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TECH FORUM 23



Where Is the Industry Headed?

A Discussion of Future Trends

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Challenges Facing the Industry Today

Holding your Serve

- Running a profitable, reasonable margin business
- Maintaining customer experience and reducing churn rate
- Keeping up with regulatory mandates and security threats
- Finding skilled talent to run networks at carrier grade resilience

Breaking the Opponent's Serve

- Competing against the velocity and efficiencies of cloud hyper-scalers
- Launching new revenue generating services quickly
- Making sense of vast amounts of data being collected



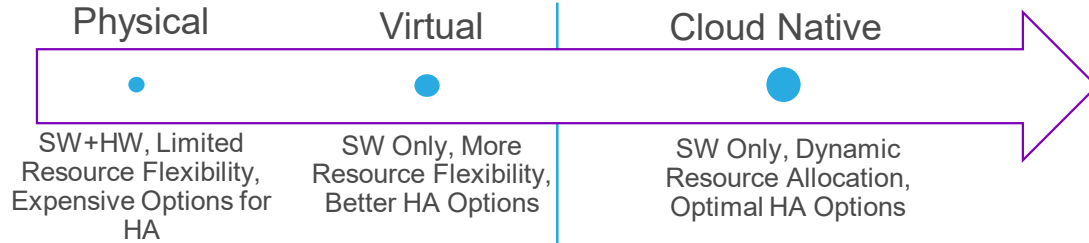
Challenges = Opportunities

- Move to a Cloud-Native world
 - Does it apply to Telco networks
 - Do I need to look at this in the short term?
 - What are the benefits?
- AI for Operations (AIOps)
 - Is this real?
 - What are carriers doing in the real world?
 - What are the use cases

