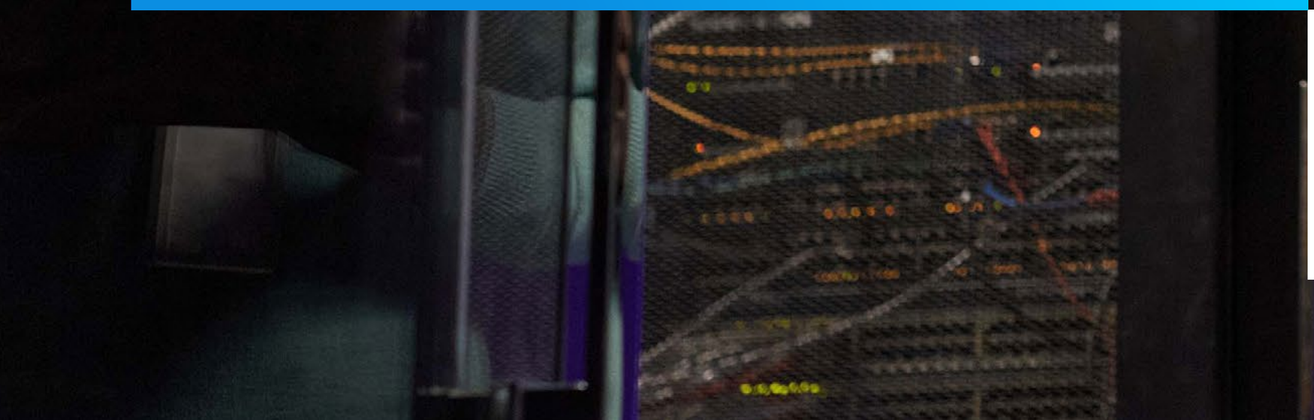
Business Brief
Data Center
Digital Transformation

The new era of digital transformation: your technology foundation can be your biggest asset

Four considerations to get your infrastructure ready for the digitization of everything



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Introduction

As we emerge towards a new normal, much remains uncertain. One thing we do know for sure is that the future is digital. Gartner found that 69 percent of businesses intend to increase their spending on digital transformation[1].

Deloitte even contends: "Nearly two-thirds of commercial respondents...believe that organizations that don't digitize in the next five years will be 'doomed'.[2]" This digitization ranges from continuing to support remote workers, to initiatives that improve customer experience, to disruptive digital-first "born-on-the-web" services in traditional and established industries.

The need to digitize is putting increased focus on infrastructure, prompting business and IT professionals alike to ask whether their infrastructure is up to the task. Apps and data continue to proliferate, cloud complexity and workload diversification are increasing, and security is an increasingly pressing concern. A well-designed infrastructure is the heart and foundation to create these new digital models.

Is your edge-to-cloud infrastructure ready?

As you plan the next stage of your IT, here are four steps to consider for a digital-ready infrastructure.

"The pandemic validated [the] cloud's value proposition. The ability to use on-demand, scalable cloud models to achieve cost efficiency and business continuity is providing the impetus for organizations to rapidly accelerate their digital business transformation plans."

Sid Nag,
Research Vice-President, Gartner[3]

1: Plan for interoperability between clouds & scalability

As enterprises grow, and the digitization of their business broadens, they find that a mix of private and public cloud best meets the needs of different workloads. The question for each organization to answer is - what mix of clouds will deliver the business outcomes and customer experiences needed to succeed and grow in the digital era?

As multicloud and hybrid cloud grow, hardware can be your biggest asset to enable interoperability across clouds. Intel has designed Intel® Xeon® Scalable processors to provide a consistent foundation across generations to give you the freedom to place and move workloads where it makes sense for your business.

Digitization is also elevating the importance of application scalability. Application performance is the life-blood of creating an optimal customer experience and it needs to be underpinned with a foundation that can facilitate an always-on application that spans edge to cloud.

Intel is committed to providing digital-ready infrastructure that can scale apps across any cloud.

This is evidenced by a comprehensive portfolio of products including the latest generation of Intel® Optane™ technologies, and Intel® Ethernet 800 Series network adapters and Intel Xeon Scalable processors that collectively move, store and process data in an optimal way.

As a result, infrastructure has the flexibility to evolve with changing needs, streamlining cost and enhancing data governance. And the interoperable architecture between on-premise and cloud deployments gives consistent and predictable performance.

Lower costs per VM by up to

while delivering the same performance when deploying 3rd Generation Intel® Xeon® Scalable processors with Intel® Optane™ persistent memory 200 series[4].

Achieving a flexible edge-to-cloud environment remains challenging given integration and optimization barriers. Seek out integrated solutions where some of these challenges have been solved in advance, for example some of the solutions developed by Intel with our software partners that we outline in point 4, below.

2: Establish a strategy that harnesses the power of AI

Digital transformation takes many forms, but AI is a key tool employed across many modern applications. A recent Forbes article provides a helpful taxonomy of five ways AI supports digital transformation[5].

- Digital transformation initiatives often include digitizing supply chains, enabling on-time delivery based on insights gained from AI.
- AI is helping to define customers' preferences and needs more precisely. This leads to more accurate personas that guide digital transformation projects from the very beginning.
- AI-based algorithms are making it possible to create propensity models by persona, and they are invaluable for predicting which customers will act on a bundling or pricing offer.
- Capitalizing on insights gained from AI, organizations are redesigning IT infrastructure and integration so they can better scale customer experiences.

