

ICS 33.040.40

CCS M 04



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 46335.3-2025

**IPv6 adoption rate evaluation indicators and evaluation
methods - Part 3: IP bearer network**

IPv6支持度评测指标与评测方法 第3部分：IP承载网

Issued on: October 5, 2025

Implemented on: February 1, 2026

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

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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 3 of GB/T 46335 "IPv6 Support Evaluation Indicators and Methods".

The "Evaluation Metrics and Evaluation Methods" document has been published in the following sections.

- Part 1: Website;
- Part 2: Mobile Internet Applications (APPs);
- Part 3: IP Backbone Networks;
- Part 4: Data Centers;
- Part 5: Content Delivery Network (CDN).

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was 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 Telecommunications Standardization Technical Committee (SAC/TC485).

This document was drafted by: China Academy of Information and Communications Technology, China United Network Communications Group Co., Ltd., and the BRICS Future

Networks Research Center.

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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 large-scale deployment and application of IPv6...

To facilitate deployment, China has formulated a series of IPv6 application standards. Among them, GB/T 46335, "IPv6 Support Evaluation Indicators and Methods," is a standard for...

This document, formulated to guide the smooth progress of large-scale IPv6 deployment in China, is proposed to consist of five parts.

- Part 1: Website. The purpose is to present the website's domain name resolution system, network connectivity, and website system performance under an IPv6 environment.

The support evaluation metrics and methods are applicable to website systems that provide services to the public and support IPv6.

- Part 2: Mobile Internet Applications (APPs). The aim is to propose solutions for mobile internet applications (APPs) in terms of IPv6 usability, Evaluation metrics and assessments for IPv6 end-to-end usability, domain name IPv6 support, IPv6 completeness, and IPv6 usage stability.

Methodology. Applicable to a comprehensive evaluation of IPv6 support in mobile internet applications.

- Part 3: IP Bearer Networks. The purpose is to propose and standardize the three aspects of IP bearer networks. network readiness, network quality, and network reliability.

This section outlines evaluation metrics and methods for IPv6 support, applicable to IP

networks carrying Internet application services regarding their IPv6 support. The evaluation.

- Part 4: Data Centers. The purpose is to measure the impact of data centers on network traffic, network quality, and infrastructure resources.

IPv6 support status, applicable to data center operators for monitoring and evaluating IPv6 support.

- Part 5: Content Delivery Network (CDN). The aim is to propose system compatibility guidelines for Content Delivery Networks (CDNs) in an IPv6 environment.

Evaluation metrics and methods for IPv6 support, including quantity, resource coverage, general performance, application acceleration performance, and stability.

Used for a comprehensive evaluation of the IPv6 support of content delivery network (CDN) operators.

IPv6 Support Evaluation Metrics and Methods Part 3: IP Bearer Network

1 Scope

This document specifies the IPv6 support evaluation indicators for IP bearer networks in an IPv6 environment, covering network readiness, network quality, and network reliability.

The requirements describe the corresponding testing methods.

This document is applicable to the evaluation of IPv6 support on IP networks that carry Internet application services.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

YD/T 1452 Technical Requirements for IPv6 Network Equipment. Edge Routers YD/T 1453 Test Methods for IPv6 Network Devices (Edge Router) YD/T 1454 Technical Requirements for IPv6 Network Equipment. Core Router YD/T 1455 IPv6 Network Device Test Methods. Core Router YD/T 1698 Technical Requirements for IPv6 Network Equipment. Ethernet Switches with IPv6 Routing Function YD/T 1916 Technical Requirements for IPv6 Network Equipment --- Broadband Network Access Server YD/T 1917 Test Methods for IPv6 Network Devices --- Ethernet Switches with IPv6 Routing Function YD/T 2370 Test Methods for IPv6 Network Equipment Broadband Network Access Server

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 One-way transmission delay

Two monitoring points are selected in the network, and the one-way transmission delay between the two points is considered.

3.2 round-trip delay

Two monitoring points are selected in the network, and the bidirectional transmission delay between the two points is considered.

3.3 one-way packet loss ratio

Select two monitoring points in the network and measure the packet loss rate between the two points in one direction.

3.4 round-trip packet loss ratio

Select two monitoring points in the network and measure the packet loss rate between the two points in both directions.