

Redefining Next Gen Data Center Transformation with HybridNXT

HybridNXT, a software-defined framework powered by Tech Mahindra, Intel, and Nutanix, enables end-to-end service delivery of hybrid and multi-Cloud solutions taking into consideration people, processes, and infrastructure. It is a holistic framework based on validated reference architecture and blueprints completely designed, deployed, migrated and managed by Tech Mahindra.

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Executive Summary

Most enterprises face the challenges of addressing IT complexity arising out of the infrastructure, process and people paradigm. For infrastructure, enterprises have to normally contend with time consuming methods in provisioning and also the challenges of plugging multiple failure points. For process, there are inherent difficulties in scaling and upgrading while also facing large upfront CapEx. And, there is usually precious little time for people to innovate in the current data center landscape, which may lead to acquiring the services of IT specialists.

In this scenario, enterprises are shifting the services they need or provide to cloud servers to save investing on hardware infrastructure and optimizing the people and process landscape. A big task now facing enterprises is to assess the cloud-readiness of their on-premises application portfolios, and discover how best to make their data centers more efficient and agile engines of digital transformation through deployed solutions. In this context, the delivery of enterprise cloud platform through software and hardware integration is becoming a new trend in the private cloud, hybrid cloud and multi-cloud market. Through the implementation of hyper-converged infrastructure (HCI), enterprises can centrally deploy and manage computing, storage, network, management resources, etc., thereby simplifying management and significantly shortening the cloud deployment cycle while achieving high performance, high reliability, flexible expansion, and low cost.

Tech Mahindra's HybridNXT, which features a Nutanix HCI software stack with hardware built on next generation Intel® Xeon® Scalable processors, provides a public cloud experience in a software-defined approach. This allows businesses to simplify and become more agile while utilizing a single platform for all workloads across private, public, and hybrid cloud deployments.

Redefining Next Gen Data Center Transformation with HybridNXT: A Tech Mahindra Offering

Forrester reports that integrating public cloud services with private enterprise cloud infrastructure gives companies choice, flexibility, and access to innovation; hybrid cloud users gain cost efficiency, IT resource and data manageability, security and scalability.¹ To achieve the desired outcomes of hybrid cloud, the only thing to do is to adopt a mindset change. IT must shift from an "infrastructure up" approach to an "application down" model. To get the most out of a mixed cloud environment, decoupling physical location from business needs enables those business needs to determine where infrastructure comes from.

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Enterprises need to tap into their vast quantities of data for better decision making and increased competitiveness. But they cannot do so on complex, legacy IT infrastructure. HCI is a fast-growing segment of the data center market that is a popular strategy for infrastructure modernization. HCI is critical for enterprises that want to make the most of their data in any cloud—public, private, or hybrid and Multi-cloud.

