Telco Peering

OpenSIPs Summit

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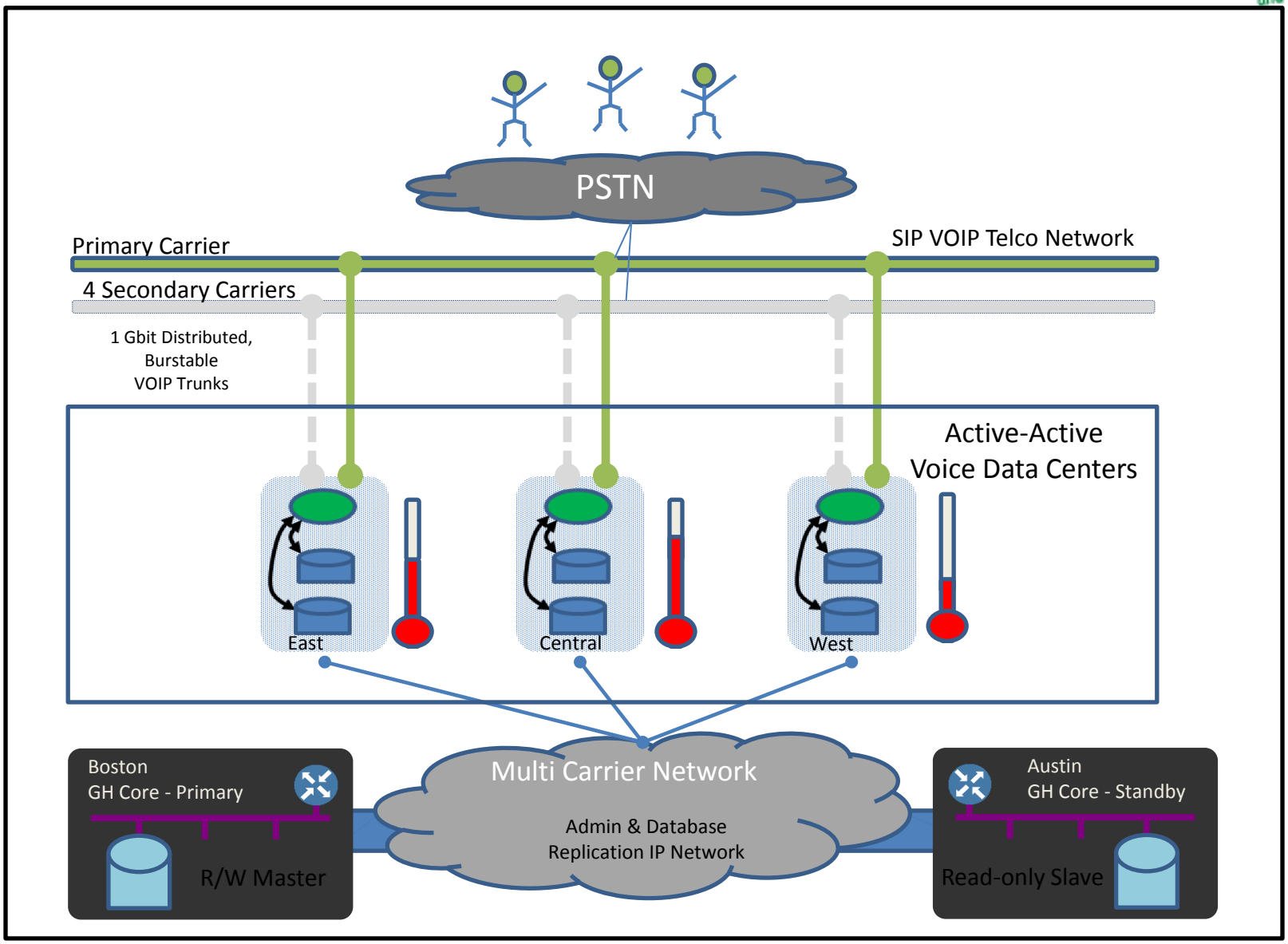
What we did

