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Learning Style: Virtual Classroom

Technology: Cisco

Difficulty: Beginner

Course Duration: 2 Days

Industrial IoT Connected Mass Transit Transportation Solution Workshop (ICMTSM)

About this course:

?In the Industrial IoT Connected Mass Transit Transportation Solution Workshop (ICMTSW) v1.0 you will gain an understanding and knowledge of Cisco Industrial IoT Mass Transit Solution architecture, services, business outcomes, applications,

deployment models and use cases. This course starts with an introduction into the (Industrial) IoT general architecture, protocols and technologies that is used as an entry point into the Cisco Mass Transit Ecosystem of secure, reliable, and interoperable network infrastructure and services that intelligently connect passengers, drivers, operations centers, vehicles, bus stops, stations, video cameras, and digital signs. This course includes training on business objectives, outcomes and benefits of deploying Mass Transit solutions as well as training on designing, planning, proposing and deploying the Cisco IoT Mass Transit solutions.

Students will get familiar with the supported Mass Transit services, applications and possible deployment models for this particular Transportation vertical using Cisco Industrial IoT portfolio. This course will describe the Mass Transit applications such as Vehicle Location Tracking application, the wireless payment and real-time data collection, network management applications, Davra RuBAN IOT applications, Video surveillance manager and Instant connect application. Davra RuBAN IOT applications provides gateway management and provisioning, fleet management applications. Other related IoT applications such as IoT Edge, Fog computing, Big Data analytics applications are mentioned in this course as well.

This course will explain the Cisco Mass Transit Solution Cisco Validated Design (CVD) based on use case and the course will also provide a review of customer real world deployments. This course will review the Mass Transit Use cases such as Fleet Tracking and Management Services, On-Board Internet Service over Wi-Fi, Vehicle Two-Way Voice Communication and others.

Course Objective:

Upon completing this course, the learner will be able to meet these overall objectives:

- Define and understand the Business Value, Challenges and outcomes of Cisco’s Industrial Internet of Things (IoT) Mass Transit Transportation Solutions
- Understand the general (Industrial) IoT architecture, components, technologies, standards and protocols as well as Cisco IoT Mass Transit Architecture and components
- Describe the Cisco Industrial IoT Product Portfolio used in Mass Transit Solutions
- Understand the Mass Transit Ecosystem components, services and general solution architecture-based use case and Cisco Validated Design
- Explain the Cisco Industrial Connected Mass Transit Transportation Solution use cases
- Understand, plan, recommend, and deploy the Cisco Mass Transit architecture, design, components and services
- Understand, configure and manage the Cisco IoT Fog and Edge Computing Architecture and IOx Applications, containers and Programmability options
- Understand, configure the Cisco Industrial IoT Mass Transit applications such as FarePayment and data collection, data analytics, Big Data and network management Applications such as Davra RuBAN.
- Understand the Cisco Service Provider IoT architecture, IOT access,

platforms and applications
- Describe the Davra RuBAN application services and capabilities including gateway provisioning and management, GPS tracking/geo fencing, Fleet management – Estimated Arrival Time (ETA), proactive maintenance, driver behavior monitoring, video and voice integration.

Audience:

The primary audience for this course is as follows:

- Entry-level network engineer
- Network administrator
- Network support technician
- Help desk technician

Prerequisite:

The knowledge and skills that the learner should have before attending this course are as follows:

- Familiarity with selling and proposing Cisco Data Center solutions, cloud solutions, Cisco Routing and Switching solutions, as well as familiarity with the industrial ecosystem.

Course Outline:

Module 1: Introduction into Cisco Industrial IoT

- Lesson 1: Introduction to Industrial IoT
    - Industrial IoT Definition
    - Typical Differences between the Industrial and Conventional Networks Requirements
    - Industrial Manufacturing IoT Terms and Acronyms
    - Industrial IoT Standard Bodies
- Lesson 2: Industrial IoT Protocols and Devices
    - Cisco Industrial Device Types
    - Industrial IoT Protocols, Standards and Networks
    - Industrial IoT High-Availability Protocols
    - Cisco Industrial Wireless Networks
- Lesson 3: Cisco Industrial IoT Connectivity and Product Portfolio
    - Cisco IoT Industrial Ethernet (IE) Switching Products
    - Cisco IoT Industrial Embedded Routers and Switches Products
    - Cisco IoT Industrial Wireless Products
    - Cisco IoT Industrial Routing (IR)/FAN Products
    - Cisco IoT Digital Media Products
    - Cisco IoT Security Products
    - Cisco IoT IoX Products
    - Cisco IoT Management Products
- Lesson 4: Cisco Industrial IoT Architecture

        - Components of Cisco IoT System Architectural
        - Standardized Industrial IoT Architectures
        - Cisco Industrial IoT Transportation Design Basics
- Lesson 5: Cisco IoT Application Design and Deployment
    - IoT Fog Computing Applications (Containers and Programmability) and Data Analytics Applications
    - Cisco IoT Big Data Analytics
    - Service Provider IOT

Module 2: Introduction to Cisco Connected Mass Transit Transportation System

- Lesson 1: Introduction to Cisco Connected Mass Transit Transportation System
    - Cisco Connected Mass Transit Transportation Solution Challenges and Business Outcomes
    - Cisco Connected Mass Transit Transportation Capabilities
    - Cisco Competition in Industrial IoT Market
- Lesson 2: Cisco Connected Mass Transit Transportation Solution Use Cases
    - Onboard Passenger Wi-Fi?
    - Proactive Maintenance Alerts?
    - Connected Transit Vehicles?
    - Connected Bus Yard, stop and station
    - Live onboard video surveillance
- Lesson 3: Key Cisco Connected Mass Transit Services and Technologies
    - Cisco Connected Mass Transit Technologies
    - Cisco Connected Mass Transit Services

Module 3: Cisco Connected Mass Transit Solution Reference Architecture and Cisco Validated Design

- Lesson 1: Cisco Connected Mass Transit System Components and Reference Architecture
    - Connected Bus
    - Connected Yard Network
    - Connected Bus Stop
    - Data Center
- Lesson 2: Cisco Connected Mass Transit System Network Infrastructure and Topology
    - Cisco Connected Bus Yard High Level Topology
    - Cisco Connected Bus Stop High Level Topology
    - Cisco Connected Bus Onboard High-Level Topology
    - Cisco System Testbed Detailed Topology
    - RuBAN Network Management Infrastructure
    - Metro Network Infrastructure
- Lesson 3: Cisco Connected Mass Transit Network Management and other Applications
    - Davra RuBAN IoT Service Delivery Platform and RuBAN Application Services

        - RuBAN IoT Service Delivery Platform
        - Vehicle Location racking and Geo Fencing Applications
        - Asset Monitoring Application
        - Future FarePayment and Collection Application
        - Lesson 4: High-Availability, Scalability, Performance and Security of Cisco Connected Mass Transit System
        - Security
        - High Availability and Resiliency
- Lesson 5: Deployment of Cisco Connected Mass Transit Use Cases and Customer Deployments
        - Passenger Wi-Fi Network Services Use Case
        - Zero Touch Provisioning and Remote Monitoring Use Case
        - Vehicle Location Tracking Use Case
        - Vehicle Telemetry Data Collection Use Case
        - Vehicle Two-way Voice Communication Use Case
        - Video Surveillance Use Case
        - Fleet Management Services Use Case
        - Ignition Power Management Use Case
        - Wireless Bulk Data Transfer Use Case
        - Cisco Industrial Ethernet Connects Stations, Ticketing Machines and Digital Displays for LINZ AG
        - Improving Road