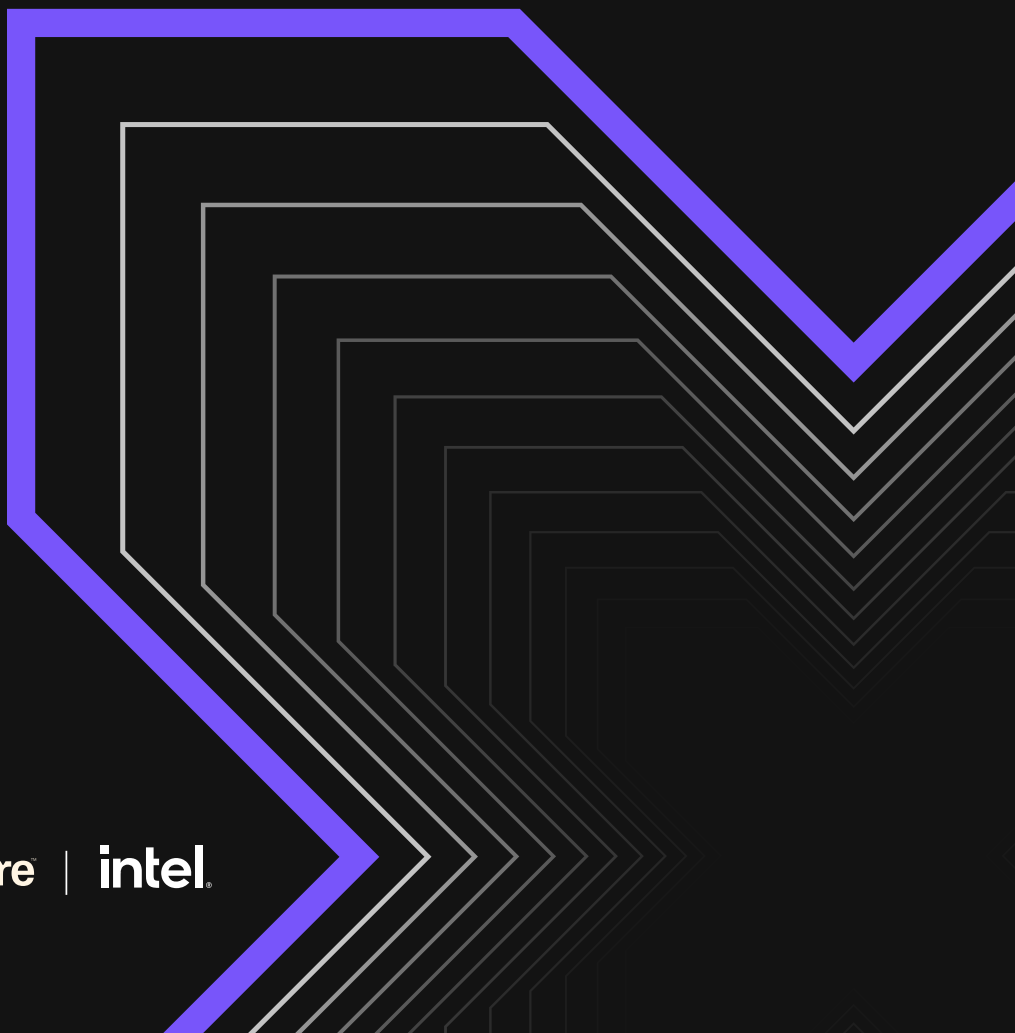
White Paper

How Everpure, Nutanix, and Intel Power Modern Virtualization

Exploring the core components of the Everpure and Nutanix integrated virtualization stack



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Executive Summary

The enterprise virtualization landscape stands at a critical inflection point. After two decades of stability, organizations face unprecedented disruption driven by sweeping changes in vendor strategies, pricing models, and technological demands. What was once a straightforward technology choice has become a complex strategic decision with far-reaching implications for cost, performance, security, and future readiness.

Legacy virtualization infrastructure, while foundational to modern IT operations, struggles to meet the demands of today's increasingly data-intensive, AI-driven enterprise environment.

