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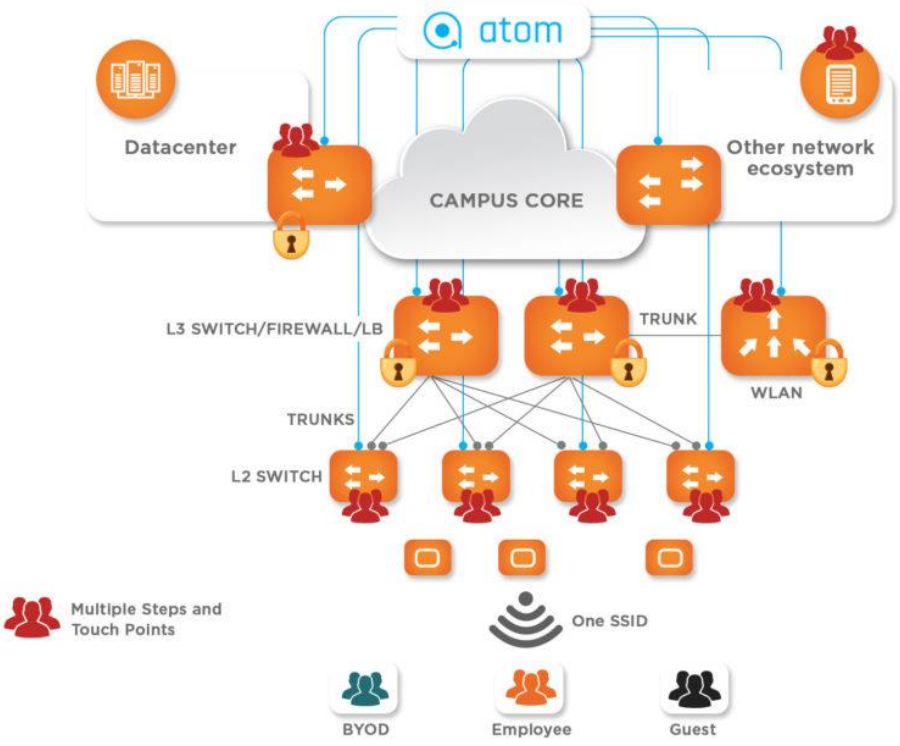
Campus Network Automation Simplified with Anuta ATOM

Today's campus networks are facing many challenges. Mobility, BYOD, and IoT are impacting the campus network landscape. Campus networks must adapt to deliver agility, performance, reliability, and seamless end-user experience. Consequently, network administrators are struggling with the complexity of handling the ever-changing demands for wired and wireless networks in recent years.

Industrial complexes, offices, venues, and distributed locations alongside multi-vendor infrastructure can combine to drive complexity in campus network management. Furthermore, with today's private LTE and eventually 5G networks gaining momentum, administrators need help. Traditional NetOps tools aren't sufficient, and as a result, enterprises are left to experimentation to satisfy their requirements. Campus networks have to find a way to break these shackles and determine a way to meet their network management needs.

Anuta Networks ATOM is the answer to campus network automation. It offers an all-in-one solution that integrates configuration management, network automation through low-code automation, compliance management, automated software upgrades, micro-segmentation, analytics & telemetry, and auto-remediation through closed-loop automation. Use cases are the best demonstration, so we will examine a handful and show how ATOM can deliver ROI in campus network scenarios.



Campus Network Automation with ATOM

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On-Demand Network Service Delivery

Campus network infrastructure must be built to accommodate the changing nature of network services. With demands such as workplace digitalization strategies, increasing connected users, and high-demand applications, NetOps teams, must be agile and need campus network automation to provide on-demand services.

The convergence of wired and wireless LAN, IP convergence of non-IP networks, and support for different connectivity models have taken the campus network architecture complexity to the next level. Trends such as BYOD have also brought flexibility to the users, but at the same time increasing security risks. Imagine for a moment the burden on NetOps teams who have to manage these complexities, learn new technologies, and support the lines of business. These teams have to deal with configuration management of both wired and wireless endpoints as well as complexities tied to providing traffic isolation at both L2 and L3 layers, switch port level configurations, defining policies for security, QoS, bandwidth requirements, configuring different flavors of spanning tree protocols and storm control.

