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Application Modernization with Microservices using AWS

Eliminate uncertainty and concerns from cloud migration processes

Highlights

→ Structured and custom-tailored cloud adoption framework

→ Highly scalable and flexible approach

→ Tight integration with AWS services

→ Proven technical expertise and customer experience

Monolithic legacy applications are complex and costly to maintain and pose several cloud migration challenges:

– Tightly coupled components make them difficult to deploy as independent microservices.

– Dedicated infrastructure, manual provisioning, and configuration management obviate the cloud's cost benefits.

– Applications design is unable to take advantage of the cloud-native capabilities, such as elasticity, availability, and observability.

– Ensuring data security and compliance with industry regulations during the migration process.

Kyndryl's Application Modernization with Microservices uses AWS APIs to enable integration and portability. This comprehensive, cloud-native solution offers developers a comprehensive and innovative pathway for application modernization—from initial discovery to ongoing managed services. Throughout the application modernisation process, the solution prioritises the following:

– **Security**

– **Scalability**

– **Compliance** with availability and performance service level agreements (SLAs)

Structured and custom-tailored cloud adoption framework

Working together, Kyndryl and AWS provide a structured cloud adoption framework tailored to expedite any organization's journey to the cloud. Amazon Elastic Kubernetes Service (EKS) serves as a pivotal tool for consolidating development and production environments, accelerating deployment timelines, and simplifying the management and scaling of containerized applications. EKS also helps bolster application reliability and security.

Key benefits of using our cloud adoption framework to transform legacy applications to cloud-native microservices-based applications include:

- **Rapid scalability:** Using a modern microservices-based architecture enables instantaneous scalability, allowing for the scaling of specific services experiencing high demand without affecting the entire application.

- **Simplified edge computing:** Customers can manage Kubernetes clusters at the edge, allowing them to process data closer to where it's generated and consumed.

- **Accelerated feature delivery:** Decoupling services from each other facilitates swift updates to microservice behavior. Developers can change one microservice without having to rewrite large sections of code. As a result, new features can be delivered faster.

- **Enhanced maintainability and automation:** The individualized nature of each microservice streamlines application maintenance efforts, fostering improved automation and operational efficiency. Testing for each microservice can be automated, and when one microservice is changed, the entire application doesn't need to be re-tested and certified.

- **Increased reliability and security:** A microservices-based architecture on AWS includes foundational security and resiliency capabilities, enhancing overall system reliability and safeguarding against potential threats.

- **Optimized resource utilization:** With a pay-as-you-go model, resources are allocated based on actual usage, resulting in improved Total Cost of Ownership (TCO) through resource optimization.

Working together, Kyndryl and AWS provide a structured cloud adoption framework tailored to expedite any organization's journey to the cloud.

Highly scalable and flexible approach

Our solution is architected to scale seamlessly, accommodating diverse needs. **We can work with a customer** wherever they are on their cloud journey whether its:

- Basic containerization of individual modules

- Intricate application modernization projects that involve re-architecting entire application suites

- Relatively simple refactoring of an application so that it now includes some cloud-native characteristics, without changing the actual behavior of the application

Regardless of project scope, customers can count on Kyndryl to supply the following:

- Standardized, repeatable methodologies

- Consistent application of our intellectual property, automation tools, and assets consistently

- Industry best practices

This approach helps enterprises of any size to become more agile, cost-effective, and sustainable through the adoption of modernized, cloud-native applications and infrastructure.

Tight integration with AWS solutions

Kyndryl's Application Modernization with Microservices using AWS solution relies on AWS services at every layer.

1. **Scalability** is enhanced by Amazon EKS, Amazon Elastic Compute Cloud (EC2), Lambda, and Fargate.

2. **Ease of deployment** is enabled by using CodeBuild, CodeDeploy, CodeArtifact, and CodeCommit for continuous integration and delivery.

3. **Monitoring and management** are streamlined using CloudWatch, CloudTrail, and App Mesh while integrating with Kubernetes ecosystem components. Other AWS services can be added as necessary.

4. **Security** measures include (but are not limited to) identity and access management (IAM), AWS Key Management Service (AWS KMS), and Secrets Manager to help ensure the integrity and confidentiality of applications and infrastructure.

Our modernization solution also adheres to the AWS Well-Architected Framework (WAF) and aligns with Site Reliability Engineering (SRE) principles. Furthermore, we leverage our intellectual property and automation assets co-created with Amazon Joint Innovation Labs (AJIL) to facilitate an agile, efficient and predictable service lifecycle for the modernization of legacy infrastructure and applications.

Proven technical expertise and customer experience

AWS partner tiers (Select, Advanced, and Premier) identify organizations that have proven technical expertise and demonstrated customer experience. The highest tier—AWS Premier Tier Services Partners—are the most experienced partners and are recognized as leaders in their respective geographical, vertical, or horizontal markets. They have deep technical expertise with multiple partner program validations and demonstrated success working with a large number of customers at scale.

Kyndryl is an AWS Premier Tier Services Partner, which means customers can expect the following:

– Customized solutions meticulously crafted to address the distinct and individualized needs and specifications of each Kyndryl customer.

– Production-grade automation accelerators for managed enterprise workloads. These deliver rapid and repeatable deployments, accelerate productivity, and reduce time to value.

– A global network of delivery centers with a vast pool of certified AWS cloud experts with the requisite engineering and application modernization skills. Kyndryl also maintains a dedicated AWS Centre of Excellence for building IP assets and automation on various use cases.

Conclusion

Kyndryl's Application Modernization with Microservices using AWS helps ensure a seamless transition to cloud-native solutions. The solution empowers organizations to unlock the full potential of their applications in the cloud while optimizing operational efficiency and cost-effectiveness. Kyndryl's deep expertise in cloud migration and its tight integration with AWS solutions provide customers with the technology and support they need to successfully and efficiently bring their applications into the cloud.

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Why Kyndryl?

Kyndryl has deep expertise in designing, running, and managing the most modern, efficient, and reliable technology infrastructure that the world depends on every day. We are deeply committed to advancing the critical infrastructure that powers human progress. We're building on our foundation of excellence by creating systems in new ways: bringing in the right partners, investing in our business, and working side by side with our customers to unlock potential.

For more information

To learn more about how Kyndryl Application Modernization with Microservices using AWS can help you simplify and accelerate cloud migration, please contact your Kyndryl representative or visit us at kyndryl.com/in/en/about-us/alliances/aws

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