White Paper

Everpure

TCS TATA CONSULTANCY SERVICES

NUTANIX

Building a Scalable, Resilient Virtualization Platform

From blueprint to production by TCS using Nutanix and Everpure

Contents

Executive summary

Enterprises are under more pressure than ever to modernize their legacy virtualized environments without sacrificing control. Rising licensing costs, increasing resilience demands, and growing infrastructure requirements from AI and other data-intensive workloads have made hypervisor strategy a broader business issue, with direct implications for operating economics, migration flexibility, and forward-looking architecture choices.

This paper presents a Tata Consultancy Services (TCS) blueprint based on Nutanix Cloud Platform (NCP) with Nutanix AHV hypervisor and Everpure™ FlashArray™ over NVMe/TCP. This architecture separates compute and storage so each can scale on its own terms, while preserving unified operations through Nutanix Prism.

This combination is designed to give enterprises a modern virtualization foundation built for performance and operational simplicity, all while creating more room for strategic choice as infrastructure needs evolve. Backed by TCS implementation and migration services, which help simplify deployment and reduce execution risk, this solution offers a practical path to modernize existing environments, improve efficiency, and reduce exposure to future platform lock-in.

Challenges with traditional infrastructure environments

Diminishing returns

While 70% of organizations have adopted hybrid-cloud or multicloud strategies,[1] only 18% reported having successfully deployed a unified management platform capable of providing comprehensive visibility and control across their hybrid infrastructure, an issue that can affect both operational complexity and total cost of ownership (TCO).

Demands of data-intense workloads

Enterprises are processing data at previously unimaginable scales, and AI/ML workloads demand far higher throughput, lower latency, and more parallelism than traditional virtualized apps. The rigidity of a fixed compute and storage architecture model introduces overprovisioning and inefficient growth paths that prevent alignment with modern infrastructure-as-a-service models, where resources can be scaled independently, on demand, and without downtime.

Security in an evolving landscape

Legacy virtualized environments 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.

Modernizing virtualization with Nutanix and Everpure

Nutanix and Everpure have co-engineered a virtualization solution that directly addresses these pain points with a disaggregated but fully integrated architecture. This architecture allows customers to leverage the storage and data services of Everpure while benefiting from the robust compute virtualization, security, disaster recovery, and operational simplicity of Nutanix Cloud Platform.

