



Colocation: Build a Scalable Cloud Foundation for AI

Unify apps, data, and infrastructure to innovate securely



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Leap into the era of AI innovation

Across industries, AI is quickly becoming a driving force behind innovation strategies. For many, it represents a prime opportunity to enhance business agility and stay ahead of the curve.

AI can be a powerful tool to help tackle some of today's biggest business challenges, including rising costs, security risks, compliance demands, and unpredictable market changes. By taking advantage of AI's speed and efficiency, companies can enhance their agility and expand their capacity for innovation, allowing them to adapt quickly to change, adopt bold new strategies, and stay competitive in an ever-evolving landscape.

For many, meeting these expectations will require a shift in the way they approach infrastructure, data, and applications. Whether they're using proprietary software or collaborative, open-source technology like Linux, having a unified and scalable foundation is critical.

A cohesive infrastructure ensures that AI applications can seamlessly integrate with existing systems, efficiently process large volumes of data, and deliver the impactful results companies need. Without this solid groundwork, the full potential of AI—including its ability to drive innovation and agility—cannot be realized.

If your business is planning to use AI, read on for a comprehensive breakdown of the barriers to AI readiness. Then, find out how the concept of colocation can help eliminate those obstacles to create an IT estate that will let you hit the ground running with AI.

Business owners expect AI to have a positive impact across multiple areas:¹

64% improve customer relationships

64% increase productivity

60% drive sales growth

59% reduce costs

¹ Forbes Advisors, How Businesses Are Using Artificial Intelligence In 2024

Eliminate the barriers to AI readiness

Preparing your IT estate for AI involves navigating several critical challenges. Successfully addressing these obstacles is essential to preparing to use AI to drive productivity and deliver new customer experiences. Whether you're looking to enhance customer engagement with personalized recommendations, streamline operations through automated workflows, or gain deeper insights from data analytics, removing these barriers will help you use AI's capabilities more effectively to drive your strategic initiatives forward.

Barrier to AI-readiness	Impact	Solution
Aging on-premises infrastructure and databases are costly to maintain	Maintaining legacy systems diverts energy, budget, and time away from strategic AI initiatives, especially as the end of support for outdated systems can lead to disruptions, security vulnerabilities, and increased risk of downtime.	Free up resources by opting for cloud-based solutions.
Data is isolated in silos	Silos make data inaccessible to the applications that need it, while also creating management and security inefficiencies. Plus, siloed data can't be used to extract insights and drive better decision making.	Transition to a stable and reliable platform that unlocks the power of your data by breaking down silos and offers high availability and performance for AI applications.
Unreliable infrastructure hinders AI initiatives	Infrastructure instability can negatively impact operations, making it challenging to maintain the consistent performance that AI applications require to deliver real value.	Adopt reliable cloud infrastructure that can scale with your data and performance demands.
On-premises IT estates lack efficient scalability	Older systems and databases struggle to adapt to the varying levels of data processing and storage required by AI and machine learning, leading to either over-provisioning or underutilizing of resources.	Use solutions that can grow and adapt to AI needs without incurring unnecessary costs.
Sophisticated cyber threat landscape	Protecting AI and apps from advanced cyber threats requires comprehensive security across multiple environments, stretching limited resources and possibly creating vulnerabilities.	Use cloud-native security and threat detection to help safeguard workloads.

Discover the link between innovation and colocation in the cloud

The barriers to AI readiness are a result of how IT ecosystems grew organically over time. In many cases, businesses have expanded their infrastructure, databases, and applications incrementally, responding to immediate needs as they arose. This piecemeal approach made sense at the time—organizations were simply meeting the moment's demands to keep operations running smoothly.

However, the rapid advancement of AI has introduced a new level of demand that these organically growth systems aren't equipped to handle effectively.

AI workloads require seamless data integration, high-performance computing, and robust scalability—things that legacy systems, built in a time of different priorities, can't support. The challenge now isn't just about adding another layer to an existing infrastructure but making a significant shift to modernize the entire ecosystem.

By **colocating** in the cloud—unifying infrastructure, databases, and apps—businesses can create a more seamless and integrated IT estate that allows them to seize on AI for fast, ongoing innovation.

What is colocation?

