



You make **possible**



# Towards operating a multi-domain network

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BRKOPS-2859

**CISCO** *Live!*

Barcelona | January 27-31, 2020



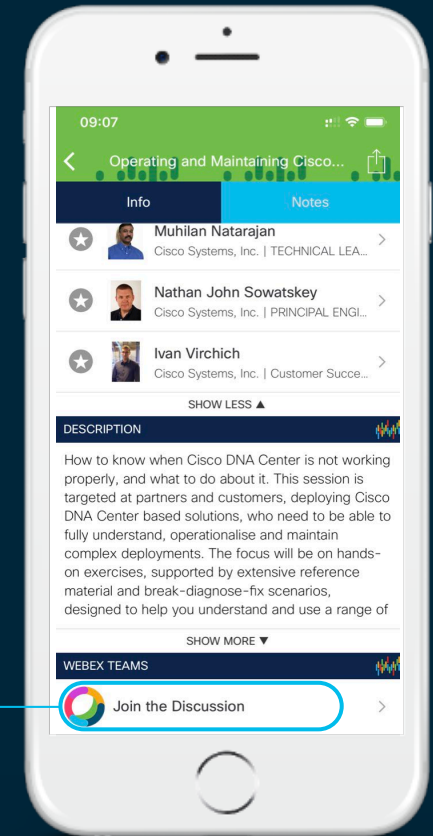
# Cisco Webex Teams

## Questions?

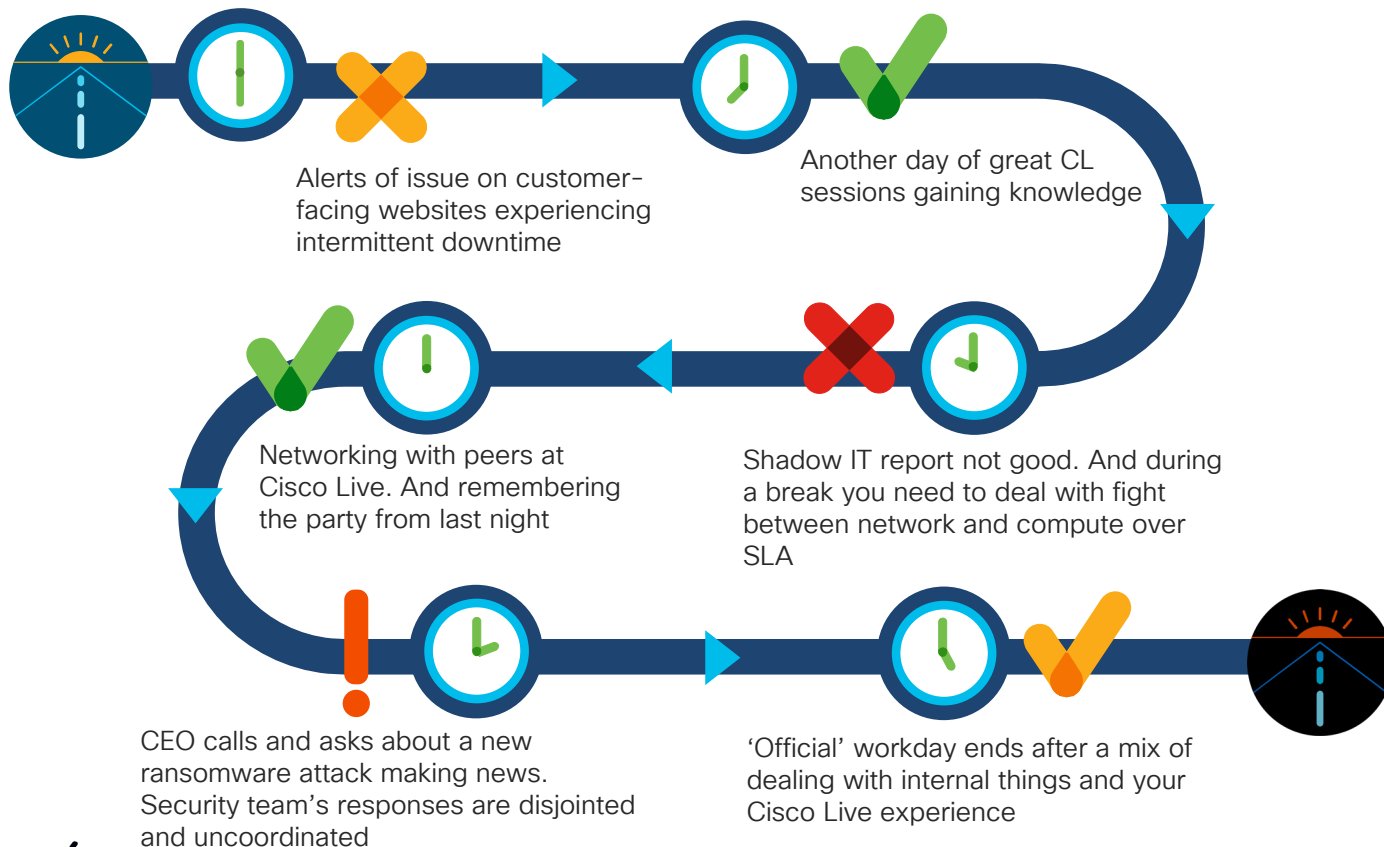
Use Cisco Webex Teams to chat with the speaker after the session

## How

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



# Is This Your Day?



# Expanding Role of the IT department

## Current Responsibilities

Equipping an agile and mobile workforce

Tackling risk and compliance

Bridging the talent gap



## New Expectations

Leading digital transformation

Optimizing for innovation

Supporting exceptional customer experience

Cisco is building a Multi Domain Architecture that securely connects any user on any device, on any network, to any application



A photograph of the Golden Gate Bridge in San Francisco, viewed from a low angle looking down the length of the bridge towards the city. The bridge's orange-red towers and suspension cables are prominent against a clear blue sky. The water below is a deep blue, and the city of San Francisco is visible in the distance, partially obscured by a light haze.

