Issues & Alternatives

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Extreme Networks

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Some Issues

- DFZ RIB growth is geometric

  - might be exponential

  - larger RIB/FIB requires more memory, of course

- Separate concern about BGP convergence properties as tables get very large

- Likely primary cause is dual-homed sites

  - "IPv4 Address Allocation & the BGP Routing Table Evolution" by Meng, Xu, Zhang, Huston, Lu, & Zhang, from ACM CCR (?), circa 2005.

Some Non-Issues

- Forwarding IP packets quickly

  - Even for IPv4/IPv6 packets containing options/headers

  - ASIC forwarding engine pretty much has this nailed

- Forwarding Ethernet frames quickly

  - ASICs help here too

- Learn rates for Ethernet frames

  - ASICs again

Alternatives

- Build bigger routers with more memory

  - Might require (LOTS ?) more money than today

- BGP configuration/deployment changes

  - thoughts from tli, rcallon

- LISP

  - proposal from dino (draft-farinacci-lisp-OO.txt)

- Classical I/D Locator splits

  - example: HIP   work in progress at IETF & IRTF

  - other I/L ideas also exist in the research world

- Others to be discovered – from people like you :-)

Questions ?