CISCO Live!

Let's go

Who are we?

- Global Systems Architect

- +24Y of industry experience

- 12Y at Cisco (5Y in sales, 8Y in CX as Architect)

- Enterprise Networking & Business Architect lead within Americas CGEM at Cisco

- Speaker at various cisco's World Wide events

- Brazilian barbecue lover

- Security Solutions Architect

- +20Y of cybersecurity industry experience

- 6Y at Cisco

- Visibility & Segmentation SME lead within GVE at Cisco

- Craft beer hunter

Cisco Webex App

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

How

1. Find the "BRKENS-1850" 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 June 9, 2023.

https://ciscolive.ciscoevents.com/ciscolivebot/#BRENS-1850
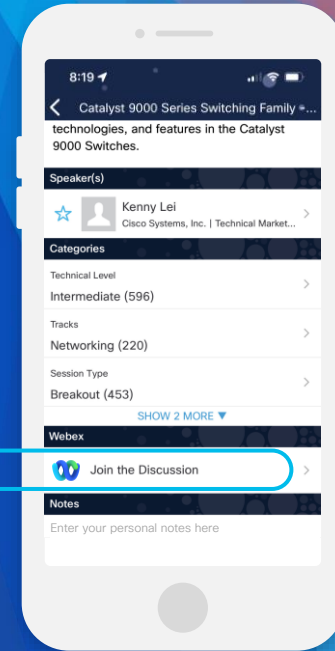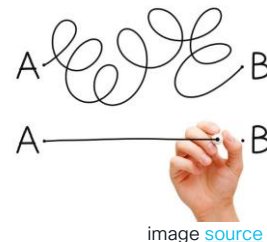
Agenda

- Infrastructure Transformation based on world change

- The SDN journey
  - part 1 – New concepts
    - demo 1 – Explore our real environment
  - part 2 – Segmentation
    - demo 2 – Segmentation in action!
  - part 3 – Micro segmentation
    - demo 3 – Micro segmentation in action!

'be different...'

image source

& KEEP IT SIMPLE

image source
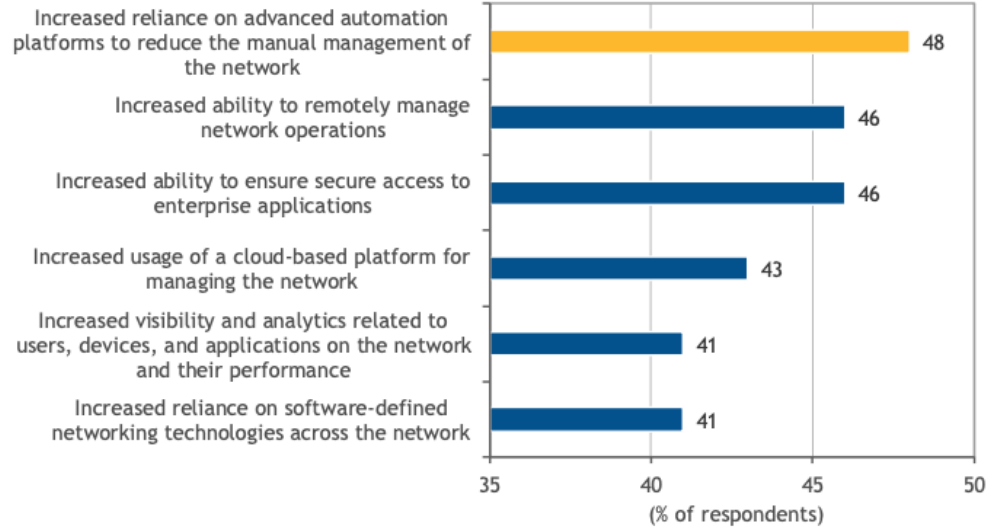
A ~~~~~ B
A —— B

image source

Globalization

According to the World Economic Forum,
we are now entering a new, digital-driven era of
Globalization referred to as "Globalization 4.0".
Digital goods and services, enabled by digital
capabilities and artificial intelligence,
are leading exports

Network impact

As the connections between systems,
people, processes, locations, and devices
get more distributed and complex, the
economic value of the network to the
organization will increase, while securing
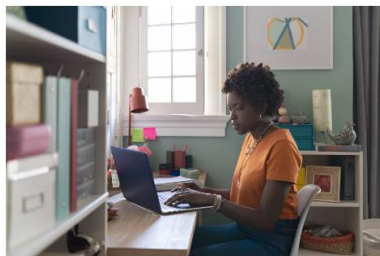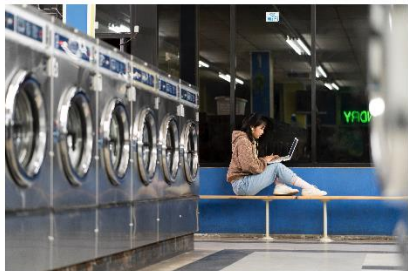and managing the network will become
more strategic and more difficult.

Source : Cisco 2020's Global Networking Trends Report

Areas of Increased Network Investment in the Post-COVID-19 World

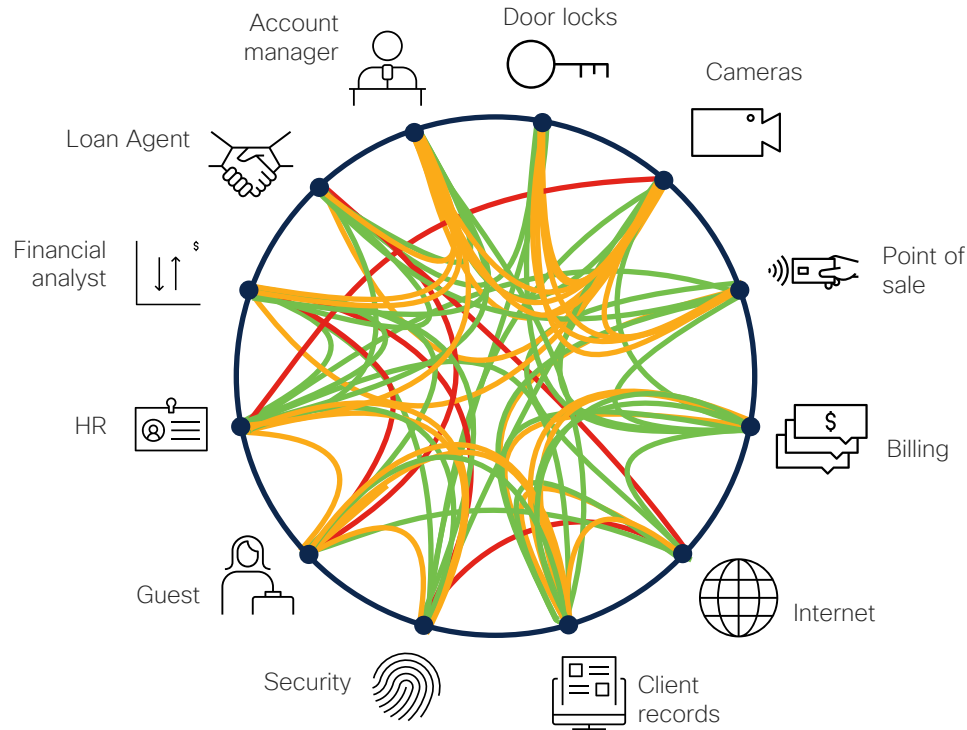| Investment Area	% of respondents
Increased reliance on advanced automation platforms to reduce the manual management of the network	48
Increased ability to remotely manage network operations	46
Increased ability to ensure secure access to enterprise applications	46
Increased usage of a cloud-based platform for managing the network	43
Increased visibility and analytics related to users, devices, and applications on the network and their performance	41
Increased reliance on software-defined networking technologies across the network	41

(% of respondents)

