

Understanding Cisco Industrial IoT Networking Foundation (INFND)

v1.0 - On Demand

Modality: On Demand

Duration: 40 Hours

CLC: 6 Units

Course Information

About this course:

This course will provide you an overview of the applications, network infrastructure and protocols you need to support and manage Industrial Internet of Things (IIoT) solutions.

The course covers configuring and verifying the protocols on Cisco® IIoT networking devices. You will also learn about IIoT industry verticals and how different protocols are used within them.

Course Objective:

You will be equipped with the following skills after taking this course:

- Define what IIoT is and identify IIoT architectures.
- Discuss wireless technologies used in a core LAN, and their relevance to IIoT implementations.
- Explore field WAN technologies and how they are used in IIoT environments.
- Explore legacy protocols and explain the methods available to transport non-routable protocols over modern networks.
- Explain fundamental concepts of Quality of Service (QoS) related to IIoT network environments.
- Discuss Multiprotocol Label Switching (MPLS) operation, components, terminology, and features, and explore its use in IIoT environments.
- Explore Layer 2 and Layer 3 VPN technologies and describe the way they can be used on IIoT deployments.
- Describe Dense Wave Division Multiplexing (DWDM) technology and its use in IIoT environments.
- Explore Layer 1 and Layer 2 high-availability technologies and redundancy mechanisms.
- Describe Layer 3 high availability and the need for Layer 3 redundancy in IIoT deployments.
- Identify IIoT market verticals, and their motivations and requirements.
- Explore Cisco IIoT networking devices, how they are different from other devices, and use common administrative tools for managing them.
- Explore industrial communications protocols for control and automation, and how they have been adapted to run on top of a TCP/IP network infrastructure.
- Describe wireless protocols used in IIoT environments, including architectures and devices used.
- Understand the TCP/IP protocol stack and how it is used with other protocols in IIoT

environments.

- Discuss network protocols for clock synchronization between network devices and describe available tools for IIoT network administration.

Audience:

- IT engineers
- Operational Technology (OT) engineers
- Generalists, including managers, project leads, and solutions and business architects

Prerequisite:

The knowledge and skills that students are expected to have before attending this course are:

- The Managing Industrial Networks for Manufacturing with Cisco Technologies (IMINS2) course or equivalent knowledge
- CCNA® Routing and Switching (or equivalent knowledge)

Course Outline:

- **Course Introduction**
- **Defining Industrial Internet of Things**
- **Examining Common IIoT Verticals**
- **Examining Cisco IIoT Networking Devices**
- **Examining and Configuring Industrial Communication Protocols**
- **Describing Wireless IIoT Protocols**
- **Explaining and Configuring TCP/IP Protocols, Addressing, and Segmentation**
- **Examining Network Services and Administration**
- **Examining and Configuring Wireless Core LAN Technologies**
- **Describing Field WAN Technologies**
- **Examining and Configuring Transportation of Legacy Protocols**
- **Describing, Configuring, and Verifying Quality of Service (QoS) for IIoT Protocols**
- **Examining and Verifying MPLS and IIoT**
- **Configuring and Explaining VPN Technology and IIoT**
- **Describing DWDM**
- **Configuring and Defining Layer 1 and Layer 2 High Availability Technologies**
- **Defining and Configuring Layer 3 High Availability Technologies**