- Deployed OpenSIPs
  - 3 Production sites
  - 2 QA/Staging sites
  - 5 Telco Carriers, Adv Toll Free, DID, & local & LD Outbound
  - Serves USA, Canada, Extended Domestic, & Mexico
- Configured for High Availability
  - Active / Standby
  - ~3 second failover
- Virtualized Platform
  - Vmware
  - 1 Gbit networking

System Illustration



Our SBC Requirements

Signaling

- SIP translation between different networks (network bridging)
- parallel call limitations: dialed, dialing number
- blacklists for dialed number

Media

- media relay (conditional, based on source IP)
- media timeout reporting with call termination
- transparent if no relay is required.
- events for reporting failures/activation of RTPproxies

Load balancing

- round robin
- failover through all available Features

Servers

- probing with SIP OPTIONS
- auto re-enabling

Provisioning

- web interface

HA

- active standby configuration
- virtual IP based
- Active call recovery on failover
- SIP and media failover separated

Quick Comparison

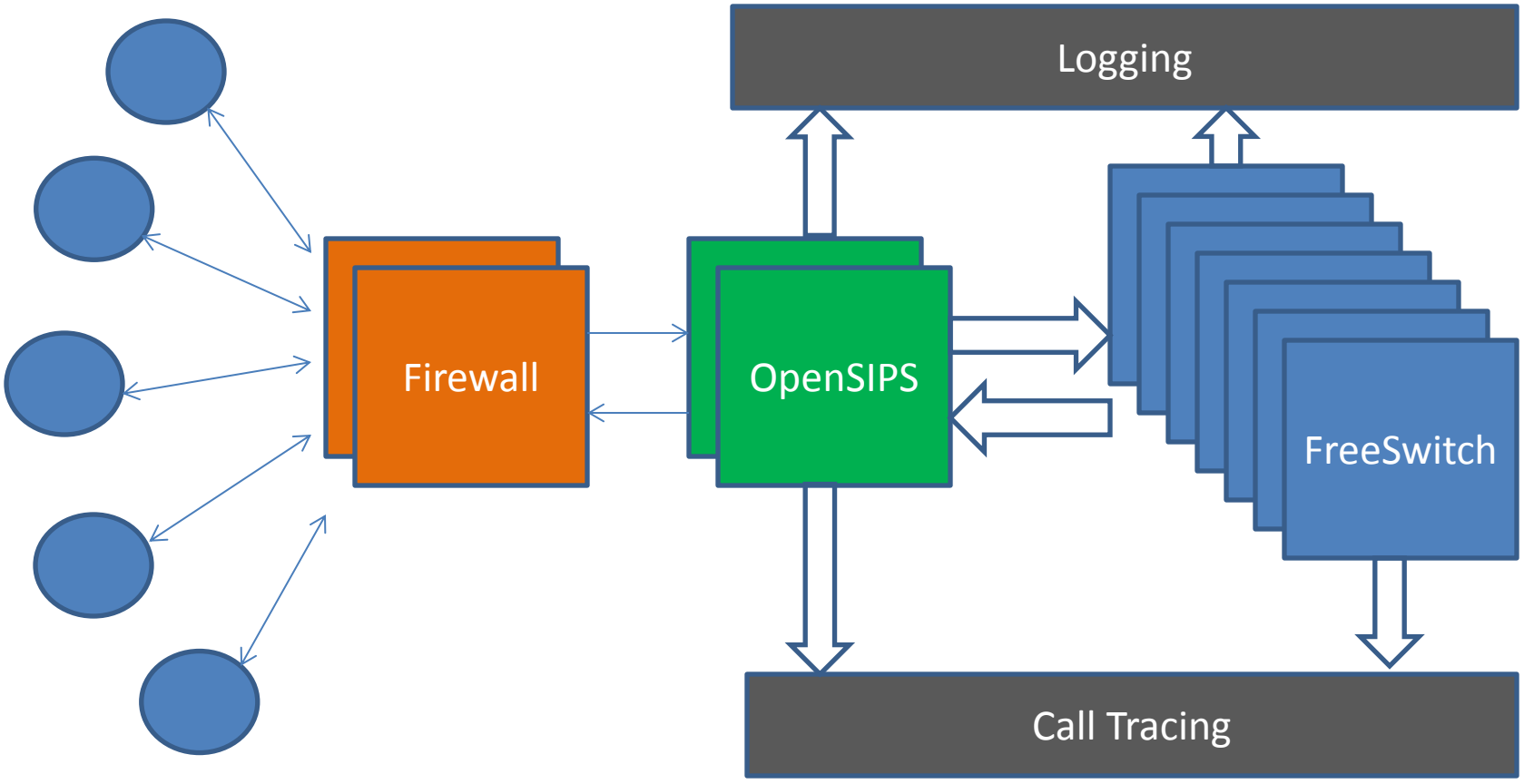
COMMERCIAL

- Licensing
  - Per channel
  - Feature packs and levels
- Appliances
  - HW, OS, & Software
- Cost
  - 10x

OPENSIPS

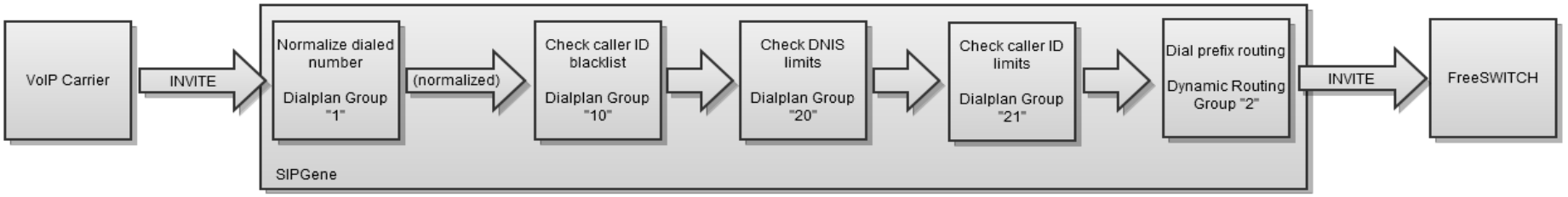
