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The bridge to possible

How Carrier Neutral Facilities (CNF) are Transforming Enterprises to Digitally Converged Architecture

Dhrumil Prajapati
Sr. Delivery Architect
BRKNWT-2201

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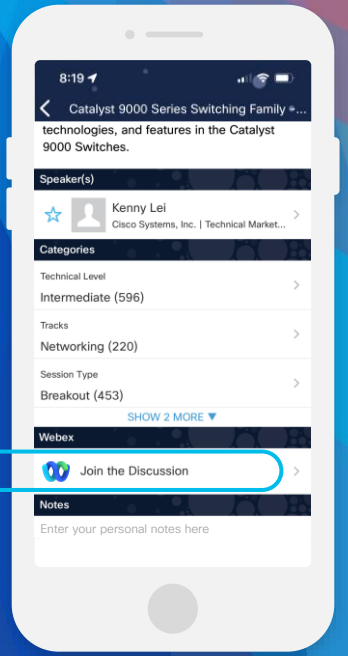

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“CNF means Carrier Neutral Facility”

Very Important

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Who am I?

Dhrumil Prajapati

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8+ Years @ Cisco

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CCDE #20210002

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@DhruPrajapati

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Agenda

- Introduction
- What is CNF and why it is cost effective?
- CNF design considerations
- Actual deployment example
- Conclusion

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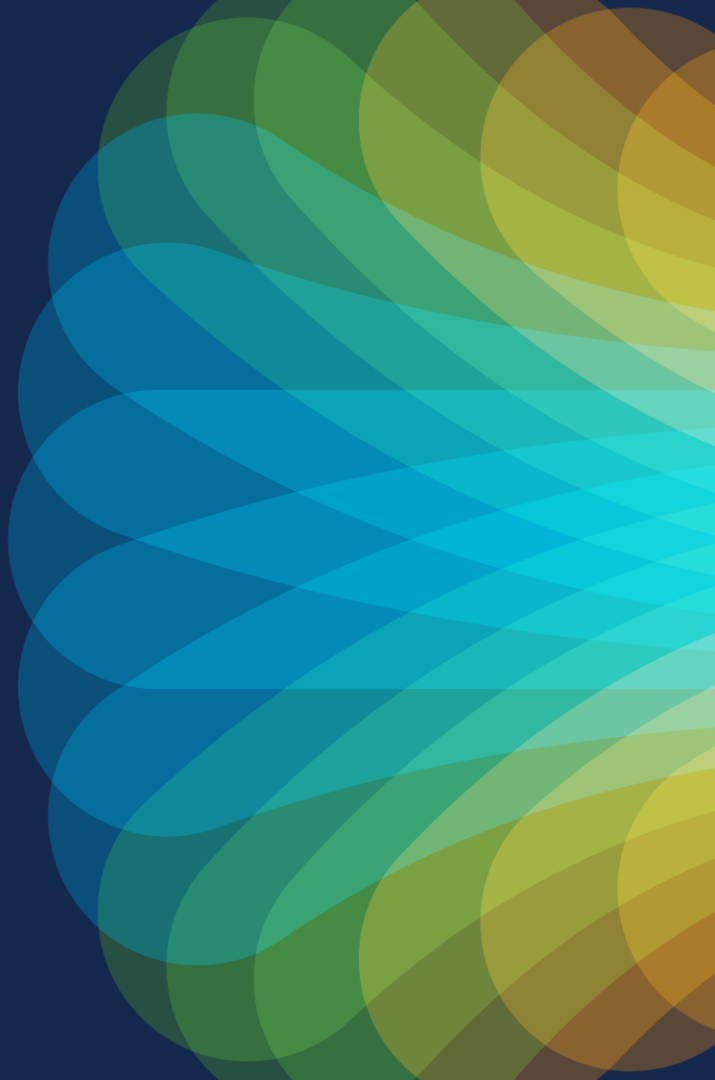
Introduction



Enterprise have been moving to cloud but still they want some services with them.

1. 60% have been moved to cloud and out of these 60%, 40% percent are considering multi-cloud.
2. There is a need to connect private cloud with enterprise network
3. Management and maintenance of an on-prem datacenter for some services requires operational cost
4. CNF is the solution.

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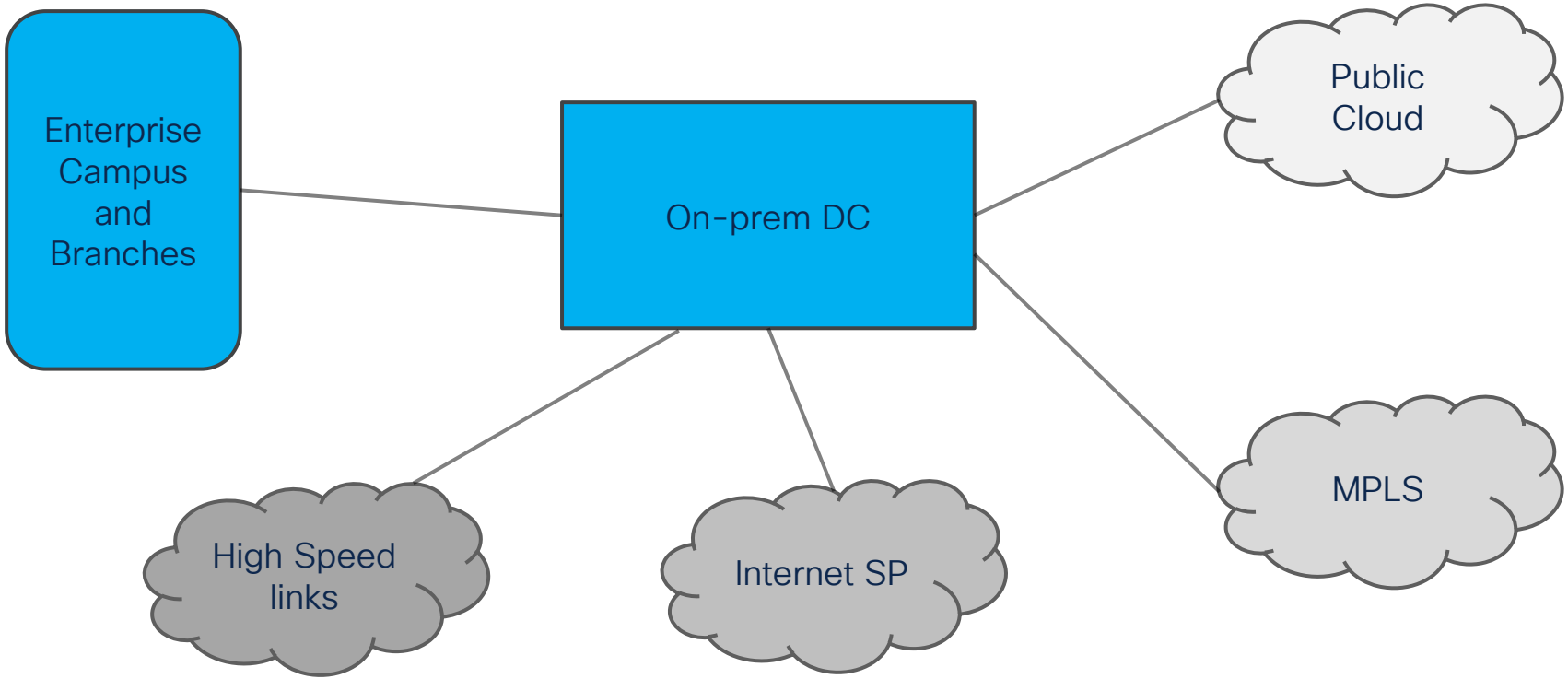
What is CNF and why it is cost effective?

