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Reap the benefits of cloud migration in capital markets

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The financial services industry is extremely complex. With legacy frameworks and several dependencies, the decision to undertake a digital transformation journey takes a lot of preparation. How do you preserve business continuity while changing countless moving parts?

The adoption of public cloud computing in areas such as capital markets has been on the rise in recent years due to the need for cost optimization, increased ROI, extra agility to comply with regulatory requirements, flexibility, greater scalability and so on. Unsurprisingly, banking leaders focus on business growth rather than infrastructure- and application-related technical maintenance.

One of the most significant advantages of public cloud migration is cost-efficiency. Public cloud computing empowers banks to shift from CapEx to OpEx, reducing IT infrastructure costs. Accordingly, they only pay for what they use when they use it rather than investing in expensive hardware and software up front.

In addition to cost savings, public cloud working offers extra scalability and flexibility. Companies can quickly scale resources up or down and respond rapidly to changing market conditions and competitive challenges.

The public cloud also enables companies to access and analyze vast amounts of data in real time. This helps them make more informed business decisions and improve their overall performance.

Focus **areas**

Despite the many benefits of public cloud migration, certain factors need careful consideration before pressing the button.

Financial services institutions handle sensitive data, so one of their biggest issues is protecting that data. Consequently, robust security measures are an essential feature of adhering to the regulator's strict rules. And while cloud providers cover the external security aspects, banks need to control security within the cloud.

Another pressing concern is compliance. Financial services institutions must comply with a wide range of regulations (e.g., GDPR and PSD2) which can be challenging in a public cloud environment.

Despite these challenges, the adoption of public cloud computing in capital markets is expected to carry on growing. As companies become more comfortable with new technologies and the security and regulatory issues are addressed, the public cloud will become an increasingly attractive option.

Market growth

The global cloud computing market has been projected to grow at 17.9% CAGR, reaching USD1,240 billion from an estimated USD545.8 billion in 2022.

Even though the adoption of public cloud computing in capital markets has increased, security and regulatory compliance are still the main issues, which needs to be addressed.

Trading platforms **and cloud adoption**

The financial services industry is continually evolving, and companies are always looking for ways to stay ahead of the competition. One method is to collaborate with specialized trading and risk management platform vendors and utilize their advanced technology (e.g., the Murex MX.3 platform — now available on AWS).

Murex cloud implementation

Murex MX.3 is a leading platform for trading, risk management and processing for capital markets. It offers a wide range of capabilities, including electronic/algorithmic trading, market data management, risk management and much more.

By leveraging the power of the AWS cloud, Murex MX.3 can provide financial service companies with the scalability, flexibility and security they need to stay competitive in today's fast-paced market. Murex MX.3 on the AWS cloud improves:

Scalability: Companies can easily scale their Murex instances up or down as business needs change without investing in new hardware or software. This makes it easier for institutions to respond quickly to changing market conditions and stay competitive.

Flexibility: Companies (large banks or small hedge funds) can configure the platform to match their unique business requirements.

Security: The Murex MX.3 platform is built on a highly secure and compliant infrastructure, providing companies with data protection and peace of mind.

Access to a wide range of advanced analytics: Banks can access a wide range of AWS services, such as AI, machine learning and data analytics. Thus, banks gain valuable data insights for more informed business decisions.

Cloud migration prerequisites and challenges

Cloud migration brings many business benefits, including increased scalability, flexibility and cost savings. However, migrating to the Cloud also presents challenges.

One of the major challenges of migrating to the Cloud is its complex process. Migration requires significant planning and coordination, and ensuring that all aspects have been taken into account can be confusing. For instance, businesses must make sure their data is migrated correctly and applications are configured for running in the cloud.

Migrators also need to check that architecture and workloads designed to run on-prem are properly optimized (or realigned) to take full advantage of cloud capabilities. This can be time-consuming and costly, and businesses must ensure they have the necessary resources and expertise to complete the task.

Cloud migration presents new security challenges, including making sure data is protected and access restricted to preauthorized users. Banks must also confirm compliance with the relevant regulations and have adequate security measures in place.

