Mobilizing Your Transformation and Modernization Strategies

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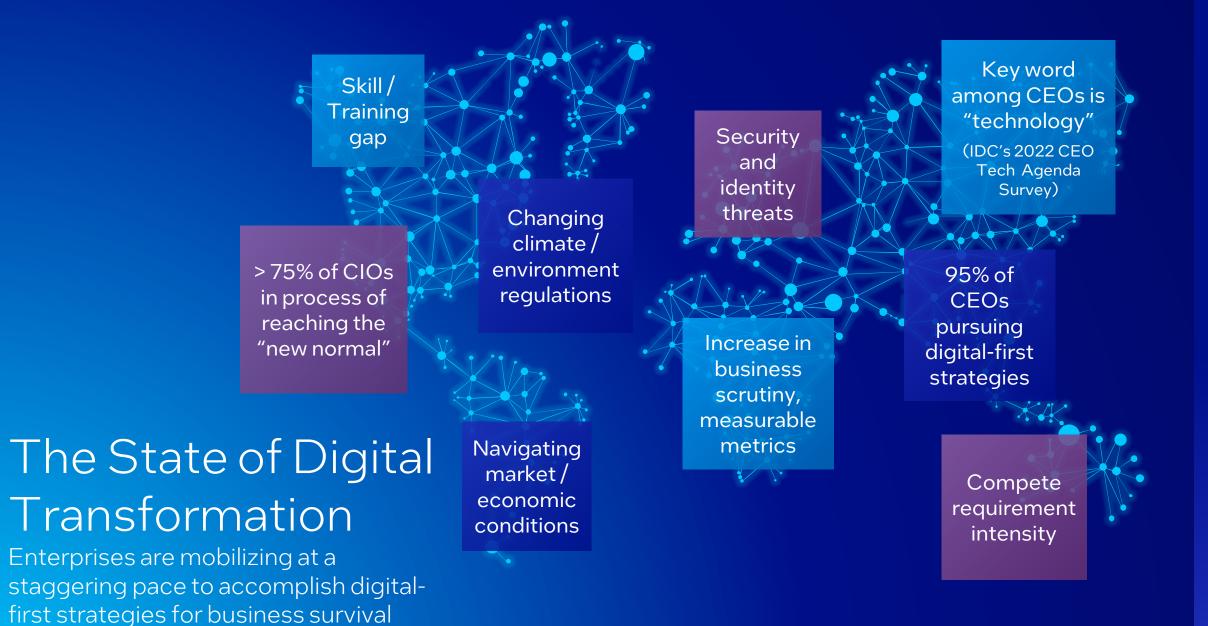
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Topics: A Transformative Journey

- Market Reality and the State of Digital Transformation
- 2 Top Global Business Priorities
- 3 How to Get It Done
- 4 Partner Relationships
- 5 Deployment and Change Management
- 6 Skilling and Training
- 7 Operationalizing Continued Momentum and Assessment
- 8 Next Steps, Resources





Enterprise Leaders Are Mobilizing on These Top Transformation Priorities to Succeed













The Imperative Means Digital-First Momentum

Business leaders are increasingly focused on technology to thrive, so much so that "technology" is the word of the year for CEOs in 2022.

IDC

Digital transformation is enabling a lot of opportunities to be exploredwhere the intention is to come up with new services and new offerings that will help to better understand the customer and be a little closer to the customer.

> Suresh Kumar Tulluri HCL

The first step is to understanding the business objectives, the business imperatives, and in a lot of cases, helping customers actually visualize where we're trying to take their business or think differently about the way they engage their consumers, their constituents, their partners.

> Brian Ortballs, WWT

We are at the precipice of a digital renaissance. The challenges we face are so complex, entwined and reliant on leading-edge tech that we need new ways to collaborate and partner.

