Building Agentic AI with Bedrock AgentCore Training

Duration: **1 Day**

BILGINC IT Academy
info@bilginc.com
bilginc.com

This course explores how Agentic AI systems can be designed and developed using AWS services. Learners will examine how Agentic AI differs from conventional conversational AI and develop an understanding of the architectures required to create autonomous, goal-oriented agents capable of addressing real-world challenges.

Throughout the course, technologies such as the Strands Agents SDK and Amazon Bedrock AgentCore are used to explore how agents can be built, deployed, secured and prepared for production environments.

The program goes beyond basic agent development by addressing the infrastructure required to operate agentic systems securely and reliably within enterprise environments. Key areas include deployment with AgentCore Runtime, security through AgentCore Identity and Policy, controlled tool access using AgentCore Gateway, extensible integrations through Model Context Protocol (MCP), memory management with AgentCore Memory, and production monitoring with AgentCore Observability.

By completing the course, learners will gain a structured understanding of the main components of Agentic AI systems and how security, memory, tool integration, observability and evaluation can be combined to create solutions suitable for production use.

Prerequisites

Learners are recommended to have attended, or possess knowledge equivalent to:

- **Agentic AI Foundations**

Who Should Attend

This course is designed for:

- Software developers seeking intermediate-level knowledge for developing advanced Agentic AI systems
- Technical professionals exploring AI technologies and looking to build sophisticated agent-based solutions
- Development and product teams working on advanced Agentic AI applications

Building Agentic AI with Bedrock AgentCore Training

Duration: **1 Day**

BILGINC IT Academy
info@bilginc.com
bilginc.com

What You Will Learn

By the end of this course, learners will be able to:

- Define the primary characteristics of Agentic AI and distinguish them from traditional AI systems.
- Identify the fundamental components of an AI agent and explain how they interact.
- Explain how Amazon Bedrock AgentCore services support Agentic AI architectures.
- Deploy agents using supported frameworks with AgentCore Runtime.
- Describe the principal capabilities of AgentCore Runtime.
- Configure serverless execution environments with session isolation.
- Configure AgentCore Identity to address enterprise security requirements.
- Build policies that secure agent tool calls using AgentCore Policy.
- Implement secure token management and permission delegation.
- Address data governance and audit requirements within agentic solutions.
- Implement different tool integration approaches, including built-in and protocol-based tools.
- Design and deploy Model Context Protocol (MCP) servers and clients to extend agent capabilities.
- Explain common authentication approaches for agent tool access.
- Configure AgentCore Gateway components to provide secure and authorised access to tools.
- Implement agentic memory patterns suited to different application scenarios.
- Configure AgentCore Memory operations for context-aware applications.
- Optimise memory performance for production workloads.
- Configure AgentCore Observability for production monitoring.
- Implement Amazon CloudWatch integration and specialised tracing.
- Explain the main capabilities of AgentCore Evaluations.
- Connect agentic systems with production APIs and services.
- Design suitable deployment strategies for production environments.
- Evaluate production readiness and establish continuous improvement processes.

Training Outline

Module 1: Foundations of Agentic AI Patterns

- Core building blocks of AI agents
- Relationships between agent components
- Fundamental Agentic AI concepts
- Introduction to Amazon Bedrock AgentCore

Module 2: AgentCore Runtime and Framework Integration

- Supported frameworks and implementation approaches
- AgentCore Runtime architecture and capabilities
- Running agents with AgentCore Runtime
- Infrastructure and deployment
- Serverless execution and session isolation

Module 3: Security and Identity Management

- Security and identity management for agentic systems
- Securing agents with AgentCore Identity
- Managing enterprise access requirements

BILGINC IT Academy

info@bilginc.com

bilginc.com

- Secure token management
- Controlled permission delegation

Module 4: Tool Integration and AgentCore Gateway

- Amazon Bedrock AgentCore Policy
- Built-in tools
- Custom tool integrations
- Model Context Protocol (MCP)
- MCP server and client architectures
- AgentCore Gateway
- Implementing AgentCore Gateway
- Secure and authorised tool access
- Controlling tool calls through AgentCore Policy

Module 5: Agentic Memory Implementation

- Core concepts of agentic memory
- Memory patterns for different use cases
- AgentCore Memory
- Using memory in context-aware agent applications
- Securing AgentCore Memory
- Optimising memory performance for production workloads

Hands-on Lab / Instructor Demonstration

Enhance and Scale Agents with Amazon Bedrock AgentCore

Learners explore how AgentCore capabilities can be applied to enhance and scale agent-based solutions through a practical scenario.

This hands-on lab is delivered as a demonstration only.

Module 6: Production Monitoring and Observability

- Monitoring agents with AgentCore Observability
- Amazon CloudWatch integration
- Tracing agent activities and interactions
- Verifying agent performance with AgentCore Evaluation
- Evaluating behaviour and performance in production environments

Module 7: Course Wrap-Up

- Recommended next steps
- Additional learning resources
- Review of key concepts
- Course summary