
Netzmanagement in 2023 - Cisco DNA Center & Meraki Cloud Monitoring

Digitalisierung
erfolgreich gestalten.

Andreas Buchmann
telent | Netzwerktag - 21.06.2023

Andreas Buchmann – (telentsche‘ Staatsangehörigkeit seit 2012)

- 2012 – 2015 | Azubi - Fachinformatiker für Systemintegration
- 2015 – 2018 | Duales Studium – Informationstechnik - Schwerpunkt Netz- & Softwaretechnik
- 2018 – 2019 | System Engineer – Routing & Switching, Software Defined Networking, PreSales
- Seit Anfang 2020 | Teamlead Customer Engineering - TCEC

- Hobbies @ telent: Azubis ausbilden & Vertrieb nerv...unterstützen! 😊

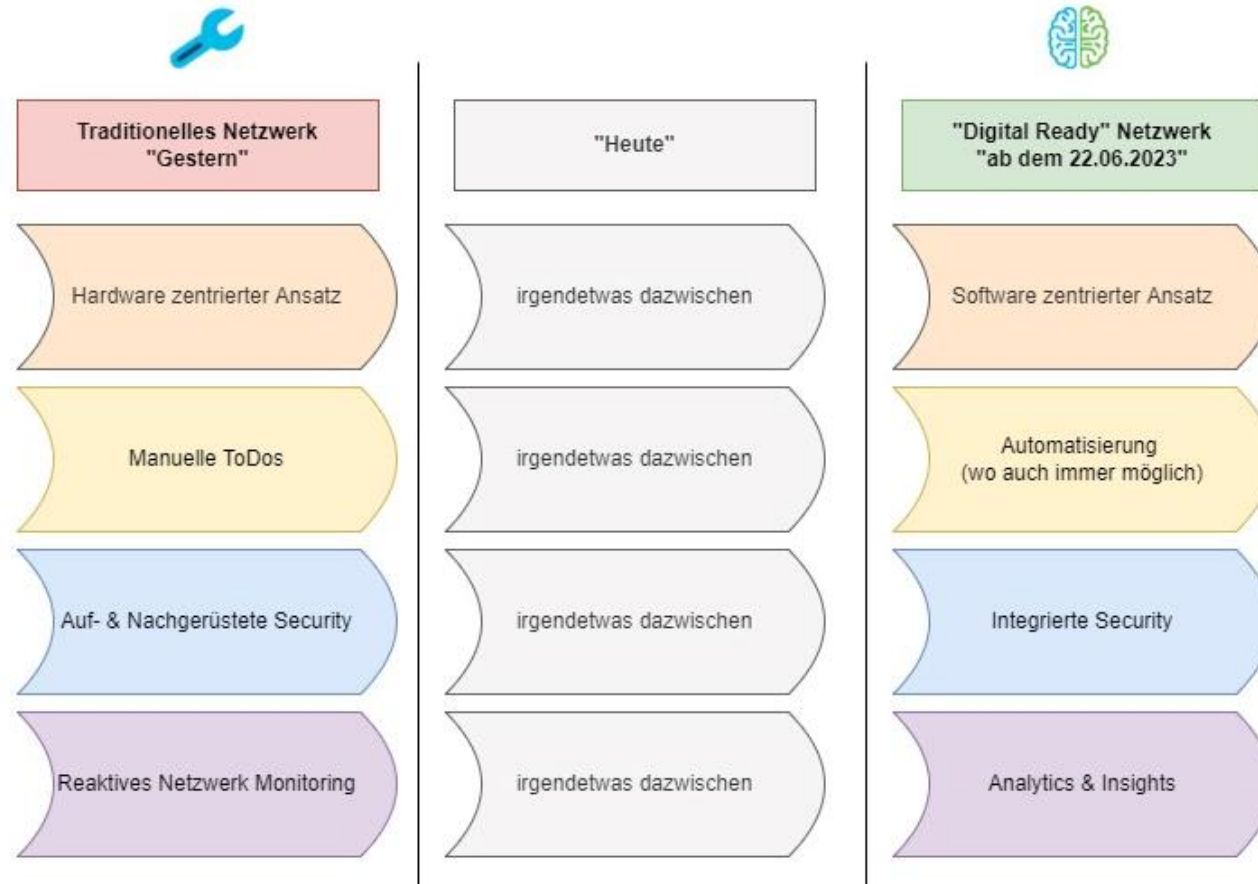
- Hobbies @ home: Smart Home & Homelab, Formel 1, Kochen & Grillen, Dackel & Dame ausführen, ...

- Fragen bitte am Ende der Session und gerne beim (alkoholfreien) **Feierabendbier oder -kaffee** 😊
(GET TOGETHER ab ca. 15:45 Uhr)

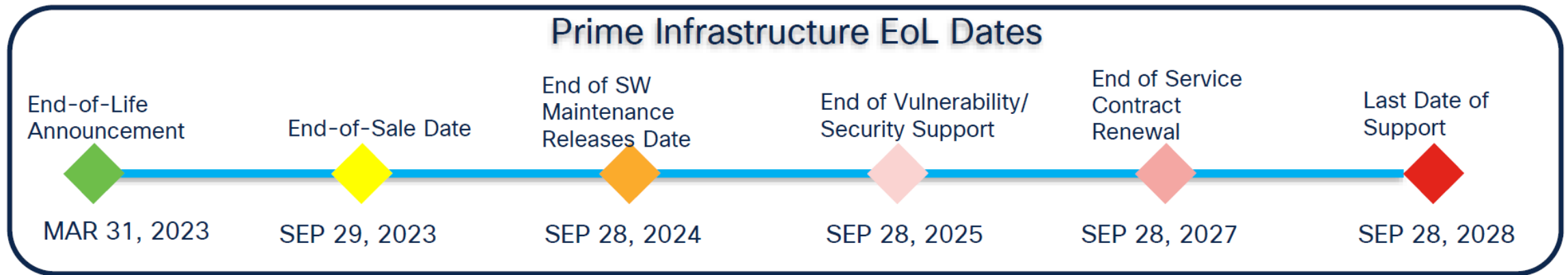
Netzmanagement | Vergleich - Vergangenheit und Zukunft



Netzmanagement | Vergleich - Vergangenheit und Zukunft



Goodbye - Cisco Prime Infrastructure



Prime Infrastructure - EoL Announcement (HW Gen3 Appliance and 3.10 Software)

Good Friends Say Goodbye as Prime Infrastructure Sunsets



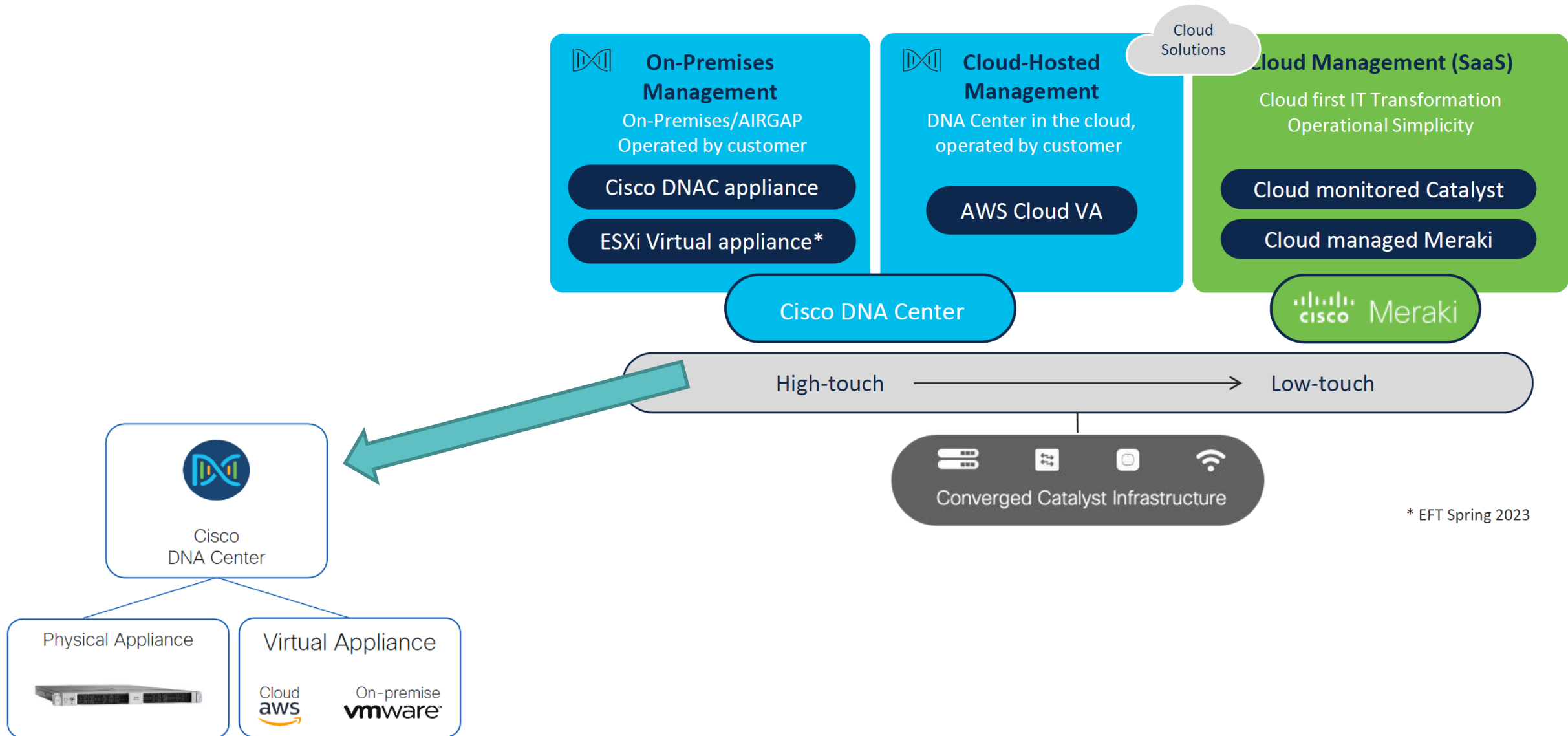
Welche Optionen gibt es?



