Intent-Based Data Center Automation
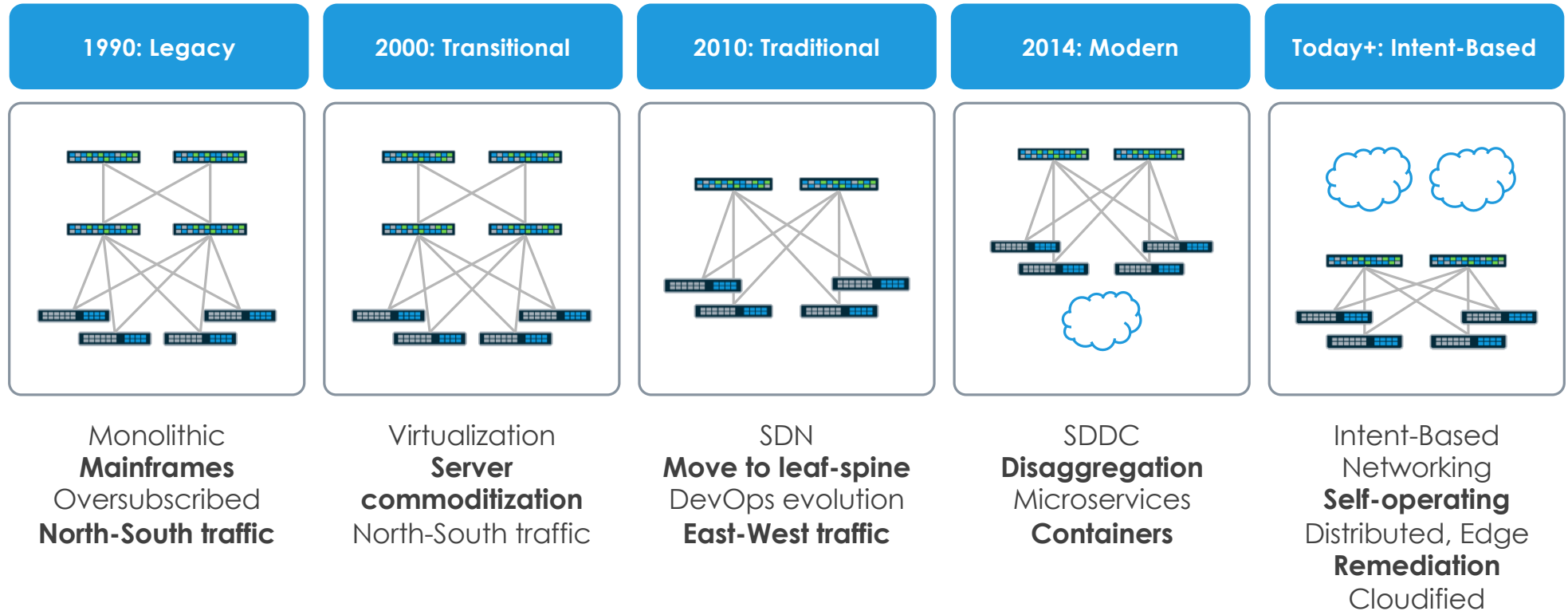
Mansour Karam
CEO & Founder

Apstra Overview

- #1 in Intent-Based Data Center Automation
- Inventor of Intent-Based Networking
- Dozens of customers including Two Fortune 50
- 80+ Headcount globally
- Customers Across North America, EMEA and APAC
- Deployed at Scale by both Enterprises and Webscale providers
- Founded in 2014

Data Center Technology Evolution

1990: Legacy	2000: Transitional	2010: Traditional	2014: Modern	Today+: Intent-Based

Monolithic
Mainframes
Oversubscribed
North-South traffic

Virtualization
Server commoditization
North-South traffic

SDN
Move to leaf-spine
DevOps evolution
East-West traffic

SDDC
Disaggregation
Microservices
Containers

Intent-Based Networking
Self-operating
Distributed, Edge
Remediation
Cloudified

Intent-Based Data Center Implementation Requirements

Fully Automated Network

| Underlay | Overlay | Virtual Networks | Security Zones | Group Based Policies | Segmentation |

| Day 2 Change Operations | Real-Time Continuous Validation | Real-Time Correlation | Self Healing |

| Choice of Hardware | Choice of Switch OS | Choice of Workload | Choice of Cloud |

