Everpure with Microsoft Azure Local

Modernizing hybrid-cloud infrastructure with high-performance external block storage

Everpure™ and Microsoft have partnered to integrate Everpure FlashArray™ with Azure Local, creating a high-performance, hybrid-cloud solution that transcends traditional hyperconverged infrastructure (HCI) limitations. By supporting external block storage, this architecture enables the independent scaling of compute and capacity, delivering the submillisecond latency required for mission-critical applications.

The changing landscape of virtualization

The IT landscape, and particularly the virtualization market, is undergoing a significant transformation, forcing IT departments globally to reevaluate their entire infrastructure and cloud strategy. As enterprises face these disruptions, many are seeking alternatives that allow them to modernize operations without abandoning their data centers.

While traditional HCI models have served general-purpose workloads well, they often struggle when faced with high-performance, low-latency, or storage-intensive applications. In a standard HCI setup, compute and storage are deployed in the same server node. This coupling means that if you need more storage, you must often purchase an entire new server node—including expensive CPU and RAM you may not need.

The solution: Azure Local powered by Everpure

Microsoft and Everpure have partnered to integrate Everpure FlashArray with Azure Local, delivering high performance, independent scaling, and streamlined hybrid-cloud operations for your most demanding workloads. This partnership addresses the limitations of traditional HCI by opening the architecture to support external storage configurations. This strategic flexibility allows customers to choose the best storage architecture for their specific virtualization workloads.

Everpure for Azure Local allows organizations to modernize their data center without the cost and complexity of traditional HCI node sprawl. By scaling storage and compute independently, you maximize your hardware investment and reclaim server power to run more applications with enterprise-grade resilience and Azure-native simplicity.

For workloads that do not have on-premises storage requirements, FlashArray capabilities can be extended into Azure by leveraging Everpure Cloud, which provides the same block storage capabilities and data services. It allows for seamless data mobility for cloud workload volumes. The same Purity OS provides the Everpure Unified Data Plane across on-premises environments, and Azure gives full visibility and consistent governance over your data no matter where it resides. You can leverage Azure for disaster recovery, data distribution, archives, or virtualization while realizing substantial savings through industry-leading data reduction and compression.

Everpure Fusion™ adds policy-driven operations and intelligent workload placement across edge, on-premises, and cloud environments, unifying all storage into a virtualized cloud of data operated through the Everpure Intelligent Control Plane. This combination of capabilities brings to life the vision of the Enterprise Data Cloud—a single, unified cloud of data that spans all locations, giving IT a consistent data environment everywhere.

Efficient scaling

Scale compute and storage resources independently to maximize efficiency.

Superior performance

Deliver ultra-low-latency storage for your most demanding high-performance workloads.

Sovereign cloud readiness

Comply with strict data residency laws that require keeping data within national borders.

Azure Local: Cloud-connected infrastructure you already understand

Azure Local is Microsoft's on-premises extension of Azure, a distributed infrastructure solution that extends Azure services inside a customer's data center or edge location. Built on the foundation of Windows Server Core Hyper-V and delivered as Azure-managed hardware, Azure Local is operationally and functionally familiar to long-time Windows users, meaning there's no learning curve. Azure Local allows organizations to run:

- **Virtual machines (VMs) and containers**: Run Azure VMs and containerized applications with Azure Kubernetes Service (AKS).
- **Virtual desktop infrastructure (VDI)**: Deploy VDI with Azure Virtual Desktop (AVD) for secure remote work.
- **Azure services**: Run Azure data services and Microsoft 365 Local while staying connected to the Azure control plane for unified management, billing, and updates.

Azure Local replaces siloed management consoles with the Azure portal, allowing IT to manage on-premises servers and cloud resources as a single, consistent environment.

The all-flash advantage

FlashArray is designed to address the needs of the modern data center with ease of management, reliability, flexibility, and predictable performance. By integrating FlashArray as external block storage for Azure Local, organizations can decouple compute and storage, ensuring that mission-critical applications receive the submillisecond latency and throughput they require.

This integration enables the use of existing FlashArray storage area networks (SANs) with Azure Local via Fibre Channel connectivity. This allows for side-by-side deployment with Storage Spaces Direct (S2D), where SAN volumes are used exclusively for user workloads like VMs and Kubernetes.

