

CISCO *Live!*

GO BEYOND

#CiscoLiveAPJC



Digital Lego:

Operations with Cisco's Comprehensive Portfolio

Darrin Miller, Distinguished TME
Jeffry Handal, Principal SE
BRKXAR-2721



Master Builder Miller



Master Builder Handal

Cisco Webex App

Questions?

Use Cisco Webex App to chat with the speaker after the session

How

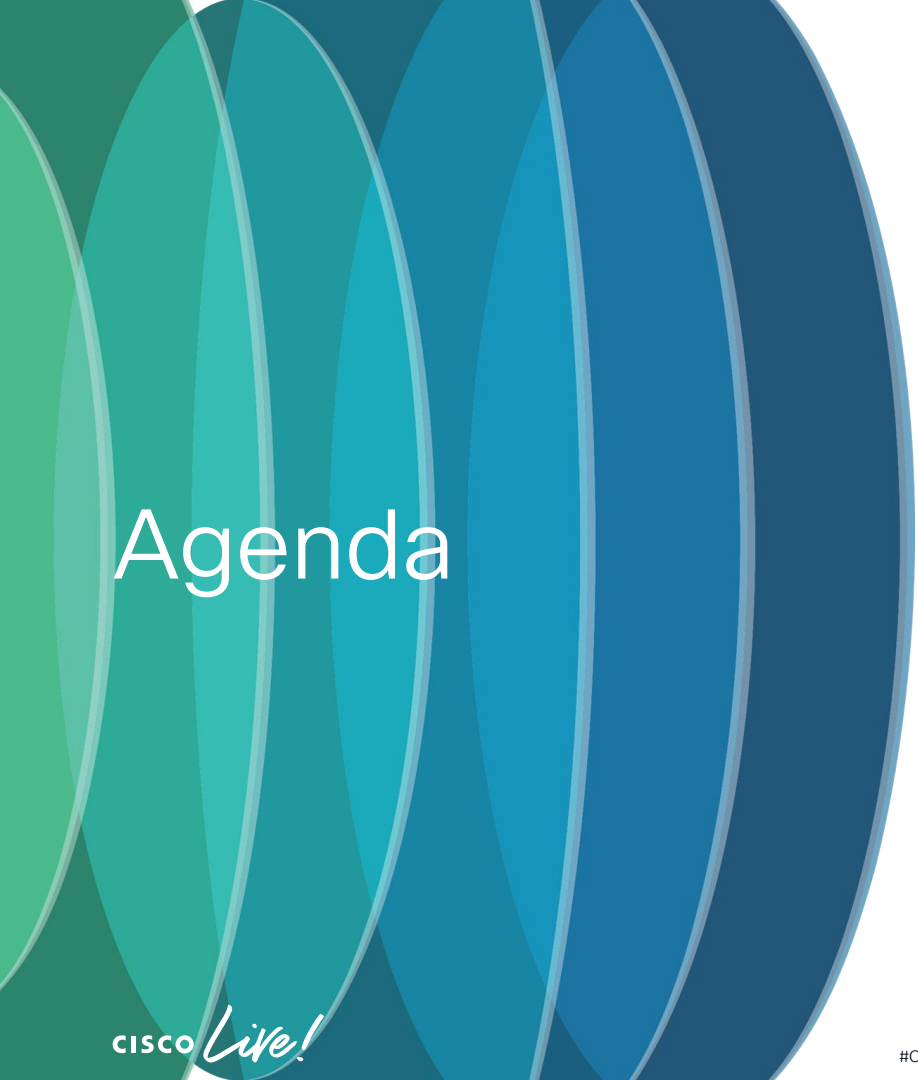
- 1 Find this session in the Cisco Live Mobile App
- 2 Click “Join the Discussion”
- 3 Install the Webex App or go directly to the Webex space
- 4 Enter messages/questions in the Webex space

Webex spaces will be moderated by the speaker until November 15, 2024.



<https://ciscolive.ciscoevents.com/ciscolivebot/#BRKXAR-2721>

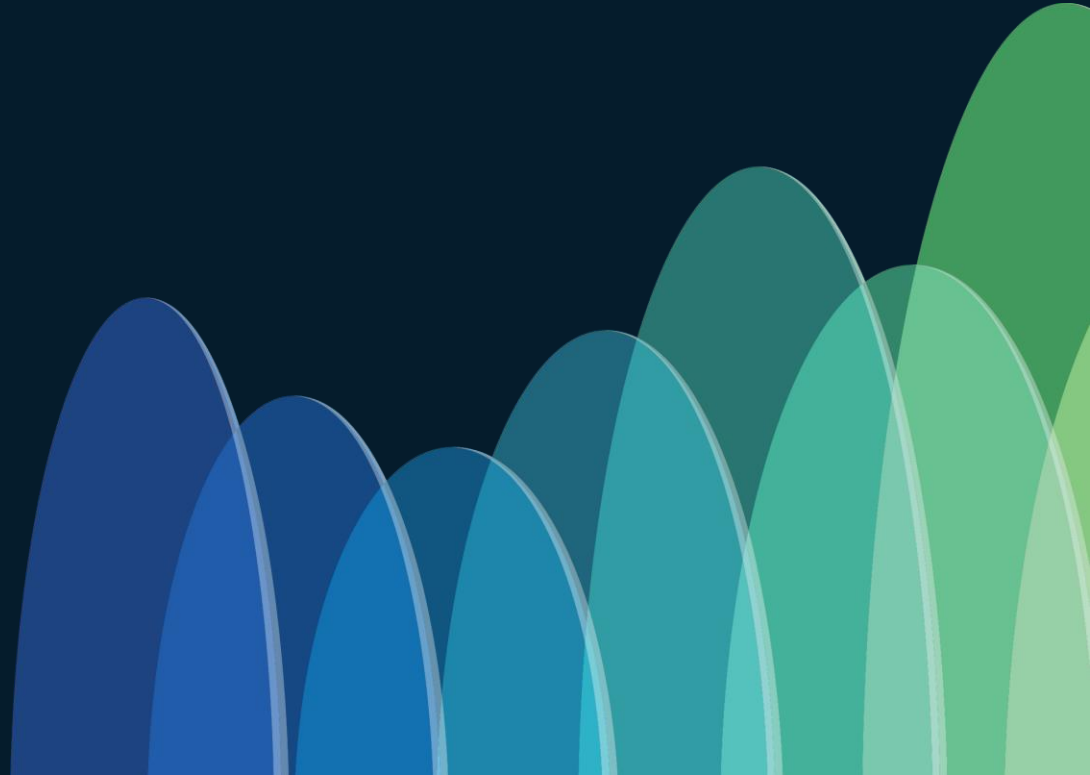


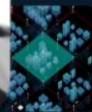


Agenda

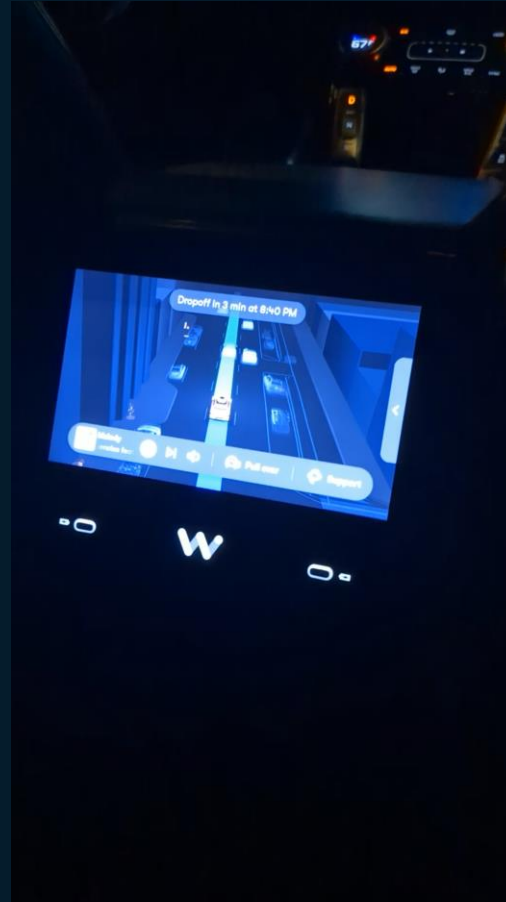
- Creating The Future
- The Building Blocks
- Design with Purpose
 - The Blue Block (Connectivity)
 - The Yellow Block (Visibility)
 - The Red Block (Policy)
- Master Builder

Creating The Future





The future is within
reach today!

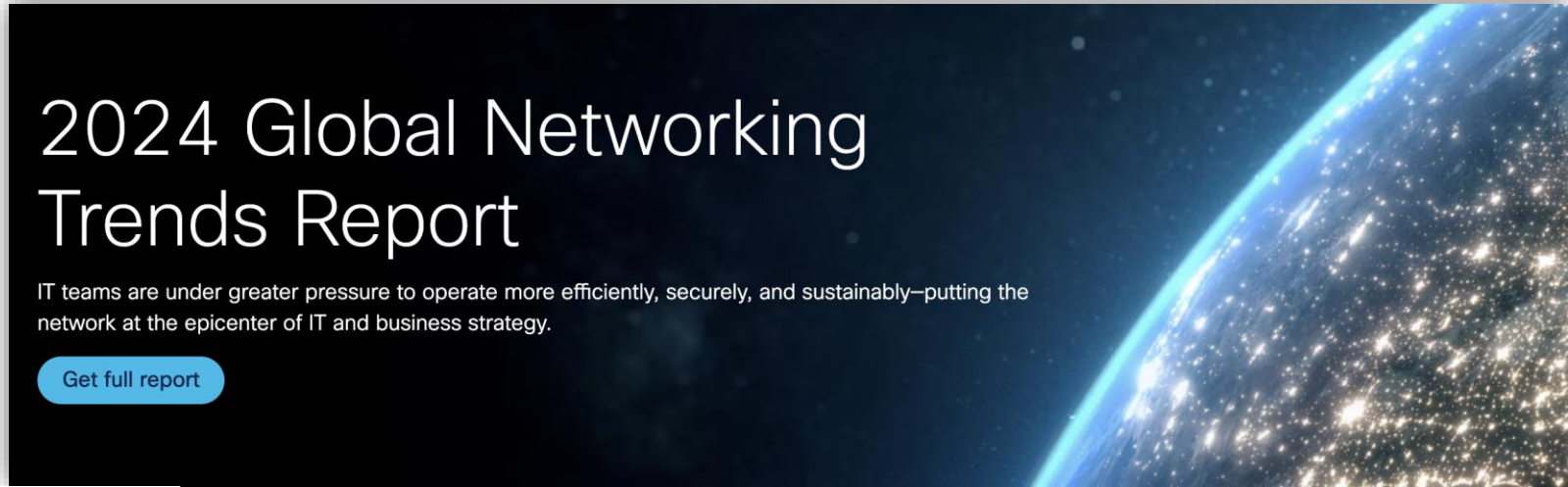


Where are
investments being
made?

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Source: 2024 Global Networking Trends Report



<https://www.cisco.com/c/en/us/solutions/enterprise-networks/global-networking-trends.html>

The network continues to be a catalyst of digital business success.



Business benefits experienced due to network investments over the past 12 months

19% Improved customer satisfaction

17% Improved employee productivity and satisfaction

17% Increased operational efficiency

11% Increased profits

10% Increased revenue growth

8% Improved cost savings

However, disruptors threaten the network's ability to continually deliver on these business goals.



Top five concerns impacting networking strategy over the next two years

40% Rising cyberthreats and security risks

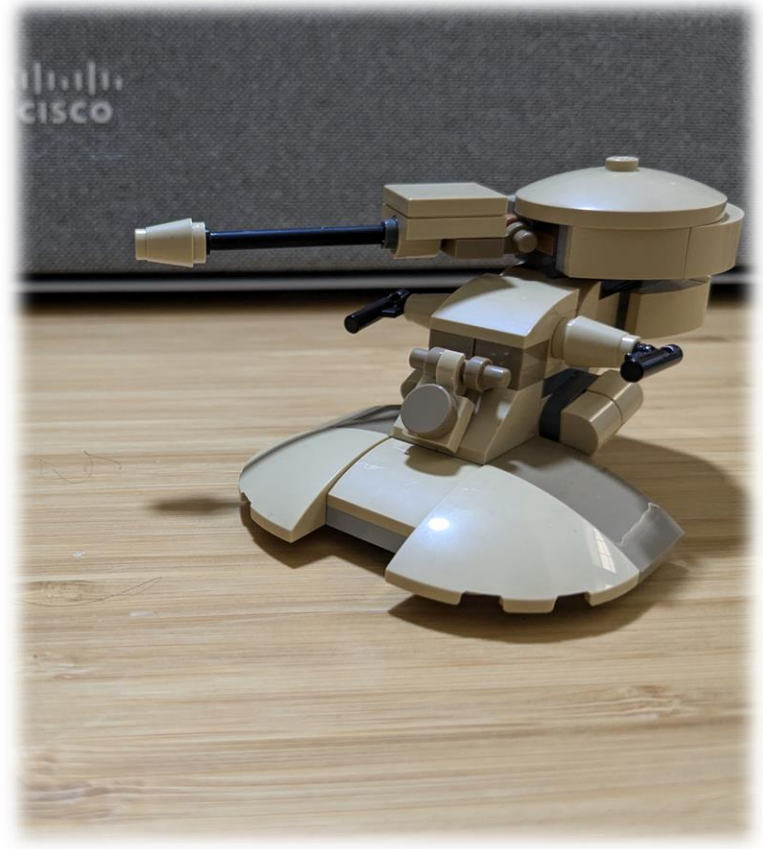
37% Increased network demand from new app and workload types (GenAI, for example)