> Pat Gelsinger, CEO Intel Corporation



Top Global Business Priorities Enterprise Leaders Are Addressing





Intel Is Pushing the Frontier Forward

Top Enterprise leadership priorities for business success

Achieve rigorous security, identity and compliance management, and contribute to your zero-trust security strategy Exemplify a culture of environment

Advance insights through adoption of data analytics and AI driving critical business outcomes

social governance (ESG) fostering equitable outcomes



Activate mature and agile cloud strategies across hybrid, multicloud or the intelligent edge

Embrace redefined, interactive worker experiences

How To Get It Done

Let's walk briefly through each priority



Achieve rigorous security, identity and compliance management, and contribute to your zero-trust security strategy







Leaders need to achieve rigorous security, identity, compliance management, and contribute to their zero-trust security strategy

Identity is the new perimeter, and access is the new security.

Nearly **50%** of cyberattacks in 2021 were caused by malicious actors (notably machine identities) using stolen credentials.

Attack surface expansion is leaving organizations vulnerable to attacks.

Cloud computing, home office networks, endpoints, mobile apps, and legacy onpremise systems have exacerbated this issue. **88%** of organizations lack the confidence to prevent sensitive data loss.

63% of organizations were breached in last 12 months.

Enterprises are spending a median of 37 days and a mean of **\$2.4M-3M** to find and recover from a breach.

The vast majority of security leaders are adopting zero trust frameworks that are strongly recommended, and even mandated, by industry analysts and government agencies.



Achieve rigorous security, identity, compliance management, and contribute to your zero-trust security strategy

Get identity and access management (IAM) estate in order

Use zero trust to contribute to holistic cybersecurity protection

Trust; Breaking through clutter

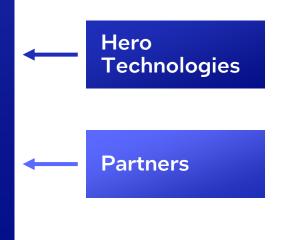




How You Can Achieve Getting Security Done

Example Desired Business Capabilities

- Keep my customer data private and secure, meeting compliance and regulatory requirements.
- Protect my data, information and business models in the cloud from new attack vectors
- Help secure my supply chain vulnerabilities
- Achieve security visibility across my platforms



Distinction

- Intel's Security First pledge is an ongoing commitment to product assurance and security.
- Intel has multifaceted approach to prevent, assure, lead and innovate across all our products, beginning with Intel's security development lifecycle (SDL), where security is engineered into products from the outset.

For a complete list of partners in your area, please go to Intel® Solutions Marketplace
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Confidential Al Computing with Intel + Fortanix



Turnkey, enterprise-level, high-performance security solution for AI models and data



Business Challenge:

Keeping sensitive data or proprietary ML algorithms safe with hundreds of VMs or containers running on a single server



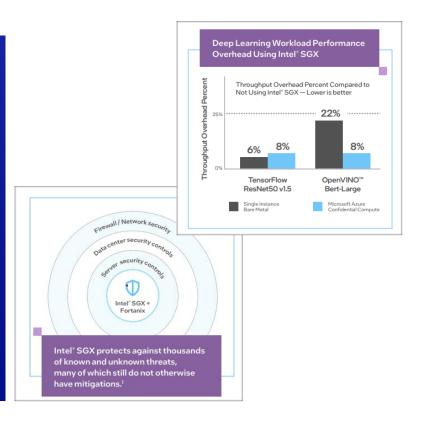
Solution

Intel® Security Solution for Fortanix Confidential AI: An enterprise-level high-performance, security enabled solution that encrypts data while in use by isolating data and code in Intel® Software Guard Extension (Intel® SGX) enclaves, without changing underlying software applications.



Result

Implementing a multipleinstance configuration provides significant throughput gains. Organizations can simultaneously increase security and performance.



1 Intel® SGX is not vulnerable to most OS layer threats, and there are over 140,000 threats in the database today: https://cve.mitre.org. 2 Benchmarks were run with Intel SGX disabled versus Intel SGX enabled and at both FP32 and INT8 precision.

