



Toronto Asterisk Users Group

Our mission is to promote the use and success of open source telephony. While we are centred in the Greater Toronto Area, we welcome members, guests and participants from anywhere. The only requirement is an enthusiasm for open source telephony!

TAUG is building a user group that is more than just social gatherings: we sponsor and organize various talks, seminars and events that help to promote Asterisk, and assist people in understanding it.

May 30th 2007

Dragnetics

Consulting & Training Services



AsteriskTM

and Small Business



Asterix

A presentation and case study by:

Henry L. Coleman

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As a senior consultant with 25 years experience Henry has worked in Europe and North America with many international telecom companies. Last year, Henry started an Asterisk “shop” serving small and medium size businesses in the Toronto area. His company builds fully featured IP-PBX systems using non-proprietary hardware and open source software. Henry is also an active member of the Toronto Asterisk Users Group (TAUG) and promotes VoIP technology at trade shows and job fairs. You can contact Henry directly for more information.



Asterisk is an open source PBX (private branch exchange) that provides all the functionality of high-end business telephone systems, and much more. It is the world's most flexible and extensible telephone system, providing many features that are not yet available in even the most advanced proprietary systems. It is also the world's cheapest telephone system. The software is free and runs on inexpensive Linux servers. The following case study shows how a small business can benefit from an Asterisk based solution.

Asterisk and Small Business



Case Study: A Small Law Firm

Just the facts

**The following is a true story, only the names have been changed to protect the innocent.*

A small legal firm had out-grown their phone system and was finding it difficult to get service and expensive to upgrade, even with upgrades the systems could never have offered the high-end solution they now enjoy. Here are some reasons they needed to change to an Asterisk solution.

- Two separate “Key” systems - unconnected
- No common voice mail
- No centralized reception
- No Interactive Voice Response (IVR)
- No directory services
- No least cost routing (LCR)
- No Off Premise Extensions (OPXs)
- Expensive maintenance contract (\$\$\$)
- No Point of Presence (POP) in Toronto
- Expensive Foreign Exchange Line (\$\$\$)

Legacy Infrastructure

- **Head Office in Whitby (905)**
 - 3 x Local plus 1 x FX Line
 - 8 x Toshiba Key Telephones + Voicemail
- **Chambers in Toronto (416)**
 - 1 x Local Analog Line
 - 3 x Toshiba Key Telephones + Voicemail

** All locations have broadband internet access (DSL or Cable)*



The Project

- Give the law practice an efficient and professional image
- Integrate all locations into one voice network
- Enable “high end” features that save time and money
- Call detail records and recording
- Save money on LD calls and FX line
- Add local presence in Peterborough
- Add local presence in Toronto
- Keep advertised phone numbers



Head Office (Whitby)

Hardware

- Asterisk Server (not hosted)
- 4 x Port FXO PCI Card (Digium)
- 9 x IP Phones (SIP) using existing network cabling
- 1 x DSS/BLF Unit for reception
- 1 x Wi-Fi Phone (SIP) for alternate answering position
- 1 x 16 Port Router
- DSL Connection (Fixed IP Address)

Internet Telephone Service

- 1 x Local Toronto DID (5 x channel)
- 1 x 705 Peterborough Number
- 1 x Toll Free Number



Chambers (Toronto)

- 2 x IP-Business Phones (SIP)
- 1 x 4 Port Router
- DSL Connection
- C/F Local Number to DID from ITSP



SOHO

Home-Office (416)

North York

1 x IP-Business Phone

Broadband Cable (Rogers)

Home-Office (705)

