640-461: Introducing Cisco Voice and Unified Communications Administration (ICOMM) v8.0

Course Introduction — 3m

Course Introduction

Module 01 - Overview of Cisco Unified Communications Solutions — 1h56m

Understanding the Components of Cisco Unified Communications Solutions

Cisco Unified Communications Manager Express Overview
Cisco Unified Communications Manager Express Supported Platforms
Cisco Unified Communications Manager Express Data Streams
Cisco Unified Communications Manager Express Key Features
Cisco Unity Express Overview
Cisco Unity Express Modules
Cisco Unity Express Data Streams
Cisco Unified Communications Manager Overview
Cisco Unified Communications Manager Hardware Requirements
Overview of Cisco Unified Computing System Solution
Cisco Unified Communications Manager High Availability
Database Replication and User-Facing Features
Intracluster Communication
Cisco Unified Communications Manager Data Streams
Cisco Unified Communications Manager Key Features
Cisco Unity Connection Overview
Cisco Voice Messaging Systems Overview
Cisco Unity Connection Architecture
Cisco Unity Connection High Availability
Cisco Unified Presence Overview
Cisco Unified Personal Communicator Overview
Cisco Unified Presence Deployment
Summary

Understanding the Characteristics of Cisco Unified Communications Solutions

Traditional Voice Networks
Analog Circuits
Digital Circuits
Converged Voice Networks
VoIP Provider Connect
VoIP Protocols
Digital Signaling Processors
Voice Codecs
RTP and RTCP
Packet Requirements
Advantages and Drawbacks of Packet-Oriented Networks
QoS Recommendations
Link Fragmentation and Interleaving
Compression Methods
Quality of Service Models
Quality of Service Mechanisms
Applying Quality of Service to Input and Output Interfaces
Queuing Algorithms
Summary
Module 01 Review

Module 02 - Overview of Administrator and End-User Interfaces 2h 49m

Understanding Administrator Interfaces

Cisco Unified Communications Manager Web Interface
Cisco Unified Communications Manager Serviceability
Cisco Unified Communications Manager Services
Cisco Unified Communications Manager Operating System
Disaster Recovery System
Cisco Unified Reporting
Access the CLI
User Management: Roles
Custom Roles
User Management: Group
Design Example with Default Roles
Design Example with Custom Roles
Access the Web Interface
Cisco Unity Connection Serviceability
Access the Web Interface 2
Cisco Unified Presence Serviceability
Access the Web Interface 3
Access the CLI 2
Cisco Configuration Professional
Access the Web Interface 4
Access the Command Line Interface
Configuring Cisco Unity Express with Cisco Configuration Professional
Comparing the Interfaces
Lab 1 - Task 1: Exploring Administrator Interfaces
Lab 1 - Task 2: Create a Personalized Application User and Verify Role Privileges for Application User Web Pages
Lab 1 - Task 3: Check System Information
Lab 1 - Task 4: Add a New Cisco Unified IP Phone
Lab 1 - Task 5: Modify Service Parameters
Lab 1 - Task 7: Enable Services on Cisco Unified Presence
Lab 1 - Task 8: Create the Presence Gateway for Cisco Unified Communications Manager in Cisco Unified Presence
Lab 1 - Task 9: Enable Synchronization of End Users for Cisco Unified Presence
Lab 1 - Task 10: Start a Service on Cisco Unity Connection
Lab 1 - Task 11: Verify SCCP Integration on Cisco Unity Connection
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Understanding End-User Interfaces

Configure End Users to Access User Website
Customize User Website Permissions
Customize CCMUser Enterprise Parameters
End-User LDAP Authentication
Device Settings
User Settings
Directory and Fast Dial
Cisco Unified Communications Manager Express End-User Interfaces
End-User Web Interface
Enable Web Access for End Users
Cisco Unity Express End-User Interfaces
Telephone User Interface
Cisco VoiceView Express
Authentication and Synchronization
Administrator Enabled User Login
Cisco Unity Connection Assistant
Cisco Unity Connection Inbox