*“Between every user and application, there is a bridge”*



Introducing the  
Multi Domain Architecture

Operations: Governance

Operations: Architecture

AGENDA



*"Between every user and application, there is a bridge"*

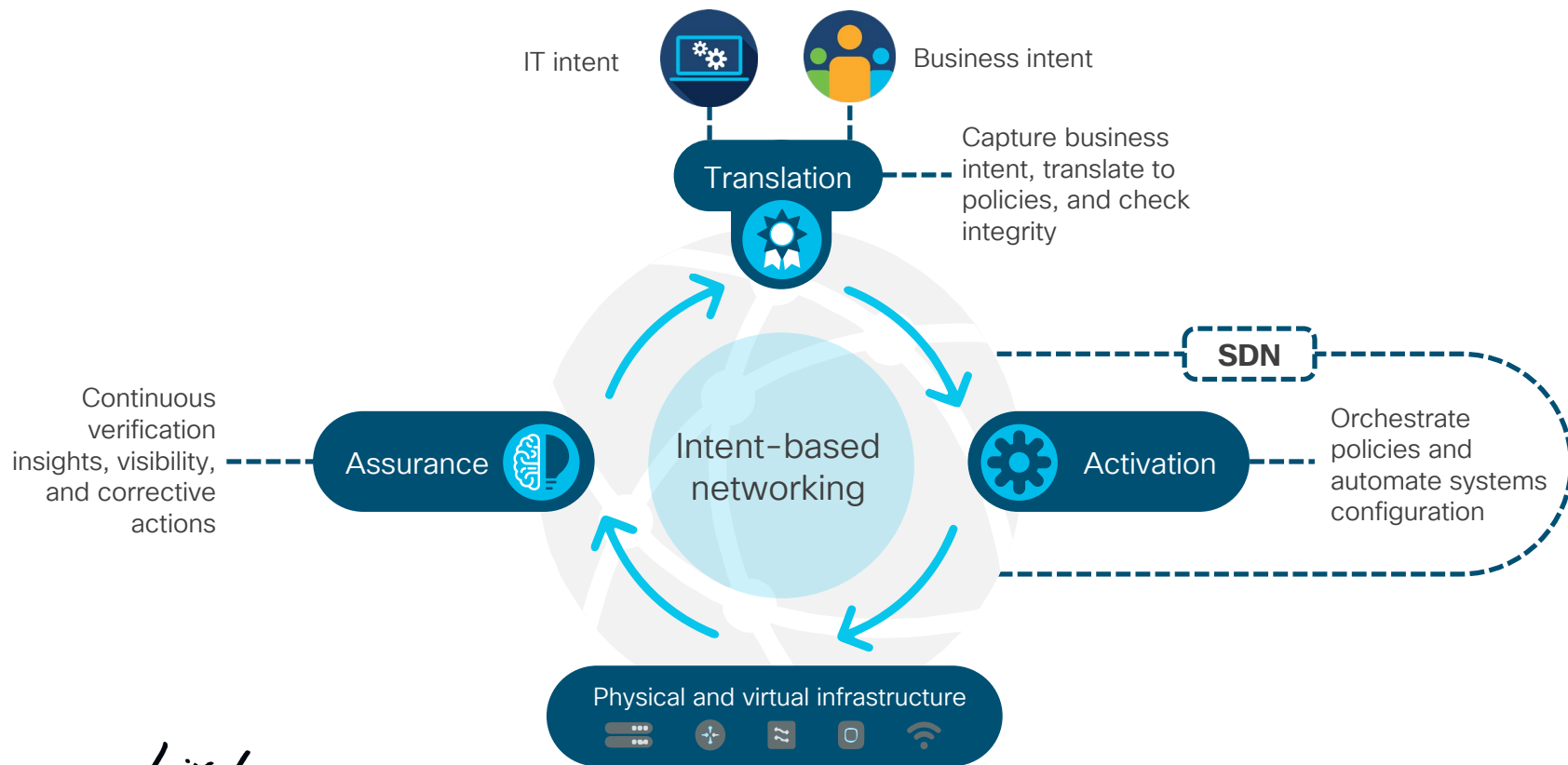


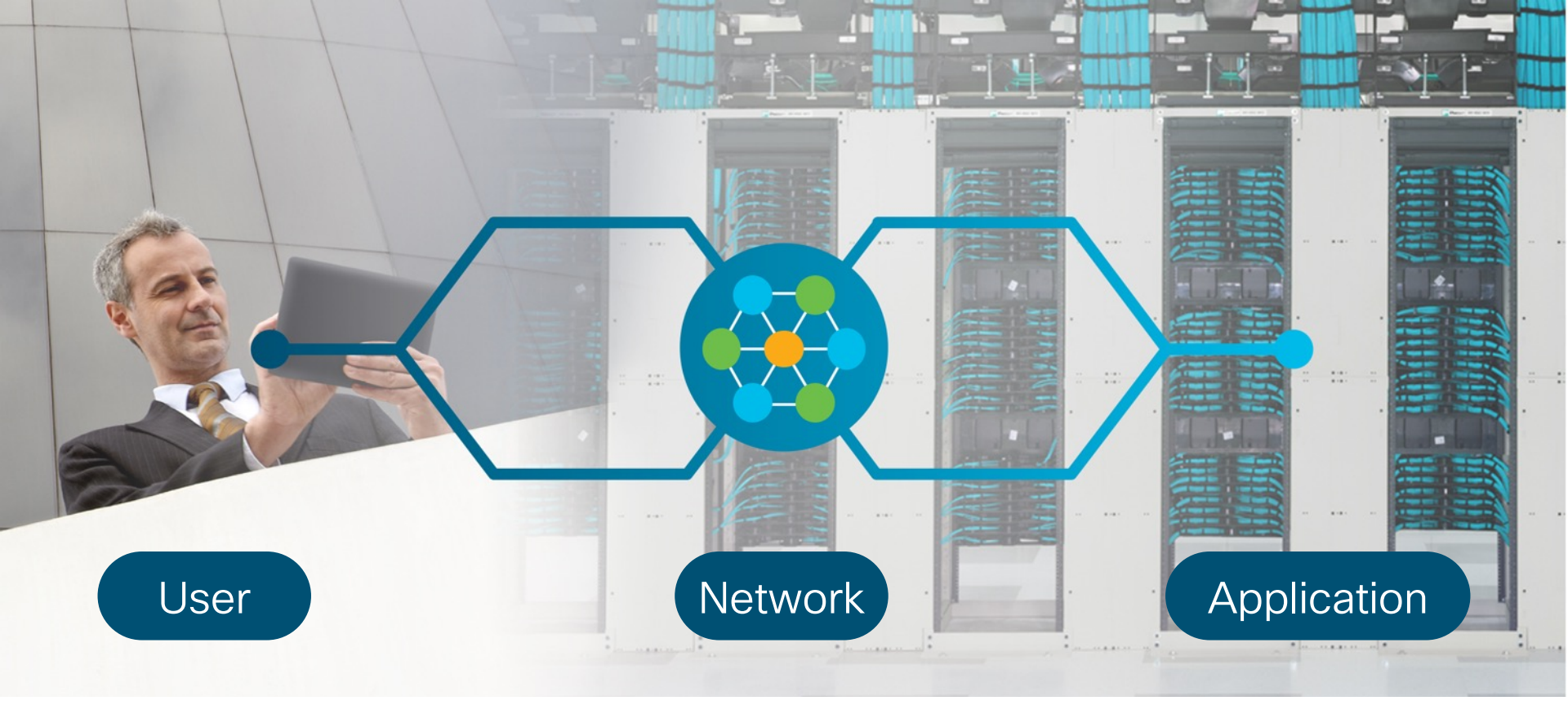
## Introducing the Multi Domain Architecture

