

Расширение концепции AI-Driven Enterprise

- Трансформация сети с помощью ИИ Mist
- Новое поколение SD-WAN с технологией Session Smart
- Портфолио Mist и SD-WAN

juniper@muk.com.ua

JUNIPER
NETWORKS | Engineering
Simplicity

О компании МУК



Основное направление деятельности МУК — дистрибуция комплексных решений и оборудования ведущих мировых производителей в сфере информационных технологий.

Год выхода на рынок: **1997 г.**

Группа компаний МУК предоставляет комплекс дополнительных услуг для своих дилеров, что позволяет говорить о ней как об уникальном дистрибьюторе, развивающем в Украине модель Value Added Distribution (VAD) и осуществляющем продажи через дилерскую сеть.



>1300 компаний-партнеров во всех регионах Украины



>400 квалифицированных сотрудников



>50 мировых брендов А-класса – контракты в портфолио компании



24 года на рынке IT-дистрибуции

Направления деятельности



Дистрибьюция:



проектные решения: серверы, системы хранения данных, сетевое оборудование, связь и телефония, защита данных, контроль доступа, инфраструктурные решения;



программное обеспечение: виртуализация, безопасность, управление инфраструктурой, аналитика, облачные решения;



клиентские решения и периферия: ноутбуки, КПК, графические станции, ИБП, периферия, мониторы, принтеры, сканеры, камеры.



Учебный центр:

Авторизированные курсы на территории СНГ от ведущих мировых производителей ИТ-индустрии, а также множество авторских курсов по заказу партнеров и заказчиков.



Сервисный центр:

Ремонт, настройка и модернизация ноутбуков, серверов, продажа и заказ комплектующих, обеспечение беспереывности работы оборудования, расширенный гарантийный сервис.

ИСТОРИЯ УСПЕХА JUNIPER NETWORKS

1998

2021

ИННОВАЦИИ

МАРШРУТИЗАЦИЯ



МАРШРУТИЗАЦИЯ



КОММУТАЦИЯ



БЕЗОПАСНОСТЬ



СОТРУДНИКИ

130

9,000+

ВОЗМОЖНОСТИ

ОБЪЕМ РЫНКА
\$0.5 МЛРД

ОБЪЕМ РЫНКА
\$50+ МЛРД

ПОРТФОЛИО JUNIPER

JUNIPER ENTERPRISE

Безопасная и Автоматизированная Многооблачная Архитектура

AI-Driven Enterprise



Филиал / Удаленный
офис



Кампус/HQ



WAN



ЦОД/Приватное облако

Enterprise Multicloud



Публичное облако



Публичное облако
SaaS



Connected Security



Juniper Portfolio



Сервисы



ПО



Wi-Fi и BLE



Коммутация



Маршрутизация

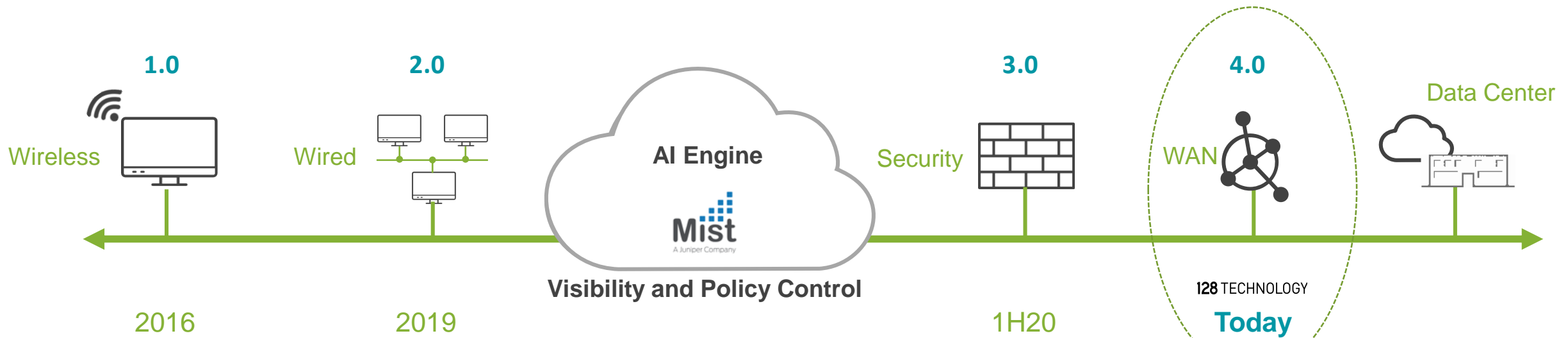


Безопасность

THE JUNIPER AI-DRIVEN ENTERPRISE (AIDE)

Key tenets of the AI-driven Enterprise

- Focus is on user experiences
- AI-driven automation, insights and actions – across Wired/Wireless/Security/WAN
- Modern cloud for agility, resiliency and scale
- AI-driven support
- Session Smart Routing for SD-WAN 2.0



2016

Mist Unveils Cloud-Based Wireless Networking Platform to Deliver Amazing Mobile Experiences

Capertino, CA, June 28, 2016

Mist, a pioneer in cutting-edge wireless technologies for delivering amazing mobile experiences for enterprises, today unveiled the first two services launched on the Mist cloud platform: Mist Business-critical Wi-Fi, and Mist's patented Virtual Bluetooth Low Energy™ (vBLE). Available today, Mist products are already in use by many medium-to-large organizations around the world, including Fortune 100 organizations.

Mist is the first extensible, programmable microservices cloud architecture for the indoor wireless technologies of Wi-Fi and Bluetooth Low Energy (BLE). A Mist wireless network understands and adapts to each user, how they are moving, the devices they are carrying, and the content they are consuming at a scale never before possible. Mist's cloud platform enables the first new approach to wireless in nearly a decade, applying data science and machine learning to transform and assure mobile user experience.

"The explosive growth of mobile users, apps, and connected devices presents big challenges for legacy wireless networks. The core technology in wireless networks today simply wasn't built to handle the rapid rate of change in the mobile and cloud era or the sheer scale of the Internet of Things," said Mist Co-founder and CTO Bob Friday. "Our products deliver an experience beyond just connectivity and allow us to drive the transition from the Connectivity Era to the Experience Era."

2019

Juniper Networks Brings AI-driven Simplicity and Reliability to Enterprise Networks with New Mist Wired Assurance Service and Marvis™ Actions

November 11, 2019 at 7:45 AM EST

Mist's award-winning AI engine and Cloud delivery on the vision of self-driving networks for wired and wireless networks

SUNNYVALE, Calif., Nov. 11, 2019 (GLOBE NEWSWIRE) -- Juniper Networks (NYSE: JNPR) company, today announced the first AI-Driven Self-Driving Networks™ for the enterprise, which leverages Mist's AI engine and microservices cloud to streamline IT operations, simplify troubleshooting across wired/wireless domains, and deliver optimized experiences to network users. With the addition of these unique

1H20

Juniper Networks Expands Connected Security Portfolio with Encrypted Traffic Analysis for Juniper Advanced Threat Prevention and SecIntel for Mist Wireless

February 24, 2020 at 7:45 AM EST

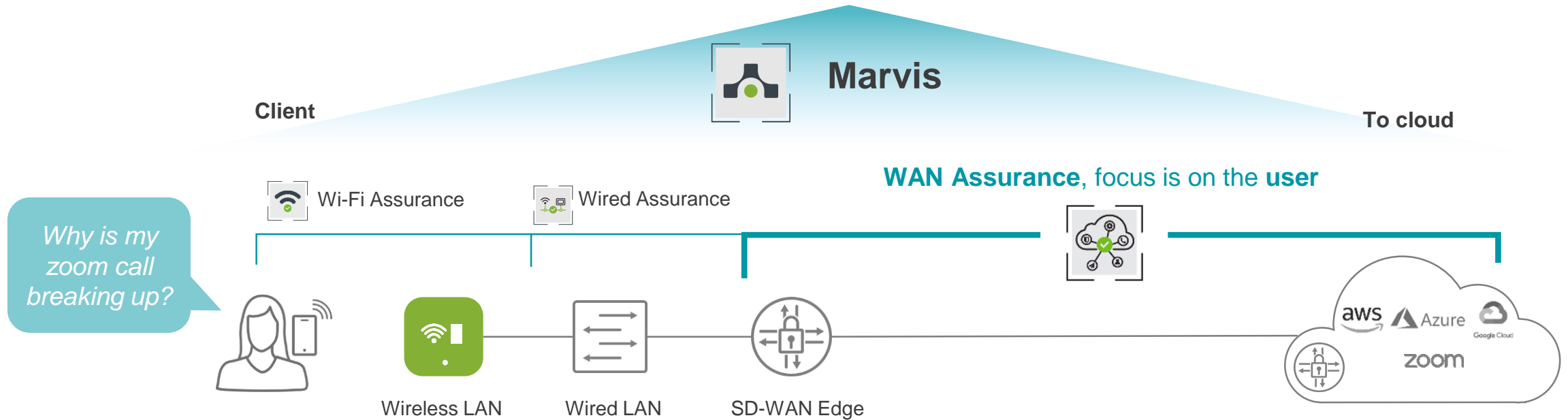
Juniper delivers on the benefits of a Threat-Aware Network by securing more traffic, in more areas of the network

SUNNYVALE, Calif., Feb. 24, 2020 (GLOBE NEWSWIRE) -- Juniper Networks (NYSE: JNPR), a leader in secure, AI-driven networks, today announced encrypted traffic analysis for Juniper Advanced Threat Prevention (ATP) Cloud and SRX Series firewalls, as well as the integration of SecIntel to the Mist platform for wireless access. With these additions to the Juniper Connected Security solution portfolio, Juniper delivers a

