

# Cisco Identity-Based Networking Services (IBNS) and 802.1X Deployment for Wired and Wireless (CIBNS802.1X)

ID CIBNS802.1X Price on request Duration 3 days

## Course Overview

This class provides theory and hands-on experience in deploying **Cisco Identity-Based Networking Services (IBNS)** and implementing **802.1X authentication** for secure network access control. The class covers **Cisco Identity Services Engine (ISE)** configuration, integration with **Active Directory**, policy creation, and implementation of **802.1X** on both wired and wireless networks including **IBNS 2.0**. Additionally, it includes advanced authentication techniques such as MAB (MAC Authentication Bypass), TEAP (Tunnelled EAP), and TLS (Transport Layer Security), along with guest access configuration, troubleshooting, and monitoring.

## Who should attend

- Security architects
- Design engineers
- Network engineers

## Prerequisites

To fully benefit from this course, you should have knowledge of these topics:

- Basic Cisco wireless LAN controllers
- Basic command-line configuration of Cisco Catalyst switches

Here are some recommended Cisco learning offerings that can help you meet these prerequisites:

- [Implementing and Administering Cisco Solutions \(CCNA\) v2.1](#)

## Course Objectives

By completing this class students will be able to:

- Set up and configure Cisco ISE – including certificate enrollment, and RADIUS settings.
- Integrate Cisco ISE with Active Directory – enabling centralized identity management and policy enforcement.
- Implement 802.1X authentication policies for wired and wireless networks using Cisco ISE and network devices.
- Deploy Cisco IBNS 2.0 for enhanced security and automation in access control.
- Enable Guest Access using Cisco ISE's Hotspot Portal for managed guest connectivity.
- Configure MAC Authentication Bypass (MAB) for non-802.1X capable devices.
- Monitor and troubleshoot network access with Cisco ISE's diagnostic tools and session tracing.
- Plan and deploy an IBNS-based network, ensuring certificate-based authentication, policy sets, and secure access control.
- Implement advanced security mechanisms such as TLS and TEAP for wired and wireless authentication.

## Detailed Course Outline

### Module 1: Introduction to Cisco Identity-Based Networking Services (IBNS)

- **Objective:** Describe Cisco IBNS for providing access control to corporate networks.
  - Overview of IBNS and its components.
  - Role of IBNS in securing corporate networks.
  - Use cases and benefits of IBNS deployment.

### Module 2: Authentication Protocols and RADIUS Communication

- **Objective:** Describe Extensible Authentication Protocol (EAP) authentication types and methods, and the role of RADIUS in EAP communications.
  - Introduction to EAP: Purpose and significance in secure network authentication.
  - Types and methods of EAP:
    - EAP-TLS
    - EAP-PEAP
    - EAP-TEAP

- Role and functions of Certificates
- Role and functionality of RADIUS:
  - Authentication, Authorization, and Accounting (AAA).
  - Communication flow between endpoints, RADIUS server, and network devices.

### Module 3: Configuring Cisco Network Devices for 802.1X Operation

- **Objective:** Describe how to configure Cisco Catalyst switches, Cisco Wireless LAN Controllers (WLCs), and Cisco ISE for 802.1X operation.
  - **Cisco Catalyst Switch Configuration:**
    - Enabling 802.1X using IBNS1 and IBNS2 commands
    - Configuring authentication methods.
    - Integrating switches with Cisco ISE.
  - **Cisco Wireless LAN Controller Configuration:**
    - Setting up 802.1X authentication on WLCs.
    - Configuring access policies for wireless networks.
  - **Cisco ISE Configuration:**
    - Adding network devices to Cisco ISE.
    - Configuring authentication policies and profiles.

### Module 4: Access Configuration for Non-Suppliant Devices

- **Objective:** Describe how to configure access for non-suppliant devices in an 802.1X deployment.
  - Understanding non-suppliant devices and challenges in securing them.
  - Methods for securing non-suppliant device access:
    - MAC Authentication Bypass (MAB).
    - Web authentication (WebAuth).
  - Best practices for managing non-suppliant devices in IBNS deployments.

### Module 5: Post Deployment Monitoring and Troubleshooting

- **Objective:** Describe how to Monitor and Troubleshoot Cisco IBNS Networks with Cisco ISE and 802.1X.
  - Troubleshooting Endpoint Issues
  - Troubleshoot Network Access Device Issues

### Module 6: Planning and Deploying Cisco IBNS Networks

- **Objective:** Describe how to plan and deploy Cisco IBNS Networks with Cisco ISE and 802.1X.
  - **Planning Phase:**
    - Assessing network infrastructure readiness.
    - Identifying key security requirements.

- Designing authentication and authorization policies.
- **Deployment Phase:**
  - Step-by-step implementation of Cisco IBNS with Cisco ISE.
  - Deployment of 802.1X across wired and wireless networks.
  - Testing and troubleshooting the deployment.
- **Post-Deployment:**
  - Monitoring and maintaining IBNS environments.

# About Fast Lane



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