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**IPv6 evolution technical requirements - Part 8: Packet header
compression for segment routing over IPv6 (SRv6)**

IPv6 演进技术要求 第8部分：基于IPv6段路由(SRv6)的报文头压缩

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents". Drafting.

This document is Part 8 of GB/T 44887 "Technical Requirements for IPv6 Evolution". GB/T 44887 has already published the following parts.

- Part 1: Reference Architecture;
- Part 2: IP Bearer Networks Based on IPv6 Segment Routing (SRv6);
- Part 3: IPv6 Segment Routing Header (SRH);
- Part 4: Network Programming Based on IPv6 Segment Routing (SRv6);
- Part 5: Virtual Private Networks (VPNs) Based on IPv6 Segment Routing (SRv6);
- Part 6: IPv6 Segment Routing (SRv6) Policy;
- Part 7: Service Chaining Based on IPv6 Segment Routing (SRv6);
- Part 8: Packet Header Compression Based on IPv6 Segment Routing (SRv6);
- Part 9: Network Fault Protection Based on IPv6 Segment Routing (SRv6);
- Part 10. Enhanced Virtual Private Networks (VPNs) Supporting IP Network Slicing;
- Part 11. IPv6 Flow Detection Technology.

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Introduction

According to the "Notice on Accelerating the Large-Scale Deployment and Application of Internet Protocol Version 6 (IPv6)," in order to accelerate the transformation of government applications, To expand industry integration and application, and to promote the standardization of large-scale IPv6 deployment and application innovations, China has formulated a series of IPv6 standards. Among them, GB/T 44887, "Technical Requirements for IPv6 Evolution," is designed to standardize the national IPv6 deployment and is proposed to consist of eleven parts.

- Part 1: Reference Architecture. The purpose is to define the application scenarios of IPv6 evolution technology in the operator and industry sectors, and in...

Deployment in carrier and industry networks.

- Part 2: IP Bearer Networks Based on IPv6 Segment Routing (SRv6). The purpose is to define IP bearer networks based on SRv6.

Overall architecture, SRv6-based device layer technical requirements, and SRv6-based control layer technical requirements.

- Part 3: IPv6 Segment Routing Header (SRH). The purpose is to define the format of the IPv6 segment routing header (SRH), and...

SRH's technical requirements for node processing.

- Part 4: Network Programming Based on IPv6 Segment Routing (SRv6). The purpose is to define the data platform for SRv6 network programming.

Surface, control plane, management plane.

- Part 5: Virtual Private Networks (VPNs) Based on IPv6 Segment Routing (SRv6). The purpose is to define SRv6-based VPNs.

The network processing flow and protocol messages include the implementation of Layer 3 services and Layer 2 services.

- Part 6: IPv6 Segment Routing (SRv6) Policy. The purpose is to define SRv6 policies, SRv6 policy routing, and SRv6 policy...

The technical requirements for protection are used to support the development, design, and testing of network devices based on SRv6 policy technology.

- Part 7: Service Chains Based on IPv6 Segment Routing (SRv6). The purpose is to define the data plane of SRv6-based service chains.

And control plane technical requirements, used to support the development, design and testing of network devices based on SRv6 packet header compression.

- Part 8: Packet Header Compression Based on IPv6 Segment Routing (SRv6). The purpose is to define the segment identifier structure for SRv6 header compression.

Requirements such as structure, data plane forwarding, control plane protocol extension, cross-domain deployment, and protection are designed to support SRv6-based packets.

The development, design, and testing of header-compressed network devices.

- Part 9: Network Fault Protection Based on IPv6 Segment Routing (SRv6). The purpose is to specify SRv6BE links/nodes, SRv6 specifies the technical requirements for SRv6 network fault protection, including intermediate nodes, tail nodes, micro-loop prevention, and end-to-end SRv6.

The development, testing, and deployment of equipment with network protection functions in SRv6 networking scenarios, addressing fault scenarios such as node/link failures.

Signatures, etc.

- Part 10: Enhanced Virtual Private Networks (VPNs) Supporting IP Network Slicing. The purpose is to define enhanced virtual private networks (VPNs).