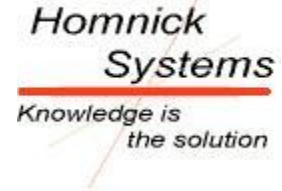


**Homnick Systems**  
**<http://homnick.com>**  
**621 NW 53<sup>rd</sup> St**  
**Suite 120**  
**Boca Raton, Florida 33487**



# **Implementing and Maintaining Telephony Using Microsoft Office Communications Server 2007**

**Course 5179A: Two days; Instructor-Led**

## **Introduction**

This two-day instructor-led course teaches students how to implement and maintain an Office Communications Server 2007 telephony solution. The course covers the topologies supported by Office Communications Server 2007 for deploying a telephony solution for an organization. Further, the course introduces the various call-flow scenarios in an enterprise and explains the call flow among the various Office Communications Server 2007 components in each scenario.

## **Audience**

This course is intended for current real-time communications IT Professional and infrastructure specialists who want to learn how to implement Microsoft Office Communications Server 2007.

## **At Course Completion**

After completing this course, students will be able to:

- Implement and maintain telephony by using Office Communications Server 2007.
- Plan and deploy Office Communications Server 2007 in a PBX telephony environment.
- Plan and deploy Office Communications Server 2007 enterprise telephony solutions.
- Describe and monitor Office Communications Server 2007 call flow.

## Prerequisites

Before attending this course, students must have:

- Familiarity with Active Directory knowledge and concepts.
- Familiarity with Exchange 2007 Unified Messaging knowledge and concepts.
- Familiarity with SharePoint knowledge and concepts.
- Fundamental knowledge of using Microsoft Office 2007 or Microsoft Office 2003.
- Fundamental Windows Server 2003 knowledge and experience.
- Fundamental Networking knowledge and experience.

In addition, it is recommended, but not required, that students have completed:

- Course 5177A: Implementing and Maintaining Instant Messaging Using Microsoft Office Communications Server 2007.
- Course 5178A: Implementing and Maintaining Audio/Visual Conferencing and Web Conferencing Using Microsoft Office Communications Server 2007.

## Course Outline

### **Module 1: Implementing and Maintaining Telephony by Using Office Communications Server 2007**

Office Communications Server 2007 supports both PBX telecommunications and SIP telecommunications. To capitalize on the SIP telecommunications functionalities, enterprises can integrate Office Communications Server 2007 into their telephony solution. This module describes the basic components of

an enterprise telephony solution, such as PSTN, PBX, SIP-PSTN gateways, and endpoints, and security considerations for implementing a secure telephony solution. The module describes the Active Directory design considerations and networking considerations for deploying Office Communications Server 2007. The module also identifies the installation considerations for distributing the Office Communicator 2007 client to enterprise users. Finally, this module introduces the administrative tools that Office Communications Server 2007 provides to manage and monitor the enterprise telephony solution.

## **Lessons**

- Introduction to the Components of a Telephony Solution
- What Is Intermediation of Telephony?
- What Is a PSTN Network?
- What Is a PBX?
- What Is VoIP?
- What Are Gateways?
- How do SIP-PSTN Gateways Work?
- What Are Basic Endpoints?
- Overview of the Integration of Office Communications Server Telephony
- What Is a PBX Coexistence Configuration?
- What Is an Office Communication Server Stand-Alone Configuration?
- Pre-requisites for Migration to Office Communications Server Telephony
- Migration from a PBX to a Coexistence Configuration
- Migration from a PBX to an Office Communications Server Stand-Alone Configuration
- Migration from a Coexistence to a Stand-Alone Configuration
- Determining the Architecture For the Office Communications Server Telephony Deployment
- Determining Configuration Options
- What Is the Role of a Mediation Server?
- What Are HW Load Balancers?
- Designing a Network for Office Communications Server 2007
- Active Directory Design and Network Considerations
- Demonstration: Configuring DNS
- Bandwidth Considerations
- Implementing a Secure Telephony Solution
- Key Features of a Secure Telephony Solution
- Active Directory Credentials in a Secure Telephony Solution
- Group Policies in a Secure Telephony Solution
- Encryption in a Secure Telephony Solution
- Certificate Services in a Secure Telephony Solution
- Demonstration: Securing a Telephony Solution

- Managing and Monitoring an Enterprise Telephony Solution by Using Administration Tools
- What Is Microsoft Management Console?
- Why Monitor Call Detail Records?
- Demonstration: Using the Office Communications Server 2007 Administrative Tools Snap-In

### **Lab: Implementing and Administering a Secure Telephony Solution**

- Exercise 1: Designing an Office Communications Server Architecture for Tailspin Toys
- Exercise 2: Designing an Office Communications Server Architecture for World Wide Importers
- Exercise 3: Securing a Telephony Solution

After completing this module, students will be able to:

- Describe the features of the basic components used in a telephony solution.
- Describe an overview of the integration of Office Communications Server 2007.
- Determine the architecture for an Office Communications Server telephony solution.
- Design a network for an Office Communications Server telephony solution.
- Implement a secure enterprise telephony solution.
- Choose a client application installation method.
- Manage and monitor an enterprise telephony solution.

### **Module 2: Planning and Deploying Office Communications Server 2007 in a PBX Telephony Environment**

Enterprise users can access the telephony solution by using any of the Office Communications Server 2007 clients, such as Office Communicator 2007, Microsoft Office Mobile Communicator 2007, Microsoft Office Web Communicator, Microsoft SIP endpoints, and third-party SIP endpoints. This module describes the deployment of a telephony solution for an enterprise based on SIP-to-PBX interoperability, SIP-to-IP-PBX interoperability, Office Communications Server 2007 integration with the IP-PSTN gateway, or remote office integration.

