

Intro

A 은행의 고민

: 어떻게 하면 더 많은 고객이 예금하게 할 수 있을까?

직원 건의

: 더 쉽게 출금할 수 있도록 합시다

쉽게 출금할 수 있다면, 더 쉽게 예금할 수 있습니다

Intro



생각의 전환

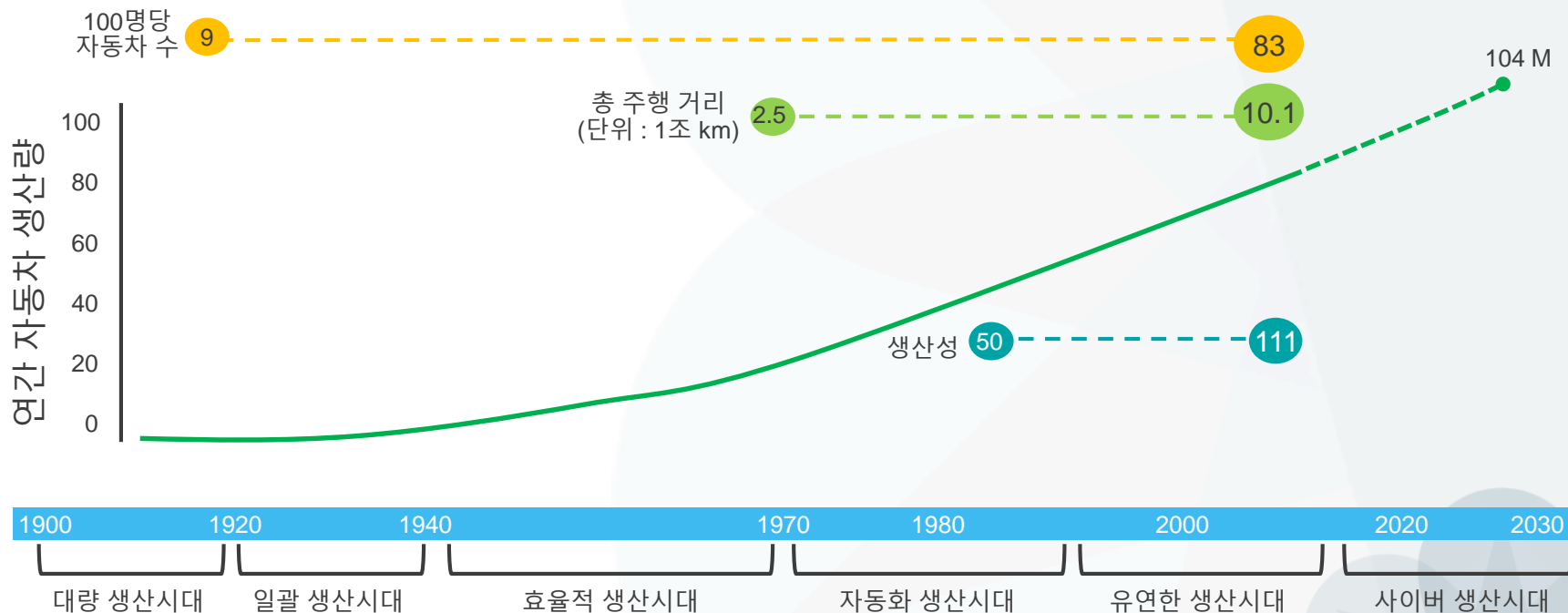
Innovation

Innovation by Automation

Campus & Branch Automation

신성오 차장 | 한국주니퍼네트웍스

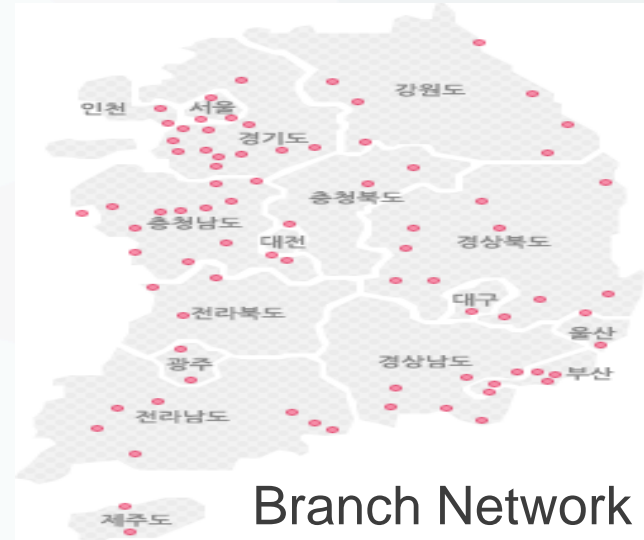
Automation (자동화)



Juniper Automation



Junos Fusion



Universal CPE

Innovation with Juniper 1st Step

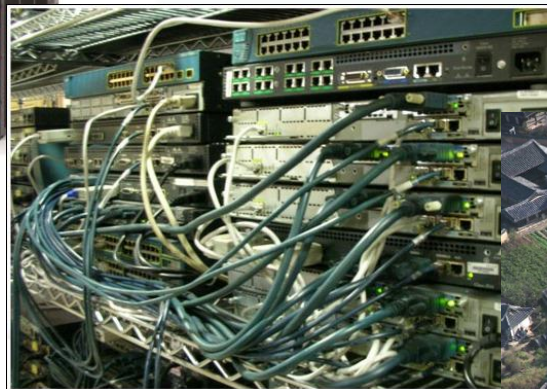
Campus Automation - Junos Fusion



Why Changed?