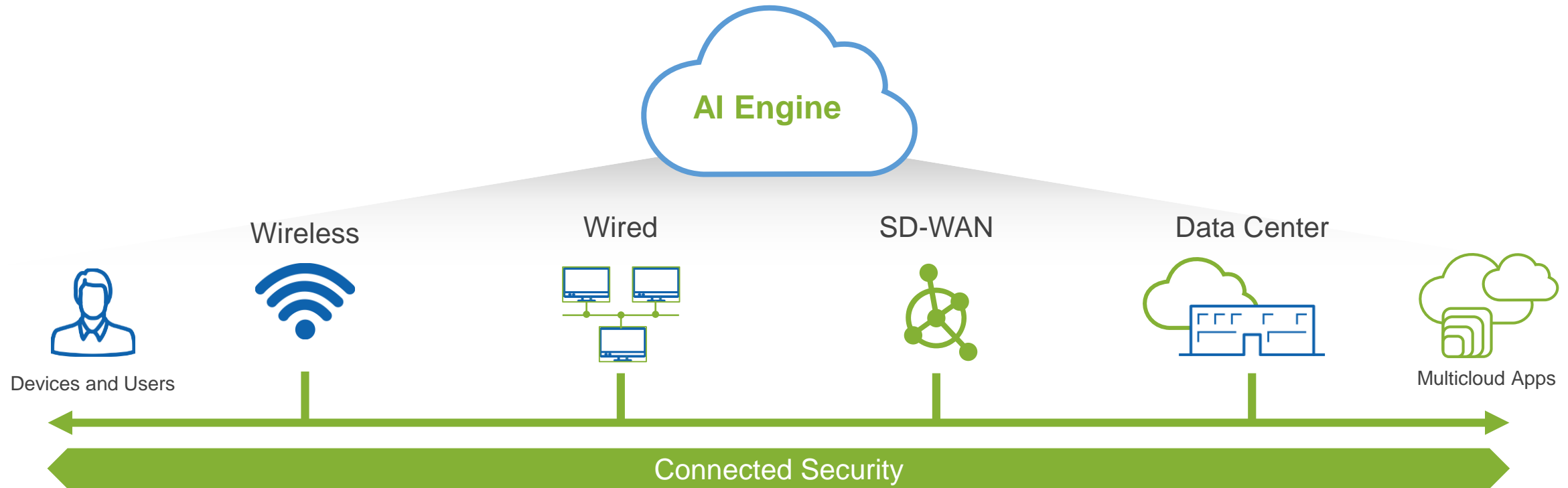
CLIENT-TO-CLOUD AUTOMATION AND INSIGHTS



128 TECHNOLOGY



THE AI-DRIVEN ENTERPRISE MISSION



Our Mission:

Juniper Mist is leading a new era of IT that uses AI to save time and money, deliver unprecedented scale and provide unparalleled user experiences.

JUNIPER IS A LEADER IN WIRED AND WIRELESS LAN

Figure 1. Magic Quadrant for Enterprise Wired and Wireless LAN Infrastructure



Juniper Networks is a Leader in the 2021 Gartner® Magic Quadrant™ for Enterprise Wired and Wireless LAN Infrastructure

This is Juniper's 2nd consecutive year as a Leader in this market.

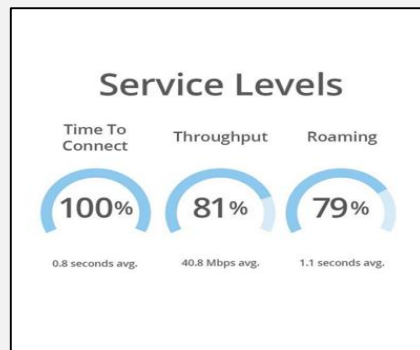
Juniper has the furthest position of any vendor in both Ability to Execute & Completeness of Vision.



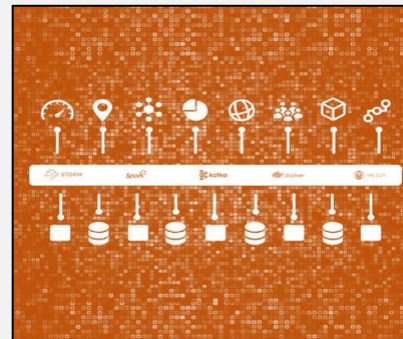
Gartner Magic Quadrant for Enterprise Wired and Wireless LAN Infrastructure, Mike Toussaint, Christian Canales, Tim Zimmerman, 15 November 2021. GARTNER is a registered trademark and service mark of Gartner, Inc. and/or its affiliates in the US and internationally and is used with permission. All rights reserved. Gartner does not endorse any vendor, product or service depicted in its research publications, and does not advise technology users to select only those vendors with the highest ratings or other designation. Gartner research publications consist of the opinions of Gartner's research organization and should not be construed as statements of fact. Gartner disclaims all warranties, expressed or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose. This graphic was published by Gartner, Inc. as part of a larger research document and should be evaluated in the context of the entire document. The Gartner document is available upon request from Juniper Networks.

WHY MIST: ASSURANCE, AUTOMATION, INSIGHTS AND RELEVANCE

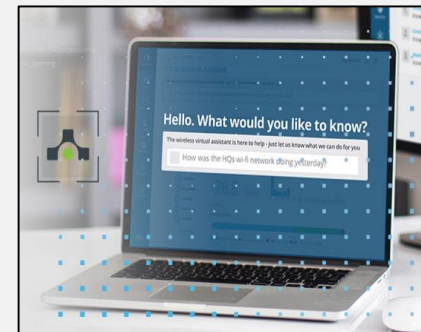
Client level visibility



Microservices cloud for agility



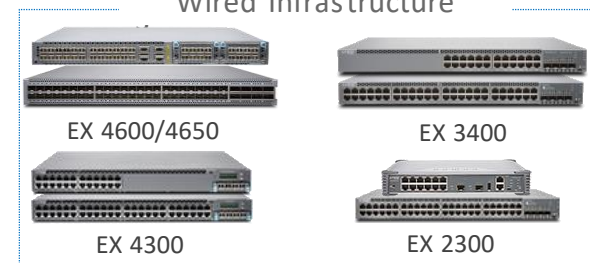
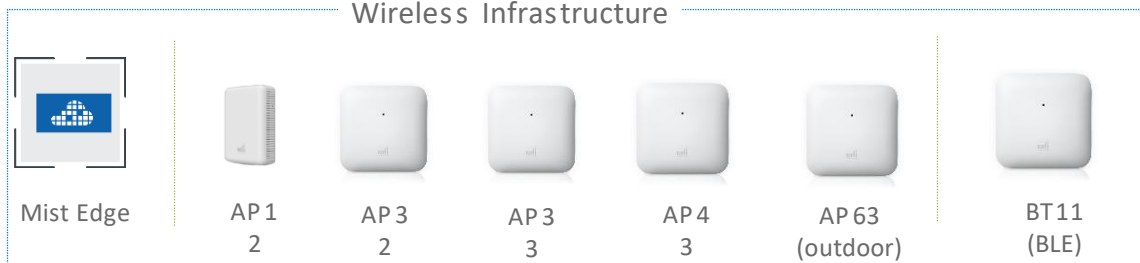
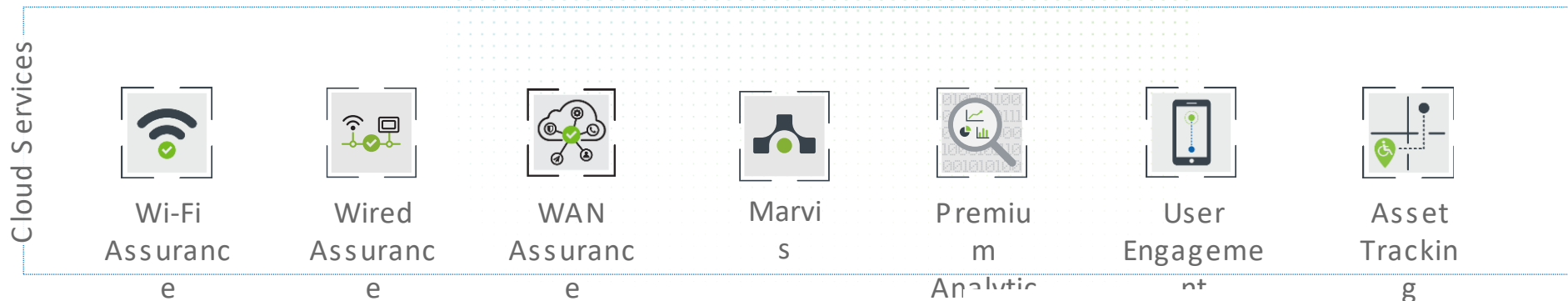
AI-driven operations and support



Digital Engagement with virtual BLE



AI-DRIVEN ENTERPRISE SOLUTION



OVERVIEW MIST

The screenshot displays the Mist dashboard interface. On the left is a blue sidebar with navigation items: Monitor, Marvis™, Clients, Access Points, Switches, Gateways, Location, Analytics, Network, and Organization. At the bottom of the sidebar is a red notification badge with the number 5. The main content area has a top header with 'LIVE DEMO' on the left, 'WED, 10:23 AM' and user icons on the right, and 'Natural Language', 'Query Language', and a '21 Actions' button. The central area features the 'MARVIS' logo and a search bar with the placeholder text 'Ask Marvis a question'. Below this is an 'Examples' section with a list of sample queries: 'troubleshoot a device', 'locate a client', 'investigate an AP', 'list clients', 'devices on vlan 12', 'devices by type', 'how many clients on SSID Guest', 'count events of type Association', 'channels by event count', 'list events for client macbook', 'list client events yesterday', and 'rank clients by event count'. The bottom right corner contains the 'MUK Classics of distribution' logo and the 'JUNIPER NETWORKS' logo.

