Evolve Your Access Network With Intelligence And Control
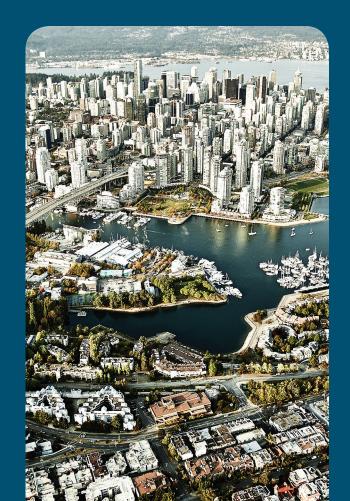
What if you could support a wide range of applications and users while preserving the integrity of mission-critical traffic?

Cisco Intelligent Metro Access solutions

IP traffic is projected to triple by 2022 with one third of that data flowing across your access networks.[1] As you prepare to handle greater volumes of network flows and take advantage of 5G networking and Internet of Things (IoT) technology, your access networks could become the bottleneck for delivering the connectivity your mission critical traffic requires. For enterprise and public-sector networks, the reliable and secure transport of high-bandwidth and latency-sensitive traffic is critical to saving lives, improving cities, and protecting assets.

With Cisco Intelligent Metro Access solutions, you can evolve your networks to improve scalability, increase reliability, simplify operations, and reduce the costs for delivering mission-critical data. With better insight and control of network traffic, you can prioritize access and ensure network performance for the growing amount traffic across your access network.

Benefits

- Increase network efficiency and reduce access network bottlenecks with segment routing technology that optimizes traffic flows.

- Reduce costs with a converged network that lowers your power and footprint for multiple services such as voice, video, data, and mobile.

- Simplify network operations and management with automation and self-healing networks, which helps to increase agility and reduce errors by eliminating manual tasks.

- Improve your customer's experience by ensuring network performance and reliability for mission-critical traffic.

How it works

Cisco Intelligent Metro Access solutions provide a network foundation that can scale efficiently, reliably and intelligently without compromising on security or increasing complexity. Using the solutions, you can connect different types of users to your access network and deliver better experiences. The solution is made up of a number of components.

Intelligent access scaling with the Cisco NCS 500 Series

The NCS 500 Series routers offer a highly scalable and energy-efficient access and aggregation router platform that offers flexible port configurations of 1/10/25/40/100 Gigabits. Available in both fixed and modular form-factors, the routers facilitate advanced features for automation and programmability throughout your access network. The NCS 500 Series features application-aware networking, which is made possible by segment routing technology. It enables you to extend control throughout your network. Automation enables you to securely deploy, provision, and configure the NCS 500 Series. With the NCS 500 Series, you can deliver the network of the future, driven by next-generation technologies such as 5G and Carrier Ethernet.

Full-featured ASR 900 aggregation platform

The ASR 900 Series is a modular aggregation platform that delivers high scale and cost-effective broadband aggregation for voice, video, data, and mobility services. The platform offers a full-featured, modular, and fully redundant platform that is built to meet Carrier Ethernet requirements and is optimized for smaller site deployments. The ASR 900 Series supports a diverse range of interfaces, including TDM/SONET and Carrier Ethernet to help transition across networks.

ıılıılı
CISCO

Avoiding bottlenecks, preserving reliability

Digitization is changing how enterprise and public-sector organizations operate. Technology drivers such as mobility, the IoT, cloud, and security are placing increasing demands on your access networks. To reliably support mission-critical data, you need a deterministic network that can:

- Scale network traffic volume without adding more cost and complexity.
- Take advantage of automation to simplify network operations and reduce costs.
- Ensure network performance for traffic with differing requirements for secure connectivity, bandwidth-intensity, and latency-sensitivity.

Smart scale aggregation

Cisco ASR 9000 Aggregation Services routers offer a modular, high-density, power-efficient, and secure platform with software virtualization capabilities. The ASR 9000 provides layers 2-3 switching and routing. The ASR 9000 is a low-power platform that supports high-density interfaces with up to 32 port 100 GE fourth-generation line cards. It helps efficiently aggregate traffic from access networks to the WAN. These routers feature a purpose-built, multi-hard-drive architecture to mitigate failures and flexible chassis options.