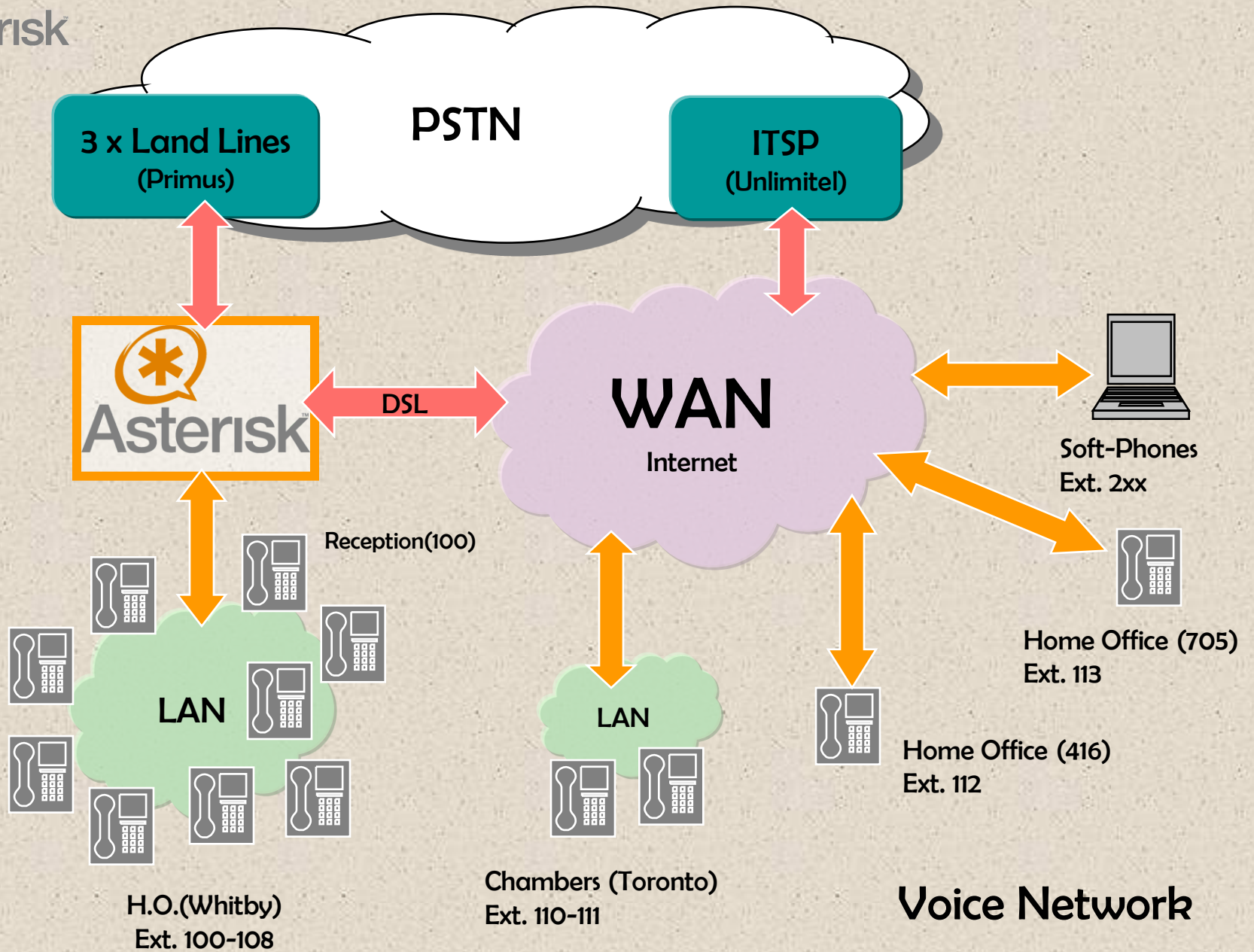
Kawarthas

1 x IP-Business Phone

Broadband DSL(AOL)

Soft-Phones

Two soft-phones are installed on laptops with Wi-Fi connectivity. These are used by the lawyers while out of town.

