

Asterisk for the Enterprise

An Open Source answer

Contents

- Introduction
- Asterisk fundamentals
- Redundancy and failover
- Routing issues
- ENUM and DUNDi
- Importance of peering
- In short

Introduction

- VoIP the Open Source way since 2001
- Providing services to end users since 2003
- Active in R&D
- Operating our own platform

Asterisk fundamentals

- *“Asterisk is a complete PBX in software. It runs on Linux, BSD and MacOSX and provides all of the features you would expect from a PBX and more. Asterisk does voice over IP in many protocols, and can interoperate with almost all standards-based telephony equipment using relatively inexpensive hardware.”*
(www.asterisk.org)

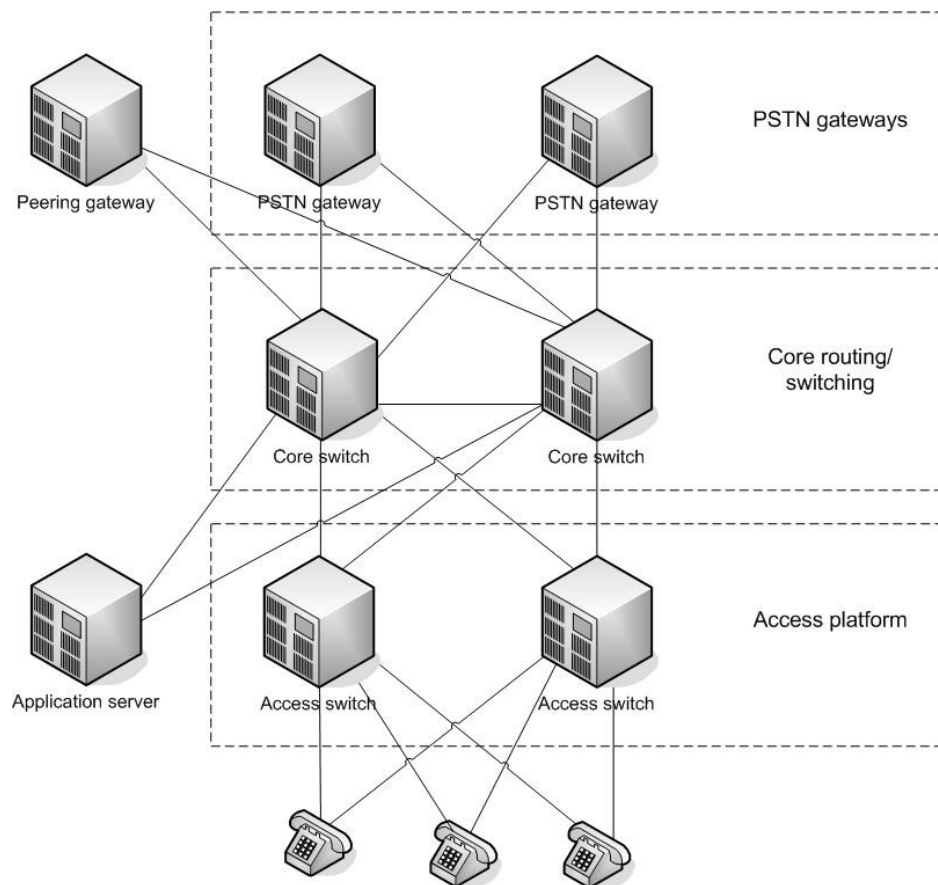
Asterisk fundamentals (2)

- PBX and IVR and Voicemail server and...
- Supports SIP, MGCP, H323, IAX2 and even SCCP (Cisco)
- Many PSTN connection types (ISDN2, ISDN30 etc) through PCI boards
- Functions with PBX and gateway separate or all in one
- Support for CTI applications (TAPI) and Call center functionality

Redundancy and failover

- A few approaches
 - Putting a SIP proxy in front (SIP only)
 - Dialing failover (if the first fails, try the next)
 - DUNDi (covered later)
 - High availability setup (IP takeover)

A failover network ('simplified')



Routing issues

- Asterisk can route to different machines by prefix
 - Can be used for LCR (carrier select)
 - Can also be used to call to other asterisk services (branch offices)
- With large setups this can be too rigid and hard to maintain

