



# Cloud Native BNG

Cisco Knowledge Network Webinar

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- Business Context and Drivers for cnBNG
- cnBNG Solution Stack and Use Cases
- Key Takeways

# Business Context and Drivers for cnBNG

# Fixed Broadband Market Trends

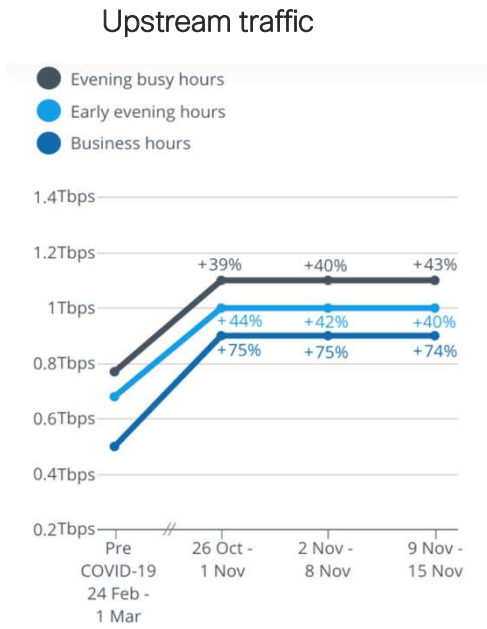
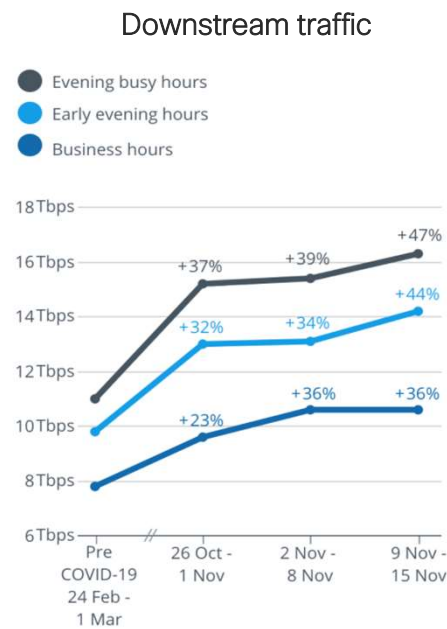
Speeds & Feeds

More Symmetric Bandwidth

Increased Service Activation

Network and Broadband Trends

## Covid19 Pandemic impacted wireline trends



<https://www.nbnco.com.au/corporate-information/about-nbn-co/updates/dashboard-september-2020>

# Fixed Broadband Market Trends

Speeds  
&  
Feeds

More  
Symmetric  
Bandwidth

Increased  
Service  
Activation

*Network and Broadband Trends*

- New Normal traffic estimates around 15-30% above the preCovid19 baseline overall, with rebalancing of traffic towards residential
- More symmetric broadband speeds due to broader usage of application with uplink bandwidth needs like video conferencing, gaming, etc.
- Increases in wireline services subscription driven by lockdowns as well as longer term work for home policies

# Architectural Shift in Subscriber Management

**Reduce OpEx:** 5x less OSS/BSS integration points • **Reduce CapEx:** 50%+ savings vs. traditional deployments

## The Shift



## The Benefits

### Reduced Transport Costs

Lower cost, higher bandwidth, simpler platforms in Aggregation/ Access.  
Offload traffic at the edge of the network

### New Services & Better User Experience

Cater for low latency services and bring edge closer to end users.

### Optimized OSS/BSS Integration

Single integration via centralized control plane significantly reduces OpEx

### Subscriber Mgmt Simplification

Single Subscriber view and orchestration across services. Unified Policy, new service offers

# Drivers for Subscriber Management Convergence

User Experience

New Revenue

## Multi access

- Bandwidth Augmentation
- Active standby (Radio / Fixed network)
  - ✓ Seamless transition
  - ✓ Differentiated services

## Fixed Wireless Access

OpEx Benefits

Convergence

## Application level

- IT / Backend systems convergence  
(Policy layer, Service Assurance)

