

GLOBAL IPv6 SERVICE LAUNCH EVENT



IPv6 Canadian Perspective

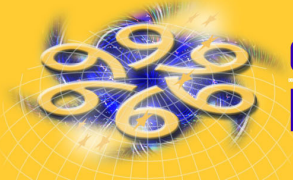
Bill St. Arnaud

Senior Director Advanced Networks

Canarie Inc.

Canada

Brussels, 15-16 January 2004



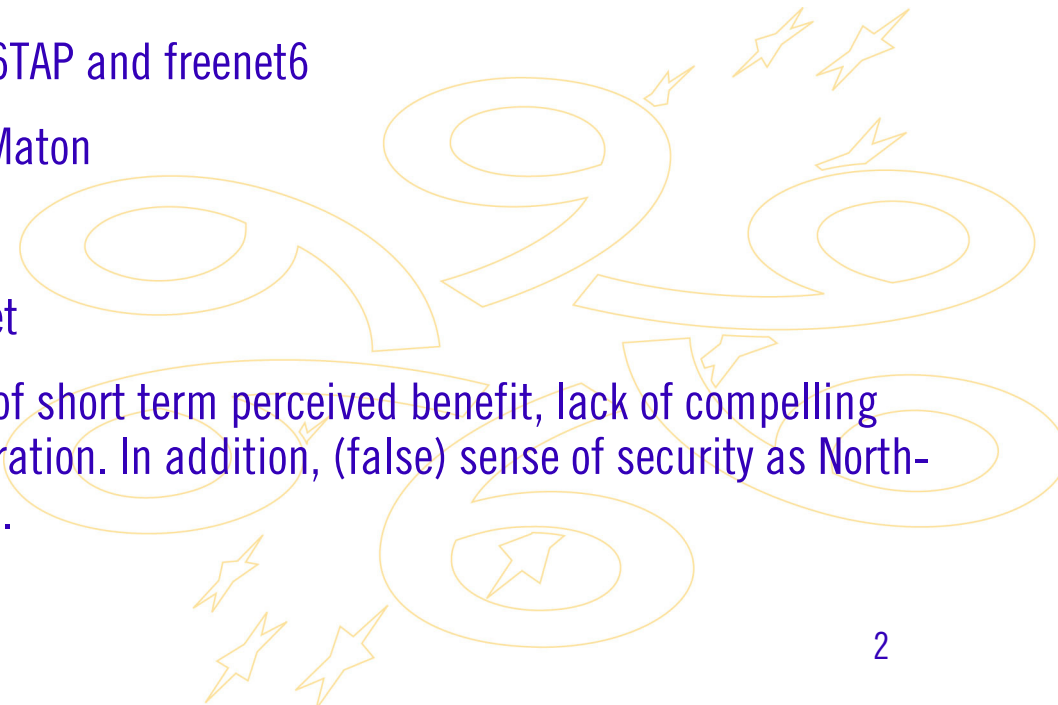
Canada and IPv6

Major actors

- Ca*net 4 is completely native IPv6 enabled since July 2002 with dual stack network.
- CRC (Communication Research Center), funded by the federal government and its BADlab (Broadband Application Development)
- Viagénie (now Hexago), developer of 6TAP and freenet6
- NRC and its IPv6 lab run by William Maton

Spectators: domestic carriers and ISP's:

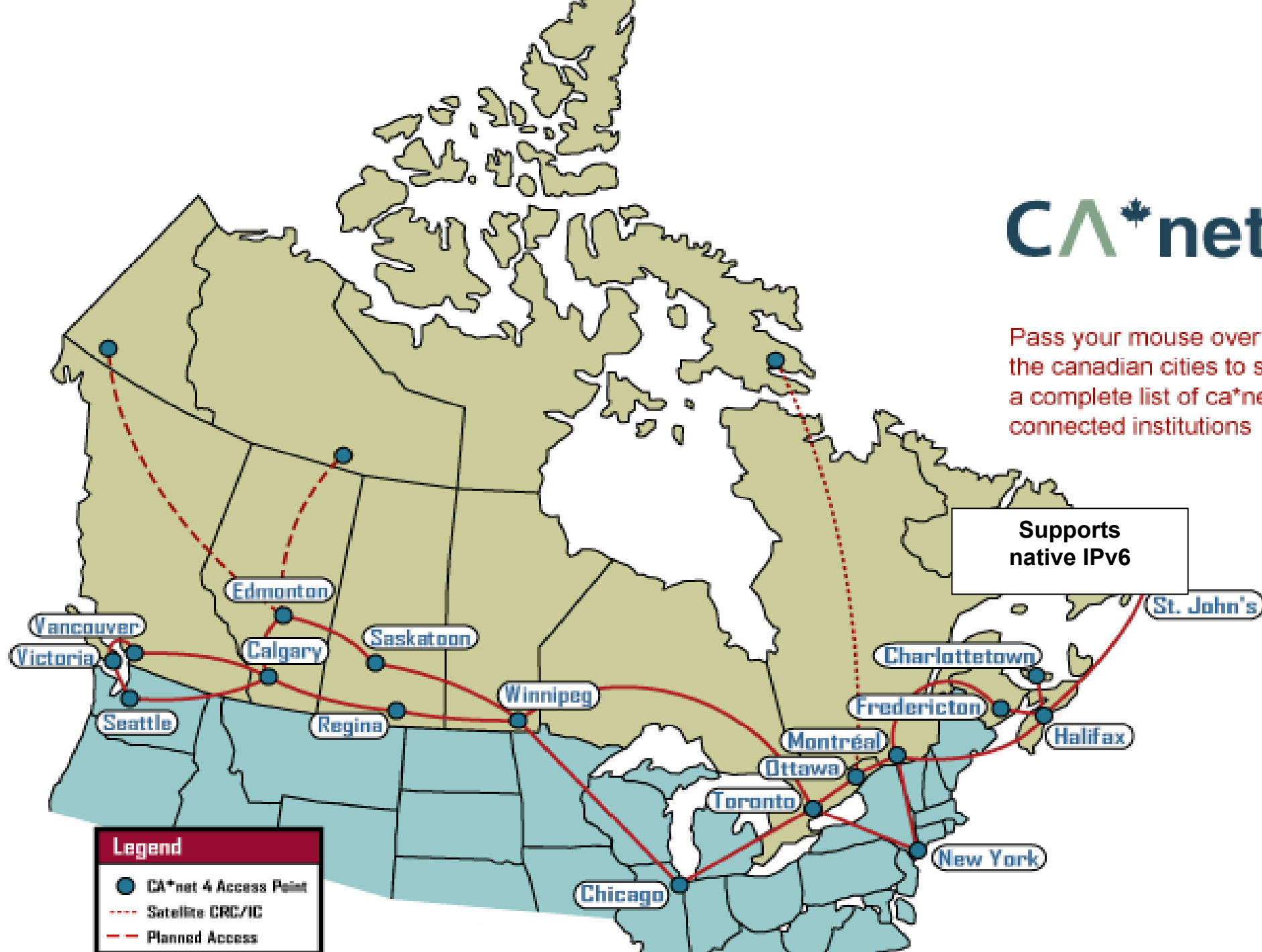
- awareness up but no major moves yet
- Major issue as everywhere else: lack of short term perceived benefit, lack of compelling applications to catalyze the IPv6 migration. In addition, (false) sense of security as North-America has plenty of IPv4 addresses.

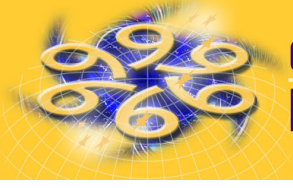


CA*net⁴

Pass your mouse over
the canadian cities to see
a complete list of ca*net 4
connected institutions