Personal Call Transfer Rules
Telephone User Interface 2
Cisco Visual Voicemail
Cisco Unified Presence End-User Interfaces
End-User Authentication
Preferences
Contacts and Privacy Policies
IPPM Broadcast and Response Messages
Lab 2 - Task 1: Create an End User in Cisco Unified Communications Manager
Lab 2 - Task 2: Set Enterprise Parameters and Configure End User Settings
Lab 2 - Task 3: Configure WebDialer for End Users
Lab 2 - Task 4: Configure Voice-Mail Users in Cisco Unity Connection
Lab 2 - Task 5: Create End Users in Cisco Unified Communications Manager Express
Summary
Module 02 Review

Module 03 - Call Flows in Cisco Unified Communications Manager and Cisco Unified Communications Manager Express 3h8m

Understanding Call Flows and Call Legs
SCCP Call Flow with DNS
SCCP Call Flow without DNS
Centralized Remote Branch Call Flow
Centralized Architecture PSTN Backup Call Flow
Centralized Architecture PSTN Backup Considerations
Distributed Architecture Call Flow
Distributed Architecture Considerations
Distributed Architecture PSTN Backup Call Flow
PSTN Backup Path Selection
AAR Call Flow
AAR Characteristics
Cisco Unified Communications Manager Express Call Flow
Cisco Unified Communications Manager Express Call Legs
POTS Dial Peers
VoIP Dial Peers
Matching Inbound Dial Peers
Default Incoming VoIP Dial Peer
Matching Outbound Dial Peers
Influencing Outgoing Call Behavior
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Understanding the Configuration Components Impacting Call Flows in Cisco Unified Communications Manager
Class of Service
Call Privileges Requirement Example
CoS Planning
CoS Configuration Elements
Partitions
Calling Search Spaces
Partition "None" and CSS "None"
CSS Partition Order Relevance
Example of Basic Partitions CSSs
Example with IP Phone Line and Device CSSs
CoS Sample Scenario
Call Routing Types
Call Routing Table Entries
Sources of Call Routing Requests
Cisco Unified Communications Manager Call Routing Logic

Addressing Method
User Input on SCCP Phones
Digit-by-Digit Analysis
Cisco Unified Communications Manager Path Selection Configuration Elements
Local Route Group Configuration
Hunt Group Overview
Hunt Pilots
Hunt Lists
Line Groups
Line Group Distribution Algorithms
Call Admission Control
Location Characteristics
Regions
Defining Regions
CAC Types
Lab 1 - Task 1: Discover the Cisco Unified Communications Manager CoS Implementation
Lab 1 - Task 2: Discover the Cisco Unified Communications Manager Call Routing Implementation
Lab 1 - Task 3: Discover the Inbound Cisco Unified Communications Manager COR Implementation
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Understanding the Configuration Components Impacting Call Flows in Cisco Unified Communications Manager Express

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COR Behavior
Default COR Behavior
COR Solution Example
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Call Routing Overview
Call Routing Backup
Trunk Groups
Ephone Hunt Group Overview
Ephone Hunt Group Default Behavior
Basic Automatic Call Distribution
Typical Call Using B-ACD
Lab 2 - Task 1: Discover the Cisco Unified Communications Manager Express COR Implementation
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Module 03 Review

Module 04 - Endpoint and End User Administration 3h35m

Understanding Endpoint Characteristics and Configuration Requirements

Network Components
Network Time Protocol
Special Functions Used by Cisco IP Phones
IP Phone Registration
Cisco SCCP IP Phone Startup Process
VLAN Discovery Process
IP Phone DHCP Configuration
DHCP Server Feature Support Overview
TFTP Device Configuration XML File
IP Phone Registration 2
Cisco SIP Phone Startup Process
Cisco Unified Communications Manager Network Configuration
Service Activation
DHCP Server
DHCP on Cisco Unified Communications Manager Express
IP Phone Configuration Requirements
Cisco Unified Communications Manager Group