Source: IDC's *Future Proofing Enterprise Networking*, June 2020

It's an increasing mobile driven world

A "new normal" dynamic hyperconnected world

Account manager

Door locks

Cameras

Loan Agent

Point of sale

Financial analyst

Billing

HR

Internet

Guest

Client records

Security

New challenges

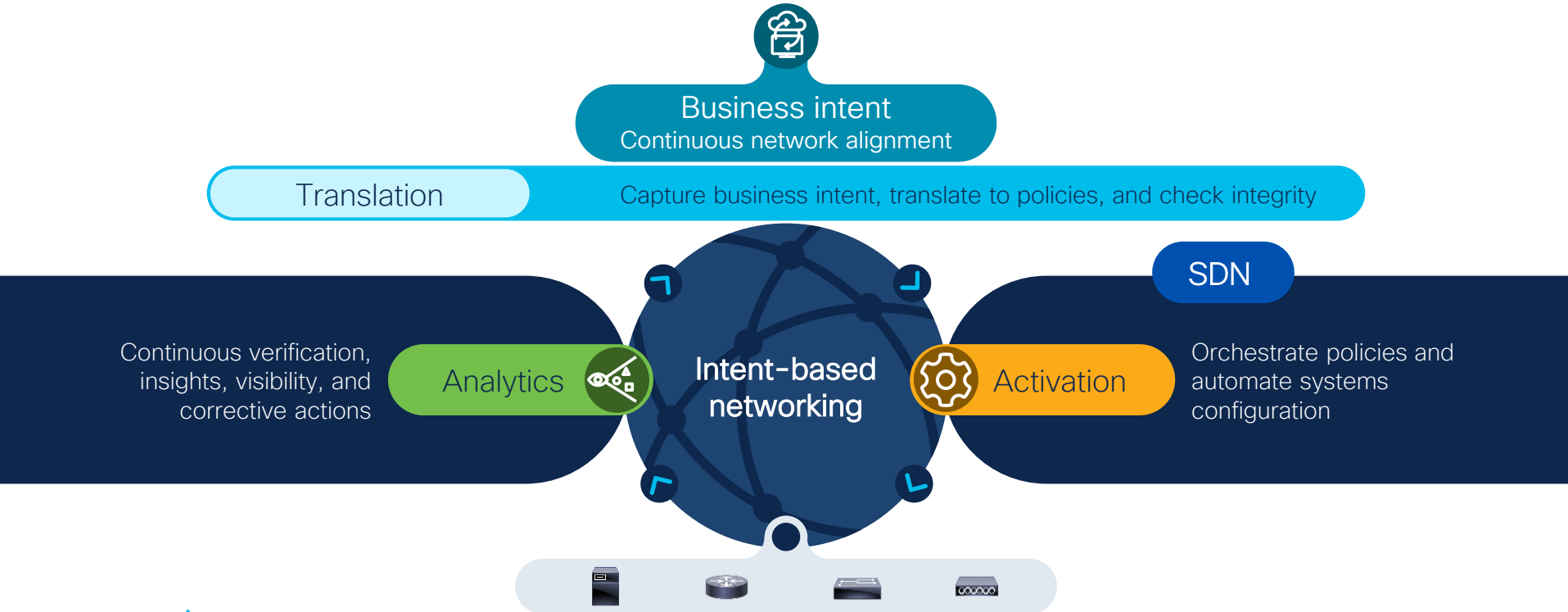Identify and group all users, devices, and connected things
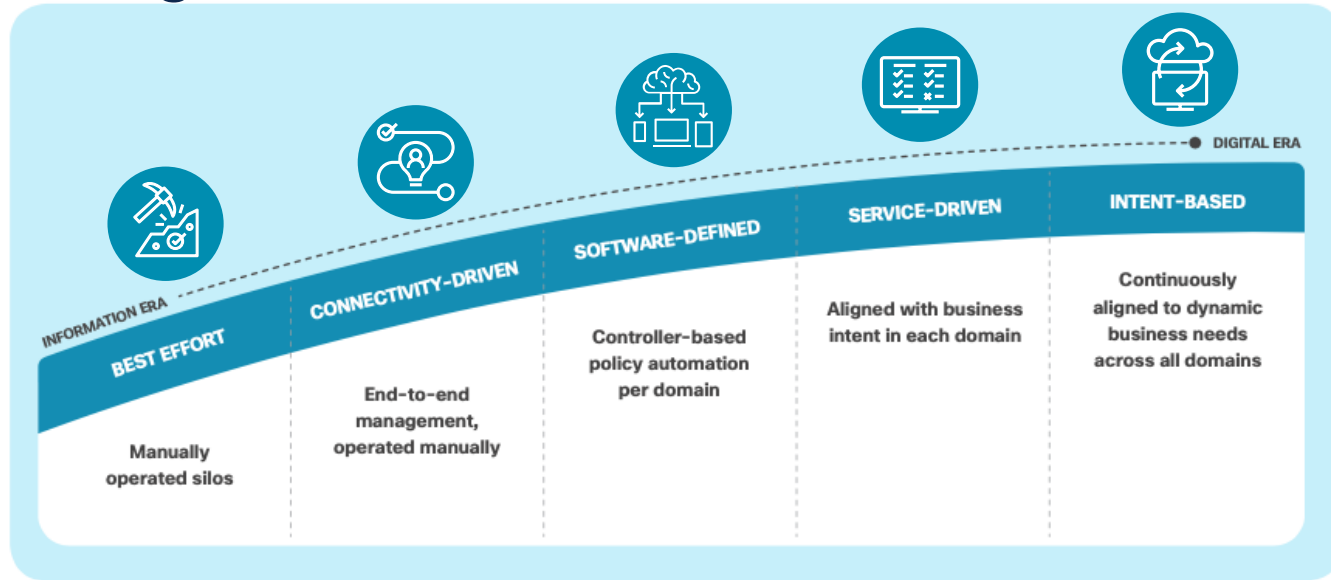
Provide granular access privileges

Protect users and applications from threats

Focus on "what" instead of "how"

Cisco's intent-based networking (IBN) extends
software-defined networking (SDN) to meet new demands

Business intent
Continuous network alignment

Translation — Capture business intent, translate to policies, and check integrity