31% Increased IT complexity due to distributed workforce and infrastructure

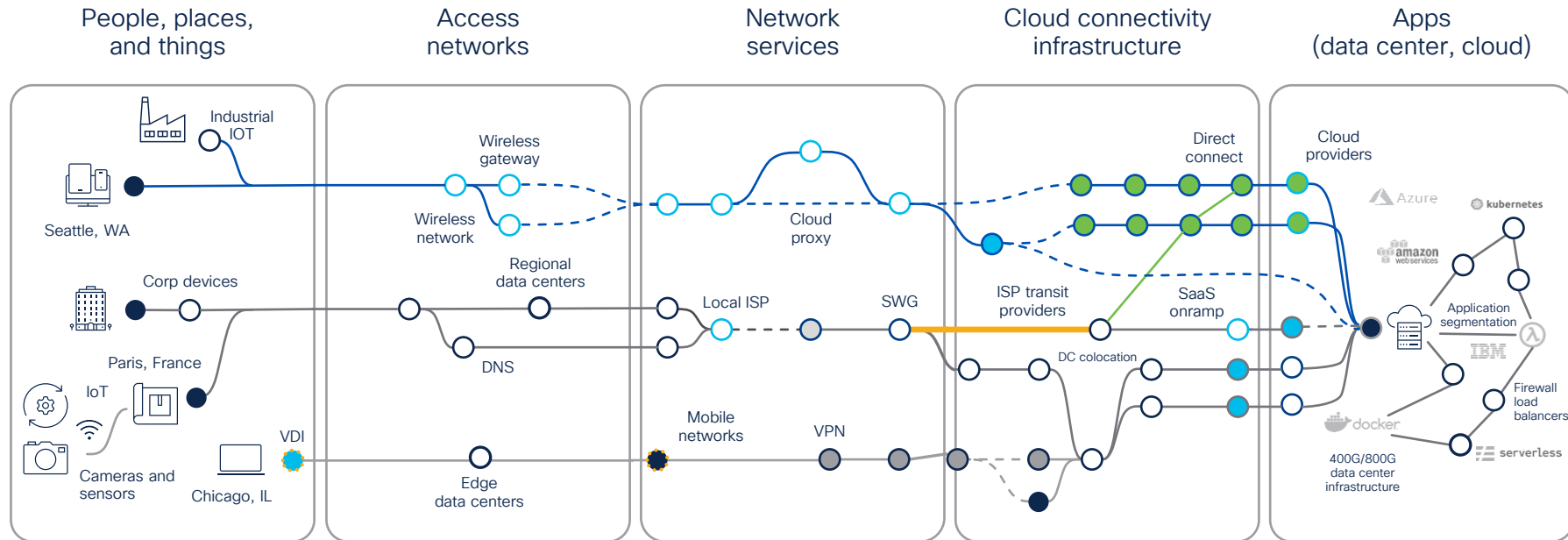
31% Increased sustainability requirements

31% Network operations and staffing challenges

Realities Being Faced



Today's Networking Landscape



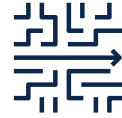


Cisco Networking **Advisory Board**

Feedback from the Cisco Networking Advisory Board meeting (April 2024)

- “IT budgets are shrinking.”
- “AI will become even more important in two years.”
- “Networks running AI need to be self-healing.”
- “Our network is going to double in the next ten years, and we don’t want to hire more people.”
- “We have islands today, so it’s difficult to manage and leverage capabilities.”

We heard **you**



Simple



Predictable



Outcome driven

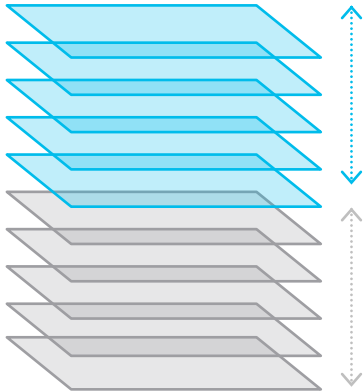
The Building Blocks



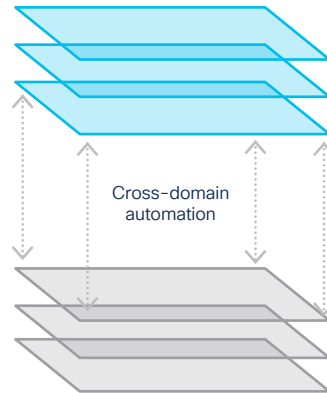
Unified Cisco Networking Software

Delivering automation, analytics and assurance for simplified IT

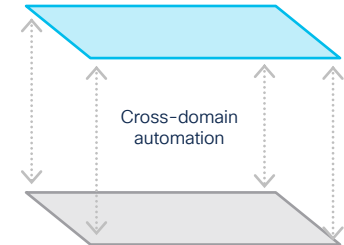
Multiple cloud platforms



Fewer cloud platforms



Single cloud platform



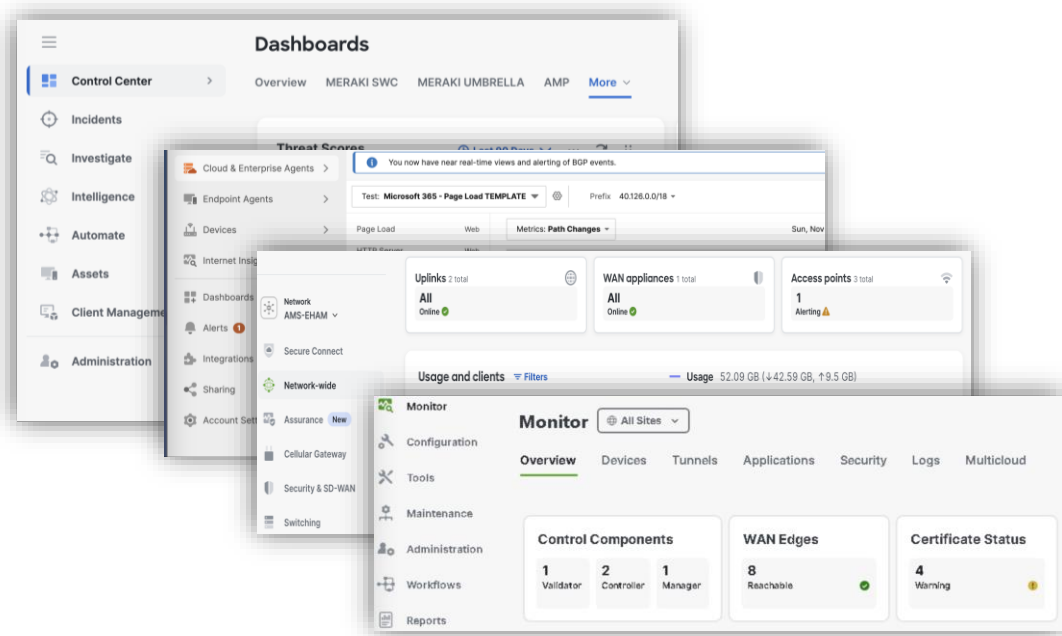
Multiple on-prem platforms

Fewer on-prem platforms

Single on-prem platform

Operational Translation

Admin experience



Developer experience



OpenAPI Spec

Unified Cisco Networking hardware



Working with Cisco, Simplified

Essentials



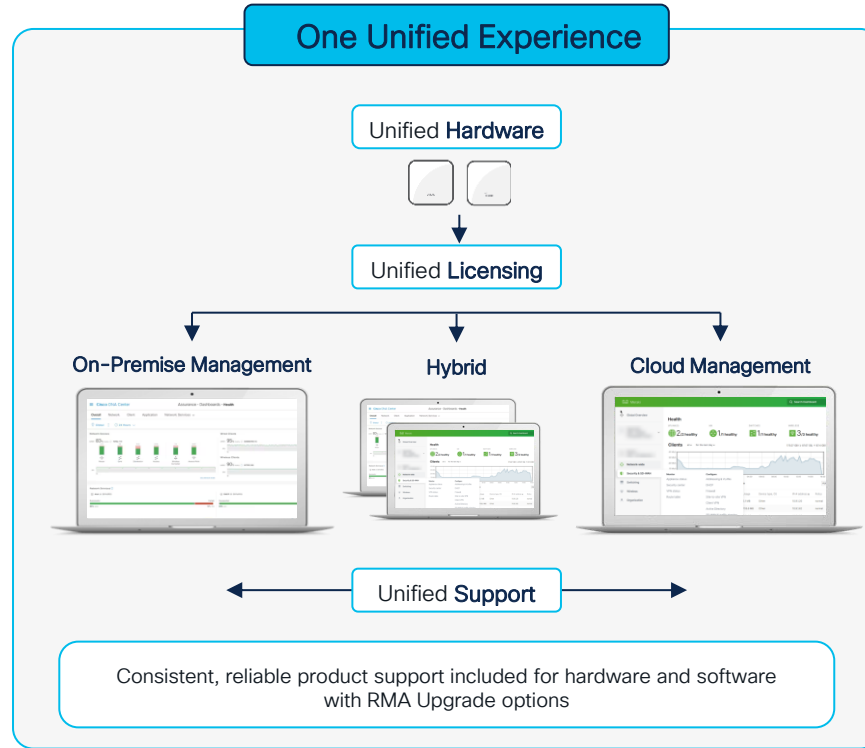
Advantage



Common nomenclature
Simpler tiering

Working with Cisco: A Unified Experience

New unified
licensing for
on-premises
and cloud

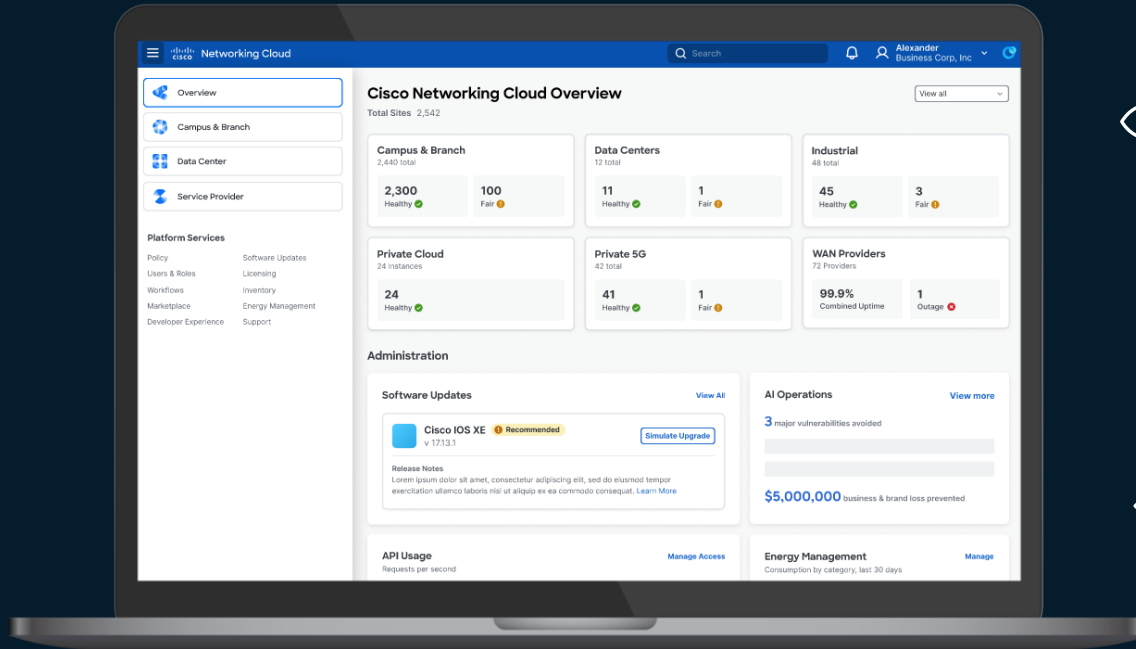
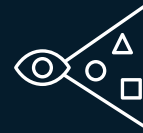


Day 1 Operations

Day 2 Operations

Cisco [Secure] Networking Cloud

An integrated platform experience for on-prem and cloud operating models



See

the experience with complete visibility



Secure

everything, everywhere



Connect

with proactive, pre-emptive, and automated operations

Design with Purpose



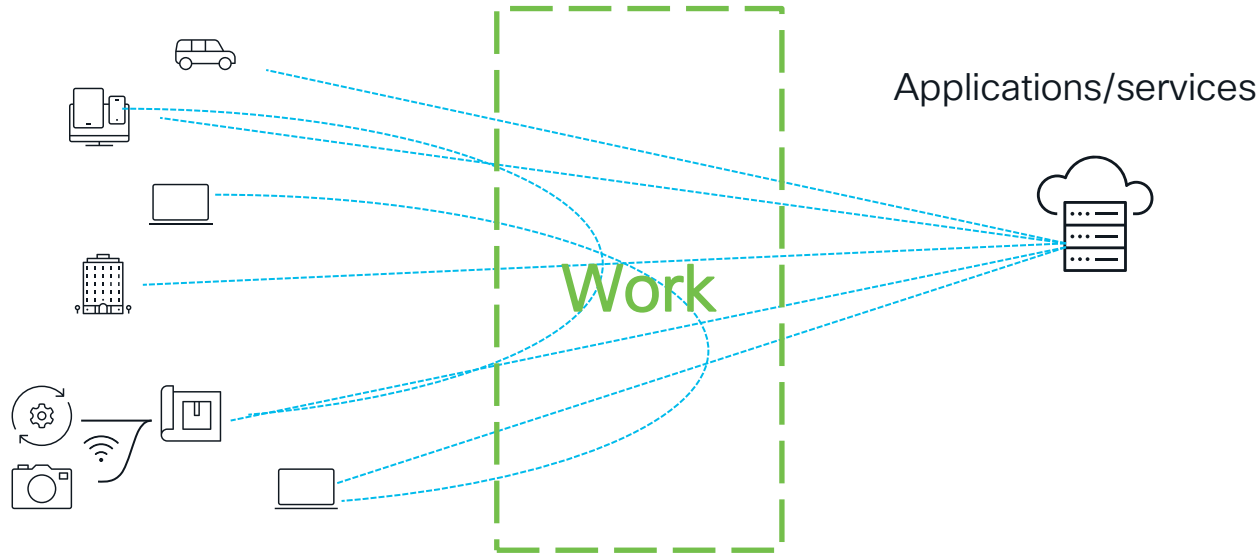
Why do we
connect things?

