

Fortune Global 50 Financial Institution Accelerates Application Delivery with Anuta ATOM Network Service Orchestration

A Fortune Global-50 (FG50) Financial Institution which operates a large number of banks and insurance businesses around the globe aims to enhance its private cloud services to its group of subsidiaries.

As global businesses drive towards the reduced cost, easy availability, increased agility, and managed risk, cloud IT infrastructure spending is expected to grow at a compounded annual growth rate (CAGR) of 15.6 percent reaching \$54.6 billion by 2019¹, accounting for 46.5 percent of the total spending on IT infrastructure. At the same time, the global hosted private cloud market is expected to grow at a CAGR of 35.4% to reach \$40.6 billion in 2019².

To expand its business operations, the FG-50 Fintech required an innovative solution that can automate the provisioning of applications as a means to improve time-to-market for its range of services. At the same time, the company aims to reduce its operating expenditure (OPEX) by shifting away from legacy processes including replacing the ticketing system currently deployed to affect policy updates.

The FG50 Fintech deployed Anuta Network's Orchestration Solution, the Anuta ATOM. In a Proof of Concept (PoC), Anuta Networks delivered a comprehensive automation solution to accelerate the Application Delivery with Network Service Orchestration for the FG-50 firm's private cloud services.

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We validated many orchestration solutions in the market and finally selected the Anuta ATOM orchestrator solution for its breadth of vendor coverage, compatibility with brownfield environment and flexible platform backed by world-class system integration support.

- **GM, Network Services Division, Fortune Global-50 Financial Institute**

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The POC enabled us to showcase the flexibility of the ATOM service model by adding support for configuring FW rules or LB policies under a logical context which represents tenants. The solution is also capable of bringing up changes quickly as ATOM discovers all the contexts, making it ready for user selections.

- **Operational Team Member**

1. Current Application Delivery Challenges

Today's agile organizations rely on IT to introduce new products to market quickly and to differentiate themselves. With the proliferation of cloud infrastructure, there is enormous pressure on IT to become a service delivery organization.

Following are some of the key challenges the FG-50 Fintech was facing:

- Too many point tools that delay application delivery time and increasing OPEX to handle change requests from application owners.
- Managing multiple vendor devices is proving costly.
- Legacy systems and manual processes make it extremely challenging to deliver new applications which involves configuration of multiple network elements such as Load Balancers, Firewalls, Web Proxy, Routers, Switches, IP Address Managers (IPAM), Certificate Managers manually.
- The manual process is burdensome and requires complex exchanges among multiple teams for approval. It also involves having the expertise to configure multi-vendor network infrastructure. For instance, the customer has over 20,000 Move, Add, Change (MAC) requests for their DNS servers alone that are handled using ad-hoc scripts.
- The manual process often results in misconfigurations and security violations.
- Lack of visibility of application status across the Data Center.
- Ensuring network compliance and service assurance is another area which is very challenging in the Multi-Vendor Network Infrastructure.
- Many legacy applications preventing the adoption of latest technologies

A PoC was commissioned to demonstrate network orchestration that can address the above challenges. Anuta Networks undertook the challenge to showcase how its ATOM service orchestration suite can address the exact needs of the FG-50 Fintech regarding its application delivery requirements.

2. PoC

i. Specific Use Cases Demonstrated During the PoC

Anuta Networks then showcased a select number of use-cases tailored to showcase its solution capabilities in addressing the challenges currently faced by the FG-50 Fintech. These use cases are targeted towards enhancing the application delivery capabilities to support private cloud infrastructure.

Use Cases demonstrated during the POC	Details on how they are successfully demo-ed
Network and Service Discovery	Anuta ATOM discovered up-to-date network topology, inventory and pre-existing services in a brownfield environment. Once the devices are on-boarded, ATOM discovers all the contexts, VIPs, Certificates, Firewall policies, Host Records, Zones, etc.
Rapid network provisioning to deploy applications in the multi-tenant private cloud.	Anuta ATOM service model consolidated multiple operations on multiple vendor devices such as Routers, Firewalls, Load Balancers, DNS servers, IPAM to deliver virtual networks for application within minutes.
Automate firewall and load balancer policies	Firewall and load balancer policies that were pre-configured and pre-validated using the simple Anuta ATOM GUI were translated into complex CLI and API calls to multi-vendor devices within minutes.
Reconciliation and Compliance	ATOM can validate the actual device configuration against the device state in ATOM and enables compliance report generation in a matter of minutes.
Enforce RBAC for department admins and users.	The PoC showcased a comprehensive Role-based Access Control feature within the Anuta ATOM with NACM, Audit Logs and Approval workflows for department admins and users that ensured strict security and compliance.
Service monitoring & SLA Management	Anuta ATOM was used to monitor the end-to-end virtual service across multiple network elements and devices. ATOM provides physical and logical topology, device level statistics and Alarms management customized for each application to ensure SLA.
IP addressing and VLAN management	Using Infoblox IPAM, the Anuta ATOM was used to generate policies to create IP address pools, dedicate IP address blocks to applications and tenants, introduce authorization rules as well as automate the reallocation of IP pools
Capacity management and forecasting	Administrators could organize the discovered resources into multiple pods and resource pools for service provisioning. ATOM uses the real-time status information to compute the capacity and availability for each service offering. Also, ATOM generates threshold-based alerts to inform the impacted tenants and departments proactively.
Integration with Self-Service Portals and OSS	ATOM offers comprehensive Restconf interface, SDK and a library of Python scripts that simplify integration with northbound self-service portals such as Science Logic, vRealize Automation Suite, and any other self-service portals.