Businesses must be prepared to address issues like security, re-architecting applications and the complexity of the migration process. With proper planning, resources and expertise, organizations can successfully migrate to the cloud and reap the benefits it has to offer.

Steps needed while migrating from on-premise to cloud

Evaluate your current workload: Determine what your application needs, its performance requirements and dependencies.

Choose the right cloud provider: Evaluate the cost, geographic location, security, and scalability factors and choose the right cloud provider.

Determine the right cloud model: There are different cloud models to choose from, such as Infrastructure as-a-Service (IaaS), Platform as-a-Service (PaaS), and Software as-a-Service (SaaS). Select the right model that suits your workload and infrastructure.

Develop a migration plan: Develop a migration plan which includes timelines, resource allocation and the scope of the migration. A well-developed plan ensures that the migration process is carried out smoothly, and there are minimal disruptions to business operations.

Migrate your workload: The migration process can be carried out using various tools and techniques, such as **lift and shift, re-platforming, and re-architecting**. Select the appropriate method that best fits your workload, infrastructure and business needs.

Test and optimize: After migrating your workload to the cloud, test it to ensure it meets the desired performance requirements. Optimize the cloud environment for performance, scalability and cost.

Monitor and manage: Monitor the cloud environment for performance, security and compliance. Continuously manage and optimize the cloud environment for better performance and cost savings.

Deep dive into **cloud migration approaches**

Lift and shift: This approach involves moving the workload to the cloud without making any significant changes to the application architecture. The application runs in the cloud the same way as it did on-premise. This method is often the fastest and easiest way to migrate a workload to the cloud.

Lift and refactor: This approach involves moving the workload to the cloud optimizing application architecture for the cloud environment. The goal is to take advantage of the scalability and flexibility that the cloud offers. For example, you might refactor the application to use cloud-native services like AWS Lambda or Azure Functions.

Re-platforming: This approach involves moving the workload to the cloud and making some modifications to the application architecture to take advantage of the cloud environment's unique features. This can include using platform-specific services like AWS RDS or Azure SQL Database instead of managing a database server on-premise.

Re-architecting: This approach involves rebuilding the application from scratch using cloud-native technologies and architectures. This method is often the most complex and time-consuming, but it can provide the most benefits in terms of scalability, resilience and cost optimization.

The lift and shift approach offers the advantage of a quick and straightforward migration process. It allows organizations to move their applications to the cloud with minimal changes to the existing architecture, making it a low-risk and low-cost option.

All the other approaches provide organizations with the flexibility to optimize their application for the cloud environment while minimizing the effort required to rebuild the entire application.

Refactoring the application can result in improved scalability, security and cost optimization.

By rebuilding the application from scratch using cloud-native technologies and architectures, organizations can take full advantage of the cloud's unique features and services.

Typical Murex cloud migration and ways to reduce cost and increase agility during the migration process