## Network level convergence

- Combined Transport network
- Combined Packet core, single breakout to internet

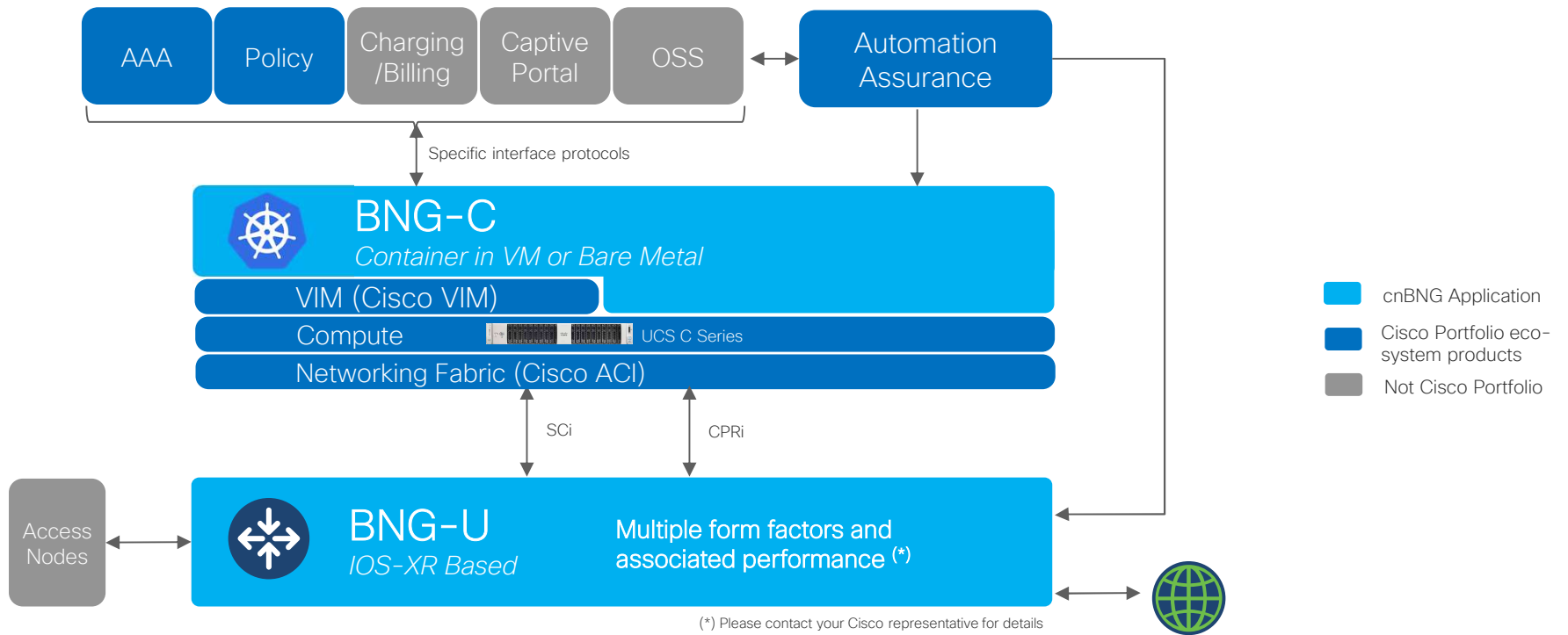
# Cloud Native BNG – Key Themes



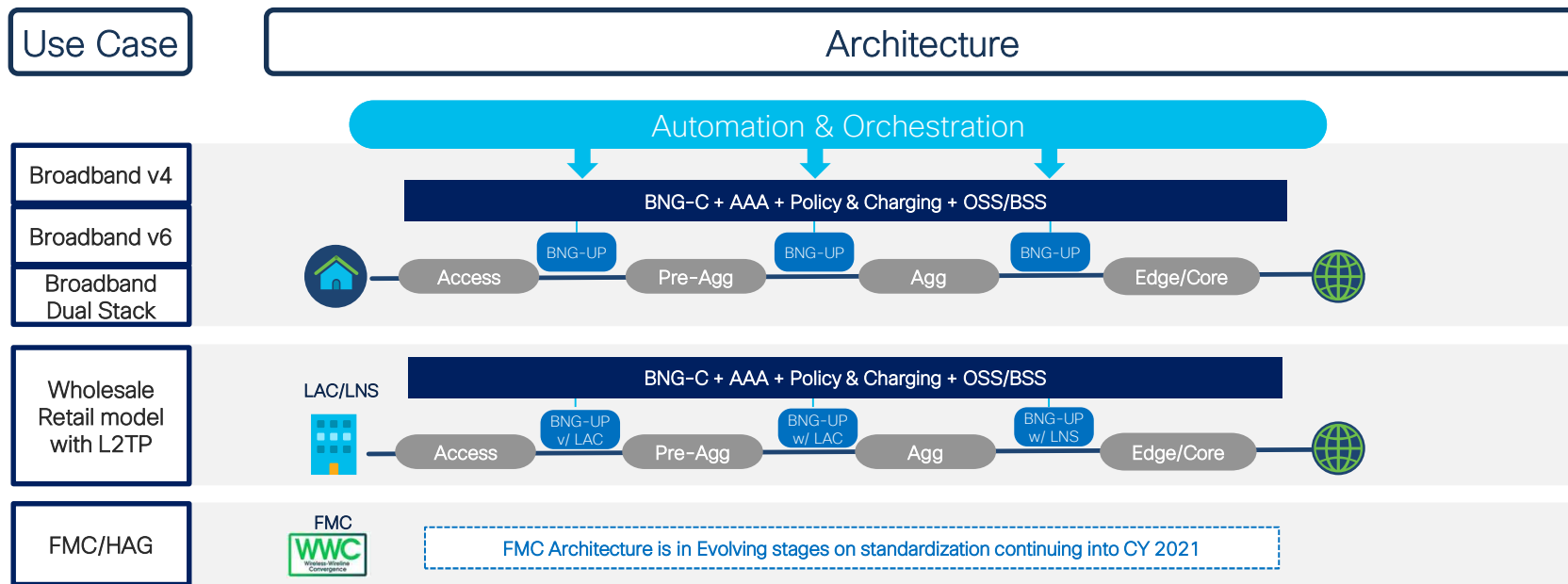


# Use Cases and Solution Architecture

# Cisco cnBNG Architecture Overview

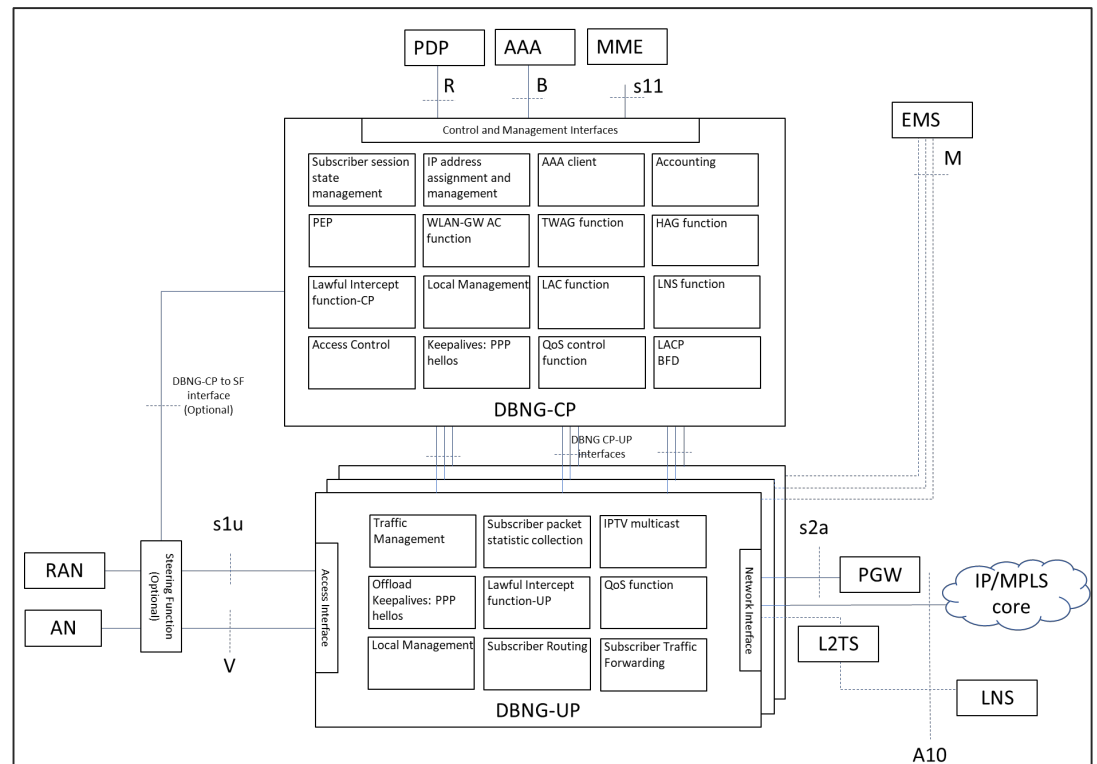