The convergence of the industry-leading Everpure® data storage platform, Nutanix's innovative cloud infrastructure/platform, and Intel's advanced processor technologies presents a compelling solution to these challenges. This deeply integrated stack delivers a transformative solution that combines unprecedented performance with operational simplicity, all while providing the scalability and flexibility required for mission-critical workloads and next-generation AI applications.

Key benefits of this integrated approach include significant cost optimization through reduced licensing complexity, enhanced performance for data-intensive workloads, simplified operations through unified management, and future-ready architecture that seamlessly supports both traditional virtual machines (VMs) and modern containerized applications. Organizations implementing this solution report substantial improvements in total cost of ownership (TCO), operational efficiency, and their ability to rapidly deploy new services and applications.

This partnership represents more than an alternative to traditional platforms—it establishes a new foundation for enterprise computing that empowers organizations to build resilient, high-performance infrastructure capable of supporting current operational requirements while positioning them for future innovation and growth.

The Evolving Landscape of Virtualization

The enterprise IT landscape is experiencing a period of unprecedented transformation, driven by converging forces that are fundamentally reshaping how organizations approach infrastructure strategy. IT leaders today face a complex array of challenges that extend far beyond traditional technology considerations, requiring strategic thinking that balances immediate operational needs with long-term architectural vision.

The data and AI revolution

At the forefront of this transformation is the explosive growth in data volumes and the rapid adoption of artificial intelligence applications across enterprise environments. Modern organizations generate and process data at scales previously unimaginable, with AI and machine learning workloads placing entirely new demands on infrastructure performance, storage capabilities, and computational resources.

The shift toward AI-driven operations is not merely an overlay on existing infrastructure—it represents a fundamental change in how systems must be designed, deployed, and managed. Organizations require platforms capable of supporting both traditional enterprise applications and emerging AI workloads without creating operational silos or performance bottlenecks.

Operational efficiency and cyber resilience imperatives

Simultaneously, organizations face mounting pressure to improve operational efficiency while maintaining increasingly sophisticated cybersecurity postures. The modern threat landscape requires infrastructure that provides comprehensive security capabilities, from hardware-level protection through application-layer security, while enabling rapid response to emerging vulnerabilities and attack vectors.

The need for operational efficiency extends beyond cost considerations to encompass agility, reliability, and the rapid deployment of new capabilities. Organizations require infrastructure that reduces administrative overhead, minimizes complexity, and allows IT teams to focus on strategic initiatives rather than routine maintenance and troubleshooting.

Furthermore, growing regulatory requirements and corporate governance standards are driving organizations to maintain greater control over their data and computational resources. This trend toward data sovereignty requires infrastructure that provides transparent control over data location, processing, and access while maintaining compliance with evolving regulatory frameworks across multiple jurisdictions.

The cloud-native and Kubernetes paradigm

The widespread adoption of cloud-native architectures and Kubernetes orchestration represents another fundamental shift in enterprise computing. Organizations increasingly require infrastructure that can seamlessly support both traditional VM workloads and containerized applications, enabling gradual modernization without disrupting existing operations. In a survey of virtualization users sponsored by Everpure, **41%** said they are rearchitecting their environments to be cloud-native, a number that will likely increase over time.

This convergence of VMs and containers requires platforms that provide unified management capabilities, consistent networking and security policies, and the ability to optimize resource allocation across diverse workload types. The future belongs to infrastructure that bridges these environments rather than treating them as separate, incompatible systems.

Platform-centric infrastructure strategy

These converging demands are driving a shift from point solutions toward comprehensive platform strategies. For the past 15 years, virtualization has often been implemented as a discrete technology layer, dedicated to specific workloads and managed through specialized tools and processes. Today's leading organizations are adopting platform-centric approaches that treat infrastructure as a service, providing cloud-like agility and flexibility within on-premises environments.

This platform approach reduces operational overhead by providing unified management interfaces, standardized deployment processes, and consistent policy enforcement across diverse workload types. It allows organizations to respond rapidly to changing business requirements while maintaining the control, security, and performance characteristics required for mission-critical applications.

