

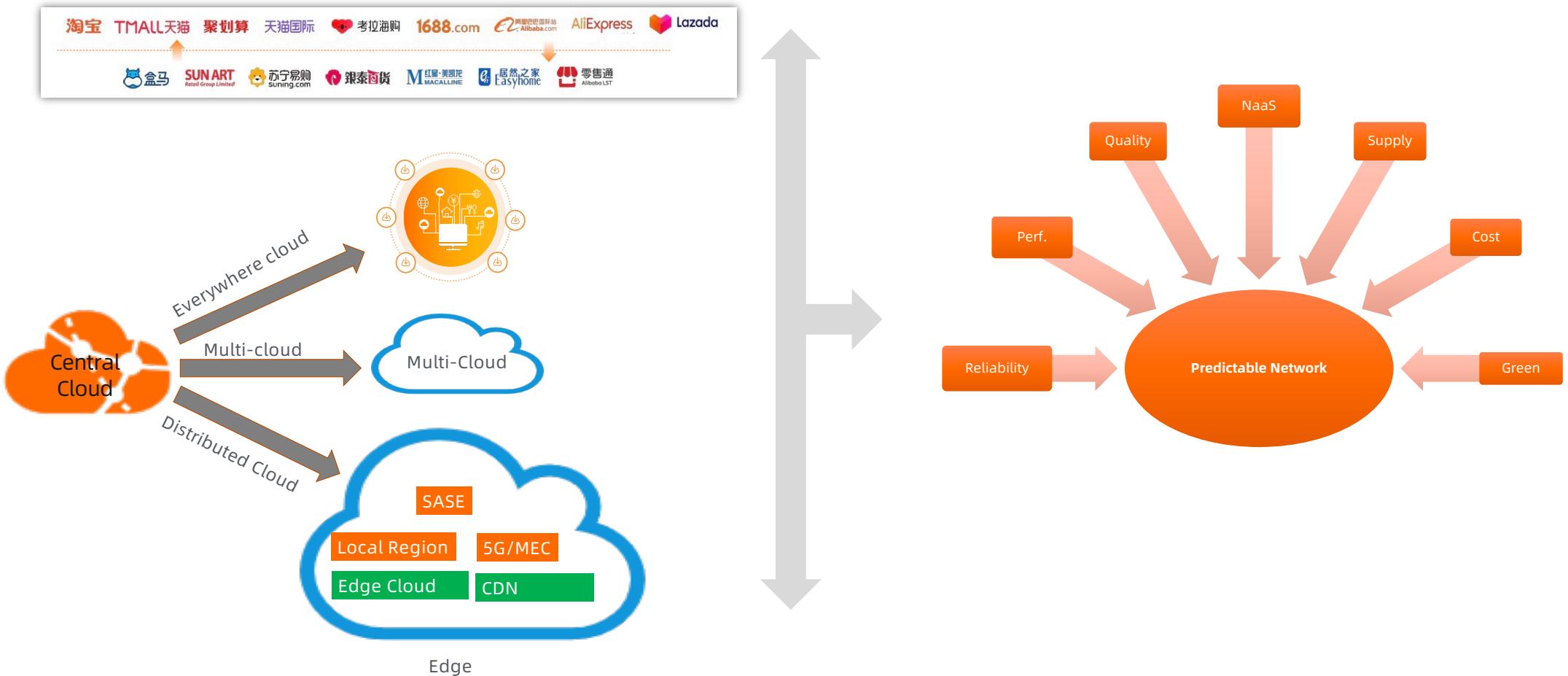


IPv6 Predictable Network

Dennis Cai / Eddie Ruan

03/2023

App & Internet-scale Driving Network Evolution

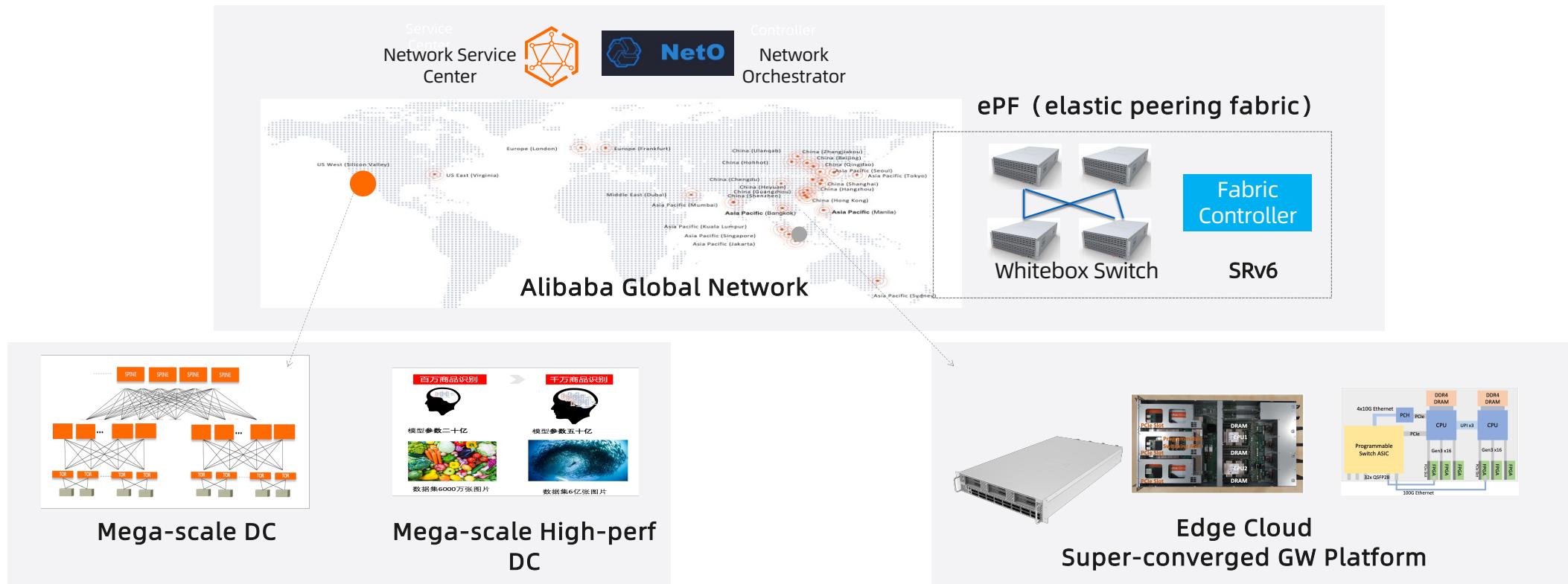




Alibaba Predictable Network Framework

2

Endpoint-Network Synergy System: Endpoint+Network fullstack optimization, APP+Network co-design



