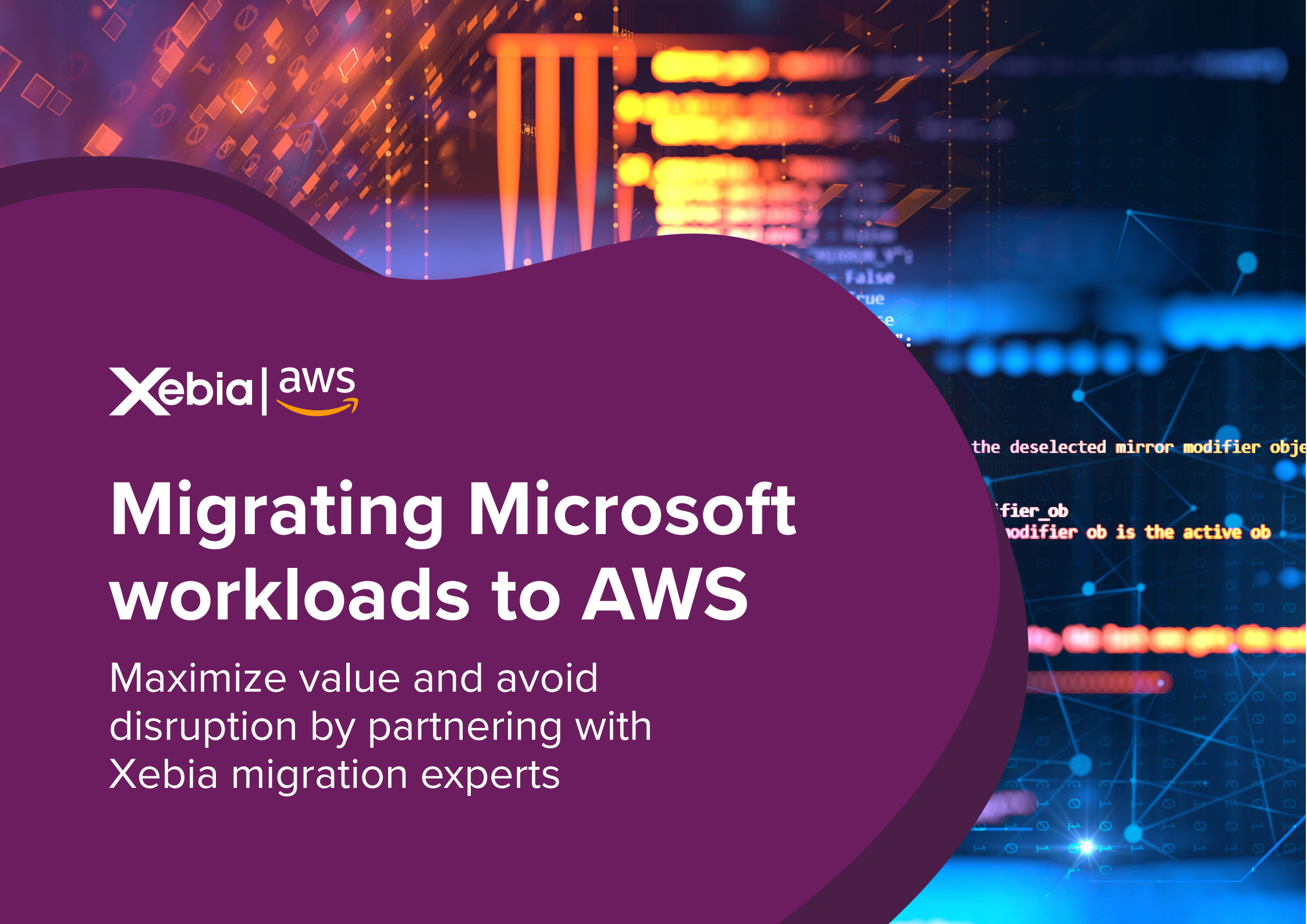

Xebia | aws
Migrating Microsoft workloads to AWS
Maximize value and avoid disruption by partnering with Xebia migration experts

What's Inside

Not If, but When, Where and How

Cloud is the new normal for enterprises. AWS cloud services mean agility, innovation, and reduced costs for businesses, enabling them to make market-defining moves, such as launching a data platform, automating tedious processes, or building intelligent applications.