Continuous verification, insights, visibility, and corrective actions

Analytics

Intent-based networking

Activation

SDN

Orchestrate policies and automate systems configuration

Path to digitization

INFORMATION ERA

BEST EFFORT

Manually operated silos

CONNECTIVITY-DRIVEN

End-to-end management, operated manually

SOFTWARE-DEFINED

Controller-based policy automation per domain

SERVICE-DRIVEN

Aligned with business intent in each domain

INTENT-BASED

Continuously aligned to dynamic business needs across all domains

DIGITAL ERA

Where organizations are now

| 35% | 43% | 22% |

Where they plan to be in two years

| 28% | 72% |

The SDN journey

Traditional campus LAN and next gen SDN campus

Traditional multilayer campus	Layer 3 routed access	L2 access simplified distribution	SD-Access fabric for campus	
				Logical topology
Protocols & tuning	Simple, stable, limited layer2	Flexible, prone to flooding	Flexible, BEST OF BOTH!	Design notes
				Physical topology
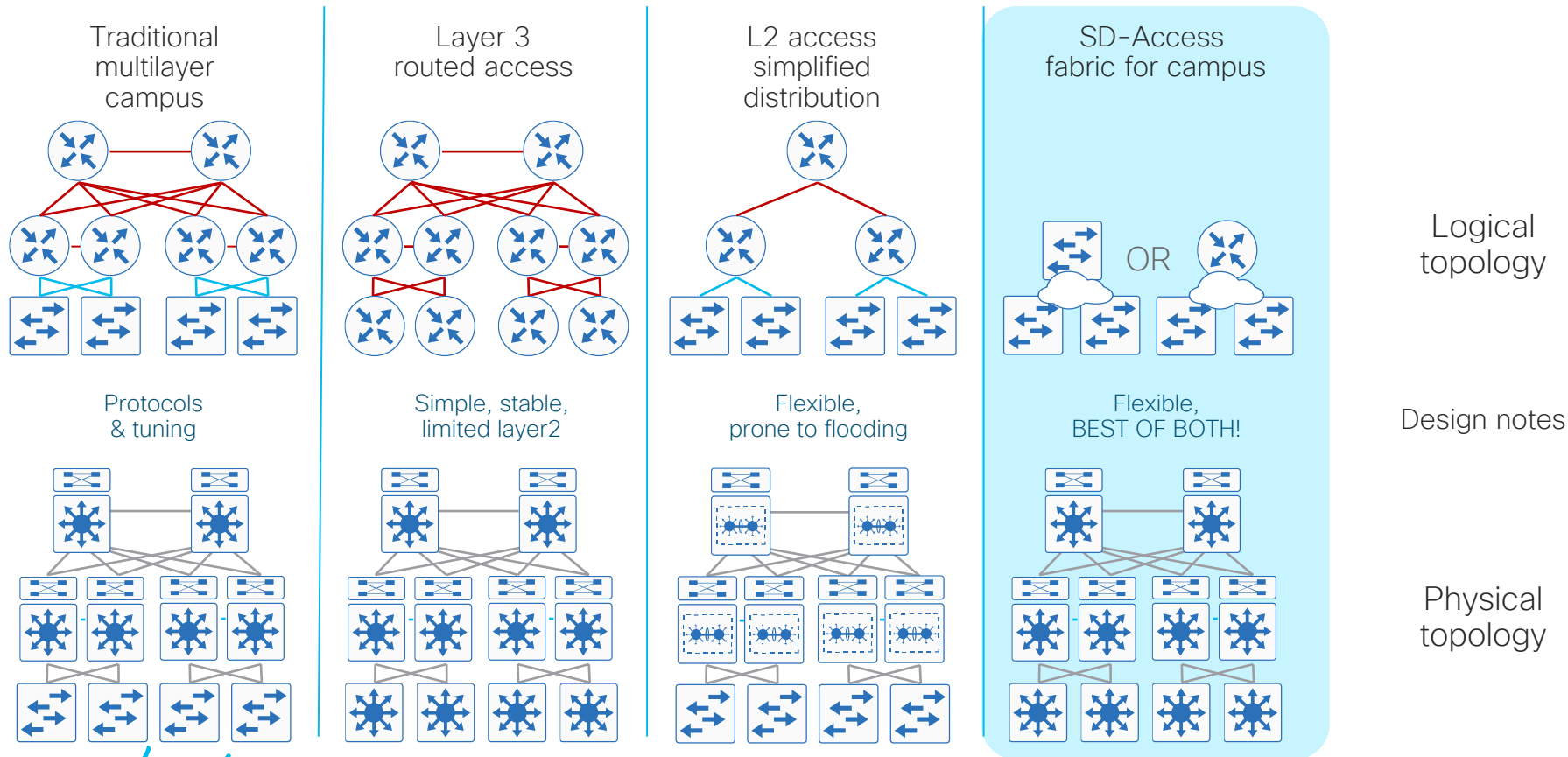
Cisco Software-Defined Access (SD-Access)

The foundation for Cisco's intent-based network

Cisco DNA Center & Cisco ISE

Policy   Automation   Assurance

Outside

B   B   C

SD-Access
extension

Client mobility
Policy follows user

IoT network   Employee network
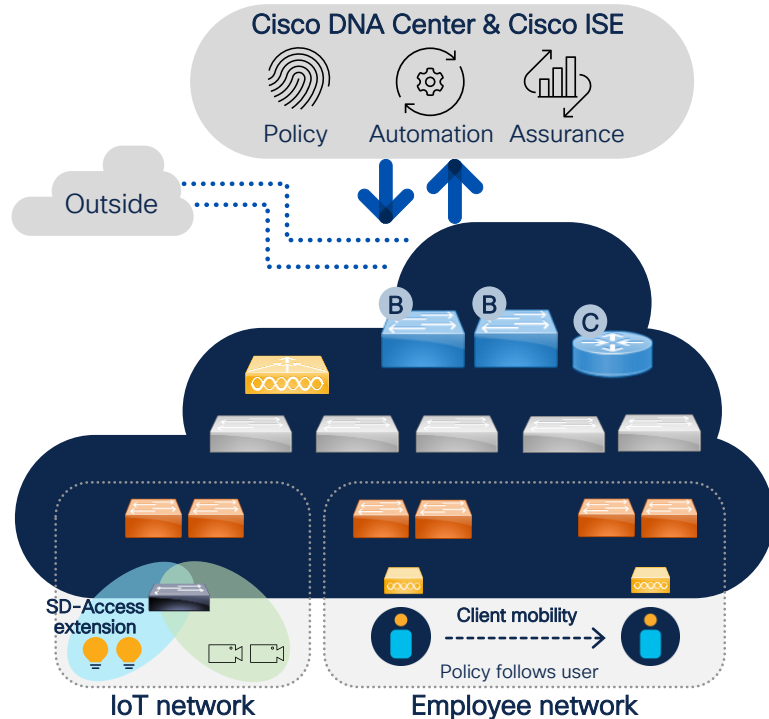
Deep visibility
Identify and group endpoints. Map their interactions and define access policies
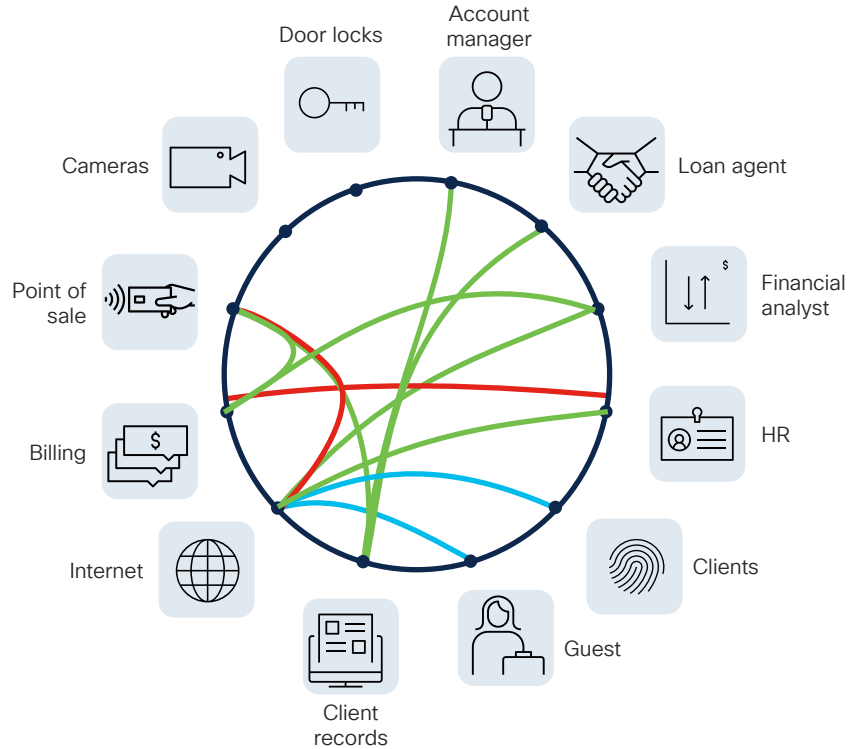
Group-based policy and segmentation
Enforce group-based access policies and secure network through segmentation

Policy consistency throughout
Use Cisco's multidomain architecture for consistent access and security policies throughout the enterprise

Addressing the "new normal" dynamic connections

Door locks
Account manager
Cameras
Loan agent
Point of sale
Financial analyst
Billing
HR
Internet
Clients
Client records
Guest

Policies (106) [ ] Enter full screen

Filter   Deploy ⌄   Refresh

■ Permit   ■ Deny   ■ Custom   ☐ Default

Source \ Destination	Auditors	Auditor_SDA	BYOD	Cameras	Contractor_N...	Contractors	Developers	Development_...	Doctors	Employees	Finance_Serv...	Guests	HVAC
Auditors	Deny	Permit	Custom	Permit	Permit	Permit	Custom	Custom	Permit	Permit	Custom	Default	Default	Default
Auditor_SDA	Default	Deny	Permit	Permit	Permit	Permit	Permit	Permit	Deny	Permit	Default	Default	Default
BYOD	Deny	Permit	Custom	Custom	Permit	Deny	Permit	Deny	Permit	Custom	Default	Default	Default
Cameras	Permit	Permit	Permit	Permit	Permit	Permit	Permit	Permit	Permit	Deny	Default	Default	Deny
Contractor_Nur...	Permit	Permit	Permit	Permit	Permit	Permit	Permit	Permit	Permit	Permit	Default	Default	Default
Contractors	Permit	Permit	Custom	Deny	Deny	Custom	Custom	Permit	Permit	Custom	Default	Default	Default