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The Experience of the Internet for Work

People, places,
and things

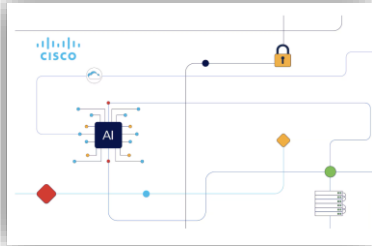


What is the
business's
objective?



Be the Hero

Public/Private Strategic Plan



SEC Filing 10-K

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

(Mark One)

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended July 27, 2024

or

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from ____ to ____
Commission file number 001-39940

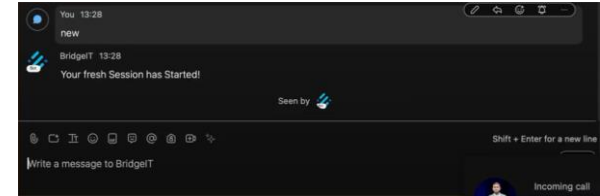

CISCO SYSTEMS, INC.
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of incorporation or organization)
170 West Tasman Drive
San Jose, California
(Address of principal executive offices)

77-009991
(IRS Employer Identification No.)
95134-1706
(Zip Code)

Registrant's telephone number, including area code: (408) 526-4000
Securities registered pursuant to Section 12(b) of the Act:
Title of each class: Common Stock, par value \$0.01 per share
Trading Symbol(s): CSCO
Name of each exchange on which registered: The Nasdaq Stock Market LLC
Securities registered pursuant to Section 12(g) of the Act: None

Company Vision & Mission



Ask an AI chatbot to help with research

What Do We Want to Build?

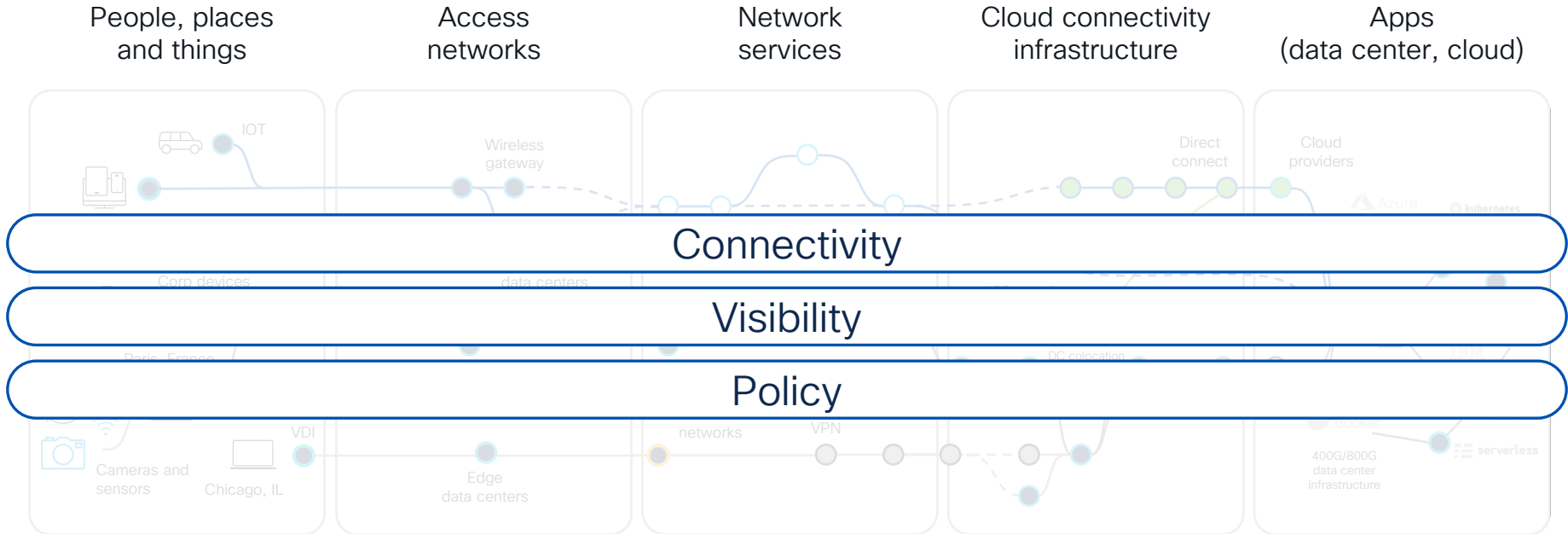


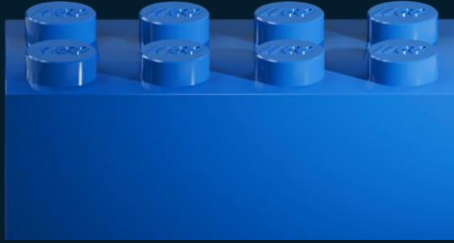
Infrastructure

Metrics

Best practices

Abstracting Complexity





The Blue Block (Connectivity)



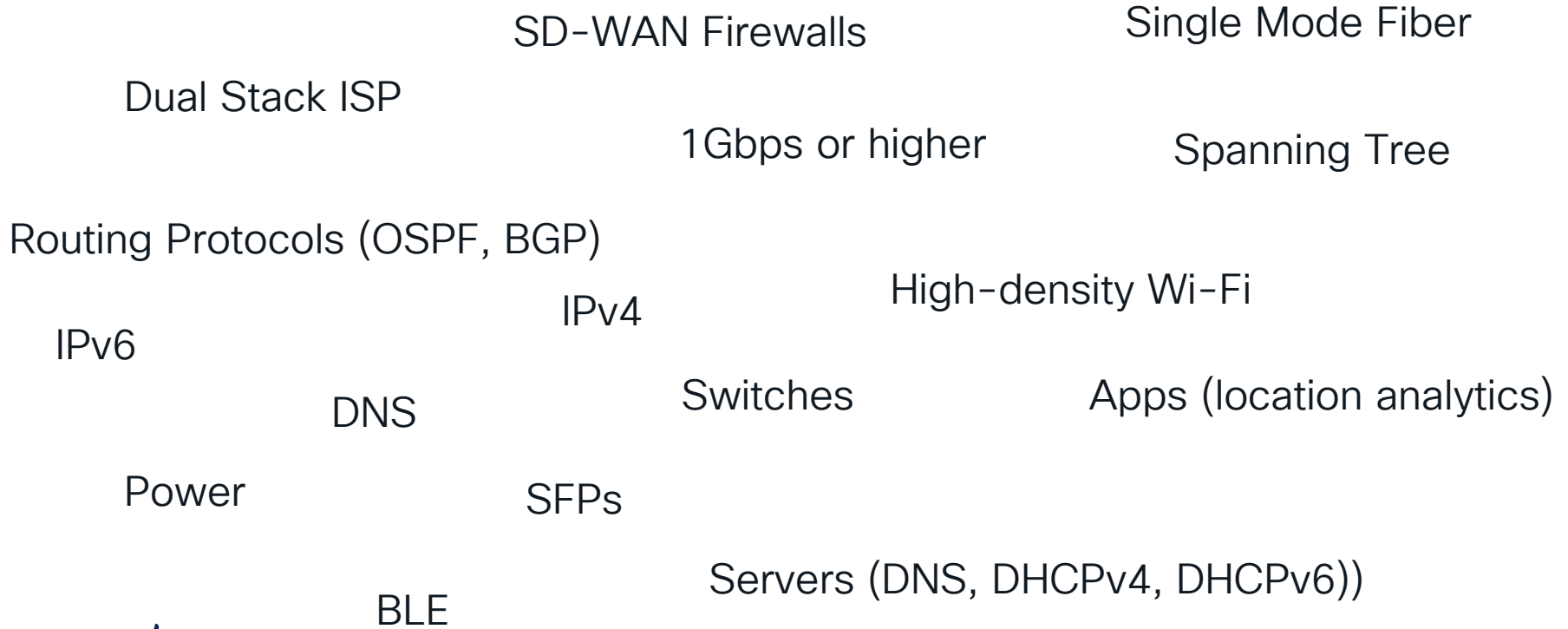
EXAMPLE SCENARIO
Industry: Airports

Reduce passenger check-in time from airport entry to aircraft gates.



<10
minutes

Focus on Connectivity Elements



WAN Form Factor Versatility with Cisco

Wired

Terrestrial Handoff

PfR over terrestrial networks (e.g., fiber, coax, two-pair) with and without tunneling.

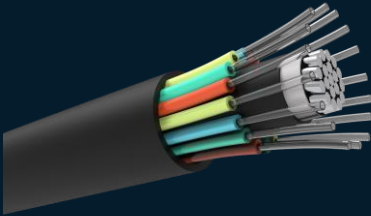


Image source: https://titanwnc.com/wp-content/uploads/2022/08/fiber_1.198.png

Wireless

Cellular and LEO

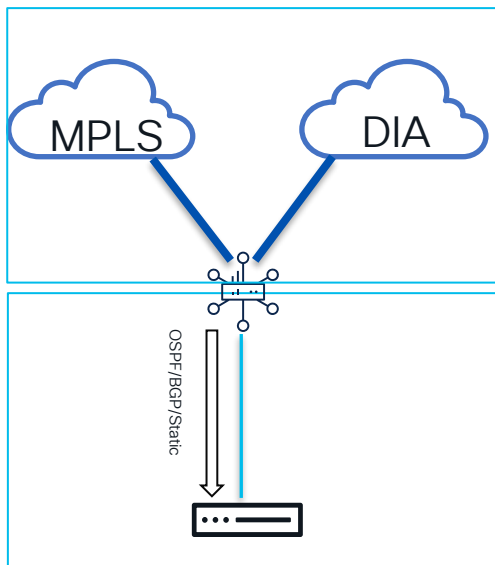
PfR over wireless networks with and without tunneling.



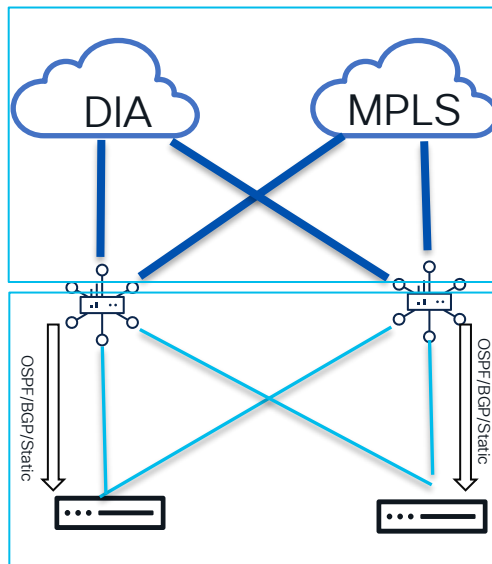
Image source: https://api.starlink.com/public-files/Starlink_Standard_500x500.png

Edge Branch Architectures (SD-WAN)

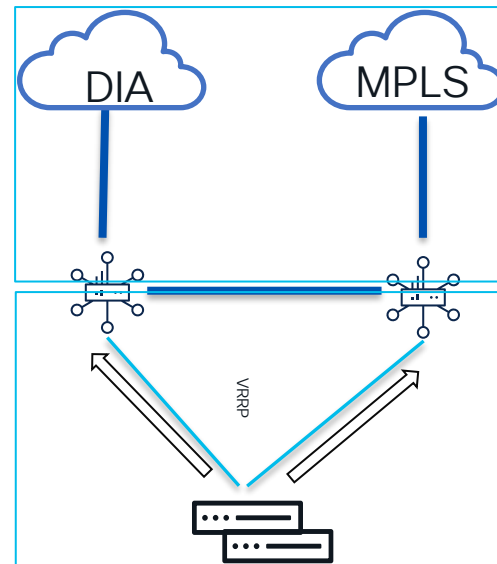
Single Edge, Multiple Uplinks



Dual Edge
(Active/Active or HA)



Dual Edge
(TLOC Extension)



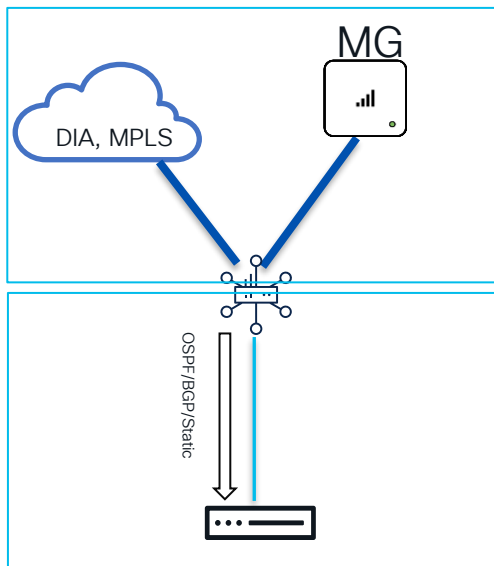
Catalyst or Meraki WAN Edge device



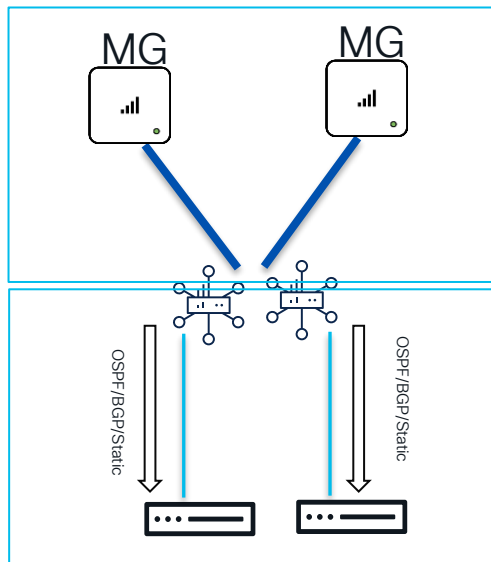
Catalyst or Meraki Switch

Edge Branch Architectures with FWA (SD-WAN)

