



SOITRON*
INSPIRÁRIUM


SOFTWARE
DEFINED
LAN

20. 5. 2021

9:00 - 10:30 hod.



AGENDA

- Úvod do SD LAN 15 minut
 - Představení Cisco SD LAN 45 minut
 - Závěr Otázky a odpovědi 10 minut
-
- Mikrofony jsou po dobu prezentace vypnuté (Mute) 
 - Dotazy můžete pokládat v průběhu prezentace pomocí Q & A (otázky a odpovědi)
 - Na závěr bude diskuze

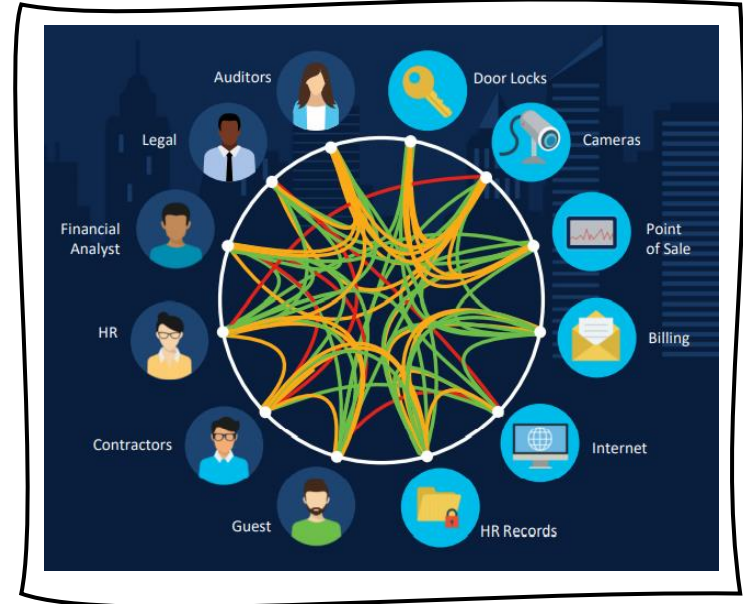


Úvod do SD LAN



SD LAN - úvod

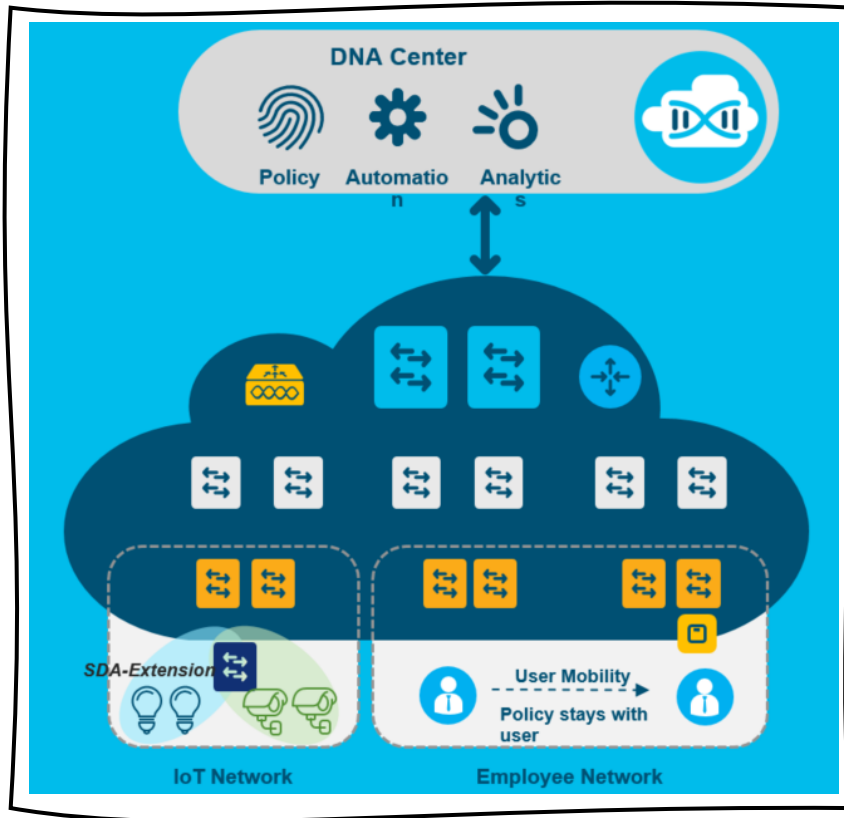
- Segmentace & Bezpečnost
- Komplexnost změn & Automatizace
- Visibilita & Troubleshooting



SDA – Software Defined Access

SDA (Software Defined Access), která je součástí koncepce DNA (Digital Network Architecture), využívá sadu vlastností pro zajištění end-to-end segmentace sítě a automatizované politiky pro přístup uživatelů do sítě v rámci jednoho prostředí (LAN / WAN).

Řešení SDA umožňuje nastavení přístupu jakémukoliv uživateli, nebo IP zařízení k jakýmkoliv aplikacím v síti při dodržení všech bezpečnostních politik.



DIGITÁLNÍ TRANSFORMACE SÍŤE



Powered by
Cisco DNA™



MÝTY O SDA

1

SDA je pouze pro lokální síť LAN v jedné lokalitě

2

SDA (Cisco DNAC) vyžaduje min. 3x výkonné servery

3

SDA je příliš drahé řešení

4

Instalace SDA / DNAC zabere mnoho týdnů

5

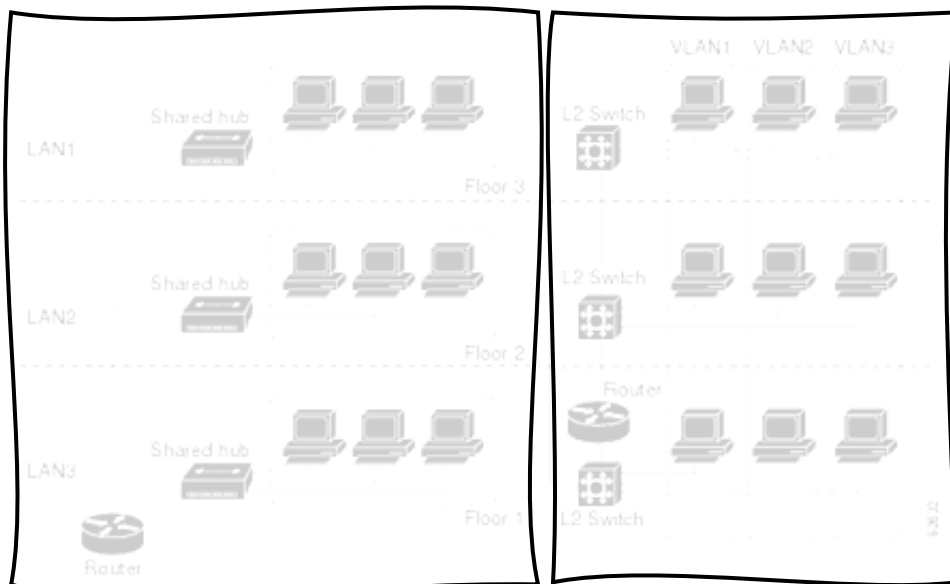
Jsou podporovány jen nejvýkonnější řady přepínačů