OVERVIEW MIST

The screenshot displays the Mist Marvis interface. On the left is a blue sidebar with navigation items: Monitor, Marvis™, Clients, Access Points, Switches, Gateways, Location, Analytics, Network, and Organization. At the bottom of the sidebar is a book icon with a red circle containing the number 5. The top header includes the Mist logo, a 'LIVE DEMO' button, the date and time 'WED, 11:15 AM', and user profile, lightbulb, and help icons. The main content area features the word 'MARVIS' in large blue letters, a search bar containing the text 'troubleshoot client', and a '21 Actions' button. Below the search bar is a section titled 'Examples' with a list of sample queries: 'troubleshoot a device', 'locate a client', 'investigate an AP', 'list clients', 'devices on vlan 12', 'devices by type', 'how many clients on SSID Guest', 'count events of type Association', 'channels by event count', 'list events for client macbook', 'list client events yesterday', and 'rank clients by event count'. The bottom right corner contains the MUK logo with the tagline 'Classics of distribution' and the Juniper Networks logo.

OVERVIEW MIST

Mist LIVE DEMO WED, 11:24 AM

MARVIS Natural Language Query Language 21 Actions

troubleshoot client

TRUBLESHOOT "hal" DURING "Today"

How would you rate my response? ☆☆☆☆☆ TELL ME MORE

✓ Assoc/Auth ! DHCP/DNS - AP ! RF

We found 3 service level problems affecting this client

- 1. Capacity**
The client experienced limited RF capacity 76% of the time primarily due to **WiFi interference**. This problem is **widespread** at site "Live-Demo", correlating most strongly with the **2.4 GHz** band. Most of the client failures occurred on the **2.4 GHz** band and "**Mist_IoT**" WLAN. [INVESTIGATE](#)
- 2. Time to Connect**
The client was slow to connect on 17% of attempts primarily due to **slow authorization from RADIUS server unknown**. This problem is **widespread** at site "Live-Demo", correlating most strongly with the **2.4 GHz** band. Most of the client failures occurred on the **2.4 GHz** band and "**Mist_IoT**" WLAN. [INVESTIGATE](#)
- 3. Roaming**
The client had a bad roaming experience 17% of the time primarily due to **high latency**. This problem is **widespread** at site "Live-Demo", correlating most strongly with the "**LD_RS_Support**" access point. Most of the client failures occurred on the "**LD_RS_Support**" access point and **2.4 GHz** band. [INVESTIGATE](#)

SHOW OTHER SERVICE LEVELS

MUK JUNIPER NETWORKS
Classics of distribution

OVERVIEW MIST

The screenshot displays the Mist MARVIS interface. On the left is a navigation sidebar with icons for Monitor, Marvis™, Clients, Access Points, Switches, Gateways, Location, Analytics, Network, and Organization. The top header includes the Mist logo, a 'LIVE DEMO' indicator, the time 'WED, 11:36 AM', and user profile icons. The main content area features a search bar with the query 'troubleshoot client'. Below the search bar, a session titled 'TROUBLESHOOT "hal" DURING "Today"' is shown. A feedback prompt asks 'How would you rate my response?' with a five-star rating and a 'TELL ME MORE' link. Below this are four status indicators: 'Assoc/Auth' (green checkmark), 'DHCP/DNS' (orange exclamation mark), 'AP' (grey minus sign), and 'RF' (red exclamation mark). The text states 'We found 3 service level problems affecting this client'. The first problem, '1. Capacity', is described as 'The client experienced limited RF capacity 76% of the time primarily due to WiFi interference. This problem is widespread at site "Live-Demo", correlating most strongly with the 2.4 GHz band. Most of the client failures occurred on the 2.4 GHz band and "Mist_IoT" WLAN.' A 'CLOSE' button is visible to the right of this problem. Below the text is a diagram with five interconnected circles labeled 'Service Levels', 'Events', 'Classifiers', 'Updates', and 'Correlation'. To the right of the diagram is the text 'Select one or more categories for further investigation'. The second problem, '2. Time to Connect', is partially visible at the bottom: 'The client was slow to connect on 17% of attempts primarily due to slow authorization from RADIUS server unknown. This problem is

OVERVIEW MIST

Mist

LIVE DEMO

WED, 11:42 AM

Assoc/Auth ✓ DHCP/DNS ! AP - RF !

We found 3 service level problems affecting this client

1. **Capacity**
The client experienced limited RF capacity 76% of the time primarily due to **WiFi interference**. This problem is **widespread** at site "Live-Demo", correlating most strongly with the **2.4 GHz** band. Most of the client failures occurred on the 2.4 GHz band and "Mist_IoT" WLAN.

Service Levels

AVG CAPACITY 26%

CAPACITY ● Capacity ● Goal

Classifiers

Correlation

Updates

Events

MUK Classics of distribution

JUNIPER NETWORKS

OVERVIEW MIST

Mist

LIVE DEMO

WED, 11:47 AM

Monitor

Marvis™

Clients

Access Points

Switches

Gateways

Location

Analytics

Network


Organization

5

Correlation

PROBABLE CAUSES

Features with the highest probability of causing Capacity problems on client hal





35%	Band: 2.4 GHz
27%	Client: hal
20%	WLAN: Mist_IoT
12%	AP: LD_JSW_AP
6%	Other

SCOPE OF IMPACT


Features across the entire site, ranked by correlation to Capacity

Correlated with Success (Blue), Correlated with Failure (Red), Assoc. with Client (Yellow)

Category	Correlated with Success	Correlated with Failure	Assoc. with Client
Clients	Low	High	Medium
APs	Low	Low	High
WLANs	High	Low	High
Bands	High	High	Low



OVERVIEW MIST



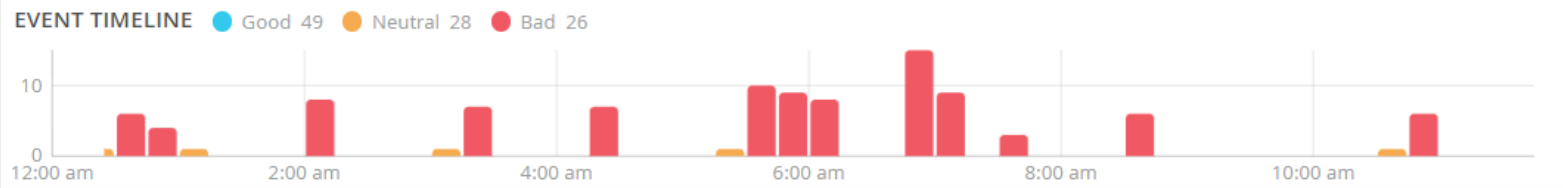
LIVE DEMO
WED, 11:50 AM

Monitor
Marvis™
Clients
Access Points
Switches
Gateways
Location
Analytics
Network
Organization

- Classifiers
- Correlation
- Updates
- Events

Total 103
Good 49
Neutral 28
Bad 26

EVENT TIMELINE
● Good 49
 ● Neutral 28
 ● Bad 26



EVENT LIST

Event	Timestamp	Details
DHCP Success	10:50:26.661	DHCP Success
DHCP Denied@	10:50:26.661	Timestamp: 10:50:26.661 AM, Jan 19
Authorization & Association	10:50:25.316	AP: LD_JSW_AP
Client Deauthentication	10:50:22.497	Client IP Address: 10.0.2.246
AP Deauthentication	10:50:22.493	Server IP Address: 10.0.2.1
Client Deauthentication	10:50:22.493	Last Association: 1.4 sec ago
AP Deauthentication	10:43:38.009	BSSID: d4:20:b0:8c:6a:3f
DHCP Denied@	08:42:07.735	DHCP: 2.13 msec

- Time to Connect**

The client was slow to connect on 17% of attempts primarily due to **slow authorization from RADIUS server unknown**. This problem is **widespread** at site "Live-Demo", correlating most strongly with the 2.4 GHz band. Most of the client failures occurred on the 2.4 GHz band and "Mist_IoT" WLAN.



OVERVIEW MIST

The screenshot displays the Mist MARVIS interface. On the left is a navigation sidebar with icons for Monitor, Marvis™, Clients, Access Points, Switches, Gateways, Location, Analytics, Network, and Organization. The top header includes the Mist logo, 'LIVE DEMO' status, the time 'WED, 12:00 PM', and user profile icons. The main content area features the 'MARVIS' search bar with the query 'unhappy user'. To the right of the search bar are options for 'Natural Language' and 'Query Language', and a highlighted '21 Actions' button. Below the search bar, a query result is shown: 'STATUSOF Clients WITH Site "Live-Demo" DURING "Today"'. A feedback prompt asks 'How would you rate my response?' with a 5-star rating and a 'TELL ME MORE' link. The main result states '1 out of 18 clients have connection problems' and provides a legend for 'Clients ranked by correlation to Successful Connect problems at the site'. The legend indicates blue bars for 'Correlated with Success' and red bars for 'Correlated with Failure'. A horizontal bar chart shows the 'Degree of Correlation' for various clients, categorized into WEAK, MEDIUM, and STRONG. Mist-PI-104 is the only client with a STRONG correlation, shown as a red bar. Other clients show varying degrees of weak correlation.

