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AI-200: Develop AI Cloud Solutions on Microsoft Azure

Build, integrate, monitor and troubleshoot AI-driven cloud applications on Azure.

Course description

AI-200T00-A focuses on developing AI-powered cloud solutions with Microsoft Azure services and modern application architectures. Learners explore how to build scalable AI-driven applications using Azure compute, containerized workloads, serverless APIs and event-driven integrations, and how Azure Service Bus, Event Grid and Azure Functions support enterprise-grade AI workflow orchestration.

Participants get practical exposure to the Azure data services behind AI workloads: Cosmos DB for NoSQL, Azure Database for PostgreSQL with pgvector, and Azure Managed Redis for vector search, streaming and caching. Hands-on activities and guided demonstrations show how to design secure, scalable, observable and production-ready AI cloud applications on Azure.

By the end of the course, learners can connect Azure services, orchestrate AI workflows, implement secure architectures and develop enterprise AI applications that support modern intelligent business solutions.

Course details

Level: Intermediate
Duration: 5 Days

Activities

This course includes presentations, demonstrations, and labs. More than 50% of the course focuses on practical Azure AI implementation and integration exercises, delivered as guided labs and demonstrations.

Course objectives

In this course, you will learn to:

- Describe Azure AI cloud solution architecture and core Azure AI services.
- Implement Azure compute and containerization patterns for AI applications.
- Build serverless APIs with Azure Functions.
- Design event-driven and message-based integration architectures.
- Use Azure Service Bus and Event Grid to orchestrate AI workflows.
- Implement Cosmos DB for NoSQL in AI-driven applications.
- Configure Azure Database for PostgreSQL with pgvector for vector-based workloads.
- Use Azure Managed Redis for caching, streaming and vector search.
- Monitor, troubleshoot and optimize AI applications on Azure.
- Build secure, scalable and observable AI cloud solutions.

Intended audience

This intermediate-level course is intended for professionals who build AI-powered applications on Azure, including:

- Azure developers.
- AI engineers and application developers.
- Cloud solution architects.
- Backend developers building AI-driven applications.

Prerequisites for the AI-200 Exam Course

Prerequisites for this intermediate-level course:

- Basic understanding of Microsoft Azure services and cloud concepts.
- Experience with application development or backend programming.
- Familiarity with APIs, databases and event-driven architectures is beneficial.
- Basic understanding of containers and serverless computing concepts.
- Interest in developing AI-powered cloud-native applications.

Course outline

Module 1 Implement container application hosting

- Build, store, version and manage container images with Azure Container Registry
- Build and run images with Azure Container Registry Tasks

Module 2 Deploy and manage apps on Azure Container Apps

- Deploy applications to Azure Container Apps, including environment configuration and revision management

Module 3 Deploy and monitor applications on Azure Kubernetes Service

- Implement event-driven scaling with Kubernetes Event-driven Autoscaling (KEDA) in Container Apps
- Deploy and manage applications on Azure Kubernetes Service (AKS) using manifest files
- Monitor and troubleshoot solutions on AKS and Container Apps by inspecting logs, events and end-to-end connectivity

Module 4 Develop AI solutions with Azure Cosmos DB for NoSQL

- Connect to Azure Cosmos DB for NoSQL with the SDK and run queries
- Optimize query performance and Request Unit (RU) consumption using indexing policies and consistency levels
- Store and retrieve embeddings and run vector similarity search for semantic retrieval
- Implement a change feed processor to detect and handle new or updated items

Module 5 Develop AI solutions with Azure Database for PostgreSQL

- Connect to and query Azure Database for PostgreSQL using SDKs
- Model schemas and design tables, choosing appropriate data types
- Implement indexing strategies that optimize query latency and reduce pgvector compute overhead
- Configure compute, memory and storage resources to support vector workloads
- Run vector similarity search, including storing embeddings, semantic retrieval and retrieval-augmented generation (RAG) patterns with metadata filters
- Optimize connections to improve throughput and minimize latency

Module 6 Enhance AI solutions with Azure Managed Redis

- Implement Azure Managed Redis data operations, including caching, expiration and invalidation
- Implement vector indexing to enable similarity search

Module 7 Integrate backend services for AI solutions

- Queue and process back-end operations with Azure Service Bus, including dead-letter queues, messages, topics and subscriptions
- Implement event-driven workflows with Azure Event Grid, including filters, custom events and retries
- Build serverless APIs, including triggers and bindings
- Configure and deploy function apps

Module 8 Manage application secrets and configuration for AI solutions

- Secure secrets with Azure Key Vault, including rotation and retrieval
- Store and retrieve app configuration with Azure App Configuration

Module 9 Observe and troubleshoot apps on Azure

- Trace distributed systems with OpenTelemetry SDKs
- Write KQL queries to analyze logs and metrics

