

Explore What's Possible: Advancing Observability through Automation



The network is the conduit to the data your business needs to deliver services. The data from flow, events, logs, metrics, and traces give us the context needed to deliver first-rate digital experiences. Since high-quality experiences require a highly-performant network, in IT, we must be able to rapidly discern and resolve any negative effects on the network before they're noticed.

Modern multi-cloud networks are intricate ecosystems that encompass cloud platforms, applications, and interconnected devices. These multi-faceted network architectures require a team of architects, developers, and operators to ensure optimum service delivery. The successful operation of these networks relies on the continuous management of the always-evolving infrastructure.

The nervous system of the network is composed of a collection of fundamental building blocks known as "intents." These intents govern the operation of the network's components and encompass the essential qualities necessary for delivering its services. Intents define all of the network's design and service delivery requirements and extend from the devices to the logic to the context and settings required.

In order to maintain a healthy network, network operations must take a programmatic approach to network management. Observability offers that by providing a more comprehensive understanding of the network, improving service delivery metrics and customer satisfaction rates. But, ultimately, it makes network automation achievable. Network automation is crucial to IT's survival because it addresses the remaining operational challenges including efficiency, cost, and manpower.



According to Enterprise Management Associates, 53% of the alerts generated by the average NetOps toolsets are false alarms.¹

Network teams waste too much time investigating alerts that are not actionable.² As a NOC analyst with a private communications technology company told EMA, "We don't know which [alerts] to check out, so we have to check all of them to verify that they are false alarms."

No-Code, Object-Oriented Network Automation Boosts Observability's Value

Identifying and reacting, while faster, is still reacting to problems that have already happened and, often, already negatively impacted users.

Even proactively resolving issues before they impact users, still requires a degree of troubleshooting manpower. The fact is, we cannot advance network operations until we fundamentally change our strategy by adopting automation.

According to EMA, No-code network automation is an obvious solution for the problems that NetOps teams struggle with today. Only by reducing human intervention, can network operations gain efficiency and mitigate staffing issues.

Functionality	Network Observability	Network Automation
Real-time network visibility	✗ Only inferred	✓
Understands live hybrid-cloud networks	✗ Requires large amounts of network data, AI, and database access to provide intelligence	✓ Creates a Digital Twin of the live hybrid network with flow logic and diagnostics
Speeds root cause analysis	✓ Requires data correlation with AI/ML based on probability	✓ Leverages no-code Intents to capture subject matter expertise, network understanding, and application needs for automated collaborative troubleshooting
Agentless	✗ Agent-based	✓
Automate baseline anomaly detection	✓	✓
Scalable automation to millions of nodes	✓ Via large quantities of data	✓ Auto replicates intents to diagnose, resolve and prevent problems
Accelerates change management workflow	✗	✓ Using no-code automation
Prevents network problems	✗ Only finds network problems	✓ Proactively with visibility through a dashboard
Dynamic mapping and Visio export	✗	✓
Chatbot for end users	✗	✓ No NetBrain knowledge or license required
Generates alerts	✓	✓ Ability to decrease alert volume
Auto opens and closes tickets	✓	✓
Automates anomaly detection	✓	✓
Recognizes trends	✓	✓
Reduces service ticket volume	✗	✓ Through preventive automation
API integration with best of breed tools	✓	✓
Provides security hardening	✗	✓
Used to automate network assessments	✗	✓
Does not require coding or developers	✗	✓ No-Code

Going Beyond Observability to Problem Prevention

Getting the answer faster is leaps and bounds better than manual troubleshooting, but it still means there's a problem in the first place that someone has to reactively solve. The direct and indirect costs to operate reactively far exceeds what it would be if problems were prevented in the first place.

Every moment infrastructures are degraded contribute to both hard and soft costs, reputation, customer satisfaction, and in the worst-case scenarios, valuations. You can dramatically reduce the number of problems by understanding what your infrastructure should always be doing, every nuance of the network in the context of what is needed by each application and topology. Automation then can proactively verify that the network is delivering the expected results, including active and standby configurations, security profiles and access control, and even the performance considerations needed for real-time applications like VoIP.

Visibility is Essential

In today's world, when the network goes down, the possibility of the entire business grinding to a halt is a major threat with potentially dire consequences. Thus, Network Operations professionals need to be able to visualize the entire network across locations, regardless of the mix of vendors and device form factors (physical, virtual, software-defined – at the edge and in the cloud). To ensure applications running on these hybrid networks are delivered without disruptions, they must be able to see the relationships between devices, as well as the application paths traversing the network – all in real time.

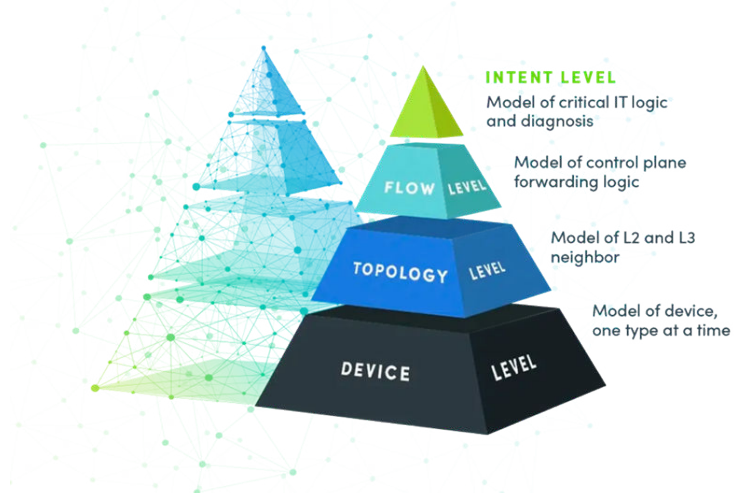
As organizations digitally transform, the concept of digital twins, or virtual representations of physical topologies and processes, has risen in importance. Digital Twins are important for process modeling, business continuity, and to maintain up-to-date documentation for increasingly complex technology infrastructures. Perhaps nowhere is this more applicable than it is for network infrastructures.

