

anuta networks



Case Study:

Responsive Networks with Closed Loop Automation

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Agenda

Anuta Introduction

Customer Business Case

Customer Requirements

Anuta Solution

Results and Summary

Anuta Networks Overview

Closed-Loop Automation that delivers Assurance, Telemetry and Orchestration for Multi-Vendor, Multi-Domain Networks.



HQ in SF, with operations in India, Japan, UK, ANZ and Asia-Pac.



Target Customers

Telco, SP, MSP, CSP, Financial Services, Retail, Transportation

Network Domains

IP/MPLS Core, Data Center, WAN

Customer Profile & Requirements



Customer

- A leading financial services provider in US
- Delivers real-time information to global banks



Wants

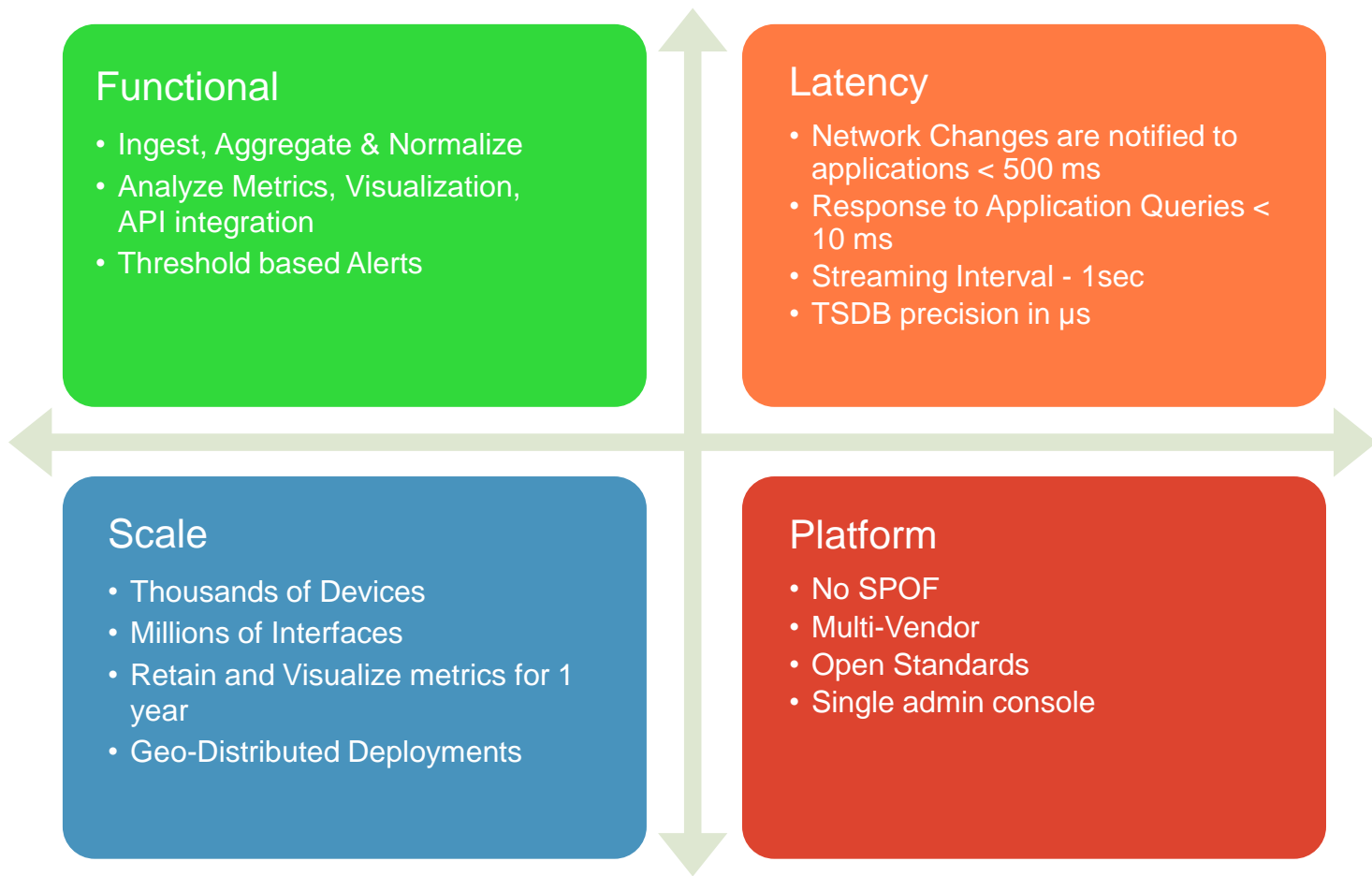
- Performance & Latency Optimization
- Network Capacity Planning
- SLA Compliance



