At-a-Glance

anuta networks

Features and Benefits

- Network Service Orchestration and Assurance for 45+ vendors that provides one of the broadest industry coverage models
- An intuitive graphical interface to define simple or complex procedures saves time and resources
- Streaming Telemetry using Google Protocol Buffers facilitates an open standard approach
- Real-time Analytics and Historical reports allow IT administration to course correct immediately and ensure a higher and more consistent QoS

Anuta ATOM: Assurance, Telemetry and Orchestration for Multi-Vendor Networks

Anuta ATOM delivers a modular, extensible, scalable and cloud-native software platform that enables enterprises and service providers to rapidly design and provision network services, collect real-time telemetry, develop deep network analytics, ensure compliance and provide service assurance for multi-vendor infrastructure.

Low Code Workflow Automation

Anuta ATOM provides an intuitive graphical interface to design, develop and execute complex or straightforward network operations and procedures. The powerful interface allows network administrators to describe business intent along with key performance indicators and corrective actions to take on violations.

Analytics & Closed-Loop Automation

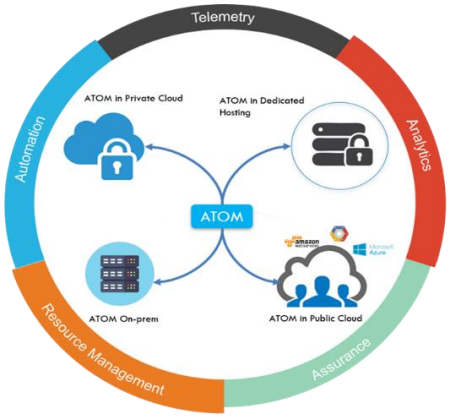
Anuta ATOM collects streaming telemetry from multi-vendor infrastructure and applies machine learning algorithms to develop deep analytics and reports. Network administrators can define KPI metrics and corrective actions to automate SLA compliance.

At-a-Glance

anuta networks

Features and Benefits

- Containerized to run on any cloud infrastructure including AWS, Azure, GCP provides customer deployment flexibility
- Always-on compliance enforcement framework reduces security threats and eliminates inconsistencies
- Horizontally scalable to thousands of devices provides networking investment protection for the future demands of 5G, IoT and multi-cloud
- Flexible low monthly pay per use plans to minimize business risk with security



Configuration & Compliance Management

Anuta ATOM offers a robust framework to define complex network and security policies easily. It enforces compliance around-the-clock by automatically detecting violations and taking corrective actions. The platform regularly archives and preserves configuration on devices. Anuta ATOM detects any unauthorized changes made on devices and enforces reconciliation procedures automatically.

Extensible Platform

Anuta ATOM is an open and extensible platform. The entire platform functionality is available via the REST API for integration with OSS/BSS and ticketing systems. Anuta ATOM has an SDK that simplifies overall development effort, introduces version control to treat the infrastructure as code and supports ongoing DevOps movement.

Scalable Cloud-Native Platform

Anuta ATOM is containerized and can be deployed on-prem or public, private, hybrid or multi-clouds including AWS, Azure, and GCP. The modular architecture helps to reduce ATOM's footprint by allowing the administrator to install components relevant to his use cases. Modular architecture allows ATOM to scale effectively to manage Small, Medium or Very Large-scale networks.

To know how Anuta ATOM Platform reduces OPEX and benefits your business visit https://www.anutanetworks.com/anuta-atom-overview/

Data Sheet

ATOM: Assurance, Telemetry, and Orchestration for Multi-Vendor Networks

Introduction

Worldwide network operation teams and product owners are facing strong demands to offer differentiated services at a faster rate while ensuring strict SLAs covering reliability, availability & serviceability. Further complicating matters, operators are burdened with legacy infrastructure, broken processes, limited visibility and shrinking budgets.

Anuta ATOM uniquely addresses these pain points and delivers a modular, extensible, scalable and cloud-native software platform that enables enterprises and service providers to rapidly design and provision network services, collect real-time telemetry, develop deep network analytics, ensure compliance and provide service assurance for multi-vendor physical and virtual infrastructure. With ATOM, networking teams can deliver services faster, eliminate human errors, avoid security violations, reduce OpEx and meet SLAs with exceptional high availability.

Product Overview

Anuta ATOM is a highly scalable cloud-ready platform for network orchestration & telemetry. Anuta ATOM combines the best of model-driven architecture with latest technologies in microservices and analytics to deliver one of the industry's most scalable platforms. The closed-loop assurance in ATOM opens exciting new opportunities to transform today's networks into future smarter, self-healing ones.

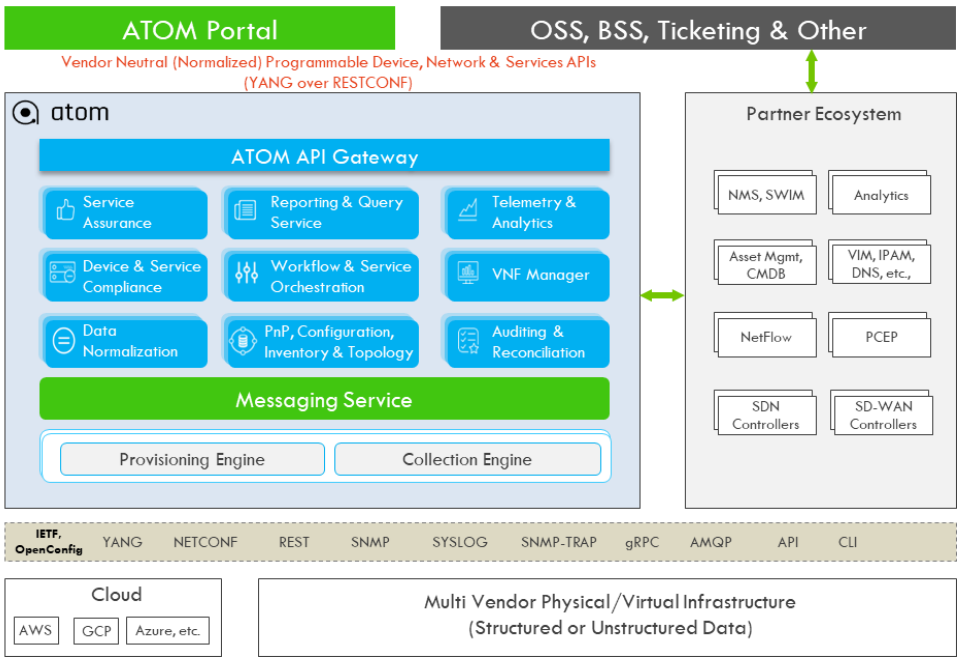


Figure 1. Anuta ATOM Architecture

Anuta ATOM includes an SDK for ease of developing applications using a sophisticated description language, query interface, and other productivity tools. Anuta ATOM is containerized and can be deployed to manage Small, Medium or Very large-scale networks in private, public and hybrid cloud environments.

Anuta ATOM is also available as a SaaS offering with low monthly pay per use plans including auto upgrades, periodic backups, billing & usage reports, and proactive customer support.

Features and Benefits

Features	Benefits
Network Orchestration & Assurance for 40+ vendors	One of the broadest industry coverage models
Horizontally scalable to 1 million+ devices	Investment protection for the future demands of IoT and other massive scalability requirements
Streaming Telemetry using Google Protocol Buffers	Open standards approach in multi-vendor environments
Real-time Analytics and Historical reports	Allow IT administration to course correct immediately to ensure a higher & consistent QoS
Dockerized to run on any cloud infrastructure including AWS, Azure, GCP	Customer deployment flexibility
Microservices based architecture with High Resiliency and Auto-Scale	Efficient scalability and reliability
A powerful DSL to define KPIs and corrective actions	Based on specific customer requirements
Available as On-Prem and SaaS offering hosted in a Tier-1 cloud	Experiment quickly and scale rapidly with minimum business risk

Supported Platforms

Anuta ATOM is validated with 150+ platforms from 45+ vendors. For the full list, visit: https://www.anutanetworks.com/managed-devices/

Vendor	Physical	Virtual	SDN
A10		vThunder	
Alcatel Lucent	7950, 7705		Nuage VSP
Arista	7000, 7500		
Brocade	VDX 6700, 6900, 8770, Fast Iron, Big Iron	Vyatta 5400, 5600, SteelApp	

Checkpoint	Provider-1, Secure GW, 4K, 12K, 13K	R77 Virtual GW	
Cisco	ASR, ISR, CSR, Nexus 1-9K, Cat 2k-4K, ASA, FWSM, ACE, WSA	vASA, Virtual WSA, CSR1000v, vWAAS	ACI and APIC
Citrix	NetScaler MPX, SDX		
Huawei	NE40E-X8, NE40E-X3		
Juniper	MX-80, 240,480,960; QFX, EX 4200, 8200, ISG, SRX	vSRX, vGW	Contrail
Palo Alto Networks	PA Series	VM Series	
Radware	5412XL	ADC-VX	
Riverbed	Stingray, Steelhead Physical	Steelhead Virtual	
VMware		vShield Edge GW, dVS, vCenter	NSX*

Scalability & Deployment Spec.

	SMB (< 1K Devices)	**Small (5K Devices)**	**Medium (50K Devices)**	**Auto Scale (50K – 1M+ Devices)**
Deployment Type	Embedded	Distributed, Multi-Node	Distributed, Multi-Node	Distributed, Multi-Node
Software Distribution	Virtual Machine or Docker			
Self-Healing & Resilient, HA	No	Yes	Yes	Yes
Multi-Tenancy, RBAC/NACM	Yes	Yes	Yes	Yes
Disaster Recovery	No	Yes	Yes	Yes
Cloud Ready	Private Cloud, Public Cloud - AWS, Google Cloud Platform, Microsoft Azure			
Total System Footprint	32GB RAM 4 vCPUs 100GB HDD	600GB RAM 80 vCPUs 1.5 TB HDD	1.0 TB RAM 120 vCPUs 1TB HDD 1.1 TB SSD	Varies per the Performance and Throughput requirements
Other Deployment Requirements		Logging, Messaging, Time-Series DB		
Throughput & Metrics		KPIs can be tuned. The system will scale and as required to meet the KPIs.		