But cloud is not the answer to all problems. Today, CTOs, CSOs, and CIOs face many challenges:

- CTOs and CIOs have sustainability objectives high on their agenda and are faced with upcoming regulatory requirements with regards to emissions reporting, requiring higher visibility.
- CTOs and CSOs have challenges with staff and skills shortages, often lacking the resources available to migrate key Microsoft workloads that make up the core backbone of their company.
- CTOs and CFOs are increasingly interested in Cloud Financial Management.

Digital transformation, enterprise workload migration, sustainability, and Cloud Financial Management are all related and require a specialized approach.

It's no longer a question of whether to migrate your core Microsoft workloads to AWS. It's a question of when, where, and how you do it to ensure you gain maximum value while meeting sustainability objectives.

Xebia is a pioneering IT consultancy company founded in the Netherlands in 2001, following 1 mission, 4 values and 4 business principles.

We consist of specialized, interlinked companies that closely cooperate to serve our customers on a worldwide scale. We offer our clients full-stack digital transformation services and solutions.

Xebia Structured Migration Approach

With Xebia, you benefit from working with seasoned professionals with a tried and tested approach to migrating workloads to AWS, which even takes post-migration optimization into account.

Collect	Analyze	Plan	Execute	Optimize
Determine Migration Objectives	Optimized License Assessment	Solution Design	Migration	Refactor
Resource Discovery	Business Case	Wave Planning	Failover & Failback Test	Leverage Open Source
Data Enrichment	Readiness Assessment		Handover	Rightsize

Xebia Structured Migration Approach

Analysis

Optimized License Assessment

Analyse current licenses, determine future licensing needs after rightsizing, optimizing and scrutinizing editions.

Business Case

An in-depth study of current cost, future cost, cost to migrate, impact on sustainability and available incentives to reduce investment and payback period.

Readiness Assessment

A series of interviews to determine any organisational, skills, technical or other gaps which stand in the way of success.

Xebia Structured Migration Approach

Planning

Solution Design

Based on the outcome of discovery, metadata and migration objectives, we create a to-be design per workload.

Wave Planning

A wave plan is created stating which workloads migrate when including pilot migrations.

The 7 Rs: Starting Your Migration the Right Way

Moving to the cloud can be difficult. But it doesn't have to be.

The cloud offers many broad migration strategies that suit a variety of different enterprises, but it's essential that you start your cloud journey off right by having a strategic conversation about your IT portfolio.

There are seven migration strategies for moving applications to the cloud, known as the 7 Rs:

Retire

Retain

Rehost

Relocate

Repurchase

Replatform

Refactor or Re-architect

Relocate is a strategy which applies to specific scenarios where an entire platform (such as VMware) is relocated to the cloud.

Retire involves decommissioning an application altogether because it is no longer needed.

Repurchase applies to strategies such as choosing a SaaS solution.

Retaining an application means leaving it on-premise, for example because licensing limitations do not allow a migration to the cloud.

The 7 Rs: Our Strategies for Microsoft Workload Migration

In this e-book, we will focus on the following strategies for moving Microsoft workloads to AWS:

Rehost

A strategy also known as lift and shift. Using this strategy, you move your applications from your source environment to the AWS Cloud without making any changes to the application.

