

Redefining Workspaces of the Future

Tech Mahindra and Intel are driving workspace transformation through a digital workspace environment that optimizes workforce productivity and flexibility

Executive Summary

The very nature of the workspace is changing fast. In this unprecedented time of change, many organizations are faced with supporting a newly remote workforce, and embracing the right technology is more critical than ever to best support that employee base.

There's no doubt that we've entered a period of intense change on a global level. The business landscape is shifting at light speed and organizations are already beginning to adjust, though many still have a way to go. In today's increasingly remote world, PC management and remote workforce support has become one of the biggest topics on IT decision-maker minds. However, IT departments are struggling to maintain a secure environment for devices while simultaneously meeting employee expectations. And, it is critical for organizations to successfully address these challenges to gain a competitive edge and drive their business forward.

Tech Mahindra Workspace NxT Solution, powered by Intel® architecture, enables workspace transformation through a digitally augmented workspace environment that optimizes workforce productivity and flexibility. It enables seamless relationships, connections, interactions, and collaboration within the enterprise workforce. Workspace NxT seeks to simplify and standardize the way users experience their workspace environment by bringing browser-based access to the enterprise workspace, application & data from any device from anywhere.

Driving the Workspace of the Future

According to a report by McKinsey Global Institute, about 60% of occupations and at least 30% activities have the potential to be automated by 2030.¹ The emergence of the 'New Normal' in a post-pandemic era is accelerating this trend even faster. It is driving enterprise leaders to transform by addressing new challenges of automated workload management and virtualized workflows. But, a key challenge to this transformation is the inability to design remote workspaces that are seamless enough to anticipate and align with dynamically shifting end-user needs. There are applications that require real-world compute capacity which needs to move into end-user workspaces. Some of these applications provide data and visual simulations that are essential for end-users and there are others that depend on quick data flows. This brings us to the question of how the new workspace would ensure high-performance connectivity and security.

The evolving workspace is accelerating the need for a holistic, digital workspace that can inspire and motivate the workforce, and bring together application delivery platform with well-managed PCs, seamless security and the optimized services. These can be achieved through a unified workspace, which can help

Executive Summary	1
Driving the Workspace of the Future ...	1
Understanding the Solution	
Architecture	2
Maximizing the Intel Advantage	4
Accelerating the Workspace of the Future	5
Conclusion	5