Part 1 – New concepts

Cisco ISE and Cisco DNAC

Integration for policy automation

Campus Fabric

Cisco Identity Services Engine

Authentication Authorization Policies

Groups and Policies

pxGrid REST APIs

Fabric Management

Policy Authoring Workflows

Cisco DNA Center
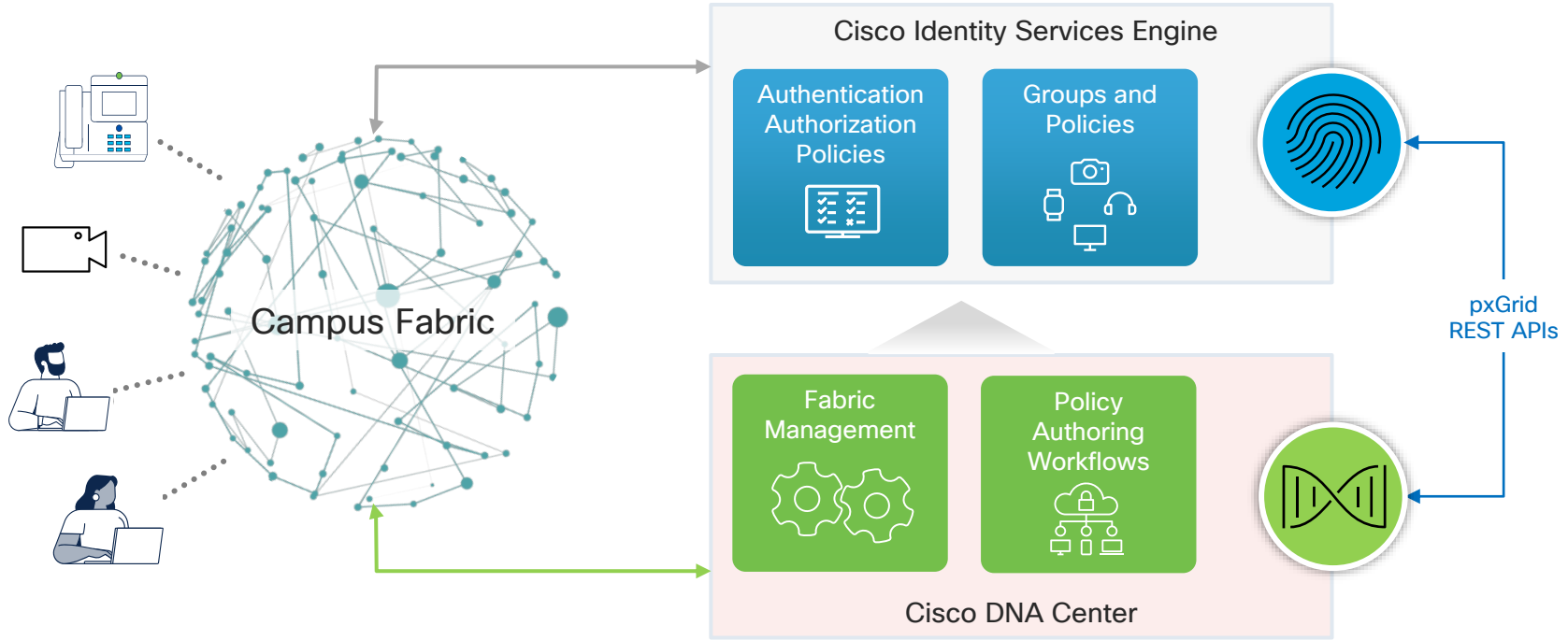
Let's explore our SD-Access environment

ISE + DNAC

PxGrid

DNS   DHCP

100.64.0.0/24   .100   .101   .53   .2

Campus Fabric

sj-CP-Border
(Cat 9300)

sf-transit
(Cat 9300)

sj-EDGE
(Cat 9300)

sf-FIAB
(Cat 9300)

Fabric

Gi1/0/1

Gi1/0/13,1
4

Gi1/0/21,2
2

Gi1/0/23,2
4

Gi1/0/23,2
4

Gi1/0/21,2
2

Gi1/0/10 Gi1/0/11

Gi1/0/10

Gi0/0/1   Gi0/0/2

TRUNK

SAN JOSE   SAN FRAN   Meraki

Client 1   Client 2   Client 3   Client 4

Underlay x Overlay

Global-Pool : 100.0.0.0/8
APs : 100.123.0.0/16
Campus VN : 100.100.0.0/16
Guest VN : 100.99.0.0/16

SDA moves to IDENTITY

John   Susan   Alan   Nathan

~~192.168.3.47~~   ~~192.168.12.213~~~~192.168.8.89~~ ~~192.168.37.149~~

Moving away from an IP address centric view

It starts with a User
or a device or thing

User: John

We move the user into a Group

Group: Finance

User: John
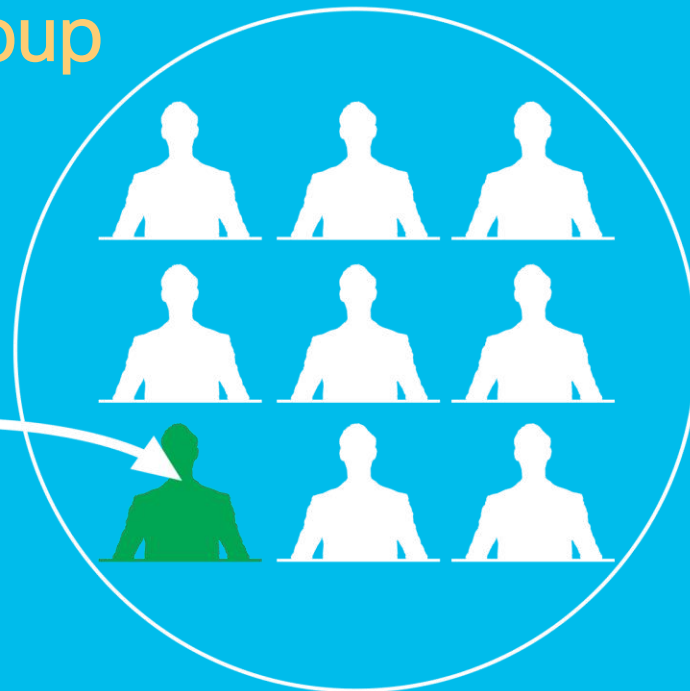
We place the Group into a Virtual Network