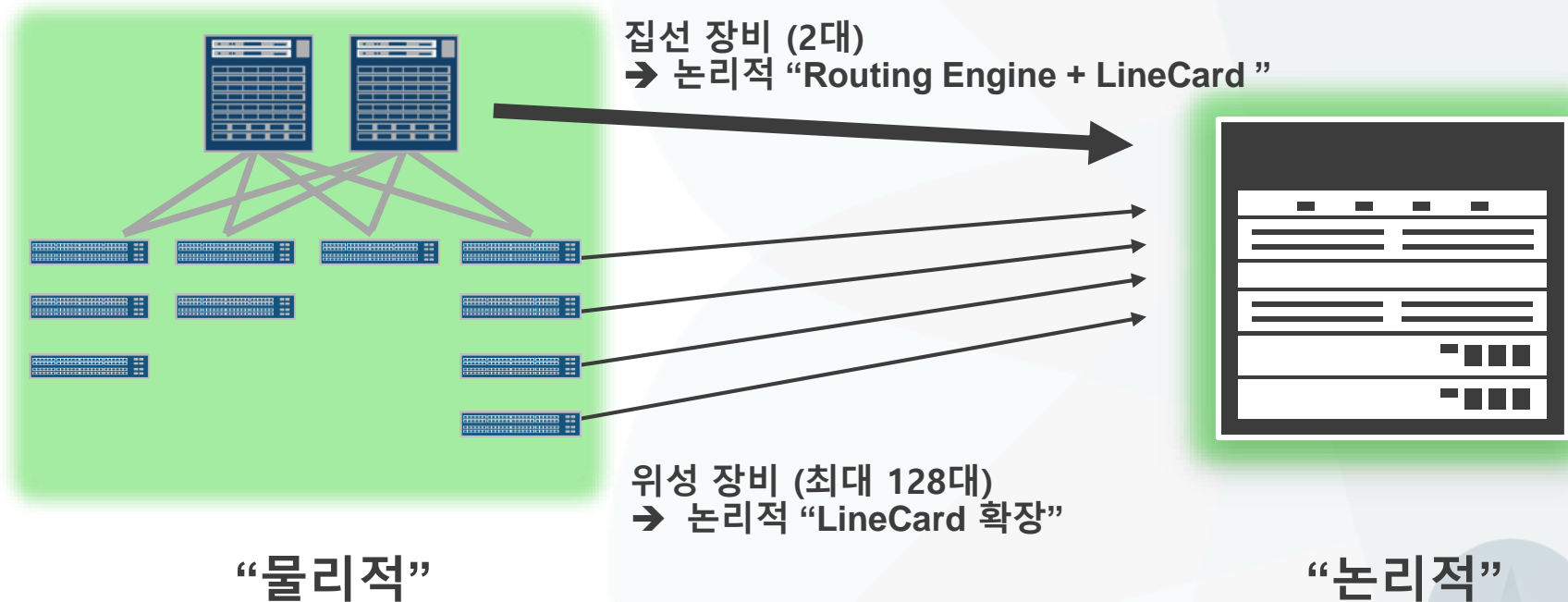
Campus Network 고민



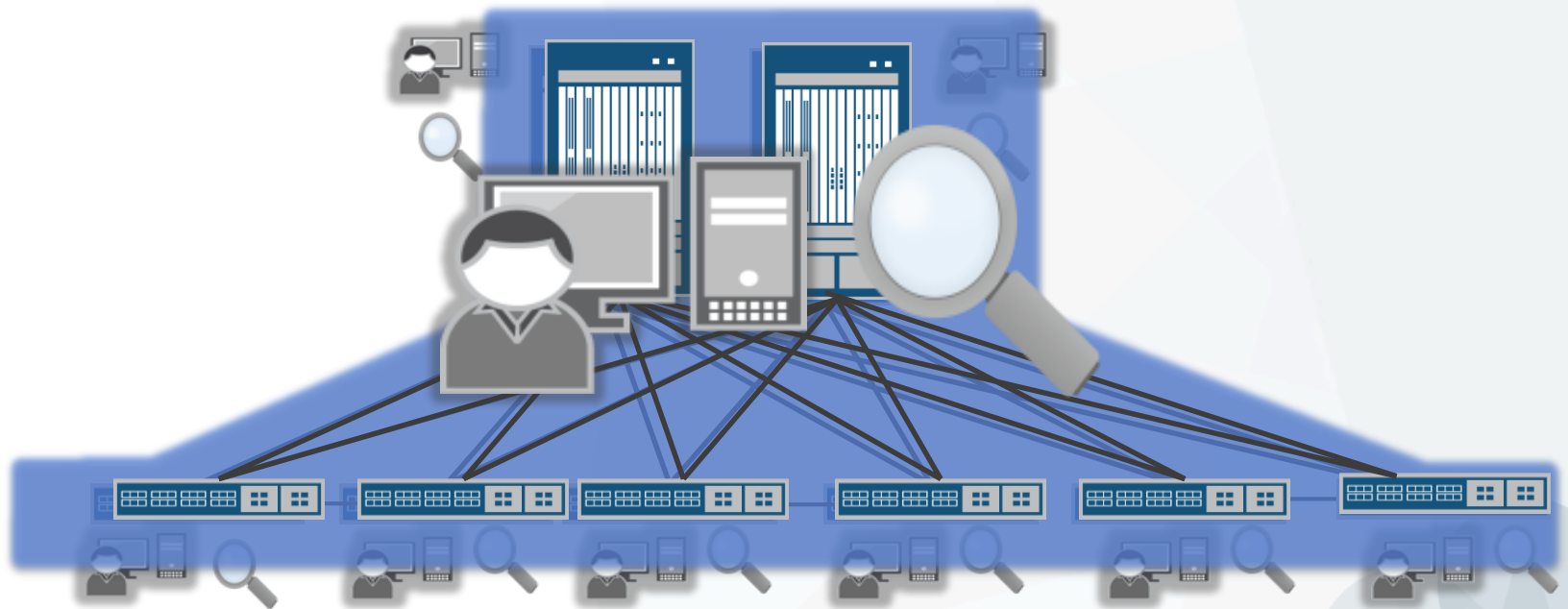
What Provided?



