Peering in New Zealand

NZNOG 2005
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Plan of Attack

- Dredge through the archives of the NZNOG mailing list

- Scrape as many press releases as I can for dates and buzzwords

- Get drunk with as many network people as I can while in New Zealand, and make them tell me all their secrets

Plan B

- Acquire fan, retire to cell block D

- Borrow money to buy L&P from machine

- Stay up until 2am doing everything possible to avoid making any slides

- Play Woody's iTunes library a few times

- Stare out of the window

Revised Approach

- Roughly chronological series of peering-related events from 1989 to the present

  - culled from MED's list of notable events in telecommunications, the NZNOG archives

  - augmented slightly by memory for the bits that I was here for

Warning!

- I once worked for a telco

- I subsequently did work for another telco

- I never had any special insight into the third telco

  - (note to recent immigrants and young children: once there were three telcos)

Audience Participation

- The Revised Plan requires you to shout and throw things and generally complain at anything you disagree with

- This will get us in the right kind of mood to assess contemporary peering developments as the morning progresses

1989

- Actrix

- TUIA Net

- Satellite link between the University of Waikato and Hawaii

1989

- Little concept of "peering". ISPs and Universities "connect to Waikato" in order to access the Internet.

- Routers, switches and associated baggage are commonly operated by Waikato ITS staff, who generally know more about them than the telcos

1989

- Telecoms Deregulation

- CLEAR Communications Limited incorporated in 1990

1989-1996

- Telecom delivers international capacity to the University of Waikato

- NZIX appears; ethernet switch across which routes are exchanged using IGPs

- CLEAR delivers two 512k circuits to Hamilton, terminated in wonderous, state-of-the-art cisco 4500 routers

1989-1996

- Routes are exchanged at the NZIX using a variety of protocols

  - RIP, RIPv2, OSPF

  - various cisco protocols that shall not be named

- very little BGP

1989-1996

- Pronet formed as a cooperative between several ISPs (Manawatu, Actrix, Iprolink, others?)

- Deployed as a wholesale network peering at the NZIX and buying transit from Telecom and CLEAR

- ISPs connected to Pronet using frame relay

1989-1996

- IHUG lands PanAmSat carrier in Newton Road, providing an additional path for inbound traffic

1989-1996

- IHUG offers flat-rate dial-up

1996

- Telecom launches Xtra

- Telstra NZ opens for business

1997

- CLEAR launches CLEAR Net

- CLEAR pulls MCI circuits back to Auckland, to avoid tromboning international traffic to Waikato and back

- NZIX's IGP routes are redistributed into BGP in CLEAR's network, tagged for identification, but not filtered

1997

- CLEAR, Telecom, Telstra NZ discuss peering in Auckland

- "AMX" is used as a working title (e.g. see Arron Scott's early mail to the NZNOG list)

- A triangle of 2M circuits is provisioned between the three telcos as an interim measure

1997

- Saturn opens for business in Wellington

February 1998

- Telecom announces ADSL trial in Wellington
  - predicts roll-out in 1999

July 1998

- Rex Croft pulls 202.7.0.0/23 out of his magic bag of addresses for use on the WIX

- Citylink have been providing connectivity between customers and ISPs for some time, but there has been little organised peering between ISPs before now

1998

- National Library peering over WIX with CLEAR, ICONZ, Netlink, Paradise, Citylink

October 1998

- Simon Blake announces availability of route servers on the WIX

March 1999

- The idea of a neutral peering point in Auckland is discussed on the NZNOG mailing list

- Guided tours of the Sky Tower's comms floors by JDA

- Richard Naylor of Citylink offers to install a cabinet and find a switch

April 1999

- Michael Newbery of Saturn names the peering point "APE" for Auckland Peering Exchange

- There was much rejoicing

- Logos involving King Kong climbing the sky tower swatting at flying routers are suggested, over-excitedly, but never materialise

May 1999

- CLEAR Net, Xtra offer flat-rate dial-up in order to compete with IHUG

1999

- Richard Naylor finds 192.203.154.0/24 down the back of the sofa, and we use it to number peers on the APE

August 1999

- Saturn launch cable modem service in Wellington

August 1999

- IHUG starts to sell calling cards which provide toll calls carried over IP

1999

- Cleaning up the NZIX is discussed, again: there is a general desire to run BGP between peers on the exchange

- Nobody wants to be the first person to throw away the OSPF routes

10 August 1999

- First peering session live on the APE (Plain Communications and CLEAR)

- CLEAR operates a fully open peering policy at the APE, WIX and NZIX

November 1999

- APE switch replaced by new hardware donated by Roger de Salis at Cisco

November 1999

- Telstra NZ live at the APE

February 2000

- Telstra NZ merges with Saturn to form Telstra Saturn

- Telstra Saturn acquires Netlink

February 2000

- Compass launches FreeNet, a free dial-up service

2000

- The Great PacRimEast Bandwidth Squeeze Begins. Both CLEAR and Telecom land IntelSat carriers in order to augment inbound capacity.

- Telstra breaks out an Australia-US DS3 in Auckland and resells transit on it to Telecom and CLEAR (AS 9901)

April 2000

- i4Free is launched

- CLEAR launches ZFree

- Telstra Saturn acquires Paradise

September 2000

- Telstra NZ disconnects from the NZIX

2000

- Xtra celebrates its 300,000th customer

- CLEAR caps ZFree subscribers at 250,000

November 2000

- Southern Cross goes live
  - (well, most of it)

March 2001

- Telstra Saturn launches local service in parts of Christchurch

August 2001

- The last router on the NZIX is turned off

- The NZIX closes

December 2001

- TelstraSaturn acquires CLEAR

- New company named TelstraClear

October 2002

- Wired Country launches network in Auckland

2003

- MCI, Sprint, Asia Netcom sell international transit in Auckland

  - Mayoral Drive/Sky Tower

  - $0 last mile

2003

- Woosh offer wireless "broadband" in Auckland, Wellington, Christchurch, Invercargill

November 2004

- TCL announces intention to disconnect from the APE, and stop peering with ISPs

- "Domestic Internet" product launched to provide equivalent functionality, but at non-zero cost

November 2004

- Citylink begin hosting content on addresses that are advertised to peers through the WIX route servers

- Corresponding routes are advertised in the US from servers which provide helpful guidance but no content

November 2004

- PNIX launched

- The PNIX so needs a logo
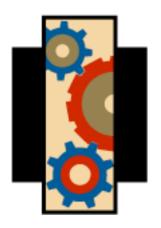
February 2005

State of the Network

- International transit from Telecom, TCL is substantially more expensive than international transit from Sprint, Asia Netcom, MCI

- WIX, APE both operate as distributed exchanges in their respective cities (WIX more so than APE, perhaps)

State of the Network

- Telecom's official position is that their peering policy is under review

- They don't want to peer with you until their peering policy has been finalised

  - but you can be a customer if you want

State of the Network

- TCL seem to be in some indeterminate state of peering/non-peering

  - Schrödinger's Telco

- Chances of anybody saying "yes" to a new peering session seem slim

  - but you can be a customer if you want

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