

Secure Digital Transformation with SAP on Azure

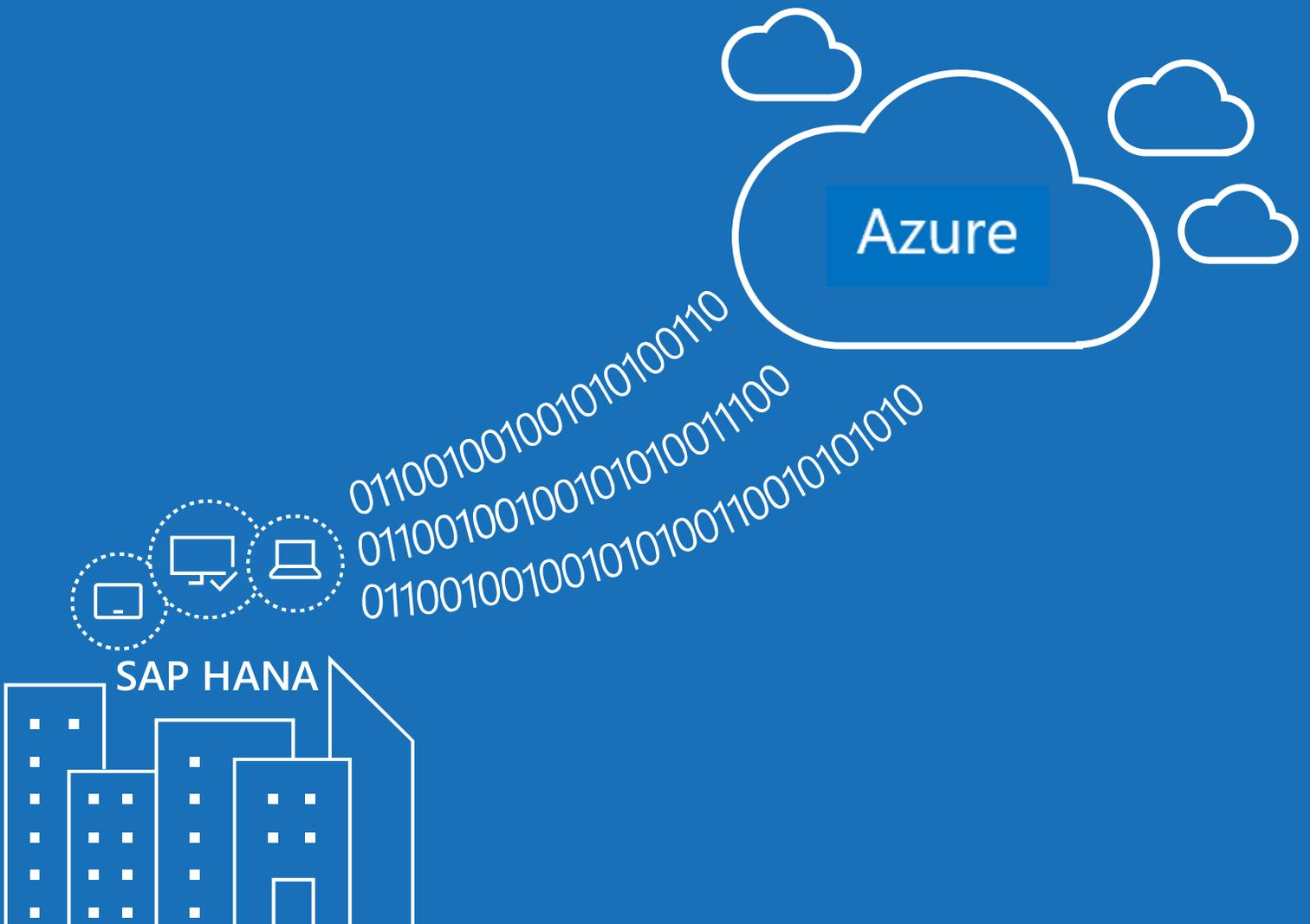


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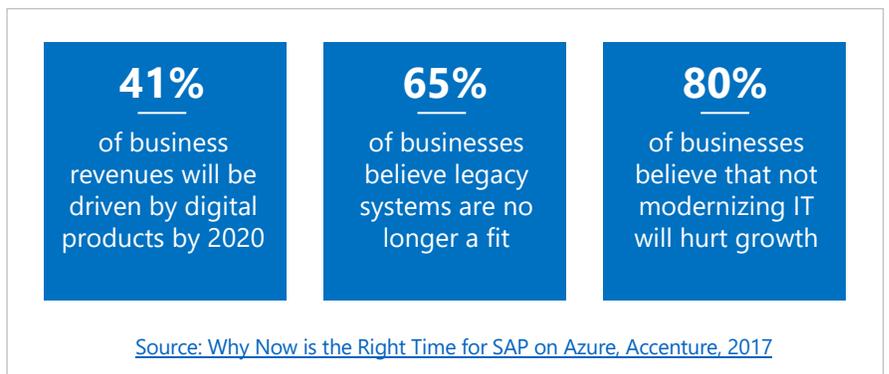
The context