Four Challenges with Traditional Virtualization

Traditional virtualization infrastructure, while revolutionary in its time, increasingly reveals limitations that constrain organizational agility and create operational inefficiencies. These constraints have become particularly acute as organizations grapple with modern workload demands and evolving security requirements.

1. Siloed architecture and operational complexity

The traditional approach involves separate, specialized systems for compute, storage, and networking, each managed through distinct interfaces

requiring specialized expertise. This architectural fragmentation creates operational silos that impede efficiency and increase complexity.

2. Aging hardware and bottlenecked performance

The typical age of deployed servers is five years or more. There are opportunities to upgrade from aging and inefficient hardware that require more energy and data center footprint than newer systems. Aging systems also have more security vulnerabilities and may be unable to keep up with the demands of modern workloads. All of these factors increase the TCO. Upgrading to new servers can ultimately be a cost-saving choice.

3. Rigid scaling and costly expansion

Traditional virtualization architectures require compute and storage to scale in lockstep, forcing organizations to overprovision one resource simply to meet the demand of the other. Adding capacity often means disruptive hardware refreshes, forklift upgrades, or complex licensing renegotiations. This rigidity locks IT into expensive growth paths and prevents alignment with modern infrastructure-as-a-service models where resources can be scaled independently, on demand, and without downtime.

4. Security exposure in an evolving threat landscape

Legacy platforms were not built with today's sophisticated ransomware, insider threats, or nation-state adversaries in mind. Their siloed architectures leave gaps across compute, storage, and networking that attackers can exploit. Without integrated, multi-layer defenses—spanning silicon, hypervisor, network, and storage—organizations face longer recovery times, higher risk of data loss, and greater compliance exposure. Cyber resilience is no longer optional; it must be engineered directly into the virtualization stack.

A Modern Approach: Everpure and Nutanix Powered by Intel

Everpure and Nutanix have co-engineered a solution that now enables Nutanix AHV hypervisor to address these workloads by extending its storage provisioning to Everpure FlashArray™.

At a time when customers need the most flexibility in how they leverage and finance virtualization, this partnership provides customers with access to high-performance, flexible, and efficient full-stack infrastructure to power their most business-critical workloads, along with the agility needed to support their infrastructure modernization journey.

How it works

Nutanix is a pioneer in hyperconverged infrastructure (HCI), delivering value by consolidating compute, networking, and storage into software-defined services that are tightly integrated with the hypervisor. In a standard HCI design, these services run within a controller virtual machine (CVM) on each node. The CVM aggregates local storage across nodes into a distributed storage pool, which is then consumed by VMs through the hypervisor.

The Nutanix Cloud Infrastructure (NCI) solution builds on this HCI foundation to deliver a comprehensive suite of compute, storage, and virtualization services, as well as integrated networking and disaster recovery. Operations are simplified with Nutanix Prism, a multi-cluster management console that provides intuitive, VM- and app-centric management and granular operational control.

Everpure FlashArray is designed to address the needs of the modern data center with its ease of management, reliability, flexibility, and predictable performance. Engineered from the ground up for flash, FlashArray combines performance, density, and reliability with its always-on data reduction, reducing storage complexity and footprint.

In this joint solution, NCI powers a disaggregated architecture where compute is delivered by Nutanix AHV in diskless nodes, and the CVM now connects to storage delivered by Everpure over non-volatile memory express over fabrics (NVMe-oF)/Transmission Control Protocol (TCP) instead of using local storage. This architecture allows customers to leverage the storage and data services of Everpure while still benefiting from Nutanix NCI's robust compute virtualization, networking, security, disaster recovery, and operational simplicity.

The deep integration between Everpure and Nutanix is engineered to minimize disruption of existing HCI workflows by using the Nutanix compute cluster connected to FlashArray. Once deployed, storage is fully external but administrators can still use Prism the same way they use it in HCI and deploy new AHV-based VMs and vDisks to the FlashArray seamlessly. A vDisk created in Prism automatically creates a corresponding FlashArray volume, providing granular management and control for administrators who can then define policies in Prism around networking and disaster recovery on a per-VM basis.

