



The state of IPv6 services

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Swiss IPv6 council meeting

Zürich, May 14th 2012



- Current IPv6 services
- Challenges and lessons learned so far
- Roadmap for future IPv6 services

- Managed security services
 - Perimeter (Firewall) dual-stacked
 - Remote Access dual-stacked
 - Content/IDS/IPS scanning mostly dual-stacked
 - Some vendors aren't there yet...
 - New features for IPv6
 - Tunnels (e.g. 6to4, Hurricane Electric, for SOHO)
 - RA Guard et al. for LANs
- Very few corporate networks dual-stacked

- Managed datacenter services
 - Backbone/Peerings/Transit: dual-stacked
 - Managed hosting: dual-stacked load-balancers
 - DNS resolvers: dual stacked anycast
 - Authoritative DNS: dual stacked
 - SIP: dual stacked
 - Email filtering: dual stacked
 - Firewall/load balancing: dual-stacked

- Monitoring services
 - Alerting/trending/discovery/config backup/logging
 - All dual stacked
 - Most monitoring targets still IPv4-RFC1918

- People who barely know IPv4 trying to grasp IPv6
 - „a subnet“ = /24 \neq /64 ?
 - „Illegal character ,:‘ in IP-address“
 - No NAT = unsafe
 - A host can have multiple IP addresses ?
- No IPv6-only content yet
 - Although this is going to change in 2012
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- IPv6 available in stable release \neq IPv6 stable
 - Deploy IPv6-test services in Lab first not (only) because it breaks existing stuff but to quickly test new software-releases
- Software ignores IPv6 capability of underlying system
 - Should be IP-version agnostic, but...
 - Input validation / name resolution / socket connection

- Dynamic IPv4 for SMB
 - 6rd -> dynamic IPv6 LAN subnet
 - 6to4 tunnels -> dynamic tunnel endpoint updates
 - Solution: move to access ISP with static IPv4/IPv6 addresses

- Deploy new public facing projects IPv6-only (frontend and backends)
 - Use stateless IPv4-to-IPv6 translation for „legacy IPv4 access“ to load-balanced service IPs (RFC6052/6145, stateless NAT64,IVI, SIIT)
- Deploy IPv6-only LANs ?
 - NAT64 for „legacy IPv4 access“ ?
- Dual stack = dual effort
 - When can we un-deploy IPv4 ?