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Welche Optionen gibt es?



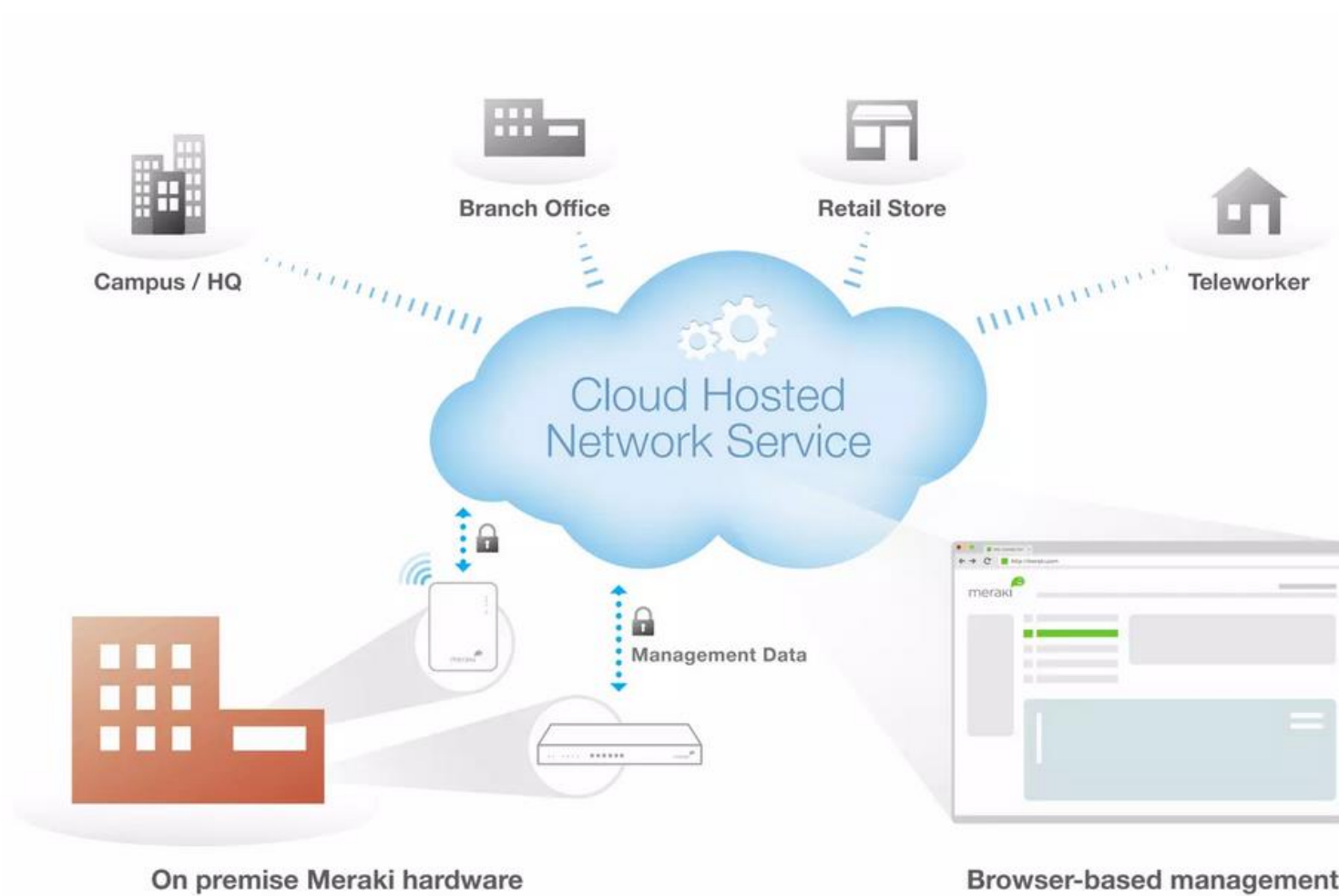
* EFT Spring 2023

Meraki – Cloud Monitoring

Cisco Catalyst 9000



Cisco Meraki



Cloud Monitoring for Catalyst

Unified view of Cisco
network infrastructure

Device health and
troubleshooting

Network client and
traffic information



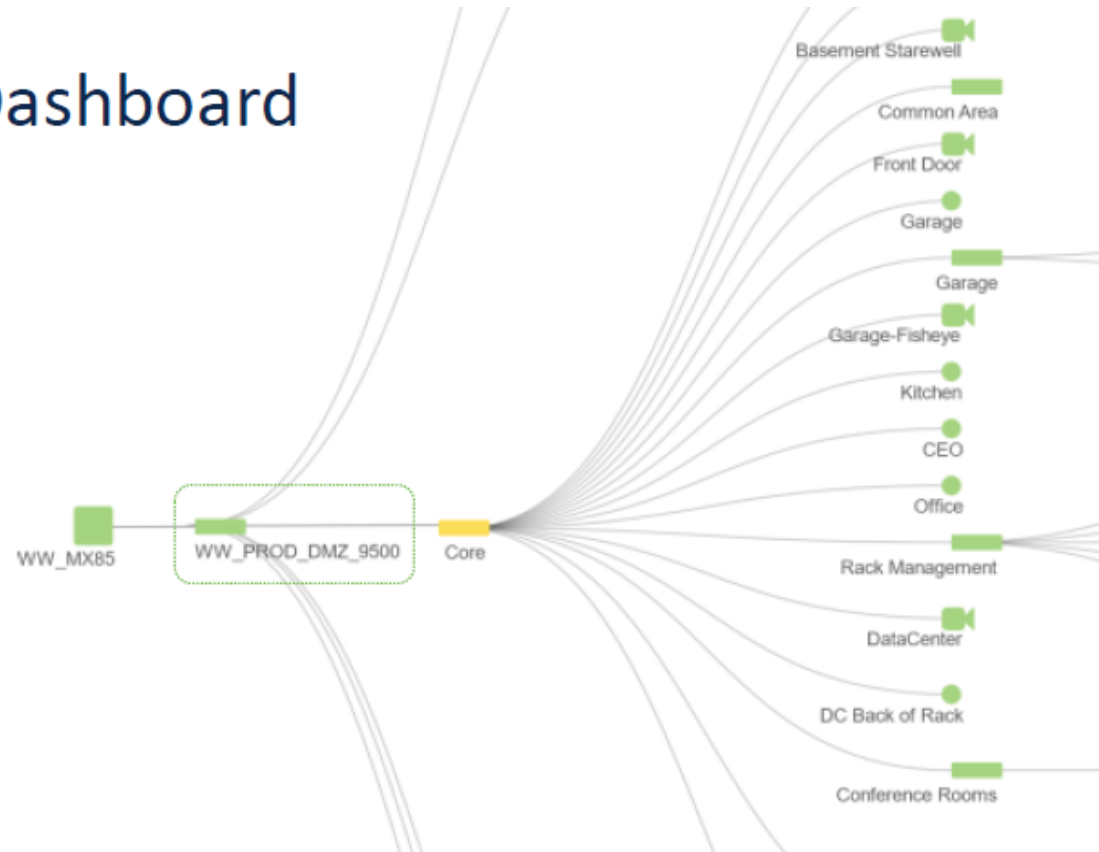
Meraki Dashboard | Cloud Monitoring

One Network, One Dashboard

**Consolidated
Device Inventory**

**Centralized monitoring of
IOS and Meraki devices**

Unified topology view



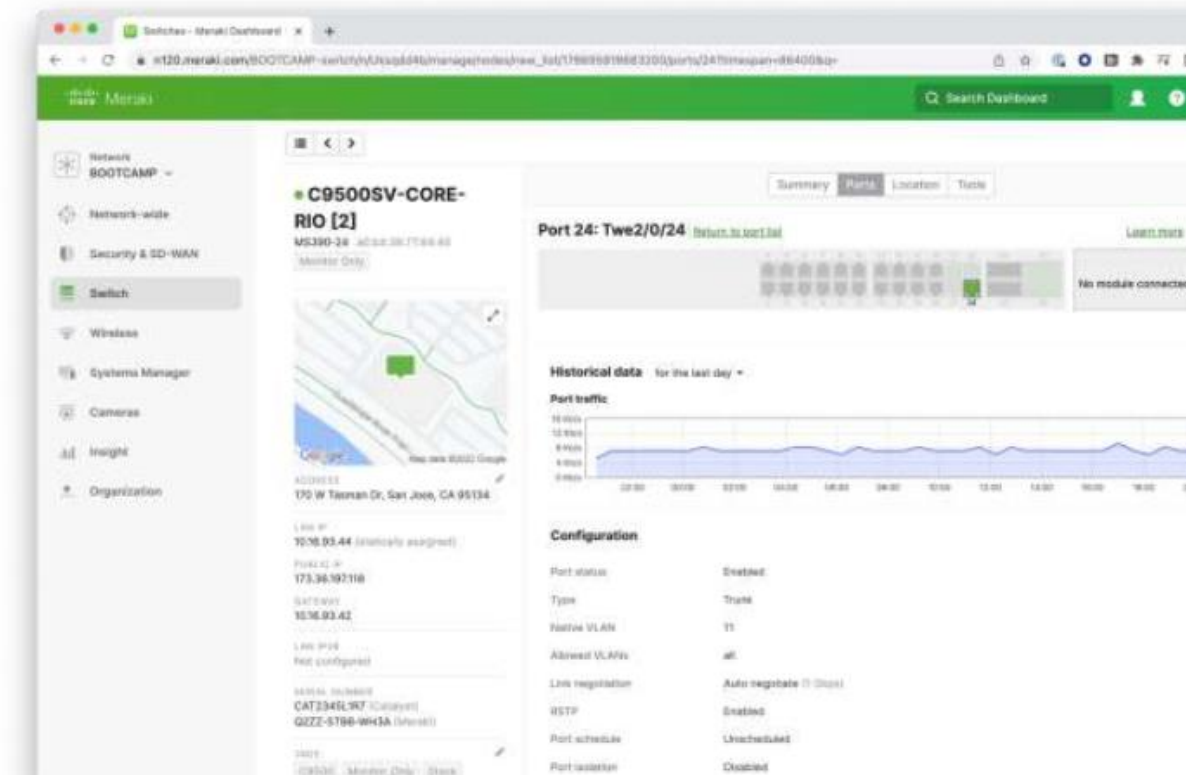