# AGENDA



# Introducing Intent Based Networking

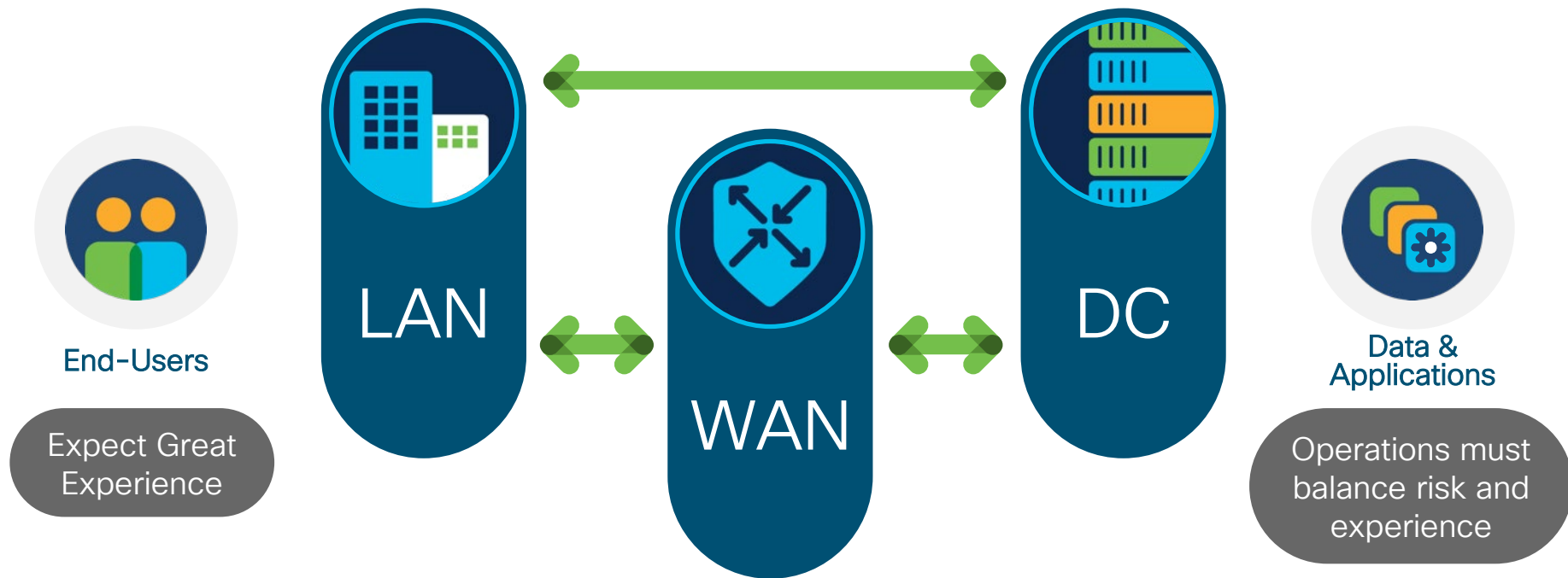




# Experience versus Business Risk

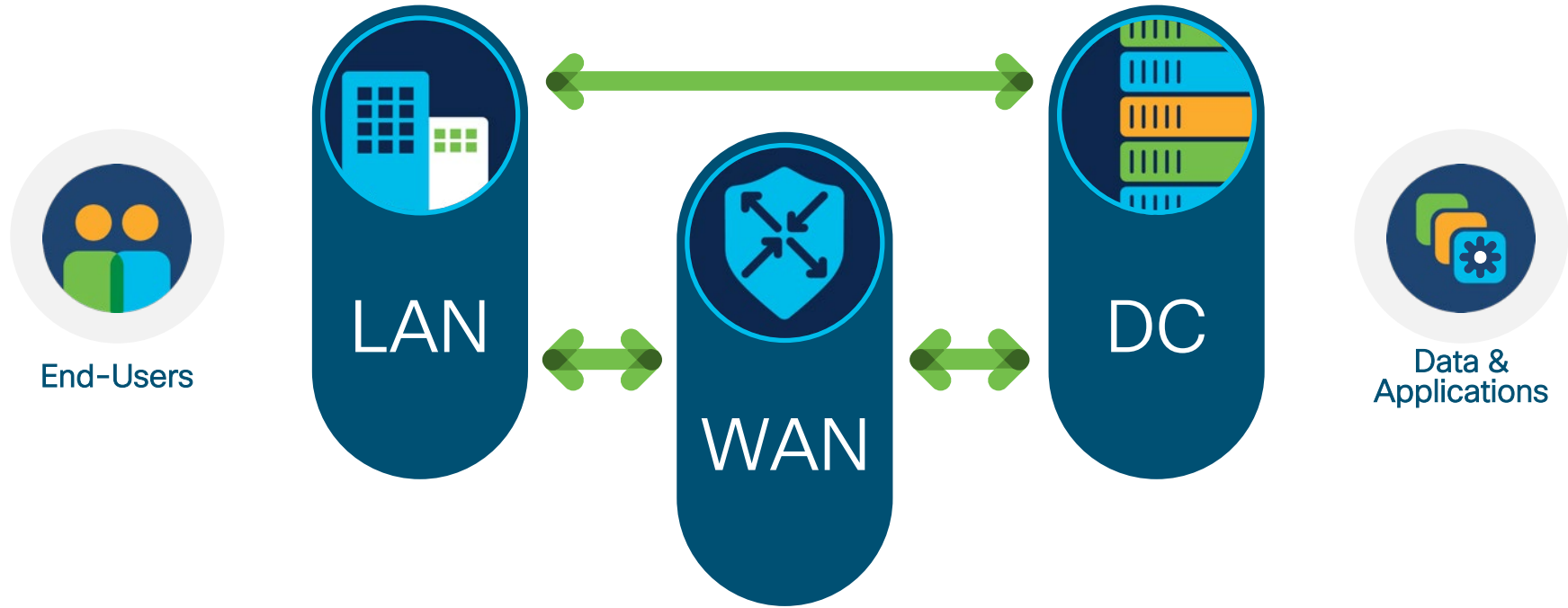
# Experience versus Risk

Between users and applications, there is a network



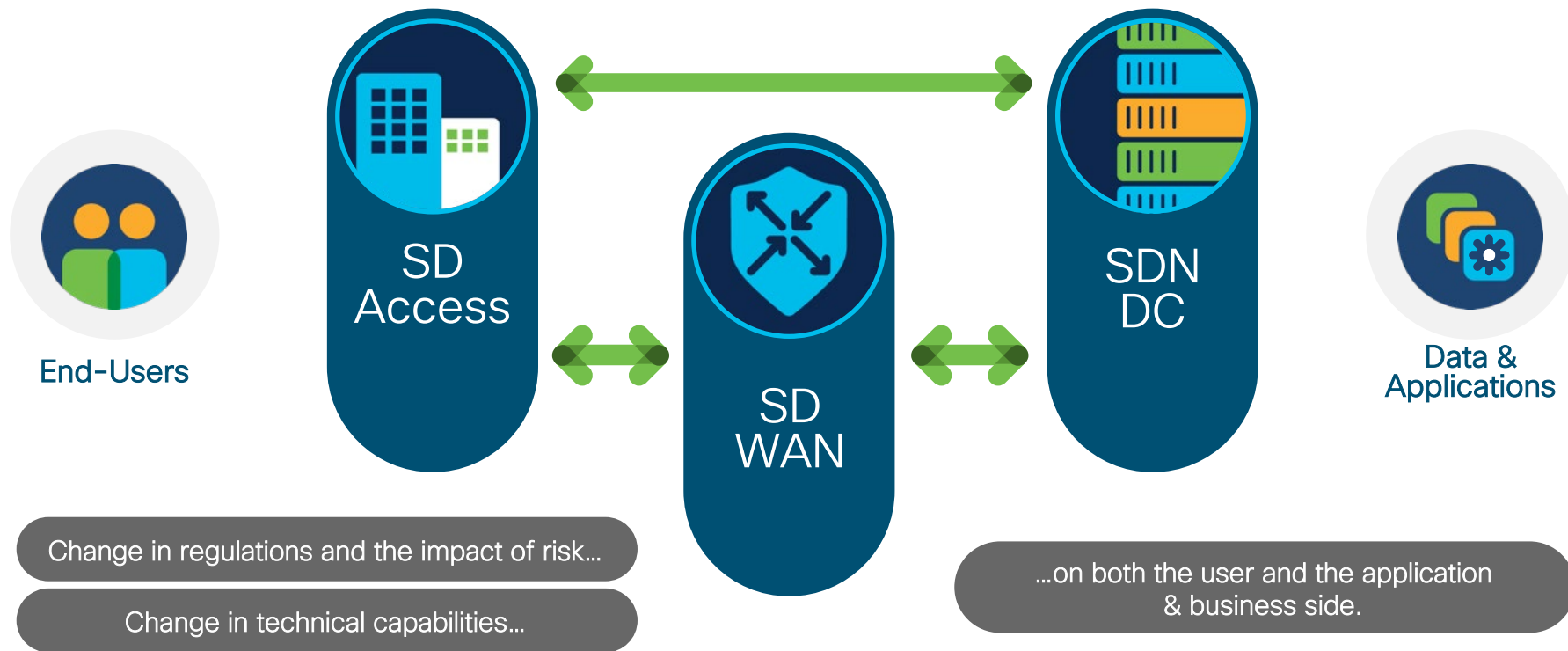
# It used to be much simpler

Networks were relatively static



# Time has brought change...

## Intent Based Networking







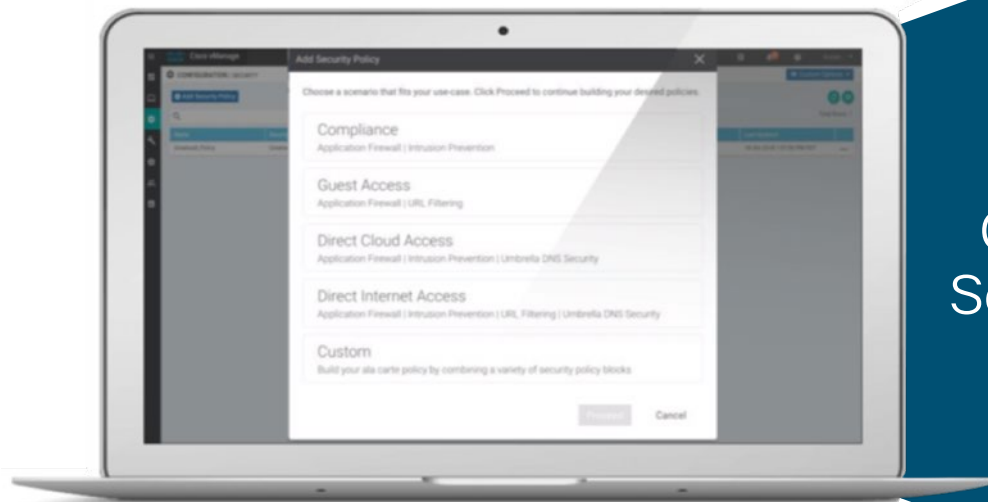
DEFINITION

## *Cloud Edge*

“A set of **functional capabilities** related to **security** and/or **connectivity**. These are available for deployment both in a **centralized** as well as **distributed** method.”