Segmentace a bezpečnost sítě

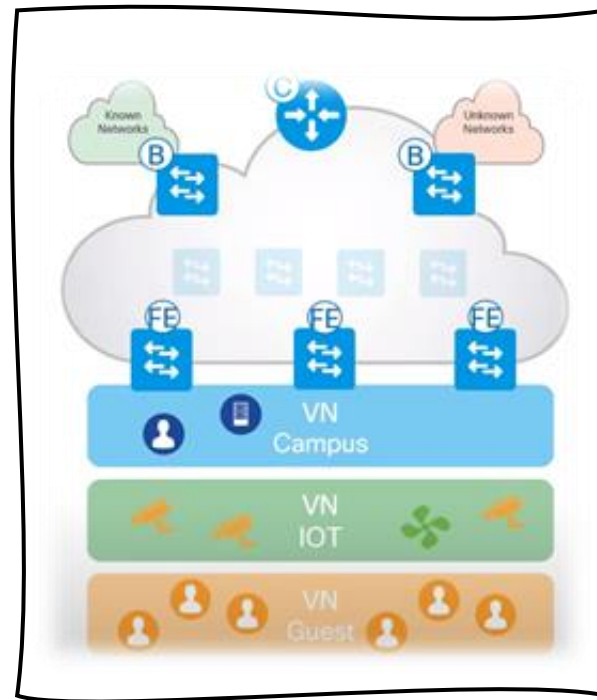


SEGMENTACE LEGACY vs. SDN



- Fyzická topologie

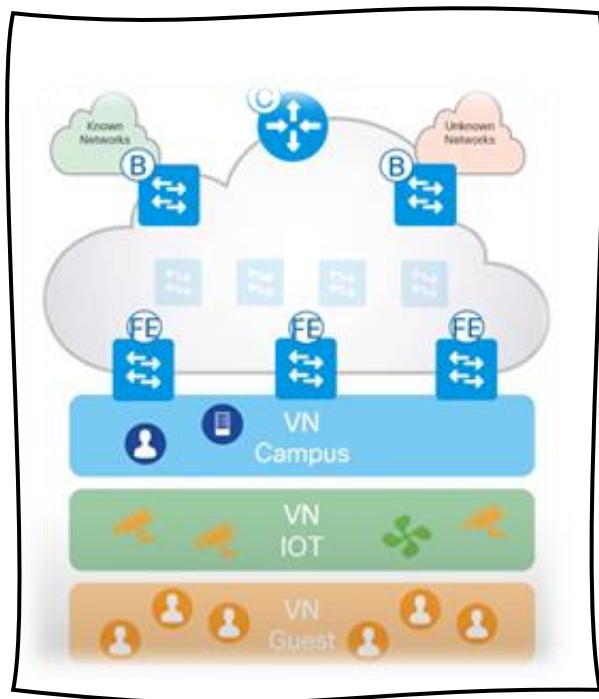
- Logická topologie



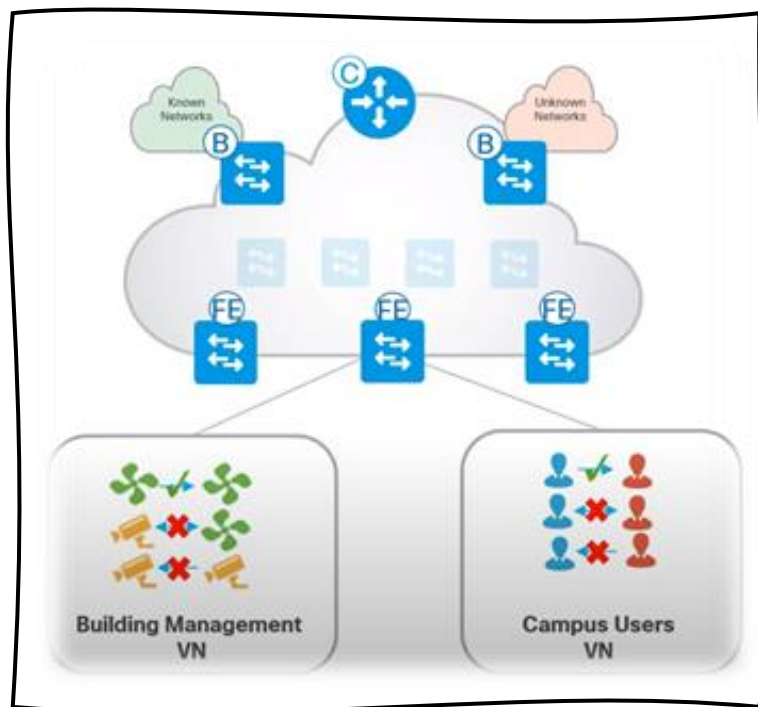
- Makrosegmentace pomocí VN



MAKRO a MIKROSEGMENTACE



- Makrosegmentace pomocí VN



- Mikrosegmentace



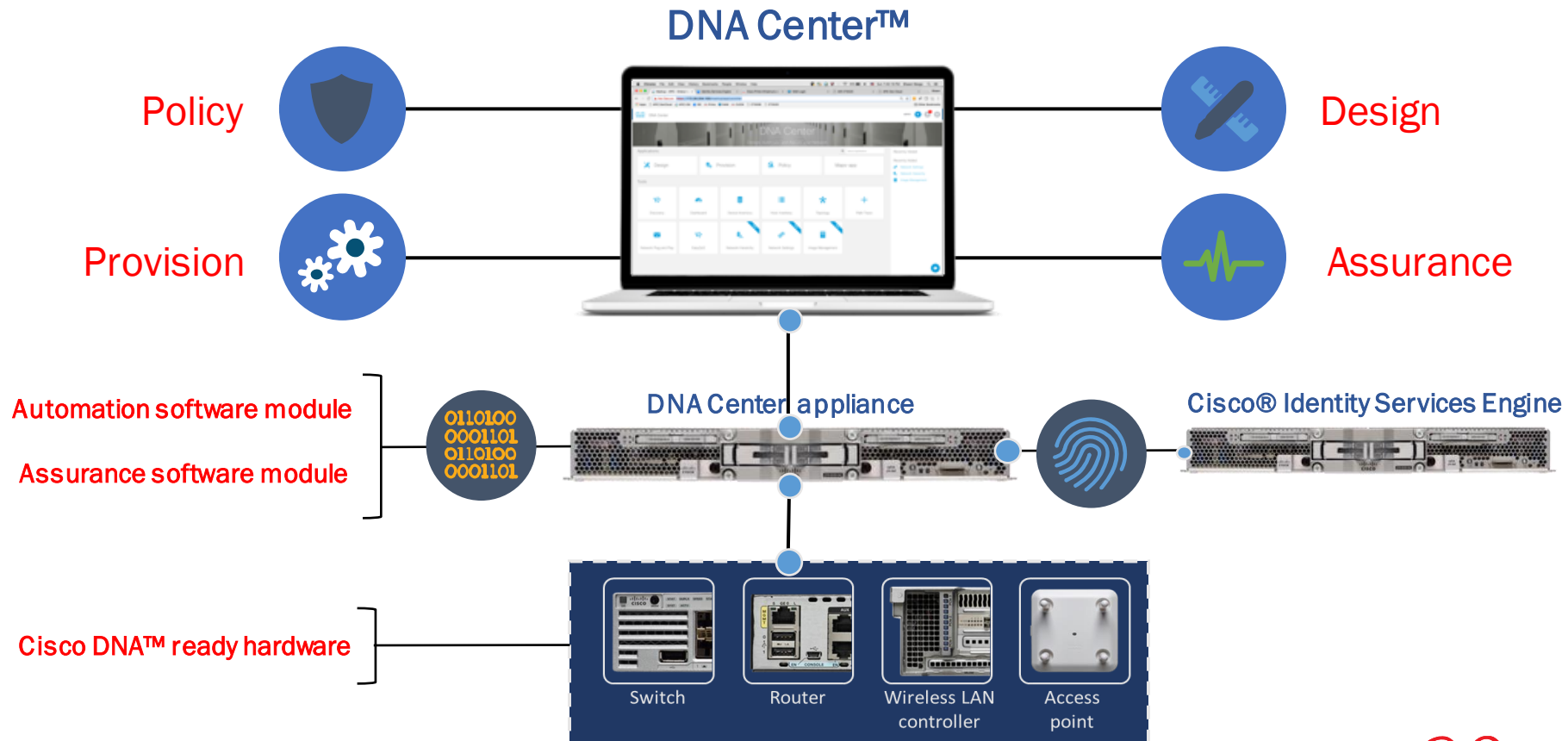
Automatizace



DNA Center



CISCO DNA – ARCHITEKTURA ŘEŠENÍ



DNA Center – 1) Design

Automation

Design



- Global settings
- Site profiles
- User access

Policy



- Virtual networks
- Access control
- Application control

Provision



- Fabric domains
- Device on-boarding
- Device inventory

Assurance



- Issues and trends
- Performance
- Proactive troubleshooting

Planning, installation and migration

Proactive and predictive network, client and application assurance



ÚVOD K DESIGNU - Network Hierarchy

- Geo lokace, budovy, patra, mapové podklady

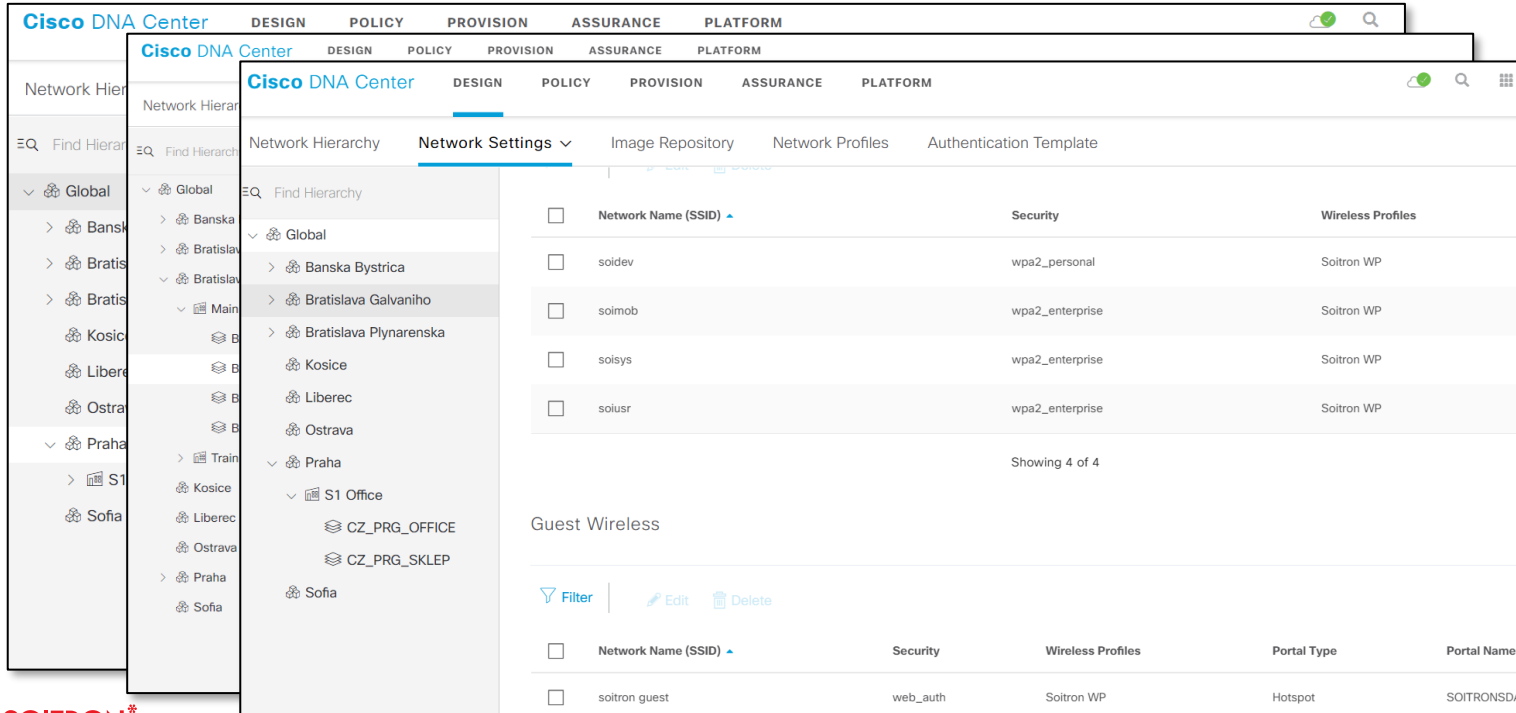
The image displays the Cisco DNA Center interface for Network Hierarchy design. It is divided into three main sections:

- Top Left:** A map view showing the geographical location of various sites. A sidebar on the left lists the hierarchy: Global, Banská Bystrica, Bratislava Galvaniho, Bratislava Plynarenska, Main Building, Train, Kosice, Liberec, Ostrava, Praha, S1 Office, CZ_PRG_OFFICE, CZ_PRG_SKLEP, and Sofia.
- Top Right:** A smaller map view showing a specific location with a 'Main Building' marker.
- Center:** A detailed floor plan view of the 'Main Building / BA_PLY_MAIN_2NP' floor. The plan shows a grid of rooms and corridors, with several access points (APs) deployed. The interface includes a search bar for 'Find Hierarchy', a dropdown for '2.4 GHz & 5 GHz', and buttons for 'Edit', 'Data', and 'View Options'. A sidebar on the left of this view shows the selected hierarchy path: Global > Bratislava Plynarenska > Main Building > BA_PLY_MAIN_2NP.



ÚVOD K DESIGNU - Network Settings

- AAA, DHCP, DNS, NTP, Syslog, SNMP, Credentials – základní síťové nastavení
- IP Address Pools – správa IP adres na jednom místě
- Wireless – SSID, ověřování, přístup pro hosty ...



The screenshot displays the Cisco DNA Center interface for Network Settings. The left sidebar shows a network hierarchy with nodes for Global, Banská Bystrica, Bratislava Galvaniho, Bratislava Plynarenska, Kosice, Liberec, Ostrava, Praha, and Sofia. The main content area shows a table of Network Name (SSID) configurations.

