Networking Academy

it bildungsnetz

Akademie für Lehrerfortbildung und Personalführung

Der Zauber der Adhoc-Administration mit API und wie ich es lernen oder lehren kann

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Programmable Infrastructure Pathway

Disruption is a way of modern business life. With greater automation in IT, new skills are required. This pathway helps you acquire those skills—not only to become employable, but to help evolve the industry.

→ Pre-requisite knowledge

--→ Recommended pre-requisite knowledge

Certification preparation

Digital badge earned

Networking Academy Curriculum Portfolio

November 2020

Explore

Introduction to exciting opportunities in technology.

- ▲ Get Connected
- ▲ Introduction to Packet Tracer
- ▲ NDG Linux Unhatched
- ▲ Introduction to Cybersecurity
- ▲ Cybersecurity Essentials
- ▲ Introduction to IoT
- ▲ Entrepreneurship

Career

Preparation for entry level positions.

Digital Essentials

★ ● ■ IT Essentials
● ▲ NDG Linux Essentials
▲ Networking Essentials

● ▲ PCAP: Programming Essentials in Python
Hackathon Playbook (Design Thinking)

Networking

CCNA:
★ ● ■ Introduction to Networks (ITN)
★ ● ■ Switching, Routing, & Wireless Essentials (SRWE)
★ ● ■ Enterprise Networking, Security & Automation (ENSA)

CCNP Enterprise:
★ ● ■ Core Networking (ENCOR)
★ ● ■ Advanced Routing (ENARSI)

Programmable Infrastructure

Infrastructure Automation:
★ ● ■ DevNet Associate
Workshop: Network Programmability
Workshop: Experimenting with REST APIs
Workshop: Model-Driven Programmability

Internet of Things:
★ IoT Fundamentals: Connecting Things
★ IoT Fundamentals: Big Data & Analytics

Cybersecurity

★ ● ■ CyberOps Associate
★ ■ CCNA Security
IoT Security

Practice

Increase mastery with hands-on tools & experiences

Packet Tracer | Gaming | Prototyping Lab | Virtual Labs | Assessments | Physical Equipment

Complementary Offerings

Additional offerings available from Partners.

NDG

● ▲ NDG Linux I
● ▲ NDG Linux II
NDG NetLab+
NDG CyberOps Lab

OPENEDG

● CLA: Programming Essentials in C
● CLP: Advanced Programming in C
● CPA: Programming Essentials in C++
● CPP: Advanced Programming in C++

○ Aligns to Certification □ Instructor Training Required △ Self-paced ☆ ASC Alignment Required

DevNet Associate 1.0

Course Overview

This course introduces the methodologies and tools of modern software development, applied to the IT and Network operations. It covers a 360 view of the domain including microservices, testing, containers and DevOps, as well as securely automating infrastructures with Application Programming Interfaces (APIs).

Benefits

Gain practical, relevant, hands-on lab experience, including programming in Python, using GIT and common data formats (JSON, XML and YAML), deploying applications as containers, using Continuous Integration/Continuous Deployment (CI/CD) pipelines and automating infrastructure using code.

Prepare for Careers

- ✓ Develop skills for entry-level software development and infrastructure automation jobs
- ✓ Prepare for DevNet Associate certification exam

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students and participants of coding bootcamps

Estimated Time to Completion: 70 hours

Recommended Preparation:
Coding skills, equivalent to:
PCAP: Programming Essentials in Python
Fundamental skills of networking, equivalent to:
CCNA: Introduction to Networks

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 8 Modules with 6 Videos, 23 Hands-on Labs and 5 Cisco Packet Tracer Activities
- ✓ 8 Quizzes, 8 Module Exam, Practice Final Exam, Final Exam, Skills Based Assessment
- ✓ Practice Exam for DEVASC Certification

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge, Cert Voucher

Recommended Next Course:
CCNA, CCNP or CyberOps Associate

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** No, only using Virtual Machines on the student's computer
- **Voucher Availability:** Yes