#### **Lessons**

- Configuring Deployment Topologies
- Considerations for an Office Communications Server 2007 Telephony Configuration

- SIP-to-PBX Topology
- SIP-to-PSTN Topology
- SIP-to-IP-PBX Interoperability
- Overview of Enterprise Telephony Clients Deployment and Configuration
- What Are SIP Endpoints?
- Considerations for Deploying and Configuring Office Communicator 2007
- Considerations for Deploying and Configuring Office Communicator Mobile
- Considerations for Deploying and Configuring Office Communicator Web Access
- Microsoft SIP Endpoints
- Third-Party SIP Endpoints
- Demonstration: Deploying and Configuring Office Communicator 2007

### **Lab: Implementing Office Communications Server 2007 in a PBX Telephony Environment**

- Exercise 1: Configuring a Deployment Topology
- Exercise 2: Deploying Enterprise Telephony Clients
- Exercise 3: Making Calls by Using Office Communicator 2007 (optional)

After completing this module, students will be able to:

- Configure deployment topologies for an Office Communications Server 2007 telephony solution.
- Deploy and configure enterprise telephony clients.

### **Module 3: Planning and Deploying Office Communications Server 2007 Enterprise Telephony Solutions**

In the Office Communications Server 2007 enterprise telephony solution, telephony users can communicate with internal telephony users and remote office telephony users. This module describes the call features in an enterprise telephony solution, such as call routing. The module introduces the enterprise telephony solution components of Office Communications Server 2007, such as the Office Communicator clients, gateways, Mediation Server, Front End Server, Access Edge Server, Director, Media Relay and multipoint control unit (MCU), interactive applications, and SIP clients.

#### **Lessons**

- Overview of an Enterprise Telephony Solution
- How Basic Call Control Works
- Features of Advanced Call Control
- What Is Phone Number Normalization?

- Overview of Routing in an Enterprise Telephony Solution
- What Are Location Profiles?
- What Are Dial Plans?
- What Is Call Routing?
- Phone Usage Records
- Voice Policies
- Call Routes
- What Is Route Helper?
- Configuring the Enterprise Telephony Solution Components
- Planning for Media Gateways
- Topologies for Media Gateways
- Deploying Mediation Servers
- Front End Servers
- Directors
- Connecting to a Remote Office
- What Is an Access Edge Server?
- Features of Front End Servers

### **Lab: Implementing an Office Communications Server 2007 Enterprise Telephony Solution**

- Exercise 1: Configure Location Profiles
- Exercise 2: Create Phone Usage Records
- Exercise 3: Deploy the Mediation Server
- Exercise 4: Configure Routes
- Exercise 5: Using Route Helper to Check Enterprise Voice Configuration
- Exercise 6: Configure Enterprise Voice Policy
- Exercise 7: Configure User Phone Numbers
- Exercise 8: Make a voice call via the PSTN (optional)

After completing this module, students will be able to:

- Describe the functions supported by an Office Communications Server 2007 enterprise telephony solution.
- Configure the components in an Office Communications Server 2007 enterprise telephony solution.
- Configure remote office connectivity within an enterprise telephony solution.

### **Module 4: Monitoring and Maintaining Office Communications Server 2007**

Office Communications Server 2007 supports both inbound and outbound calls between internal telephony users and external PSTN users, and

between internal PBX users and internal Office Communicator telephony users. Understanding the protocols used and the call flow can assist in troubleshooting and improving routing within the telephony solution. This module describes the protocols used, and the call flow between internal telephony users in an Office Communications Server 2007 enterprise telephony solution. In addition this module describes the tools available for monitoring the call flow.

## **Lessons**

- Backing Up and Restoring Office Communications Server 2007
- Prepare for Backup and Recovery
- Back Up Office Communications Server 2007
- Restore Office Communications Server 2007
- Demonstration: Backing Up and Restoring Office Communications Server 2007
- Monitoring Office Communications Server 2007
- How to Monitor Resource Utilization
- Event Logging
- What Is OCSLogger?
- Configuring the Archiving and CDR Service
- What Is the Archiving and CDR Server?
- Components of the Archiving and CDR Service
- How to Install the Archiving and CDR Server
- Demonstration: Installing and Activating the Archiving and CDR Server
- Demonstration: Associating Archiving with the Front End Server or Pool
- Options for User Configuration for Archiving
- Options for Call Data Records Configuration
- Overview of Protocol Monitoring in a Telephony Solution
- Why Capture Protocols?
- Call Flow Monitoring Tools
- Monitoring Call Flow in an Office Communications Server 2007 Telephony Environment
- Office Communicator Voice Call Flow
- Demonstration: Capturing Call Flow Between Office Communicator Telephony Users
- Office Communicator-to-PBX Call Flow
- PBX-to-Office Communicator Call Flow
- Office Communicator-to-PSTN Call Flow
- PSTN-to-Office Communicator Call Flow

## **Lab: Maintaining and Monitoring Office Communications Server**

- Exercise 1: Backing Up and Restoring Office Communications Server 2007

- Exercise 2: Monitoring Office Communications Server
- Exercise 3: Working with the Call Flow Monitoring Tools

After completing this module, students will be able to:

- Back up and restore Office Communications Server.
- Monitor Office Communications Server.
- Install and configure the Archiving and CDR Server.
- Identify the protocol capturing tools you can use in a telephony solution.
- Monitor call flow in an Office Communications Server 2007 telephony environment.