Junos Fusion



One Management, Analytics



가상화 Type

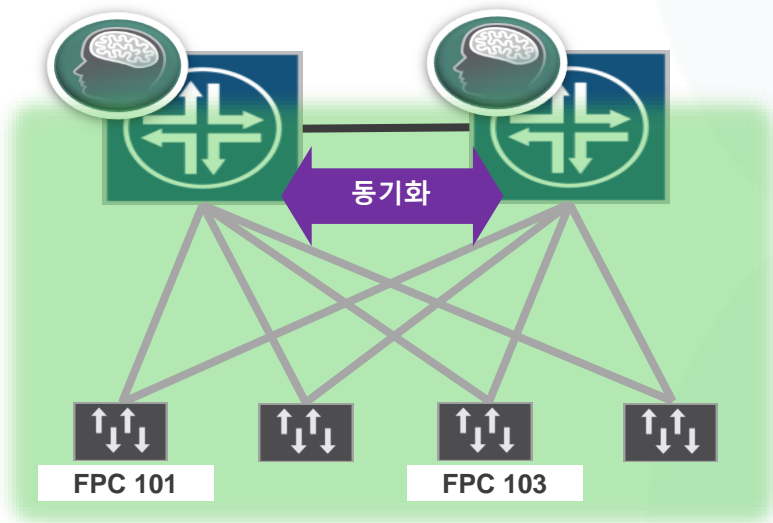


밀결합 (Tightly Coupled)



약결합 (Loosely Coupled)

집선 장비 Loosely Coupled 가상화



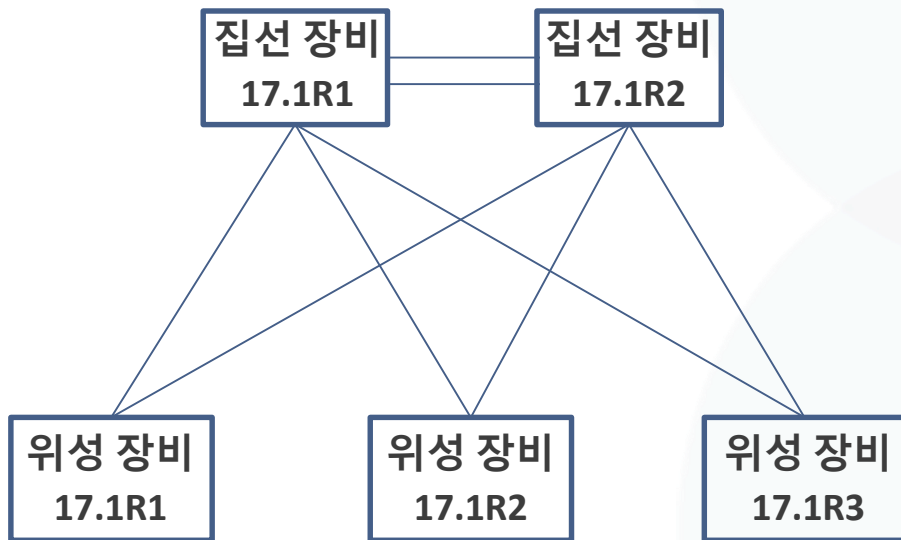
각 집선 장비는 개별적으로 Control Plane 을 가짐
(예시 : VRRP)

집선 장비는 상호간 MC-LAG ICCP 를 통해
설정 및 상태 정보를 실시간 동기화함.