With many workloads moving to the public clouds, campus networks have to support workload mobility between private and public clouds. This requirement involves the configuration of different flavors of VPN, such as IPSec VPNs, DMVPN along with firewall configurations. Today, it's typical to encounter a network with Wi-Fi infrastructure from Aruba, wired infrastructure from Cisco, and security infrastructure from Palo Alto as an example. Different management consoles for each vendor adds to the complexity. Thus, it is highly imperative that NetOps teams look beyond traditional tools and deploy a platform that can scale and support the needs of the enterprise. The following are important considerations:

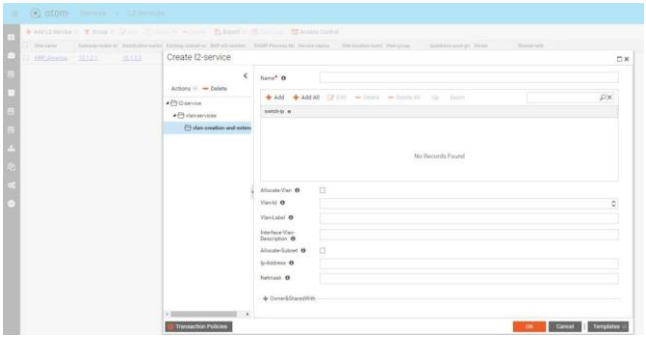
Standardize & Automate - Anuta ATOM supports brownfield discovery of networks to onboard network devices. With its powerful configuration management capabilities, ATOM offers an abstraction and orchestration layer to automate Day-0 to Day-N configurations that will relieve NetOps teams of the complexity and eliminate the need for multi-skilled staff. With the service modeling capability in ATOM, NetOps teams can also maintain the lifecycle of services and support rapid on-demand provisioning of network services through a single form along with the feasibility to update or retire the services at any point in time. ATOM also delivers service-chaining of configurations across multiple devices.

Automate your MOPs - ATOM delivers stateless use cases via its low-code automation framework. This entails using ATOM's workflow designer to drag and drop user and system tasks to automate day-to-day MOPs executed in campus networks. ATOM can also trigger device models, service models and directly talk to device CLIs or APIs to complete the provisioning activity. One can easily provision services or trigger an RMA process by calling the out-of-box workflows in ATOM as well as visualize MOPs with ATOM's low code workflow automation

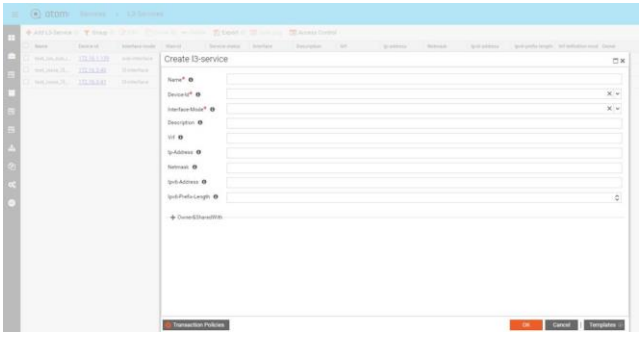
Ensure Compliance & Consistency - ATOM can not only handle traditional configuration management needs, but its compliance management can also help to maintain configuration consistency at service and device-level configurations. It ensures that campus networks are compliant with regulatory policies and compares configurations against pre-set policies within ATOM for any out-of-band changes and reconciliation.

Open Platform - Enterprises already using OSS/BSS/ITSM, such as ServiceNow, Jira, BMCRemedy, or other self-service portals, do not have to worry. ATOM allows integration into any northbound portal facilitating service models, workflows, and approvals.