Colocation is an approach that aims to eliminate the challenges that come with having a disjointed ecosystem. In cloud computing, colocation generally refers to the process of migrating an organization's applications, data, and infrastructure from on-premises or dispersed data centers into a single cloud environment. This consolidation enables organizations to use cloud services and centralize their IT resources within one cloud provider.

The key elements of colocation typically include:

- **Applications:** Transitioning legacy or custom-built applications to run on cloud-native services or virtual machines (VMs) within the cloud provider.
- **Data:** Migrating databases and storage systems to cloud-based solutions that offer scalability, redundancy, and higher availability.
- **Infrastructure:** Moving physical servers or virtualized environments from a colocation facility or in-house data center to infrastructure-as-a-service (IaaS) solutions provided by the cloud vendor.

Colocate infrastructure to optimize operations for AI

- Optimize performance and reliability
- Improve cost-efficiency and scalability
- Enhance security and compliance

Colocating your infrastructure plays a critical role in meeting the demands of advanced AI workloads. It delivers high availability, low latency, and robust security—ensuring uninterrupted and efficient operations for your mission-critical applications.

Sharing infrastructure also helps avoid unnecessary expenses by allowing you to scale resources as your needs fluctuate. Plus, it helps enhance security and compliance by providing advanced physical protections and industry-standard certifications, helping you ensure regulatory requirements are met while still enabling full control of your infrastructure.

Colocate databases to achieve AI-ready data management

- Improve data management and accessibility
- Simplify data security and compliance
- Maintain high data quality and availability
- Reduce storage costs
- Optimize workload performance

To achieve optimal performance and value, domain-specific AI models must be colocated with data in the cloud. Only the cloud has the flexibility, speed, and security needed to manage AI's complex data processing and storage demands.

Moving your databases to the cloud helps break down data silos, reduce latency, and significantly boost performance for data-intensive AI and machine learning applications.

Cloud-based solutions also provide multilayered security, making it easier to comply with industry regulations while ensuring your data remains protected. Additionally, the cloud helps to ensure consistent data availability and reliability, enabling real-time AI-driven analysis. You can also use your organization's data to build copilots and GPTs, feeding AI applications and uncovering valuable insights.

In terms of cost, colocating databases also allows you to better manage expenses by eliminating the overhead of on-premises storage, using the cloud's scalability to only pay for the capacity you need. Meanwhile, high availability and scalable resource management contribute to smooth operations for even the most data-intensive AI tasks.

Colocate applications to infuse them with AI

- Accelerate deployment and innovation
- Achieve greater flexibility and integration
- Drive better performance and availability for AI apps

Developing and scaling applications quickly is crucial in today's fast-paced AI-driven environment. Colocating your applications in the cloud lets you adapt rapidly to market changes, developing and deploying apps that set you ahead of the curve.

Colocating your apps in the cloud also allows you to integrate them with advanced cloud services and infuse them with AI capabilities like speech, vision, and document intelligence.

Using AI-enhanced solutions in the cloud, you can deliver high-performance, low-latency apps that offer end users a consistent and satisfying experience.

Safeguard against cyber threats in the era of AI

Cybercrime comes in many forms—identity fraud, data theft, ransomware, copyright infringement, and phishing. As businesses strive to strengthen their security posture, bad actors increasingly use AI to deliver more sophisticated and frequent cyberattacks, making it more crucial than ever to stay ahead of these evolving threats.

For businesses, the loss of personally identifiable information (PII) from customers or employees is among the most serious risks. When sensitive data is compromised, the fallout can be severe, damaging reputations and significant revenue losses.

By colocating your infrastructure, databases, and apps in the cloud, you can enable comprehensive protection that spans the entire lifecycle of your workloads. This includes safeguarding your code from the early stages of development, testing and deployment, and running workloads in the cloud. With the right cloud tools and security protocols in place, you can confidently manage vulnerabilities, enforce compliance, and maintain data integrity while taking full advantage of the cloud's scalability and flexibility.

More sophisticated attacks

Among security operations professionals who have seen an increase in cyber attacks, 85% attribute the increase to the use of generative AI.²

The cost of data breaches

In 2024, the average cost of a data breach rose to 4.88 million USD—10% higher than the previous year.³

²Deep Instinct Voice of SecOps 2023, Generative AI and Cybersecurity: Bright Future or Business Battleground?

³IBM, Cost of a data breach 2024

Protect workloads from sophisticated threats with cloud-native security

Defending against cyber threats isn't just about keeping your data safe—it's about protecting the future of your business.

