Microsoft Azure

Cloud Lessons Learned

Learn how four companies migrated their databases and workloads to Azure

Contents

Introduction

Cloud computing solves real challenges, including ageing hardware, constantly shifting market conditions, security threats and compliance requirements. These challenges pressure budgets and teams and hinder your ability to build trust and adopt cutting-edge AI technology.

Moving databases and workloads to the cloud can be daunting, but the result is worth it. With careful planning and a review of different migration scenarios, your organisation can confidently migrate so you can develop new features and products faster, unify processes, identify cost savings and sharpen your business' competitive edge by laying a secure framework for integrating AI capabilities.

Migrating and modernising with Azure helps establish a future-ready foundation that lets you develop new solutions and features rapidly while getting better performance from your investments.

A key part of that foundation is ensuring you have security at every step. With built-in security and sophisticated threat detection, Azure provides peace of mind for teams so they can build and deploy new apps without the constant fear that they may be putting data at risk. This multi-layered security also extends to hybrid environments, meaning you don't need a full migration to take advantage of advanced protection features. Establishing a strong defensive framework for your data allows you to innovate boldly, create better customer experiences, respond to business demands more quickly and stay agile in a world of constant change.

Many businesses, including Orca Security, Loyal, eClinicalWorks and Tecnicas Reunidas, have already migrated their databases and workloads to Azure and integrated advanced services into their operations. Learn how they each found the right solution for migration with Azure, the processes they used and how they've integrated AI and cloud-native services to deliver even better outcomes.

How do you innovate for the future?

Rapidly → **45% faster delivery** of applications with Windows Server and SQL Server in Azure.[1]

Boldly → Automated upgrades and enhanced visibility **reduce the risk of security breaches by 30%**.[2]

Securely → **95% of Fortune 500 companies** trust their business on Azure, the only cloud provider with 90+ compliance offerings.

Chapter 1

Modernize your infrastructure to become AI-ready

Azure migration lets Orca Security use generative AI to enhance customers' cloud security posture.

Agentless cloud security pioneer Orca Security has always sought to provide exceptional service to hundreds of enterprises worldwide. When the company leaders saw the potential benefits generative AI could bring to customers, they turned to Azure to help establish a cloud infrastructure that would keep its data protected and private while integrating OpenAI's GPT API into its solution.

The path to migration

As opposed to other solutions focusing on only one area of cloud security – vulnerability management, misconfigurations or compliance – Orca Security addresses all these different risks simultaneously. With just 30 minutes of set-up, the company can help its customers reveal all the risks in their cloud environment within a few hours. However, the company wanted to do more for its customers. The next step was to give Orca Security the tools to immediately address those risks and vulnerabilities without causing burnout among security teams.

Orca Security saw ChatGPT as an easy way to empower its customers to address vulnerabilities and risks. However, integrating OpenAI posed a few challenges. First, there were concerns about the privacy regulations like Health Insurance Portability and Accountability Act (HIPAA), System and Organisation Controls (SOC 2) and General Data Protection Regulation (GDPR).

Orca Security also wanted to give customers the ability to choose where and how they could store and move their data depending on the specific regulations they must abide by.

Orca Security needed a reliable way to deliver the benefits of generative AI to its customers while also ensuring data privacy and compliance. The solution was Azure OpenAI Service, which – with stronger privacy and compliance protocols – offered better support and reliability. According to the Orca Security team, the migration was quick and painless, using the same APIs and requiring only a slight change in authentication. Moreover, the migration enabled Orca Security to offer its upgraded service to more customers thanks to verifying compliance by the company's security team.

The result

Migrating to Azure gave Orca Security a more secure foundation to support Open AI capabilities – accelerating their alert response. Since its launch in May 2023, the company's GPT-4 powered solution has already helped countless customers dramatically improve their cloud security postures.

Customers who receive an alert select a remediation method and receive steps tailored to their specific platform. In many cases, the security practitioner can simply copy and paste the commands or follow the steps to resolve the alert. The solution has been well received by Orca Security customers, who can now resolve issues faster and handle more events, ultimately bolstering their security.

Benefits

Orca Security uses Azure to build an **AI-ready foundation** to improve customers' security operations.

