

Route Projection

Towards a new hierarchy

The Infrastructure today

- The Internet (the 'carpet')
 - Fully engineered
 - Hierarchical, Aggregation, ASs, Wire links
 - Fully distributed States
 - Route injection
 - Shows limits (BGP tables)

=> Fully interleaved, impact of route change is pervasive
- Intranets
 - Same structure as the Internet
 - Yet decoupled from the Internet
 - NAT, Socks, Proxies

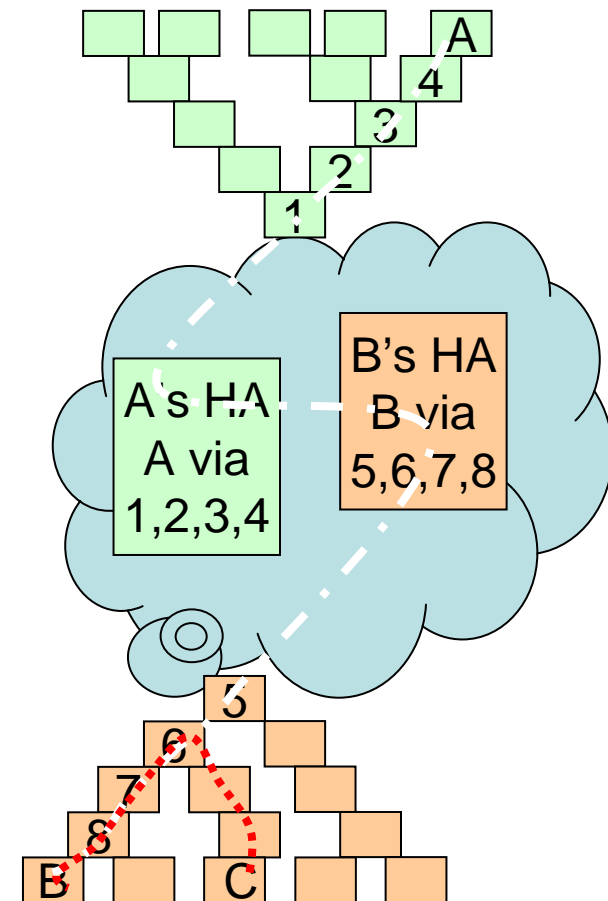
=> First model for Internet extension

The Fringe

- Ad-Hoc Internet connectivity
 - No engineering, no trust model
 - Dynamic Internet connectivity sharing
- On demand localized states for Internet Access
 - Still NATs, Socks, Proxies based edge decoupling
 - NEMO adds dynamic tunnel creation and route projection
- Local reachability
 - Contextual Ad Hoc Networking (eg group, geo, event etc...)
 - Local services (DDNS, Service Discovery etc...)
- Getting Pervasive
 - Several orders of magnitude more routers in the Fringe
 - No way to extend the Internet model there
 - Pervasive Routing to become a commodity

Fringe Routing

- Tree Discovery
 - Highly dynamic contextual structure
 - Enables L3 Packet Relay to Internet Access
- Network Mobility
 - On demand tunnels
 - Projects localized routing states into the Internet
 - To Home Agent
 - To Correspondent (Router) if RO
- RRH
 - Source Routing in the Fringe
 - Full privacy possible, no trust necessary
- MANET
 - Enables local reachability
 - Need to combine dynamically with NEMO



Hierarchies

Nemo + RO => an on-demand layer with huge scalability potential