Scalable Architecture - From small or to a distributed campus infrastructure, ATOM can scale horizontally to automate and provision thousands of devices. The secret - every feature within ATOM, including databases are microservices-based to scale automatically given system requirements. With the most comprehensive vendor coverage, including 45+ vendors and a flexible & scalable platform, ATOM is well-positioned to deliver campus network support for NetOps teams.

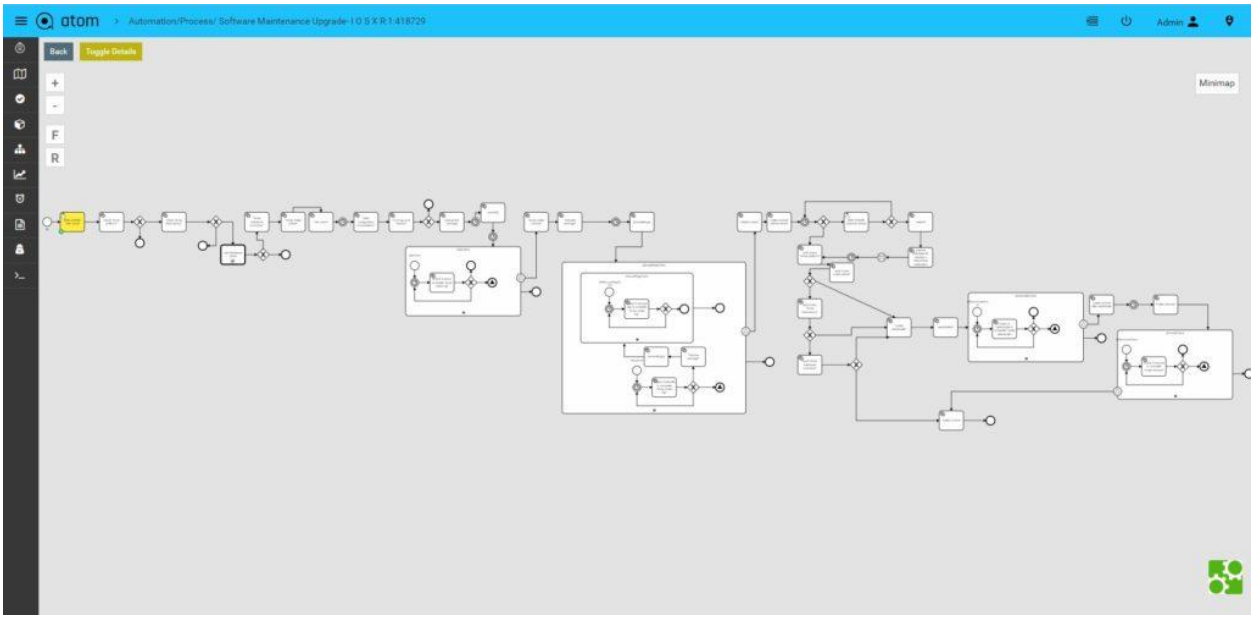


L2 service automation with ATOM



L3 service automation with ATOM

Upgrade Your Network with Ease



Software Image Upgrades with ATOM

Network refreshes allow any enterprise to realize more cutting-edge features and make the network more secure. In a diverse network ecosystem such as the campus, software upgrades can be challenging due to the sheer number of devices and its distributed nature.

With ATOM's low-code automated software upgrade workflows that support multiple vendor platforms, NetOps teams can easily drag and drop pre-checks to ensure any device is ready for an upgrade. Within the workflow, one can contact file servers and upload packages to devices, execute the upgrade process iterating over certain tasks, integrate the approval process to ITSM tools such as ServiceNow, and execute post-checks to ensure a successful upgrade.

Multi-vendor software upgrade procedures can be combined into a single workflow as needed. ATOM also facilitates executing a single workflow multiple times as well as supports the appropriate level of segregation through its RBAC and multi-tenancy feature.

