

IPv6 Migration (1/2)

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The transition from IPv4 to IPv6 is necessary, but can only be carried out gradually – completion by 2020 ?

Possibilities of the co-existence of IPv4 and IPv6:

■ **Tunneling:**

- IPv6 datagrams are tunneled unchanged through IPv4 networks, i.e., packed and transported in IPv4 packets
- IPv6 are only interpreted in IPv6 networks

■ **Dual Stack Implementation:**

- Routers can process IPv4 as well as IPv6 data traffic
- IPv6 datagrams are interpreted and, if required, correctly implemented in IPv4

IPv6 Migration (2/2)

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Possible scenario:

- **Step 1:** Extension of the DNS systems for IPv6 addresses
- **Step 2:** Extension of end systems and routers with dual stack implementation
- **Step 3:** Using dual stack systems
- **Step 4:** Dividing the global Internet into IPv4 and IPv6 areas
- **Step 5:** As soon as all routers are IPv6-ready → restructuring of the old IPv4 Internet into an IPv6 Internet

Previous test runs:

- World IPv6 Day on July 8, 2011
- World IPv6 Patch Day on June 6, 2012

IPv6 Deployment

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Operating system support:

- Starting with Windows Vista/Windows 7: IPv6 is enabled by default
- Other Windows derivatives: optional
- xBSD/Linux: since Kernel 2.6 complete IPv6 support
- Mac OS X: starting with 10.2
- Cisco (router): optional
- Implementation in own LAN is no problem
- Beyond own border router: tunneling
- ...