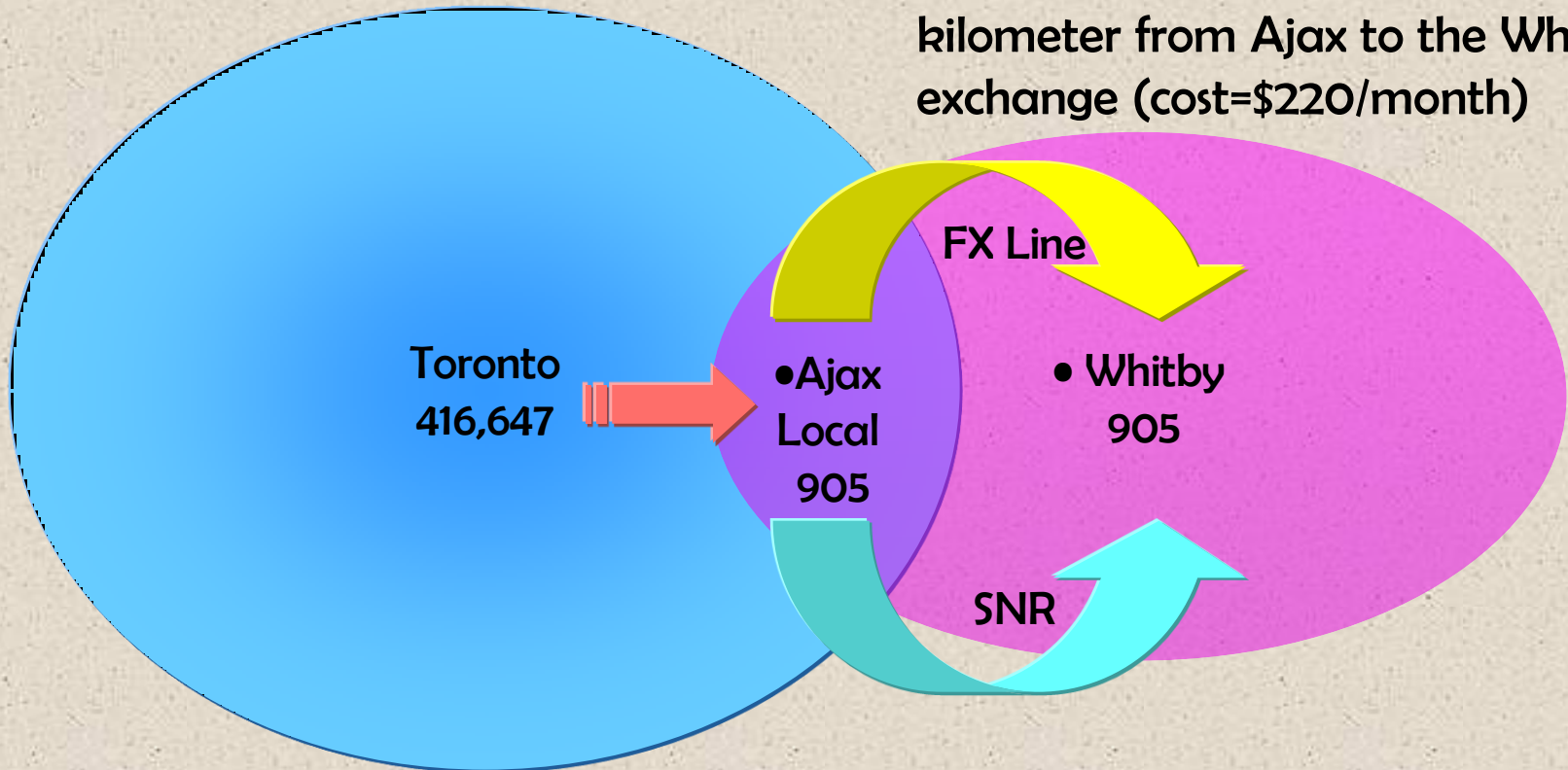


Cool Stuff

- Replaced FX Line with Bell “Single Number Reach” saving \$200 per month
- Long Distance bill < \$50 per month
- Increased call capacity (incoming and outgoing)
- Free usage on remote extensions and soft-phones
- Additional local POP in Toronto and Peterborough
- External call forwarding/follow-me to reach cell phones etc.
- Ability to record conversations (for legal purposes)
- Alternate answering position (via Wi-Fi phone)
- Centralized V/Mail with e-mail notification and attachment

