

# Delivering a Secure Network for the AI-ready Campus and Branch

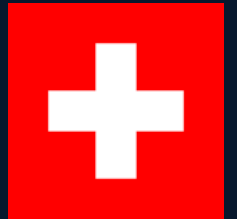
Future-Proofed Workplaces

Patrick Mosimann  
Solutions Engineer

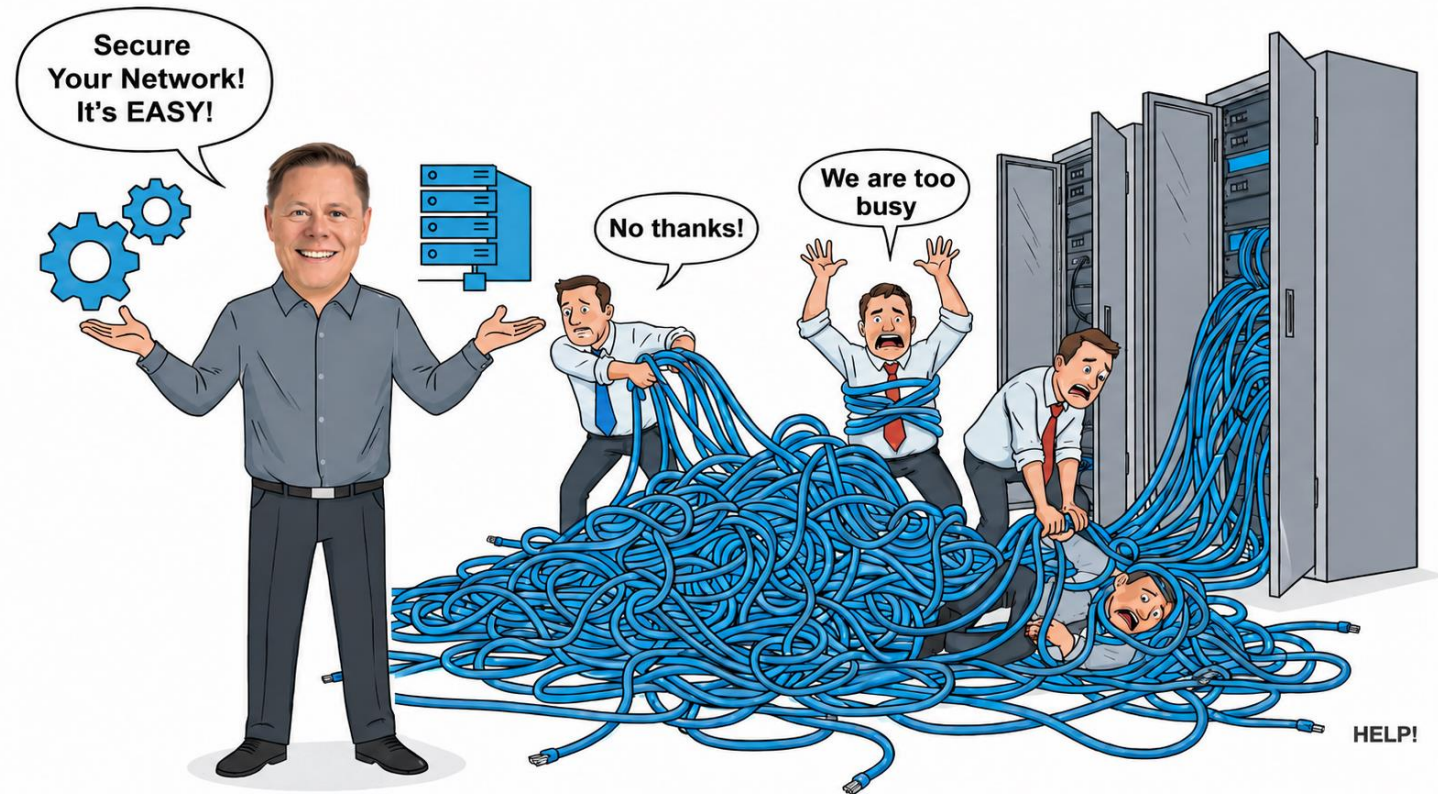
Ricardo Kaufmann  
Solutions Engineer



# About Patrick...



19+ years in Networking  
3 years as customer  
3 years as a partner  
3 years as a competitor  
10+ years at Cisco



AI Generated

# About Ricardo...



# 2023::66



# 65507

- Sports & Traveling
- Solutions Engineer Routing & SD-WAN

## 14+ years in Networking

7 years as customer  
2 years as partner  
1 year as a competitor  
2.5 years at Cisco

# Agenda

1. Introduction
2. Why Secure Networking?
3. What is Secure Networking?
4. The Challenge of building an End-to-End 'Reference Architecture'
5. Closing / Next Steps

# Why Secure Networking?

# Is your Campus Network AI ready?

- For explosive traffic
- For more complexity
- For increased security risks



# Network complexity is increasing security risk

## Identities are changing



Explosion of IoT, OT, and unmanaged devices raises risk of lateral movement

## Workloads are everywhere



Remote work, SaaS, and cloud adoption erode the traditional security perimeter

## Threats from AI are here



Rise of AI-powered attacks overwhelm network and security teams

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MORE USERS. MORE DEVICES. SMARTER THREATS.

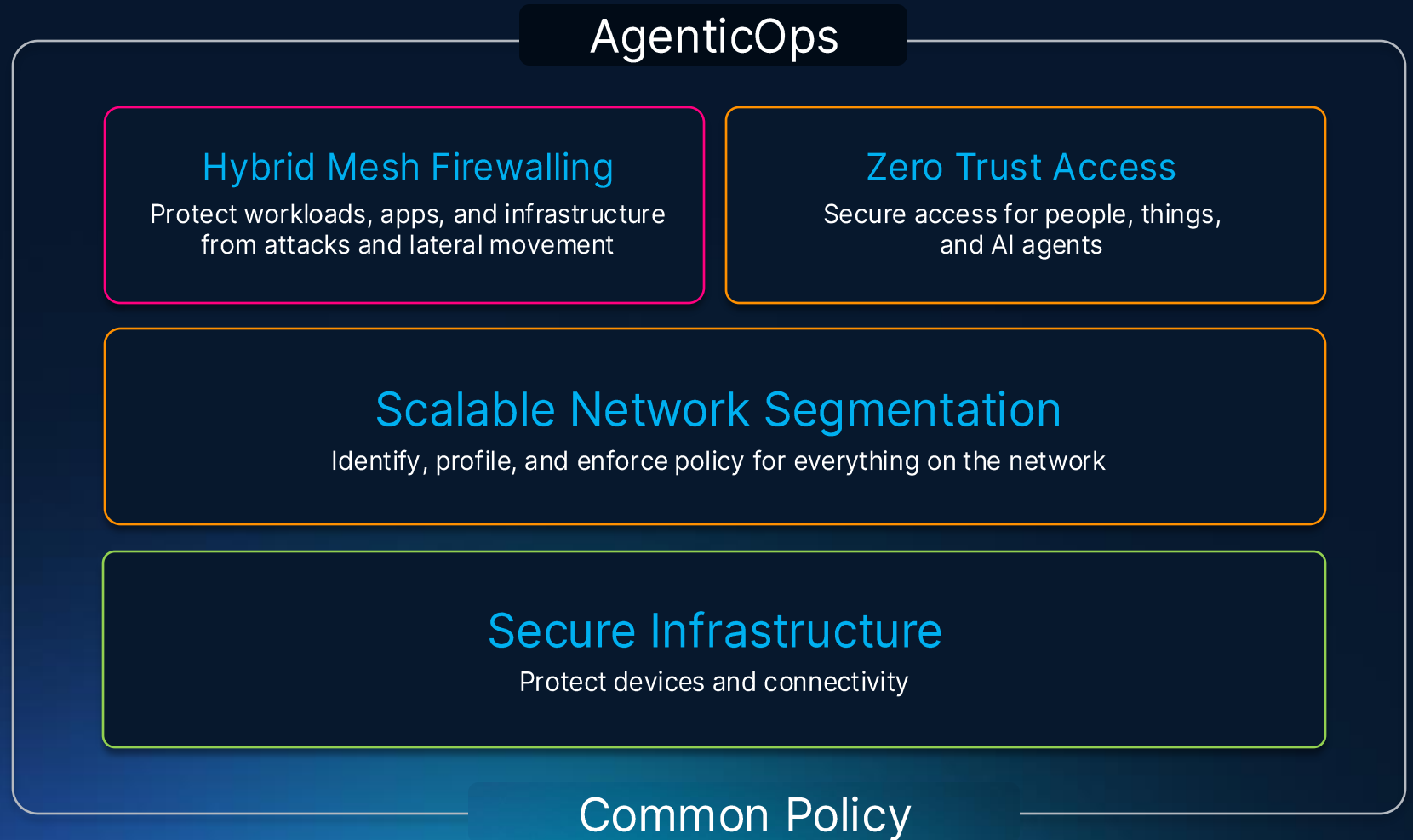
# What is Secure Networking?



# Introducing Cisco's Secure Networking

## Security infused into the network

- Identity-first
- Continuously verified
- Enterprise-wide policies
- Comprehensive threat intel
- Distributed enforcement
- Streamlined Operations



\*Source: Zeus Kerravala, ZK Research, 2025

# A unified framework for managing security policies across diverse IT environments



## Scalable Network Segmentation

# Securing network access and eliminating lateral movement

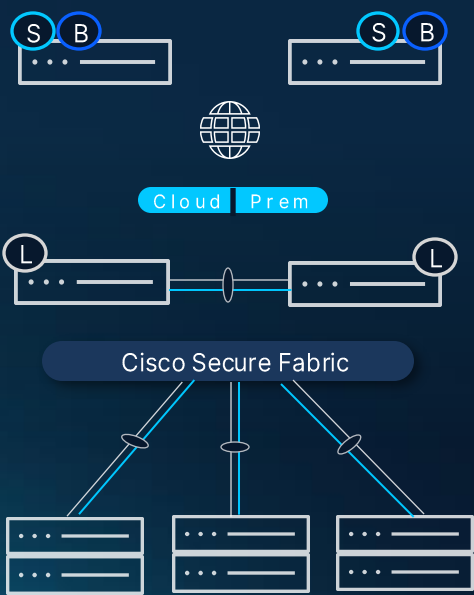
## Native segmentation VLAN, SGT, VRF/VPN



## Strengthened with NAC ISE and Access Manager



## Automated secure fabric Cloud and On-Premise



## Scalable Network Segmentation

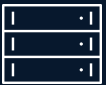
# Simplifying network segmentation through automation with campus fabric



IOS XE Switches,  
Access Points, Routers



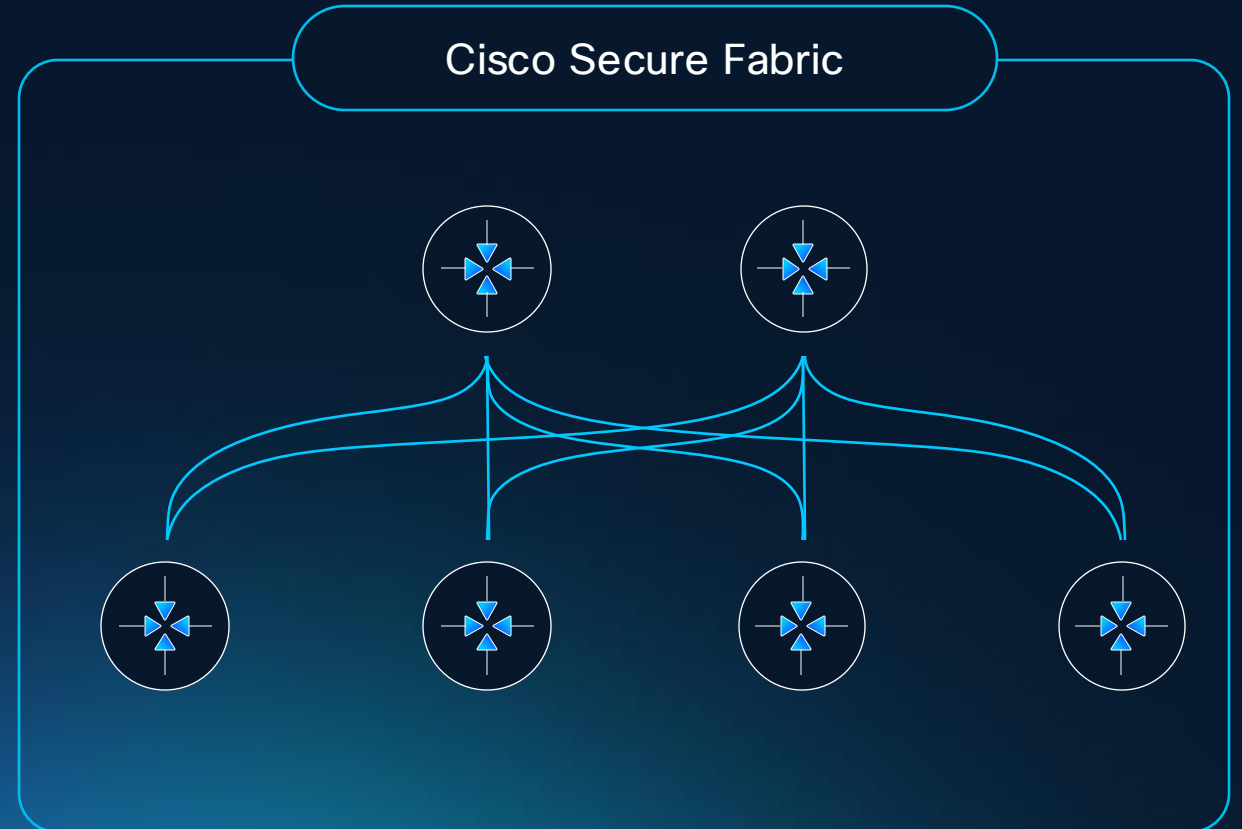
Cloud Fabric



On-Premise Fabric (SDA)