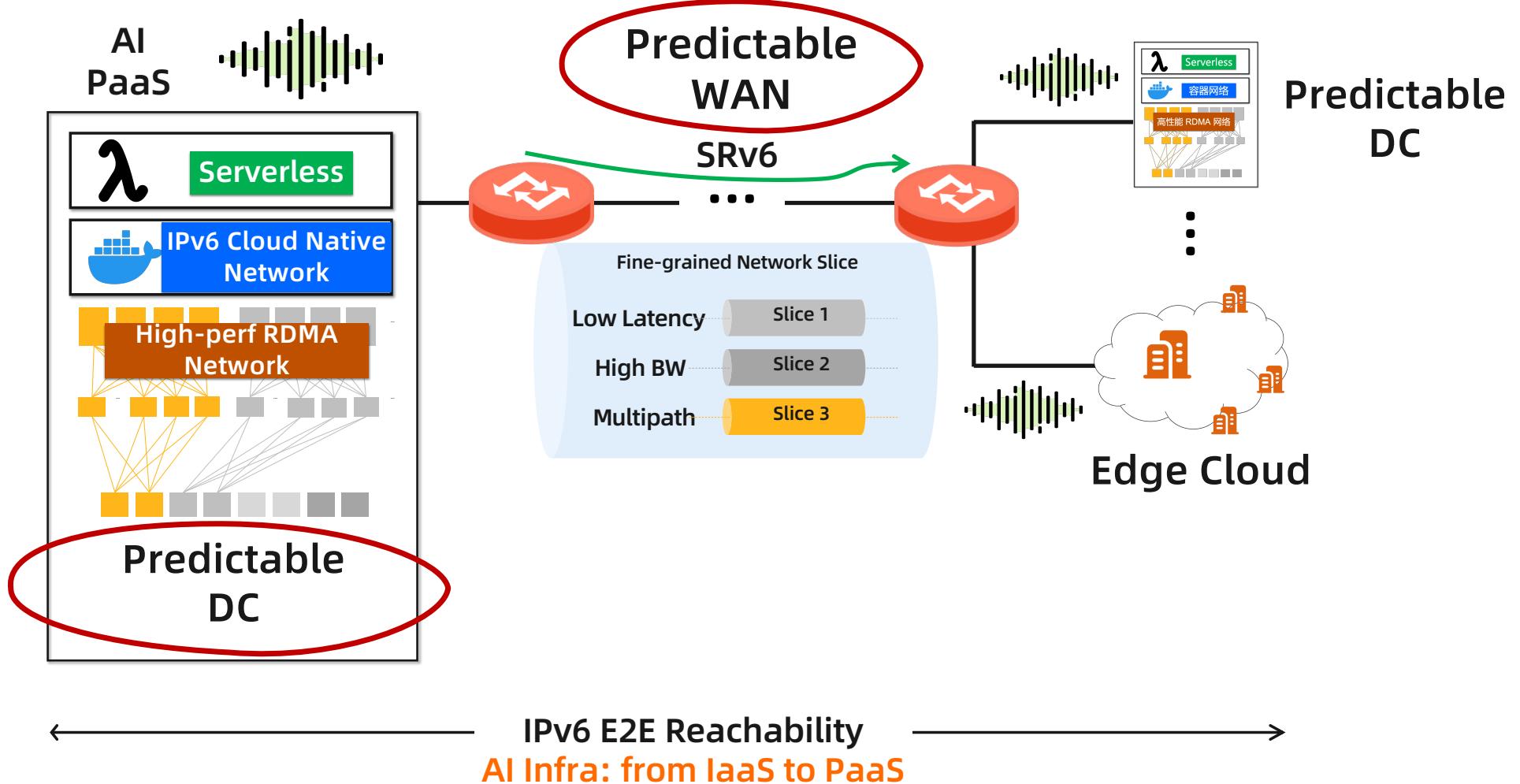
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