

A decorative graphic in the top right corner consisting of numerous circles of various sizes and colors, including shades of blue, green, orange, red, and yellow, arranged in a cluster that tapers towards the right edge.

Transformacja sieci z Wi-Fi i Cisco Classic. Nowości w Enterprise Networking.

Zespół Cisco Networking Experiences (NX)

Aleksandra Sosnowska, NX Specialist, esosnows@cisco.com

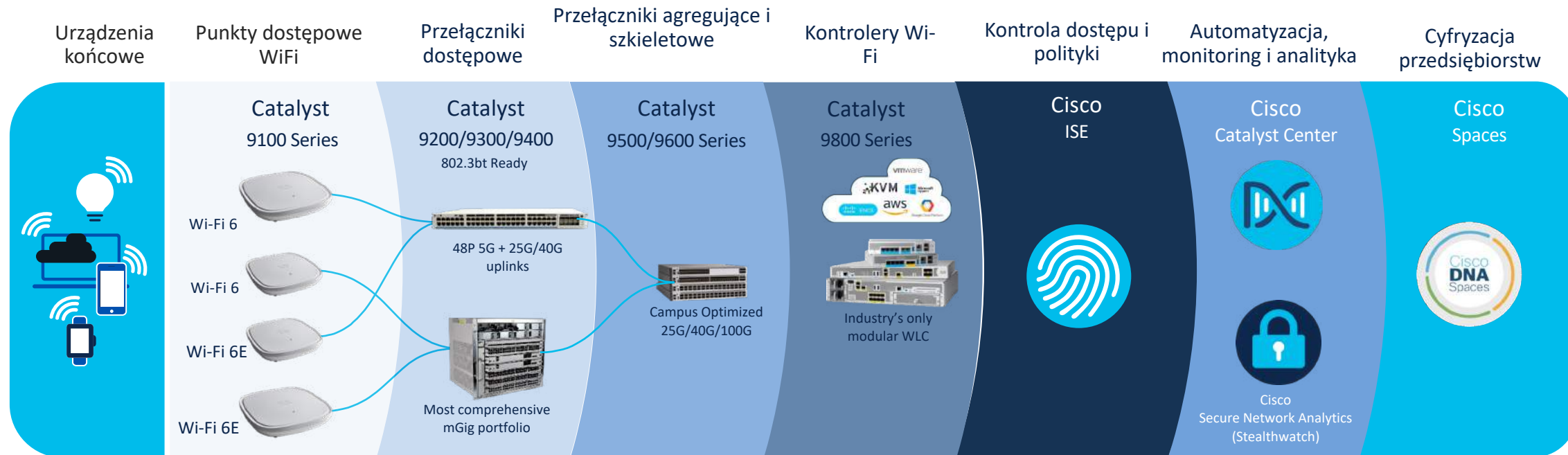
Agenda | Śniadanie technologiczne Cisco

[4 października - Poznań]

- 8:30 - 9:00** Rejestracja, poranna kawa i lekkie śniadanie
- 9:00 - 9:30** Powitanie i wprowadzenie do tematyki spotkania – Piotr Flis, UpGreat
- 9:30 - 10:30** Nowoczesne sieci z SD-WAN – Rafał Telbusiewicz, Cisco
- 10:30 - 11:00** Przerwa na kawę
- 11:00 - 12:30** Transformacja sieci z Wi-Fi i Cisco Classic. Nowości w Enterprise Networkingu – Aleksandra Sosnowska, Cisco
- 12:30 - 13:30** Przerwa na lunch i rozmowy
- 13:30 - 14:30** Cisco ACI - magnes dla Twojej firmy – Grzegorz Gondek, Cisco
- 14:30 - 15:30** Zakończenie i podsumowanie spotkania



Enterprise Networking Campus

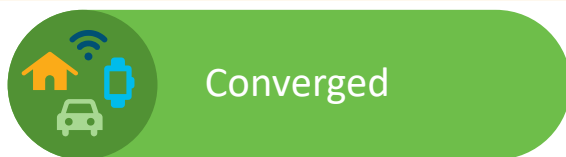


Klasyczny deployment lub SD-Access

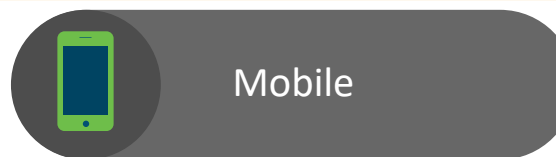
Licencje w formie EA lub a-la-carte



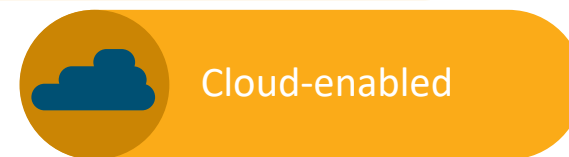
Secure



Converged



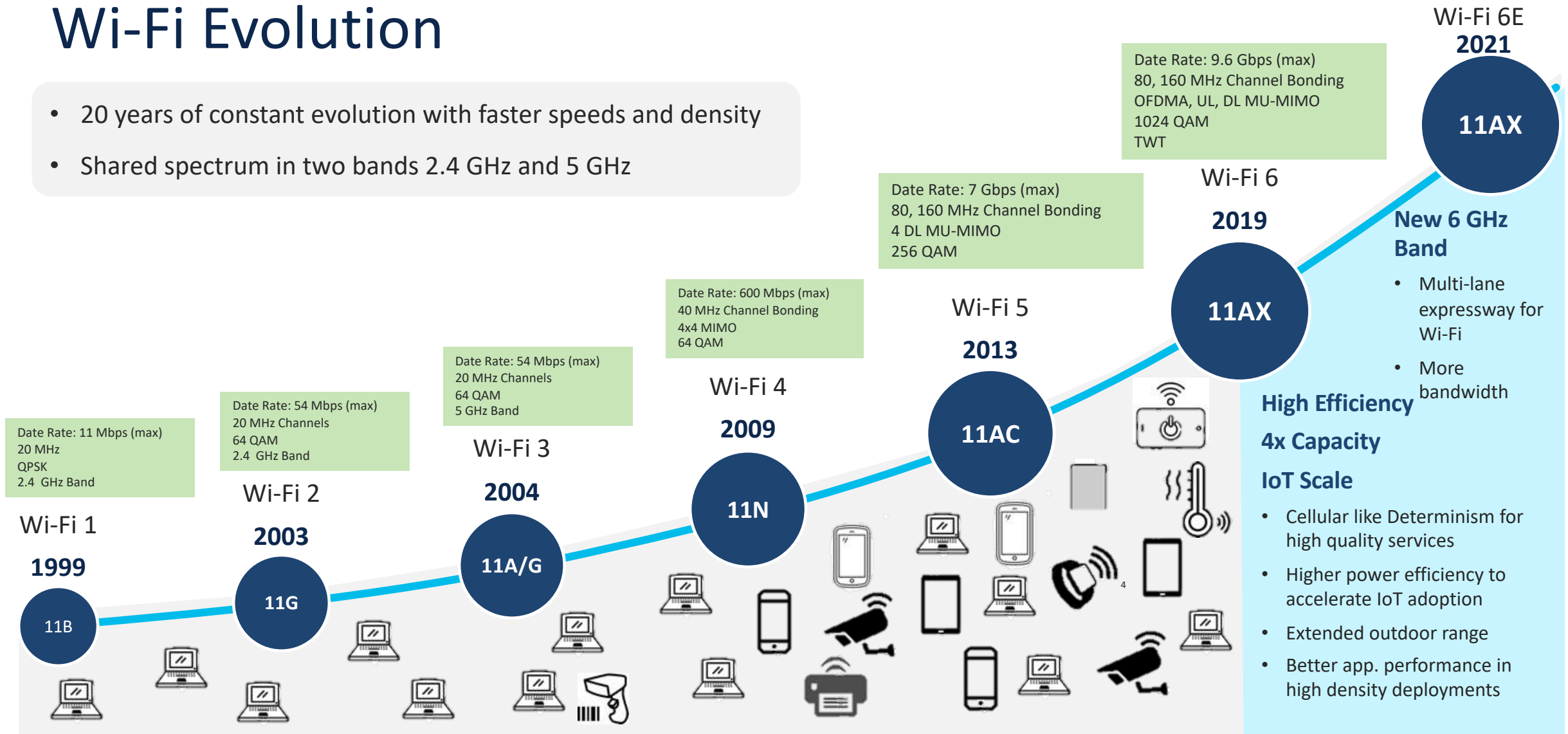
Mobile



Cloud-enabled

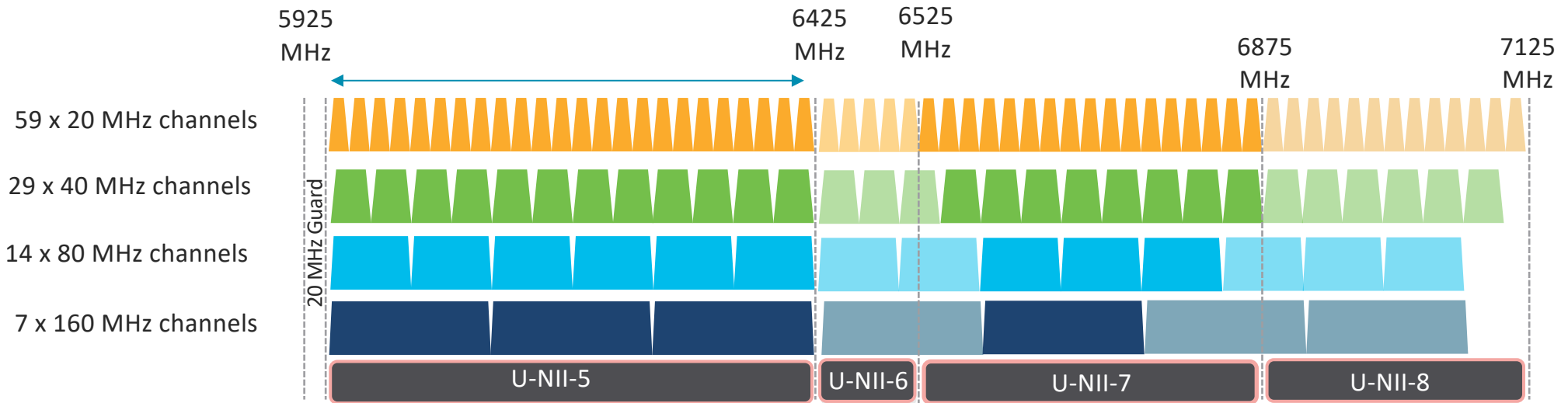
Wi-Fi Evolution

- 20 years of constant evolution with faster speeds and density
- Shared spectrum in two bands 2.4 GHz and 5 GHz

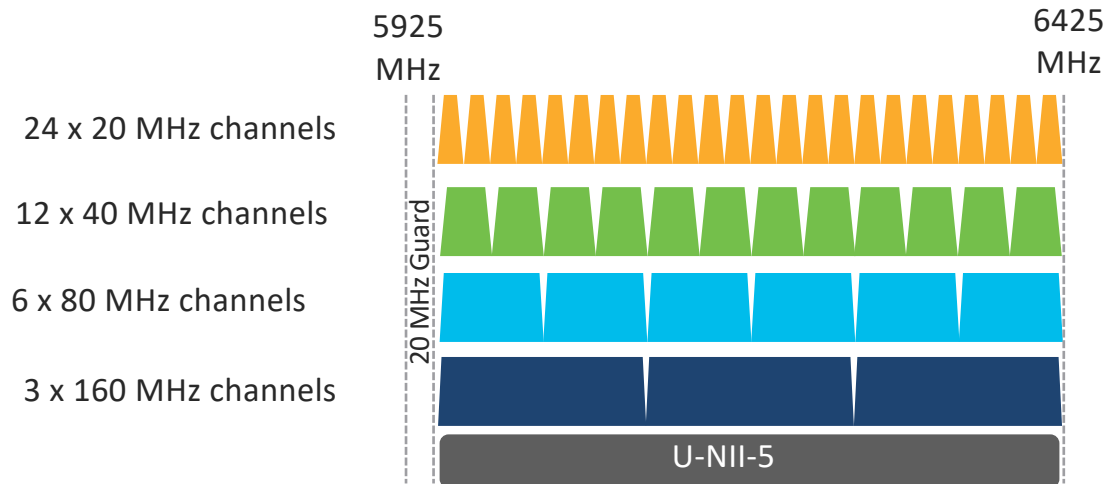


The new 6 GHz band :

United States
1200 MHz

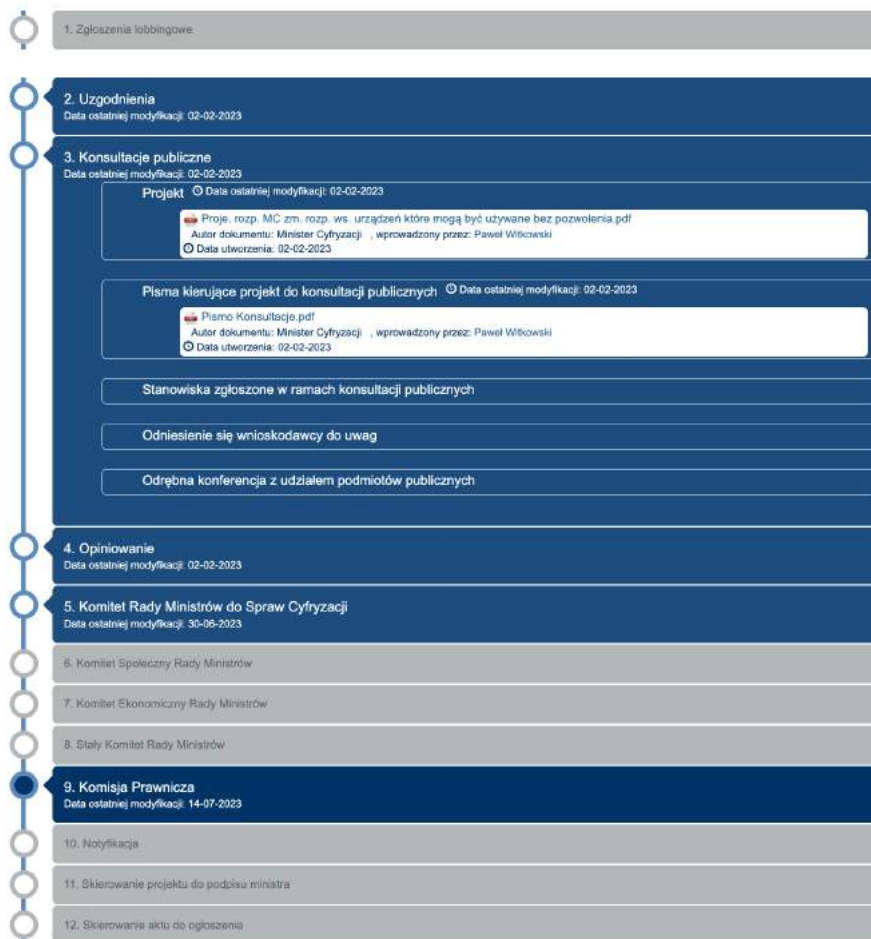


Europe/CEPT
500 MHz



5955 – Central Frequency of the first 20 MHz channel
→ Starting at 5925 MHz +
20 MHz of guard band +
10 MHz to get to the center of the first 20 MHz channel

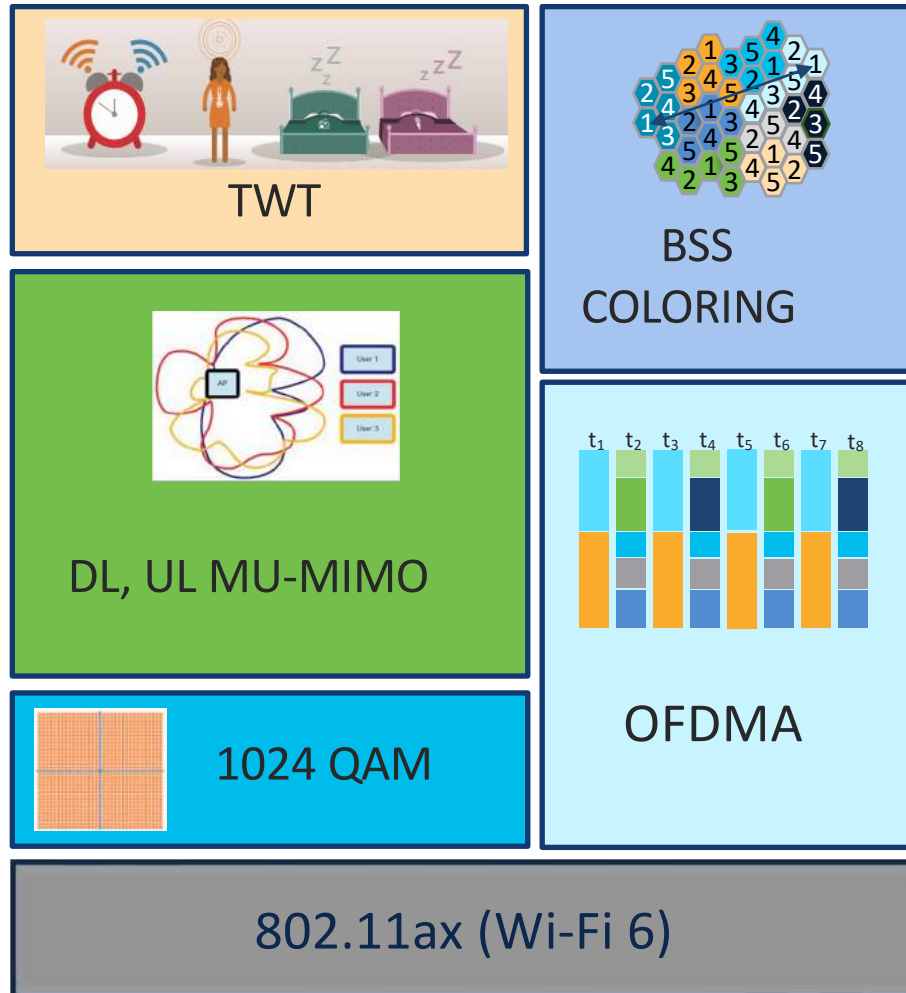
Legislacja



<https://legislacja.rcl.gov.pl/projekt/12369000/katalog/12948508#12948508>

Wi-Fi 6E

Wi-Fi 6 and 6GHz are friends!