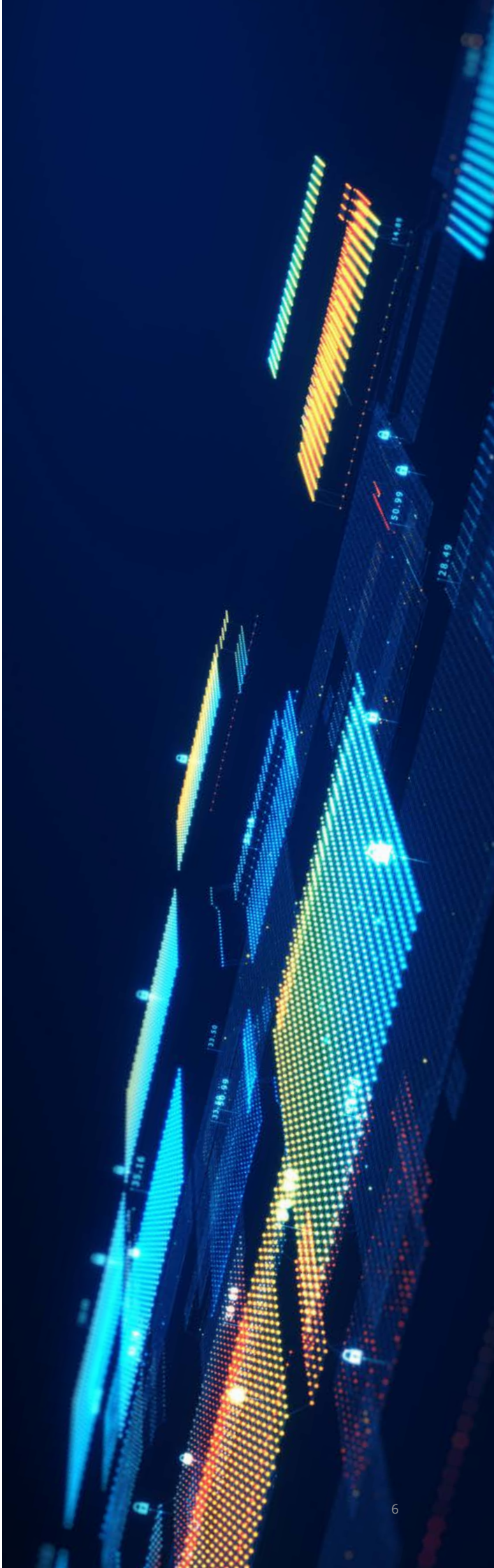
Optimize cloud resources: During the migration process, organizations should evaluate their cloud resource usage regularly and optimize their resources to reduce costs. This can involve rightsizing instances, scheduling instances to turn off during non-business hours and using spot instances for non-critical workloads.

Use cloud-native services: Cloud providers offer many services that can help organizations reduce costs and increase agility. Migrating to cloud-native services like AWS Lambda or Azure Functions can provide better scalability and cost optimization, reducing the need for dedicated servers.

Implement automation: Automating the deployment and management of Murex on the cloud can reduce the manual effort required and help organizations achieve greater agility. Tools like Ansible, Terraform and AWS CloudFormation can be used to automate the deployment and configuration of Murex on the cloud.

Implement DevOps practices: Implementing DevOps practices like continuous integration and continuous delivery can help organizations deliver new features and updates to Murex faster, reducing time to market and increasing agility.

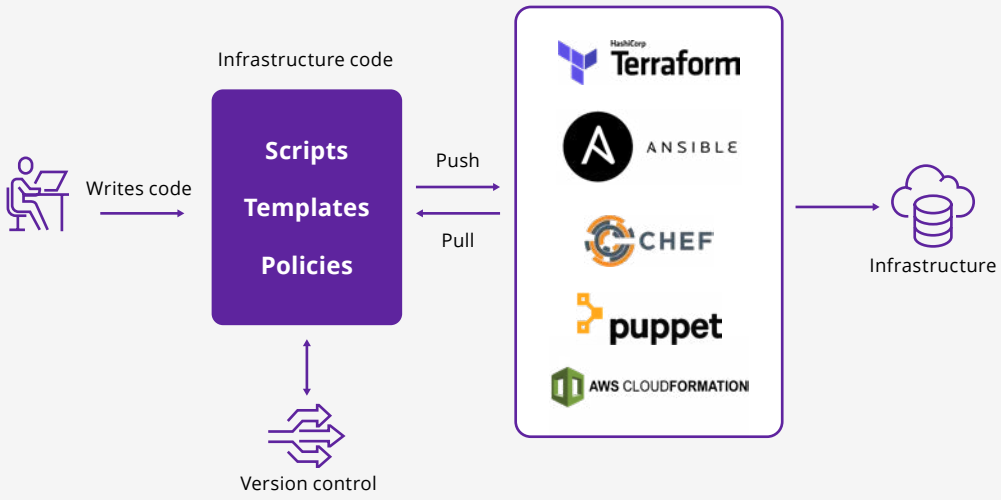
Leverage cloud-native security features: Cloud providers offer many built-in security features like identity and access management (IAM), encryption and threat detection. Leveraging these features can help organizations reduce their security costs while improving their security posture.