# Use Case and Architecture Mapping



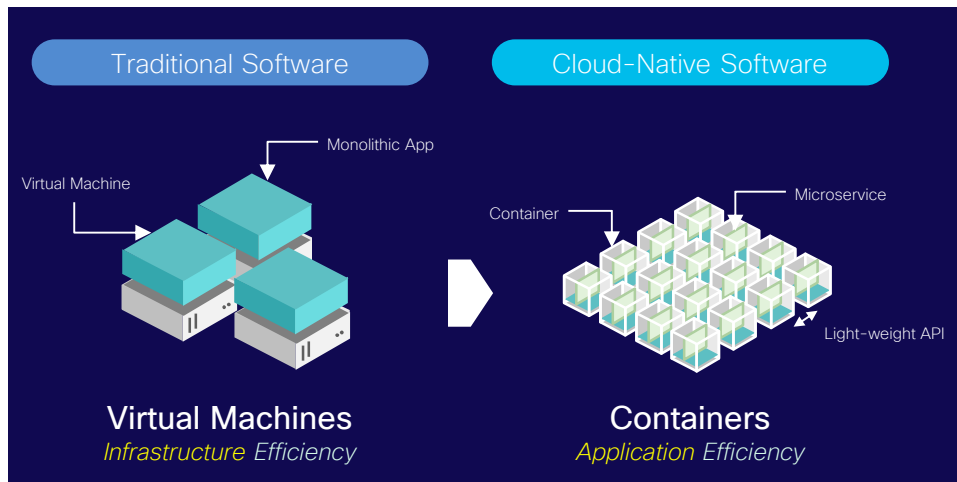
# Cisco cnBNG and Standardization

- Cisco CN-BNG is aligned with TR-459 (CUPS for Disaggregated BNG)
- TR-459 is Broadband Forum standard for BNG CUPS
- TR-459 defines architecture and interfaces between CP and UP
  - Management Interface (Mi)
  - Control Packet Redirect Interface (CPRi)
  - State Control interface (SCi)