As the only cloud provider that is also a security vendor, Microsoft provides end-to-end security from code to cloud with a comprehensive portfolio that includes identity and access management, threat protection, information protection, and security management. By colocating in Azure, you can help secure vital workloads and consistently reinforce your security stance against the ever-changing tactics of cybercriminals.

Build a security framework that protects critical workloads while enabling AI innovation

With [Microsoft Defender for Cloud](#), you can streamline your security management and gain advanced threat protection across cloud environments.

Using intelligent threat detection and continuous monitoring, your teams can spot vulnerabilities early, allowing them to take proactive steps to secure your systems. This not only helps keep your data safe but also supports the integration of AI innovations within your business. When you have robust security measures in place, you can deploy AI-driven processes knowing your sensitive data and applications are protected from emerging threats.

Additionally, [Microsoft Sentinel](#) helps you strengthen your security operations with AI-powered analytics. Sentinel uses AI to analyze large amounts of data, recognize patterns, and predict potential attacks, helping you stay ahead of cyber threats. This is especially critical when scaling AI innovations, as it ensures your AI applications and the underlying infrastructure remain secure as you explore and iterate new opportunities.

By combining the capabilities of Defender for Cloud and Microsoft Sentinel, you can create a security framework that protects your critical workloads while letting you pursue AI advancements confidently. With comprehensive security in place, your teams are freer to explore new opportunities without compromising the safety of your systems and data.

Build a culture of trust around AI

In addition to colocation, another critical step in preparing for AI is ensuring it will be used responsibly. By taking a human-centered approach to AI, you can help ensure that the systems you create benefit people while mitigating potential harms, fostering a culture of trust around AI. This is achieved through research-driven best practices that prioritize human well-being.

Human-centered AI focuses on building solutions that serve society and consider people at every stage of the development process—from initial design to deployment. Moreover, AI systems should be designed to perform as intended for users under diverse conditions, ensuring they remain effective even when facing adversarial threats.

Microsoft created the Responsible AI Standard to provide businesses and organizations with a comprehensive framework for promoting fairness, reliability and safety, privacy and security, inclusiveness, transparency, and accountability in their AI strategies.

[Learn more](#)

Create a reliable cloud foundation for AI with Azure

If your business has plans to use AI, set it up for greater success with a foundation in the cloud.

Migrating and colocating applications, databases, and infrastructure in Azure helps you achieve enhanced performance, cost-efficiency, and security that isn't possible with disparate environments or on-premises systems.

For example, a Forrester Total Economic Impact™ study found that using Azure infrastructure significantly impacted an organization's flexibility and spending. Organizations with Azure infrastructure reported having greater flexibility and scalability to innovate with AI and machine learning compared to those relying on on-premises systems, with 77% of Azure users saying that their environment made it easier to innovate with AI, compared to only 34% of on-premises users.⁴ Meanwhile, lack of scalability was often cited as a key barrier by organizations that tried—and failed—to deploy AI on-premises.

In addition to gaining greater confidence and agility for AI innovation, organizations using Azure infrastructure reported greater cost savings for their AI initiatives, reporting 17% lower costs when deploying AI and machine learning on the Azure cloud.⁴ The results of this survey showed that using a purpose-built cloud platform—as opposed to slowed on-premises systems—provided a better foundation for enabling rapid, cost-efficient AI innovation.

“[When my firm migrated to Azure,] suddenly we had an environment available with a lot of options that we didn't have before we migrated. Now, we can go to the marketplace and say we need AI. We can experiment [and] make a proof of concept, and if it works and it's valuable for the money, we can decide to go to production more easily.”

— Head of Cloud and Tooling,
transportation services organization⁴

⁴[The Total Economic Impact™ Of Migrating to Microsoft Azure For AI-Readiness, a commissioned study by Forrester Consulting, June 2024.](#) Results are for a composite organization based on interviewed customers.

How colocating in Azure accelerates AI-readiness

Infrastructure

Azure provides access to **more than 60 global regions**, offering unmatched stability and reliability for colocated infrastructure. You can also use its AI-enhanced central management and security features to develop and easily scale applications across environments rapidly.

Plus, compared to on-premises or distributed workloads, Azure provides purpose-built AI supercomputing infrastructure to further enhance your AI capabilities while helping you reduce costs.