- Orca Security customers can use generative AI to resolve issues in minutes as opposed to hours.
- Azure OpenAI accessibility allows Orca Security customers to remediate risks using generative AI, even if they lack advanced tech skills.
- Azure guaranteed a **99.9%** uptime.

> **When a customer receives an alert, they can select a remediation method. Upon selection, they receive remediation steps tailored to their specific platform. In most cases, a security practitioner can simply copy and paste the commands or follow the steps to resolve the alert. Instead of taking hours, it now only takes minutes."**
>
> **Lior Drihem**
> Director of Innovation, Orca Security

Chapter 2

Enable secure and confident innovation

Loyal helps ensure peace of mind by exceeding HIPAA requirements with Azure SQL Database.

Loyal provides a healthcare technology platform that helps unify the business side of healthcare with patient experiences and outcomes. Before migrating and modernising with Azure, the company faced significant challenges trying to help medical centres, not-for-profit systems, children's hospitals and cancer institutes deploy solutions that could operate under strict regulatory requirements and protect sensitive patient data.

The path to migration

Handling sensitive healthcare data requires a secure infrastructure that can defend against the most sophisticated cyber threats. The significance of data security in the healthcare industry is especially critical when ransomware and high-profile data breaches are top of mind. Data is more secure when it's encrypted in transit and stored in a centralised location rather than by different apps that interact with the data. The challenge is striking a balance between security and performance, so data privacy measures don't impair the team's productivity as they work to develop new products.

Loyal designs and engineers its platform solutions to help its customers thrive in a highly regulated healthcare industry. Additionally, they help prevent data breaches, ransomware and cyberattacks that can negatively impact patient outcomes and trust.

Before migrating to SQL Server, the development teams had to pull all the data to a client-side application before performing any segmentation or parsing. The answer was Always Encrypted – a security feature of SQL Server and Azure SQL Database – that would provide advanced, column-level encryption capabilities to overcome these limitations.

Implementing Always Encrypted with secure enclaves at Loyal was a straightforward process. The development teams implemented it into their existing database schema and applications without significant challenges. The required application changes were minimal, and developers could quickly modify their applications to work with Always Encrypted. With Always Encrypted, sensitive data can be encrypted and decrypted transparently with minimal changes to the application code. At the same time, secure enclaves enhance the Always Encrypted feature by adding functionality for more robust data engineering. Together, Loyal uses Always Encrypted with secure enclaves to extend its development while taking advantage of additional security benefits.

Always Encrypted with secure enclaves has also made the company more confident when handling customer data, allowing them to develop and deploy services they wouldn't have been able to offer customers without advanced encryption.

The result

Loyal has taken a significant step in building a successful and trustworthy healthcare technology brand by prioritising data security in the cloud. With advanced encryption, only authorised users can view sensitive data, and the developers can perform actions on the SQL Server side to extract a specific segment of encrypted data without pulling out millions of patient records. The result is that teams can interact with patient data without putting it at risk. The Always Encrypted implementation also positively affected Loyal's software engineering and product development, transforming how the company's development teams think about data security and how to initiate new ways of improving business results and patient outcomes.

> **Implementing Always Encrypted with secure enclaves was a no-brainer for us because we get lower latency and an order of magnitude better performance on much larger volumes of data."**

Britton Powell
Director of Engineering, Loyal

Benefits

Loyal takes advantage of **advanced SQL Server** security features to ensure peace of mind when handling patient data.

- Loyal now exceeds data security and management measures that the Health Insurance Portability and Accountability Act of 1996 (HIPAA) require of health systems and providers to protect patient data.
- Platform users can now interact with data without exposing patient information in plain text.
- The team has more power to innovate thanks to the ability to run more queries on encrypted data and perform functions that they couldn't otherwise do.

Chapter 3

Migrate on your terms

With hybrid and VMWare solutions, eClinicalWorks migrates its EHR platform to Azure for greater scalability and security.

eClinicalWorks is a national leader with cloud-based solutions for electronic health records (EHR), practice management, patient engagement and population health management. Under its traditional collocation hosting model, introducing new customers meant buying more servers, hardware and data storage. In addition to driving up costs, this also slowed down development cycles and required IT teams to increasingly dedicate time to managing new hardware installations and customer migrations. To handle the influx of data and network traffic, eClinicalWorks migrated and modernised its Electronic Health Records (EHR) platform with Azure.