Programmable Fabric



## Scalable Network Segmentation

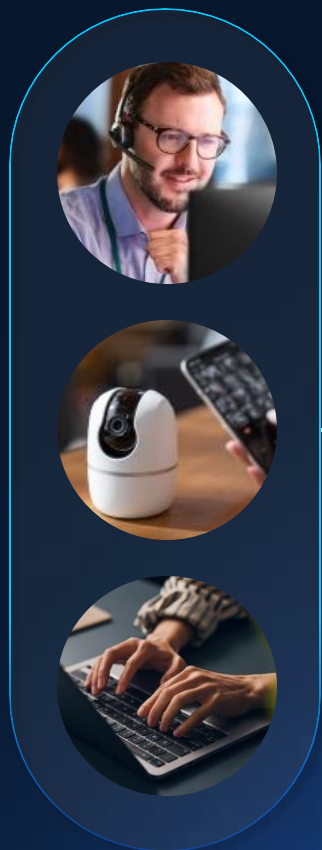
# A unified framework for managing security policies across diverse IT environments



## Scalable Network Segmentation

# Connecting and securing every corner of the network

Users, Devices, and Things



Campus LAN

Data Loss Prevention (DLP)

Secure Web Gateway (SWG)

Cloud Access Security Broker

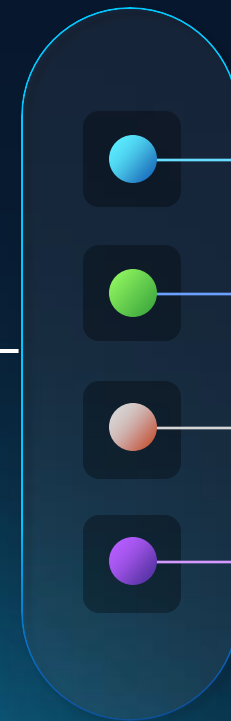
WAN Optimization and Routing

Firewall as a Service (FWaaS)

Remote Browser isolation (RBI)

Consistent WAN Security  
Security Service Edge + SD-WAN

Secure Application Access



Traditional Apps

Private Apps

Internet Apps

SaaS Apps

## Zero-Trust Network Access

# Hybrid Mesh Firewall: Distributed Firewall Policy

Advanced protection, simplified operations and real-time intelligence for a more secure, scalable future



## Security Cloud Control



Secure Firewall  
(physical)



Secure Firewall  
(virtual)



Secure Firewall  
(cloud)



Secure  
Router



SSE



Secure  
Workload

Isovalent runtime  
protection



3rd Party  
Firewall



ACI

← Native enforcement points go deeper → Integrate with existing

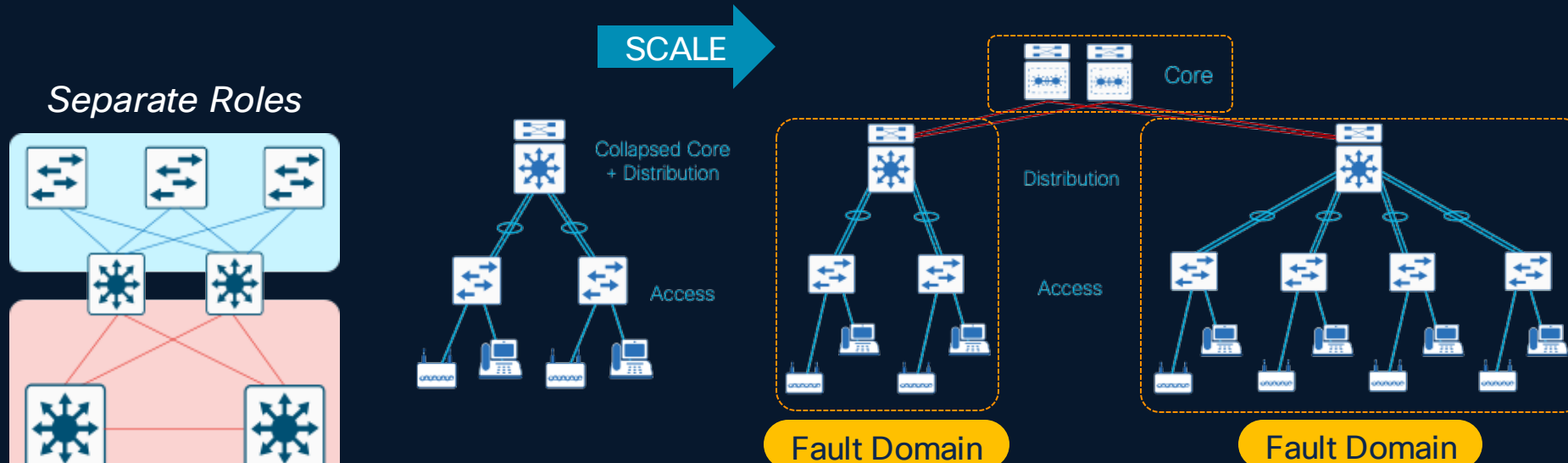
Write policy **once** - enforce **across the mesh**

# The **Challenge** of building an End-to-End **‘Reference Architecture’**



## Why can't we just collapse Layers & Domains?

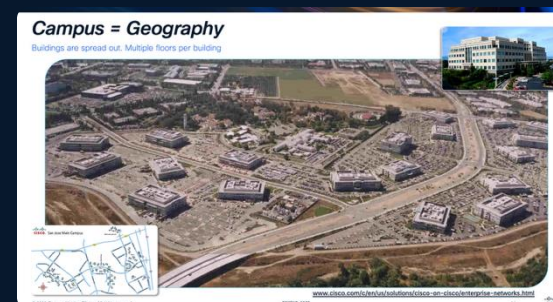
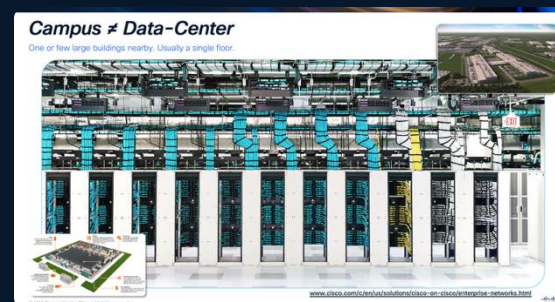
The eternal battle between: “reducing complexity & costs” and “maximizing stability & reliability”