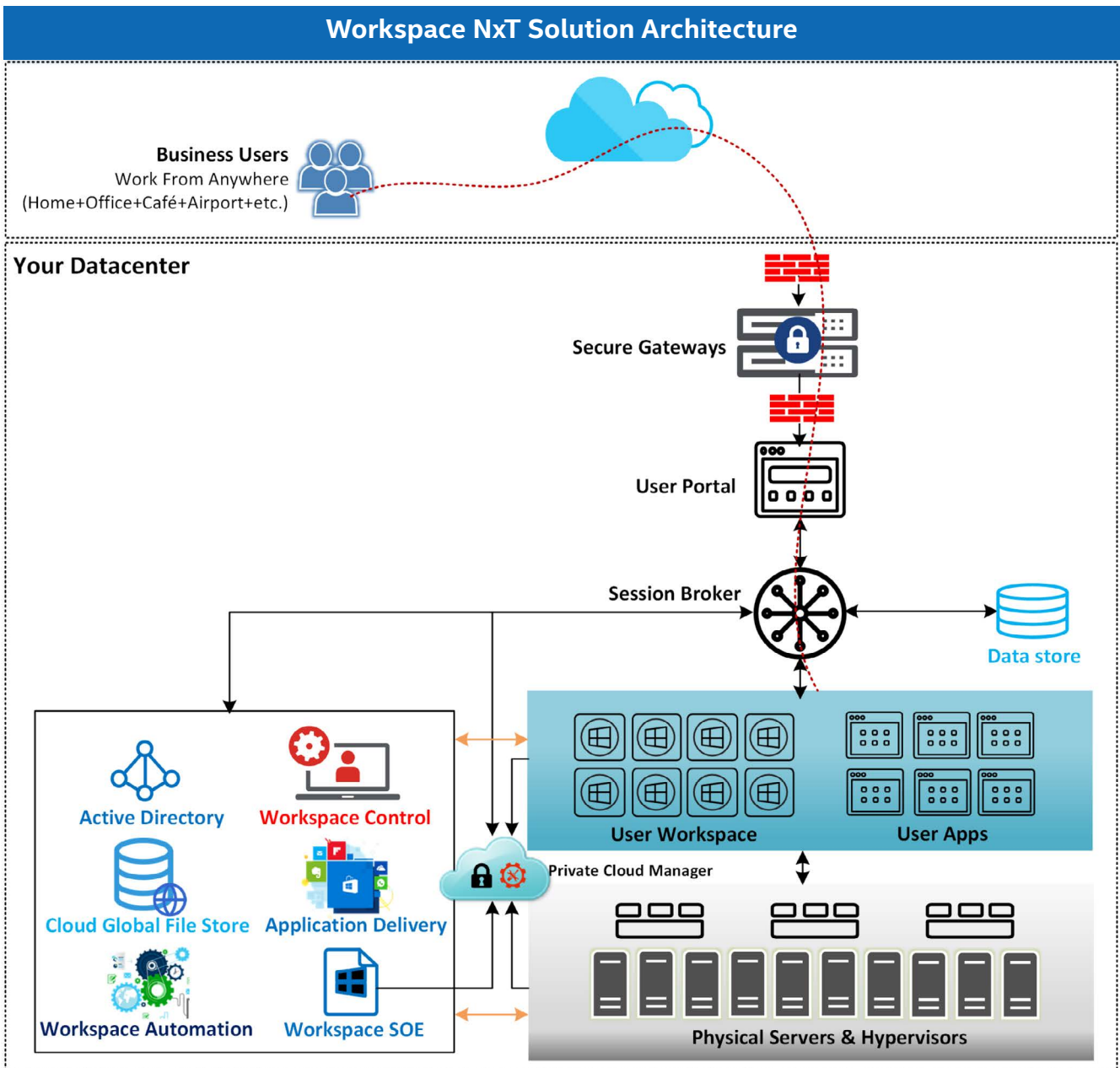
IT transform the end-user experience. This approach can enable a ready-to-work experience, while enabling IT with automated, open and intelligent solutions for unified management. This can further redefine the way IT admins assist and enable their end users with device selection, deployment, security, management and support through flexible, scalable services and solutions that integrate with any customer environment, regardless of the operating system (OS), device, and cloud environment.

Workspace NxT, optimized on Intel® architecture is designed to deliver a unified workspace experience using a hybrid workspace delivery model that leverages virtualization, enterprise mobility, and context aware security. It delivers all

workspace resources as a universal single URL to consolidate all end user computing services. This model will bring all services under a single window to avoid duplication of investments and improve end user experience.

Understanding the Solution Architecture

Tech Mahindra and Intel came together to build a reference architecture for the Workspace NxT solution based on the Converged Infrastructure. This infrastructure reference stack is based on real time test scenarios, user workloads, systems integrations, and end user experience measurement. An overview of the solution architecture is outlined below:



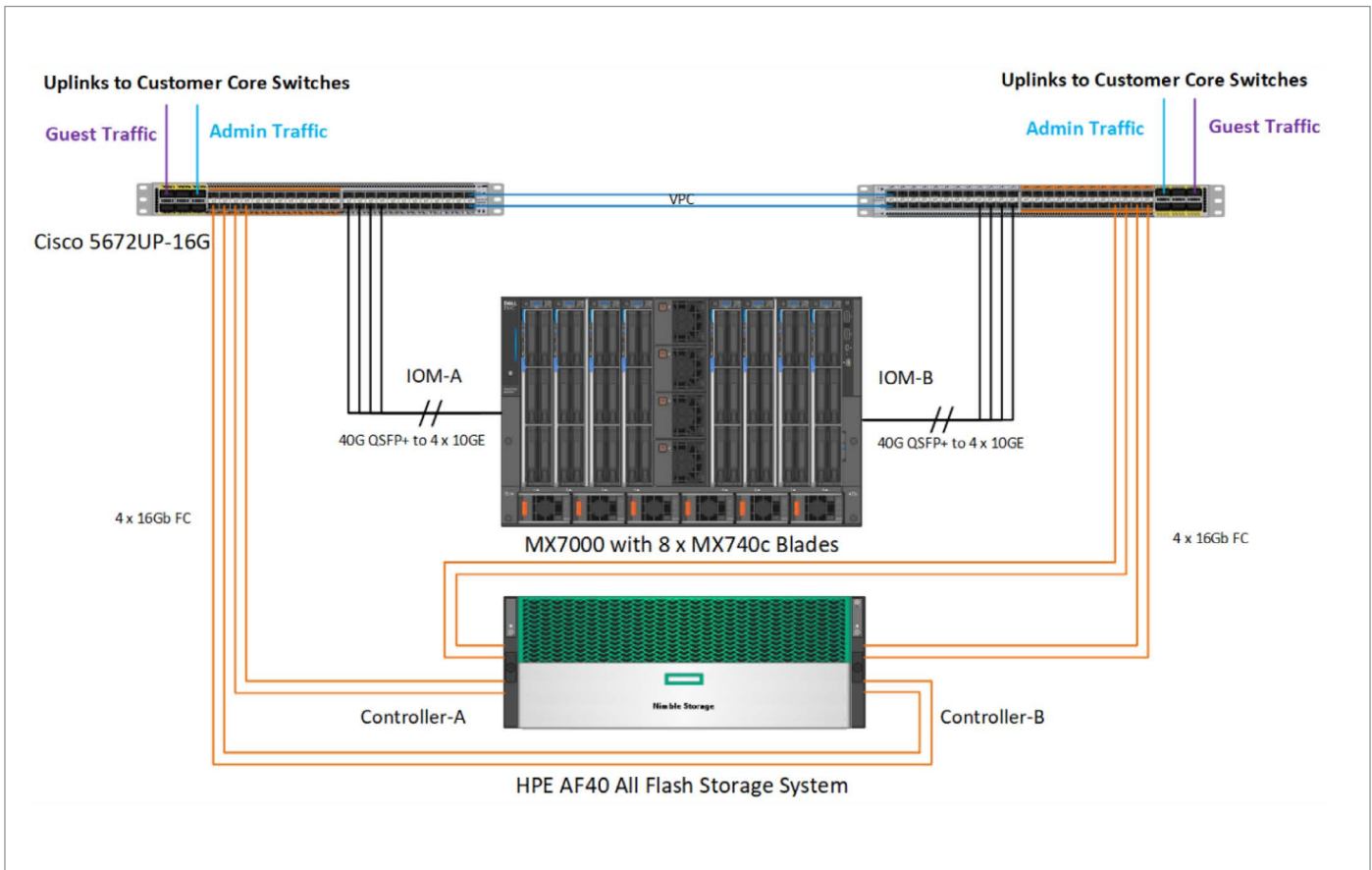
This Intel-powered architecture can be delivered with Discrete, Converged and Hyperconverged infrastructure design with compatibility across OEMs.

The reference architecture is based on two key solution pillars: The Hardware Solution Stack and the Virtualization Software and System Management.

The Hardware Solution Stack

The Workspace NxT solution leverages dedicated compute, memory and network resources that are highly scalable. The reference architecture was built with optimized Intel components within the systems to meet the performance need of a virtual computing infrastructure.

- **Compute Systems:** Blade Servers powered by 2nd Generation Intel® Xeon® Scalable processors, up to 768 GB DRAM or 1 TB Intel® Optane™ persistent memory, converged network adapter with 40Gbps bandwidth
- **Storage Systems:** Complete All Flash System with 24 X 960 SSD SAS 15K Disks, and 8 x 16Gbps FC Ports
- **Network Systems:** ToR Switch with LAN and SAN convergence with 7.68 Tbps switching capacity, and 16Gb Fiber Channel