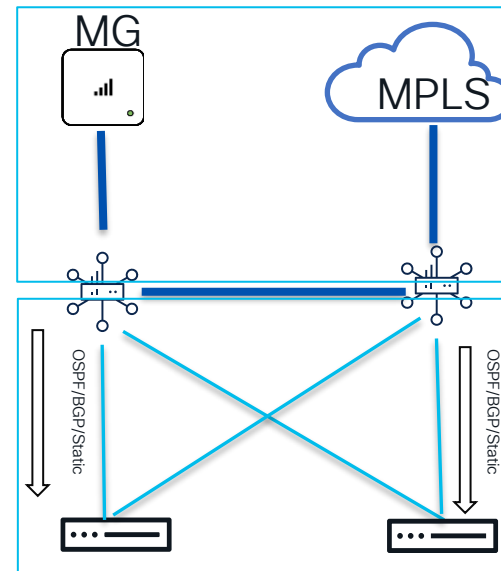
Single Cellular Uplink



Dual Cellular Uplink
(Different carriers)



Cellular + TLOC extension



Catalyst or Meraki WAN Edge device



Catalyst or Meraki Switch

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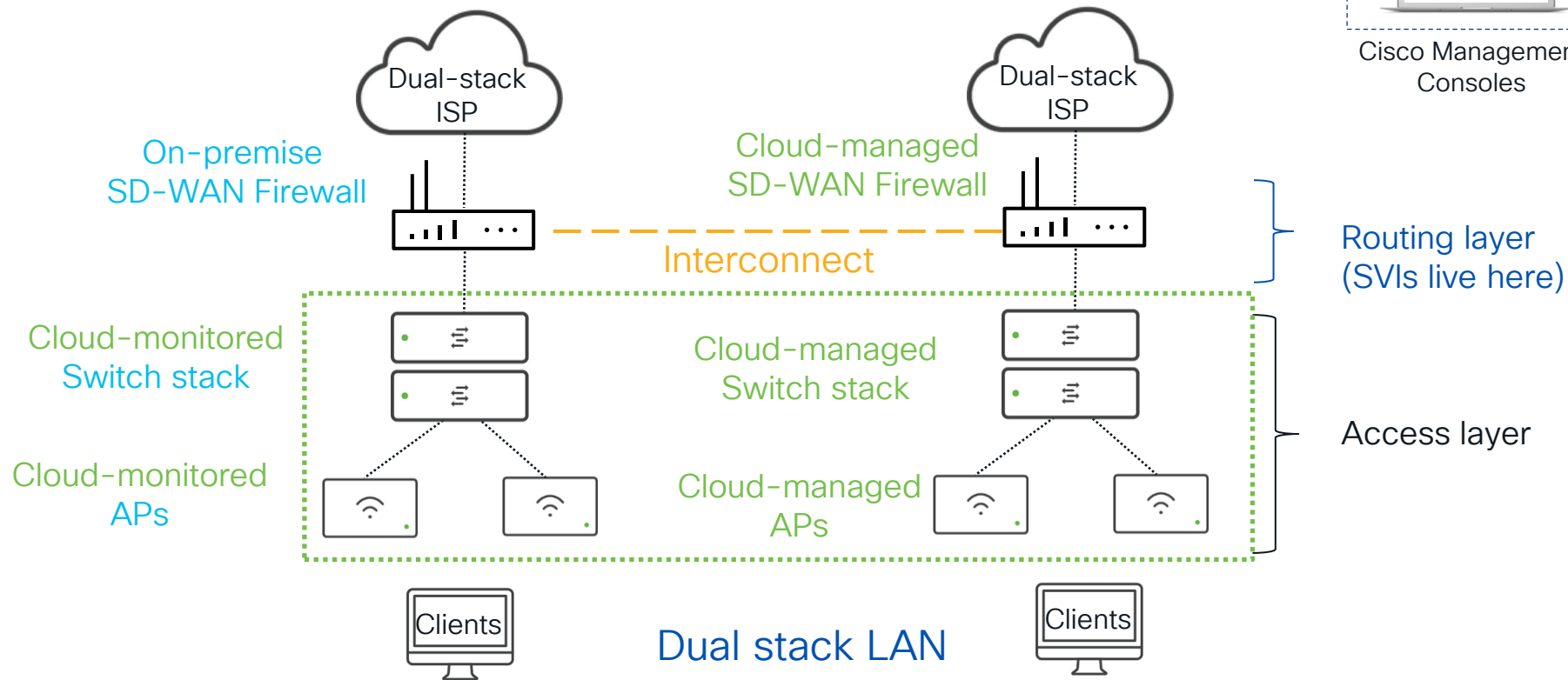
MG = Cellular Gateway

FWA = Fixed Wireless Access

S/M/L Branch Site – Dual Stack



Cisco Management
Consoles



Wired Architecture Choices



Catalyst 9k



No SDA

Retail & Branch
Offices (On-prem)

Software Defined
Access



LiSP

Campus network
(On-prem)

Software Defined
Access



BGP EVPN

Campus network
(Hybrid)

Converged Catalyst



STP-based

Campus network
(Cloud)

Meraki MS



STP-based

Retail & Branch
Offices (Cloud)



Catalyst
9000



Catalyst
9200/9300/9500



Meraki MS
Catalyst 9300-M

Wireless Architectures Choices



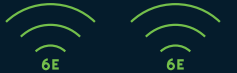
Distributed
On-prem Managed

Centralized
On-prem Managed

Centralized
Cloud Monitored

Centralized
Cloud Managed

Distributed
Cloud Managed



Retail & Brach
Offices (On-prem)

Campus network
(On-prem)

Campus network
(Hybrid)

Campus network
(Cloud)

Retail & Brach
Offices (Cloud)



Catalyst
AP



Catalyst
28/38/48/91/CW9100



Meraki MR
Catalyst 9162/64/66



Catalyst
WLC



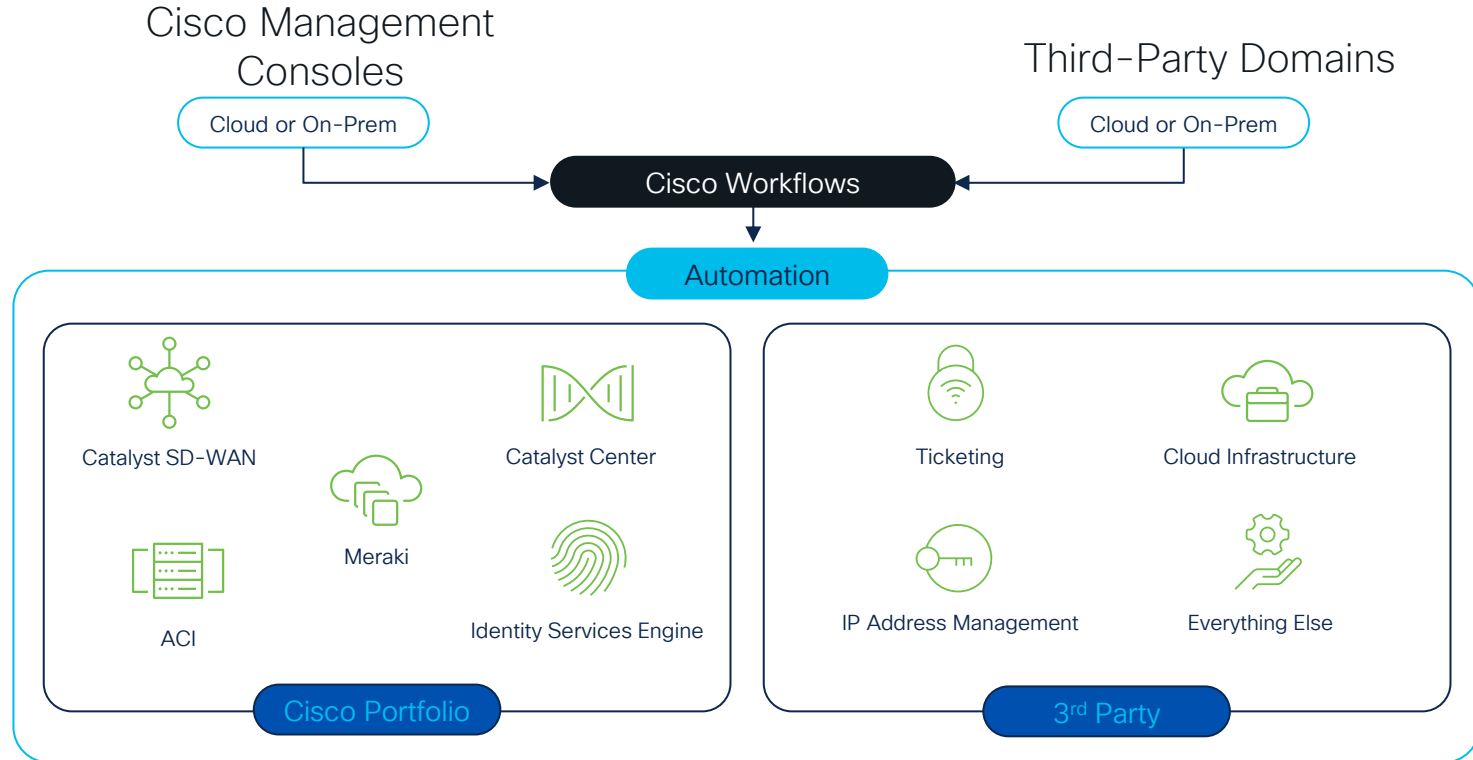
Catalyst
9800



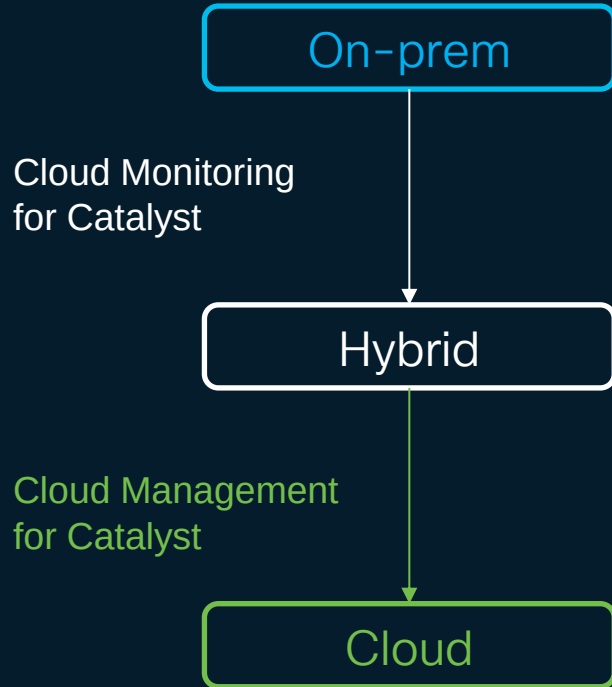
MX Concentrator (Auto VPN)
Catalyst Core/ASR (L2TPv3, EoGRE)

CISCO Live!

Central Automation for your Entire Infrastructure



Infrastructure Assembly



Assemble the blocks as needed to achieve the mission with automation



The Yellow Block (Visibility)



