Build AI Apps with Azure Database for PostgreSQL (AI-3019)

ID AI-3019 **Price** CHF 690.—(excl. VAT) **Duration** 1 days

Prerequisites

Before starting this module, you should have experience working with PostgreSQL databases, writing SQL queries, and a general understanding of AI and ML concepts.

Course Content

Get started with generative AI in Azure Database for PostgreSQL

- Introduction
- Understand generative AI language models
- Describe the Azure AI extension
- Explore the Azure OpenAI schema
- Review the Azure Cognitive schema
- Explore semantic operators
- Examine the Azure Machine Learning schema
- Exercise-Explore the Azure AI extension
- Module assessment
- Summary

Enable semantic search in Azure Database for PostgreSQL

- Introduction
- Understand semantic search
- Store vectors in Azure Database for PostgreSQL
- Create embeddings with the Azure AI extension
- Exercise - Generate vector embeddings with Azure OpenAI
- Explore semantic search use cases
- Exercise - Create a search function for a recommendation system
- Module assessment
- Summary

Integrate AI Services to enrich your applications with intelligent features in Azure Database for PostgreSQL

- Introduction
- Summarize data with Azure AI Services and Azure Database for PostgreSQL
- Perform sentiment analysis and opinion mining in Azure Database for PostgreSQL
- Extract insights using Azure Language and Azure Database for PostgreSQL
- Translate text with Azure Translator and Azure Database for PostgreSQL
- Exercise - Use Azure AI services with Azure Database for PostgreSQL
- Use Azure Machine Learning for inference from Azure Database for PostgreSQL
- Exercise - Perform inference with Azure Machine Learning and Azure Database for PostgreSQL
- Module assessment
- Summary

Build RAG applications with Azure Database for PostgreSQL

- Introduction
- Understand RAG pattern with Azure Database for PostgreSQL
- Explore information retrieval challenges - scale and accuracy
- Enhance scale with vector indexes
- Build RAG Applications with Azure Database for PostgreSQL and Python
- Exercise: Build RAG applications with Azure Database for PostgreSQL and Python
- Improve accuracy with advanced RAG architectures
- Explore GraphRAG with Azure Database for PostgreSQL
- Exercise: Implement GraphRAG with Azure Database for PostgreSQL
- Module assessment
- Summary

Implement generative AI agents with Azure Database for PostgreSQL

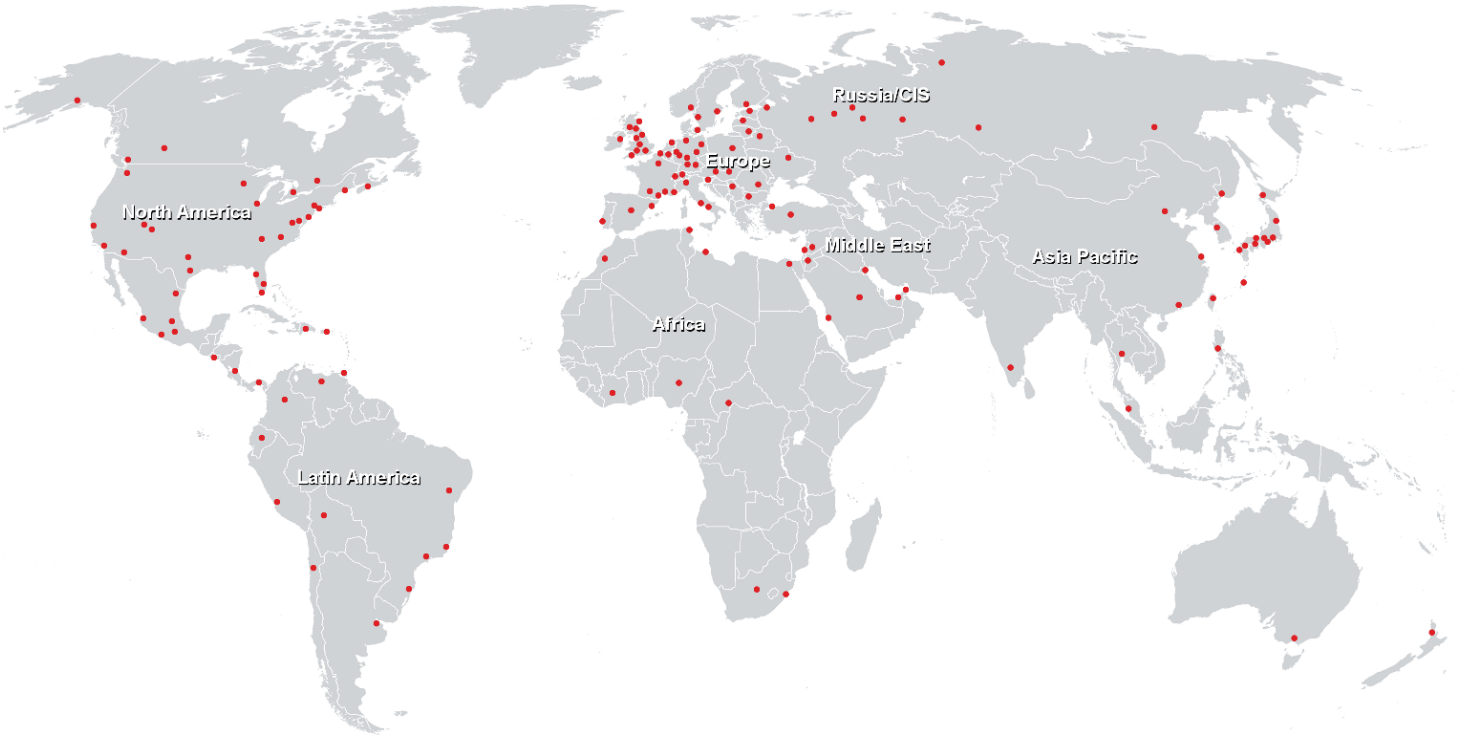
- Introduction
- Understand AI agents with Azure Database for PostgreSQL
- Apply information retrieval for agents
- Evaluate agentic frameworks for integration with PostgreSQL
- Implement AI agents with Foundry Agent Service
- Exercise - Build an AI agent with Foundry Agent Service and Azure Database for PostgreSQL
- Integrate AI agents with MCP and PostgreSQL
- Module assessment
- Summary

Develop PostgreSQL solutions in Visual Studio Code with the PostgreSQL extension and GitHub Copilot

- Introduction
- Understand how the PostgreSQL extension supports SQL development
- Understand how GitHub Copilot integrates with the PostgreSQL extension
- Use GitHub Copilot to generate, refine, and troubleshoot SQL queries
- Exercise - Enhance PostgreSQL development with GitHub Copilot
- Knowledge check
- Summary

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