Building Agentic AI with Amazon Bedrock AgentCore

Duration: 1 Day Course Code: GK910036 Delivery Method: Virtual Learning

Overview:

Explore the core principles and strategies for designing Agentic AI systems using AWS services.

In this course, you'll learn how to advance your proof-of-concept agents to production-ready agentic AI solutions on AWS. You will use Amazon Bedrock AgentCore services for tool orchestration, identity management, and production monitoring to implement secure, scalable enterprise AI systems ready for deployment.
- Course level: Intermediate
- Duration: 1 day

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Virtual Learning

This interactive training can be taken from any location, your office or home and is delivered by a trainer. This training does not have any delegates in the class with the instructor, since all delegates are virtually connected. Virtual delegates do not travel to this course, Global Knowledge will send you all the information needed before the start of the course and you can test the logins.

Target Audience:

This course is intended for:
- Software developers seeking intermediate knowledge for building agentic systems
- Technical professionals exploring AI capabilities and interested in building agentic AI systems.
- Development teams building agentic AI solutions.

Objectives:

- **In this course, you will learn to:**
- Define agentic AI characteristics and differentiate them from traditional AI systems.
- Identify the core agent components and their interactions.
- Describe how Bedrock AgentCore services support agentic AI.
- Deploy agents by using supported frameworks with AgentCore Runtime.
- Describe the core features of AgentCore Runtime.
- Configure serverless execution with session isolation.
- Configure AgentCore Identity for enterprise security requirements.
- Create policies to secure agent tool calls using AgentCore Policy.
- Implement secure token management and permission delegation.
- Ensure compliance with data governance and audit requirements.
- Implement different tool integration patterns, including built-in tools and protocol-based tools.
- Design and deploy Model Context Protocol (MCP) servers and clients for extensible agent capabilities.
- Describe common authentication patterns for agent tool use.
- Configure AgentCore Gateway components for secure and authorized tool access.
- Implement agentic memory patterns for different use cases.
- Configure AgentCore Memory operations for context-aware development.
- Optimize memory performance for production workloads.
- Configure AgentCore Observability for production monitoring.
- Implement Amazon CloudWatch integration and specialized tracing.
- Describe the core features of AgentCore Evaluations.
- Integrate agentic systems with production APIs and services.
- Design deployment strategies for production environments.
- Assess production readiness and establish continuous improvement processes

Prerequisites:

We recommend that attendees of this course have:

- Agentic AI Foundations
- GK910031 - Agentic AI Foundations

Testing and Certification

None

Follow-on-Courses:

- GK1979 - DevOps Engineering on AWS
- GK910029 - Machine Learning Engineering on AWS

Content:

Day 1:

Module 1: Foundations of Agentic AI Patterns

- Agent building blocks
- Amazon Bedrock AgentCore introduction

Module 2: AgentCore Runtime and Framework Integration

- Supported frameworks and implementation
- AgentCore Runtime overview
- Infrastructure and deployment

Module 3: Security and Identity Management

- Security and identity management
- Securing your agents with AgentCore Identity

Module 4: Tool Integration and AgentCore Gateway

- Amazon Bedrock AgentCore Policy
- Built-in tools and custom integration
- Model Context Protocol (MCP)
- AgentCore Gateway
- Implementing AgentCore Gateway
- Amazon Bedrock AgentCore Policy

Module 5: Agentic Memory Implementation

- Agentic memory core concepts
- AgentCore Memory
- Securing AgentCore Memory
- Hands-on Lab: Enhance and Scale Agents with Amazon Bedrock AgentCore

Module 6: Production Monitoring and Observability

- Monitoring agents with AgentCore Observability
- Verifying agent performance with AgentCore Evaluation

Module 7: Course Wrap-up

- Next steps and additional resources
- Course summary

Additional Information:

Activities:
This course includes presentations, hands-on lab, and group exercises.

Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

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