CISCO CERTIFIED DEVNET Associate

Certification Aligned
Cisco Certified DevNet Associate

Course Outline

	Module Title	Objectives
1	Course Introduction	• Setup the lab environment • Review Python programming and Linux skills
2	The DevNet Developer Environment	• Explore and get familiar with DevNet Resources
3	Software Development and Design	• Use best practices from software development and design with Python
4	Understanding and Using APIs	• Discover API Design and Architecture styles and Advanced uses of REST APIs • Interact with REST APIs using command line, graphical tools and Python code
5	Network Fundamentals	• Explain the features and functions of common network devices • Troubleshoot basic network connectivity issues
6	Application Deployment and Security	• Use current technologies to deploy and secure applications and data in a local or cloud environments
7	Infrastructure and Automation	• Explore software testing and deployment methods in automation and simulation environments and use DevOps tools for infrastructure automation
8	Cisco Platforms and Development	• Compare Cisco platforms used for collaboration, infrastructure management, and automation • Use APIs to interact with and automate Cisco platforms

3 x Fast Track für Lehre und Unterricht: Emerging Technology Workshops

Emerging Technologies Workshop

Experimenting with REST APIs using Webex Teams

Workshop Overview

The Experimenting with REST APIs using Webex Teams workshop introduces you to the basic competencies needed to create applications and automate tasks using REST APIs, the most popular architecture for software integration in IT.

Benefits

In one day students will learn and practice Python programming skills and tools, culminating in live interactions with the APIs on Cisco collaboration software using the Webex Teams online platform.

Learning Outcomes

- Understand value, set-up and use the most prevalent software language (Python) and tools for network programmability (JSON, Postman).
- Understand the importance of participating in professional communities of practice when doing work in the software domain.
- Join and engage in 3 professional communities of practice: GitHub, Stack Overflow and Cisco DevNet.
- Describe the relevance of REST APIs architecture and perform basic software integration and automation using real-world APIs on an enterprise collaboration platform (Webex Teams).

Features

Target Audience: Vocational, 2-year and 4-year College, 4-Year University students
Prerequisites: Basic programming
Languages: English
Course Delivery: Instructor-led
Equipment: FREE! Uses free online software tools
Estimated Time to Complete: 8 hours
Recommended Insertion Points: PCAP Programming Essentials in Python, Connecting Things
Other Insertion Points: IT Essentials, CCNA R&S ITN
ASC Alignment Required: No
Instructor Training: Required, self-paced options available

1. Experimenting with REST APIs
2. Network Programmability
3. Model Driven Programmability

Emerging Technologies Workshop

Network Programmability with Cisco APIC-EM

Workshop Overview

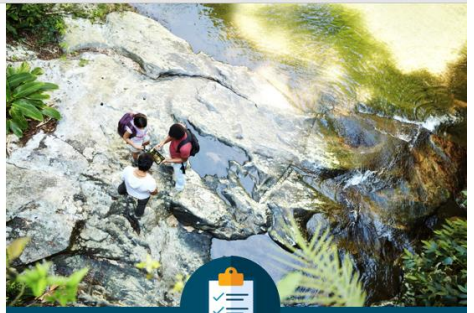
The Network Programmability with Cisco APIC-EM workshop introduces you to the basic competencies to operate and automate management tasks on a controller-based network.

Benefits

In this workshop, students will learn and practice Python programming skills and tools, culminating in live interactions with the APIs on Cisco programmable controllers using the Cisco DevNet Sandbox.

Learning Outcomes

- Understand the value, set-up and use of software concepts and tools relevant to network programmability (Python scripting, Git, JSON, Postman, APIs).
- Describe a different approach to software-defined networking (SDN), including central application policy control.
- Use the Cisco DevNet Sandbox to learn how to interact with programmable devices using real-world APIs on Cisco APIC-EM programmable controllers.
- Understand the value of joining professional communities of practice to working in the network programmability domain. Participate in Cisco DevNet, GitHub, and Stack Overflow.