Detailed Features list

Network Services:

- Application Delivery in Private Cloud
- FWaaS, LBaaS
- CPE: Physical, Virtual and Hybrid
- IP/MPLS backbone - L2 VPN, L3 VPNs
- Cloud Interconnect
- Segmentation in Campus Networks
- Data Center Interconnect
- IETF YANG models, OpenConfig models

Orchestration:

- Service Design
- Service Chaining
- BPMN 2.0 compatible Workflow
- Service Deletion
- VNF Manager- OpenStack, vCenter
- Capacity Forecast
- Dynamic Service Provisioning
- Service Alerts
- Logical and Physical View
- Support for TOSCA and YANG models

Assurance:

- Compliance Validation
- Service Validation
- DSL for custom KPIs and actions
- Define baseline behavior and correct deviations
- Monitor BGP neighbor flapping
- Security Threat Management
- Monitor WAN interface for Jitter, Packet loss, Utilization.
- Traffic migration from primary to secondary
- Automatic config backup per KPI

Network Functions:

- VLAN, VXLAN, Virtual Port Group
- Firewall, NAT- Physical & Virtual
- Load Balancer- Physical & Virtual
- WAN Optimizer- Physical & Virtual
- VRF
- Virtual Router
- Web Security, Proxy
- MPLS L3 VPN, IPSec VPN, DMVPN
- RIP, OSPF, ISIS, BGP
- STP, VPC, MC-LAG
- EtherChannel

Telemetry:

- Model-driven Collection
- Protocol Buffers
- Interface Counters
- Integrates with InfluxDB, ELK Stack
- Sensors – BGP, Interface
- Query time series DB for past events and KPIs
- Integration with Grafana

System:

- VM or Docker Image
- Scalable Server & Agent Model
- Role Based Access Control
- Kubernetes based Cluster Management
- Multi-Site & DR
- Java SDK
- API Gateway & Load Balancing
- Application Tracing
- Dynamic & Customizable UI

Resource Management:

- Resource Discovery
- ZTP, RMA, Network Plug and Play
- Topology Discovery
- Active Device Monitoring
- Config Management
- IPAM
- Resource Pools
- Resource Audit Log
- Software Image Mgmt (SWIM/SMU)

Analytics:

- Device Reports
- Query operational data
- Visualization with Grafana
- Time Series DB
- Top-10 anomalies in given time range
- Troubled Devices
- Tenant-specific alarms
- Map L1, L2 failures to service outages
- Predictive analytics with ML*

ATOM SaaS:

- Monthly Pay-per-Use plans
- Flexible Pricing based on Device Type and Quantity
- Multiple Enterprise Connectivity Options
- Security and Availability by Tier-1 Cloud Provider
- Compliance and Audit Report

Sample Deployments:

1. Tata Communications (TCL) is a leading global Tier-1 SP, offering IZO SD-WAN for managed branch customers across 130 countries in 700 cities. TCL team evaluated multiple network service orchestration solutions including Cisco NSO, Glue Networks, and Anuta ATOM for their multi-vendor infrastructure consisting of Cisco, Riverbed, Versa and Juniper. They chose Anuta ATOM because of its flexibility, multi-vendor coverage, scalability, development toolkit as well as customer service.

2. Telstra provides hosted cloud services for enterprise applications with strict access controls. However, they faced significant challenges to manage and scale the security policies manually. Anuta ATOM automated the entire L4-L7 services across multi-vendor devices and introduced “Security as a Service.” The solution reduced operating expenses by 50%, increased security compliance and application availability.

3. Neustar, a leader in identity and authentication services, has deployed Anuta ATOM to automate their 26 DCs that scrub DDoS attack traffic at 175Gbps for 11K clients.

4. F5 networks deployed Anuta ATOM in their Silverline DDoS private cloud to simplify and automate the provisioning of Data Center services for their external customers while driving down operational expense.

5. One of the world’s leading financial services company deployed Anuta ATOM to collect streaming telemetry and deliver analytics, reporting, remediation, and assurance for millions of interfaces on thousands of devices spanning geo-distributed deployments.

6. One of the world’s premier clean energy company deployed ATOM to accelerate its network service delivery. They provide managed services using a complex multi-vendor network infrastructure with 2000 network devices. Anuta ATOM reduced service provisioning by 95% and OPEX by 80% while eliminating manual errors.

TATA COMMUNICATIONS

Case Study

anuta networks

Analytics & Closed-Loop Automation for SD-WAN Services

TATA Communications Ltd (TCL) is one of the world's leading Managed Service Providers (MSP). In the pursuit of modernizing and transforming their operations, TCL recently rolled out their IZO™ SD-WAN cloud-based solution. IZO™ SD-WAN is aimed at providing enterprises with instant deployment and seamless management of multi-vendor branch networks while delivering a consistent experience across all branch offices through analytics-driven service assurance and service agility. TCL approached Anuta Networks to solve the challenges of accelerating the enterprise customer onboarding process and improving overall network management.

Customer Profile

- Leading MSP with $2.4B revenue
- Operations across 130 countries and 2000 cities
- SD-WAN and Hybrid WAN solution delivery spanning multi-vendor networks

Business Requirements

- Reduce time-to-market
- Simplify branch infrastructure
- Multi-technology, Multi-vendor Orchestration
- Consistent network policies
- Improved TCO realized through lower OPEX and improved agility

Technical Requirements

- Zero Touch Provisioning of SD-WAN and Hybrid WAN
- Automated, analytics-driven capacity management
- Proactive customer-centric policy updates and remediation
- Multi-tenancy

MSPs offering SD-WAN services typically share several common requirements:

- On-demand provisioning of SD-WAN capabilities for both new and existing networks;
- The need for an easy-to-manage platform that simplifies management and monitoring of SD-WAN services and existing branch office infrastructure;
- Multi-tenant support for secure and segregated environments that meet individual industry standards;
- Integration into existing OSS/BSS and ITSM tools;
- Service assurance delivered through rapid troubleshooting toolsets.

Key Considerations

- Software is expected to scale to accommodate the demands of massive on-boarding.
- Provisioning should dramatically compress the historical CLI script driven process.
- Automation should deliver an analytics-driven service assurance for faster remediation of network issues.
- Tools should provide "self-service" support to expedite incident remediation.
- Automate configuration audits and reconciliation to detect out-of-band changes and raise alarms.

TATA COMMUNICATIONS

Case Study

anuta networks

Why TCL chose Anuta ATOM?

- Delivers zero touch provisioning analytics, reporting, remediation and assurance
- Support for 45+ vendors
- Microservices architecture scalable to 1 million+ devices
- Multi-Cloud Ready
- Compliant with open standards – IETF YANG, IETF NACM
- Flexible pay-as-you-grow pricing

Results Achieved

- CPE provisioning time < 5 mins
- Highly scalable, fully redundant platform
- Implemented analytics-driven closed loop automation
- Integration into self-service portals
- Initial Ready-For-Service achieved in 37 business days

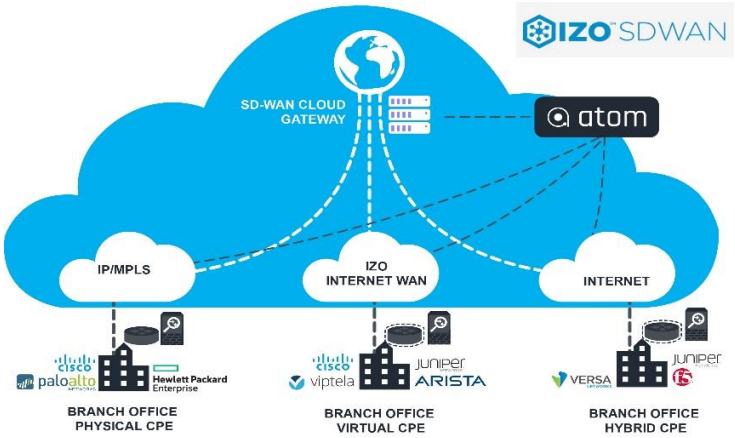
Business Benefits

- 89% reduction in CPE provisioning time with ZTP
- 0% error rate during provisioning
- 100% network uptime driven by analytics and telemetry
- Elimination of manual operations
- Achieved SLA compliance

Why did TCL choose Anuta Networks ATOM?

ATOM is a microservices-based, web-scale networking architecture that can be deployed in Kubernetes clusters either in a local data center or a cloud-based deployment scaling horizontally to support an unrivaled one million+ devices.

- ATOM's Zero Touch Provisioning (ZTP) capabilities helped TCL onboard devices ranging from SD-WAN CPEs to traditional CPEs in less than 5 minutes. Consequently, TCL reduced time-to-market and enhanced customer onboarding.
- ATOM's capability to onboard both new/ greenfield and existing/ brownfield networks helped TCL deliver both SD-WAN and existing branch infrastructure enabling a wide range of customer services.
- ATOM's closed-loop automation capabilities helped TCL automate WAN policies based on the analytics derived from network device streaming telemetry data. TCL was therefore able to manage underlay and overlay networks more efficiently thus exceeding customer expectations.
- ATOM's open platform and rich set of APIs enabled TCL to improve their self-service capabilities through the integration of their incident management tools.



Results & Anuta Networks ATOM Value

The TATA Communications IZO™ SD-WAN solution realized the following benefits by deploying Anuta Networks ATOM:

- Reduction of CPE provisioning time by 89% through ZTP
- Automation of SD-WAN policy management using feedback loops
- Elimination of manual processes thereby dramatically reducing errors and achieving SLA compliance

Case Study

anuta networks

Customer Profile

- Leading financial services provider with $11B revenue
- 55 locations in three regions
- Multi-vendor network with massive app support needs

Business Requirements

- Ultra-low-latency response to network events
- Real-time network analytics
- Network capacity planning
- Compliance with PCI & SLA

Technical Requirements

- Ingest, aggregate & normalize flow data
- Analyze metrics, Grafana Visualization & API integration
- Applications to be notified of network changes within 1 sec
- Scale to millions of interfaces
- No SPOF

Network Analytics & Closed-Loop Automation for Financial Services

One of the world's leading providers of news and information-based tools for financial professionals approached Anuta Networks with two key challenges. First, their ongoing difficulty in managing a multitude of business intelligence applications from vendors such as Oracle, IBM, SAP, and Microsoft. Secondly, the complications typically associated with managing a core network comprised of multiple vendors that include Cisco, Juniper, HPE, Blue Coat, Brocade, F5, and IBM across 55 locations and 3 global regions.

