ANUTA NETWORKS ATOM

NETWORK AUTOMATION DELIVERED AT SCALE

EXECUTIVE SUMMARY

Companies' interest in network automation surges as they seek to support knowledge workers under the impact of COVID-19. In the past, most IT operators were reluctant to automate out of fear of losing control. However, given the pandemic-driven need to support remote workers on a massive scale, enterprises and service providers alike should consider automation. Automation benefits include higher quality of connectivity, less downtime through faster remediation, easier device provisioning, and a more consistent user-application experience. Cloudification can also dramatically extend network scalability and IT agility. Network operators should seek an automation solution that offers a flexible deployment path that spans on-premises, cloud, and as-a-service options.

When evaluating a networking automation solution, IT operators should seek comprehensive solutions with full functionality and the ability to scale. Many offerings are fragmented and missing key functionality, while others are refactored from legacy architectures that will not scale. Organizations need guidance to choose an optimal platform.

This paper explores Anuta Networks' ability to deliver a modern, flexible, secure, and complete closed-loop automation solution and specifically evaluates its Automation, Telemetry, Orchestration, Monitoring (ATOM) platform.

WHY AUTOMATE?

Historically, enterprises hesitated to automate networking functions over concern for loss of control or human operator elimination. However, the pandemic has caused enterprises and service providers alike to reconsider automation's valuable role. Automation can deliver elastic scale, ensure high network uptime with auto-remediation, and optimize application performance. In enterprise environments, automation can support a single source of truth for the absolute highest levels of security and facilitate massive industrial Internet of Things (IoT) deployments connecting machines to machines. In service provider environments, automation can support more efficient deployment of 5G, network slicing to unlock new monetization opportunities, and multi-

access edge computing (MEC) to supercharge new service delivery by bringing cloud-scale closer to data creation points.

Many automation solutions are available. How do enterprises and service providers start to evaluate a platform? One important consideration is the underlying architecture. It is our opinion that customers should only consider automation platforms that use a modern infrastructure stack. Next, we will examine what comprises a modern architecture.

THE IMPORTANCE OF A MODERN ARCHITECTURE

Many automation solutions available today refactor legacy platforms or offer a mishmash of organically developed tools and tools added through acquisition that do not integrate well together. On the other hand, modern networking architectures incorporate microservices, containerization, and cloud-native elements.

What role do microservices play in a networking environment? As modular components that can be developed and deployed independently. Microservices improve the agility of software development and maintenance through the elimination of interdependence. The benefits are better scalability, faster deployment, and improved maintenance through expedient issue isolation and resolution schemes. When coupled with a philosophy of continuous integration and delivery (CI/CD), microservices can serve as a disruptive platform. Developers can subsequently build modular blocks of software code that comprise an application and link them together through standard application program interfaces (APIs). Additionally, microservices require less coordination across development teams. Since each microservice is independent, software teams can focus on one particular component in isolation of others.

Another modern architecture trend is containerization, made popular by Docker and Kubernetes. Containerization utilizes virtualization to facilitate the transportation of applications more efficiently over a network. Containers vary from standard virtual machines (VMs) in that they create abstraction at the application layer. On the other hand, VMs are an abstraction of physical hardware. The resulting benefit of containerization is faster response times, lower latency, and greater application portability, all of which lend to a much-improved user experience.

Finally, a cloud-native design is an essential consideration for network operators. Moving beyond cloud enablement or delivery, cloud-native, web-scale architectures

facilitate a multitude of delivery models providing greater deployment flexibility ranging from software as a service (SaaS), on-cloud, and on-premises.

Let us examine the ATOM platform in greater detail and evaluate its underlying architecture and automation capabilities.

WHAT IS ANUTA NETWORKS ATOM?

ATOM is a clever acronym that stands for Automation, Telemetry, Orchestration, and Monitoring and accurately captures Anuta's overall capability to deliver a closed-loop automation platform with the added capabilities of network assurance, device and service lifecycle management, compliance, and configuration maintenance. Built from the ground up on microservices, highly containerized and with web-scale architecture, according to Anuta, ATOM can massively scale and support diverse multi-vendor and multi-domain environments.

Microservices allow ATOM to structure its features independently for a high degree of test and deployment flexibility. This web-scale approach is designed to enable customers of any size to start with small pilots and scale to thousands of devices. Network operators can also choose discrete features and functionality, selectively conduct rolling upgrades based on the containerization, and deploy anywhere from on-premises to private, public, and hybrid cloud.

