



ons

NORTH AMERICA

OPEN NETWORKING //

Enabling Collaborative
Development & Innovation

Blockchain Defined Networking

Vipin Rathi

Asst. Professor, University of Delhi



ons

NORTH AMERICA

OPEN NETWORKING //
Enabling Collaborative
Development & Innovation

Agenda

- Before Blockchain Era
- After Blockchain Era
- De Facto Blockchain for Telecoms
- Blockchain Defined Networking POC

Hosted By

 THE **LINUX** FOUNDATION |  **LF** NETWORKING



ons

NORTH AMERICA

OPEN NETWORKING //
Enabling Collaborative
Development & Innovation

Before Blockchain

- Distributed Data stores
- Distributed Coordination
- Consensus
- Distributed Network
- Distributed Computing

Hosted By

 THE **LINUX** FOUNDATION |  **LF** NETWORKING



Why Blockchain ?

- Blockchain's are old because chained hashes are nothing new, Git uses them.
- Proof of Work isn't new either. It's simply a rate limiting algorithm that's been around forever.
- Just apply both to a ***distributed database***.



ons

NORTH AMERICA

OPEN NETWORKING //
Enabling Collaborative
Development & Innovation

Blockchain Goals

- Blockchain adds **Distributed Trust**.
- Blockchain's were built for transaction consistency in a datastore, allowing for auditability, atomicity, linearizability, Durability, and most importantly, data integrity.

Hosted By

 THE **LINUX** FOUNDATION |  **LF** NETWORKING



ons

NORTH AMERICA

OPEN NETWORKING //
Enabling Collaborative
Development & Innovation

Blockchain Earthquake

- Banks
- Fintech
- Supply chain
- Health care
- Distributed Storage
- Now Telecom

Hosted By

 THE **LINUX** FOUNDATION |  **LF** NETWORKING



ons
NORTH AMERICA
OPEN NETWORKING //
Enabling Collaborative
Development & Innovation

Blockchain for Telecoms

- Public
- Private
- Consortium

Hosted By

 THE **LINUX** FOUNDATION |  **LF** NETWORKING



ons

NORTH AMERICA

OPEN NETWORKING //
Enabling Collaborative
Development & Innovation

Blockchain use cases in Telecom

- SLA Management
- Roaming
- Number Portability
- Carrier Inter-connect settlement
- Blockchain-Based Carrier Marketplace for LSO
- Network Slicing Broker

Hosted By

 THE **LINUX** FOUNDATION |  **LF** NETWORKING



ons

NORTH AMERICA

OPEN NETWORKING //
Enabling Collaborative
Development & Innovation

LiveDemo

Hosted By

 THE **LINUX** FOUNDATION |  **LF** NETWORKING



Multi Domain Orchestrator

- MDO sits atop each domain and orchestrates services from end to end.
- It interfaces with NMS and/or SDN controllers, the NFV orchestrator and understands available resources, both physical and virtual, that need to be managed.
- The result is successful orchestration of those resources and the delivery of an end to end services across a multi-vendor, multi-domain infrastructure.

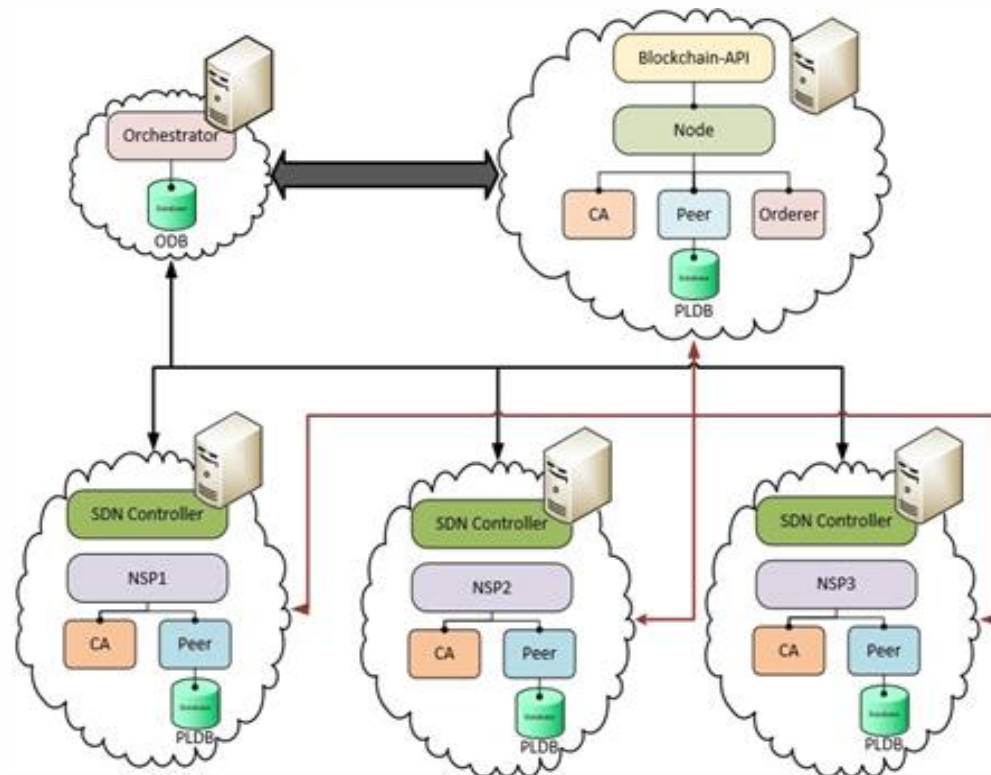


MDO Advantages

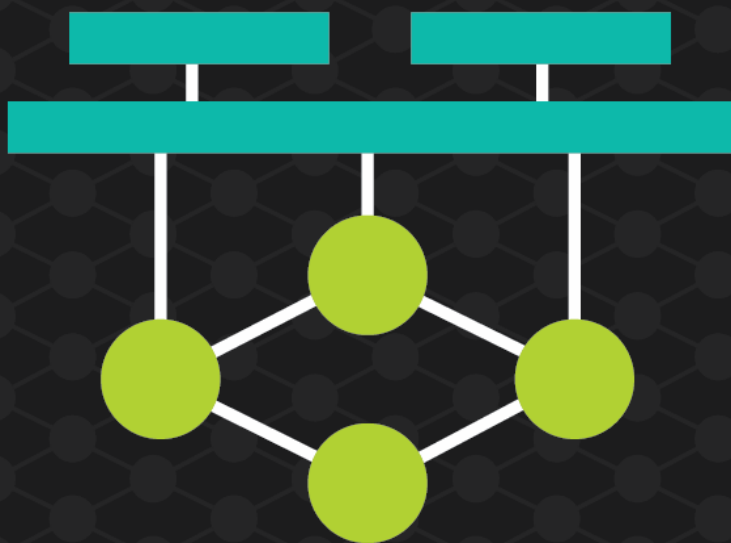
- MDO is an end-to-end solution for implementation and integration of SDN/NFV orchestration and network domains.
- MDO can help CSPs achieve dynamic and real-time provisioning of services by configuring core and edge nodes with a federated view of resources. It simplifies end-to-end creation, provisioning and deployment of services across multiple domains, thus becoming a key element in next-gen networking.



Blockchain Defined Multi-Domain Orchestrator



THANKS



ons

NORTH AMERICA

OPEN NETWORKING //
Enabling Collaborative
Development & Innovation

Hosted By

 THE **LINUX** FOUNDATION |  **LF** NETWORKING