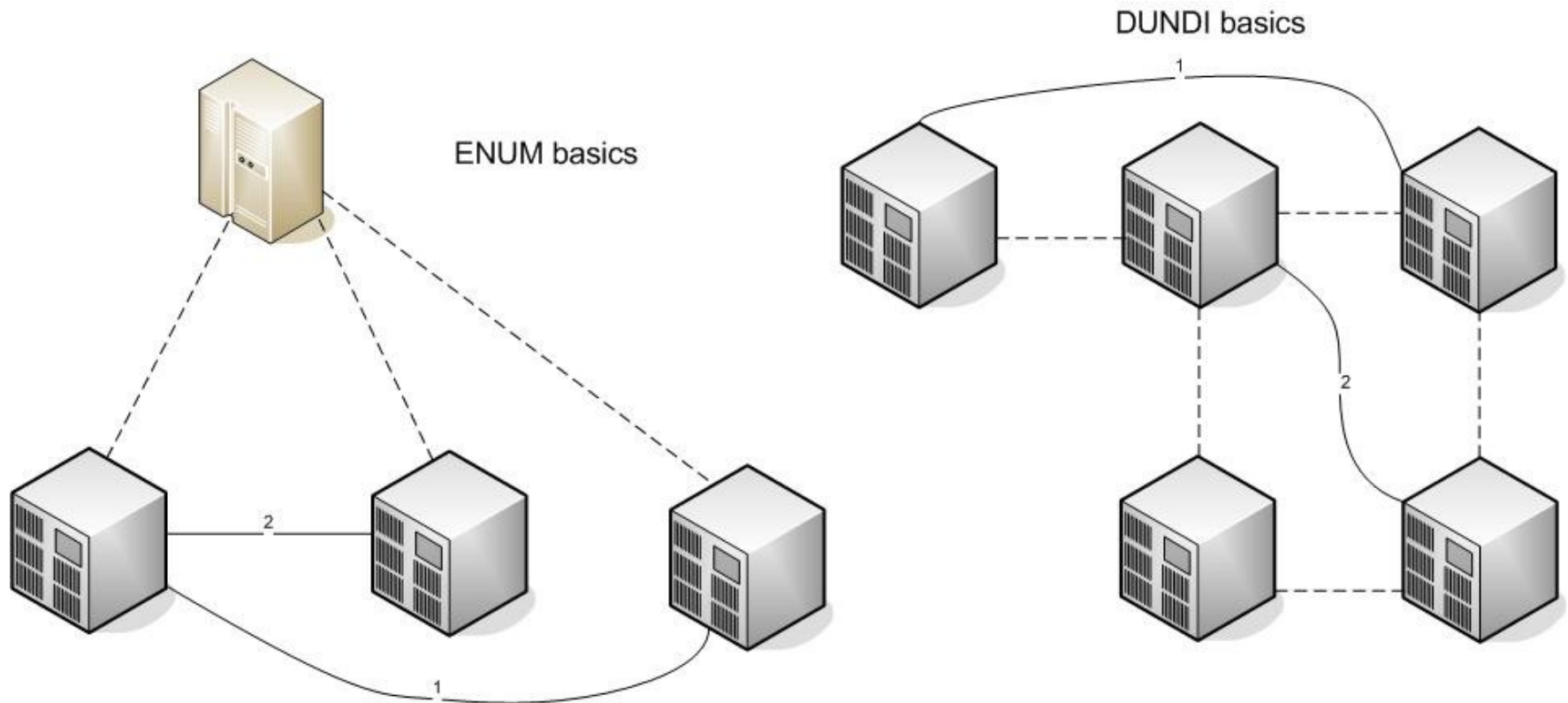
ENUM and DUNDi

- Peering strategies to make discovery of remote extensions easier
- ENUM covered enough today, suffice to say it is supported in Asterisk. You decide what DNS tree to use
- Distributed Universal Number Discovery (DUNDi) is a good alternative
 - Limited support outside Asterisk
 - Designed as a peer-to-peer system: no single control point

DUNDi principles

- **Russell:** “I need to reach 31534305842, any idea how to do that ?”
 - **Sara:** “I'm not sure. Hey Andy, do you know where Russell can reach 31534305842?”
 - **Andy:** “Not off the top of my head. Hey Beth, do you know where Russell can reach 31534305842?”
 - **Beth:** “Yah, you can reach them through their server at sip:31534305842@continental.speakup.nl.”
 - **Andy:** “Beth says its at sip:31534305842@dundi.speakup.nl.”
 - **Sara:** “Beth says its at sip:31534305842@dundi.speakup.nl.”
 - **Russell:** “Thanks!”
-
- **Tom:** “I need to reach 31534305842, any idea how to do that ?”
 - **Sara:** “Beth just said its at sip:31534305842@continental.speakup.nl.”
 - **Tom:** “Thanks!”

DUNDi principles (2)



Comparison

- ENUM based on a DNS tree, caching is done in local DNS
- DUNDi is peer-to-peer, with caching
- DUNDi offers an authentication model to avoid SPIT etc.
- GPA allows peering without pollution of the 'directory' or invalid CallerID

Importance of peering

- Available technology - Telco's need to participate as a service to customers who will otherwise do it themselves
- Be aware of security considerations
- As more destinations become VoIP-reachable the market opens for more/smaller VoIP Telco's
- Popularity for interconnecting on VoIP will grow
- As a result the trend towards flat-rate pricing models will increase
- Telco's and service providers will (need to) focus on added value services

In short

- Asterisk (and related projects) offer an Open Source alternative that can compete with commercial solutions
- VoIP peering is an important step in the path to full PSTN migration
- It will change the economical models
- Security / privacy considerations need to be addressed
- DUNDi addresses some of these considerations
- It can be made to interconnect with ENUM and other platforms (technically)

Thank you for your attention

<http://www.asterisk.org/>

<http://www.dundi.com/>

<http://www.speakup.nl/>