Meraki Dashboard | Cloud Monitoring

Keep Your Network Healthy

In-Dashboard alerts for switch or port issues

Port-level packet and error counters

Remote troubleshooting and diagnostics tools



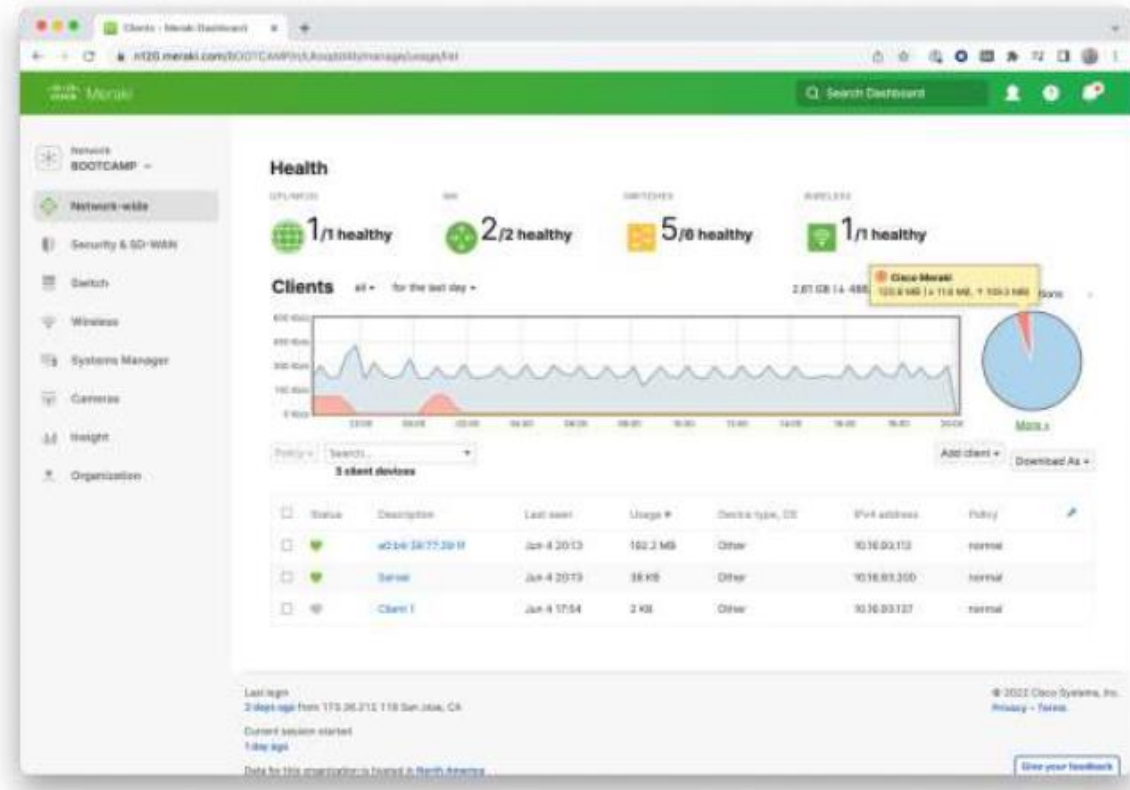
Meraki Dashboard | Cloud Monitoring

Know What's Happening With Your Users

See connected devices
across your network

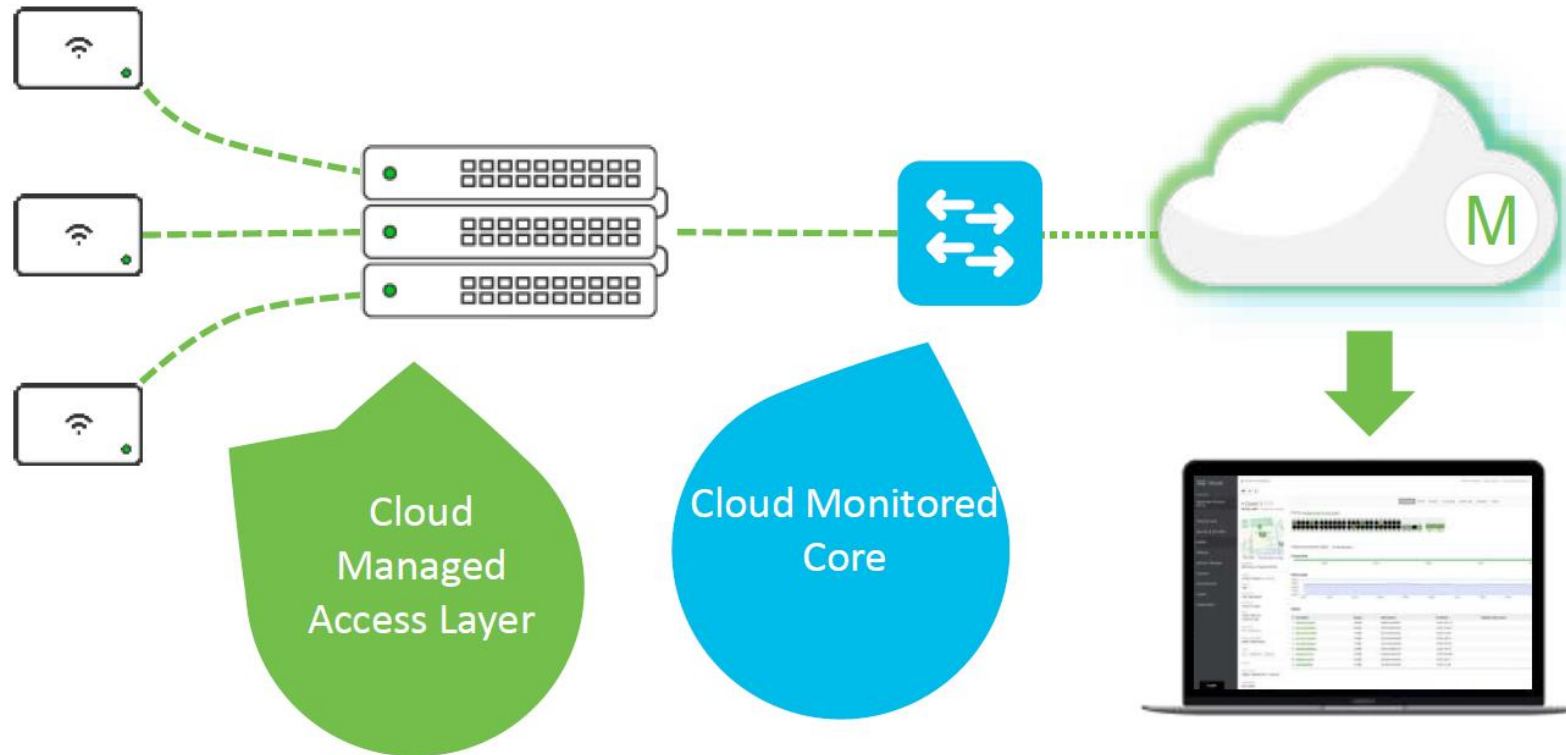
Detailed network usage
and traffic statistics

Application visibility
into network traffic



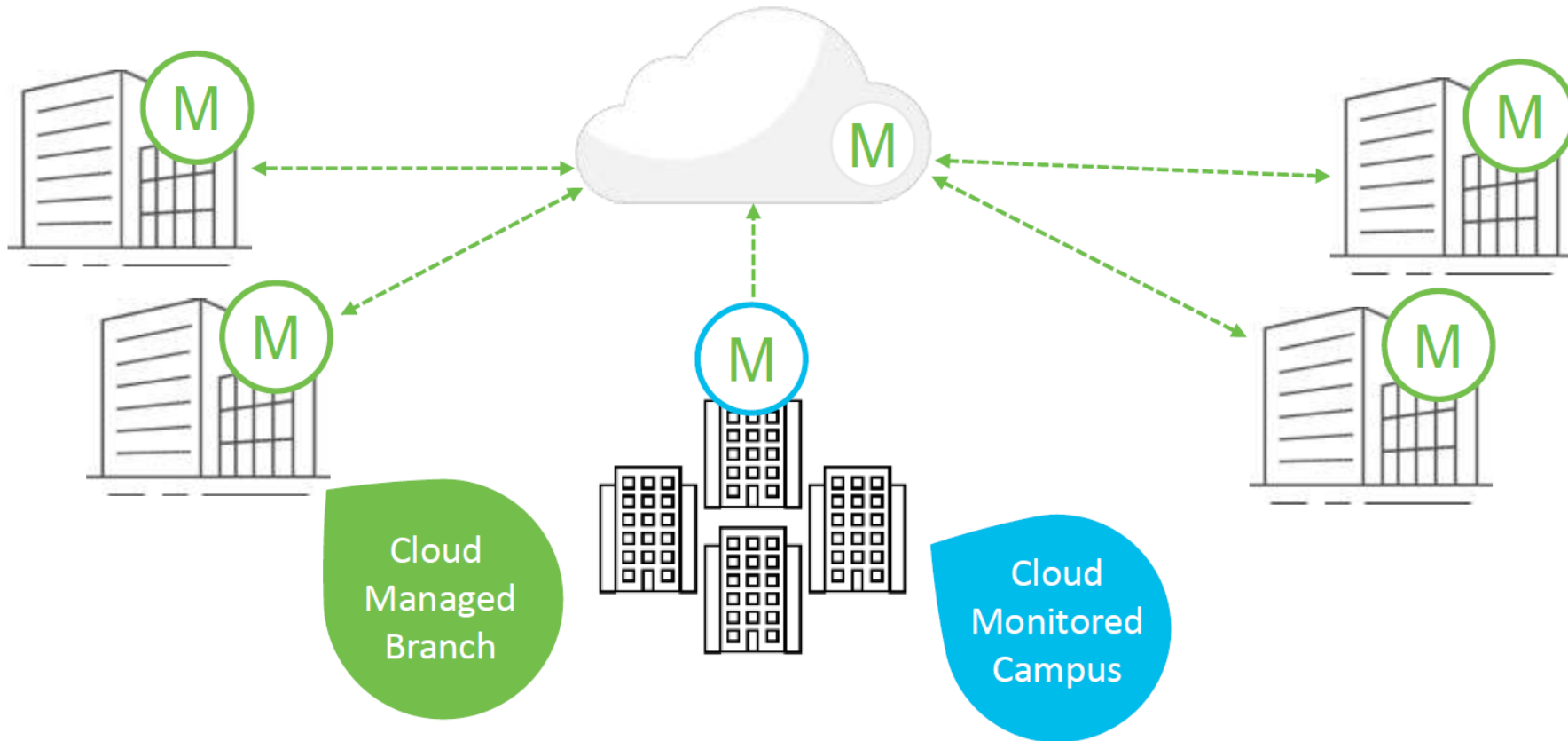
Meraki Dashboard | Cloud Monitoring – Catalyst 9000 Switches