Network Name (SSID)	Security	Wireless Profiles
<input type="checkbox"/> soidev	wpa2_personal	Soitron WP
<input type="checkbox"/> soimob	wpa2_enterprise	Soitron WP
<input type="checkbox"/> soisys	wpa2_enterprise	Soitron WP
<input type="checkbox"/> solusr	wpa2_enterprise	Soitron WP

Showing 4 of 4

Guest Wireless

Network Name (SSID)	Security	Wireless Profiles	Portal Type	Portal Name
<input type="checkbox"/> soitron guest	web_auth	Soitron WP	Hotspot	SOITRONSDA



ÚVOD K DESIGNU - Příprava síťového zařízení

- Image repositories (jednotný management SW)
- Síťové profily a jejich aplikace pro jednotlivé lokality

The screenshot displays the Cisco DNA Center interface for configuring Network Profiles. The main content area shows a table of profiles:

Profile Name	Type
BA-HQ-PLYNARENSKA-BORDER-ROUTERS	switchin
BB-BO-BORDER-ROUTERS	switchin
Soitron WP	Wireless

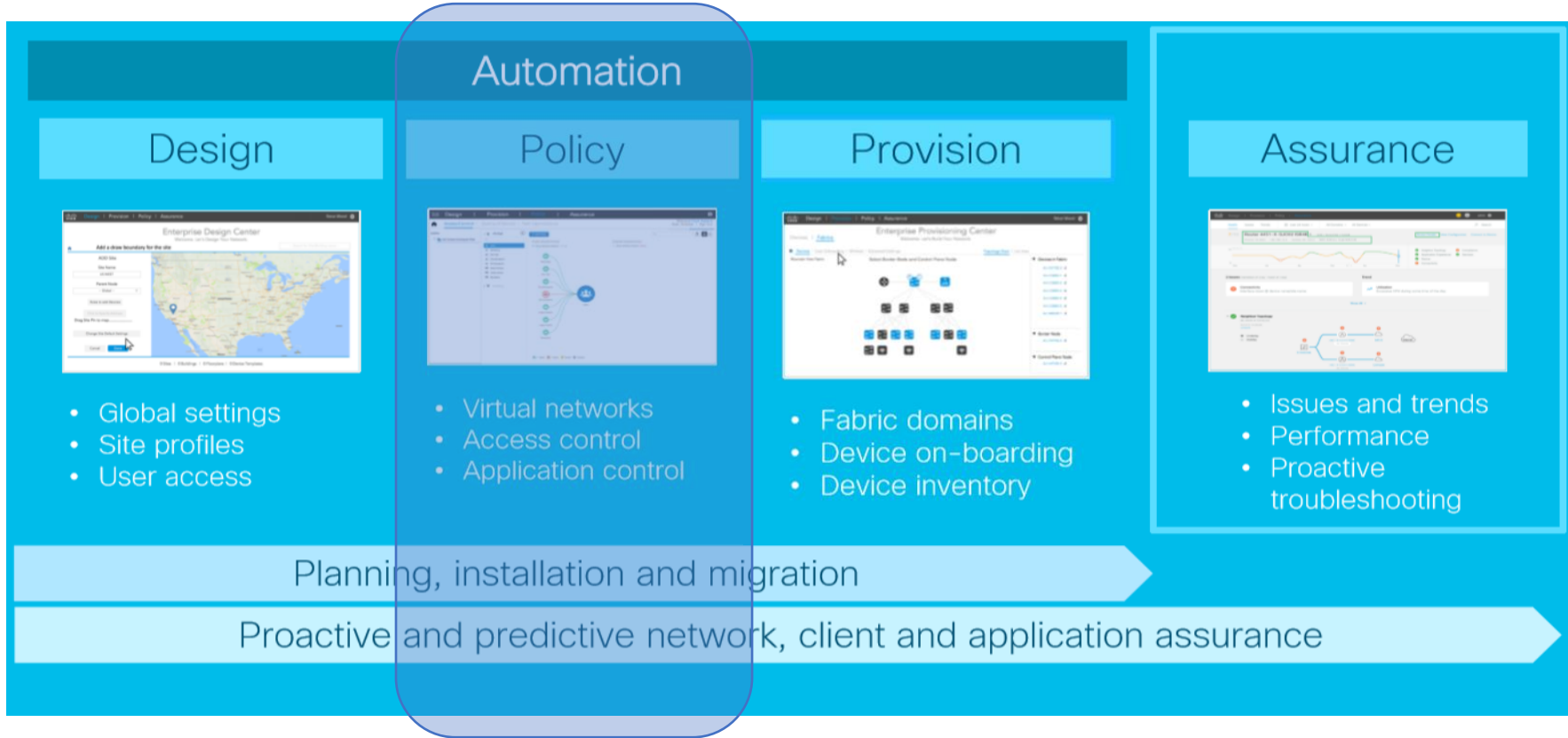
Below the table, it indicates "Showing 3".

On the right, the "Add Sites to Profile" panel is active, showing a search bar and a list of sites with checkboxes:

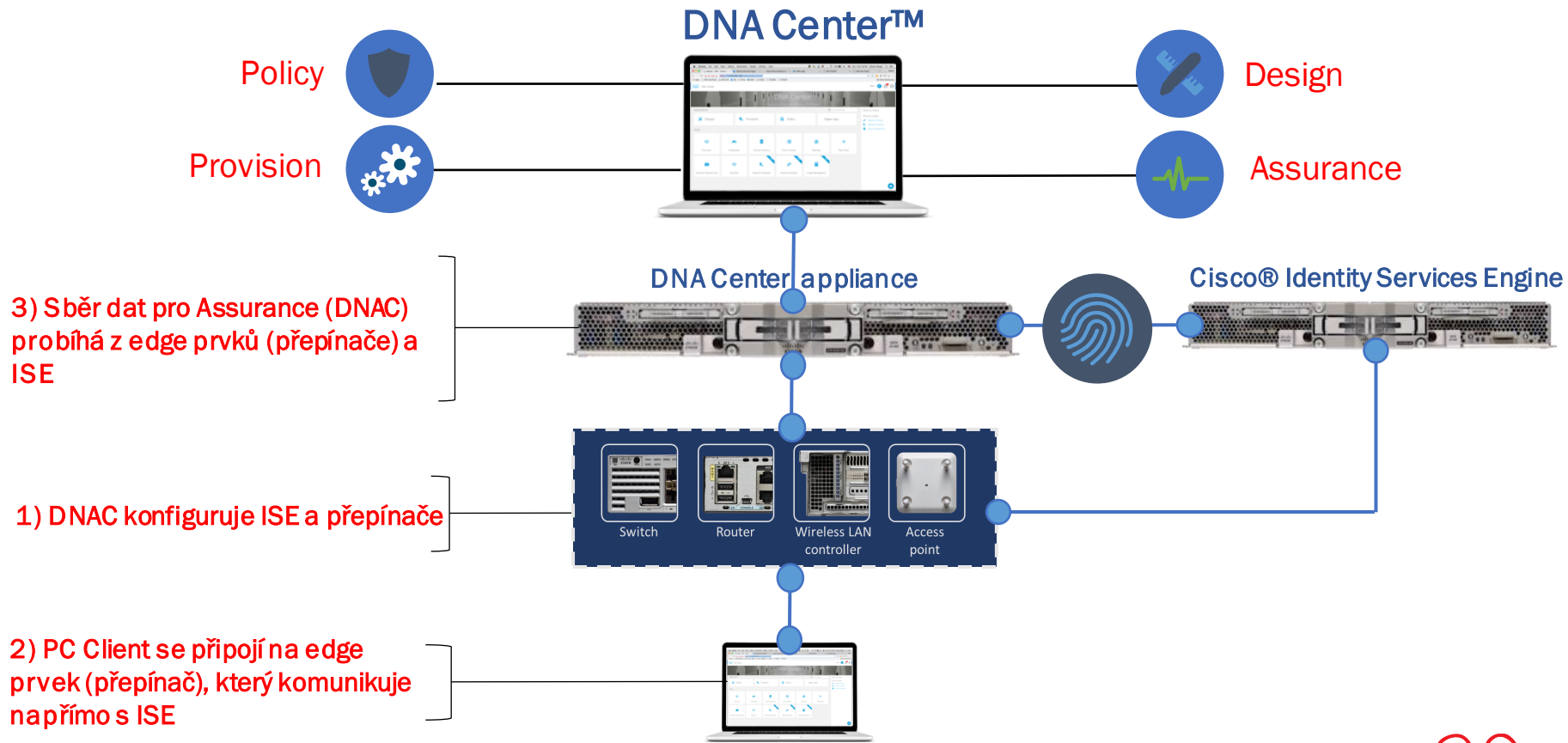
- Global (8)
- Banska Bystrica (1)
- Bratislava Galvaniho (1)
- Bratislava Plynarenska (2)
 - Main Building (4)
 - BA_PLY_MAIN_1NP
 - BA_PLY_MAIN_2NP
 - BA_PLY_MAIN_3NP
 - BA_PLY_MAIN_4NP
 - Train (1)
 - BA_PLY_TRAIN_1NP
- Kosice
- Liberec
- Ostrava
- Praha (1)
- Sofia