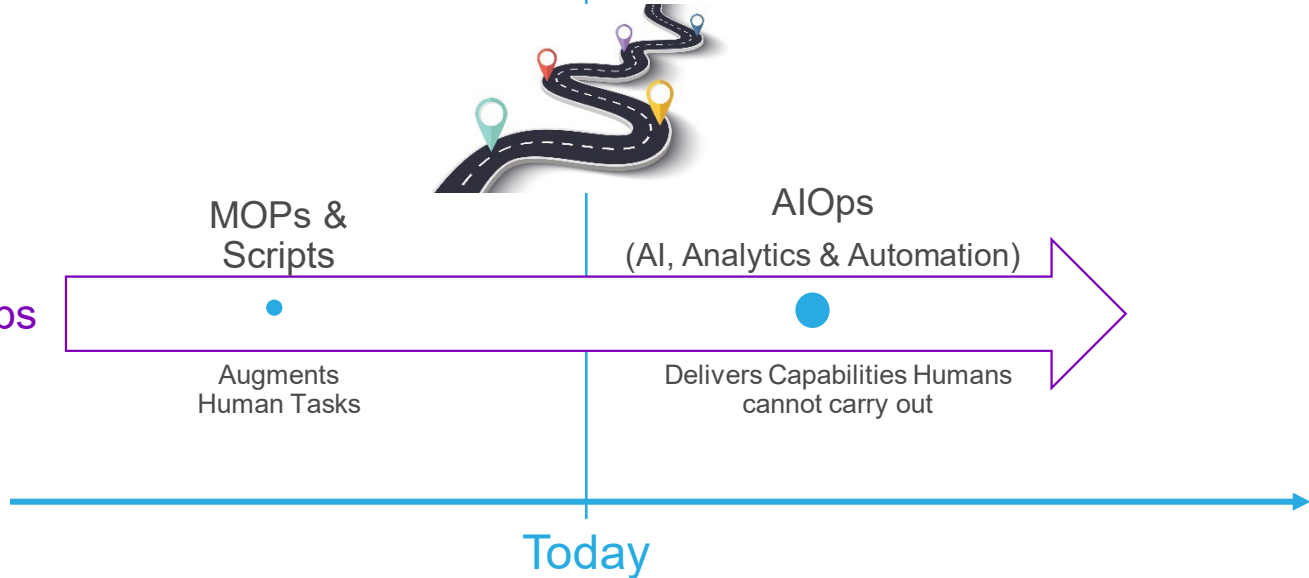


Where Are We Headed

From Virtual to Cloud Native



Adoption of AIOps



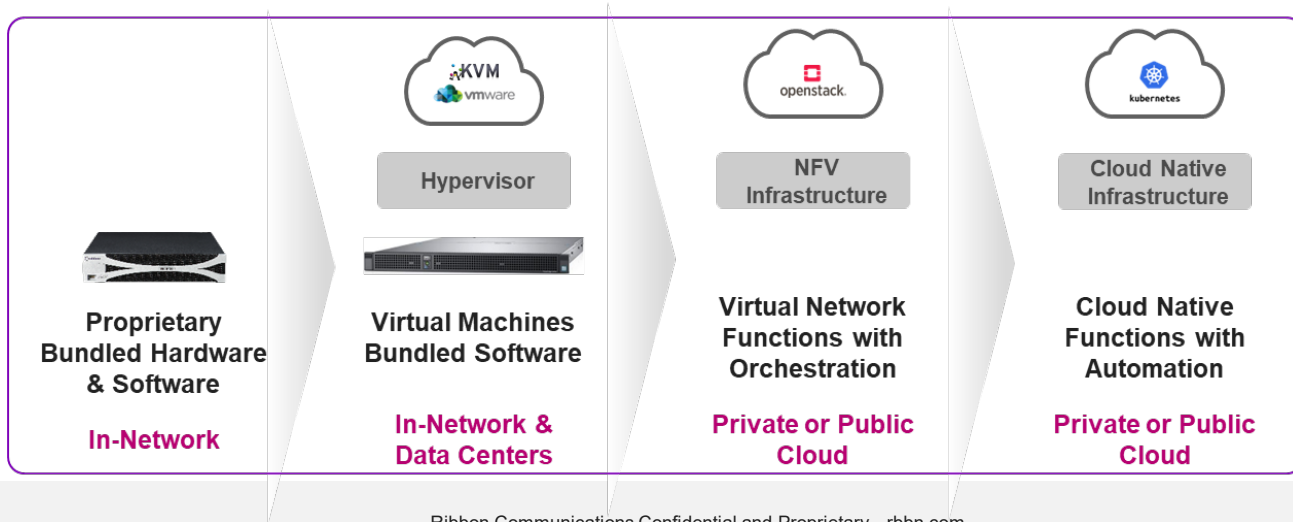
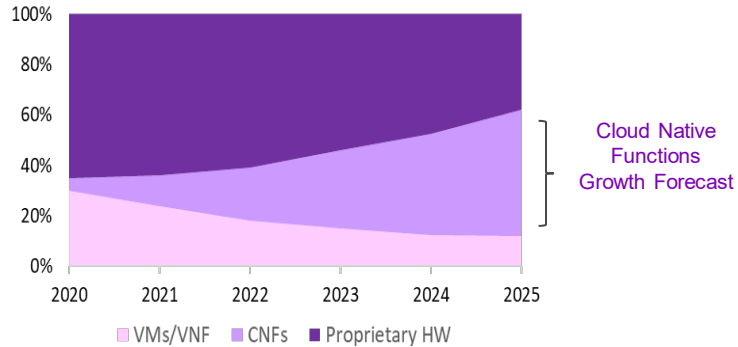


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From Virtual To Cloud Native

A Continuous Evolution For Network Functions



Benefits of Cloud Native Architecture



Microservices

- Independent lifecycle management of components
- Easier to incrementally add new functionality
- Granular Scale In and Scale Out capabilities