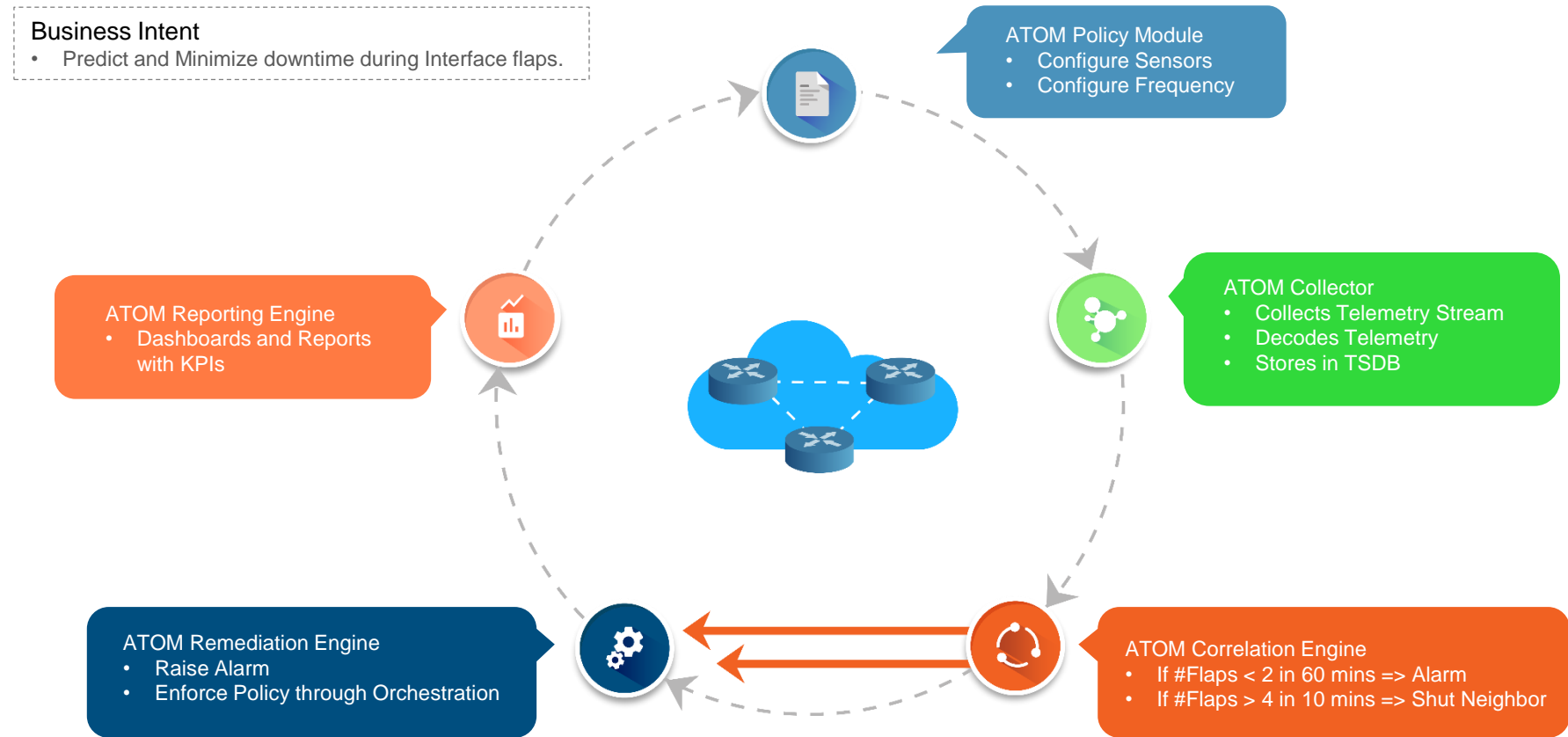
Using

- Streaming Telemetry Collection
- Real-Time Network Analytics
- Closed Loop Automation

