IPv6 Multicast

Jérôme DURAND
SIPA - GIP RENATER

TERENA – June 9th 2004
Jerome.Durand@renater.fr
July 2001
June 2004
June 2004

6net

Juniper Networks

FreeBSD: The Power To Serve
Beginning of 6NET

- No implementations from vendors
- IPv6 multicast connectivity via tunnels to start playing with the technology
- RIPng hack used for routing as MBGP not available for IPv6 multicast
- One goal: have 6NET core IPv6 multicast enable
Deployment in 6NET core (1)

- Good partnership with CISCO engineers
- Implementation of a first set of features for deployment in the core:
  - PIMv2 - SM/SSM
  - MLD
  - PIM Hello option for IPv6 global addresses
  - MBGP for IPv6 multicast AF
  - RP / DR
  - Static RP configuration
Deployment in 6NET core (2)

- March 2003 First deployment in core
- September 2003
  - Native IPv6 multicast for most of NRENs
- No more wild tunnels everywhere
  - Coordination of the deployment
  - Routing policy: aggregation
  - Stability
  - Almost production like!
Deployment in 6NET core (3)

- New requests
  - Embedded-RP
  - MLDv2
  - Scoped BSR
  - PIM boundaries
  - Multicast static route redistribution in MBGP
  - PIM Bidir

- Most of them already implemented and deployed in 6NET
Deployment in 6NET core (4)

- End of 6NET links at the end of the year
- How to interconnect NRENs then?
- Tests being made in Géant
  - most of features are here
  - others are coming soon
- Maybe difficulties for transition
  - most of NRENs have IPv6 multicast only in testbeds
  - UNINETT has it running in the production network
  - will we have enough time?
Not only playing...  
...we’ve been writing too!

- Cookbooks
- Interdomain multicast
  - Embedded-RP
  - Key solution for scalable interdomain
- Coexistence with IPv4 multicast
- Address allocation problem
M6Bone

MBGP + PIM SM/SSM

+ global embedded-RP
RP for an organisation scope

embedded-RP managed
by an ISP

+ global embedded-RP
RP for a site scope

Global RP managed
by RENATER

global embedded-RP

TERENA – June 9th 2004
6NET and IPv6 multicast

- Certainly one of the topic the most exciting in 6NET
  - Many partners
  - A lot of energy
  - Many discussions
  - Internet drafts
  - Lot of dissemination
  - Deployments everywhere
Applications and services

- Videoconferencing: VIC/RAT, Videolan, Isabel, WM player 9
- Radio broadcast: Freeamp
- Others: NTE, WB, MAD, SDR
- Reflectors
  - To IPv4 multicast
  - To IPv6 unicast
Want to play?

- M6bone-team@renater.fr

- Web-site: [http://www.m6bone.net](http://www.m6bone.net)
  - Collaborative web-site
  - Architecture of the network
  - Information about equipment’s configuration
  - Subscription form

- Mailing list: m6bone@ml.renater.fr
  - More than 180 active and experienced people ready to help you
See you soon on the M6Bone!