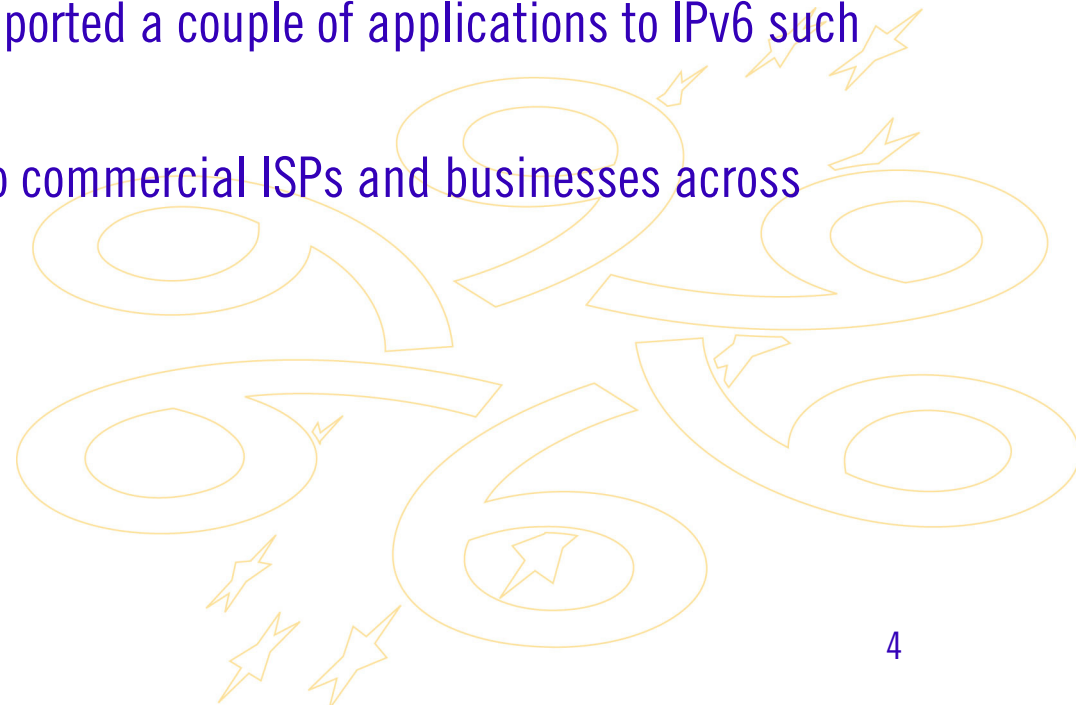
Supports
native IPv6

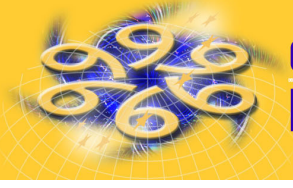




CA*net 4 and IPv6

- Native IPv6 since 2002
- Several institutions and regional networks operate IPv6 NNTP
- Plans to move all NNTP feeds across to CA*net 4 to IPv6 only
- In partnership with Viagénie have ported a couple of applications to IPv6 such as Quake
- We provide AUP free IPv6 transit to commercial ISPs and businesses across CA*net 4





Viagénie/Hexago

Canadian based company.

Contributor to IETF, co-founder IPv6 forum and NAv6TF

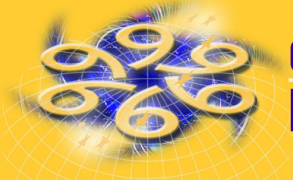
Developed the Chicago 6TAP and freenet6

Developed the TSP (Tunnel Setup Protocol) with AAA

Involved in optical internet (OBGP) and wave disk drive (WDD)

Started marketing the IPv6 Migration Broker

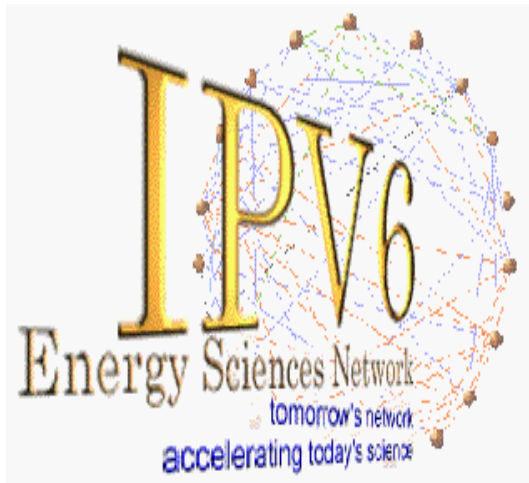


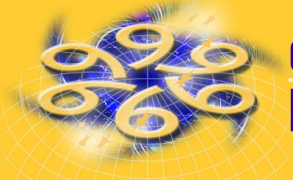


6TAP

1999: Funded by Canarie and the US DoE (Department of Energy), 6TAP becomes the 6Bone IPv6 exchange

members include APAN, NTT, Surfnet, CERN, Renater, Heanet, Ca*net, DREN, Esnet, vBNS....