For more: https://www.intel.com/content/www/us/en/architecture-and-technology/sgx-product-offerings/fortanix-confidential-ai.html

Advance insights through adoption of data analytics and Al driving critical business outcomes







Leaders Need to Advance Their Adoption of Data Analytics and Artificial Intelligence (AI)

68% of enterprise data currently goes unused for analytics.

Enterprise leaders realize it is a matter of survival to close this gap and have to advance their proficiency with data (data literacy).

By 2025, **80%** of data analytics initiatives will be focused on business outcomes and considered an essential business capability.

84% of business executives believe they need to use AI to achieve their growth objectives.

However, **76%** acknowledge they are struggling with how to use / scale Al across their business, with the most common challenge being staff skills (56%).

The increase in data literacy and advancing insights has heightened the significance in use of artificial intelligence (AI).





Leaders need to advance their data literacy, adoption of data analytics and use of artificial intelligence (AI)

Data literacy, management and access by all to drive business results

Data visualization

Governance, ethical framework, trust and transparency

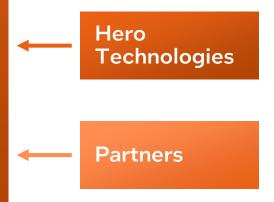




How You can Enhance Data Analytics and Al Strategies to Drive Critical Business Outcomes

Example Desired Business Capabilities

- I want to identify and predict program offerings faster to market for my customers
- I want to use data and visualization to quickly spot trends in healthcare effectiveness, reduce clinical errors, or identify workflow enhancement to reduce cost and increase operational efficiency
- Have trusted, accurate data for decision intelligence and prediction to institute new policies or investments
- I want to be proactive in how I as an educator can help student success, or even dept. or campus success.



Distinction

- Intel understands large data sets. This includes unstructured and previously "dark" forms of data and information from the intelligent edge.
- Differentiation is based on focusing on product quality, features, and customer service. The quality of Intel's products and the features they provide are key factors in differentiation.

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UAB Medicine Uses Al to Access New Data The University of Alabama at Birmingham (UAB)



Medicine and Medical Informatics Corp. work to enhance near real-time decision-making and patient care



Business Challenge:

Faster access to more and more detailed patient information to speed decision-making.



Solution

Medical Informatics Corp.'s FDA cleared Sickbay platform powered by Intel® technology, leveraging Cisco network architecture to enable secure, waveform-enabled medical device integration with nonnetworked devices such as near-infrared spectroscopy (NIRS), ventilators, anesthesia machines, extracorporeal membrane oxygenation (ECMO), electroencephalograms (EEG), and more.



Result

The Sickbay platform allowed UAB Medicine to combine and transform two or more complex signals to create a brand-new, more complete view of the patient's status. This new view can be used to tackle two objectives:

- Identify the optimal blood
 pressure for each patient during
 their procedure based on realtime data
- Provide doctors with a single blood pressure number that is updated every few seconds

"The Sickbay platform allows us to capture and integrate this high-resolution information from every monitoring device we have in a completely vendor-agnostic manner. That forms a profoundly useful basis for discovery and real-time monitoring."

Dr. Dan Berkowitz, Chair, Department of Anesthesiology and Perioperative Medicine, UAB

Activate mature and agile cloud strategies across hybrid, multi-cloud or the intelligent edge







Leaders are Maturing Their Data Centers, Cloud or Edge Strategies

Strategic cloud modernization is instituting best practices and a cloud culture with:

- Vertical focus
- Cloud management
- FinOps roles
- Pay-as-you-go models

Cloud services spending increased **49%** to over **\$450** billion during the pandemic and is expected to grow **another 20%** in 2022.

Maturing cloud strategies delivers visibility into product/service costs and forecasting, speed and innovation, most importantly operational agility.

A theme driving current state of software on the edge of the network is the focus on running workloads as close to where they're needed as possible.

There are two models to consider - reviewing where point of origin is and how to extend into other environments:

- Cloud out to Edge
- Edge into Cloud

By 2028, **36.5%** of the global Infrastructure Edge footprint will be for use cases associated with mobile and residential consumers.