While we know AI is integral to our digital future, delivering AI into production from edge to cloud remains challenging. Data still lives in silos, so we're not able to tap its full value. Data also has gravity, so there are costs implications to moving it, and fragmented tools add to the complexity. AI also can put heavy demands on compute resources.

Intel is addressing these challenges to make AI more accessible and efficient.

3rd Gen Intel Xeon Scalable processors are the only data center CPUs with built-in AI acceleration. This gives you improved performance across a diverse set of smart AI inference workloads.

Intel also makes it faster and easier for data practitioners to build and widely deploy smarter models, and simpler to move from proof of concept (PoC) to production. We optimized popular end-to-end tools and libraries that data scientists use to process data as efficiently as possible.

And to speed the deployment of your core apps, Intel has a key set of pre-integrated and verified enterprise solutions for data analytics and AI. These include the most popular enterprise databases (like Microsoft SQL Server) and a broad range of applications that are ready to unlock insights and accelerate time to AI deployment.

3: Cloud Architectures need Confidential Computing

Distributed cloud architectures and applying AI and analytics to huge amounts of data makes security much more complex. Hardware-based security offers added protection to help secure data at rest, in flight, and in use, across different cloud environments.

Intel hardware-based security creates a trusted foundation for protecting data in all its phases: at rest, in flight, and in use. These capabilities include:

- Intel® Crypto Acceleration increases the performance of encryption-intensive workloads including SSL web serving, 5G infrastructure, and VPN/firewalls. It also reduces the performance impact of pervasive encryption.
- Data insights have never been easier or more secure with Intel Software Guard Extensions powering Confidential Computing. 3rd Gen offers to 1TB of enclave size to help protect data and application code - enabling enhanced collaboration.
- Platform integrity through Intel® Platform Firmware Resilience (Intel® PFR) provides root-of-trust protection for firmware, code, and data.
- Intel® Total Memory Encryption (Intel® TME) encrypts the entirety of the physical memory of a system. A Multi-Tenant version enables a virtual machine manager (VMM) to separately encrypt VMs and containers.

Intel's zero-trust security solutions allow business transformation in areas such as multi-party collaboration while helping to maintain data privacy and regulatory compliance. In healthcare this could be collaborative learning models between hospitals on early disease detection, fast-tracking drug trials. Or in financial services it could mean using cloud-based financial data analytics to identify money laundering schemes as funds move between banks. And, crucially it offers added protection for your encryption keys.

Intel continually advances security technologies that enable easier deployment for defense against modern threats, helping to lock down unauthorized code access and accelerating cryptographic workloads.

4: Speed digital transformation with pre-integrated solutions

Building the right architecture to support digital transformation is complex and creates integration and optimization challenges. Reinventing the wheel is not necessary.

Intel's software engineers are partnering with the world's leading independent software vendors (ISVs) and open-source communities to optimize software, break bottlenecks, and enable new technologies. This makes it possible to unleash valuable new capabilities for your modern infrastructure.

Intel collaborates across an entire edge-to-cloud value chain, from builder to integrator to cloud and network provider to developer. As a result, we have aligned use cases, fixed common integration headaches, and delivered hundreds of repeatable production-ready packages.

This results in more than 500 optimized, ready-to-deploy solutions in market today. They are delivered by our valued ecosystem across 5G, Internet of Things (IoT), data analytics, hyperconverged infrastructure (HCI), high- performance computing (HPC), and AI.

Intel® Select Solutions to speed digital transformation

Intel Select Solutions accelerate time to deployment, time to innovation, and time to transformation of your IT infrastructure. These solutions are rigorously benchmarked to help you transform faster and better. Key solutions areas for Digital transformation include:

- Intel® Select Solutions for Hybrid cloud make deploying and managing workloads on cloud architectures easier and faster.
- Intel® Select Solution for Analytics speeds deployment and time to value of some of the most powerful analytics apps and the databases which feed them - like SAP Hana, Microsoft SQL Server and Splunk.
- Intel® Select Solution for AI Accelerates time to inference by deploying AI applications at scale on an optimized, verified infrastructure designed for low-latency and high-throughput.

Digital transformation continues to help businesses find new markets, develop new profit streams, and streamline their own operations. A stable, interoperable and high-performing architectural foundation is essential for success – now and in the future.

See how our ecosystem and customers are using Intel-based hardware solutions to drive their digital transformations.

Learn more HERE →

[1] https://www.gartner.com/document/3996808?ref=solrAll&refval=293635220

[2] https://www2.deloitte.com/us/en/insights/topics/digital-transformation/digital-acceleration-in-a-changing-world.html

[3] https://www.gartner.com/en/newsroom/press-releases/2020-11-17-gartner-forecasts-worldwide-public-cloud-end-user-spending-to-grow-18-percent-in-2021

[4] See claim [3] at https://edc.intel.com/content/www/us/en/products/performance/benchmarks/intel-optane-persistent-memory-200-series/.Results may vary

[5] https://www.forbes.com/sites/louiscolumbus/2020/04/15/10-ways-ai-can-improve-digital-transformations-success-rate/?sh=57d728325c43

[6] ESG Master Survey Results, Cybersecurity in the C-Suite and boardroom, March 2021.

Performance varies by use, configuration and other factors. Learn more at www.Intel.com/PerformanceIndex.

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.

Your costs and results may vary.

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