DNA Center – 2) Policies & TrustSec



ÚVOD K TRUSTSEC A SEGMENTACI



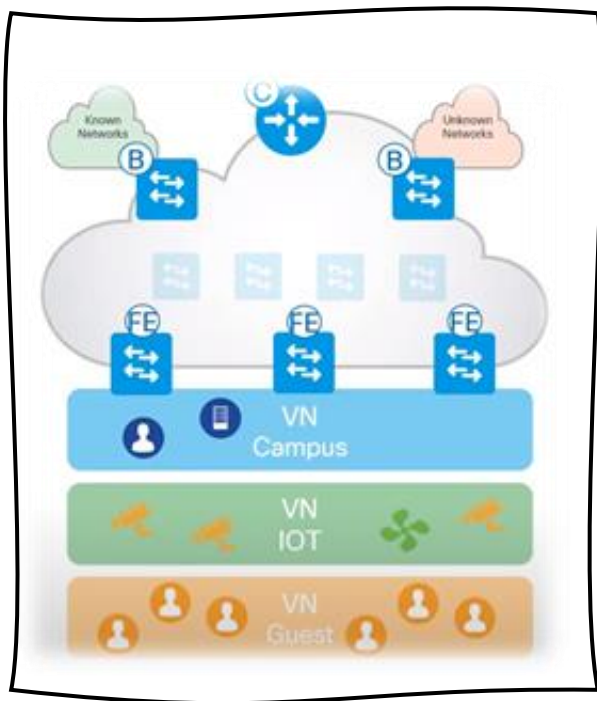
3) Sběr dat pro Assurance (DNAC) probíhá z edge prvků (přepínače) a ISE

1) DNAC konfiguruje ISE a přepínače

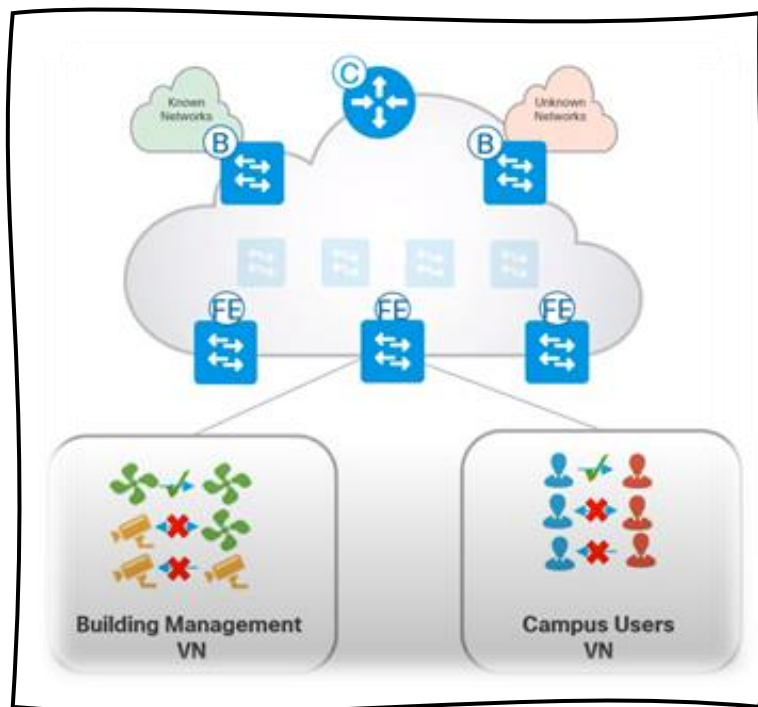
2) PC Client se připojí na edge prvek (přepínač), který komunikuje napřímo s ISE



MAKRO / MIKROSEGMENTACE & TRUSTSEC



- Makrosegmentace pomocí VN



- Mikrosegmentace



SEGMENTACE SÍTĚ V SDA

Create or Modify Virtual Network by selecting Available Scalable Groups.

Virtual Network Name*

IOT

Available Scalable Groups

Find Scalable Group

AC ACL_Ap pServer	AC ACL_We bServer	AP Access Point	AS Airport, Security
CO Contract ors	DE Develop ers	DS Develop ment_S ...	DO Doctor
GU Guest	HV HVAC	LI Lights	NU Nurse

Available Scalable Groups

Find Scalable Group

Show Unselected

AC ACL_Ap pServer	AC ACL_We bServer	AP Access Point	AS Airport_ Security	BY BYOD	BA Baggag e
CO Contract ors	DE Develop ers	DS Develop ment_S ...	DO Doctor	EM EMR	FI Finance
GU Guest	HV HVAC	LI Lights	NU Nurse	PC PCI_Ser vers	PO Point_of Sale_S ...
PS Producti on_Serv ...	PU Producti on_User ...	QS Quarant ined_Sy ...	ST Staff	TS Test_Se rvers	TI Ticketin g
TS TrustSe c_Devic ...	VM Vending _Machin ...				

Policy Name*

DENY-HVAC-LIGHTS

Find Contracts

Deny_TFTP_only

deny

permit

Source Scalable Groups

HV
HVAC

Destination Scalable Groups

LI
Lights



DNA Center – 3) Provision

Automation

Design



- Global settings
- Site profiles
- User access

Policy



- Virtual networks
- Access control
- Application control

Provision



- Fabric domains
- Device on-boarding
- Device inventory

Assurance



- Issues and trends
- Performance
- Proactive troubleshooting

Planning, installation and migration

Proactive and predictive network, client and application assurance



ÚVOD K PROVISIONING

- Vybudování inventory
- Zařazení prvku do "underlay sítě" jako podkladové vrstvy

The image displays two overlapping screenshots of the Cisco DNA Center web interface, specifically the Provisioning section for SD-Access Fabrics.

