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Course Outline

Developing Applications Using Cisco Core Platforms and APIs
Course DEVCOR: 5 days Instructor Led

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About this course
Developing Applications Using Cisco Core Platforms and APIs (DEVCOR) v1.0 is a 5-day course which helps students prepare for Cisco DevNet Professional certification and for professional-level network automation engineer roles. Students will learn how to implement network applications using Cisco® platforms as a base, from initial software design to diverse system integration, as well as testing and deployment automation. The course gives you hands-on experience solving real world problems using Cisco Application Programming Interfaces (APIs) and modern development tools.

This course helps you prepare to take the 350-901 Developing Applications Using Cisco Core Platforms and APIs (DEVCOR) exam. By passing this exam, you satisfy the core exam requirement toward Cisco Certified DevNet Professional, and you earn the Cisco Certified DevNet Specialist – Core certification.

Audience profile
This course is designed for anyone who performs or seeks to perform a developer role and has one or more years of hands-on experience developing and maintaining applications that are built on top of Cisco platforms.

This course covers specialized material about designing, developing, and debugging applications using Cisco APIs and platforms, and managing and deploying applications on Cisco infrastructure. To fully benefit from this course, you should have three to five years of experience designing and implementing applications that are built on top of Cisco platforms.

The course is appropriate for:
- Network engineers expanding their skill-base to include software and automation
- Developers expanding expertise in automation and DevOps
- Solution architects moving to the Cisco ecosystem
- Infrastructure developers designing hardened production environments

The job roles best suited to the material in this course are:
- Senior network automation engineer
- Senior software developer
- Senior system integration programmer
- Senior infrastructure architect
- Senior network designer
- Senior test development engineer

At course completion
After completing this course, students will be able to:
- Describe the architectural traits and patterns that improve application maintainability
- Describe the architectural traits and patterns that improve application serviceability
- Identify steps to design and build a ChatOps application
- Implement robust Representational State Transfer (REST) API integrations with network error handling, pagination, and error flow control

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- Describe the necessary steps for securing user and system data in applications
- Describe the necessary steps for securing applications
- Identify common tasks in automated application release process
- Describe best practices for application deployment
- Describe methodologies for designing distributed systems
- Describe the concepts of infrastructure configuration management and device automation
- Utilize Yet Another Next Generation (YANG) data models to describe network configurations and telemetry
- Compare various relational and nonrelational database types and how to select the appropriate type based on requirements

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- Designing for Maintainability
- Designing for Serviceability
- Implementing ChatOps Application
- Describing Advanced REST API Integration
- Securing Application Data
- Securing Web and Mobile Applications
- Automating Application-Release
- Deploying Applications
- Understanding Distributed Systems
- Orchestrating Network and Infrastructure
- Modeling Data with YANG
- Using Relational and Non-Relational Databases

Lab Outline:

- Construct Sequence Diagram
- Construct Web Sequence Diagram
- Use Cisco Webex Teams™ API to Enable ChatOps
- Integrate Cisco Meraki™ API to List Service Set Identifiers (SSIDs) and Retrieve Location Data
- Use Paginated REST API Endpoint
- Utilize REST API Error Control Flow Techniques
- Evaluate Application for Common Open Web Application Security Project (OWASP) Vulnerabilities
- Resolve Merge Conflicts with Git
- Diagnose Continuous Integration and Continuous Delivery (CI/CD) Pipeline Failures
- Containerize Application Using Docker
- Integrate Application into Existing CI/CD Environment
- Diagnose Problems Using Application Logs
- Configure Network Parameters Using Ansible and Puppet
- Synchronize Firepower Device Configuration
- Utilize RESTCONF for Network Configuration

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- Query Relational Database
- Query Document Store
- Query Time Series Database
- Query Graph Database