EXAMPLE SCENARIO
Industry: Mining Operations

Improve efficiency and
sustainability goals



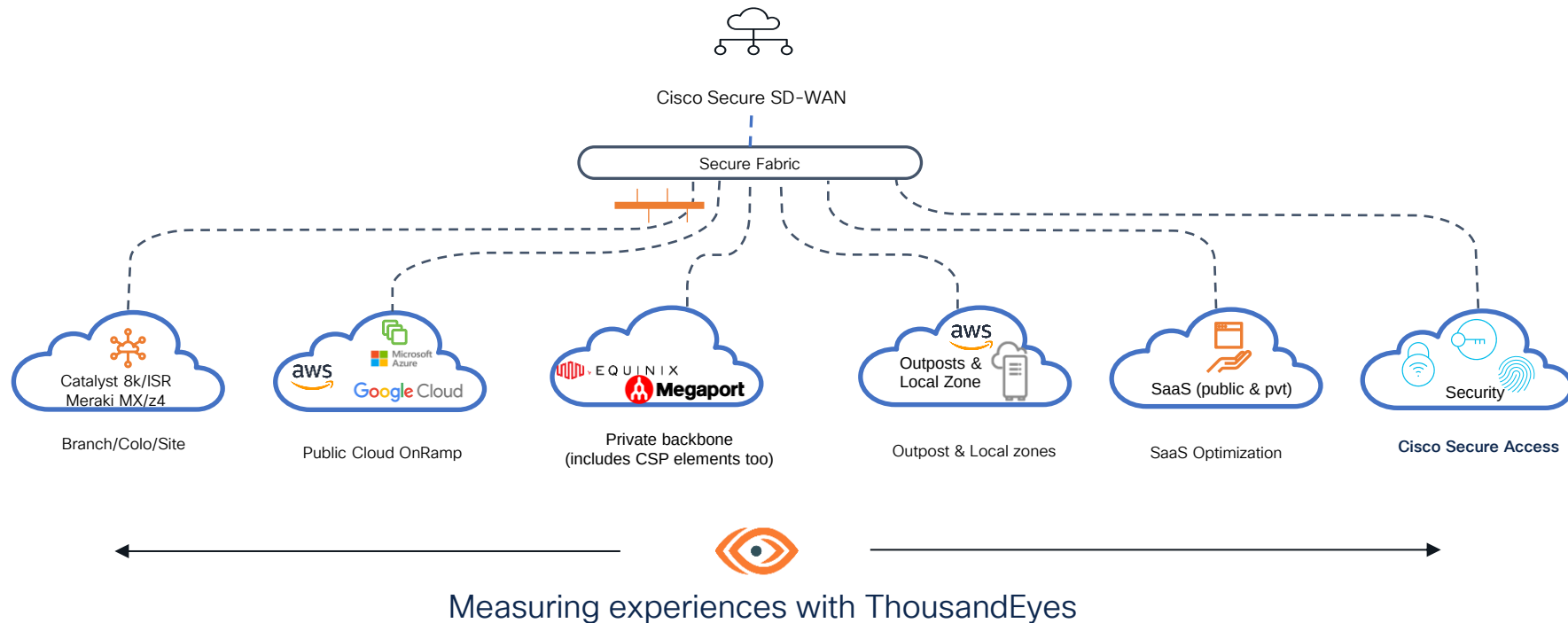
90%

energy reduction

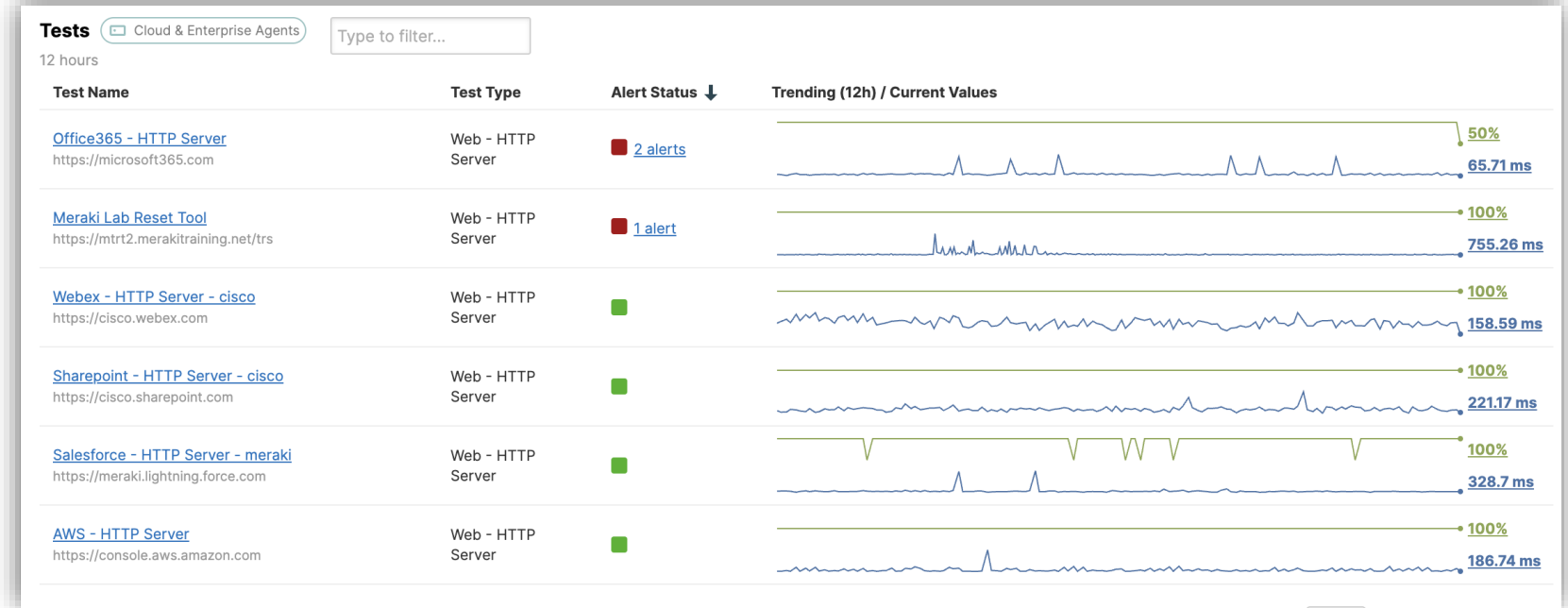
What do Australia and Iceland have in common to solve the problem?



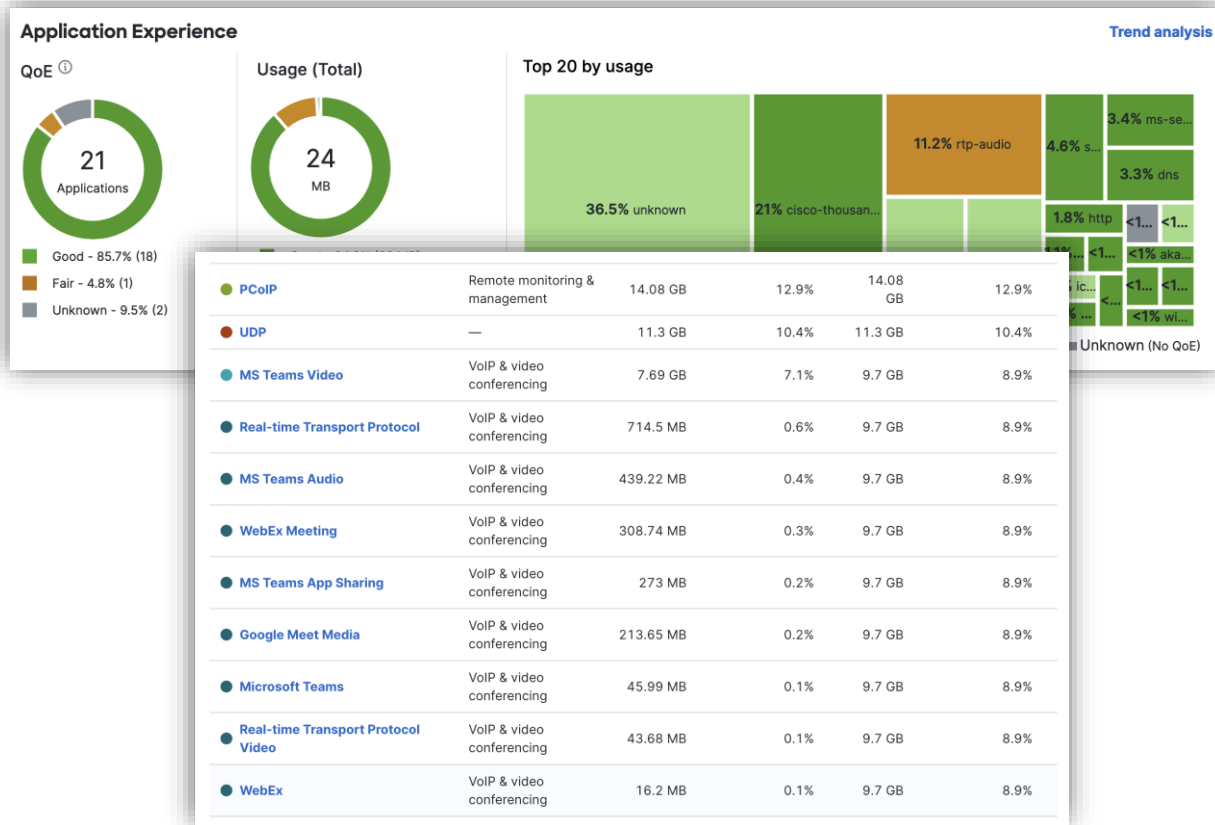
Measuring the Data Plane Architecture (High Level)



ThousandEyes Measurements

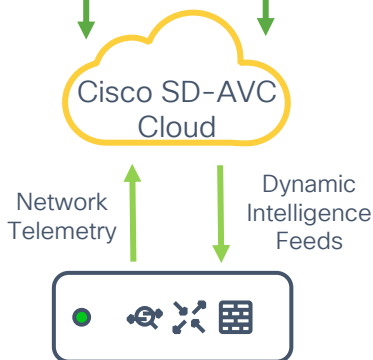


NBAR



Network-based
Application
Recognition

Cisco Cloud SD-AVC



IP Feeds

Domain Feeds

Cloud Feeds

Dynamic Feeds

Custom Regex Feeds

Up to 90%+ first packet classification with additional telemetry sources!

Firmware Independent Updates

5000+ Signatures

- Amazon Chime
- Atlassian
- Box
- Cisco Meraki
- Code42
- Crashplan
- Dropbox
- Microsoft Intune
- MS Office 365
- RingCentral
- Salesforce
- SAP
- ServiceNow
- SugarCRM
- Zoho
- Zoom
- Zscaler
- CASI Umbrella Top 1 Million
- AWS
- Azure
- ...

Host Discovery



Status	Description	Usage	Client type, OS	IPv6 address	
✓ Wireless	Android	2.45 GB	Galaxy S21, Android 13	2601:2c3:8880:cb73:f008:75f1:dc2	
✓ Wireless	iPad-2	48 MB	Apple iPad	2001:1c08:800:fc01:d93d:efd3:a02	
✓ Wireless	a98d7d99-93a2-47d2-9a88-b9a877669171	3.85 GB	Apple iPhone 14, iOS17.6.1	2001:1c08:800:fc04:7180:c1bd:cec	
✓ Wireless	639315ad-01ac-4af6-8e76-89b77bbd329f	5.09 GB	Apple iPhone 14, iOS17.6.1	2601:2c3:8880:cb73:8514:b643:7c2	
✓ Wireless	WFH	1.61 GB	Apple TV 4K 3, iOS17.6.1	2001:1c08:800:fc01:887c:2e0f:942	
⊖ Wireless	JEHANDAL-M-J44J	1.7 GB	MacBook Pro, macOS14.6.1	2001:1c08:800:fc05:9888:c932:2e0	
⊖ Wireless	Handal-Mini-4	64.22 MB	Apple	2001:1c08:800:fc05:64dc:bf9d:d0e	

Identifying what is on your network is just as important

Netflow – Making the Old Awesome



Catalyst or Meraki WAN Edge device



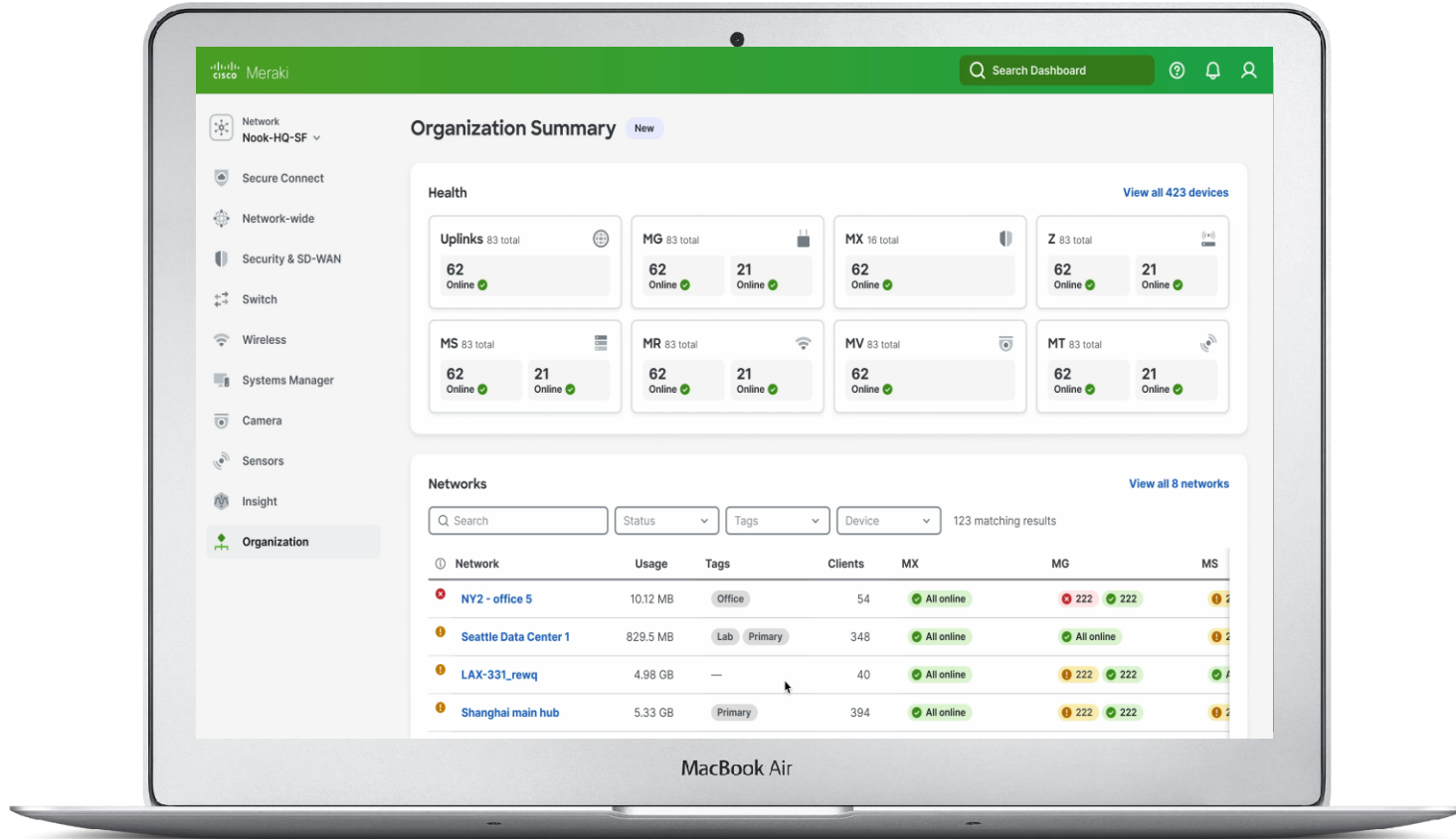
Catalyst or Meraki Switch

NetFlow collector IP	<input type="text" value="10.11.11.21"/>
NetFlow collector port	<input type="text" value="9995"/>
Encrypted Traffic Analytics ⓘ	☒
ETA collector port	<input type="text" value="1234"/>

On-premise Collector

“Cloud” Collector

Example: “Cloud” Collector



The Splunk Effect

Data Fidelity



```
Nov 1 05:28:51 10.11.11.1 1 1730456931.362125884  
KIAH_BDR_MX75 firewall src=2601:1111:8888:cb73::db8  
dst=2001:1c08:800:fc05:983:ce39:3f2:f107  
mac=10:DD:BB:CC:FC:20 protocol=tcp sport=8000  
dport=52815 pattern: allow all
```