Apstra **Intent-Based Data Center Automation**
empowers the **Intent-Based Data Center**
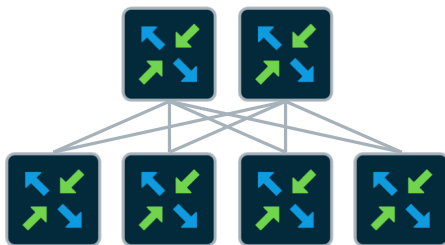for Enterprises, Cloud Providers and Telcos

Apstra Intent-Based Data Center Automation

- Increases Application Reliability & Availability
- Automates & Simplifies Deployments and Operations
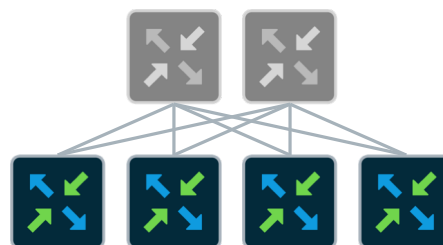- Decreases Costs (OpEx & CapEx)
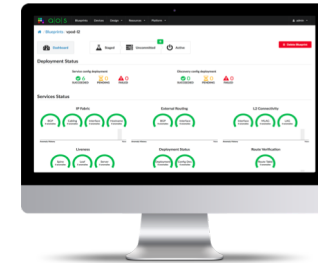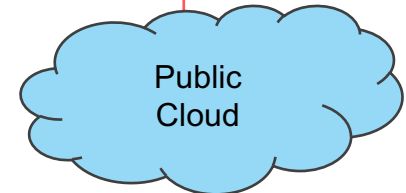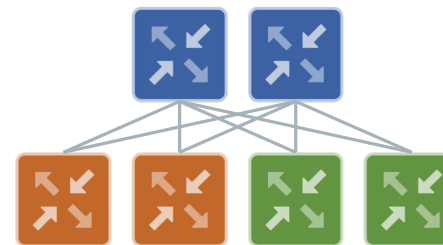
IP Connectivity for Management

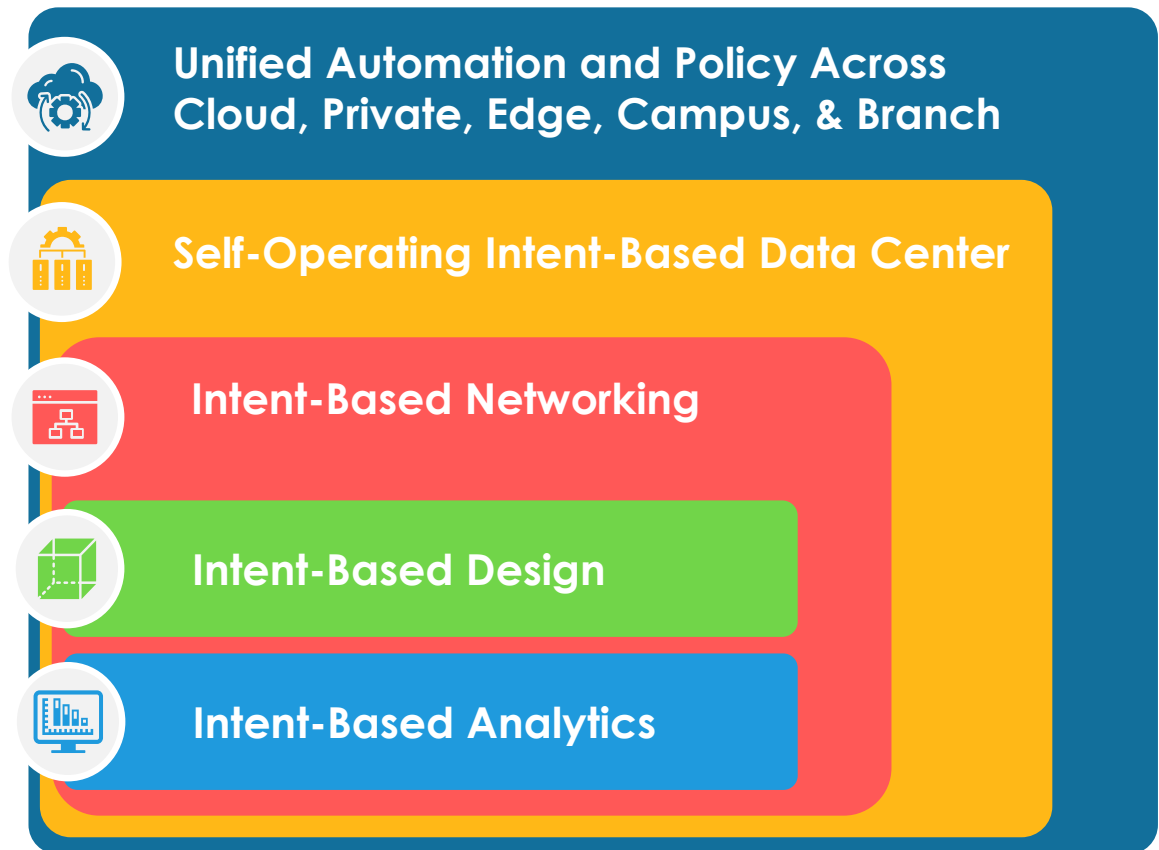Row/Pod/Brick = Single Vendor   Row/Pod/Brick = Two Vendors   Row/Pod/Brick = Multi-vendor

