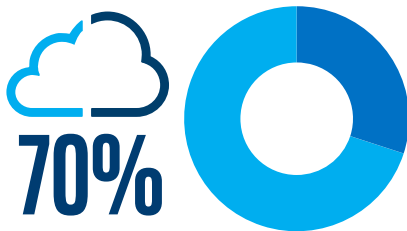(intel®)

Bring the Power of the Public Cloud into Your Data Center

Cloud-based computing meets advanced processing power with TERRA* for Microsoft Azure Stack*, an all-flash-based solution from Wortmann* AG that builds on a legacy of superior quality and support to transform cloud computing

70%

of cloud users are considering a hybrid cloud strategy in the next 24 months[1]

A Higher Standard in Cloud-Based Computing Solutions

Companies are increasingly looking to cloud-based computing solutions for greater flexibility, cost efficiency, and the agility needed to adjust rapidly to marketplace changes.

But for many—particularly companies with significant intellectual property and privacy concerns—the public cloud poses a dilemma. While they prize the flexibility and power it offers, they are reluctant to give up control over their proprietary data and assets. Concerns about this trade-off between flexibility and control have led many to miss out on the full power of cloud computing.

Until now.

Seventy percent of cloud users are considering a hybrid cloud strategy in the next 24 months[1]. As the need for hybrid cloud-based computing grows among companies of all sizes, Microsoft's Azure Stack provides scale and flexibility required by modern workloads.

Azure Stack, built on Intel® technologies, provides performance, control, and agility in a fast and easy-to-implement solution. Azure Stack combines the flexibility of multi-cloud computing with performance and control for on-premises environments.
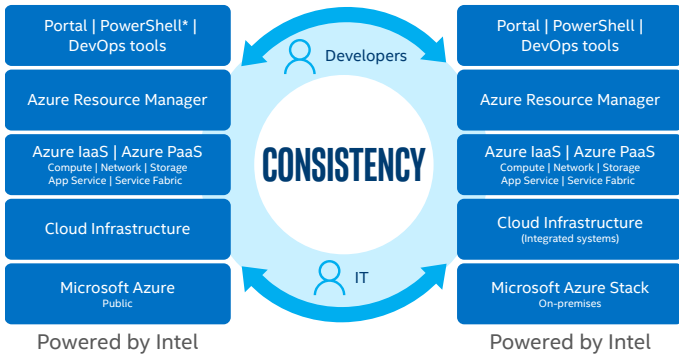
IT leaders can invest with confidence in leading-edge infrastructure while delivering the environment their development teams need to build modern applications that meet swiftly changing business and technical needs. Developers can now build these applications using a consistent, open set of Azure* services that meet business, technical, and regulatory requirements. The self-service portal has a simplified GUI, making it easy for anyone with basic technical skills to seamlessly manage data and applications in both the public and private cloud.

Through Intel's leadership, cloud computing is meeting the needs of more companies, of all sizes—by becoming more accessible, more secure, more streamlined, and more efficient.

The First All-Flash-Based Azure Stack System from Intel, Microsoft* and Wortmann AG

TERRA for Microsoft Azure Stack, the result of a three-way collaboration between Microsoft, Intel and Wortmann AG, is a turnkey solution designed to set a new standard in hybrid cloud computing for both public and on-premises environments. Wortmann AG, Intel's first all-flash Microsoft Azure Stack deployment partner, brings a legacy of superior quality and support to the endeavor.

WORTMANN AG

Microsoft Azure Stack is Azure in Your Data Center

Figure 1. Microsoft Azure Stack hybrid cloud gives enterprises the flexibility to choose the combination of public cloud and on-premises deployment models that meet their business needs.

TERRA for Microsoft Azure Stack combines feature-rich Intel® Xeon® Scalable processors, powerful Intel® Solid State Drives (Intel® SSDs), and the latest Intel® Server Boards. Together these next-generation technologies provide end users higher levels of performance, scale, and flexibility.

Introducing Wortmann AG, Our First Deployment Partner

Wortmann AG is Intel's first all-flash Microsoft Azure Stack deployment partner, bringing a legacy of superior quality and support.

Founded in 1986, Wortmann is a German computer manufacturer known for servers and their THINCLIENT. With TERRA, Wortmann delivers the first all-flash-based system for Azure Stack.

Wortmann AG empowers its customers with industry-recognized consulting and support services, featuring automated and semi-automated maintenance processes, deep troubleshooting, and easy-to-use customer and administrator portals.

Customers can choose to have Wortmann as their main point of support contact for TERRA for Microsoft Azure Stack, or utilize a pay-as-you-use model to work for all budgets.

The result is a supported, secure, and turnkey cloud platform that can get to work immediately.