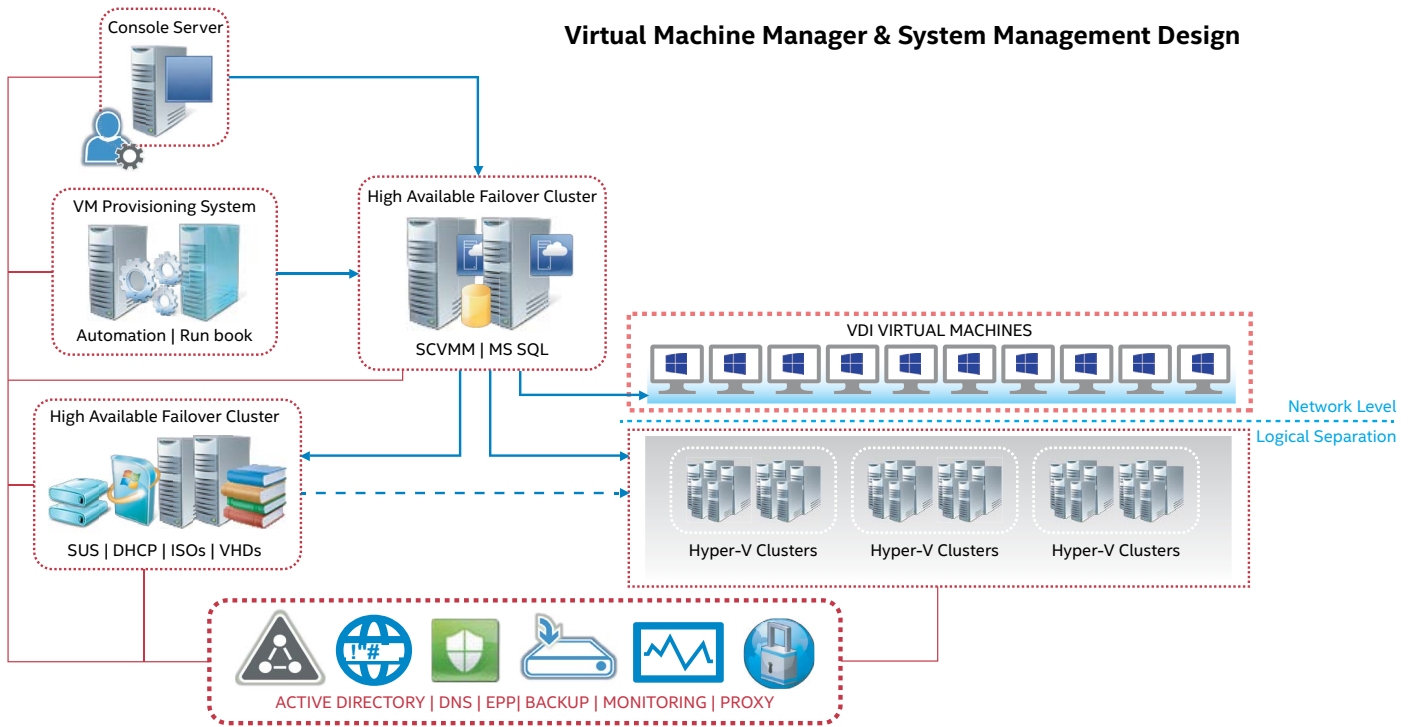
Virtualization Software and System Management

The reference architecture uses the right selection of virtualization software that is optimized to run on the hardware solution stack mentioned above.

- **Hypervisor:** Hyper-V core instance running with dual network paths for Ethernet & storage traffic and each hypervisor designed to host ~91 virtual machines with static memory configuration
- **Hypervisor Networking:** Converged Network Adapter is virtualized at hardware level with Host typically configured to have a minimum of 40G bandwidth to ensure sufficient bandwidth is available with nanoseconds latency

- **Delivery Controllers:** For enumerating, allocating, assigning and maintaining virtualized desktops and applications
- **Workspace Control:** persist user personalization even when running non-persistent virtual desktops and to provide a Standard Workspace Environment to user
- **Workspace Automation:** Streamlining complex operations and automate the infrastructure, cloud, and workspace processes required to support and deliver IT services

WaaS System Management Design | Virtual Machine Manager



Maximizing the Intel Advantage

Intel® architecture plays a key role in enabling Workspace NxT solutions. The highly-optimized Intel® architecture enhances the capability of hypervisors and hardware-assisted virtualization to significantly boost responsiveness of Workspace NxT virtualized systems. The Intel® Xeon® Scalable platform enables the solution to deliver a high level of performance and security that future workspace models require. The Intel® Xeon® Scalable platform delivers the capabilities to drive highly scalable and flexible workspace models, like the Workspace NxT, that leverage Virtualization, Enterprise Mobility, and Predictive Security on the go. The reference architecture also includes breakthrough Intel® Optane™ persistent memory, which is an innovative memory technology that delivers a unique combination of affordable large capacity and support for data persistence. This technology helps with increased capacity, lower overall TCO while maximizing VM densities, and increasing memory security with automatic hardware-level encryption.