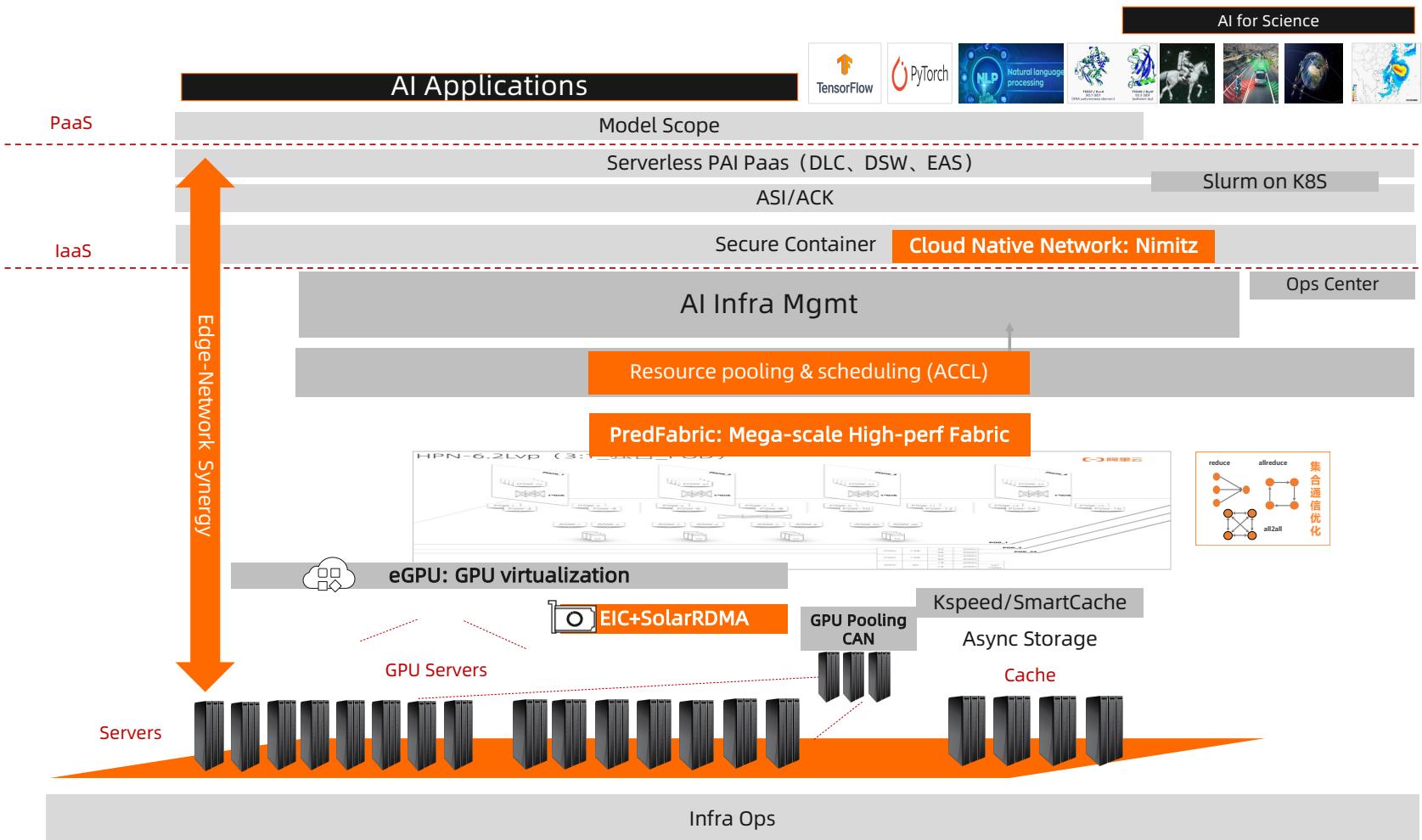
Whitebox System :IPv6/SRv6 + Single-chip white box + Programmability

