Implementing Cisco Data Center AI Infrastructure (DCAI)

Category: AI, Data & Analytics | **Vendor:** Cisco

Duration: 40.00 hours (5 days) **32.5 CPD Hours**

Rating: ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format:	Instructor Led - Online
Certification:	Cisco Certified Specialist - Data Center AI Infrastructure, Cisco Certified Network Professional (CCNP) Data Center
Related Exam:	300-640

Course Overview

The Implementing Cisco Data Center AI Infrastructure (DCAI) training is designed to equip professionals with the skills to support, secure, and optimize AI workloads within modern data center environments. This comprehensive program delves into the unique characteristics of AI/ML applications, their influence on infrastructure design, and best practices for automated provisioning. Participants will gain in-depth knowledge of security considerations for AI deployments and master day-2 operations, including monitoring and advanced troubleshooting techniques such as log correlation and telemetry analysis. Through hands-on experience, including practical application with tools like Splunk, learners will be prepared to efficiently monitor, diagnose, and resolve issues in AI/ML-enabled data centers, ensuring optimal uptime and performance for critical organizational workloads.

This training combines content from Operate and Troubleshoot AI Solutions on Cisco Infrastructure (DCAIAOT) and AI Solutions on Cisco Infrastructure Essentials (DCAIE) training.

This training prepares you for the 300-640 DCAI v1.0 exam. If passed, you earn the Cisco Certified Specialist - Data Center AI Infrastructure certification and satisfy the concentration exam requirement for the Cisco Certified Network Professional (CCNP) Data Center certification.

What to Expect in the Exam

Implementing Cisco Data Center AI Infrastructure (300-640 DCAI) v1.0 is a 90-minute exam associated with the Cisco Certified Specialist - Data Center AI Infrastructure certification and satisfies the concentration exam requirement for the CCNP Data Center certification.

This exam tests your knowledge of AI infrastructure, including:

- Design
- Implementation
- Monitoring
- Troubleshooting

How You'll Benefit

This training will help you:

- Acquire comprehensive skills to support, secure, and optimize AI workloads within modern data center environments
- Understand the design, implementation, and advanced troubleshooting of AI infrastructure, including network challenges and specialized hardware
- Gain in-depth knowledge of AI/ML concepts, generative AI, and their practical application in network management and automation
- Apply hands-on techniques for monitoring, diagnosing, and resolving issues, leveraging tools like Splunk and utilizing AI for enhanced productivity in network operations
- Prepare for the 300-640 DCAI v1.0 exam
- Earn 38 CE credits toward recertification

About This Course

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Who Should Attend

- 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

Prerequisites & Entry Requirements

General Prerequisites:

There are no formal prerequisites for this training. 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 Cisco NX-OS Switches and Fabrics in the Data Center (DCNX)
- Cisco Data Center Nexus Dashboard Essentials (DCNDE)
- Implementing and Operating Cisco Data Center Core Technologies (DCCOR)

Learning Outcomes

Upon successful completion of this course, participants will 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
- 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 compute hardware required to run AI/ML solutions
- Understand existing intelligence and 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

Detailed Course Outline

- Fundamentals of AI
- Generative AI
- AI Use Cases
- AI-ML Clusters and Models
- AI Toolset—Jupyter Notebook
- AI Infrastructure
- AI Workloads Placement 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
- Congestion 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
- AI Infrastructure Operations and Monitoring
- Troubleshooting AI Infrastructure
- Troubleshoot Common Issues in AI/ML Fabric

🎓 Certification Path

Cisco Certified Specialist - Data Center AI Infrastructure, Cisco Certified Network Professional (CCNP) Data Center

Exam: 300-640

Skills You Will Learn:

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Frequently Asked Questions

Q: What delivery options are available for Implementing Cisco Data Center AI Infrastructure (DCAI)?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: What certification does this course prepare me for?

The Implementing Cisco Data Center AI Infrastructure (DCAI) course helps prepare you for the Cisco Certified Specialist - Data Center AI Infrastructure, Cisco Certified Network Professional (CCNP) Data Center certification path.

Q: Which exam does this course prepare me for?

This course prepares you for the 300-640 official exam. You can take this exam at any exam center across United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online wherever you are located.

Q: How many CPD hours does this course provide?

The 5-day Implementing Cisco Data Center AI Infrastructure (DCAI) course provides up to 32.5 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the Implementing Cisco Data Center AI Infrastructure (DCAI) training?

The training takes place over 5 day(s), with each day lasting approximately 40.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for Implementing Cisco Data Center AI Infrastructure (DCAI)?

Yes, we provide corporate training, dedicated training, and closed classes for Implementing Cisco Data Center AI Infrastructure (DCAI). Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: What related terms do people search for?

Popular related searches include: Implementing Cisco Data Center AI Infrastructure, Cisco AI Solutions, DCAI

Q: Why choose Nexus Human for Implementing Cisco Data Center AI Infrastructure (DCAI)?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Implementing Cisco Data Center AI Infrastructure (DCAI) training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

Nexus Human

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