Redefining Hybrid and Multi-Cloud with HybridNXT

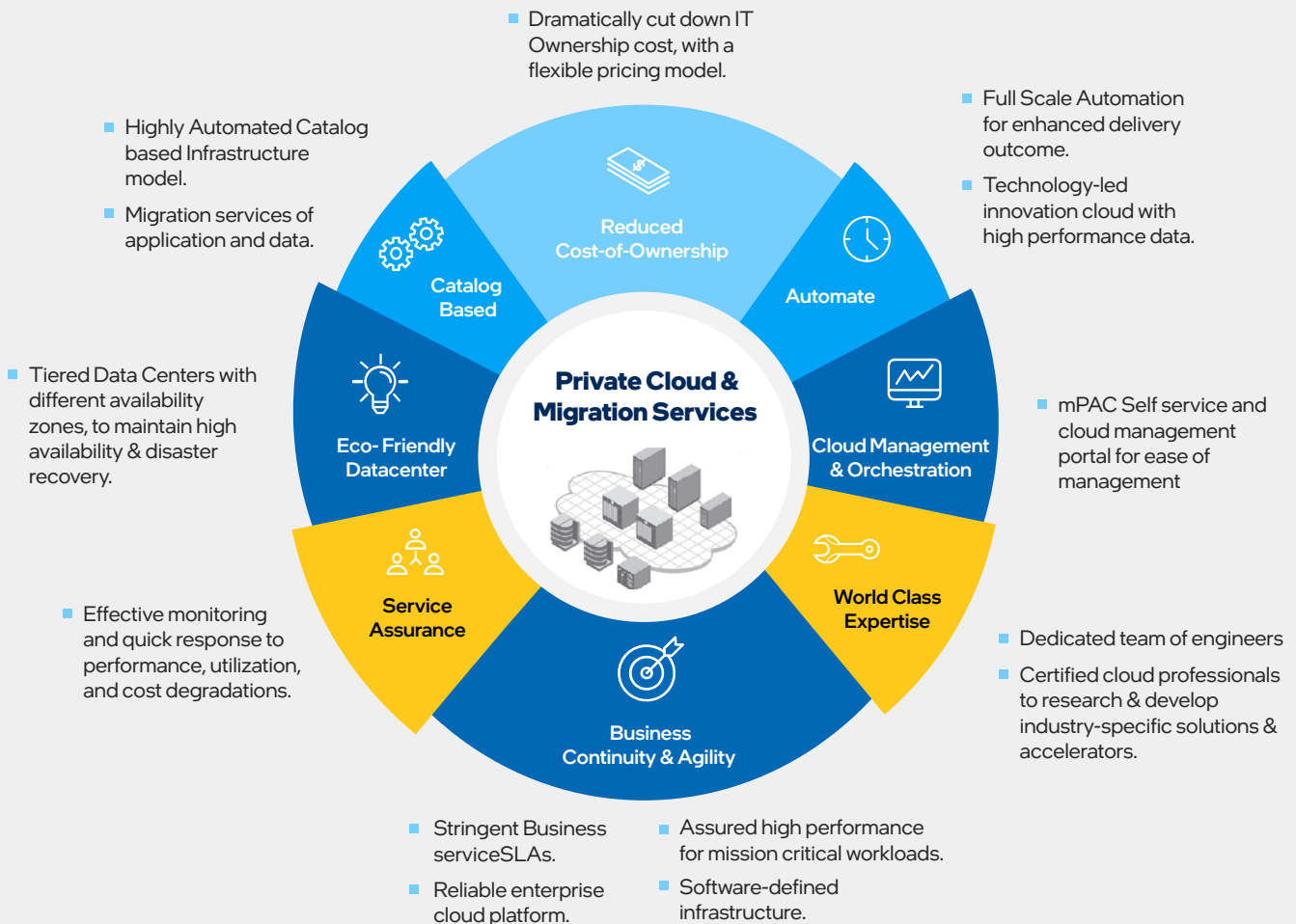
Powered by the industry's leading OEMs and public cloud providers, HybridNXT reference architecture provides a public cloud experience in a software-defined approach that allows customers to simplify and become more agile while utilizing a

single platform for all workloads across private, public, and hybrid cloud deployments.

The software-defined platform is managed completely by Tech M. The platform has the flexibility where customers can avail the entire stack or some of the components as it is modular in nature. The stack can further scale by adding more components and has the ability to integrate with third party tools. Tech M then further enables full control and seamless management of the full stack from a single, unified control plane.

Through the HybridNxt hybrid cloud framework, businesses can drive IT agility, accelerate time to market performance, dramatically reduce deployment and operations risks and increase IT and business efficiency.

HybridNXT: Hybrid and Multi-Cloud Framework



Key Highlights of the Solution

- Experience centric: A self-service, self-healing infrastructure, which enables customers to focus on application delivery rather than underlying infrastructure, thus enhancing the experience.
- Policy driven automation: Define and create your own workflows and enable more granular policy enforcement on the infrastructure.
- Programmable infrastructure: SDI moves intelligence from underlying hardware to software, thereby making the infrastructure more programmable and agile.
- Service oriented: Process and integrations that are defined top to bottom, enabling service based view and consumption of various services exposed.
- Analytics-based agile operations: Operations driven and controlled by analytics to provide hindsight, foresight and insight and enable efficiencies including faster/proactive remediation.
- Any infra, any app, any place at scale.
- Automated lifecycle manager: Software upgrade, firmware, BIOS, and hypervisor.
- Unlimited linear scale-out/scale-up, auto-tier, self-healing and load balancing.
- Distributed storage fabric: No-RAID, data locality, no traditional SAN complexity.
- Simplified scalability: Enables enterprises to rapidly add new or additional applications and data on a workload-optimized and cloud-ready infrastructure.
- Enhanced serviceability: For storage devices and expansion of high-performance NVMe SSDs using Intel® VMD.
- Supports VMware, Hyper-V, AHV, Kubernetes and Docker workloads.

