Cisco Agile Services Networking

An architecture to power AI connectivity and customer experiences

Benefits

- Deliver improved experiences for residential, business, and mobile services with a network that can behave more autonomously, making it simpler and more cost-effective to build, operate, and scale from locations closer to end users.
- Monetize differentiated connectivity services – such as assured SD-WAN, network transport, AI inferencing – by delivering resilient networking and services enabled by real-time observability and insights across owned and third-party networks.
- Meet performance requirements for transporting demanding AI training, inferencing, and generative AI applications (such as ones that require high bandwidth, low latency, security, and resilience) with granular control of network resources.

Monetize networks that power AI connectivity and customer experiences

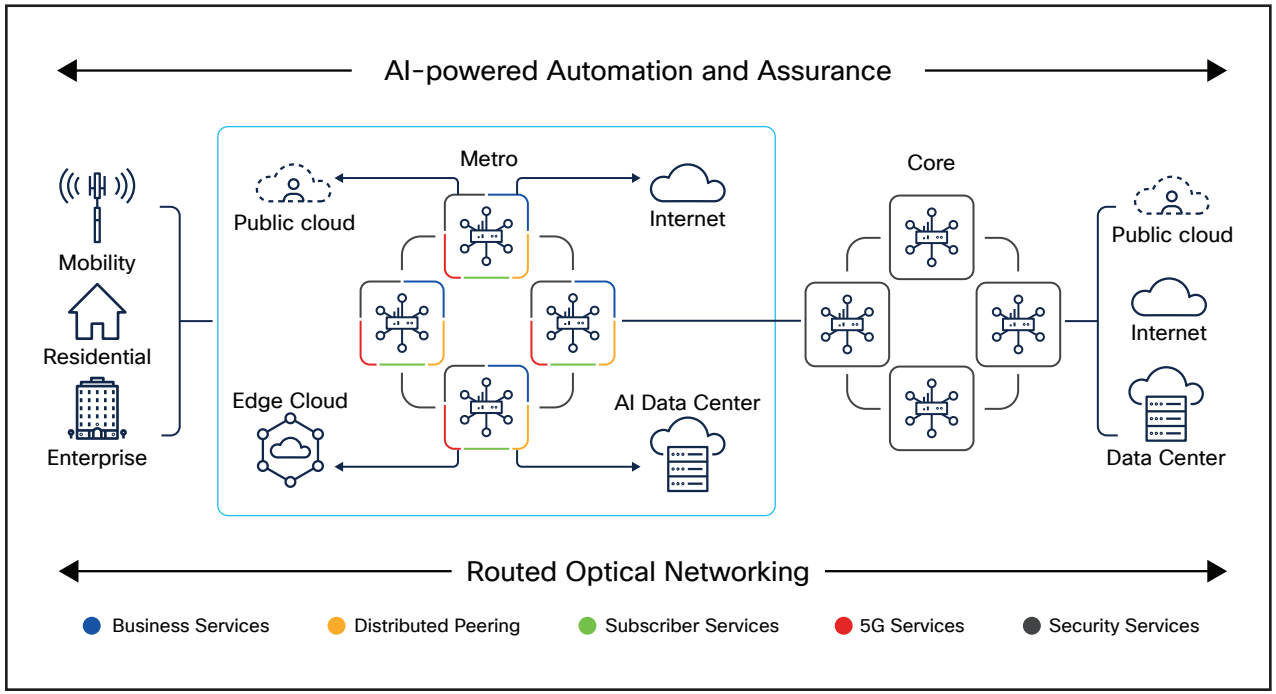

Figure 1. Agile Services Networking Architecture

Overview

AI is generating more data that needs to be processed, transported, and consumed across more locations, devices, and people on the network. Connecting all this data – and the services that consume it – requires service providers to rethink how they architect their network. Networks need to be agile and responsive and to operate autonomously in order to support the more demanding and dynamic nature of AI traffic. They also need to be able to implement predictive and proactive operations based on real-time data from across the network to assure network performance and network services supporting AI traffic.

Cisco® Agile Services Networking is an architecture designed to power AI connectivity and customer experiences. It enables service providers to monetize the delivery of assured services and networking.