ii. Architecture

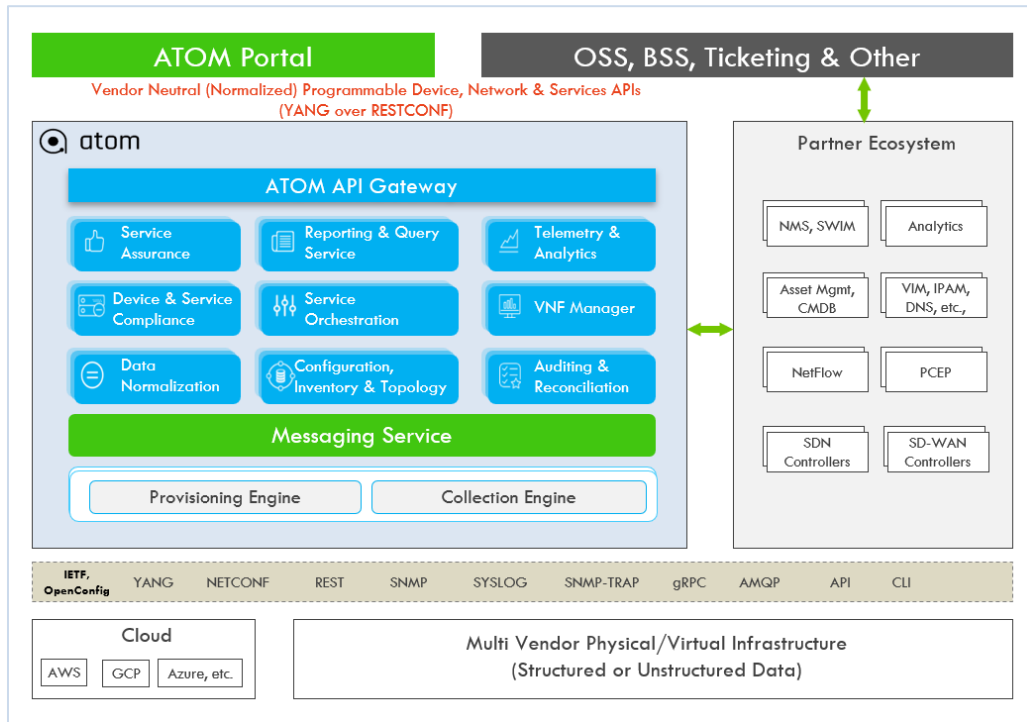


Diagram-1: PoC Reference Architecture

3. Towards Enhanced Application Delivery

While the use cases showed specific capabilities of the ATOM in addressing the FG-50 Fintech’s application delivery requirements, the ATOM can address the needs of any company of any size that is looking to enhance its application delivery capabilities. This promise is supported by the core capabilities built in the ATOM namely:

Core Capabilities of Anuta ATOM	Enhancements Delivered
<p>Accelerated Tenant On-boarding Anuta ATOM automates the configuration of network services across L2-L7 multi-vendor physical, virtual and hybrid networks.</p> <p>ATOM self-service delivery avoids legacy handoffs between the server and network teams resulting in lower overall OPEX and time to market.</p>	<p>Accelerated Time to Market</p>
<p>L4-L7 Automation and Self-Service ATOM abstracts multi-vendor L4-L7 appliances including Firewalls, Load Balancers, WanOp, etc.</p>	<p>Provided a fully-fledged Self-Service solution; Removes dependency on IT admin.</p>

