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NVIDIA AI Infrastructure and Operations Certification Training

2 days (14 hours)

Overview

The NVIDIA AI Infrastructure and Operations Certification Training prepares you for the official NCA-AIIO certification and provides you with the essential knowledge to understand, size, and operate an infrastructure dedicated to artificial intelligence workloads.

This entry-level course helps you prepare for the NCA-AIIO exam, an NVIDIA Associate certification that validates fundamental knowledge related to AI, accelerated computing, GPUs, and infrastructure environments.

You'll learn to distinguish between the requirements of training and inference workloads, understand the roles of CPUs, GPUs, and DPUs, and identify the hardware, networking, storage, and software components of an AI environment.

The course also covers challenges related to data centers, high-speed connectivity, power, cooling, monitoring, and orchestration. The concepts are organized according to the domains assessed by the official NCA-AIIO certification to help you structure your preparation effectively.

By the end of the course, you will be able to analyze an AI infrastructure scenario, select the relevant technical concepts, and methodically answer exam questions. Scenario-based exercises and workshops will help you apply your knowledge in a certification context.

Like all our training courses, this one will introduce you to **the latest stable version** of the technology and its new features.

Objectives

- Explain the fundamentals of AI, machine learning, and deep learning as applied to infrastructure
- Distinguish between training and inference architectures based on business needs
- Identify the role of CPUs, GPUs, DPUs, and the NVIDIA software stack in an AI environment
- Recognize the essential components of an AI infrastructure, from the data center to the accelerated cluster
- Systematically prepare for the official NCA-AIO exam using scenarios and certification questions

Target Audience

- Cloud Architect
- System Administrator
- Infrastructure Engineer
- Network Engineer
- DevOps Engineer

Prerequisites

- Basic knowledge of IP networks and data center environments
- General understanding of Linux or Windows operating systems
- Introductory knowledge of AI, machine learning, and deep learning
- Familiarity with the principles of virtualization, cloud computing, and infrastructure administration

Technical Prerequisites

- Computer running Windows 10 or 11, macOS, or Linux, with at least 8 GB of RAM
- A recent version of Google Chrome, Mozilla Firefox, or Microsoft Edge
- Stable internet connection without filtering that blocks access to NVIDIA lab environments
- Linux lab environment equipped with NVIDIA GPU resources and the monitoring tools required for the exercises
- Access to the NVIDIA resources and tools used during the training, provided by the organization or the instructor

Curriculum for our NVIDIA AI Infrastructure and Operations training

[Day 1 - Morning]

Fundamentals of AI and Accelerated Computing

- Overview of the official NCA-AIIO certification, assessed areas, and exam preparation methods.
- Essential vocabulary: artificial intelligence, machine learning, deep learning, data, models, and inference.
- Use cases for accelerated computing in industrial, scientific, and professional sectors.
- Differences between CPUs and GPUs, parallelism, memory, and the benefits of accelerated architectures.
- Overview of the NVIDIA ecosystem: hardware, software, and solutions for AI environments.
- Hands-on workshop: Analyzing certification-style questions to match an AI use case with the appropriate technical concept.

[Day 1 - Afternoon]

Training and Inference Architectures

- The lifecycle of an AI project, from data preparation to model deployment and operation.
- Characteristics of training workloads: data volumes, computing power, memory, and scalability.
- Characteristics of inference workloads: latency, throughput, availability, and resource optimization.
- Overview of the NVIDIA software stack: drivers, libraries, frameworks, and deployment tools.
- Choosing the right architecture: single server, on-premises infrastructure, cloud, or hybrid environment.
- Hands-on workshop: Compare three training and inference scenarios, then justify the choices regarding resource and architecture choices.

[Day 2 - Morning]

Components of an AI Infrastructure

- Architecture of an AI cluster: accelerated servers, storage, networking, management nodes, and users.
- Role of GPUs, DPUs, and hardware components in data processing and flow data.
- Sizing concepts: computing capacity, GPU memory, storage, and infrastructure scalability.
- Data center networking principles: latency, bandwidth, topologies, and high-speed .
- Physical constraints: power supply, cooling, space, cabling, and site requirements.
- Hands-on workshop: Identify the components needed for a basic AI cluster based on a deployment requirement.

[Day 2 - Afternoon]

Operations, monitoring, and final preparation

- Fundamentals of AI Operations: Availability, Resource Management, Security, and Service Continuity.
- Principles of GPU monitoring: usage, memory, temperature, power consumption, and
- Introduction to orchestration and job scheduling in a cluster environment.
- Virtualization of accelerated resources, workload isolation, and concepts of GPU sharing.
- Structured review of the exam topics: AI knowledge, AI infrastructure, and AI operations.
- Hands-on workshop: take a guided practice exam, review the answers, and create a for the NCA-AIIO certification.

Target Audience

This training is intended for both individuals and companies—large or small—seeking to train their teams in new, advanced IT technologies or to acquire specific industry knowledge or modern methodologies.

Pre-training Assessment

The pre-training assessment complies with Qualiopi quality standards. Upon final registration, the learner receives a self-assessment questionnaire that allows us to evaluate their estimated proficiency level across various types of technologies, as well as their expectations and personal goals for the upcoming training, within the limits imposed by the selected format. This questionnaire also allows us to anticipate certain connection or internal security issues within the company (intra-company or virtual classroom) that could pose challenges for monitoring and ensuring the smooth operation of the training session.

Teaching Methods

Hands-On Training: 60% hands-on, 40% theory. Training materials distributed in digital format to all participants.

Organization

The course alternates between theoretical input from the instructor—supported by examples and reflection sessions—and group work.

Assessment

At the end of the session, a multiple-choice quiz is administered to verify that participants have successfully acquired the skills.

Certification

A certificate will be issued to each trainee who has completed the entire training program.