Financial services companies overall have several common requirements:

- Application delivery requires extremely low-latency due to the sensitivity of financial information;
- Real-time network inventory and proactive monitoring are required to ensure proper capacity is allocated for each business application; downtime equates to lost revenue and penalties for missing SLAs.
- Compliance with PCI and many other stringent financial services regulatory requirements must be established and maintained.

Key Considerations

- Analytics software must be able to ingest variety of data including NetFlow, sFlow, IP SLA, Syslog as well as streaming telemetry from multiple vendors;
- Automation software should then be able to generate alerts based on pre-defined thresholds and automate remediation steps;
- Applications should be notified of interesting network changes within 1 sec with response to application queries within 10 milliseconds;
- The overall networking solution should support millions of interfaces on thousands of devices spanning geo-distributed deployments, be highly redundant, work with multiple vendor equipment, leverage open standards - all managed through a single pane of glass.

Case Study

anuta networks

Anuta ATOM Advantages

- Delivers analytics, reporting, remediation and assurance
- Support for 45+ vendors
- Micro-Services architecture scalable to 1 million+ devices
- Multi-Cloud Ready
- Compliant with open standards – IETF YANG, IETF NACM
- Flexible pay-as-you-grow pricing

Results Achieved

- Latency from device to storage < 500ms
- Fully redundant platform
- Implemented threshold-based alerts
- Visualization with Grafana
- Customizable metric retention for SLA Compliance
- Down sampling of High-precision data after user defined time period

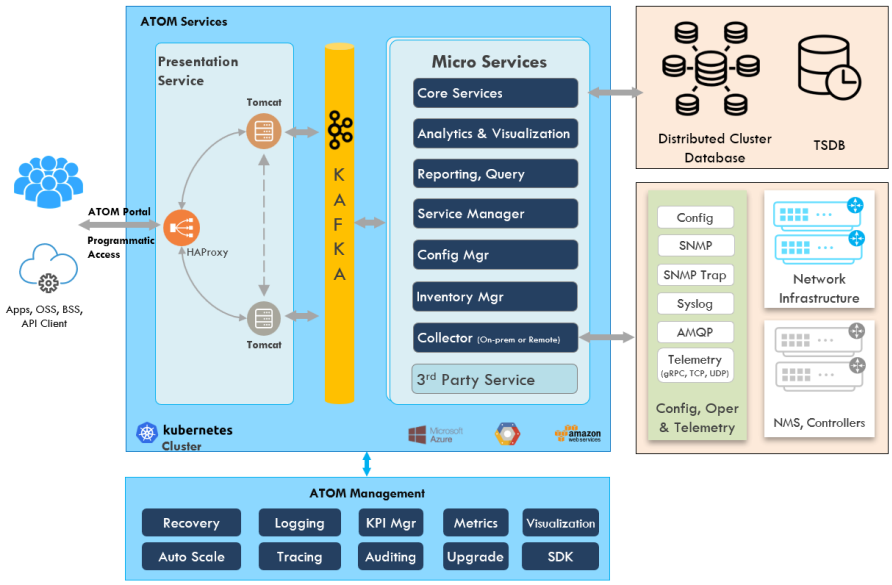
Business Benefits

- 95% reduction in response time
- 80% OpEx reduction
- Eliminated manual operations
- Achieved SLA compliance
- Avoided network downtime
- Delivered real-time analytics and historical reports

Why Anuta Networks ATOM?

Financial services network operators can deliver services faster, eliminate human errors, avoid security violations, reduce operating expense, and meet SLAs with exceptional high availability:

- ATOM is a microservices-based, web-scale networking architecture that can be deployed in Kubernetes clusters either in a local data center or a cloud-based deployment and scales horizontally to support an unrivaled 1 million+ devices.
- ATOM delivers a modular, extensible, scalable and cloud-native software platform that enables enterprises and service providers to design and provision network services, collect real-time telemetry, develop deep network analytics, ensure compliance, and provide service assurance.
- ATOM is a YANG based platform that comprises several different models including device, service, and telemetry models. The provisioning process is automated to minimize human intervention and eliminate errors.
- ATOM can detect various types of configuration changes and carry out predefined actions. Its closed loop automation remediation capabilities are significant, but organizations can customize the degree of automation based on comfort level.



Customer Results

This particular financial services customer realized the following benefits by deploying Anuta Networks ATOM:

- Reduced network response time by 95% with Closed-Loop Automation
- Reduced operating expense for network operations by 80%
- Eliminated manual errors and achieved SLA compliance

Case Study

anuta networks

Customer Profile

- Premier Energy company serving 750,000 subscribers
- Multi-vendor network with more than 2000 devices

Business Requirements

- Automate device and configuration management
- Automate service provisioning and management
- Network capacity planning
- Compliance with SLA

Technical Requirements

- Discover and configure greenfield and brownfield deployments
- Provision and Manage L2 and L3 VPN Services
- Generate Alerts on configuration or service drift
- Customize YANG models

Automated Service Discovery and Device Management

One of the world's premier clean energy company approached Anuta Networks to accelerate their network services delivery. The clean energy company which also provides managed services to many of its customers had a complex network infrastructure with 2000 network devices. The multi-vendor network includes switches, routers and firewalls from Cisco, Juniper and Huawei.

Companies providing managed services have several common requirements:

- Device provisioning and management for a large Multi-Vendor and Multi-Domain network
- Service Discovery, provisioning and management for brownfield and greenfield deployments
- Reconciliation capabilities to manage compliance with SLAs.

Key Considerations

- The overall networking solution should support many interfaces on thousands of devices spanning geo-distributed deployments, be highly redundant, work with multiple vendor equipment, leverage open standards - all managed through a single pane of glass.
- Automation software should have capabilities to onboard devices by retrieving values from CSV file or SQL queries to database
- Automation software should be able to discover greenfield and existing brownfield deployments and add or update services as required.
- Automation software should be able to generate alerts based on pre-defined thresholds and automate remediation steps upon approval from admin users.

Case Study

anuta networks

Anuta ATOM Advantages

- Delivers zero touch provisioning, analytics, reporting, remediation and assurance
- Support for 45+ vendors
- Micro-Services architecture scalable to 1 million+ devices
- Multi-Cloud Ready
- Compliant with open standards – IETF YANG, IETF NACM
- Flexible pay-as-you-grow pricing

Results Achieved

- Automated Device onboarding using REST APIs
- Brownfield service discovery
- Automated configuration drift remediation

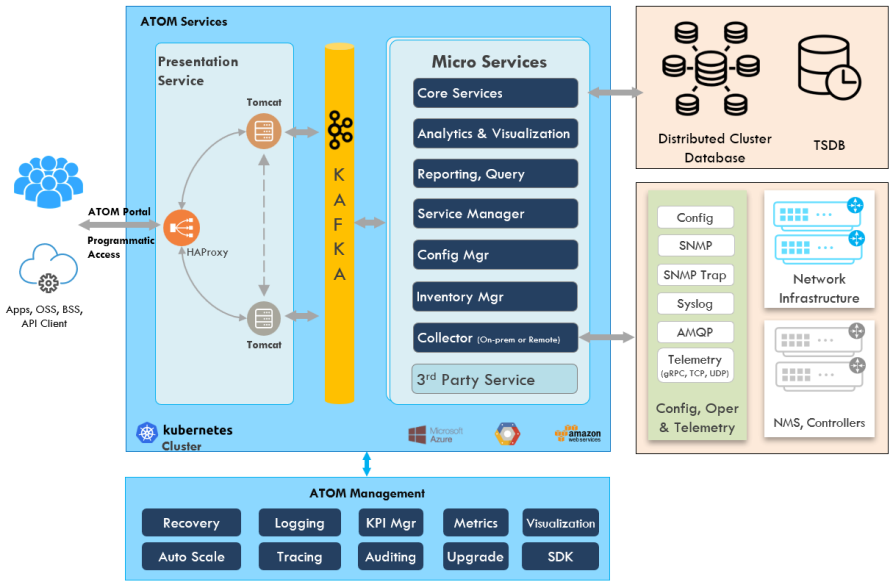
Business Benefits

- 95% reduction in service provisioning time
- 80% OpEx reduction
- Eliminated manual operations
- Achieved SLA compliance
- Avoided network downtime

Why Anuta Networks ATOM?

Managed services network operators can provision devices and services faster, eliminate human errors, avoid security violations, reduce operating expense, and meet SLAs with exceptional high availability:

- ATOM is a microservices-based, web-scale networking architecture that can be deployed in Kubernetes clusters either in a local data center or a cloud-based deployment and scales horizontally to support an unrivaled 1 million+ devices.
- ATOM is a YANG based platform that comprises several different models including device, service, and telemetry models. The provisioning process is automated to minimize human intervention and eliminate errors.
- ATOM can detect various types of configuration changes and carry out predefined actions. Its closed loop automation remediation capabilities are significant, but organizations can customize the degree of automation based on comfort level.
- ATOM delivers a modular, extensible, scalable and cloud-native software platform that enables enterprises and service providers to design and provision network services, collect real-time telemetry, develop deep network analytics, ensure compliance, and provide service assurance.