- 1 Additional Spectrum**
1200 MHz (5.925 to 7.125 MHz) – US
500 MHz (5.925 to 6.425) - EU
- 2 Security Upgrade**
WPA3 Mandatory
Improves Security
- 3 Clean RF**
(Fixed Mobile Service Operators in
UNI-5 and UNI-7)
- 4 No Legacy (Slow) Devices**
Improves performance
- 5 6 GHz WLAN Discovery**
Airtime Efficiency
- 6 Wider RF Channels**
80 MHz channels – 1200 MHz
40 MHz channels – 500 MHz

Wi-Fi 6E Clients Status

Phones and Tablets



- Samsung Galaxy S21 Ultra
- Samsung Galaxy S22 Ultra
- Samsung Z Fold 3 and 4



Samsung Galaxy S8
tabs



- iPad-Pro11 in 4th gen
- iPad-Pro 12.9 in 6th gen



Pixel 6 and 6 Pro



- Motorola Edge, X30 Pro
- Motorola Moto G200 5G

Others: Asus Zenfone 8, Asus Rog Phone 5, Redmagic 7/7 Pro, Xiaomi Mi 11 and **more!!**

Laptops



MacBook Pro 14 in. 2023
MacBook Pro 16 in. 2023
MAC Mini 2023



MSI Raider, MSI
Summit



Samsung Galaxy Book Pro



- Dell Precision 3561
- Dell XPS 13 9320



Lenovo ThinkPad T14, X13,
Z13/Z16 series, X1 Extreme

Others: HP Spectre x360, HP Chromebook Elite, Asus ZenBook Duo, Dell Alienware, Razer Blade 14 and **more!!**

EoS/EoL Update - WLC



Reference

Product	End of Sale	EoSW Maintenance	EoVSS	LDOS
Gen 1 AireOS				
2504	18-Apr-2018	18-Apr-2019	18-Apr-2021	30-Apr-2023
5508	4-May-2018	1-Aug-2019	31-Jul-2021	31-Jul-2023
8510	4-Jul-2018	3-Sep-2019	2-Sep-2021	30-Sep-2023
Gen 2 AireOS				
3504	31-Jan-2021	31-Jan-2023	30-Jan-2025	30-Jan-2027
5520	10-Dec-2021	31-Jan-2023	30-Jan-2025	30-Jan-2027
8540	31-Jan-2022	31-Jan-2023	30-Jan-2025	30-Jan-2027
IOS-XE				
9800-L	No plans			
9800-40	No plans			
9800-80	No plans			

EoL = End of Life

EoSW = End of Software Maintenance

EoVSS = End of Vulnerability Software Support

LDOS= Last Day of Support

EoS/EoL Update – Access Points



Reference

Product	End of Sale	EoSW Maintenance	EoVSS	LDoS
Wave 1 APs				
1700/2700/3700	30-Apr-2019	29-Apr-2020	30-Apr-2024	
1570	13-Nov-2020	13-Nov-2021	30-Nov-2025	
Wave 2 APs				
1830/1840/1850 and 1540	1-May-2022	1-May-2023	30-Apr-2027	
2800/3800/4800	31-Oct-2022	1-May-2024	31-Oct-2027	
1560	31-Jan-2023	1-May-2024	31-Jan-2028	
Wi-Fi 6 APs				
9117	30-Apr-2021	30-Apr-2022	30-Apr-2026	
9105/9115/9120/9130	No plans			
9124	No plans			

EoL = End of Life
 EoSW = End of Software Maintenance
 EoVSS = End of Vulnerability Software Support
 LDoS= Last Day of Support

Jeden produkt – dwie osobowości



Persona DNA
C9800 & DNAC Stack



Persona Meraki
MR Dashboard Stack



Portfolio Cisco Wi-Fi 6 + Wi-Fi 6E



1 AP, 2 możliwości: modele CW 916x



Catalyst 9162

	Tx	Rx
2.4 GHz	2	2
5 GHz	2	2
6 GHz	2	2



- 2.5Gbps mGig Uplink
- PoE+ and UPoE compliant
- IoT Radio
- CleanAir Pro Radio



Catalyst 9164

	Tx	Rx
2.4 GHz	2	2
5 GHz	4	4
6 GHz	4	4

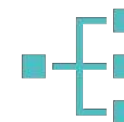


- 2.5Gbps mGig Uplink
- PoE+ and UPoE compliant
- IoT Radio
- CleanAir Pro Radio



Catalyst 9166

	Tx	Rx
2.4 GHz	4	4
5 GHz	4	4
6 GHz	4	4



- 5Gbps mGig Uplink
- PoE+ and UPoE compliant
- IoT Radio
- CleanAir Pro Radio
- XOR radios (low band/high band)
- Environmental sensors

Full radio capability (6 GHz @LPI) on single 30W PoE+

Optymalizacja mocy AP | Dedykowane radio do CleanAir® Pro | Ten sam element montażowy

Punkty dostępowe Cisco Catalyst 916x Wi-Fi 6E

Wspólne platformy będą miały CW PID



Catalyst 9162I

Catalyst 9164I

Catalyst 9166I

Catalyst 9166D1

- Wszystkie AP są tylko w wersji z anteną wewnętrzną.
- Brak dostępnych modeli z antenami zewnętrznymi i w wersji outdoor.
- Czujniki środowiskowe będą obsługiwane tylko w personie DNA.



Prostota | Łatwość użytkowania | Najlepszy w swojej klasie sprzęt

Punkt dostępowy Catalyst z najlepszymi funkcjami na świecie

Wi-Fi 6

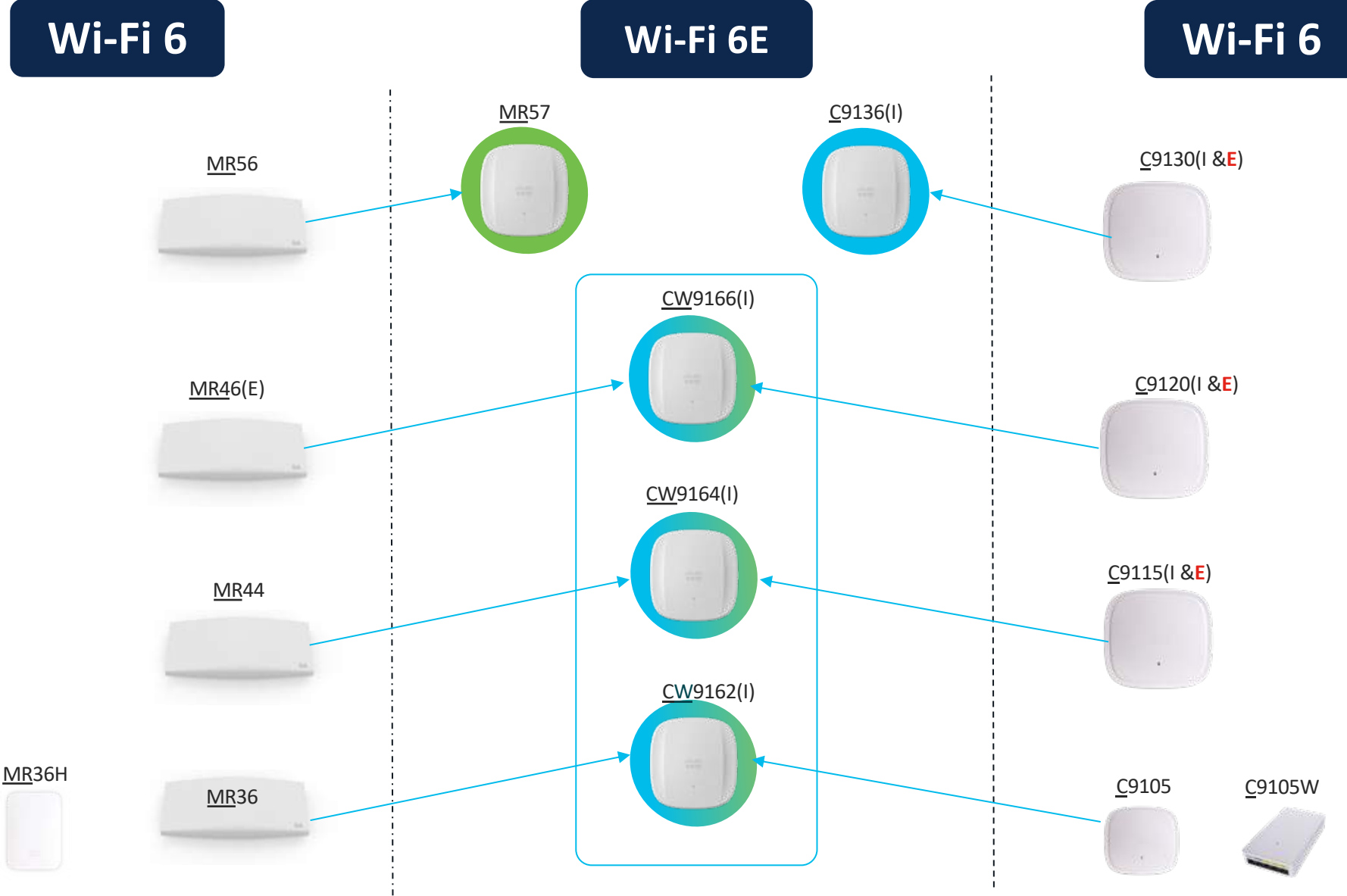
Wi-Fi 6E



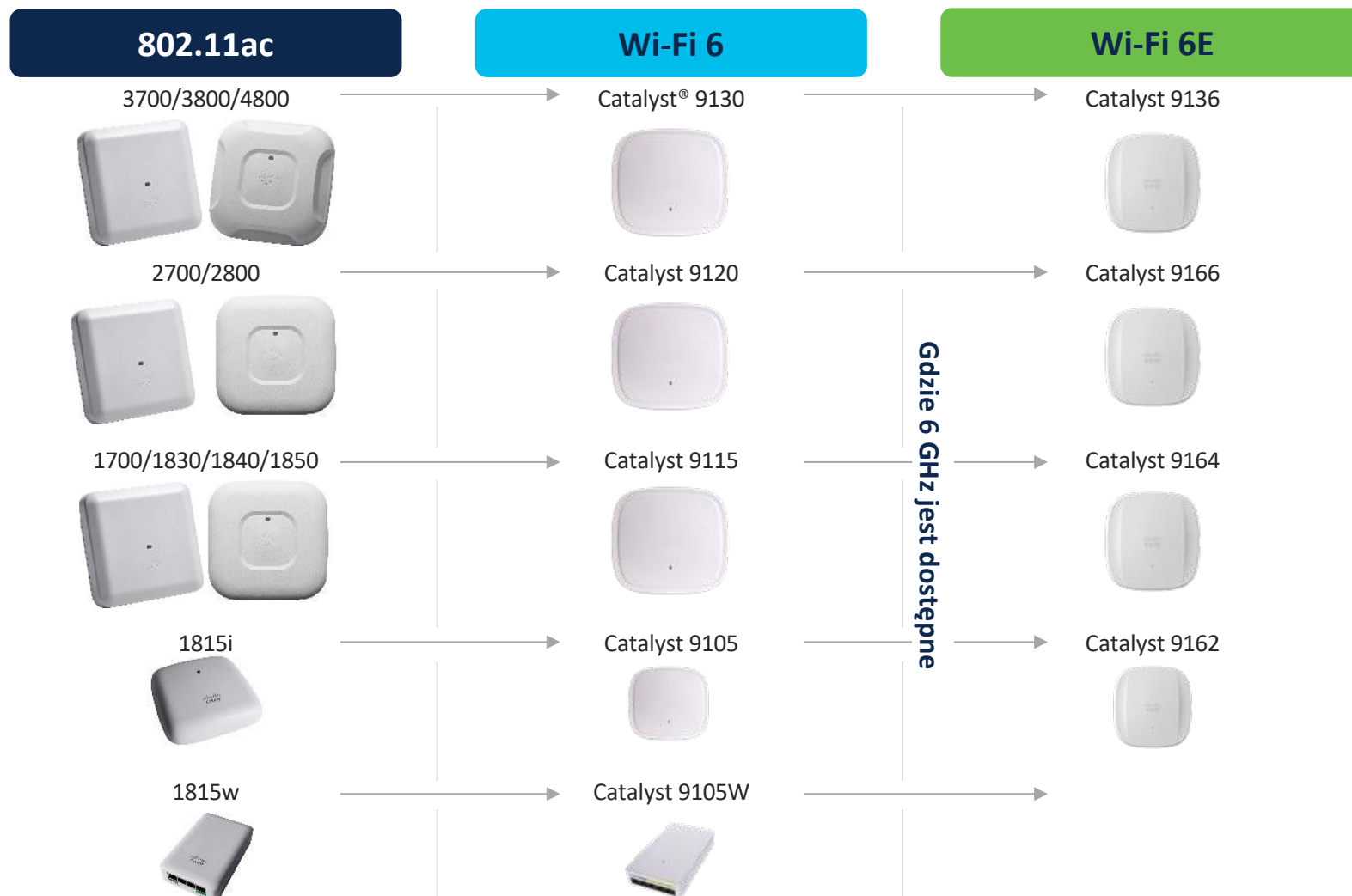
- ✓ Elementy montażowe Catalyst (Aironet)
- ✓ DC Power - zasilanie prądem stałym
- ✓ Porty USB
- ✓ Diody LED dla odpowiedniej Persony
- ✓ Ujednolicona architektura FRA/XOR

Prostota | Łatwość użytkowania | Najlepszy w swojej klasie sprzęt

Współistnienie Wi-Fi 6 i Wi-Fi 6E



Zalecana ścieżka aktualizacji (wewnętrzne anteny)



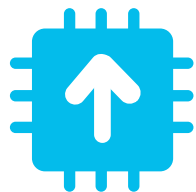
W przypadku Wi-Fi 6E punkty dostępowe z zewnętrznymi antenami i AP typu outdoor nie są jeszcze dozwolone przez organy regulacyjne

Cisco CleanAir™ Pro



Cisco CleanAir™ Pro

15 lat doskonałości w dziedzinie RF i wciąż rośnie...



Cisco CleanAir™

RF-ASIC — doskonałość oparta na SaGE

- Specjalnie zbudowany dla 2,4 i 5 GHz
- Zaprojektowany dla wielu popularnych urządzeń konsumenckich – w 2005 roku



Cisco CleanAir™ Pro

Po ewolucji Wi-Fi do 6 GHz

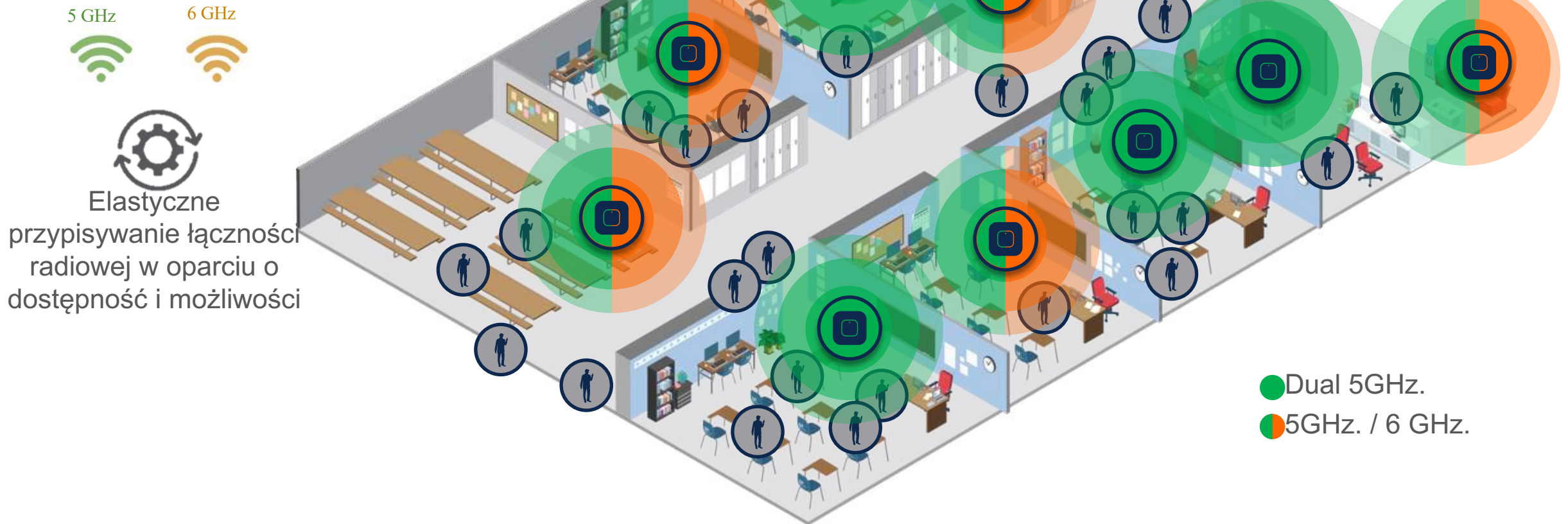
- Pełna obsługa pasma 2,4, 5 i 6 GHz
- Architektura multiradiowa
- Radio skanujące sterowane przez AI/ML
- Klasyfikacja zakłóceń oparta na ML — w punkcie dostępowym

Dual 5 GHz



Catalyst CW9166 - Dual 5GHz

Elastyczność i utrzymanie pojemności



Dzięki rozwiązaniu Cisco użytkownicy mają elastyczność w zakresie 5 + 6 GHz lub 5 + 5 GHz

Cisco Catalyst CW9166 – Dual 5 GHz

Macro-Macro Omnidirectional w Dual 5GHz.

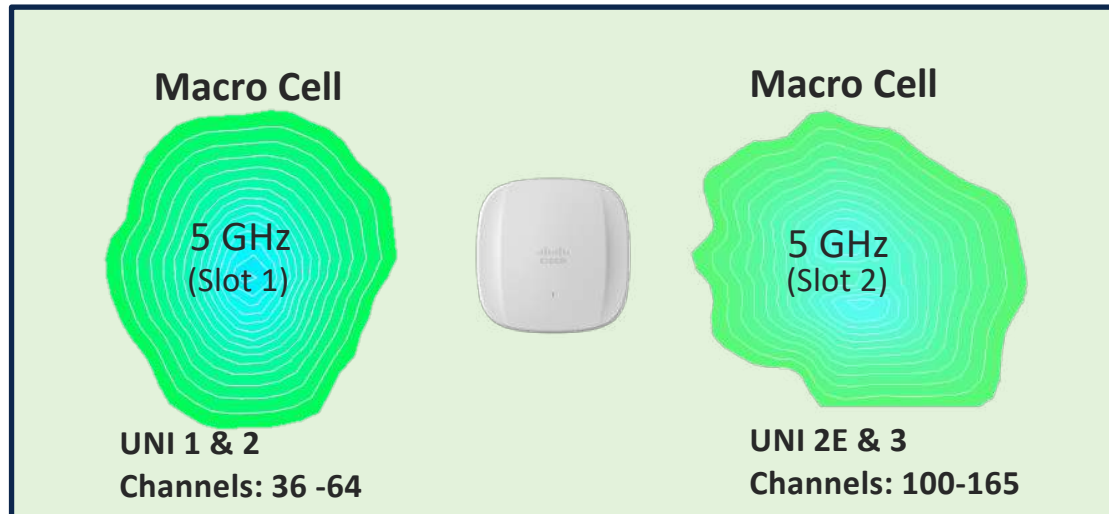


- Domyślnie włączone w krajach obsługujących pasmo 6 GHz

Warto pamiętać o tym, że:

- Dual 5 GHz zapewnia elastyczność w przypadku braku lub minimalnego użycia 6 GHz
- Ochrona inwestycji

XOR



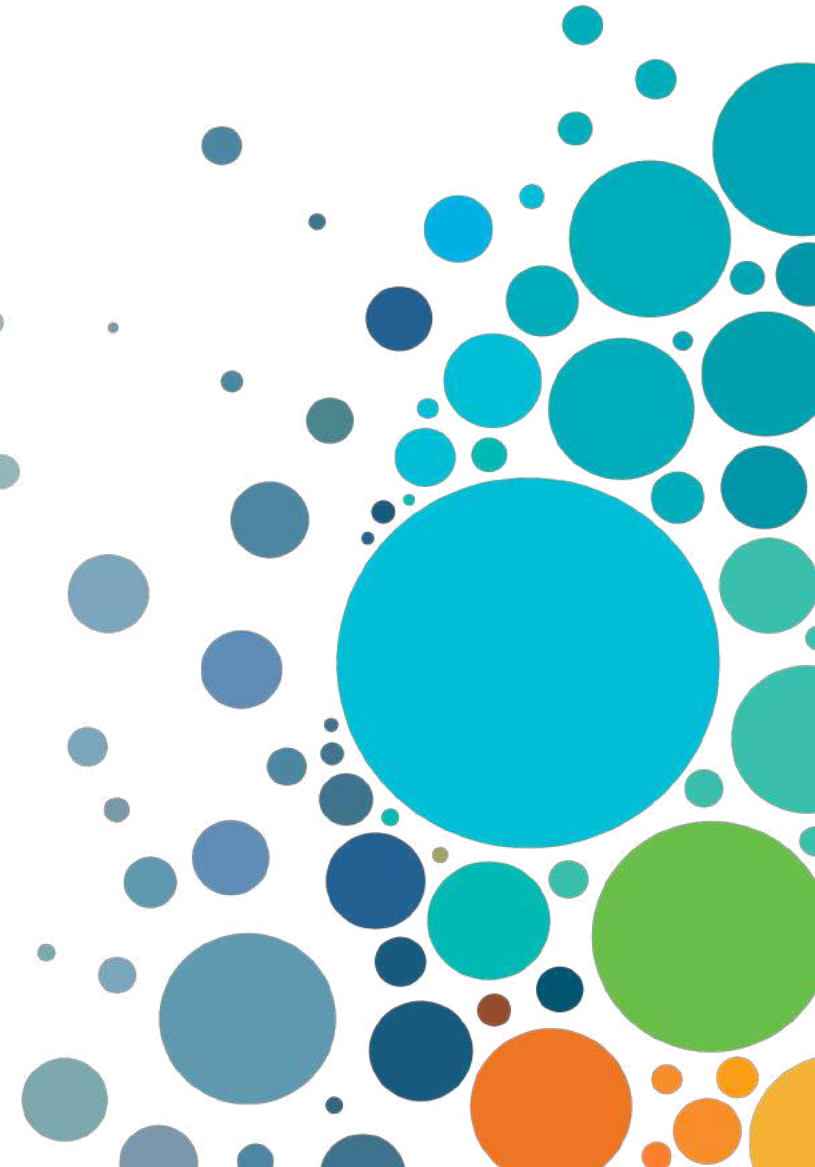
- Podwójne pasmo 5 GHz włączone domyślnie w krajach, które nie obsługują pasma 6 GHz.
- Wybór roli jest ręczny lub automatyczny – FRA/RRM