Business Challenges: Why More Companies are Turning to Hybrid Cloud Solutions
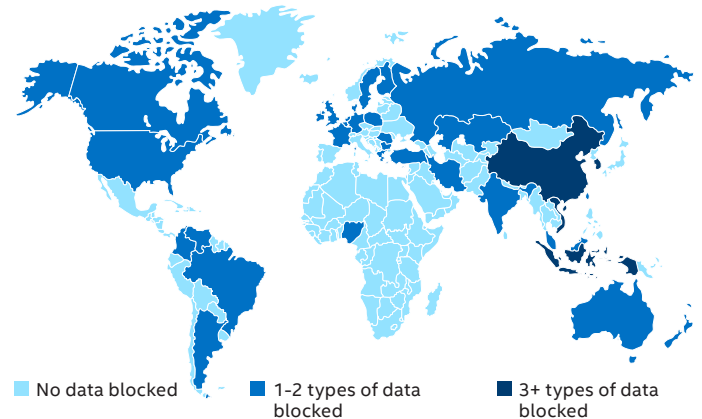
Legacy Infrastructure Often Hampers Agility

Gaining a competitive advantage today requires efficient use of technology and the ability to be flexible. While new, more effective technology is developing faster all the time, the reality is that most legacy infrastructure simply cannot keep up—it is not designed to accommodate rapid innovation and agility. Complicating matters further, the rapid pace of

technology development is contributing to a growing gap in the skills and experience of IT workers. Companies need flexible, scalable, easy-to-deploy IT infrastructure in order to meet modern business challenges.

Regulations Require On-premises Workloads

Concerns about data security and regulatory compliance prevent some organizations from benefiting from the advantages public cloud offers. In many parts of the world, regulations exist that prevent data from being stored outside that region. (See figure 2.)

Which Countries Block Data Flows?

Figure 2. ITIF *Cross-Border Data Flows: Where Are the Barriers, and What Do They Cost?*[2]

Growing Computing and Usage Demands

With today's workloads, customers need high-efficiency, high-performing solutions that allow them to meet usage demands without increasing costs and the ability to move work back and forth from on-premises to cloud easily and efficiently.

Investing in hybrid cloud delivers increased flexibility and scalability, along with cost savings, to help organizations gain a competitive edge and improve regulatory compliance. As companies become more aware of these benefits, the market for hybrid cloud solutions is rapidly growing.

But not all hybrid cloud implementations are the same. Some hybrid solutions can be challenging due to the following:

Complexity. A combination of on-premises and off-premises infrastructure requires carefully planned management, the lack of which can result in difficulty controlling assets across systems.

Duplication. Security policies and other processes can be duplicated, leading to inefficiency and unnecessary work.

Inconsistency. Data and governance policies can quickly become out of sync between on-premises and off-premises systems if poorly managed.

The TERRA for Microsoft Azure Stack hybrid cloud solution helps businesses overcome these challenges and speed time to market while supporting data security, privacy protection, and regulatory compliance.

Solution Benefits

TERRA for Microsoft Azure Stack Delivers Flexible Application Development, Available On-Premises and Off the Grid, with Breakthrough Performance

TERRA for Microsoft Azure Stack takes hybrid cloud computing to the next level. All-flash-based and built on the latest generation of Intel technologies, TERRA for Microsoft Azure Stack runs on Intel Xeon Scalable processors, delivering advanced performance and workload acceleration in a flexible environment that is available on- and off-premises.

The Microsoft Azure Stack hybrid cloud solution offers the following advantages:

- Ability to choose the right mix of on-premises and public cloud environments to meet workload demands
- Enhanced developer productivity through a consistent hybrid application development environment
- Wide range of Microsoft Azure services available on-premises
- Purpose-built systems with Intel technologies that provide operational excellence
- Access to continuous innovation by following the Azure planning cycle

Consistent and Flexible Application Development

Developers need integrated workloads across flexible systems. With TERRA for Microsoft Azure Stack, they can now make use of a truly hybrid platform with two environments that behave the exact same way and use the exact same tools.

TERRA for Microsoft Azure Stack provides a uniform cloud environment for workloads operating on-premises and hosted by cloud service providers running Microsoft Azure services. This uniform environment reduces testing and validation burden and helps assure high performance and security for business-critical applications.

The result is a solution that offers flexibility within a uniform environment, delivers cost and time savings, and allows customers to make use of a broad range of existing services while benefiting from ongoing cloud innovation.

Azure Services: Available On- and Off-Premises

TERRA for Microsoft Azure Stack allows customers to seamlessly develop and run applications in the appropriate environment—on-premises or in the public cloud. On-premises applications can take advantage of a wide range of Microsoft Azure services and third-party software solutions from the Azure Marketplace, including Azure's Infrastructure as a Service (IaaS) and Platform as a Service (PaaS).

TERRA for Microsoft Azure Stack also offers flexible "off-the-grid" cloud capabilities for use in remote locations.

Breakthrough Hybrid Computing Performance

TERRA for Microsoft Azure Stack is a private cloud that enables consistency with and extension into public cloud environments for a seamless experience. Developed by Intel, Microsoft and Wortmann to provide exceptional performance, these technologies were built and tested from the ground up to work better together, and were validated in an optimized Azure Stack configuration.

Intel provides Azure Stack the high-performance, mission-critical hardware architecture that is tested and trusted to deliver consistent and flexible hybrid cloud operations.

The Intel Xeon Scalable processor offers six memory channels, delivering increased memory speed, and bandwidth that dramatically boosts the performance of many mission-critical applications. One of the key benefits of this hybrid solution is its burst capacity—the ability to make use of the cloud for greater space requirements without making costly increases to private cloud capacity.