The path to migration

The company needed a public cloud solution to meet its requirements for scalability, security and storage and to provide compliance with the Health Insurance Portability and Accountability Act (HIPAA). eClinicalWorks manages more than 2,200 Azure virtual machines (VMs) spread over multiple regions and primarily depends on computing and memory optimisation for running its Java applications and SQL Server databases. In a typical SQL cluster, the company has two VMs deployed in zone redundancy and one for disaster recovery in a different region, which enhances the availability and reliability of the application in the cloud.

In addition to the on-demand scalability, flexibility and performance enhancements it gets from Azure VMs, eClinicalWorks particularly values the ability to give customers the same high-quality service without interruptions or data leakage. For these reasons, eClinicalWorks was drawn to Azure for its straightforward set-up, ease of use and dedicated support from Microsoft experts.

The company's EHR comprised a massive amount of data that couldn't be migrated all at once. They needed a flexible migration that would start from where they were, so the migration occurred every week. The eClinical Works team worked closely with an Azure development group to migrate data to the cloud – including millions of small, but unstructured data files, such as faxed or scanned medical documents – without causing interruptions to service. eClinicalWorks has since moved its EHR platform to Azure in a seamless migration to Azure Virtual Machines and Azure Disk Storage. After moving customer clusters from its legacy hosting environment to Azure every weekend, eClinicalWorks' EHR platform migration to Azure is now 99% complete.

eClinicalWorks also started using Microsoft Defender for Cloud – a cloud-native application protection program to provide security recommendations based on its workloads, allowing teams to deploy policies to comply with different regulatory requirements. The company is also moving the rest of its HER components over, including up to 70 component services, with several already moved and running smoothly.

The result

Thanks to new flexibility and agility on Azure, eClinicalWorks has added new customers and deployed new applications faster than previously possible. With the flexibility of Azure and its ability to support speedy development, the company is deploying new features into its customer offerings faster – and more securely – than it was able to deliver new capabilities in the past, often in weeks versus months or even years. In addition to optimising its operating speed, eClinicalWorks has accelerated time to market for new physical hardware from three months, in its previous collocation model, to a maximum of two weeks with Azure – including security and compliance checks.

Benefits

eClinicalWorks gives customers more control of their data with Azure virtual machines.

- eClinicalWorks saw improved platform agility, resilience and uptime.
- The move to Azure accelerated time to market for new physical hardware **from three months to two weeks**.
- Azure VMs helped the company provide every customer with their own back-end database so there's no commingling of data, providing the same high-quality service without interruptions or data leakage.

> **As we get out of the infrastructure management business, Azure has given us platform agility, resilience and uptime. We're able to build those benefits into our deployments and ensure that we have high availability so we can handle potential failures without issue."**
>
> **Bharat Satyanarayan**
> Vice President of Technology and Quality Assurance, eClinicalWorks

Chapter 4

Unify complex systems

Tecnicas Reunidas migrates its on-premises facilities to Azure to enable a simplified hybrid environment.

Managing over 1,000 industrial plants in more than 50 countries, engineering and construction company Tecnicas Reunidas is a leader in energy innovation. With an extensive global footprint and a complex set of operational, regulatory and digital requirements, the company's growth began to create new challenges – and limitations – to security and scalability.

The path to migration

When the Tecnicas Reunidas IT team began to face limitations with managing security across its estates, it was clear they needed to modernise. They wanted a way to unify their environments and increase efficiencies both on-premises and across cloud environments. The company launched an ongoing migration to Microsoft Azure to meet this challenge. They also adopted Microsoft Azure Arc and cloud-native services to help the IT team unify deployments and establish central control over the company's hybrid infrastructure and apps.

Running Windows Server across its environments, the IT team at Tecnicas Reunidas unified its expanding hybrid environment by connecting nearly 900 on-premises and cloud servers to Azure Arc. As the migration proceeded and IT team members became more engaged with their interoperable solutions, they discovered new ways to manage security, governance and compliance for infrastructure and apps across all its environments. Whether teams are working on-premises or in the cloud, everything runs as if it's a workload in Azure, creating a more harmonious and efficient workflow that's also more secure.

