



IPv6 Tunnel Broker

Anand Kumria
akumria@acm.org

What is a Tunnel Broker

- A “virtual” IPV6 ISP
- Used by people who want IPv6 access but whose upstream IPv4 ISP doesn't provide the service

Tunnel Broker Requirements

- **BANDWIDTH!**

- Lots of bandwidth required as you have many clients from all around the world

- Address space

- Generally the people looking to use IPv6 today are fairly sophisticated users who want as much control as possible.
 - That means /64s but preferably /48s
-

Whols?

- Learning to interact with the network infrastructure:
 - Whois (whois.6bone.net)
 - DNS (reverse, e.f.f.3.ip6.arpa, ip6.int)
 - AS numbers (Regional Internet Registries, RIRs)

Driving Take-up

- IRC

- People love to have `l.a.very.l33t.h4x0r.org`
- Most networks are switching very quickly to IPv6

- SMTP

- About 10% of all mail I received comes via IPv6 SMTP
 - Shortly to be about 40%, once I switch `murphy.debian.org` to IPv6
-

Tools

- Zebra
 - Used to connect to peers and provide routing
- DNS
 - Used to setup forward/reverse
- Postgres to store the data about tunnels
- Various and sundry scripts

Interfaces

- Lots of interfaces
 - We have about 40 or so
 - Nice thing about the kernel is that you can listen for when interfaces come up & down
- Configuring them
 - Initially I setup them up by hand using Debian's interfaces(5) format
 - Nowadays I have a script generate that format

Interfaces (cont'd)

- Advantages of this format
 - Clear and concise.
 - Handy for reboots.
 - Administrators who know Debian can understand the config.
- Disadvantages of this format
 - Specific to Debian

Zebra

- Configuring peers
 - <insert config>
- Filtering BGP
 - Important to not provide transit to everyone
 - Otherwise tunnels to mexico get preference to local one
 - Try to ensure that peers do not advertise bogus routes to you

DNS

- Forward and reverse files are easy
- Getting BIND to look at this new values isn't
- Delegation
 - Harder to do
 - Fewer people understand it

Statistics

- About 40 tunnels (so far)
- Over half go to cable users at Optus
- Most are to fairly sophisticated users who don't require much hand-holding

Shameless self-promotion

- Tunnel Brokers (.au)
 - Trumpet
 - ProgSoc
- Tunnel Brokers (nearby)
 - Hurricane Electric (US)
 - Freenet6 (US)
 - BTEexact (UK)
 - XS26 (EU)

Other Tunnel Brokers

- ProgSoc

- <http://www.progsoc.org/ip6/>

- Hurricane Electric

- <http://www.tunnelbroker.net/>

- BT Exact

- <http://tb.btexact.com/>

- XS26

- <http://www.xs26.net/>

Questions