<p>Tenant admins can manage high-frequency operations such as adding or modifying ACLs, NAT rules, VIPs, Real Servers, etc. with a simple GUI.</p> <p>The solution avoids the cumbersome ticketing process prevalent in the traditional DC and ensures consistent security policies.</p>	
<p>Extensible Platform with YANG Modeling</p> <p>The rich YANG model enables Anuta ATOM to integrate seamlessly with any platform, device or interface/protocol, delivering a truly open architecture. ATOM enables customers and partners to develop the custom device, service and operational models to match their service delivery needs.</p> <p>ATOM uses an extensible, IETF YANG based model-driven configuration and service management engine on managing multi-vendor devices.</p>	<p>Supported Multi-Vendor devices for each technology in the Data Center and obviates the need to learn multiple vendor GUI or CLI.</p>
<p>Performance and Scale</p> <p>ATOM has been proven to automate thousands of L2-L7 devices including routers, switches, firewalls, ADCs, WAN Op, Proxy devices for different use cases such as app delivery, private cloud, ACL and VIP management.</p> <p>ATOM distributed architecture scales to several tens of thousands of devices in the network. Both the ATOM controller and agent are stateless resulting in a highly available solution.</p> <p>For large scale deployments, ATOM supports external DB such as Oracle / Postgres SQL to store server state.</p>	<p>Delivered Scalability for DevOps Operations of any size and in any sector</p>
<p>Multi-Tenancy and RBAC (Role Based Access Control)</p> <p>The solution requires only one instance of ATOM to manage multiple customer's infrastructures. ATOM tracks each tenants' resources and tags them separately.</p> <p>ATOM offers comprehensive role-based access control and integrates with AD and LDAP to enforce authorization policies. Roles and permissions can be customized to satisfy various organizational structures.</p>	<p>Catered for multiple organization and conforms to industry best practices and ensures compliance with regulations</p>
<p>Capacity Management</p> <p>ATOM discovers network infrastructure including device type, role, capacity, and topology. Admin can organize the resources into multiple pods and resource pools for service provisioning.</p> <p>ATOM maintains a real-time inventory of physical and virtual network resources and computes capacity and availability for each service offering. ATOM also generates threshold-based alerts to inform the impacted tenants.</p>	<p>Discovered existing network services and enabled self-service automation for them. This relieves the IT admin from trivial network changes and helps them focus on evaluating and deploying new technologies.</p>

The highly successful PoC demonstrated the capabilities of Anuta Networks' ATOM solution to deliver application delivery orchestration for comprehensive network policy automation that supports L2-L7 services including Firewall, ADC, GSLB, WAN Op, Proxy, MPLS, QoS, and IPAM. Following are the key highlights:

1. Reduced tenant onboarding time from weeks to minutes.
2. Reduced network team's involvement in change requests by 70%.
3. Introduced consistency for network operations and improved overall security and compliance.
4. Service Models for customer use-cases were developed in less than two weeks.
5. Faster application deployment within any data center environment with integrated service fulfillment testing for quicker turnaround time.

Six Key Differentiators of Anuta ATOM Compared to Other Leading Solutions in the Market

1. Supports the largest range of vendor devices such as Cisco, Juniper, Infoblox, Checkpoint, Citrix, F5, Fortinet, Palo Alto Networks, HP, Bluecat, Infoblox, Radware and VMware
2. Integrated Service Fulfillment testing with results
3. Resource Management and Service Assurance capabilities
4. In-built applications such as IPAM and network component such as DNS server
5. Yang Model-driven, an extensible and scalable platform with the most comprehensive support for multi-vendor physical and virtual network devices and new age SDN controllers regardless of the network use-case.
6. Support for Branch, Campus, Data Center and Carrier Core infrastructure automation across large enterprises, service providers, and telecommunications operators – a competitive advantage over similar offerings by other niche players.

About Anuta Networks

Anuta Networks is a leading provider of Web-Scale On-prem and Cloud Network Orchestration and Assurance software for the branch, campus, data center and service provider-managed multi-vendor enterprise networks. Anuta ATOM orchestration and assurance platform enables customers to automate and accelerate network services. Anuta ATOM offers complete Lifecycle Service Orchestration and Telemetry for the physical, virtual, and hybrid networks thus allowing customers to leverage their investments in existing network infrastructure and transition them seamlessly to Intent-Based SDN and NFV environments. Headquartered in Silicon Valley, Anuta Networks is a Gartner Cool Vendor and Best of VMworld award winner three times in a row.

Reference: ¹IDC - *Worldwide Quarterly Cloud IT Infrastructure Tracker*; ²IDC - *Worldwide Hosted Private Cloud Services Forecast, 2015–2019: New Models for Delivering Infrastructure Services*(Jan 2016);