Cost savings opportunities for infrastructure

- Minimize costs and scale resources efficiently with flexible consumption models like [Azure Reserved Virtual Machine Instances](#), [Spot Virtual Machines](#), and [Azure savings plan for compute](#).
- For customers with existing Windows Server and SQL Server licenses, ave an average of 36% compared to the leading cloud provider with [Azure Hybrid Benefit](#),⁵ or up to 76% savings for those with Linux subscriptions.⁶

⁵Savings based on sample of VMs across variety of regions including Dv4 in West Europe. Savings are calculated from full price (license included) for SQL Server Enterprise edition VM against reduced rate (applying Azure Hybrid Benefit for SQL Server and Windows Server), which excludes Software Assurance costs for SQL Server and Windows Server. Actual savings may vary based on region, instance size, compute family, and EA agreement. Prices as of January 2023, subject to change.

⁶The 76% savings is based on one standard D2s v3 Azure VM with RHEL or SLES subscription in the East US region running at a pay-as-you-go rate vs a reduced rate for a 3-year Reserved Instance. Based on Azure pricing as of October 2022. Prices subject to change. Actual savings may vary based on location, instance type, or usage.

Databases

Colocating databases in Azure offers numerous advantages for organizations looking to use AI solutions. By unifying data in the cloud, businesses can reduce latency and eliminate silos, allowing AI to be seamlessly integrated across operations. Azure offers advanced AI-enhanced tools, such as Azure AI and Copilots, that can further empower organizations to extract meaningful insights from their data, enhancing decision-making and operational efficiency.

Features like snapshot copies, backup and restore, encryption, and data replication between [Azure regions](#) ensure [high availability](#) and data integrity, even during unexpected disruptions. Additionally, colocating data in Azure helps optimize storage costs by eliminating the need for expensive on-premises solutions, while keeping data close to analytics tools for faster insights. Organizations can also use Azure's generative AI apps to build even more powerful AI-driven experiences, making their data work harder and smarter.

Securing your data in the cloud

- Protect data from unauthorized access, safeguard credentials, and adhere to strict regulations with Azure role-based access control, and [identity access management](#).
- Remediate potential threats in real time with intelligent [advanced threat detection](#) and use [built-in security controls](#) like T-SQL, authentication, networking, and key management to enable multilayered protection. Plus, get the [most comprehensive compliance](#) coverage of any cloud database service.

Applications

Colocating your apps in Azure makes it easier for your teams to infuse existing apps with advanced AI features and build high-performing AI apps from the ground up. Using AI tools like Azure OpenAI Service and Copilot, you can accelerate deployments, speed up time to market, and quickly iterate on your apps. With Azure Arc, you can extend Azure management and services to any infrastructure, enabling seamless AI integration and creating versatile and robust AI-powered solutions.

Design, operate, and optimize high-performing apps

- Infuse apps with advanced AI capabilities: Use powerful language models to build intelligent applications, automate tasks, and gain insights from data with [Azure OpenAI Service](#).
- Enhance productivity with an AI-driven companion: Streamline operations, improve decision-making, and boost overall efficiency with real-time assistance from [Copilot](#).

Take the next steps

Colocation is a critical step in preparing your IT estate for AI. By removing the challenges of a disjointed ecosystem and unifying your infrastructure, databases, and apps in Azure, you can free up valuable resources, ensure consistent performance, enable scalability, and maintain the security of your AI applications.

75%

of organizations using Azure infrastructure said that migrating to Azure significantly reduced the barriers to enabling AI.⁴

Whether you're just beginning your cloud journey or finishing up the last mile, Azure offers the guidance and support needed to achieve a secure migration for your workloads. Offering resources like Azure Migrate and Modernize, [FastTrack for Azure](#), and the [Microsoft Cloud Adoption Framework](#), Azure gives businesses the tools they need to address key migration concerns, including compliance, security, and scalability.

With tailored support from Azure, your organization can streamline your transition to the cloud while maintaining strong security measures every step of the way.

Envision an AI-ready IT estate with Azure

- Free up resources for strategic AI initiatives
- Enable high-performing AI and machine learning apps
- Scale AI apps to meet demand
- Use cost-effective, cloud-native solutions
- Protect AI apps, data, and workloads

Colocate your infrastructure, databases, and apps today—innovate with AI tomorrow

[Explore Azure Migrate and Modernize](#)

[Talk to an Azure sales specialist](#)

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