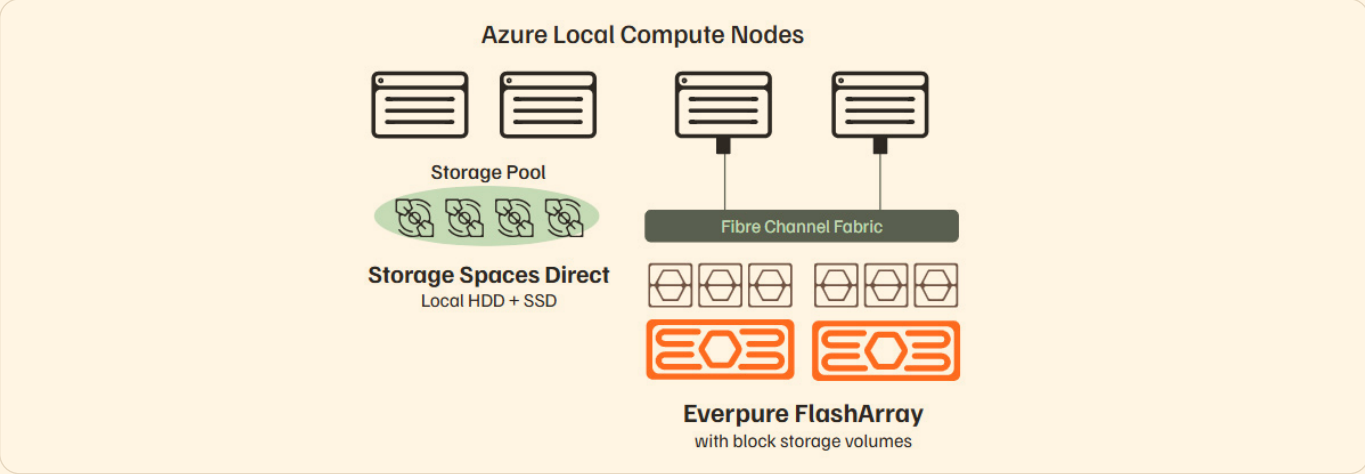

FIGURE 1 Azure Local can be deployed in HCI mode (left) with local drives that create a storage pool, as well as in SAN mode (right) with external storage. SAN mode can be added to existing HCI mode deployments. In SAN mode, FlashArray provisions block volumes across a Fibre Channel fabric. iSCSI and NVMe connectivity will be supported in future Azure Local releases.

Key solution benefits

Performance and scale for your most demanding workloads

By moving to an architecture that supports FlashArray as external storage, organizations gain scale and performance benefits.

- **Independent scaling**: Scale performance and storage layer capacity without needing to add or disrupt compute resources. Conversely, add compute power without paying for extra storage you don't need.
- **Predictable performance**: Since the storage has its own dedicated processors, your applications don't have to "compete" with storage software for server resources. FlashArray delivers consistent, submillisecond latency essential for mission-critical databases and high-transaction workloads.

Easy migration and modernization

For organizations looking to migrate away from legacy virtualization platforms, the combination of Azure Local and Everpure offers a low-friction path.

- **A familiar experience**: VMware users who are accustomed to external storage will find the Azure Local and Everpure architecture to be a familiar experience, eliminating the need to redesign storage architectures or retrain staff on rigid HCI concepts.
- **Unified management**: Azure Local replaces disparate tools with the Azure portal. Simultaneously, storage teams can continue using the Everpure tools and workflows they already trust, such as Pure1® for AI-driven fleet management, with unified management across on-premises and public cloud environments.
- **Seamless transition**: Current Everpure customers can reuse their existing investments, providing a clean exit path that avoids forklift upgrades.

Enterprise-grade efficiency and sustainability

Everpure brings industry-leading data efficiency to the Azure Local environment.