Client	Degree of Correlation		
	WEAK	MEDIUM	STRONG
Mist-PI-104			Correlated with Failure
rajkunjit-mbp	Correlated with Success		
denali	Correlated with Success		
HS103	Correlated with Success		
mauna kea	Correlated with Success		
everest	Correlated with Success		
rakiran-mbp	Correlated with Success		
kputtaswamy...	Correlated with Success		
shindea	Correlated with Success		
Amazon Tech...	Correlated with Success		
Mist-13s-Mini	Correlated with Success		
h-t	Correlated with Success		

OVERVIEW MIST

Mist LIVE DEMO WED, 01:11 PM

MARVIS

ACTIONS

21

- 0 Clients
- 1 Layer 1
- 5 Connectivity
- 8 AP
- 5 Switch
- 2 Gateway
- Security
- Application

0 Other Actions

LATEST UPDATES

All Actions Today Yesterday Last 7 Days

- 19.01.2022, 02:29:10
AI VALIDATED
Offline
Site: BostonHQ
AP: 4 APs. [View More](#)
Reason: Switch BostonHQ-EX2300-C down.
- 18.01.2022, 18:13:39
AI VALIDATED
Missing VLAN
Site: Live-Demo
Switch: N/A
Reason: 0 APs missing VLANs

MUK JUNIPER NETWORKS
Classics of distribution

OVERVIEW MIST

- Monitor
- Marvis™
- Clients
- Access Points
- Switches
- Gateways
- Location
- Analytics
- Network
- Organization

MARVIS



Ask a Question

LATEST UPDATES

All Actions

Today

19.01.2022, 02:29:10

AI VALIDATED
Offline
Site: BostonHQ
AP: 4 APs. [View More](#)
Reason: Switch BostonHQ-EX2300-C down.

Yesterday

18.01.2022, 18:13:39

AI VALIDATED
Missing VLAN
Site: Live-Demo
Switch: N/A
Reason: 0 APs missing VLANs

Last 7 Days

MISSING VLAN

RECOMMENDED ACTION
The below APs don't see any incoming traffic which is expected from the specified VLANs. Please add these VLANs to the respective switch ports.

Site	Switch	Details	Date
<input type="checkbox"/> Live-Demo	ICX7450-48P Switch	1 APs missing VLANs. View More	Jan 9, 2022 04:00 PM

Missing VLAN Details

1 impacted AP at ICX7450-48P Switch

ICX7450-48P Switch

LD_IDF_B_AP VLANs 10, 24 missing on port cc:4e:24:88:8b:d5.





PORTFOLIO MIST

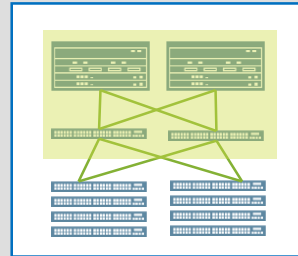


JUNIPER SWITCHING: AI-DRIVEN, PROGRAMMABLE, OPEN

Open APIs for Automation and Programmability



Simplified Segmentation with EVPN-VXLAN



Mist/Marvis: AI-Driven Operations, Wired Assurance



EX2300



EX3400



EX4300



EX4400 **NEW!**

Access

Fixed Power/Fan
MultiGigabit
PoE+

Modular Power
PoE+

Modular Power
Multigigabit
PoE+/PoE++

Modular Power
Multigigabit PoE++
Lots more

EX4600 EX4650

QFX5120

EX9200

Distribution / Core

10/40GbE
10/25/100GbE

10/40/100GbE
10/25/100GbE
10GT/100GbE

Modular

Wired Assurance (WA)



ROUTER JUNIPER MIST

SRX300 Series, SRX550

- All-in-one routing, switching and next generation firewall in a single platform
- Support variety of WAN & POE Interfaces
- Security for every layer with MAC-Sec, IPSec, Application Security, IPS, UTM and Sky ATP
- Targeted for
 - Secure Router/SD-WAN
 - Remote office firewall
 - Managed CPE for SPs



	SRX300	SRX320	SRX340	SRX345	SRX550	SRX380
1GE Ports	8 (2 SFP)	8 (2 SFP)	16 (8 SFP)	16 (8 SFP)	10 (4 SFP)	16
10GE Ports	0	0	0	0	0	4 (SFP+)
MAC Sec Ports	2	2	16	16	NA	20
POE+ Ports	0	6	0	0	32 (GPIM)	16
MPIM slots	0	2 MPIMs	4 MPIMs	4 MPIMs	2 MPIMs	4 MPIMs
GPIM Slots	0	0	0	0	6 GPIMs	0
SSD slot	No	No	Yes	Yes	Yes	Built-in
R. PSU	No	No	No	Yes	Yes	Yes
Routing	800 Mbps	800 Mbps	1.6 Gbps	2.3 Gbps	3.0 Gbps	4.0 Gbps
Firewall	500 Mbps	500 Mbps	1.1 Gbps	1.7 Gbps	2.3 Gbps	4.0 Gbps
IPSec	100 Mbps	100 Mbps	200 Mbps	300 Mbps	300 Mbps	1 Gbps
NGFW	100 Mbps	100 Mbps	200 Mbps	300 Mbps	400 Mbps	1 Gbps
SD-WAN (CSO)	60 Mbps	60 Mbps	125 Mbps	150 Mbps	190 Mbps	750 Mbps

SD-WAN (CSO) – MPLSoGREoIPSEC (HTTP 44KB)

NGFW = App Firewall + IPS + URLF + Logging

*Please visit srxsnr.juniper.net for latest and up to date S&P

ACCESS POINT JUNIPER MIST



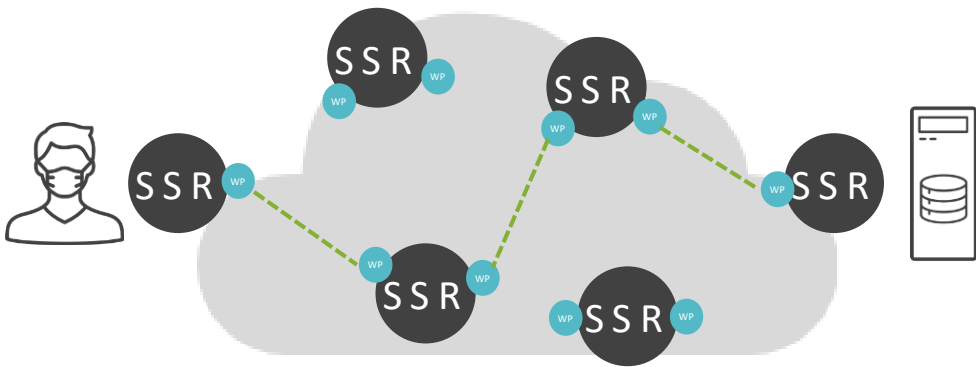
	AP43	AP63	AP33	AP32	AP12	AP41	AP61	AP21	BT11
Deployment	Indoor	Outdoor	Indoor	Indoor	Indoor wall plate	Indoor	Outdoor	Indoor	Indoor
Wi-Fi Standard	802.11ax (Wi-Fi 6) 4x4:4SS	802.11ax (Wi-Fi 6) 4x4:4SS	802.11ax (Wi-Fi 6) 5GHz: 4x4:4SS 2.4GHz: 2x2:2SS	802.11ax (Wi-Fi 6) 5GHz: 4x4:4SS 2.4GHz: 2x2:2SS	802.11ax (Wi-Fi 6) 2x2:2SS	802.11ac Wave 2 4x4:4SS	802.11ac Wave 2 4x4:4SS	802.11ac Wave 2 2x2:2SS	---
Wi-Fi Tri Radio	Yes	Yes	Yes	Yes	Yes	Yes	Yes	---	---
Antenna Options	Internal External	Internal External	Internal	Internal External	Internal External	Internal External	Internal External	Internal	Internal
Virtual BLE	Yes	Yes	Yes	---	---	Yes	Yes	Yes	Yes
Warranty	Limited lifetime	One year	Limited lifetime	Limited lifetime	Limited lifetime	Limited lifetime	One year	Limited lifetime	Limited lifetime



SESSION SMART TECHNOLOGY



THE SESSION SMART™ ROUTER



Session Awareness

1

Know source, destination, and Directionality to connect related, bi-directional flows into sessions.

Service Centric

2

Understand named services and applications, service topology, and business policies.

Waypoint Setting

3

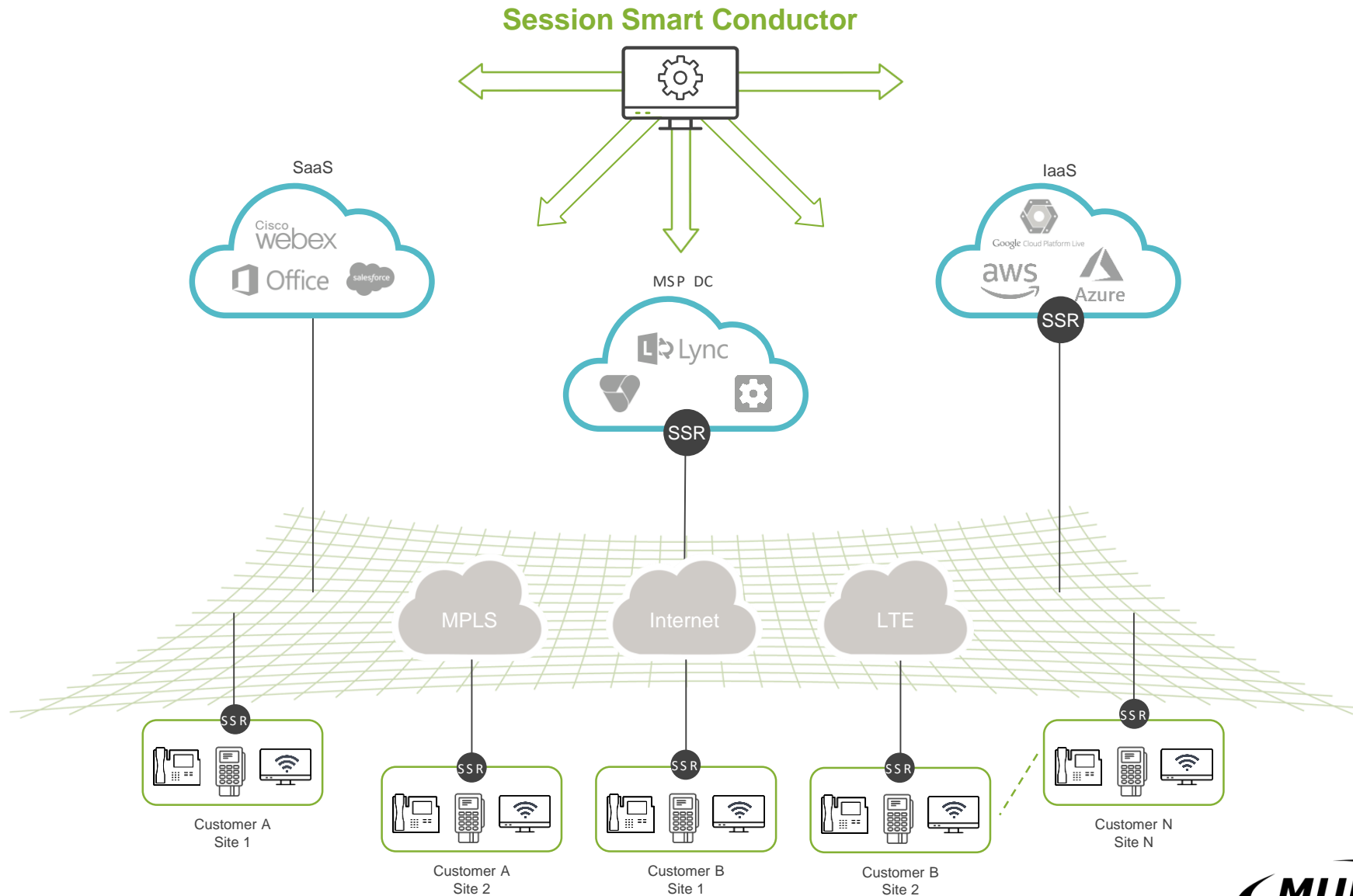
Determine lead packet, requirements, choose waypoints that mark best path right now.

