IPv6@TILAB

Raffaele D’Albenzio
IPv6@TILAB

- TILAB IPv6 network
- ngnet.it initiative
- Euro6IX project
- TILAB IPv6 routing monitor: ASPath-tree
TILAB IPv6 network

• TILAB is connected to several IPv6 (both Tunneled and native) networks
  - 6Bone
  - Euro6IX network
  - Telecom Italia Reseau
  - m6Bone
TILAB IPv6 network
TILAB within 6Bone

- Started as Backbone site (CSELT) in 1997

http://carmen.ipv6.tilab.com/ipv6
Euro6IX Network

- Native IPv6 connections
  - 34Mb/sec links
- Peering with 6Net
  - UK
  - Italy (almost up)

http://www.euro6ix.org
IPv6 and RESEAU

• What is Reseau
  – it is an experimental network built and managed by Telecom Italia to test next generation broadband services
  – High bandwidth infrastructure
  – experimental access services based on Gigabit Ethernet for campus/corporate customers and xDSL (mainly VDSL) for residential users

• RESEAU network is IPv6 enabled
  – Some customers are using IPv6 native service. Some examples:
    • CSP
    • Politecnico di Torino
    • Centro Elis
RESEAU IPv6 network topology
m6Bone

- experimental worldwide IPv6 network used to test IPv6 multicast protocols
- Born under an initiative promoted by RENATER (FR)
- Several events are forwarded on m6Bone
  - e.g. some IETF wg sessions

- TILAB m6bone connection
  - 1\textsuperscript{st} phase: connection through CNR in Pisa
  - 2\textsuperscript{nd} phase: multicast BGP peering with Renater (FR)
m6bone (Multicast 6Bone) topology
m6bone (Multicast 6Bone) multicast BGP topology
TILAB IPv6 network

Gigabit Ethernet Infrastructure (TUR6IX)

R6

R4/6

R4/6

R6

R6

TILAB Corporate

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Gigabit Ethernet Infrastructure (TUR6IX)
The “ngnet.it” initiative

- Development of an “R&D” service offering from the TI Group:
  - IPv6 access using Tunnel Broker
  - Application Services: WWW, ftp, Chat, instant messaging, network games, news, forum, e-mail
  - Experimental connectivity (static Tunnel or native)
  - Traffic and network Monitoring
    - Traffic statistics
    - Routing stability analysis
“ngnet.it” services

• “ngnet.it” IPv6 Tunnel Broker
  – number of registered users on 9/2003: ~ 37000

• “ngnet.it” application services
  – chat, instant messaging, newsgroups, games on line, mailboxes available to IPv6 users only

• Chat with IPv6
  – chat servers linked to IPv4 IRCnet (through TIN.IT) and Azzurranet
  – peak of contemporary IRCnet users: 1521
  – average contemporary users: ~600

http://www.ngnet.it
"ngnet.it" services

• Newsgroups with IPv6
  – feed from/to TIN.IT (IPv4) and University of Oregon (IPv6)
  – it.*, tin.* and comp.* newsgroups available

• Games with IPv6
  – Quake I/II server (porting by VIAGENIE)

• E-mail with IPv6
  – mailboxes offered to all the “ngnet.it” IPv6 Tunnel Broker registered users
  – web, pop3 and imap IPv6 only access

• instant messaging with IPv6
  – IPv6 only Jabber server

http://www.ngnet.it
IST Euro6IX project

GOAL: development, testing and trial of innovative IPv6 services on a wide area infrastructure built as the interconnection of experimental IPv6 Internet Exchanges distributed through Europe

TILAB main contributions:
- Set up of an experimental IPv6 Internet Exchange in Turin
- Connections to Germany and Switzerland
- Design of the IPv6 Internet Exchange internal structure
- Interconnection network design
- Monitoring tools
- Trial site

[http://www.euro6ix.org](http://www.euro6ix.org)

Partners

- BT Exact
- TILAB
- T-NOVA (DT)
- France Telecom
- TID
- PT
- Telscom
- Airtel
- 6Wind
- Consulintel
- Ericsson Telebit
- Eurocontrol
- novaGnet systems
- UPM
- UM
- UoS

IPv6 Task Force
IPv6@TILAB

Raffaele D’Albenzio

Milan, 1st Oct 2003
IST Euro6IX project (2)

- Investigation of new roles for Internet Exchanges.
- Mediation function between ISPs and customers.
  - To be investigated
- Easier renumbering and multihoming
TILAB tools: ASPath-tree