Datacenters and ATOM – Time for Intelligence, Agility and Edge

A walk through some datacenter use-cases with ATOM Platform reveals the ultimate impact of network augmentation when IT does not forget to amplify datacenters along

In a world of sturdy, open, and affordable hardware; complemented well with the skill and flexibility offered by cloud and applications, CIOs have a lot less to worry about than what they fretted upon before.

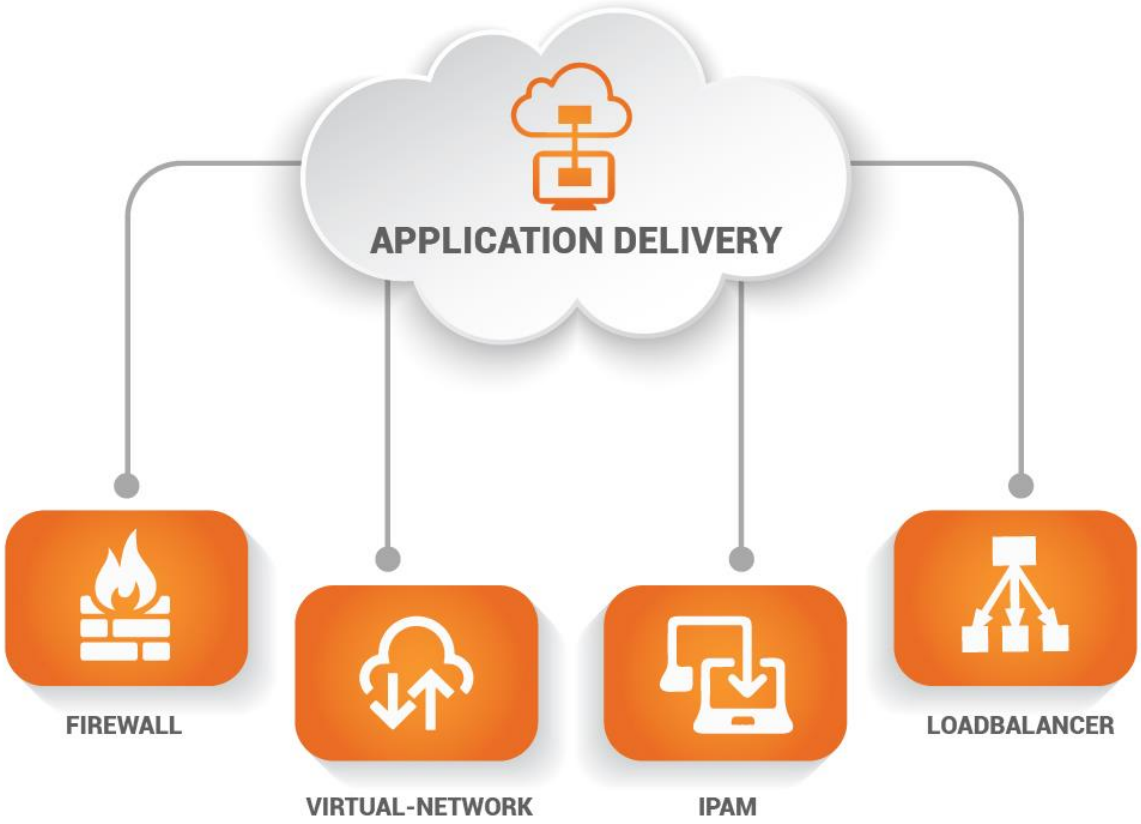
One cannot forget the potential and efficiencies that lurk in the corners of datacentre management, network administration, and intelligence. Equipped with the right strategy, enterprises can convert their networks and datacentres into powerhouses of speed and competitive edge. When a CIO embraces a new application or network-upgrade or cloud-native platform or Kubernetes investment, it becomes useful to help datacentres keep up with the new paradigm of pace and agility.

Maintaining and enhancing a large multi-vendor datacenter is, often, an unwieldy and critical part of any IT strategy. More so, as an organization embraces numerous application-deployments every year.

Consider the role that ATOM platform can play here. It has been helping network architects and network engineers to manage datacenter network resources efficiently and reduce OPEX by effectively monitoring and automating resources. The beauty is that it does all that as it simultaneously, and confidently, eliminates any human errors that pop along the way.

ATOM helps IT bring all elements in perfect alignment. Check out these three effective ways where ATOM Platform has demonstrated its value:

1. **Time Reduction for Application Delivery**



Applications inject excitement, speed, and new frontiers for any organization. But to provision an application, a network administrator has to touch multiple devices. In the datacenter topology diagram above, application provisioning requires configuration of load balancers, firewalls, IPAM and VLANs and VRFs on routers and switches. In many cases, each of these resources is managed by a separate team for operational efficiency. The network administrator has to raise multiple tickets with varying priorities to trigger configuration-changes on these resources. The erstwhile gamut of provisioning can consist of the following problems.

