

AWS Migration and Modernization with AWS Kiro

Course Details	Durations (8 Hrs/ Day)
Part-1 Migrating to AWS	4 Days
Part-2 AWS Kiro	1 Day
Part-3 Hands-on Workshop	1 Days
Total Duration	6 Days

Course objectives

In this course, you will learn to:

- Recognize the common business and technical drivers for migrating to the cloud
 - Summarize the three phases of a migration and associated objectives, tasks, and stakeholders for each
 - Describe AWS architecture, tools, and migration best practices
 - Distinguish between the various cloud migration strategies and when each is most appropriate
 - Determine an organization's application migration readiness
 - Discover a portfolio and gather data necessary for migration
 - Plan and design an application migration strategy
 - Perform and validate application migration to the cloud
 - Optimize applications and operations after migrating to the cloud
- Intended audience
- Use AWS Kiro for spec-driven development and generate production-ready code.
 - Customize Kiro workflows using steering files, hooks, MCP, Powers, subagents, and Agent Skills.
 - Apply enterprise security and governance and implement an end-to-end Kiro development workflow.

This course is intended for:

- Solutions architects
- Software engineers
- IT project managers
- Other individuals involved in the planning and running of migration projects

Prerequisites

We recommend that attendees of this course have:

- Familiarity with enterprise IT infrastructure (hardware and software)
- Completed the AWS Technical Essentials or Architecting on AWS classroom training
- Basic programming knowledge, AWS fundamentals, experience with any IDE

Day 1: Migration Foundations & Readiness

Module 1: What Is a Cloud Migration?

- Drivers and business outcomes of cloud migration
- Planning for a successful cloud migration
- The three-phase migration process (Assess, Mobilize, Migrate & Modernize)

Module 2: Assessing Migration Readiness

- The Assess phase in depth
- Cloud readiness assessment tools
- Examining your IT landscape
- Building a business case for migration
- Cloud Adoption Readiness Tool (CART)

Module 3: Preparing for Migration and Understanding Workstreams

- The Mobilize phase
- Migration-related workstreams overview

Lab 1: Wave intake: inventory, buckets & pattern selection

Module 4: Discovering Landing Zones and Their Benefits

- What is a landing zone and why it matters
- Custom multi-account structure with AWS Organizations
- AWS Control Tower overview and capabilities
- Customizations for AWS Control Tower (CfCT)
- Planning for network connectivity

Module 5: Building a Landing Zone

- Planning and designing a landing zone
- Designing a multi-account structure
- Governance policies and guardrails
- Connectivity planning (Transit Gateway, Direct Connect, VPN)
- AWS Control Tower walkthrough

Lab 2: Rehost Windows Server 2019 web app (IIS/.NET) via CMF

Day 2: Discovery, Planning & Migration Design

Module 6: Portfolio Discovery and Migration Strategies

- Detailed portfolio discovery workstream
- Evaluating cloud readiness of applications
- The 7 Rs of cloud migration strategies (Retire, Retain, Rehost, Replatform, Repurchase, Refactor, Relocate)
- Scenario-based strategy selection

Module 7: Understanding and Choosing Portfolio Discovery Tools

- Migration Evaluator — business case and TCO analysis
- AWS Migration Hub — centralized tracking
- AWS Application Discovery Service — agentless vs. agent-based discovery
- AWS Systems Manager inventory and patch baseline
- Amazon CloudWatch for baseline performance metrics

Module 8: Planning and Designing a Migration

- Planning the overall migration program
- Building the migration factory model
- Wave planning and prioritization
- Designing the migration for each application

Lab 3- Replatform Path C: rehost, then upgrade the OS inside AWS

Day 3: Migration Execution & Database Migration

Module 9: Performing the Migration to AWS

- End-to-end server migration process
- Server migration tools comparison and selection criteria
- AWS Application Migration Service (AWS MGN)
- VMware Cloud on AWS for VMware-based workloads
- AWS Migration Hub for tracking and orchestration
- Evaluating and selecting the right server migration tool

Module 10: Database and Data Migration Services

- Data migration strategies and considerations
- Online data migration services
- Offline data migration services
- Database migration patterns and schema conversion
- AWS Schema Conversion Tool (AWS SCT)
- Homogeneous vs. heterogeneous database migrations

Lab 4- SQL Server server migration + Always On rebuild

Module 11: Additional Migration Support Options

- AWS Managed Services (AMS) for operational support
- AWS Service Catalog and integrations
- Microsoft workloads on AWS (Active Directory, SQL Server, .NET)
- SAP on AWS migration considerations

Day 4: Modernization, Operations & Best Practices

Module 12: Integrating, Validating, and Cutting Over Applications

- Migrate and Modernize phase overview
- Integration testing strategies
- Cutover planning and execution
- Rollback strategies and risk mitigation
- Validation frameworks post-cutover

Module 13: Modernizing and Optimizing Applications

- Cost optimization strategies and AWS tools
- Performance optimization techniques
- AWS tools used for optimization
- Modernizing the enterprise application portfolio
- Containerization strategies with Amazon ECS and Amazon EKS
- Serverless architectures with AWS Lambda and Amazon API Gateway

Module 14: Operations Tools, Integration Testing, and Automation

- AWS Config for compliance and configuration tracking
- Infrastructure and operations as code
- Adopting a DevOps approach post-migration
- Automating change and configuration management
- Automating management
- Migration Best Practices

Lab 5- File share and storage migration

Part-2

Day- 5 AWS Kiro

Module 15 — Introduction to AWS Kiro

1. Kiro overview — agentic IDE vs. traditional coding assistants
2. Kiro vs. Amazon Q Developer — key differences
3. Kiro modes — IDE, CLI, Autonomous Agent
4. Kiro editions — Personal, Pro, Enterprise
5. Security model — TLS 1.2+, KMS, IAM Identity Center, IP indemnity
6. Supervised mode vs. Autopilot mode

Hands-On Lab - Install, authenticate and explore Kiro

Module 16 — Spec-Driven Development

1. What is spec-driven development
2. Three-phase workflow — Requirements, Design, Tasks
3. EARS format for writing requirements
4. Feature Specs vs. Bugfix Specs
5. Review checkpoints and human-in-the-loop oversight
6. How specs produce production-ready code

Hands-On Lab - Build a Feature Spec end-to-end

Module 17— Steering Files

1. What are steering files
2. Inclusion types
3. Steering use cases
4. Steering vs. Agent Skills vs. File references
5. Version-controlling

Hands-On Lab - Configure and validate steering files

Module 18 — Agent Hooks

1. What are agent hooks
2. Trigger types
3. Three-tier system
4. Common use cases

Hands-On Lab- Build an automated quality gate

Module 19 — MCP Integration and Kiro Powers

1. What is Model Context Protocol (MCP)
2. Configuring MCP servers in mcp.json
3. MCP use cases
4. What are Kiro Powers
5. Powers vs. MCP servers

Hands-On Lab - Connect MCP server and activate a Kiro Power

Module 20— Subagents, Skills and Security Controls

1. Custom subagents
2. Agent Skills
3. Subagents vs. Skills vs. Steering
4. Enterprise controls
5. Risk mitigations

Part-3 Hands-on Workshop

Day-6

Hands-on Workshop: Migrate & Modernize with App Migration Service & AWS
Transform using Kiro