On-prem Datacenter and Operational Cost



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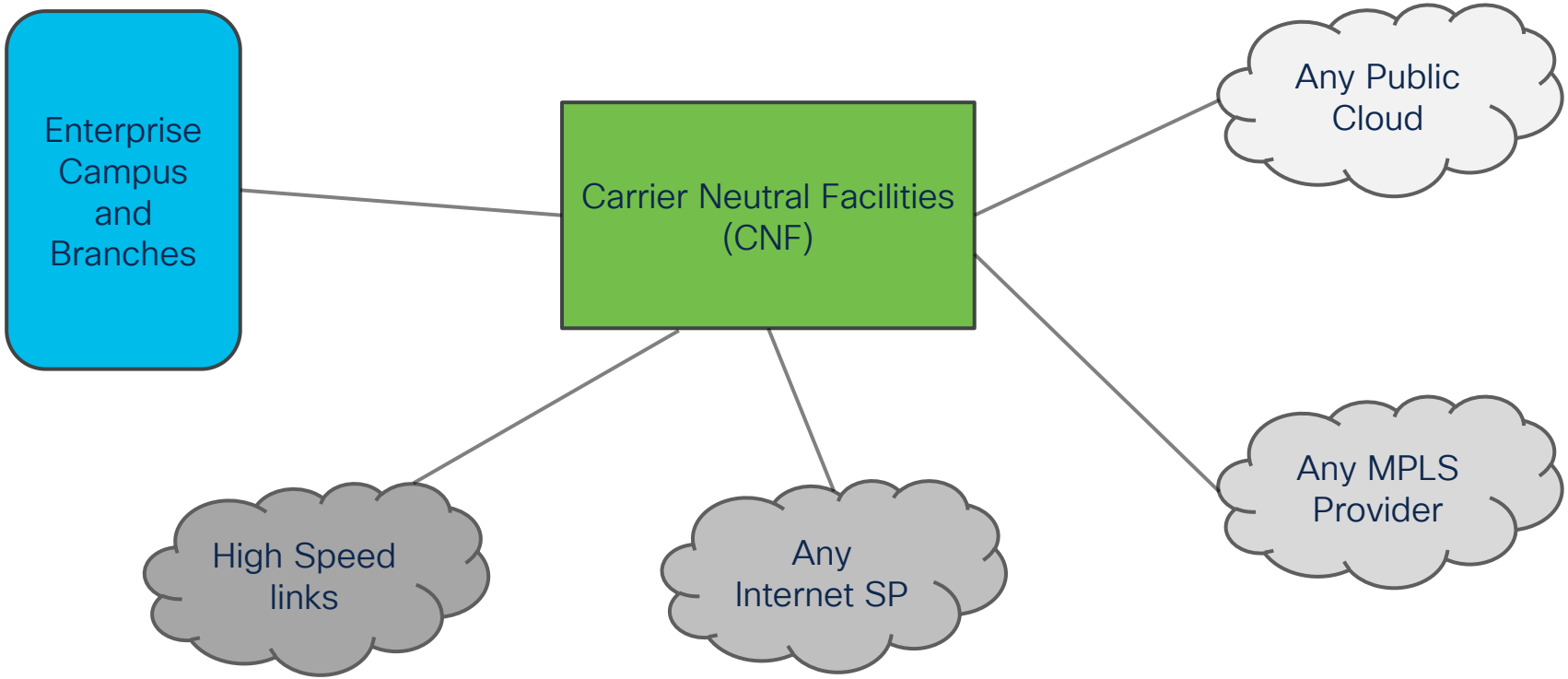
CNF's and why they are cost effective