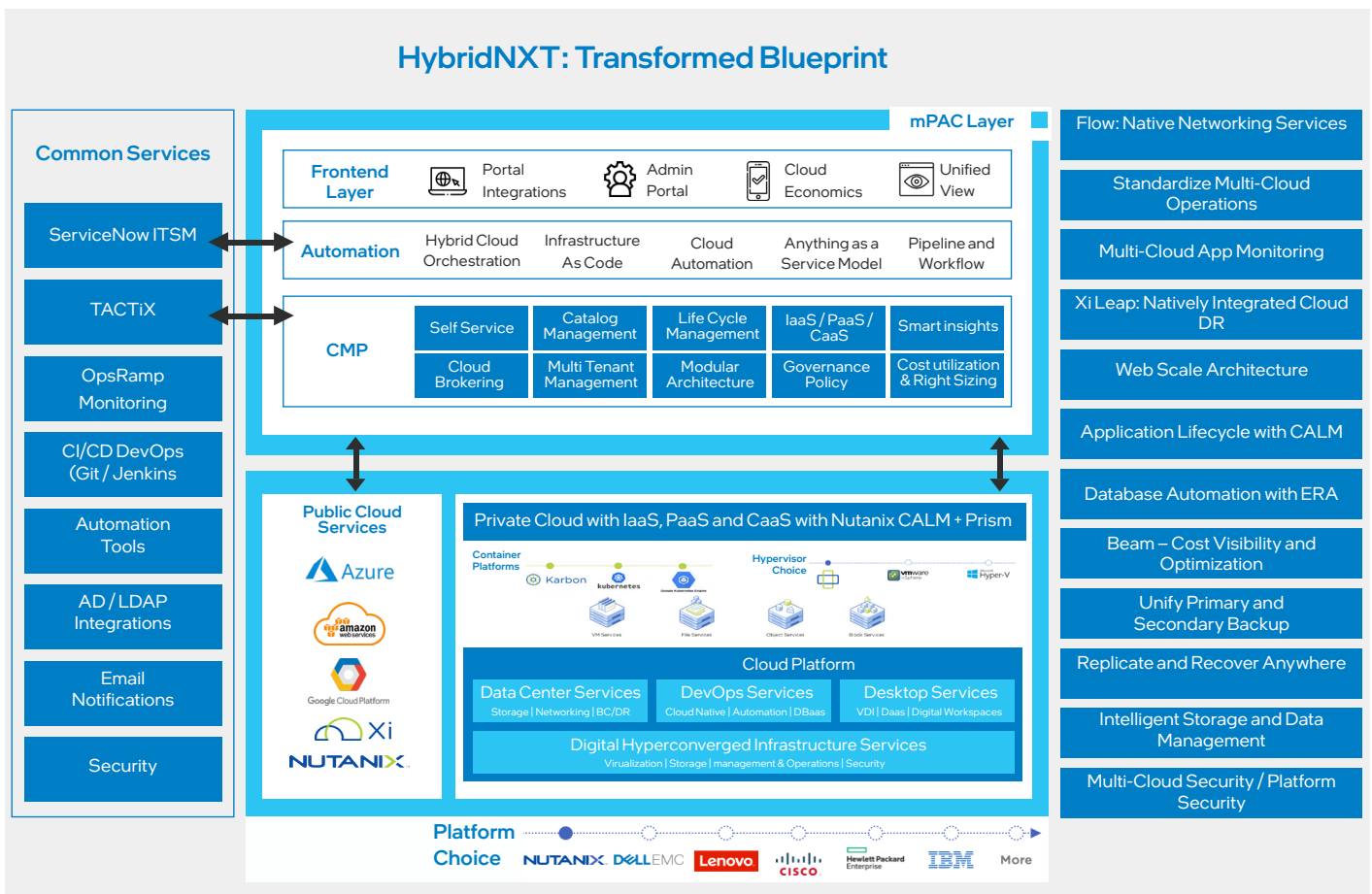


Figure 1. HybridNXT blueprint

High Performance and Scalability without Complexity with Nutanix HCI

HybridNXT is built on the Nutanix HCI – a comprehensive software-defined stack that integrates compute, virtualization, storage, networking, and security to power applications at scale. It delivers high performance, availability, and simplified management for multiple workloads by offering flexible orchestration and control across on-premises and cloud environments.