Left Screenshot: Shows the main overview page for "SD-Access Fabrics and Transit/Peer Networks". The "Fabric" tab is selected. Under "Fabrics", there are two cards: "Default LAN Fabric" (0 Site, 0 Fabric Device, 0 Control Plane, 0 Border LAN) and "SK FABRIC" (2 Site, 5 Fabric Device, 2 Control Plane, 2 Border LAN). A "Plug and Play" button is visible in the top right of the fabric list area.

Right Screenshot: Shows a detailed view of the "SK FABRIC" configuration. The left sidebar lists the fabric and its components: "SK FABRIC", "Banska Bystrica", and "Bratislava Plynarenska". The main content area displays a diagram for "Bratislava Plynarenska" with two control plane nodes (CB) and their associated IP addresses: "BA-P-SW-SDA-CO RE1.soitron.as" and "BA-V-SW-SDA-CO RE1.soitron.as".

PROVISION - Příprava síťového zařízení

- Image repositories (jednotný management SW)
- Host Onboarding - Authentication Template, Virtual Networks, Wireless SSID's, Port Assignment

The screenshot displays the Cisco DNA Center Provisioning interface. The top navigation bar includes tabs for DESIGN, POLICY, PROVISION (active), ASSURANCE, and PLATFORM. The left sidebar shows a network hierarchy with 'Fabric-Enabled Sites' expanded to show 'SK FABRIC' and 'Banska Bystrica'. The main content area shows a list of devices under 'Main Building' with the following details:

Device Name	IP Address	Provision Status
BA-P-SW-SDA-CO	RE1.soltron.as	Provisioned
BA-V-SW-SDA-CO	RE1.soltron.as	Provisioned
BA-P-SW-SDA-ED	GE1.soltron.as	Provisioned
BA-V-SW-SDA-ED	GE1.soltron.as	Provisioned
21 Unified AP		Provisioned
4 Unified AP		Provisioned
sbawic01	.soltron.as	Provisioned

The right side of the interface shows a network diagram with nodes representing the devices and their interconnections. A 'Filter' button and 'Provision Status' dropdown are visible above the diagram. The diagram shows a central switch (BA-V-SW-SDA-CO) connected to other switches (BA-P-SW-SDA-CO, BA-P-SW-SDA-ED, BA-V-SW-SDA-ED) and access points (21 Unified AP, 4 Unified AP, sbawic01).