Metadata

4

Metadata is encrypted throughout, extracted as lead packet reaches destination, and eliminated on session completion.

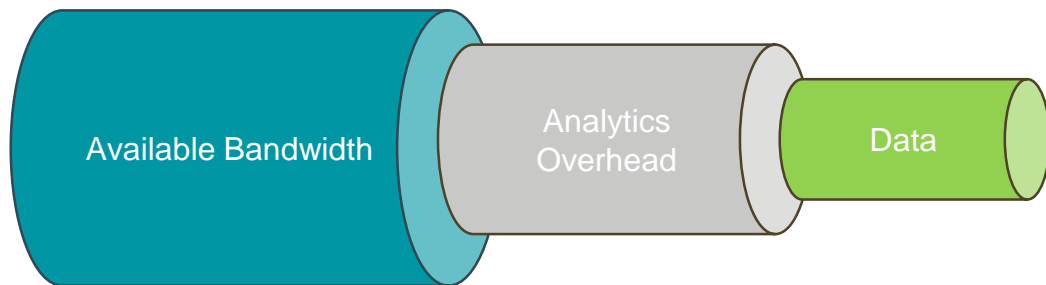
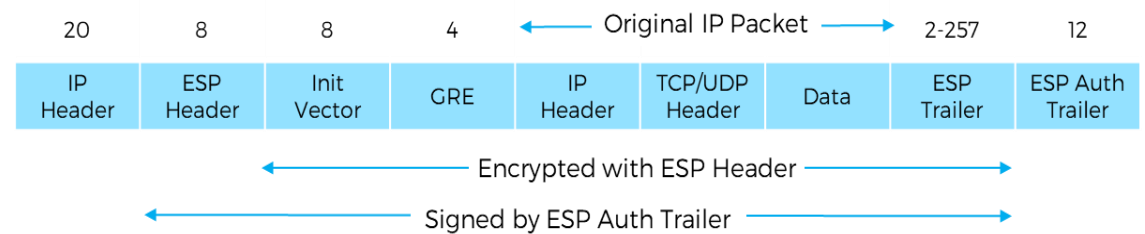
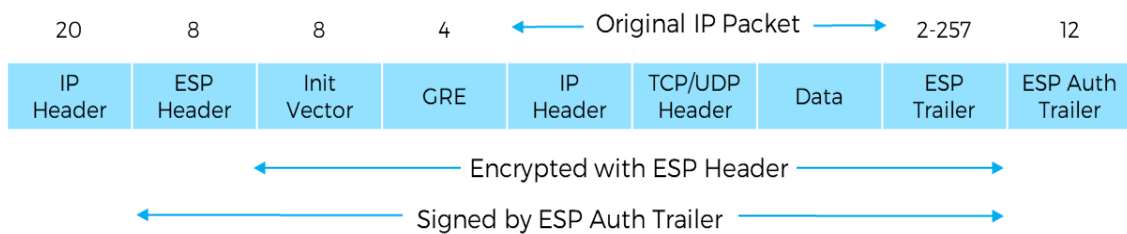
SESSION SMART SERVICE-CENTRIC FABRICS



Traditional IPSEC Overlay and associated overhead



Alternative solutions impose tunnel/encapsulation/overlay IPsec and/or IPsec + VxLAN, GRE, MPLS



- Severe impacts to available bandwidth
- 30%-50% overhead due to headers
- Tunnel management requires tuning
- Centralized Analytics constantly transmitted or completely unavailable

EFFECTIVELY ARCHITECTED CONNECTIVITY

SSR

Tunnel-free Secure Vector Routing provides the most optimal link management available



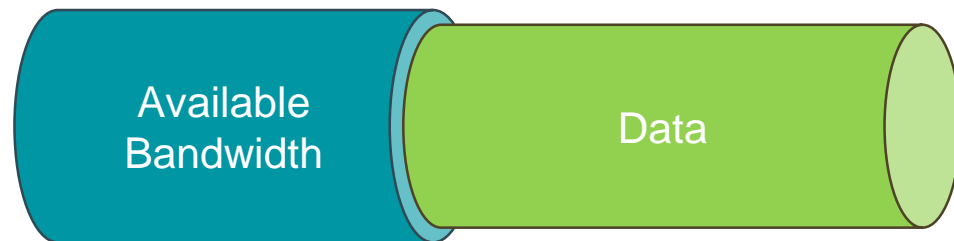
First SVR packet includes Metadata with context



Subsequent SVR packets may be entirely data or include mid-flow session data as needed

