



Administering Cisco DNA Spaces (DNASPA)

COURSE OVERVIEW

Cisco DNA Spaces helps resolve physical-space 'blind spots' inside an organization. Through Cisco wireless infrastructure, organizations can gain insights into how people and things move throughout their physical spaces. Based on these insights, organizations can drive operational efficiencies by monitoring and managing the location, movement, and utilization of assets.

This course enables learners how to use DNA Spaces to drive operational efficiency across environment types. Learners will understand use-cases and obtain the ability to identify procedures and applications when implementing and operating DNA spaces that are getting 'back to business' or business as usual.

This course covers both basic and advanced operational elements of DNA Spaces while considering Data Analytics in the context of DNA Spaces. You will perform a hands-on 'deep-dive' into the solution and perform on-boarding of wireless infrastructure. Subsequently, you will configure the DNA Spaces solution both tactically and strategically. This will include elements such as behavioral metrics, location analytics, captive portals, profiling, customer engagements, Internet of Things, asset identification and management, and API interfaces for streaming and notifications. You will also explore DNA Spaces App Center and IoT Device Marketplace.

WHO WILL BENEFIT FROM THIS COURSE?

The primary audience for this course is as follows:

- System Engineers
- Network Engineers
- Technical Managers
- System Administrators
- System Architects
- Technical Decision Makers

PREREQUISITES

The knowledge and skills that a learner must have before attending this course are as follows:

- Basic knowledge of networking concepts.
- Basic knowledge of Wi-Fi concepts.
- Basic knowledge of computer security.

COURSE OBJECTIVES

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

- Understand DNA Spaces benefits
- Use DNA Spaces in three phases



- Explore the DNA Spaces security features in the context of data compliance
- Analyze DNA Spaces components, architectures, and use cases
- Consider DNA Spaces migration options
- Analyze data provided by DNA Spaces
- Discuss the DNA Spaces indoor Internet of Things (IoT) service and its use cases
- Explore Open Roaming
- Configure DNA Spaces onboarding
- Configure and demonstrate DNA Spaces IoT Services
- Configure DNA Spaces profiles, engagements, and triggers
- Configure a captive portal
- Perform API calls to DNA Spaces

COURSE OUTLINE

Section 1 – DNA Spaces Solutions Overview

- Introduction – What is “DNA Spaces”?
- Resolution of physical-space blind spot to better understand behavior and location of people and things
- Operationalizing DNA Spaces
- Providing Data Analytics for Business Intelligence
- Operational Efficiency and productivity
- Improve customer experience
- Understand behavior and monetization
- Onboarding to provide customer acquisition and loyalty
- Enhance IT productivity

Section 2 – DNA Spaces Use Cases

- Example Use Cases by Vertical
- Retail
- Healthcare
- Carpeted Enterprises
- Education
- Hospitality
- Manufacturing
- Education
- “Back-to-Business” – Observations, recommendations, and applications specific to safe Covid-19 reopening

Section 3 – ‘SEE-EXTEND-ACT’: Three-phased approach to extract maximum value from your Cisco wireless infrastructure.

- SEE-EXTEND-ACT
- Overview
- SEE what’s happening at your properties
- Behavior Metrics



- Right Now
- Camera metrics
- Open roaming
- Location Analytics
- Detect and Locate
- Impact Analysis
- EXTEND platform capabilities and drive business outcomes
- High-performance streaming API (Firehose)
- Dashboard
- Native integration into enterprise software
- Apps Center for industry-specific solutions
- ACT on insights with digitization toolkits
- Internet of Things (IoT)
- Captive Portal
- Location Personas
- Engagements
- Asset Locator
- Proximity reporting

Section 4 – DNA Spaces and Data Compliance

- Protecting data at rest and in transit
- Data Security Law compliance

Section 5 – Architecture Overview and Location Compute Models

- Supported Topologies
- On-premise Direct-Connect
- On-premise Cloud-enabled Connected Mobility Experience
- DNA Spaces Connector
- Meraki
- Compute Model – On-Premise
- Compute Model – Cloud
- Migrating from Connected Mobility Experience/Mobility Services Engine (CMX/MSE) to DNA Spaces
- Why Migrate to DNA Spaces?
- Migration Options – Overview
- Migration Option 1 – Keep AireOS WLC and PI on-premise
- Migration Option 2 – Keep only AireOS WLC on-premise
- Migration Option 3 – Keep only Prime on-premise
- Migration Option 4 – Full stack migration
- DNA Spaces – Ports, Protocols, and Data Flows