Skills Evolution



Network Engineering -> Data Management

Platform Driving Data Sharing Example



Catalyst SD-WAN



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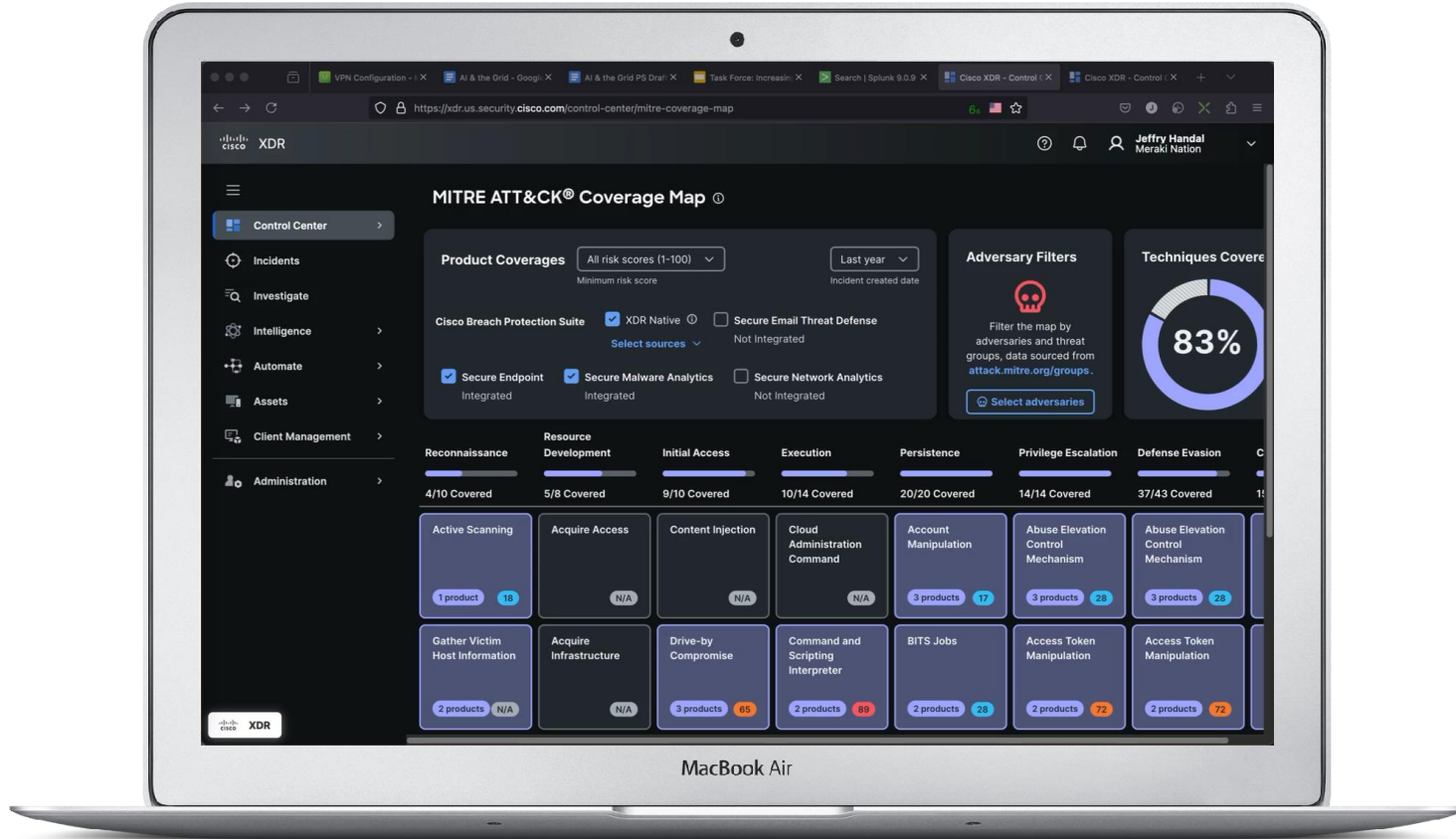


**Cisco Webex
Control Hub
Overview**



Cisco
Secure Connect

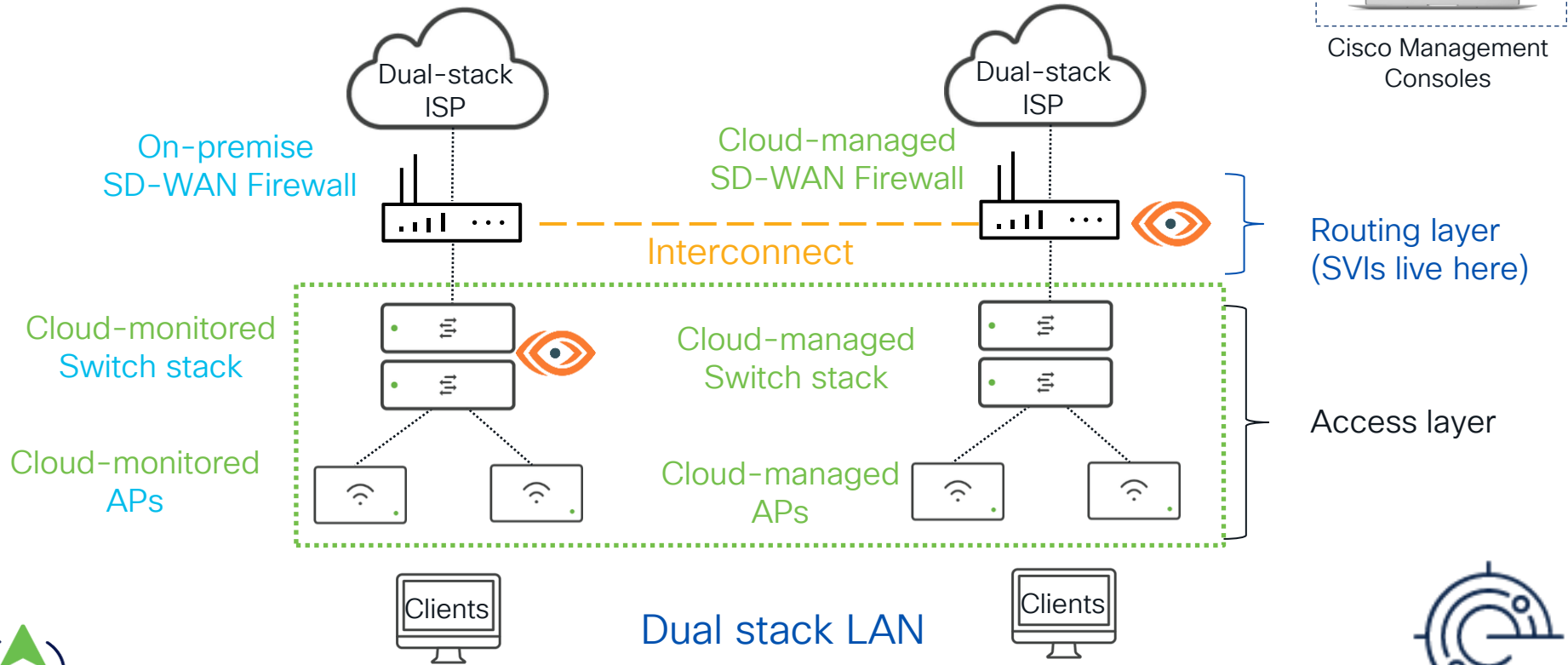
Example: Cross Domain Data Sharing



Data Domain



Cisco Management
Consoles



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XDR

Tell The Data Story



"Focus on what provides value to others, not what impresses others."
– Simon Sinek



splunk>
a **CISCO** company



Building the foundation to enter the AI Era



The Red Block (Policy)



What comes to
mind when you
hear the word
policy?



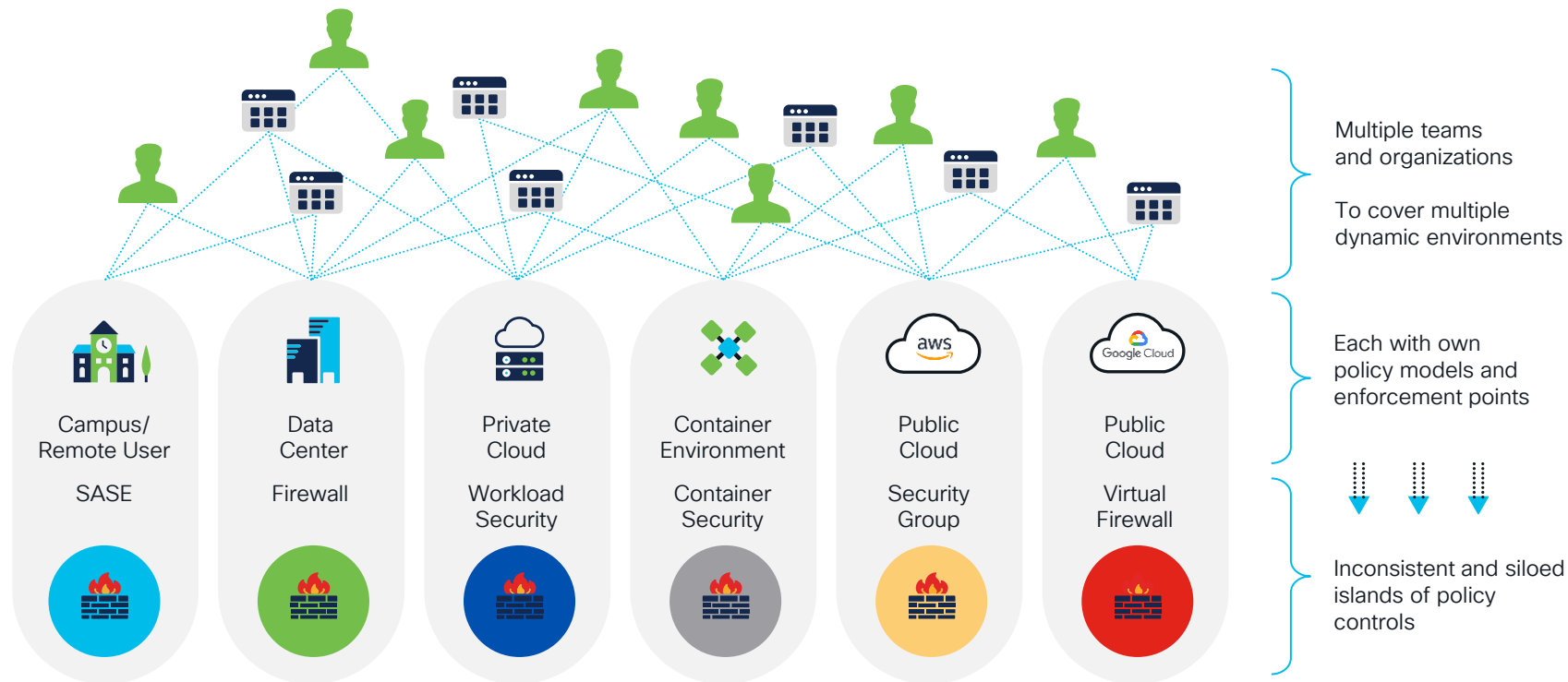
Security



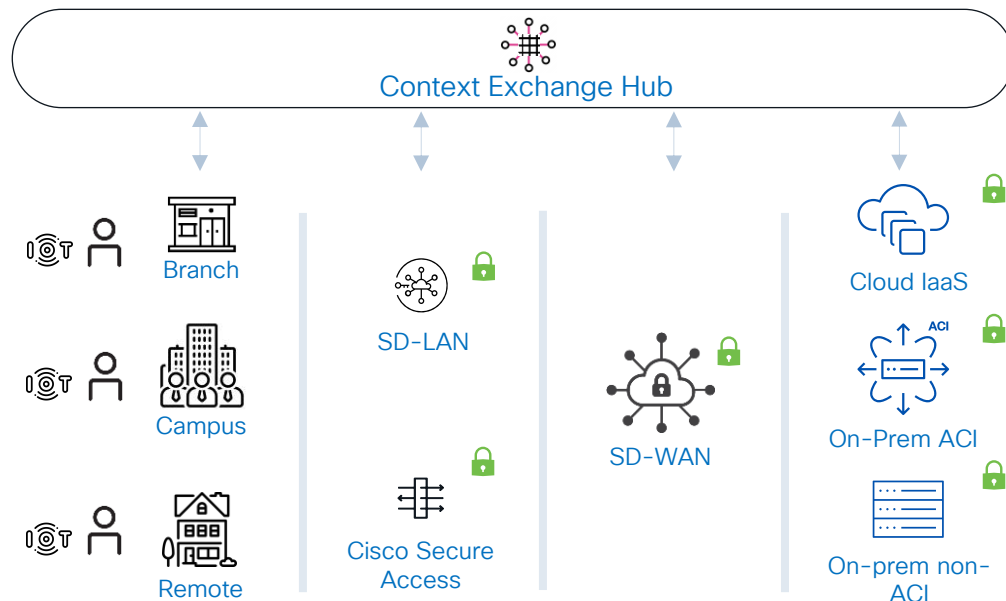
App Control

Security Control

Policy Complexity across Hybrid Environments



What Common Policy Enables

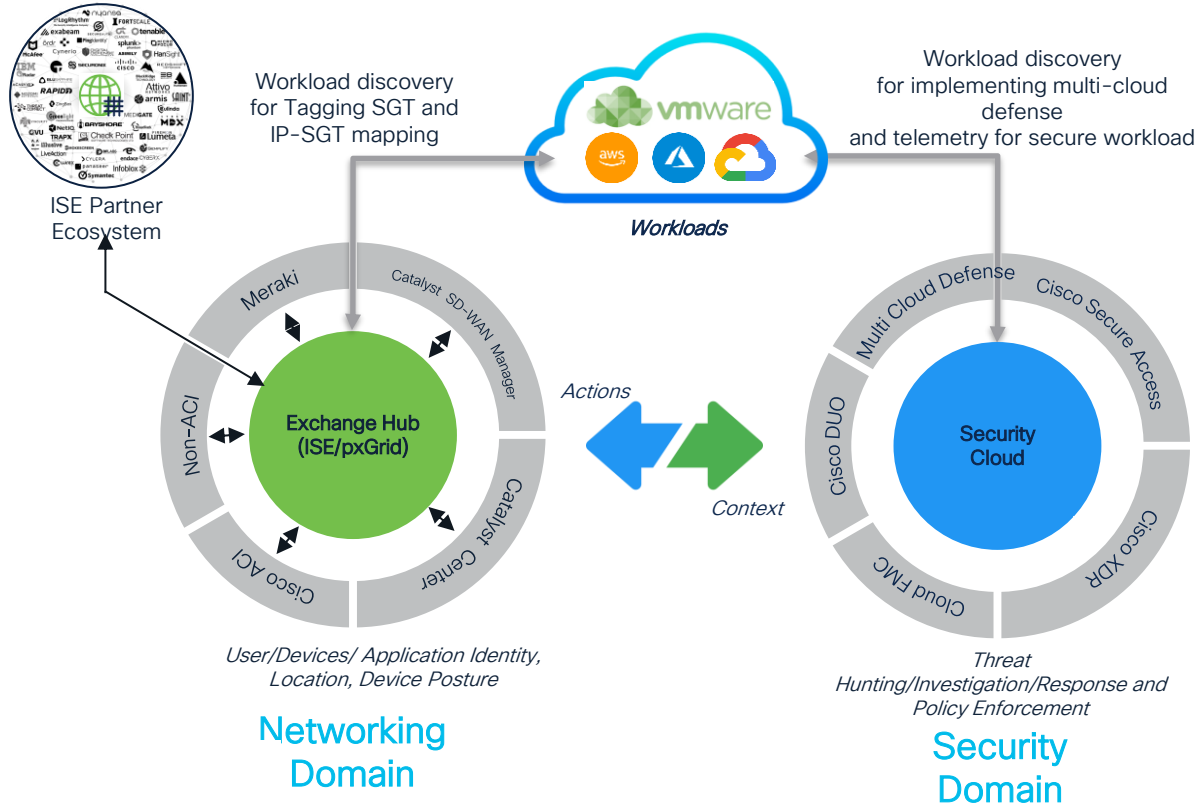


- ✓ Build context in its local domain and store it as standard scalable group tags (SGT)
- ✓ Share context everywhere, across networking and security domains
- ✓ Enforce consistent SGT based policies, enable simple and unified policy experience