DNA Center – 4) Assurance

Automation

Design



- Global settings
- Site profiles
- User access

Policy



- Virtual networks
- Access control
- Application control

Provision



- Fabric domains
- Device on-boarding
- Device inventory

Assurance



- Issues and trends
- Performance
- Proactive troubleshooting

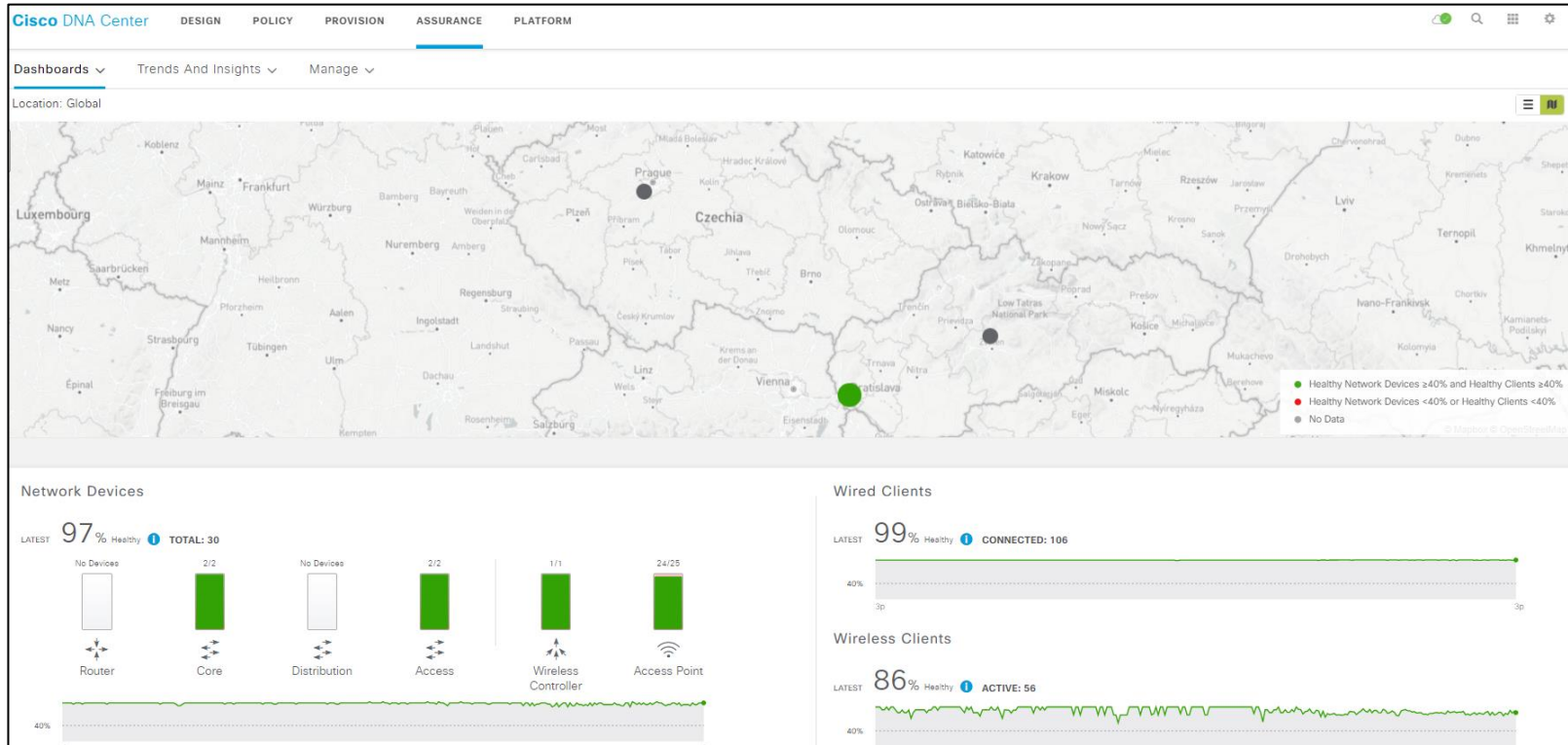
Planning, installation and migration

Proactive and predictive network, client and application assurance



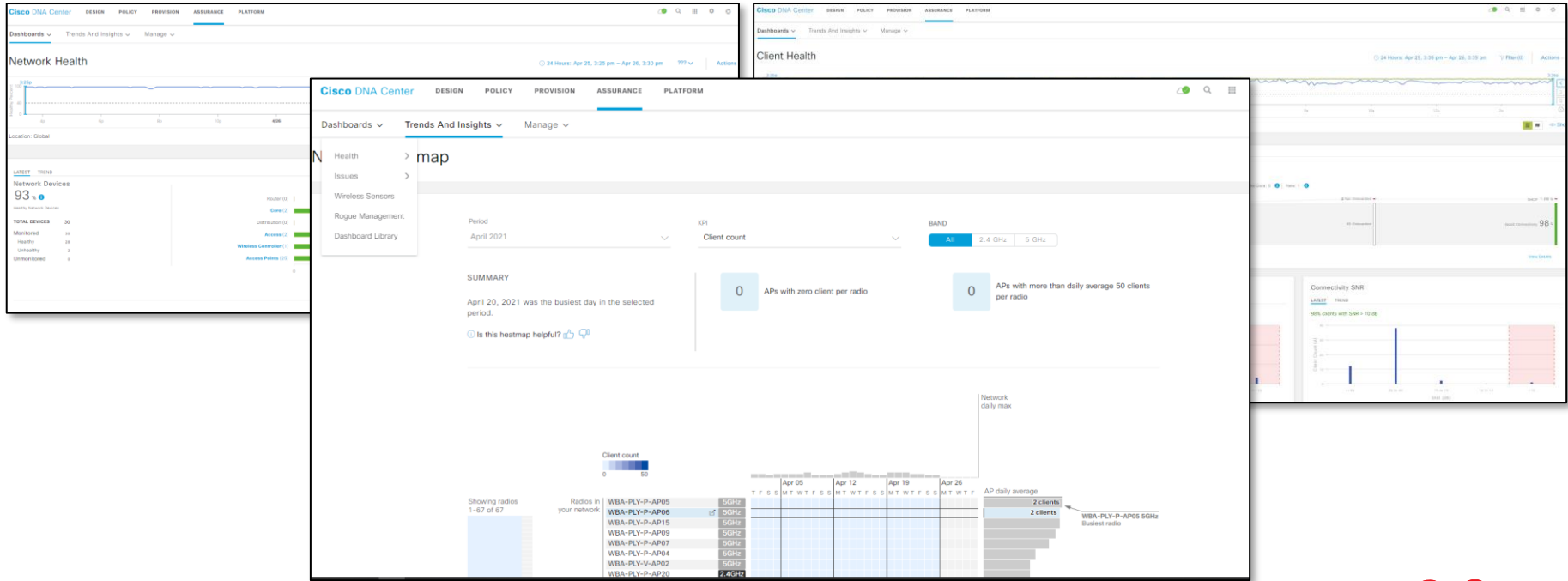
ÚVOD K ASSURANCE

- Co budeme ukazovat?