The clock speed of business—and cybercrime—is changing

New disruptive competition has changed the “clock speed” of business. Just as consumer expectations drive businesses to achieve results and outcomes, the growing digital estate has increased pressure on businesses to rethink their cybersecurity approach. According to Ponemon’s 2018 Cost of a Data Breach Study, the global average cost of a data breach is up 6.4% over the previous year from \$3.62 to \$3.86 million. Securing business decisionmakers’ ability to act quickly and make better-informed predictions and decisions is critical.



The new digital landscape



What’s needed: a secure foundation for insights and speed

In today’s lightning-fast digital economy, businesses must improve business processes and use end-to-end, real-time insights from modern ERP systems combined with non-transactional data to succeed in new markets and to reinvent themselves in existing markets. A foundation of trust and security is key to enable this business transformation.

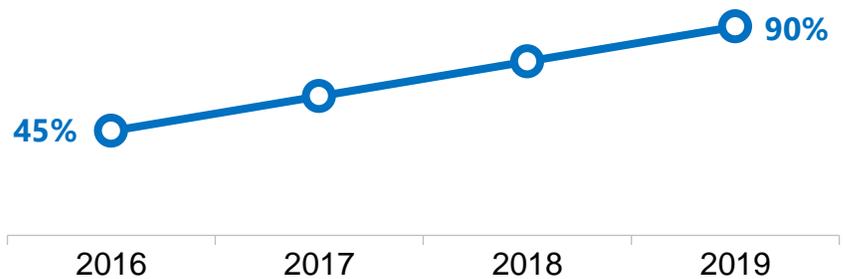
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The cloud

Enterprises are past the tipping point of cloud adoption

Public cloud is being embraced by most enterprises today, and the majority of IT spending is now focused around cloud applications and services, as a “cloud-first” procurement strategy is now the norm.

The number of enterprises using the public cloud will increase from 45% in 2016 to more than 90% by the end of 2019, according to Morgan Stanley.



It’s about the need for speed, automation, scalability, time-to-value, and innovation – and cloud becomes more than just a deployment option, it becomes an enabler of expanded capabilities. As Frank Gens at IDC noted in 2017:

“The cloud is becoming enterprises’ most critical and dependable source of sustained technology innovations.”

Azure’s uniqueness lies in the enterprise

Azure, Microsoft’s cloud platform, is an evolving collection of integrated cloud services spanning compute, storage, data, networking, and applications. The platform offers enterprises a smooth and seamless transition to the cloud by offering Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and a hybrid cloud model that leverages organizations’ existing investments on-premises with cloud resources.

“Some of Microsoft's largest customers are moving their production SAP workloads to the Azure Cloud, offering conclusive proof that the cloud has become a mainstream enterprise-technology foundation for anything a global corporation chooses to deploy there.”

– Bob Evans, Forbes, 2018

The risk today is around *not* moving to cloud

Today, the risks around the cloud are the opportunity costs of *not* leveraging its benefits, particularly for SAP and SAP HANA application landscapes. Cloud technologies not only inspire business transformation but enable greater security resiliency for the business. With Azure, organizations can access vast security resources and knowledge, including threat intelligence, and are able to rapidly provision new security capabilities from the cloud to adapt to attacker’s changing tactics. The opportunity for SAP customers on Azure is the value realization of a modernized SAP landscape combined with a secure global hyperscale cloud.

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The secure path

Microsoft Azure is the hyperscale public cloud built to meet enterprise SAP requirements

Azure's unique ability to drive security for SAP workloads is derived from Microsoft's enterprise-grade security experience, culture, and investments.

When SAP estates are moved to the Azure cloud, the business benefits from built-in security for its data and operations:



Microsoft's investment in security



Global reach and compliance



Enterprise DNA, partners, and support



Microsoft and SAP deep partnership



Reliable – High availability for business continuity

1. Microsoft's investment in security

Microsoft invests \$1 billion on security research and development every year. Enterprise-grade security and privacy are built into the Azure platform including ongoing rigorous validation by real world tests, such as [Red Team exercises](#). These tests enable Microsoft to test breach detection and response as well as accurately measure readiness and impacts of real-world attacks, and are just one of the many operational processes that provide best-in-class security for Azure.