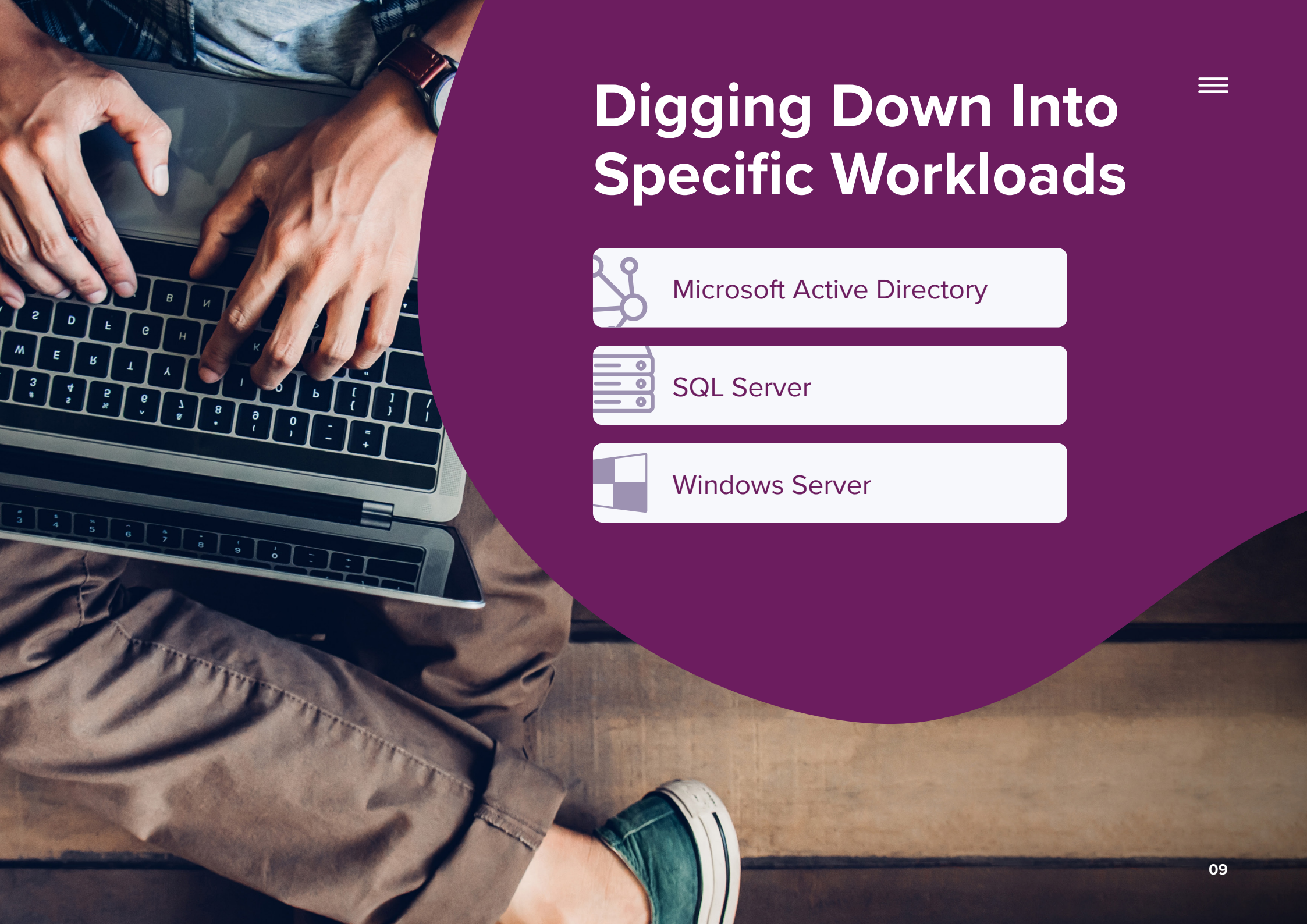
Replatform

This strategy is also known as lift, tinker, and shift or lift and reshape. Using this migration strategy, you move the application to the cloud, whilst introducing some level of optimization in order to operate the application efficiently, to reduce costs, or to take advantage of cloud capabilities.

Refactor

Using this strategy, you move an application to the cloud and modify its architecture by taking full advantage of cloud-native features to improve agility, performance, and scalability.

Each strategy has its own benefits and the amount of effort required to execute the strategy also varies. We will discuss options for each strategy and type of Microsoft workload which is being migrated, to help you understand the best migration approach for your workloads and create the right solution your organization needs.



Digging Down Into Specific Workloads

- Microsoft Active Directory
- SQL Server
- Windows Server

Microsoft Active Directory on AWS

If you already have on-premises Microsoft Active Directory (AD) infrastructure, you probably want to migrate it to the AWS Cloud if you're also migrating AD-aware workloads.

With AWS, you have a number of options to migrate Active Directory to the cloud.

Rehosting

AD on Amazon EC2 with replication: deploy Microsoft Active Directory on Windows Server on EC2. The deployment acts as an extension to your current AD deployment and it replicates to the on-premise environment. You are responsible for designing for High Availability and DR.