Features

Target Audience: Vocational, 2-year and 4-year College, 4-year University students
Prerequisites: Basic programming, CCENT level networking
Languages: English
Course Delivery: Instructor-led
Equipment: FREE! Uses free online software tools
Estimated Time to Complete: 8 hours
Recommended Insertion Points: After CCNA R&S course 2, with CCNA Security or CCNP R&S
ASC Alignment Required: No
Instructor Training: Required, self-paced option available

Emerging Technologies Workshop

Model Driven Programmability

Workshop Overview

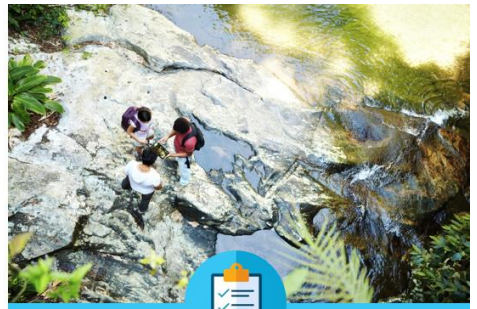
With the increasing size of the modern network and the frequency of changes required by the business, managing and automating networks via a Command Line Interface (CLI) is ineffective and error prone. A new approach, using Model Driven Programmability, enables transactional changes, by defining standardized device models and APIs. This workshop introduces students to device level programmability competencies, to automate configuration and management tasks using standardized YANG device models and using the RESTCONF and NETCONF device level APIs.

Benefits

Every networking student will benefit in grasping the importance of YANG, as language to "model" a networking device, combined with the robustness of the RESTCONF and NETCONF device level programmability APIs. Students will also experiment and develop Python scripts to manage networking devices at scale, using the Model Driven Programmability approach.

Learning Outcomes

- Understand the value, set-up and use of software concepts and tools relevant to network programmability (Python scripting, Git, JSON, Postman, APIs).
- Describe a different approach to software-defined networking (SDN), including central application policy control.
- Use Python with combination of RESTCONF and NETCONF APIs to retrieve and update the device's configuration
- Understand the value of joining professional communities of practice to working in the network programmability domain. Participate in Cisco DevNet, GitHub, and Stack Overflow.



Features

Target Audience: Vocational, 2-year and 4-year College, 4-year University students
Prerequisites: Basic programming, CCNA Routing and Switching Essentials level networking skills
Languages: English
Course Delivery: Instructor-led
Equipment: Virtual Cisco SW Router, DevNet Sandbox, or Real Equipment with Cisco ISR4k routers
Estimated Time to Complete: 8 hours
Recommended Insertion Points: After CCNA Routing and Switching Essentials, or CCNP R&S
Instructor Training: Required, self-paced option available

Instructor Training 2-Prong Approach

Option 1:
Novice instructors

Option 2:
DevNet Experienced instructors

ITC-based Value-Add Course

Best in class training by a Cisco Qualified Instructor Trainers

Opportunity to obtain:
- ✓ Accreditation to Teach
- ✓ Certificate of Course Completion
- ✓ Letter of Merit
- ✓ Learning Badge
- ✓ Certification Voucher

Online Self-Paced Training-only Course

Flexible solution for DevNet, SDN, APIs and coding experienced instructors

Accreditation Option **2a**

ITC Remote Proctored Final Exam

Opportunity to obtain:
- ✓ Accreditation to Teach
- ✓ Certificate of Course Completion
- ✓ Letter of Merit
- ✓ Learning Badge

Accreditation Option **2b**

DEVASC Certified

Opportunity to obtain:
- ✓ Accreditation to Teach

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Akademie für Lehrerfortbildung und Personalführung

Cisco Virtual Partner Technical eXchange

Contact

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