## Different Features



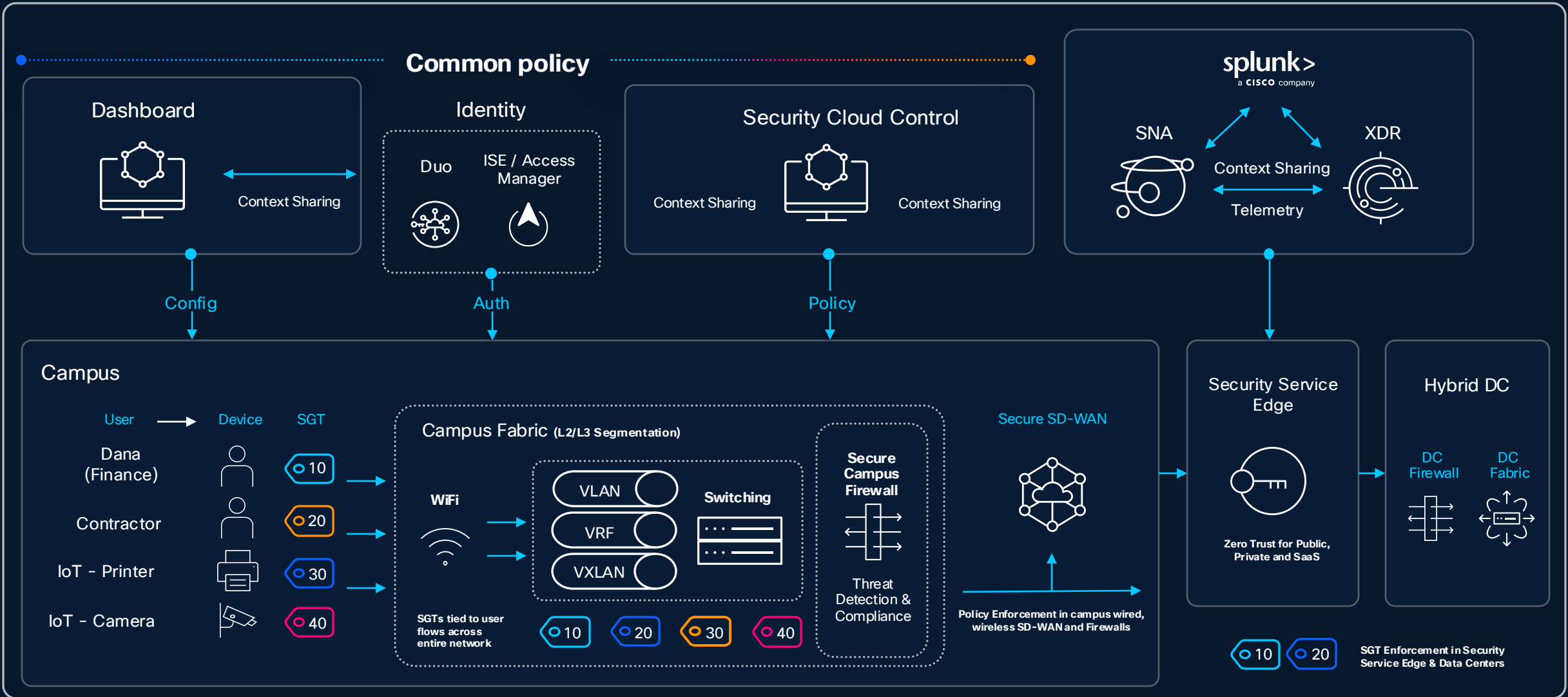
## Different Ops Teams



## Different Environments

# Secure campus and branch

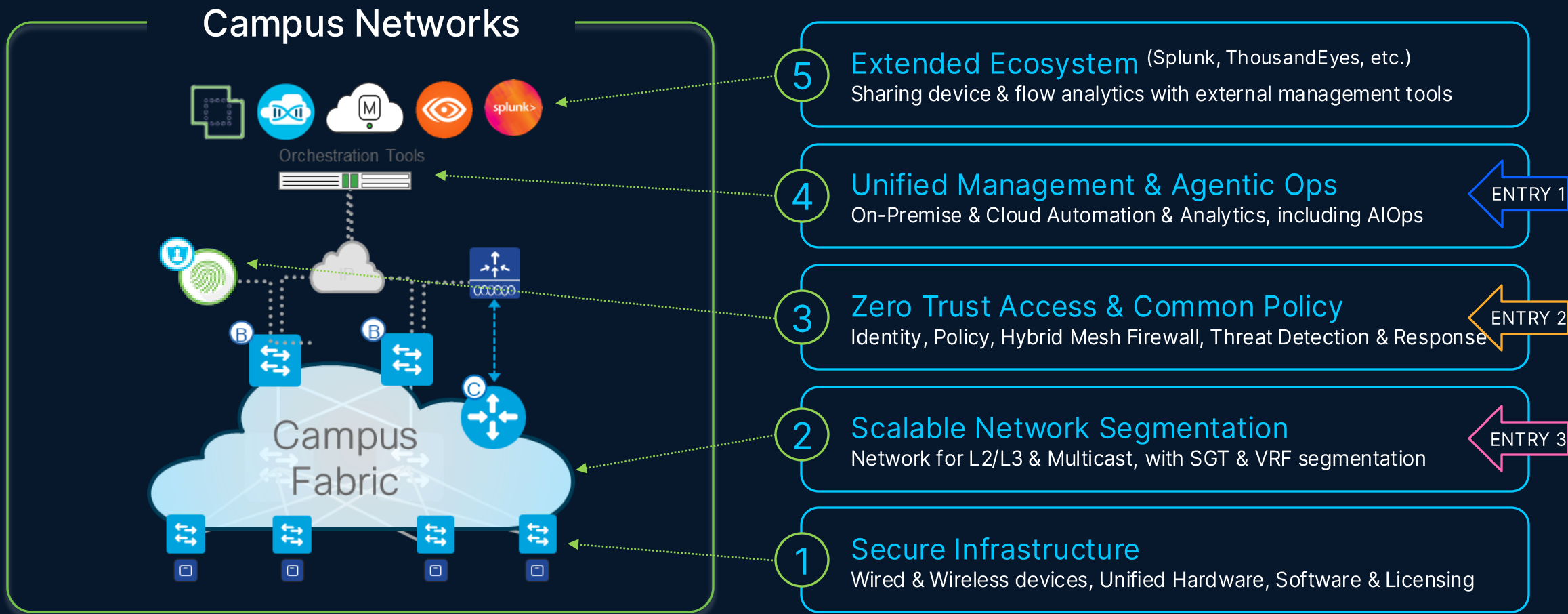
## Reference Design



# Introducing the Secure Networking Reference Architecture (SNRA) Multi-Layer 'Reference Model'

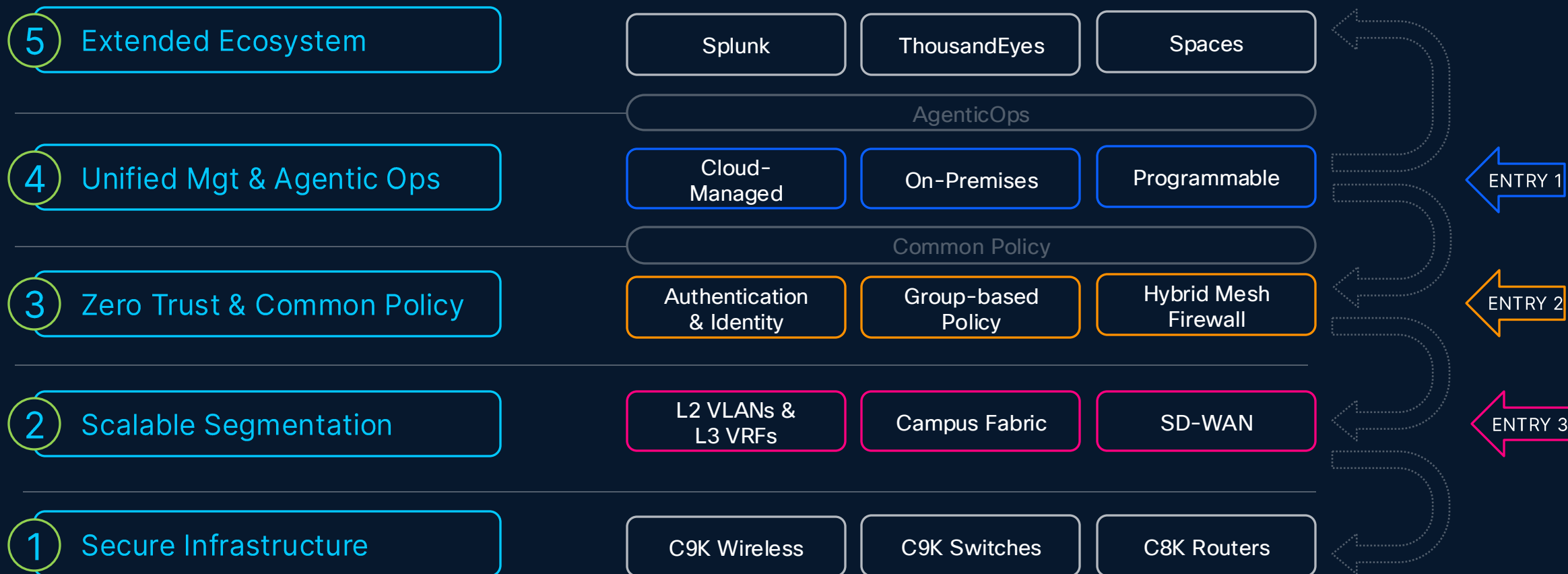
# Secure Networks – Solution Layers

Full-Stack Multi-Layer Reference Model (like the OSI Model)



# Secure Networks – Solution Layers

Each Layer can be designed independently (connects to other layers)

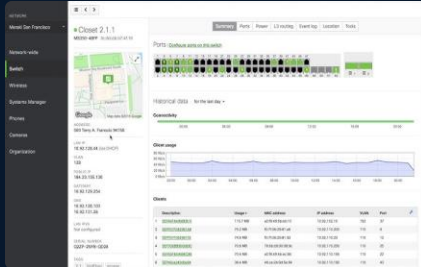


# Management Type – Journey Map

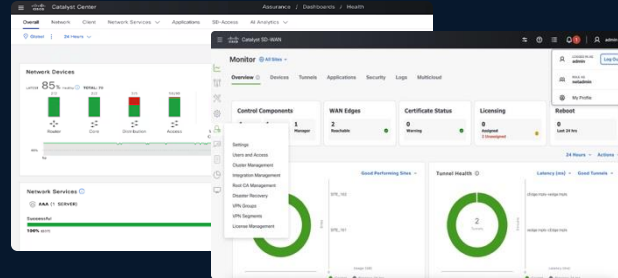
Start from your Management or Operational model



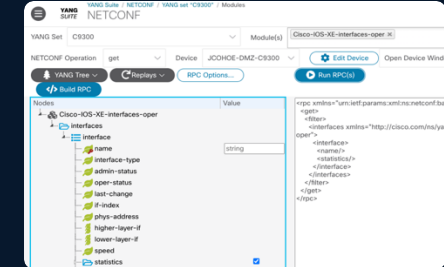
## Cloud Managed



## On-Premises



## Programmable (DIY)



4

### Meraki Dashboard

Cloud-Managed LAN, WLAN & WAN



3

### Access-Manager + SCC

Cloud-managed NAC + Group Policy



2

### Cloud Fabric & SD-WAN

Cloud-automated Underlay & Overlay



1

### Meraki for C9K & C8K

Cloud Switching, Wireless & Routing

4

### Cat Center & SDWAN Mgr

On-Premises LAN, WLAN & WAN



3

### Cisco ISE + FMC

On-Premises NAC + Group Policy



2

### SD-Access & SD-WAN

Premises-automated Underlay & Overlay



1

### CC for C9K & SDW for C8K

Premises Switching, Wireless & Routing

4

### Programmable (DIY)

Customer-managed APIs or CLIs



3

### RADIUS + CTS + SCC API

Customer-managed NAC + Group Policy



2

### Custom Fabric & WAN

Customer-managed Underlay & Overlay



1

### Programmable C9K & C8K

Custom Switching, Wireless & Routing

# Introducing the SNRA Modular 'T-shirt Sizing'



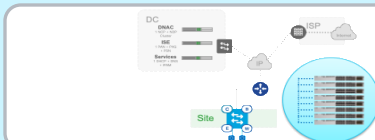
# Secure Networks – Modular T-shirt Sizing

## 1 Baseline Modules

XS

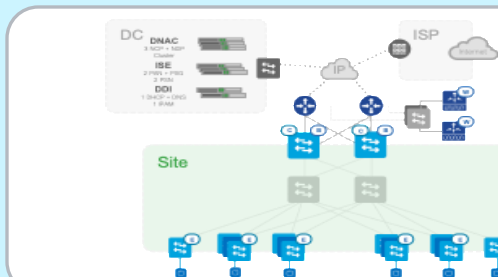
### Small

1-2 Tier LAN  
≤ 5K endpoints



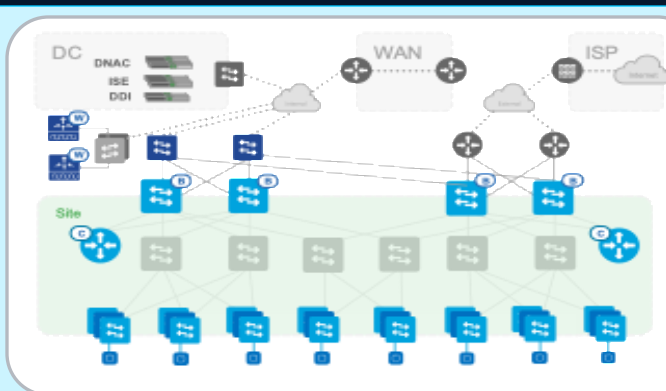
### Medium

2-3 Tier LAN  
≤ 25K endpoints



### Large

3-4 Tier LAN  
≥ 50K endpoints



XL

## 2 Specialized Modules

### Ultra HA Networks

Networks with ultra high-availability requirements with minimal to zero down time in critical networks (Hospitals, Financial Institutions, etc.)

### Critical Security Networks

Networks with critical security requirements requiring high confidentiality and integrity requirements (Defense Sector, etc.)

### Multicast Heavy Networks

Networks with high number of camera feeds for security and monitoring resulting into a specialized multicast design (Stadiums, Casinos, etc.)

### Digital Audio Video Networks

Networks with digital audio and video end points like mic and speakers with various QoS/PTP/etc requirements. (Schools, Media, etc.)

### Smart Powered Buildings

Networks powering smart buildings and modern workspaces using PoE infrastructure (Hospitality, Manufacturing, etc.)