ATOM offers multiple fully integrated capabilities that deliver a complete, closed-loop automation capability from a technology stack perspective. This approach is compelling given that most other automation offerings provide only a subset of functionality. According to Anuta, ATOM's capabilities include:

- Low code and stateful service automation to improve IT agility and software image management as well as bolster the overall user customer experience.
- Compliance and configuration management to improve security posture, IT staff efficiency, and lower operating costs.
- Monitoring and analytics to provide visibility, identify issues before they occur. and trigger auto-remediation measures to prevent costly network outages.
- Event correlation to facilitate deeper insights and alert routing to remediate the most critical issues first on a reactive basis.
- Automated device onboarding for ease of management and faster deployment as well as improved lifecycle management to ease device upgrades.

- High availability and redundancy through active cluster modes coupled with massive scale to support up to one million networked devices, fifteen thousand services per hour, and a vast number of workflows.

Several other platform features differentiate ATOM from its competitors. These features include broad and deep multi-vendor device support across 45 vendors and 150 platforms with the ability to add new ones quickly, as well as a single pane of glass for management ease through one console. ATOM also delivers robust scaling of performance metrics and security capabilities that provide a single source of truth with SOC2 certification expected later this year for the highest degree of customer data integrity management.

SIMPLIFYING THE CUSTOMER JOURNEY

Many network infrastructure companies embrace a customer experience (CX) approach to ease deployment and accelerate customer return on investment (ROI). We believe that Anuta Networks embraces CX in three ways to simplify the automation path for its customers. First, ATOM offers over 100 out-of-box service workflow and device support templates based on real-world deployments and use cases. Top use cases include the following:

- Software upgrades and network migration.
- Network health monitoring and remediation.
- Core service orchestration and network method of operational procedures (MOPs).
- Compliance auditing and reporting.
- Zero-touch device provisioning and service, network, and device-level monitoring.

ATOM also includes a self-service catalog with an intuitive dashboard. These tools subsequently ease the selection, deployment and management of services and workflows based on vendor, device, and YANG data modeling language spanning IETF, OpenConfig, and Device Native.

Second, according to Anuta, ATOM provides enterprises and service providers alike the flexibility of deploying the ATOM platform or agents on-premise, in the cloud, or via SaaS with intuitive dashboarding. Case in point, the recent announcement of ATOM Cloud offers fast time to value, ease of deployment, and management. It does so through immediate access to the latest features and security provisions. It is also

deployable through Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform for the greatest hosting flexibility.

Third, we believe that the partnership between Anuta Networks and Juniper Networks in 2020 marries Anuta's device and service lifecycle management with Juniper's transport and wide-area networking (WAN) capabilities powered by Paragon Pathfinder, Paragon Planner, and network health assurance powered by Paragon Insights and Paragon Active Assurance. Consequently, the combined Anuta/ Juniper Paragon Automation portfolio is positioned to deliver a complete, end to end networking automation offering that has the potential to simplify deployment and offer headroom for future use cases.

CUSTOMER TESTIMONIAL

Neustar is a firm specializing in facilitating identity resolution services that supports secure business to consumer (B2C) communications for some of the most iconic brands in the world, including Google and Ticketmaster. Neustar's key challenge was to automate a manual service flow across a diverse multi-vendor network comprised of Citrix, Arista, HPE, and Juniper devices. ATOM, hosted in the AWS cloud, delivered a modular, cloud-native, and extensible service validation and compliance platform. Anuta claims that human errors were reduced, network uptime was improved, and that Neustar was able to deliver new services more quickly. Matthew Wilson, Senior Director, Product Management, Network, and Application Security, Neustar, states: "Anuta Networks ATOM with its 24/7 network availability as well as its speed of incident response and visibility provided critical assurance during attempted denial of service attacks."

To learn more, visit the link here.

CALL TO ACTION

The pandemic has underscored the need for IT operators to seek new ways of ensuring networking scale and resilience. This paper examined how automation is key to achieving these objectives and why a modern underlying architecture is essential. We also evaluated the Anuta Networks ATOM automation platform and its capabilities to simplify deployment, bolster security, and improve the overall customer experience. Moor Insights and Strategy believes that ATOM is powerful in its depth and breadth of features as well as its consolidation of disparate automation tools. ATOM is also poised to ease network deployment, ongoing management and has the potential to reduce operating expenses with its modern architecture that employs a CI/CD methodology. To

the latter point, microservices, containerization, and web-scale elements allow ATOM to deliver closed-loop automation with a higher degree of deployment flexibility through a choice of shared or dedicated infrastructure and on-premises, cloud, or software as a service (SaaS) models. To learn more, visit www.anutanetworks.com/anuta-atom-overview/

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