Freenet6.net initiative

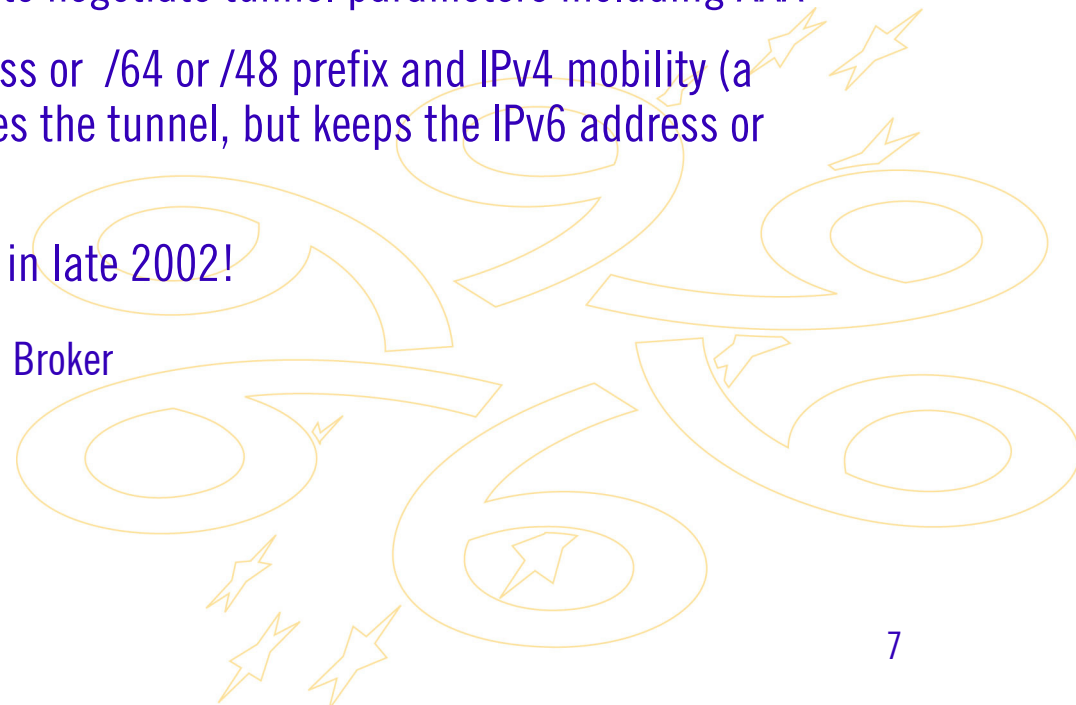
The need: not everyone could access 6TAP, what about tunneling IPv6 over IPv4 to facilitate access?

Canarie and Viagénie fund Freenet6.net initiative inaugurated Feb 99

May 2001 : second version of freenet6

- A Control protocol (TCP) is defined to negotiate tunnel parameters including AAA
- Users get a tunnel, a stable address or /64 or /48 prefix and IPv4 mobility (a change of IPv4 address reconfigures the tunnel, but keeps the IPv6 address or prefix)
- User base passes 100,000 tunnels in late 2002!

Becomes the foundation for the Hexago Migration Broker





Perceived IPv6 Drivers

Content sharing

- Napster, Kazaa, Morpheus,
- Grokster, Gnutella ...



gnutella.com

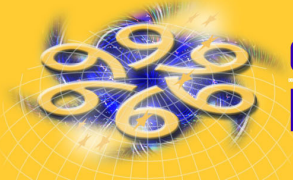


Distributed data processing

- SETI@home
- Folding@home
- FightAIDS@home



Microsoft Three Degrees



IPv6 issues for CA*net 4

- Initial biggest attraction was not address space but multi-homing route aggregation and Provider Independent address space
- This was important as CA*net 4 architecture assumes multiple parallel multi-homed, discipline or application specific IP networks
- But the promise of massive aggregation of routes is dead with current IPv6 implementation
- New overlay networks and distributed naming services and resource location services have largely eliminated need for additional address space