각 위성 장비는 집선 장비 어디에서나
라인카드로서 관리 가능

ISSU 지원을 통해 고가용성 확보

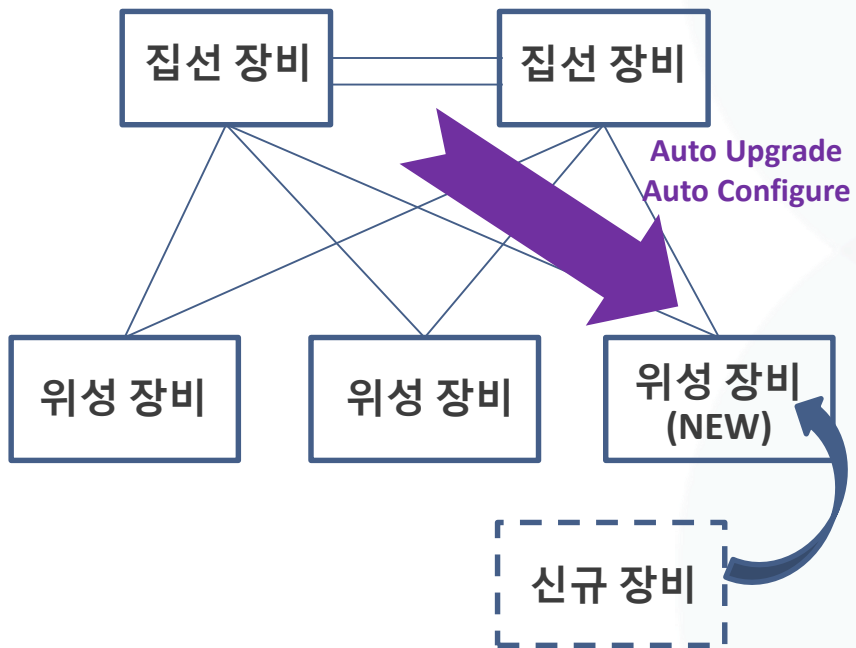
Any Version, Anywhere



다양한 Version 혼용해서 운영 가능

Bug patch 등으로 Version 변경시
별도 Test 환경이 아닌 운영 환경 일부 적용,
사전 검토 가능

Plug And Play

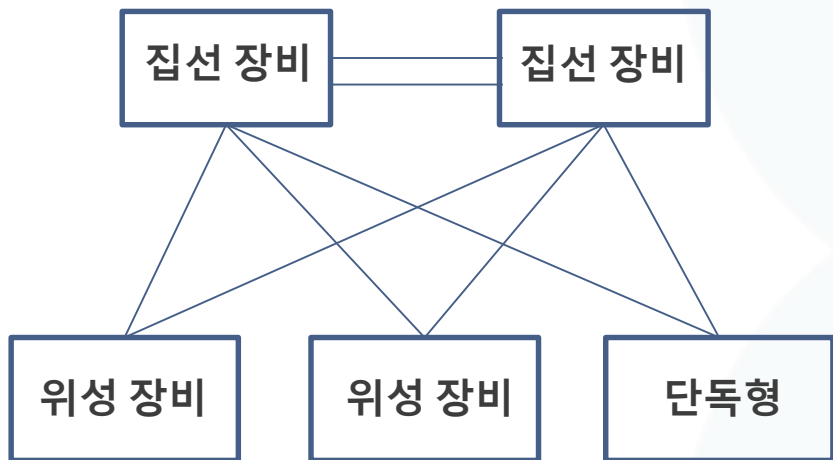


새로운 위성 장비 연결시 LLDP 로 대상 식별
Version 확인 및 Auto Upgrade 수행

NetConf 를 통해 Auto Configuration 수행

운영 편의성 증가

유연한 위성 장비 활용



위성 장비는 단독형 or 가상화 선택 가능

단독형 / 가상화 혼용 가능

비용 효율 높음

Innovation with Juniper 2nd Step

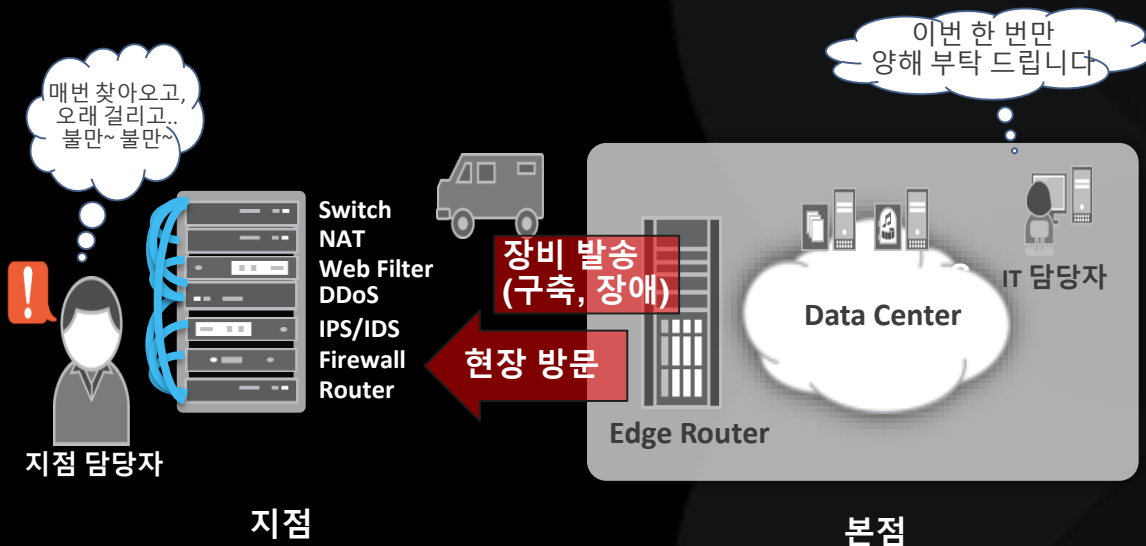
Branch Automation
- Universal CPE

A blurred person walking in a modern glass-walled hallway, symbolizing movement and progress. The hallway is filled with large glass panels and metal frames, creating a grid-like pattern. The person is walking from left to right, and their motion is blurred, suggesting a fast-paced environment. The overall color scheme is a cool blue, which adds to the professional and technological feel of the image.

Why Changed?



오늘날까지 이어지고 있는 업무 환경

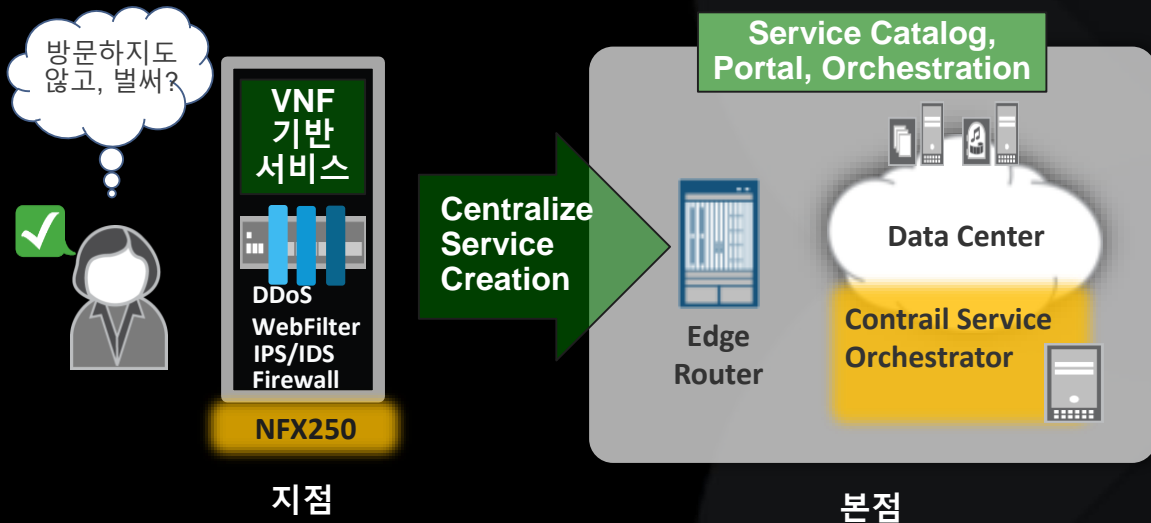


보다 좋은 서비스를 위해서
보다 많은 불편함은 당연한 걸까요?

전통적인 본/지점 업무 환경

- **제한된 서비스**
모든 장비를 지점에 설치 불가
최소한의 보안과 VPN을 지점에!
모든 Traffic 은 센터로!
- **지역적 한계**
도서 산간, 해외 관리 불편
- **처리 시간 지연**
현장 방문 필요시 장애 처리 지연

이젠 바뀌봅시다!