✓ Context-aware policies for on-prem app and cloud workloads for multiple enforcement points

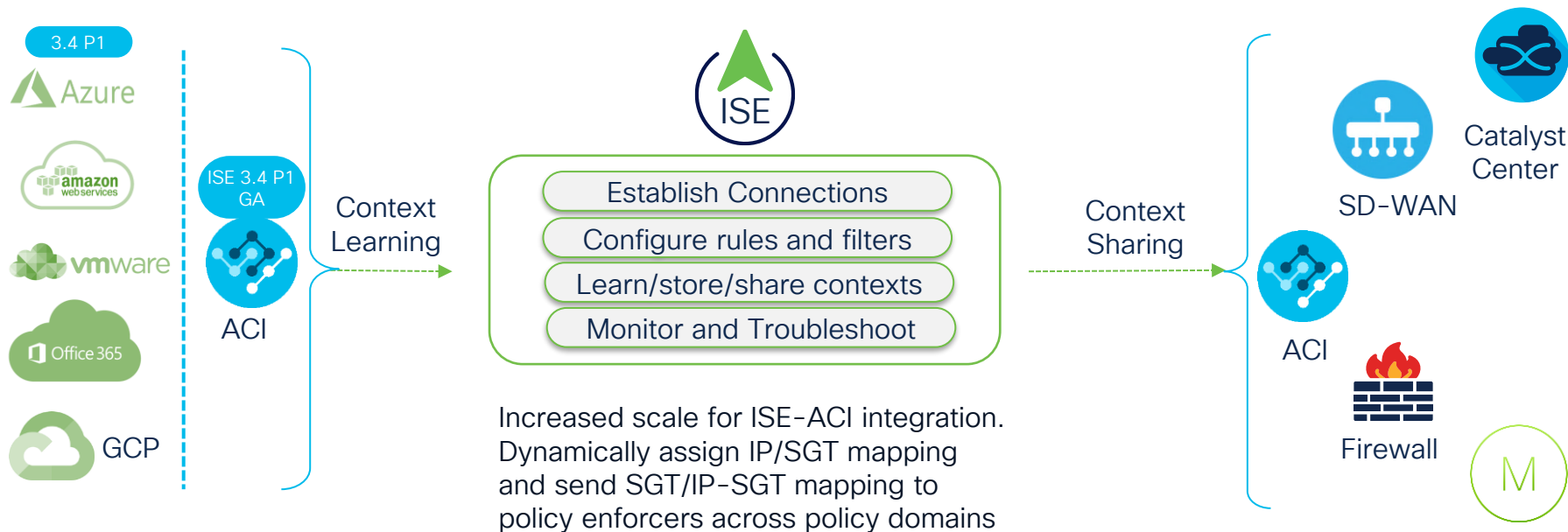
Common Policy for Cisco Networking Cloud

Normalizing and sharing context across domains

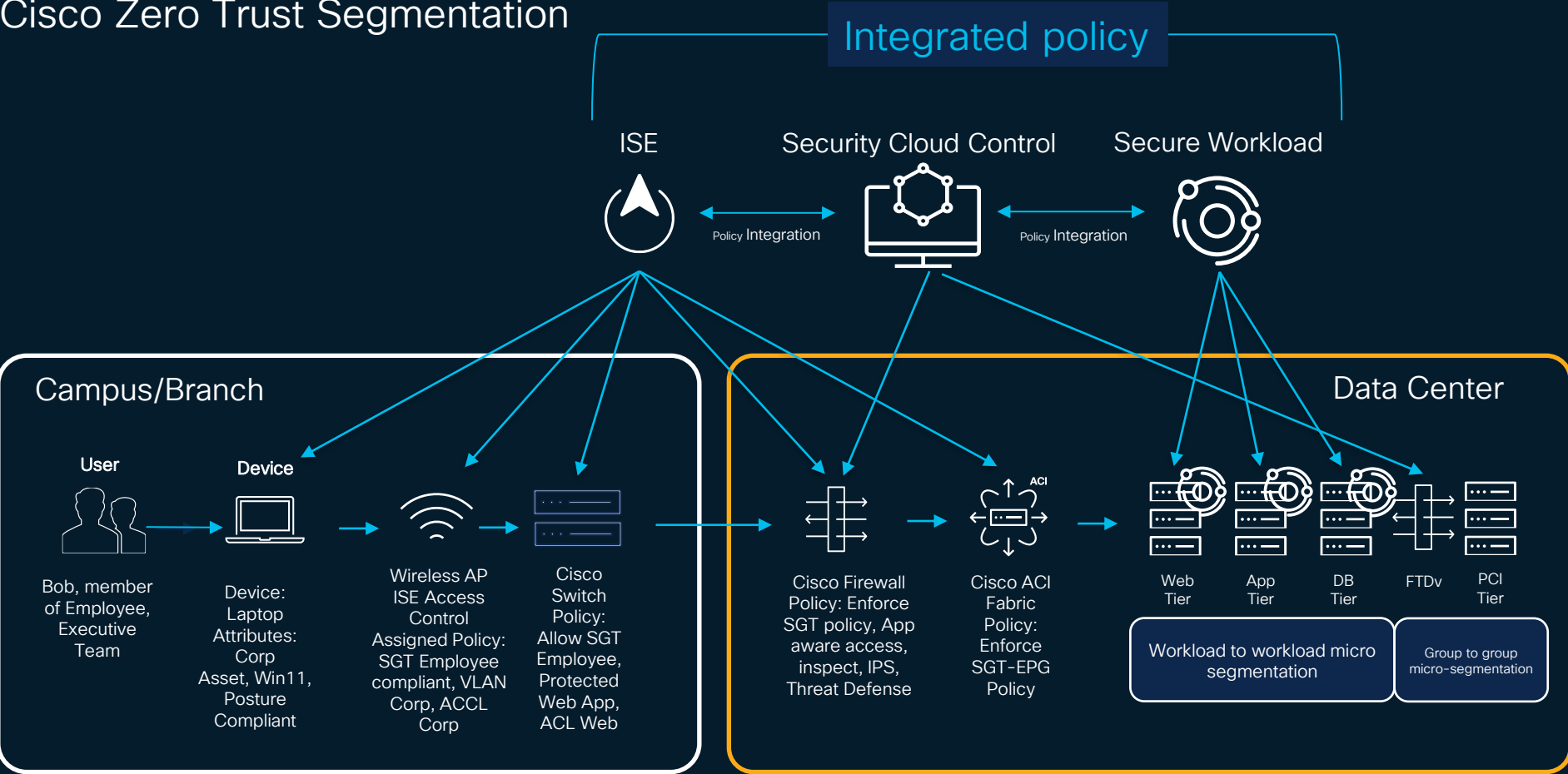


Common Policy Capabilities

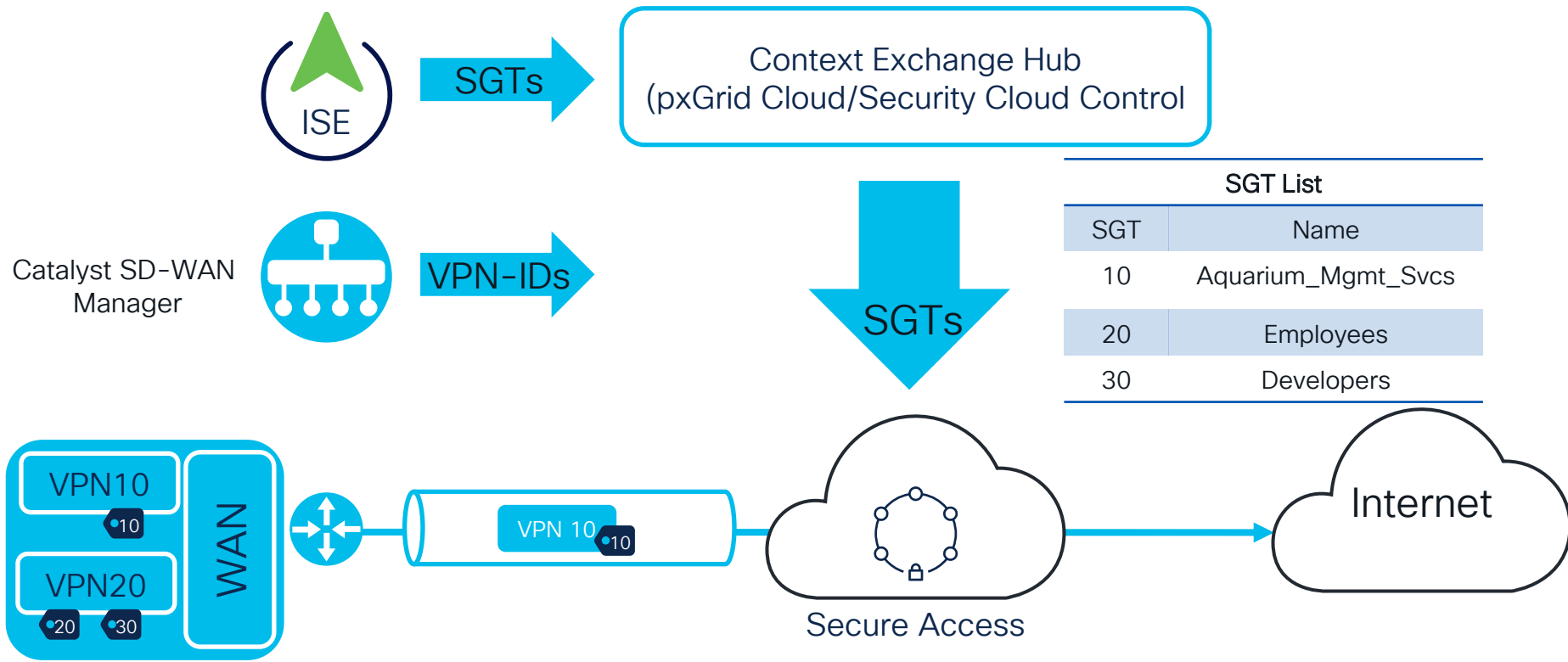
Enabling consistent Zero Trust policies in a multidomain environment



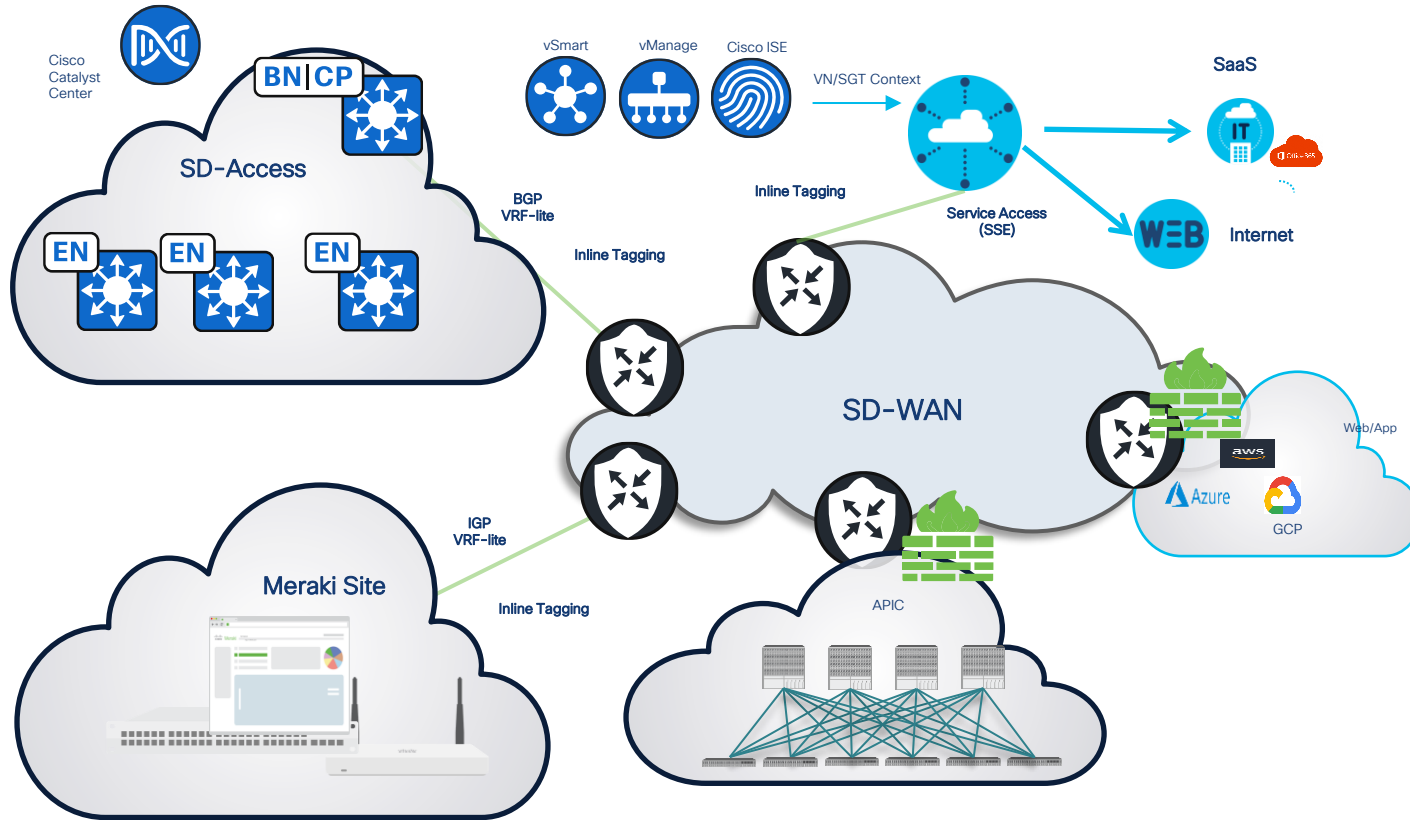
Cisco Zero Trust Segmentation



ISE / SD-WAN / Secure Access Integration



End-to-End Segmentation



- Branch User is Authenticated/Authorized, and the application traffic gets tagged with SGT
- SD-WAN carries the tagged traffic to Secure Access
- Secure Access enforces context-based policies, leveraging SGTs, to control application access