Key Innovation: Endpoint-Network Synergy for AI/ML

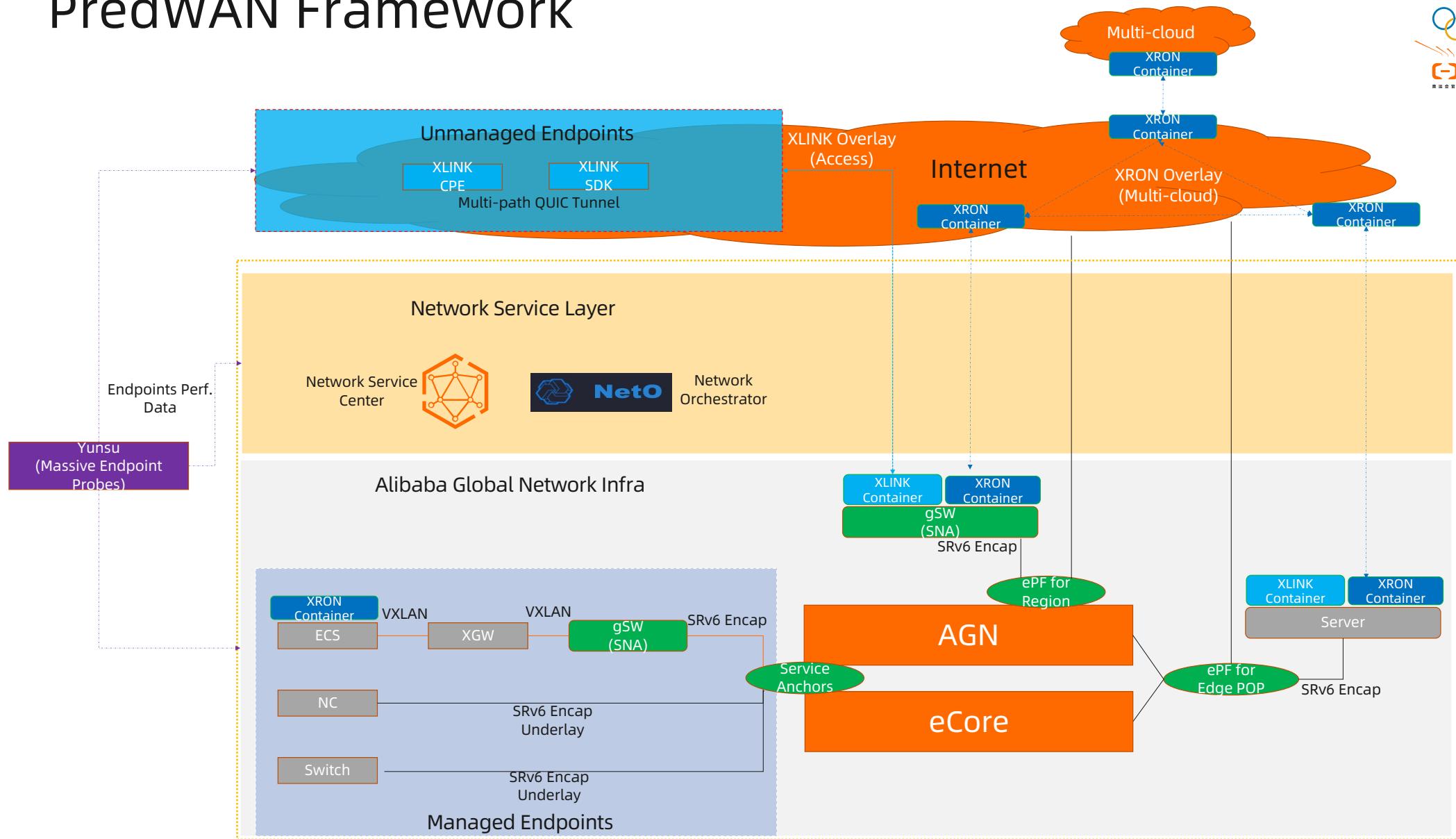
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Alibaba AI Infra



