# ON.LAB

# ONOS Architectural Progress

## February 2014

## Current

**Application**
Config, Mgt, Control…

Application | Application | Application | Application | Application | Application

Blueprints API

Programmable Intents

**Northbound
Global Network View
Application Intent Framework**

Eventually Consistent - Ramcloud

Global Network View | Global Network View | Global Network View

**Distributed Core**

172.16.0.0 | 172.16.0.0 | 172.16.0.0

OpenFlow | OpenFlow | OpenFlow

OpenFlow, Others | OpenFlow, Others | OpenFlow, Others

**Southbound**

Leader election
Zookeeper

Leader election
Hazelcast

**Physical Network**

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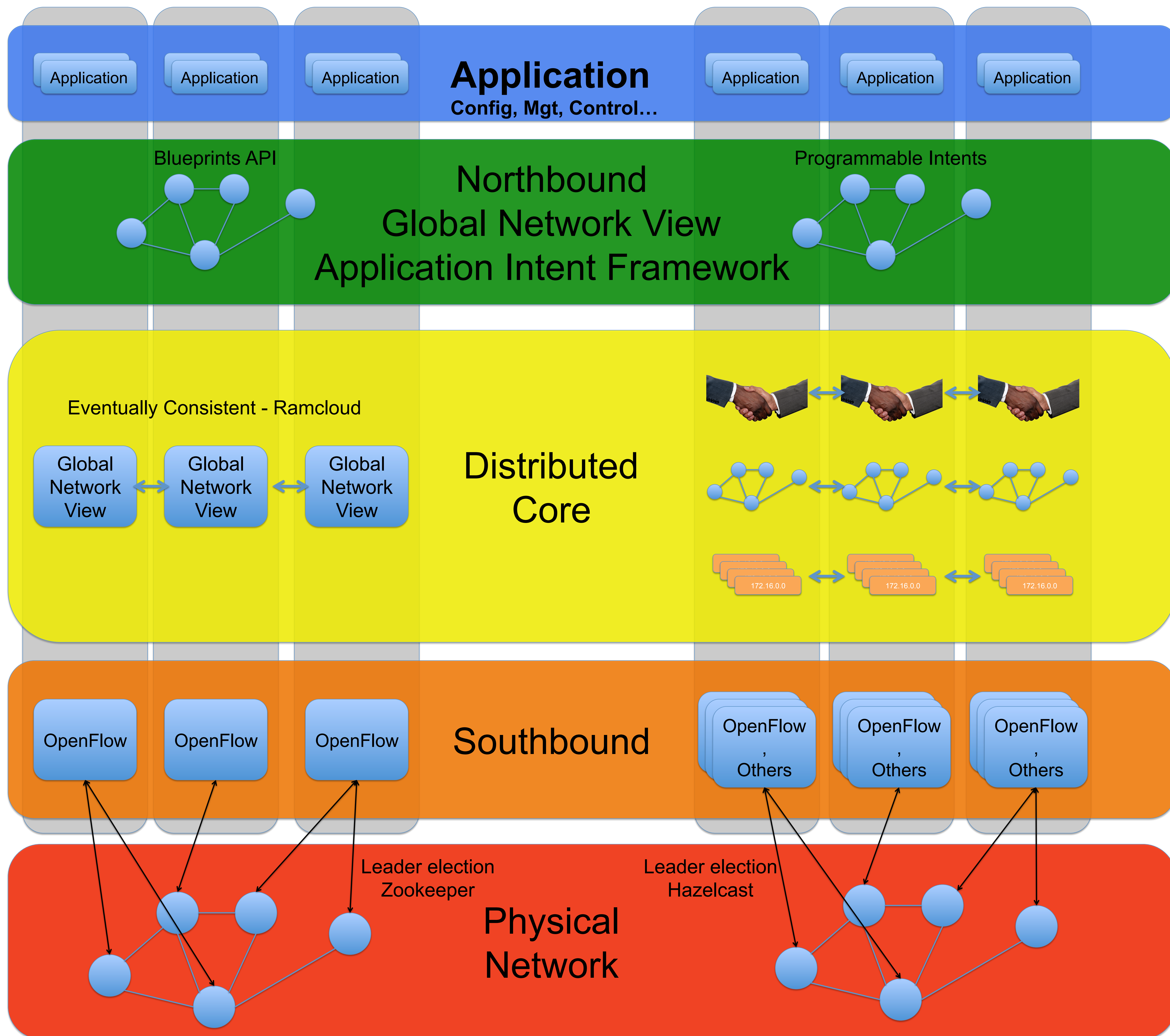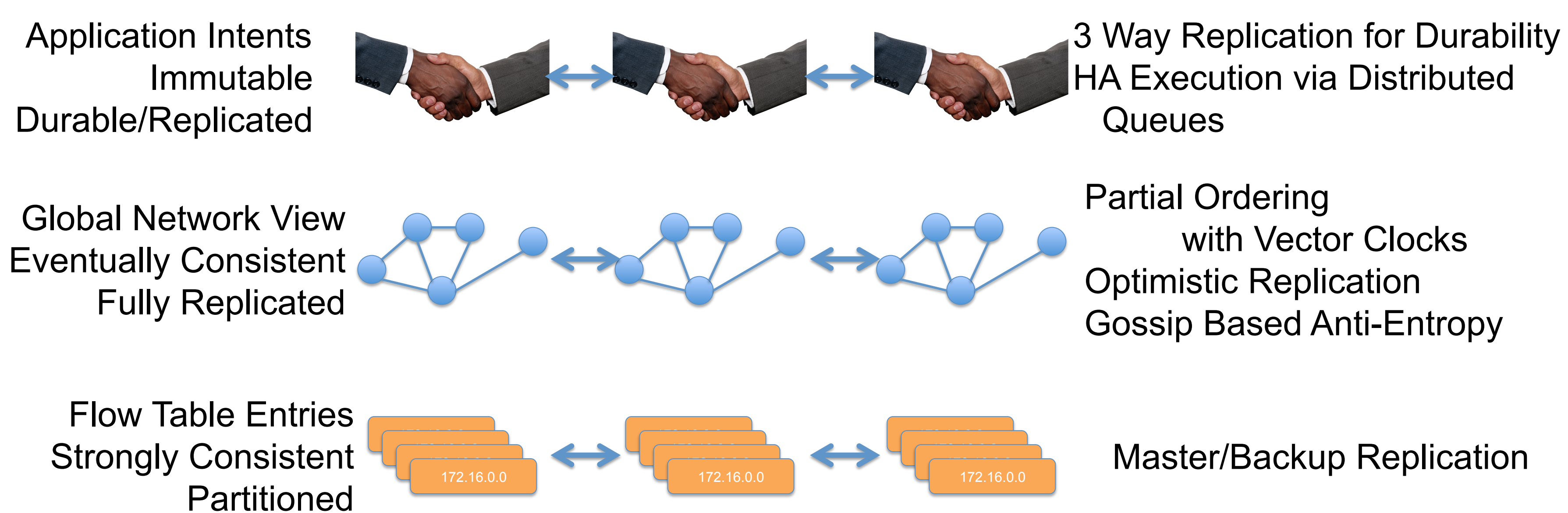
## Highlights

- New Abstraction: Application Intents
- Optimized State Management
- Pluggable Southbound
- Refactored Interfaces
  - Northbound / Core
  - Southbound / Core
- Modularity – Apache Karafe
- Removed Zookeeper

## Optimizing Distributed State Management

Application Intents
Immutable
Durable/Replicated

3 Way Replication for Durability
HA Execution via Distributed Queues

Global Network View
Eventually Consistent
Fully Replicated

Partial Ordering
with Vector Clocks
Optimistic Replication
Gossip Based Anti-Entropy

Flow Table Entries
Strongly Consistent
Partitioned

172.16.0.0 | 172.16.0.0 | 172.16.0.0

Master/Backup Replication

*ONOS Partners:*

at&t | ciena | ERICSSON | FUJITSU | HUAWEI | intel | NEC | NTT Communications