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Technical requirements of 4over6 technology in IPv6-only network-Part 3: IPv4 address dynamic allocation based on IPv6-only network

面向单栈IPv6网络的4over6技术要求 第3部分：基于IPv6网络的IPv4地址动态分配

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

GB/T 44866 "4over6 Technical Requirements for Single-Stack IPv6 Networks" and GB/T 44887 "Technical Requirements for IPv6 Evolution", GB/T 44598 "General Technical

Requirements for Multi-domain IPv6 Single Stack Networks" together constitute the national standard system for IPv6 evolution technology.

This document is Part 3 of GB/T 44866 "Technical requirements for 4over6 for single-stack IPv6 networks".

The following parts are published.

- Part 1: IPv4 network interconnection based on IPv6 backbone network;

- Part 3: Dynamic allocation of IPv4 addresses over IPv6 networks.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document is proposed by the Ministry of Industry and Information Technology of the People's Republic of China.

This document is under the jurisdiction of the National Communications Standardization Technical Committee (SAC/TC485).

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Introduction

According to the Notice on Accelerating the Scale Deployment and Application of Internet Protocol Version 6 (IPv6), in order to promote the integration of IPv6 technology, In order to integrate and build an IPv6 technology system and promote the standardization of IPv6 scale deployment and application results, China has formulated a series of IPv6 technology standards.

GB/T 44866 "Technical Requirements for 4over6 for Single-Stack IPv6 Networks" was issued at a critical time for China to launch large-scale IPv6 deployment.

The standard formulated to specify the technical requirements for the 4over6 transition consists of three parts.

- Part 1: IPv4 Network Interconnection over an IPv6 Backbone. The purpose is to

standardize the interconnection of IPv4 networks over an IPv6 backbone network.

- Part 2: IPv4 network interconnection based on IPv6 access network. The purpose is to standardize the use of IPv4 public land in IPv6 access network.

The two-way interconnection between users and IPv4 networks is achieved through the use of IPv4 addresses and address reuse.

- Part 3: Dynamic allocation of IPv4 addresses based on IPv6 networks. The purpose is to standardize the support of IPv4 addresses by IPv6 network users.

The mechanism of dynamic address allocation.

4over6 Technical Requirements for Single-Stack IPv6 Networks Part 3: Dynamic Allocation of IPv4 Addresses over IPv6 Networks

1 Scope

This document specifies a method for dynamically allocating IPv4 addresses and other specific configuration parameters on an IPv6 network using the DHCPv6 protocol. Require.

This document applies to single-stack IPv6 network clients using the DHCPv6 protocol to dynamically obtain an IPv4 address from a DHCPv6 server. scene.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document. IPv6) DHCPv4)

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1

Dynamic Host Configuration Protocol (DHCP) for IPv6 networks enables configuration of network parameters, IP addresses, prefixes, and other information.

3.2 DHCP4o6 DHCPv4overDHCPv6

A protocol used to carry DHCPv4 messages within the payload of DHCPv6 messages.

3.3

DHCP client that supports DHCPv6 and DHCP4o6 protocols.

NOTE. The client can request IPv6 configuration using DHCPv6 and IPv4 configuration using DHCPv4 over DHCPv6.

3.4

A DHCP server capable of processing DHCPv4 packets encapsulated in DHCPv4 message options.