App Control



Steering the Network

WAN edge

Cloud Onramps

Performance-based routing (PfR)



L7 “firewalling”
Quality of Service (QoS)
Bandwidth management

Access layer

Building and Measuring Policy - Examples

SD-WAN policies

Internet traffic

Custom Expressions

Uplink Selection Policy	Traffic Filters	Actions
Prefer WAN 2. Fail over if poor performance for STARLINK.	UDP from Any to Any	
Prefer WAN 1. Fail over if uplink down.	10.11.0.192/32 to Any	

[Add a preference](#)

Major Applications

Uplink Selection Policy	Traffic Filters	Actions
Prefer WAN 1. Fail over if poor performance for STARLINK.	Any to Office 365 Suite	
Prefer WAN 1. Fail over if poor performance for STARLINK.	Any to Skype & Teams	

[Add a preference](#)

VPN traffic

Uplink selection policy

Uplink selection policy	Traffic filters	Actions
Prefer WAN 2. Fail over if poor performance for "MV OVER AUTOVPN". (Any to 10.33.0.0/24)		

[Add a preference](#)

Custom performance classes

Name	Maximum latency (ms)	Maximum jitter (ms)	Maximum loss (%)
STARLINK	60	(none)	3
MV OVER AUTOVPN	175	(none)	10

[Create a new custom performance class...](#)

Meraki MX: tunnel-less/tunneled PfR policies

Cloud OnRamp for SaaS Telemetry settings

Application Snapshots ⁴ Refresh

Search

Salesforce

Sites	Devices 1 Total
1	0 0 1
Active	Poor Fair Good

Intuit

Sites	Devices 1 Total
1	1 0 0
Active	Poor Fair Good

Office 365

Sites	Devices 2 Total
2	0 0 2
Active	Poor Fair Good

Box

Sites	Devices 1 Total
1	0 0 1
Active	Poor Fair Good

Catalyst SD-WAN Manager: Connecting the fabric to SaaS

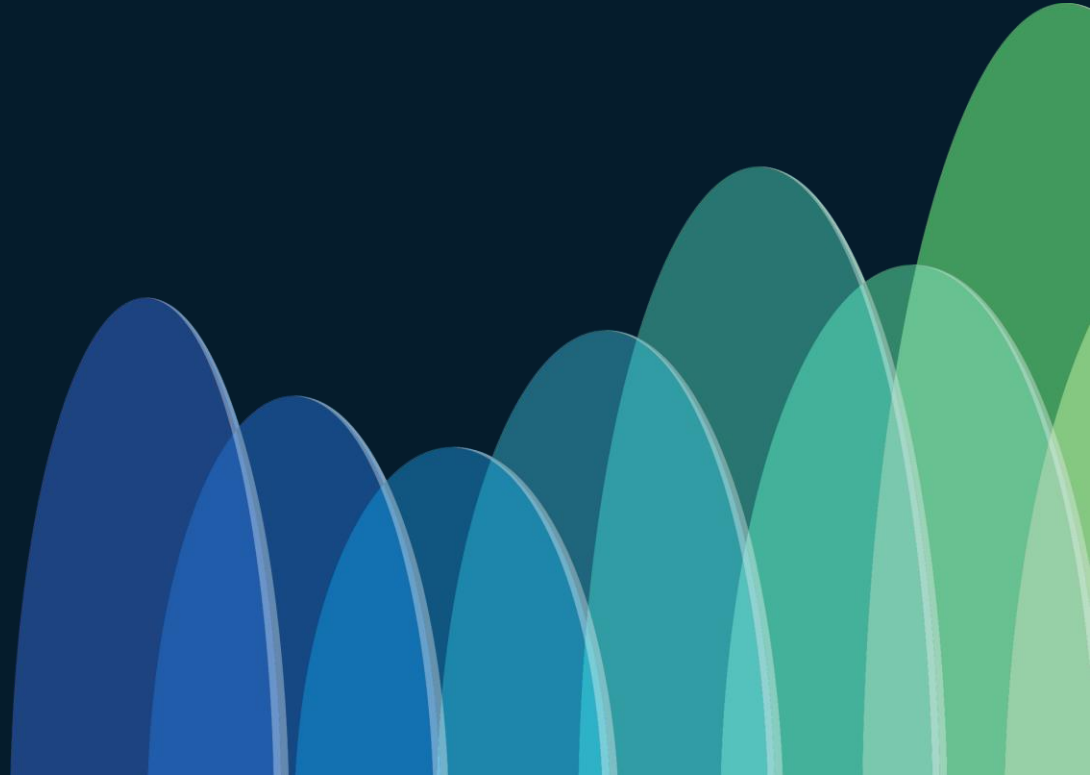
Policy



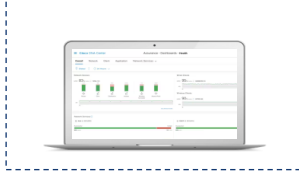
Create guidelines and standards to establish consistency, facilitate audits, and increase productivity (for admins and users).

Policies connect infrastructure to company strategy

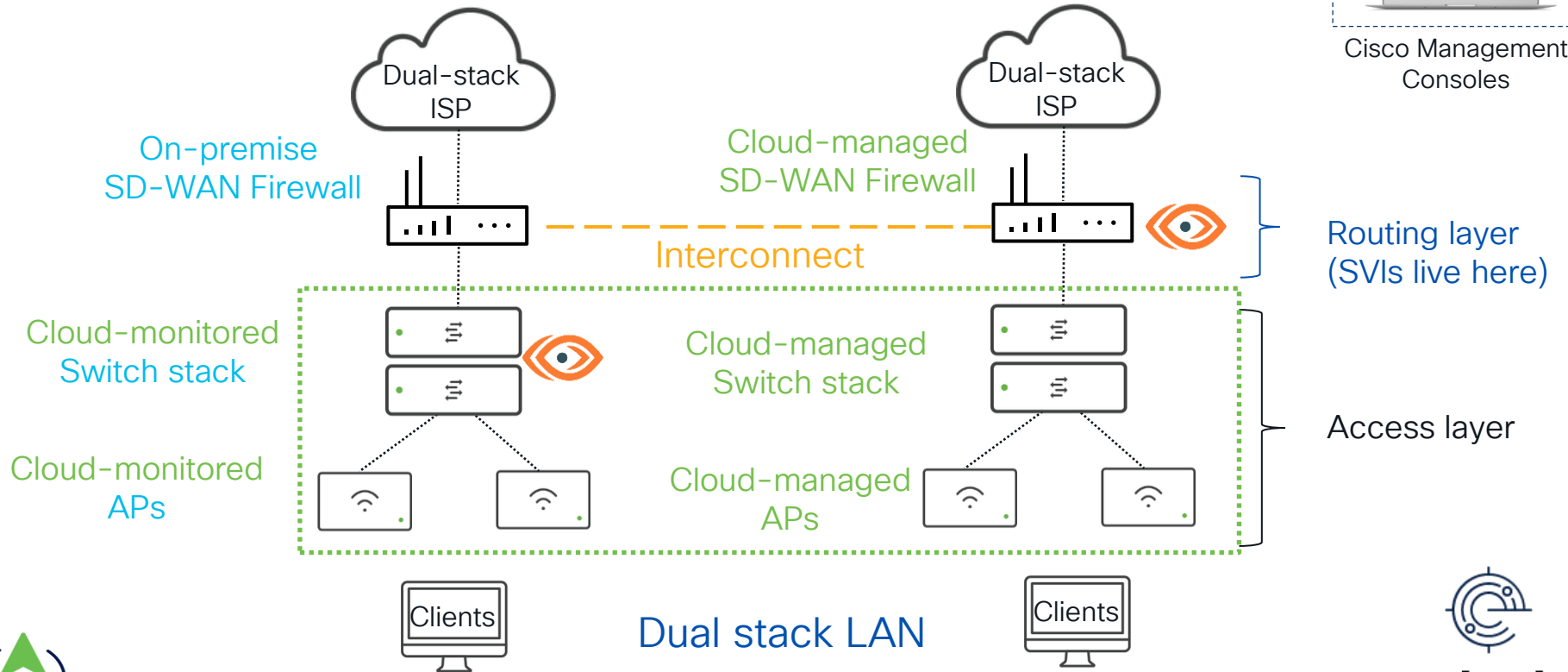
Master Builder



Remember This?



Cisco Management
Consoles



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a **CISCO** company

Automation: Opening the Door for Powerful Results

68%

Reduction in total
labor time

85%

Reduction in manual
errors

71%

Reduction in Mean
Time to Repair

88%

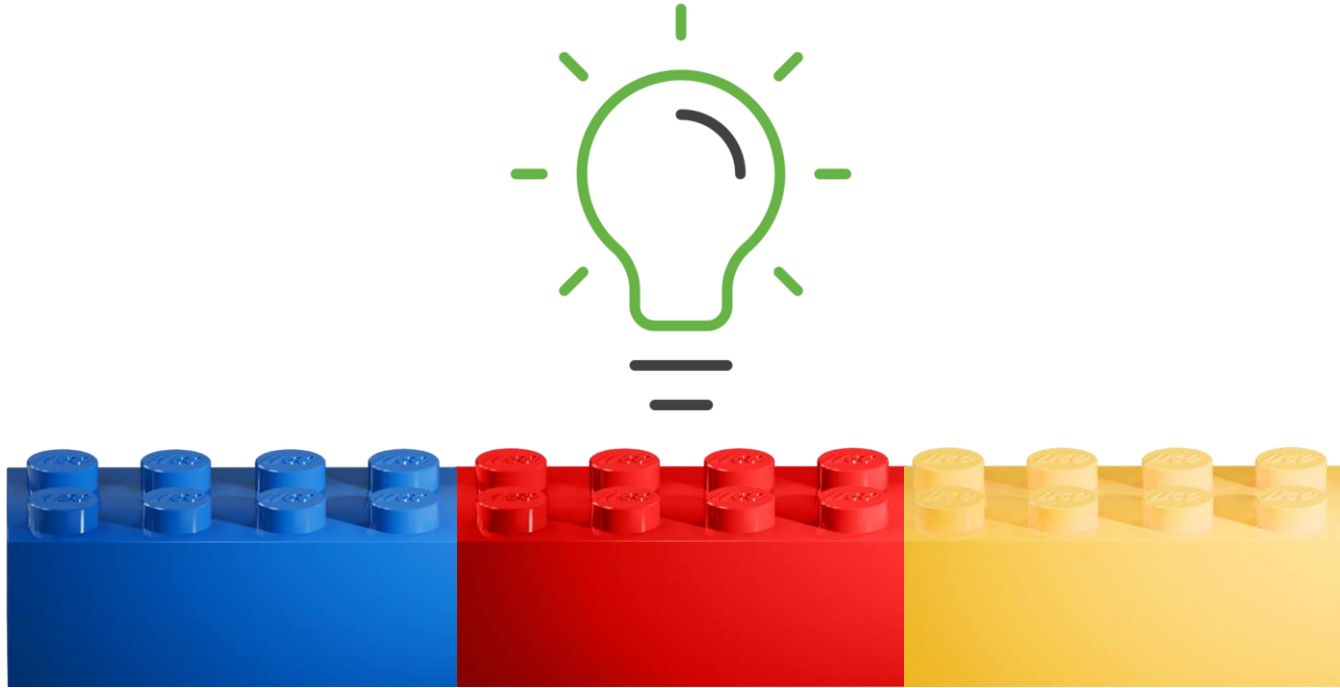
Reduction in Time to
Value

The value of time is the key to {technical | business} gains.

Becoming a Master Builder



- Understand the business
- Generate the data
- Build the foundation



Imagine how technology can be
an enabler for your business

Complete Your Session Evaluations



Complete a minimum of 4 session surveys and the Overall Event Survey to claim a **Cisco Live T-Shirt**.



Complete your surveys in the **Cisco Live mobile app**.



Continue your education

- Visit the Cisco Stand for related demos
- Book your one-on-one Meet the Expert meeting
- Attend the interactive education with DevNet, Capture the Flag, and Walk-in Labs
- Visit the On-Demand Library for more sessions at www.CiscoLive.com/on-demand

Contact me at: **Insert preferred comms method**



Thank you

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