John
Group: Finance

John
Group: Finance

Susan
Group: Marketing

Group: Engineering
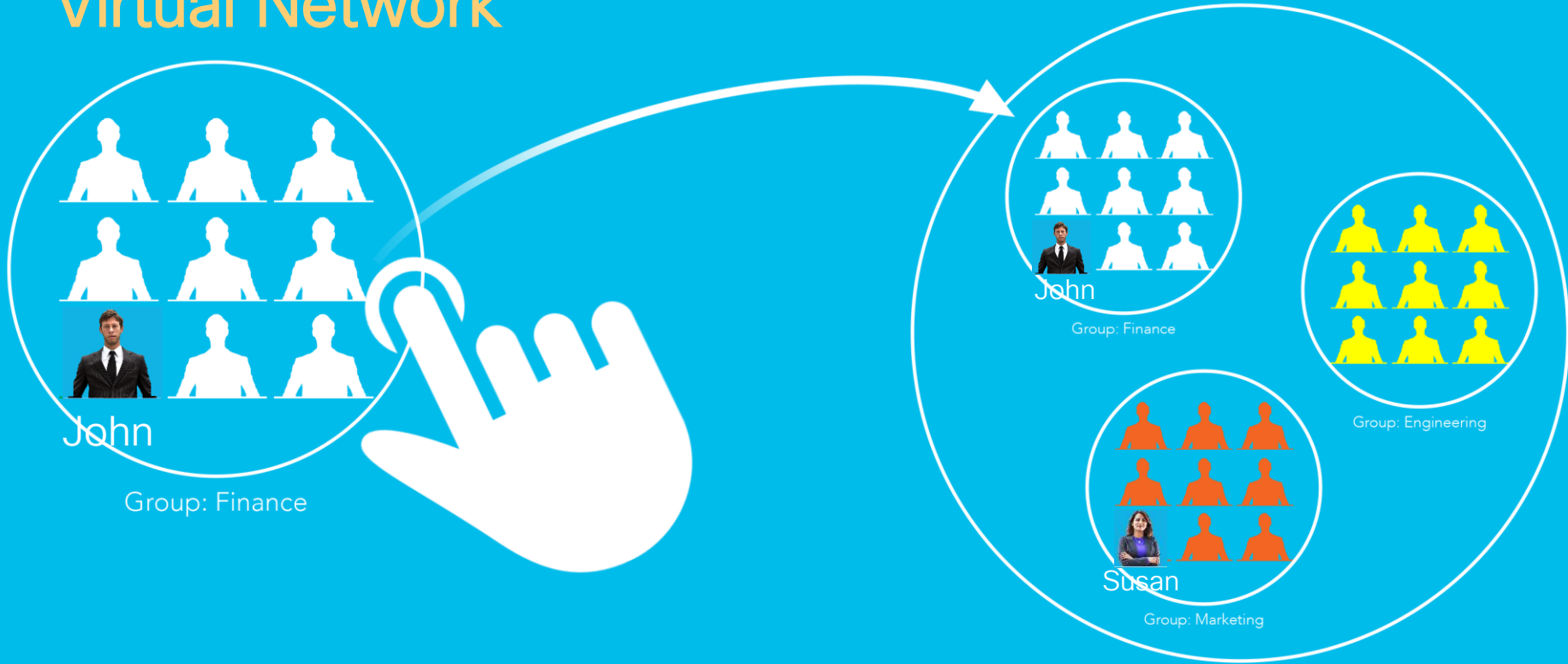
Virtual Network: *CAMPUS*

VN to VN Segmentation
Default mode is DENY-ALL

Group: Marketing
Susan

Group: Finance
John

Group: Engineering

Alan   Nathan

Virtual Network **CAMPUS**   Virtual Network **GUEST**
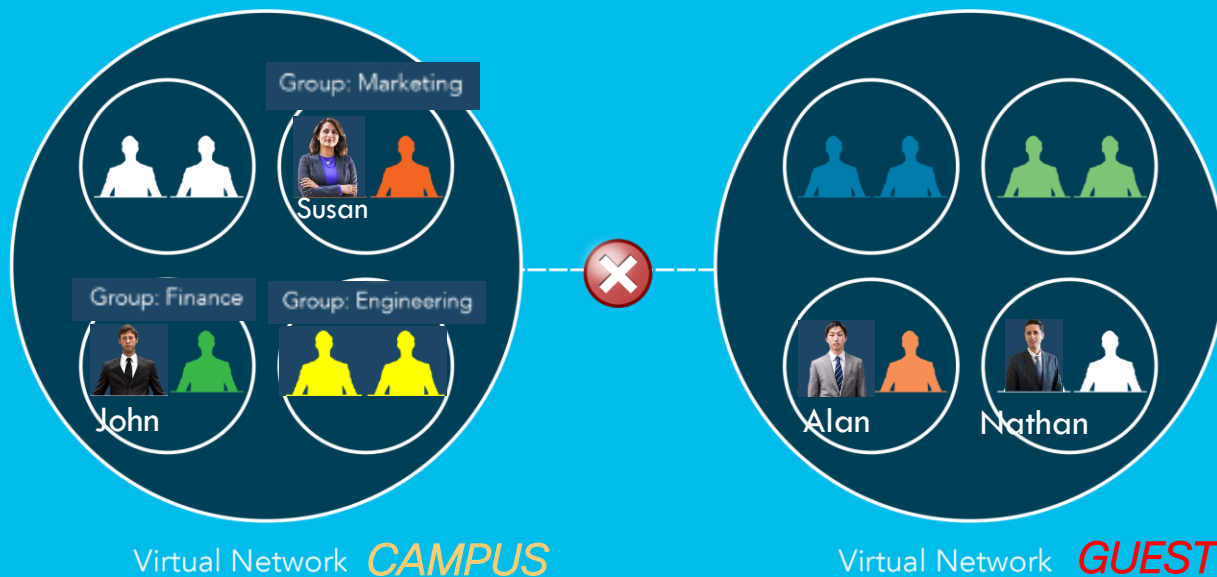
Communication between different VN(s) (ex.: companies)
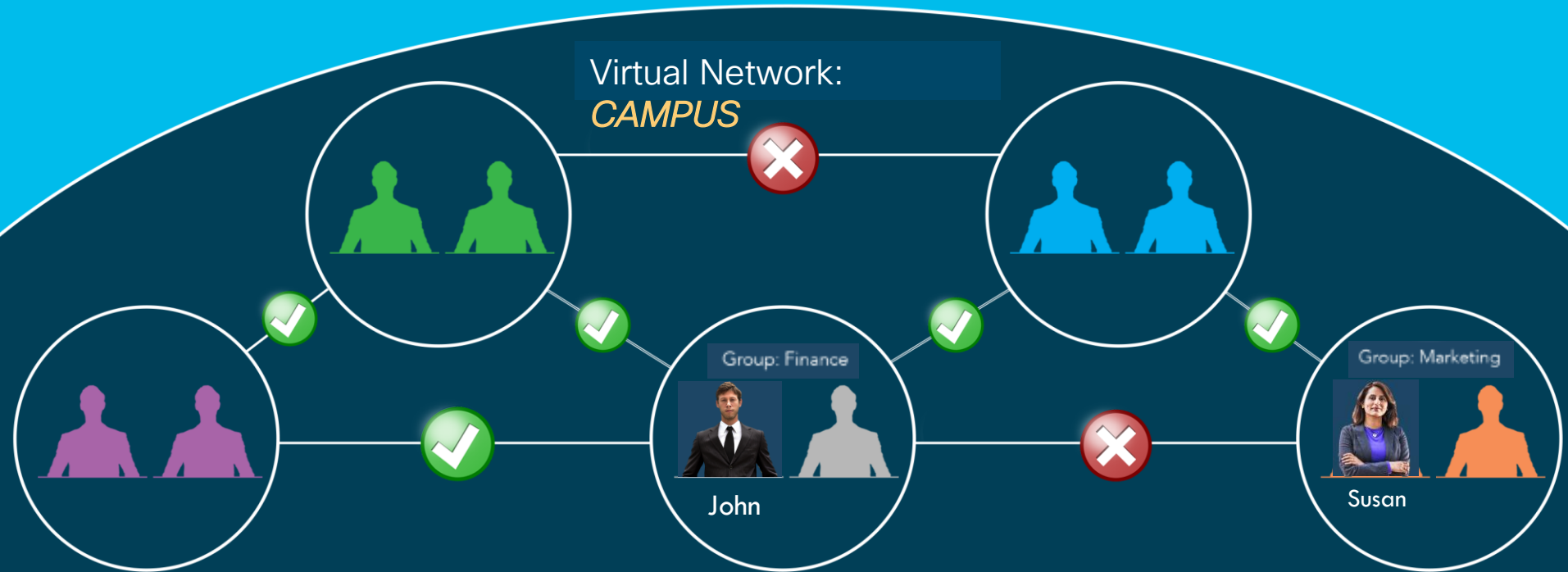
Our LAB Virtual Networks (VNs)

