

Intent-Based Networking

Bridge the gap between business and IT

IT must be able to change fast and at scale.

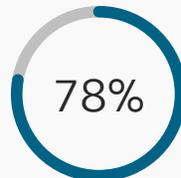
The modern organization faces unprecedented rates of change in market forces, customer behaviors, employee expectations, technological innovations, and security threats. Business goals and modern networks are interlinked as technology powers new digital transformation initiatives and more business processes. IT professionals need to bridge the gap between what your business needs and what your network delivers in terms of scalability, operational effectiveness, and security.

Scale



Ninety percent of all the data that exists today was created by users, apps, and devices in the last two years.¹

Operational Effectiveness



Seventy-eight percent of IT budgets is spent to maintain current environments.²

Security



The risk of a major security breach is 1 in 4.³

By adopting an intent-based approach across each network domain, your IT team will meet these challenges. Intent-based networking captures business intent and uses analytics, machine learning, and automation to align the network continuously to changing business needs, which can include application service levels, security policies, regulatory compliance, and operational processes.

“By 2020, more than 1,000 large enterprises will use intent-based networking systems in production, up from less than 15 in 2Q18.”⁴

¹ “How Much Data Do We Create Every Day? The Mind-Blowing Stats Everyone Should Read”, Bernard Marr, May 2018. <https://www.forbes.com/sites/bernardmarr/2018/05/21/how-much-data-do-we-create-every-day-the-mind-blowing-stats-everyone-should-read/#1374d0ab60ba>

² ZK Research 2018 IT Priorities Survey, www.cisco.com/c/dam/en/us/services/collateral/se/business-critical-services-zk-machine-learning.pdf

³ Ponemon Research Institute Study on Malware Detection, June 2017

⁴ 2018 Strategic Roadmap for Networking, Neil Rickard and Andrew Lerner, Gartner, May 2018.

Example

Intent: You must ensure your finance department receives uninterrupted service levels at month's end.

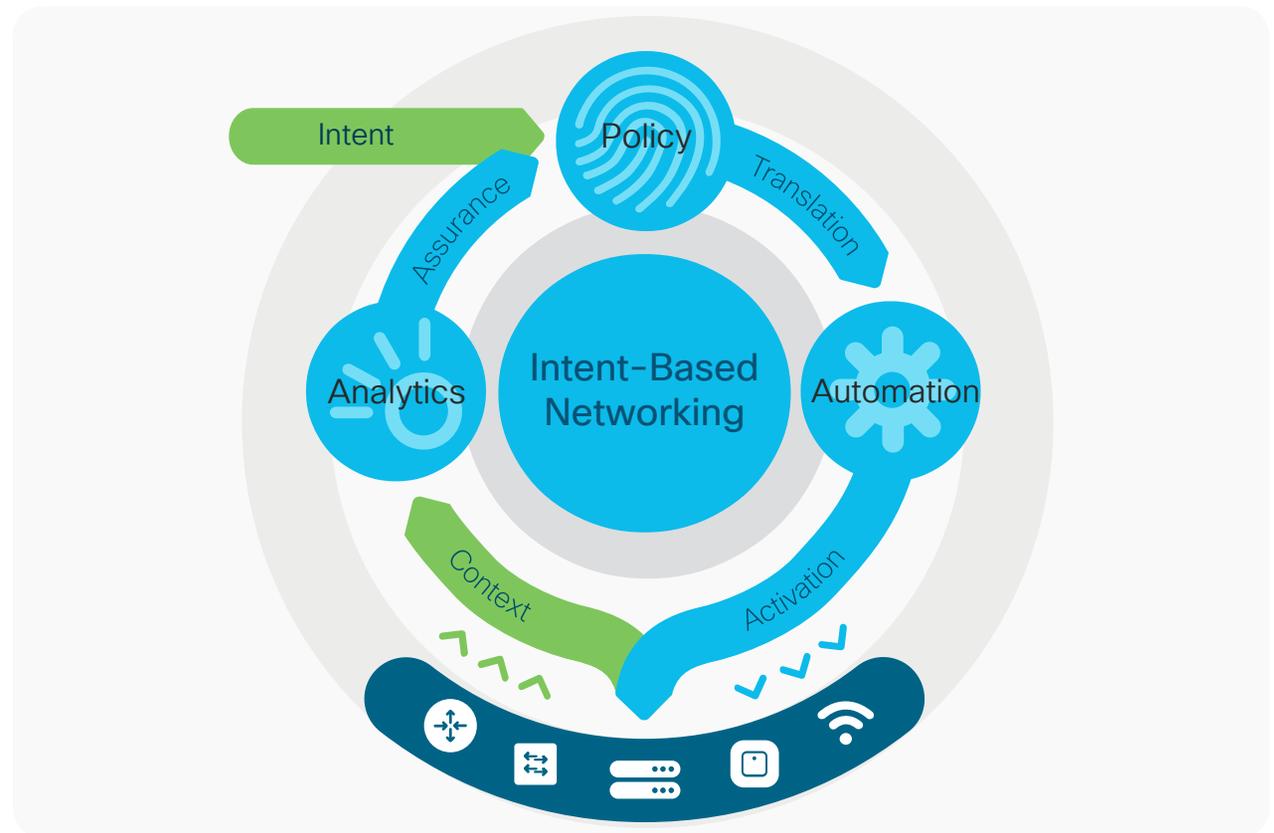
Translation: Build policy which guarantees that finance users and applications are placed on a secure segment that receives the highest priority service.