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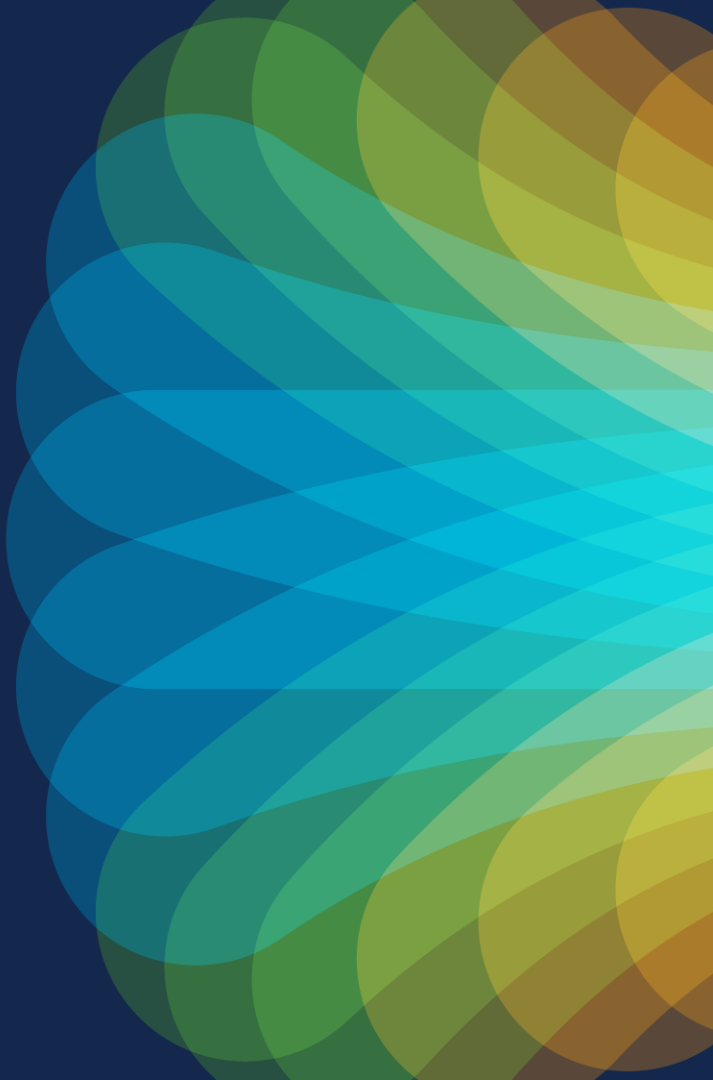
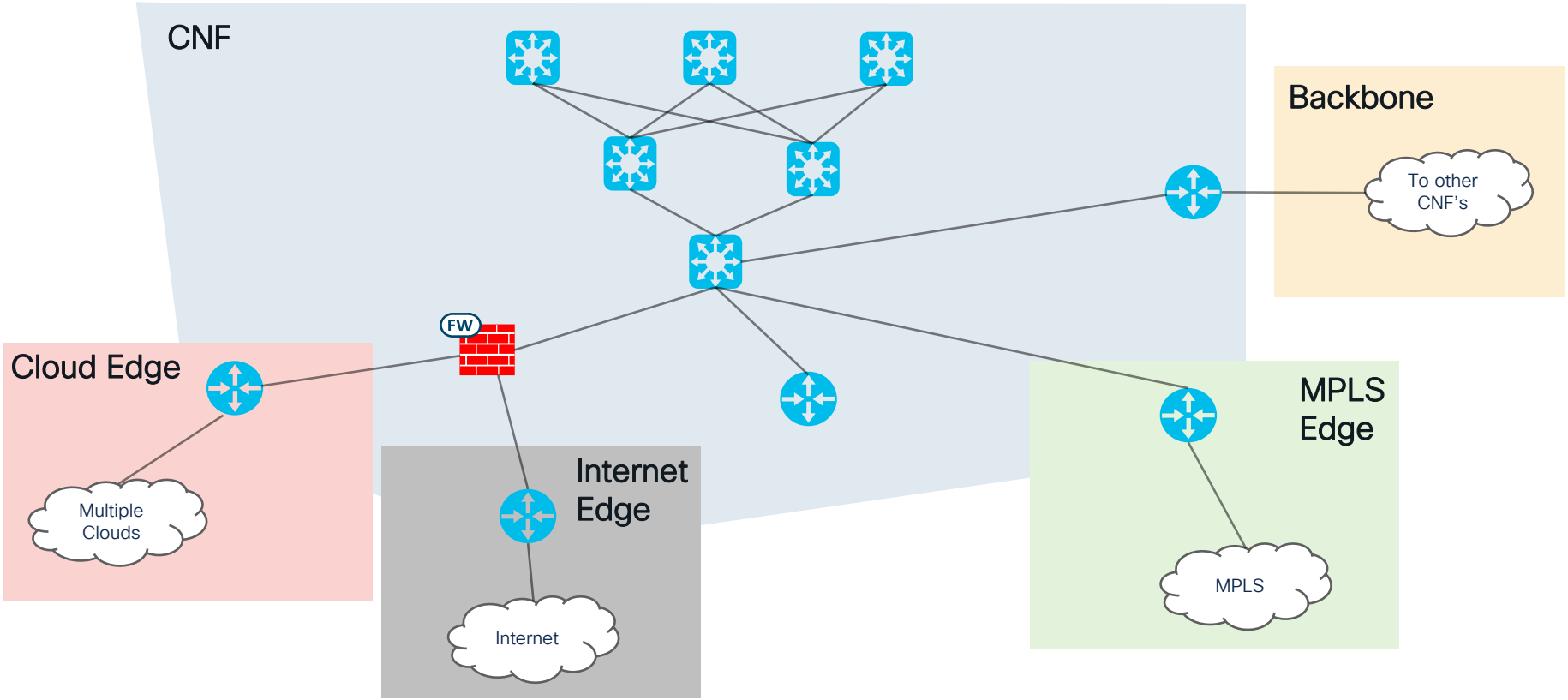
CNF Design Considerations



CNF Overall Design



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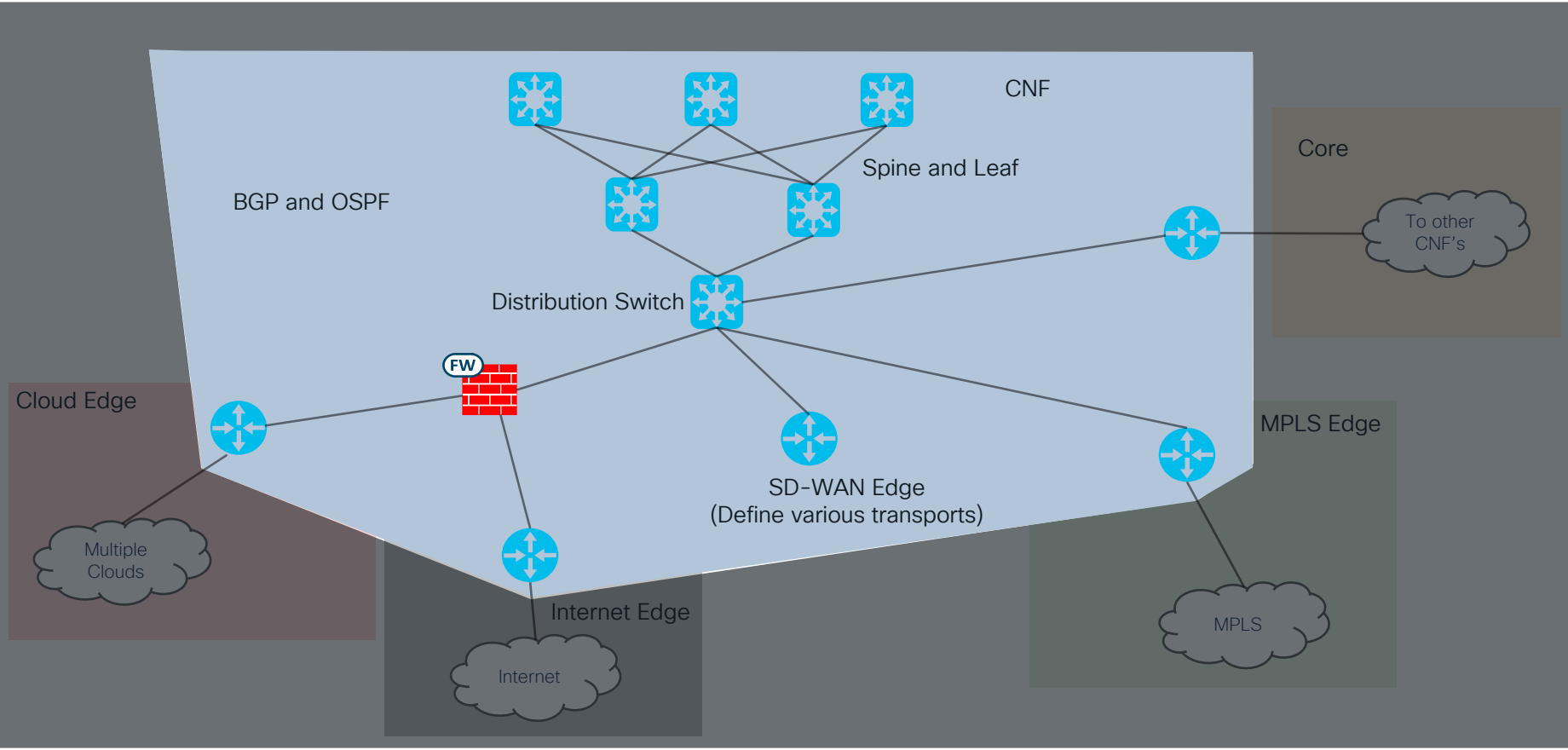
CNF Routing