Universal CPE (Customer Premises Equipment)

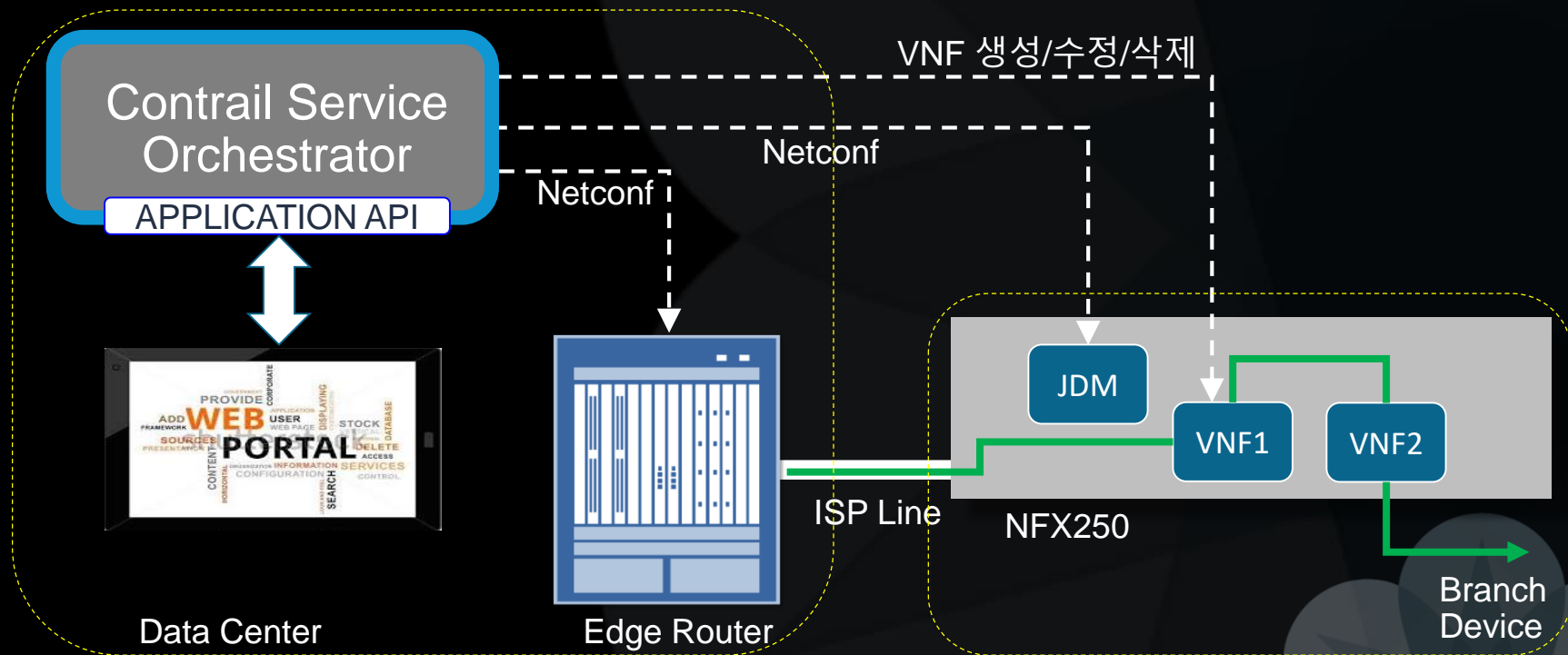
uCPE 를 통한 혁신

- **폭넓은 서비스**
NFX250 에 VM 형태로 서비스 제공
방화벽, VPN, 해외의 경우 가속
기능까지 제공
- **지역적 한계 극복**
- **처리 시간 단축**
NFX250 만 설치하면 더 이상의 물리
작업은 NO!!
장비에 Lan Cable 만 연결하면 Auto
setup 제공 (Zero Touch Deployment)

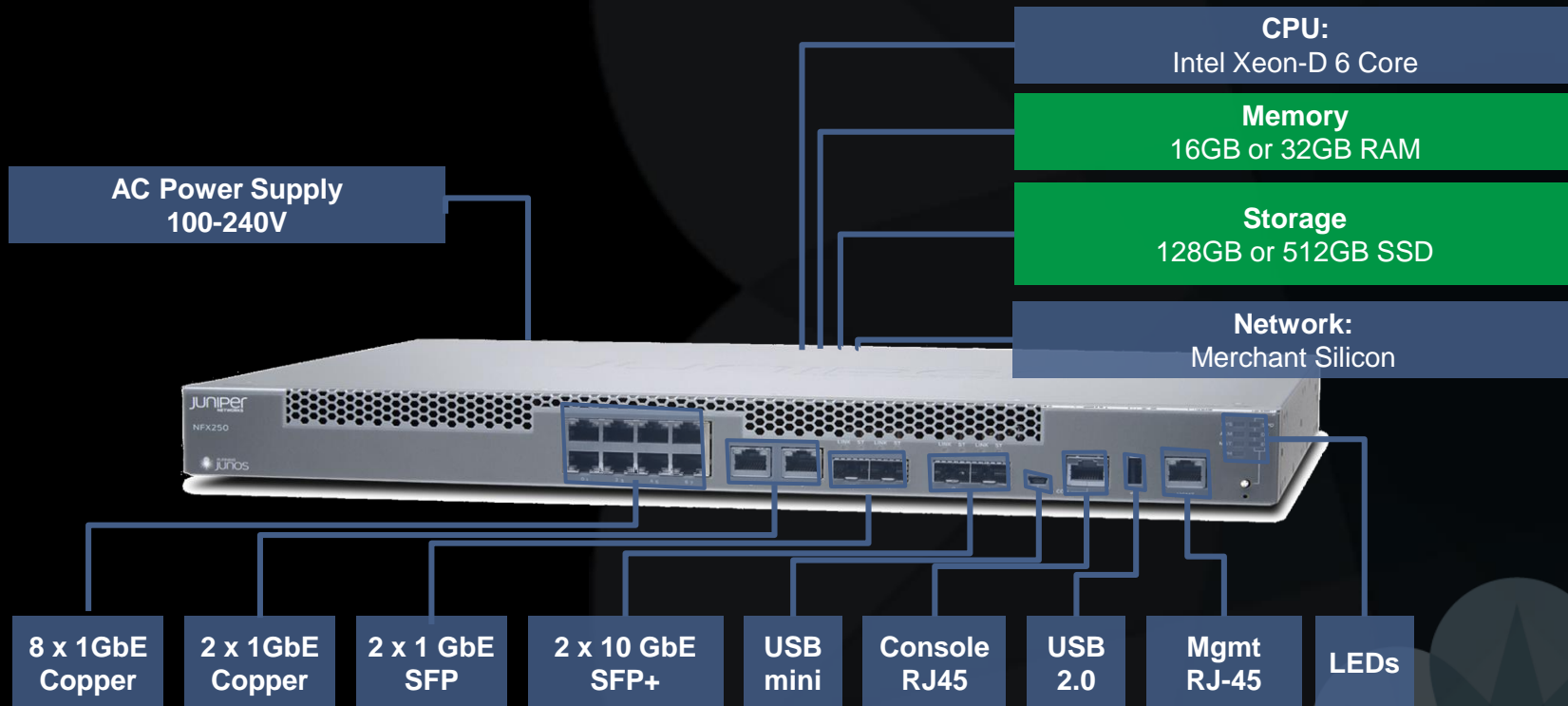
What Provided?



