Hub is ready to use and locked down preconfigured to use security-enhancing features.

The Need for Data Proximity

In many applications, certain situations require that data resides in close proximity to where it is being processed. The fact is that data is sometimes generated at the edge and needs to be processed very quickly for actionable results. In these cases, close proximity means that low latency and high bandwidth are necessary. The alternative is to send back to the public cloud resulting in a compromise in latency, bandwidth, and/or costs. Anyone of which may present an untenable situation for the application.

Disconnected and Edge Operation

Some data cannot be stored in the cloud due to its sensitive nature or because it must remain within a certain geographical or geopolitical boundary. In other scenarios, an application must be forward deployed at the edge where latency and performance are critical factors. In these situations, many public cloud solutions or traditional on-premises IT infrastructure or legacy private and hybrid cloud solutions are not a fit. They have numerous shortcomings that include a potential loss of many of the most desired cloud computing benefits.

Microsoft Azure Stack Hub was carefully designed to offer truly consistent cloud services where and when you need them—whether that is an air-gapped or remote location. Microsoft Azure Stack Hub can be configured to operate connected to the internet or completely disconnected, providing maximum flexibility in the use of the platform. This also allows for unique use cases that may not have been foreseen. It is the only cloud computing platform to offer this flexibility of use while maintaining application and operational consistency with the public cloud.

Cloud computing is driving massive value to modern organizations by allowing them to more rapidly develop and deploy new capabilities. Microsoft Azure Stack Hub is the only cloud software able to bring the benefits of the cloud to any location around the globe, positioning it to be a strategic technology for modern enterprises.

Implementation

Microsoft Azure Stack Hub is deployed as a managed and supported solution for ease of installation, integration, and operation. Azure software is pre-installed on specifically designed hyper-converged hardware and provides turnkey cloud services. A single Microsoft Azure Stack Hub cluster is composed of between four and sixteen compute and storage node servers, one hardware management server on a management network switch, and two top of rack switches for internal and external connectivity. Many clusters can be configured together for virtually unlimited scale.

Azure Stack Software Development Kits (ASDK) can be purchased or downloaded and run for free from the Microsoft website. ASDK's allow for immediate testing of Microsoft Azure Stack without waiting for hardware to be purchased. Developers and IT operations can use ASDK systems to validate and test a wide range of scenarios.

Strategic Technology Partners

UNICOM Engineering maintains strong partnerships with industry-leading technology providers such as Intel, Microsoft, Dell Technologies, and many more to design best-in-class solutions that meet the exact needs of our customers. Our relationships afford us visibility into future roadmaps, access to engineering staff, and continuous training on next-generation technology.

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About UNICOM Engineering

UNICOM Engineering is a strategic system integration partner and leading provider of server-based application platforms and lifecycle support services. We ease the burdens of deployment with a comprehensive suite of services, including solution design, system integration, logistics and compliance, and global support. A strong foundation of engineering expertise, process-driven manufacturing, technology partner relationships, and an unrelenting commitment to quality has made UNICOM Engineering one of the most trusted deployment partners in the industry. Founded in 1997, UNICOM Engineering has facilities in Canton, Massachusetts, Plano, Texas, and Galway, Ireland. For more information, visit www.unicomengineering.com.

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