Customer Results

This particular managed services customer realized the following benefits by deploying Anuta Networks ATOM:

- Reduced service provisioning time by 95% with automation
- Reduced operating expense for network operations by 80%
- Eliminated manual errors and achieved SLA compliance

Solution Brief

anuta networks

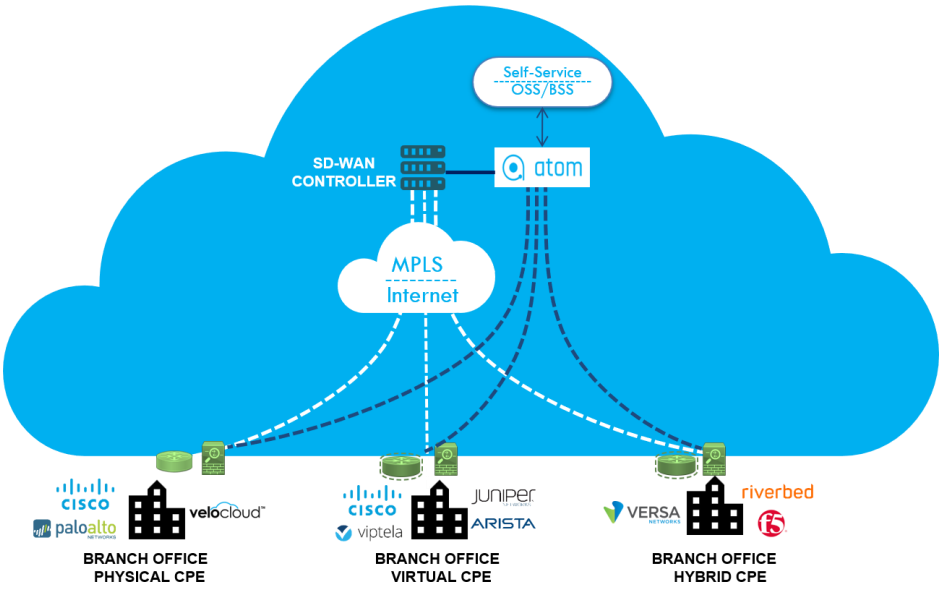
ATOM Multi-Vendor Automation for SD-WAN

Delivers Real-Time Assurance, Analytics, and Orchestration

Benefits of ATOM Multi-Vendor Automation for SD-WAN

- Improve time-to-market and reduce OpEx with Zero Touch Provisioning
- Ensure network availability through Closed-Loop Automation
- Increase visibility and network awareness of SD-WAN and legacy WAN infrastructure with Analytics and Telemetry
- Scale across the WAN infrastructure with ATOM's cloud native architecture
- Reduce MTTR and have more command over the SD-WAN and legacy WAN infrastructure

Many organizations are excited about the prospect of deploying SD-WAN but are hesitant due to the complexities involved. Concerns involving existing branch and tooling infrastructure are warranted and consequently these investments require protection. If not fully vetted, requirements and non-standardized SD-WAN solutions could result in a vendor lock situation. WAN optimization and security are critical to any branch office infrastructure, and not all SD-WAN vendors deliver a complete solution forcing the organizations to stick to individual components providing these solutions.



Anuta Networks ATOM Multi-Vendor Automation enables organizations to handle the complexities of multi-vendor, multi-platform infrastructure through a comprehensive coverage of more than 45 different vendors and 100+ platforms including SD-WAN vendors like Cisco Viptela, Versa Networks, and Velocloud

Leveraging ATOM's advanced capabilities in automated provisioning, analytics, orchestration and pro-active assurance; enterprises and service providers can take a confident step towards creating smart networks and a more successful future through digital transformation.

Solution Brief

anuta networks

ATOM Multi-Vendor Automation will also serve as an overall orchestrator to the WAN infrastructure including SD-WAN, Security, WAN optimization, and legacy devices.

Reduce OpEx with ATOM's Zero Touch Provisioning

Anuta's ATOM Multi-Vendor Automation offers Zero Touch Provisioning of both underlay and overlay network infrastructure. Templatized configurations are pushed to the branch CPEs to make them immediately operational allowing them to communicate with SD-WAN controllers. ATOM's abstraction capabilities enable provisioning of any branch infrastructure device helping organizations mitigate truck rolls and dependency on multi-skilled staff there by reducing OpEx.

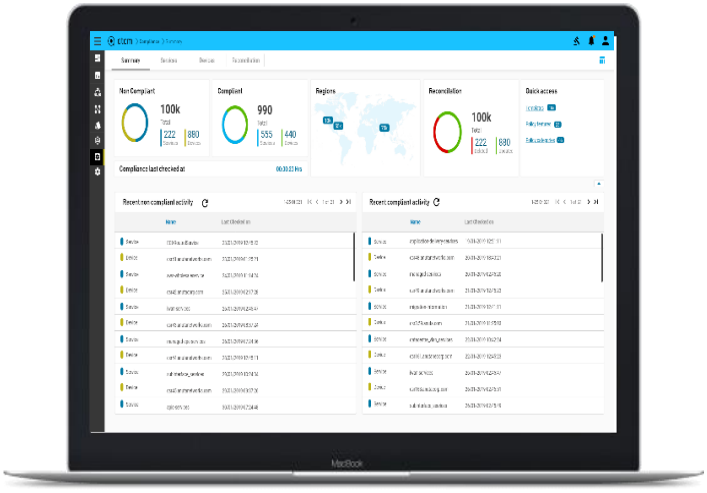
ATOM also offers software image management allowing one-touch upgrade of devices where ATOM goes through a series of pre-checks, upgrade procedures and post-checks to ensure a successful upgrade.

Improve MTTR using ATOM's Compliance, Assurance & Closed Loop Automation through Analytics & Machine Learning

ATOM Multi-Vendor Automation derives telemetry from the WAN infrastructure and runs its powerful analytic algorithms to obtain contextual and actionable insights. It also creates network awareness and provides unified, end-to-end visibility across SD-WAN and existing infrastructure.

ATOM's Closed-Loop Automation (CLA) with machine learning capabilities takes pro-active remediation actions based on baselined network behavior. CLA empowers organizations to reduce MTTR, achieve SLA compliance and improve operational efficiency across the organization.

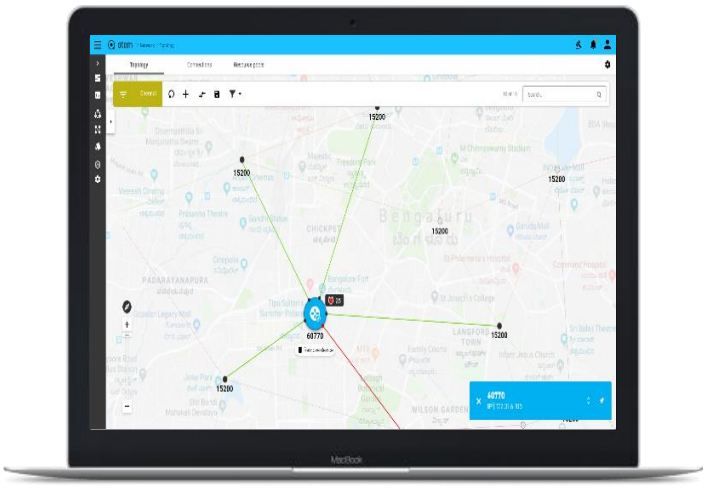
Configuration and image compliance with reconciliation upon deviation also ensures consistency across the WAN infrastructure.



Solution Brief

anuta networks

Protect your existing network investments through ATOM's Brownfield support



With its device and service discovery capabilities, ATOM helps onboarding of existing network devices and services and builds a topology of both underlay and overlay networks.

A rich southbound interface enables ATOM to connect to devices over a variety of protocols including APIs. It also collects and normalizes the configurations from devices for service modeling.

With advanced workflow automation, ATOM ties different service models together and allows automation of repetitive method of procedures (MOP) such as software upgrades.

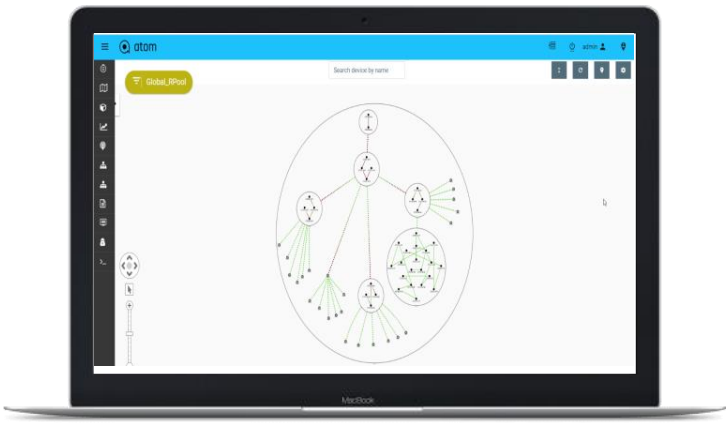
ATOM also delivers single-click provisioning of applications across SD-WAN, next-generation firewalls, legacy devices, and WAN optimization devices.

Scale Massively using ATOM's Cloud Native Architecture

ATOM Multi-Vendor Automation has been designed and developed with cloud characteristics in mind. All related services are containerized and can be deployed in Kubernetes environments both on-prem and in public cloud providers AWS, Google Cloud and Microsoft Azure. Best-in-class security and encryption is also offered by ATOM in public cloud deployments.

The horizontally, massive scalable architecture of ATOM supports more than 1M devices and organizations can scale up to meet their increasing workloads.

The distributed architecture of ATOM also allows deployment of ATOM agents at the edge of the network catering to latency sensitive use cases.

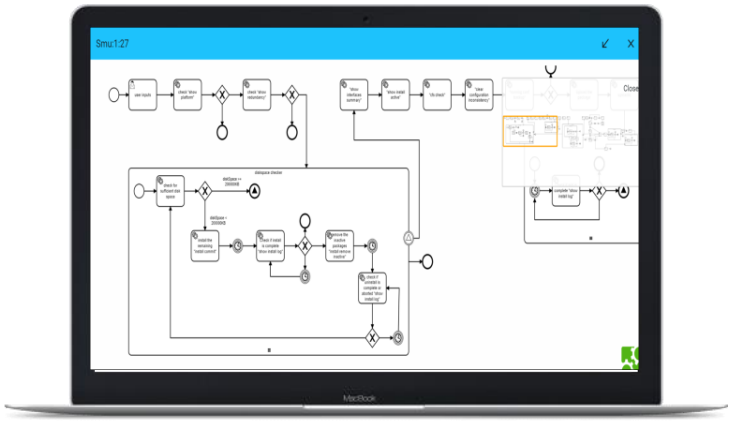


Solution Brief

anuta networks

Integrate into existing tooling infrastructure using ATOM's Open platform

ATOM's open architecture enables integration into northbound tools like OSS/BSS or ITSM tools such as Service Now and Jira. Some of ATOM's differentiation lies in its ability to facilitate business intelligence tool participation in network automation through ATOM's advanced workflow suite.



The interoperability with service management tools also allows integration of approval flows into workflow management enabling seamless operation of the WAN infrastructure.

ATOM's Multi-Vendor Automation allows service management tools to act as a single-pane-of-glass for SD-WAN and legacy infrastructure thus greatly simplifying management operations.

The abstraction layer of ATOM also allows integration into popular automation tools like Ansible and custom python scripts all serving as the single-source-of-truth for a given WAN infrastructure.