Secure Networking

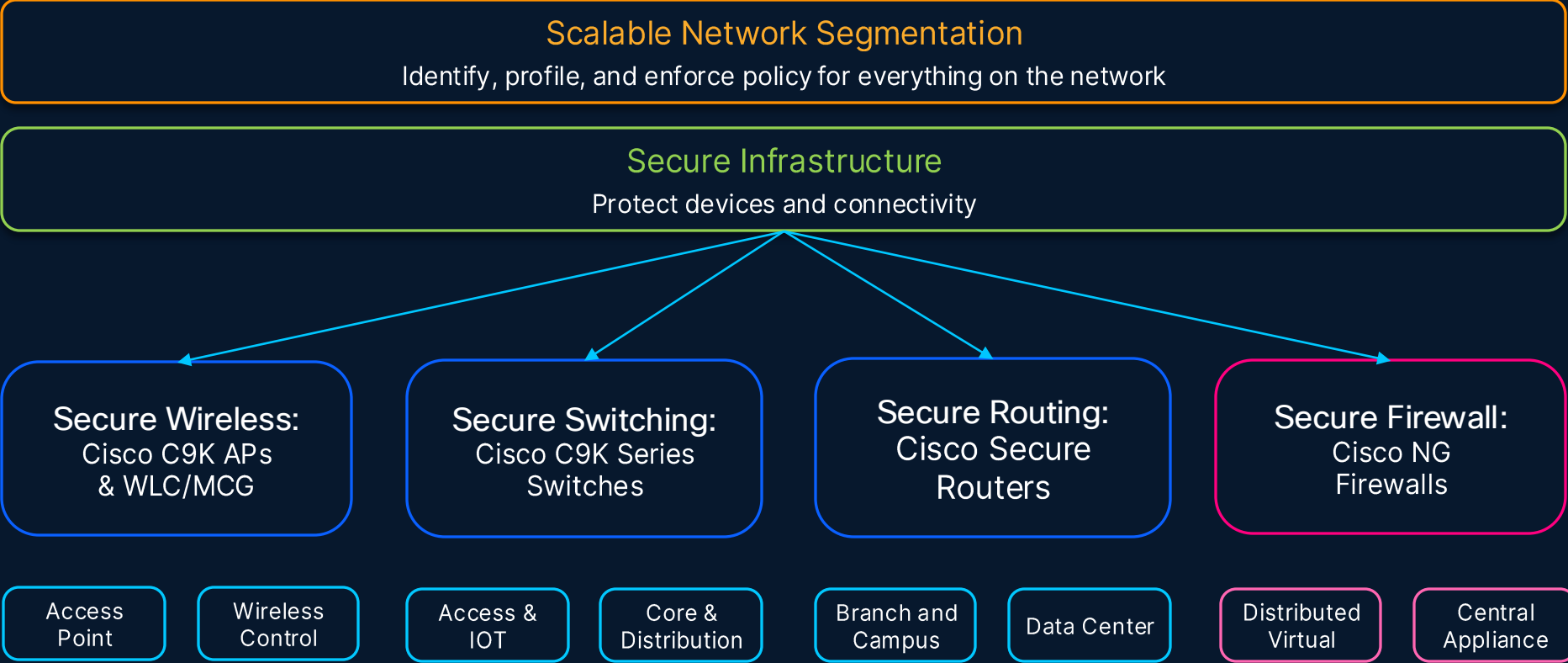
# Secure Network Infrastructure

1

## Network Infrastructure

Wired & Wireless devices, Unified Hardware, Software & Licensing

# Reference design for Secure Network Infra



Secure Networking

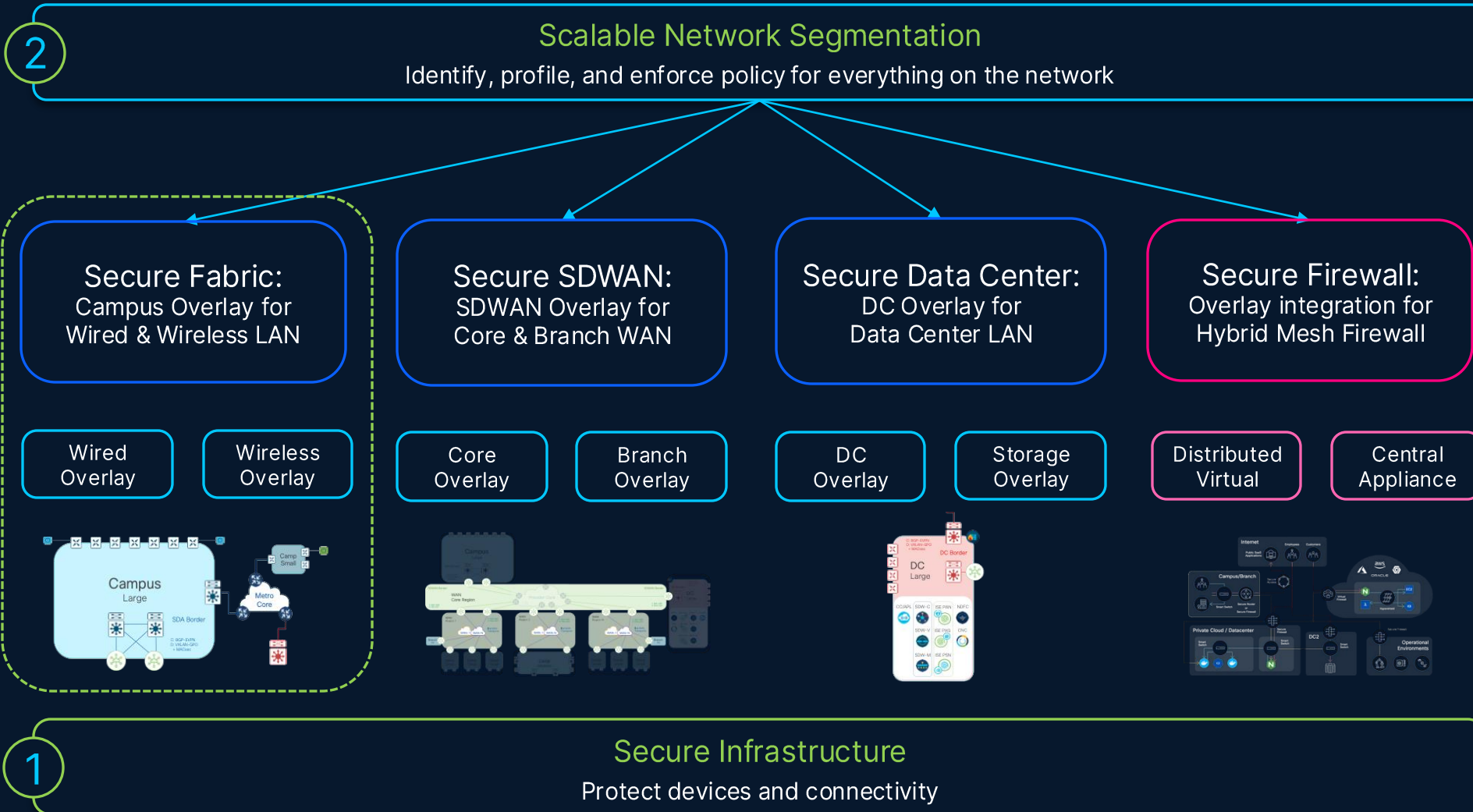
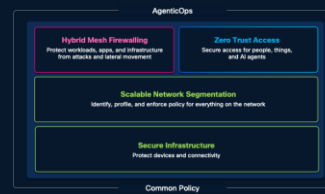
# Scalable Fabric Segmentation

2

## Scalable Fabric Segmentation

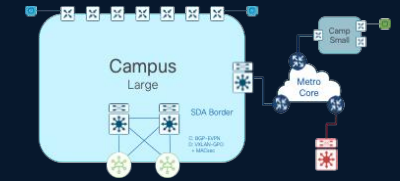
Overlay Fabric for L2/L3 & Multicast, with SGT & VRF segmentation

# Reference design for Scalable Network Segmentation

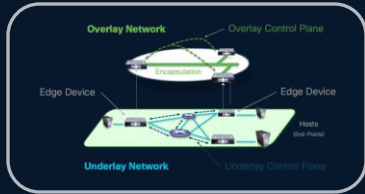


# Cisco Campus Fabric

## Key Concepts & Considerations (Why it matters)

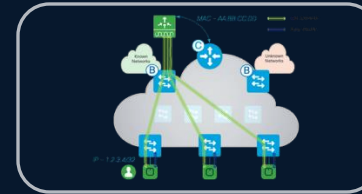


### 1 L2 & L3 Overlay



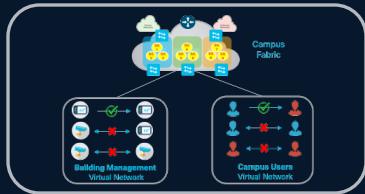
- Support **L2 Broadcast & Multicast** bridging behavior
  - without reliance on L2 protocols (eg. STP)
- Support **IPv4 & IPv6 L3 routing** protocols
  - abstracts IGP & EGP into single 'overlay'
- Enable **L2 VLANs & L3 Anycast GW** across Campus
  - without enabling L2 across the Core

### 2 Wireless Integration



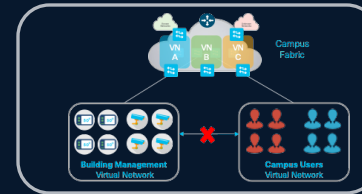
- Simplifies **L2 & L3 wireless roaming** in the 'overlay'
  - maximizes load-balance & redundancy
- Offload **Wireless Data** traffic to the Access switches
  - without tunneling back to WLC
- Enables a **common policy for wired and wireless**
  - single point of policy enforcement

### 3 Micro-Segmentation



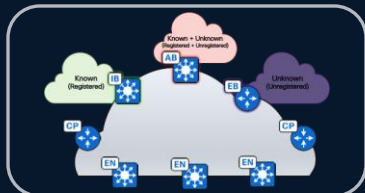
- Segments endpoints **based on an Identity (SGT)**
  - rather than based on VLAN or IP/subnet
- Enables **Group (SGT) based ACL & QoS** and more
  - address-independent services
- Fabric **natively carries SGT** inside of VXLAN-GPO

### 4 Macro-Segmentation



- Segments Groups (IP) into **Virtual Networks (VN)**
  - isolates VNs from other VNs
- Enables **L2 & L3 VPN services** and security
  - without MPLS or other VPNs
- Fabric **natively carries VNID** inside of VXLAN-GPO

### 5 Fabric Handoff



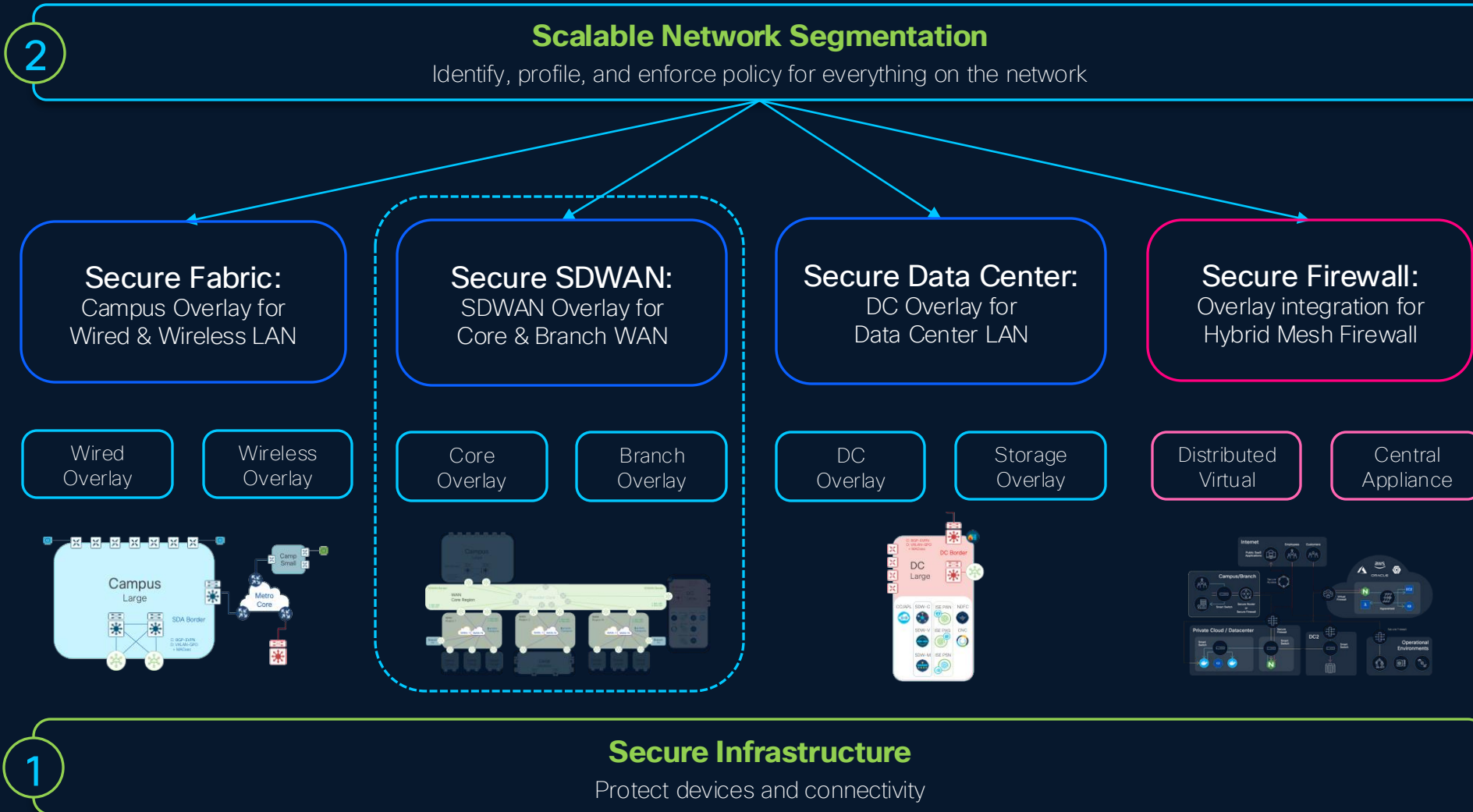
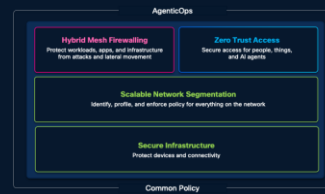
- Support for **L2 or L3 hand-off** at Fabric Border
- Native **VXLAN hand-off** to carry SGT & VRF
  - Includes Cisco NG Firewalls + VXLAN
- Simple **IP/MPLS + CTS/SXP** hand-offs
  - Includes legacy & third-party Firewalls

### 6 Multi-Site & Multi-Domain Fabrics



- Connects **multiple Fabric Sites & Domains**
- Native **VXLAN + LISP Transit** between Campuses
  - integration with EVPN multi-site
- Native **VXLAN + EVPN Transit** with Data Centers
  - hierarchical EVPN multi-site

# Reference design for Scalable Network Segmentation



# Cisco SASE

## Secure SD-WAN

Catalyst and Meraki



## Secure Services Edge

Cisco Secure Access



## Identity First

ISE + Identity Intelligence

### Key Highlights

#### Experienced through Common Platform

Single dashboard (SCC) for Secure Access,  
Catalyst SD-WAN

#### Extended Network to the Cloud

End-to-End Segmentation  
with SGT and VPN information

#### Single Global Security Policy

ZTNA, CASB, DLP, AI Access...