With Agile Services Networking, organizations can monetize services deployed closer to end-user demand from a network architecture optimized for intelligent service delivery; remove complexity with simplified networks that converge network layers and services; and assure experiences with resilient networks and services enabled by AI-powered automation, observability, and security.

Trends and challenges

AI adoption is expanding

The AI revolution is rapidly expanding, with sizable growth in investments by service providers, enterprises, and government institutions everywhere. According to the 2024 Cisco AI Readiness Index, 50% of companies say they've dedicated 10% to 30% of their budget to AI.

AI workloads are shaping network traffic

Cloud and AI workloads are driving increases in data generation and capacity at the edge. IDC research has found that over half of organizations expect data volumes to increase by 16% to 30% next year, and S&P Global Market Intelligence expects that by 2027 62% of total data will be processed at the edge. Connecting all this data, and the services that consume it, requires service providers to rethink how they architect their network. In fact, according to Omdia, networks are being rearchitected for AI and multicloud environments to meet demanding requirements such as higher access speeds, service performance, data security, lower latency, and more.

Networks need to be agile and responsive and to operate autonomously in order to support the more demanding and dynamic nature of AI traffic. They need to be able to implement predictive and proactive operations based on real-time data from across the network to assure network performance and network services supporting AI traffic.

Network operator challenges

- Scaling connectivity and services closer to end-user demand from consumers and enterprises. They need flexibility to deploy more services at scale from space- and power-constrained environments, while managing the complexity and cost of increasing network capacity to meet growing traffic demands.
- Transporting demanding AI training and inference workloads that have stringent and dynamic requirements for high performance, low latency, increased security, and data sovereignty.
- Delivering differentiated resilient digital experiences customers will pay for. They need to leverage network resources and telemetry to provide assured experiences that build customer trust and brand loyalty.
- Migrating to a new architecture with interoperability and compatibility with existing environments and infrastructure.

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How it works

Key capabilities

- **Intelligent delivery to capture revenue by making data and network capabilities consumable:**
  - End-to-end network policy and programmability with Segment Routing v6 and network-integrated performance management.
  - Unified data platform for end-to-end visibility and real-time control of the digital experience using intelligent insight harnessed from network data across owned and third-party network infrastructure.
- **Simplified networks that reduce cost and increase efficiency with converged infrastructure for flexible service delivery:**
  - High-performance Cisco Silicon One™ based platforms that cost-effectively distribute edge functionality in more network places with consistent control and support from the silicon level.
  - Industry-leading IP/optical convergence that simplifies network and service layers.
- **Resilience by helping assure experiences with AI-powered automation, observability, and security:**
  - Unified service and device lifecycle management.
  - Automated and scalable deployments with intent-based planning, provisioning, health monitoring, and optimization.
  - Intelligent and automated service assurance that provides continuous, real-time visibility into each infrastructure layer.
  - AI-enabled predictive insight on service and network health, so you can prevent customer-impacting issues.
  - Protection against distributed denial-of-service attacks, quantum-safe security, and support for IPsec/MACsec across the network.

Cisco Capital

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.

Learn more

Learn more about how you can monetize your network with Cisco Agile Services Networking and accelerate your journey to powering AI connections and improving customer experiences.

C22-4882532-00 02/25

Use cases

Use case name	Use case description
Agile Metro	· Deliver improved experiences for residential, business, and mobile services with a network that is simpler and more cost-effective to build, operate, and scale from locations closer to end users.
Agile Data Center Connectivity	· Reduce the cost to connect AI-ready data centers with Data Center Interconnect (DCI) solutions to transport demanding AI training and inferencing traffic using coherent pluggable optics.
Agile Mobile Transport	· Simplify the network to support mobile transport applications in cell site routing, fronthaul/midhaul/backhaul, and 5G metro aggregation.
Agile Core	· Expand core backbone connectivity with peering. Increase deployment flexibility with a converged core supporting edge features and functions.

Cisco Customer Experience for service providers

Fix things faster. Reduce your risk of downtime. Enjoy extraordinary efficiency and pave the way for innovation with Cisco Customer Experience services.

The Cisco Advantage

Cisco is uniquely positioned to deliver the network that powers AI connectivity and experiences. Only Cisco can help you migrate to, and implement, an AI-first network design that is consistently "service-ready," enabling you to monetize the delivery of assured services provided by the network and monetize the delivery of assured networking provided as a service.