To learn how Anuta Network's ATOM Multi-Vendor Automation can help you simplify your SD-WAN implementation, contact us at http://www.anutanetworks.com

Solution Brief

anuta networks

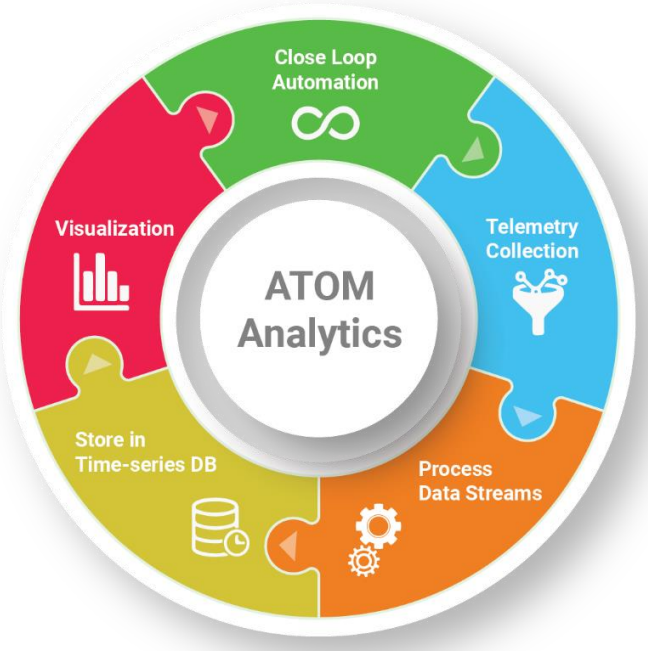
Anuta Networks ATOM Analytics & Telemetry

Stream, Transform, Load & Visualize

Benefits of ATOM Analytics & Telemetry

- Increase network visibility & awareness
- Data collection from multiple data sources with ATOM's vendor agnostic platform
- Get real-time streaming & traditional analytics industry leading TSDB support
- Faster query response & massive storage capacity
- Best in class visualization tools for interaction with operational data
- Trigger workflows and provide service assurance

Today's modern networks face many challenges but have the potential to deliver value-add like never before. Consequently, ensuring high availability of networks is mission critical. The information age, through its generation of vast amounts of data, has put tremendous strain on networks, and traditional monitoring techniques are no longer scalable. The proliferation of multi-vendor hardware has also introduced management complexity. As a result, network operators not only need real-time visibility into dynamic network events but also a sophisticated way to analyze trends to evaluate network behavior in order to perform proactive remediation and capacity planning.

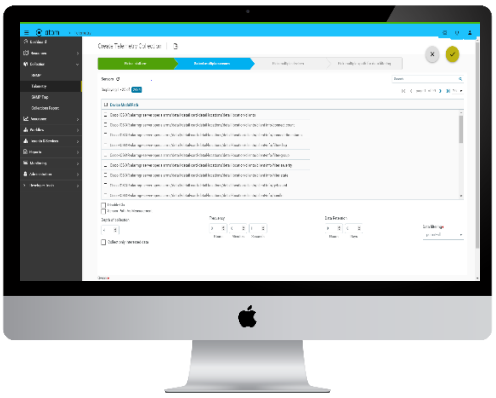


Anuta Networks solves the challenges of monitoring large and complex multi-vendor networks with its ATOM Analytics & Telemetry. With its massive telemetry collection capabilities and analytics-centric approach, ATOM enables networks to become more intelligent by providing detailed awareness in a more timely and accessible manner.

Solution Brief

anuta networks

ATOM Analytics & Telemetry goes beyond traditional monitoring and explores network feedback, correlates the information at different times against a baseline and intelligently plots data-driven insights taking the guess work out of network management.



Collect network data from disparate systems

In reality, networks are organic building over time and served by both new and legacy devices. ATOM enables the collection of data from a wide range of network management protocols ranging from SNMP, SNMP traps, Syslog and Model-driven telemetry across multi-vendor network infrastructure.

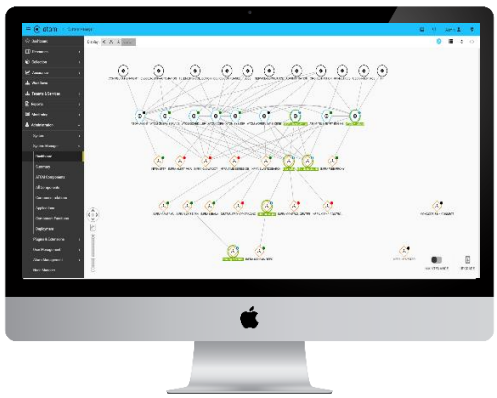
What's more, all ingested data from mixed environments undergoes the same set of processing in ATOM to create a normalized data model delivering simplicity.

Real-time analytics powered by a distributed streaming platform & time-series database

ATOM deploys cutting-edge technologies such as streaming and an industry leading time-series database as the foundation of its powerful analytics capabilities. All high-volume data collected undergoes real-time processing and is stored and exposed via components within ATOM.

ATOM provides these services with micro-second granularity by correlating massive amounts of network data received from disparate sources. Given its scalable architecture, ATOM manages more than 15 million metrics per second and offers massive storage capabilities of 200+ peta-bytes.

ATOM's open platform also enables organizations to access real-time network data through external databases or third-party dashboards.



Solution Brief

anuta networks

Put your finger on the pulse of any network with ATOM's dynamic network visualization tools

ATOM provides a model-driven, highly customizable user interface for its customers. This includes built -in, intuitive dashboards and an unparalleled software platform for time-series analytics.

ATOM not only provides dashboards such as Top N data but also allows users to select metrics and customize any view desired.

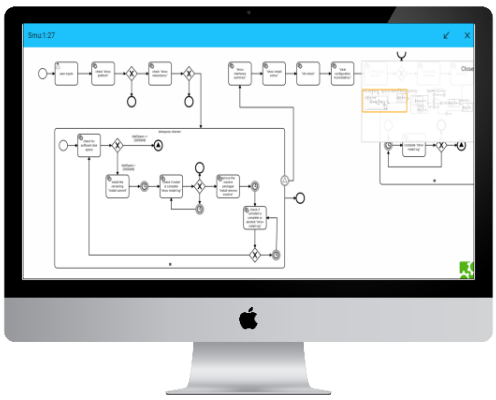
Faster query response from ATOM's time-series database allows operators to also visualize data within seconds of processing even in cases of high data volumes.

Trigger ATOM's workflow automation with analytics & telemetry data

ATOM's workflow automation helps to automate tedious and mundane network operational procedures.

ATOM's analytics & telemetry can also be used to trigger complex troubleshooting workflows to auto-remediate known issues in the network.

As an example, if any event in the network such as high bandwidth utilization or latency issues, the relevant telemetry data can trigger a workflow to send alerts or take auto-remediation actions such as traffic re-routing.



Solution Brief

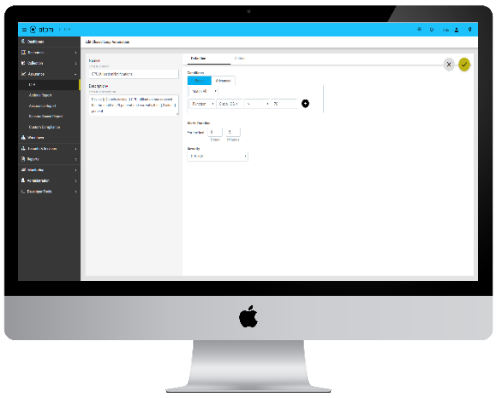
anuta networks

Move closer to self-healing networks with ATOM's closed loop automation

Anuta Networks believes in creating smart and self-healing networks.

Combining its powerful analytics and service assurance capabilities, ATOM allows customers to baseline network behavior, correlate the network status to the intent and take automated remediation actions through its closed loop automation (CLA) feature.

ATOM analytics & telemetry provides trend visualization which when fed into the CLA framework helps network operators automate common use cases such as bandwidth management, QoS and much more.



To learn how Anuta Network's ATOM Analytics & Telemetry can change the way you listen to your network, contact us at http:// anutanetworks.com

Solution Brief

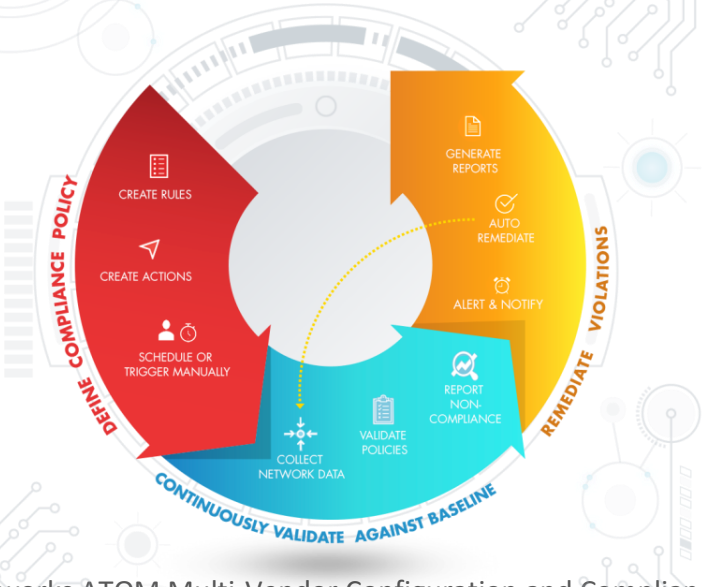
anuta networks

Anuta Networks ATOM Multi-Vendor Network Configuration & Compliance Management

Benefits

- Define policies faster and save time with an intuitive Policy Builder
- Improve network performance and security with in-depth analytics
- Ensure 24x7 compliance with scheduled periodic checks and auto-remediations.
- Scale across any network infrastructure with ATOM's cloud native architecture
- Maintain logs of all actions by generating custom documentation specific to business need

Managing configuration changes and enforcing compliance policies is a complex undertaking within large networks. A wide array of research indicates that a vast majority consider human error as the root cause of most network outages. Furthermore, manual network management and network automation scripting does not scale to meet the challenges of today's dynamic support of infrastructure, software or policies. Enterprises need an end-to-end automation solution that provides comprehensive configuration and compliance management capabilities.



