Current Technologies
Computer Learning Centers

cisco Partner
Platinum Learning

AI Solutions on Cisco Infrastructure Essentials (DCAIE)

WHERE GREAT TRAINING HAPPENS EVERYDAY!

+1 (219) 764-3800
6210 Central Ave, Portage IN
sales@ctclc.com
www.ctclc.com

AI Solutions on Cisco Infrastructure Essentials (DCAIE)

Course Duration

4 Days

Course Price

$3,495.00
35 CLCs

Methods of Delivery

In-Person ILT
Virtual ILT
Onsite ILT

About this Class

The AI Solutions on Cisco Infrastructure Essentials (DCAIE) v1.0 training covers the essentials of deploying, migrating, and operating AI solutions on Cisco data center infrastructure. You'll be introduced to key AI workloads and elements, as well as foundational architecture, design, and security practices critical to successful delivery and maintenance of AI solutions on Cisco infrastructure.

AI Solutions on Cisco Infrastructure Essentials (DCAIE)

How you will benefit

This class will help you:

- Gain the knowledge you need to deploy, migrate, and operate AI solutions on Cisco data center infrastructure
- Qualify for professional-level job data center roles
- Earn 34 CE credits toward recertification

Why Attend with Current Technologies CLC

- Our Instructors are the top 10% rated by Cisco
- Our Lab has a dedicated 1 Gig Fiber Connection for our Labs
- Our Labs run up to Date Code for all our courses

Who Should Attend

The job roles best suited to the material in this course are:

- Network Designers
- Network Administrators
- Storage Administrators
- Network Engineers
- Systems Engineers
- Data Center Engineers
- Consulting Systems Engineers
- Technical Solutions Architects
- Cisco Integrators/Partners
- Field Engineers
- Server Administrators
- Network Managers
- Program Managers
- Project Managers

AI Solutions on Cisco Infrastructure Essentials (DCAIE)

Objectives

After taking this course, you should be able to:

- Describe key concepts in artificial intelligence, focusing on traditional AI, machine learning, and deep learning techniques and their applications
- Describe generative AI, its challenges, and future trends, while examining the nuances between traditional and modern AI methodologies
- Explain how AI enhances network management and security through intelligent automation, predictive analytics, and anomaly detection
- Describe the key concepts, architecture, and basic management principles of AI-ML clusters, as well as describe the process of acquiring, fine-tuning, optimizing and using pre-trained ML models
- Use the capabilities of Jupyter Lab and Generative AI to automate network operations, write Python code, and leverage AI models for enhanced productivity
- Describe the essential components and considerations for setting up robust AI infrastructure
- Evaluate and implement effective workload placement strategies and ensure interoperability within AI systems
- Explore compliance standards, policies, and governance frameworks relevant to AI systems
- Describe sustainable AI infrastructure practices, focusing on environmental and economic sustainability
- Guide AI infrastructure decisions to optimize efficiency and cost
- Describe key network challenges from the perspective of AI/ML application requirements
- Describe the role of optical and copper technologies in enabling AI/ML data center workloads
- Describe network connectivity models and network designs

AI Solutions on Cisco Infrastructure Essentials (DCAIE)

Objectives

After taking this course, you should be able to:

- Describe important Layer 2 and Layer 3 protocols for AI and fog computing for Distributed AI processing
- Migrate AI workloads to dedicated AI network
- Explain the mechanisms and operations of RDMA and RoCE protocols
- Understand the architecture and features of high-performance Ethernet fabrics
- Explain the network mechanisms and QoS tools needed for building high-performance, lossless RoCE networks
- Describe ECN and PFC mechanisms, introduce Cisco Nexus Dashboard Insights for congestion monitoring, explore how different stages of AI/ML applications impact data center infrastructure, and vice versa
- Introduce the basic steps, challenges, and techniques regarding the data preparation process
- Use Cisco Nexus Dashboard Insights for monitoring AI/ML traffic flows
- Describe the importance of AI-specific hardware in reducing training times and supporting the advanced processing requirements of AI tasks
- Understand the computer hardware required to run AI/ML solutions
- Understand existing AI/ML solutions
- Describe virtual infrastructure options and their considerations when deploying
- Explain data storage strategies, storage protocols, and software-defined storage
- Use NDFC to configure a fabric optimized for AI/ML workloads
- Use locally hosted GPT models with RAG for network engineering tasks

Prerequisites

The knowledge and skills you are recommended to have before attending this training are:

- Cisco UCS compute architecture and operations
- Cisco Nexus switch portfolio and features
- Data Center core technologies

+1 (219) 764-3800
6210 Central Ave, Portage IN
sales@ctclc.com
www.ctclc.com

AI Solutions on Cisco Infrastructure Essentials (DCAIE)

Course Outline

Module 1: Fundamentals of AI

Module 2: Generative AI

Module 3: AI Use Cases

Module 4: AI-ML Clusters and Models

Module 5: AI Toolset Mastery - Jupyter Notebook

Module 6: AI Infrastructure

Module 7: AI Workload Placements and Interoperability

Module 8: AI Policies

Module 9: AI Sustainability

Module 10: AI Infrastructure Design

Module 11: Key Network Challenges and Requirements for AI Workloads

Module 12: AI Transport

Module 13: Connectivity Models

Module 14: AI Network

AI Solutions on Cisco Infrastructure Essentials (DCAIE)

Course Outline

Module 15: Architecture Migration to AI/ML Network

Module 16: Application-Level Protocols

Module 17: High Throughput Converged Fabrics

Module 18: Building Lossless Fabrics

Module 19: Congestive Visibility

Module 20: Data Preparation for AI

Module 21: AI/ML Workload Data Performance

Module 22: AI-Enabling Hardware

Module 23: Compute Resources

Module 24: Compute Resource Solutions

Module 25: Virtual Resources

Module 26: Storage Resources

Module 27: Setting Up AI Cluster

Module 28: Deploy and Use Open Source GPT Models for RAG

AI Solutions on Cisco Infrastructure Essentials (DCAIE)

Lab Outline

Lab 1: AI Toolset—Jupyter Notebook

Lab 2: AI/ML Workload Data Performance

Lab 3: Setting Up AI Cluster

Lab 4: Deploy and Use Open Source GPT Models for RAG