



The Enterprise Use Case

Amar Kapadia, Brandon Wick, Aarna Networks

 **OPENFLOW** NETWORKING

 **THE LINUX** FOUNDATION

Nephio Can Already Address the Enterprise

- Nephio is very effective for enterprise use cases in addition to telco
- Related, Nephio can orchestrate and manage cloud native applications in addition to xNFs

Nephio's goal is to deliver carrier-grade, simple, open, Kubernetes-based cloud native intent automation and common automation templates that materially simplify the deployment and management of multi-vendor cloud infrastructure and network functions across large scale edge deployments. Nephio enables faster onboarding of network functions to production including provisioning of underlying cloud infrastructure with a true cloud native approach, and reduces costs of adoption of cloud and network infrastructure.

Proposal: Create an Ad-Hoc Enterprise Group

- Align with “hot” use cases and/or
- Align with “hot” communities

Hot Use Cases

- LLM Orchestration
- Security Orchestration (AccuKnox)
- Process automation (Ubicity)
- IoT (MicroShift/Portainer/K0s/K3s)

Hot Communities

- OpenTofu
- L3AF

LLM Orchestration

LLM Orchestration e.g. Llama2 using a consistent API

Network Services e.g. Cloud data sources, SD-WAN PoP

Infra Orchestration e.g. Compute (bare metal or VMs), Storage, Kubernetes Cluster

LF AI & DATA Synergy?

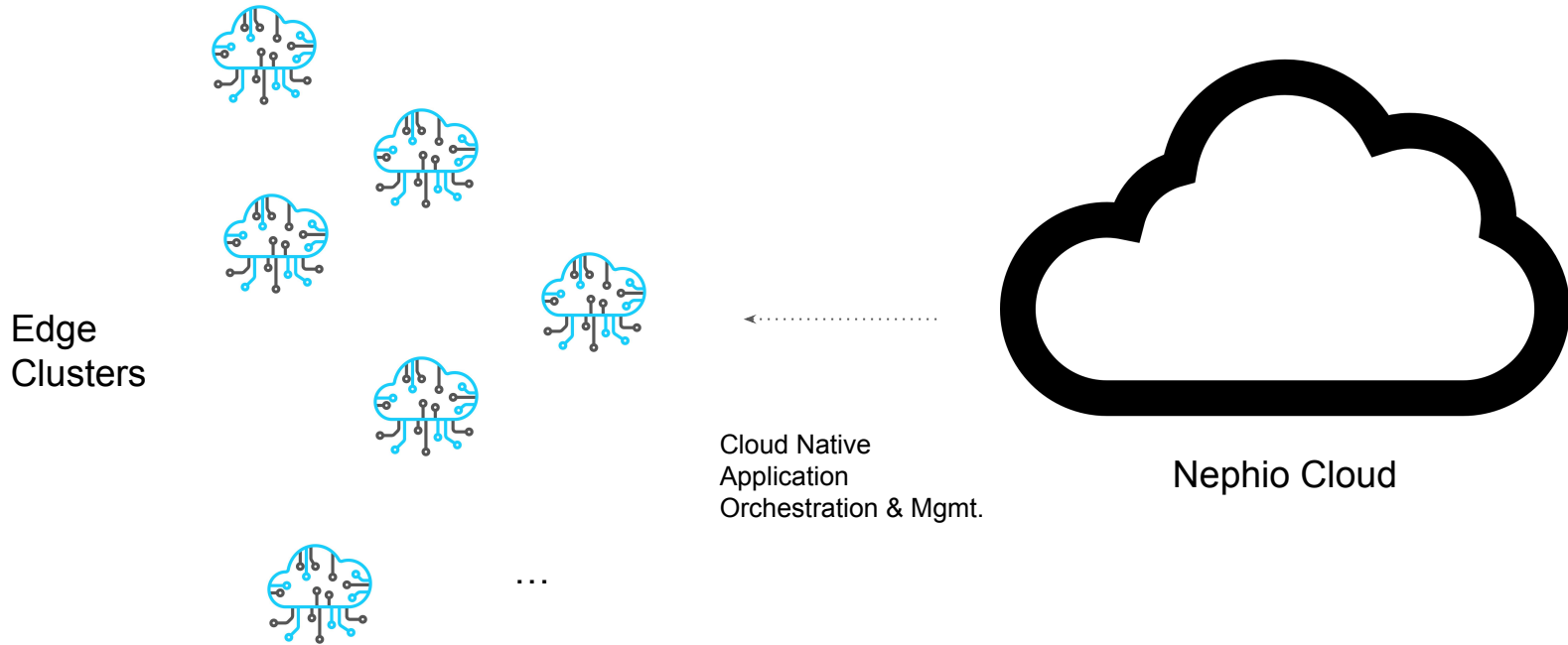
Security Orchestration (Accunox)

