Deploying IPv6 Services over Fixed and Mobile Networks

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Company History

Canadian company - started IPv6 consulting in 1997 and became a product company in 2003

Experience

• Active participants in IETF IPv6 Working Groups - Softwires, IPv6 WG, Mobile IPv6 WG, V6Ops WG
• Co-founders of the IPv6 Forum
• Long term involvement in the 6bone network, 6NET, Moonv6
• Designed 6TAP exchange
• Hands-on deployment experience in 4 continents
• Founder wrote the IPv6 book: Migrating to IPv6, Wiley, 2006

Accomplishments

• Launched Freenet6 (www.freenet6.net) in 1999 which has provided IPv6 access to over 150K people
• Released the Hexago Gateway6 in 2004
• Launched go6.net, in partnership, in 2007
Partial Customer List

Network Operators

Defense & Government

Research & Education

Manufacturer

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Overview Video
Product Overview

Gateway6

- IPv6 service delivery platform for fixed and wireless networks
- Deploy IPv6 services over IPv4 network
- Provide interoperability between IPv6 - IPv4 - IPv6 networks

Dongle6

- Plug ‘n’ play IPv6 CPE
- Plug into Ethernet port anywhere in the LAN to get IPv6

P2P6 (Peer-to-Peer6) Platform

- Platform to deploy P2P services
- Works in IPv6 networks or in IPv4 networks with Gateway6
Gateway6 Solution

Description
- An IPv6 service delivery platform
- Extends IPv6 from the core to the edge of the network (last mile or last hop)
- Provides interoperability between IPv6 & IPv4 hosts, networks and services

Value Proposition
- Enables IPv6 services to work over IPv4 networks

USP
- The only IPv6 service delivery platform sold today

Consists of 3 parts:
1. Client
2. Transition mechanisms
3. Server
Gateway6

1U Internet appliance
2 x 1GbE interfaces
Supports up to 50,000 tunnels
IPv6 in IPv4 tunneling
IPv4 in IPv6 tunneling (DSTM)
NAT traversal
RADIUS support
IPv6 permanent (or temporary) addresses
Node and network mobility
IPv6 prefix delegation
Authentication, Authorization & Accounting (AAA)
Automatically update DNS information
Monitoring
Gateway6 Client

Small footprint - uses v6 resources already in OS. BSD licensed. Source code and OPENWRT port available.

Deployed in three ways:
1. Software download for computer
   - Is available on Windows 2000, Server 2003, XP, Linux, FreeBSD, OpenBSD, NetBSD, Solaris, OS X, VxWorks
2. Dongle6 - “Plug ‘n’ play” hardware device
   - Plug anywhere in network to provision IPv6 to LAN
3. Ported to various CPE devices
Gateway6 Transition Mechanisms

Tunneling
- Tunneling protocol is used to establish tunnel between client and Gateway6 server
- Utilizes the Tunnel Setup Protocol (TSP), DSTM, L2TP (prototype) and others soon

Translation
- IPv4 -> IPv6 & IPv6 -> IPv4 proxy functionality
- IPv6 -> IPv4 & IPv6 -> IPv4 translation functionality
Dongle6

Plug ‘n’ play IPv6 CPE
Dongle6 eliminates client software
Provisions IPv6 over L2 network
Can be installed by user
Cost effective way to upgrade exiting CPE deployments to IPv6
P2P6 Platform Overview

Opens a new class of services for the Operator to sell

- Broadband fixed
- 3G mobile

All services are plug ‘n’ play - user can install

Platform supports the deployment of IPv6 P2P service over IPv4

Provides secure access to the home from anywhere on the internet

- Access home services with any computer or mobile device using IPv4
- Works with both IPv4 and IPv6 enabled home servers/devices

Enabled services:

- P2P Camera
- Home Access
- Home Website
- Big Big Mail
- P2P Filesharing
- P2P Streaming
- Remote Support
Peer to Peer (P2P6) Services

http://cam1.gateway6.hexago.com
User = camuser; Password = secret
Gateway6 Applications - Fixed

IPv6 services platform using tunneling over IPv4
  - Start small and add more Gateway6s step by step as traffic grows without requiring any client changes
Provides IPv6 access to users outside of IPv6 network
IPv4 support in an IPv6 only environment through DSTM
Gateway6 Applications - Mobile

IPv6 over IPv4 to start IPv6 3G/IMS services today
IPv6 roaming in IPv4 networks
Various solutions to access IPv4 services in IPv6 network
Gateway6 Applications - FMC

Provide a scalable platform for home access services
Accessing IPv6 IMS domain from wireline/wireless networks
IPv4 - IPv6 IMS interoperability - in progress
Booth Demonstrations

Demonstrating: Gateway6, Dongle6 and P2P6

Home Network in Canada

IPv6 Camera
IPv6 web server
IPv6 streaming server
IPv4 file sharing server (with P2P6 client)
IPv4 Power Control Device

Gateway6
IPv4 Access
IPv4 internet
IPv6 China Summit

IPv6 Camera
IPv4
IPv4 / IPv6
IPv6

IPv4 file sharing server (with P2P6 client)
IPv4 Power Control Device
IPv4
IPv4 / IPv6
IPv6

PC
Phone
IPv4
IPv4 / IPv6
IPv6

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Thank you.

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