#### Seamless Integration

Consolidate network and security  
into a single architecture

#### Ease of Operation

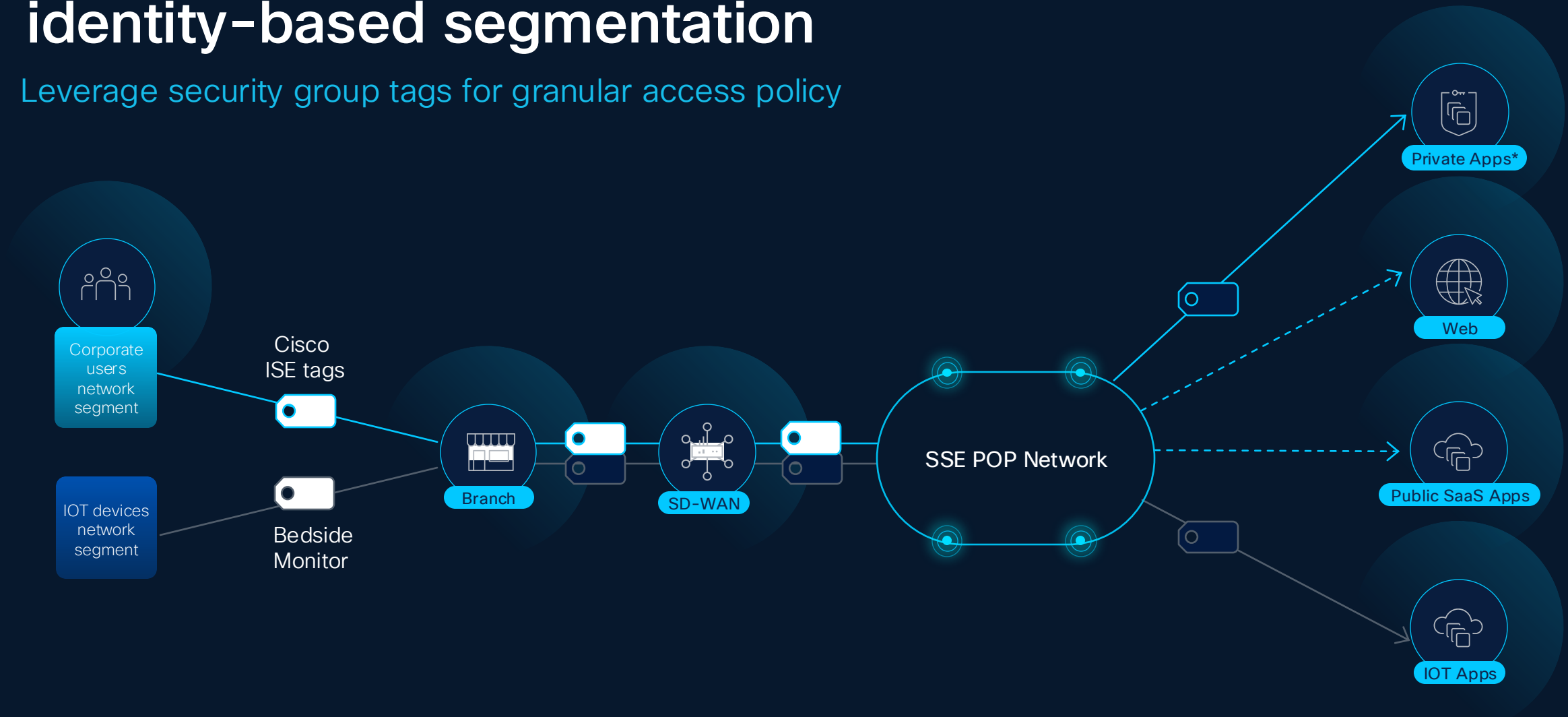
Define once, use objects everywhere  
across SASE experiences

#### End-to-End Observability and Troubleshooting

powered by ThousandEyes

# Securing network access with identity-based segmentation

Leverage security group tags for granular access policy





# Core Capabilities



SD-WAN Manager



Security Cloud Control



Splunk

## SD-WAN



Transport  
Abstraction



Policy-based  
path selection



QoS & App SLA



0-Touch  
Provisioning



Segmentation



## Next Generation Firewall



L3 - L7 FW



IPS/IDPS



AMP



Sandboxing



URL-F



TLS Decryption



EVE, SnortML



## SSE Ecosystem



Auto Tunnel + HA



ZTNA



CASB



FWaaS



DLP

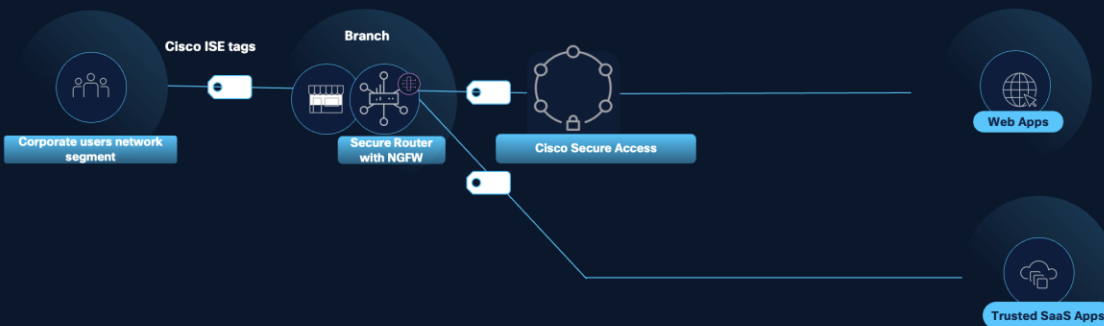


SWG



# SD-WAN to SSE – Use Cases

## Cisco Secure Access Integration Secure Internet access (SIA)



### *Protect Branch → Internet traffic*

- **Automated tunnels** to closest SSE POPs
- **Flexible load-sharing** via weighted ECMP, with HA
- Route or **policy-based traffic redirection** to SSE
- **Context Sharing** (SD-WAN VPN/VRF, ISE SGT) with Cisco Secure Access

## Cisco Secure Access Integration Secure Private Access (SPA)



### *Protect Remote User → on-premises & private apps traffic*

- **Automated tunnels** closest SSE POPs
- **Flexible load-sharing** via weighted ECMP, with HA
- **BGP-based connectivity** between remote users and private resources
- Segment/service VPN based tunnels

# Cisco Secure Access – Architecture



Managed  
Endpoint



Clientless



SD-WAN  
Branch



Web



Private Apps



SaaS Apps

## Core SSE – Full Stack Security



Secure Web  
Gateway  
(SWG)



Cloud Access  
Security  
Broker (CASB) and  
DLP



Zero Trust  
Network  
Access (ZTA)



Firewall as a  
Service  
(FWaaS) and  
IPS

Cisco delivers the core and more in a single subscription...



DNS  
Security



Multimode  
DLP



Advanced  
Malware  
protection



Sandbox



Talos Threat  
Intelligence



VPN as a  
Service



Digital  
Experience  
Monitoring\*



Remote  
Browser  
Isolation\*

## Add-on solutions



XDR



DUO MFA/  
SSO



CSPM

Secure Networking |

# Zero Trust Access & Common Policy

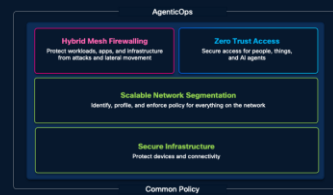
3

## Zero Trust Access & Common Policy

Identity Policy, Stateful Firewall, Threat Detection & Response

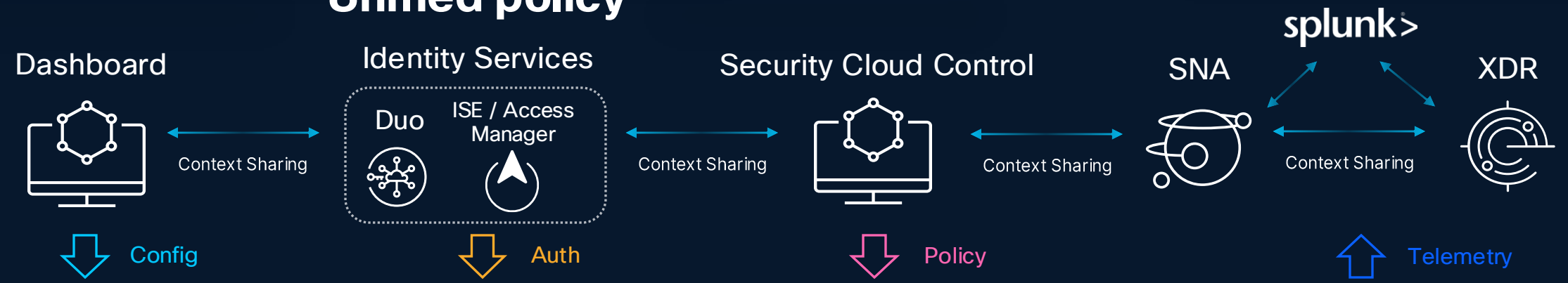
# Cisco Zero Trust Segmentation

End to End identity-based segmentation from User to App

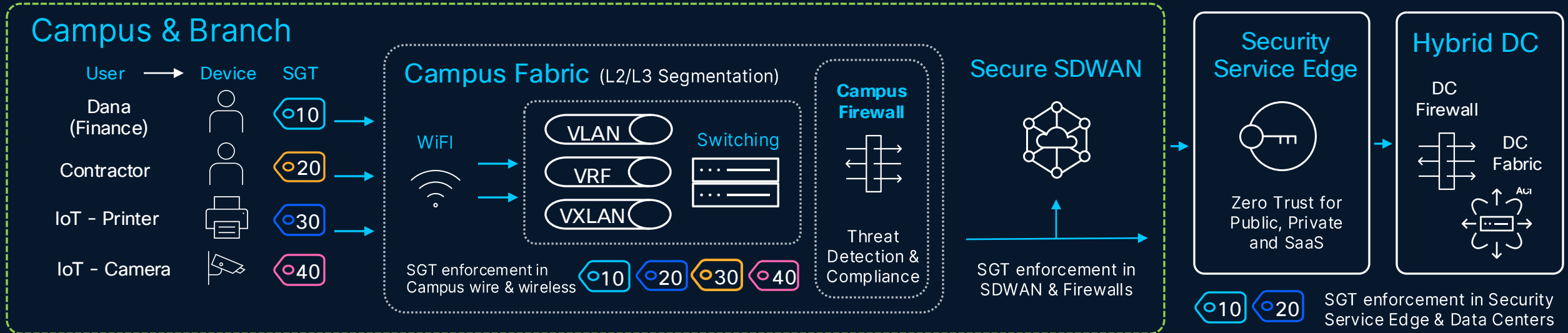


## Unified security

## Unified policy



## Campus & Branch



# Zero Trust Access & Common Policy

## Design Workflow



### 1 Identity & Group Policy



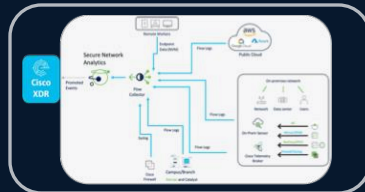
- Identity and Micro Segmentation Group Policy for Secure Fabric – powered by [Cisco ISE](#)

### 2 Stateful Firewall Policy



- Stateful Firewall and Macro Segmentation – powered by [Cisco Security Cloud Control](#)

### 3 Threat Detection & Response



- Threat Detection and Response – powered by [Cisco SNA](#) and [Cisco Splunk](#)

