Benefits

- End-to-End Management: Provides FCAPS framework and enables complete management of network elements.
- Design Flexibility: Allows administrators to design, validate, and push configurations to a device or a group of devices
- Lifecycle Management: For multi-vendor devices including ZTP, Software Upgrades and Monitoring.
- Visualization: Provides flexible network visualization options for simplifying network operations.
- High Resiliency: Microservices-based Architecture with High Resiliency and Auto-Scale ensures scalability and reliability.
- Instant Scale: Horizontally scalable to 1 million+ devices, the solution provides investment protection for the future demands of 5G, IoT, & multi-cloud deployments.

Automate and Monitor Multi-Vendor Networks with Next-Generation Element Management System

The need for network availability, scalability, speed, and performance

Enterprises can take advantage of new capabilities as devices are added to networks. However, this introduces challenges and complexities for network operators in managing traditional IT applications and business services like telephony, video conferencing, and IoT devices. Enterprise networks must also support round-the-clock availability while simultaneously blocking traffic from unauthorized sources cost-effectively.

With the next-generation element management system (EMS) from Anuta Networks ATOM, companies can easily implement and manage automation and monitoring of multi-vendor networks through a single, integrated solution. Network managers can finally say goodbye to poor network performance given ATOM's robust fault and syslog analysis techniques which provide an in-depth insight into operations and historical data of multiple networks.

End-to-end management of multi-vendor networks with ATOM

No matter which vendor or what type of network devices (routers, switches, or firewalls) your organization uses, ATOM has you covered with a complete EMS solution. Features include a broad FCAPS capability, same-day support for new devices, a task-specific user interface, and other capabilities that help network operators manage simple to complex network operations. ATOM's northbound APIs easily integrate with existing NMS or OSS/BSS deployments, SDN controllers, CMDB, IPAM, Syslog / NetFlow collectors, Service Now, Jira, and many others. Subsequently, ATOM ensures that IT operators can manage every network, regardless of complexity, from a single platform.

ATOM also helps automate networks at scale through a modular, extensible, scalable, and cloud-native software platform that enables enterprises and service providers the ability to rapidly design and provision network services, collect telemetry, ensure compliance, and provide closed-loop remediation for multi-vendor infrastructure environments.

Anuta Networks ATOM has a flexible architecture that can support any automation journey. Get started quickly with basic use-cases such as discovering devices in brownfield environments, managing configurations at scale, visualizing inventory, upgrading images. As one gains comfort with automation, adopt advanced use-cases such as provisioning services using out-of-box templates and workflows, orchestrating complex multi-domain services, building custom workflows, and remediating known failures using closed-loop automation. This "at-a-glance" covers the basic features of ATOM. For advanced concepts, please reference the ATOM Datasheet.

Figure 1: ATOM - Lifecycle automation for multi-vendor networks

Device Management and Monitoring

Dashboard View: The ATOM device dashboard enables operators to manage all network devices in a single user interface/ dashboard - including device performance and health. This capability provides a concise view of all networks, helping IT teams take quick action if required.

Device Discovery and ZTP: ATOM provides a wizard-based interface for near real-time device discovery to enable operators to have a holistic view of every network device for easy management. ATOM also offers a true multi-vendor Zero-Touch Provisioning solution that enhances how network teams onboard devices to a given network. It utilizes a DHCP-based architecture that automates steps such as deploying Day-0 configuration templates, updating software images, deploying patches, and fixing bugs.

Device Operations: ATOM supports the industry-standard Fault, Configuration, Accounting, Performance, Security (FCAPS) framework and provides end-to-end management of network elements. ATOM also enables teams to leverage notifications and alerts to take swift actions for a configuration change.

Device Inventory: ATOM maintains up-to-date inventory details of all managed devices in the database through a holistic platform. This includes the complete hardware, software, and license inventory of each device as well as

Fault & Performance Management

- Monitoring, controlling, and planning network infrastructure is crucial. New networks introduce variations in size, heterogeneity, and complexity.
- ATOM enables an operator to always be on top of the near real-time health and performance of networks. The operator can also define event thresholds based on different metrics to be alerted when a threshold limit is breached.
- ATOM provides the framework to analyze Faults and Syslog based on historical data where specific performance degradation might be observed.
- ATOM deploys cutting-edge technologies such as streaming and industry-leading time-series database as the foundation of its powerful analytics capabilities, ensuring high-quality, relevant insights. All high-volume data collected undergoes real-time processing and is stored and exposed via components within ATOM.

relevant information of all physical and logical interfaces on these devices. It also provides a detailed view of all hardware inventory (such as power supplies, chassis cards, fans, part numbers) for all managed devices to enable intelligent cataloging for effective system upgrades and modifications.

Software Image Management

ATOM empowers network teams to perform remote software upgrades and enables scheduling, downloading of images, and automation of pre-checks/post-checks at the time of software upgrades using workflows.

Security Management

The ATOM platform supports granular role-based access control across all platform features, including device management, inventory management, workflow automation, service orchestration, and compliance management. This ensures the security of networks by providing access to only relevant teams while also integrating with other platforms to enable easy and secure safety checks. ATOM integrates with LDAP, AD, and TACACS servers for user authentication and authorization. ATOM also provides single-sign-on (SSO) capabilities. Regular internal and external audit of security, penetration, and vulnerability of the platform ensures that no security gaps go undetected.