Section 6 – Getting started with DNA Spaces: Onboarding

- Account Creation
- Connecting to DNA Spaces and Network Onboarding



- Connecting to DNA Spaces – Introduction
- Cisco Wireless Connectors
- Meraki Connector
- Configuring Locations
- Location Hierarchy - Introduction
- Location Hierarchy Creation – Automated Map Import
- Location Hierarchy Creation – Manual Configuration
- Location Hierarchy Configuration Best Practices

Section 7 – Advanced Topics

- Open Roaming
- Problem Statement
- The Players
- On-Boarding
- Configuration
- Indoor Internet of Things (IoT)
- Indoor IoT Problems
- Indoor IoT Solutions with DNA Spaces
- Indoor IoT Components
- Indoor IoT Gateway Types
- Indoor IoT Control Flows
- Indoor IoT Configuration
- Configure Asset Management using IoT device
- DNA Spaces APIs and Firehose
- API configuration
- SLA and monitoring
- Firehose configuration (streaming data support)
- DNA Spaces App Center
- Extend location data into enterprise software platforms
- Review enterprise application

Section 8 – DNA Spaces and Data Analytics

- Introduction to Data Analytics
- Data analytics review – mathematical, probability, and statistical functions
- Introduction to graphical functions and data structures to represent data
- Extracting data using DNA Spaces APIs
- Proposed use cases:
 - Determining physical location density based on telemetry data
 - Build and index people proximity in a given space using dynamic clustering
 - Predicting when a space's capacity limits will be reached telemetry data
 - Calculation of dynamic proximity coefficient. Example: 'x' number of people crowded around a moving crane. Currently this is done using RFID tags with maximum distance of 15 meters within 3 meters of precision



Lab Outline:

Lab 1: Configure DNA Spaces Connector

- Step 1: Log in to DNA Spaces Account
- Step 2: Configure Spaces connector
- Step 3: View the token
- Step 4: Log in to On-premise Connector and verify settings
- Step 5: Configure Token
- Step 6: View Connector Status On-premise
- Step 7: View Connector Status in Cloud Account

Lab 2: Add Wireless LAN Controllers

- Step 1: Add Controllers
- Step 2: Check WLC Connectivity on the Connector
- Step 3: Check status on the WLC

Lab 3: Maps and Location Hierarchy

- Step 1: Configure or Export Maps from Cisco Prime
- Step 2: Upload Maps in DNA Spaces
- Step 3: View the Location Hierarchy
- Step 4: Add META Data about the site
- Step 5: Enter Location Details
- Step 6: Add Zone
- Step 7: Select Access Points for Zone
- Step 8: View the updated Location Hierarchy

Lab 4: Location Analytics

- Step 1: Navigate to Location Analytics
- Step 2: View the different Analytics
- Step 3: Apply Filters

Lab 5: Captive Portal Setup

- Step 1: Captive Portal Setup
- Step 2: Select Authentication
- Step 3: Select Email
- Step 3: Enable Data Capture
- Step 4: Review User Agreements
- Step 5: Portal Editor
- Step 6: Verify Portal Created
- Step 7: Configure SSID
- Step 8: Captive Portal Rule Creation
- Step 9: Provide Rules
- Step 10: Portal Status
- Step 11: Setting up WLAN on the WLC
- Step 12: Connect your gadgets



Lab 6: Location Personas

- Step 1: Setting up Visitor and Employee Personas
- Step 2: Viewing Configured Personas

Lab 7: Engagement Rules

- Step 1: Setting up Engagement Rules with Personas
- Step 2: View Visitor Engagement Metrics

Lab 8: Add IoT Services

- Step 1: Configure AP Gateway
- Step 2: Deploy IoT Devices and/or sensors
- Step 3: Configure and enable IoT Streams
- Step 4: Configure Access Point as Beacon or Gateway
- Step 5: Troubleshoot
- Step 6: Monitor

Lab 9: REST API Query

- Step 1: Go to Detect & Locate App
- Step 2: Navigate to Notifications
- Step 3: Get the API Keys
- Step 4: Get Postman App
- Step 5: Open the application and create a new request
- Step 6: Create Request
- Step 7: Prepare the query
- Step 8: Submit/Send the query
- Step 7: Prepare the query
- Step 8: Submit/Send the query

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