SNR vs. Foreign Exchange Line

An FX line is charged by the kilometer from Ajax to the Whitby exchange (cost=\$220/month)



The client's number is ported to "Single Number Reach" and Call Forwarded to the client's local number (cost=\$17.80/month)



Saving Money

- Costs 70% less than an IP-PBX with comparable features
- No Cabling costs (using existing network with dual port phones)
- Used existing UPS
- Long distance costs reduced by 60%
- Local GTA access cost reduced by over 80%
- Maintenance cost reduced by 50%



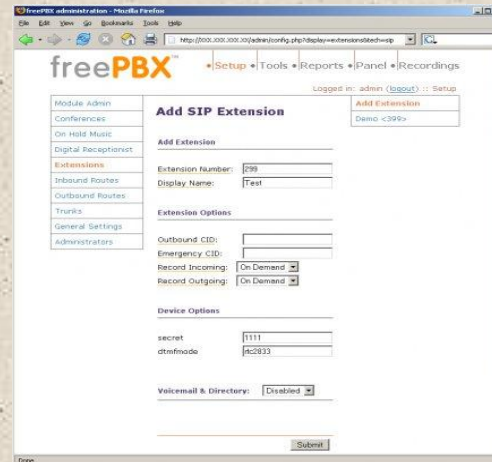
trixbox

 Sponsored by Fonality

Download from trixbox.org

Trixbox is a telephony application platform based on Asterisk™ Open Source PBX Software. The trixbox application platform makes it fast and simple to install and configure your business-class telephony system. With unlimited extensions, voicemail-to-email, music on hold, call parking, analog lines or high density T1/E1 circuits and many other features, trixbox provides all the functionality your business needs. trixbox brings big business PBX features to small and medium-sized businesses.

*trixbox includes FreePBX and other useful applications





trixbox Features

- Automated Attendant
- Blacklists & Last number
- Blind Transfer
- Call Detail Records
- Call Forward on Busy
- Call Forward on No Answer
- Call Forward/ Follow-me
- Call Monitoring
- Call Parking (orbit)
- Call Queuing (multiple)
- Call Recording (on demand)
- Call Routing (DID & ANI)
- Call Snooping (Barge-in)
- Call Transfer
- Call Waiting
- Caller ID
- Caller ID Blocking
- Caller ID on Call Waiting
- Calling Cards
- Conference Bridging (private)
- Conference Bridging (chat room)
- Dial by Name
- Direct Inward System Access (DISA)
- Do Not Disturb (DND)
- Ring Tones
- Interactive Directory Listing
- Interactive Voice Response (IVR)
- Local and Remote Call Agents
- Music On Hold
- Overhead Paging
- Remote Call Pickup
- Remote Office Support
- Roaming Extensions
- Route by Caller ID
- Supervised Transfer
- Talk Detection
- Text-to-Speech (via Festival)
- Three-way Calling
- Time and Date
- Voicemail with Envelope
- Voicemail with email attachment
- Voicemail with Web Interface
- And more

IP-Phones



Note: The TAUG has a number of selected phones that you can have on loan to evaluate.

There are many SIP based phones on the market. At the time of installation we chose the Grandstream GXP 2000 because of it's bright display, dual ports and economical price.



Free Soft-phones



X-Lite offers a full featured SIP soft-phone



iaxLite is an IAX protocol soft-phone that can be deployed in a pre-configured form

Most of these companies offer a branded version of their softphones

Wi-Fi Phones



Linksys WP300 is a SIP based Wi-Fi phone
It is used by the receptionist when she has to leave her
reception area. It features hold and transfer buttons.