Source: Broadband forum TR-459

# Cloud Native Control Plane: Benefits

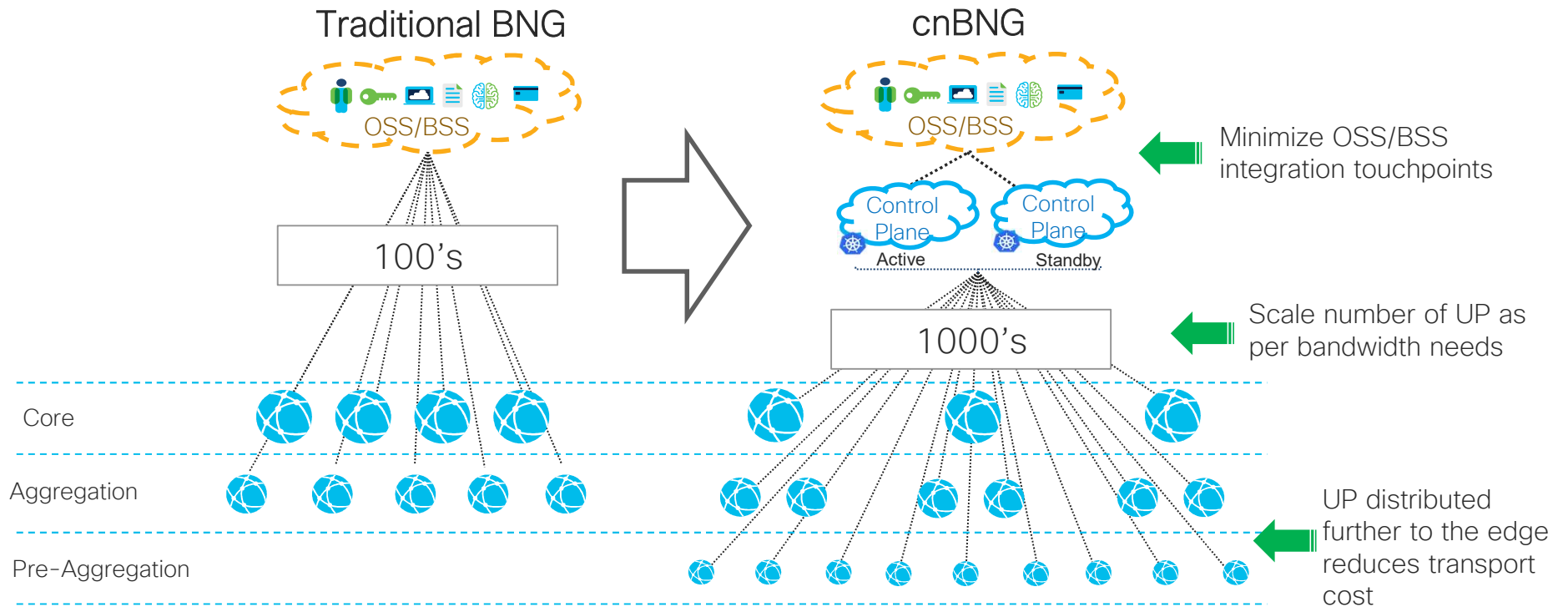


*Cloud native computing uses an open source software stack to deploy applications as microservices, packaging each part into its own container, and dynamically orchestrating those containers to optimize resource utilization.*

