

Applied IPv6 in VoIP technologies

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Topics for Today

- ✓ Definition VoIP
- ✓ Motivation for VoIP
- ✓ VoIP-Protocols
- ✓ VoIP-Products
- ✓ Networking VoIP, Infrastructure
- ✓ IPv6 challenges for VoIP
- ✓ Outlook and System Integration
- ✓ Short demonstration

Definition VoIP

- Voice over Internet Protocol
- IP Telephony, Internet telephony

= Routing of voice conversations over the Internet or through any other IP-based network.

(from Wikipedia)

Motivation for VoIP

- CTI (computer telephone integration)
 - LDAP/SQL (company directory, addressbook)
 - IM
 - Home made solutions made “easy”
- The One-Number-Principle: „Wherever you go, your number is with you“
- Cost-effectiveness (\$\$\$, €€€)
- Quality compared to GSM

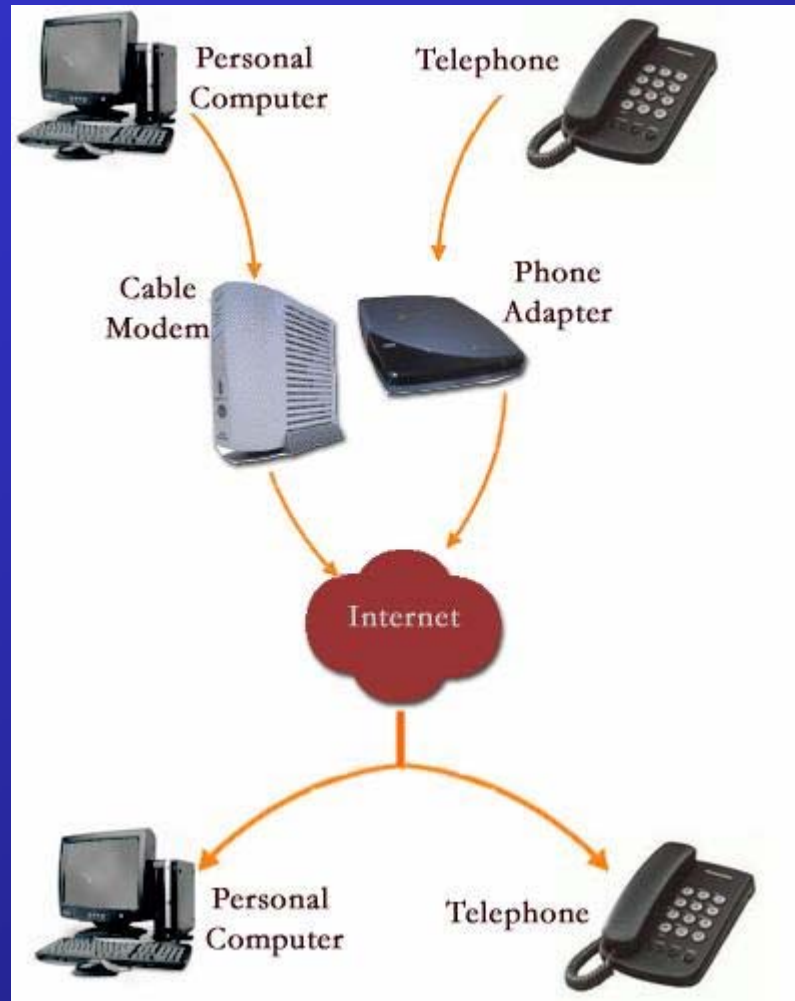
VoIP-Protocols

- Signalling
 - SIP (IETF)
 - H.323 (ITU)
- Transmission
 - RTP/UDP
- Mixed
 - IAX/IAX2 (Digium / Asterisk) - proprietary
 - Skype - proprietary

VoIP-Products (Selected List)

- Softphone
 - Netmeeting (dead for a long time now!)
 - Ekiga (formerly GnomeMeeting)
 - OpenPhone, OHPPhone
 - Firefly
 - etc.
- Gateway, Proxy, Router
 - Asterisk
 - SER, OpenSER
 - GnuGK
 - Callweaver (formerly OpenPBX)
 - etc.
- Commercial Hardware
 - Cisco
 - SNOM
 - Polycom
 - etc.

Minimal Infrastructure



(taken from Wikipedia)

Networking VoIP, Infrastructure

- Protocols with separate streams
 - Signaling (H.323/SIP) – infrastructure preferred
 - Payload (RTP) – direct connection preferred
- Combined Protocols
 - IAX2 always through next endpoint
 - Skype through mesh network, encrypted!

IPv6 challenges for VoIP

- VoIP-Quality consists of:
 - Latency
 - Bandwidth (codec), Packet loss
 - Jitter
 - Reliability

Unfortunately VoIP needs **ALL** of them!

→ Native IPv6 preferred over Tunnels

BUT: Firewalling usually no issue (yet), even though “peering” sometimes is

Today's VoIP software IPv6 ready?

- asterisk: Experimental branch
- SER: IPv6-ready
- Linphone: IPv6-ready
- Windows Messenger: IPv6-ready
- KPhone: IPv6-ready
- SJPhone: IPv6-ready
- Ekiga: Not yet (GnomeMeeting was!)
- GnuGK: Not yet

Outlook and System Integration

- Contacts through E-D-S will have VoIP
- Full VFS coverage to initiate calls
- Public infrastructure will become available
 - VoIP
 - Broadband Internet
- Security, Cryptography
- Location awareness, Emergency calls (911, 110, 112)
- Faxing through T.38

Discussion

Thank you for your attention!