Universal CPE Process



Network Service Platform (NFX Series)



NFX250 기본 제공

IPv4/IPv6 Routing

- Static Routing
- RIP, OSPF
- BFD for RIP, OSPF

L2 Switching

- Port based, MAC based VLAN
- Voice Vlan
- STP (PVST+ 호환)
- LLDP
- IEEE 802.1 Q
- Link Aggregation with LACP

Quality of Service

- Classification, Queuing (L2, L3)
- Trusted 802.1p/DSCP/MF
- Policing

Security

- MAC Limiting
- 802.1X
- Proxy ARP
- DHCP Snooping
- Control Plane DOS Protection

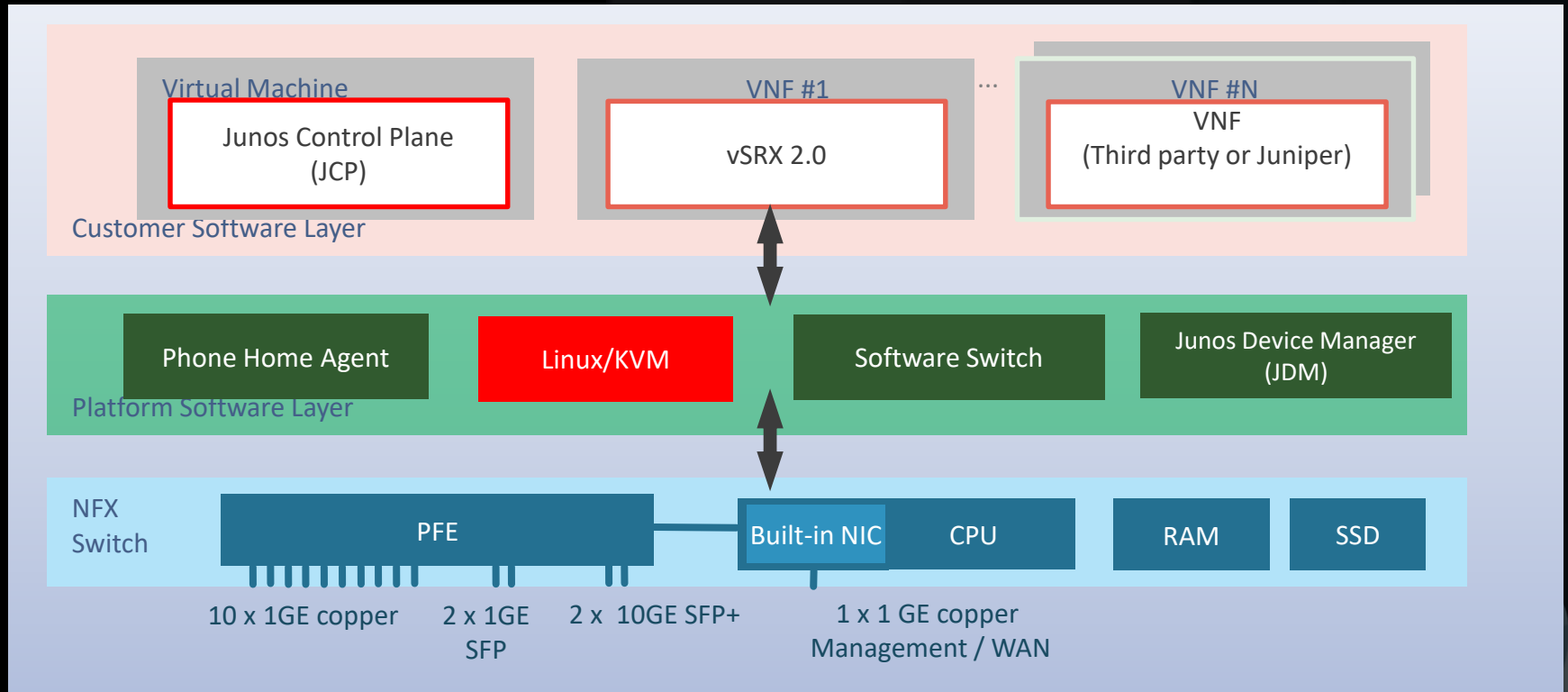
Multicast

- IGMP v1, v2, v3
- IGMP Snooping
- PIM-DM
- PIM-SM
- PIM-SSM

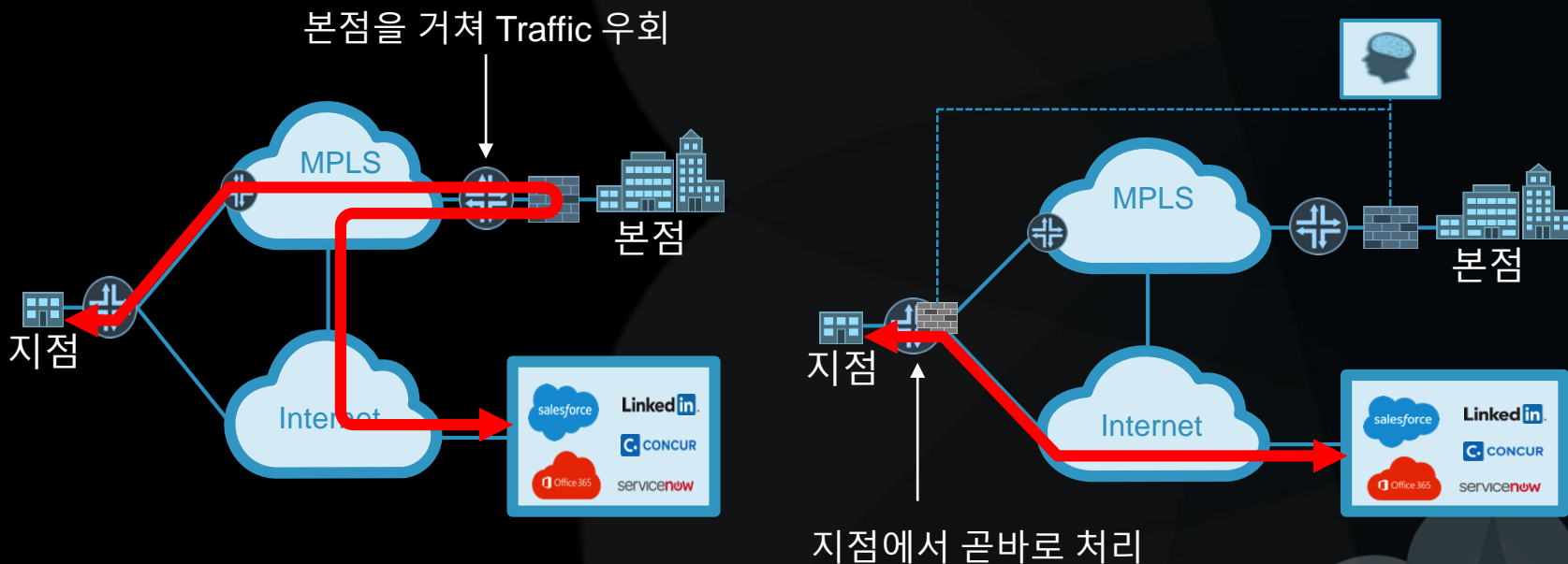
Services and Manageability

- Configuration / Image rollback
- SNMP v1,v2,v3
- TACACS+ / RADIUS Auth.
- Logging
- DNS
- Mirroring
- Uplink failure detection

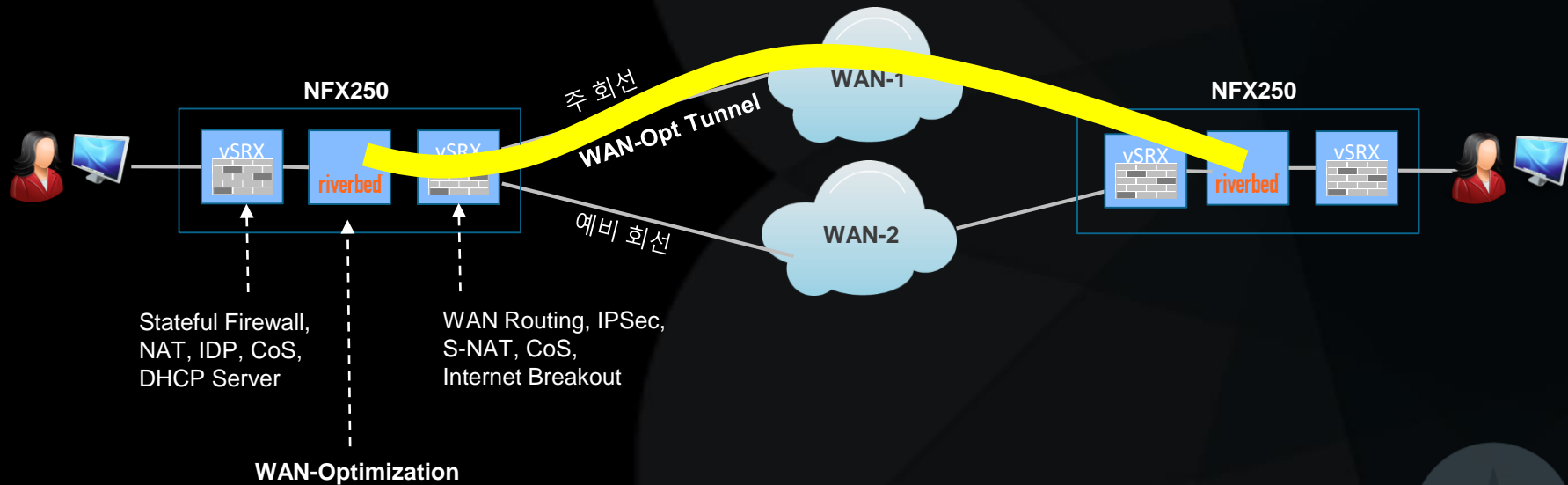
NFX Architecture



강화된 보안 기반 Traffic Flow 개선



WAN 가속 서비스 제공 with Riverbed



A close-up photograph of a hand holding a smartphone. The background is filled with out-of-focus, colorful bokeh lights in shades of blue, green, yellow, and purple. A semi-transparent dark grey rectangular box is overlaid on the left side of the image, containing the word "DEMO" in white, bold, sans-serif capital letters.

DEMO

Demo

The image displays four overlapping screenshots of the Juniper Administration Portal interface, illustrating different monitoring and management capabilities.

Top Left Screenshot: Monitor / Overview