Tiered Architecture

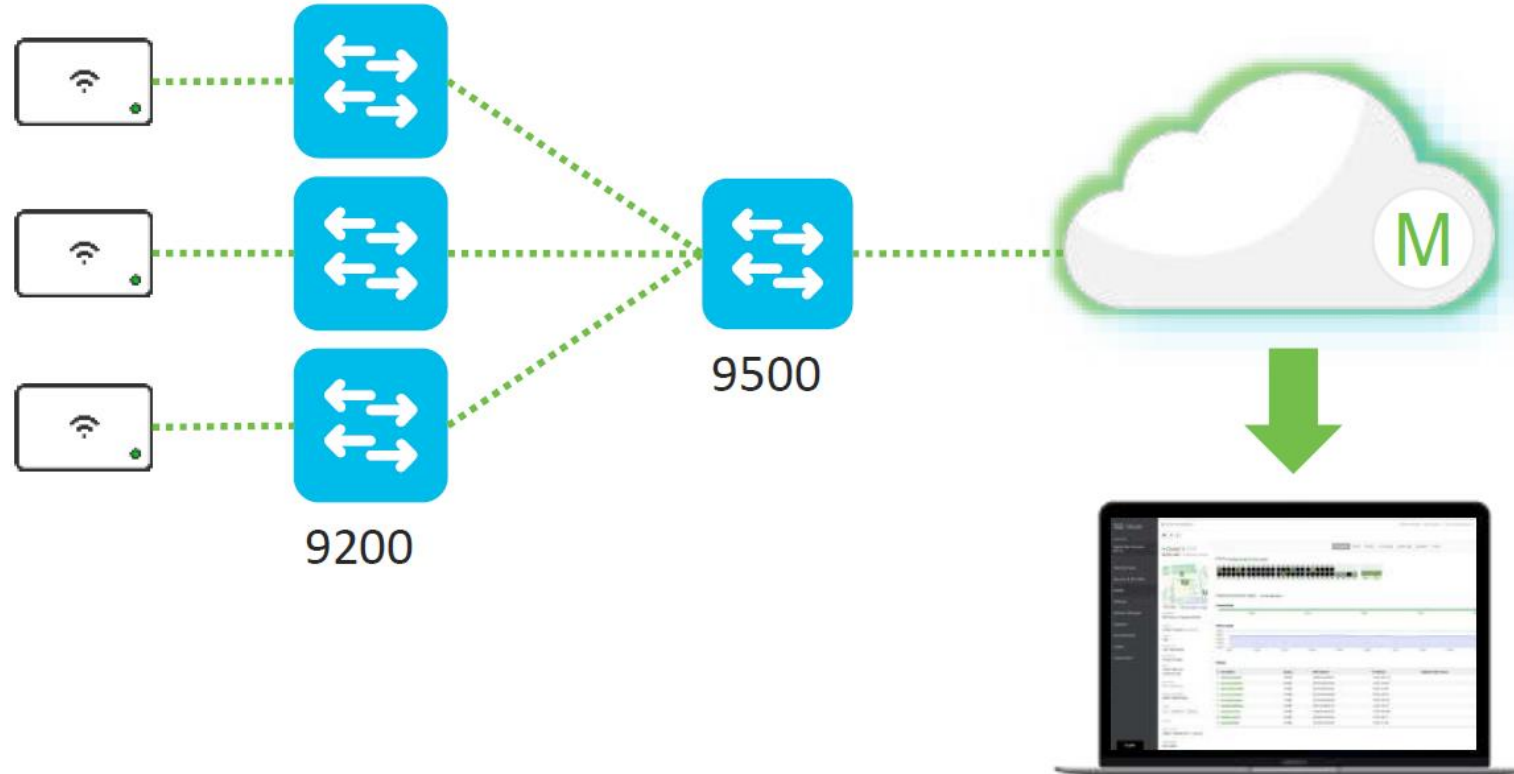


Meraki Dashboard | Cloud Monitoring – Catalyst 9000 Switches

Catalyst Campus with Meraki Branches



Centralized Monitoring of Catalyst Networks



Meraki Dashboard | Cloud Monitoring – Catalyst 9000 Switches

Catalyst Models

- 9200/L/CX
- 9300/L/LM/X
- 9500



Firmware

IOS-XE
17.3.1 - 17.9.2



Licensing

- DNA Advantage
- DNA Essentials*

* Keine Trafficanalyse



Meraki Dashboard | Cloud Monitoring – C9000 Access Points (WIFI 6E)



DNA Mode
C9800 & DNAC Stack



Meraki Mode
MR Dashboard Stack



Meraki Dashboard | Cloud Monitoring – C9000 Access Points (WIFI 6E)



 Management mode can be changed

Meraki Dashboard | Roadmap

H1CY23

- New features
 - Alerts (via email & webhooks)*
 - Packet capture
 - Event Logging
 - Troubleshooting console ('show')
- New platform support
 - 9200CX * and 9300LM *
 - 9500X

H2CY23

- IOS-XE image upgrades (switching)
- Config backup (switching)

H1CY24^

- Catalyst Wireless monitoring
 - 9800 controller appliances
 - 91xx/2800/3800/4800 APs
 - App-less onboarding
- App-less onboarding (switching)

H2CY24 ^

- Wireless enhancements
 - Image upgrades
 - Config backup

Pending Prioritization^ (Availability & timeline TBD)

- 9400 & 9600 support (switching)
- Configuration console (switching)
- DNA Center co-existence
- Layer 3 monitoring (switching)
- ... and many more

Roadmap subject to change

* Available now

^ Higher minimum IOS-XE version may be required

Meraki Dashboard | Cloud Monitoring

WHAT CLOUD MONITORING IS

- Integrated view of Catalyst 9000 series switches* in the Meraki dashboard
- a **single-pane-of-glass** experience for network Infrastructure, connected clients, device health
- **"Monitor Only"**

WHAT CLOUD MONITORING IS NOT

- does not replace other management solutions (such as CLI, Cisco DNA Center)
- a provisioning solution

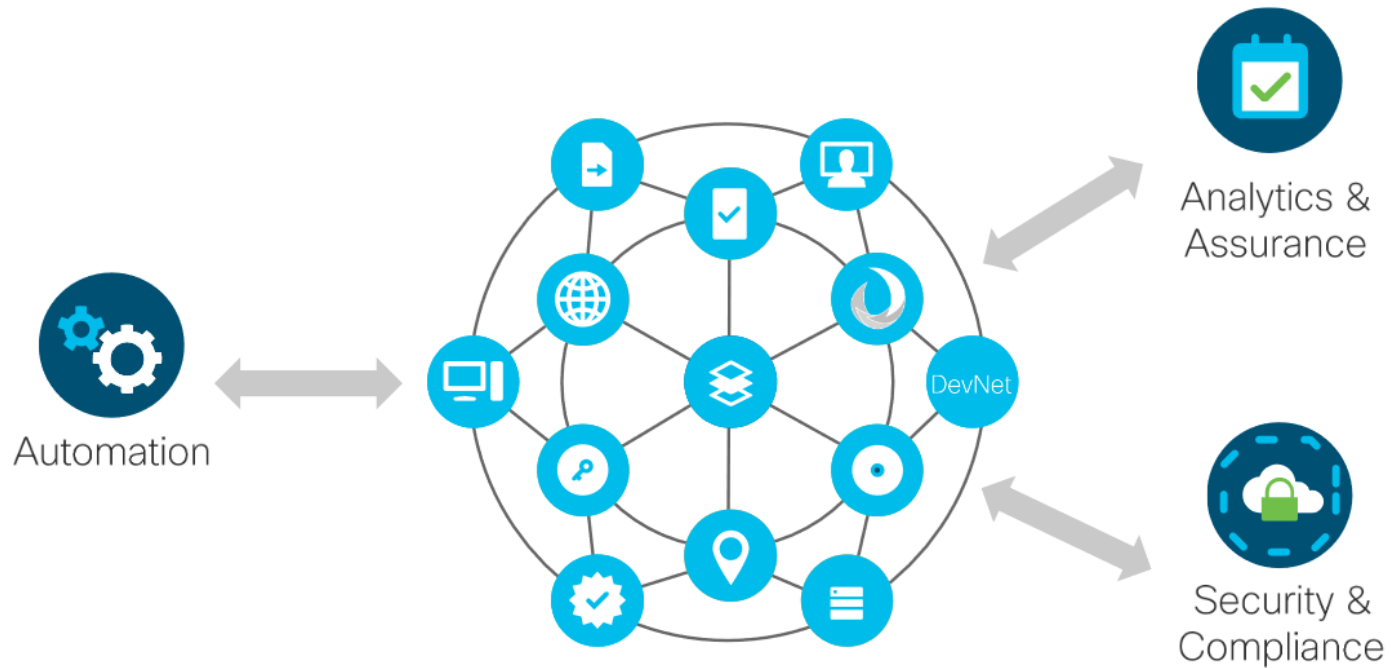
[Catalyst - Cloud Monitoring FAQ](#)