- Securing 'Cloudification' of 5GC & RAN deployments in Public/Hybrid Cloud
 - Continuous SBOMs, microsegmentation, k8tls, etc
- Securing 5G Network Functions
 - K8s hardening, vuln. scanning, SBOMs, RBAC, least privilege, monitoring/logging and auditing
- Securing Edge deployments from distributed attack vectors
 - Process whitelisting, microsegmentation, file integrity with latency control
- Securing O-RAN open fronthaul
 - MobiFlow Auditor records L3 protocol state transitions & base stations aggregate statistics and a Security focused Service Model (secSM)

Security Orchestration (Accunox)

- Securing O-RAN nearRT-RIC
 - Auto-discover RIC behavior and govern via auto-created policies, Control plane xAPP having runtime IDS
- Securing Network Slicing
- 5G Supply Chain Security
- Security orchestration from O-RAN SMO to near-RT RIC and xAPPs

IoT Cloud Native Application Orchestration



Open Process Automation (Ubicity)

Support migration of industrial process automation systems

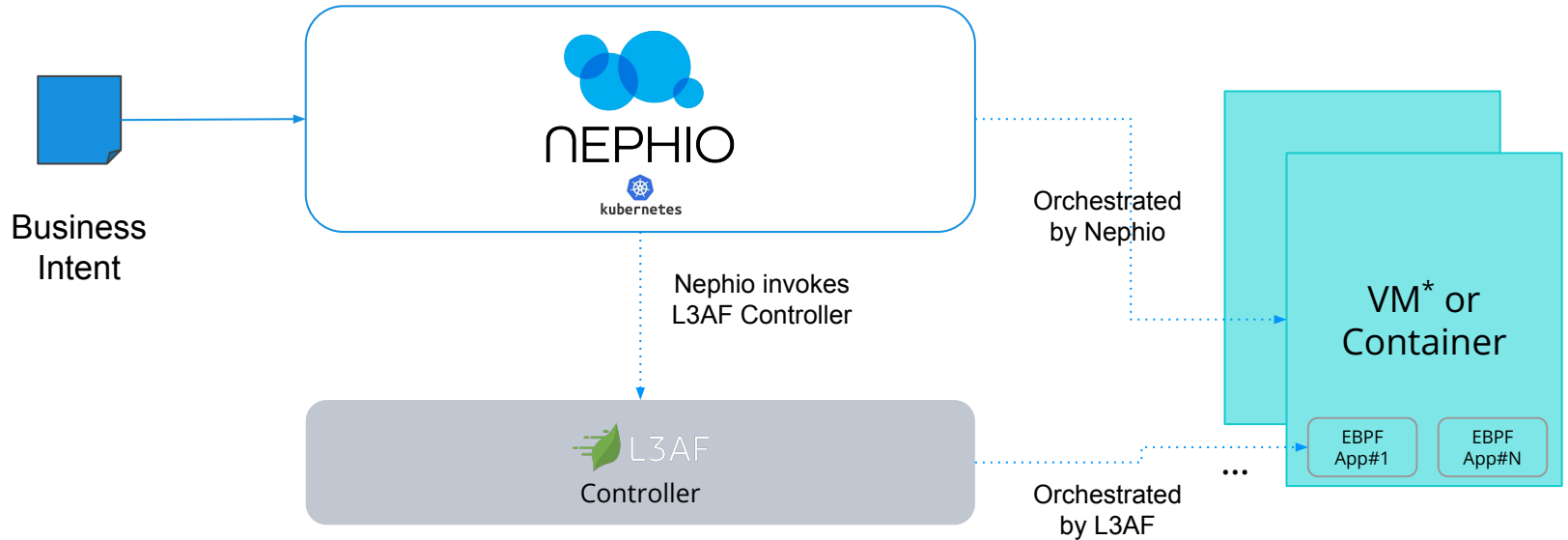
- › Away from closed proprietary systems
- › Towards software components deployed on COTS hardware
- › Using open standards

OpenTofu + Nephio = ~~laC~~ laD

Nephio can bring a slew of valuable features to OpenTofu for edge (and cloud) use cases:

- Declarative intent (covert laC to laD)
- Business intent -> technical intent mutation
- Scale via pull model
- Dependency handling
- Constant state reconciliation
- Rollback

L3AF + Nephio



Nephio provides declarative configuration-as-data business intent using Kubernetes Resources (explore via Nephio Enterprise SIG)

Call To Action

Join us

- Pick use case(s)
- Start working on quick win demos

THANK YOU!

LF NETWORKING

THE LINUX FOUNDATION