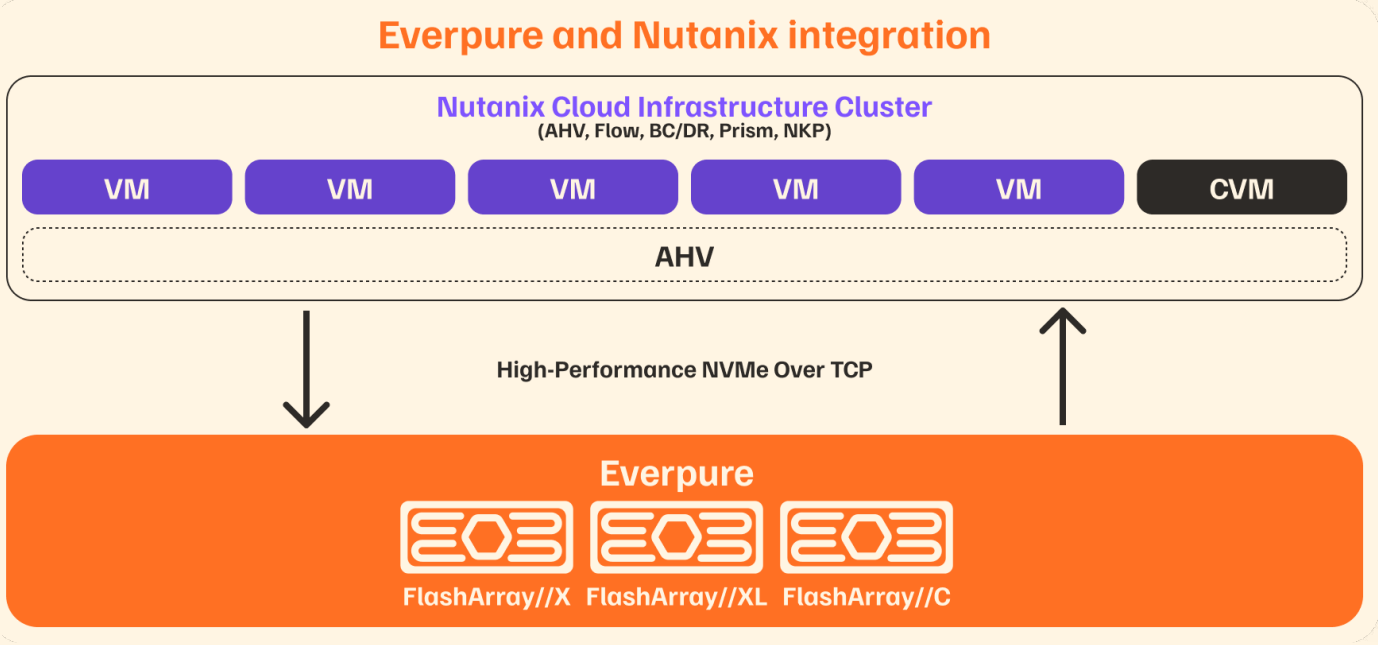

FIGURE 1 The FlashArray systems connect via NVMe over TCP to provide storage and data services to the Nutanix Cloud Platform. Users may choose from FlashArray//XL™, FlashArray//X™, and FlashArray//C™.

The core features of Nutanix Cloud Infrastructure (NCI) and Everpure FlashArray can be summarized as follows.

	Nutanix Cloud Infrastructure	Everpure FlashArray
Primary focus	Hyperconverged platform for apps, data, and security across data center and multicloud	All-flash storage for simple, reliable, and predictable performance
Availability	Virtual machine (VM) high availability with automatic failover; lifecycle management via simple, nondisruptive upgrades	Evergreen® controller architecture with nondisruptive upgrades and zero-downtime expansions
Performance	Fast live migration, dynamic VM placement, and performance without manual tuning	Consistent low latency, handles dual-drive failures, and avoids hotspots
Efficiency	Cluster-wide workload balancing	Always-on deduplication/compression, high density, and low power
Security	Security hardening guides, automated compliance, and encryption	Always-on encryption, built-in key management, and resilient design
Networking/insights	Software-defined networking and microsegmentation; Prism-enabled granular AIOps	Pure1® AIOps for AI-driven insights and data movement
Operations	Centralized VM, data, and network management	Simple UI, Purity OS, and full automation via REST APIs

In this co-engineered solution:

- **NCI** runs AHV hypervisor nodes that provide compute, networking, security, and rich data services at the VM level.
- **Everpure FlashArray** delivers external, all-flash storage via NVMe over TCP, exposing block volumes that map 1:1 to Nutanix vDisks.
- **Nutanix Prism** acts as the single control plane, orchestrating VM provisioning, vDisk creation, snapshots, and replication while automatically creating and managing corresponding FlashArray volumes behind the scenes.

Key properties of the joint solution

- **Disaggregated, yet integrated**: Compute and storage are physically separate but operationally unified. Prism presents a VM-centric view; when you create or resize a vDisk, NCI transparently drives the equivalent operations on Everpure FlashArray via NVMe over TCP.
- **Granular storage control**: A strict 1:1 vDisk-to-volume mapping helps avoid noisy neighbor issues and gives per-VM observability and data services (snapshots, clones, quality of service, and policies).
- **Role specialization**: Nutanix AHV manages compute and VM resources, while FlashArray focuses on data performance, data protection, and security—each platform doing what it was built for.

From a topology perspective, validated designs include one NCP cluster per FlashArray or multiple NCP clusters sharing a single FlashArray, always with each cluster mapped to a single array for simplicity and deterministic behavior.