Activate mature and agile cloud strategies across hybrid/multi-cloud and the intelligent edge

Agile cloud and edge optimization strategies and understanding

Help ensure regulatory and compliant cloud management

IT and application modernization (apps, data center, operating processes, etc.)

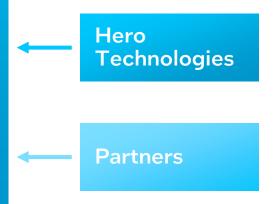




How to Achieve Operational Agility Across Your Data Center, Cloud or Intelligent Edge Strategies

Example Desired Business Capabilities

- I need to offer my healthcare providers and patients access to real-time information and services, securely, while maintaining HIPAA compliance and manage my CapEx.
- I need to launch a new program for my credit card customers that is secure, I can scale with confidence, and is compliant and provides for mobility.
- I want to advance my city with smart technology, securely, gathering and visualizing data to help me create safe pedestrian pathways and easy and transparent engagement with my city.
- As an instructional technologist, I need education continuity with a platform for Educators and students easy to access, to collaborate together – no disruptions. But I also need security and duty of care.



Distinction

• We're now over three decades into the cloud era, and looking back, it is apparent that <u>Intel has been driving cloud</u> innovation since day one. At a recent exclusive <u>Tech Field Day</u> event, Intel detailed just how integral a part they have played in the growth, advancement, and now dominance of the cloud in today's enterprise IT space.

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The Intel-Powered Bare Metal Solution on Google Cloud Platform (GCP) Accelerated StubHub's Cloud Journey

GCP enabled a seamless transition from on-premise to cloud well ahead of schedule and delivered a higher performance at a lower cost



Business Challenge:

Scaling capacity to meet the demand when tickets first go on sale or as a sporting event nears without overprovisioning onpremise equipment



Solution

Analytics Zoo open-source analytics and AI platform and bfloat16 accelerate Al applications on an Alibaba Cloud ECS instance with 3rd Gen Intel® Xeon® Scalable processors



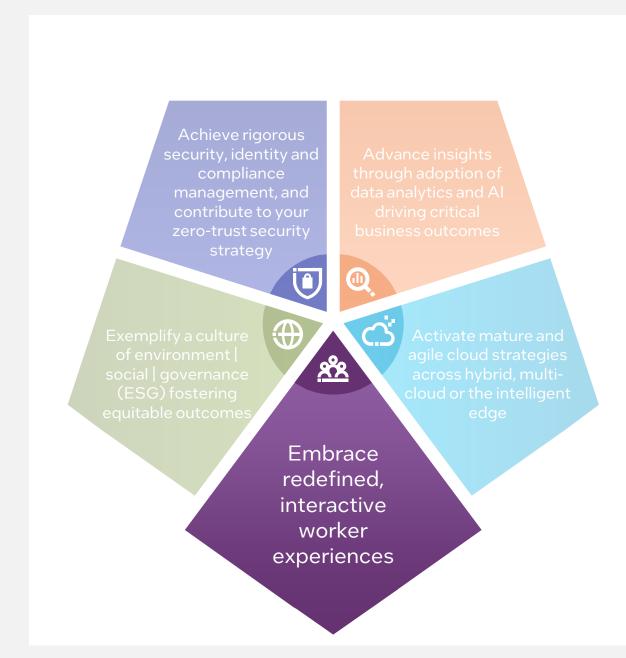
Result

The scalability and on-thefly provisioning of hardware delivered a higher performance at a lower cost and enabled StubHub's goal of continuous deployment getting value to customers faster

"Our goal is continuous deployment, and on GCP it's smoother and easier than before. Checking code and having it flow into production quickly lets StubHub get value to its customers faster. We can add new features or fix bugs instantly—GCP enables that for our entire environment." – Todd Northcutt, senior director of product and technology at StubHub



Embrace redefined, interactive worker experiences







Leaders are Looking to Redefine the Worker Experience Through Hybrid, Interactive Platforms

52% of workers preferred tools providing team collaboration platforms and apps.

