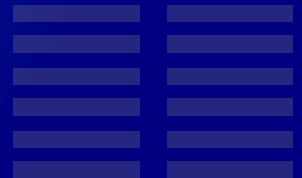


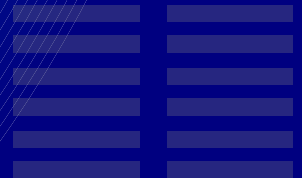
# VoIP and Asterisk

Wolverhampton Linux Users Group



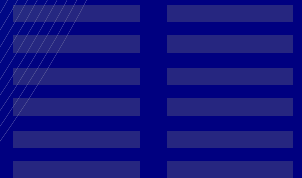
# VoIP and Asterisk

- What is VoIP?
  - Protocols
  - Codecs
  - Disadvantages
  - Advantages
- Requirements
  - Hardware
  - Software



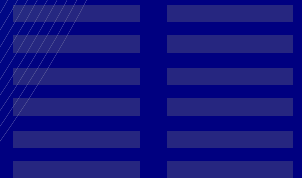
# Protocols

- Open
  - MGCP
  - H323
  - SIP
  - IAX
- Proprietary
  - SCCP (Cisco “Skinny”)
  - Skype



# Skype

- Rhymes with “Hype”
- From the makers of Kazzaa
- “Steals” part of your bandwidth to operate the network.



# Codecs

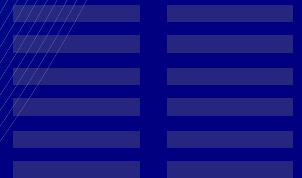
- Closely linked to bandwidth/Hardware
- Open
  - G.711 (A-Law or  $\mu$ -Law)
  - Speex
- Patented
  - Gsm
  - G.729
  - G.723 family

# VoIP Advantages

- Use 1 network for Voice & Data
- CTI
- Low Running Cost (LCR)
- Free Calls
  - [www.freeworlddialup.com](http://www.freeworlddialup.com)
  - [www.gizmoproject.com](http://www.gizmoproject.com)
  - [www.voipcheap.co.uk](http://www.voipcheap.co.uk)

# VoIP Disadvantages

- Latency
- Softphones
- Dropout
- Firewall/NAT traversal



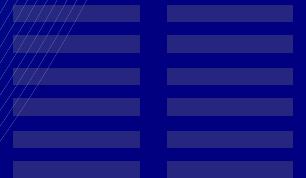
# Requirements

- Hardware (optional)
  - Phones
  - ATAs
  - Gateways
- Software
  - Softphone
  - (PBX Software)



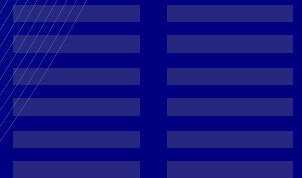
# Asterisk

- PBX Software
- Gateway
- Multi-Protocol
- Scalable
- Flexible
- AGI Scripts



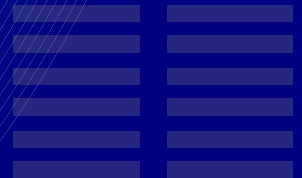
# PBX Software

- Routes calls
- Voicemail
- Auto Attendant (Menus)
- Queues
- Music On Hold
- Conference
- Call Parking



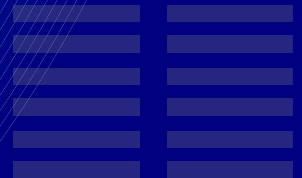
# Gateway

- Interface to PSTN
  - POTS
  - ISDN (BRI/PRI)
  - VoIP Gateways
- SIP Gateways
  - POTS
  - ISDN
  - GSM



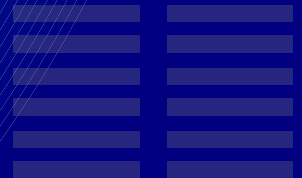
# Multi-Protocol

- Built In
  - SIP
  - MGCP
  - Skinny (Very limited SCCP)
  - IAX2
- Addons
  - H323
  - SCCP



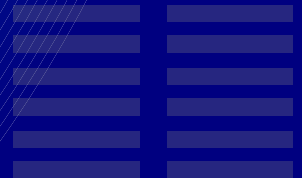
# Scalable

- Single Server
  - 1 to 500 Users
  - 1 to 120 Lines
- Multi-Server
  - Single Dialplan
  - Limited by bandwidth



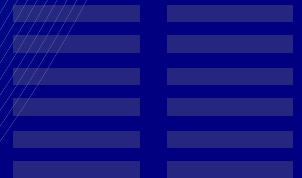
# Flexible

- Low-level Dialplan language
  - Like Assembly language
- Can do
  - Asterisk is a toolkit (Swiss Army Chainsaw)



# AGI Scripts

- Used to expand capabilities
  - Wakeup Call
- Common Language Bindings:
  - Bash
  - Python
  - Perl
  - PHP
  - C/C++



# Links

- <http://www.voipcheap.co.uk>
  - Free VoIP to PSTN calls
- <http://www.voip-info.org>
  - THE VoIP Wiki
- <http://www.voipuser.org>
- <http://www.asterisk.org>
- <http://asterisk-uk.org.uk>