- Faster Upgrades
- Launch new services quickly
- Lower OpEx



Canary Upgrades

- Graceful and Controlled transition to new software
- Rollback as needed

- Automation
- Outage Risk Mitigation
- Lower OpEx



Optimal High Availability

- Stateless Workers and Shared Stateful Data

- Lower CAPEX, OpEx
- Targeted Scaling

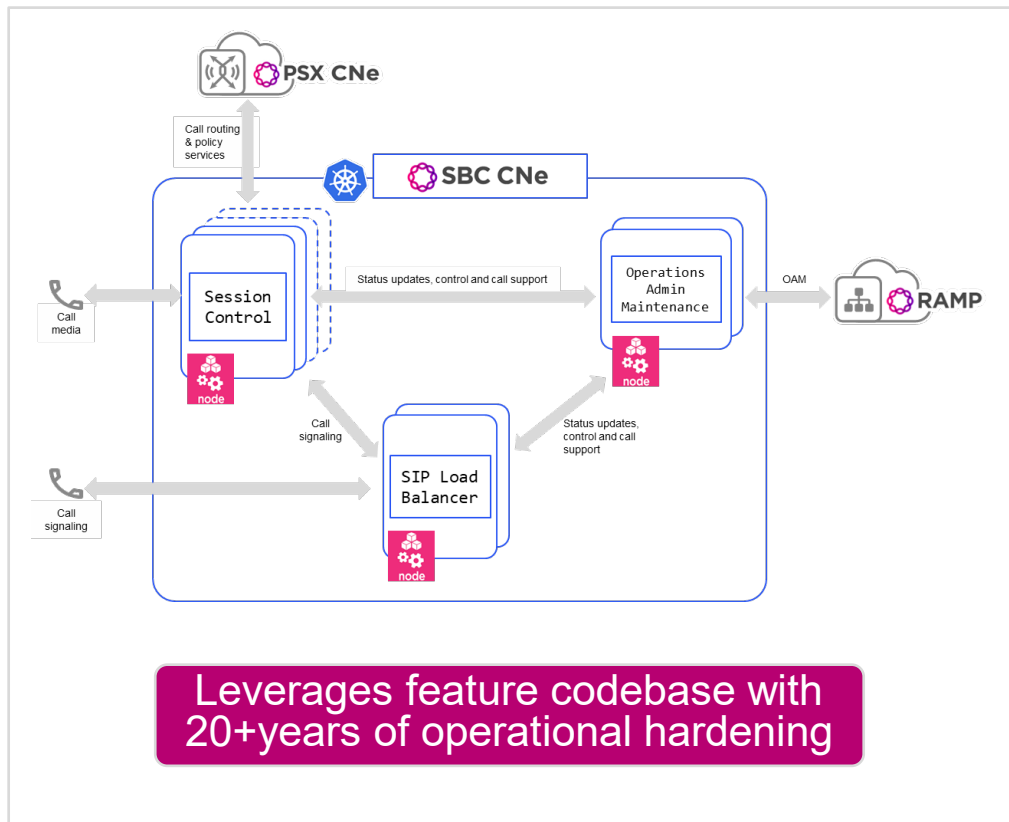


Platform

- Kubernetes for lifecycle management
- Architecture is ideally suited for CI/CD
- Flex deployment: On Prem, Cloud, Hybrid

- Lower CAPEX, OpEx
- Automate to Compete
- Investment Preservation

Ribbon Cloud Native Network Functions



Cloud Native Design

- Microservices, Automation, Observability, DevOps
- Integrated with PSX CNe for routing
- Integrated with RAMP for management

Cloud Native Environment

- Containers
- Kubernetes R1.23 or above

The logo for Ribbon Tech Forum 23. The word "ribbon" is written in a lowercase, rounded, pink-to-purple gradient font. Below it, the words "TECH FORUM 23" are written in a white, uppercase, sans-serif font inside a blue-outlined rectangular box.

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Adoption of AIOps (AI, Analytics & Automation)