Activation: Apply priority-service levels between all users and applications on the finance-reporting segment across all network devices.

Assurance: Use telemetry to monitor and analyze the network against your desired outcome, to remediate, optimize, and correct as appropriate.

For intent-based networking to achieve its full potential, these functions are applied across all networking domains and build on a programmable network infrastructure.

How intent-based networking works:



Defining the model

Intent: What is the business or IT outcome that your organization needs?

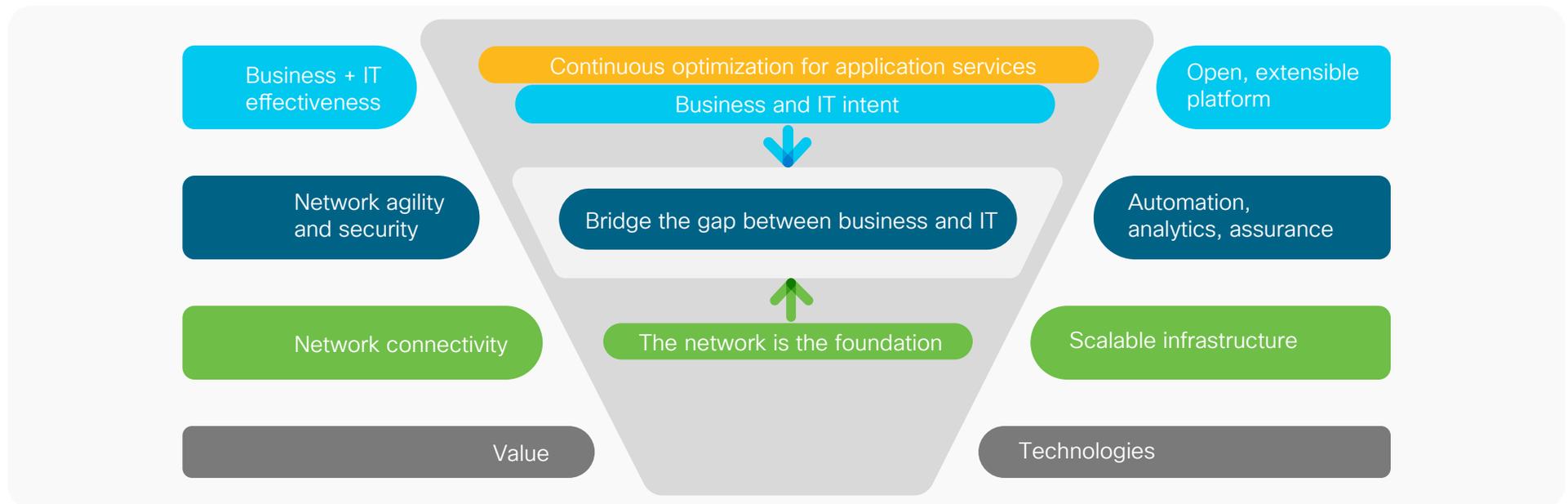
Translation: The capture and translation of intent into **policies** that the network can act on.

Activation: Installation of these policies across the physical and virtual network infrastructure, using network-wide **automation**.

Assurance: Use of **analytics** and machine learning to continuously monitor and verify that the desired intent has been applied and the business outcome is being achieved.

Business outcomes

What you can expect



An intent-based network integrates with other IT and business systems and applications and enables you to:

- **Adapt to new application and service requirements:** An intent-based network makes it easier for you to deploy new applications, prioritize applications, and integrate with IT services and processes through APIs.
- **Reduce risk:** Through continuous gathering of telemetry, combined with machine learning, you provide context to identify and neutralize security threats.
- **Operate efficiently:** Applying automated policy across users, devices, branches, WAN, campus, data centers, and clouds helps you respond to business needs faster.
- **Support exceptional customer experience:** You can improve the user experience by translating desired operational Service-Level Agreements (SLAs) and applying them consistently across the network.

Cisco delivers the benefits of intent-based networking today, across the campus, branch, and WAN, with Cisco DNA, and in the data center with Cisco ACI™, Cisco Network Assurance Engine (NAE), and Cisco Tetration™.

New assurance and policy integrations across these domains enable consistent performance, compliance, and security enforcement. IT and business intent can be expressed in one domain and then exchanged, enforced, and monitored across all of them.

Learn more

<https://www.cisco.com/go/intentbasednetworking>

Starting your journey

Cisco's solutions help customers achieve end-to-end intent-based networking across all network domains based on Cisco's open platforms and third-party technologies.



Data center

[Cisco Network Assurance Engine \(NAE\)](#)

Provides always-on assurance for data centers. NAE predicts the impact of changes, proactively verifies network behavior, and helps assure policy and compliance.

[Cisco Application Centric Infrastructure \(Cisco ACI\)](#)

Policy-based automated network fabric, covering the translation and activation phases of the intent-based network framework.

[Cisco Tetration Platform](#)

Gain visibility with deep forensics across everything in your data center in real time, to quickly identify network and server bottlenecks.



Enterprise networking

[Cisco Digital Network Architecture \(Cisco DNA\)](#)

Cisco DNA takes a controller-based approach to automating and assuring services across your campus, WAN, and branch networks. Based on an open and extensible platform, Cisco DNA allows you to continuously align network performance and security to business intent, so you can streamline operations and facilitate IT and business innovation.



Cisco Services

New Cisco Services help you accelerate network assurance, gain analytical insight, improve productivity, and lower risk by leveraging our unique expertise, best practices, innovative tools, and business and IT insights.