Anuta Networks ATOM Multi-Vendor Configuration and Compliance management solution enables organizations the ability to manage and monitor a diverse, multi-vendor network. It also provides an automated enforcement mechanism to ensure network consistency and business continuity.

Solution Highlights

- Define complex policies with ATOM Policy Builder
- Get in-depth compliance analytics
- Schedule and automatically run regular network audits
- Enforce compliance through automated remediation
- Generate business specific documentation
- Easily scale up to 1M+ devices across 45+ vendors

Solution Brief

anuta networks

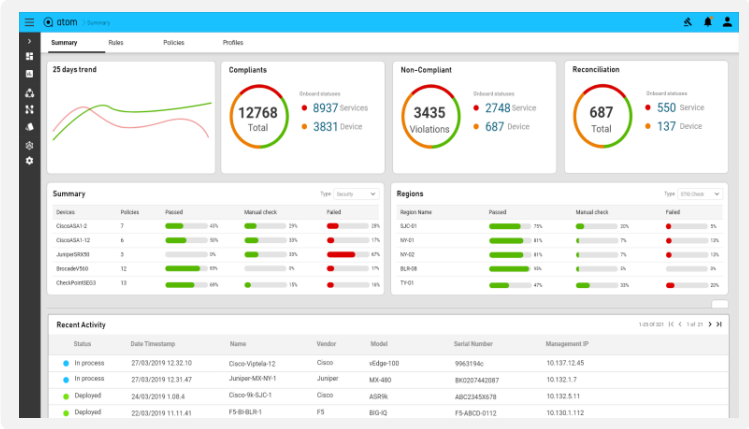
Today's networks are fast and multi-dimensional with an ever-increasing demand to move to smart and 100% compliant networks. Configuration and compliance management solutions combined with provisioning, analytics, telemetry, and closed-loop automation will enable organizations to achieve these objectives.

Easily define complex policies with Anuta Networks ATOM Policy Builder

ATOM Policy Builder is an intuitive user interface that facilitates the definition of simple network, security and other policies. It allows the administrator to define intent or baseline rules as well as remediation actions in the event of violations. Administrators can also create parameterized baseline or expected configurations using strings or python-jinja.

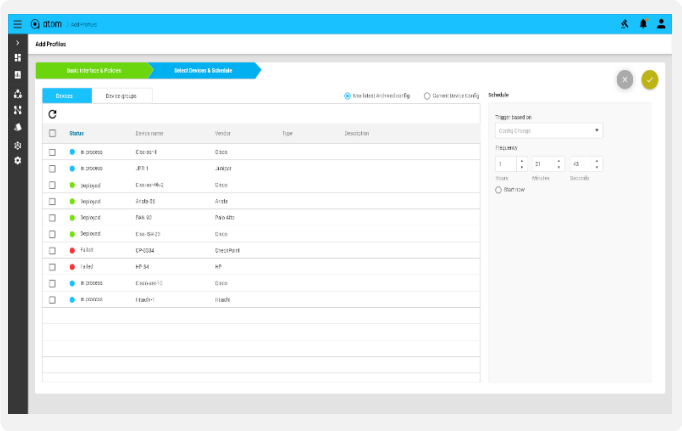
Monitor the entire network and extract meaningful insights

Compliance dashboards provide a summary of compliance status of all devices and services across any multi-vendor network. Administrators can view past trends and validate network behavior using Grafana, which is packaged with ATOM.



Solution Brief

anuta networks

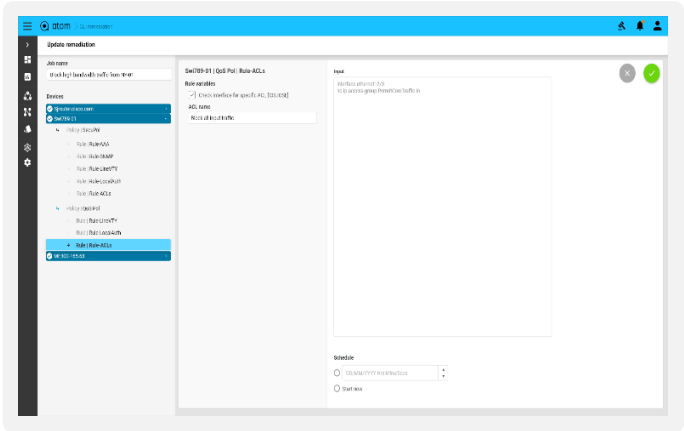


Manually trigger or schedule a network audit

In order to be 100% compliant, networks must be audited constantly in order to identify and remediate compliance issues. ATOM provides the flexibility to schedule a compliance job at regular intervals as well as periodically audit the network at scheduled intervals and alert non-compliant devices and services. Administrators also have the capability to manually trigger a compliance check.

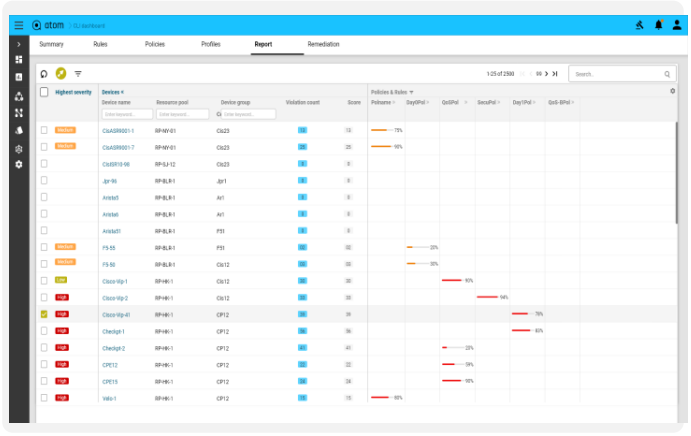
Remediate non-compliant devices & services automatically

While defining compliance policy, administrator have the option to define remediation actions to be taken in case of a violation. The ATOM correlation engine constantly validates baseline configurations with the collected network data. Given any discrepancy, ATOM can alert via dashboard, Slack and other tools, raise a ticket on ticketing systems such as ServiceNow, or schedule a job to enforce compliance automatically.



Solution Brief

anuta networks

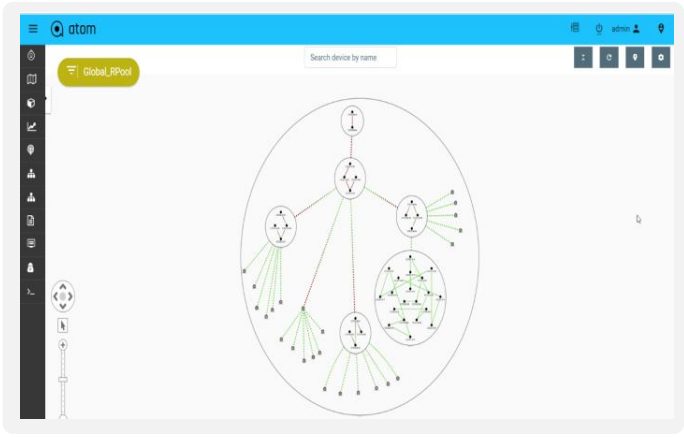


Generate customized documentation

ATOM can generate customized reports suiting an organization's business needs. Compliance reports include compliance status of devices and services across the various vendors, policies validated, status of remediation actions, KPIs and much more.

Easily scale with ATOM's microservices platform

Monitor and manage compliance of the entire network through a single pane of glass. Given its horizontally scalable microservices architecture, ATOM has the capability to enforce compliance across thousands of devices- up to 1M+!



To learn how Anuta Network's ATOM Multi-Vendor Configuration and Compliance management can help you simplify network audit procedures, contact us at http://www.anutanetworks.com

Solution Brief

anuta networks

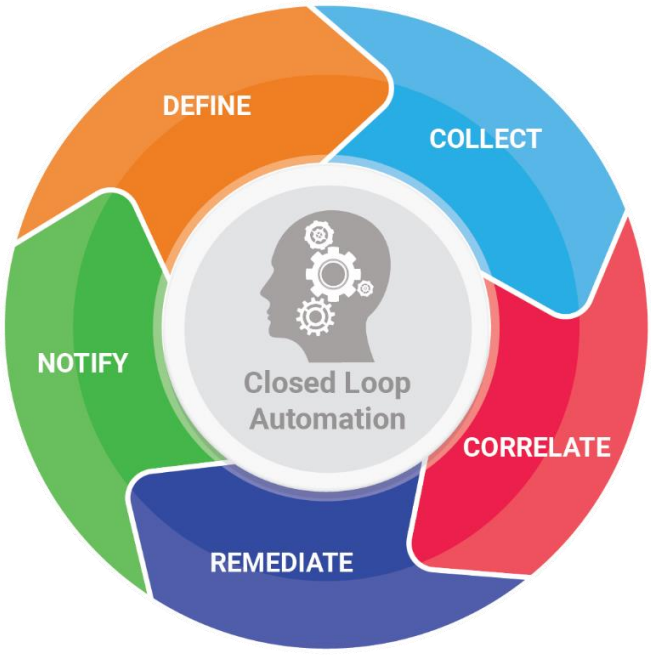
Anuta Networks ATOM Closed Loop Automation

Delivers Smart & Self-Healing Networks

Benefits of ATOM Closed Loop Automation

- Increase network visibility & awareness
- Build more predictable networks
- Automate redundant troubleshooting techniques
- Reduce risk & ensure continuous compliance
- Improve MTTD & MTTR in any network environment
- Realize consistent problem resolution
- Reduce OpEx

Automation is a strategic consideration to most organizations today. It enables operational efficiency and rapid service delivery. Organizations are also looking beyond Day-0 and have a desire to eliminate manual and time-consuming troubleshooting techniques. However, legacy automation tools tend to be open-ended and fail to ingest the required information to take remediation action.