CAMPUS

GUEST

HR

Acct

Guest

Segmentation ← ✕ → Segmentation
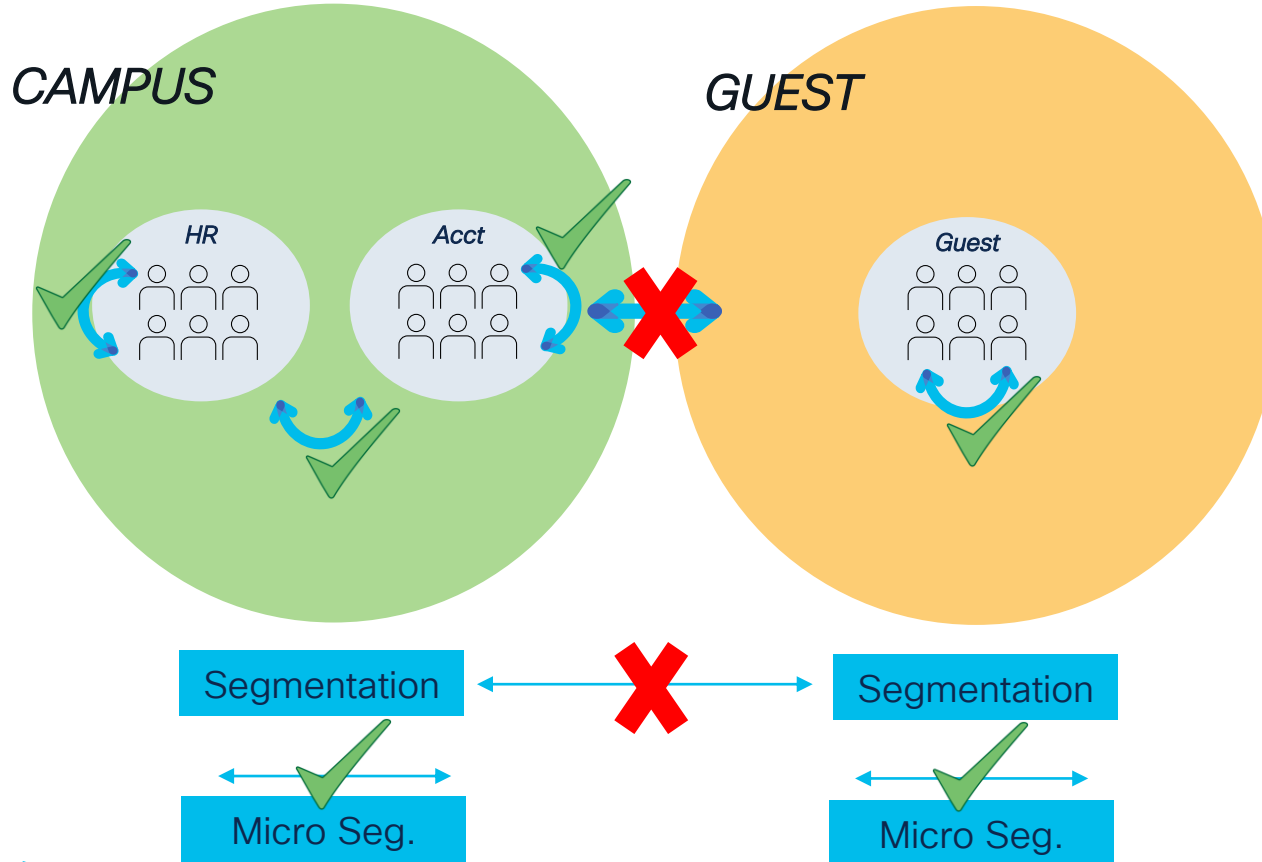
Micro Seg. ✓ Micro Seg.

Let's see it in a real life!
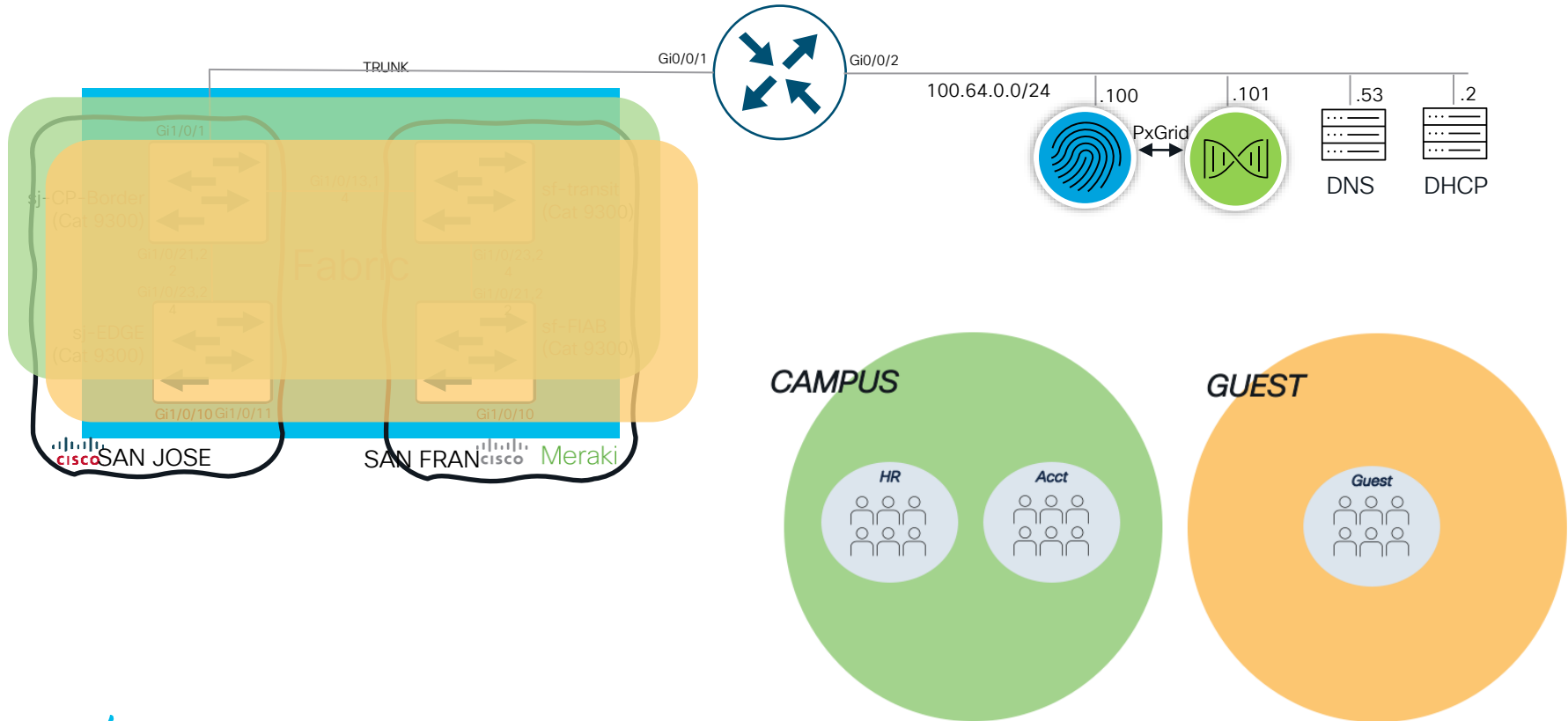
Demo 1 –
Explore our real environment