Microsoft's S/4HANA-on-Azure platform incorporates sophisticated code-scanning capabilities, threat and vulnerability management, standards-based authorization design and development, and system hardening.

Azure's built-in security capabilities help protect your applications and data, support your compliance efforts, and provide cost-effective security for organizations of all sizes:

- **Manage and control identity and user access:** Azure helps you protect business and personal information by enabling you to manage and secure user identities and credentials with Azure Active Directory (Azure AD). Azure AD protects accounts using passwordless authentication, as well as Azure Multi-Factor Authentication to ensure that only authorized users can access your environments, data, and applications; and can be integrated with [SAP HANA](#) and [SAP NetWeaver](#) to control access, enable single sign-on, manage accounts from one central location.
- **Encrypt communications and operation processes:** Azure uses industry-standard protocols to encrypt data at rest and in transit. Your data is secure as it travels between devices and Microsoft datacenters, as it moves within datacenters, and when your data is at rest in Azure Storage. First, Azure Key Vault enables Azure subscribers to safeguard and control cryptographic keys and other secrets used by cloud apps and services. Encrypt your data before putting it into Azure and maintain complete control over the keys with client-side encryption for Azure Blob storage. Next, Azure is the first public cloud to provide protection for data while in use. Azure Confidential Computing is the cornerstone of Microsoft's '[Confidential Cloud](#)' vision, helping to protect data while being processed in the cloud. Additionally, you can leverage partner solutions to protect your data with Azure Information Protection as it leaves SAP.
- **Increase network and infrastructure security:** Azure provides the security-hardened infrastructure to connect virtual machines (VMs) to one another and to connect on-premises datacenters with Azure VMs. Azure blocks unauthorized traffic to and within Microsoft datacenters using a variety of technologies. Azure Virtual Networks extend your on-premises network to the cloud through IPsec-based site-to-site VPN technology or through a high-speed Azure ExpressRoute dedicated WAN link.
- **Defend against threats:** Microsoft continuously monitors servers, networks, and applications to detect threats. The Azure multipronged threat-management approach includes technologies and processes to constantly strengthen Azure's defenses and reduce risks and include intrusion detection, distributed denial-of-service (DDoS) attack prevention, penetration testing, behavioral analytics, anomaly detection, and machine learning. Azure Security Center provides integrated security monitoring and policy management across your Azure subscriptions, helps detect threats that might otherwise go unnoticed, and works with a broad ecosystem of security solutions. Azure Security Center makes Azure the only public cloud platform to offer continuous security-health monitoring.

- **Shared responsibility:** While the cloud offers considerable advantages for security and compliance efforts, customers are still responsible for taking steps to protect their users, applications, and service offerings. Microsoft is your partner to help meet these security, privacy, and compliance needs, aligning with considerations for shared responsibilities laid out by the National Institute of Standards and Technology (NIST) (Special Publication 500-292) and the PCI Standards Council (Information Supplement: PCI DSS Cloud Computing Guidelines). [Learn more](#) about Microsoft's shared responsibility model for cloud computing and security, and tools that enable you to manage and administer these responsibilities.

2. Global reach and compliance

Azure has the largest compliance portfolio of any cloud with more than [85 offerings covering multiple industries and geographies](#), including [GDPR regulations](#). Azure has more than 74 international and industry-specific compliance certifications, such as SOC 1, SOC 2, ISO 27001, and 5 regions for Government including SAP HANA certified M-series VMs in 2 GovCloud regions.

Built-in compliance solutions help businesses remain compliance from discovery to reporting:

- **Discover:** Search and identify personal data with Azure Search, Azure Data Catalog, and Azure Active Directory (Azure AD), along with specialized tools such as Power Query and Query Explorer. Facilitate data classification with Azure Information Protection labels and data source annotation in Azure Data Catalog.
- **Manage:** Microsoft Azure enables data governance practices and processes in accordance with GDPR via Microsoft Azure AD, while Azure Role-Based Access Control helps manage access to Azure services containing personal data.
- **Protect:** Microsoft's [Secure Development Lifecycle](#) incorporates privacy-by-design and privacy-by-default methodologies. Azure tools enable you to secure/encrypt personal data at rest and in transit, detect and respond to data breaches, and facilitate regular testing of security measures. Microsoft itself is committed to physical control at its data centers, as well as tight internal controls to sensitive data and multiple levels of monitoring, logging, and reporting for all Azure products.
- **Reporting:** Microsoft cloud services offer embedded auditing services and analytics that can help you meet the GDPR standards for transparency, accountability, and record-keeping. For example, Azure AD logs detail sign-in activity and application usage, while Azure Security Center helps collect and review security logs across Azure applications and services.