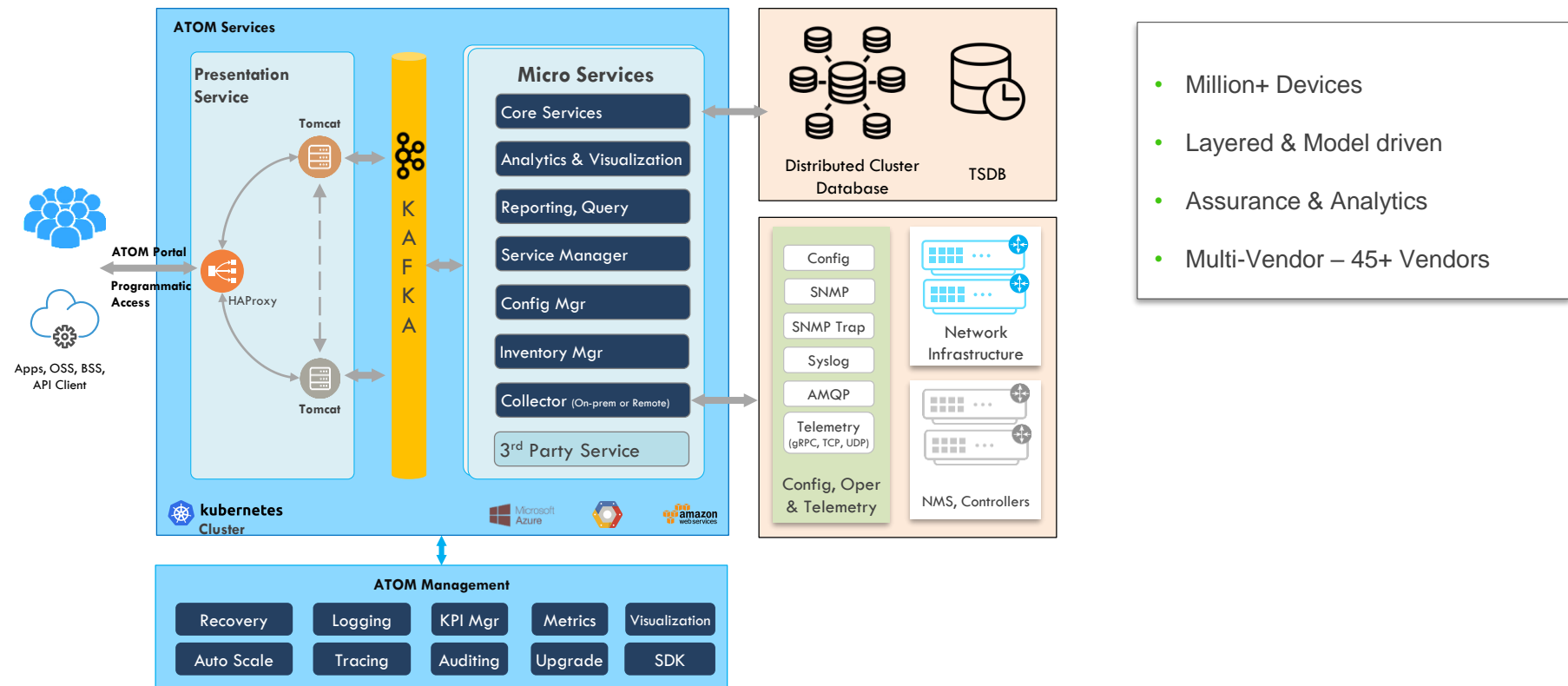
Customer Requirements



Closed Loop Automation – Interface Flapping

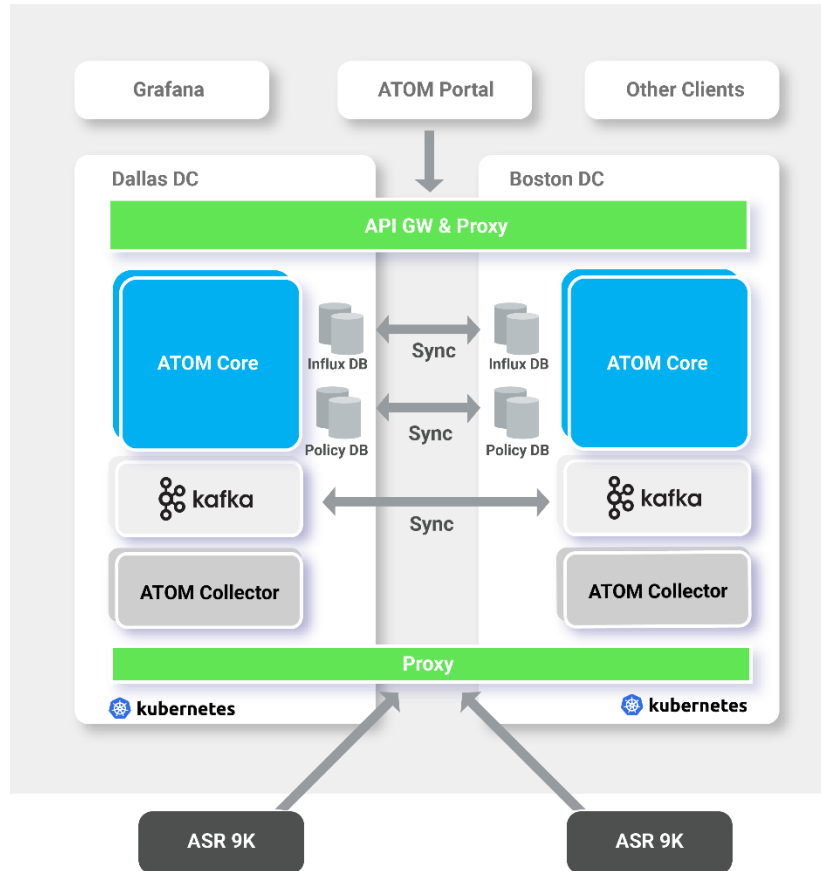


Anuta ATOM Architecture



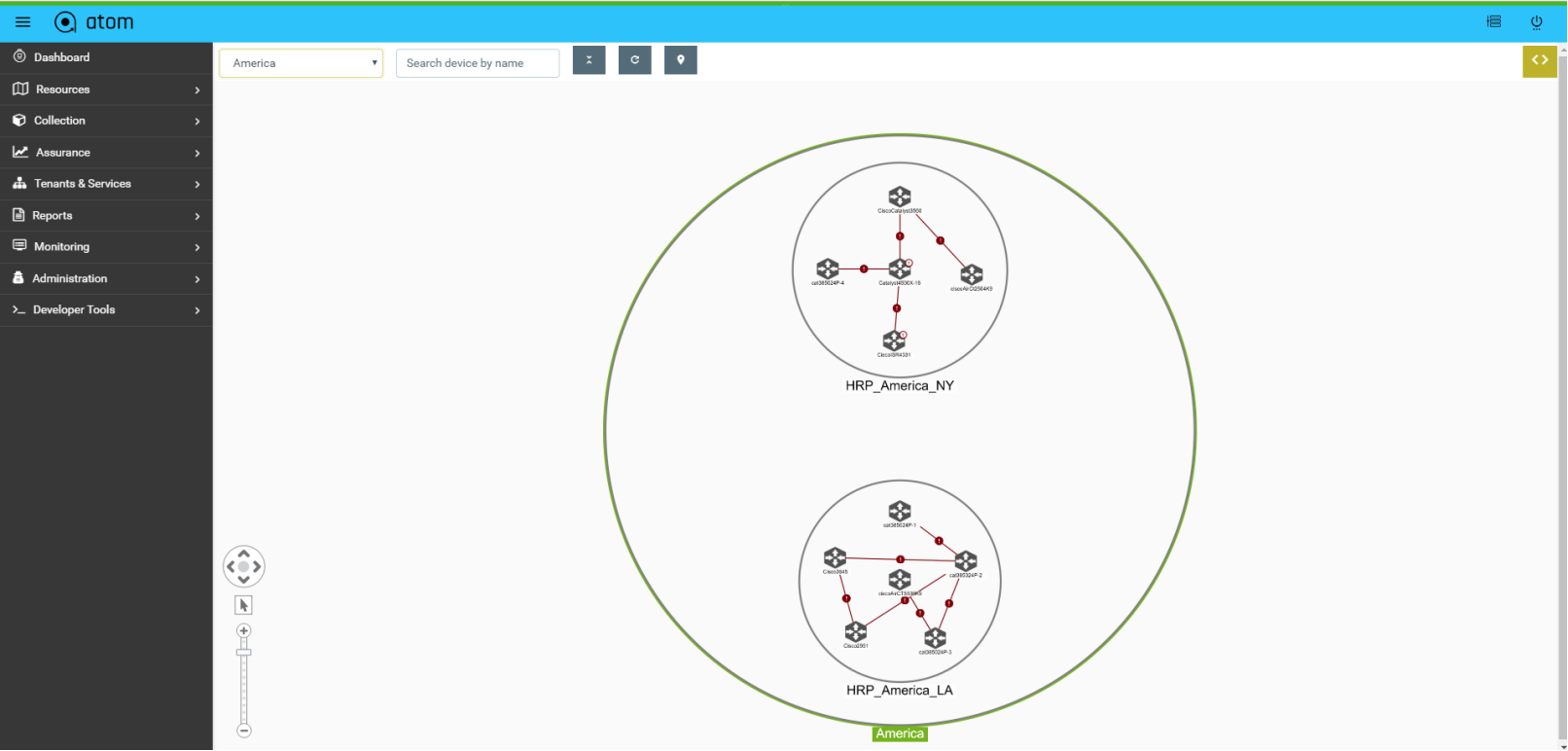
- Million+ Devices
- Layered & Model driven
- Assurance & Analytics
- Multi-Vendor – 45+ Vendors

Deployment Architecture



- Highly Available Deployment
- Geo-Distributed
- No SPOF

On-board Device to ATOM



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Select Pre-Defined Telemetry Sensors

atom

Telemetry

Dashboard

Resources

Collection

SNMP

Telemetry

SNMP Trap

Collections Report

Assurance