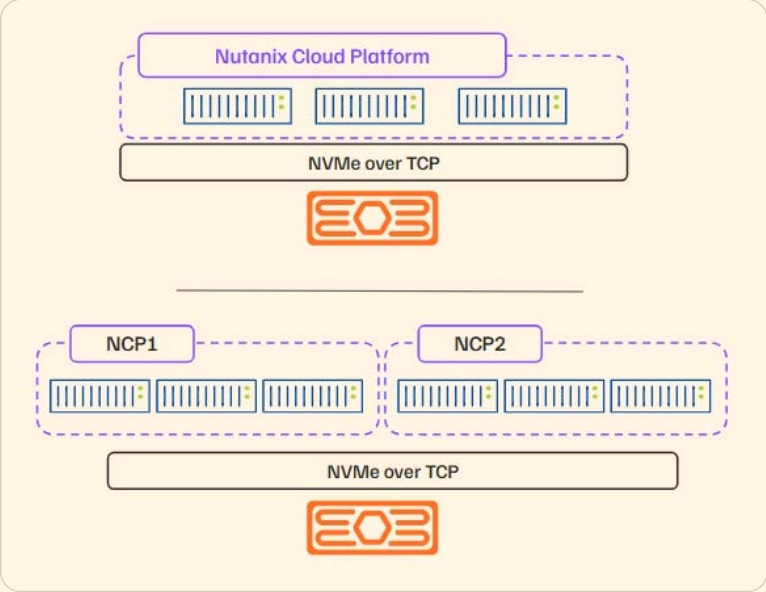

FIGURE 2 The deployment model supports a one-to-one cluster-to-array model or a many-to-one model.

How much could you save?

Economic validation research by Omdia[2] showed the participating organizations that implemented Nutanix Cloud Platform with external storage like Everpure FlashArray achieved an average of:

171%	40%	24%
ROI within 12 months	lower TCO over 3 years	greater operational efficiency for IT teams

Platform capabilities and scale

From an operational perspective, the solution directly addresses the siloed, multi-console operational pain of traditional virtualization stacks.

- **Familiar VM-centric workflows**: AHV offers live migration, high availability, and virtual networking with workflows that virtualization teams find easy to learn coming from legacy hypervisors. Users gain faster insights and control with simplified workflows, intelligent automation, and integrated monitoring, all from a single pane of glass.
- **Single pane of glass**: Prism Central manages compute, storage, network security, and disaster recovery for NCI clusters. You can clone VMs, create snapshots, and orchestrate replication policies from one place instead of juggling multiple point tools.
- **Automated, VM-aware storage operations**: Integration with FlashArray means vDisk operations (clone, snapshot, and recovery) map to array-level actions, giving both Nutanix and storage admins per-VM visibility and control.
- **Nutanix Cloud Manager (NCM) and Nutanix Flow for operations continuity**: NCM offers cloud blueprint capabilities, providing intelligent operations, self-service, cost governance, and security centralization for multicloud environments.

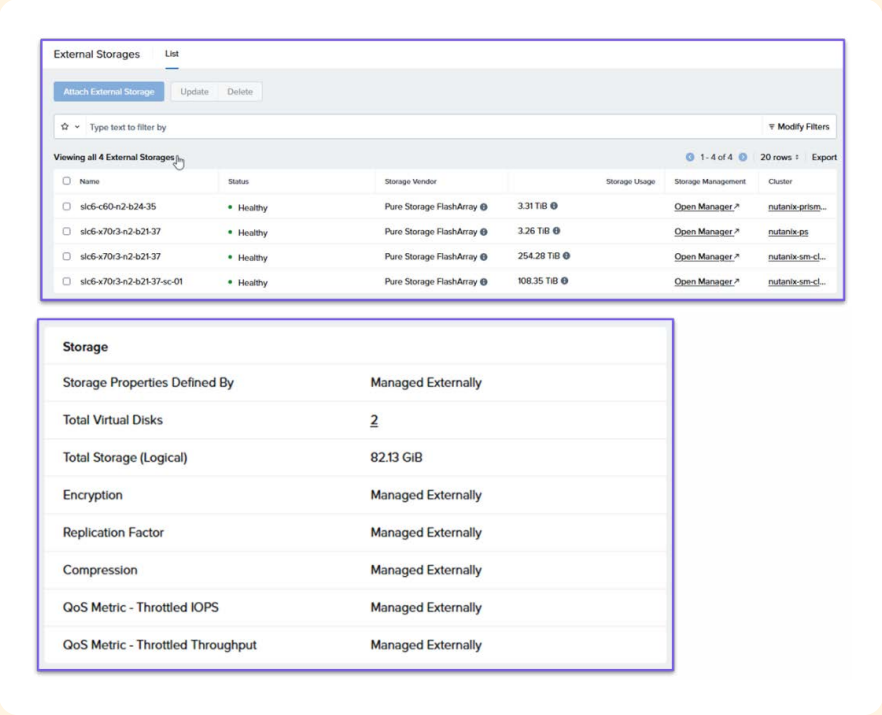

FIGURE 3 Sample UI images for adding FlashArray storage to the Nutanix Cloud Platform.