Demo 1 – Explore our real environment (recap)
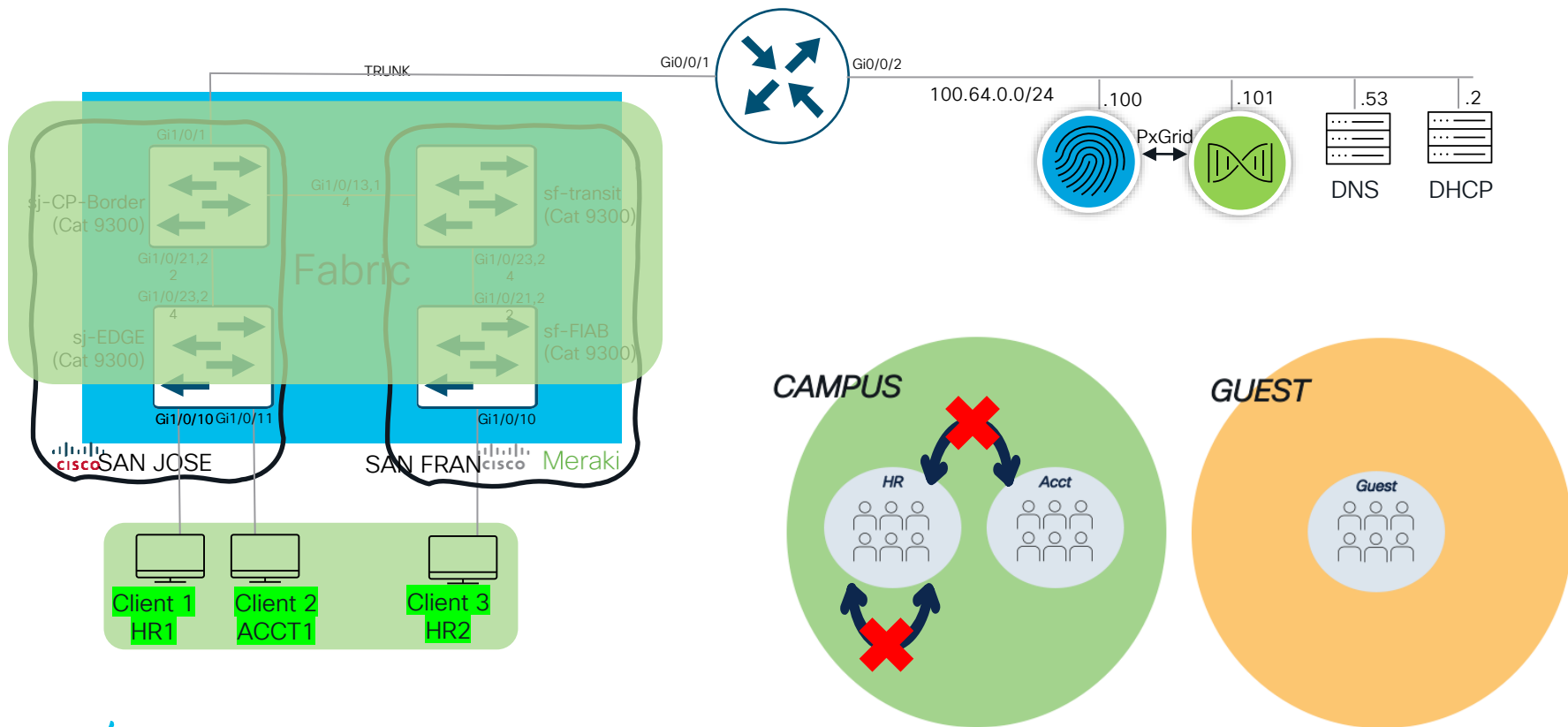
Part 2 – Segmentation

