Voice Primer Datasheet

Purpose - The Voice Primer is intended to be a student's first exposure to voice on a data network (VoIP). It can be used as an enhancement to CCNA Discovery and Exploration curriculum.

Target Audience - CCNA Instructors that want to include basic voice content into their CCNA classes

Duration (Hrs.) of "Course" - 4 to 8 hours lecture / lab

Prerequisites - Completion of CCNA Exploration 3 or CCNA Discovery 2 (students need experience in using a router as a DHCP server, VLAN Tagging, using Packet Tracer)

Instructional Objectives / Outcomes

- Define common voice terms and concepts including POTS line, digital trunks, PBX systems and VoIP gateways.
- Describe some of the key advantages of a voice over IP (VoIP) system over a traditional PBX system.
- Describe the purpose and nature of fundamental VoIP technologies including common call signaling protocols (such as SIP, SCCP, MGCP) and codecs (such as G.711, G.729, GSM).
- Explain the importance of quality of service (QoS) in a voice network.
- Apply their VoIP knowledge to configure and connect a basic VoIP-to-VoIP network with multiple endpoints, basic dialplan manipulation and CME router-based call processing.

Voice Primer Contents

1. Understanding Traditional Telephony
2. Introducing Analog Circuits
3. Introducing Digital Circuits
4. Understanding Packetization
5. Introducing VoIP Signaling Protocols
6. Preparing the Network to Support Voice
7. Introducing Cisco Unified Communications Manager Express (CME)
8. Global Telephony Commands
9. Defining Ephone-dn and Ephone
10. Configuring CME to Support Endpoints
11. Dial Peers and Destination Patterns

Voice Primer Lab – The lab objective is to use Packet Tracer to configure Cisco Unified Communications Manager Express (CUCME) in a basic two site topology. The labs are designed to use Packet Tracer, but they can also be done on actual equipment. Lab activities include:

- Configuring VLAN's, DHCP, routing, etc.
- Enabling basic VoIP service on each router
- Registering phones into CME
- Configuring site-to-site calling

Voice Primer Material for Students

- Voice Primer Slides
- Primer Lab Document
- One standard chapter assessment with 30 - 40 multiple choice questions

Voice Primer Material for Instructors

- Instructor Notes for Voice Primer Slides
- Voice Primer Lab Instructor Guide
- Voice Primer Lab Packet Tracer Files (.pkt)
- Voice Primer Lab Configuration Files (.txt)
- Supporting Materials- US/CAN Conference Presentation – June 2012

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