Practical aspects of deploying IPv6 in Luxembourg

EPT IPv6 Roadmap

P&TLuxembourg

International Conference on

Future Trends of the Internet

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P&T LUXEMBOURG

- IPv6 Key Benefits over existing IPv4 technology

  - Larger IP Address Space
  - Inherent Mobility Support
  - Improved routing techniques
  - Multicast supported as native communication mode
  - Extended authentication and privacy capabilities
  - Auto configuration – Plug and Play Networking
  - Integrated Quality of Services (QoS)
  - Enabler for RFID technologies
  - ..

- IPv6 Initiatives

  – US is moving to real utilization of IPv6

  – Asia has deployed IPv6 at a large scale

  – Europe has to move to IPv6 in order to keep up with technological developments and for global communication:
    - Internet-enabled wireless devices
    - Web 3.0
    - Intelligent sensors, RFID
    - Hosted & virtual services, Cloud computing, gaming

  – Luxembourg: U2010 research project

- EPT IPv6 Evolution and Roadmap

  - Network elements to be considered or to be upgraded
    - IP backbone
    - IPv6 address range
    - Internet international Transit Links
    - Internet Peering
    - National IP access network (DSL)
    - Enduser equipment (CPE's)
    - Network security
    - Running IT applications and systems

- EPT IP Backbone

  - **Q1/2009** - All EPT core routers are IPv6 enabled
    - Full hardware forwarding of IPv6 on EPT Backbone Routers
      Same forwarding capacity as for IPv4
    - EPT Backbone supports full suite of IPv6 Protocols
      OSPFv3, BGPv6, DHCPv6, ICMP6, etc...
  - **Q4/2009** – Our goal is to have end of 2009 IPv6 or dual stack IPv4/IPv6 running for:
    Professional BGP Internet Access
    MPLS IP VPN
    DSL lines

- EPT IPv6 address space is available

  – IPv6 addresses reserved in 2002

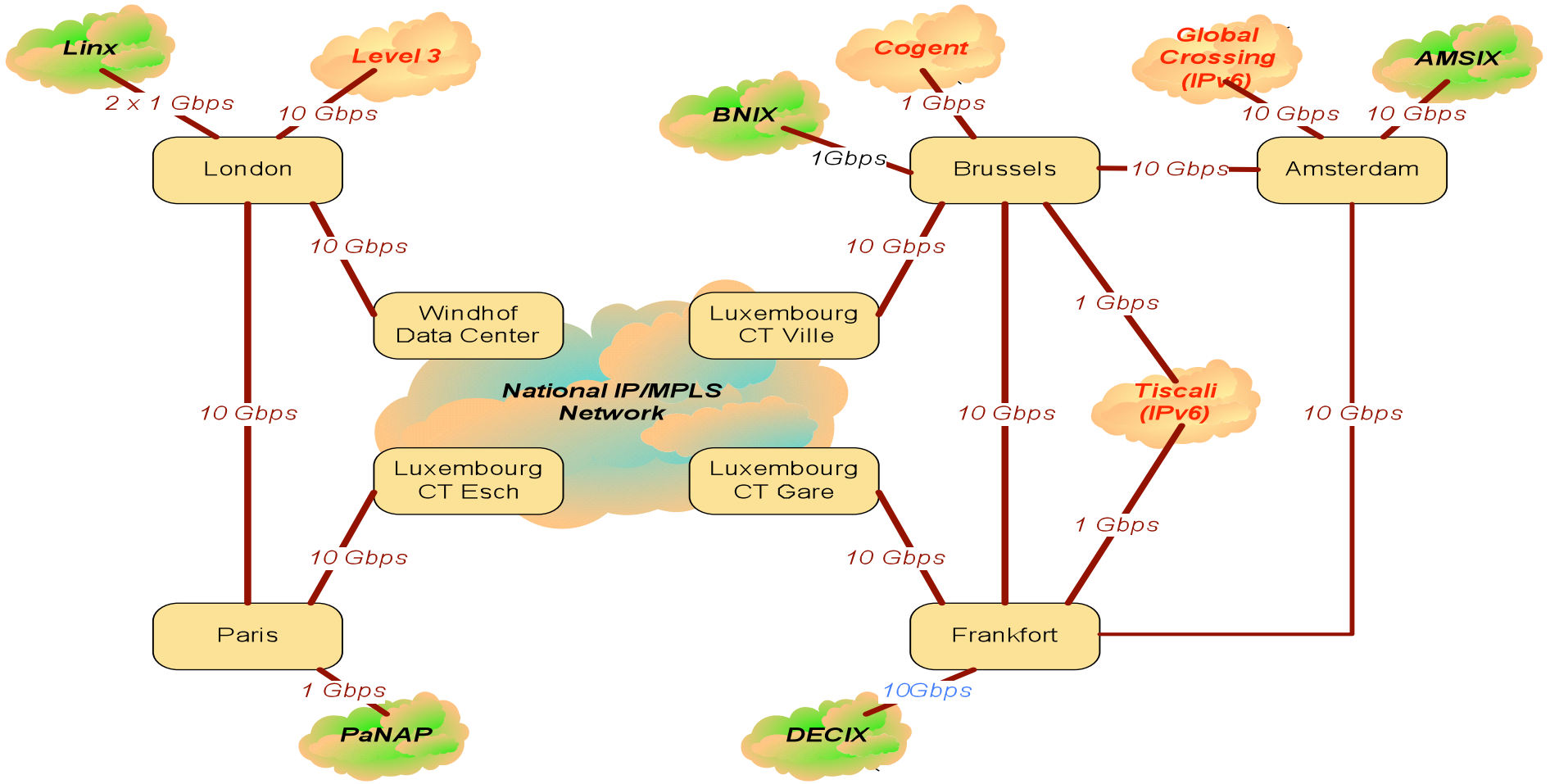
    –Address format

      2001:07e8::/32

        /48 for corporate customers

        /64 for DSL like customers

EPT IP Backbone - International Interconnects



- Internet Transit Links
  - **Q1/2009** - IPv6 active on 10Gb/s Transit Link with Global Crossing in Amsterdam
  - **Q3/2009** – Upgrade of EPT Transit Link with Tiscali in Frankfurt to IPv6
- Internet Peering
  - **Q4/2009** - EPT will start IPv6 Peering in Amsterdam and Frankfurt

- LuxDSL

  -**Q2/2009** - Dual Stack LuxDSL available for internal testing and friendly users

  - DSLAM (Digital Subscriber Line Access Multiplexer)
  - IPv6 for LuxDSL pppoE transparent
  - Ethernet based Isam's supporting IPv6 today
  - CPE's New AVM VDSL2/ADSL2+ HAG with IPv6 in introduction phase

- Broadband remote access platforms

  -**Q4/2008** - First IPv6 capable Juniper ERX 320s installed and in service

  -**Q1/Q2 2009** - ATM based Juniper ERX 1410 will be replaced with new Juniper ERX 320s, supporting IPv6

- EPT residential servers and services
  - **Q3/2009** - IPv6 name servers (DNS)
  - **Q4/2009** - Application Servers dual stack (VMware, hosted servers..)
  - **Q2/2010** - IPv6 hostpack service
- EPT Security Services
  - **Q2/2009** - New hardware based dual-stack Fortinet Firewalls

- Conclusion
  - IPv6 deployment will occur as an evolution, not as a bang!
  - EPT will make transition as easy as possible for end-users and system administrators
  - IPv6 End to End connectivity possible **Q4/2009**

Thank You