Intel® Data Center Blocks: All–Flash Storage for Greater Reliability

Intel® Data Center Blocks (Intel® DCB) configurations are purpose built with all-Intel technology. These fully-validated blocks deliver performance, reliability, and quality for solutions customers want and can trust to handle their demanding cloud workloads.

The Intel Data Center Blocks for Cloud are uniquely configured for all-flash storage, which provides greater reliability, outstanding IOPS and data transfer speed, and world-class performance.
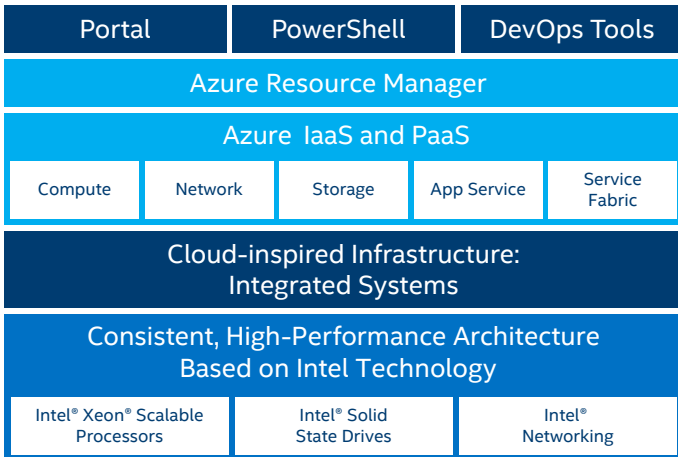
TERRA for Microsoft Azure Stack, based on fully integrated, Azure Stack-optimized Intel Data Center Blocks for Cloud, empowers Wortmann customers with a turnkey way to reap the consistency, agility, and simplified development and management experience that Azure Stack offers for hybrid cloud environments.

Solution Architecture

TERRA for Microsoft Azure Stack is a fully integrated system that is ready to run and comes with enterprise-grade support.

Built on the latest generation Intel Xeon Scalable processors and Intel Solid State Drives, this solution brings the power of cloud computing to the on-premises data center for increased control over regulatory compliance. With consistent tools and purpose-built hardware that is tested to deliver consistent hybrid cloud operations, Azure Stack helps customers speed time to value, improve application lifecycle management, and take advantage of continuous innovation.

Microsoft Azure Stack

Portal	PowerShell	DevOps Tools

Azure Resource Manager

Azure IaaS and PaaS

Compute	Network	Storage	App Service	Service Fabric

Cloud-inspired Infrastructure: Integrated Systems

Consistent, High-Performance Architecture Based on Intel Technology

Intel® Xeon® Scalable Processors	Intel® Solid State Drives	Intel® Networking

Figure 3. With purpose-built Microsoft Azure Stack integrated systems, powered by Intel technology, organizations quickly gain the power of cloud computing in the on-premises data center.

With as few as four nodes, an enterprise can deploy Azure Stack and start reaping the advantages of consistent hybrid cloud operations and high-performance, mission-critical hardware architecture.

Now, customers who run their IT infrastructure on Intel Xeon Scalable processors can take advantage of advanced performance, higher processing speeds, and next-generation technology with Wortmann's new TERRA for Azure Stack solution.

Cost Savings without the Costly Up-front Investment

Wortmann's TERRA for Microsoft Azure Stack extends the cloud economic model to on-premises environments with leased and pay-as-you-use pricing. Customers pay only for the Azure services used, allowing them entry into the powerful cloud computing environment without an initial costly investment.

Why Go Hybrid with Wortmann Solutions?

- Use one single vendor throughout the entire customer cloud journey:
  - On-premises: virtualization, OS, and security features
  - Hybrid cloud: TERRA for Microsoft Azure Stack
  - Public cloud: Microsoft Azure
- An easy-to-use, Microsoft-friendly environment is available in all scenarios
- Performance, control, and agility with Intel technologies
- Quality support with tested products

Summary

As the need for hybrid cloud-based computing grows among companies and institutions of all sizes, TERRA for Microsoft Azure Stack provides scale and flexibility required by modern workloads.

TERRA for Microsoft Azure Stack, built on Intel technologies, provides performance, control, and agility in a fast and easy-to-implement solution that combines the flexibility of multi-cloud computing with the performance and control of on-premises environments.

Through Intel's leadership, cloud computing is getting more accessible, more secure, more streamlined, and more efficient. Now, Intel is partnering with Wortmann to take hybrid cloud computing to the next level through TERRA for Microsoft Azure Stack, the first all-flash-based Azure Stack system that runs on Intel Xeon Scalable processors and delivers advanced performance and workload acceleration.

Contact your Intel® Sales Representative for more information about purchasing, or contact Wortmann directly at cloud@wortmann.de.

Learn More

You may also find the following resources useful:

- **Microsoft Azure Stack**
- **Intel and Microsoft Accelerate Business Transformation**
- Cloud Solutions Meet Changing Needs with a Competitive Advantage brief (ask your Intel Representative)

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