ETSI GR IP6 006 V1.1.1 (2017-11)

Generic migration steps from IPv4 to IPv6

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Reference
DGR/IP6-0006

Keywords
IPv4, IPv6, transition

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Contents

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1 Scope

The present document outlines the generic transition steps from IPv4 to IPv6 [i.1], [i.2], including the transition necessity, principles and technology guidelines, generic transition steps, security implications and the generic step-by-step process.

2 References

2.1 Normative references

Normative references are not applicable in the present document.

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

[i.1] IETF RFC 791: "Internet Protocol", September 1981.

[i.2] IETF RFC 2460: "Internet Protocol, Version 6 (IPv6) Specification", December 1998.

[i.3] IETF RFC 1631: "The IP Network Address Translator (NAT)", May 1994.

[i.4] IETF RFC 1701: "Generic Routing Encapsulation", October 1994.

[i.5] Durand, A., Droms, R., Woodyatt, J., and Y. Lee: "Dual-Stack Lite Broadband Deployments Following IPv4 Exhaustion".

[i.6] IETF RFC 5569: "IPv6 Rapid Deployment on IPv4 Infrastructures (6rd)", January 2010.

[i.7] IETF RFC 7597: "Mapping of Address and Port with Encapsulation (MAP-E)", July 2015.

[i.8] IETF RFC 7599: "Mapping of Address and Port using Translation (MAP-T)", July 2015.

[i.9] IETF draft-ietf-v6ops-ipv6-ehs-in-real-world-02: "Observations on the Dropping of Packets with IPv6 Extension Headers in the Real World", December 2015.

[i.10] IETF RFC 6555: "A. Happy Eyeballs: Success with Dual-Stack Hosts", April 2013.

[i.11] IETF RFC 7359: "Layer 3 Virtual Private Network (VPN) Tunnel Traffic Leakages in Dual-Stack Hosts/Networks", August 2014.

[i.12] LinkedIn® Case Study: "IPv6 at a Social Media Company". Schuller, S. 11th Slovenian IPv6 Summit, June 21, 2016, Ljubljana, Slovenia.

NOTE: Available at https://go6.si/wp-content/uploads/2016/06/LinkedIn-Case-Study.pdf.

[i.13] IETF RFC 1702: "Generic Routing Encapsulation over IPv4 networks".

[i.14] IETF RFC 5969: "IPv6 Rapid Deployment on IPv4 Infrastructures (6rd) - Protocol Specification".

[i.15] IETF RFC 6751: "Native IPv6 behind IPv4-to-IPv4 NAT Customer Premises Equipment (6a44)".

[i.16] IETF RFC 5214: "Intra-Site Automatic Tunnel Addressing Protocol (ISATAP)".