Tenants & Services

Reports

Monitoring

Administration

Developer Tools

Edit Telemetry Collection

Name

DEMO-oung

Platform

IOS-XR

Dial-Out

Disable-Cla

Transport Type

grob

tcp

Packet-Encoding

compact-gpb

self-describing-gpb

Sensor-Path-As-Measurement

Sensors Displaying

14

All

Selected 1

interface/latest/data-rate

X

Device Model Path

Cisco-IOS-XR-infra-statsd-oper:infra-statistics/interfaces/interface/latest/data-rate/peak-input-packet-rate

Cisco-IOS-XR-infra-statsd-oper:infra-statistics/interfaces/interface/latest/data-rate/peak-input-data-rate

Cisco-IOS-XR-infra-statsd-oper:infra-statistics/interfaces/interface/latest/data-rate/input-load

Cisco-IOS-XR-infra-statsd-oper:infra-statistics/interfaces/interface/latest/data-rate/input-data-rate

Cisco-IOS-XR-infra-statsd-oper:infra-statistics/interfaces/interface/latest/data-rate/bandwidth

Cisco-IOS-XR-infra-statsd-oper:infra-statistics/interfaces/interface/latest/data-rate/input-packet-rate

Cisco-IOS-XR-infra-statsd-oper:infra-statistics/interfaces/interface/latest/data-rate/peak-output-packet-rate

Cisco-IOS-XR-infra-statsd-oper:infra-statistics/interfaces/interface/latest/data-rate/output-packet-rate

Cisco-IOS-XR-infra-statsd-oper:infra-statistics/interfaces/interface/latest/data-rate

