

IOS-XR (TELECON O&M SERIES: OPERAÇÃO E CONFIGURAÇÃO DO CISCO IOS XR) 1.0

Objetivo

Ao término deste treinamento, o participante será capaz de: • Descrever os principais conceitos do Cisco IOS XR; • Configurar via CLI o Cisco IOS XR; • Administrar o Cisco IOS XR; • Administrar usuários; • Entender a operação do Cisco IOS XR; • Configurar os comandos básicos dos protocolos OSPF, BGP e MPLS em dispositivos com Cisco IOS XR; • Entender e configurar Route Policy Language - RPL; • Entender e configurar os principais comandos da VPN MPLS Layer 3.

Público Alvo

O público inclui os profissionais que demandam conhecimentos para entender, operar e configurar uma solução que contenha o sistema operacional Cisco IOS XR.

Pré-Requisitos

Para maior aproveitamento é recomendado que o aluno possua conhecimentos em redes IPs e conhecimentos básicos dos protocolos OSPF, BGP e MPLS; Estes conhecimentos podem ser obtidos através dos treinamentos das certificações Cisco CCNA e CCNP Enterprise.

Carga Horária

40 horas (5 dias).

Conteúdo Programático

• Cisco IOS XR Software Overview

- Cisco IOS XR Architecture
- High Availability (HA) Components
- HA: Plane Separation
- HA: Fault Tolerance and Isolation
- HA: Nonstop Forwarding
- Minimum Disruption Restart
- ISSU - In Service Software Upgrade Capability
- Scalability Features

• Cisco IOS XR Software Basics

- Two-Stage Configuration
- Configuration File System
- Access and Login

- o Command Modes
- o Configuration Modes
- o Administration Modes
- o Command Mode Examples
- o Virtual Routing and Forwarding
- o Configuration Considerations
- o Configuring Management Ethernet
- o Hostname
- o Configuring Loopback Address
- o Configuring Network Interfaces
- o Configuring Static and Default Routes
- o Configuring Telnet Access
- o Commit
- o Displaying the Active Configuration
- o Displaying the Target Configuration
- o Displaying the Merged Configuration
- o Displaying the Interfaces
- o Displaying the IP Interfaces
- o Displaying the Routing Table
- o Redundancy Commands

- **Cisco IOS XR Security**

- o Basic Security Overview
- o Prerequisites for Secure Access
- o Secure Access Implementation
- o Local Security Database
- o Remote Security Database
- o Secure Access Policy
- o Secure Access Policy Implementation
- o Task-Based Authorization
- o Site-Defined Groups and Users
- o Site-Defined Group Examples
 - *Task groups*
 - o Creating Site-defined Task Groups
 - o Verify “taskgroup” Configuration
 - *User groups*
 - o Predefined User Groups
 - o Predefined User Group Permissions
 - o Creating Site-defined User Groups
 - o Verify “usergroup” Configuration
 - o Configuring Users
 - o Verifying User Configuration
 - *Access lists*
 - o Access Control List Overview
 - o Creating ACL and Applying to Interface
 - o Editing ACLs
 - o Resequencing ACLs
 - o Copying ACLs

- o Displaying Access Lists

- **Cisco IOS XR Operations**

- o Preconfiguration
- o Locking and Unlocking the Configuration
- o Clearing Target Configuration Changes
- o Saving a Target Configuration
- o Aborting Configuration Mode
- o Failed Configuration Commands
- o Displaying Configuration Changes
- o Other Commit Keywords
- o Commit Comments and Labels
- o Configuration Sessions
- o Configuration Checkpoint and Rollback
- o Displaying Stored Configuration Commits
- o Displaying Committed Changes
- o Displaying Rollback Information
- o Rolling Back Configurations
- o Loading a Specific Configuration
- o Saving and Restoring Configuration Files
- o Process Restartability
- o Process Stop
- o Process Restart

- **IOS XR routing protocols**

- *OSPF Protocol*
 - o Feature Support
 - o CLI Configuration Structure
 - o Router Command and Submode
 - o Area Command and Submode
 - o Area Types
 - o interface Command and Submode
 - o Network Types
 - o Authentication Types
 - o Configuration Example
 - o OSPF Status
 - o Interface Operation
 - o Neighbor Adjacencies
- *BGP Protocol*
 - o Feature Support
 - o CLI Configuration Structure
 - o Configuring iBGP: Router Command and Submode
 - o Router address-family Command and Submode
 - o Neighbor Command and Submode
 - o Neighbor address-family Command and Submode
 - o Configuration Groups
 - o Neighbor-group Command and Submode
 - o Configuration Example

- o BGP and Neighbor Status
- o Peer Session Operation

- **Route policy language - RPL**

- o RPL Overview: Background
- o Fundamental Capabilities
- o Infrastructure
- o RPL Description: Basic Building Blocks
- o Hierarchical Policy
- o Parameterized Policy
- o Attach Point
- o Sets
- o Prefix Set
- o AS Path Set
- o Community Set
- o Extended Community Set
- o Route Distinguisher Set
- o Conditional Statements
- o Nested Conditionals
- o Boolean Conditions
- o Compound Conditions
- o Drop Condition
- o Attribute Value Determination
- o Converting Route Maps to RPL Policies
- o Initial Route Map Configuration
- o Direct Translation
- o Nest Conditionals
- o Use Inline Sets
- o Parameterize
- o Final RPL Policy Configuration

- **Multiprotocol Label Switching - MPLS protocol**

- o MPLS Forwarding Infrastructure
- o Displaying MPLS Forwarding
- o LDP - Label Distribution Protocol
- o LDP IGP Synchronization
- o Enabling LDP
- o LDP Router ID
- o LDP Neighbors
- o LDP Penultimate Hop
- o Restarting LDP Sessions
- o Displaying LDP Parameter Information
- o LDP Label Information Base
- o Displaying LDP Bindings Information
- o Displaying MPLS Interfaces

- **Layer 3 Virtual Private Networks**

- o Service Provider Solution

- o Terms to Understand
- o VPN Routing Infrastructure
- o Route Distinguisher Implementation
- o VPN Packet Flow
- o Configuration Steps
- o VRF Configuration
- o VRF Interface Configuration
- o Static Route Configuration
- o BGP Configuration
- o Displaying Configuration Information
- o Displaying Routing Information
- o Displaying IGP Information
- o Displaying BGP Information
- o Displaying MPLS Information