# One Cloud Edge solution example:

Bringing Together SD-WAN and Security



Cisco SD-WAN

Cisco  
Security

Enterprise Firewall

+1400 layer 7 apps classified

Intrusion Protection System

Most widely deployed IPS engine in the world

URL - Filtering

Web reputation score using 82+ web categories

Simplified Cloud Security

Easy deployment for Cisco Umbrella

Advanced Malware Protection

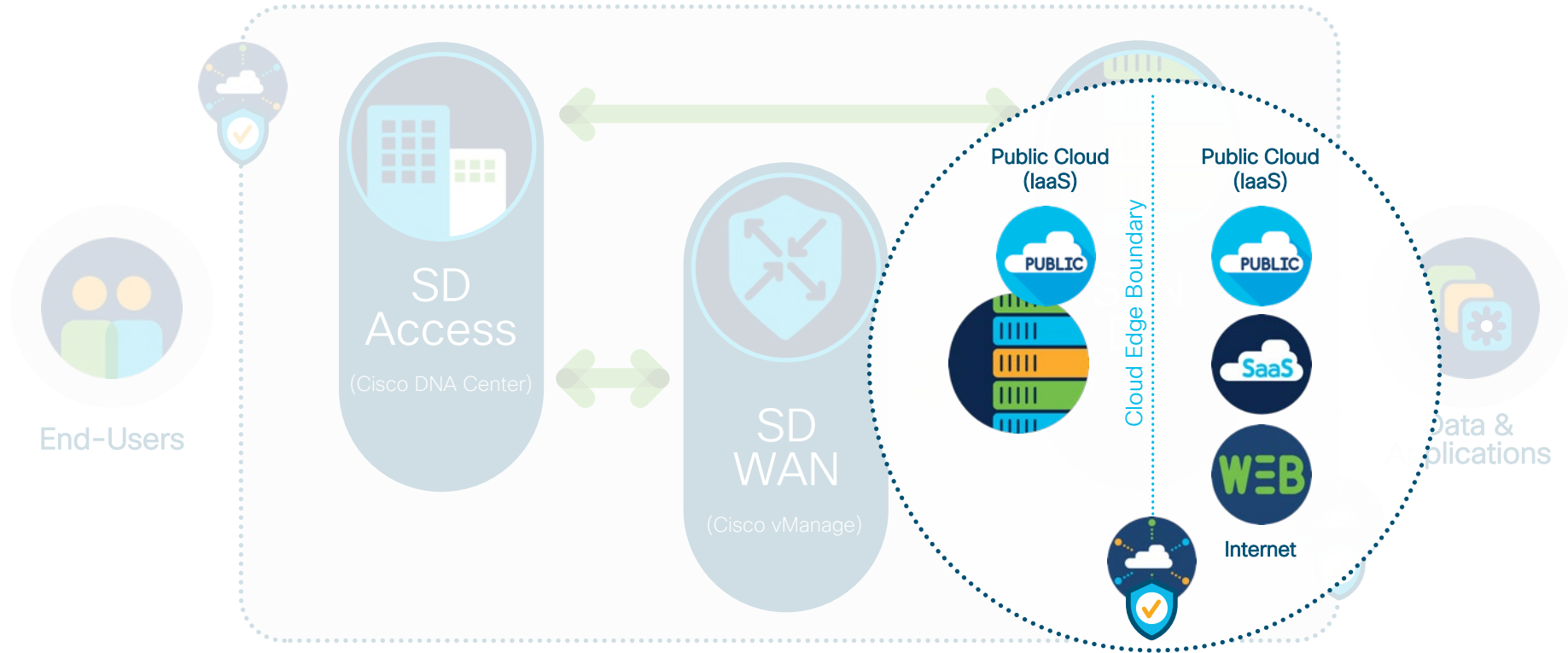
With File Analysis

Common security architecture across Viptela and Meraki powered by **TALOS**

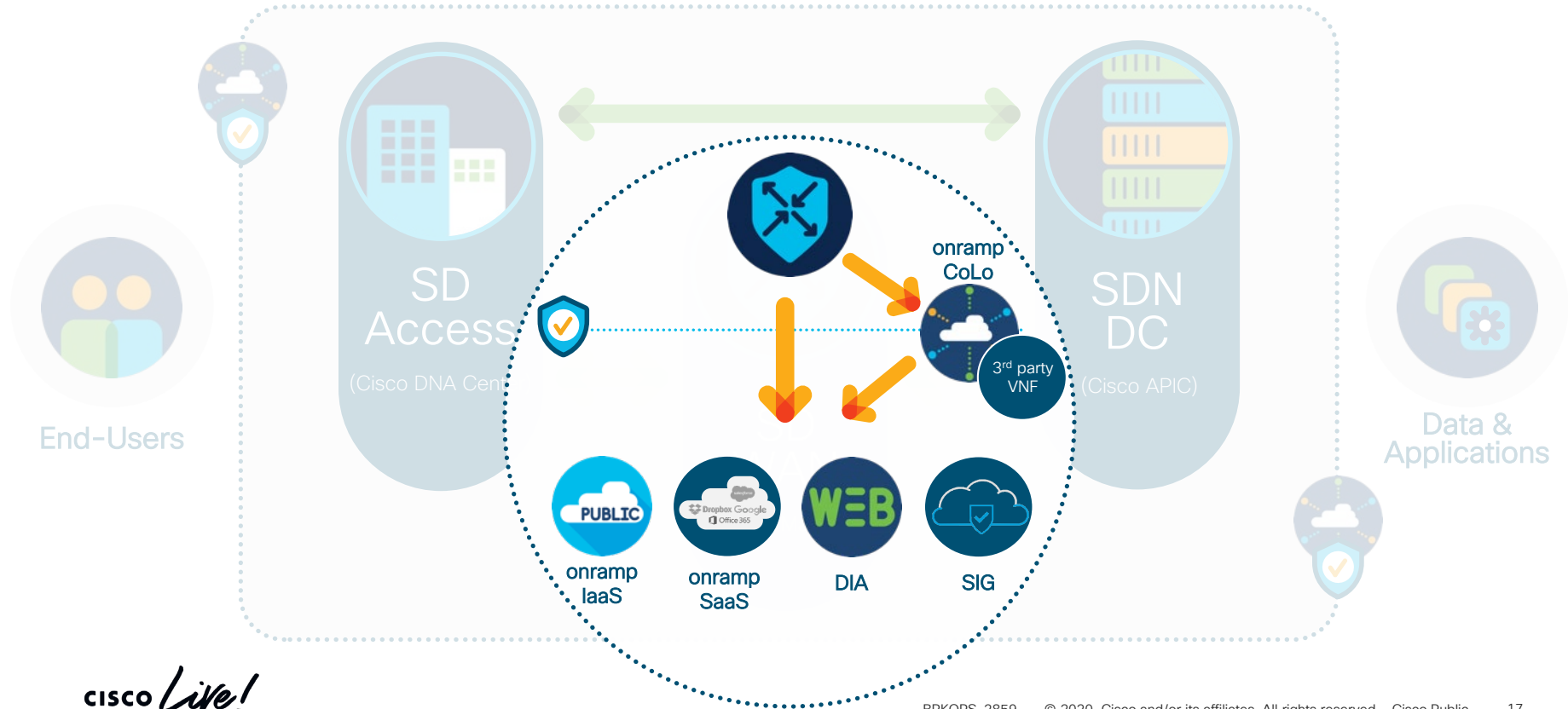


# It is a Multi-cloud World...

With a trust boundary and Cloud Edge

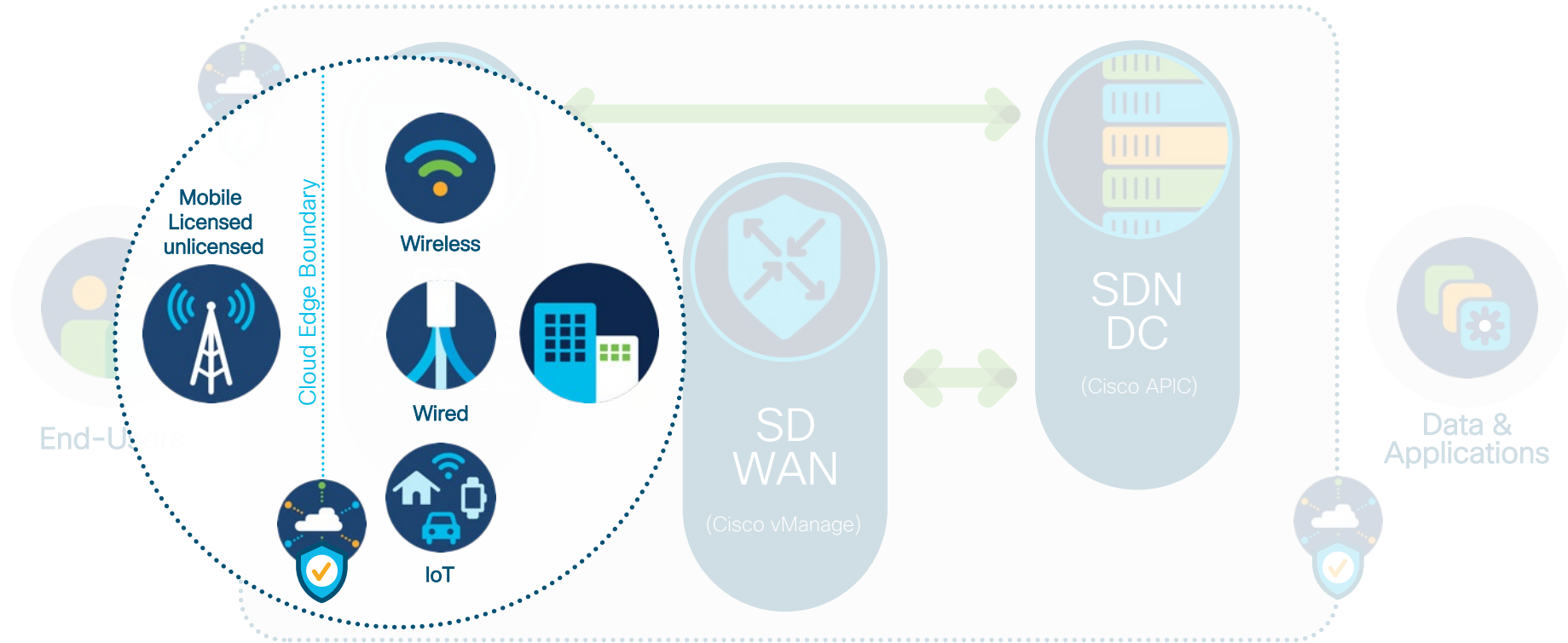


# ... with Hybrid Cloud Connectivity Needs

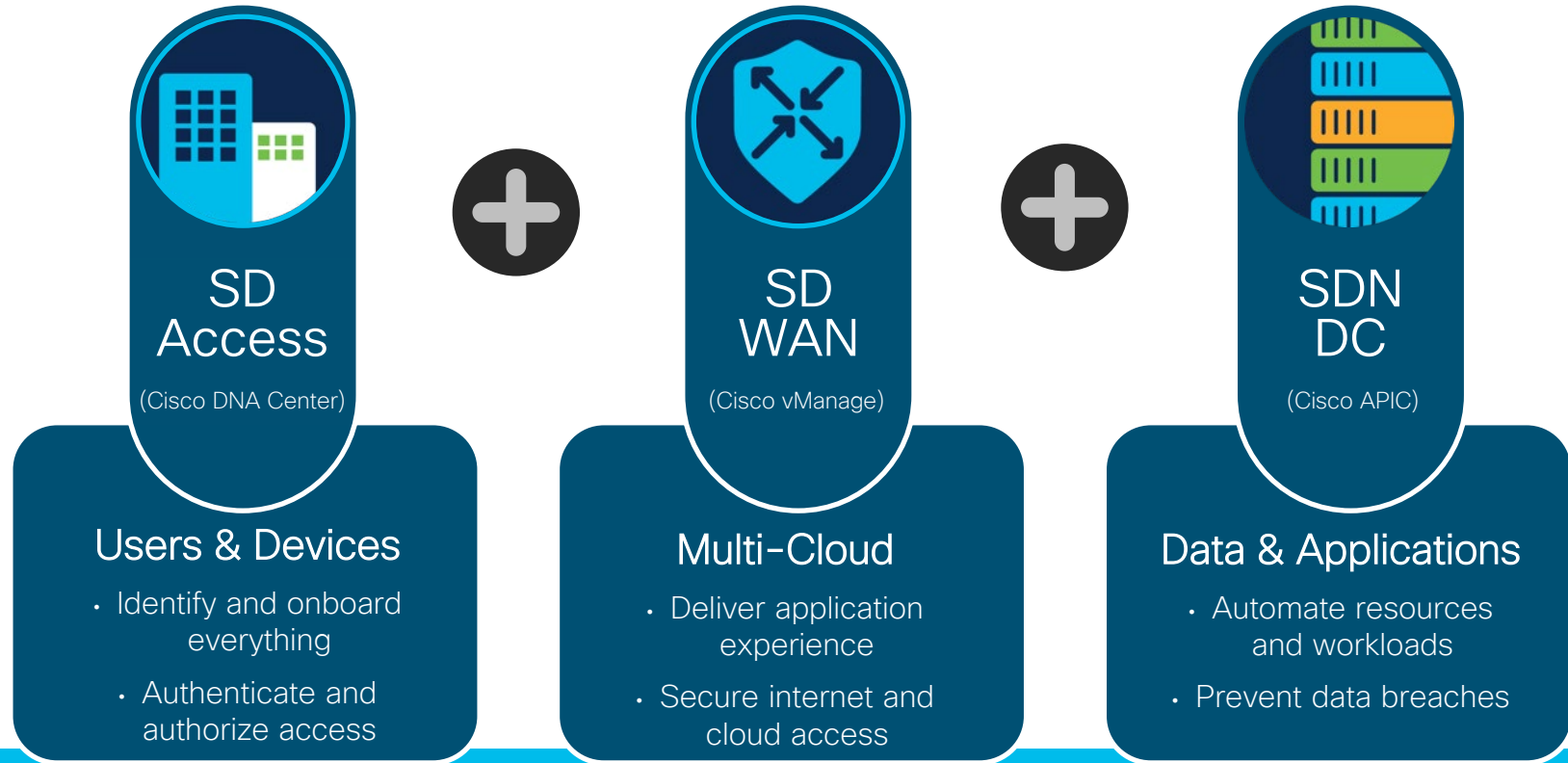


# ... and Consistent Access for Users and Devices

With a trust boundary and Cloud Edge

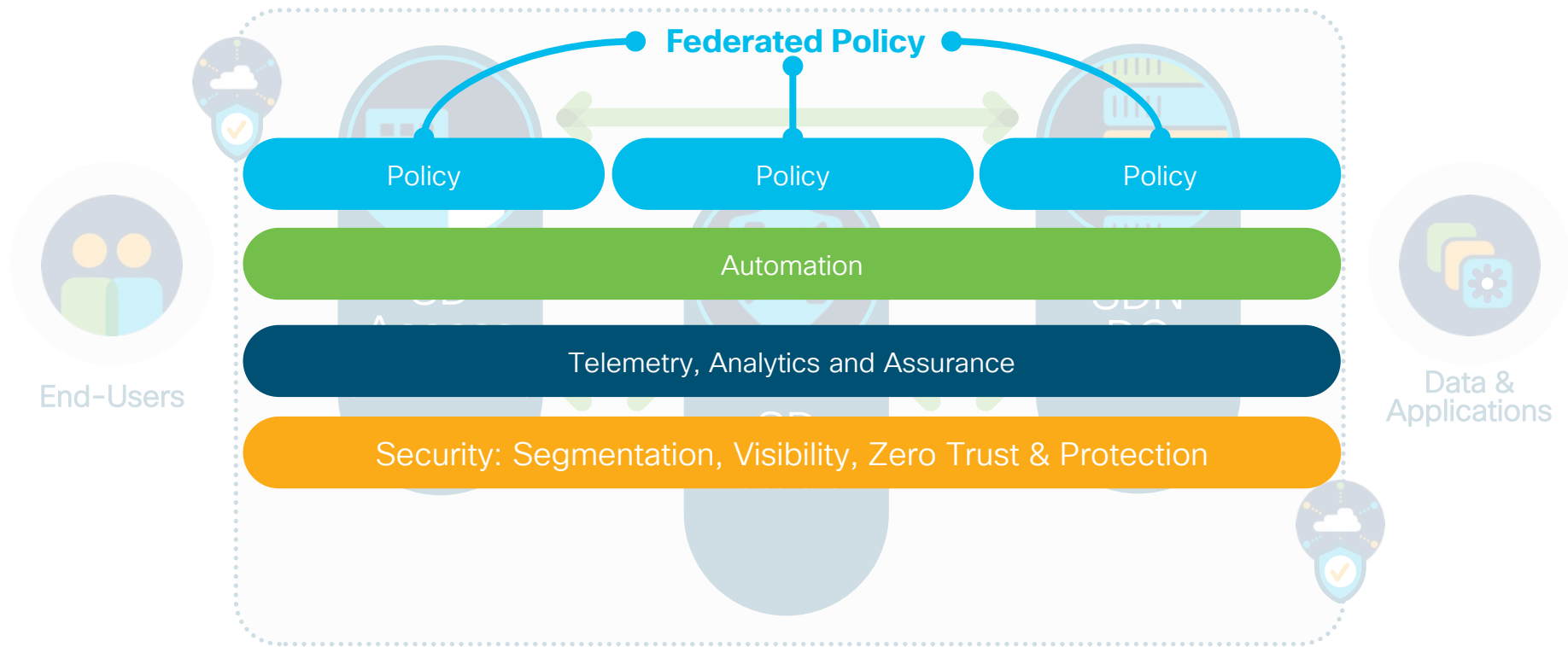


# Each Domain Supports Its Unique Role



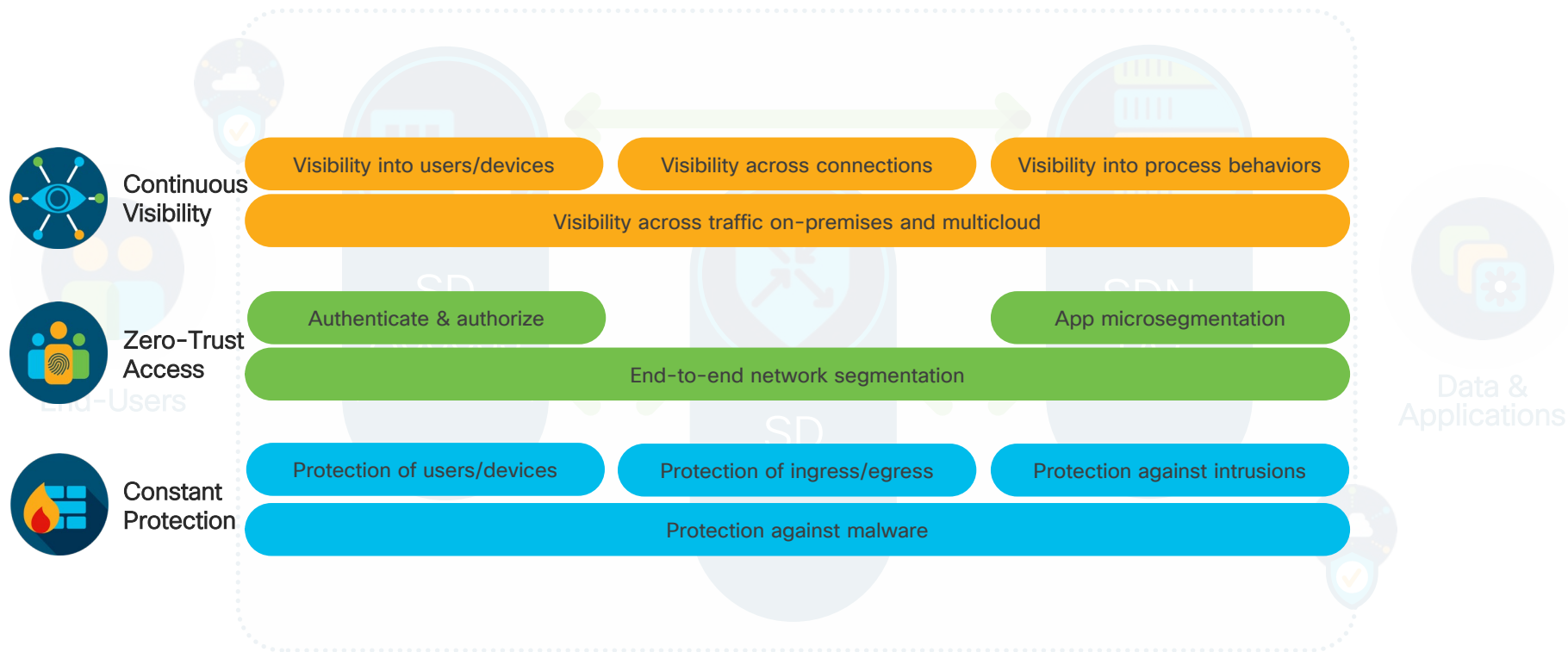
AND the domains must cooperate to meet business intent  