Replatforming

Standalone AWS Managed AD: using AWS Managed AD reduces the amount of effort required to build, run, and maintain an AD deployment in the cloud because this is managed by AWS.

AWS Managed AD with trust: in many cases, having a trust relationship with the on-premises active directory makes sense.

AD Connector with service principal: a strategy whereby you create a directory gateway with which you can redirect directory requests to your on-premises Microsoft Active Directory without caching any information in the cloud.

Microsoft Active Directory on AWS

The best option for you depends on a number of factors such as:

Do you intend to fully migrate to the cloud or will you still need an AD on-premises?

Do you want to manage AD yourself or would you rather use a managed solution?

Does your security policy allow replication between on-premises and cloud Active Directory?

Should your workloads be able to run without disruption even if connectivity between the cloud and on-premises is not available?

Do you have very specific (legacy) schema requirements which need to be met?

Xebia has helped many customers migrate Microsoft workloads to AWS and can provide expert guidance to help you determine the appropriate strategy.

Microsoft Windows Server on AWS

One of the first things to decide on is the migration strategy which will benefit you most. Retaining, retiring or repurchasing are strategies we will not discuss in detail due to the limited relevance in terms of migration. This leaves:

Rehosting

Also known as lifting and shifting an application. In this case, existing server images can be leveraged and turned into images which can be launched on AWS. Alternatively, the application can be installed freshly on AWS-provided optimized images.

Replatforming

Also called the lift, tinker, and shift strategy. Virtual machines can be migrated into Windows containers. Another example is a .NET application which is ported to .NET core and run on Linux.

Refactoring

The most far-reaching option, where the entire application architecture and/or codebase is re-visited to allow the new application to run on - for instance - a serverless environment.

Which strategy works best in your case will depend on a number of factors:

- Your existing license entitlements and eligibility to bring these to the cloud.
- Whether or not you have access to the code base of the application (in-house development) versus commercial-off-the-shelf (COTS) applications.
- The amount of effort you are willing to invest in improving the performance or functionality of an application.

Microsoft Windows Server on AWS

Xebia has extensive experience analyzing application portfolios, creating business cases, investigating license mobility options, and assessing the impact of a strategy from a sustainability perspective.

Once you have decided on a particular strategy, we will work with you to make sure we have covered all the details:

- RTO and RPO requirements and the resulting backup, restore, and Disaster Recovery strategy.
- Any SLAs which maybe be applicable that can influence the migration window available.
- Performance requirements which will determine the type of resources (Virtual Machines, File Systems) used.
- Connectivity requirements to make sure applications can be reached (only) from where they need to be reached.
- Maintenance aspects such as vulnerability scanning, monitoring, and patching.
- As a premier consulting partner with additional competencies, Xebia has demonstrable experience with the broad toolset provided by AWS such as Application Migration Service, Elastic Disaster Recovery Service and VM Export and Import.
- For customers wishing to invest in modernization we can provide consultants with extensive experience porting applications to .NET and refactoring applications towards microservices architectures. We consider AWS-provided tools such as Porting assistant for .NET and AWS Microservice Extractor for .NET to be great assets in this regard.

Microsoft SQL Server on AWS

For similar reasons as explained in the Windows Server section of this e-book, we will discuss three options:

Rehosting

In this case the database is moved to a self-managed database or database cluster on EC2. Existing knowledge of managing databases can be leveraged whilst benefiting from a wide choice of EC2 instances and the scalability and flexibility that the cloud offers. Both License Included and Bring-Your-Own-License options are available.

Replatforming

With this lift, tinker, and shift strategy the database is moved from a self-hosted environment to an AWS managed environment. Amazon RDS for SQL Server relieves the owner of many of the non-differentiated heavy lifting associated with managing databases. Recently, with the introduction of Amazon RDS Custom for SQL Server, customers can now also have more control over their database instance whilst still benefiting from having a managed database instance.

Refactoring

In essence a modernization approach. The database can be migrated to an open-source versus commercial database and, if needed, a service like Babelfish can be used to minimize the number of changes needed to the application.

Choosing the right option will depend on a number of considerations:

- Existing license entitlements and eligibility to bring these to the cloud.
- Version and Edition (Developer, Express, Web, Standard, Enterprise) requirements, since availability of editions varies across the presented options.
- Freeing up valuable IT resource capacity: using a managed service like Amazon RDS reduces the effort that customers need to invest in building and maintaining databases.
- Application compatibility: some applications require levels of access to the database instance only available in self-hosted or RDS custom deployments.