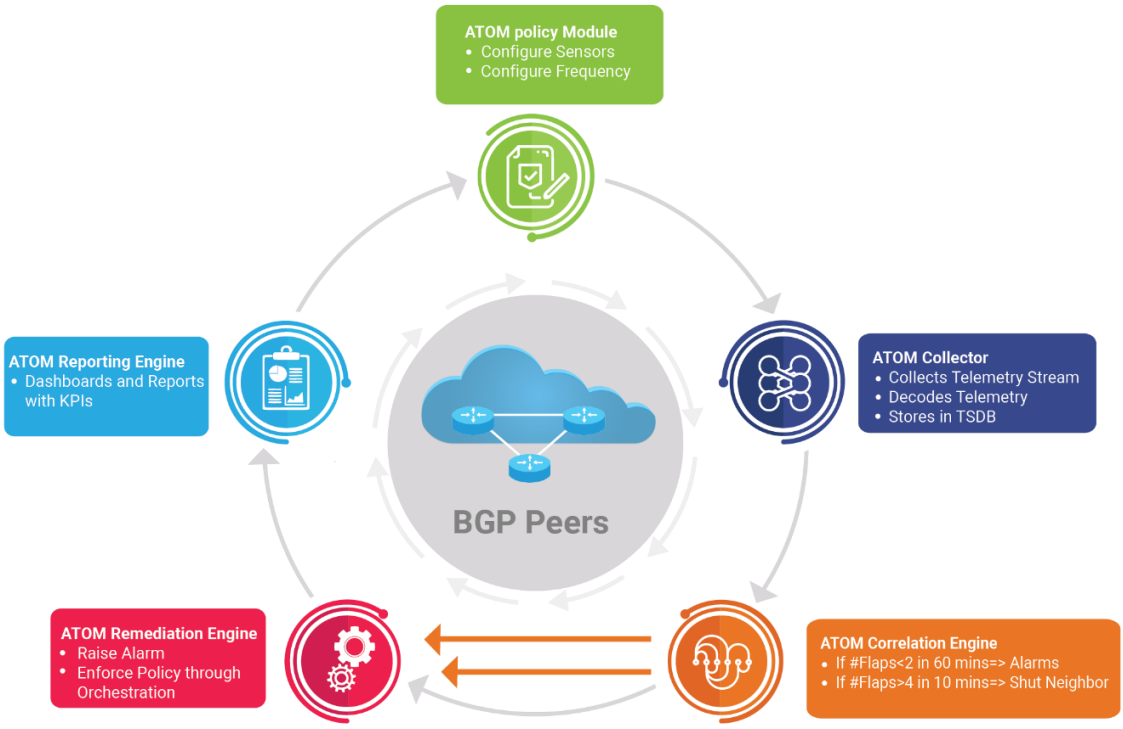
Closed Loop Automation (CLA) is the most efficient and disruptive way to automate well-known and defined troubleshooting techniques in large and complex networks.

Solution Brief

anuta networks

Anuta Network's ATOM Closed Loop Automation platform offers organizations a framework to baseline network behavior, collect feedback, and take remediation actions to ensure the highest level of service assurance in dynamic network environments. It also allows organizations to take that first step towards self-healing and autonomous networking thus facilitating a focus on improving productivity and digital transformation.

Put your troubleshooting steps to rest



Network administrators typically follow a common set of procedures during a network or service outage. Given today's massive scalability requirements and multi-vendor networks, it is a near impossible task to manage devices and analyze thousands of alarms over short periods of time to identify root cause and diagnose underlying problems. Subsequently, ATOM Closed Loop Automation offers organizations a solution to auto-remediate well-known issues & ensure compliance by proactively monitoring and detecting anomalies in a network. In the example above, based on the number of changes in the neighbor state, BGP neighbor flaps can be remediated by alerting or by shutting down the neighbor.

Solution Brief

anuta networks

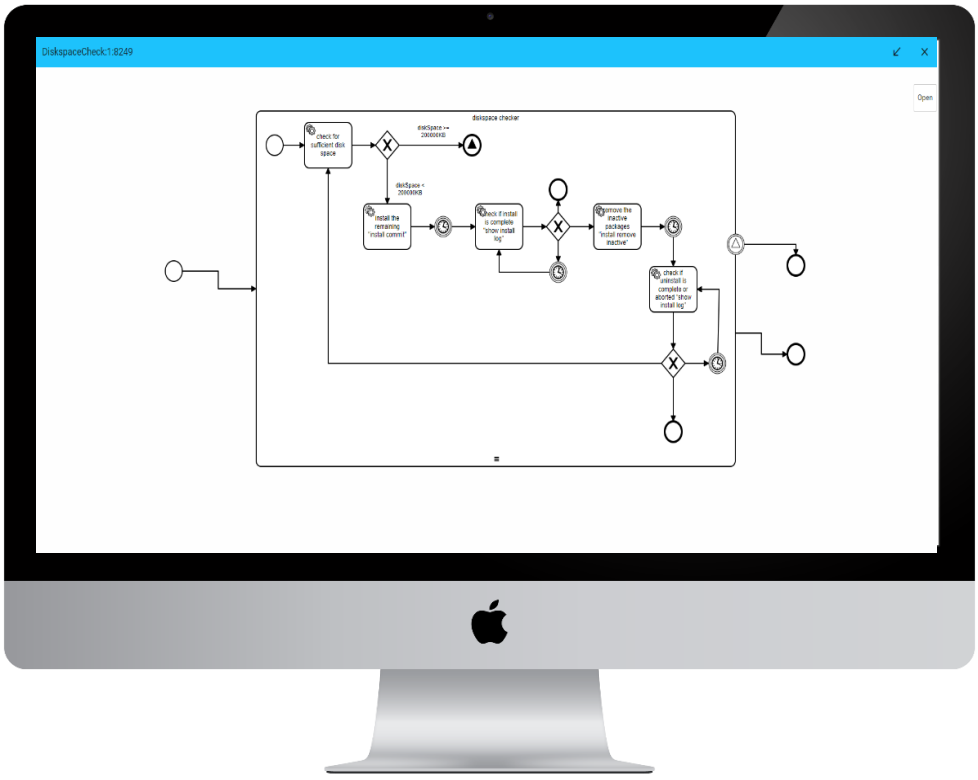
Trigger ATOM CLA with analytics & telemetry support

Analytics & telemetry are key features within the ATOM platform. It can ingest operational data from disparate sources and derive deep insights from complex networks. ATOM provides a flexible framework for network architects to customize thresholds, triggers and notifications. ATOM's analytics & telemetry can also function as the trigger that guides CLA to facilitate repair by combining both features of ATOM into a single and closed loop offering. For example, within ATOM an IP SLA data from a latency hit network can trigger a CLA to push configurations to re-route the traffic to meet service level agreements.

Solution Brief

anuta networks

Trigger ATOM workflow with closed-loop automation

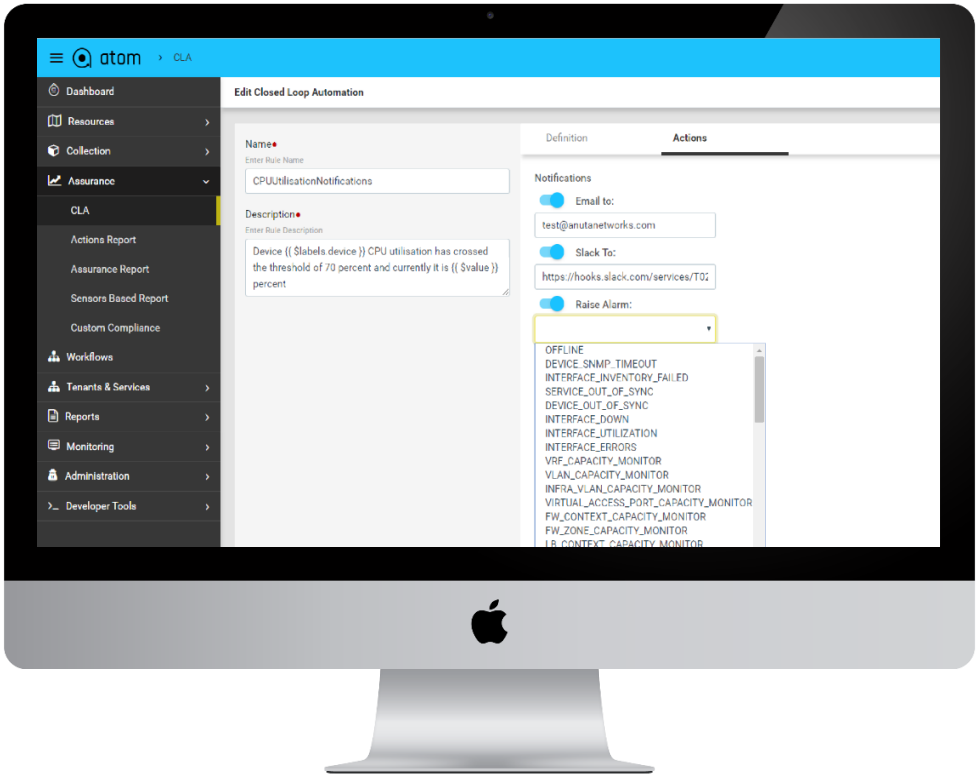


Taking the necessary remediation steps within complex networks is not always a straightforward process. The existing troubleshooting techniques may include pre-checks, approvals, multi-level provisioning, and post-checks to ensure successful remediation. ATOM's low code automation through workflow addresses such complex methods and procedures. By combining ATOM's closed loop automation and low code automation, network teams can reap the benefits of both features. ATOM CLA can also invoke complex workflows ensuring pre-checks to ascertain the problem, provision the changes, and perform post-checks to ensure the changes were received.