Cisco DNA Center

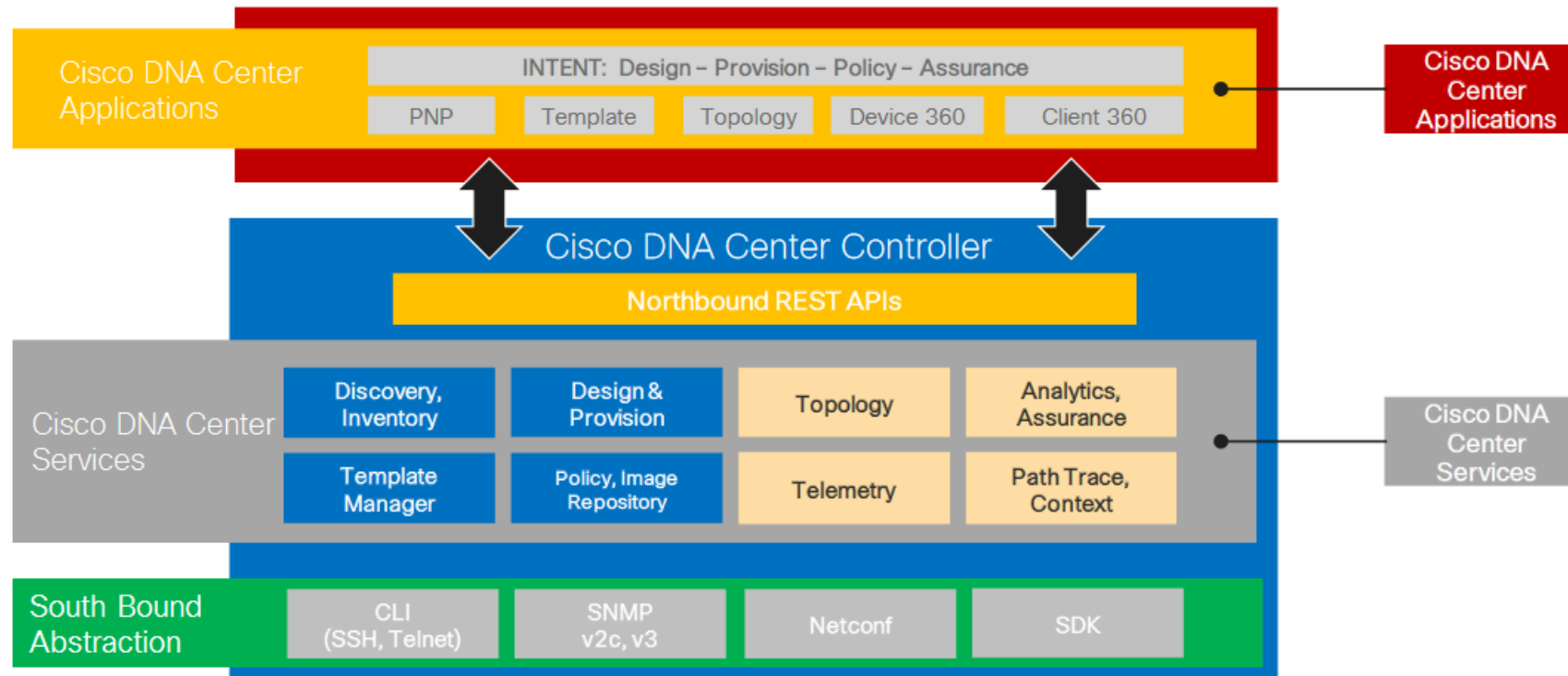
Digital Network Architecture Center



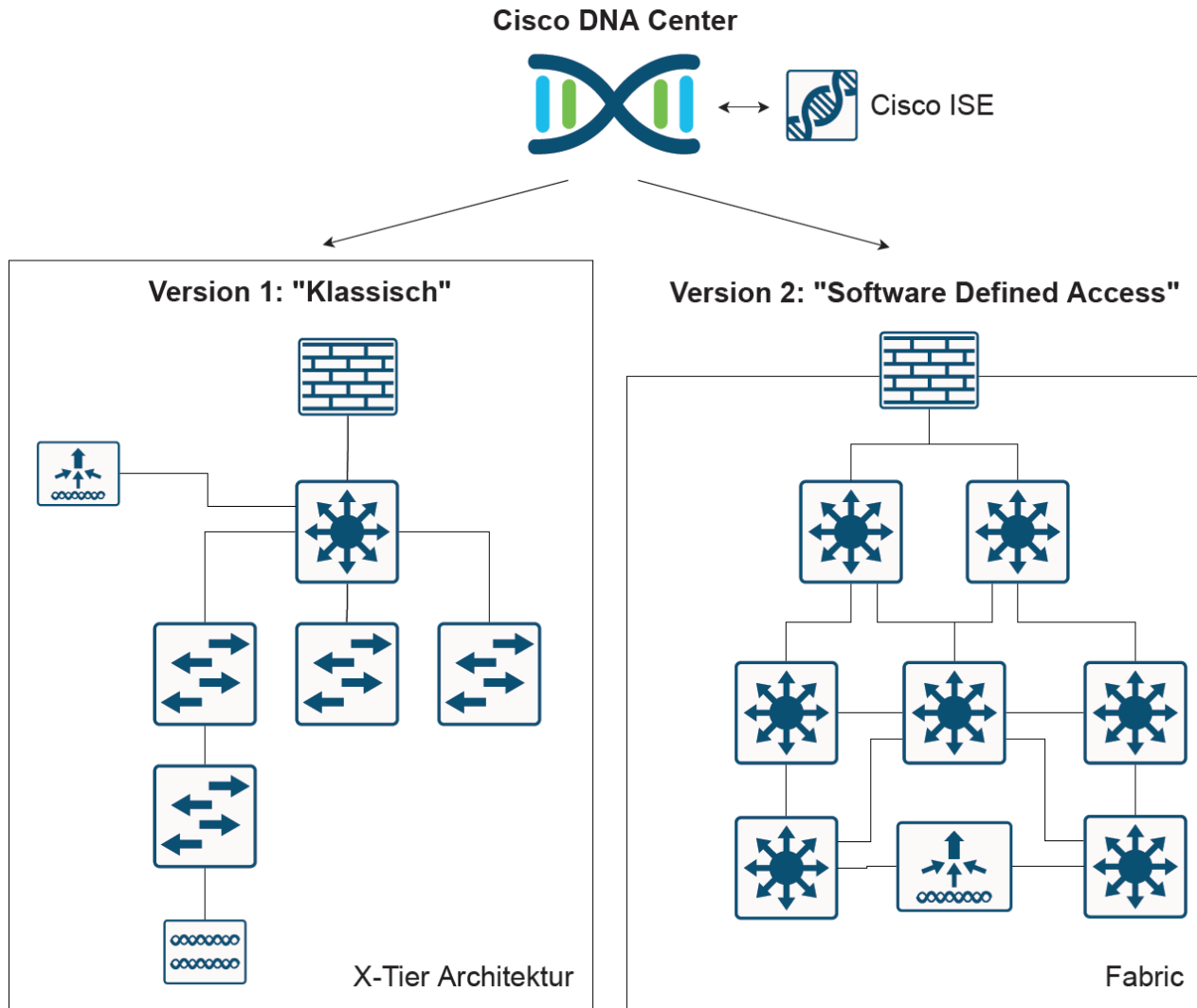
Cisco DNA Center | Übersicht



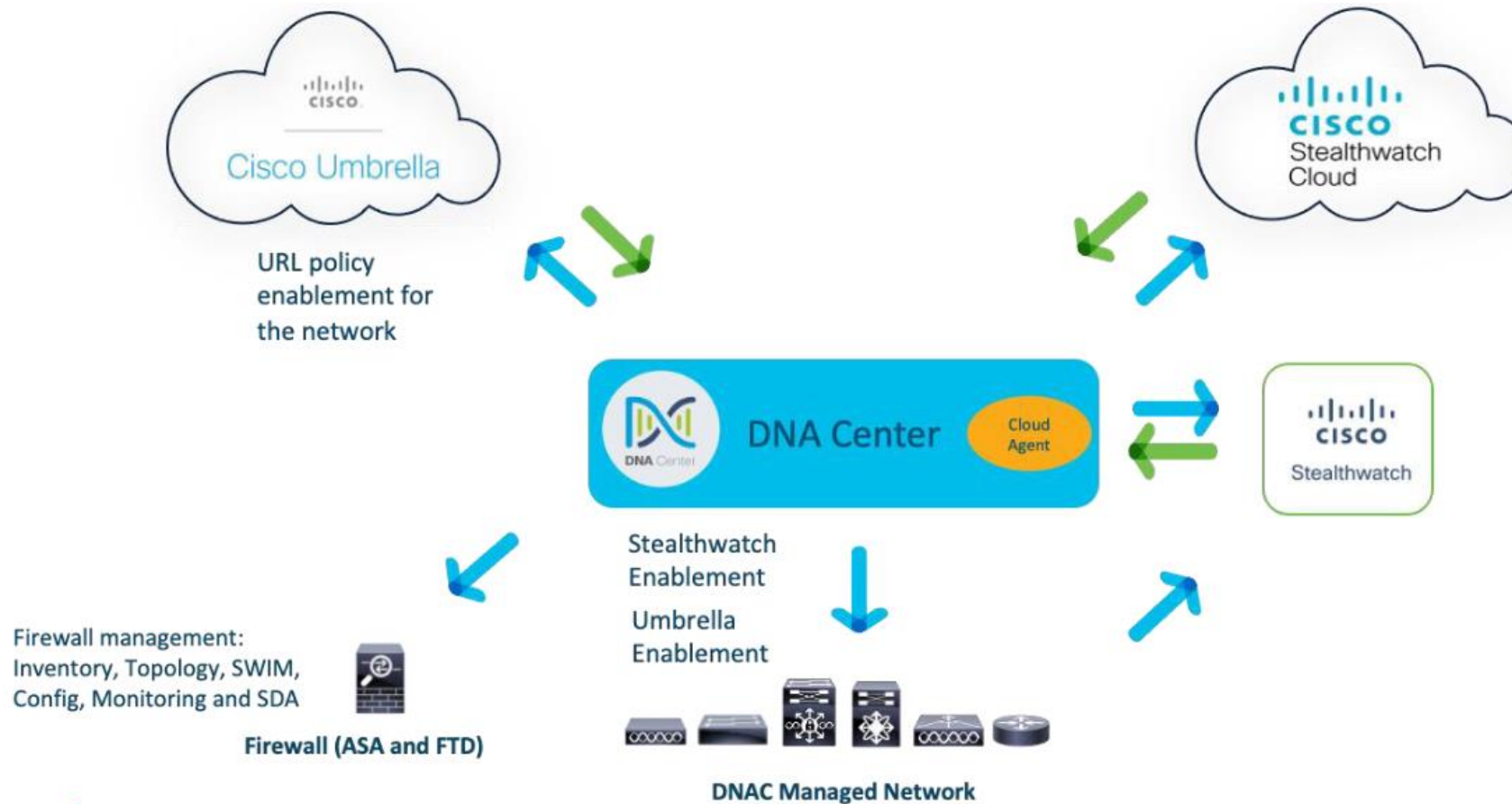
Cisco DNA Center | Übersicht – Apps & Services