Elastyczne role radiowe Catalyst CW916x

Flexible Radio Assignment

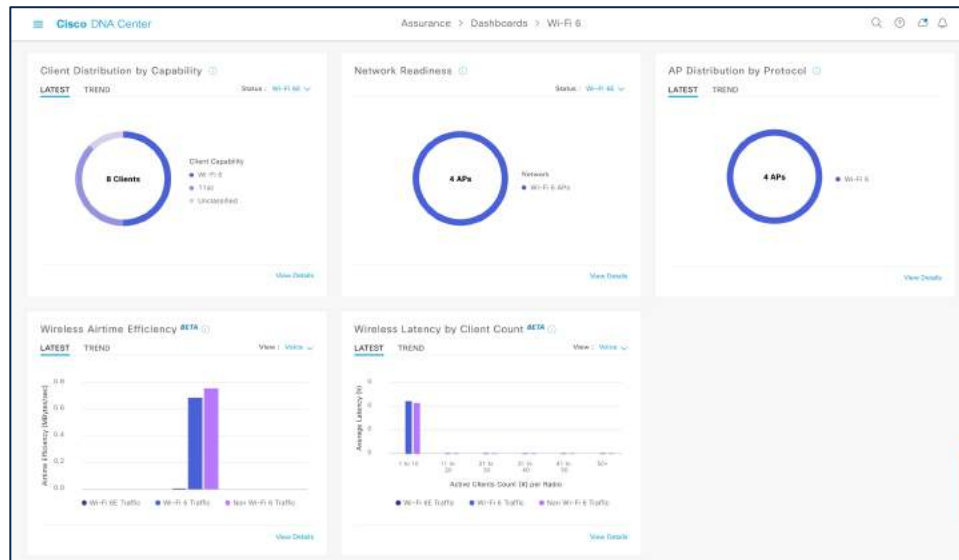
Slot 0	Slot 1	Slot 2	CW9166	CW9164	CW9162	
2.4 GHz 	5 GHz 	6 GHz 	✓	✓	✓	- Wszelchobecny zasięg 2,4/5/6 GHz - Domyślna rola w krajach z obsługą 6 GHz
2.4 GHz 	5 GHz 	5 GHz 	✓	✗	✗	Zwiększ pojemność i wydajność sieci dzięki radiu 5 GHz, w którym 6 GHz dla Wi-Fi nie jest dostępne (lub) gęstym klientom 5 GHz.
Monitor 	5 GHz 	6 GHz 	✓	✓	✓	- Zmniejsz zakłócenia w paśmie 2,4 GHz. - Aktywnie monitoruj i zabezpieczaj sieć.
Monitor 	5 GHz 	5 GHz 	✓	✗	✗	- Zmniejsz zakłócenia w paśmie 2,4 GHz. - Aktywnie monitoruj i zabezpieczaj sieć. - Zwiększ pojemność sieci dzięki radiu 5 GHz

Wi-Fi 6E z Cisco Catalyst Center (dawniej DNA Center)



Wi-Fi 6E z Cisco Catalyst Center

1. Wi-Fi 6/6E Dashboard



- Widok gotowości sieci dla Wi-Fi 6/6E
- Podkreśla zalety Wi-Fi 6/6E

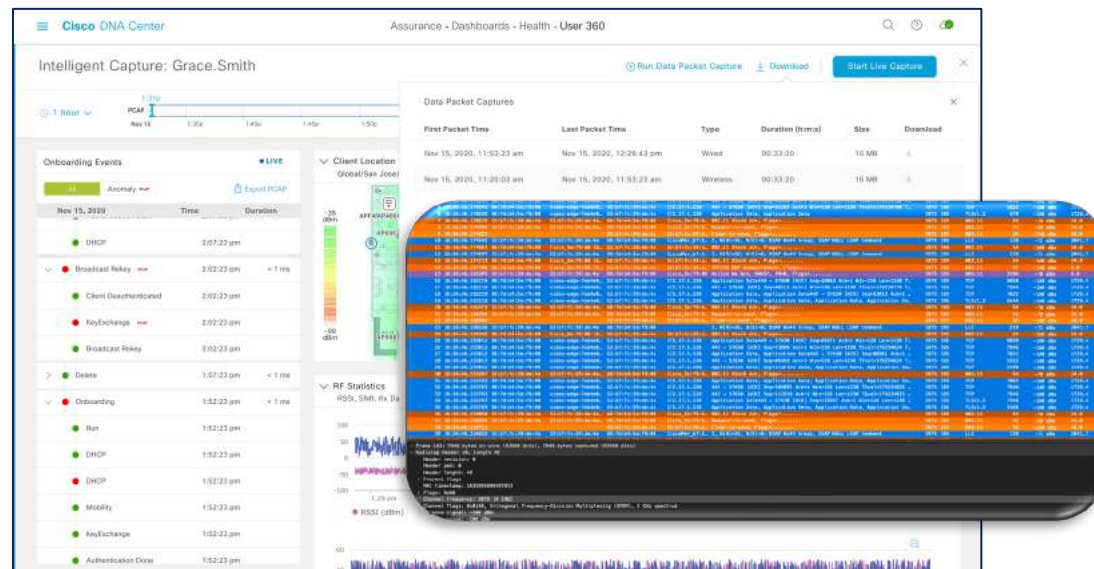
2. CleanAir PRO/iCAP Spectrum dla pasma 6 GHz



- iCAP Spectrum umożliwia przeglądanie surowego widma z punktów dostępowych Catalyst obsługujących CleanAir Pro
- Widmo 2,4, 5 i 6 GHz dostępne na żądanie!

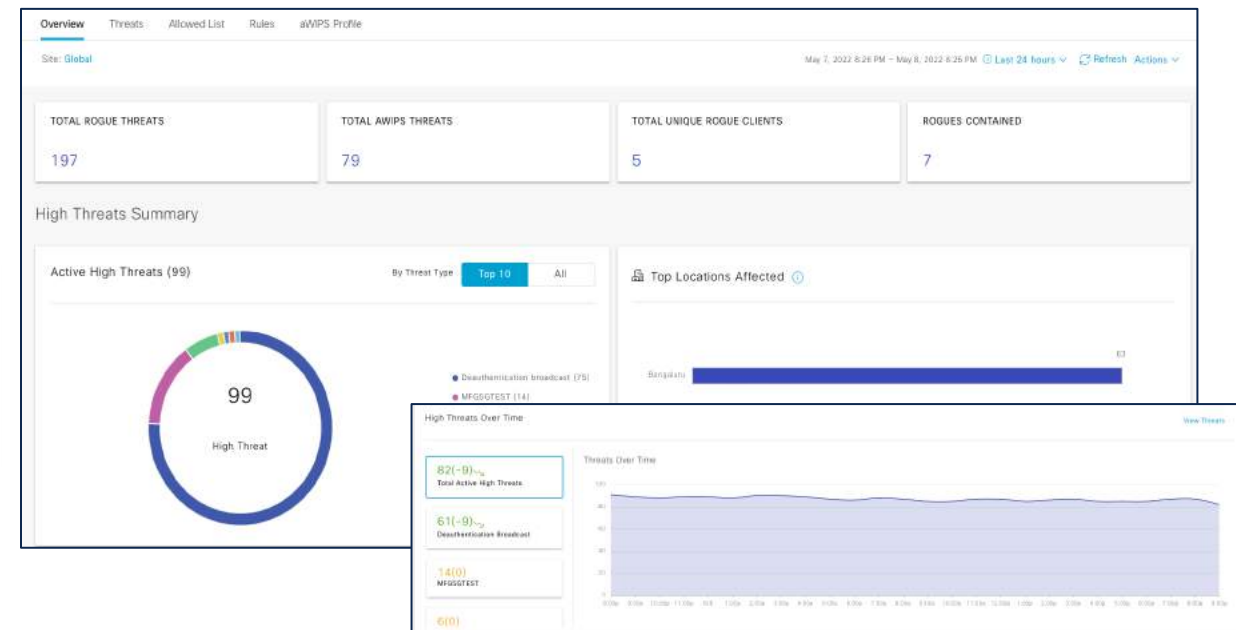
Wi-Fi 6E z Cisco Catalyst Center

3. iCAP dla ramek 6 GHz i HE



- CW9166 — Pełna obsługa iCAP (pakiety danych, na żywo i anomalii)
- CW9164/62 — Częściowe przechwytywanie pakietów w celu rozwiązywania problemów z wprowadzaniem (na żywo i anomalii)

4. Rogue i aWIPS Dashboard – nowy wygląd



- Nowy i ulepszony pulpit nawigacyjny z Cisco DNAC 2.3.4
- Wykrywanie ataków Rogue i aWIPS z częstotliwością 6 GHz.

IoT Integration



Catalyst 9136 i 9166 mają trzy wbudowane czujniki środowiskowe z pełną integracją z Cisco DNA Spaces



AP Product	IOS-XE Release
C9136	17.8.1
CW9166	17.9.1

Uwaga: Temperatura generowana przez AP będzie b



Jakość powietrza



Wbudowany moduł czujnika gazu umożliwi odczyt całkowitego stężenia lotnych związków organicznych (TVOC) i ocenę jakości powietrza w pomieszczeniach (IAQ).



Wilgotność



Wbudowany moduł to w pełni skalibrowany czujnik z możliwością pomiaru względnej wilgotności powietrza.



Temperatura



Wbudowany moduł może również rejestrować temperaturę, aby zapewnić zdalny odczyt otoczenia.



**Czujniki
środowiskowe**

Kontrolery Cisco Catalyst 9800



Architektura bezprzewodowa nowej generacji Cisco Catalyst

Catalyst 9800: Kontroler sieci bezprzewodowej nowej generacji



Odporność na
awarie



Bezpieczeństwo



Dowolna forma
wdrożenia

obsługiwane przez IOS XE



Połączenie magii lat przywództwa w sieci z innowacjami RF

Doskonałość RF
Ekosystem urządzeń
Gwarancja łączności
bezprzewodowej

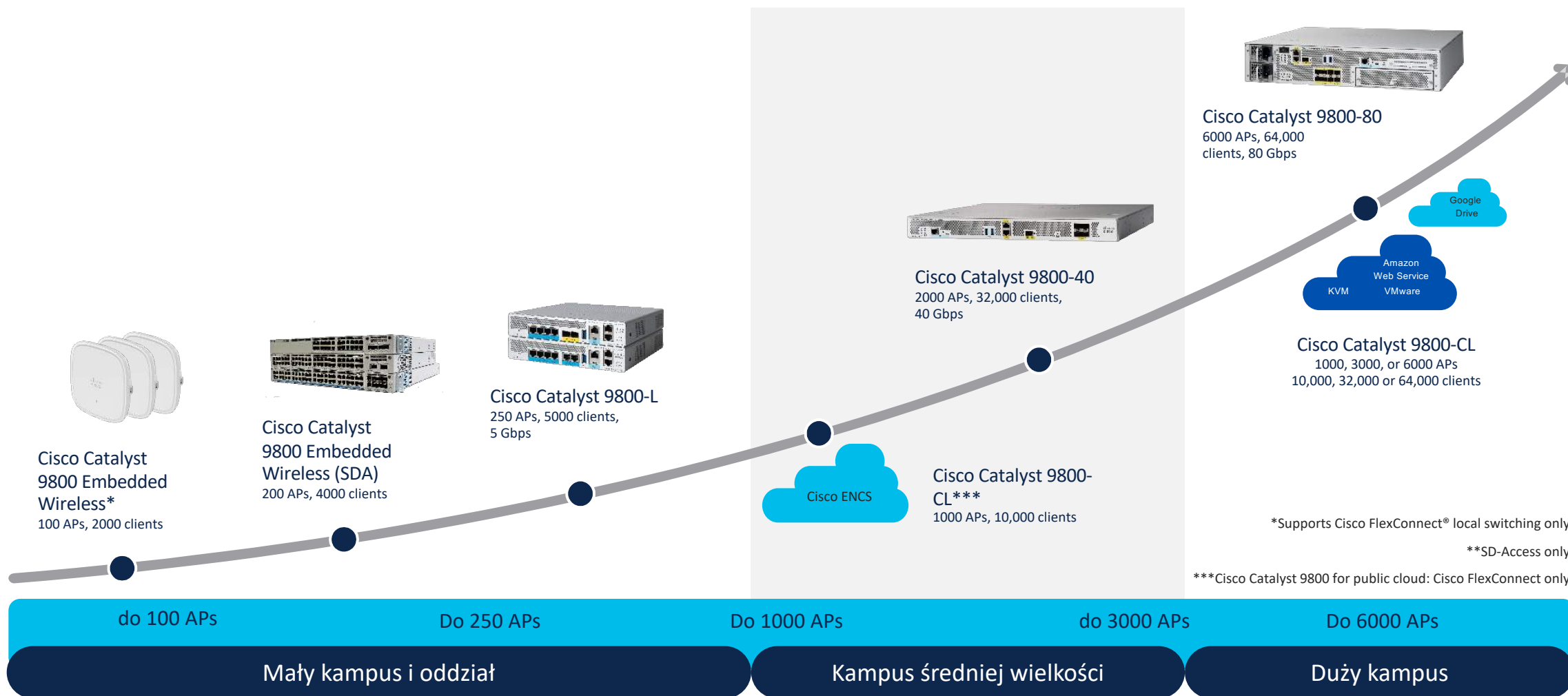
Najbardziej
rozpowszechniony
kontroler na świecie



Nowoczesny
modułowy system
operacyjny

Duża dostępność
Programowalność
Skala

Portfolio kontrolerów bezprzewodowych z serii Catalyst 9800



Cisco oferuje wysoką dostępność dla każdego scenariusza

Cisco Catalyst 9800 DNA Advantage

Planowane

Poprawki "łatki" oprogramowania

AP Service Pack

WLC SMU

Udoskonalenia funkcji

WLC Services Pack

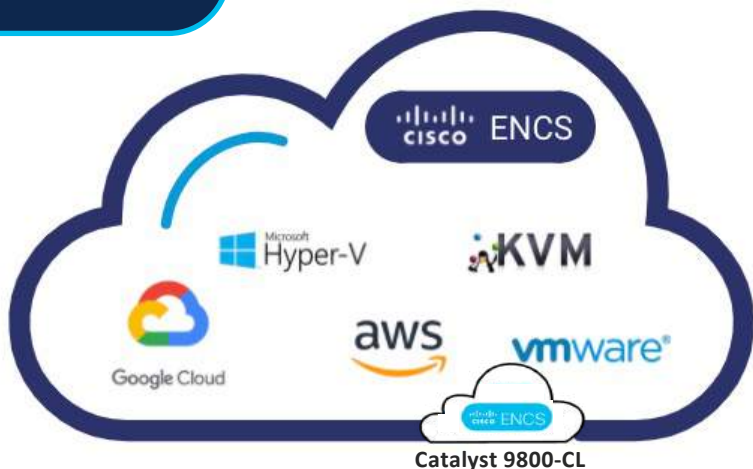
Nowe urządzenie

AP Device Pack

Aktualizacja

Rolling AP Upgrade

ISSU



Catalyst 9800 embedded wireless for Cat 9k Switch

Catalyst 9800-L

Catalyst 9800-40

Nieplanowane

Przełączanie awaryjne

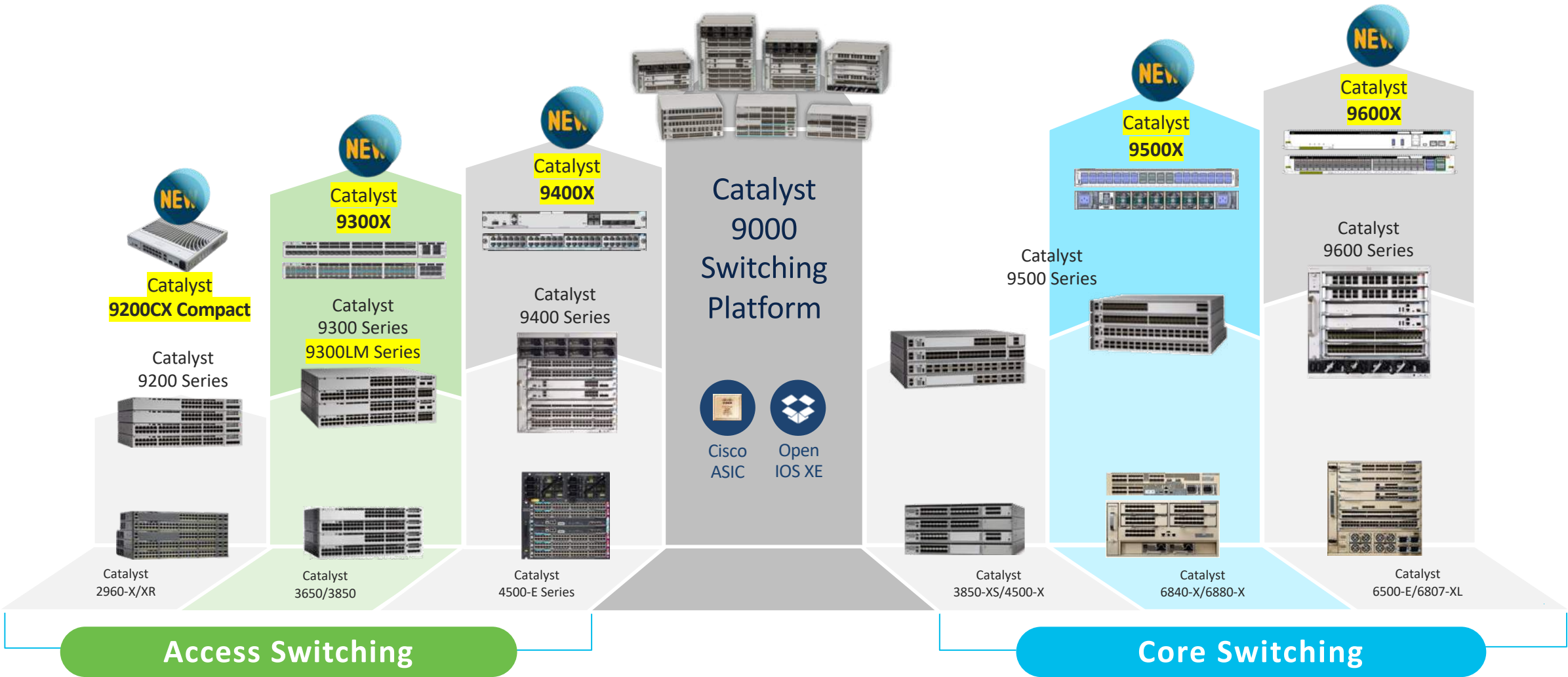
Client SSO



Wiosenne nowości w przełącznikach Catalyst 9K

Cisco Catalyst 9000 Switching Portfolio

Adding the “X factor” to the industry’s leading switching family





Catalyst 9200CX



Milestone	Definition	2960CX	Date
End-of-Life Announcement Date	The date the document that announces the end-of-sale and end-of-life of a product is distributed to the general public.		May 1, 2023
End-of-Sale Date: HW	The last date to order the product through Cisco point-of-sale mechanisms. The product is no longer for sale after this date.		April 30, 2024
Last Ship Date: HW	The last-possible ship date that can be requested of Cisco and/or its contract manufacturers. Actual ship date is dependent on lead time.		July 30, 2024
End of SW Maintenance Releases Date: HW	The last date that Cisco Engineering may release any final software maintenance releases or bug fixes. After this date, Cisco Engineering will no longer develop, repair, maintain, or test the product software.		April 30, 2025
End of Vulnerability/Security Support: HW	The last date that Cisco Engineering may release a planned maintenance release or scheduled software remedy for a security vulnerability issue.		April 30, 2029
End of Routine Failure Analysis Date: HW	The last-possible date a routine failure analysis may be performed to determine the cause of hardware product failure or defect.		April 30, 2025
End of New Service Attachment Date: HW	For equipment and software that is not covered by a service-and-support contract, this is the last date to order a new service-and-support contract or add the equipment and/or software to an existing service-and-support contract.		April 30, 2025
End of Service Contract Renewal Date: HW	The last date to extend or renew a service contract for the product.		July 29, 2028
Last Date of Support: HW	The last date to receive applicable service and support for the product as entitled by active service contracts or by warranty terms and conditions. After this date, all support services for the product are unavailable, and the product becomes obsolete.		April 30, 2029

Milestone	Definition	3560CX	Date
End-of-Life Announcement Date	The date the document that announces the end-of-sale and end-of-life of a product is distributed to the general public.		May 1, 2023
End-of-Sale Date: HW	The last date to order the product through Cisco point-of-sale mechanisms. The product is no longer for sale after this date.		April 30, 2024
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Cisco Catalyst 9200CX

Shipping

PoE+ and Data Models

C9200CX-12P-2X2G



- 12 x 1G PoE+
- 2 x 1G copper and 2 x SFP+ uplinks
- Internal AC power supply
- 240W PoE power budget

C9200CX-8P-2X2G



- 8 x 1G PoE+
- 2 x 1G copper and 2 x SFP+ uplinks
- Internal AC power supply
- 240W PoE power budget

C9200CX-12T-2X2G



- 12 x 1G data
- 3 x 1G copper and 2 x SFP+ uplinks
- External power adapter (80W)
- 802.3bt Class 6 powered (60W)*