The IoT will enable organizations to make better and more timely decisions, improve efficiencies and help businesses reduce the impact on the environment.

Increased adoption of sensors will allow organizations to bring contactless automation at every level, helping them to maintain social distancing norms and create a safe working environment, and eliminate repetitive tasks.

Total Experience (TX)

The Total Experience goal is to drive more outstanding customer and employee confidence, satisfaction, loyalty, and advocacy in the new, hybrid set-up.





Embrace redefined worker and customer interactive experiences

Use technology to provide a hybrid, Total Experience (TX) for distributed workers

Liberate workers through Al augmentation

Provide personalized and productive engagement through process automation

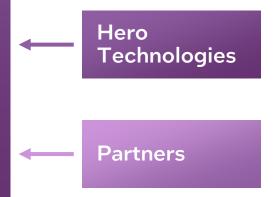




How to Establish a Total Experience (TX) Platform, Providing Hybrid, Interactive, and Personalized Capabilities

Example Desired Business Capabilities

- I need to automate repeatable tasks that are consuming the time of my workers.
- I require a collaborative platform that brings the resources / tools to my workers quickly, securely and accessibly anytime, anywhere, on any device.
- I would like to enable my clinicians and medical staff to have mobile healthcare data securely at their fingertips to increase safety and quality of care.
- I want my customers to get answers to most commonly asked questions fast, and let my workers focus on areas where human intervention is required.



Distinction

- Intel has a strong technical foundation. Intel's products are diverse and reliable, which is why they are trusted by millions of consumers.
- Have successfully cemented name as the leading PC manufacturer.

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BMW Group: Al on Every Employee PC

BMW Group is counting on Intel® OpenVINO™ toolkit for Al-based anonymization for every employee



Business Challenge:

Democratize Al by enabling data scientists and other employees in manufacturing to use Al workloads on classic desktop PCs.



Solution

The BMW Group, together with Robotron and Intel, created several AI APIs and tools based on Intel OpenVINO toolkit and applied the tools to a project to anonymize faces or components.



Result

No servers or other special hardware were necessary to run the anonymization models

"With OpenVINO, the inferencing for the anonymization workflow can be carried out directly on standard hardware and optimized perfectly for this purpose. Thanks to our purpose-oriented partnership with Intel, we were very quickly able to achieve good results for the BMW Group in this case. This means that now potentially every employee is able to use Al applications."

Michael Baling, Robotron

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Exemplify a culture of environment | social | governance (ESG) fostering equitable outcomes







Leaders are being Required to Attain Their Transformation Responsibly Using Environment | Social | Governance (ESG) Strategies

Operating sustainably has become a source of competitive advantage.

Today, ESG considerations drive investment decisions - now totaling **\$35.3 trillion** - accounting for roughly a third of all global assets under management.

65% of employees believe organizations should be responsible for leaving their people "net better off" through work.

Sustainable organizations are purpose-led businesses which inspire their people and partners to deliver lasting financial performance, equitable impact and societal value that earns and retains the trust of all stakeholders.

68% of executives say they have developed a "robust" sustainability plan. However, 21% of workers say their company plans go beyond "superficial."





Exemplify a culture of environment | social | governance (ESG) fostering equitable outcomes

Lead in what's right in sustainability, ESG

Use technology to reduce environmental impact

Use technology to create inclusiveness, furnish skills/training, establish well-being

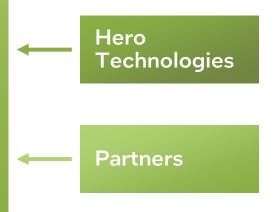




How to Exemplify a Culture of Environment | Social | Governance (ESG) Fostering Equitable Outcomes

Example Desired Business Capabilities

- I need to develop a secure, hybrid work model for my workers / constituents that is inclusive, encourages collaboration, in turn supports well-being.
- I need to establish an understanding and roadmap for how technology can help me reduce environmental impact and report on it.
- I need to create sustainability (TCE and ESG) goals and monitor progress and report.
- I need to launch a secure learning platform enabling my [industry] workers to continue their professional and personal education and certifications.