Cisco DNA Center | Übersicht - klassisch vs. SDA

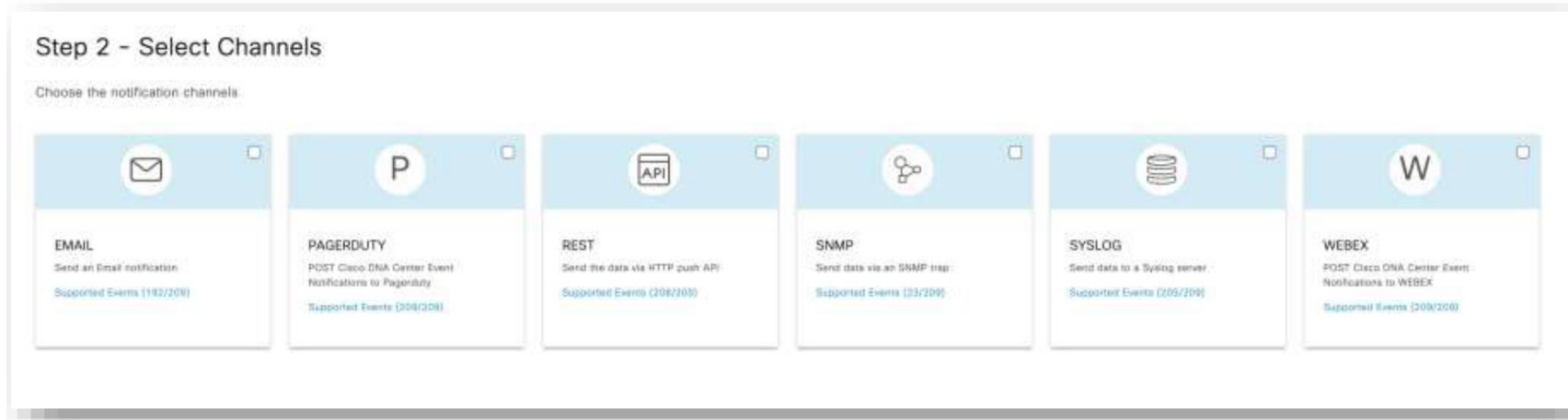


Cisco DNA Center | Übersicht - Integrationen



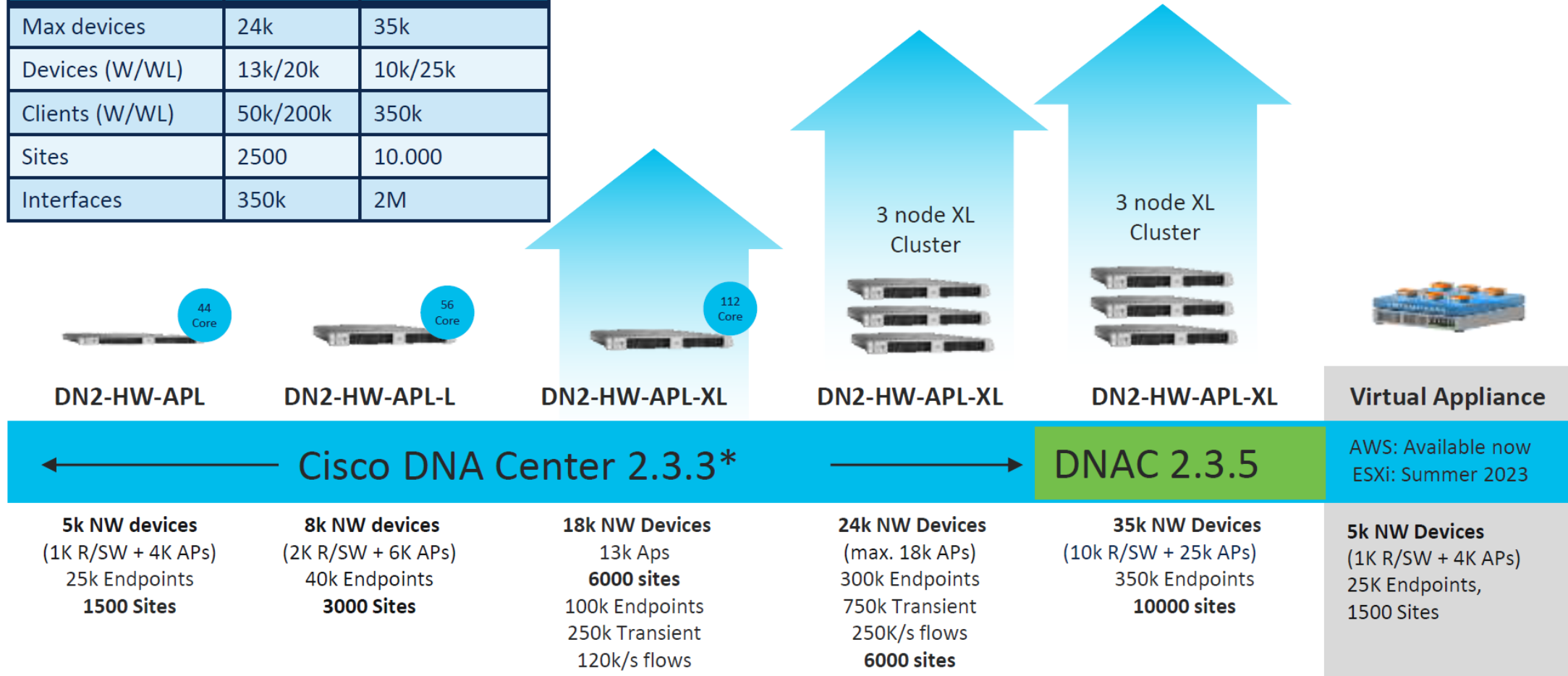
Cisco DNA Center | Übersicht - Reports & Benachrichtigungen

	Network Compliance Report		Device CPU and Memory Utilization Report
	EoX Data Report		Network Devices Availability Report
	Port Reclaim report		PoE and Power Budget Report
	AP Detail Report		Port Capacity Report - Network Interface utilization Report
	AP Report (Traffic and Client Breakdown)		Reports - 12-month data retention
	Busiest Clients Report		Rogue reporting
	Client Detail Report		Schedule Reports as email attachment
	Client Sessions Report		Channel Change Count Report
	Client Trend Report		Transmit Power Change Count Report



Cisco DNA Center | Übersicht – Zahlen, Daten, Fakten

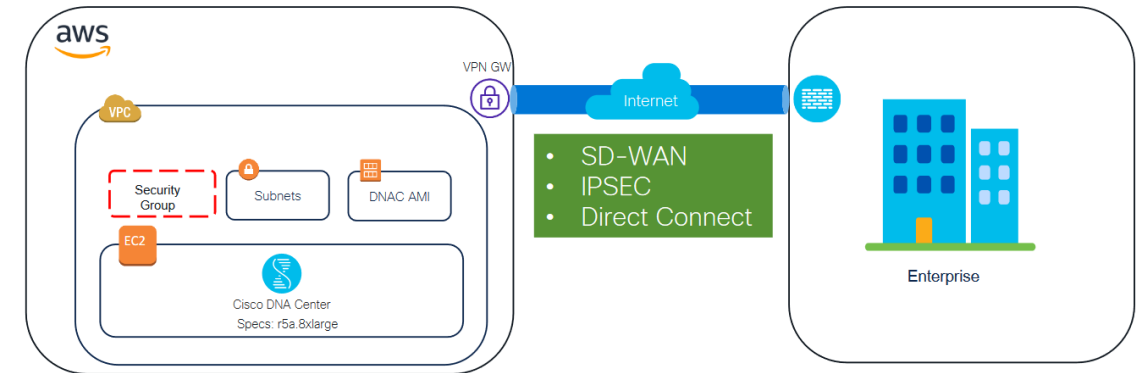
Component	PI	DNAC (2.3.5)
Max devices	24k	35k
Devices (W/WL)	13k/20k	10k/25k
Clients (W/WL)	50k/200k	350k
Sites	2500	10.000
Interfaces	350k	2M



Cisco DNA Center | Übersicht – AWS Deployment

	Specifications	Scale
 Cisco DNA Center Virtual Appliance (VA) on AWS	- Type: AMI - CPU: 32vCPU - Mem: 256GB - Storage: 4TB (EBS: GP3 SSD) - Storage Bandwidth: 180Mbps (Bi-directional) - IOPS: 2000-2500 - Instance Type: r5a.8xlarge	5K devices (1K R/SW + 4K APs) 25K Endpoints, 1500 Sites

Available!