Powered by Cisco
IOS-XE Lite

Programmability

Cold patching

Full Flexible NetFlow

MACsec-256

Trustworthy solutions

Perpetual/Fast PoE

SD-Access

Bonjour Service Peering**

UADP 2.0 Mini



Multicore
X86 CPU



Cisco IOS® XE
Lite



X86

Deployment Use Cases



Mobility

Campus, Public Sector, Higher Ed

- 1G/10G Fiber/Copper
- Reduce IDF cable runs



IoT

Hospitality/Cruise Lines

- Powering lights & phones in rooms
- Connecting TVs



**Cloud
Retail**

- Connecting to POS Machines and Demo Units



Security

Financial Services

- Fewer impenetrable threats
- Less downtime

* 802.3bt Type 3 Class 6 60W needed to power

** Roadmap

Cisco Catalyst 9200CX Series

Data and PoE+ Models

1G Downlink and 1G/10G Uplink Models

Data SKU



C9200CX-12T-2X2G

12x1G Downlinks + (3x1G + 2x10G SPP+ Uplinks)

- External power adapter (80W)
- UPOE+ powered (70W)



Power adapter

80W AC External Power Adapter

Powering Option	Available Power (W)
Auxiliary Input	80W
1 UPOE+ Uplink	71W
1 Class 6 802.3bt (60W)	51W

PoE+ SKUs



C9200CX 12 Port PoE+

12x1G Downlinks + (2x1G + 2x10G SPP+ Uplinks)



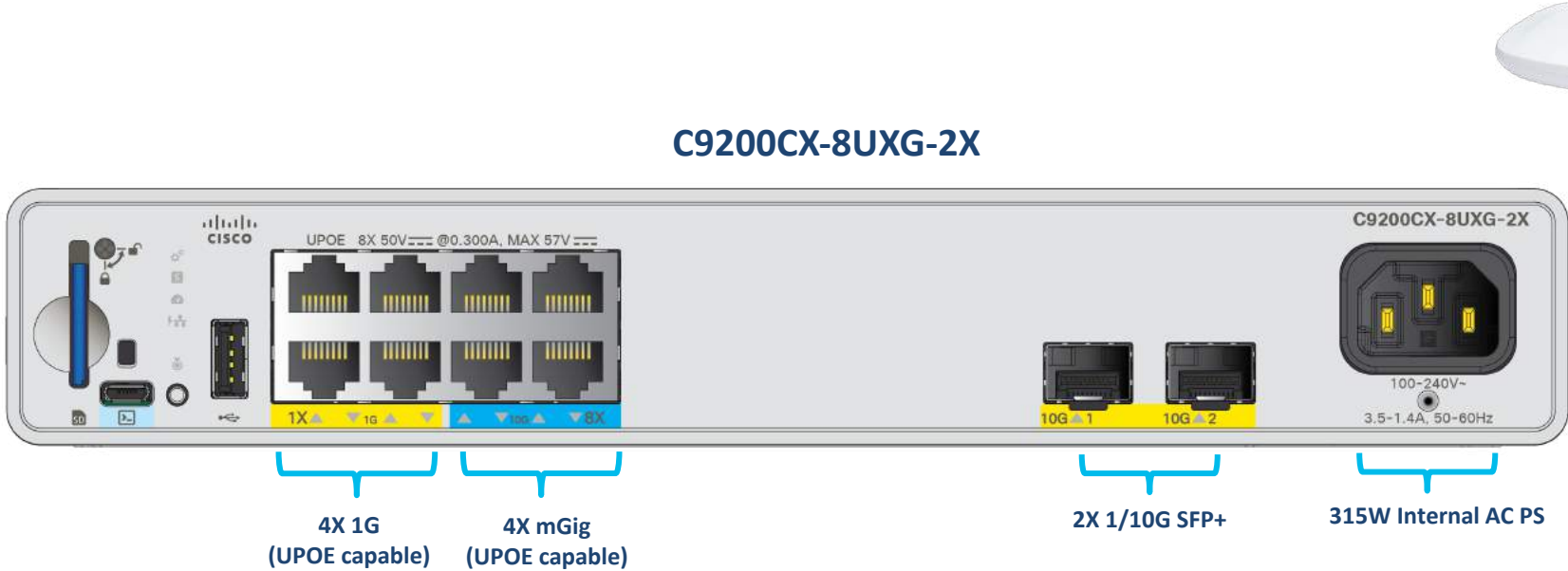
C9200CX 8 Port PoE+

8x1G Downlinks + (2x1G + 2x10G SPP+ Uplinks)

- 310W Internal AC power supply
- 240W PoE power budget

Cisco Catalyst 9200CX mGig SKU

Ready for Wi-Fi 6/6E & Smart Building Deployments



Wi-Fi 6/6E with Catalyst 9100 Series APs

AP	PoE power consumption	Link speed	Link Layer Discovery Protocol (LLDP)
C9136I	802.3bt (UPOE)	5G	47.3W
C9162I	802.3bt (UPOE)	2.5G	25.5W
C9164I	802.3bt (UPOE)	2.5G	30W
C9166	802.3bt (UPOE)	5G	30.5W

All Downlink Ports UPOE Capable

Varying Speeds—for IP phones to Wi-Fi 6/6E APs

Large Power Bank for PDs

802.3bt Type 3 Class 6 60W

10MB/100MB/1G/2.5G/5G/10G
mGig Speeds

240W PoE Power Budget

Catalyst 9200CX Family

Shipping

PoE+ and Data Models

C9200CX-12P-2X2G



- 12 x 1G PoE+
- 2 x 1G copper and 2 x SFP+ uplinks
- Internal AC power supply
- 240W PoE power budget

C9200CX-8P-2X2G



- 8 x 1G PoE+
- 2 x 1G copper and 2 x SFP+ uplinks
- Internal AC power supply
- 240W PoE power budget

C9200CX-12T-2X2G



- 12 x 1G data
- 3 x 1G copper and 2 x SFP+ uplinks
- External power adapter (80W)
- 802.3bt Class 6 powered (60W)

Q3CY23

mGig/UPOE

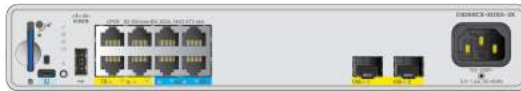
NEW

Q1CY23

HVDC Models

NEW

C9200CX-8UXG-2X



- 4x mGig/10G + 4 x 1G (802.3bt Type 3 Class 6 60W all ports)
- 2x 1/10G SFP+
- Internal AC power supply
- 240W PoE power budget

C9200CX-12P-2X2GH



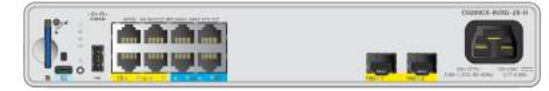
- 12 x 1G PoE+
- 2 x 1G copper and 2 x SFP+ uplinks
- Internal HVDC power supply
- 240W PoE power budget

C9200CX-8P-2X2GH



- 8 x 1G PoE+
- 2 x 1G copper and 2 x SFP+ uplinks
- Internal HVDC power supply
- 240W PoE power budget

C9200CX-8UXG-2XH



- 4x mGig/10G + 4 x 1G (802.3bt Type 3 Class 6 60W all ports)
- 2x 1/10G SFP+
- Internal HVDC power supply
- 240W PoE power budget

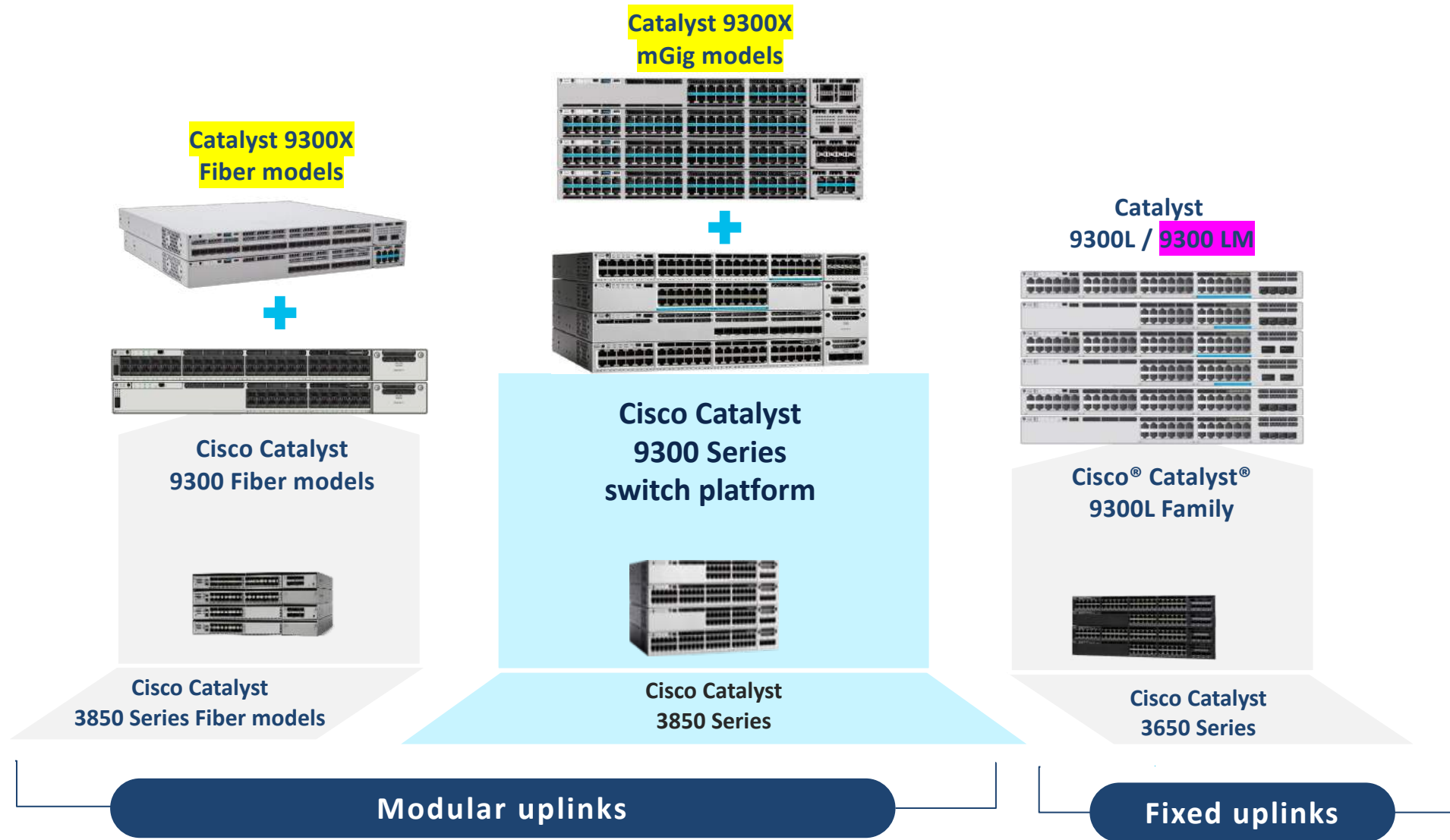


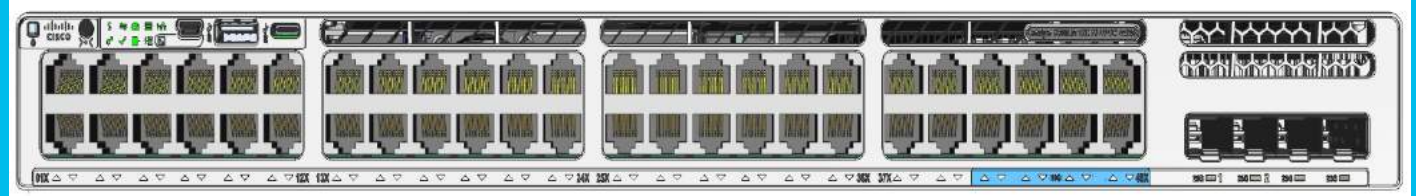
Catalyst 9300 Series



Cisco Catalyst 9300 Series

Platform transitions



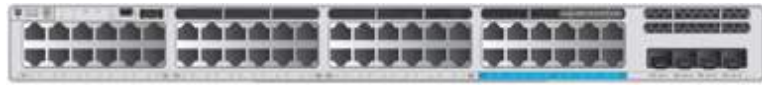


Catalyst 9300LM Series

Cisco Catalyst 9300LM Series

Fixed Uplinks (C9300LM Models)

Multigigabit model



C9300LM-48UX-4Y

40 x 1 G + 8 x 100/1/2.5/5/10G UPOE Ports

4 x10/25G
Uplinks

UPOE models



C9300LM-24U-4Y

24 x 1G UPOE Ports

4 x10/25G
Uplinks

1G Data model



C9300LM-48T-4Y

48 x 1G Ports

4 x10/25G
Uplinks



C9300LM-48U-4Y

48 x 1G UPOE Ports

4 x10/25G
Uplinks

NEW

Modular Stacking



Stack Adapters



Stack Cables

NEW

Newer Higher-Efficiency C9300LM only Power supplies



600W AC



715W DC



1000W AC



FAN Module

Modular Fans*

* Data SKU utilize Fixed Fan

Catalyst 9300LM- Shallow Depth



19.2 inches

Catalyst C9300L



11.8-13.2 inches

Catalyst C9300LM



11.6 Inches

Catalyst C3650-mini

Dimension(H X W x D)

SKU	AC PSU	DC PSU
Data Models	17.50" x 1.73" x 12.39"	17.50" x 1.73" x 11.86"
UPOE/mGig Models	17.50" x 1.73" x 13.17"	17.50" x 1.73" x 13.03"

Migration Platform for C3650-mini



Catalyst 9300X Series

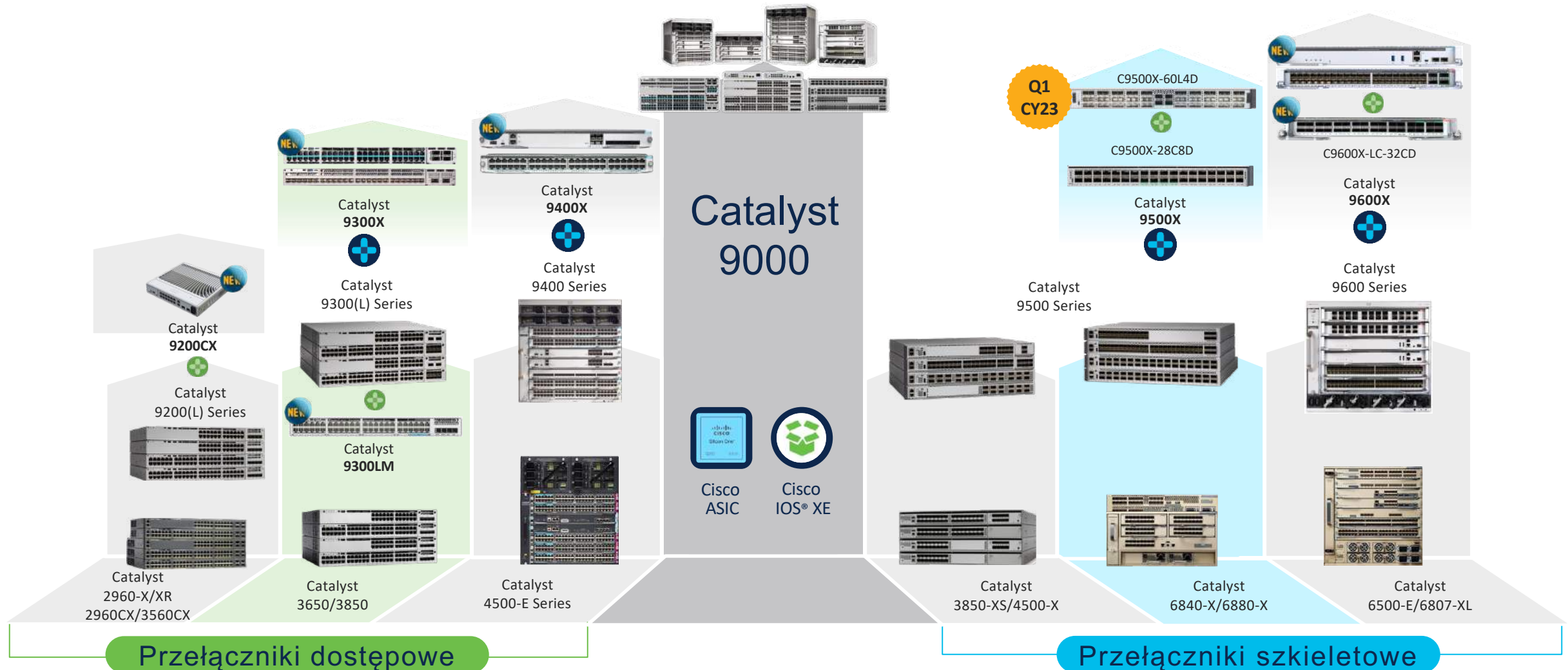


Cisco Catalyst 9000 portfolio produktów

Jedna rodzina od sieci dostępowych do szkieletowych

2022

NEW



Rodzina Cisco Catalyst 9200CX

W
sprzedaży

Modele PoE+ i Data

C9200CX-12P-2X2G



- 12 x 1G PoE+
- 2 x 1G copper and 2 x SFP+ uplinks
- Internal AC power supply
- 240W PoE power budget

C9200CX-8P-2X2G



- 8 x 1G PoE+
- 2 x 1G copper and 2 x SFP+ uplinks
- Internal AC power supply
- 240W PoE power budget

C9200CX-12T-2X2G



- 12 x 1G data
- 3 x 1G copper and 2 x SFP+ uplinks
- External power adapter (80W)
- UPOE/UPOE+ powered (60W/90W)*

Powered by Cisco
IOS-XE Lite

Programmability

Cold patching

Full Flexible NetFlow

MACsec-256

Trustworthy solutions

Perpetual/Fast PoE

SD-Access

Bonjour Service Peering**

UADP 2.0 Mini



Multicore
X86 CPU



Cisco IOS® XE
Lite



X86

Typowe zastosowanie



Środowisko biurowe:

- Sale konferencyjne
- Punkty mobilne i ad-hoc



Środowisko IOT / hotelarstwo:

- Podłączanie i zasilanie wyposażenia pomieszczeń (TV, telefon, czujnik)



Sieci sprzedaży:

- Podłączenie urządzeń w małym punkcie sprzedaży (POS, ekran)



Hale wystawowe i obiekty o dużej powierzchni

* 802.3bt Type 3 Class 6 60W Minimum needed to power

** Roadmap

Rodzina Cisco Catalyst 9200CX

1G Downlink i 1G/10G Uplink

Data (brak POE)



C9200CX-12T-2X2G

12x1G Downlinks + (3x1G + 2x10G SPP+ Uplinks)

- External power adapter (80W)
- UPOE+ powered (70W)



Power adapter

80W AC External Power Adapter

Powering Option	Available Power (W)
Auxiliary Input	80W
1 UPOE+ Uplink	71W
1 Class 6 802.3bt (60W)	51W

PoE+



C9200CX 12 Port PoE+

12x1G Downlinks + (2x1G + 2x10G SPP+ Uplinks)



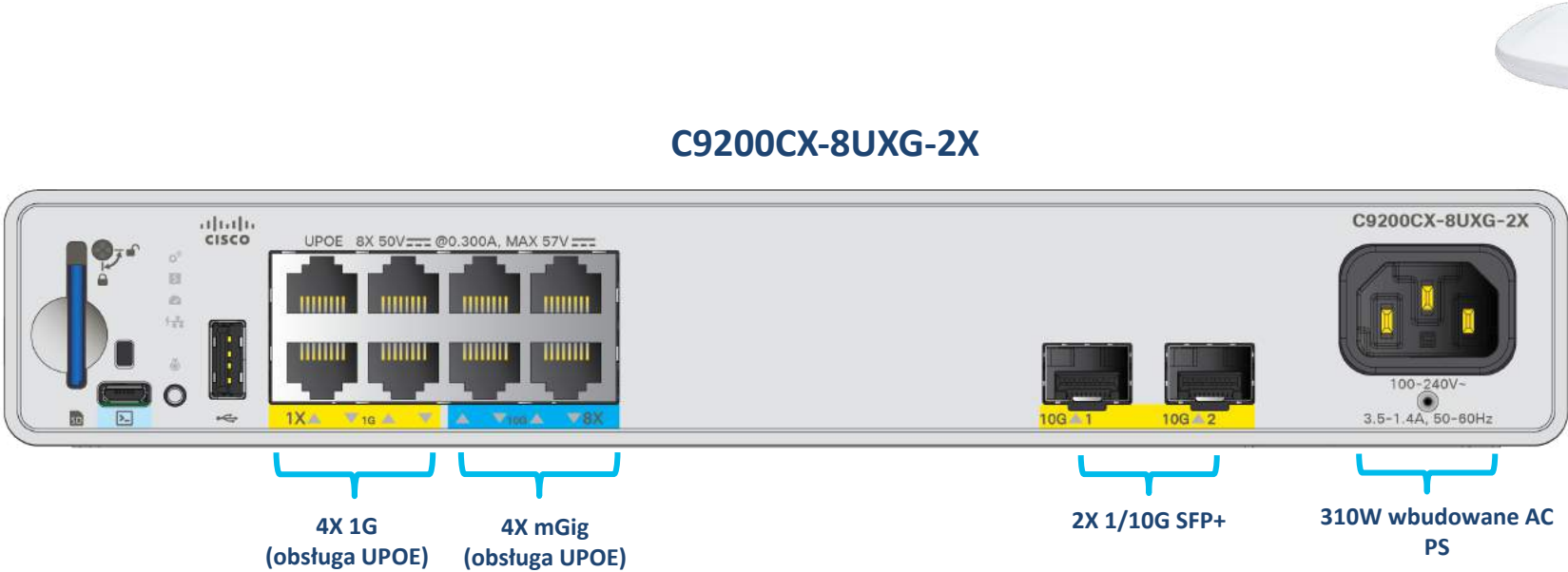
C9200CX 8 Port PoE+

8x1G Downlinks + (2x1G + 2x10G SPP+ Uplinks)