Nearly 900 on-premises and cloud servers connected to Azure Arc.

The result

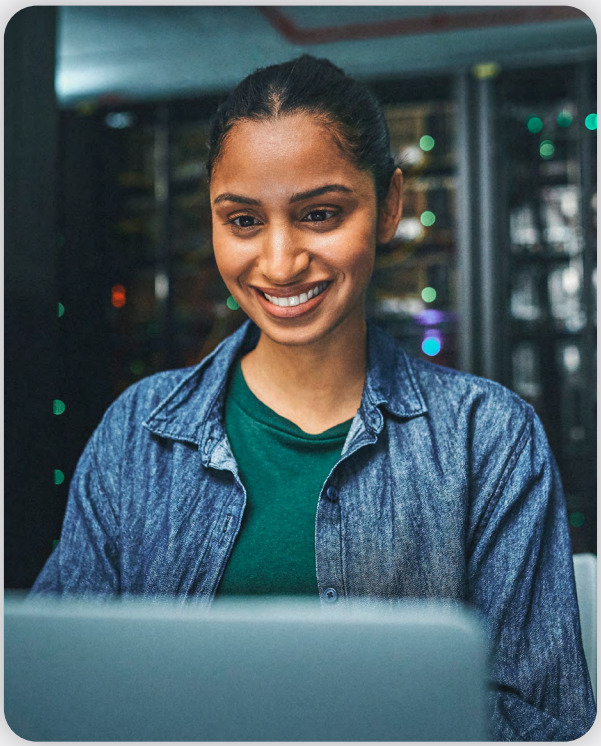
Migrating to Azure has helped the IT team consolidate the company's on-premises and cloud environments for a more unified innovation workflow. The result is enhanced, scalable security that also saves costs, delivers data analytics and opens new paths for innovation and efficiency as new **AI-powered capabilities** are developed. Looking ahead, Tecnicas Reunidas is working to develop a corporate data platform using Azure Arc–enabled SQL Server to get insights that will help them create workbooks, define key performance indicators and draw on all data sources to generate custom views. Additionally, in its goal to achieve zero net carbon emissions by 2040, the company also plans to apply AI and data innovations to research promising new approaches to sustainability.

Benefits

Tecnicas Reunidas runs its **Windows Server** using Azure Arc for a streamlined and cost-effective hybrid infrastructure.

- AI-enabled threat detection gives teams more visibility into threats, provides real-time alerts and generates responses to suspicious incidents, all from a single dashboard.
- During migration, Tecnicas Reunidas discovered it could get rid of obsolete security tools and save on costs, thanks to new comprehensive security coverage in the cloud.
- Increased automation and security let teams focus on more advanced infrastructure management, rather than day-to-day worries.

> **Our work approach has changed with Azure. Now, we're putting more emphasis on governance instead of just loading up on services and tools."**
>
> **Israel Pérez Jiménez**
> IT System and Cloud Architect
> Tecnicas Reunidas



Conclusion

Lay a foundation for limitless innovation

While Orca Security, Loyal, eClinicalWorks and Tecnicas Reunidas had different IT goals and challenges, they all found that their migration to Azure helped them save costs and improve their security posture. Their Azure migrations helped pave the way for AI readiness and rapid innovation at scale, giving their IT teams the tools and support to create new business value without complicating their workloads and operations.

Organisations of all sizes can use streamlined migration tools, high performance, centralised control and seamless hybrid capabilities found on Azure. Azure lets you adopt the cloud with hybrid, multicloud and edge solutions, including robust security and threat detection, so you can migrate on your terms.

Try Azure Migrate and Modernise, a unified offering that helps you assess your on-premises resources and plan your database and workload migration using built-in security guidance and access to top specialised partners.

Get expert help and guidance on your cloud adoption journey through Azure Migrate and Modernise.

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[1] Business Value of Azure IDC Study | Microsoft
[2] The Total Economic Impact™ Of Microsoft Azure Network Security