- Licensing
  - Support agreements
- Software
  - Platform & OS separate
- Cost
  - 1x

Block Diagram

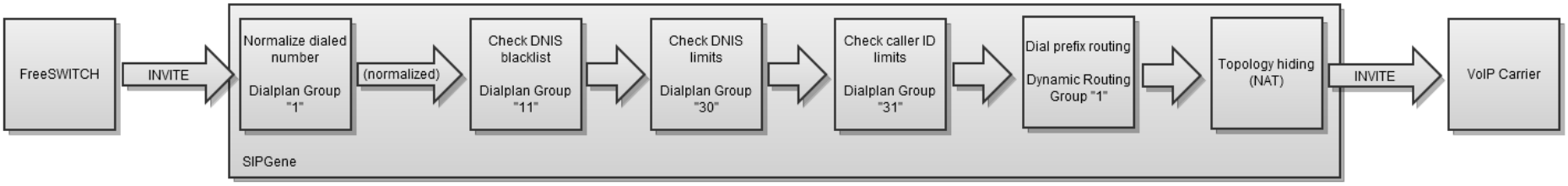


OpenSIPs Inbound & Outbound Processing Pipeline

INBOUND Flow



OUTBOUND Flow



Our Setup - Overview

- Using 2 vmware cores, 4 GB RAM, CentOS, 2 Server DELL R420 cluster
- Using Gigabit Inside & Outside interfaces
  - Intel i350 physical NIC with vmware virtual NIC mapping
- Using Virtual IP between HA pairs.
  - Gratuitous ARP announces newly elected primary
- Separated Signaling from RTP
  - Didn't use OpenSIPs RTP proxy (because of virtualization)
  - Used OpenSIPs for signaling only
- Using 6 Dial Plans
- Peering with 48 Telco Gateways
- Internally Integrated with FreeSwitch and Homer
- Monitoring via SNMP (for now)
- In production since June. Completely stable.

OpenSIPs Lessons Learned

- OpenSIPs and IP Tables need separate treatment in HA fail over events
  - Should have allocated more time to HA testing
  - Should have started this earlier
- SNMP monitoring not adequate
  - We plan to build a REST interface that uses MI commands to get better status
- OpenSIPs Solutions (Bogdan's team) is great. Good support.

Questions?

Thank you!