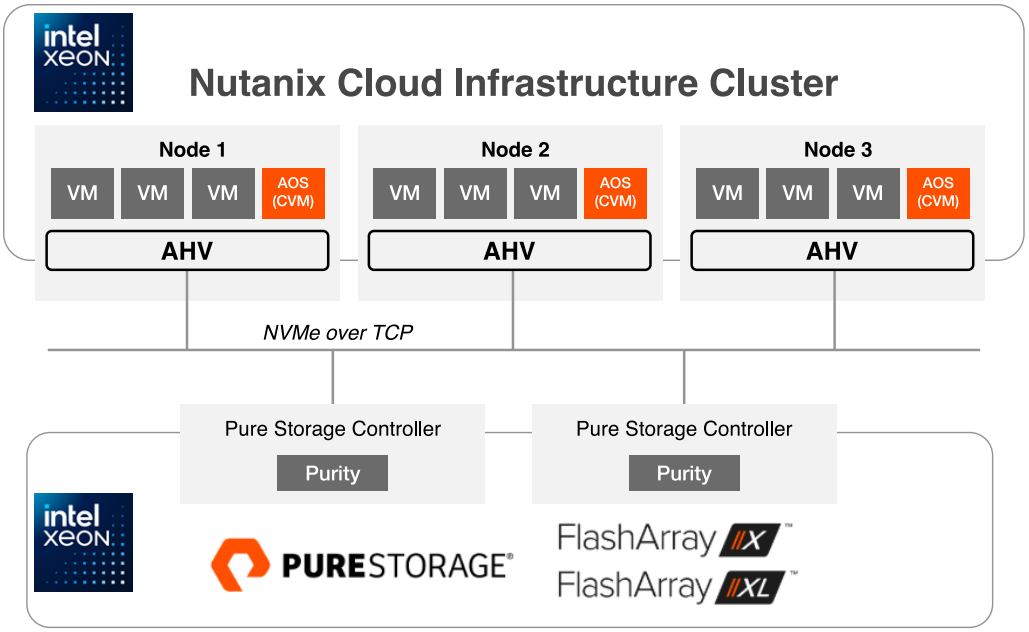

Figure 1. Nutanix nodes connect to Everpure via NVMe over TCP. Intel powers both the server nodes and the Everpure arrays.

NCI provides an enterprise virtualization platform to support demanding, mission-critical applications. Nutanix and Prism deliver storage-centric management with vVol-like simplicity and unified operations across compute and storage. Additionally, customers can benefit from VM-centric data protection managed via Prism. Snapshot orchestration is managed by Prism, allowing users to create protection policies and recovery plans in Prism Central, but the actual snapshots are taken by FlashArray. These zero-footprint, instant copies eliminate the traditional hypervisor snapshot impact. Multi-layer security protects mission-critical environments with microsegmentation, least-privileged access, and compliance guardrails, supported by storage-level encryption delivered by Everpure.

Everpure FlashArray

The evolution of enterprise applications, from virtualized workloads to AI and real-time analytics, has placed new demands on underlying data storage infrastructure. The legacy approach, often reliant on mechanical disks and disruptive lifecycle management, creates performance bottlenecks and operational friction. A modern storage layer must provide high-performance data access, architectural longevity, and robust data protection. This section provides a technical overview of the Everpure FlashArray architecture, focusing on the core components designed to meet these requirements.

All-flash NVMe

FlashArray is designed to minimize latency through an end-to-end NVMe data path. Unlike legacy protocols such as SAS and SATA, which were designed for slower spinning disks, NVMe was built specifically for solid-state

media. It utilizes multiple parallel queues and a streamlined command set to reduce CPU overhead and significantly increase I/O operations per second (IOPS).

This protocol is extended across the network using NVMe-oF, with a specific focus on NVMe/TCP. This allows the high performance of NVMe to be transported over standard Ethernet networks, eliminating the need for specialized and costly Fibre Channel infrastructure. The result is a storage system capable of delivering consistent, submillisecond latency for demanding workloads. By removing the protocol and media bottlenecks of traditional systems, this all-flash architecture ensures that applications have rapid and predictable access to their data.