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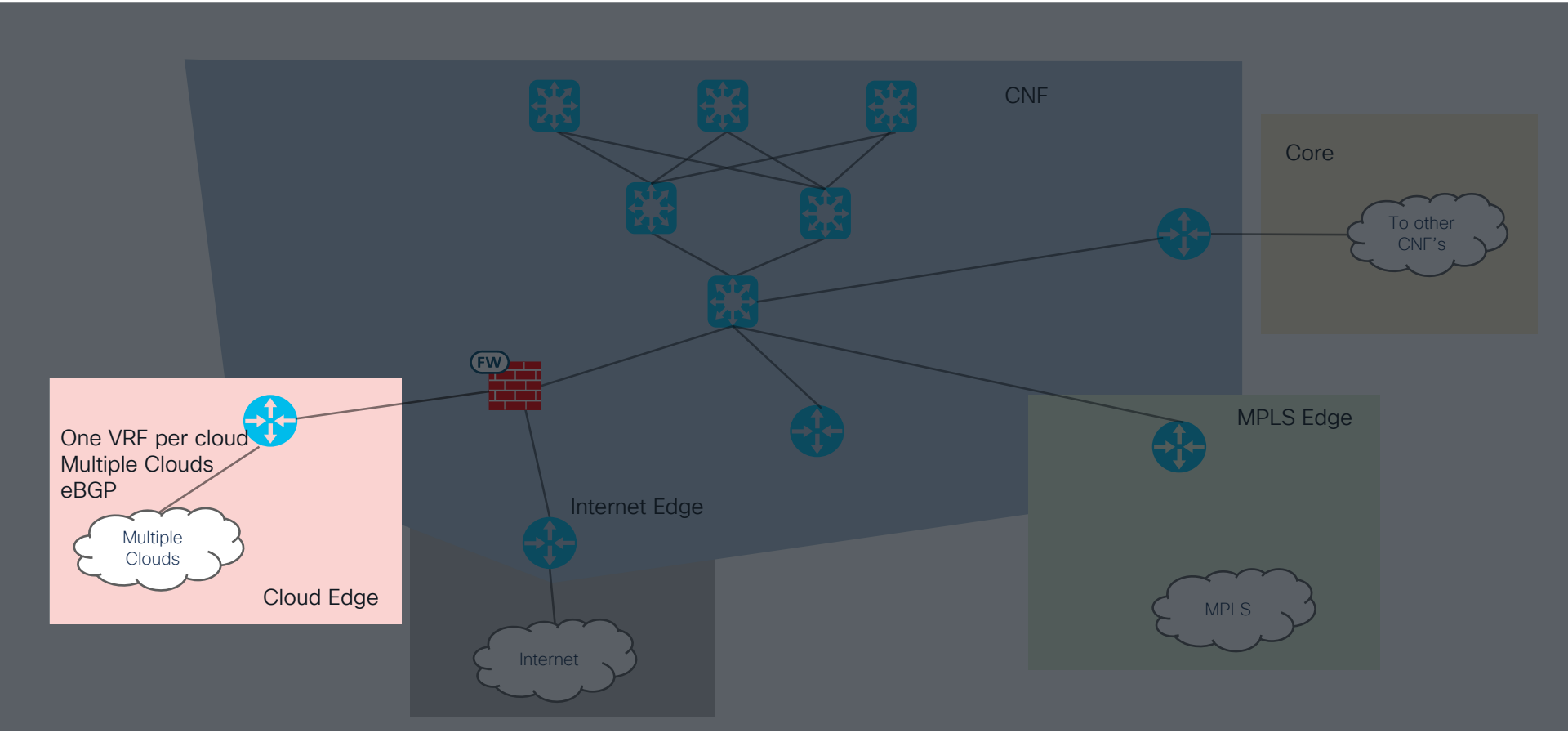
Cloud Edge



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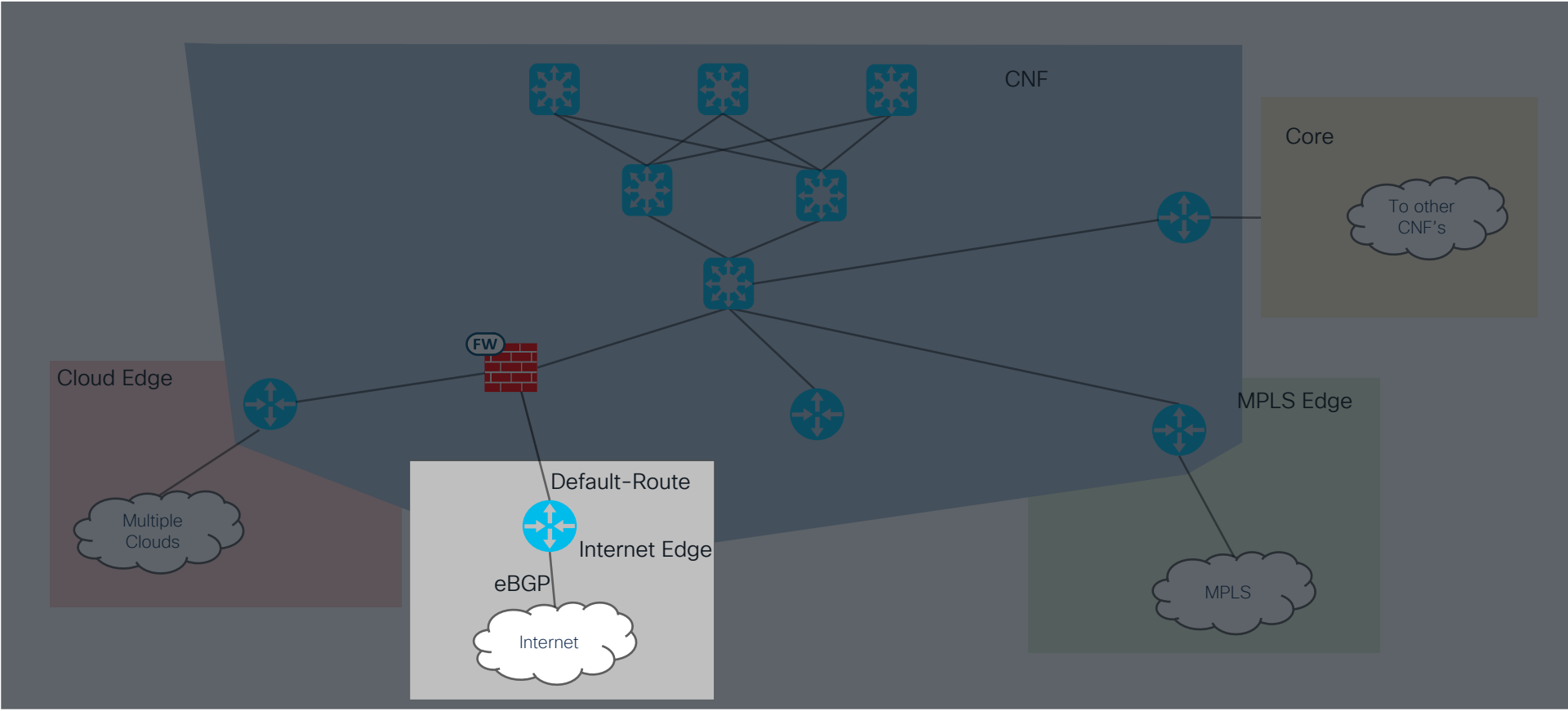
Internet Edge