The Azure cloud is the leader in global coverage, powering high-performance services worldwide with a growing network of datacenters and backed by Microsoft's multi-billion dollar investment in datacenter infrastructure.

Microsoft’s regional datacenter strategy offers greater flexibility as well as compliance with GDPR requirements regarding the flows of personal data into and out of the EU and flows of personal data to third-party service providers.



Today Azure has 50 regions around the world and supports 10 languages and 24 currencies. Azure’s global coverage enables enterprises to deliver low-latency services to users around the world. Enterprises can co-locate data close to users, and Azure’s 1,500+ peering points for express routing ensure reliable high-speed connectivity.

3. Enterprise DNA, partners and support

Microsoft has decades of experience serving global enterprises, understands their needs, and has a large portfolio of enterprise-grade products and services, along with a thriving security partner ecosystem to augment your security technology or provide specific expertise, scale, and outsourcing. As the most partner-friendly cloud, Azure invites you to bring your trusted partners and SI along as solution collaborators. In addition, Microsoft’s SAP certified high performance infrastructure supports lifting and shifting as-is or transformation with SAP HANA.

4. The Microsoft and SAP strategic partnership

Microsoft and SAP are committed to empowering digital transformation and innovation for their customers with a 30-year partnership that is optimized, trusted, and seamless. Roadmaps and innovation are, by design, driven by co-located developers. SAP is running on Azure for their business-critical systems and [Microsoft runs SAP, including SAP S/4HANA](#).

In addition, integrated enterprise-class support is provided by co-located support staff, while co-located engineering and aligned sales and marketing teams ensure a seamless customer experience.

In November of 2017 [the two companies announced an expanded partnership](#) offering customers joint cloud capabilities and a trusted road map.



Microsoft and SAP CEOs announcing their expanded partnership in 2017

5. Reliable high availability for business continuity

Azure offers a wide range of easy and economical high availability, backup, and disaster recovery services that protect and natively support the widest range of enterprise applications of any cloud DR provider. Failover your apps – and your entire datacenter – with automated recovery plans in a matter of minutes and hours instead of weeks or months and reap the benefits of global hyperscale cloud economics. For reliable business continuity, Azure uniquely offers 99.99% SLAs for mission-critical SAP deployments.

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The results

The value of SAP on Azure

Companies that conquer new markets do so because they have access to real-time insights and the ability to quickly pivot and scale their businesses. Businesses can achieve this more securely by running their core operational processes on SAP's next-generation intelligent ERP platform, SAP S/4HANA, in the Azure cloud.

Microsoft completes its journey to SAP on Azure

In February 2018, Microsoft finished moving its entire SAP landscape – *an estimated 50 terabytes* – to Microsoft Azure on the S/4HANA platform, ending a fast-moving year-long journey. Today, Microsoft's SAP environment includes approximately 600 application servers and is our largest internal application running on Azure, supporting approximately 10,000 business users.

Microsoft has seen approximately a 15 percent cost savings when moving from our on-premises physical and virtual servers to Azure, savings that come from fine-tuning usage, snoozing systems at night and on weekends, and by leaving behind old processes that aren't needed any more.

Securing its growing SAP-data footprint is a driving factor behind a multifaceted approach to modernize and streamline our overall security and governance, risk management, privacy, and compliance capabilities. As leaders in developing enterprise software, Microsoft and SAP continue to collaborate closely to provide the preferred foundation for enabling a safe and trusted path to digital transformation for other enterprises.

"Moving to the cloud will save us money, but this is really about becoming more agile and innovative...our teams can stop worrying about keeping our infra-structure up and running and focus on innovating without a lot of heartburn. They can run experiments, learn, and then take us in new directions."

– Mike Taylor, Manager of the Microsoft SAP program in Core Services Engineering and Operations

Co-op champions intelligent customer experience with SAP on Azure

Every week, more than 11 million people shop at UK retailer Co-op, and with over 8 million members, it's one of the largest consumer owned co-operatives in the world. Having SAP hosted on Azure eliminates the headaches of building and managing its own infrastructure because security and maintenance are handled by Microsoft.