Intel® architecture-based platforms running Nutanix HCI software help enterprises reduce IT complexity, utilize their data better, and speed time to value. Using Intel® Select Solutions for Nutanix HCI, enterprises can support many types of workloads—including data analytics and AI, ERP, collaboration, databases, and VDI—on a workload-optimized, cloud-ready, and security-enabled infrastructure. Nutanix and Intel architects and engineers collaborate to optimize HCI software that takes advantage of the underlying hardware technologies—including Intel® Xeon® Scalable processors, Intel® Optane™ SSDs, Intel® 3D NAND SSDs, and Intel® Ethernet Adapters—to bring the most benefit to customers.

By modernizing legacy infrastructure to a platform based on Intel® technologies and the Nutanix HCI solution, enterprises can cost-effectively scale to support increasingly demanding workloads. Intel architecture-based Nutanix HCI allows enterprises to scale out incrementally, one node at a time, as businesses require, for reduced capital expenditures (CapEx outlays). Nutanix HCI solutions and Intel® technologies can be tailored to a variety of private or hybrid cloud use cases and workloads, providing the right balance of compute, storage, or memory.

Latest Intel® Technology Combined into a Single HCI Solution

Intel® Select Solutions for Nutanix HCI help simplify IT with a co-engineered and qualified software and hardware solution that also provides the flexibility to choose from various server platform manufacturers and hypervisors, including Nutanix AHV, VMware vSphere, and Microsoft Hyper-V.

Intel® Select Solutions for Nutanix HCI combine the latest hardware innovations from Intel to provide a high level of performance and scalability.

Intel® Select Solutions for Nutanix HCI provide the modern infrastructure enterprises need

Software-defined Platform
Validated, Certified, Optimized with Intel® Select Solutions

			
Intel® Server Platform and Components	2nd Generation Intel® Xeon® Scalable Processor	Intel® SSDs (SATA, 3D NAND, and Intel® Optane™ SSDs)	Intel® Ethernet Adapters

Accelerate time-to-market for customers worldwide

Figure 2. Compute, memory, storage, and Next Gen hardware platform from Intel.



Below are the highlights of this pre-verified reference design.

- **Intel® Xeon® Scalable Processor Family:** The base configuration uses the Intel® Xeon® Gold 6226 processor, while the plus configuration uses the higher-frequency Intel® Xeon® Gold 6246R processor. These processors are equipped with features that enhance multi-processor data flow and offer six memory channels using up to DDR4-2933 MT/s. Intel® Xeon® Scalable processors offer high scalability that is cost-efficient and flexible, from the multi-cloud to the intelligent edge. They also accelerate AI performance across the data center.
- **Intel® SSDs:** For the capacity tier, the base configuration uses a high-capacity SATA drive, the Intel® SSD D3-S4510. Because the plus configuration is designed to handle larger amounts of data, it uses a faster (and larger) NVMe drive, the Intel® SSD DC P4510. Both configurations use NVMe-based drives for the persistent write buffer. The base configuration uses two Intel® SSD DC P4510 SSDs, which are based on 3D NAND technology. The plus configuration is upgraded to the Intel® Optane™ SSD DC P4800X. The unique design of Intel® Optane™ SSDs provides low latency, up to 60 drive-writes-per-day endurance, and high IOPS per dollar. The P4800X accelerates applications for fast metadata, logging, caching, and fast storage to increase scale per server and reduce transaction costs for latency-sensitive workloads. All these SSDs are optimized for cloud infrastructures, offering large capacities with outstanding quality, reliability, advanced manageability, and serviceability to minimize service disruptions.
- **Intel® Select Solutions for Nutanix HCI:** The Intel® Select Solutions for Nutanix HCI have been validated and optimized on a 2U 1-node system that was based on the Intel® Server Board S2600WF family, using the 2nd Gen Intel® Xeon® Scalable processor family.
- **Intel® Ethernet Network Adapters:** Intel® Ethernet Network Adapters accelerate the delivery of new services and capabilities by increasing the speed and efficiency of network infrastructure. The Intel® Ethernet 700 Series is the foundation for server connectivity, providing broad interoperability with multiple speed and media types; critical performance optimizations using intelligent offloads and accelerators to unlock network performance using Intel® Xeon® processors; and increased agility by supporting both kernel and DPDK for scalable packet processing.

Enabling Key Benefits for Enterprises

The solution is aimed at helping IT, DevOps, or database teams to simplify their multi-cloud environment delivering any business app or use case on the cloud of their choice. The key benefits of HybridNXT includes:

- Flexibility and choice of technology to tailor cloud approach in accordance with the business needs
- Ability to build cloud without technology restrictions, hyper specialized skill requirements, or costly vendor lock-in
- Versatility to pick the right resources for the right workload and adjust seamlessly as the business grows
- Managed services delivered in conjunction with Nutanix subscription and support model

Why Tech Mahindra for Digital Transformation?

