

# DEVCOR (DEVELOPING APPLICATIONS USING CISCO CORE PLATFORMS AND APIS) 1.0

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## Objetivo

After taking this course, you should 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;
- 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.

## Público Alvo

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.

Additional job roles that could find this course useful are:

- Senior infrastructure architect;
- Senior network designer;
- Senior test development engineer;

Students preparing for Cisco Certified DevNet Professional and Cisco Certified DevNet Specialist Core certification will also find this material useful.

## Pré-Requisitos

There are no formal prerequisites for Cisco Certified DevNet Associate certification, but you should make sure to have a good understanding of the exam topics before taking the exam. Before taking this course, you should have:

- Knowledge of program design and coding with focus on Python;
- Familiarity with Ethernet, TCP/IP, and Internet-related networking;
- Understand the utilization of APIs;
- Understanding of software development and design methodologies;
- Hands-on experience with a programming language (specifically Python).

Here are Cisco learning resources that can help you prepare:

- Developing Applications and Automating Workflows Using Cisco Core Platforms (DEVASC);
- Explore the DevNet Certification area for specific topics and labs related to this course and certification: <https://developer.cisco.com/certification/>.

## Carga Horária

40 horas (5 dias).

## Conteúdo Programático

### Course Introduction

Course Outline

Course Goals & Objectives

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

Lab 1: Construct Sequence Diagram

Lab 2: Construct Web Sequence Diagram

Lab 3: Use Cisco Webex Teams™ API to Enable ChatOps

Lab 4: Integrate Cisco Meraki™ API to List Service Set Identifiers (SSIDs) and Retrieve Location Data

Lab 5: Use Paginated REST API Endpoint

Lab 6: Utilize REST API Error Control Flow Techniques

Lab 7: Evaluate Application for Common Open Web Application Security Project (OWASP) Vulnerabilities

Lab 8: Resolve Merge Conflicts with Git

Lab 9: Diagnose Continuous Integration and Continuous Delivery (CI/CD) Pipeline Failures

Lab 10: Containerize Application Using Docker

Lab 11: Integrate Application into Existing CI/CD Environment

- Lab 12: Diagnose Problems Using Application Logs
- Lab 13: Configure Network Parameters Using Ansible and Puppet
- Lab 14: Synchronize Firepower Device Configuration
- Lab 15: Utilize RESTCONF for Network Configuration
- Lab 16: Query Relational Database
- Lab 17: Query Document Store
- Lab 18: Query Time Series Database
- Lab 19: Query Graph Database