Microsoft SQL Server on AWS

One aspect of cloud migrations which is definitely at the top of the agenda of most enterprises is how large sets of data can be migrated to the cloud with as little disruption to service availability as possible.

Questions to consider

Is the service window during which the application can be down during migration sufficient to allow for a migration where a backup is taken and subsequently restored to the new database instance? Or is a more elaborate strategy required, where the database is replicated and cut-over to the migrated instance taking place with minimal disruption?

In either case, AWS and Xebia have you covered with:

- AWS Database Migration Service – for target databases on EC2 and RDS
- AWS Application Migration Service – for migrations targets towards EC2
- AWS Migration Hub Orchestrator – for both RDS and EC2 scenarios
- Benefit from our extensive experience with these services to make your journey to the cloud more predictable and minimize disruption

MN Pensioen Unlocks Hybrid Cloud Landscape for Future Security

We supported MN Pensioen, a Dutch financial services provider that manages over €175 billion in pension assets, with an agile cloud migration that provided a highly automated, highly secure, and highly innovative cloud environment that prevented data from being compromised.

MN services follow stringent governance and protocols in line with EU and Dutch legislation, so their new IT architecture required all sensitive information to be protected. At the same time, MN needed to modernize its IT architecture to remain competitive and put in place state-of-the-art security measures.

Xebia helped build, plan, and execute a powerful hybrid cloud environment, migrating all Windows applications to AWS and developing new patterns for backup and DR. As a result of AWS' commitment to renewable energy this resulted in a near-zero (net) carbon emissions of MN's workloads in AWS in 2022.

Xebia was chosen for our coaching abilities, deep knowledge of cloud architectures, and migration best practice. We worked closely with MN through the entire process and once the ball got rolling, it took only 3 months to get MN up to the task with cloud migration.

The solution deployed Xebia's Cloud Foundation framework and a mature AWS multi-account structure that serves as a highly secure and resilient base, built on the AWS Well-Architected Framework. Further, the solution was highly automated, leveraging AWS CloudFormation and AWS CodeCommit to minimize the risk of human error, reduce administrative time spent, and allow faster Disaster Recovery.

> **This Cloud Foundation is exactly what we needed. It is scalable, secure and cost-efficient. The best part is that we came from zero to hero in less than three months, surpassing every expectation."**

Jan-Paul Lottering
MN Cloud and Infrastructure Manager

Client gains

- Highly resilient hybrid environment
- Leveraging powerful automation
- GDPR compliant environment hosted in a single AWS Region
- Fast and complete audit trail with Amazon CloudTrail and AWS GuardDuty

Xebia and AWS: Partners During Your Sustainability Journey

Sustainability

AWS provides a dashboard which captures the Carbon Footprint of customers on AWS, as well as visibility into the amount of carbon emissions which has been compensated using renewable energy purchases. These are the immediate benefits of migrating to the cloud.

If necessary, AWS together with Xebia can provide more granular and actionable data, extending to all emission scopes, as well as the knowledge and expertise to help you architect for sustainability, deploying tools like AWS Graviton to help you refactor certain applications.

Ongoing support

Xebia is an IT Consultancy and Software Development Company that has been creating digital leaders across the globe since 2001. With offices on every continent, we help the top 250 companies worldwide embrace innovation, adopt the latest technologies, and implement the most successful business models. To meet every digital demand, Xebia is organized into chapters.

These are teams with tremendous knowledge and experience in Agile, DevOps, Data & AI, Cloud, Software Development, Security, Quality Assurance, Low Code, and Microsoft Solutions. In addition to high-quality consulting and state-of-the-art software, Xebia Academy offers the training that modern companies need to work better, smarter, and faster. Today, Xebia continues to expand through a buy and build strategy. We partner with leading IT companies to gain a greater foothold in the digital space.

Find more information on how Xebia is driving innovation at www.xebia.com

Take the First Step in Migrating Your Microsoft Workloads to AWS

Maximize value and avoid disruption with effective solutions and efficient implementations from Xebia.

Get in touch today

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