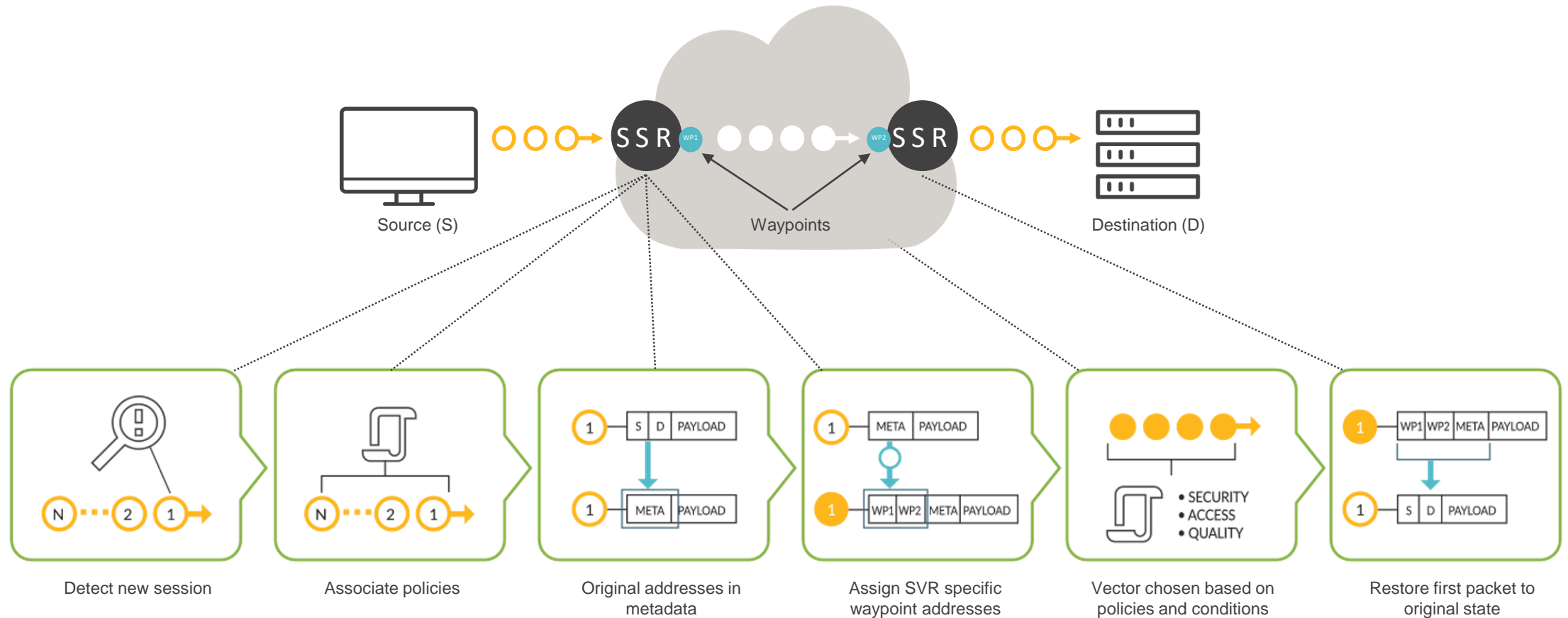


Original packets are restored at egress

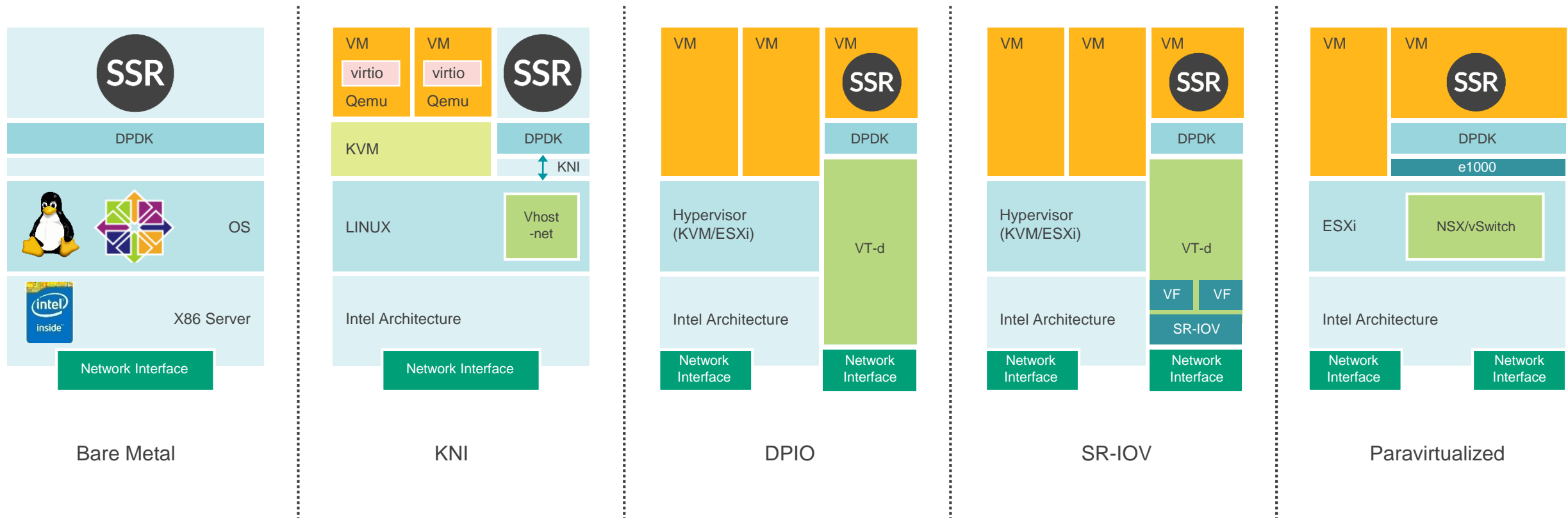


- Minimal impact to available bandwidth
- Recover 30%-50% overhead
- Optimized adjacency management
- Distributed Analytics post-processed and accessed on-demand

SECURE VECTOR ROUTING










DEPLOYMENT MODELS



SSR solution can be deployed on any INTEL based COTS platform (physical or virtual), private cloud with OpenStack, vCloud Director, or public cloud like AWS, Azure, or GCP!

SESSION SMART ROUTER UCPE PORTFOLIO

	Branch				DC		
Specification	Small / Medium	Small / Medium	Medium / Large	Medium / Large	Small	Medium	Large
Picture							
Manufacturer	Silicom <small>Connectivity Solutions Ltd</small>	Lanner	Silicom <small>Connectivity Solutions Ltd</small>	Lanner	Lenovo	Lenovo	Lenovo
Model	Madrid Desktop	1515B	Madrid 1U	1515A	SR530	SR530	SR570
Arrow SKU	128T-C044B	n/a	128T-C084B	n/a	n/a	n/a	n/a
Cores / Memory	4C (Atom) / 8GB	4C (Atom) / 8GB	8C (Atom) / 16GB	8C (Atom) / 16GB	8C (Xeon Bronze) / 32GB	12C (Xeon Silver) / 128GB	22C (Xeon Gold) / 128GB
Hard Disk	128GB SSD	128GB SSD	128GB SSD	128GB SSD	240GB SSD	480GB SSD	480GB SSD
Interface Count	6	6	6 - 12	6	2 – 16	2 – 16	2 – 16
LTE certified	AT&T and Verizon	AT&T and Verizon	AT&T and Verizon	AT&T and Verizon	N/A	N/A	N/A
Encrypted + Auth Throughput (IMIX)	165 Mbps	165 Mbps	650 Mbps	650 Mbps	1 Gbps	2.2 Gbps	5.8 Gbps
Non-Encrypted Throughput (IMIX)	2 Gbps	2 Gbps	2.5 Gbps	2.5 Gbps	17 Gbps	18 Gbps	74 Gbps

JUNIPER NFX UCPE OPTION

NFX150-S1

- [Intel\(R\) Atom\(TM\) CPU C3758 8C @ 2.20GHz](#)
- 16 GB RAM
- VNF – SRIOV (4 total cores passed through to VNF)
- 210 Mbps IMIX encrypted HMAC w/ time

NFX250-S2

- [Intel® Xeon® Processor D-1528 6C @ 1.9GHz](#)
- 32 GB RAM
- VNF – SRIOV (4 total cores passed through to VNF)
- 370 Mbps IMIX encrypted HMAC w/ time

NFX350-S3

- [Intel® Xeon® D-2166NT 12C @ 2.00GHz](#)
- 128 GB RAM
- VNF – SRIOV (4 total cores passed through to VNF)
 - 460 Mbps IMIX encrypted HMAC w/ time
- VNF – SRIOV (8 total cores passed through to VNF)
 - 10C available but because of driver, 8C is the ceiling
 - 1710 Mbps IMIX encrypted HMAC w/ time

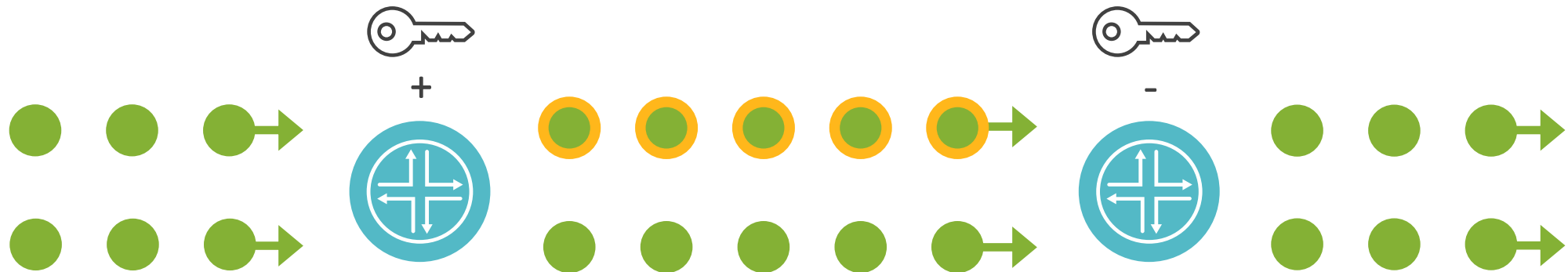




SELECTED TECHNICAL CAPABILITIES

ADAPTIVE ENCRYPTION

- Adaptive Encryption for TLS and IPSEC
- Prevents double encryption
- Conserves use of network resources
- Improves user experience
- Improved security through segmentation and individual keys
- End-to-end encryption



ZERO TRUST SECURITY

- Centralized configuration in Session Smart Conductor
 - User groups
 - Applications
 - Policies
- Routers are session-based stateful firewall
 - Deny by default
 - Firewall at every hop
 - Authentication on every router



PROVISIONING OPTIONS

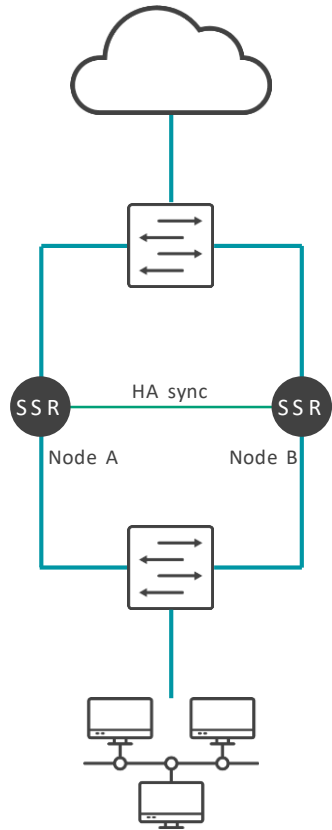
Ways to install 128T software:

- 128T Installer
 - Install the CentOS “minimal” package and download 128T-installer
- Interactive IS O
- One Touch Provisioning
 - Method of deploying 128T Routers by transferring 1 file from your Conductor to your Router
- AWS /Azure
 - Available at markeplaces

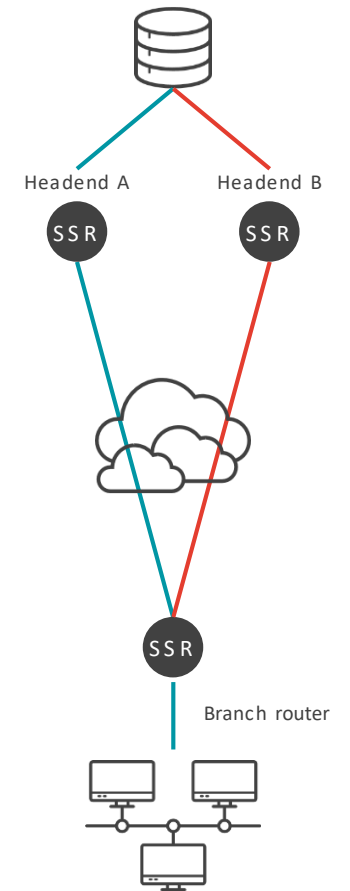
USER-DEFINED CONFIGURATION TEMPLATES

- Allows definition of templates for routers/roles in the network
 - E.g. branch, head office, cloud, datacenter
- Fast deployment of new components using pre-defined templates
- Templates can be specific to one or all customers/tenants of a system
- Deployment mechanisms
 - Scripted via CLI/APIs
 - UI-driven
- UI-driven Liquid templating language as easy interface