Distinction

• Intel started engaging with investors around ESG issues nearly 20 years ago. Through so-called "outreach roadshows," company representatives met with investment firms to share Intel's ESG metrics and gather feedback about the data points of greatest interest to investors.

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Électricité de France Deploys Cronos Supercomputer

The second-largest electric utility in the world manages current power facilities while predicting future needs and engineering resources to help be CO2 neutral



Business Challenge:

Validate the safety of nuclear facilities, design new power-generating resources, and leverage the power that artificial intelligence (AI) and machine learning (ML) can bring to scientific insight, business efficiency, and leadership.



Solution

Cronos was built for traditional simulation and modeling of various scientific codes plus to support emerging machine learning use cases. The BullSequana X supercomputer was built by Atos using Intel® Xeon® Platinum 8260 processors with 24 cores, 326 TB of memory, and InfiniBand HDR fabric.



Result

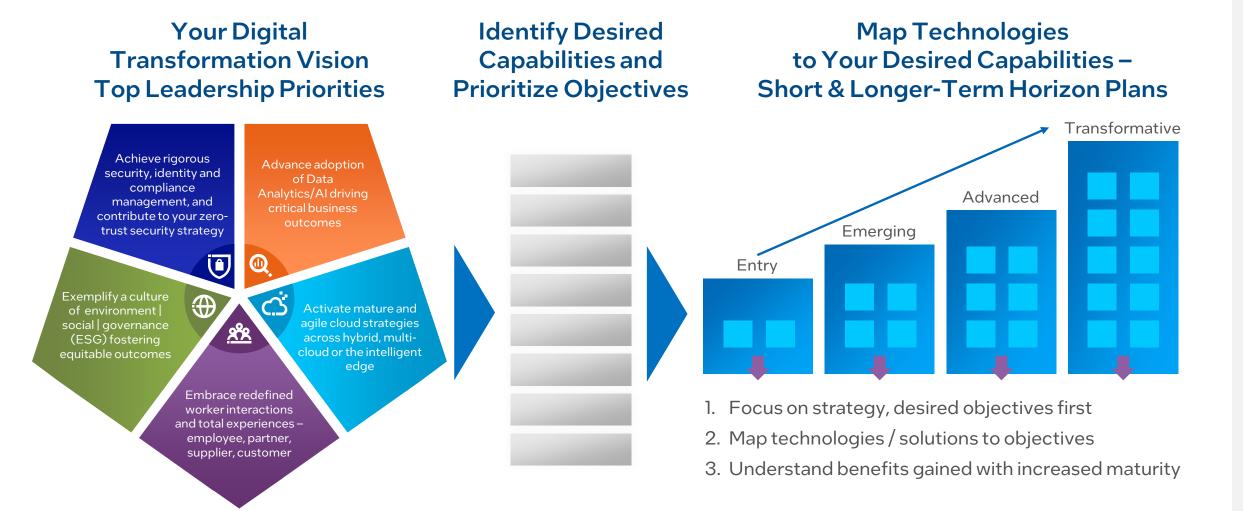
More memory channels and higher memory bandwidth compared to previous Intel Xeon Scalable processors. Intel Xeon Platinum 8260 gives EDF the needed resources for new insights and continuing operations for several years to come.

"When it comes to our facilities, our number one concern is safety. Many things are difficult or complex to measure within a nuclear power facility, so we simulate the evolution of various components using computation. The higher the resolution of these simulations, the more detail we understand about the components' condition, operational efficiency, and reliability."

Alain Martin, Head of Scientific Information Systems, EDF



Start Making Impact: Prioritize Your Objectives to Mapped Technologies and Short- and Mid-Term Transformation





Industry Modernization



Learn about industries seeing the benefits of Intel® technologies and solutions.