From a security and resilience perspective, the solution embeds multi-layer defenses that support capabilities including:

- **Silicon-level protections**: Integration with the built-in security functions of CPUs provides hardware-level enclaves and trusted execution, forming the foundation for secure virtualization.
- **Network microsegmentation and software-defined networking**: Nutanix Flow Virtual Networking delivers software-defined overlay networks with virtual private cloud semantics, virtual local-area networks, VPNs, and virtual network extension. Flow Network Security provides distributed, stateful firewalls and least-privilege, category-based policies enforced at the AHV node.
- **Immutable storage protection**: Everpure FlashArray immutable SafeMode™ Snapshots cannot be deleted via GUI/CLI, even by administrators; deletion requires a multiparty process with support. This provides a hardened last line of defense and allows rapid rollback to a known-good state after ransomware incidents.

While Nutanix-managed snapshots are orchestrated at the VM level in Prism, the snapshots themselves are taken on FlashArray as instant, zero-footprint copies, avoiding the performance penalties of traditional hypervisor snapshots.

Everpure FlashArray limits and capabilities:

- Up to 50 realms (tenants) and 50 pods, 2,000 hosts, and 10,000 volumes on larger models (5,000 on smaller models), with up to 4,000 volumes per host
- NVMe-over-TCP connectivity using 25/100/200GbE, with multiple supported NIC SKUs across FlashArray//X, FlashArray//C, and FlashArray//XL families

Nutanix Cloud Infrastructure and AHV characteristics:

- Clusters of 5–32 nodes (three-node minimum for POC/test/dev)
- Up to 5,000 vDisks and 500 VMs using asynchronous replication per cluster in current validation
- Controller VM (CVM) sizing: 16 vCPUs and 32GB RAM per node in the AHV cluster

The extent of node counts and volume limits helps address the typical large enterprise requirements and is only expected to mature as Nutanix and Everpure extend their joint roadmap.

From blueprint to production: The TCS implementation approach

TCS is uniquely well-positioned to implement the joint Nutanix Cloud Infrastructure and Everpure FlashArray solution because of its expertise and hands-on experience in running large-scale virtualization and cloud transformation programs, backed by automation expertise developed through dedicated R&D investments in its Agile Center of Excellence (CoE).

Drawing on proven blueprints such as its modern virtualization reference architectures, TCS combines Nutanix and Everpure best practices with industrialized migration patterns, automation frameworks, and operating models that have been refined across multiple global enterprises.

TCS brings these capabilities together across the full life cycle, from upfront consulting and assessment through integrated architecture design, migration, modernization, and ongoing optimization. This allows customers to move from strategy to implementation with a more cohesive path that aligns technical requirements, business objectives, and operating model considerations from the outset.

High-level approach

1. TCS applies its PRIME Factory approach to support agile, resilient, and scalable design implementation across data center and cloud environments.
2. TCS Migration Factory helps industrialize large-scale migration and modernization efforts.
3. TCS Agile CoE works closely with Nutanix and Everpure teams to build integration accelerators and codify runbooks for lifecycle management, security, and disaster recovery, providing customers a pretested path from assessment through production rollout.
4. TCS helps develop in-house expertise and automation to significantly reduce deployment risk and shorten time to value.

This implementation support allows NCI and FlashArray to be deployed as a cohesive, future-ready platform rather than as isolated point technologies. Typical scenarios where TCS offers a low-risk, phased migration approach include:

- **Legacy architecture to NCI and Everpure**: Migrate workloads from traditional storage to AHV (or ESXi) on NCI while attaching FlashArray as external NVMe-over-TCP storage.
- **Legacy fixed compute and storage to NCI and Everpure**: Move from fixed storage and compute clusters (including those affected by fragmentation) to NCI clusters with Everpure external storage. Certain existing hardware can be reused, reducing CAPEX.

Here are five key steps that TCS recommends for confidently migrating from an existing environment to an NCI and FlashArray environment.