- 310W Internal AC power supply
- 240W PoE power budget

Catalyst 9200CX mGig

Gotowy na Wi-Fi 6/6E i wyższe wymagania na PoE (UPOE)



Punkty dostępowe Wi-Fi 6/6E Catalyst 9100

AP	PoE power consumption	Link speed	Link Layer Discovery Protocol (LLDP)
C9136I	802.3bt (UPOE)	5G	47.3W
C9162I	802.3bt (UPOE)	2.5G	25.5W
C9164I	802.3bt (UPOE)	2.5G	30W
C9166	802.3bt (UPOE)	5G	30.5W

Wszystkie porty downlinkowe obsługują UPOE

Wybór różnych prędkości portów

Duży budżet mocy

802.3bt Type 3 Class 6 60W

10MB/100MB/1G/2.5G/5G/10G
mGig

240W PoE Power Budget

Cisco Catalyst 9300

Nowe linie produktowe Catalyst 9300X oraz Catalyst 9300LM

Catalyst 9300X – modułarny uplink, kompatybilny z c9300 (stos)

Fiber Models

C9300X-24Y



C9300X-12Y



mGig with UPOE+ Models

C9300X-48HX



C9300X-48TX



C9300X-48HXN



C9300X-24HX



Q4
CY22

Q4
CY22

QSFP 4x 100/40G * 2x 100/40G QSFP 8x 10G-Mgig 8x 25/10/1G

Modular Uplinks

315W AC 715W AC/DC 1100W AC 1900W AC

Platinum Rated Power Supplies

Modular Fans

30CM-150CM 50CM-1M-3M

StackWise and StackPower Cables

Features

StackWise® 1T

100G Hw IPSec

UADP 2.0 Sec

100G Uplinks

Highest mGig density

Cisco UPOE+

2 x App Hosting

USB 3.0
120/240GB

Storage

Catalyst 9300LM – Mniejsza głębokość obudowy

Copper Data

C9300LM-48T-4Y



UPOE Models

C9300LM-24U-4Y



C9300LM-48U-4Y



mGig with UPOE

C9300LM-48UX-4Y



IOS-XE 17.9.1



Stack
Adapters



50CM-1M-3M

New StackKit



715W DC



600W AC



1000W AC

New Platinum Rated Power Supplies

Features

StackWise® 320G

Depth<=13.2 inch

UADP 2.0

UPOE

Front Panel SSD**

Feature/Scale Parity with C9300L



Modular Fans



USB 3.0
120/240GB

Storage

Rodzina Cisco Catalyst 9300LM

Wbudowane uplinki (Modele C9300LM)

Modele mGIG (Multigigabit)



C9300LM-48UX-4Y

40 x 1 G + 8 x 100/1/2.5/5/10G UPOE Ports

Uplinki
4 x10/25G

1G Data model



C9300LM-48T-4Y

48 x 1G Ports

Uplinki
4 x10/25G

Modele UPOE



C9300LM-24U-4Y

24 x 1G UPOE Ports

Uplinki
4 x10/25G



C9300LM-48U-4Y

48 x 1G UPOE Ports

Uplinki
4 x10/25G

NEW

Stakowanie



Stack Adapters



Stack Cables

NEW

Nowe zasilacze dla modeli C9300LM only o
wyższej efektywności



600W AC



715W DC



1000W AC



FAN Module

* Data SKU utilize Fixed Fan

Catalyst 9300LM-mniejsza głębokość



Catalyst C9300L



Catalyst C9300LM



Catalyst C3650-mini

Wymiary obudowy (H X W x D)

SKU	AC PSU	DC PSU
Data Models	17.50" x 1.73" x 12.39"	17.50" x 1.73" x 11.86"
UPOE/mGig Models	17.50" x 1.73" x 13.17"	17.50" x 1.73" x 13.03"

Migracja z platformy C3650-mini

Cisco Catalyst 9300

Nowe linie produktowe Catalyst 9300X oraz Catalyst 9300LM

Catalyst 9300X – modułarny uplink, kompatybilny z c9300 (stos)

Fiber Models

C9300X-24Y



C9300X-12Y



mGig with UPOE+ Models

C9300X-48HX



C9300X-48TX



C9300X-48HXN



C9300X-24HX



Q4
CY22

Q4
CY22

QSFP 4x 100/40G* 2x 100/40G QSFP 8x 10G-Mgig 8x 25/10/1G

Modular Uplinks

315W AC 715W AC/DC 1100W AC 1900W AC

Platinum Rated Power Supplies

Modular Fans

30CM-150CM 50CM-1M-3M

StackWise and StackPower Cables

Features

StackWise® 1T

100G Hw IPSec

UADP 2.0 Sec

100G Uplinks

Highest mGig density

Cisco UPOE+

2 x App Hosting

USB 3.0
120/240GB

Storage

Catalyst 9300LM – Mniejsza głębokość obudowy

Copper Data

C9300LM-48T-4Y



UPOE Models

C9300LM-24U-4Y



C9300LM-48U-4Y



mGig with UPOE

C9300LM-48UX-4Y



IOS-XE 17.9.1

Stack
Adapters

50CM-1M-3M

New StackKit

715W DC

600W AC

1000W AC

New Platinum Rated Power Supplies

Features

StackWise® 320G

Depth<=13.2 inch

UADP 2.0

UPOE

Front Panel SSD**

Feature/Scale Parity with C9300L

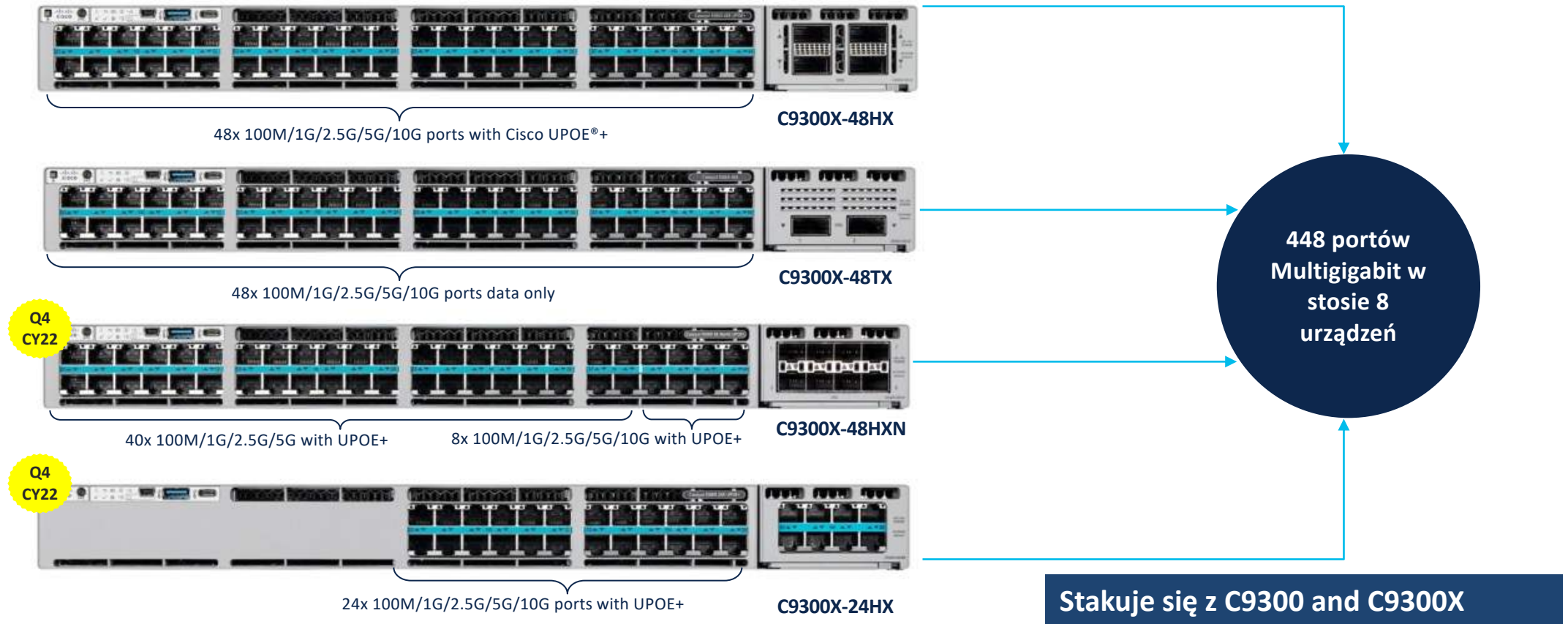


Modular Fans

USB 3.0
120/240GB

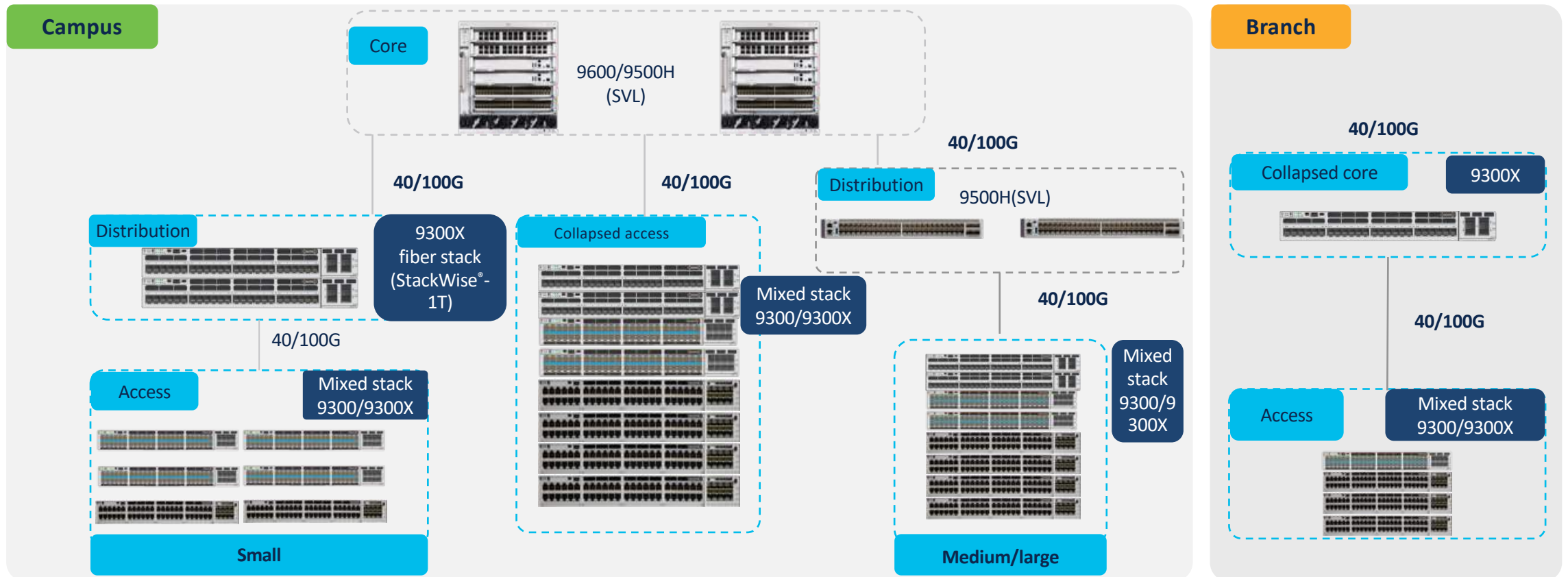
Storage

Catalyst 9300X modele Multigigabit nowej generacji



Największa na rysunku gęstość portów mGIG i możliwości zasilania POE

Bardzo duża elastyczność w projektowaniu sieci dzięki platformie Catalyst 9000X



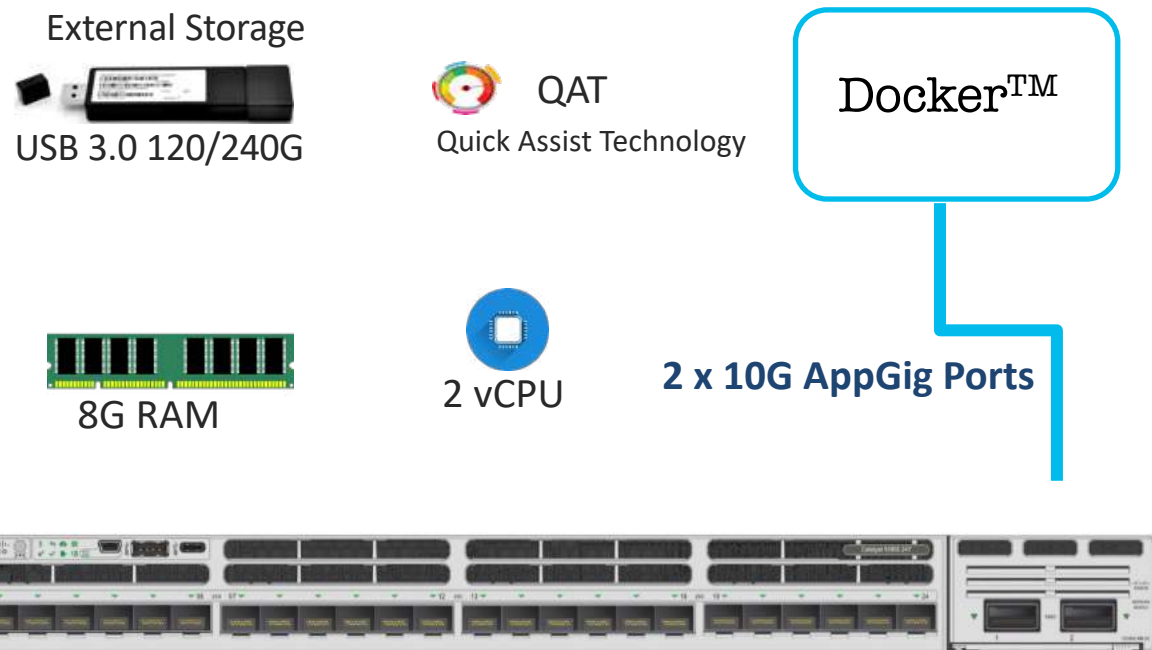
Ułatwia uzyskanie interfejsów 10/25/40/100G w dostępie

Uruchamianie aplikacji na platformie c9300(X)

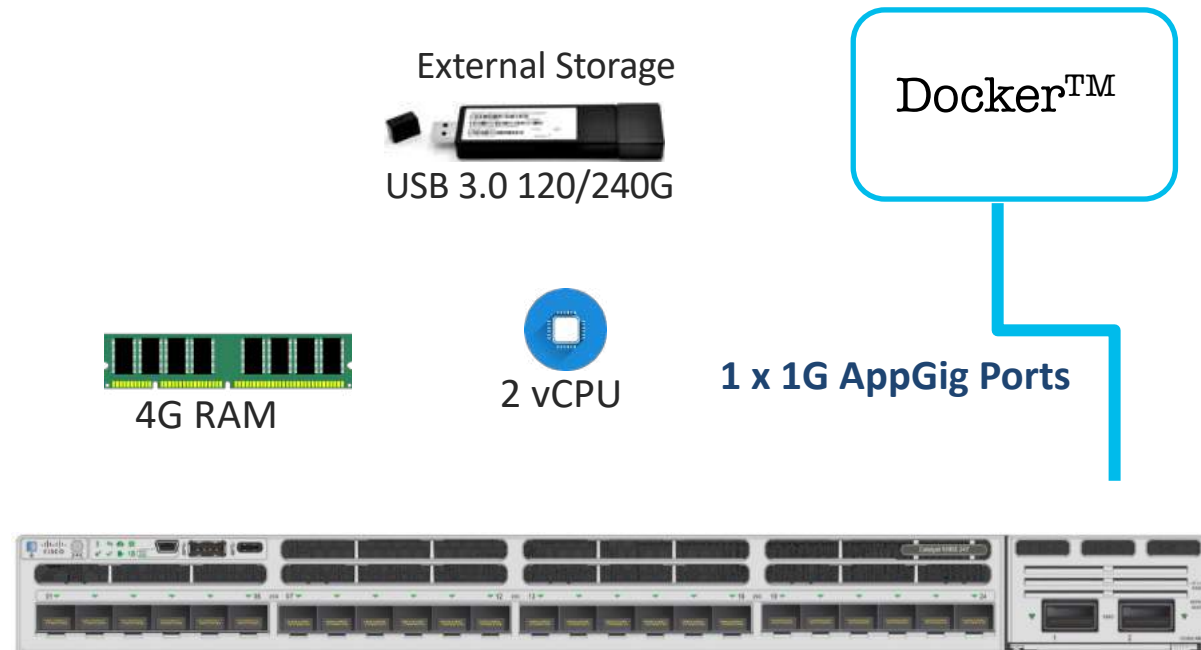


Zmieniamy Catalysta 9300 w platformę obliczeniową

Enhanced Application Hosting Infrastructure on Catalyst 9300X models



Application Hosting Infrastructure on Catalyst 9300 models



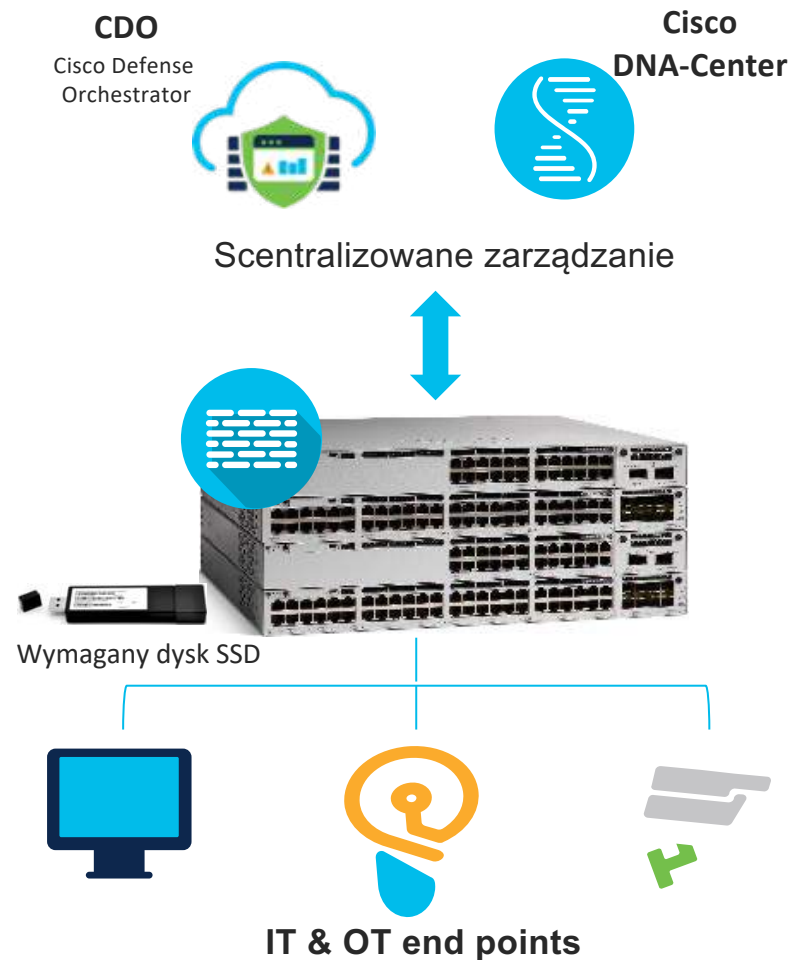
Cisco ASAv jako aplikacja dla Catalyst 9000

Inspekcja i filtrowanie stanowe bliżej źródła ruchu

EFT Start Oct'22
Cisco IOS® XE 17.9.2
Beta Support

Cechy rozwiązania:

- Dodanie “firewallingu” do usług sieciowych bez konieczności zmiany architektury sieci
- Rozproszone przetwarzanie z scentralizowanym zarządzaniem w chmurze przez CDO
- Łatwa implementacja poprzez DNA Center
- Jasny podział na NetOps i SecOps



Stateful Inspection Firewall

L3 Firewall (tylko Routed Mode)