Key features of the AI-200 course

- **Hands-on labs and activities:** more than 50% of the course is practical Azure AI implementation and integration exercises.
- **Real-world AI cloud architectures:** enterprise-grade AI application scenarios built with Azure-native services.
- **Expert-led sessions:** delivered by Microsoft-certified trainers experienced in Azure AI, cloud-native development and enterprise architectures.
- **Modern AI application development:** serverless APIs, event-driven workflows, containerization and AI orchestration techniques.
- **Data services for AI workloads:** practical use of Cosmos DB, PostgreSQL with pgvector and Azure Managed Redis.
- **Cloud-native focus:** scalable, observable AI application deployment and monitoring practices.
- **Industry-aligned curriculum:** follows the official Microsoft Learn AI-200T00-A learning objectives.
- **Enterprise security and monitoring:** secure AI application deployment, observability and troubleshooting approaches.

Why choose CloudThat as your training partner?

- **Expert Azure AI trainers** – Microsoft-certified professionals experienced in enterprise AI cloud application development and Azure architectures.
- **Hands-on learning approach** – guided labs and implementation-focused exercises built for real-world AI solution development.
- **Enterprise AI use cases** – practice with scalable AI scenarios involving APIs, messaging, vector databases and event-driven integrations.
- **Flexible training delivery** – instructor-led online, classroom, corporate or customized sessions to suit organizational needs.
- **Comprehensive lab support** – guided exercises, architecture references, deployment examples and post-training learning resources.
- **Industry-aligned curriculum** – closely follows the Microsoft Learn AI-200T00-A official course objectives and enterprise AI trends.
- **Focus on cloud-native AI development** – practical skills for scalable, observable and secure AI solutions on Azure.

Certification details

- **Certification:** Microsoft Certified: Developing AI Cloud Solutions on Azure (Exam: AI-200).
- **Focus:** developing AI-powered cloud solutions on Microsoft Azure using modern cloud-native and AI integration patterns.
- **Validity:** 1 year, renewable through Microsoft's free annual renewal assessment.

Frequently asked questions

What is the AI-200T00-A course about?

It teaches developers how to build, monitor, troubleshoot and integrate AI cloud solutions with Microsoft Azure services.

Who should take the AI-200T00-A course?

Azure developers, AI engineers, backend developers and cloud architects building AI-powered applications.

Is AI-200T00-A suitable for beginners?

The course is designed for intermediate-level learners with basic Azure and application development knowledge.

What Azure services are covered in the course?

Azure Functions, Cosmos DB, Azure Service Bus, Event Grid, PostgreSQL with pgvector, Azure Managed Redis and containerized compute services.

Does the course include hands-on labs?

Yes. Learners take part in guided labs and implementation exercises focused on building AI cloud solutions with Azure services.

What skills will I gain after completing AI-200T00-A?

AI cloud architecture, serverless APIs, event-driven integration, vector databases, monitoring and scalable AI application development.

How does PostgreSQL with pgvector support AI applications?

It provides vector storage and similarity search, commonly used in generative AI and semantic search applications.

What is the role of Azure Service Bus and Event Grid in AI solutions?

They enable event-driven communication, workflow orchestration and reliable message-based integration between AI application components.

What career benefits does AI-200T00-A provide?

It builds practical Azure AI cloud development skills that are increasingly required in modern AI and cloud engineering roles.

What salary benefits can Azure AI cloud skills provide?

Professionals skilled in Azure AI cloud development, vector databases and scalable AI application architectures are highly valued in enterprise digital transformation initiatives.

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Your course overview ends here.
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About CloudThat

Established in 2012, CloudThat is an award-winning company and the first in India to offer cloud training and consulting services for individuals and enterprises worldwide. Recently, it won Google Cloud's New Training Partner of the Year Award for 2025, becoming the first company in the world in 2025 to hold awards from all three major cloud giants: AWS, Microsoft, and Google. CloudThat notably won consecutive AWS Training Partner of the Year (APJ) awards in 2023 and 2024 and the Microsoft Training Services Partner of the Year Award in 2024, bringing its total award count to an impressive 12 awards in the last 8 years.

CloudThat specializes in Cloud Migration, Data Platforms, DevOps, IoT, and cutting-edge technologies like Gen AI & AI/ML. As a Microsoft Solutions Partner, AWS Premier Tier Training Partner, Google Cloud Platform Partner, and collaborator with leading organizations like HPE, Oracle, Nvidia and Databricks, CloudThat has trained over 850,000 professionals across 600+ cloud certifications, empowering students and professionals worldwide to advance their skills and careers.

To know more about our cloud certification training, email at sales@cloudthat.com or call us at +91-8880002200 or +1-8555588830 for those from outside India.