

IBM

UNLOCKING RESILIENCY THROUGH NETWORK INTELLIGENCE

SUMMARY

The application of AI and machine learning to enterprise network operations is not a new concept. AIOps has made great strides over the past several years to improve resiliency through deeper assurance and by providing higher levels of security. However, the complexity of today's networks — resulting from continued disaggregation and cloudification — is taxing the application of traditional AIOps tools. Ethernet's continued evolution and modern network scale-up, -out, and -across architectures hold great promise in addressing these challenges, as do emerging agentic AI frameworks to facilitate deeper automation.

Despite these advancements, more is needed to support the performance and automation requirements of campus, branch, and datacenter network deployments given the increasing demands of modern applications and workloads. As AI adoption accelerates, networking teams will require tools that are intelligent — contextually aware of business processes, capable of dynamic policy control, and able to self-heal. This capability holds great promise for rooting out issues that impact end-user experiences and were previously undetectable.

Most importantly, a different architectural approach is needed to facilitate AI inferencing and non-human agent deployment at scale. There will also be an ongoing need to anticipate future operational capacity as AI usage matures — something that has traditionally been difficult to predict. Consequently, the future of network operations is not just about reacting faster but also about anticipating user demands and improving the mean time-to-resolution of network faults.

Moor Insights & Strategy (MI&S) believes that IBM is uniquely positioned to deliver what enterprises require from feature, function, and scalability perspectives with its IBM Network Intelligence solution. It enables dynamic automation that evolves from event-driven to AI-driven discovery, analysis, and remediation at massive scale, while offering a ground-up, full-stack intelligent architecture that supports multi-vendor infrastructure — a hallmark of enterprise IT and OT environments. Powered by an innovative, network-specific AI approach and an agentic architecture, IBM Network Intelligence understands intent, takes proactive action, and evolves over time to optimize network operations.

MOVING FROM INTENT-BASED TO AUTONOMOUS NETWORKS

In the past, intent-based networking constructs promised to shift connectivity to a new paradigm designed to deliver optimized business outcomes. However, these constructs failed to materialize due to a lack of contextual business intelligence beyond machine learning.

Today, the rapid emergence of agentic AI frameworks provides the missing ingredient to make this vision a reality. By combining defined business intent and methods of procedure with modern AI tools, autonomous networks can leverage data and observability to continually monitor network posture and control. They can also take remediation action through service orchestration and assurance without human intervention, freeing teams to engage in more value-added business support.

Traditional AIOps have closed many of these gaps, allowing enterprises to realize improved connectivity reliability, faster resolution of IT and OT networking faults, reduced operational costs, and more. However, agentic AI is now poised to supercharge network operations through proactive traffic management, predictive maintenance, automated quality-of-service policy enforcement, and other valuable capabilities. These are important considerations given the anticipated demands of next-generation AI applications and workloads.

UNPACKING IBM NETWORK INTELLIGENCE

IBM Network Intelligence aims to complement intent-based networking constructs and traditional AIOps by infusing domain-specific knowledge and an understanding of optimized business outcomes. It embodies a deeply integrated AI solution that addresses the shortcomings of fragmented legacy network topologies. Agents automate the typical reactive work of human network operators by leveraging a dual-intelligence approach, combining analytical and reasoning AI to analyze network data, identify anomalies, and automate issue resolution. This enables the system to uncover hidden issues, generate threshold-less early problem predictions, and automate trusted root cause analysis and remediation actions.

At the heart of its architecture is an advanced IBM Granite Time Series foundational model, which provides critical multivariate analysis of network-specific data sets based on fine-tuned training and grounding. This is a powerful capability that can be deployed within multi-vendor infrastructures to manage the complexity of modern, highly disaggregated networks that often create cumbersome silos. IBM reports that its

Network Intelligence platform can be integrated in weeks rather than months across multiple domains, vendors, and tools — providing existing connectivity stacks with explainable, network-aware closed-loop intelligence and dramatically simplifying management through automated remediation.

A key point of differentiation of IBM Network Intelligence is its role as an active participant in network operations. Most, if not all, comparable solutions function as sophisticated monitoring systems that simply analyze network data and generate alerts and remediation recommendations. IBM Network Intelligence has the potential to deliver on the promise of network autonomy. Its distributed intelligence allows models to operate on streaming telemetry and historical data to make informed, autonomous decisions within defined guardrails. As a result, the solution actively improves the pace and reliability of network operations while facilitating human-in-the-loop interaction to build trust and provide explainability.

IBM Network Intelligence also integrates data from the company's well-established SevOne Network Performance Management at launch, providing it with a robust data source.

CALL TO ACTION

Network operations teams continue to struggle with network complexity, but emerging agentic AI frameworks are poised to help. However, most solutions do not incorporate enough analytical AI capability, critical business context, domain knowledge, telemetry, and historical data to unlock network autonomy and anticipate future connectivity and operational capacity needs.

MI&S believes that IBM is the first network software provider to understand these needs and deliver on them with its Network Intelligence platform. The solution complements traditional AIOps tools, acting as an active participant that shifts reactive, break-fix operational management toward proactive operational control across multi-vendor infrastructure. Future capabilities will include design validation, configuration assurance, and ongoing fault resolution. Together, these enhancements will allow IBM Network Intelligence to embed autonomy across the entire lifecycle — eliminating blind spots, reducing false positives, and driving smarter outcomes quickly, easily, and without the need to replace existing network infrastructure.

Powered by IBM's highly differentiated Granite Time Series foundational model and the integration of SevOne Network Performance Management, the solution provides a

compelling set of capabilities with strong potential to unlock resiliency through network intelligence.

To learn more about IBM's Network Intelligence platform, visit <https://www.ibm.com/products/network-intelligence>

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