Wsparcie dla SGT

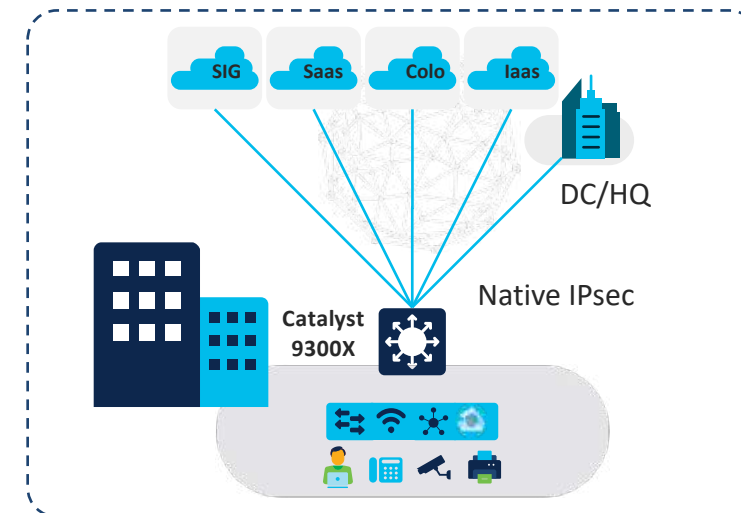
300M
Przepustowość ASAv

Catalyst 9300X, 9300, 9300L

Catalyst 9300X – szyfrowanie sprzętowe IPSEC



Cisco Catalyst 9300X



Encryption	Authentication
AES-128-CBC	HMAC/SHA1
AES-128/256-GCM	GMAC
Tunnel mode	
Encapsulation – ESP	
IKEv2	

Static virtual tunnel interface

IPv4/IPv6

OSPF/BGP

PBR + Set interface*

NAT traversal*

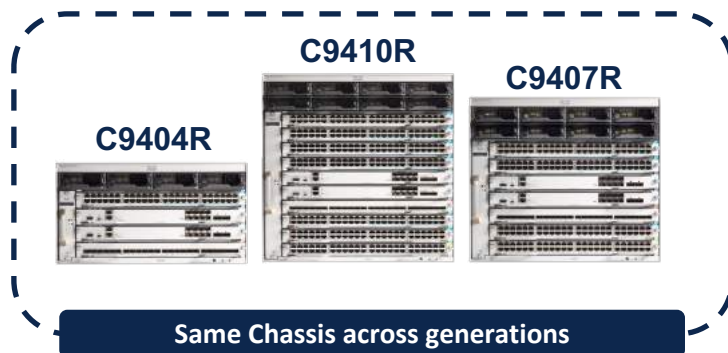
Multicast routing*

Layer 3 segmentation over IPsec*

Layer 2 extension over IPsec*

Catalyst 9400

Możliwość zastosowania jako wydajnej i skalowanej platformy dostępowej i agregacyjnej 10G z uplnikami 25/40/100G



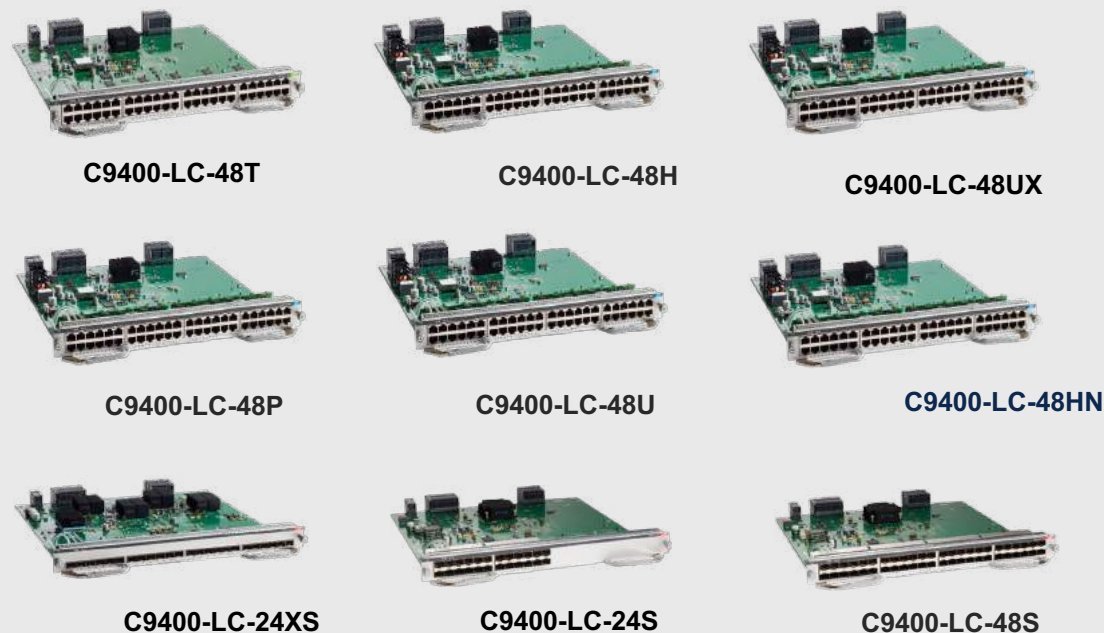
Gen 1 Supervisor Engines



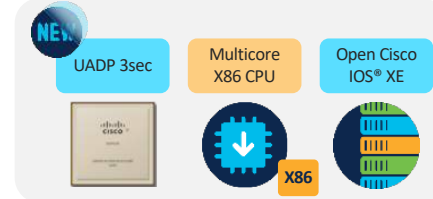
Gen 2 Supervisor Engines



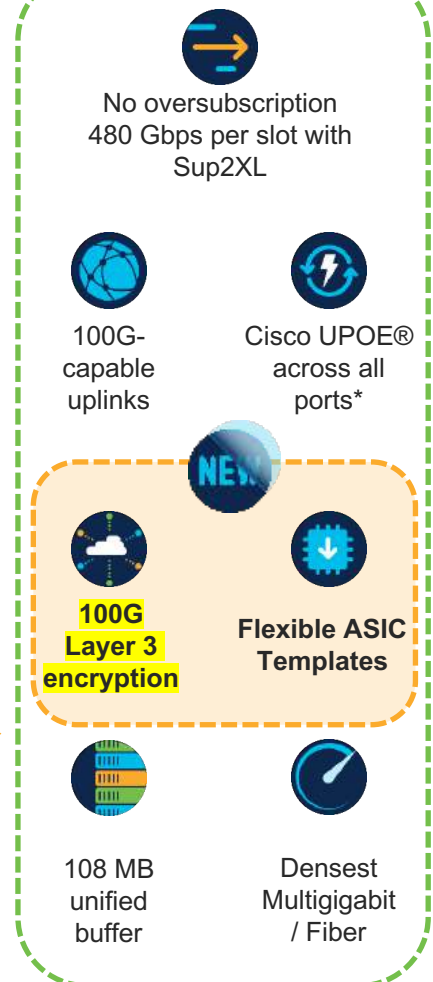
Gen 1 Line cards – Compatible with both Sup 1 and Sup 2



Gen 2 Line cards – Only Compatible with Sup 2



Sup 2/XL Features



Requires all power supplies present.

POE/UPOE/UPOE+ - krótkie podsumowanie

	9200	9300(X)	9400/X
PoE/PoE+	✓	✓	✓
UPOE+		✓	✓
UPOE		✓	✓

mGIG - krótkie podsumowanie

	9200	9300(X)	9400/X
mGIG 8 lub 12 portów	✓	✓	✓ na slot
mGIG 24 porty		✓	✓ na slot
mGIG do 5G 48 portów		✓	✓ na slot

Catalyst 9000

Portfolio rozwiązań szkieletowych i agregacyjnych

UADP 3.0

Catalyst 9500

QSFP



C9500-32C / C9500-32QC

32 x 40/100G Ports

SFP28



C9500-48Y4C / C9500-24Y4C

48 x 1/10/25G & 4 x 40/100G Ports

Total capacity
4.8 Tbps
Slot bandwidth
1.2 Tbps

Highest capacity
3.2 Tbps

Catalyst 9600



Supervisor 1



Szkielet i agregacja

Silicon One Q200

Catalyst 9500X

QSFP

IOS-XE 17.7.1



C9500X-28C8D

28 x 40/100G & 8 x 100/400G Ports

SFP56

NEW



C9500X-60L4D

IOS-XE 17.10.1

60 x 10/25/50G & 4 x 100/400G Ports

Supervisor 2



Catalyst 9600X

IOS-XE 17.7.1

Total capacity
12.8 Tbps
Slot bandwidth
3.2 Tbps

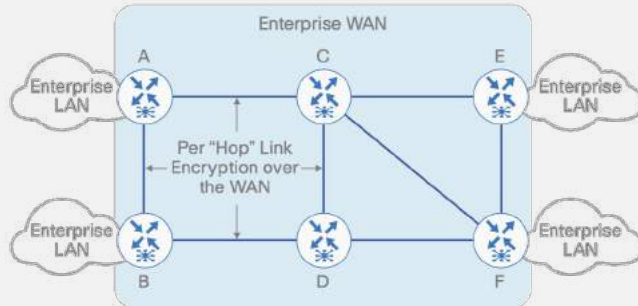
Highest capacity
6 Tbps

Szkielet, agregacja i wydajny brzeg

WAN MACsec jak to działa i dla kogo?

Enabled in hardware on Catalyst 9000 Switches

MACsec

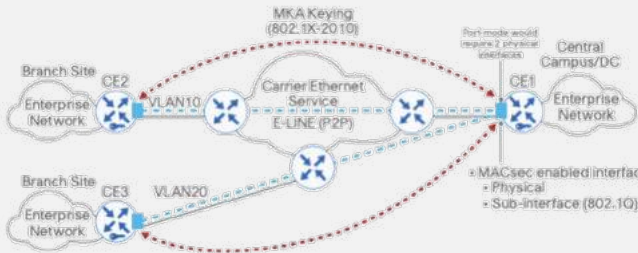


- Szyfrowanie “Hop-by-hop”
- Tylko dla bezpośrednich połączeń L1
- Zabezpieczenie połączeń bezpośrednich w kampusie
- Szyfrowanie 256/128-bit AES



Supported on **all Catalyst® 9000** models
All ports and speeds simultaneously

WAN MACsec



- Szyfrowanie “End-to-end” połączeń w formie usług Metro / L2 WAN
- EoMPLS/VPLS, Q-in-Q
- Point-to-point or point-to-multipoint
- Bezpieczne połączenie typu “site interconnect”, DCI, |storage replication”
- Szyfrowanie 256/128-bit AES



Catalyst 9600X



Catalyst 9500X

Supported on **Silicon One™** platforms*
All ports/speeds (up to 400G) simultaneously



Catalyst 9400X



Catalyst 9300X

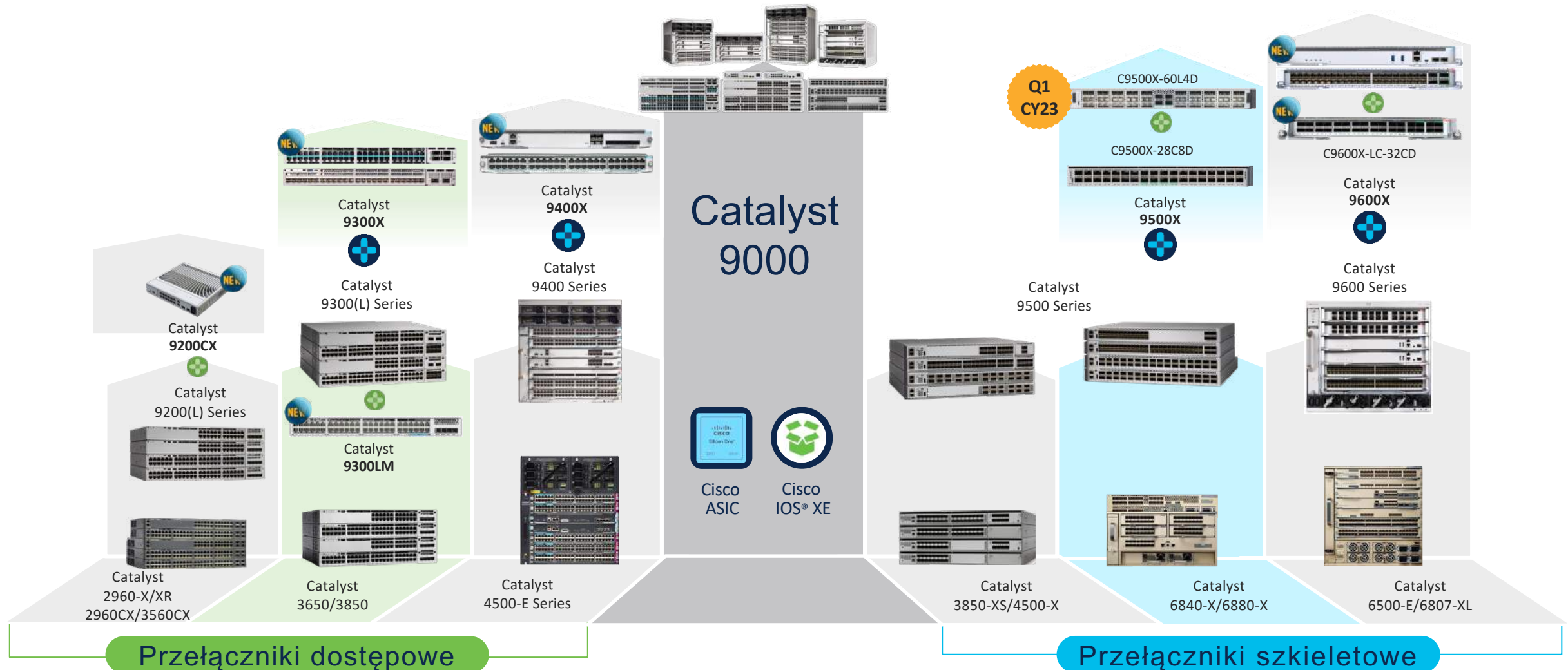
Roadmap support access **Catalyst 9300X and 9400X**
Aggregate speed up to 100G

Cisco Catalyst 9000 portfolio produktów

Jedna rodzina od sieci dostępowych do szkieletowych

2022

NEW





The bridge to possible

Monitoring i zarządzanie z chmury

Monitoring z chmury vs. zarządzanie z chmurą

Monitoring z chmury Cloud **Monitoring**

Przełączniki
Catalyst 9200,
9300, 9500

Dashboard Meraki



Zarządzanie z chmury Cloud **Management**

Dashboard Meraki



Uniwersalny sprzęt WiFi 6E
(osobowość Meraki)

Catalyst 9K
Switching (9300)



Monitoring z chmury vs. zarządzanie z chmurą

Monitoring z chmury Cloud **Monitoring**

Przełączniki
Catalyst 9200,
9300, 9500

Dashboard Meraki



Zarządzanie z chmury Cloud **Management**

Dashboard Meraki



Uniwersalny sprzęt WiFi 6E
(osobowość Meraki)

Catalyst 9K
Switching (9300)



Monitoring z chmury przełączników Catalyst

Jednolity obraz infrastruktury

Stan urządzeń i diagnostyka

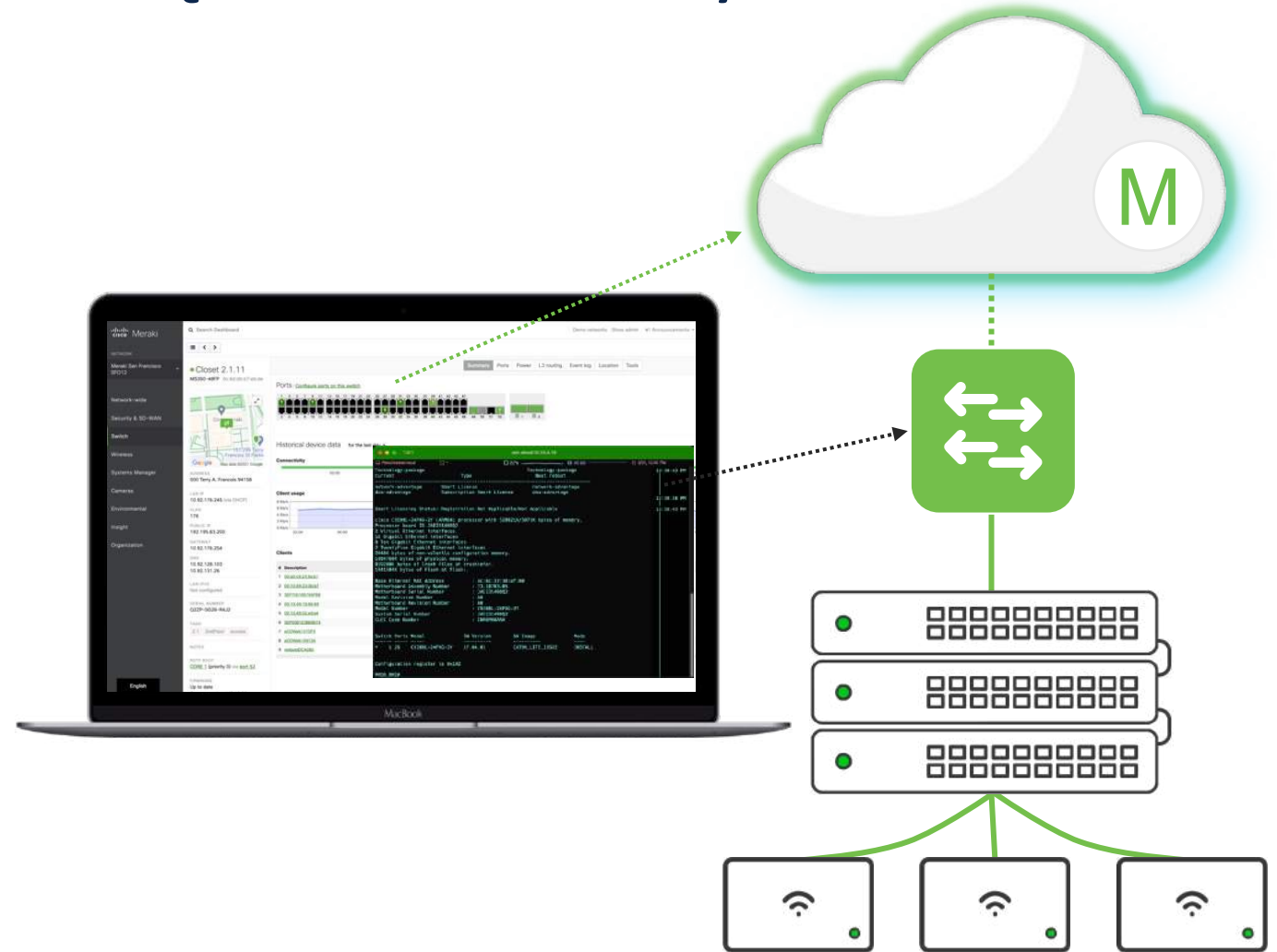
Informacje o klientach sieci

Topologia sieci

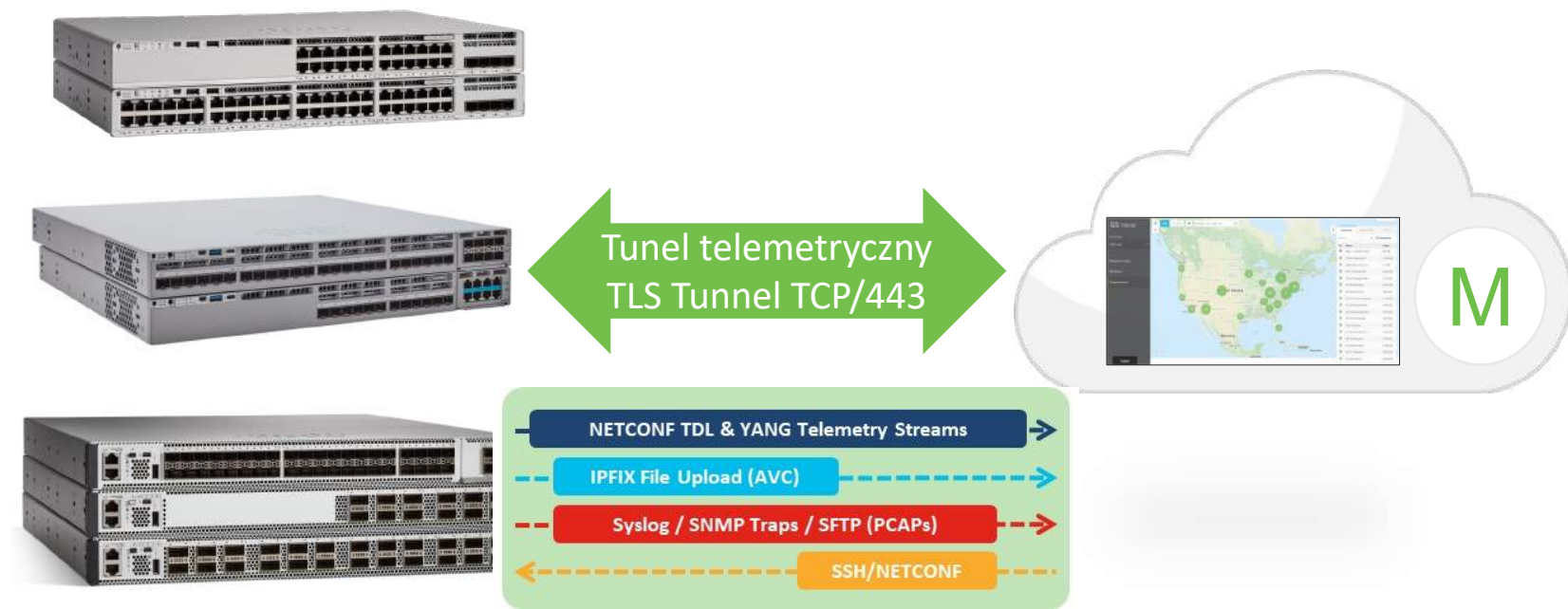
Alerty dla urządzeń i portów

Statystyki wykorzystania

Wykorzystanie sieci przez aplikacje



Monitoring z chmury przełączników Catalyst



Modele

9200/L/CX
9300/L/X
9500

Firmware

IOS-XE 17.3+ - 17.8

Licencje

DNA Advantage
DNA Essentials*

Jak to zrobić?