The Server



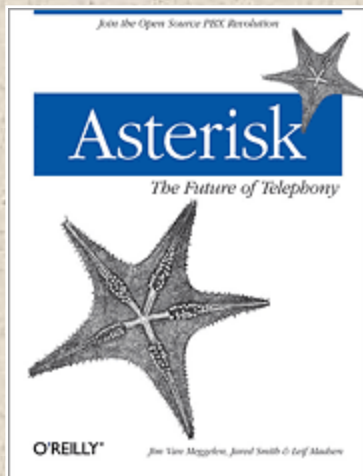
- Pentium 4 - 3.2 Ghz. , 800 Mhz. FSB
- 1024 Mb Memory
- 4 Port FXO PCI Card (Digium)
- NIC
- 120 Gb Hard Drive (7200rpm)
- CD Drive

Almost any PC can be used but this configuration is a good price/performance trade-off



*Asterisk was created by Mark Spencer of Digium (formerly Linux Support Services), and is now sponsored by Digium.

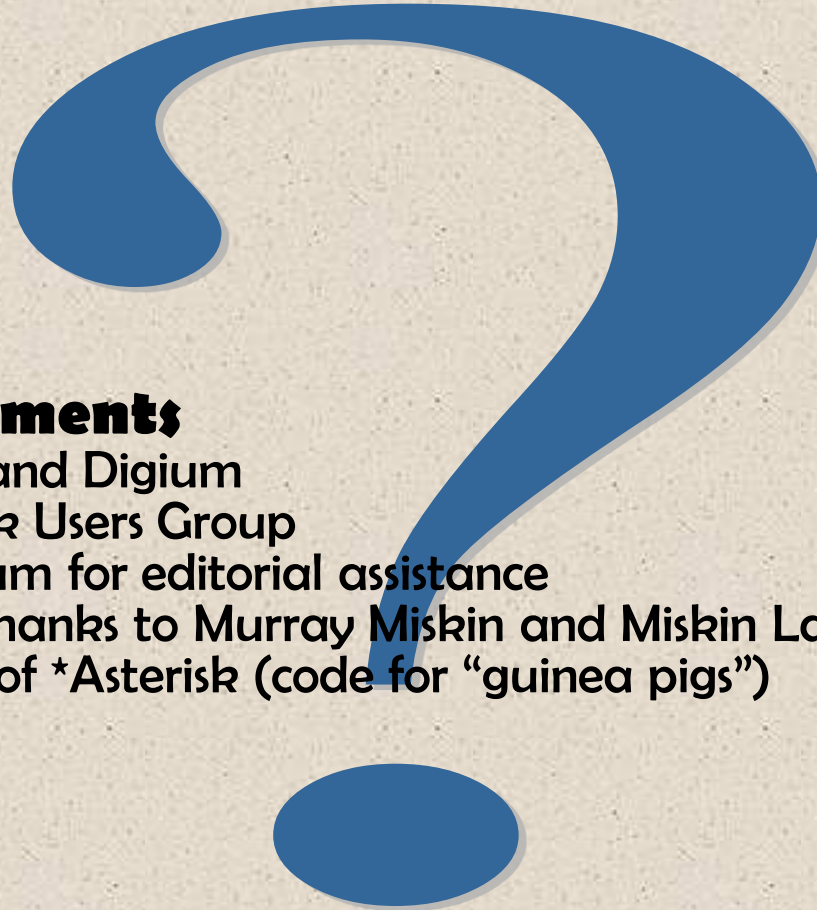
Digium manufactures analog and digital telephone network interface cards that happen to work particularly well with Asterisk.



***Asterisk: The Future of Telephony**

By Jared Smith, Jim Van Meggelen
and Leif Madsen

First Edition September 2005



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Questions

Presentation by:

Dragnetics

Consulting & Training Services

VoIP-PBX.ca

Advanced IP-PBX systems



Thank you for your attending this presentation. We hope you found it interesting and informative.

The End