Secure Networking

# Unified Management & Agentic Ops

4

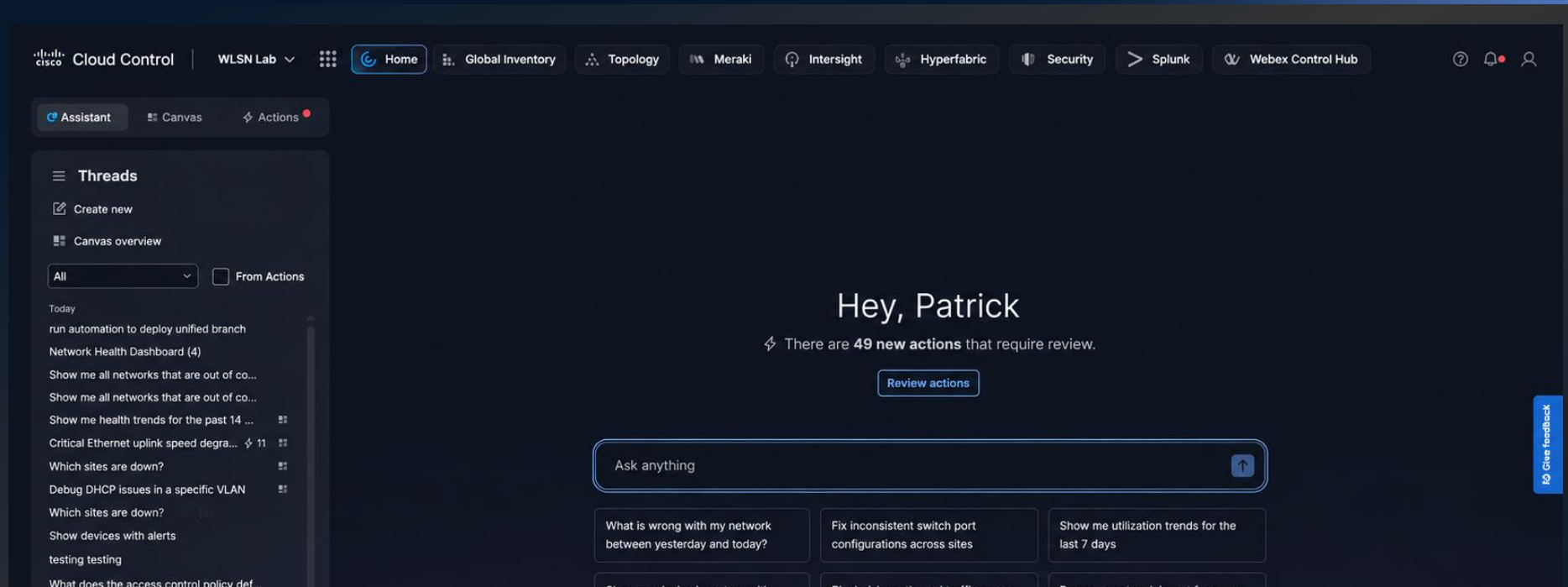
**Unified Management & Agentic Ops**

On-Premise & Cloud Automation & Analytics, including AIOps

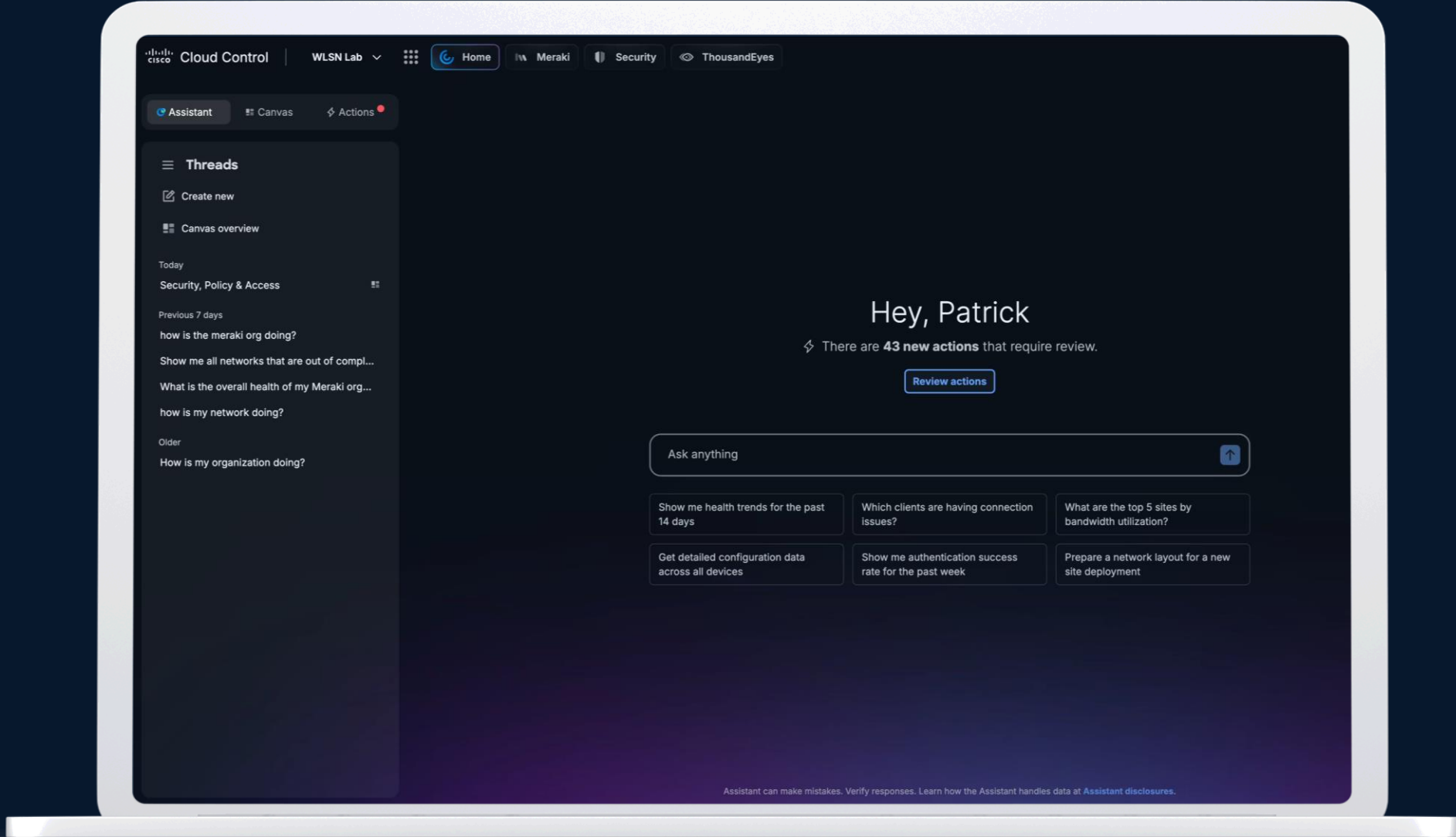
# Cisco Cloud Control

One platform. Every domain. The foundation everything else is built on.

Meraki · Catalyst Center · Catalyst SD-WAN · Security Cloud Control · ThousandEyes · Splunk · Nexus Dashboard · Intersight · IQ · & more









Threads

Create new

Canvas overview

- Today
  - Security, Policy & Access
- Previous 7 days
  - how is the meraki org doing?
  - Show me all networks that are out of compl...
  - What is the overall health of my Meraki org...
  - how is my network doing?
- Older
  - How is my organization doing?

Hey, Patrick

There are 43 new actions that require review.

Review actions

Ask anything



Show me health trends for the past 14 days

Which clients are having connection issues?

What are the top 5 sites by bandwidth utilization?

Get detailed configuration data across all devices

Show me authentication success rate for the past week

Prepare a network layout for a new site deployment

Assistant

Canvas

Actions

## Threads

Create new

Canvas overview

Today

Security, Policy &amp; Access

Previous 7 days

how is the meraki org doing?

Show me all networks that are out of compl...

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Older

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Show me health trends for the past 14 days

Which clients are having connection issues?

What are the top 5 sites by bandwidth utilization?

Get detailed configuration data across all devices

Show me authentication success rate for the past week

Prepare a network layout for a new site deployment

- Global Overview
- Organization  
WLSN Meraki
- Network  
WLSN01-Fabric
- Network-wide
- Assurance
- Switching
- Wireless
- Insight
- Organization
- Security
- Automation
- Access Manager

← Fabrics →

Fabric-WLSN (ASN: 65213)

Deployed

Last deploy: Success

Preview changes

Deploy

Summary

Device roles

VRFs

Border configuration

Fabric subnets

Fabric devices

Single role deployment

Border(s) Leaf(s) Spine(s)

2 Deployed / 4 Total devices

0 / 4

2 / 4

0 / 4

Multi role deployment

Border(s)/Leaf(s) Border(s)/Spine(s) Spine(s)/Leaf(s) Border(s)/Spine(s)/Leaf(s)

2 Deployed / 4 Total devices

0 / 4

2 / 4

0 / 4

0 / 4

Deployment summary

Border configuration 2 total

2 Deployed / 2 total configurations

VRFs 1 total

1 Deployed / 1 total VRFs

Fabric subnets 2 total

2 Deployed / 2 created subnets

Underlay subnets 0 total

0 Deployed / 0 total subnets

Statistics

BGP Peers

0% healthy

Online

-

Offline

-

Ext border peers

0% healthy

Online

-

Offline

-

VXLAN tunnels

Healthy

Online

-

Offline

--

Overlay subnets

0% healthy

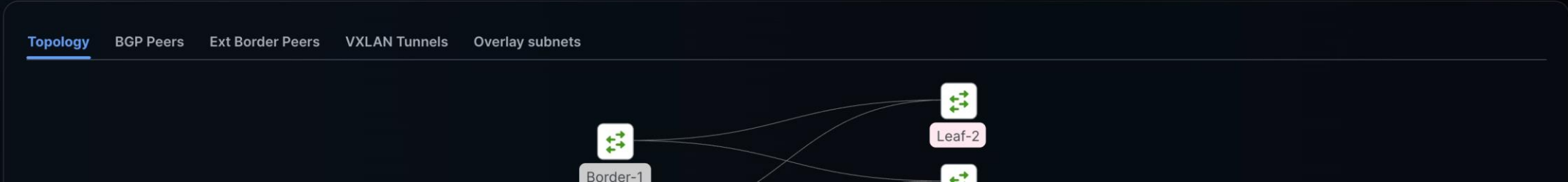
Online

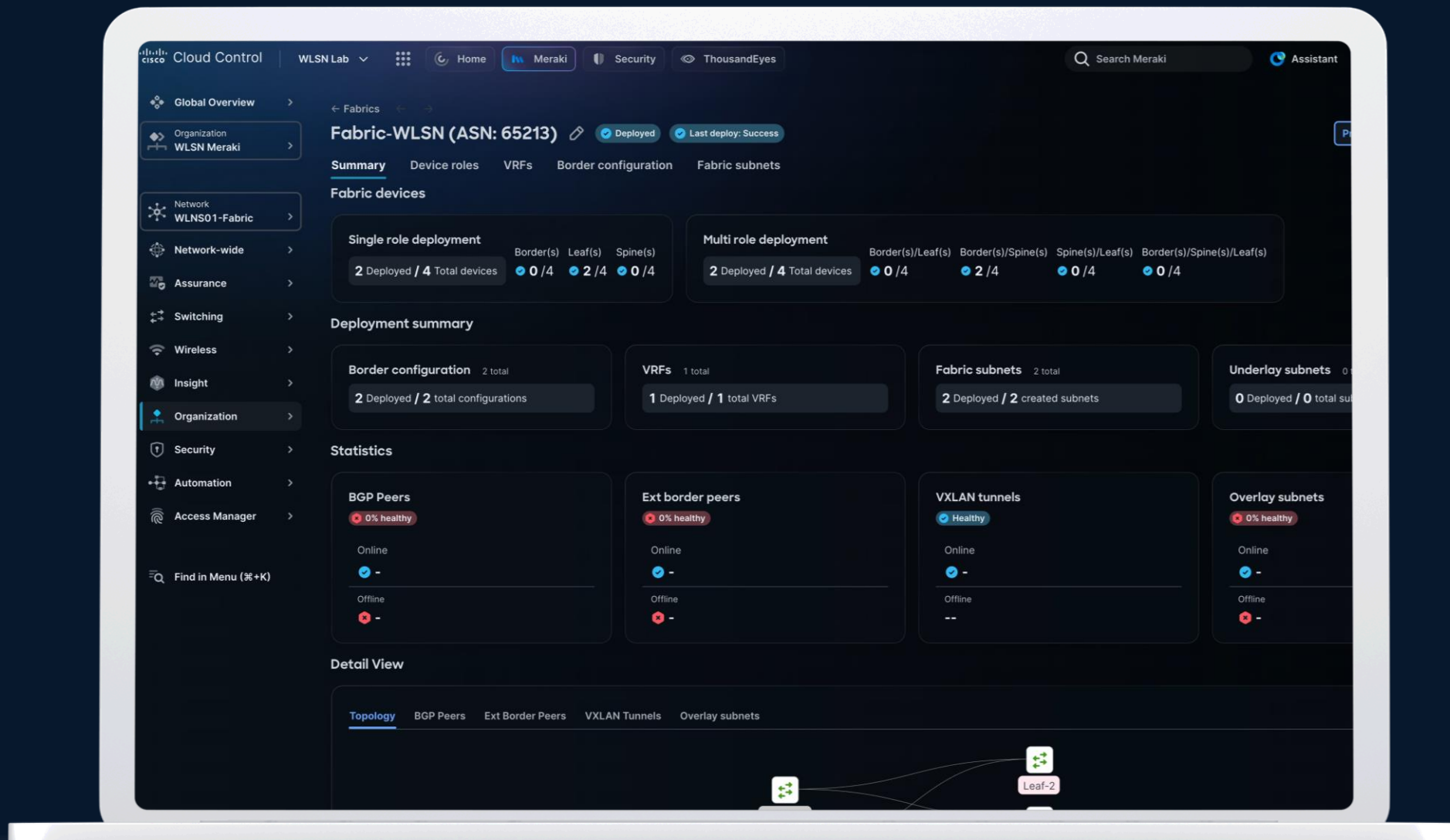
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Offline