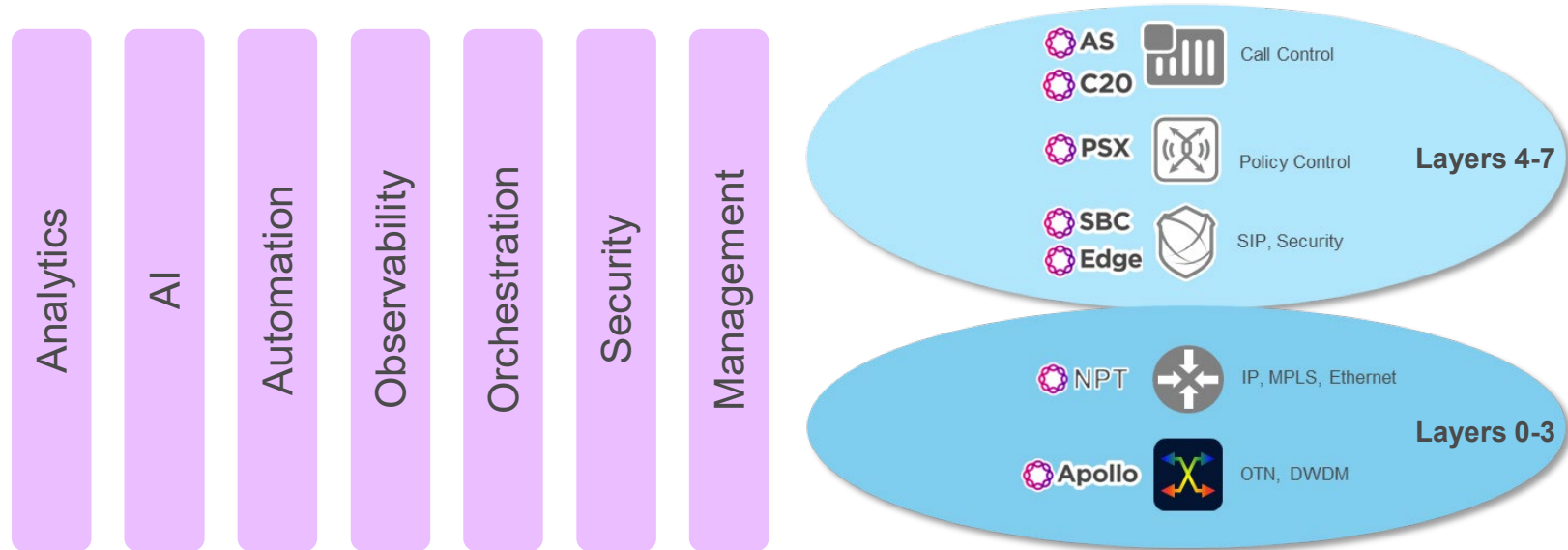
AI for Operations

- AI Ops – *applying analytics and automation, enabled by artificial intelligence (AI) and machine learning (ML), across network operations*
- Analytics
 - Tons of data available in customer networks. Meaningful insights need to be derived.
 - Insights help with End-to-End Observability, Troubleshooting, Network Planning, Fraud Mitigation, Energy Efficiency Improvements, Customer Sat and Churn Management and much more
- Automation
 - Data analysis and learning can help with automating key network functions like Testing, Provisioning, SLA Management