Public Cloud

# Apstra Intent-Based Data Center Use Cases
Building an End-to-End IBDC

- Implement independently or in combination

- Begin with a single use case or multiple use cases

- Unified Automation across private, cloud, & multi-cloud

Unified Automation and Policy Across Cloud, Private, Edge, Campus, & Branch

Self-Operating Intent-Based Data Center

Intent-Based Networking

Intent-Based Design

Intent-Based Analytics

Intent-Based Networking Tiers
Apstra is at Level 2 & Architected for Level 3
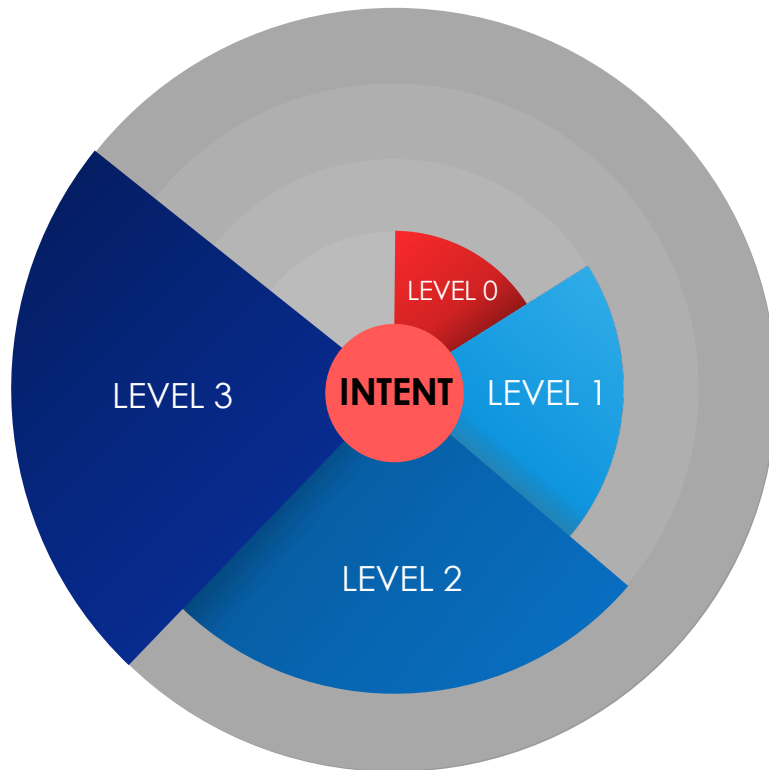
LEVEL 3
Self-Operation

LEVEL 2
Real-time Change Validation

LEVEL 1
Single Source of Truth

LEVEL 0
Basic Automation

apstra®

Early Indications of Measured Customer Impact

83%

OpEx Reduction

99%

From *one week* to *2 hours*

Agility Improvement

3 switches *out of compliance* (out of 100s')

One transceiver *about to fail* (out of 100s')

One process on switch *about to run out of memory* (out of 100's)