-

Detail View





BETA JUNE 2026

# Introducing Cisco Multicloud Fabric

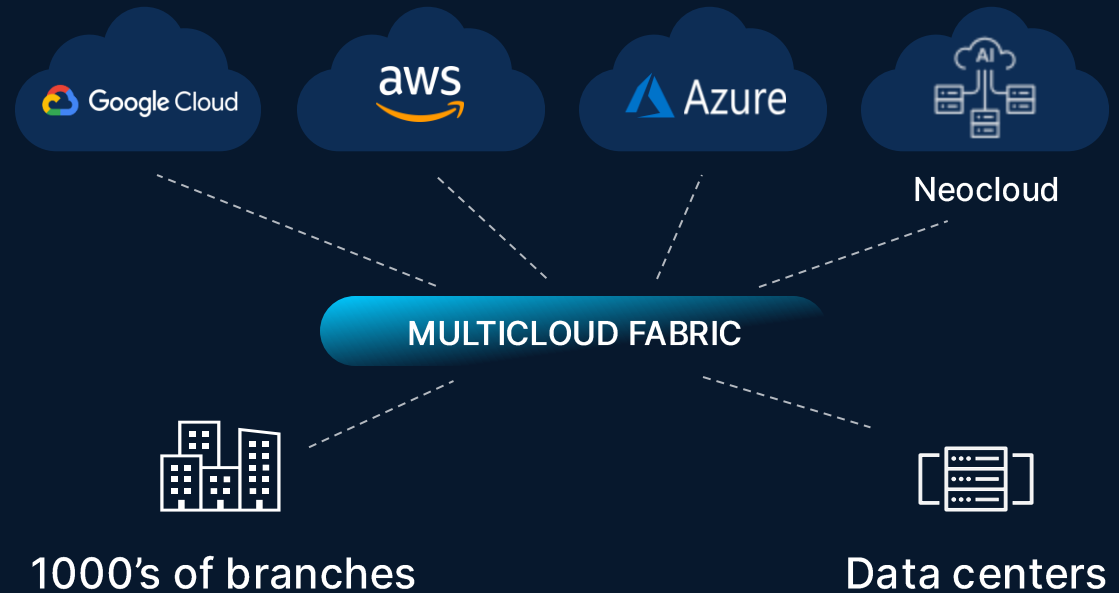
Single multicloud networking service – available via Cloud Control

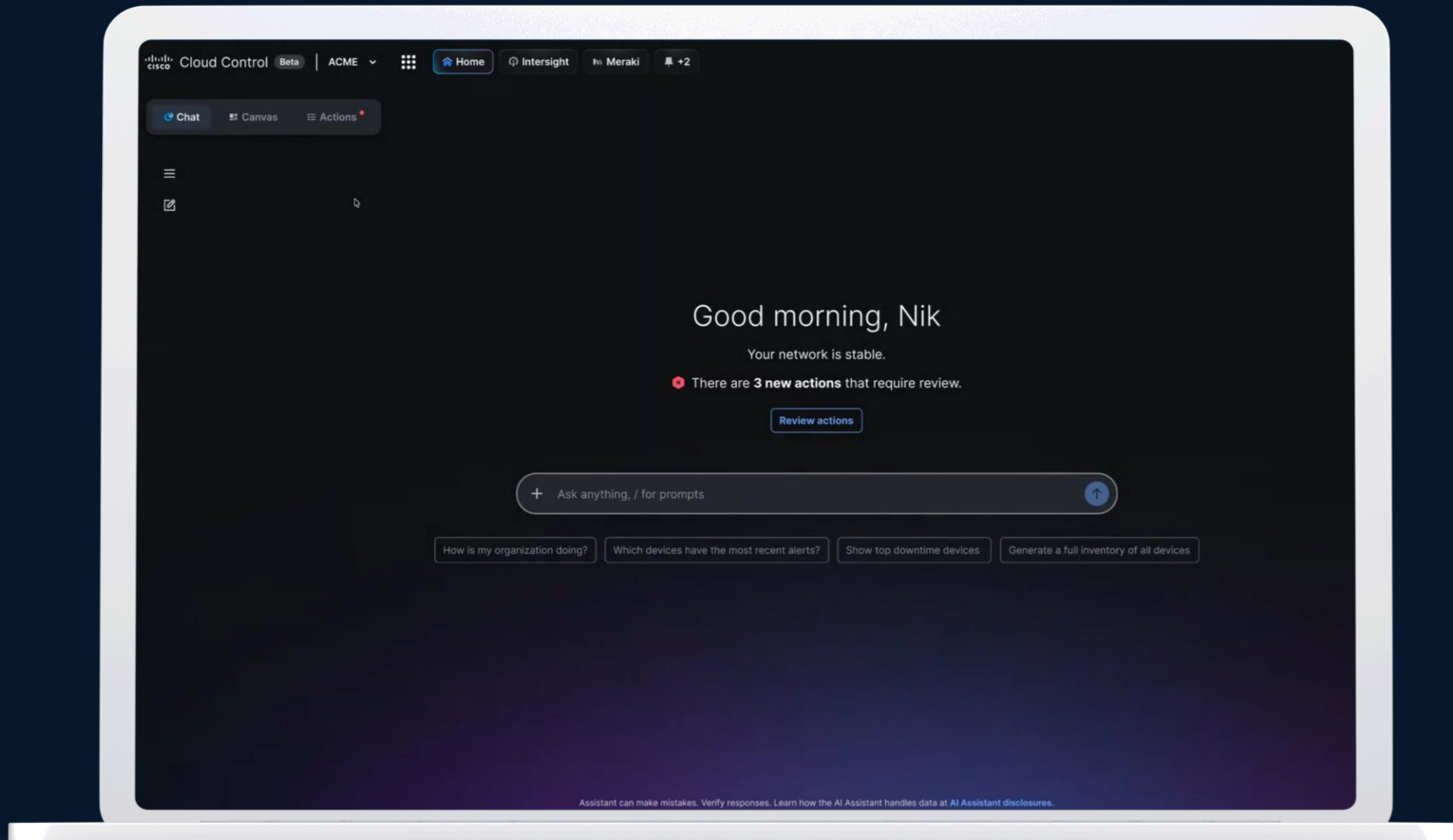
Instantly available global fabric across clouds

Built-in security and end-to-end visibility

**Use Cases**   Site-to-Cloud   Cloud-to-Cloud

## Multicloud Fabric







# Good morning, Nik

Your network is stable.

⚠️ There are **3 new actions** that require review.

[Review actions](#)

+ Ask anything, / for prompts



How is my organization doing?

Which devices have the most recent alerts?

Show top downtime devices

Generate a full inventory of all devices



Good morning, Nik

Your network is stable.

There are **3 new actions** that require review.

Review actions

+ Ask anything, / for prompts

- How is my organization doing?
- Which devices have the most recent alerts?
- Show top downtime devices
- Generate a full inventory of all devices

Close Canvas

AI Assistant11:05 am

I found several dependencies for **Health\_quote\_k8s**. Issue detected between the app and database **healthclaims-aurora-us-east-1** in AWS region **us-east-1** because of **security group** rule.

Issue analysis

When App Server attempting to query the Amazon Relational Database Service (RDS), the RDS Inbound Rule not allowing traffic from App Server. A recent security hardening update removed the App Server's access rule.

Recommendation

Navigate to the RDS Instance in your AWS cloud console.  
<https://us-west-2.console.aws.amazon.com/rds/home?region=us-east-1#databases:>

Edit RDS Inbound Rule to allow traffic from the App Server's **Security Group ID sg-0a1b2c3d4e5f6g7h8**

Connectivity should be immediate once updated.

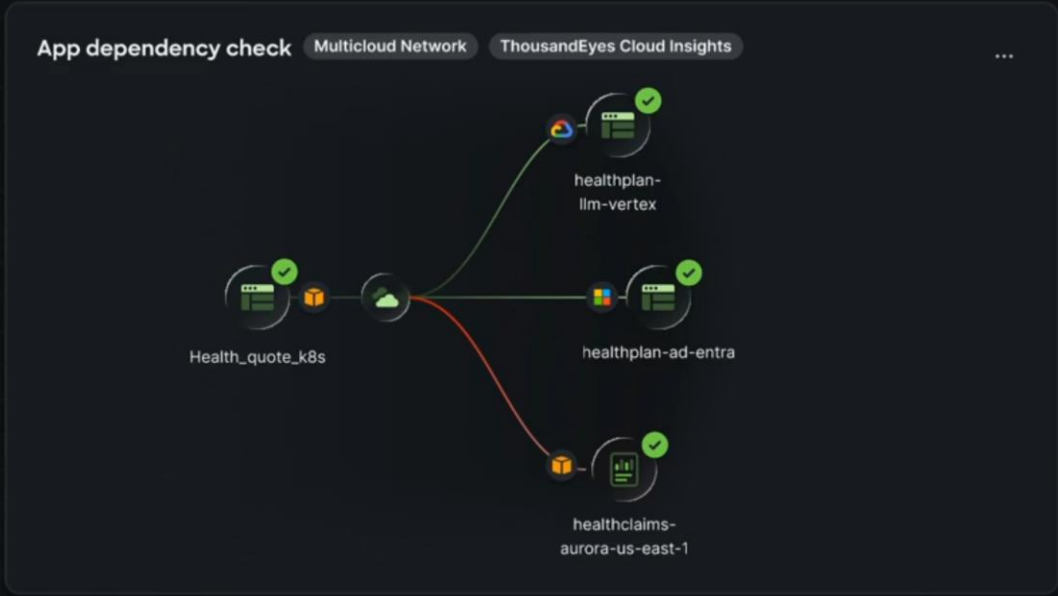
App dependency check

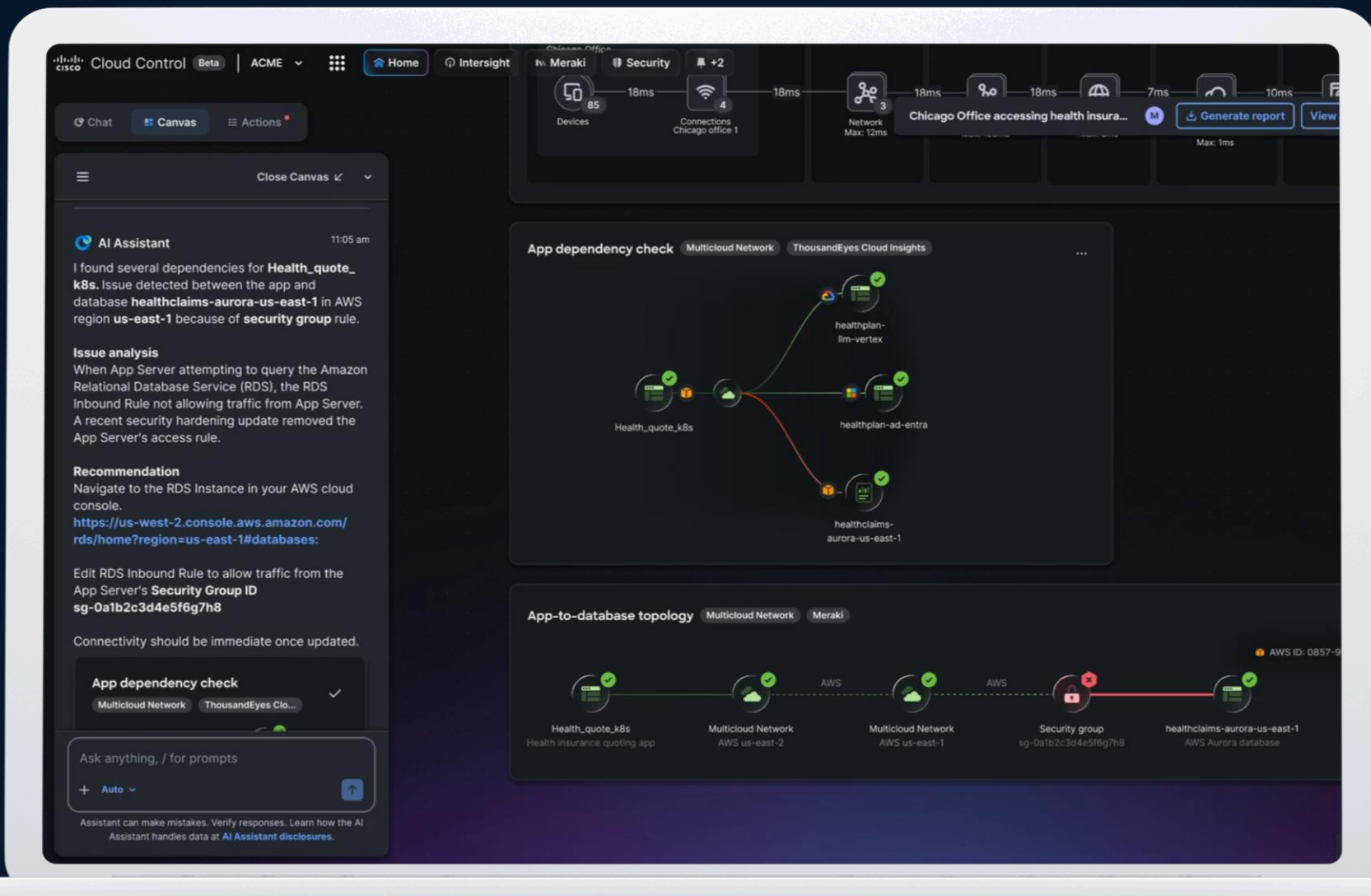
Multicloud NetworkThousandEyes Clo...