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Gain Deep Insights into Your Network

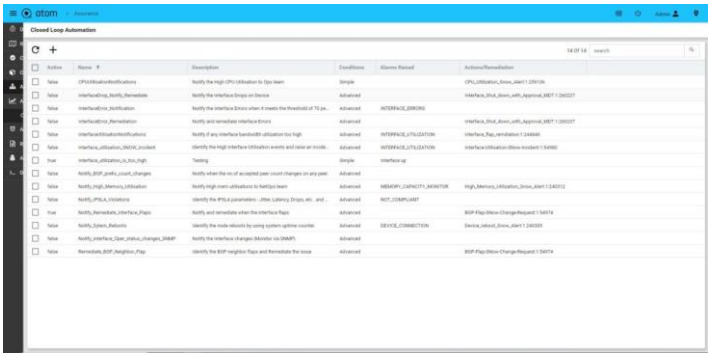
Configuration and compliance are only one aspect of campus network automation. A large and complex network will generate a massive amount of data through SNMP, streaming telemetry, SNMP traps & syslog files. This data helps to provide more context into the network events, and NetOps teams realize better insights into the network. But it's more than historical data; network operators need real-time information to make decisions around capacity planning and objective business outcomes.

Enterprises typically deploy 5 to 8 tools to handle all the monitoring requirements. However, many still miss vital information due to integration issues between tools. The clutter of tools puts pressure on NetOps teams since they have to learn and maintain them daily in remediating issues. What's needed is a single-pane-of-glass to ease the management of the overall networking infrastructure, and ATOM can help.

ATOM ingests operational and performance data from multiple data sources. The ingested information is subsequently available in real-time through ATOM's message bus and is normalized and stored in its time-series database. ATOM offers comprehensive monitoring, alerting, and reporting capabilities that allow NetOps teams in campus network environments to consolidate existing monitoring tools into a single-pane-of-glass. ATOM also offers the following capabilities, which makes it an ideal solution for network monitoring within campus networks. Consider ATOM as your data scientist!

- **Single collector for multiple datasets** - Support for legacy protocols such as SNMP, SNMP traps, Syslog, and modern streaming telemetry;
- **In-depth KPI monitoring** - Offers network, platform & interface level statistics, heat maps, & routing protocol metrics. It also provides network metrics on availability, health, capacity, and throughput;
- **Apache Kafka & time-series database** - High precision data collection of millions of metrics as well as a horizontally scalable database that supports roll-up & down sampling;
- **Geo-distributed architecture** - A micro services architecture allows distributed deployment and remote collector deployment to aid low-latency requirements;
- **Customizable dashboards** - Customizable dashboards and widgets powered by Grafana with a time-series database as the data source;
- **Topology maps** - Overlay capability for operational and performance data on the network topology to provide real-time insights into any network statistics;
- **Comprehensive reporting** - Live, batch, and historical reports spanning network, device, platform, interface, or even regional queries. Reports can be scheduled and emailed or downloaded as PDF/XLS/CSV.

Analytics with ATOM



Closed Loop Automation with ATOM

Meet SLAs with ATOM's Closed Loop Automation

Network downtime and SLA violations are always top of mind for any NetOps team. Managing a large network involves troubleshooting that can take a significant amount of time and divert attention away from more value-added activities to support the lines of business. NetOps teams need better tools to move beyond manual and time-consuming troubleshooting techniques. However, many present-day automation tools fail to meet the requirements to support complex troubleshooting.

ATOM's closed-loop automation (CLA) framework delivers! Powered by its analytics & telemetry capabilities, it offers powerful, highly automated service assurance to campus networks. With CLA, NetOps teams can baseline their network behavior, and when a relevant network event is triggered, ATOM will notify through email, Slack, or other customer-defined methods to ensure remediation actions address service assurance. For complex remediation tasks, CLA can trigger out-of-box workflows with ATOM to ensure more controlled remediation with integrated approval chains.

Campus networks are more complex and evolving, like never before. With technological advancements comes complexity - and a comprehensive solution that can address all the campus network automation requirements of network operators. ATOM is that solution for campus networks that can handhold them through this dense technological labyrinth.

Make way, the next-generation automation platform for campus networks is here.

Learn more about ATOM's capabilities in this webinar