The ATOM on-premises solution is compliant and supports industry-leading standards. The ATOM Cloud offering is compliant with SOC2 and GDPR standards. Both provide best-in-class security covering safety, availability, integrity, confidentiality, and privacy for all data - whether at rest or in transit. Customers can also be onboarded onto a shared or dedicated infrastructure, enhancing the product's flexibility. The nature of ATOM Cloud's shared instance provides comprehensive multi-tenant capabilities to facilitate complete data privacy, segregation, and isolation.

Configuration & Compliance Management

ATOM offers a robust framework to define complex network and security policies easily. It enforces proactive 24*7 compliance by automatically detecting violations and taking corrective actions to stay on track. The platform regularly archives and preserves configuration on devices for future analysis. ATOM also detects any unauthorized changes made on devices and enforces reconciliation procedures automatically.

Low Code Workflow Automation

ATOM provides an intuitive graphical interface to design, develop, and execute complex and straightforward network operations and procedures on the go. The low-code workflows enable operators to execute complex MOPs such as software upgrades, zero-touch provisioning, configuration migrations, troubleshooting tasks from an easy-to-use graphical interface.

Service Provisioning & Lifecycle Management

ATOM service orchestration capabilities enable network operators to create and manage complex network services such as L2VPN, L3VPN, EVPN, etc. The IETF YANG framework can be leveraged to model or customize services as needed. ATOM provides a key feature of brownfield discovery and the complete lifecycle management of network services. The platform supports out-of-box OpenConfig and IETF models for L2/L3 VPN services. Service models support atomic transactions and can be invoked by the low-code workflow for complete stateful and stateless automation execution. ATOM's powerful service orchestration combined with pre-and-post checks via low-code workflows delivers a differentiated service activation experience for your clients.

Once a service is activated, ATOM enables network operators to manage SLAs and perform periodic health checks for WAN services such as L2/L3 VPNs. Network operators can monitor the health, operating efficiency, traffic-handling capacity, and performance metrics of the managed devices and configured services throughout the life of the service for maximum uptime and business continuity. Real-time information from devices and services helps operators identify, analyze, and remediate performance issues to continue serving their customers throughout the year.

Closed-Loop Automation

ATOM integrates configuration management, compliance, telemetry collection, and low-code workflows to deliver auto-remediation from known failures. Network administrators can describe business intent, key performance indicators and take corrective action on violations. This ensures that teams are on track to continuously work on, meet and exceed the line of business objectives.

Out-of-box Workflows and Adaptors

ATOM provides numerous out-of-box workflow templates for the most common network operational and troubleshooting activities allowing network operators to quickly address basic and well-known use cases. These templates are incredibly customizable, can be set up instantly, and can be easily modified to suit business requirements. The templates cover a broad spectrum of use cases - from simple use cases such as L2/L3 provisioning to complicated ones like OS upgrades.

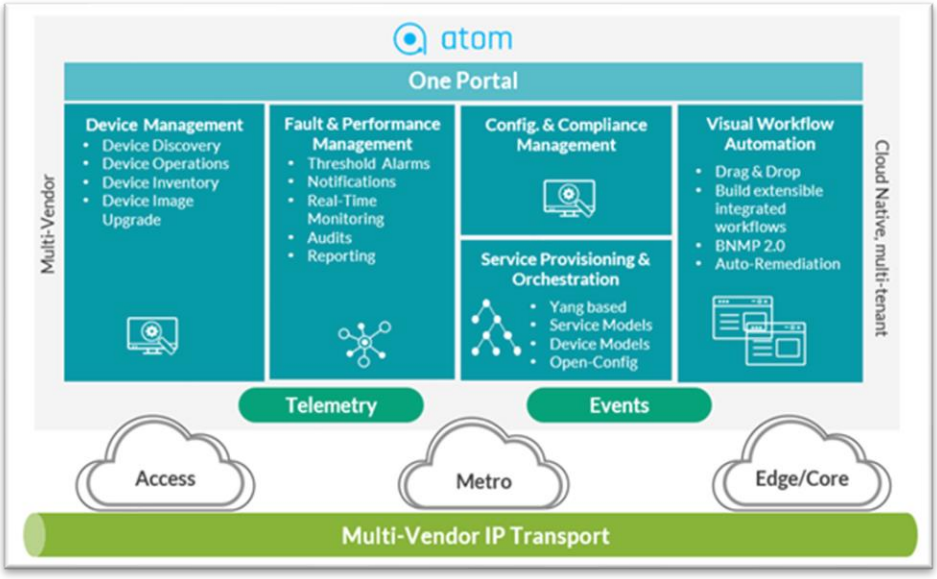

Figure 2: One portal, multiple benefits

Conclusion:

By the end of 2021, a total of 22.2 billion devices were connected to the internet. While this sheer volume creates opportunities for network operators to upsell more services, it also creates challenges in ensuring reliability and network uptime. A downtime of just one hour can cost tens of thousands of dollars for a network operator. The adoption of multi-vendor, hybrid multi-cloud environments only exacerbates the challenges of maintaining network availability, performance, reliability, and flexibility.

ATOM's support for Multi-Vendor FCAPS, Service Orchestration, Workflow Automation, and Closed-Loop Remediation eliminates manual processes, avoids costly errors, provides visibility, and ensures performance and security at a massive scale. The out-of-the-box features in ATOM, such as Zero Touch Provisioning, Software Upgrade, Inventory, and Alert Management, helps networking teams realize the benefits of automation from Day 1 without any customization.

About Anuta Networks

Anuta Networks is a leading provider of web-scale, on-premises and cloud network orchestration and assurance software for the branch, campus, data center, and service provider-managed, multi-vendor enterprise networks. Headquartered in Silicon Valley, Anuta Networks is a Gartner Cool Vendor and Best of VMworld award winner three times in a row.