Nondisruptive Evergreen model

A primary challenge in storage administration has been the high-risk, high-cost cycle of hardware replacement and data migration. The Evergreen® storage model addresses this through a specific architectural design focused on modularity and a stateless controller design. FlashArray systems are built with active-active dual controllers. During an upgrade, a new, more powerful controller can be installed alongside an existing one. The system nondisruptively fails over all operations to the new controller, after which the older one can be removed. This process occurs without downtime or performance degradation.

This hardware modularity is coupled with a subscription-based service model that includes both ongoing software updates and periodic hardware refreshes as part of the standard maintenance agreement. This approach effectively decouples the data from the physical hardware on which it resides, allowing the storage platform to evolve in place. The result is the elimination of the traditional three- to five-year forklift upgrade, reducing both operational risk and TCO over the life of the system. Everpure has 10 years of success updating storage arrays without moving data, successfully completing over 30,000 upgrades during that time.

For a truly cloud-like buying model, Evergreen//One™ offers consumption-based storage without the complexity of traditional infrastructure management, allowing you to focus on innovation while maintaining complete financial flexibility to scale up or down as needed. Multi-tiered SLAs guarantee performance, availability, capacity, and efficiency.

SafeMode Snapshots

In the context of increasing cyber threats like ransomware, data protection at the storage level is critical. FlashArray incorporates a feature called SafeMode™ Snapshots to provide a layer of resilience against malicious attacks. These are read-only snapshots of data volumes that, once created, are made immutable.

The deletion of these snapshots is not possible through the array's GUI or CLI, even with full administrative credentials. It requires a multi-party authentication process that involves direct engagement with Everpure support, creating a technical and procedural safeguard against unauthorized deletion by an attacker. In the event of a data corruption event or ransomware attack, an organization can use these immutable snapshots to restore data to a known clean state. This built-in protection mechanism is designed to provide a reliable last line of defense and enable rapid recovery of operations.

Always-on data reduction

FlashArray delivers always-on data reduction by combining inline deduplication and compression at write time, applied globally across volumes with no manual tuning required. Purity also runs background and nearline deduplication services to capture any duplicates missed during bursts and to preserve performance, so savings continue to improve over time without disrupting workloads.

While any data reduction is dependent on the type of data, FlashArray has an average of about 5:1 data reduction based on telemetry data Everpure receives from its global customer base.

Nutanix AHV

Nutanix's native hypervisor AHV offers powerful virtualization capabilities needed to deploy and manage enterprise applications. AHV provides value by integrating native virtualization along with networking, infrastructure, and operations management with Nutanix's intuitive interface Prism. Nutanix Prism makes it very easy and efficient to perform VM-centric operations. Virtualization teams find AHV easy to learn and transition to from legacy virtualization solutions, with familiar workflows for VM operations, live migration, VM high availability, and virtual network management. AHV offers resiliency features, including high availability and dynamic scheduling, without the need for additional licensing. AHV also includes Flow Network Security and Flow Virtual Networking, allowing easy access to hypervisor-based network microsegmentation and advanced software-defined networking.

Flow Virtual Networking

Flow Virtual Networking delivers network virtualization to offer a seamless network experience with enhanced security. Flow Virtual Networking virtual private clouds (VPCs) deliver software-defined overlay networks with multi-tiered, virtualization-based routing. Flow Virtual Networking is a software-defined networking solution that provides multi-tenant isolation, self-service provisioning, and IP address preservation using VPCs, subnets, and other virtual components that are separate from the physical network for the AHV clusters. It integrates tools to deploy networking features—such as virtual local-area networks (VLANs), VPCs, virtual private networks (VPNs), Layer 2 virtual network extension using VPN, virtual tunnel endpoints

(VTEPs), and Border Gateway Protocol sessions—to support flexible, app-driven networking that focuses on VMs and applications.