Device Defaults and Profiles
Device Pools
Templates
IP Phone Configuration
Adding IP Phones
Software Configuration Elements
Summary
Understanding Endpoint Implementation Options
Endpoint Basic Configuration Elements
Phone NTP Reference
Date/Time Group Configuration
Cisco Unified Communications Manager Group
Regions Configuration
Locations Configuration
Device Pools Configuration
Device Settings Configuration
Device Defaults Configuration
Phone Button Template Configuration
Softkey Template Configuration
Common Phone Profile Configuration
Configuration Methods and Tools
Autoregistration
Configuring Autoregistration
Assigning the Default Autoregistration Protocol
Cisco Unified Communications Manager Group Configuration
Cisco Unified Communications Manager Configuration
Manual Cisco IP Phone Configuration
Add the IP Phone
Configure SCCP IP Phone Settings
Directory Number Configuration
Apply the Configuration
Cisco Unified Communications Manager BAT
Cisco Unified Communications Manager BAT Components
BAT.xlt File
Bulk Provisioning Service
Cisco Unified Communications Manager BAT Templates
Adding Phones
Export Utility
Getting Started with Cisco Configuration Professional
Cisco Configuration Professional Community
Adding Devices to Communities
Device Discovery
Initial Configuration
Configure Menu
Telephony Settings
Phone Firmware
Adding Extensions
Adding IP Phones
Adding Users
Associate Users with Phones and Extensions
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Configuration Tool Comparison
Lab 1 - Task 1: Verify Endpoint Basic Configuration Elements in Cisco Unified Communications Manager
Lab 1 - Task 2: Add a New Phone in Cisco Unified Communications Manager Using Autoregistration
Lab 1 - Task 3: Add a New Phone in Cisco Unified Communications Manager Using the Cisco Unified Communications Manager BAT

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Understanding End-User Characteristics and Configuration Requirements
User Accounts
Credential Policy
Passwords
PIN
Features Interacting with User Accounts
Types of User Accounts
Data Associated with User Accounts
User Locale
Device Association
User Access Levels
User Locale 2
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Understanding End-User Implementation Options
Cisco Unified Communications Manager User Management Options
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Manual End User Configuration Page
LDAP
Cisco Unified Communications Manager LDAP Support
LDAP Integration: Synchronization
LDAP Synchronization
LDAP Integration: Authentication
LDAP Authentication
End-User Data Storage Locations
LDAP Integration Considerations
LDAP Attributes Mapping
LDAP Synchronization: Data Attributes Imported
Synchronization Agreements
User Search Bases
Synchronization Mechanism
LDAP Custom Filter
LDAP Synchronization Configuration Procedure
Activate Cisco DirSync Service
LDAP System Configuration
Configuring LDAP Directory
LDAP Synchronization Verification
LDAP Synchronization User Attributes
LDAP Authentication Configuration
LDAP Authentication Verification
LDAP Custom Filter 2
LDAP Custom Filter Verification
Cisco Configuration Professional
User Directory
Lab 2 - Task 1: Configure End Users in Cisco Unified Communications Manager by Configuring New Users in Microsoft Active Directory for End User Synchronization
Lab 2 - Task 2: Change User Settings in Cisco Unified Communications Manager
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Module 04 Review

Module 05 - Enablement of End User Telephony and Mobility Features 3h30m

Understanding Telephony Features
Cisco Extension Mobility
Cisco Extension Mobility Login Process
Cisco Extension Mobility Default Device Profile
Call Forward Options

Shared Lines
Shared Lines with Barge and Privacy
Call Pickup
Directed and Group Call Pickup
Other Group Pickup
Call Hunting Components
Call Hunting with Personal Preferences
Call Park
Intercom
Intercom with Connected Line State
Intercom Architecture
Cisco Unified Communications Manager Presence Characteristics
Presence Status on IP Phones
BLF Call Pickup
Limiting Presence Visibility
Subscribe CSS
Presence Groups
Cisco Extension Mobility 2
Call Forward
Night Service
Paging
Shared Ephone-dn
Call Pickup Groups
Intercom 2
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Enabling Telephony Features

Cisco Extension Mobility Configuration Checklist
Step 1: Activate the Cisco Extension Mobility Service
Step 2: Set Cisco Extension Mobility Service Parameters
Step 3: Add the Cisco Extension Mobility Phone Service
Step 4: Create Default Device Profiles
Step 5a: Create Device Profiles
Step 5b: Subscribe Device Profile to Phone Service
Step 6: Associate Users with Device Profiles
Step 7a: Configure Phones for Cisco Extension Mobility
Step 7b: Subscribe Phones to Phone Service
Call Coverage Overview
Shared Lines
Barge and cBarge Service Parameters
Barge and cBarge Softkeys
Barge and cBarge Configuration
Group Pickup Configuration
Configure the Softkey Template for Call Pickup Groups
Assign a Directory Number for Call Pickup Group
Call Park and Directed Call Park Configuration
Add Call Park BLF Feature
Hunt Configuration Steps
Step 1: Add Line Group Groups
Step 2: Configure Hunt Lists
Step 3a: Set Hunt Pilot
Step 3b: Set Hunt Forwarding
Step 4: Service Parameters and Login and Logout Feature
Intercom Configuration Steps
Step 1: Create Intercom Partitions
Step 2: Intercom Calling Search Space
Step 3: Create Intercom Directory Number