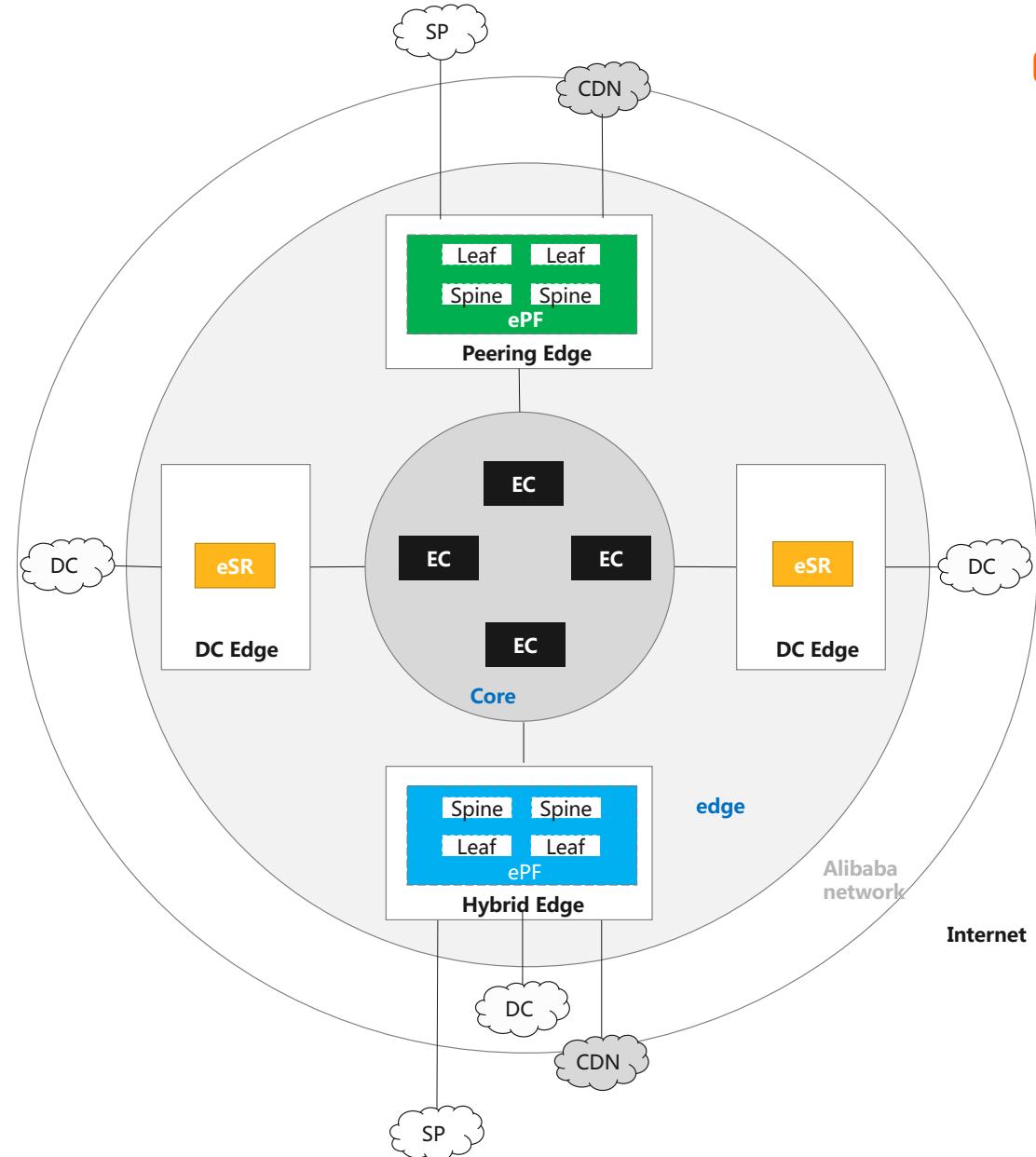
PredWAN Framework



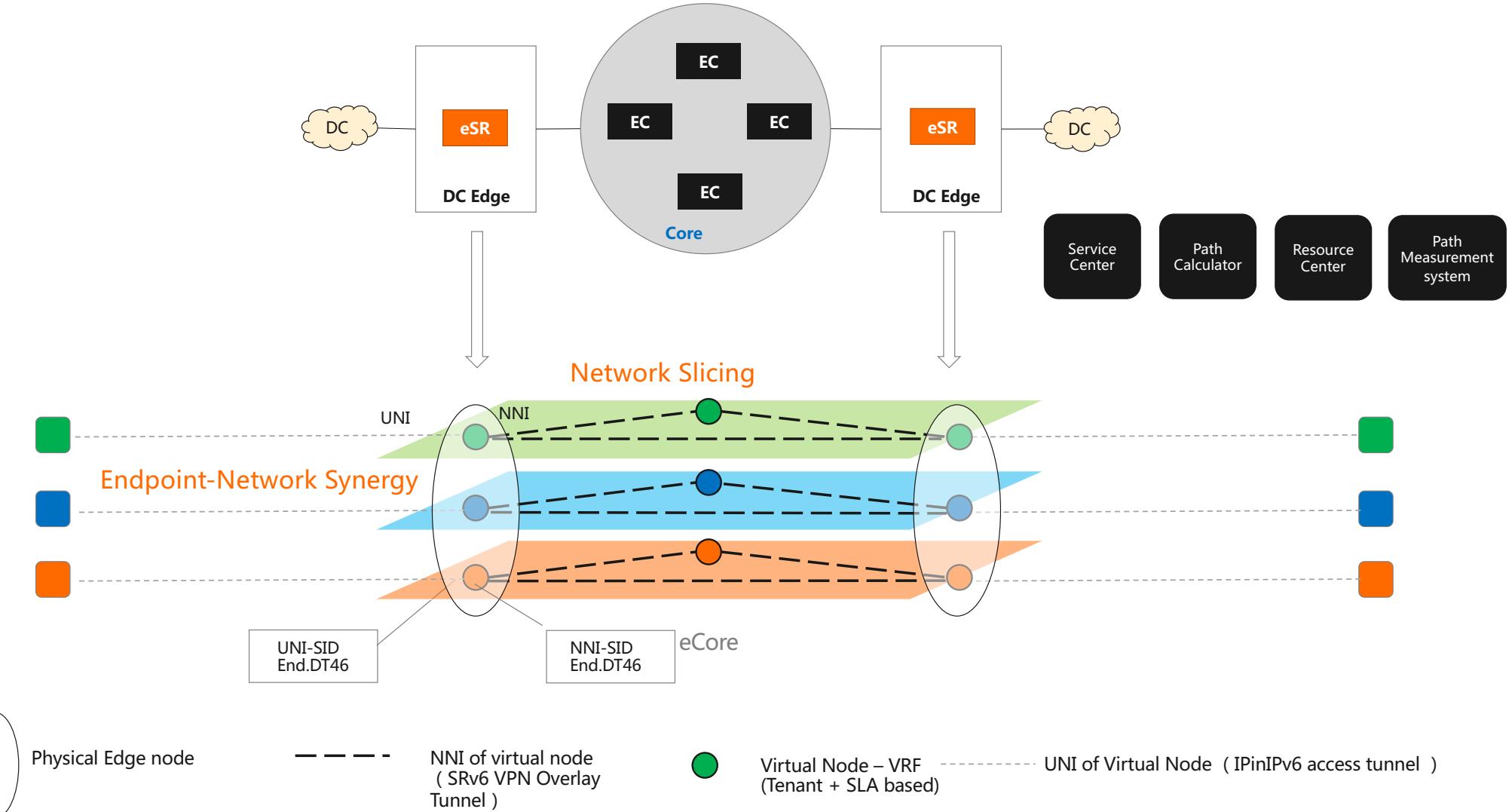
eCore Overview



- Core
 - IPv6 underlay with SR Traffic Engineering
 - Multiple Physical planes
- Edge
