

AI-100

Designing and Implementing an Azure AI Solution

Exam number: AI-100

Exam title: Designing and Implementing an Azure AI Solution

Language(s) this exam will be available in: English

Audience (IT professionals, Developers, Information workers, etc.): IT professionals

Technology: Microsoft Azure

Exam provider (VUE, Certiport, or both): VUE

Exam Design

Note: This document shows tracked changes that are effective as of June 25, 2019.

Audience Profile

Candidates for this exam analyze the requirements for ~~AI cloud-based and hybrid~~ AI solutions, recommends appropriate tools and technologies, and implements solutions that meet scalability and performance requirements.

Candidates translate the vision from solution architects and work with data scientists, data engineers, IoT specialists, and AI developers to build complete end-to-end solutions. Candidates design and implement AI apps and agents that use Microsoft Azure Cognitive Services and Azure Bot Service. Candidates can recommend solutions that use open source technologies.

Candidates understand the components that make up the Azure AI portfolio and the available data storage options.

Candidates implement AI solutions that use Cognitive Services, Azure bots, Azure Search, and data storage in Azure. Candidates understand when a custom API should be developed to meet specific requirements.

Candidates are aware of the various components that make up the Microsoft Azure AI portfolio, related open source frameworks and technologies, and available data storage options. Candidates use their understanding of cost models, capacity, and best practices to architect and implement AI solutions.

Candidates should have a working knowledge of basic statistics, data ethics, and data privacy.

Skills measured

Objective Domain

Analyze solution requirements (2025-2530%)

Identify storage solutions

may include but is not limited to:

- Identify the appropriate storage capacity
- Storage types and storage locations for a solution
- Determine the storage technologies that the solution should use
- Identify the appropriate storage architecture for the solution
- Identify components and technologies required to connect data

Recommend tools, technologies, and processes to meet process flow Cognitive Services APIs to meet business requirements

may include but is not limited to:

- Select the processing architecture for a solution
- Select the appropriate data processing technologies
- Select the appropriate AI models and services
- Identify components and technologies required to connect service endpoints
- Identify automation requirements

Map security requirements to tools, technologies, and processes

may include but is not limited to:

- Determine-Identify processes and regulations needed to conform with data privacy, protection, and regulatory requirements
- Determine-Identify which users and groups have access to information and interfaces
- Identify appropriate tools for a solution
- Identify auditing requirements

Select the software, and services, and storage required to support the a solution

may include but is not limited to:

- Identify appropriate services and tools for a solution
- Identify integration points with other Microsoft services
- Identify storage required to store logging, bot state data, and Cognitive Services output

Design AI solutions (3040-3545%)

Design an AI solutions that includes one or more pipelines.

may include but is not limited to:

- Define an AI application a workflow process
- Design a strategy for ingesting and egress data
- Design the integration point between multiple workflows and pipelines
- Design pipelines that use AI apps
- Design pipelines that call Azure Machine Learning models

- Select an AI solution that meet cost constraints

Design solutions that uses Cognitive Services

may include but is not limited to:

- Design solutions that use vision, speech, language, knowledge, search, and anomaly detection APIs

Design solutions that implement the Bot Framework

may include but is not limited to:

- Integrate bots and AI solutions
- Design bot services that use Language Understanding (LUIS)
- Design bots that integrate with channels
- Integrate bots with Azure app services and Azure Application Insights

Design the compute infrastructure to support a solution.

may include but is not limited to:

- ~~Define infrastructure types~~
- Determine-Identify whether to create a GPU, FPGA, -based or CPU-based solution
- Identify whether to use a cloud-based, on-premises, or hybrid compute infrastructure
- Select a compute solution that meets cost constraints

~~Design Intelligent Edge solutions.~~

may include but is not limited to:

- ~~Identify appropriate tools for a solution~~
- ~~Design solutions that incorporate AI pipeline components on Edge devices~~

Design for data governance, compliance, integrity, and security

may include but is not limited to:

- ~~Design-Define how users and applications will authentication-authenticate architecture to AI services~~
- Design a content moderation strategy for data usage within an AI solution
- Ensure that data adheres to compliance requirements defined by your organization
- Ensure appropriate governance for data
- Design strategies to ensure the solution meets data privacy and industry standard regulations

~~Design solutions that adhere to cost constraints~~

may include but is not limited to:

- ~~Choose a cost-effective data topology~~
- ~~Configure model processing options to meet constraints~~
- ~~Select APIs that meet business constraints~~

Integrate-Implement and monitor AI models into solutions (25-30%)

Orchestrate-Implement an AI workflow

may include but is not limited to:

- ~~Define and d~~Develop AI pipelines stages
- Manage the flow of data through solution components

- Implement data logging processes
- Define and construct interfaces for custom AI services
- Integrate AI models with other solution components
- Design solution endpoints
- Develop streaming solutions

Integrate AI services with solution components.

may include but is not limited to:

- Set up/Configure prerequisite components and input datasets to allow consumption of Cognitive Services APIs
- Configure integration with Azure Services
- Set up/Configure prerequisite components to allow connectivity with Bot Framework
- Implement Azure Search in a solution

Integrate Intelligent Edge with solutions

may include but is not limited to:

- Connect to IoT data streams
- Design pre-processing and processing strategy for IoT data
- Implement Azure Search in a solution

Deploy and manage solutions (20-25%)

Provision required cloud, on-premises, and hybrid environments

may include but is not limited to:

- Create and manage hardware and software environments
- Deploy components and services required to benchmark and monitor AI solutions
- Create and manage container environments

Validate solutions to ensure compliance with data privacy and security requirements

may include but is not limited to:

- Manage access keys
- Manage certificates
- Manage encryption keys

Monitor and evaluate the AI environment

may include but is not limited to:

- Identify the differences between KPIs, reported metrics, and root causes of the differences
- Identify the differences between expected and actual workflow throughput
- Maintain the AI solution for continuous improvement
- Monitor AI components for availability
- Recommend changes to an AI solution based on performance data