Depth of collection

-1

Collect only interested data

Frequency

0

0

1

Hours

Minutes

Seconds

Data filtering

deny-all

Data Retention

0

0

Hours

Days

Data Filtering Displaying

6

Xpath	Subtree	Filter Type
Cisco-IOS-XR-infra-statsd-oper:infra-statistics/interfaces/interface/latest/data-rate/load-interval	false	permit
Cisco-IOS-XR-infra-statsd-oper:infra-statistics/interfaces/interface/latest/data-rate/input-load	false	permit
Cisco-IOS-XR-infra-statsd-oper:infra-statistics/interfaces/interface/latest/data-rate/input-data-rate	false	permit
Cisco-IOS-XR-infra-statsd-oper:infra-statistics/interfaces/interface/latest/data-rate/bandwidth	false	permit
Cisco-IOS-XR-infra-statsd-oper:infra-statistics/interfaces/interface/latest/data-rate/reliability	false	permit

Devices Displaying

4

All

Selected 2

Search

Ip Address

172.16.18.176

172.16.18.180

172.16.18.181

172.16.5.221

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Telemetry Configs Pushed to IOS-XR

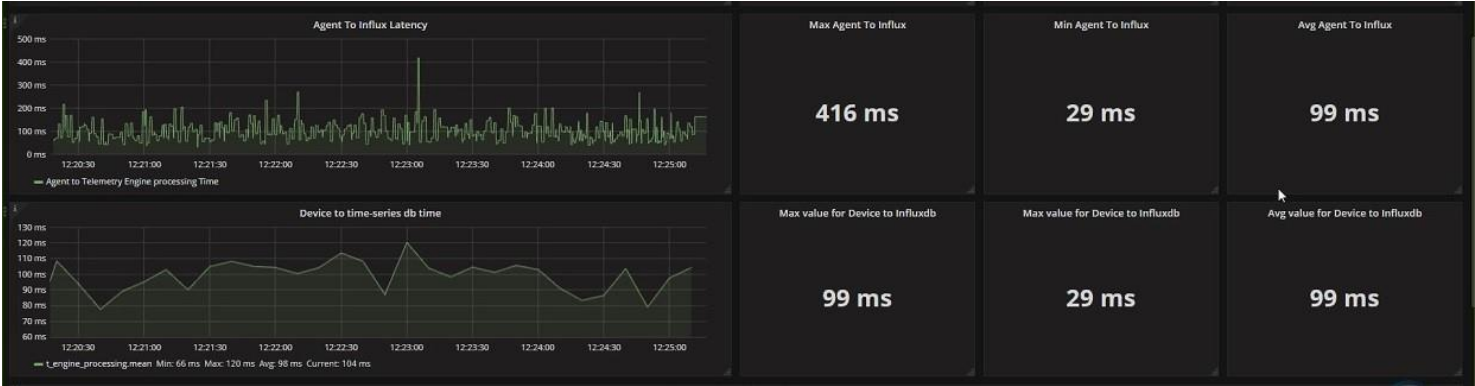
```
RP/0/RSP0/CPU0:asr9006b_PEG-2#sh telemetry model-driven subscription ATOM-POC2-GENERICCOUNTER
Fri Sep 21 09:27:30.754 UTC
Subscription:  ATOM-POC2-GENERICCOUNTER
-----
State:          ACTIVE
Sensor groups:
Id: ATOM-POC2-GENERICCOUNTER
  Sample Interval: 1000 ms
  Sensor Path:     Cisco-IOS-XR-infra-statsd-oper:infra-statistics/interfaces/interface/latest/generic-counters
  Sensor Path State: Resolved

Destination Groups:
Group Id: 10.65.127.73_compact-gpb_tcp
  Destination IP: 10.65.127.73
  Destination Port: 12455
  Encoding: gpb
  Transport: tcp
  State: Active
  No TLS
  Total bytes sent: 3022651650
  Total packets sent: 230375
  Last Sent time: 2018-09-21 09:27:28.1065914488 +0000

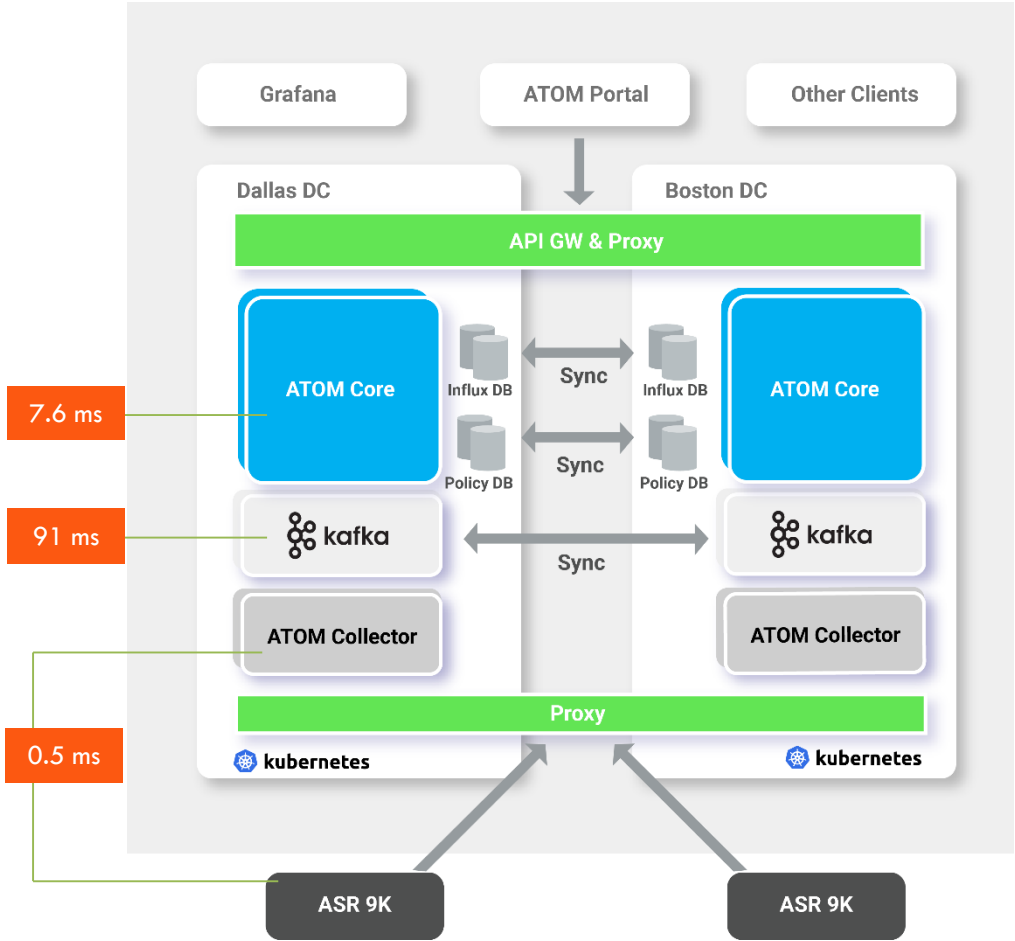
Collection Groups:
-----
Id: 9
  Sample Interval: 1000 ms
  Encoding: gpb
  Num of collection: 305712
  Collection time: Min: 40 ms Max: 1470 ms
  Total time: Min: 42 ms Avg: 59 ms Max: 1471 ms
  Total Deferred: 0
  Total Send Errors: 0
  Total Send Drops: 0
  Total Other Errors: 0
  Last Collection Start: 2018-09-21 09:27:28.1065738515 +0000
  Last Collection End: 2018-09-21 09:27:28.1065809504 +0000
  Sensor Path: Cisco-IOS-XR-infra-statsd-oper:infra-statistics/interfaces/interface/latest/generic-counters

RP/0/RSP0/CPU0:asr9006b_PEG-2#
```

Visualization & Latency with Grafana



Test Results - Latency



- Latency from Device to App < 100ms
- Collector – 0.5 ms
- Kafka Lag Time – 91 ms
- ATOM Telemetry Engine - 7.6 ms