Solution Brief

anuta networks

Integrate approvals & get notified with ATOM CLA

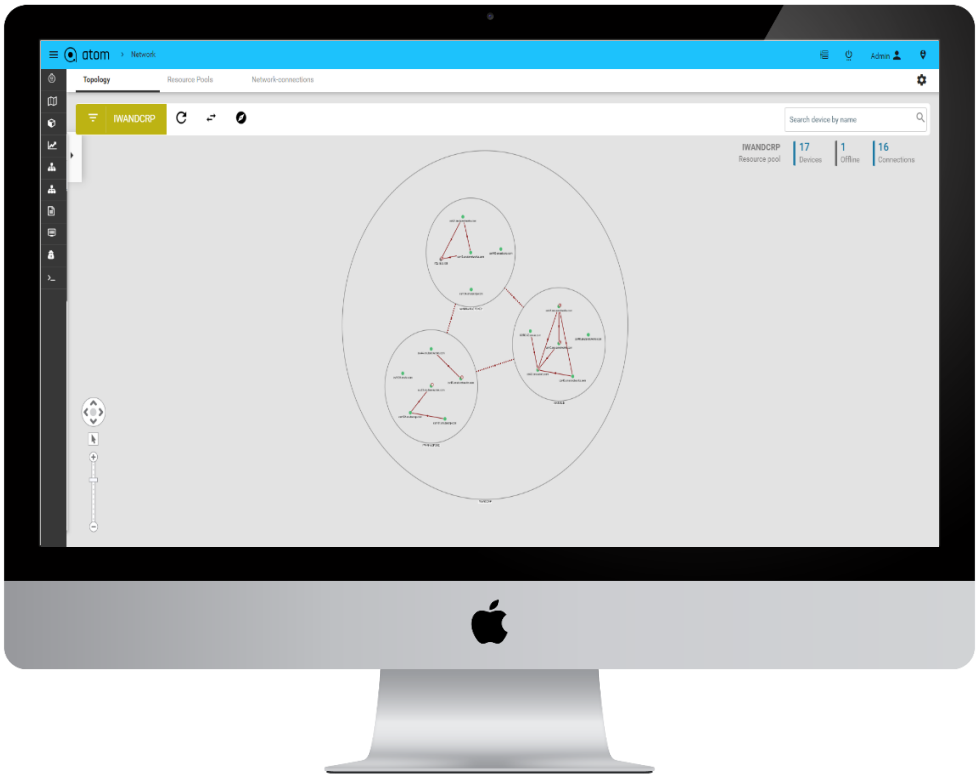


ATOM's open architecture facilitates integration into Slack, email servers and ITSM tools such as ServiceNow. When a CLA is triggered due to network activity, the ATOM platform can notify designated network administrators through an email, Slack notification or by automatically opening tickets into service management tools. For those remediation actions that need approval from relevant authorities, ATOM's CLA allows integration of approval chains. The network teams can subsequently preview configurations or alarms and make informed decisions to approve change or take a manual action. For example, a high CPU utilization can trigger Slack notifications to the relevant channels or open tickets in ticketing systems to keep the network administrators informed in real time. The ultimate value to any IT organization is management flexibility.

Solution Brief

anuta networks

Integrate ATOM CLA seamlessly into existing networks

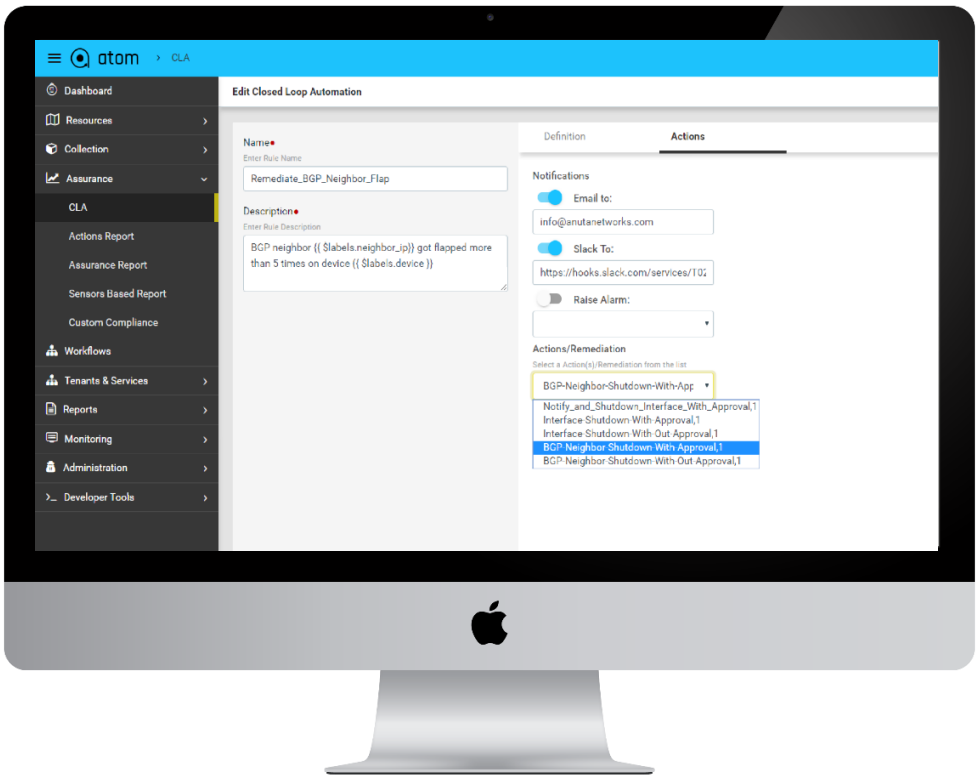


Today's modern networks are complex due to massive scale requirements and multi-vendor topologies that leverage OpEx spend. With its vendor agnostic capabilities, the ATOM platform provides the most comprehensive support for more than 45+ vendors. Its scalable micro-services architecture also enables ATOM to scale the breadth of complex networks to ensure service assurance through its closed-loop automation capabilities. Additionally, network architects are provided with an advanced DSL to enhance the ATOM CLA in building complex business logic that suits individual network requirements. With an open architecture, ATOM CLA also seamlessly integrates into existing automation tools such as Ansible or other custom scripts.

Solution Brief

anuta networks

Power your use cases with ATOM CLA



With the advent of 5G and IoT, networks are set to rise to another inflection point. However, with scale comes a deluge of notifications and anomalies in any given network that must be managed. The ATOM platform can automate common use cases such as congestion management, DDoS mitigation services, and other service assurance use cases while enhancing QoE with ATOM's comprehensive closed-loop automation capabilities.

To learn how Anuta Network's ATOM Closed Loop Automation can help you automate ajourney to a self-healing network, contact us at http://anutanetworks.com

Supporting Quotes:

Using the Anuta ATOM network orchestrator, we have been able to turn around a greenfield 148 site deployment project with zero errors in less than 18 hours. Before ATOM, such project would take 112 engineering hours excluding audits and rework.

Peter Juffernholz, AVP of Virtualized Network Services, Tata Communications.

Anuta's YANG model-based ATOM platform allows applications to describe intent to the network without worrying about underlying physical infrastructure. ATOM enabled our DevOps teams to focus on the service workflow instead of learning complex CLIs.

Mike Lechner, Manager, Product Development for Silverline, F5 Networks.

Anuta's advanced network service orchestration solution offers capability that supports our Telstra Cloud network automation to allow customers to easily and quickly connect with our partner clouds. We worked very closely with the Anuta team to develop the user stories and workflows. It was a great team effort to deliver the entire project in two months for orchestration and integration with other components.

Craig Fulton, Head of Cloud Engineering, Telstra.

Integrated NFV/SDN-based technology is the new paradigm that enables telecommunications service providers to be agile and innovative to stay competitive amidst the increasingly complex industry landscape. Logicalis will leverage our experience and expertise in solutions integration in this strategic partnership with HPE and Anuta Networks. We will deliver a robust solution, built upon a tried-and-tested network service delivery platform, and which can continuously evolve to support our telecommunications customers' exponentially growing and ever-changing business needs.

James Tay, Logicalis' Chief Executive Officer for Asia.

As the global telecommunications industry moves to the next stage of evolution, the coexistence of physical and virtual infrastructure can hinder service agility and slow time-to-market. Our PoC with Logicalis and Anuta Networks will address the industry need for end-to-end service orchestration and accelerate the delivery of services across hybrid, physical and virtual networks on a proven open orchestration platform.

Thomas Sennhauser, CTO, Enterprise Group, HPE APAC.

Our highest priority is satisfied customers. Our customers can be rest assured that they will enjoy the latest services, technology and developments in the industry while mitigating risks associated with deployment. Anuta ATOM brings unique value to our client base and we look forward to deploying them throughout United Kingdom.

Andy de Clerck, Technical Director and Co-Founder at Geode Networks.

We've seen significant uptake in our data center business practice. Anuta ATOM solution is a great fit for our large enterprise customers as they embark upon the journey to orchestrate their multi-vendor network infrastructure. Together, we look forward to accelerate the SDN deployments in Italy.

Giulio Covassi, CEO at Kiratech.

At Silicom, we strive to deliver exceptional value to our customers and hence we are very selective about the products we offer. Today, we are excited to partner with Anuta Networks to bring its award winning ATOM Network Orchestration Solution to Enterprise and Service Provider customers in France. Anuta's ATOM has been proven in world-wide deployments to reduce service delivery for traditional and next generation multi-vendor network infrastructure.

Christian Bataille, President and Founder, Silicom.

Network Service Delivery is a key criterion for Service Provider's success. Anuta ATOM solution with its YANG based model driven orchestration offers the balance between network automation and customization that is needed for large scale multi-vendor network infrastructure. We look forward to empowering our mutual customers in EMEA to deliver the SDN benefits including agility, self-service and operational savings.

Gerold Arheilger, CTO at Xantaro Deutschland GMBH.

In order to expand our footprint in Poland targeting the enterprise segment, today we need to provide on demand and even higher quality of services to our customers. In that extent, we did a pilot with Anuta regarding network automation and orchestration which enables network resources provisioning in a matter of few minutes instead of few days. These tests were very successful and we are looking forward to further success.

Emil Kowalczyk, head of advanced network solution at Orange

Service providers and large enterprises face a key challenge of service orchestration for their multi-vendor networks. In order to solve this, the industry has to come together and create platforms and open frameworks. In my 15+ years of experience in the industry, we are now moving from silo architectures into open and flexible platforms and architectures. I am very pleased to see that Fortinet and Anuta Networks have collaborated to provide such a platform for KPN.

Clements Radenborg, Program Manager, KPN Networks

Anuta Networks and FjordIT are bringing innovative Network Services offerings to the Nordic Markets. At Fujitsu Norway, our key focus in bringing new technologies that can help customers achieve more efficiency and reliability in managing their networks. We are

looking forward to our collaborative approach and partnership in bringing this key technology to our enterprise customers.

Tor Arne Rømma, Sr. Network Architect, Fujitsu Norway.

As a leader of sustainable data power services, Fjord IT is very selective about the technology partners we work with to deliver innovative, high-performing solutions for our global enterprise customers. This strategic collaboration with Anuta Networks enables us to utilize its ATOM Enterprise platform to securely and rapidly deliver industry-leading network services, and with faster business value for our enterprise customers.

Helge Gallefoss, CEO and Founder, Fjord IT.