Ribbon's Architecture for AI powered Operations

Unified Management, Analytics & Automation Plane

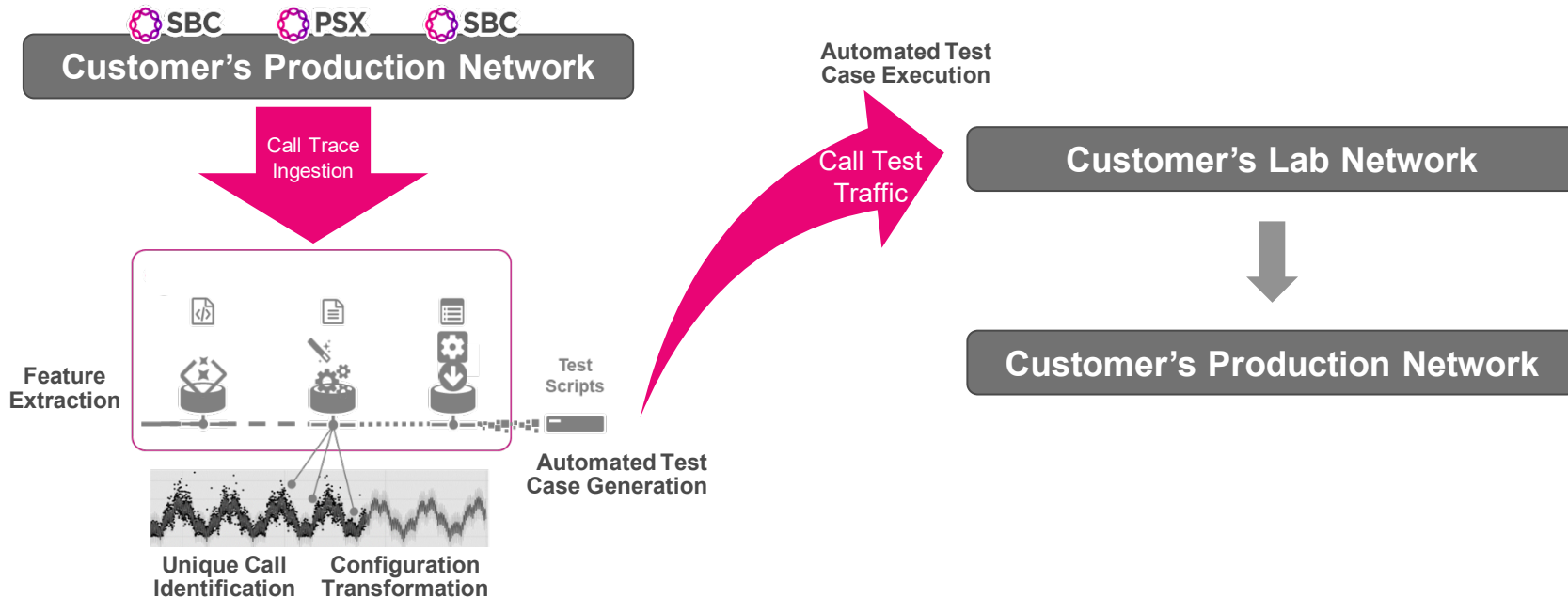


CNF

VNF

PNF

AIOps – Ribbon Automation

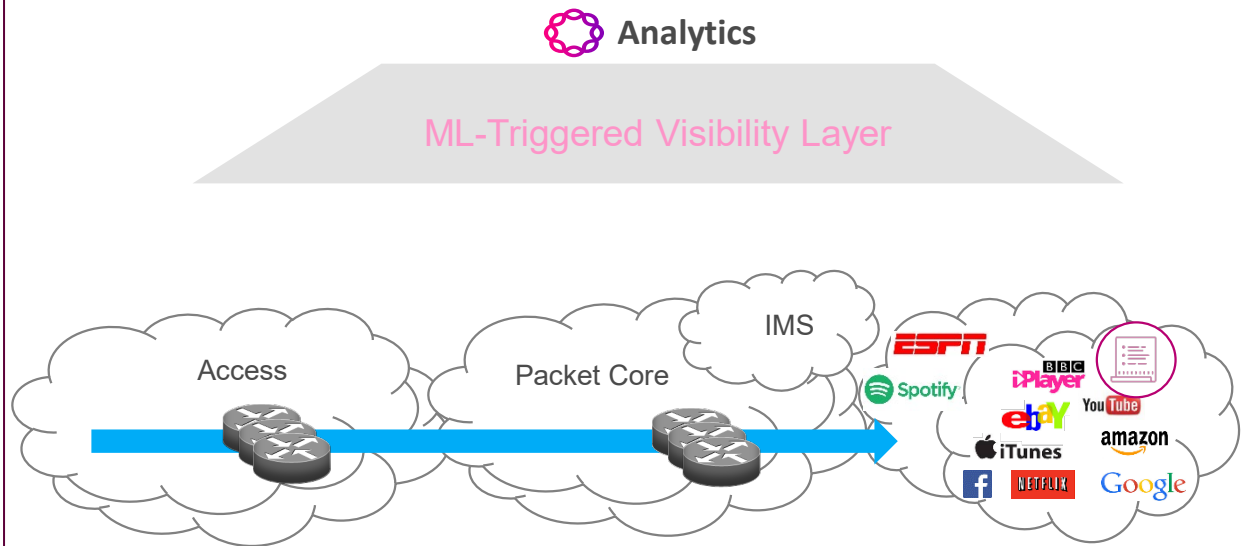


- A reliable model to learn & replicate a customer-specific network
- Better test coverage and execution
- Repeatable upgrades with less errors



AIOps – Ribbon Analytics for Observability and Actions

- Integrate across mobile and fixed domains
- End to End Observability → Access to Packet to Data/Voice
- Proactive Root Cause Analysis and Mitigation with reduction in probe costs
- Aids orchestration and efficient use of resources