 - SONiC Pizza-box + commercial Pizza-box
 - SRv6 VPN PE – overlay
 - Simple SRv6 Policy – Traffic dispatching across planes



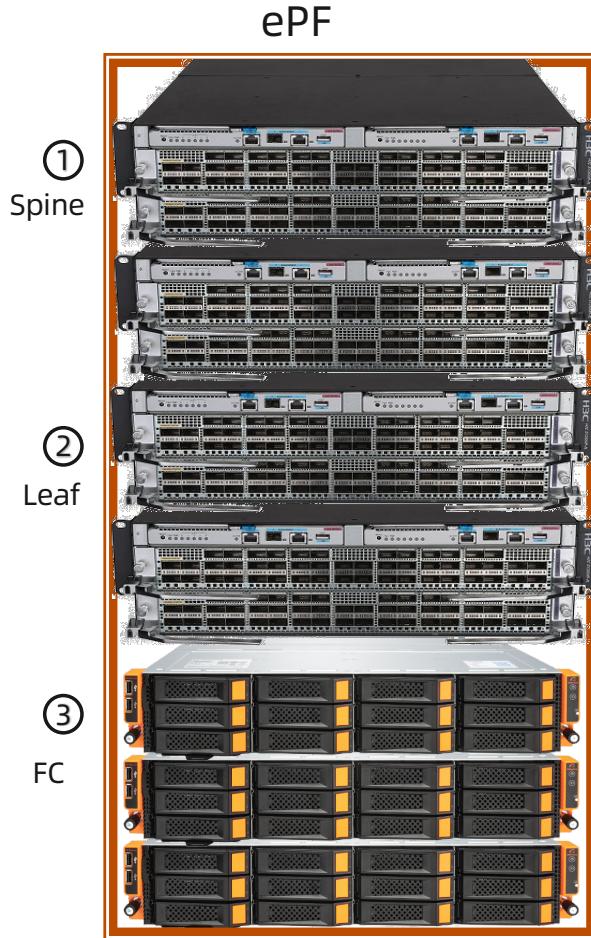
Service-Oriented network



Self-developed Router Portfolio(eSR/ePF)