1 Start with a strategic migration plan

Every successful migration begins with a clear roadmap. Identify which workloads are ready for Nutanix, assess dependencies on Everpure FlashArray, and clearly define the objectives/goals, whether it's performance optimization, cost reduction, or operational simplicity.

Use the Nutanix Move migration tool to automate VM, workload, and network migrations with minimal disruption. Move supports cross-hypervisor migration and offers rollback capabilities, making it ideal for phased transitions.

Why it matters: A well-defined strategy reduces risk, accelerates timelines, and promotes business continuity.

2 Integrate Everpure FlashArray seamlessly

Nutanix enables integration with Everpure FlashArray//XL, FlashArray//X, and FlashArray//C series arrays, allowing new deployments to connect existing arrays directly to your Nutanix environment without rearchitecting your infrastructure.

Nutanix supports integration with the Everpure FlashArray platform via NVMe over TCP. This flexibility to connect to existing arrays allows IT teams to leverage existing storage investments and avoid forklift upgrades.

Why it matters: Seamless integration reduces migration friction and preserves capital investments.

3 Workload classification and prioritization

Whether you're scaling mission-critical applications or managing large data sets, TCS helps provide a seamless migration from the current virtualized environment to the Nutanix and Everpure environment.

If a customer already has an existing Nutanix HCI cluster, depending on the workload fit, workloads can be migrated to operate in existing Nutanix HCI or using Everpure FlashArray, giving you the flexibility to choose the best-suited option. The unified management of vDisks across HCI and Everpure FlashArray greatly simplifies Day 2 operations.

Why it matters: Gain the freedom to deploy critical workloads where and how you need, backed by the simplicity and reliability of the Nutanix Cloud Platform.

4 Strengthen application-level security across your environment

Security starts at the application layer. The Nutanix Flow solution provides microsegmentation and policy-based controls to isolate workloads and reduce attack surfaces. These protections remain consistent across migrations, even when moving between platforms.

The recommended approach is to:

- Apply Flow policies to enforce workload isolation and minimize lateral movement.
- Preserve existing software-defined security configurations during migration.
- Use the Nutanix Prism management console to monitor network activity and policy adherence.

Why it matters: This helps protect sensitive data across hybrid infrastructure.

5 Simplify management with unified visibility in Prism

Once migrated, Nutanix Prism provides a unified interface to monitor and manage VMs with precision. IT teams gain deep visibility into VM performance, resource usage, and operational health—all from a single pane of glass.

The key efficiency gains from the simplified infrastructure include:

- Real-time VM performance insights
- Granular resource tracking and optimization
- Automated alerts and guided remediation

Why it matters: Focused VM-level visibility helps IT teams proactively manage workloads, troubleshoot quickly, and maintain consistent performance across the environment.

TCS's migration methodology also emphasizes phased execution: breaking large moves into stages, validating each phase, and leveraging professional services and partners as needed for complex apps (for example, large databases or highly customized systems).

Ready for cloud native?

The same integrated approach described in this paper can also support organizations pursuing a cloud-native operating model. With Nutanix Kubernetes Platform alongside Everpure storage, enterprises can run containers and VMs in the same environment, creating a practical path to Kubernetes without introducing another isolated platform. TCS can help define the migration and operating strategy, enabling a smoother transition to a high-performance architecture with unified visibility, granular resource tracking, and ongoing optimization across both traditional and cloud-native workloads.

Conclusion

Enterprises can no longer treat a virtualized environment as a static commodity layer under the stack.

The jointly engineered Nutanix and Everpure solution—Nutanix Cloud Platform with AHV, Flow, and advanced management capabilities, integrated via NVMe over TCP with Everpure FlashArray—offers a concrete, production-ready alternative. It combines:

- A highly scalable, resilient virtualized environment
- A disaggregated yet tightly integrated architecture that eliminates the silos of traditional virtualization deployments
- High-performance, efficient all-flash storage with strong data reduction and resilience characteristics
- A structured, tool-assisted migration path, without locking you into a proprietary stack

Learn more

- Explore the Everpure Platform.
- Learn more about the Nutanix future-ready platform.
- Discover cutting-edge TCS solutions.

1 | IDC, Enterprise Infrastructure Pulse, October 2024

2 | Omdia, The Economic Benefits of Nutanix Cloud Platform With External Storage, 2026

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