Flow Network Security

Flow Network Security is a distributed, stateful firewall that enables granular network monitoring and enforcement between VMs running on the AHV platform as well as external entities they communicate with. It has an enhanced policy model, advanced policy operation, and enterprise readiness. Flow Network Security policies protect VMs on AHV using categories that are applied to the VM. Categories and policies are centrally managed from Prism, but the firewall enforcement is distributed to the AHV nodes. Flow Network Security policies provide east–west protection for VMs inside VLANs or even to VMs inside a VPC network.

Nutanix Disaster Recovery

Nutanix Disaster Recovery offers an entity-centric (VM-centric), automated approach to protect and recover applications right from Prism. Similar to Flow Network Security, it uses categories to group the guest VMs, create and apply policies that are tied to these categories, and automate the protection of the guest VMs as the application scales. Application recovery is more flexible with network mappings, an enforceable VM start sequence, and interstage delays. Application recovery can also be tested and validated directly from Prism without affecting production workloads or requiring additional software to manage it.

Powered by Intel

At the heart of this joint solution is Intel, providing the compute and acceleration foundation that powers both the Nutanix and Everpure platforms. Intel® Xeon® processors are purpose-built to meet the diverse demands of modern virtualization environments, supporting everything from mission-critical databases to AI-driven analytics. With advanced virtualization extensions, higher memory bandwidth, and built-in hardware accelerators such as Intel AMX® for AI workloads, Xeon delivers scalable performance across mixed workloads.

Each new generation of Xeon expands these capabilities with technologies like Intel AVX-512, which accelerates data-intensive workloads and advanced analytics. These innovations complement the AI and data services of Everpure and Nutanix, empowering customers to run their most demanding applications with confidence.

For organizations modernizing on the latest Intel platforms, the benefits extend beyond performance. Customers see significant TCO improvements, achieving higher consolidation ratios with fewer servers, reducing power and cooling requirements, and shrinking their data center footprint. In short, Intel ensures the entire virtualization stack operates at peak efficiency while staying secure, agile, and ready for the future.

The Advantages of a Modern, Integrated Virtualization Stack

The Everpure and Nutanix solution delivers benefits that go far beyond cost savings or incremental performance gains, redefining what enterprises should expect from their virtualization platforms, including:

- **Effortless management:** Prism Central provides a unified, VM-centric control plane for managing compute and storage with cloud-like simplicity. Administrators can clone VMs, create snapshots, and orchestrate replication policies without juggling multiple tools.
- **Unmatched perfor mance:** All-flash NVMe storage from Everpure combined with Intel Xeon processors accelerates mission-critical workloads with predictable, submillisecond latency. This results in higher consolidation ratios, faster response times, and more efficient resource usage compared to legacy platforms.
- **Flexibility and scale:** With the ability to scal e compute and storage independently, enterprises can expand only what is needed—avoiding overprovisioning and aligning infrastructure costs to workload demands.
- **Built-in cyber resilience:** Multi-layered protection starts at the silicon (Intel SGX, TDX), extends through the hypervisor (Nutanix Flow), and is reinforced by immutable storage snapshots (Everpure SafeMode). This creates a hardened defense against modern ransomware and insider threats.

Partnering for Success

The collaboration of Everpure, Nutanix, and Intel creates a virtualization solution that is greater than the sum of its parts. Intel's deep partnerships with both Everpure and Nutanix ensure tight alignment in technology roadmaps, optimized performance, and proven integration across the stack. Customers benefit from the credibility and innovation of three industry leaders consistently recognized in Gartner® Magic Quadrant™ reports and trusted by enterprises worldwide.

Together, we deliver an open, flexible, and forward-looking ecosystem that offers customers confidence not just for today's workloads but also for emerging trends such as AI, edge computing, and secure multicloud operations. Our high Net Promoter Scores reinforce the commitment to customer success from deployment through long-term support. Looking ahead, this joint solution represents more than a modernization of virtualization. It's a strategic foundation that allows enterprises to unlock agility, performance, and resilience in the era of data-driven business.

Additional Resources

- Learn more about Everpure FlashArray.
- Explore Nutanix AHV.
- Learn more about Intel Xeon processors.

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