Anuta ATOM Delivers



Fast and Responsive
Network



Multi-vendor Support

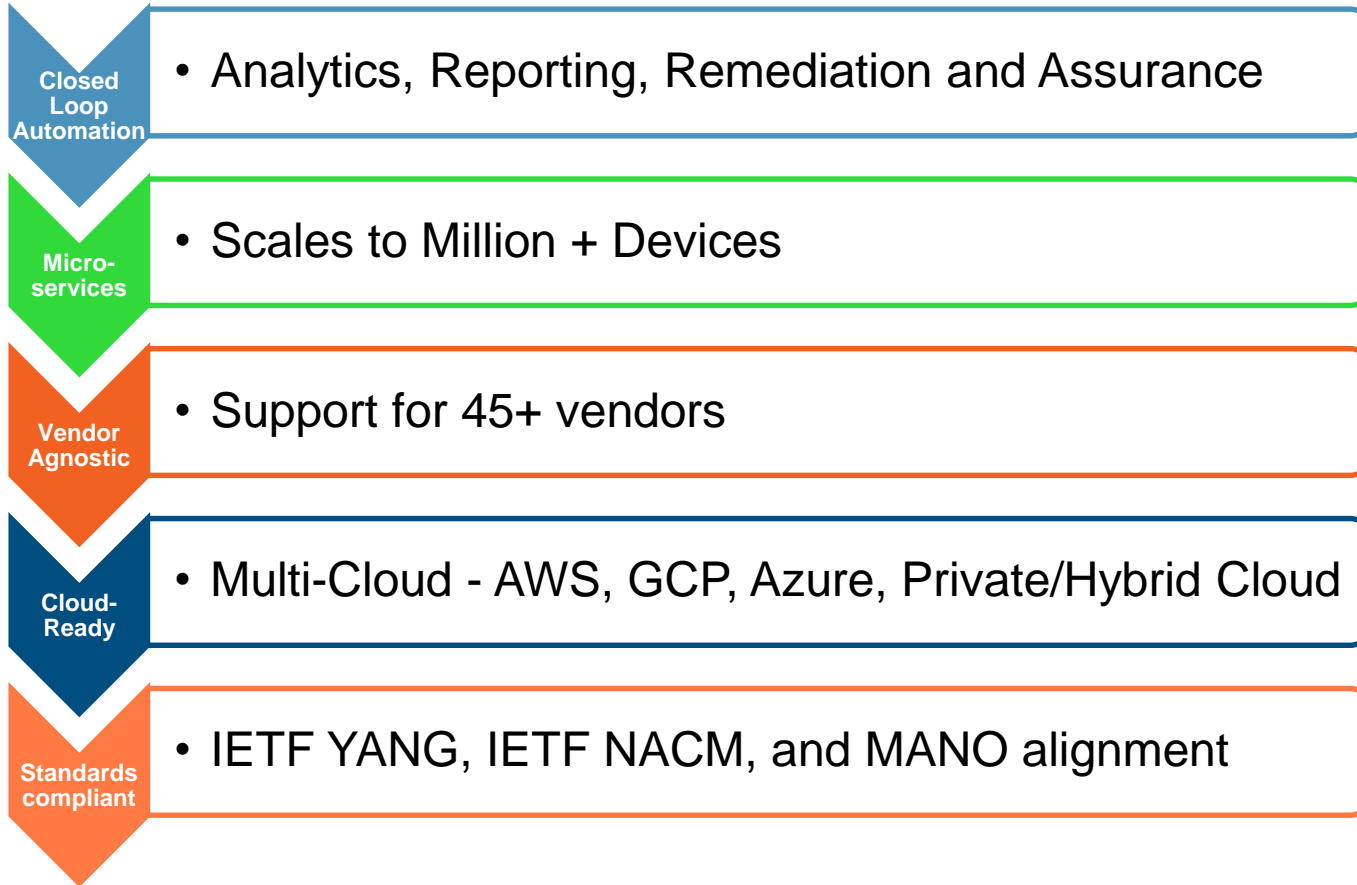


Fully Redundant
Design



Open Standard

Why Anuta ATOM ?



Additional Resources

- Live Demo - Drop by our Booth
- Data Sheet & Case Study – <https://anutanetworks.com>
- Email - info@anutanetworks.com
- LinkedIn - <https://www.linkedin.com/company/anuta-networks/>