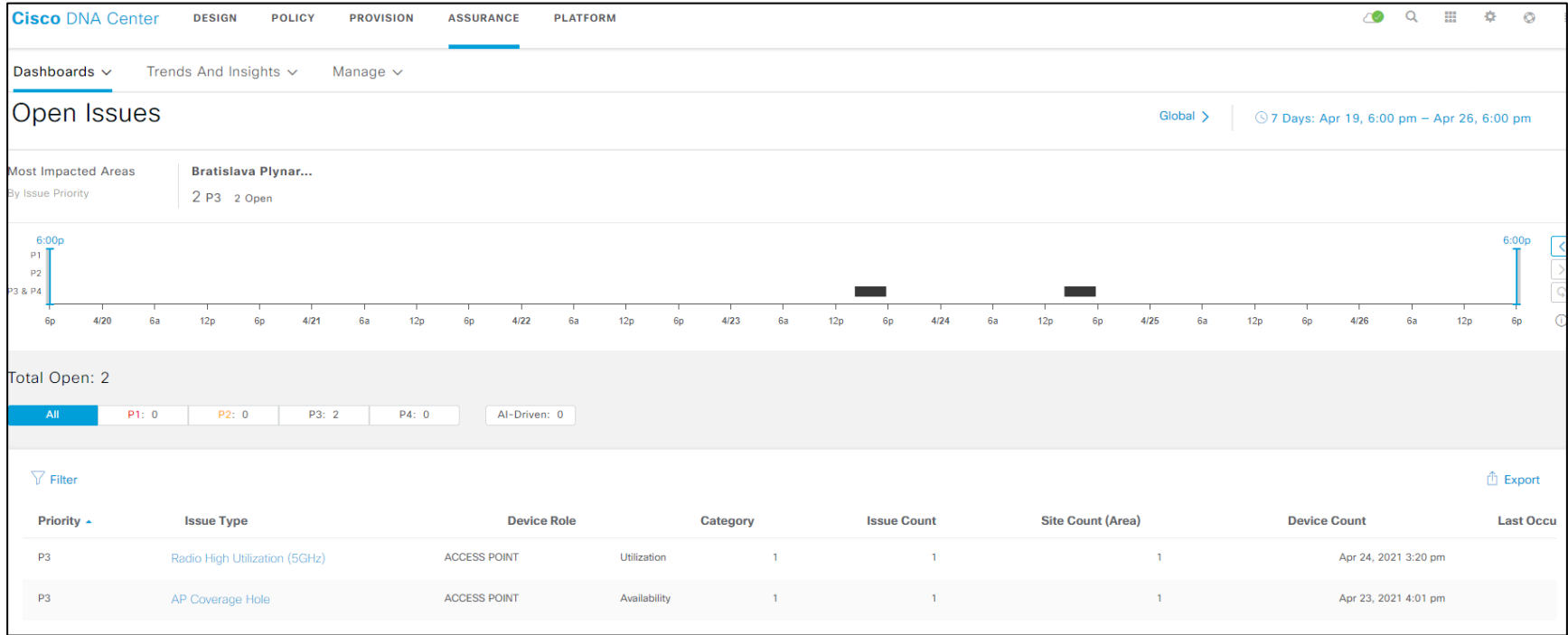
ÚVOD K ASSURANCE

- Network health, client health, insights
- Client health
- Insights



ÚVOD K ASSURANCE

- Open Issues



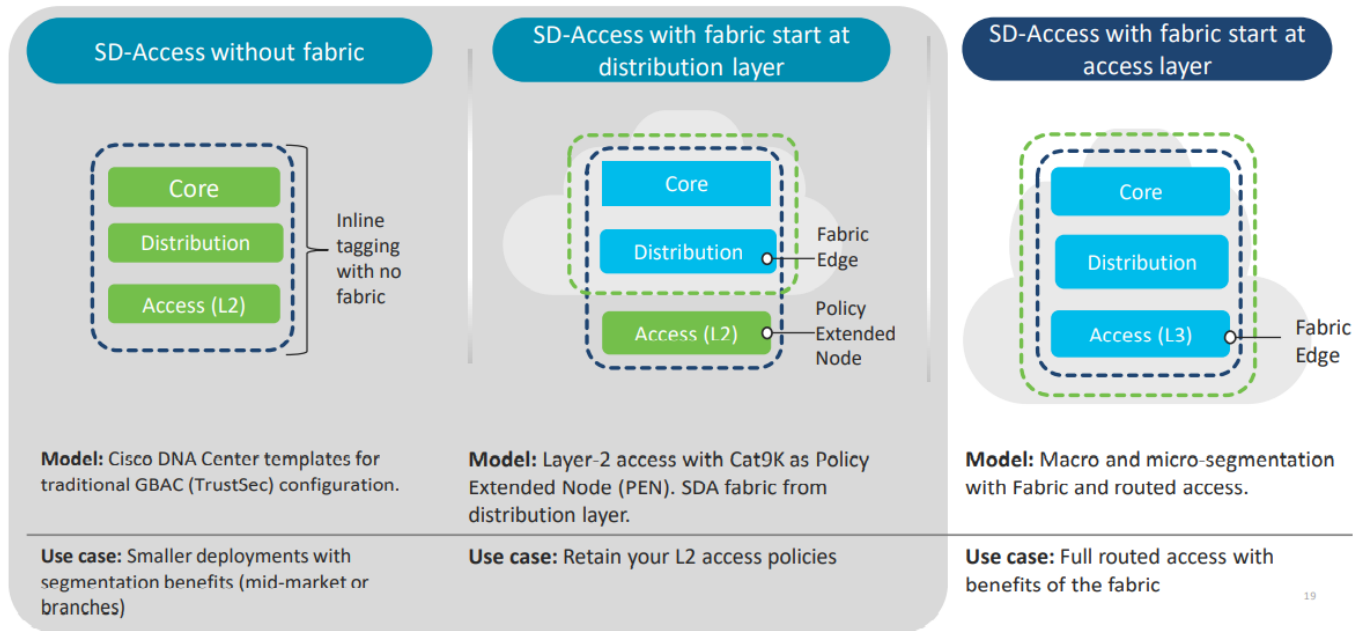
Zboření mýtů / SDA v praxi



MÝTY O SDA - ROZPTÝLENÍ OBAV #1

1

SDA je pouze pro lokální síť LAN v jedné lokalitě



MÝTY O SDA - ROZPTÝLENÍ OBAV #2

2

SDA (Cisco DNAC) vyžaduje min. 3x výkonné servery

...requires 3 appliances

Does **not** require 3 appliances for regular functionality (this is not ACI)



Full redundancy does require 3 appliances, as do almost all SD network controllers



Less than 5% of all Prime installs have full redundancy



The number of appliances your customer will require depends on the size of the network

Important note on redundancy

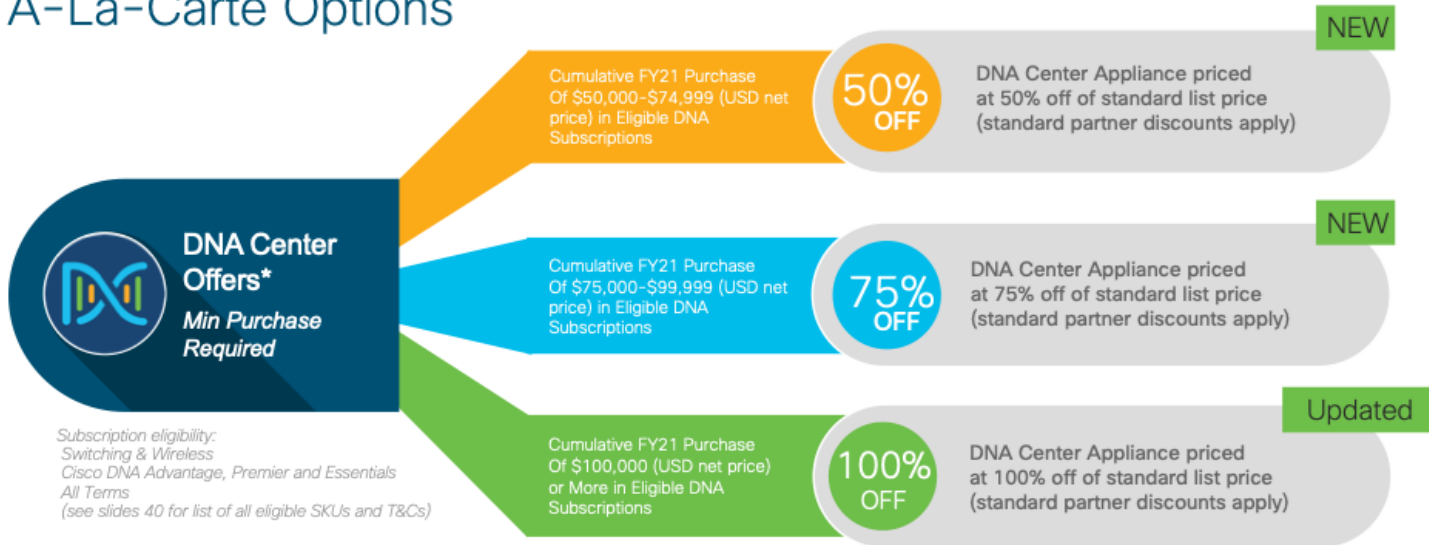


MÝTY O SDA - ROZPTÝLENÍ OBAV #3

3

SDA je příliš drahé řešení

Cisco DNA Center Appliance Offer: A-La-Carte Options



MÝTY O SDA - ROZPTÝLENÍ OBAV #4

4

Instalace SDA/DNAC zabere mnoho týdnů

...takes weeks to set up



Typical DNA Center deployments can be done in **2 days** (200–400 devices)



Small DNA Center deployments can be done in **a single day** (50–200 devices)



New “DNAC Time to Value” focus is bringing this even lower



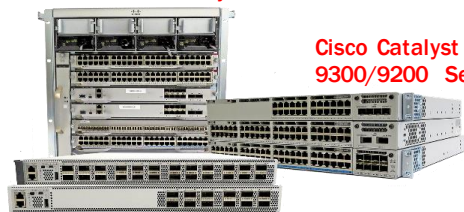
MÝTY O SDA - ROZPTÝLENÍ OBAV #5

5

Jsou podporovány jen nejvýkonnější řady přepínačů

Přepínače

Cisco® Catalyst® 9400 Series



Cisco Catalyst
9300/9200 Series

Cisco Catalyst 9500 Series



Catalyst 4500E Catalyst 6000 Series Cisco Nexus® 7700



Cisco Catalyst 3850 and 3650 Series



Směrovače



ASR-1000-X



ASR-1000-HX



4430 ISR



4450 ISR



CSR 1000V

WiFi



Catalyst 9800



AIR-CT5520



AIR-CT3504



Wave 2 APs (1800, 2800,
3800, 4800 9100)



Wave 1 APs (1700, 2700, 3700)



Anketa – vyhodnocení



CO DODAT...

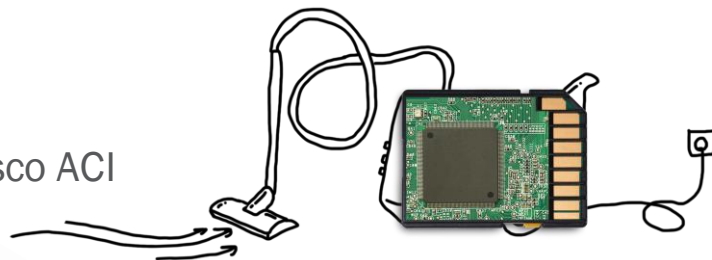
- Co získáme přechodem na SDx?
- O čem budeme mluvit příště?



4. webinář

SD DC

* Powered by Cisco ACI



Dotazy?



010100
11101
00101

111



DĚKUJEME

30 SOITRON*