HIGH AVAILABILITY



- Routers and conductors can be operated in different HA modes
- Traditional active-(hot) standby
 - One logical router, two nodes
 - Session state synchronization
 - Typical LAN setup
- Redundant routers
 - Two active-active routers
 - Redundant network paths
 - Optionally with different technologies, locations, ...
 - Better use of resources (N+M redundancy)
- Combination of HA models





SESSION SMART BENEFITS

IP ACCESS OPTIMIZATION



10Mbps
standby

MPLS Active-Standby

- Expensive
- Backup line not used
- No local internet breakout



10Mbps
10Mbps

MPLS Active-Active

- Both lines used
- Application prioritization



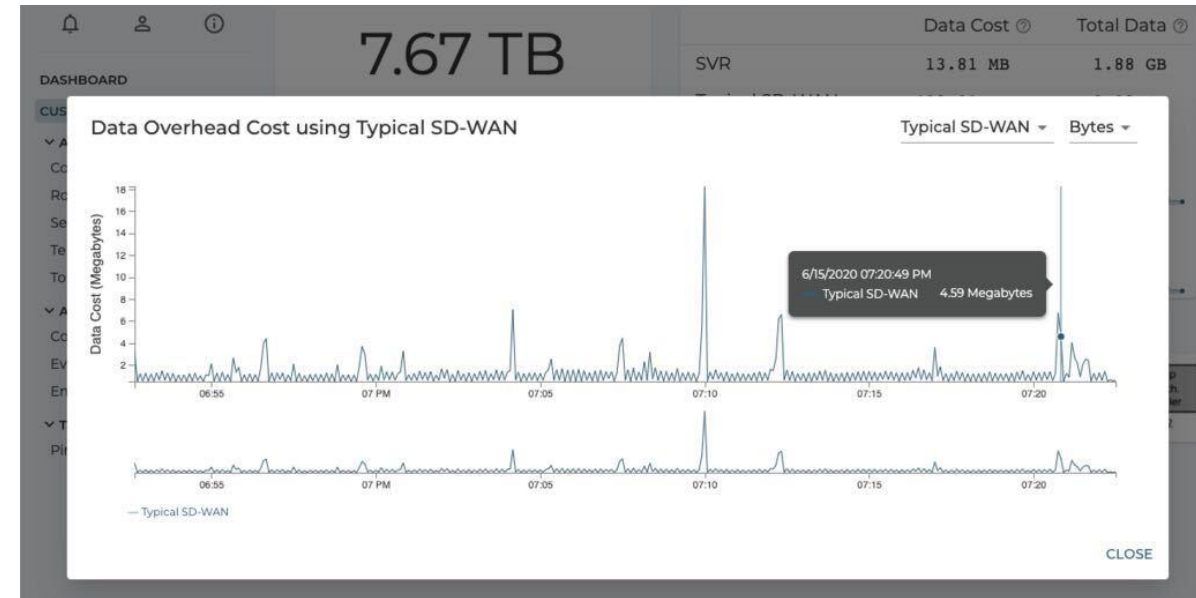
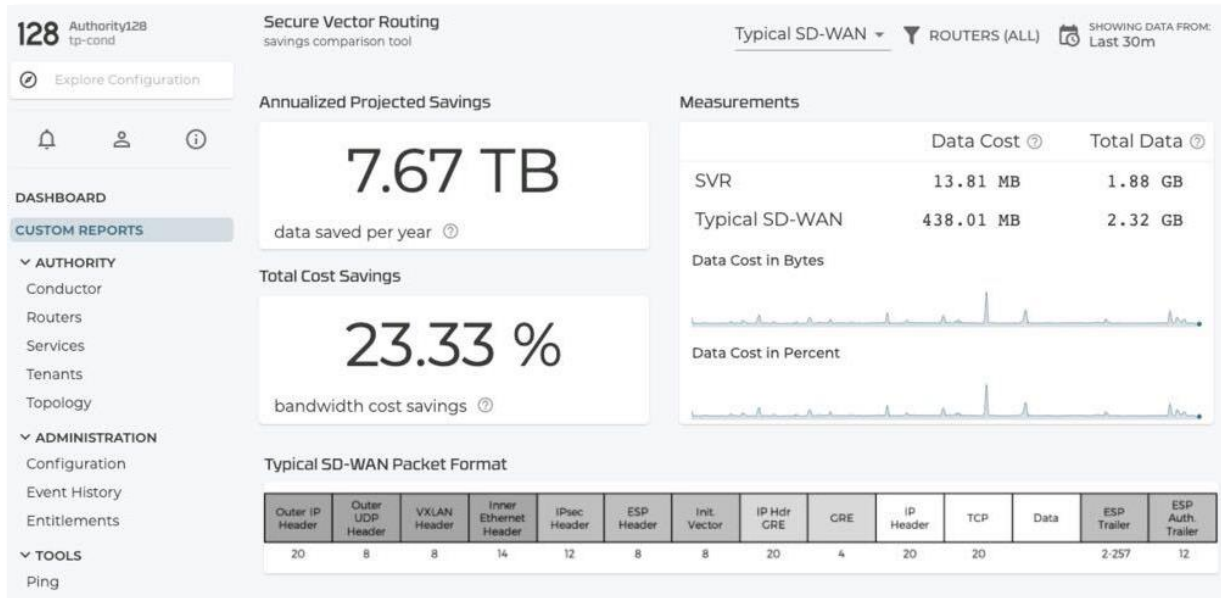
10Mbps
100Mbps

MPLS + Internet

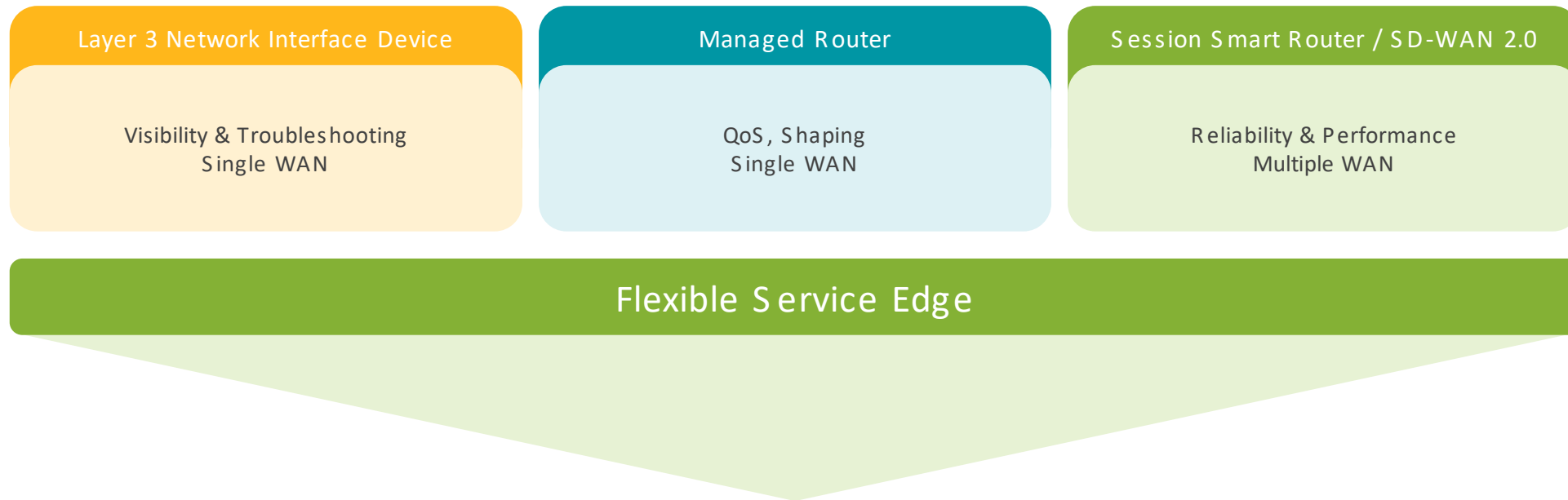
- Cheap bandwidth
- Service-based routing
- Security and encryption
- Integration into existing MPLS network
- LTE support

BANDWIDTH SAVINGS: SCREENSHOTS

The Session Smart Router UI / Conductor shows projected savings compared to typical SD-WAN overhead.