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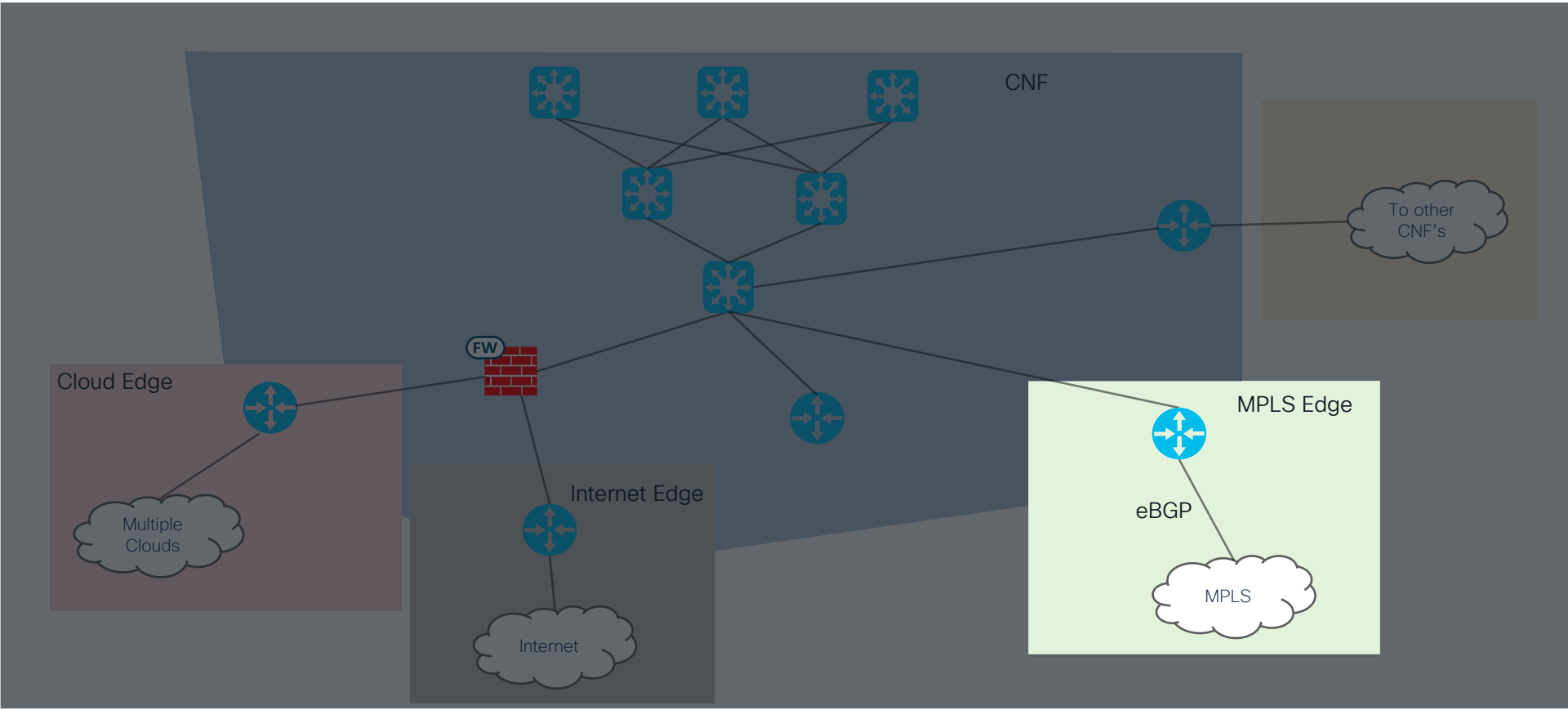
MPLS Edge



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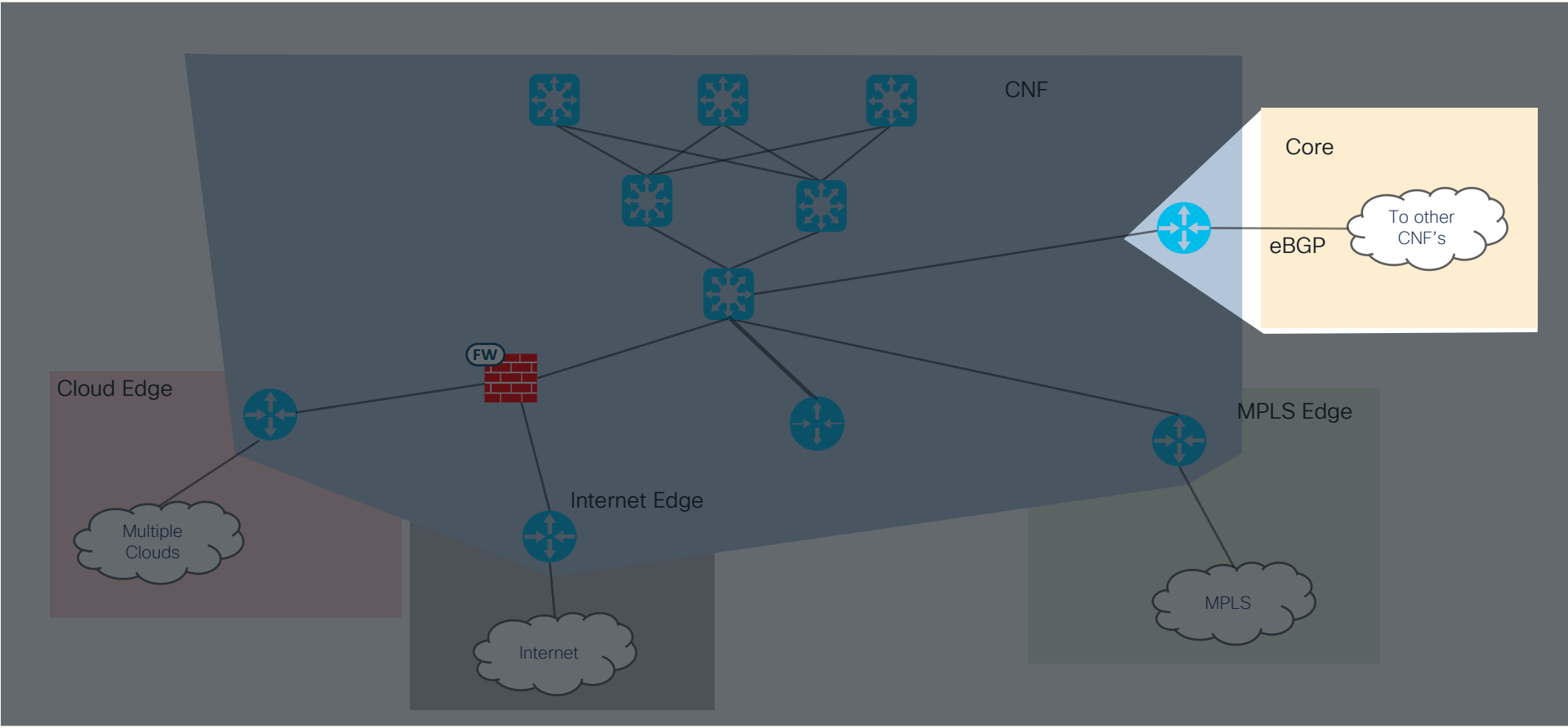
CNF Core