A Live Full-Stack Digital Twin Creates a Robust Data Model

The auto-discovery of the network that creates the Digital Twin in NetBrain extracts the plethora of rich data that exists within your network's infrastructure devices. Using a combination of automated SNMP, CLI, and API mechanisms and NetBrain's patented neighbor discovery algorithms, NetBrain can understand even the largest environments with scalable efficiency.

NetBrain is constantly updating its data model, providing real-time telemetry for the most accurate Digital Twin of your network. The API connections to third-party software tools take this to the next level, enriching the robust data model with contextual information that deepens your understanding of the network and allows you to act.

This Digital Twin of the network not only allows for dynamic modeling, but also allows collaborative knowledge sharing around the mapped network and maintains business continuity preventing disruption.



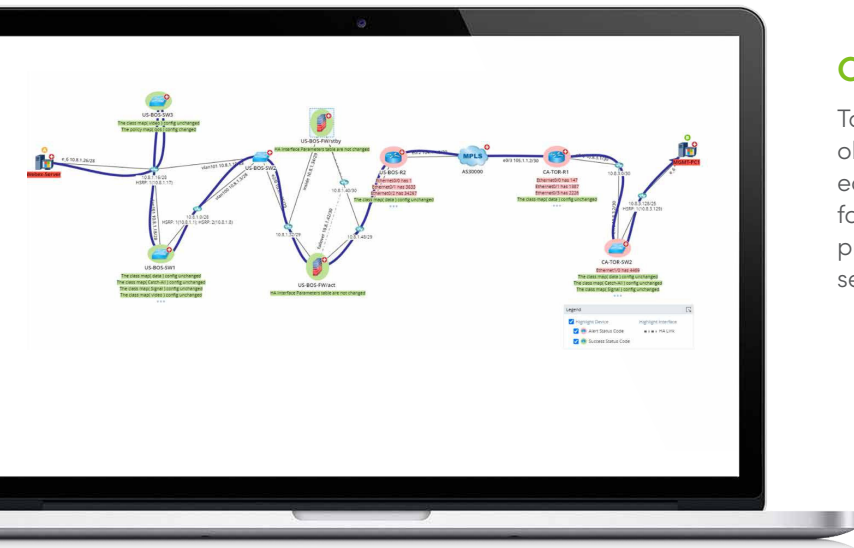
Every network operations team knows the benefit of up-to-date network mapping and documentation, especially in today's rapidly changing environment. However, legacy approaches mean that documentation quickly becomes out-of-date or may never get completed at all.

Dynamic Maps

NetBrain's Dynamic Maps differ from traditional ways of doing network documentation in multiple ways:

- **Auto-discover every device on the network.** NetBrain continuously discovers, models, and visualizes the network from edge-to-cloud in a single, consolidated view. This is regardless of mix of infrastructure, delivery models, vendors, or number of locations.
- **Integrates with your software ecosystem.** Organizations rely on a number of data monitoring, network change and configuration, ITSM, APM, Telemetry, SIEM, and Observability tools to ensure end-to-end network management. NetBrain integrates into all these solutions via API to provide a view of the end-to-end network that is enriched with contextual data.
- **Displays network logical topologies, design pathways, baseline configurations, and changes made over time.** See and understand the logical relationships between network devices, their design intents, and compare changes over time. NetBrain's Dynamic Maps provide the network's full history while being highly adaptable for the future.

NetBrain's Dynamic Maps provide real-time visual digital representations of any edge-to-cloud network, across all network devices, platforms, and firmware versions. This always up-to-date digital documentation speeds audit preparation and eases adherence to compliance mandates. Intent and templated Data Views give service-delivery context to observability and bring in 3rd-party data overlaying it on its maps. A to B pathing follows application flows hop-by-hop comparing real-time paths to golden, or baseline, paths, revealing the contextual dependencies of applications and workflows across environments.



The Foundation for Problem Diagnosis Automation

As NetBrain discovers and understands the network, not only does it generate data that can be put to use, but it also captures the design intent of the network, forming the core of NetBrain's Next-Gen platform. The data model enables the sharing of knowledge that is at the heart of building no-code automations, as well as the enforcement of network intents in NetBrain. As a result, IT teams can continually drive down the MTTR of network tickets, while continuously increasing the number of NetOps workflows that they can automate.

Conclusion

Today, it is not enough to just observe the network. NetBrain observes, models, and automates the network from edge-to-cloud in real-time while providing the data-driven foundation for streamlining ticket resolution and problem prevention to continuously improve application and service-delivery performance through the network.

¹EMA, "Network Management Megatrends 2022," April 2022.2 Ibid.

²EMA, "Network Observability: Delivering Actionable Insights to Network Operations," October 2022

About NetBrain Technologies

Founded in 2004, NetBrain is the market leader for NetOps automation, providing network operators and engineers with dynamic visibility across their hybrid networks and low-code/no-code automation for key tasks across IT workflows. Today, more than 2,500 of the world's largest enterprises and managed service providers use NetBrain to automate network problem diagnosis, generate real-time documentation, accelerate troubleshooting, and enforce enterprise architectural rules.