The Intel Xeon Scalable platform delivers the following advantages for the Workspace NxT platform:

- **Performance:** Intel-powered deployments offer the responsiveness required to improve user experience with superior latency and productivity while significantly lowering turnarounds on IT resources.
- **TCO:** Lowers infrastructure expense CAPEX and boosts ROI with VDI deployments that are built for volatile data intensive workloads fueled by a constantly changing workspace scenario.

- **Complexity:** Helps in sizing, allocating, scaling, and maintaining large amounts of storage required to manage administrative complexities of remote workforce data, access and productivity.

Typically, Virtualization enables a computing platform to share its resources across multiple workloads, which all run as if they have their own dedicated system. However, these systems need to be performance capable in delivering real-time and deterministic response that today's advanced automated processes require. After all, future workspaces will be manifested through ecosystems of automated machines working alongside remote employees and IT infrastructure. Many of these experiences also depend on automation to deliver the capability and convenience that employees as well as customers' demand.

Datacenter with Secure Data Processing: Workspace NxT solution powered by 2nd Generation Intel® Xeon® Scalable processors brings core capabilities with enhanced built-in hardware level security. This protects against CPU side channel vulnerabilities for virtualized environments, making the platform more secure when combined with software fixes to deliver reliable remote workspaces from anywhere.

Large Memory Workspace: The Workspace NxT solution leverages Intel® Optane™ persistent memory system configuration with the combination and support of traditional DRAM technologies. These systems are able to provision more memory with lower cost, and meet the requirements of memory intense workloads.

Compute & Graphics Enabled Workspace: 2nd Generation Intel® Xeon® Scalable processors configuration eases Graphics Virtualization on the Workspace NxT platform. The high-speed configuration eliminates the need for maintaining and moving high configuration workstations for remote users who are working on workload heavy engineering applications such as CAD, CATIA, and more. It helps enable seamlessly-accessed, powerful virtual graphics workstations remotely.

Secure Endpoints for Remote Work Force: Workspace NxT enabled secure endpoints are built on the Intel vPro® platform provide hardware-enhanced security features. It provides secure workspaces that are protected against attacks below the OS combined with remote recovery capabilities. This makes it easy for users to work from anywhere while eliminating the complexity of management with remote patching capabilities.

Accelerating the Workspace of the Future

Enterprises looking to accelerate workspace transformation can now seamlessly shift to highly secure and customized

virtualized workspaces with Workspace NxT. They can restart delivering service in XaaS enabled models with a simple, modular, plug and play implementation to ensure uninterrupted services.

Workspace NxT can deliver a multitude of business values and simplify IT operations by providing the framework for the workspace of the future:

- Self-service portal and mobile app for end-users
- Instant onboarding and & Off-boarding of users
- Simplified content migration to the cloud
- A multi-cloud, portable and secure desktop environment
- Personalized and enhanced user experience
- Intelligent and automated license management
- Contextual security for all users
- AI-enabled user experience analytics

Conclusion

Intel-powered Workspace NxT solution provides a great opportunity to transform workspace experience and build a flexible and versatile enterprise. By re-configuring with Workspace NxT, enterprises can quickly embrace a transformative remote workspace solution to stay ahead of curve.

Tech
Mahindra



intel®

'Source: <https://www.mckinsey.com/~media/mckinsey/featured%20insights/Digital%20Disruption/Harnessing%20automation%20for%20a%20future%20that%20works/MGI-A-future-that-works-Executive-summary.ashx>

© Intel Corporation. Intel, the Intel logo, and other Intel marks are trademarks of Intel Corporation or its subsidiaries.

Other names and brands may be claimed as the property of others.

Copyright © Tech Mahindra 2020. All Rights Reserved.

Disclaimer. Brand names, logos and trademarks used herein remain the property of their respective owners.

