AI Solutions on Cisco Infrastructure Essentials (DCAIE)

ID DCAIE **Prix** CHF 3 190,– (Hors Taxe) **Durée** 4 jours

A qui s'adresse cette formation

- 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

Pré-requis

There are no prerequisites for this training. This is an essentials training that progresses from beginner to intermediate content. Familiarity with Cisco data center networking and computing solutions is a plus but not a requirement. However, 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

These skills can be found in the following Cisco Learning Offerings:

- Implementing and Operating Cisco Data Center Core Technologies (DCCOR)
- Implementing Cisco NX-OS Switches and Fabrics in the Data Center (DCNX)

Objectifs

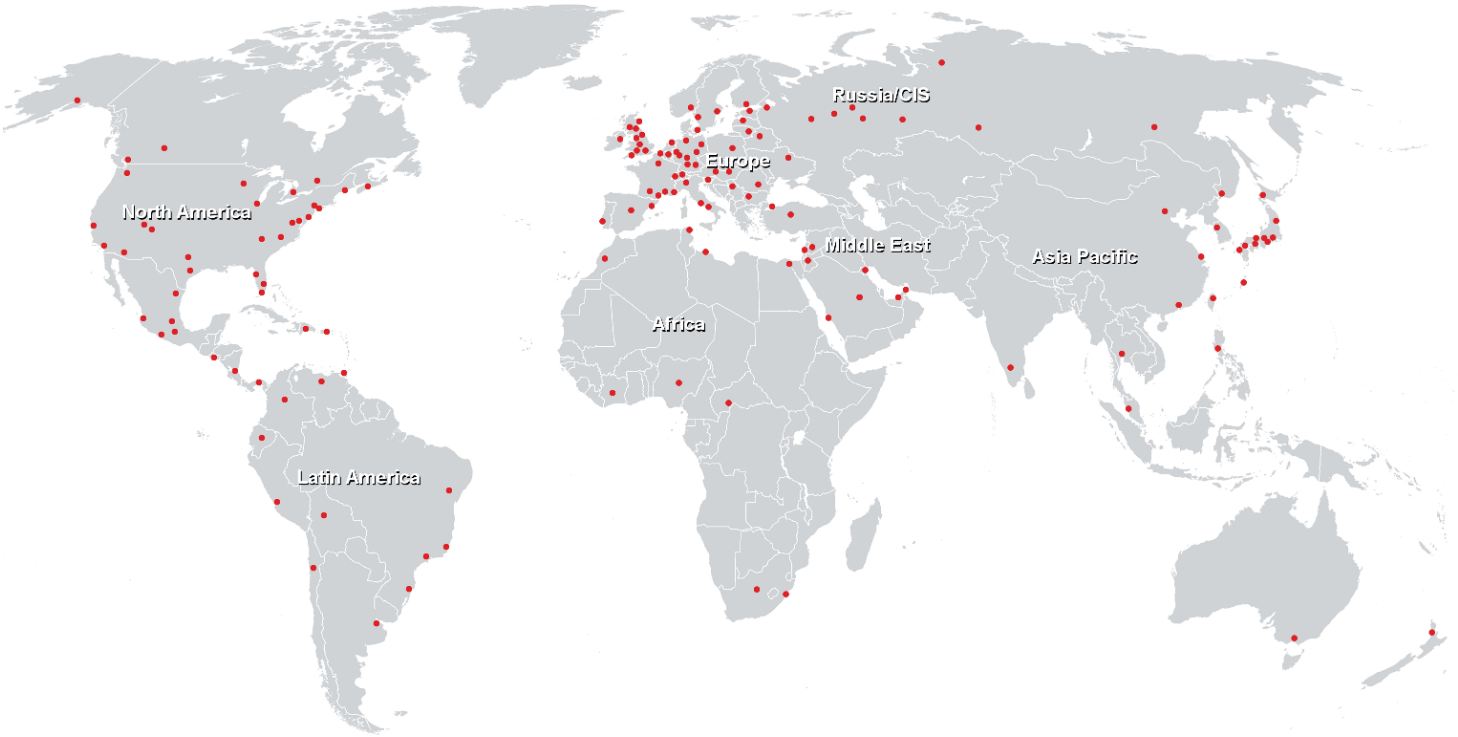
- Describe key concepts in artificial intelligence, focusing on traditional AI, machine learning, and deep learning techniques and their applications
- Describe generative AI, its challenges, and future trends, while examining the nuances between traditional and modern AI methodologies
- Explain how 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
- 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

Contenu

- Fundamentals of AI
- Generative AI
- AI Use Cases
- AI-ML Clusters and Models
- AI Toolset Mastery - Jupyter Notebook
- AI Infrastructure
- AI Workload Placements and Interoperability
- AI Policies
- AI Sustainability
- AI Infrastructure Design
- Key Network Challenges and Requirements for AI Workloads
- AI Transport
- Connectivity Models
- AI Network
- Architecture Migration to AI/ML Network
- Application-Level Protocols
- High Throughput Converged Fabrics
- Building Lossless Fabrics
- Congestive Visibility
- Data Preparation for AI
- AI/ML Workload Data Performance
- AI-Enabling Hardware
- Compute Resources
- Compute Resource Solutions
- Virtual Resources
- Storage Resources
- Setting Up AI Cluster
- Deploy and Use Open Source GPT Models for RAG

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