Using the Intelligent Cloud's pay-as-you-grow model allows Co-op flexibility, agility and cost efficiency. Co-op's teams are free to focus on excelling at retail innovation and customer service.

"Microsoft gives us ease of management, security, analysis, monitoring and reporting, so overall the experience for everybody is significantly better... Running SAP on Azure is drastically improving efficiency and quality across our stores; we've estimated we'll save £58 million by 2022."

– Bob Marchant, Head of Co-op Supply and Supplier Relationship Management

GWC implements SAP on Azure for robust disaster recovery and next-generation security

A leading provider of logistics and supply chain solutions in the Gulf region, Gulf Warehousing Company (GWC)'s commitment to protecting client information and digital assets saw the company seek out a reliable, cost-effective solution to prevent data leakage or loss. This solution would have to comply with GWC's longstanding commitment to high international standards, including the ISO 27001 information security management and European standard GDPR accreditations.

GWC
Delivering Logistics Innovation

Microsoft

Gulf Warehousing Company

GWC, trendsetter and leading provider in the logistics and supply chain industry, implemented a disaster recovery on Azure, and adopted Office 365 to enhance productivity and efficiency amongst the company's divisions.

“
We sought to implement the disaster recovery on Azure as its cloud services allowed for immediate deployment. Additionally, transferring from CAPEX to OPEX model resulted in huge savings.
”

Maged Kamal
Senior Director - Information Technology, and GM at LEDD Technologies

100% SAFE

- NO DATA LEAKAGE OR LOSS AT ANY GIVEN TIME OCCURS
- RELIABLE AND COST-EFFECTIVE SOLUTION FOR DISASTER RECOVERY
- BETTER INTEGRATING DIVISIONS WITHIN THE BUSINESS
- MAXIMUM UTILIZATION OF THE IT INFRASTRUCTURE

Azure Office 365

LINK TO THE FULL CASE STUDY
[HTTP://AKA.MS/GWC](http://aka.ms/gwc)

Maged Kamal, Senior Director, Information Technology at GWC and General Manager at LEDD Technologies, notes that “As a trendsetter and a leader in the market, we sought to implement the disaster recovery on Azure as its cloud services allowed for immediate deployment. Additionally, transferring from a CAPEX to an OPEX model resulted in huge savings to the company.”

“We fully utilize Azure AD authentication functionalities, including risk-based authentication. When an employee’s account signs in from Kuwait, and then five minutes later from UK, we get alerted that there is a high probability that this user account is compromised. With such a trigger, we can check and mitigate security threats promptly.”

– Maged Kamal, Senior Director, Information Technology at GWC and General Manager at LEDD Technologies

Eneco’s secure migration to the cloud to deliver sustainable energy



Eneco, a sustainable energy company based in the Netherlands, wanted to develop sustainable energy solutions in the most efficient way possible, yet its own legacy data estates and infrastructure were complex and outdated. Moving its infrastructure and systems to Microsoft Azure allowed Eneco to take advantage of the many benefits of SAP on Azure.

Consolidating both datacenters and costs to achieve the flexibility, scalability, and availability it desired, the company is already in a position to use technology as an enabler for the business.

“In a big corporate environment like Eneco, it’s important to be on the same page regarding connectivity and security, for example. It’s far simpler if you move your data and services ‘as is’ and then adjust things as needed once you’ve moved to the cloud. It makes life a lot easier.” – Maximilian Ebenhoch of Conclusion, Eneco’s migration partner

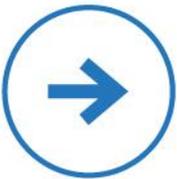
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Conclusions and recommendations

Run your business securely with your SAP applications and their data in the Azure global hyperscale cloud

To succeed in today's disruptive environment, it's time to start planning the move of your SAP systems to Azure. By marrying your SAP data to other data on Azure's agile cloud platform, you'll be able to securely use end-to-end, real-time insights to quickly enter new markets, fend off disruptive competition, improve your margins, and grow your business.

For a successful, secure journey to the cloud, we recommend you build internal allies and be proactive in engaging and collaborating with your technical colleagues. Pick your partners carefully and bring them along. Select a business unit or focus area, such as logistics, planning, or financials. Engage in a free workshop with Executive Security Advisors and SAP on Azure cloud architects by contacting your Microsoft Account team. Come up with a POC and develop and iterate on it. Develop your cloud roadmap and embark on the journey.



For additional information please visit the [SAP on Azure website](#).