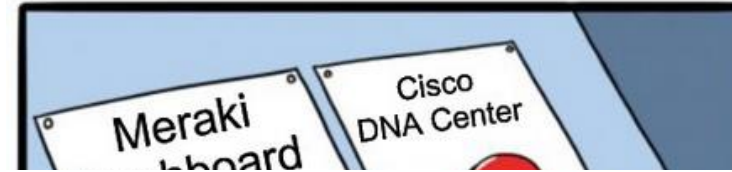
	Specifications of DNAC VM	Specifications of Server	Device Scale	Timelines
 Cisco DNA Center on ESXi	- Type: OVA - CPU: 32vCPU - Mem: 256GB - Storage: 3TB - Storage Bandwidth: 180Mbps (Bi-directional) - IOPS: 2000-2500	- Vcenter and ESXi: 7.0.x - Intel CPU 2.1Ghz and above - Hyperthreading enabled - RAM: 264 GB (ESXi + VA) - RAID: Any as long as bandwidth and IOPS is met - Thin Provisioning	5K devices (1K R/SW + 4K APs) 25K Endpoints, 1500 Sites	- EFT – 1HCY2023 - FCS - 2HCY2023

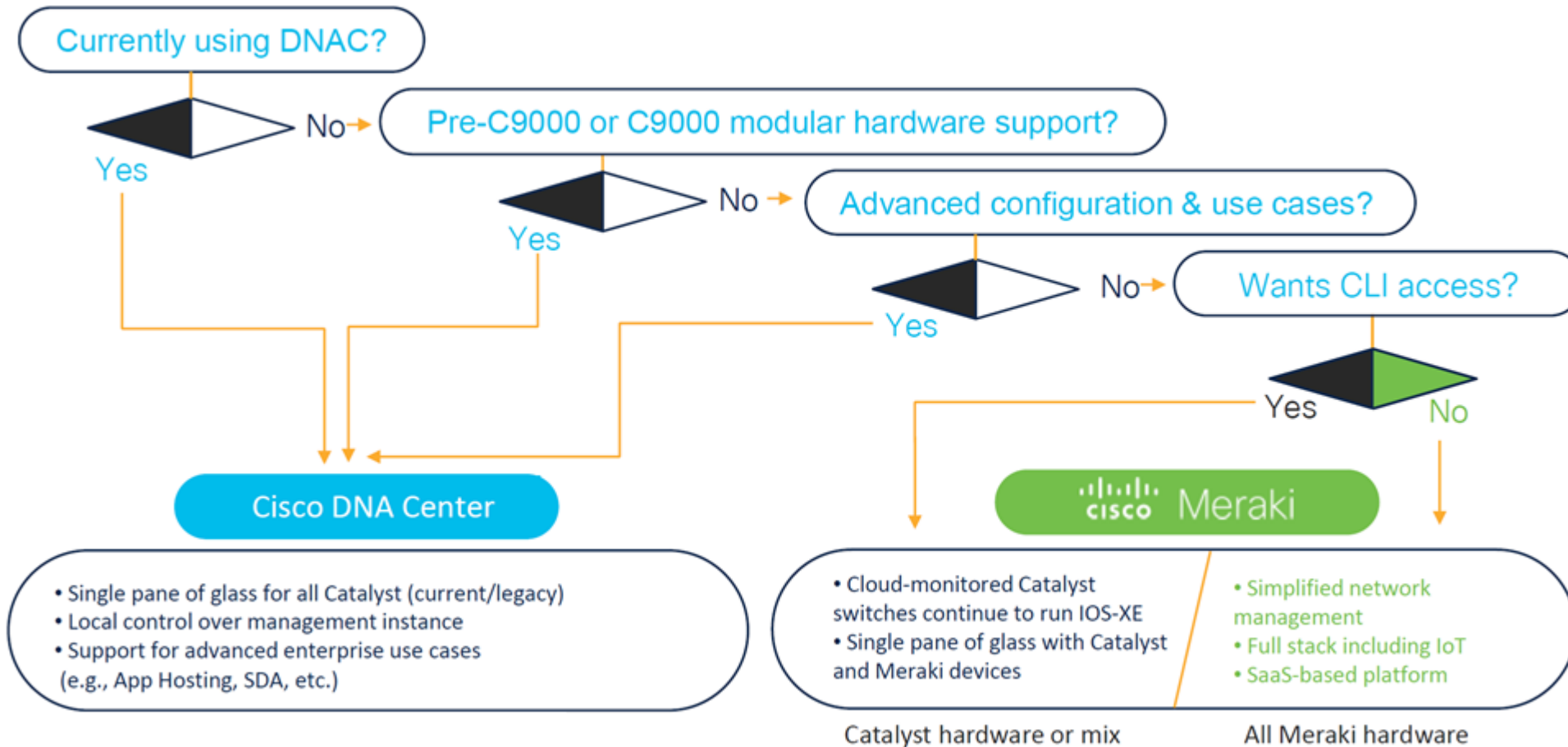
Cisco DNA Center | Unterstützung von Cisco Legacy & 3rd Party Geräten

			
Device Type	Campus, Branch and Nexus Devices	Campus, Branch and Nexus Devices	
Lifecycle Stage	End of Life	Not End of Life	Third Party Devices*
Support Strategy	Simplified Refresh	Basic Support with refresh objective	Limited Support
What is supported	Discovery	Discovery	Discovery
	Inventory	Inventory	Inventory
	Topology	Topology	Topology
	Device Uptime and Reachability	Device Uptime and Reachability	Device Uptime and Reachability
	Config Archive	Config Archive	
	Device Refresh Workflows	Device Refresh Workflows	
		SWIM	
		Config Provisioning	
		Device Health, Assurance	
		Compliance	

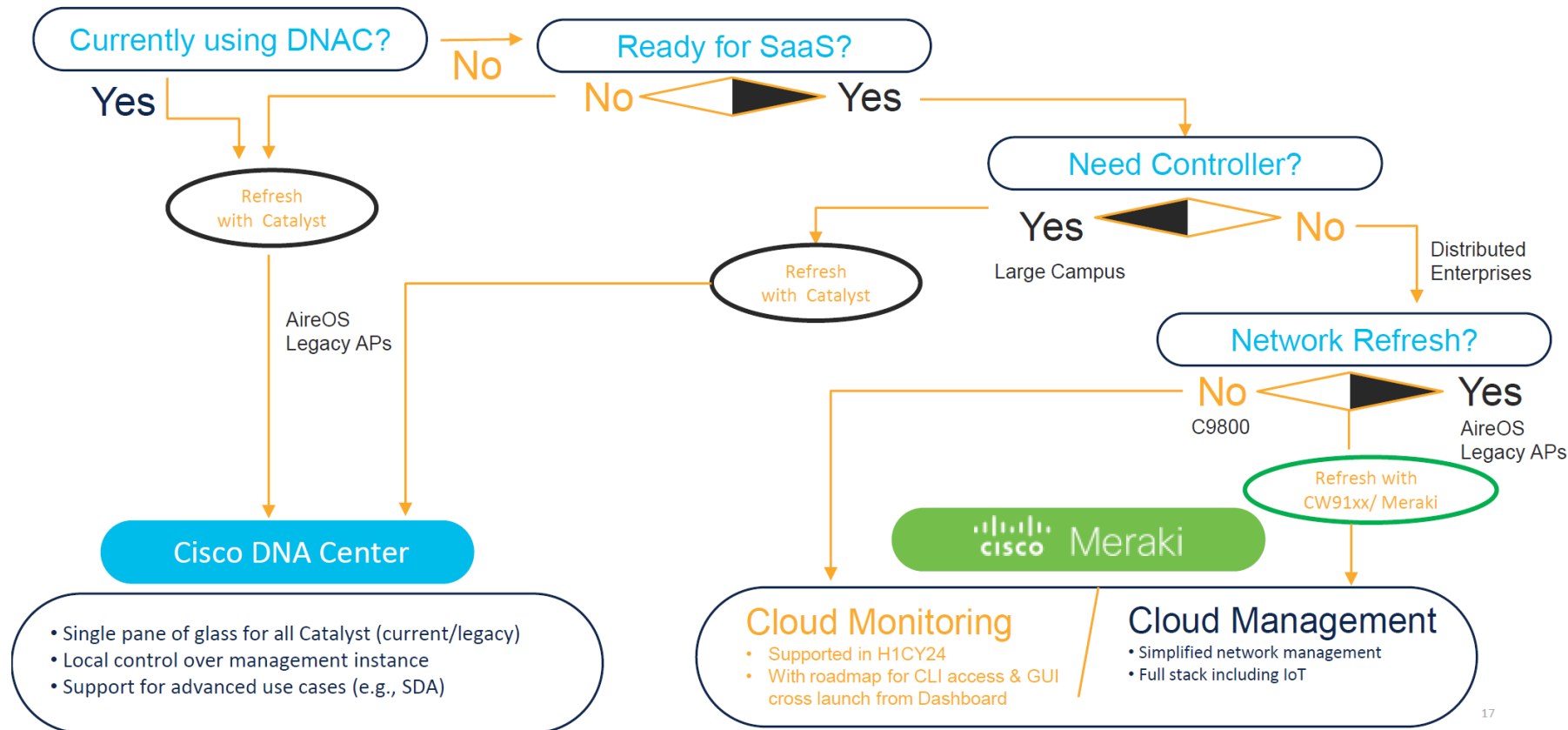
Cisco Prime Legacy Device Compatibility Matrix