Segmentation | App SLA | Security

# Our Direction



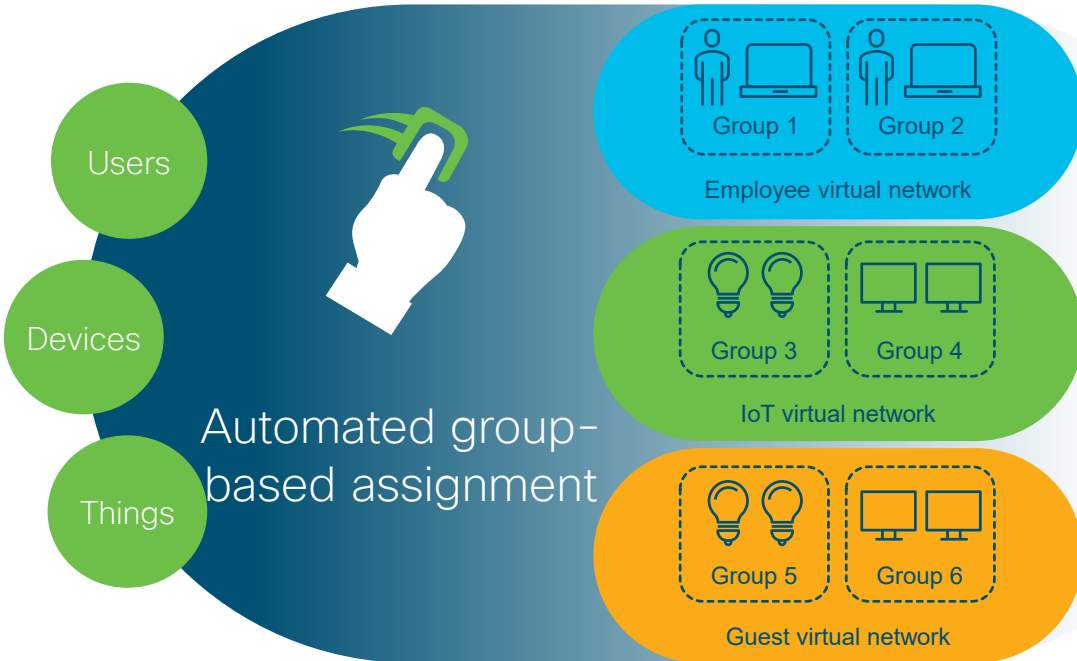
# Infrastructure Security

A great user experience requires it



# Use-Case: End-to-End Segmentation

Enforce Group Based Policies across multiple domains, automatically



## IT simplicity

- No VLAN, ACLs or IP Address management required
- Single network fabric
- Define one consistent policy

## Security

- Simplified micro-segmentation
- Policy enforcement

Completely automated | Policy follows identity | Minimize lateral threat movement



Group-Based Access Control ▾

IP Based Access Control ▾

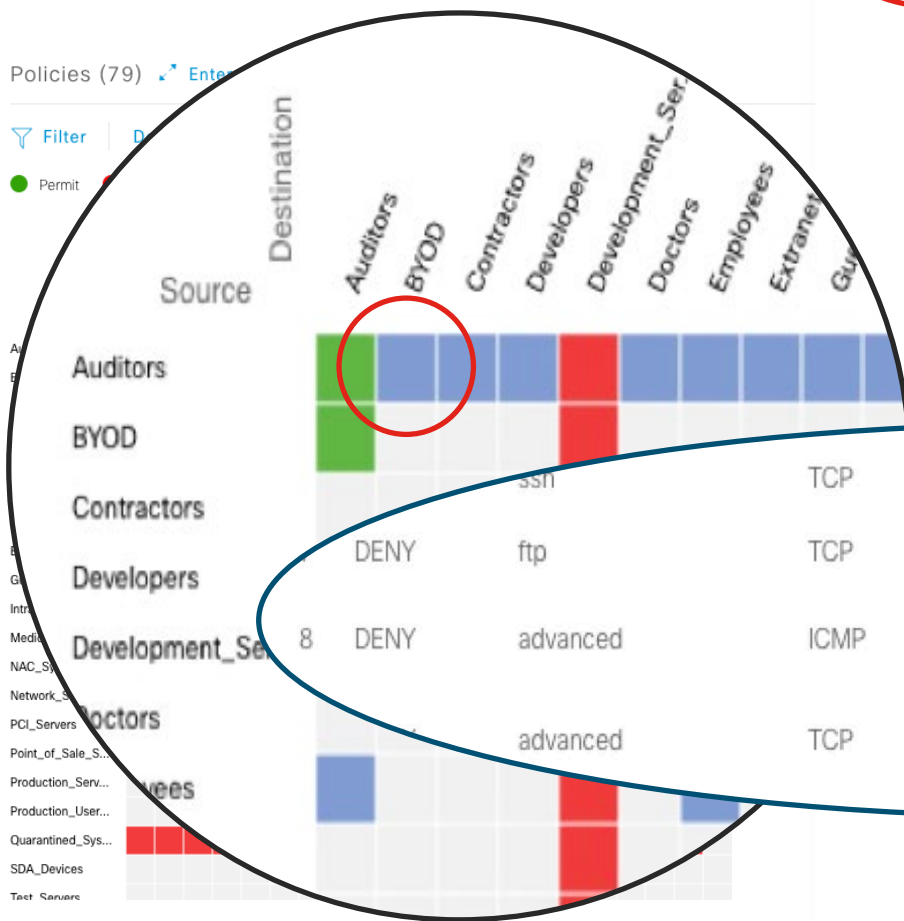
Traffic Copy ▾

Virtual

Policies (79) ↗ Enter

Filter

● Permit



			TCP	Destination	22	
	DENY	ftp	TCP	Destination	21,21000	OFF
8	DENY	advanced	ICMP	Source Destination		ON
		advanced	TCP	Source Destination	80	

# Multi Domain

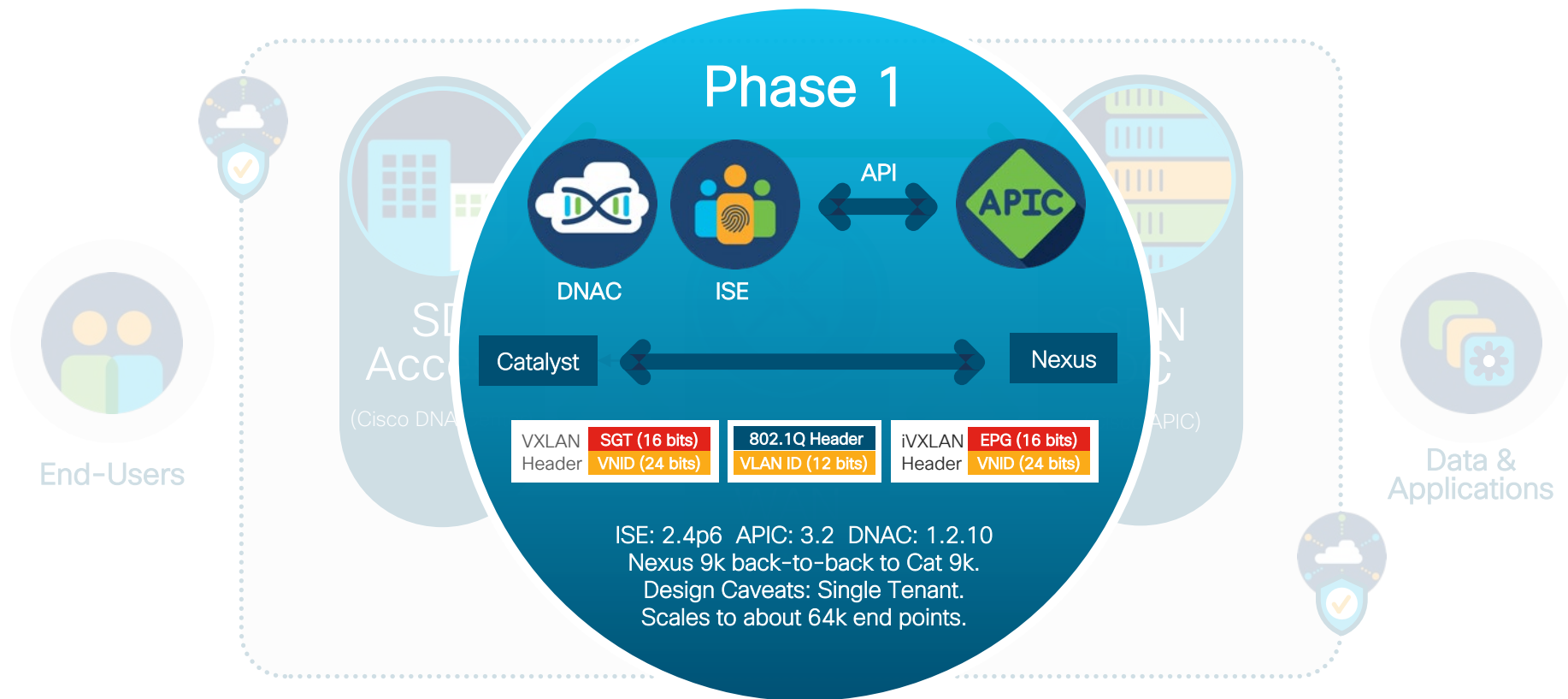
## Pair-wise Integration Details

Disclaimer: The next section has forward looking information. That information can change.