Murex and infrastructure provisioning

The provisioning process can be easily accomplished in the cloud, specifically on AWS, within a timeframe of 45-90 minutes. This can be achieved by utilizing infrastructure-as-code (IAC) tools such as Terraform or CloudFormation. By merging the necessary code on a designated branch, it can trigger a continuous delivery (CD) pipeline, automating the deployment of the desired Murex environment.

How infrastructure as code works



Infrastructure as Code (IaC) is a process of automating the provisioning, configuration, and management of infrastructure using code.

Consistency: IaC ensures that infrastructure is consistently and reliably provisioned across different environments, such as development, testing and production.

Speed: IaC can rapidly provision and configure infrastructure, which is particularly useful for quickly spinning up environments for development and testing.

Version control: IaC enables version control of infrastructure code, which allows for easier collaboration, tracking of changes and rollback of changes if necessary.

Provisioning infrastructure in the cloud can be faster than provisioning infrastructure in a DMZ due to the pre-built templates, elasticity, automation and pre-configured security features offered by cloud providers.

Ways of provisioning of infrastructure

Provisioning infrastructure in the cloud can often be faster than provisioning infrastructure in a traditional DMZ (demilitarized zone) because cloud providers offer pre-built and pre-configured templates that can be rapidly deployed with just a few clicks.

Here are a few ways in which cloud provisioning can be faster than DMZ provisioning:

Pre-built templates: Cloud providers often offer pre-built templates for common use cases such as web servers, application servers and databases. These templates are pre-configured with the necessary software, operating system, and security settings, making it easy to provision infrastructure quickly. In contrast, setting up infrastructure in a DMZ requires more manual configuration and can take longer.

Elasticity: Cloud providers offer on-demand infrastructure, which can be provisioned and de-provisioned quickly. This means that you can easily scale up or down your infrastructure as needed without worrying about physical hardware limitations. In contrast, provisioning infrastructure in a DMZ requires physical hardware to be purchased and configured, which can be a time-consuming process.

Automation: Cloud providers offer a range of automation tools, such as Infrastructure as Code (IaC) and containerization, which can significantly reduce the time it takes to provision and configure infrastructure. With IaC, you can define your infrastructure as code, which can be version controlled and easily deployed. In contrast, setting up infrastructure in a DMZ requires more manual configuration, which can be prone to errors and take longer.

Pre-configured security: Cloud providers offer pre-configured security settings and features, such as firewalls and encryption, which can be easily enabled during the provisioning process. This can significantly reduce the time it takes to set up secure infrastructure. In contrast, setting up secure infrastructure in a DMZ requires more manual configuration and can take longer.

Like to talk things over?

If you'd like to learn more about how cloud adoption in capital markets could benefit your organization, visit **luxoft.com/capital-markets** or contact **financialservices@luxoft.com**

About **the authors**

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Praveena has over 19.5 years' industry experience, specializing in Capital Markets, and Trading and Risk Management Solutions. She has proven her abilities on a wide range of roles including account management, delivery management, pre-sales, solutioning, capability development, and driven several value-added initiatives. Praveena also has a successful track record of managing multi-system implementation and simplification programs, Cloud and DevOps implementations, migrations and change-the-bank programs, bringing system integration partner experience and thought leadership to the journey. Currently, she is responsible for Luxoft India Trading and Risk Management Solutions and CLM practice and driving multiple initiatives across the organization as a subject matter expert.

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Naga Santhosh Baba has gained over 8 years of experience across APAC and EMEA, focusing on cloud and DevOps solutions, and building accelerators to help clients with their cloud migration. He also has a successful track record in pre-sales, overseeing multiple cloud and DevOps implementations. Currently, Naga Santhosh Baba is responsible for developing and delivering solutions for Luxoft's Trading and Risk Management Solutions practice.

About Luxoft

Luxoft, a DXC Technology Company delivers digital advantage for software-defined organizations, leveraging domain knowledge and software engineering capabilities. We use our industry-specific expertise and extensive partnership network to engineer innovative products and services that generate value and shape the future of industries.

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