Availability

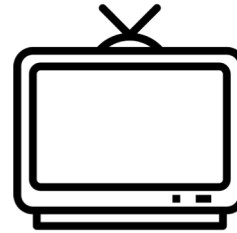**apstra**®

Bloomberg Customer Deployment Story

Bloomberg®

Leading innovation, *together*

Bloomberg Television's Media Production Network

High performance and availability in support of media production

8 hrs/day

4 hrs/day

Large scale network

**90+ network nodes
400+ 40GE links
2,000+ live network endpoints**

**4,000+ ports
10GbE, 40GbE, 100GbE
14 PB video storage**

Bloomberg
TELEVISION is available in more than **437 million** households worldwide

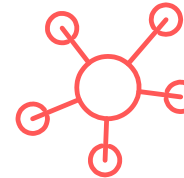# Bloomberg IT Challenges

DESIGN	OPERATION

DESIGN

- Manage complex network infrastructure
- Gain visibility into network performance
- Predict and prevent disruption in real-time

OPERATION

- Simple operation, Day 0, 1, 2, and beyond
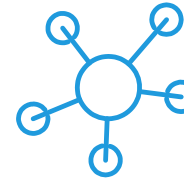- Flexibility and agility to accommodate change

Bloomberg Solution

DESIGN	OPERATION
• Vendor agnostic/multi-vendor • Resilient infrastructure • Allows for continuous improvements	• Increased operational velocity • Resilient and predictable • Massive scale • Allows for maintenance while maintaining availability

"Apstra's system gives us a single view into the entire media production network - regardless of our devices, switches, operating systems or vendors."

\- Tony Lott, Global Head of Capital Projects
for Bloomberg's IT Infrastructure team

apstra®

"It has enabled us to gain the day-2 operational efficiency needed to manage and sustain the complex network infrastructure in our cutting-edge media production facility."

- Tony Lott, Global Head of Capital Projects for Bloomberg's IT Infrastructure team