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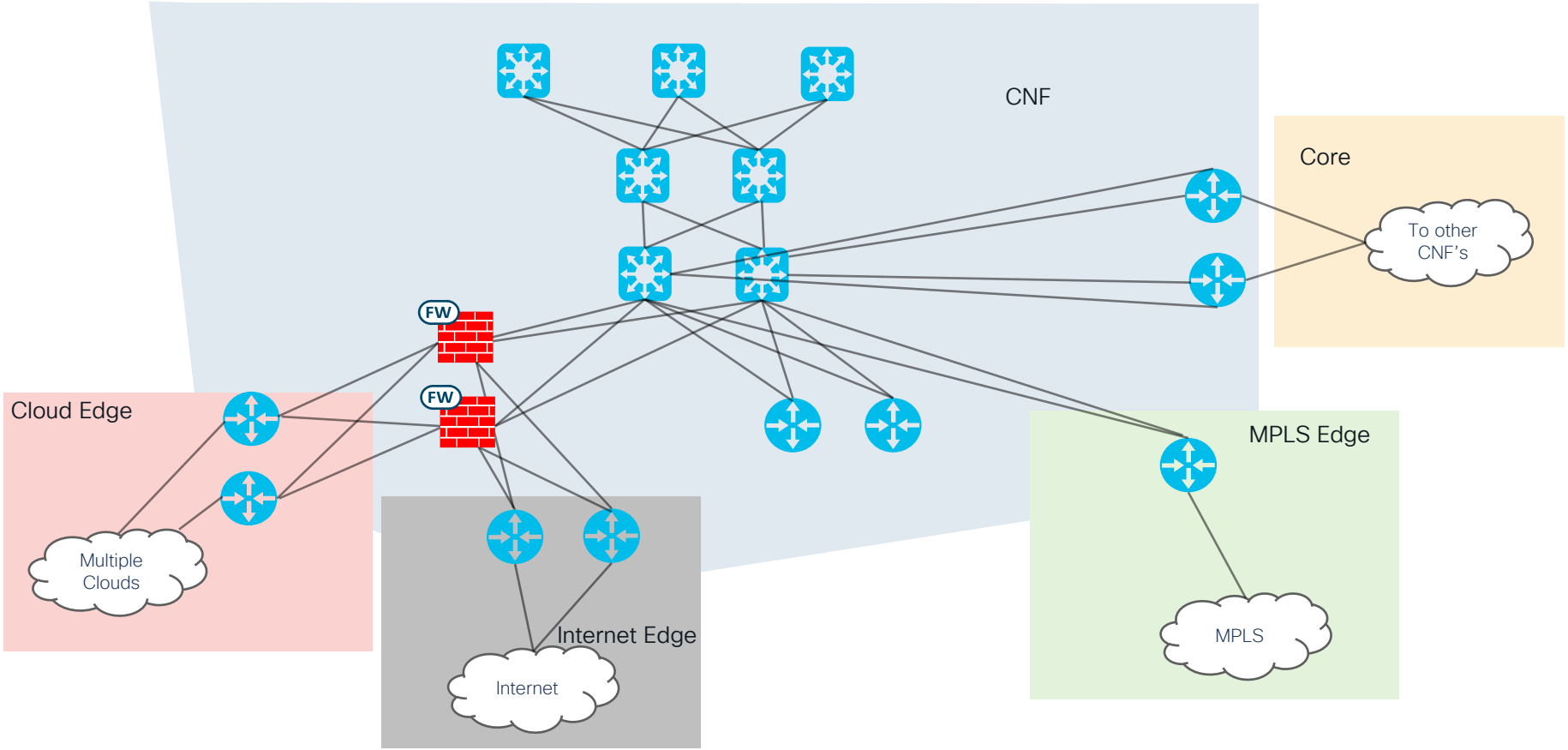
Actual CNF Deployment example

CNF Overall Design



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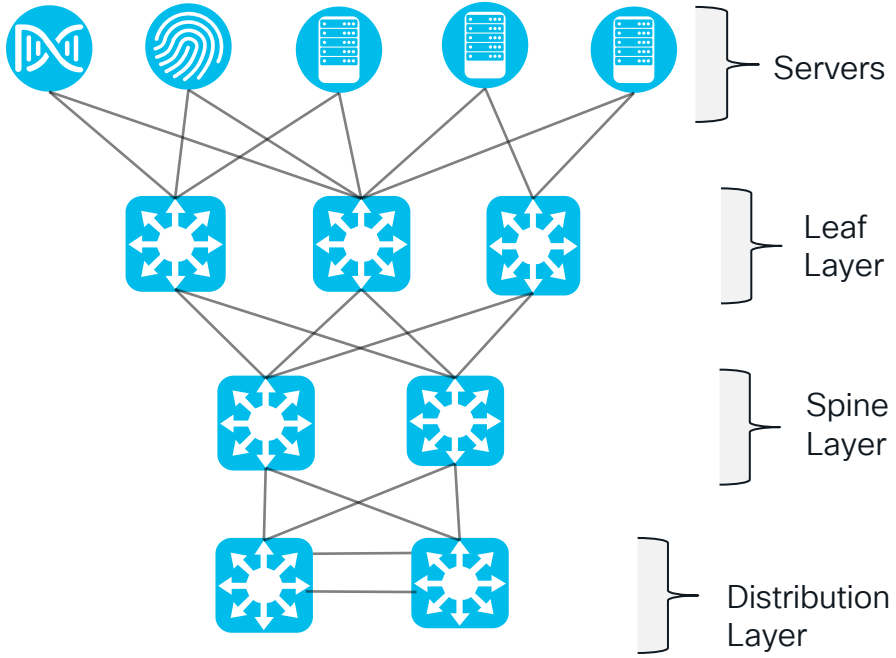
Real-world CNF analysis

CNF Core Network

- Leaf and Spine topology
- Application, Servers, AAA and other services are connected to leaf.
- SVI of VLAN's are on the spines
- Distribution layer for efficient routing between different edges
- Routing (OSPF and BGP)



