Voice over IP (VoIP)  
Linksys  
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What is Voice over IP?

- VoIP – Transmitting voice over an IP-based network
- Myth – Does not have to be on the Internet
- Fact - Digitized voice can tolerate no more than 150ms of delay from source to destination
Basic Components of a Phone System

The **Central Office** contains equipment used to connect subscribers to the telephone network. This equipment includes trunks and phone switches.

The **Local Loop** is also known as the last mile. It connects a business or home to the phone company central office.

Click on the words “Local Loop” in PowerPoint presentation mode to have the definition appear.
Click on the words “Central Office” in PowerPoint presentation mode to have the definition appear.
The New Generation - VoIP

- Can perform calling with or without a computer
- Can surf the Internet while making calls
- Can call non-VoIP phones
- Uses the same network as your data, printers, projectors
- Can provide voicemail through your email, caller ID, audio and/or video conferencing
AT&T Customer Design
A Sample VoIP Implementation
Telephony Terms

- Latency – The time for a packet to travel from source to destination
- Jitter – The variation of timing when voice packets are received
- Bandwidth – Data transfer rate measured in bits per second
- Packet loss – The number of packets dropped along the way
- Reliability – A measurement of network up time. PSTN standard is 99.999%.
Why the Hype?

Evolution of VoIP

Source: TeleGeography research
What Kind of Jobs?

- ALL TECHNICIANS NEED TO KNOW VoIP

- Helpdesk
  - Support end users
  - Moves, changes, and adds

- PC Technician
  - Install VoIP phones

- Server administrators or infrastructure network administrators
  - Manage VoIP servers
  - Implement routers/switches and QoS
Linksys Voice System Modules

- 12 Modules
- Each Module Contains
  - PowerPoint
  - Hands-on Lab
  - Hands-on Test
  - Written Quiz
- Final Hands-on and Written Test
- Approximately 1.5 hours Per Module

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Linksys Voice System Modules

- Module 1- Switch and Wireless Router Config
- Module 2- Configure Setup Wizard
- Module 3- Configuring SPA9000 PBX
- Module 4- Configuring SPA942 IP Phone
- Module 5- Configuring Syslog Server
- Module 6- Adding Additional IP Phones
Linksys Voice System Modules

- Module 7- Phone Setup Options
- Module 8- Voicemail and Hunt Groups
- Module 9- Calling Features
- Module 10- IP Softphone
- Module 11- Auto Attendant
- Module 12- Connecting to Skype Business
Linksys Voice System

- SPA9000 SIP PBX $300
- SPA400 4 FXO Ports and Voicemail $250
- SRW2008MP 8 Port PoE Switch $350
- SPA942 4 Line Phone $120
- Wireless Access Point $60
Certifications

- CompTia Convergence+
- Cisco CCNA Voice
- Cisco Unified Communications & Video Specialists
- Nortel Unified Communications Specialists
Questions???