Broadcasting
Education
Energy & Utilities
Financial Services
Government & Public Sector
Health & Life Sciences

Hospitality & Restaurants
Industrial
Manufacturing
Retail
Smart Cities
Transportation

<u>Industry Solutions (intel.com)</u>



Intel technologies are helping modernize and transform across industries.



Holistic Solutions: Hardware, Software, Services Enabling an End-to-End Infrastructure

Move Faster

Store More

Process **Everything**

Intel® Ethernet 800 Series

Intel Silicon Photonics

Intel® Tofino™







Software & System Level Optimized Select



Partner Relationships





Superior Partner Experts Across the Ecosystem to Address Short-Term and Longer-Term Business Strategies

Cloud Service Providers











Hardware Manufacturer













System Integrators































Software Vendors























Deployment and Change Management

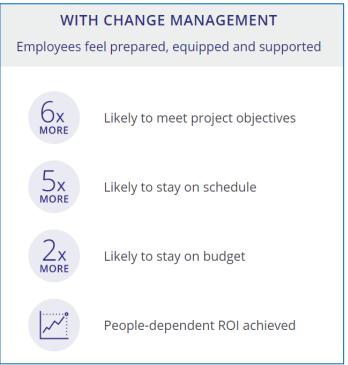




Deployment and Change Management

- ✓ Faster deployment and adoption
- ✓ Workers embrace change
- ✓ Your investments pay off
- Cultural adaptation for individual and enterprise change is achieved
- ✓ Organization is equipped to face future changes





Intel is here to be your trusted advisor and collaborate with partners on hardware, software, service, deployment and change management.

Environment, Social, Governance (ESG)







Rethinking How We Build Data Centers

Liquid immersion cooling and recapturing heat

Benefits

Up to

50%1

Reduction in CAPEX build costs

Up to

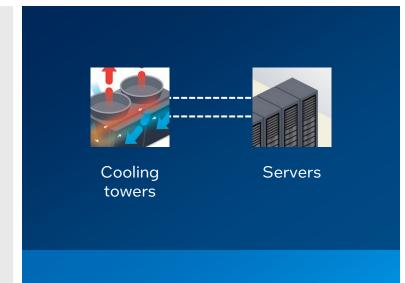
95%1

Reduction in cooling OPEX

Up to

10x1

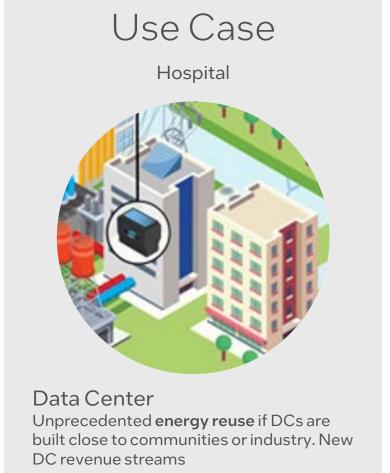
Increase in computing density



Heat capture advantage

99%1

heat captured in the form of water. No water consumed.



1 Source: Submer



Inclusiveness / Training-Learning

Leaders can build the necessary skill base to remain competitive by:

- Realigning employee skills with emerging business needs
- Providing workers with opportunities for personal growth
- Using internal / external secure learning management systems and platforms – inclusive, community, accessible

Impact:

- Increase in employee satisfaction and wellbeing
- 3X ROI for talentfocused organizations

Intel helps you achieve building inclusive communities and well-being through intelligent and personalized training and use of technology solutions.

