

SPCNCI (IMPLEMENTING CISCO CROSSWORK NETWORK CONTROLLER) 1.0

Objetivo

After taking this course, you should be able to:

- Explain the advantages of CNC for service lifecycle functions;
- Describe the architecture of the Cisco Crosswork Network Controller and its components;
- Describe the main operations features and capabilities of CNC;
- Perform the installation and initial configuration of the Cisco Crosswork Network Controller;
- Onboard network devices in CNC;
- Enable data collection in CNC using Crosswork Data Gateway;
- Provision traffic engineering policies to be used by network services;
- Explore network topology and inventory details by using the available visualizing tools;
- Optimize a network service instance for bandwidth utilization during the lifetime of service instances;
- Bind newly provisioned Layer 2 and Layer 3 VPN service instances to traffic engineering policies;
- Develop custom Layer 2 and Layer 3 Multiprotocol Label Switching (MPLS) VPN service definitions;
- Configure Key Performance Indicators (KPIs) to monitor the health of devices;
- Develop plays and playbooks for closed loop automation;
- Automate network operations and maintenance tasks;
- Explore closed loop workflows;
- Use northbound application programming interfaces to integrate other systems with CNC;
- Send alerts to northbound systems;
- Configure the collection and exporting of data to external endpoints;
- Manage the Crosswork cluster;
- Deploy CNC for optimal availability, scalability, and performance;
- Troubleshoot CNC issues.

Público Alvo

• Network administrators
• Network operators
• Network architects
• System installers
• System integrators
• System administrators

Pré-Requisitos

Before enrolling in this course, you should have the following knowledge and skills:

- Basic management of network components (routers, switches, etc.)
- Knowledge of segment routing and MPLS
- Working knowledge of traffic engineering
- Basic knowledge of the Cisco Command-Line Interface (CLI)
- Basic knowledge of programming (Python or any scripting language)
- Basic knowledge of the NETCONF communication protocol and Yet Another Next Generation (YANG) data modeling
- Basic knowledge of XML, YAML, or JavaScript Object Notation (JSON) data structures and schemas

These are the recommended Cisco offerings that may help you meet these prerequisites:

- Implementing and Administering Cisco Solutions (CCNA®)
- Implementing and Operating Cisco Service Provider Network Core Technologies (SPCOR)
- Implementing Cisco Service Provider VPN Services (SPVI)
- Implementing Automation for Cisco Service Provider Solutions (SPAUI)
- Implementing Cisco Service Provider Advanced Routing Solutions (SPRI)

Carga Horária

32 horas (4 dias).

Conteúdo Programático

- Introducing Cisco CNC
- Exploring Cisco CNC Architecture
- Describing Cisco CNC Unified Functions
- Installing and Configuring Cisco CNC
- Onboarding Network Devices
- Setting Up Data Collection
- Provisioning Traffic Engineering Policies
- Visualizing and Exploring Network Topology and Inventory Details
- Optimizing Networks Using Closed-Loop Automation
- Orchestrating VPN Services
- Developing Custom L2VPN and L3VPN Service Definitions
- Configuring KPIs to Monitor Device Health
- Automating Maintenance and Closed Loop Remediation
- Automating Network Maintenance Tasks
- Exploring Closed Loop Workflows
- Exploring Northbound APIs for External System Integration
- Managing System Alerts
- Collecting and Exporting Data to External Endpoints
- Operating a Cisco Crosswork Cluster
- Implementing CNC for High Availability, Scalability, and Performance
- Troubleshooting Cisco CNC

Lab outline

- Install Cisco CNC
- Use Device Life Cycle Manager to Onboard Devices
- Provision Data Gateways
- Provision Segment Routing for Traffic Engineering (SR-TE) Policies
- Customize View
- Enable Local Congestion Mitigation
- Provision VPN Services
- Extend an Existing VPN Service
- Create New KPI Profiles with Custom Alerting Logic and Forward Alerts via Northbound Interface (NBI)
- Develop Custom Plays and Playbooks
- Implement a Closed Loop Workflow
- Use Postman with Cisco CNC API
- Export Alerts to an External System
- Troubleshoot System Health Issues