Tech Mahindra along with esteemed partners like Intel & Nutanix, helps enterprises accelerate their digital transformation with a comprehensive suite of offerings that covers the entire IT infrastructure stack. With platform-enabled solutions powered by AI and Automation, Tech Mahindra helps enterprises accelerate their journey to a digital future focusing on helping organizations develop a future ready infrastructure aligned to their core business needs.

Tech Mahindra fosters customer success through a 3-pillar strategy:

Imagine

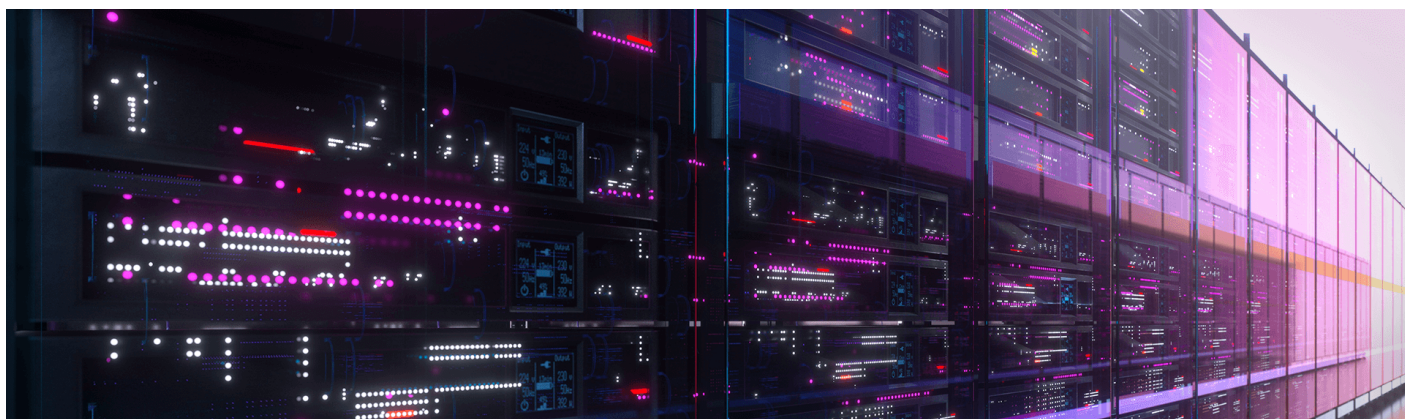
with enterprises to define how their industries will change in the future and how they will proactively transform to be ready for that eventuality.

Build







systems and processes for enterprises so that they can handle revolutionary change.

Run

the business value of clients by helping them differentiate themselves in an increasingly crowded market.



Leadership across verticals

 <p>Communications</p>	<p>5G Slice to Price - Communications Value Chain</p> <p>Produce to Play - Media & Entertainment Value Chain</p>	 <p>Retail</p>	<p>Design to Delight - Retail & Consumer Goods Value Chain</p>
 <p>BFSI</p>	<p>Cradle to Grave - Banking, Financial Services Value Chain</p>	 <p>Energy & Utilities</p>	<p>Wells to Wheels - Oil & Gas Value Chain</p> <p>Generation to Consumption utilities Value Chain</p>
 <p>Manufacturing</p>	<p>Concept to Customer Delight - Manufacturing Value Chain</p>	 <p>Healthcare</p>	<p>Delivering Future of Care Health & Lifesciences Value Chain</p>

Learn more at <https://www.techmahindra.com/en-in/>

Conclusion

HybridNXT framework is created to deliver speed, agility and standardization in creating software defined infrastructure. Powered by TechM services, Intel and Nutanix technology, HybridNXT helps design, deploy, and manage private and multi-cloud platforms by offering an end-to-end solution stack of pre-integrated, validated and fully tested components along with third party integrations which is completely designed, deployed, migrated and managed by Tech Mahindra.



¹Source: https://img03.en25.com/Web/IntelCorporation/%7B0eb71263-a421-4037-8993-f6efd8aa7a63%7D_Intel_Hybrid_Cloud_TLP-_FINAL%5b1%5d.pdf?elqTrackId=9741563bc44949e19064e914bca5b647&elqaid=16317&elqat=2

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Performance results are based on testing as of dates shown in configurations and may not reflect all publicly available updates. See backup for configuration details. No product or component can be absolutely secure.

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