

Recommended List of Carrier-Grade Routers

Article Overview

Carrier-grade routers are high-performance, highly reliable routers designed for telecom operators and large-scale networks, including models like Cisco CRS, H3C CR16000, CR19000, and S12500R.

Key Examples of Carrier-Grade Routers

Cisco Carrier Routing System (CRS): A modular and distributed core router that supports scalable IP Next-Generation Networks (NGN). It handles interface speeds from 1GE to 100GE and can scale from 2.2 Tbit/s in a standalone system to 322 Tbit/s in multi-chassis deployments. CRS routers run IOS XR, designed for high-end carrier-grade performance, and are used in core and edge networks for service providers and large enterprises .

H3C CR16000: A carrier-grade router with advanced orthogonal CLOS architecture, separating control and forwarding planes. It supports flexible slot configurations, high-density line cards, and robust BRAS functionality for multi-service edge (MSE) deployments. It is widely deployed in metropolitan area networks (MAN) and supports high-density user access .

H3C CR19000: A next-generation core router designed for carrier-grade applications, featuring CLOS non-blocking architecture and optical interconnection technology. It is suitable for carrier IP backbone, MAN core, and data center interconnect (DCI) scenarios .

H3C S12500R: A switching router optimized for telecommunications carrier data center networks and DCI. It offers high-density 10GE/25GE/40GE/100GE/200GE/400GE Ethernet ports, ultra-low latency, and advanced traffic scheduling. Its architecture ensures high reliability with N+M redundancy and fast business recovery capabilities .

Features of Carrier-Grade Routers

- o **High Availability:** Designed to meet "five nines" (99.999%) uptime standards with fast fault recovery, often under 50 milliseconds .
- o **Scalability:** Support for multi-terabit throughput and high-density interfaces to handle large-scale traffic.
- o **Redundancy:** Hot-swappable components, redundant power and fan modules, and separate control and forwarding planes.
- o **Multi-Service Support:** Unified IP/MPLS, VoIP, VPN, QoS, and IPv4/IPv6 dual-stack capabilities .
- o **Advanced Management:** Integration with SDN, NFV, and AI-driven analytics for dynamic traffic management and operational efficiency .
- o **Compliance and Standards:** Adherence to ITU-T, IEEE, and ETSI standards for telecom reliability, along with certifications like CE, FCC, and RoHS .

Market Context

The carrier-grade router market is growing rapidly due to 5G deployment, cloud services, and IoT expansion.



Recommended List of Carrier-Grade Routers

Leading vendors include Cisco, Nokia, Huawei, Juniper, ZTE, Ericsson, and H3C, offering solutions for core, edge, and data center networks. Modern carrier-grade routers are designed to handle ultra-low latency, high throughput, and real-time traffic optimization, making them essential for mission-critical network infrastructure.

77 Router reviews. Start with our picks for the best routers below. These are the ones we recommend based on our testing and in

The carrier-grade router by Cisco is the CRS-X, which provides an impressive economic scale and a proven

The Top Work from Home Routers and Mesh Systems 2024 While we've given out Business Choice router awards

We've also stopped recommending a few older models that've been staples on our best

List of the top Routers for Enterprise in 2026 including comparisons, user reviews, pricing, features, and more.

We've tested and reviewed more routers than we care to count, and we list our top picks.

Wi-Fi 6 isn't the most cutting-edge wireless standard, but it can offer a bargain if you know where to look. We've tested

Explore our top Wi-Fi router picks with this in-depth guide that outlines the pros and cons of each router and which

These days, your wireless router is not just your lifeline to the internet, but also to your job. We've hand-tested the top

Best Router for Popular Internet Providers: A Complete Guide Popular internet service providers (ISPs) such as Cox,

We recommend the TP-Link Archer BE900 as the best router. It's a Wi-Fi 7 router with truly top-of-the-line specs,

The best Wi-Fi routers provide a strong internet connection, rapid speeds, and plenty of coverage for working,

Cisco WAN Appliance Migration and Enterprise Router Selector Explore our router selector to swiftly

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identify and migrate to the

Ready to give your internet an upgrade? We found the best Wi-Fi routers to buy right now, from mesh

Data Centers and Telecom: Carrier-grade routers with ultra-high bandwidth and low latency are essential. Home or

Cisco routers can help you create a more intelligent, responsive, and integrated network, based on adaptive and agile technologies.

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