FLEXIBLE SERVICE EDGE: MULTIPLE SERVICES, ONE SOLUTION

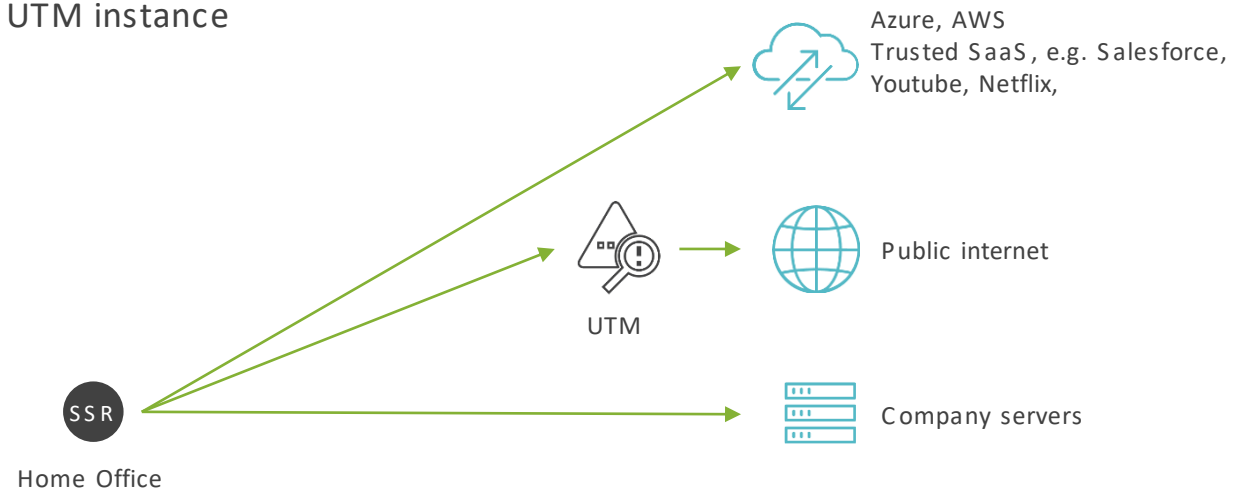


Session Smart SD-WAN

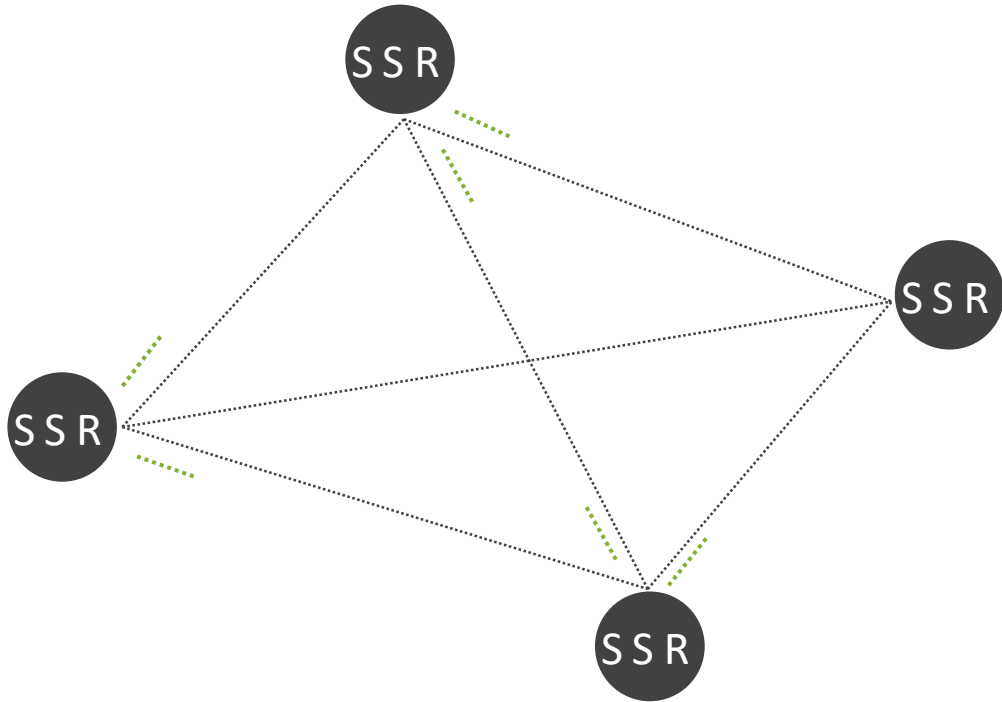
One Management Platform • uCPE S support • Remote Install & Upgrade • Service-Based Licenses

LOCAL INTERNET BREAKOUT

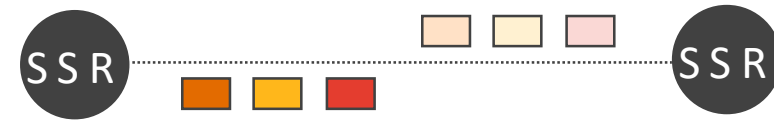
- Implement typical edge site requirements
 - Local internet breakout for trusted SaaS services
 - UTM protection for additional security
 - Prioritization of business-relevant applications
- Session Smart Router differentiates between applications
 - Local internet breakout used for trusted SaaS service
 - Business traffic is routed to HQ via secure Session Smart Network peerings
 - Unknown applications are screened by local or central UTM instance



PERFORMANCE MONITORING

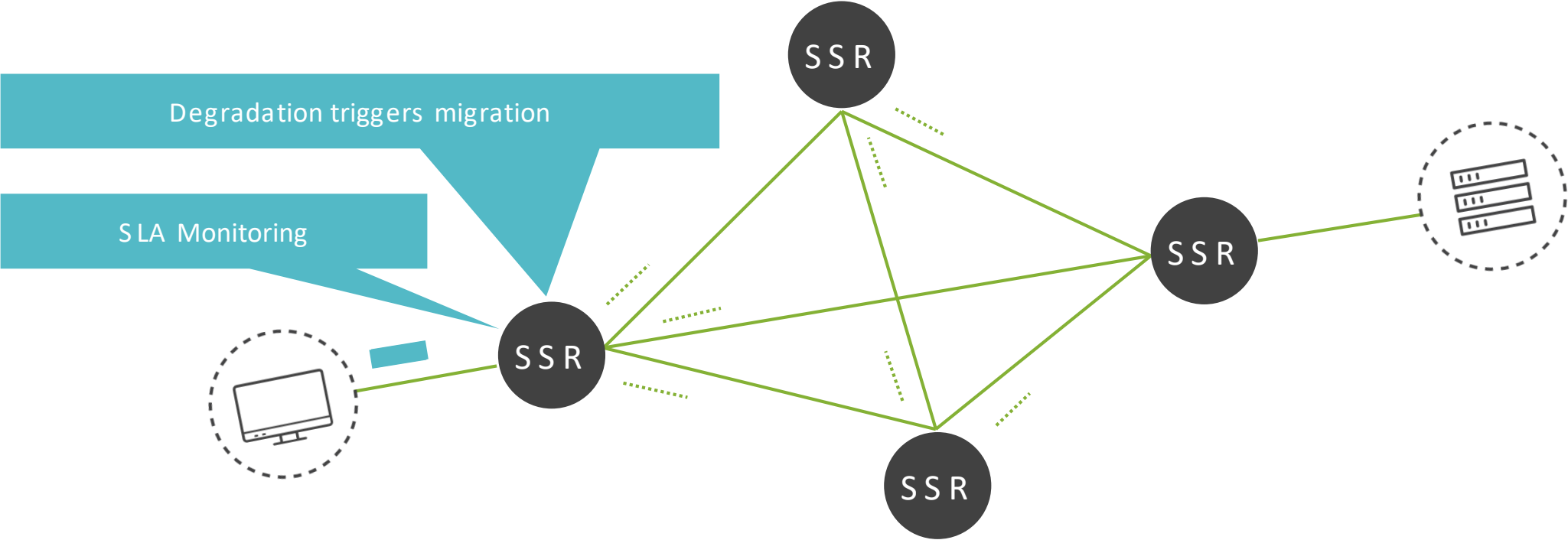


- Multi-hop BFD
- Monitor links between SSR routers

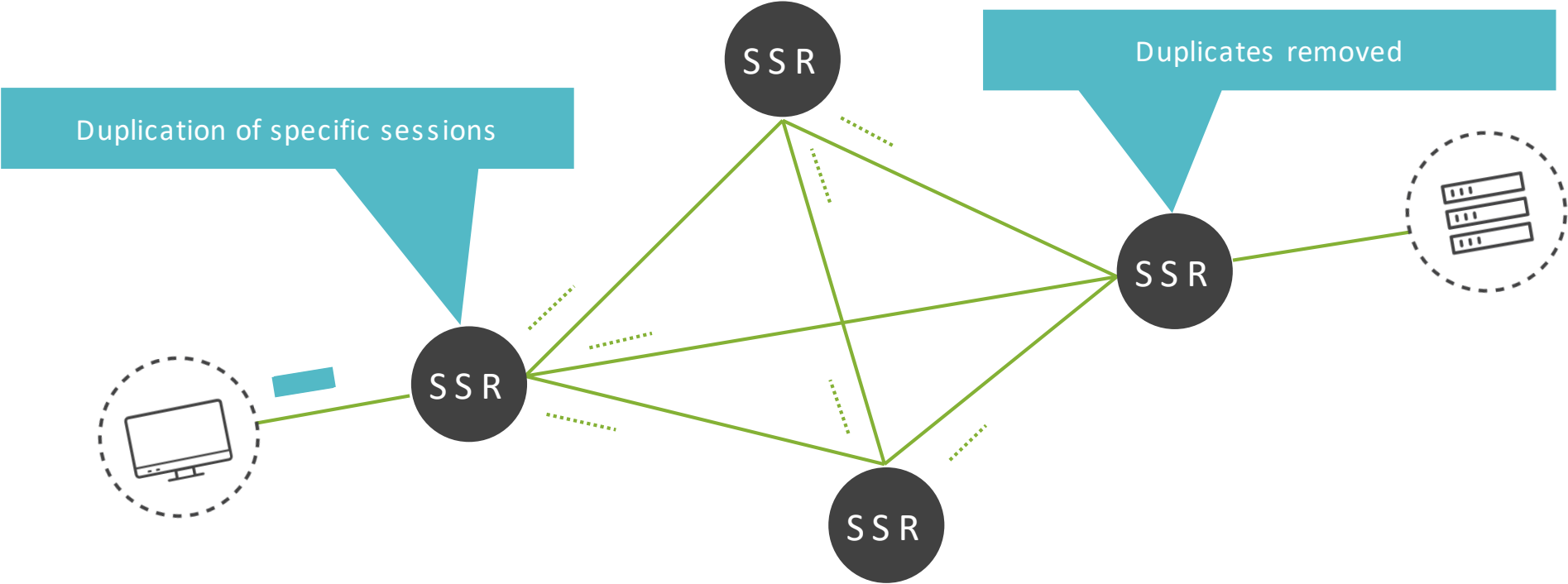


- In-flow performance monitoring
- Relaxed BFD frequency
- Using actual sessions
- Report on session performance

SESSION MIGRATION



SESSION DUPLICATION



Thank you

JUNIPER
NETWORKS | Engineering
Simplicity