- **Unmatched data reduction**: Technologies including deduplication, compression, and pattern removal significantly reduce the effective cost of storing data. This reduction means less physical capacity is required, lowering power, cooling, and space needs within the data center.
- **Scale and density**: The FlashArray platform can scale to over 2PBs of raw capacity in a single array with up to 466% more effective terabytes per rack unit compared to similarly configured competitive systems. This allows you to consolidate tremendous numbers of VMs or containers onto a single platform.
- **Sustainable IT**: The inherent efficiency of the all-flash array helps support organizational sustainability goals while maintaining peak performance.
- **The Evergreen® experience**: FlashArray delivers a subscription-based ownership model that includes controller and capacity upgrades without the need for data migrations. This ensures the storage layer supporting Azure Local is always leveraging the latest technology without downtime.
- **Price/performance**: There are multiple models in the FlashArray family, providing a range of price and performance options. The FlashArray//XL™ is the top-of-the-line performance powerhouse for your most latency-sensitive workloads or density needs. FlashArray//X™ offers high performance for critical workloads. FlashArray//C™ delivers a price-performance balance for general-purpose workloads, data protection repositories, and so forth. And the FlashArray//E™ is a massively scalable repository for data with lower performance needs, such as archives, content archives, long-term backups, and so on. Every FlashArray model uses the same operating system and APIs, making it simple to reuse scripts, reporting tools, and monitoring across the environment.

Data protection and sovereign clouds

Azure Local targets regulated, disconnected, and sovereignty-sensitive deployments. Pairing it with external storage preserves data locality while enhancing security.

- **Sovereign cloud ready**: Ideally suited for industries with strict data residency laws, this solution keeps sensitive data within national borders while still integrating with Azure's security and governance stack.
- **Built-in resilience**: The solution comes bundled with built-in cyber resilience, encryption, and immutable SafeMode™ Snapshots that prevent data from being deleted or encrypted by ransomware.
- **Rapid recovery**: FlashArray can often restore multi-terabyte databases in seconds, offering a significant advantage over the longer rehydration times often associated with software-defined storage.

Technical integration and supported features

The integration between Everpure and Microsoft runs deep, leveraging the Windows Server foundation of Azure Local to add value and reduce risk.

- **Connectivity**: The solution utilizes robust Fibre Channel connectivity for mission-critical applications, with support for iSCSI and NVMe protocols planned for the future.
- **Volume Shadow Copy Service (VSS)**: VSS enables application-consistent hardware snapshots of VMs on Cluster Shared Volumes (CSVs) using the built-in Diskshadow or third-party backup applications.
- **Offloaded Data Transfer (ODX)**: ODX offloads the copy of data between Everpure volumes that are NTFS formatted, improving performance for file operations.
- **Windows Admin Center (WAC)**: The Everpure extension for WAC simplifies management, enabling quick scans and fixes of server multipath I/O (MPIO) settings directly from the admin console.
- **System Center Virtual Machine Manager (SCVMM)**: SCVMM can be used to manage block storage, allowing administrators to create, attach, and format new FlashArray volumes with just a couple of clicks.

Architecture: How it works

In this joint solution, the Azure Local instance connects to the FlashArray via host bus adapters (HBAs) on the nodes.

1. **Setup**: LUNs are created on the SAN storage and attached to each host via Fibre Channel.
2. **Configuration**: Volumes are created and formatted (NTFS) and converted into CSVs.
3. **Consumption**: When creating Arc VMs in the Azure portal, administrators simply specify the storage path as the one provided by the SAN.

This architecture allows customers to use SAN volumes exclusively for user workloads (VMs, Kubernetes, and AVD) while utilizing S2D minimally for platform services. This separation ensures that heavy user I/O does not impact the management fabric of the cluster.

Conclusion

Everpure for Azure Local allows you to modernize your data center without compromise. By decoupling compute and storage, you gain the flexibility to scale resources independently, the power of all-flash performance, and the simplicity of cloud-managed infrastructure. Whether you are migrating from legacy virtualization platforms or deploying new AI and high-performance workloads, Everpure and Azure Local provide a resilient, efficient, and future-proof foundation for your hybrid cloud.

Contact your Everpure or Microsoft account team today to learn more about how to unlock the full potential of Azure Local with FlashArray.

Additional resources

- See all of the virtualization solutions from Everpure.
- Learn more about Everpure FlashArray.

Visit Our Website | 800.379.PURE

ID19159-01-en-04/26