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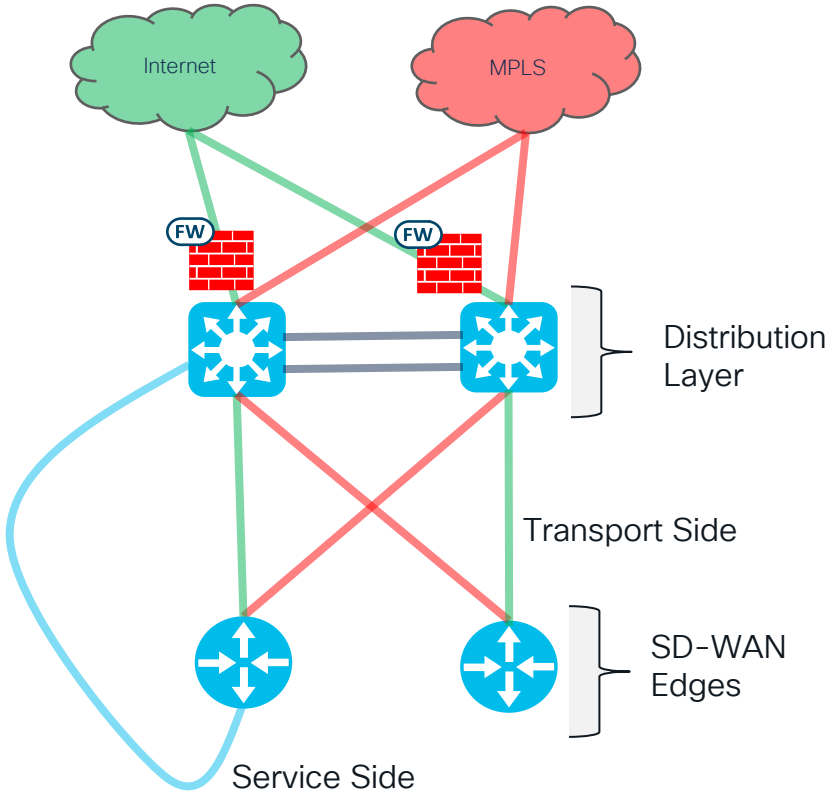
CNF SD-WAN edge devices

- SD-WAN Edges are directly connected to distribution layer.
- Various Transports (Public and Private)
- Service side is connected to WAN distributions
- SD-WAN VPN's are the key
- Routing (OSPF and BGP)



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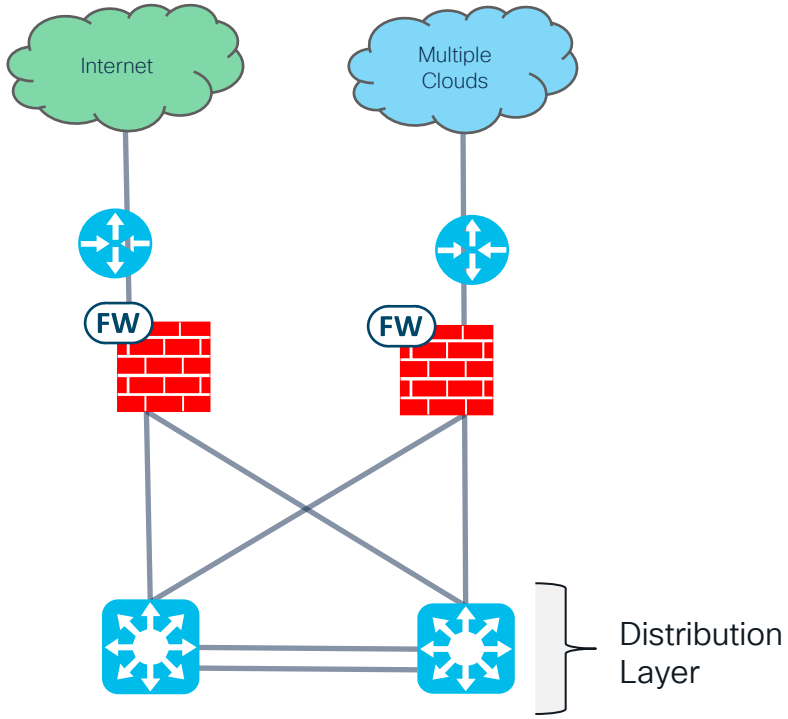
CNF Firewall Considerations

- Active/Standby firewall design
- Traffic to and from Cloud and Internet pass through firewall.
- FW's are directly connected to distribution switches
- Firewall is receiving default route from internet and advertising it towards distribution switches.
- Routing (OSPF and BGP)



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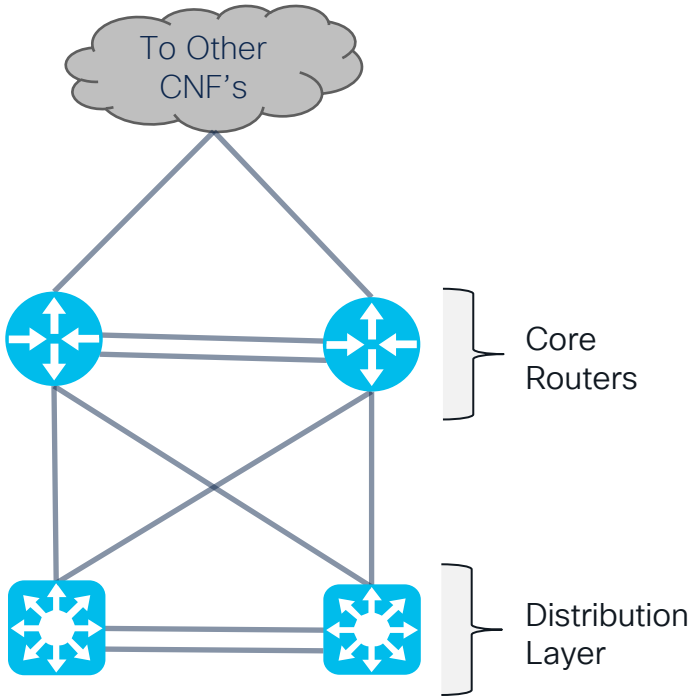
CNF Core Design (to other CNF)

- Core routers are connected to distribution switches
- Advertising only the relevant route
- Firewall is receiving default route from internet and advertising it towards distribution switches.
- Routing (OSPF and BGP)