Onboarding app

* DNA Essentials nie dostarcza informacji o wykorzystaniu sieci przez aplikacje i ruch sieciowy
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Monitoring z chmury przełączników Catalyst

Licencja DNA Advantage
Analityka sieciowa



Licencja DNA Essentials
Brak analityki sieciowej

Oczytanie konfiguracji

Monitoring klientów

Wykorzystanie pasma

Narzędzia diagnostyczne

“Firmware tracking”

Topologia

C9200-24-16-2039

C9200-24P 80:2d:bf:96:00:00

Monitor Only



Set a location for this switch

Add an address below and check Move marker to update its location

ADDRESS

LAN IP
10.7.67.20 (via DHCP)

PUBLIC IP
128.107.81.82

GATEWAY
10.7.67.1

LAN IPV6
Not configured

SERIAL NUMBER
JAE2427XXXX (Catalyst)
Q2ZZ-KZ5Q-XXXX (Meraki)

TAGS

recently-added

NOTES

FIRMWARE
Current version: IOS XE 17.5.1

Summary

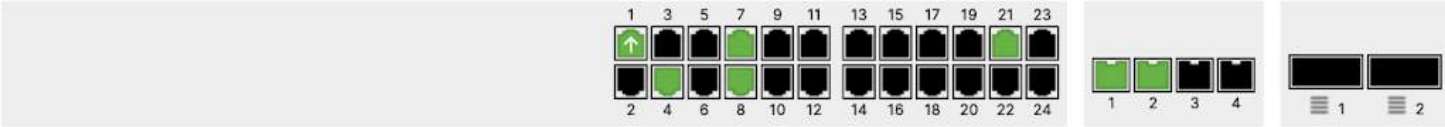
Ports

Location

Tools

Ports [View ports on this switch](#)

[Learn more](#)



Historical device data for the last day ▾

Connectivity



Client usage

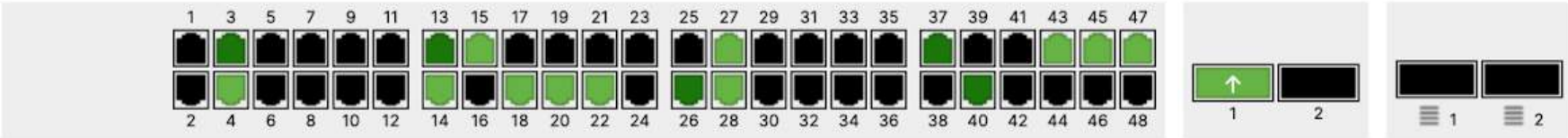


Clients

#	Description	Usage ▲	MAC address	IP address	VLAN	Port	
1	00:11:01:00:03:eb	None	00:11:01:00:03:eb	127.0.0.1	1	C9200-NM-4X / 1	
2	a4:88:73:13:00:f3	2.3 KB	a4:88:73:13:00:f3	10.7.67.30	1	C9200-NM-4X / 1	
3	00:57:d2:c1:ef:2d	420.1 KB	00:57:d2:c1:ef:2d	10.7.72.5	201	8	
4	00:50:56:bb:95:17	49.2 MB	00:50:56:bb:95:17	10.7.71.2	200	4	
5	94:57:a5:12:e2:50	74.5 MB	94:57:a5:12:e2:50	10.7.71.3	200	8	
6	a4:88:73:12:ad:73	102.3 MB	a4:88:73:12:ad:73	10.7.67.29	1	C9200-NM-4X / 1	

Ports [View ports on this switch](#)

[Learn more](#)



Historical device data for the last day ▾

Connectivity



Monitoring-only switches in this network are using DNA Essentials licensing. Usage and application information are only available for Catalyst switch clients when using a DNA Advantage license. See [link](#) for more information.

back

DEMO

Monitoring z chmury vs. zarządzanie z chmurą

Monitoring z chmury Cloud **Monitoring**

Przełączniki
Catalyst 9200,
9300, 9500

Dashboard Meraki



Zarządzanie z chmury Cloud **Management**

Dashboard Meraki



Uniwersalny sprzęt WiFi 6E
(osobowość Meraki)



Catalyst 9K
Switching (9300)



DEMO

Cloud switching innovations

Coming soon

Distributed and high density access



MS130

8 & 8P GigE, 8X & 12 X mGigE*



Compact



Retail



Wi-Fi 6

24 & 24P GigE, 48 & 48P GigE,
24X & 48X mGigE*



Rack size



Wi-Fi 6

Now!

Ruggedized access



MS130R

8 Port GigE, 240W PoE+ Budget -40C
to 70C, DIN rail, wall, or rack mounts,
AC adapter or DIN Rail PSUs



Parking
lots



Outdoor
kiosks



Outdoor APs
and cameras



Pop-up
locations



Hospitality

Q2FY24

Large campus



9300-M

C9300, C9300 AGG
Fiber SKUs Migration Available
with a Future Release



Large
Campus



Advanced
Use Cases

Q2 FY24

Adaptive policy ready**

* Up to 2.5Gbps

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** MS130 mGig (-X) models and MS130R are hardware-ready for the Adaptive Policy feature with a future firmware upgrade and advanced license



Slajdy dodatkowe

Catalyst Center

Formerly known as Cisco DNA Center

Catalyst Center and Cisco DNA Center are the same product; as Cisco progresses through the rebranding process, both product names can be used interchangeably.



CISCO

Prime Infrastructure

Application Search

2

root - ROOT-DOMAIN

Dashboard / Network Summary

OverviewEquipment loadWirelessTopology

Settings

ICMP Reachability Status

50500

ReachableUnreachable

SNMP Reachability Status

50500

AllReachableUnreachable

System Health

000

CriticalMajorMinor

Wi-Fi users

1w | 2w | 4w | 3m | 6m | 1y

3:54 PM To: 3/13/2018, 3:54 PM

Network equipment reachability

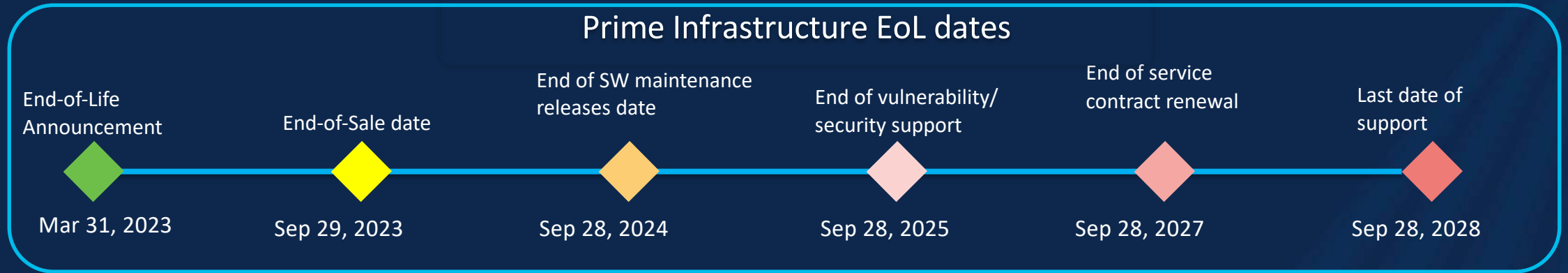
View Details

Device	Device IP	Location	Reachability
SW-UM03-01-A01...	192.168.20.41		Reachable
SW-UM04-03-A08...	192.168.20.35		Reachable
SW-UM05-01-A01...	192.168.20.11		Reachable
SW-UM05-CORE...	192.168.20.10		Reachable
SW-UM20-01-A02...	192.168.20.49		Reachable
SW-UM20-01-A01...	192.168.20.48		Reachable
SW-UM09-02-A02...	192.168.20.55		Reachable
SW-UM09-01-A02...	192.168.20.51		Reachable

Partner Summit 2019

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Prime Infrastructure EOL Timeline



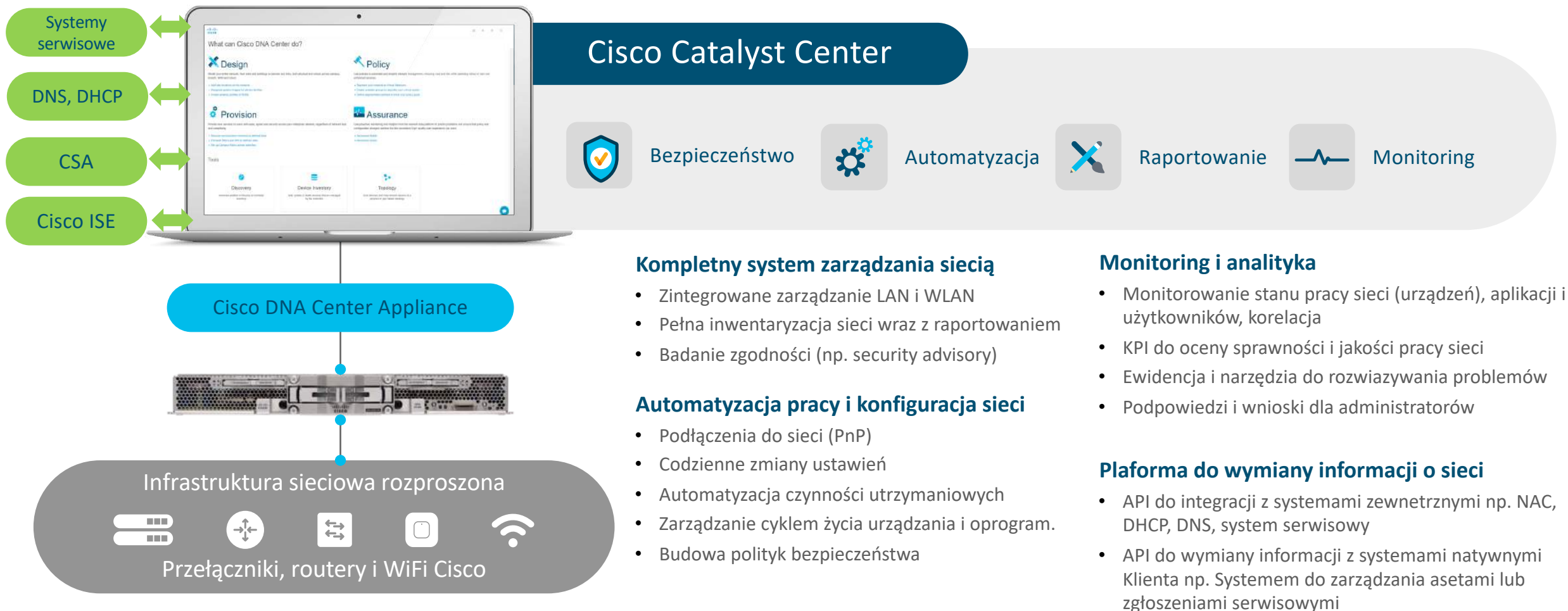
<https://www.cisco.com/c/en/us/products/collateral/cloud-systems-management/prime-infrastructure/prime-infrast-gen-appliance-lic-eol.html>

Opcje migracji:

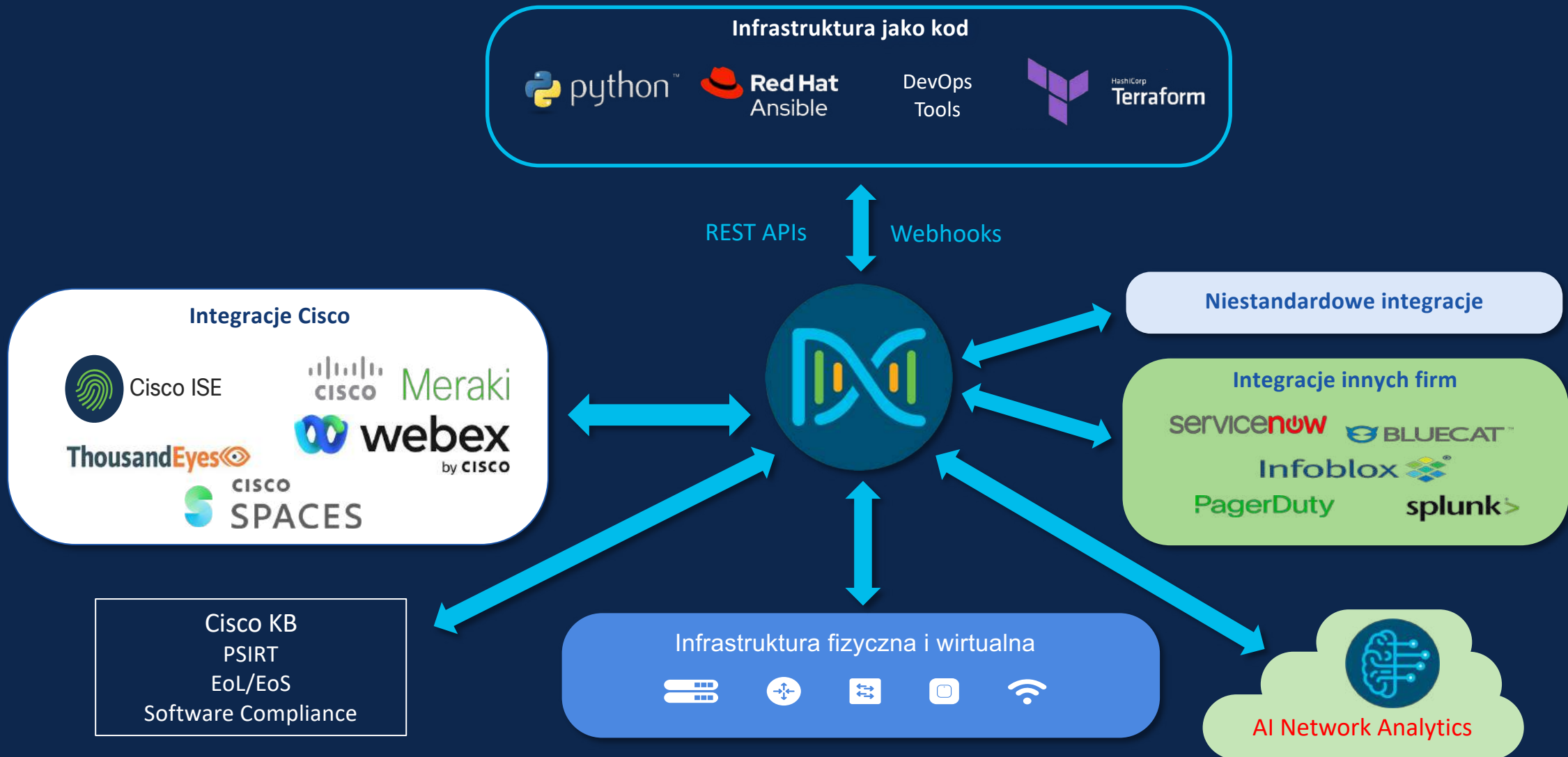
- DNA Center Appliance
- DNA Center VM na AWS
- DNA Center VM na VmWare (lipiec/sierpień) <https://www.cisco.com/c/en/us/products/collateral/cloud-systems-management/dna-center/dna-center-virtual-appliance.pdf>
- Cloud Monitoring

Cisco Catalyst Center

Centrum “command and control” dla nowoczesnej sieci kampusowej LAN i WLAN



Platforma Cisco Catalyst Center



Cisco Catalyst Center ...

...wspiera jedynie rodzinę Cat9K (?)

Oprócz tej listy wszystkie obecne przełączniki i urządzenia bezprzewodowe Cisco Catalyst 9000 są obsługiwane przez DNA Center.

Aby uzyskać pełniejszą listę, w tym obsługiwane funkcje, zapoznaj się z naszą tabelą zgodności pod poniższym łączem.

Catalyst Switches	Aironet Wireless	Cisco Routers
2960 series	1500 series	ASR 1000 series
3560 series	1600 series	ISR 1000 series
3850 series	1700 series	ISR 4000 series
4500 series	1800 series	C800 series
6500 series	2700 series	C900 series
6800 series	2800 series	IR 1100 series
IE2000 series	3700 series	IR 800 series
IE3000 series	3800 series	ESR 6300 series
IE4000 series	4800 series	ASA 500 series
IE5000 series		

Catalyst Center Supported Devices

Supported Devices:

- https://www.cisco.com/c/dam/en/us/td/docs/Website/enterprise/dnac_compatibility_matrix/index.html

Legacy Supported Devices:

- https://www.cisco.com/c/dam/en/us/td/docs/Website/enterprise/prime_legacy_device_compatibility_matrix/index.html

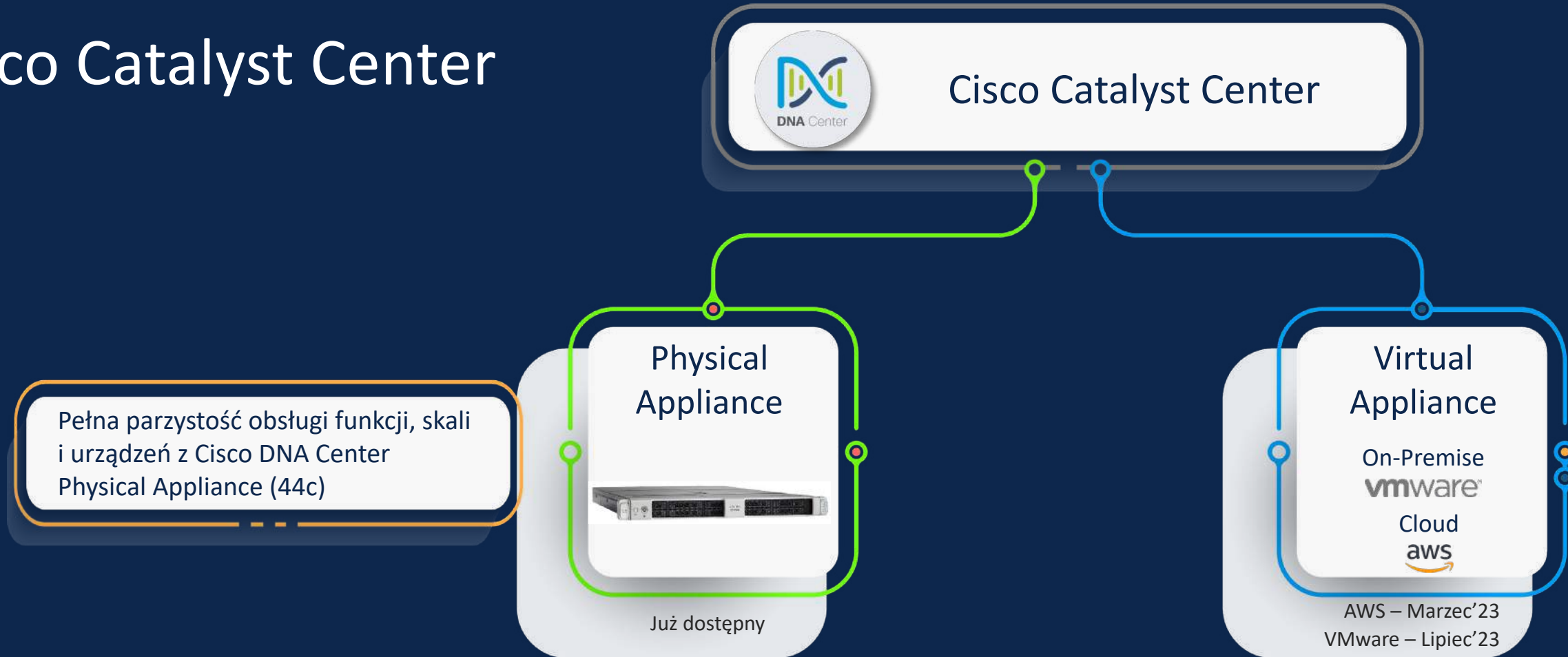
SDA Supported Devices:

- https://www.cisco.com/c/dam/en/us/td/docs/Website/enterprise/sda_compatibility_matrix/index.html

3rd party supported devices: (from 2.3.7)

- Third-party devices are defined as non-Cisco devices that support MIB-II (RFC 1213) and can be added to Cisco DNA Center.
- https://www.cisco.com/c/en/us/td/docs/cloud-systems-management/network-automation-and-management/dna-center/2-3-7/release_notes/b_cisco_dna_center_rn_2_3_7.html#guidelines_limitations_dnac_237

Cisco Catalyst Center



FAQ - Cisco DNA Center VA on AWS:

Everything you need to know about Cisco DNA Center VA on AWS!