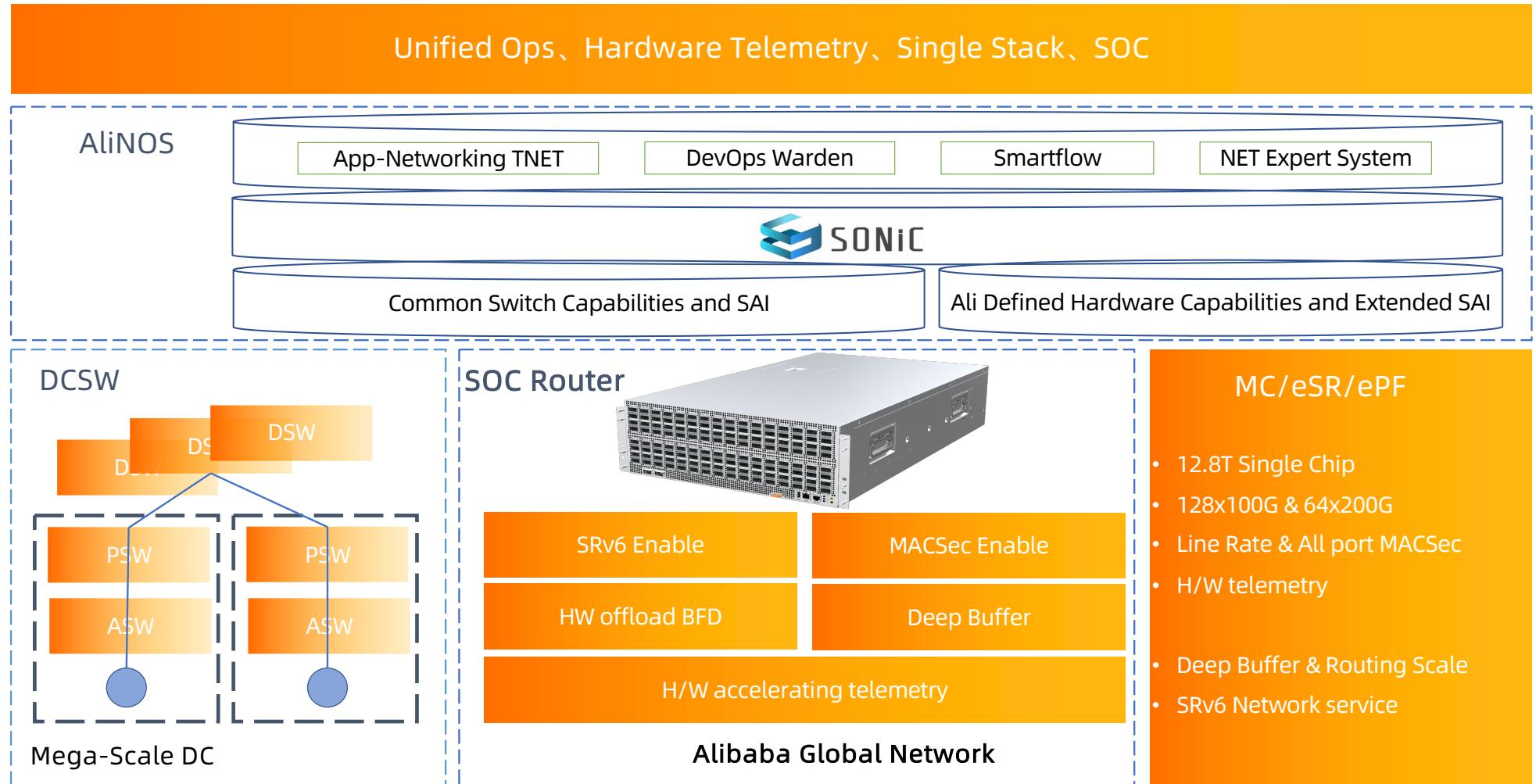
Announced@Apsara Conference 2022



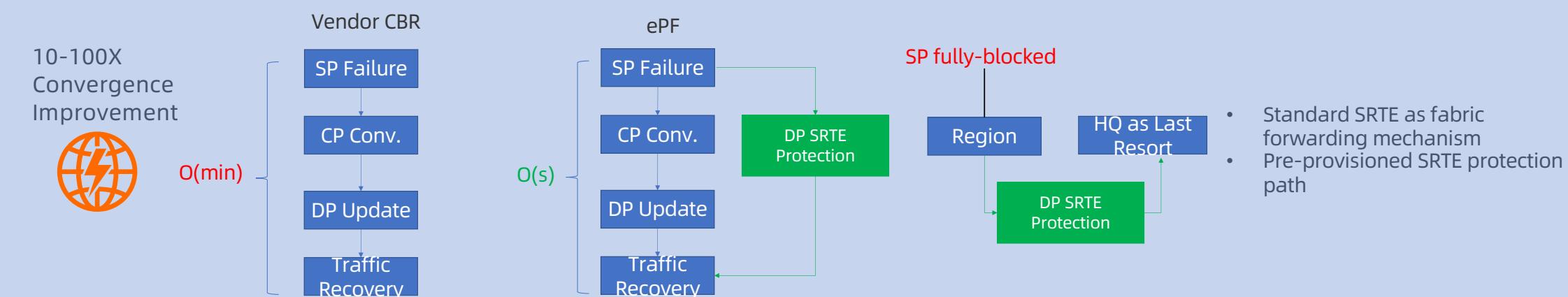
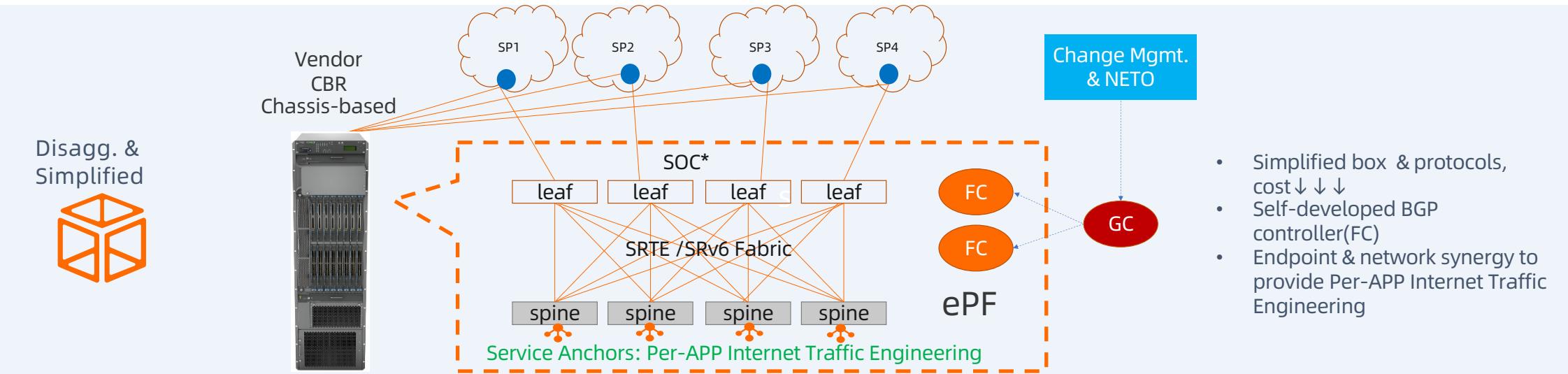
Self-developed eSR