1. Coordination across multiple teams to provision corresponding resources
2. Longer time-to-delivery
3. A longer period of post-checks
4. Difficulty in maintenance as any changes/fixes need coordination across teams
5. Possibility of human and process errors

ATOM helps to correct some salient issues here. It simplifies application delivery. ATOM supports more than 45 different vendors across various types of devices - load balancers, firewalls, routers, switches, SDN controllers, and many more. It helps an enterprise become intelligent, resilient, and real-time when it comes to network infrastructure.

All one needs to do is fill 1 form in ATOM which collects all the information required to provision resources like

1. VIP to configure the load balancer
2. ACL rules to configure firewalls
3. VLAN and VRFs to configure switches and routers

ATOM is easy, works fast, and delivers instantaneous results on the pace and simplicity of driving new applications. It will generate all necessary CLIs and configure the devices needed. Network administrators would not need to raise tickets to different teams, and the whole scenario will be effortless and low-maintenance after ATOM jumps in.

The road to efficiency and agility will soon start manifesting benefits, such as:

1. Zero-touch provisioning - Eliminates human errors
2. Faster provisioning-time
3. Updates/troubleshooting that can be done directly in ATOM
4. Nifty runs of post-checks for more rapid validation
5. Handy design-workflows to get approvals from relevant stakeholders
6. Audits that transpire fast with every single change undertaken

2. Compliance Validation with Analytics

Enterprises use many monitoring tools to assess and detect failures. But they still lack adequate visibility for performance tracking, troubleshooting, and diagnostics. All of these factors are, however, critical to ensure and maintain application availability, performance, and responsiveness. Datacenter operators require systems that can provide pervasive and real-time network insights with streaming telemetry information along with the ability to analyze such information nuggets at a considerable scale.

Getting in-depth and detailed analytics is imperative when one needs to monitor compliance and rectify violations without sacrificing time and accuracy.
Enterprises have to adhere to many types of compliances

- Security compliance
- Corporate policy compliance
- PCI DSS, CIS, and HIPAA
- Software-version compliance

ATOM brings in the ease, rigor, and speed that a modern enterprise needs but without any wrinkles or gaps. It gathers information from a variety of sources streaming telemetry, SNMP, SNMP trap and syslog and stores in a database.

ATOM DC analytics helps

- To identify known fraud and compliance risks with rules-based monitoring
- To ensure anomaly-detection by recognizing potential new fraud and compliance risks
- To deliver network analysis by identifying any potentially-worrisome collusive activity across entities
- To present visual analytics/dashboards that summarize actionable results for network architects in an understandable and actionable manner

The data, hence distilled, can be viewed in an engaging way using Grafana. Customized graphs can be created to identify specific compliance issues. E.g., we can have a customized graph showing

1. How many configuration lines are non-compliant in each device or service
2. How many out-of-band changes have occurred
3. How many services are compliant and how many devices are compliant
4. How often do compliance violations occur
5. Number of reconciliations - automated and manual
6. Non-Compliance severity, if any
7. Business metrics – Claims-handling, uphold-rates, and speed of reconciliation
8. Number of PSIRTs reported
9. Number of devices that are running an older or vulnerable OS

ATOM arms network teams with in-depth and intuitive analytics. It helps them to quickly and efficiently monitor and report non-compliance in datacenters.

3. Intelligent, Day-1 Provisioning to Automated Troubleshooting

Provisioning of Day 1 services across multi-vendor devices is quite a daunting task. Especially in a scenario where customers are impatient, spoilt for choices, and always jumping on to the next hoop. Logging in to every device and applying the same configurations is not only tedious and monotonous but a chore fraught with human errors and always ripe for security vulnerabilities.

Automated Day 1 device and service configuration are, thus, urgent and unavoidable IT pit-stops. ATOM not only simplifies Day 1 on-boarding and initialization here, but it also continually monitors the device and services present for key KPIs and baseline behavior. It rapidly, and impressively fixes any violations to the baseline behavior as well.

Using self-service portals, one can easily create specific baseline policies – Like - Make sure router CPU is always < 70 percent. If CPU > 70 percent, then define specific remediation actions (which could be to notify and run a workflow to block particular ports to decrease traffic on the router or configure additional routes in distribution-switch to distribute traffic across more routers).

Similarly, we could define the baseline for packet-drops or interface-errors. And if packet-drops or interface-errors exceed the baseline, appropriate notification or workflows could be triggered to troubleshoot the issues that emerge.

As can be reckoned from the scenarios explained above, ATOM allows an organization's IT to be as swift and smooth in the back-end as it is in the front-end. It marries speed with intelligence.
The result is a well-oiled enterprise that never skids on unexpected spots. Drive ahead, move confidently, and deliver compellingly with ATOM.