# Integration Details

## Between SD-Access and SDN-DC (ACI)

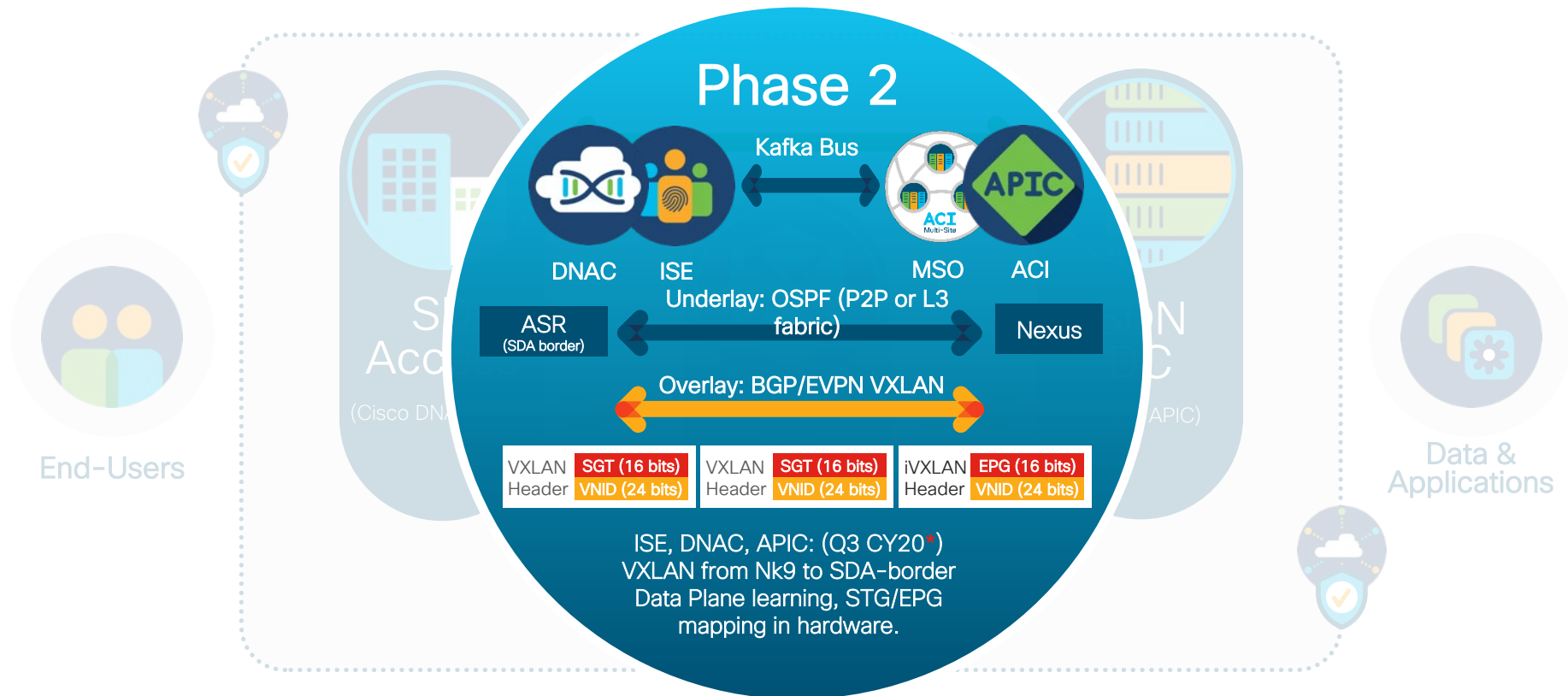
Shipping



# Integration Details

## Between SD-Access and SDN-DC (ACI)

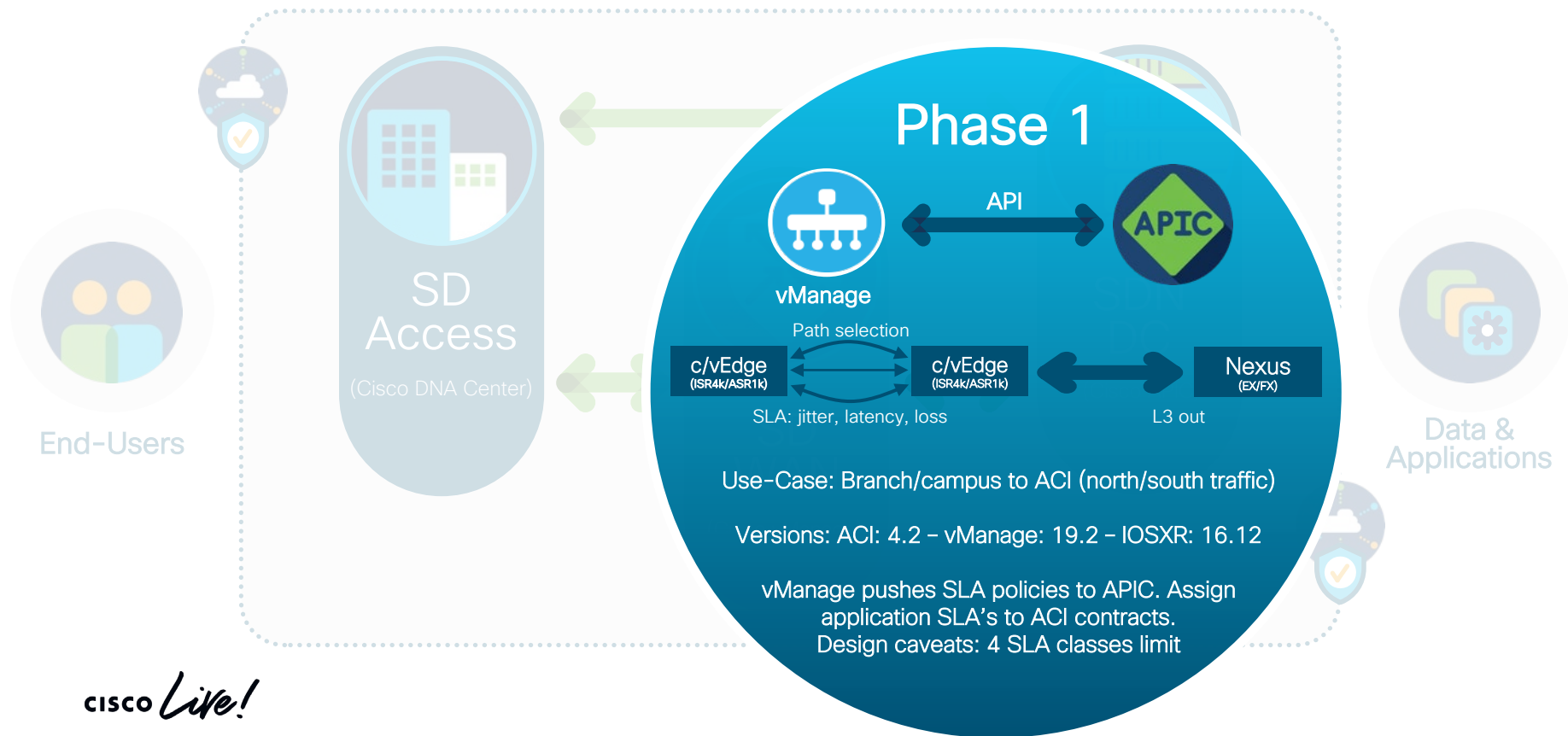
Future



# Integration Details

Between SDN-DC and SD-WAN

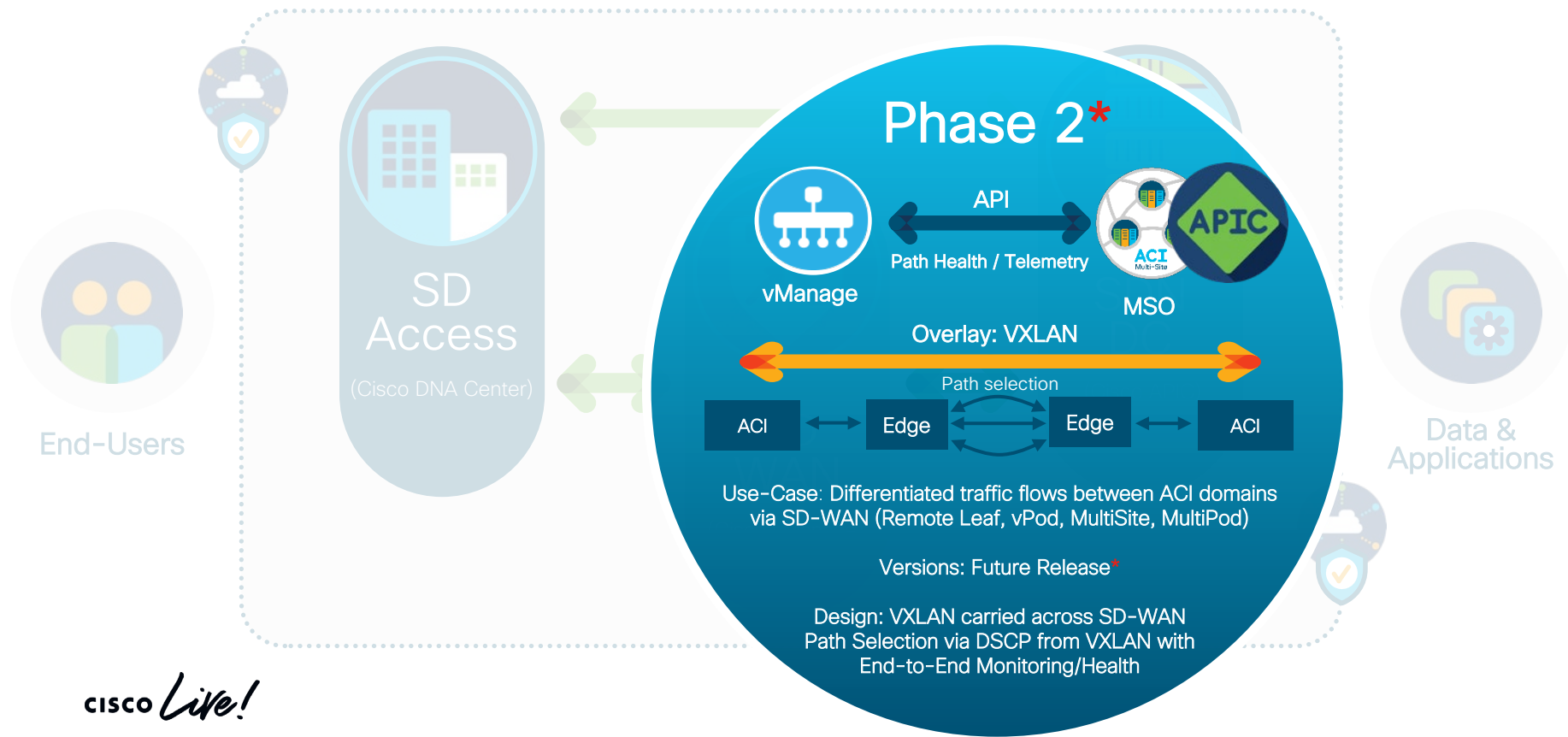
Shipping



# Integration Details

## Between SDN-DC and SD-WAN

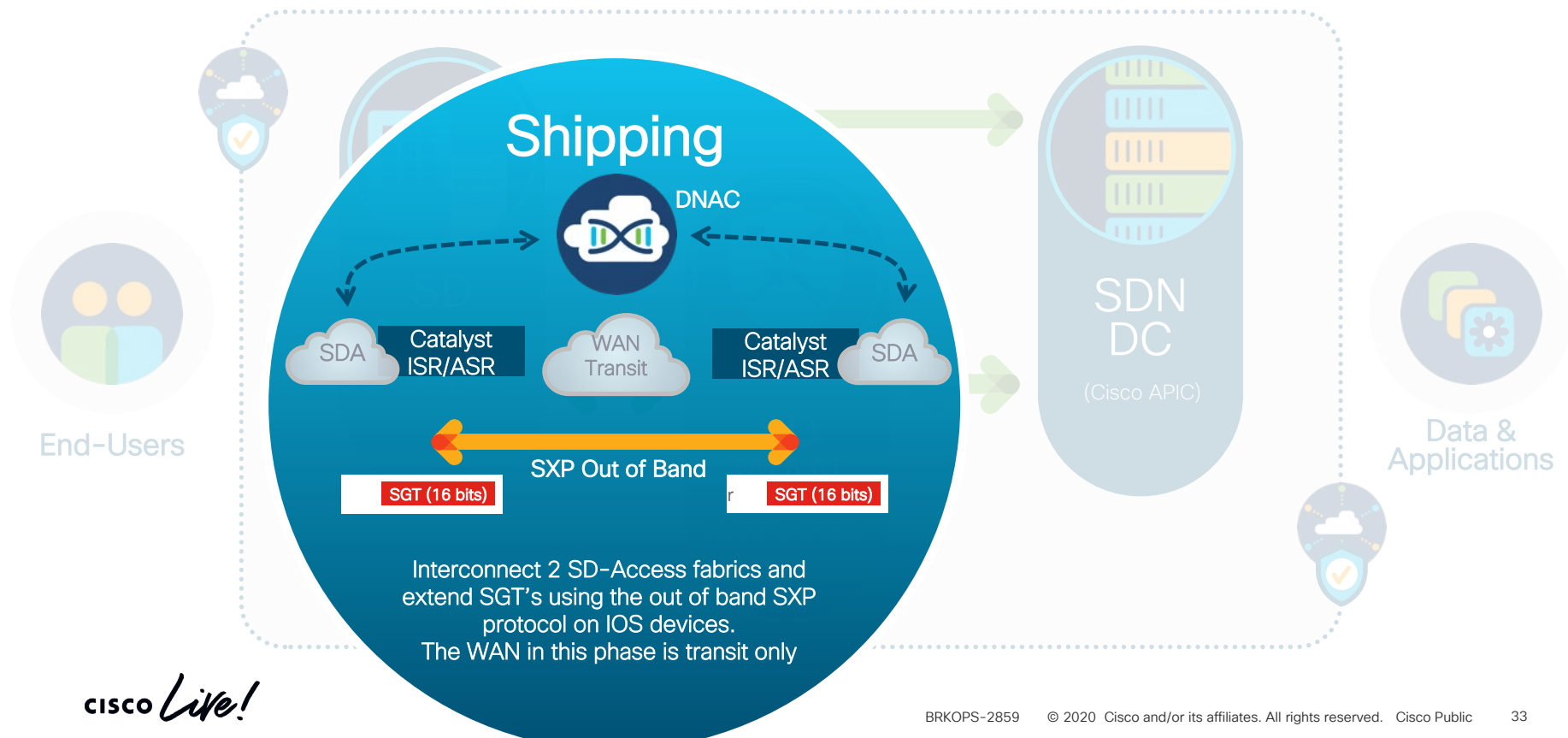
Future



# Integration Details

## Between SD-Access and SD-WAN

Shipping

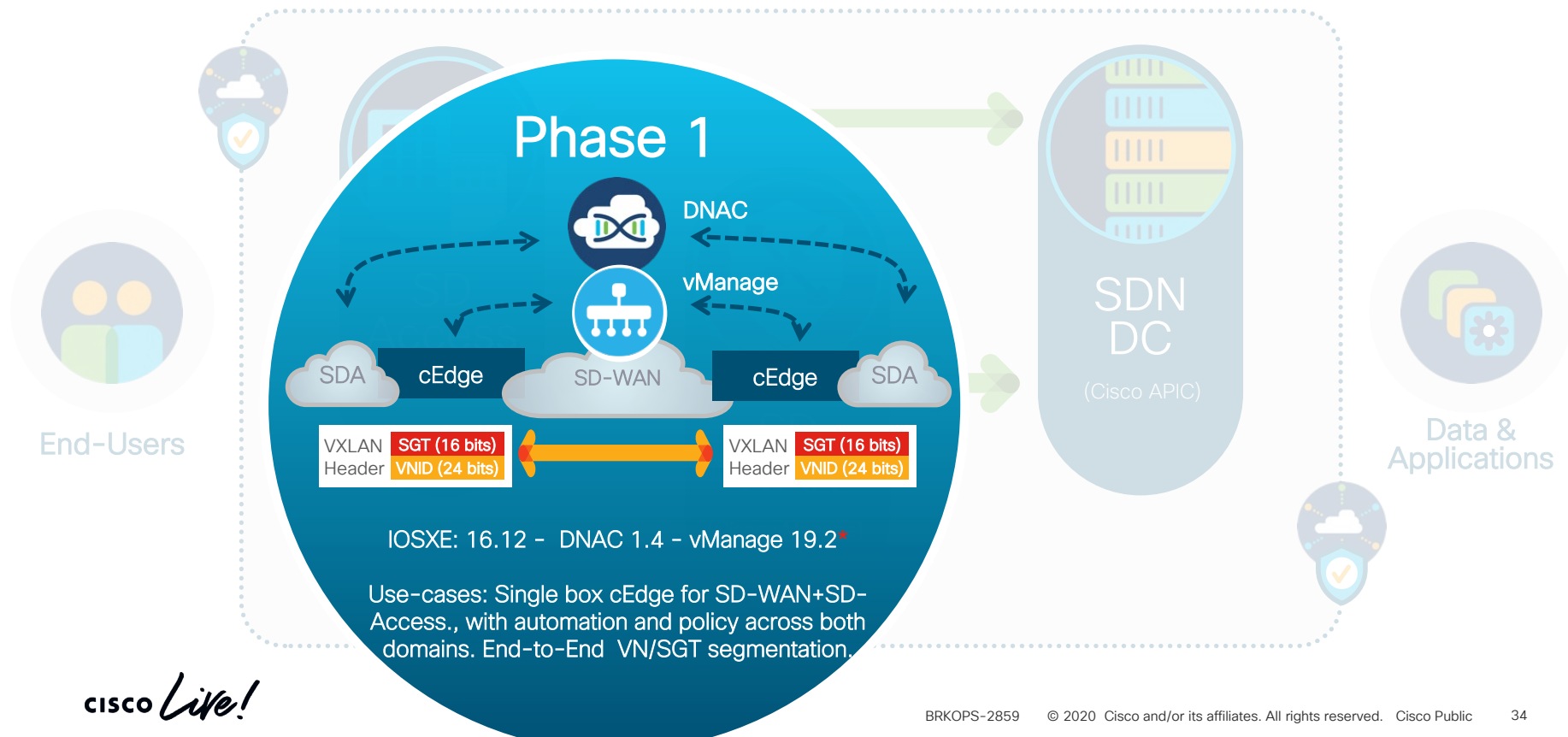




# Integration Details

## Between SD-Access and SD-WAN

Future



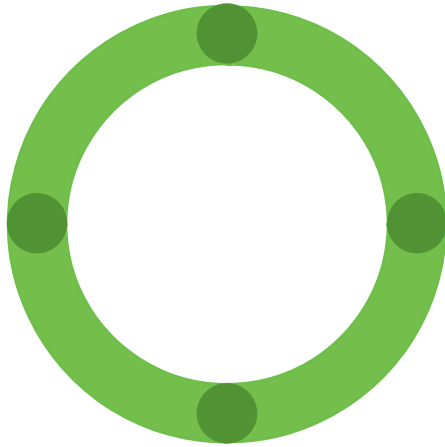
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Operations: Governance

AGENDA

# Digital Transformation



## Culture

Agile, Empowerment,  
Data Driven

## People and Organization

- Skills, Functions, Roles
- Cross Functional Teams

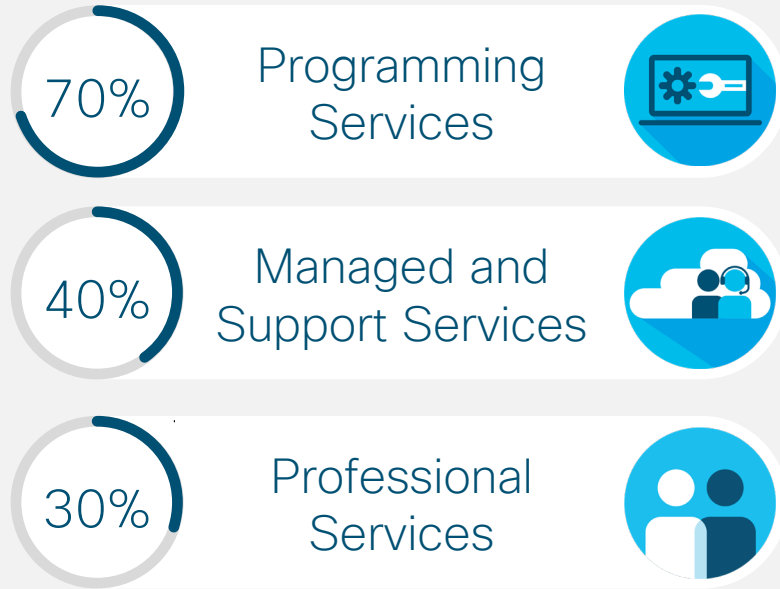
## Operating Models

- Bi-/Tri-Modal, Agile, CI/CD, Governance
- Pockets of Success → Centers of Excellence

## Technology

- Digital Platform
- Policy and Analytics
- Open, Programmable, Virtual and Physical
- Wired, Wireless, Hybrid Cloud, Multidomain

# Digital Transformation – Worldwide Spending



Worldwide Spending on  
Digital Transformation

**\$2  
Trillion**

by  
**2025**



Source: Worldwide Semiannual Digital Transformation Spending Guide, 2019, IDC



# From CLI to API

## A personal development journey

Python  
Ansible  
GitHub  
SDK  
XML/REST/JSON  
Puppet/Chef  
Cloud Networking  
OpenSource  
Containers

This list isn't meant to be complete



# Cisco's expanded certification suite

## Cisco Certifications

	Associate Level	Specialist Level	Professional Level	Expert Level
Engineering				
Software				

cisco *Live!*



# The Network is Open for Business!

Create connections never before possible.