 This view shows a summary dashboard with a central gauge displaying '78 Alerts'. Below it, there are several charts and tables. The 'Alerts Time Series Chart' shows a line graph with a legend for Critical (red), Major (orange), and Minor (green) alerts. The 'Alerts Donut Chart' shows a red donut chart with a 'NoData' label. The 'Top 5 Tenants with Alerts' table lists tenants with their status and names.

Status	Name
critical	CITI
critical	Walmart
critical	Starbucks
critical	Home Goods
critical	General Motors

Top Right Screenshot: Overview
 This view features a map of the United States with a pop-up window for 'pop_cnrd'. The pop-up displays utilization metrics for CPU, Memory, and Storage, all at 0%. It also shows 'Alerts on this PoP' (Critical, Major, Minor) and 'Connected Sites with Alerts' (sites for total). Resources are listed as 0 VMs, 0 Routers, and 0 EMS.

Bottom Left Screenshot: PoP Management
 This view provides detailed management for Points of Presence (PoPs). It includes summary cards for CPU, Storage, and Memory allocation, and a table listing PoPs with their locations and resource usage.

Name	Location	CPU Allocated	Memory Allocated	Storage Allocated	VMs	EMS	Routers	Tenants	Sites
dc2	Name	0 of 0 Cores	0 of 0 MB	0 of 0 GB	1		0		0
pop_pe	Sunnyvale, CA	0 of 0 Cores	0 of 0 MB	0 of 0 GB	0		1	ucpe-tenant	1

Bottom Right Screenshot: TENANT SERVICES
 This view shows a list of tenant services. A summary card indicates '10 Sites With Alerts' and lists specific services like STRBK3456, WLMRT-GG, and STRBK321. Below is a table of services with columns for Location, PoP Name, State, Type, and Services Activated.