Self-developed Service Router: eSR

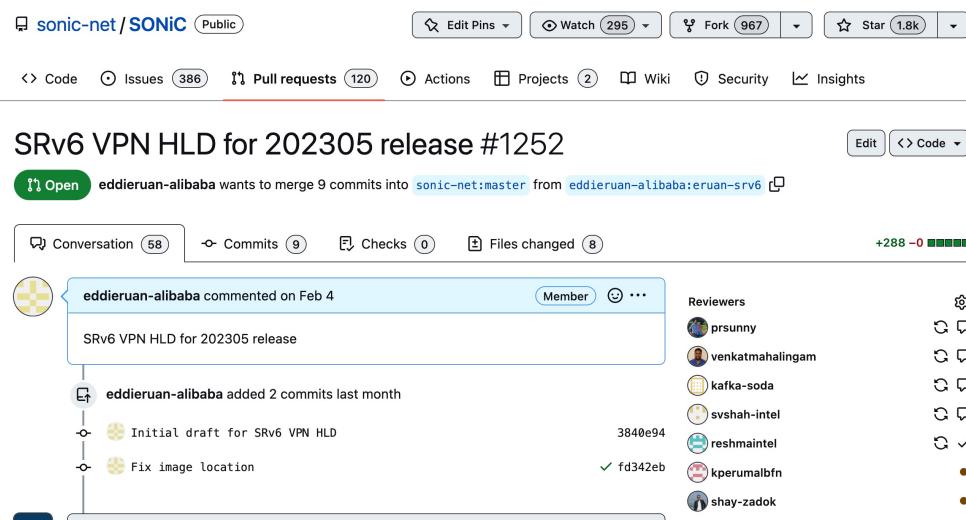


Self-developed Cloud-scale Router: ePF



*Vendor SOC for now, will migrate to self-developed eSR next year

SONiC Initiative-1: SRv6 for SONiC



sonic-net / SONiC Public

Edit Pins Watch 295 Fork 967 Star 1.8k

Code Issues 386 Pull requests 120 Actions Projects 2 Wiki Security Insights

SRv6 VPN HLD for 202305 release #1252

Open eddieruan-alibaba wants to merge 9 commits into sonic-net:master from eddieruan-alibaba:eruan-srv6

Conversation 58 Commits 9 Checks 0 Files changed 8 +288 -0

eddieruan-alibaba commented on Feb 4

SRv6 VPN HLD for 202305 release

eddieruan-alibaba added 2 commits last month

- Initial draft for SRv6 VPN HLD 3840e94
- Fix image location fd342eb

Reviewers

pr sunny	...
venkatmalingam	...
kafka-soda	...
svshah-intel	...
reshmaintel	...
kperumalbn	•
shay-zadok	•

SRv6 VPN/SRv6 Policy with uSID will be upstreamed to SONiC 202305

- Key contributors: Alibaba、Cisco

SONiC Initiative-2: Routing Working Group

Router !=high scale switch

1. Routing related features, such as L3 VPN
2. High scale L3 VPN routes
3. Routes loading time
4. Routes convergence time
5. Efficient communication among FRR, kernel and SONiC

Goals for Routing Working Group

Gather contributors from both FRR community and SONiC community to improve white box support for a router.

Initial focus areas:

1. Communication among FRR, kernel and SONiC
2. Routing related features
3. Routes memory reduction
4. BGP loading time
5. Routes convergence time

- Organization:
 - Chairman: Eddie Ruan (Alibaba)
 - Co-Chairs:
 - Praveen Bhagwatula (Cisco)
 - Syed Hasan Raza Naqvi (Broadcom)
 - Rita Hui (Microsoft)

From Elastic to Predictable!