Wegfinder

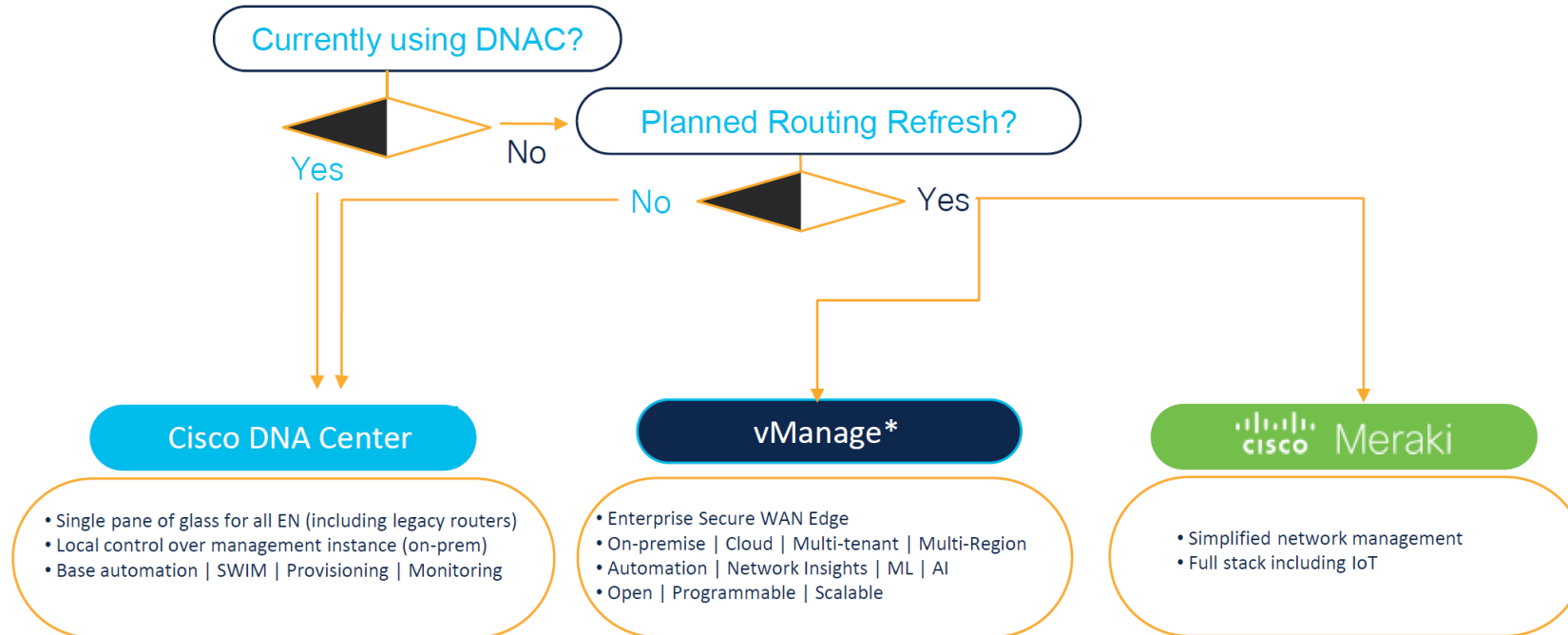




Wireless | Migrationspfade



Routing | Migrationspfade



How-To: Der Weg (von Prime Infrastructure) zu Cisco DNA Center



How-to | Von Prime zu Cisco DNA Center



„Close to Feature Parity“

How-to | Von Prime zu Cisco DNA Center



Understanding DNA Center

Learn about DNAC Capabilities, extent of Prime Parity and differentiated use cases compared to Prime



Assess Prime Usage and DNA Center Compatibility

PDART Tool provides a comprehensive summary of Prime Usage, DNAC compatibility of network devices, use cases, network scale and other relevant details



Prepare for Data Migration

Follow recommendations from PDART report. If required, upgrade Prime, optimize network hierarchy, onboard DNAC appliance etc.



Initiate Data Migration

Use Data Migration Tool (co-existence tool) within Prime to easily and securely port your network from Prime to DNAC



Complete Data Migration

Verify on DNAC that the necessary network elements, sites, maps, templates and credentials have been ported from Prime



Adopt DNA Center

DNAC offers superior automation, vastly greater visibility, complete with AI driven analytics that help keep your network healthy and reduce your operational expenditure

PDART | Prime to Cisco DNA Center Assessment and Readiness Tool

PDART

Pre-Check

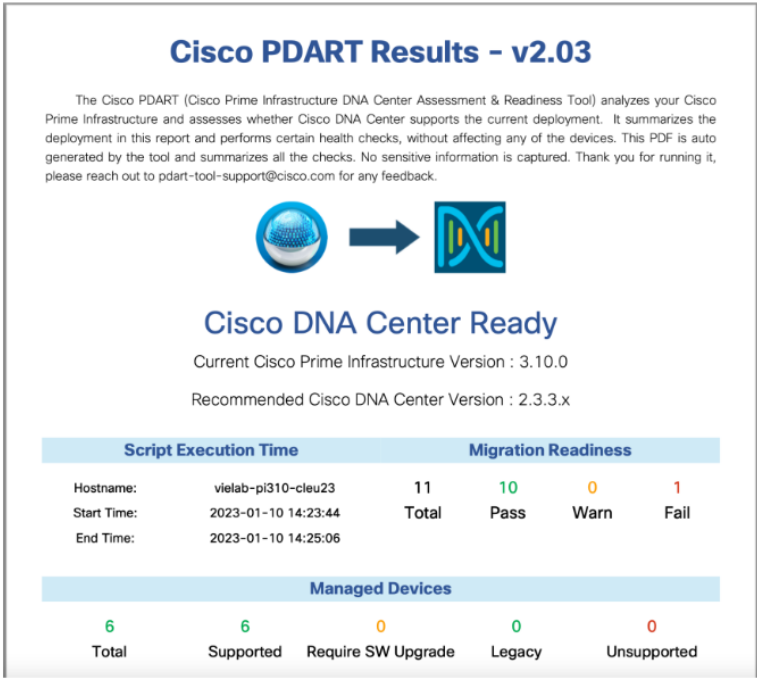
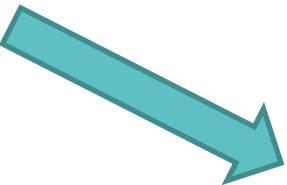
Prime to Cisco DNA center
Assessment and Readiness Tool
(PDART)

For YOUR Prime installation:

- Check device support
- Used Features
- Used Reporting
- Needed DNAC Scale

PDART Available from Prime 3.7

Weitere Infos zu PDART

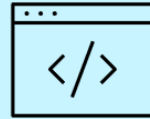


Prime Infra Scale Usage/KPIs		PARAMETER	Cisco DNA Center Appliance Scale KPIs			
Current Usage	Supported Scale		DN2-HW-APL	DN2-HW-APL-L	DN2-HW-APL-XL	DN2-HW-APL-XL [3N]
2	305	Combination of Switches, Routers and Wireless Controllers	1000	2000	5000	6000
4	300	Unified APs	4000	6000	13000	18000
1	300	Wired Devices	2000	4000	5000	8000
1	5	Controllers	500	1000	2000	2000
0	6000	Wired Clients	25000	40000	100000	300000
0	4000	Wireless Clients	25000	40000	100000	300000
0	1000	Changing Clients (every 5 minutes)	75000	120000	250000	750000
116	12000	Interfaces	48000	192000	480000	768000
14	200	Number of Site Elements	1500	3000	6000	6000

Recommended Cisco DNA Center Appliance: DN2-HW-APL

PDART | Prime to Cisco DNA Center Assessment and Readiness Tool

• CLI



- Needs CLI access and shell credentials of Prime Infrastructure
- No PI reboot required

Advanced

• GUI (UBF)



- Need Super Users GUI Access of Prime Infrastructure
- PI reboot required

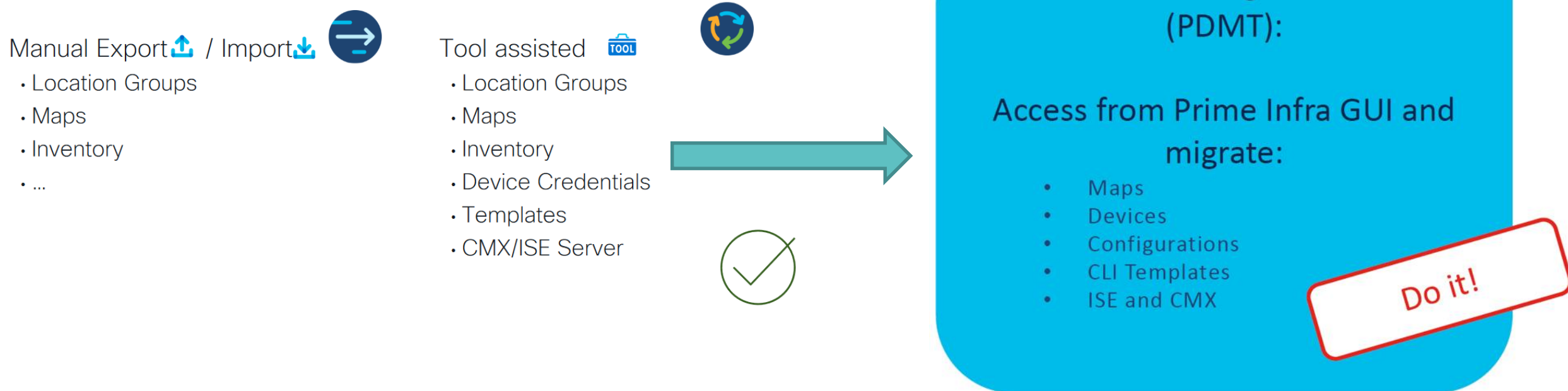
Easy



PMDT | Prime Data Migration Tool



PMDT | Prime Data Migration Tool



Weitere Infos zu PMDT



Vielen Dank für Ihre Aufmerksamkeit!

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