Location	PoP Name	State	Type	Services Activated
site1 street01 city		provisioned		0

Demo

ENTERPRISE1 CUSTOMER PORTAL

MONITOR

Admin1

VPN Services

Enterprise1

- SiteA
- SiteB
- SiteC
- SiteE
- SiteF
- SiteG

The diagram shows a central VPN hub connected to six sites: SiteA, SiteB, SiteC, SiteE, SiteF, and SiteG. SiteA is highlighted with a 'Security Active' status. A 'VPN' icon is in the center, with arrows pointing to each site. SiteA also has a 'Security Active' icon. SiteB, SiteC, SiteE, and SiteF have 'VPN' icons. SiteG has a 'VPN' icon. A 'Security Active' icon is also present near SiteA.

Status: Platinum-Multivendor (SiteA)
csr1000v

Uptime	Bandwidth	Sessions
100% 13 days, 14:05:00	L Input: 0 Mbps R Input: 0 Mbps Output: 0 Mbps	0 Current

vsrx

Uptime	Bandwidth	Sessions
100% 13 days, 13:57:07	L Input: 0 Mbps R Input: 0 Mbps Output: 0 Mbps	0 Current

lxcpitable

Uptime	Bandwidth	Sessions
99.2776% 13 days, 14:08:09	L Input: not available R Input: not available Output: not available	0 Current

Cancel

Demo

NETWORK SERVICE DESIGNER

HOME BUILD VALIDATE

Stephen Flamm

Network_Service_Citi_East

In-progress

Functional Service Design

```
graph LR; NAT --> Firewall; Firewall --> IDP;
```

Thomas Black
Firewall | 03 Mar 2015, 10:27AM
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nunc sed tellus at urna rhoncus consectetur agestas eu urna. Donec ac accumsan fests.

Network Service Design

```
graph LR; subgraph Firefly; NAT; end; subgraph ASA-V; Firewall; end; Firefly --- ASA-V;
```

SESSIONS
Goal 5000
Estimated 2500
50%

BANDWIDTH
Goal 600 Mbps
Estimated 400 Mbps
67%

Vendors All

- Load Balancer Gold
- ASA-V Silver
- VM-300 Silver
- Firefly Gold
- VMX Gold

Data Control Management

Single Service Multi-Service

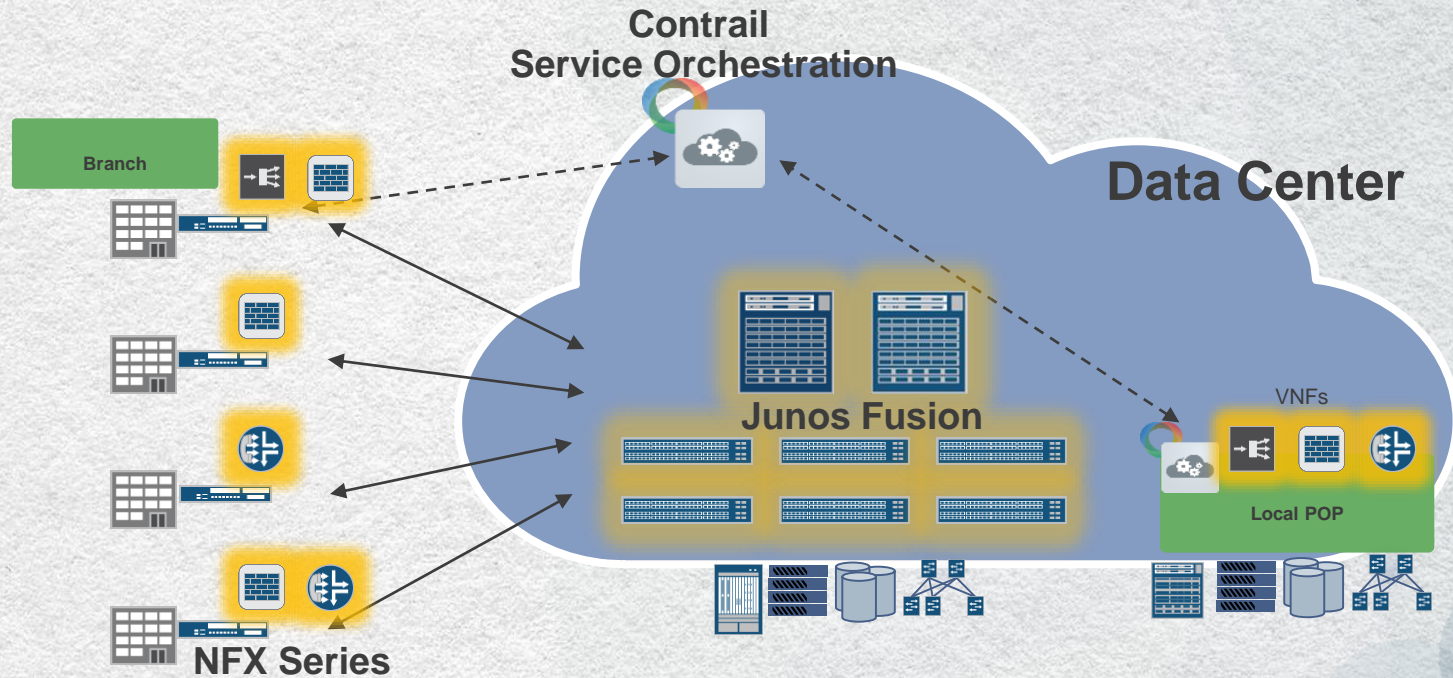
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20 For Networking

Summary



Next Generation Network



*“Our DNA as a challenger in this industry applies so well. It is not just about challenging your competitors, it is challenging the status quo, it is **challenging yourself** and your assumptions about how to solve something. We’ve never been afraid to **try things differently**, to solve things differently.”*

- Rami Rahim, Juniper Networks CEO

The image features a blue-tinted background showing a crowd of people. The text "Thank you" is prominently displayed in the center in a large, white, sans-serif font. The overall mood is appreciative and professional.

Thank you