Integrate devices from any provider.

Transform slow, manual processes into fast, automated workflows.

See Automation Use Cases



## Move faster

Quickly deploy new networks and devices, automate key activities, and reduce touchpoints by centralizing monitoring and control.



## Save money

Avoid unnecessary manual effort, manage global sites from anywhere, and save time by creating repeatable, automated processes.



## Know more

Derive new insights from data, optimize network health, and reduce risk through end-to-end, proactive communication.

developer.cisco.com



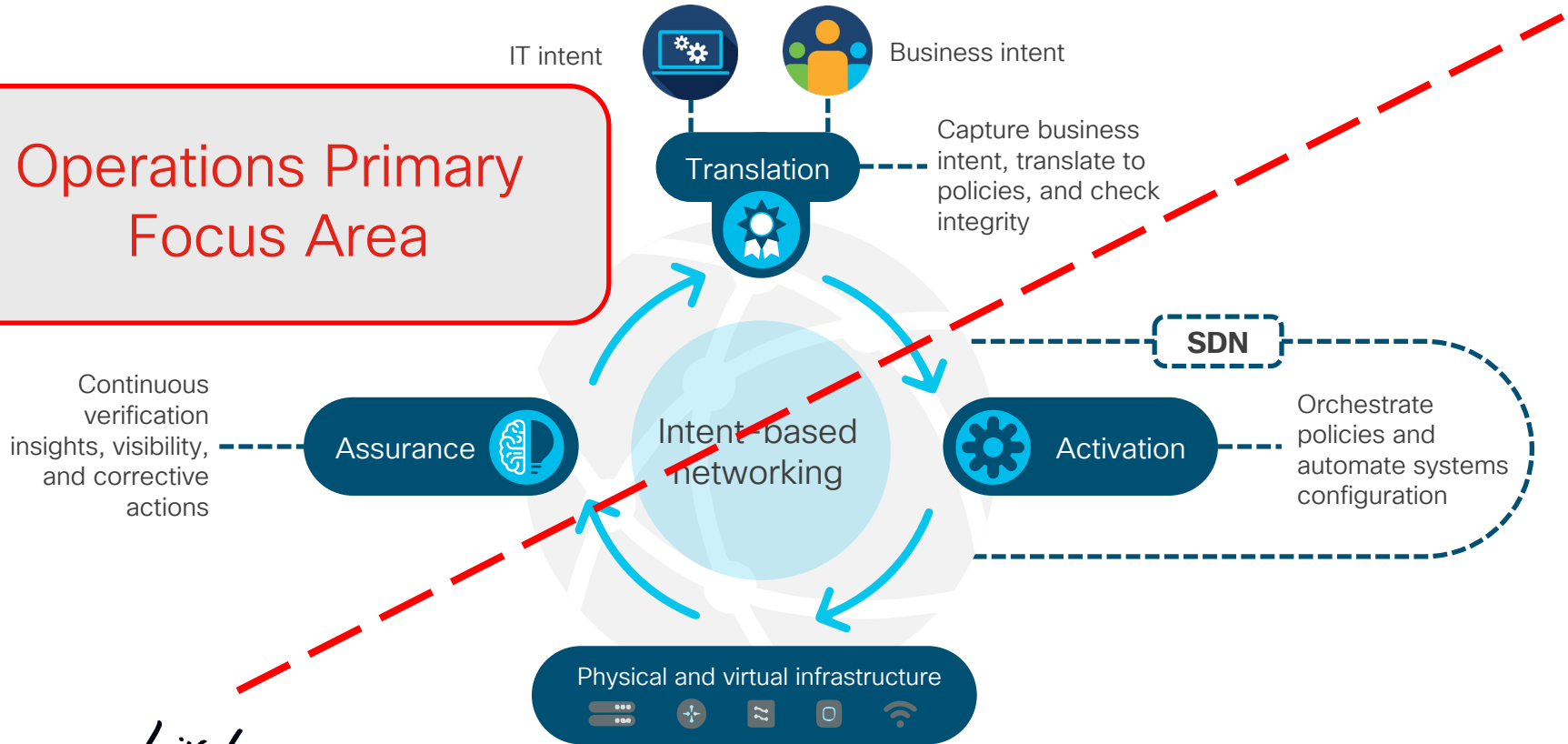
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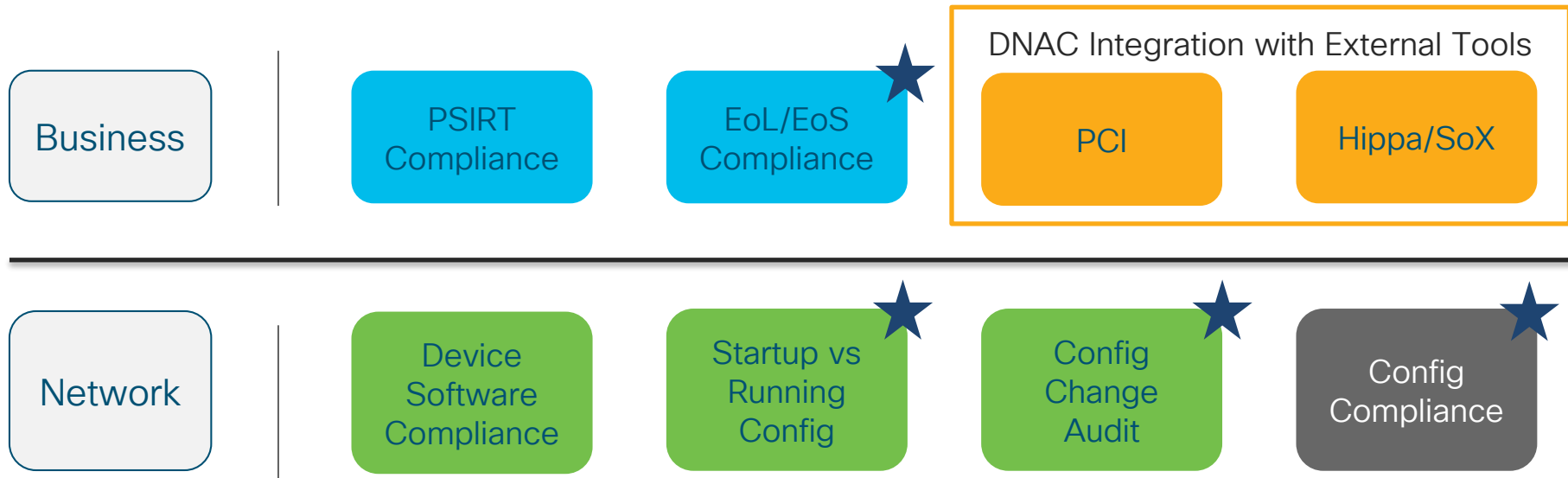
Operations: Architecture

# AGENDA

# Review: Intent Based Networking

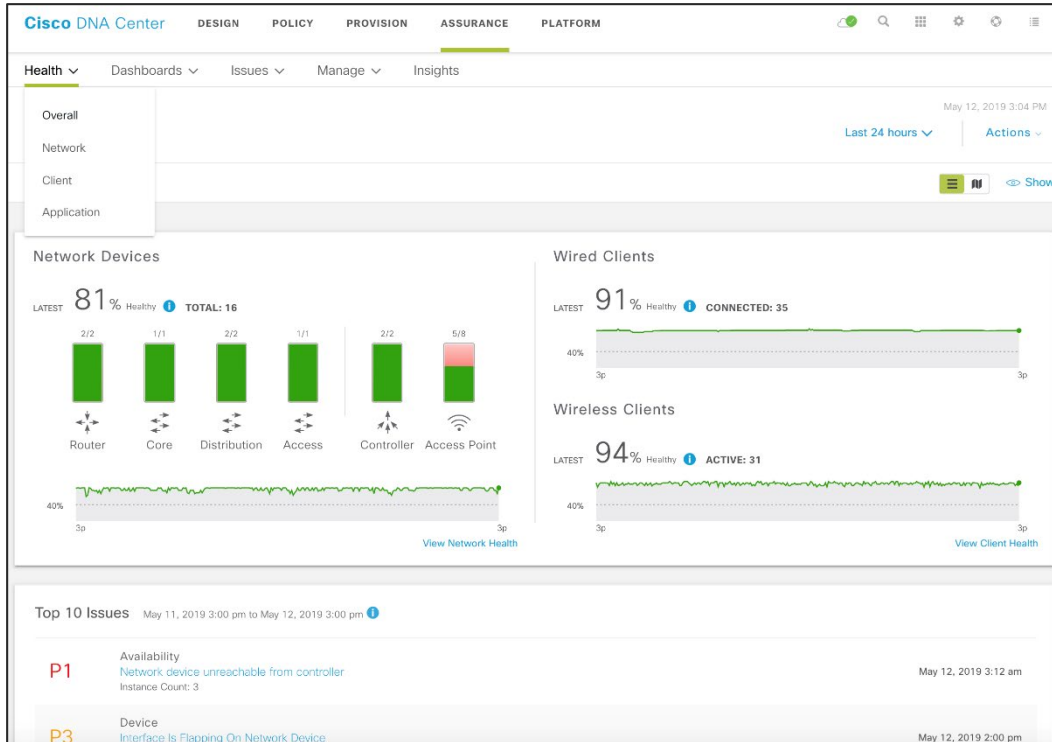


# Operations: Cisco DNA Center and Compliance



# Operations: Cisco DNA Assurance and Analytics

Is my network healthy, are my users happy... and if not, why not?



## Common Use Cases

- How are my clients, applications, and network infrastructure doing?
- Has anything changed in my network?
- How can I troubleshoot a problem I am having now?
- How can I prevent problems from happening in the future?
- How am I doing compared to others in my industry?

# Operations: Cisco ACI Assurance

“Monitor the  
Architecture, not  
the Events”



## Proactive Monitoring

Anomaly Detection | Pro-Active alerts |  
Predictive failure | Packet drops | Latency



## Capacity Planning

Bandwidth | Ports | TCAM | Scale Limits  
| Top Talkers



## Pro-active Advisory

PSIRT | Hardening Anomalies | Field  
Notices



## Pro-active Support

TAC SRs | Upgrade Impact | Defect  
Scans

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Operations: Architecture

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- Complete a minimum of 4 session surveys and the Overall Conference survey (starting on Thursday) to receive your Cisco Live t-shirt.
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Demos in the  
Cisco Showcase



Walk-In Labs



Meet the Engineer  
1:1 meetings



Related sessions





Thank you





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