# Implementing Cisco SD-WAN Solutions (ENSDWI)

**Duration:** **5 Days**

**Prerequisites:**

You should have the following knowledge and skills before taking this training:

- Knowledge of Software-Defined Networking (SDN) concepts as applied to large-scale live network deployments
- Strong understanding of enterprise WAN design
- Strong understanding of routing protocol operation, including both interior and exterior routing protocol operation
- Familiarity with Transport Layer Security (TLS) and IP Security (IPSec)

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

- Implementing and Administering Cisco Solutions (CCNA®)
- Implementing and Operating Cisco Enterprise Network Core Technologies (ENCOR)

**Course Description:**

The Implementing Cisco SD-WAN Solutions (ENSDWI) training trains you to design, deploy, configure, and manage your Cisco® Software-Defined WAN (SD-WAN) solution in a large-scale live network, including how to migrate from legacy WAN to SD-WAN. You will learn best practices for configuring routing protocols in the data center and the branch, as well as how to implement advanced control, data, and application-aware policies. The training also covers SD-WAN deployment and migration options, placement of controllers, how to deploy WAN Edge devices, and how to configure Direct Internet Access (DIA) breakout. The training examines the different Cisco SD-WAN security options available, such as application-aware enterprise firewall, Intrusion Prevention System (IPS), URL filtering, Cisco Advanced Malware Protection (AMP), Secure Sockets Layer/Transport Layer Security (SSL/TLS) proxy, and Cisco Umbrella® Secure Internet Gateway (SIG).

The training lab environment is built using Cisco vEdge Cloud routers and Cisco SD-WAN 20.3 code.

This training helps you prepare to take the Implementing Cisco SD-WAN Solutions (300-415 ENSDWI) exam which is part of the CCNP® Enterprise certification. You will also earn 32 Continuing Education (CE) credits toward recertification.

**Course Objectives:**

After taking this training, you should be able to:

- Describe the Cisco SD-WAN solution and how modes of operation differ in traditional WAN versus SD-WAN
- Describe options for Cisco SD-WAN cloud and on-premises deployment
- Explain how to deploy WAN Edge devices
- Review the Zero-Touch Provisioning (ZTP) process and examine technical specifics for on-premises deployment
- Review the device configuration template and describe new features of device configuration templates
- Describe options for providing scalability, high availability, and redundancy
- Explain how dynamic routing protocols are deployed in an SD-WAN environment, on the service side and transport side
- Describe Cisco SD-WAN policy concepts, which includes how policies are defined, attached, distributed, and applied
- Define and implement advanced control policies, such as policies for custom topologies and service insertion
- Identify and implement advanced data policies, such as policies for traffic engineering and QoS
- Define and implement an Application-Aware Routing (AAR) policy
- Implement Direct Internet Access (DIA) and Cisco SD-WAN Cloud OnRamp options
- Describe Cisco SD-WAN security components and integration
- Describe how to design pure and hybrid Cisco SD-WAN solutions, as well as how to perform a migration to Cisco SD-WAN
- Describe Cisco SD-WAN Day-2 operations, such as monitoring, reporting, logging, troubleshooting, and upgrading
- Describe Cisco SD-WAN support for multicast

**Intended Audience:**

- System installers
- System integrators
- System administrators
- Network administrators
- Solutions designers

**Course Outline:**

- Section 1: Examining the Cisco SD-WAN Architecture
- Section 2: Examining Cisco SD-WAN Deployment Options
- Section 3: Deploying WAN Edge Devices
- Section 4: Managing Device Configuration
- Section 5: Exploring Redundancy, High Availability, and Scalability
- Section 6: Enabling Service-Side and Transport-Side Routing
- Section 7: Understanding Cisco SD-WAN Policy Configuration Basics
- Section 8: Defining Advanced Control Policies
- Section 9: Defining Advanced Data Policies
- Section 10: Implementing Application Quality of Experience
- Section 11: Implementing AAR
- Section 12: Examining DIA and Cisco Cloud OnRamp
- Section 13: Exploring Cisco SD-WAN Security
- Section 14: Designing and Migrating to Cisco SD-WAN
- Section 15: Performing Cisco SD-WAN Network Management and Troubleshooting
- Section 16: Examining Cisco SD-WAN Multicast Support

Lab Outline

- Discovery 1: Deploy Cisco SD-WAN Controllers
- Discovery 2: Deploy Cisco SD-WAN Devices Using Configuration Groups
- Discovery 3: Configure Cisco SD-WAN Controller Affinity
- Discovery 4: Implement Service-Side Routing Protocols
- Discovery 5: Implement TLOC Extensions
- Discovery 6: Implement Control Policies
- Discovery 7: Implement Data Policies
- Discovery 8: Implement Application-Aware Routing
- Discovery 9: Implement Branch and Regional Internet Breakouts
- Discovery 10: Configure Application Firewall
- Discovery 11: Migrate Branch Sites
- Discovery 12: Perform Cisco SD-WAN Software Upgrade
- CCSI Instructor Requirement