Configuring Speed Dial BLF
Step 1: Modify Phone Button Template
Step 2: Apply the Phone Button Template to Phones
Step 3: Configure Presence-Enabled Speed-Dial Buttons
Enable Presence-Enabled Call Lists
Presence Policy Example: Subscribe CSS
Assign Subscribe CSSs to Phones and SIP Trunks
Presence Policy Example: Presence Groups
Presence Group Configuration Steps
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Step 2: Set the Default Interpresence Group Policy
Step 3a: Assign Presence Groups to Lines and Phones
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Call Forward Settings
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Paging
Shared Ephone-dn
Pickup Groups
Intercom
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Mobile Connect Characteristics
Cisco Unified Mobility Architecture
Access List
Time-of-Day Access
Mobile Connect Call Flow: Incoming Calls to Office Phone
Mobile Connect Call Flow: Internal Calls Placed from a Remote Phone
Mobile Voice Access Characteristics
MVA Call Flow
Cisco Unified Mobility Interaction
Single Number Reach
Mobility
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Enabling Mobility Features
Implementing Cisco Unified Mobility
Step 1: Configure Softkey Template
Step 2: Configure End User
Step 3: Configure IP Phone
Step 4: Configure Remote Destination Profile
Step 5a: Add Remote Destinations to Remote Destination Profile
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Step 5c: Configure Access Lists
Step 5d: Apply Access Lists
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MVA Configuration Steps
Step 1: Activate Service
Step 2: Configure Service Parameters
Step 3: Enable MVA for End Users
Step 4: Configure MVA Media Resource
Step 5: Cisco IOS Gateway Configuration
Modify Softkey Template for Mobility
Configuring Single Number Reach
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Lab 1 - Task 2: Enable End Users for Cisco Extension Mobility

Lab 1 - Task 3: Configure Barge
Lab 1 - Task 4: Set Up Group Pickup for the HQ Phones
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Module 05 Review

Module 06 - Enablement of Cisco Unity Connection and Cisco Unified Presence 3h7m

Understanding Cisco Unity Connection
Cisco Unity Connection Overview
Single-Site and Multisite Deployment Model
Cisco Unity Connection Integration
Cisco Unity Connection SCCP Integration
Cisco Unity Connection SIP Integration
Cisco Unity Connection System Settings
Cisco Unity Connection Call Handler
Call Handler Example
Cisco Unity Connection Call Routing
Cisco Unity Connection Distribution Lists
Cisco Unity Connection Authentication Rules
Cisco Unity Connection Dial Plan
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Understanding End User and Voice Mailbox Characteristics and Configuration Requirements
User Templates Model
General Settings vs. User Settings
User Template Basics
Default Class of Services
Password Settings and Roles
Transfer Rules and Greetings
Call Actions
Message Actions and Caller Input
TUI Experience
End User Creation
Extensions and Call Forward Options
Voice Messaging with SRST and AAR
Voice Mailbox
Private Distribution Lists
Notifications Devices
User Creation Options
Mailbox Stores and Membership
Message Aging Policy and Mailbox Quotas
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Understanding End User and Voice Mailbox Implementation Options
Steps for User Template Configuration
User Template Basics
Password Settings
Administrator Roles
Message Settings
Phone Menu
Playback Message Settings
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Steps for User Configuration
User and User Template Verification
Alternate Extensions and Names
Private Distribution List
Import Users from Cisco Unified Communications Manager
Import Users
Import Users from LDAP

LDAP Directory
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Mailbox Store
Mailbox Stores Membership
Message Aging Policy
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Lab 1 - Task 1: Add End Users and Voice Mailboxes
Lab 1 - Task 2: Import End Users from Cisco Unified Communications Manager
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Understanding Cisco Unified Presence

