Barriers to IPv6 Deployment

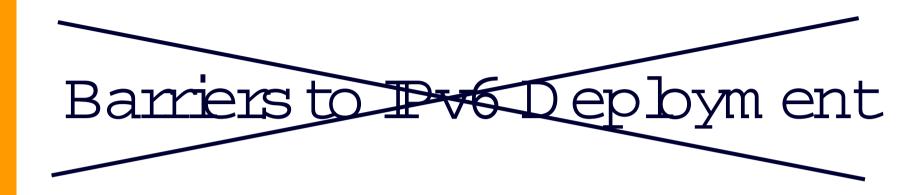peter.hovell@bt.com

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IPv4

~~Barriers to IPv6 Deployment~~

Areas to Investigate

Why Produce the Document?

- Requested at the TF London Meeting 17/01/03
- Aims:
  - to get a list of areas that need further investigations
  - may help steer FP6 projects
  - could help TF's steer their work
- Procedure:
  - input requested from experts around Europe (world)
  - reviewed at the TF Berlin Meeting 30/04/03 and on the TF email list
  - agreed document on the web site
  - presented today

International Agreements

- Standards
  - Some important areas still not stable
  - (MobileIPv6, DHCPv6), multi-homing, renumbering and maybe Flow Label or its use
- Agree User/Network Interface
  - A plethora of standards that apply to the user/network interface area
  - Best practices guide needed for mass deployment and to ensure interoperable

Equipment Availability

- IPv6 Access Equipment
  - Compared with the core limited kit available, but situation improving
- Network management
  - Carrier scale products needed
- Host OS Support
  - Many operating systems support IPv6 to some degree
  - Full support in the most popular end host operating system would stimulate demand
  - Support for RT kernels for embedded systems is needed for consumer devices

Equipment Availability

- Consumer devices
  - Currently there are very few IPv6 capable consumer devices?
  - Is it just a chicken and egg problem!
  - Can European industry be stimulated to produce devices that capitalise on IPv6 advantages and hence generate new markets?
- IP version-neutral applications
  - We still have new applications that are IPv4 and them ported to IPv6?
  - Is there a requirement for:
    - "best practices" guide
    - better education
    - an IP version application label scheme?…

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Investigations

- DNS
  - Many issues: interworking, DNSsec, performance, scalability?
- Zero Configuration
  - IP is still reserved for the technically aware! Complete and robust zero configuration is required for true mass deployment
- Security
  - Is IPsec the answer? Will it be made to scale, what about privacy?
- Transition
  - Lots of effort but still confusion!
  - Clear guidelines are needed: v6ops documents helping
  - Interoperability of interworking mechanisms has not been adequately studied

Outreach

- Awareness
  - Training of IPv4 engineers
  - Awareness in industrial sectors that currently do not use IP but to which IPv6 could bring benefits

Commercialisation

- Business Case
  - What is the business case?
  - Make money: new applications, customers, market segments
  - Save money: OSS
- Technical Case
  - Clear technical guide to deployment needed: v6ops
  - What should IT people be considering
- Advantages
  - Claimed IPv6 advantages: Mobile IPv6, Multicast, Plug and Play and even NAT avoidance
  - But business benefits have not been quantified

Conclusions

- Lots of areas to work on
- These need tracking and progress monitoring
- And this is without any longer term IPv6 research

Thanks you

Any Questions?

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