Summary

What is Needed to Make the Transition to the Future

- Executive buy in and top-to-bottom, left-to-right mindset alignment
- Bite-size changes → AIOps can be adopted in current PNF/VNF networks
- Learning new technologies and skills
- Dedicated Time and Resources

Summary and Actions

- Move to a Cloud-Native mindset and plan is paramount to success
- Adopting AIOps in small chunks building towards a broader vision, is necessary to stay relevant
- Automate, Automate, Automate – oh did I forget something – **AUTOMATE!**
- Speed, Scale and Resiliency are hallmarks of future networks
- **USE DATA** to monetize, improve customer sat, stay on top of security threats





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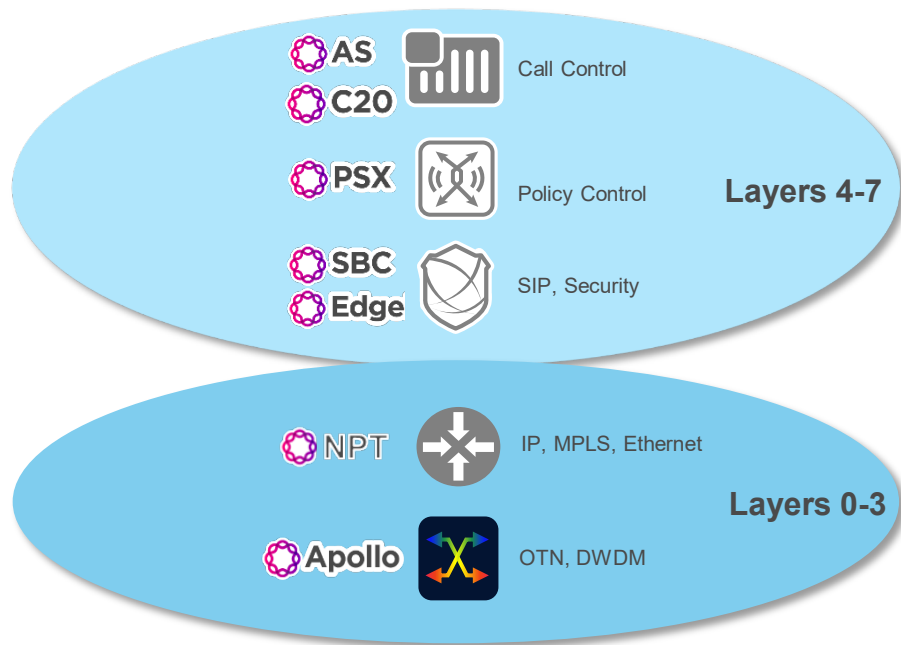
Backup

Additional Resources

- [Enabling Cloud-Native Voice for a Cloud-First Service Provider](#)

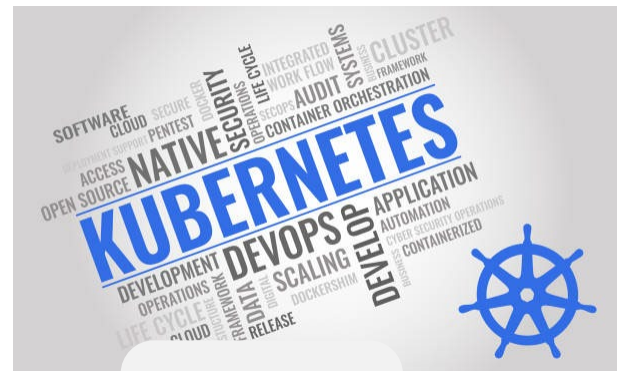


Other links
for RA-
MPC, LEAP



Examples of Cloud Native Attributes Delivering Business Value

- **Microservices design**
 - Easier to incrementally add new service capabilities
 - Increases high availability and resiliency options
- **Kubernetes orchestration for lifecycle management**
 - Dynamic allocation and more efficient use of resources
 - Reduces network infrastructure budgets
- **Automation of operational processes**
 - Reduces costs and simplifies workloads for limited staff



Ram is working