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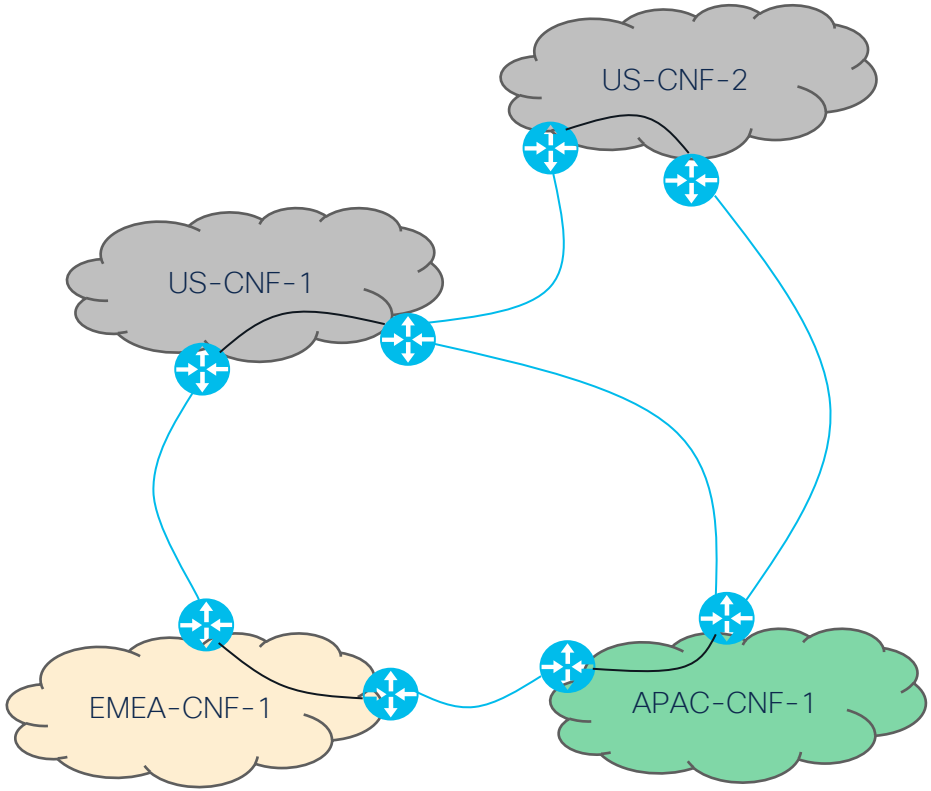
CNF Interconnection

- Connected over private10Gig links
- eBGP is running to exchange routes. Controlling and filtering routes based of BGP communities.
- Each CNF has its own MPLS, Internet and Cloud Edge



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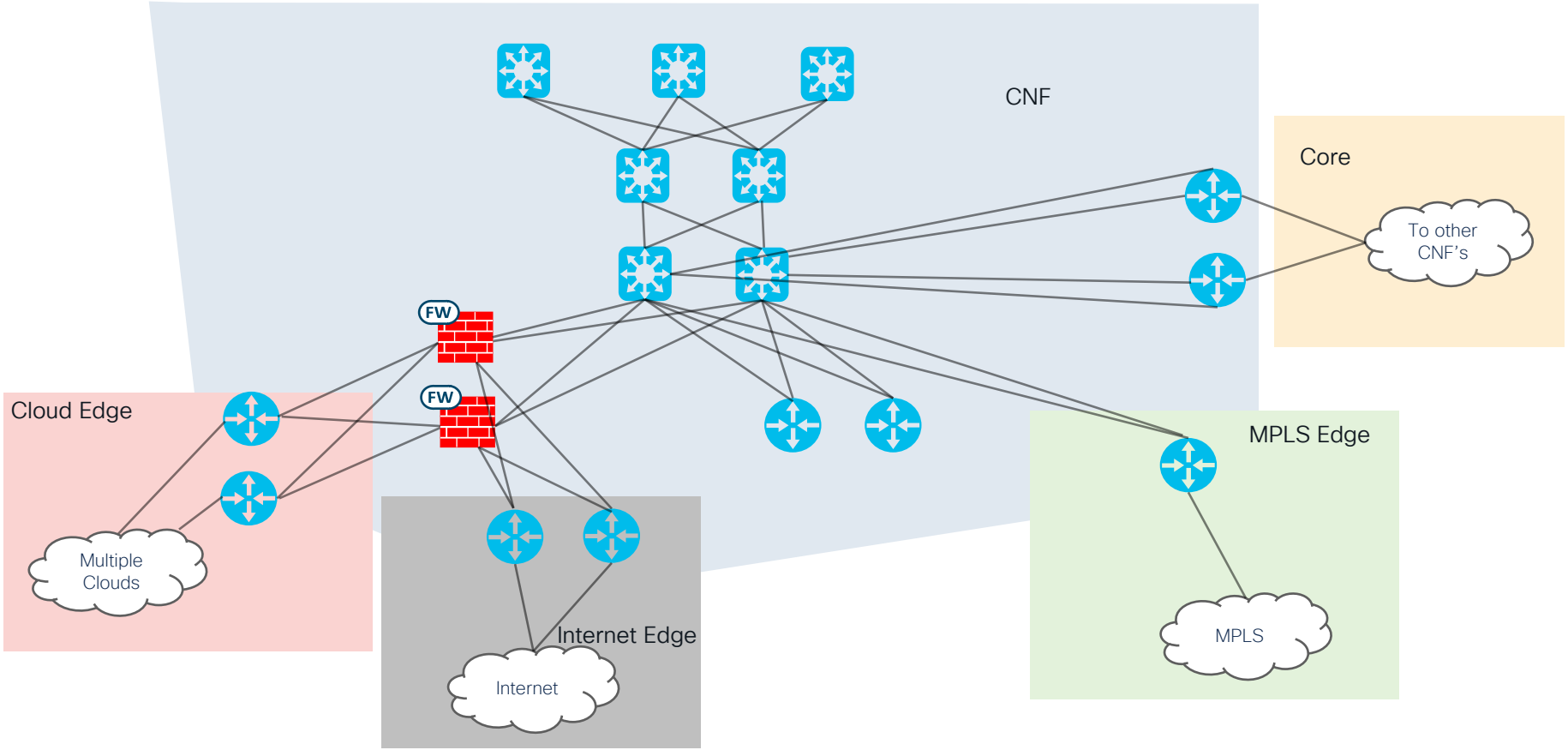
Various CNF Edges



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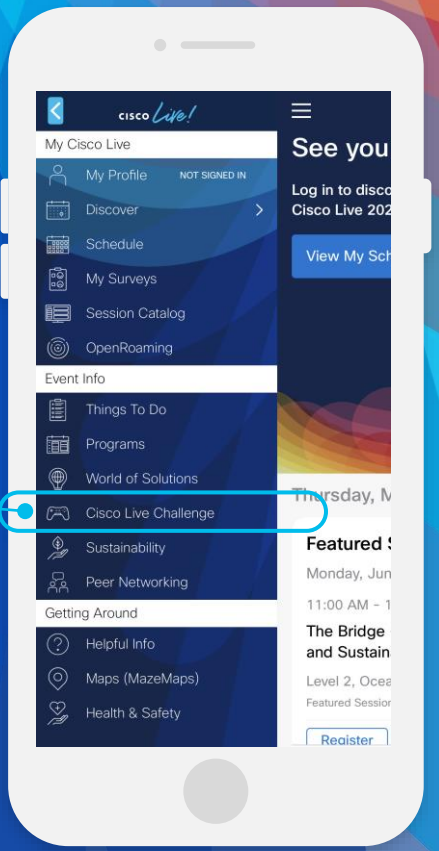

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