Cisco Unified Presence Overview
Cisco Unified Personal Communicator Product Overview
Cisco Unified Personal Communicator Operation Modes
Enterprise Instant Messaging
Audio Calls
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Integration Support
Cisco Unified Personal Communicator Requirements
Cisco Unified Client Services Framework
CCMCIP Service
Cisco Unified IP Phone Messenger User Interface
Cisco Unified IP Phone Messenger Characteristics
Cisco Unified Communications Solution Information Flow
Cisco Unified Presence Integration with MS Active Directory and Exchange
Cisco Unified Presence Integration with Cisco Unity Connection
Cisco Unified Presence Integration with Conferencing Servers
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Cisco Unified Presence Calendar Integration
Cisco Unified Personal Communicator Information Flow in Deskphone Mode
Cisco Unified Personal Communicator Information Flow in Softphone Mode
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Quality of Service
Cisco Unified Personal Communicator Port Usage
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Enabling Cisco Unified Presence

Cisco Unified Personal Communicator Configuration Checklist
Step 1: License Capabilities Assignment
Step 2: End User Configuration
Step 3: Directory Number Configuration
Step 4: Create a Cisco Unified CSF Device
Step 5: Associate a Cisco Unified CSF Device to an End User
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Voice-Mail Server Configuration
Voice-Mail Profile Configuration
CTI Gateway and Profile Configuration
LDAP Host Configuration
LDAP Profile Configuration
Audio Profile Settings
CCMCIP Profile Settings
Modify End User Settings in Cisco Unified Presence
Cisco Unified Personal Communicator Options
Troubleshoot Common Cisco Unified Personal Communicator Issues
Example 1: Cisco Unified IP Phone Cannot Be Selected
Example 2: In Softphone Mode, Telephony Is Not Possible
Example 3: Users Are Not Shown as on the Phone during an Active Call
Example 4: End User Cannot Log In to Cisco Unified Personal Communicator

Example 5: Search for Contacts Returns No Results
Example 6: End User Cannot Control the Cisco Unified IP Phone 9971
Server Health
Problem Report
Cisco Unified Presence Troubleshooter
Cisco IP Phone Messenger Setup
Step 1: Configure Application User
Step 2: Create the Phone Service
Step 3: Subscribe the Phone Service
Cisco IP Phone Messenger Setup on Cisco Unified Presence
Step 1: Enable Cisco IP Phone Messenger
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Verify the Cisco IP Phone Messenger Status
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Module 06 Review

Module 07 - Cisco Unified Communications Solution Maintenance 3h1m

Providing End-User Support
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Gather Facts
Sample Network Problem: Gather Facts
Consider Possibilities
Sample Network Problem: Considering Possibilities
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Sample Network Problem: Action Plan
Implement Action Plan
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Document Results
Troubleshooting IP Phone Registration
Divide-and-Conquer Methodology
Troubleshooting: No IP Address
Troubleshooting: TFTP Download Fails
Troubleshooting: Not Registered
Powering IP Phones
PoE with Cisco Catalyst Switches
VLAN Overview
Voice VLANs
Single VLAN Access Port
Multi-VLAN Access Port
Trunk Ports
Configuring Voice VLANs with Access Ports
Configuring Trunk Ports
Verifying Voice VLAN Configuration
QoS Traffic Requirements and Recommendations: Voice
Provisioning for Voice: VoIP Bandwidth Reference Tables
QoS Traffic Requirements and Recommendations: Videoconferencing
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Activating Cisco Unified Communications Manager CAR Services
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Cisco Unified Communications Manager CAR Tool User Types
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Cisco Unified Communications Manager CAR Tool Overview for End Users
Cisco Unified Communications Manager CAR Tool Overview for Managers
Cisco Unified Communications Manager CAR Tool Overview for Administrators
Cisco Unified Communications Manager CAR System Parameters
Cisco Unified Communications Manager CAR Scheduler
Database
Automatic Report Generation
Common Automatic Report Generation Interval
Export CDR and CMR Reports
Using the CDR Search
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Viewing Bill Reports
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Cisco Unified RTMT System Requirements
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Phone Interface Failed Logon Report
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Disaster Recovery System Overview
Disaster Recovery System Architecture
Disaster Recovery System Menu
Disaster Recovery System Components
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Course Closure

Total Duration: 21h 8m