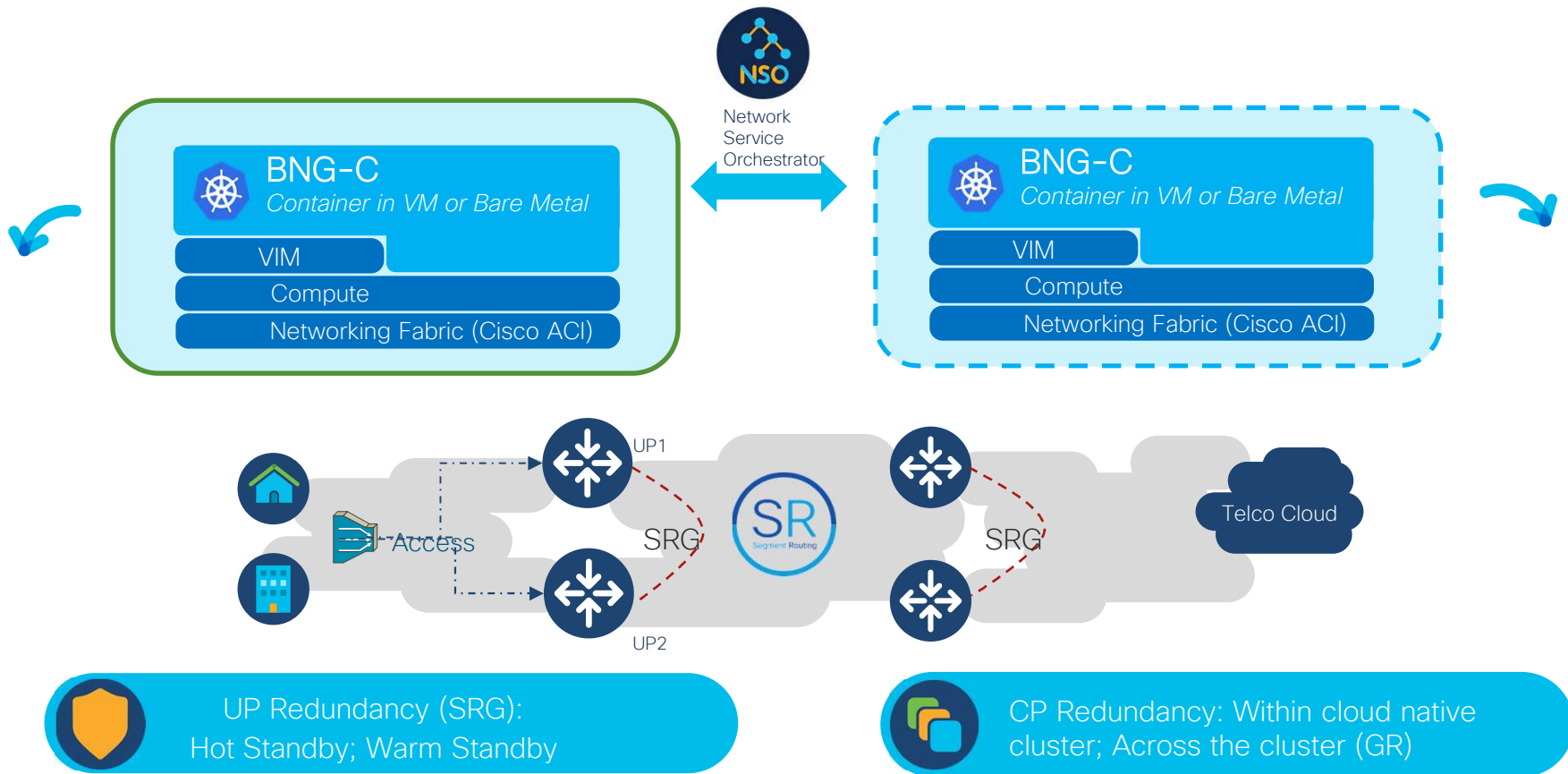
-CNCF

- **State separation**  
Session state deployed in separate containers enabling simplified scalability and availability of application services
- **Lightweight Footprint**  
Container startup times in seconds as opposed to minutes for VMs. Deploying patches and upgrades target only updated containers.
- **Elastic Scalability and High Availability**  
Dynamic scheduling of containers enables for simplified scale up/down of each individual service. Lightweight stateless containers can be more quickly detected and recovered.
- **Highly Portable**  
Container technology encapsulates the program and its dependencies to enable portability across bare metal and virtual machines running on public and private clouds.

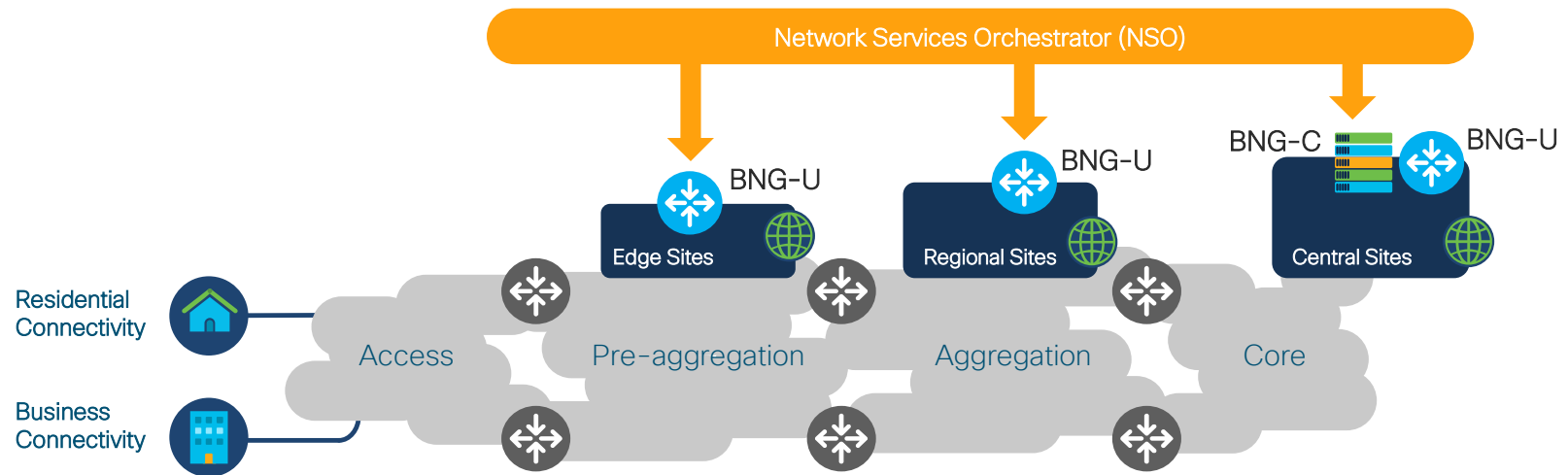
# Flexible Scaling



# cnBNG Subscriber Redundancy



# Operational Simplicity with Automation








- Automation and orchestration key for services with agility and cost efficiency
- Cisco cnBNG leveraging market leading and field proven orchestration Cisco NSO
- Cisco Cloud Native framework is blended into the automation stack for the start



# Key Takeaways

# Key Takeaways

-  Fixed Broadband traffic trending upwards in post pandemic New Normal with changes in usage patterns
-  New BNG solution architecture needed to address efficiently the capacity increase, new services while maintaining operational simplicity
-  Cisco brings cnBNG as a complete solution stack with truly cloud native Control Plane and integrated to automation framework
-  Cisco cnBNG includes wide choice of User Plane platforms to suit with increasing distribution to the edge
-  Cisco cnBNG makes customer ready for convergence of subscriber management layers in fixed and mobile.

## Physical BNG References

- Tier 1 Service Providers
- Cable MSO
- Cloud Service Providers

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300+

BNG Customers

A blue circle containing the text "80M+" in white. The background of the slide features a blurred image of server racks in a data center.

80M+

Subscriber Sessions