Operationalizing





Cross-Functional Approach (The Dream Team)

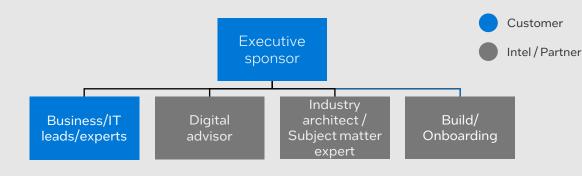
Assumptions

- Executive sponsorship and commitment
- Dedicated points of contact from each business area, and identified personnel provided to the engagement
- Access to relevant stakeholders, business and technology strategy, in addition to, KPIs, IT spend, investment ratios, business capability, organizational and technical information

Team approach

- Encourages innovation and creativity
- Reinforces strong business alignment and partnership
- Action-oriented and delivery-focused
- Prioritizes the areas that matter most
- Focuses inputs on high value areas
- Provides an open and collaborative working environment
- Utilizes plain language that anyone can understand, not just those with technical backgrounds

Team members and responsibilities



Executive sponsor

- Decides engagement direction, reviews the outputs and success criteria agreement
- Provides positive and visible leadership of the engagement within relevant leadership team and senior management

Business/ IT leads / experts

 Provides expert insight into the business and technology requirements, future direction, and solution as required

Digital advisor

- Provides strategic and architectural leadership
- Delivers workshop to the executive sponsor and steering group
- Creates outputs
- Provides expert input

Industry architect/ Subject matter experts

 Provides specialist domain and education industry expertise input into the engagement as required

Next Steps





Next Steps for Now, and Future Planning

1

- Develop a cross-org team and include Intel, Partner
- Review desired business outcomes using top 5 business priorities as launch pad
- Audit security and infrastructure
- Audit your data estate

2

- Use Intel and Partner solution assessment tools to map out short/longer term plans or roadmap, IaaS, PaaS, SaaS, or services
- Create a Project Plan; Assign the project management lead

3

- Partner experts will help with turn-key solutions or develop what is needed
- Deploy with confidence have the right foundation, skilling, change management

A Few Resources

- Intel's Vision for the Future of Technology
- Digital Transformation Strategy Resources and Solutions Intel
- Intel Cloud Tools Performance Optimization and Management
- Hardware-Enabled Security Powered by Intel® Technology | Intel
- ESG: Intel Corporation (INTC)
- Newsroom Home (intel.com)

Get started with an Intel trusted advisor and one of our great partners.

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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.

Intel technologies may require enabled hardware, software or service activation.

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Appendix



We Are Proud. Makers of Wonderful. Global 2000 – The World's Best Regarded Companies

- Trustworthiness
- Social conduct
- Strength of products and services
- How we fare as employer

Intel #170th

Statista surveyed 15,000 respondents from more than 50 countries.



"We are focused on four areas to deliver leadership products and digital innovations in the years ahead: one, be the leader in every category in which we compete; two, execute flawlessly to our commitments; three, passionately innovate with boldness and speed; and four, reignite our culture to attract and motivate the best engineers and technologists on the planet."

Pat Gelsinger, CEO
 Intel Corporation

In Summary ...

Intel is developing technologies – hardware, software, services – enabling us to transform through these challenges over time

Business model

Deployment modelas-a-service

We ask: Is this all we can do? We are working at a TORRID pace.

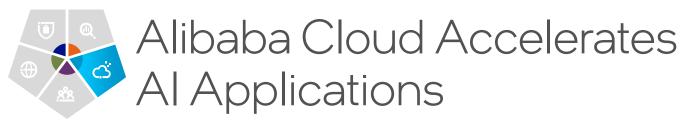
We are the makers of wonderful. Today's renaissance leads us to tomorrow.

Thank you.











Analytics Zoo and bfloat 16 improve the performance of Al applications on seventhgeneration Alibaba Cloud ECS instances



Business Challenge:

Inference and training performance for AI tasks like natural language processing (NLP) and image classification.



Solution

Analytics Zoo open-source analytics and Al platform and bfloat16 accelerate Al applications on an Alibaba Cloud ECS instance with 3rd Gen Intel® Xeon® Scalable processors



Result

Up to 1.775X

more performance on ResNet-50 with Analytics Zoo using bfloat16 vs. FP32.¹



1. Based on Alibaba Cloud testing. Source: Alibaba Cloud. "Detailed explanation of the performance parameters of the seventh-generation high-frequency instance of Alibaba Cloud Server ECS." June 2020. https://developer.aliyun.com/article/765901.

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