Bloomberg Three-Pronged Solution, Three Innovations

Leading Innovation, Together

Network Discovery

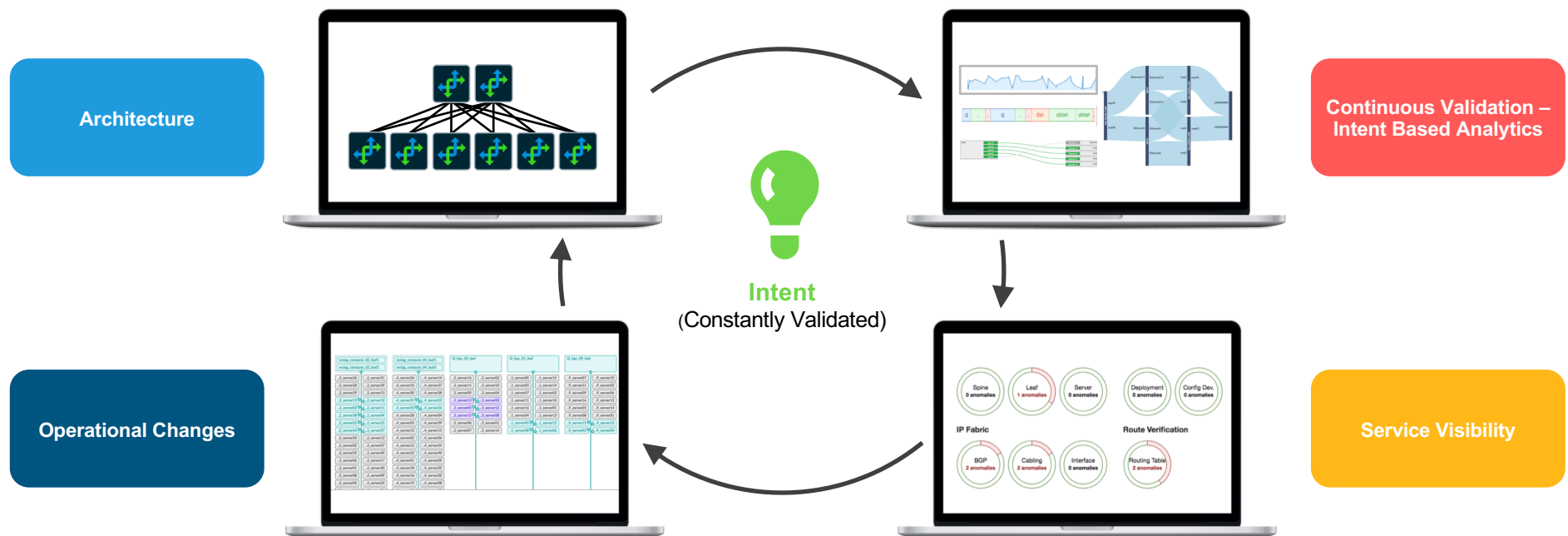Offbox Agents

Intent-Based Network Probes

Bloomberg with Apstra
Intent-Based Automation

- Enabling Network Management
- Advanced Telemetry, Analytics, and Metrics
- Vendor-Agnostic Support
- Self-Documenting

Apstra Intent-Based Networking Analytics

Leverages AOS Closed Loop Continuous Validation

Architecture

Continuous Validation – Intent Based Analytics

Intent
(Constantly Validated)

Operational Changes

Service Visibility

Apstra Intent-Based Networking Analytics
Declarative Specification of Big Data Pipeline
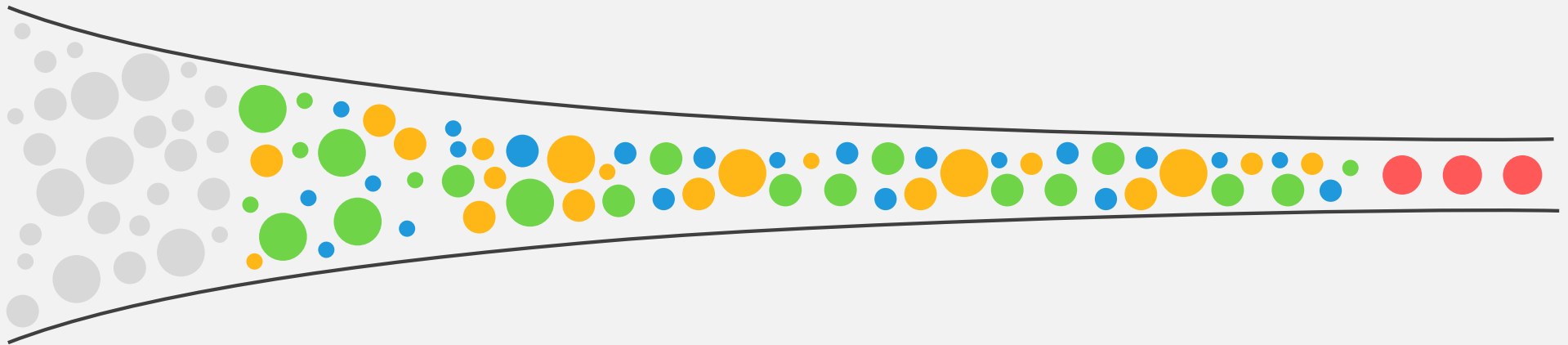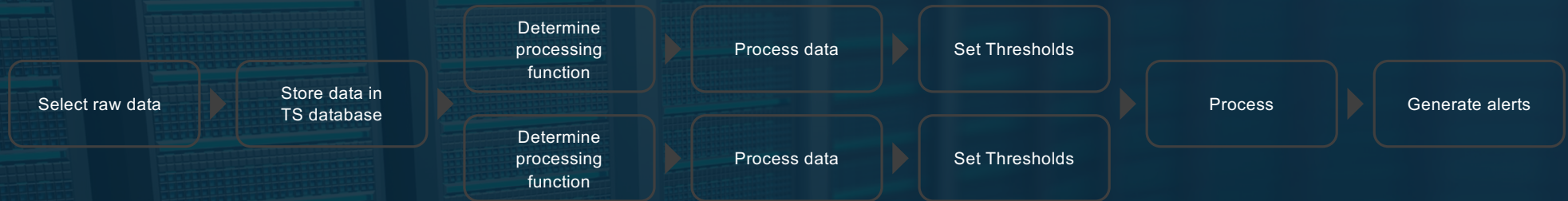
Intent-Based Analytics

Production Customers

GitHub

50+ IBA Probes

Compliance	Connectivity
Performance	Traffic

Many Use Cases

Exciting Roadmap

Thank You!

www.apstra.com

@ApstraInc

https://www.linkedin.com/company/apstra

https://www.facebook.com/apstrainc/

apstra®