Cisco DNA Center on VMware ESXi



Virtual appliance hosted on
customer supplied hardware

No cost for software

Optional support can be purchased

Customer-supplied VMWare license
Operational flexibility and choice

Features and scale

Features from 2.3.7.x release and above across:

- Automation, assurance, system, SPA, SDA and integrations

Scale parity with DN2-HW-APL(44 core appliance):

- 25K endpoints
- 5K devices
- 1500 sites (to be confirmed)

Specifications

Virtual machine

- CPU: 32vCPU
- Mem: 256GB
- Storage: 2TB-4TB
- IO Bandwidth: 180MB/sec
- IOPS: 2000-2500

Server

- vCenter and ESXi: 7.0
- Intel CPU 2.1 GHz and above
- Hyperthreading enabled
- RAM: 264 GB (ESXi and VA)
- RAID: Any (must meet IOPS and bandwidth)
- Thin provisioning

*Planned

Prime to DNA Center Migration - narzędzia

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

Prime Data Migration Tool (PDMT)

The Cisco PDART (Cisco Prime Infrastructure DNA Center Assessment & Readiness Tool) analyzes your Cisco Prime Infrastructure and assesses whether Cisco DNA Center supports the current deployment. It summarizes the deployment in this report and performs certain health checks, without affecting any of the devices. This PDF is auto-generated by the tool and summarizes all the checks. No sensitive information is captured. Thank you for running it, please reach out to pdart-tool-support@cisco.com for any feedback.



Cisco DNA Center Ready

Current Cisco Prime Infrastructure Version : 3.10.0

Recommended Cisco DNA Center Version : 2.2.3.x



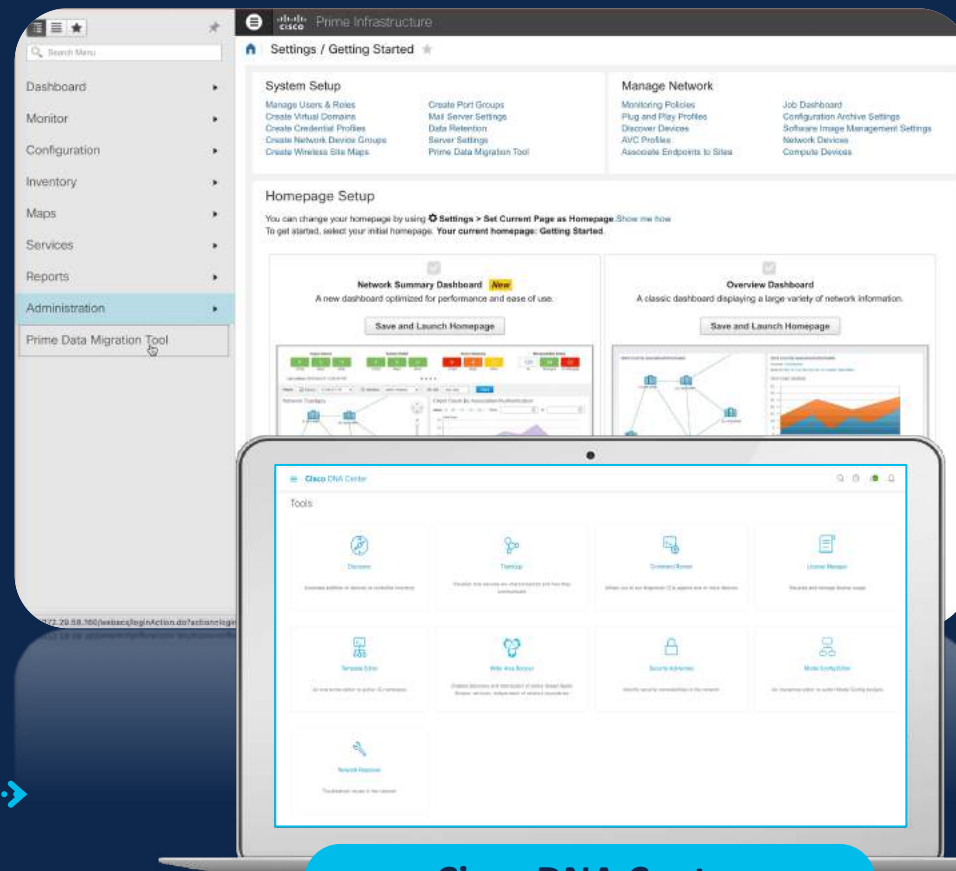
Cisco Prime® Infrastructure



Mapy
Topologia
Urządzenia
Konfiguracje
Szablony CLI
ISE i CMX

Port 443

Współdzielenie danych



Cisco DNA Center



Infrastruktura fizyczna i wirtualna



Cisco i 3rd party

Use case 1: Klient nie może dołączyć do sieci

Cisco Catalyst 9000 DNA
Advantage

Wprowadzenie klienta



1

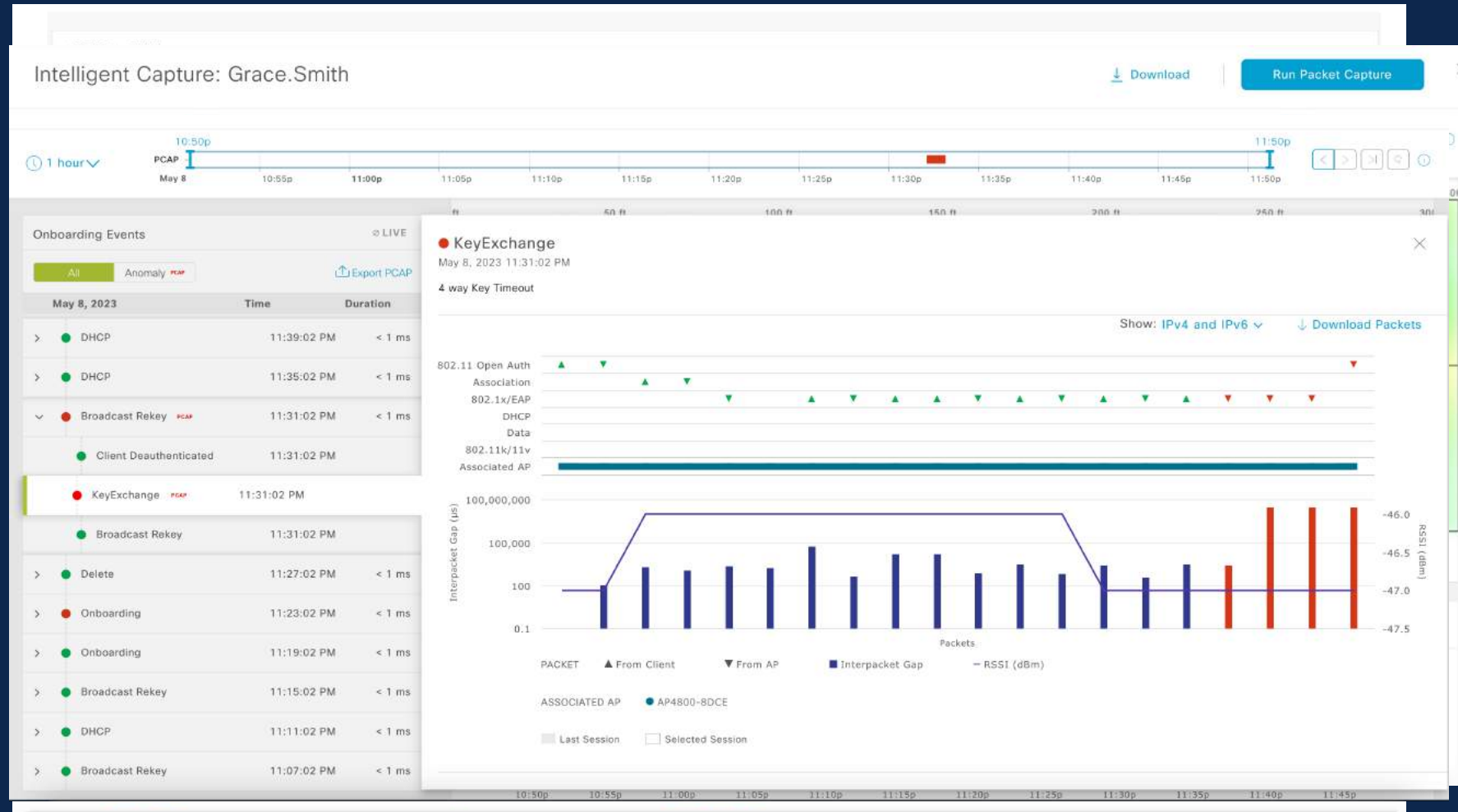
Actionable dashboards:
Onboarding Sankey charts for
better analysis

2

Real-time correlation:
Correlate onboarding events
with poor RF and client
location for RCA

3

Intelligent Capture:
Onboarding failures with
in-service PCAPs



Use case 2: Klient ma słabą łączność bezprzewodową

Cisco Catalyst 9000 DNA
Advantage

Doświadczenie w
obsłudze klientów i
sieci



1

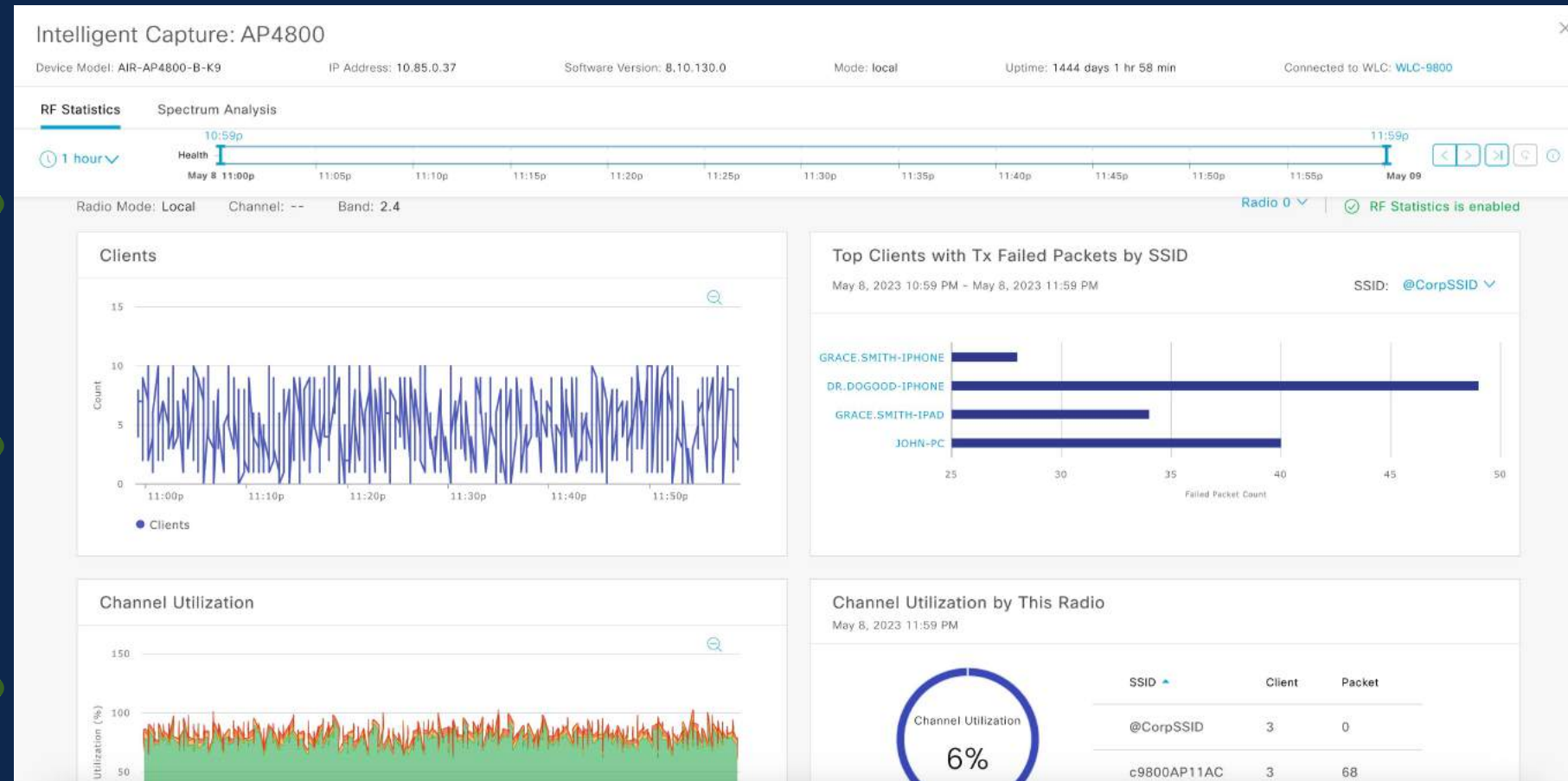
Health dashboard:
Near-real-time client tracking
(<60 sec) and top N AP analytics

2

Client 360:
Historical time travel with
client RF correlated with the
onboarding events

3

Intelligent Capture:
On-demand AP stats for Wi-Fi
troubleshooting



Use case 3: Klient ma słabą jakość aplikacji

Cisco Catalyst 9000 DNA
Advantage

Application experience



1

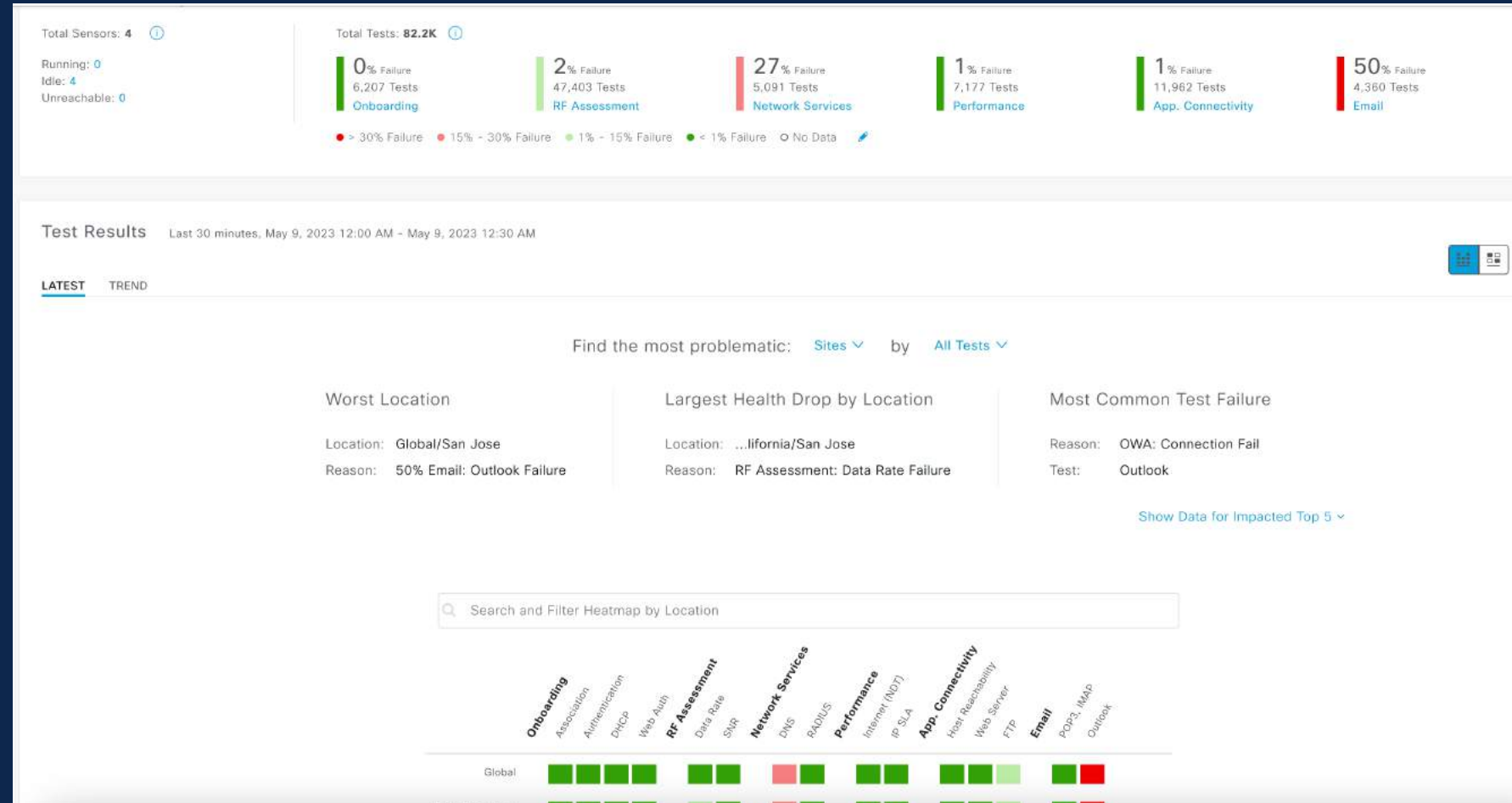
Health dashboard:
Overall health of business-
relevant apps and top
N app analytics

2

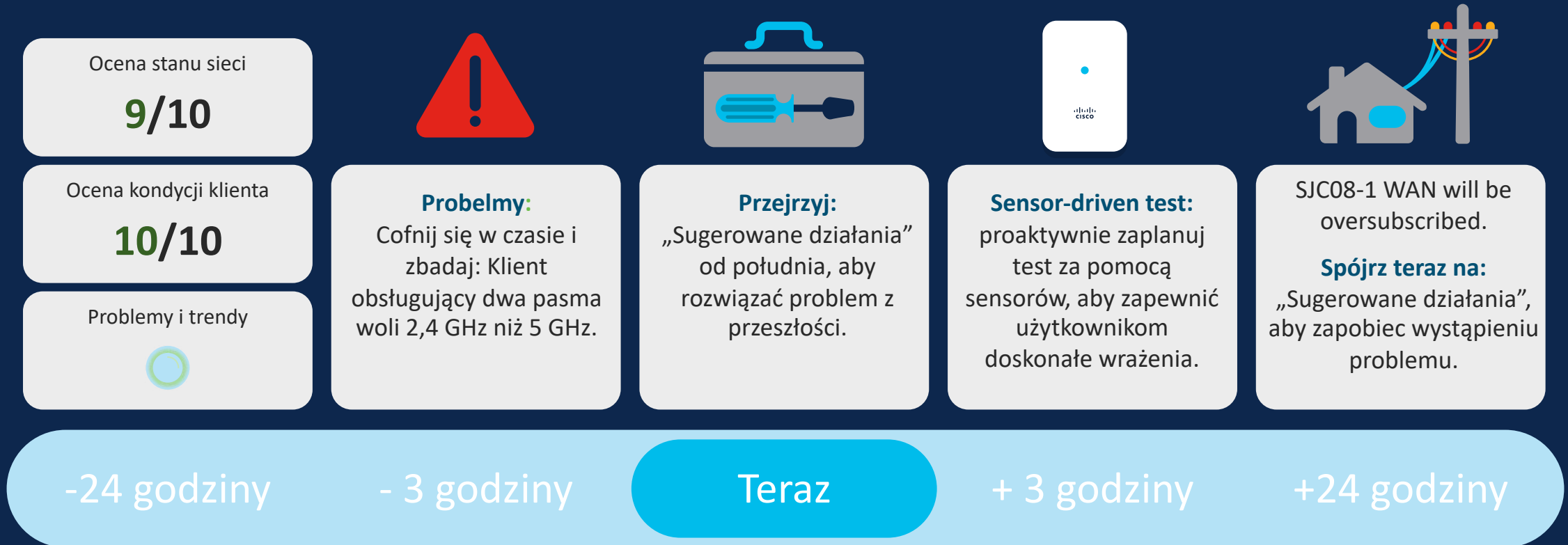
App 360: Time travel with
qualitative and quantitative
assessment for network
and S4B server

3

Sensor simulated SLA:
Cloud apps speed and AppX
performance simulation using
1800s sensors



Sieciowa podróż w czasie



Nie ma potrzeby powielania problemów; po prostu wróć i zobacz dokładnie, co się stało.