CISCO Live!
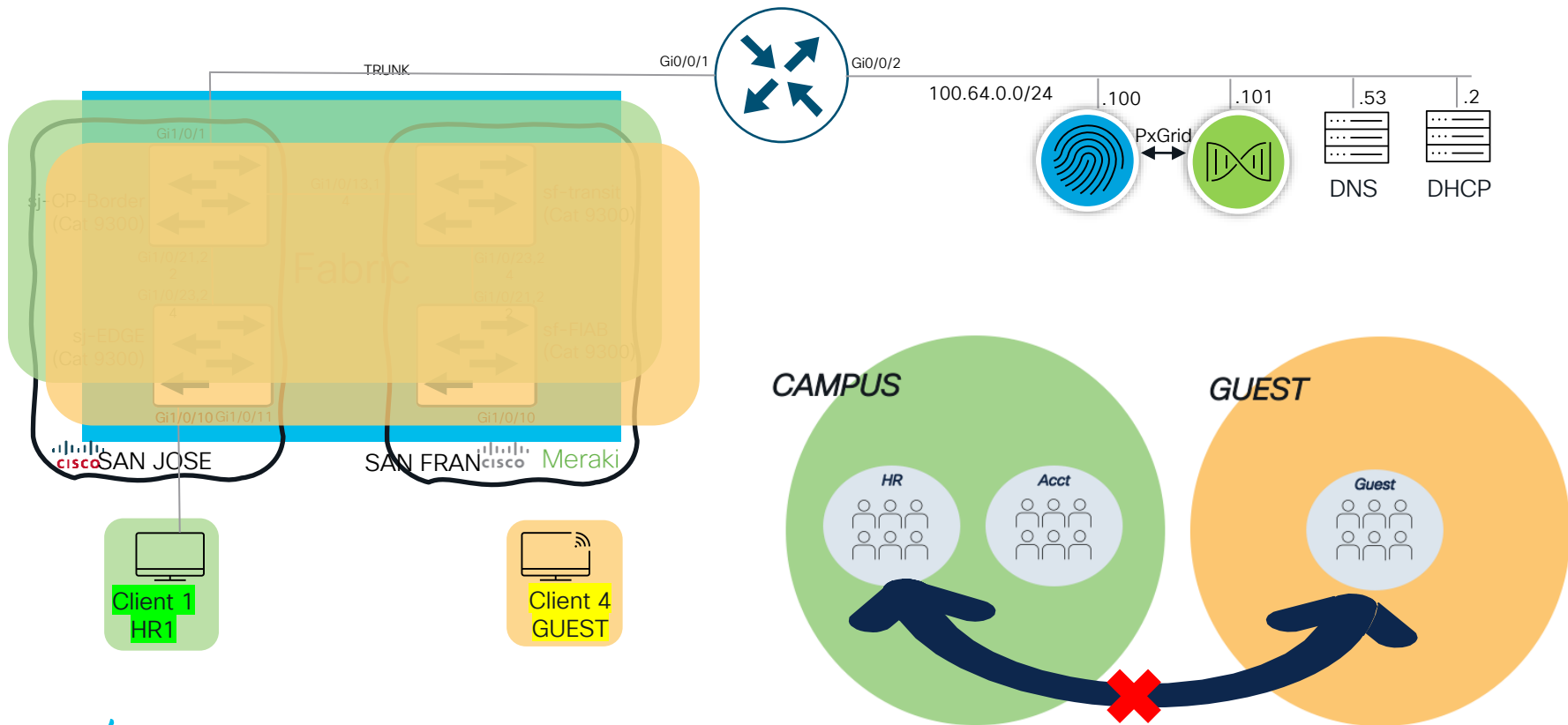
Segmentation

Demo 2 –
Segmentation in ACTION!
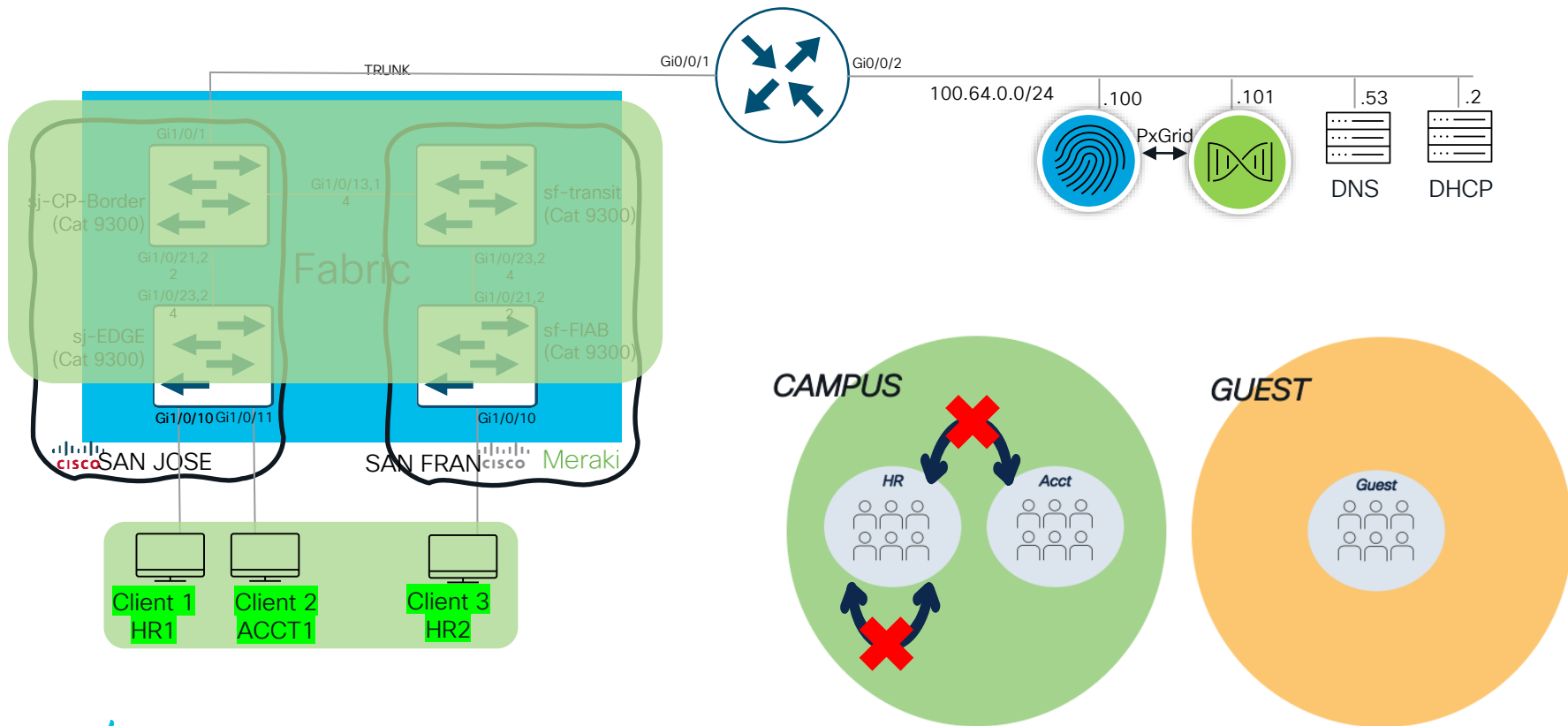
Demo 2 – **Segmentation** in ACTION! (recap)
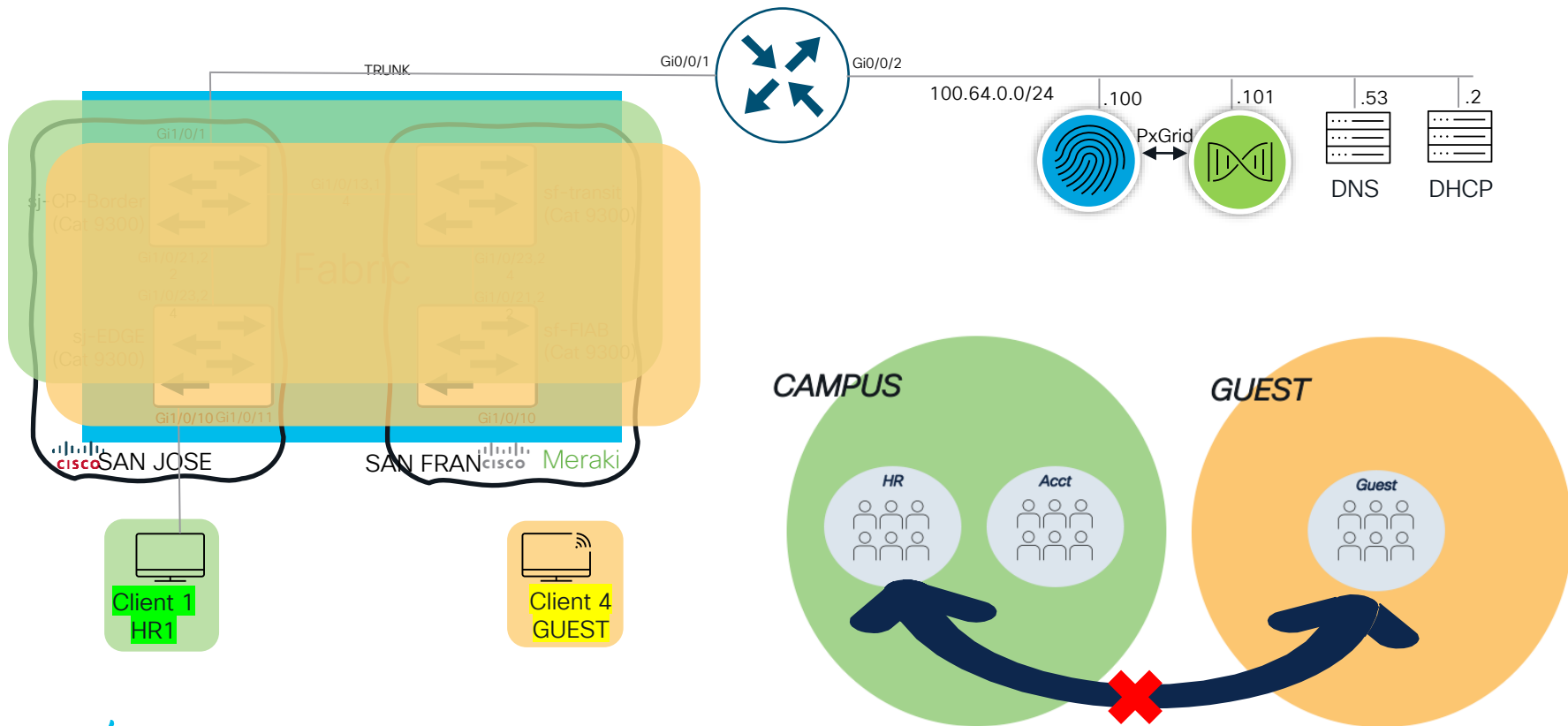
Part 3 – Micro Segmentation

Micro Segmentation

Demo 3 –
Micro Segmentation in ACTION!

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Demo 3 – Micro Segmentation in ACTION! (recap)

Key takeaways!

- How cisco is addressing Network Transformation challenges

- SD-access journey outcomes:
  - Automation/Orchestration as a way to address complexity
  - Simplification on managing security policies from small to very big environments in a dynamic way
  - Higher SLAs with no effort for your Operations teams

Fill out your session surveys!

Attendees who fill out a minimum of four session surveys and the overall event survey will get **Cisco Live-branded socks** (while supplies last)!

Attendees will also earn 100 points in the **Cisco Live Game** for every survey completed.

These points help you get on the leaderboard and increase your chances of winning daily and grand prizes

Continue your education

- Visit the Cisco Showcase for related demos

- Book your one-on-one Meet the Engineer meeting

- Attend the interactive education with DevNet, Capture the Flag, and Walk-in Labs

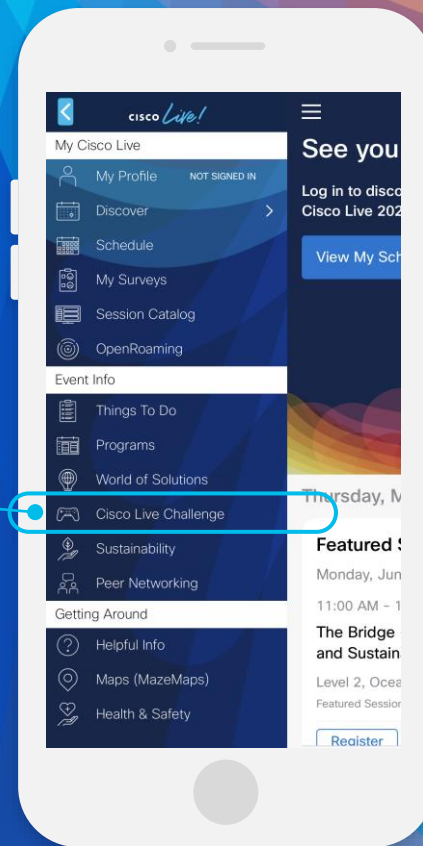- Visit the On-Demand Library for more sessions at www.CiscoLive.com/on-demand

Cisco Live
Challenge

Gamify your Cisco Live experience!
Get points for attending this session!

How:

1 Open the Cisco Events App.

2 Click on 'Cisco Live Challenge' in the side menu.

3 Click on View Your Badges at the top.

4 Click the + at the bottom of the screen and scan the QR code:

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Let's go