Ask anything, / for prompts

+ Auto

Assistant can make mistakes. Verify responses. Learn how the AI Assistant handles data at [AI Assistant disclosures](#).





Secure Networking

# Extended Ecosystem

5

## Extended Ecosystem

Sharing device & flow analytics with external management tools

Marketplace

# One platform. Every tool you need

## Fast time to value

Pre-built, ready-to-deploy solutions. Go live in minutes, not months.

## Work with your existing tools

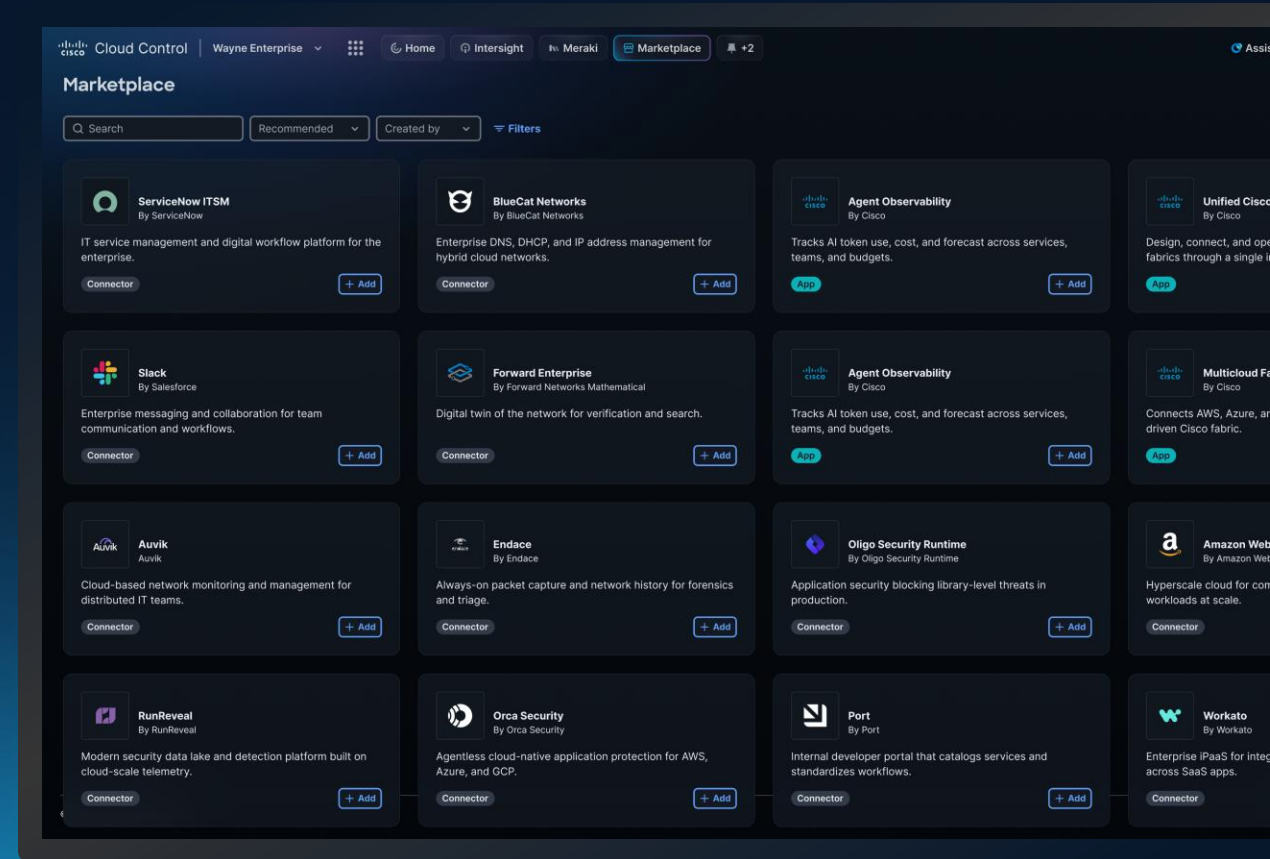
ServiceNow, Azure, Slack, Webex, and many more.

## Built for your team

Solutions tailored for Network Admins, IT Ops, MSPs, and System Integrators

## Trusted & secure

Admin-controlled installs, pre-deployment validation, and centralized alerts





# Integrating into your ecosystem

\*Alpha launch planned for end of June



**Closing / Next Steps**



# Secure Networking v1.0

THE JOURNEY OF A  
THOUSAND MILES BEGINS  
WITH ONE STEP.

LAO TZU

This is our first **cross-domain** and **end-to-end** Cisco **reference architecture** in the **modern era**!

- **Version 1.0** delivers 'Secure Networking' outcomes
  - Many Domains, PINs, Products & Protocols
  - Based on the currently available Products
  - There are some challenges, limits and gaps
- We will **continue to evolve** in the **future\*** (v2.0+)

## SNRA v1.0 Versions:

- IOSXE 26.1.(latest)
- Meraki Q2CY26 (latest)
- Catalyst Center 3.2.1.(latest)
- SDWAN Manager 20.18.2.(latest)
- ISE 3.5.(latest)
- TE Q2CY26 (latest)
- SNA 7.6.(latest)
- FMC 10.0.(latest)
- SCC Q2CY26 (latest)



\* Feature Roadmap aligned to SNRA



# Call to Action

## Implementing SNRA – Layer by Layer

### 5 Extended Ecosystem

### 4 Unified Mgt & Agentic Ops

### 3 Zero Trust & Common Policy

### 2 Scalable Segmentation

### 1 Secure Infrastructure

## CHECKLIST



#### *Increase overall Visibility & Observability*

- leverage the robust ecosystem of Cisco and third-party tools and data-sources to increase observability and integrate multiple support systems.



#### *Simplify Ops with Unified Tools & AI*

- consistently deploy fabrics globally, leveraging a unified management experience, with model-driven programmability and Agentic Ops.



#### *Embrace secure ZTNA & Common Policy*

- employ easy endpoint identification & authentication, integration of hybrid mesh firewall, with end-to-end identity-based common policy.



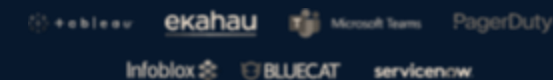
#### *Migrate Traditional to Fabric Overlay*

- leverage network automation to simplify migration, implementing consistent design, and using an incremental site-by-site approach.



#### *Refresh to latest Cisco Secure products*

- install scalable devices, with security fused in, using Unified Hardware, Unified Software, Unified Licensing & Unified Support.



#### AgenticOps



#### Common Policy



Scalable  
Wi-Fi 7



Smart  
Switches



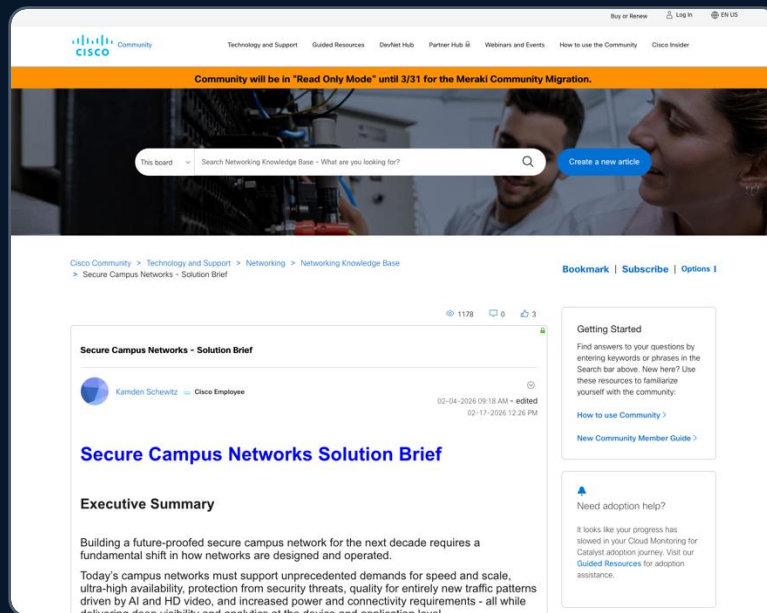
Secure  
Routers



Secure  
Firewall

# Secure Networking Resources

Start your Secure Network Reference Architecture



## Public SNRA References

- [Secure Networking Overview](#)
- [Secure Campus & Branch Networking](#)
- [Secure Campus Networks – Solution Brief](#)

Published

## New SNRA Cisco Validated Designs

- [Secure Network Reference Architecture – End-to-End Architecture Guide](#)
- [Secure Network Reference Architecture – Cloud-managed Design Guide](#)
- [Secure Network Reference Architecture – On-Premises Design Guide](#)
- [Secure Network Reference Architecture – Programmable Design Guide](#)

Published

June 2026

## Related References

- [BRKENS-2614 - Campus Design with Secure Network Reference Architecture](#)

June 2026

## Existing Cisco Validated Designs

- [Cisco Cloud Fabric Validated Case Study](#)
- [Cisco SD-Access Design Guide](#)
- [Cisco Unified Branch Design Guide](#)
- [Cisco Common Policy Integration Guide](#)

New

New

Updated

Updated

# Secure Networking on Cisco.com

Secure networking

## Break down silos with secure networking

In a world where highly distributed users connect to highly distributed applications, data, and resources, you can rely on network security solutions by Cisco to protect your organization against cyberthreats.



[www.cisco.com/site/us/en/solutions/transform-infrastructure/secure-networking-overview.html](https://www.cisco.com/site/us/en/solutions/transform-infrastructure/secure-networking-overview.html)

**AI-Ready Secure Network Architecture**

### Modernize your network for the AI era

Unlock the performance, security, and intelligence you need to power real-time and AI-driven applications—across campus, branch, and industrial environments. With Cisco, you'll be ready for what's next.

[Read e-book](#) [Watch webinar](#)

**Overview** Secure campus Unified branch Industrial networks

**The AI-ready secure network architecture**

Meet the demands of modern applications and AI workloads with unified architecture combining AI, automation, and security to simplify operations, scale intelligently, and safeguard connections.

**Secure campus networking**

### Reimagine your campus network for the AI era

Support real-time collaboration, immersive learning, smart buildings, and AI-powered apps—on a network that's ready for the future, not stuck in the past.

[Get e-book](#) [Book a consultation](#)

**Overview** Resources Unified Branch Industrial networks

**Why modernize your campus?**

As AI becomes embedded in daily workflows, campus networks must evolve—becoming simpler to operate, secure by design, and built for real-time performance—to support the growing demands of users, devices, and applications.

**Unified Branch Networking**

### Transform every branch into a smart, secure, and scalable platform

Run your branches like physical extensions of your digital business. Deliver great user experiences, enforce consistent policy, and scale securely with Cisco's AI-powered unified branch platform.

[Get e-book](#) [Book a consultation](#)

**Overview** Resources Secure campus Industrial networks

**Why modernize your branch?**

Most branches were designed for static traffic patterns and trusted users. Today's reality requires a nimbler approach—with automation, intelligence, and security built in.

[www.cisco.com/site/us/en/solutions/networking/campus-branch-networking/index.html](https://www.cisco.com/site/us/en/solutions/networking/campus-branch-networking/index.html)

**CISCO** Connect

**Thank you**