The Cisco NCS 5500 Series offers industry-leading density of up to 288 100 GE ports, in a low-power highly redundant platform that is designed to efficiently scale edge aggregation between data centers and large enterprise, web, and service provider WAN aggregation networks.

All four platforms offered in the Intelligent Metro Access solutions have the following key features:

- **Cisco IOS XR software** provides an array of features that reflect more than 15 years of use and development. Cisco IOS XR is modular, and its major features are available as independent packages. You simply get the code you need and put it to work. Industry-standard Route Processing Modules (RPMs) align, update, and upgrade procedures with those used in the data center.
- **Cisco IOS XR zero-touch provisioning and enhanced pre-boot execution environment (iPXE)** has automated device onboarding, which enables fast boot and day-zero provisioning, so you can bring devices online in minutes instead of hours. The iPXE feature supported in Cisco IOS XR Software allows an administrator to boot from TFTP, HTTP, or FTP.
- **YANG data models for automated provisioning** are included in Cisco IOS XR software. This integration with structured, data model-driven, high-performance APIs allow you to move beyond the command-line interface (CLI).
- **Model-driven telemetry for real-time, detailed visibility** is available with Cisco IOS XR software, enables streamed data to be captured continuously from devices with efficient, incremental updates. Model-driven telemetry is fully configurable using YANG models. The increased visibility provided by the streaming telemetry push model enables highly efficient techniques of segment routing for near-real-time network optimization.

CISCO

Are you looking to save time and money by scaling your access network through more advanced software intelligence?

Additional technologies that can be used with Intelligent Metro Access solutions include:

- **Cisco Evolved Programmable Network (EPN) Manager** provides simplified, converged, end-to-end network lifecycle management. It helps you increase operational scale and efficiency through integrated and automated device operations, network provisioning, and network assurance. You can proactively assure service performance and minimize future service disruption through real-time fault management. With EPN Manager, you can perform service provisioning, monitoring, and change and compliance management to accelerate device and services deployment and rapidly resolve problems.

- **Cisco WAN Automation Engine (WAE)** is a powerful and flexible optimization platform that automates the engineering and operations of multivendor physical and virtual WAN infrastructures. You can use WAE to deploy new services, including global load balancing, bandwidth on demand, and premium/latency-based network routing. It can help you optimize traffic load-balance over core MPLS and segment routing links. It can also minimize service downtime through worst-case failure analysis and reduce both OpEx and CapEx through efficient asset utilization.

- **Cisco Network Services Orchestrator (NSO)** lets you deliver services faster and more easily through network automation. It can drastically reduce the time to on-board new services in the network using model-driven orchestration. You can increase business agility with the capability to create, reconfigure, and repurpose services in real time. NSO allows you to dramatically reduce downtime with exceptional control over network changes and the capability to reconfigure devices and services during live production.

Do you need a network solution that is easier to use without sacrificing the customer experience?

Financing to help you achieve your objectives

Cisco Capital can help you acquire the technology you need to achieve your objectives and stay competitive. We can help you reduce CapEx. Accelerate your growth. Optimize your investment dollars and ROI. Cisco Capital financing gives you flexibility in acquiring hardware, software, services, and complementary third-party equipment. And there's just one predictable payment. Cisco Capital is available in more than 100 countries. Learn more.

Spanning platforms, technologies, and topologies

Because Cisco is a global networking innovator, we understand that to survive and thrive, you need to harness the latest benefits and features of the network. Our Intelligent Metro Access solutions span a broad range of platforms, technologies, and topology options. The solutions are designed to give you the flexibility to address your specific needs.

Our customers are pursuing Intelligent Metro Access solutions to modernize their networks and increase efficiency through converged access and segment routing technology. By delivering advanced software intelligence and automation across access networks, our customers are increasing agility and improving customer experiences.

Next steps

Learn more about Cisco solutions for Intelligent Metro Access. Contact your Cisco account representative today.

- Cisco ASR 900 Series Aggregation Services Routers
- Cisco Network Convergence System 500 Series Routers
- Cisco ASR 9000 Series Aggregation Services Routers
- Cisco Network Convergence System 5500 Series

1. Cisco Visual Networking Index, 2018