

# Asterisk for the Enterprise or What Canterbury Christ Church is doing with VoIP or Octothorpe

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## Outline

- History: Why did we set out on this path
- Goals: what we wanted to achieve
- Implementation: what we did
- Review: didn't they do well
- Win/Fails: Lessons, both good and bad
- Non-technical Stuff
- Fun: Various blue sky projects

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## Some History

- Existing Asterisk Pilot
- Restricted to
  - Computing Services
  - In a single building
- Required due to a rapid move
- ... and a good opportunity
- But what next?

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## Lofty Goals

- Virtualised
  - Lets make as much use of our existing vSphere4 cluster infrastructure as possible
- Decentralised
  - Lets not build a "tree" in the traditional telephony sense
- Resilient
  - Let build a system that can cope with failures of individual parts, yet remain usable
- Highly Available
  - Lets build a system that we can load balance and scale out with ease if necessary
- Open Standards and Source
  - Chose from multiple vendors and have freedom of choice for support contracts

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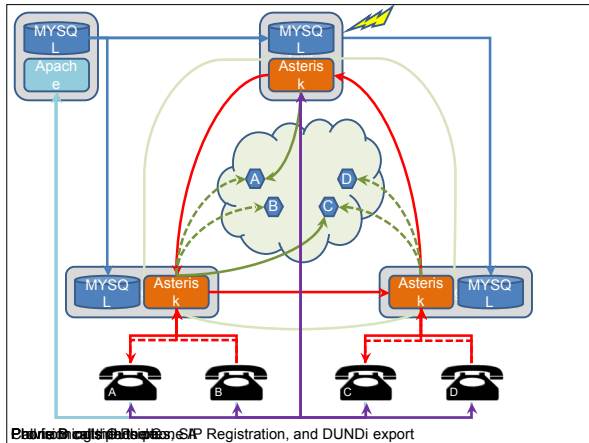


Diagram illustrating SIP Registration, and DUNDi export

## How did we do?

- Virtualised
  - Yes, works absolutely fine!
- Decentralised
  - Yes, DUNDi allows us to do that
- Resilient
  - Mostly, we are dependent on a single gateway
- Highly Available
  - At the moment, no, but not impossible to achieve
- Open Standards and Source
  - So far so good

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## Fails and Win's

### WIN's

- Caller ID
- Voicemail email notification
- Virtualization
- Less parallel cabling

### FAIL's

- Bitten by one of Asterisk's many locking problems!
- Cultural differences

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## Fun things to play with

- Soft phones
  - Why supply a PC and a phone to each desk, why not just make the PC the phone?
- Off site / SOHO / peripatetic
- edu roam integration
  - Why can't I use my SIP client anywhere?
- Inter-institution SIP
  - Lets use DUNDi to peer over JANET

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## Non-technical Stuff

- Is Open Source Viable?
  - Interestingly this seems to be either, “no one got fired for buying CISCO”, or “if its free its no good” – the cultural problem
  - “The Government will actively and fairly consider open source solutions alongside proprietary ones in making procurement decisions.”
  - Trust X, they have a solution -- Risk transfer
- Getting external support!
  - Easier than you might think, we have an external company for 3<sup>rd</sup> line support, and there is plenty of community support
- Where to look for help?
  - JISC Open Source Watch ([www.oss-watch.ac.uk](http://www.oss-watch.ac.uk))
  - JANET Voice Advisory Group

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## Summary

- Where we came from, what we did, and how well it worked
- You can get a flavour of where we would like to go (feel free to join in)
- The non-technical aspects are still there, but can be overcome
- Who else is doing more than ‘playing’ with Asterisk?

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## Backup Slides

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## Damovo: QoS Requirements

- From “IPT Network Readiness Assessment Questionnaire”

	Toil quality	Might be acceptable as business quality	Not considered as acceptable
Network latency (one-way)	≤80ms	80 ms < delay ≤ 150ms	>150ms
Network jitter	<20ms	20ms < jitter ≤ 30ms	>30ms
Network packet loss	≤1%	1% < loss ≤ 3%	>3%

- Don't know about you, but seems ok to me!

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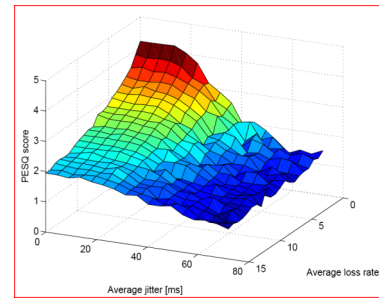
## What about QoS

- Users care about “Quality” of the speech
  - Normally the subjective measure of speech quality is MOS (Mean Opinion Score)
  - There are objective measures, such as PESQ, that can be automated
- For a given CODEC we can draw a link between how the network “performs” and what “quality” the user experiences!
- Expressed another way; if the network performs no worse than X the PESQ score will be at least Y

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## G.711



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## The ‘#’ Key

- Comment sign
- Crosshatch
- Crunch
- Fence, gate, grid, gridlet
- Hash, hash mark, hash sign
- Hex
- Mesh
- octothorp / octothorpe / octathorp / octatherp
- Pound
- Sharp
- Space
- Square
- Tic-tac-toe

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## Octothorpe: Etymology

Origin disputed. Reportedly a jocular coinage by Bell Labs supervisor Don Macpherson in the early 1960s, from ‘octo’, with reference to its eight points, and ‘thorpe’ (after 1912 Olympic medalist Jim Thorpe, in whom Macpherson was interested). However, Doug Kerr attributes octatherp to a practical joke by engineers John C. Schaak, Herbert T. Uthlaut, and Lauren Asplund upon himself and Howard Eby.

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## Asterix and the blue box



Asterix the Gaul



Asterisk