

DATASHEET

Automating Troubleshooting for Collaboration



Modern hybrid networks must support edge, data centers, cloud-based services, and software-defined networking technologies, each of which dramatically increases the overall complexity and the amount of ongoing operations required.

The result? A myriad of network service tickets to keep the network up and running in support of the business. These network service tickets may number into the hundreds or thousands per week – many of them solving the same issues that have already been resolved countless times before. With average Mean-Time-To-Repair (MTTR) of several hours, the total operational resources required adds up quickly.

Repeatedly troubleshooting the same common issues is time-consuming, tedious, and inefficient. Although adding more service desk personnel historically has been a common and tactical solution to this problem, it fails to achieve the desired results:



higher service availability



lower operational costs



shorter task duration



more consistent ticket resolutions

With skilled candidates even harder to find today due to a wealth of global socio-economic pressures, scaling through headcount is simply not a strategic plan for IT Operations.

A *better* way is one that significantly amplifies existing resources' efforts. NetBrain Next-Gen, as a tightly integrated part of your IT Service Management (ITSM) strategy, makes your network operations more intelligent and more repeatable. When you integrate NetBrain into your incident workflows, it does most of the work before your operators even get involved! This dramatically reduces your MTTR by decreasing the reliance on network operators' manual processes.

NetBrain Eases Network Troubleshooting Challenges



Repetitive Incidents

Close repetitive tickets faster by leveraging existing knowledge as automation.



Impact to Critical Functions

Accelerate remediation of abnormal critical application network functions including failover and security.



Transient Problems

Identify and resolve random complaints of slow and poor-performing applications when they occur.



Reduce MTTR

Shift workloads left from human to machine to speed incident resolution.

Troubleshooting Automation Platform Overview

NetBrain Next-Gen is a no-code network automation platform that manages any hybrid networks differently by capturing, replicating, and enforcing network design intents to ease problem diagnosis and maintain ideal network conditions.

When connected to an ITSM system like ServiceNow, Ivanti, Jira, and others, it allows enterprises to address of up to 95% of their network service tickets, commonly reducing their ticket service times by at least half. When used proactively, it even prevents up to 50% of abnormal network conditions that would otherwise lead to the creation of even more service tickets.

Benefits:

- Automates up to 95% of tickets
- Reduces MTTR by half or more
- Eliminates up to 50% of tickets
- Leverages existing SME resources
- No-code required for setup and usage
- Enables self-service troubleshooting for level 1

It's because it's based on a fundamental understanding of the *intent of any network* rather than the compilation of thousands of connected devices that must be individually managed. NetBrain Next-Gen looks at multi-vendor, multi-format networks as the automation of thousands of network design intents created without scripting. It automates IT service delivery by verifying the network intents.

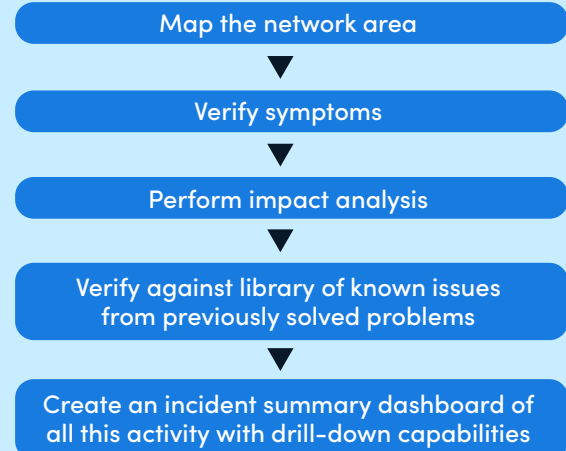
Automation Library

Harness your network knowledge and expertise for reuse by anyone as automation. Your own library is built from your network model and is based on configurations, L2 Network, L3 network, failover, overlay and underlay, security, etc. Realize the immediate value of your library with hundreds of the most common network assessments pre-built out of the box. Digitize your unique troubleshooting, change, and assessment knowledge as automation without coding or scripting. Expand the library while working your day-to-day tasks to automate every workflow such as upgrades, change windows, and troubleshooting. Share proven solutions across your organization as your network needs evolve.

Automating the Incident Workflow

With so many repetitive and non-actionable service tickets, most become just noise to operators. Automation can help tune out the noise by auto-closing and auto-prioritizing service tickets.

In addition, when a trouble ticket is created from an external system, it triggers NetBrain Next-Gen to automatically:



Automated Service Ticket Handling

Problem Diagnosis

- ▶ Capture Context
- ▶ Perform Diagnosis
- ▶ Dynamic Map



NetBrain Next-Gen automates every aspect of the incident workflow from ticket creation to diagnosis to notification.

- Automating a “best first response” diagnosis for 95% of all problems. Service tickets trigger Next-Gen to find the automation most applicable to the ticket type.
- Automatically identifying the problem area and generating topology maps (physical and logical) for the reported condition.
- Empowering network operators to collaborate and leverage members of the team using an automation library increasing the intelligence when taking additional actions.
- Automatically documenting the full ticket response investigation and subsequent operator-led remediations, preserving the context of each service operation for future reference.
- Identifying when the network can no longer support the required application-defined connectivity intents to proactively prevent abnormal conditions from affecting production.

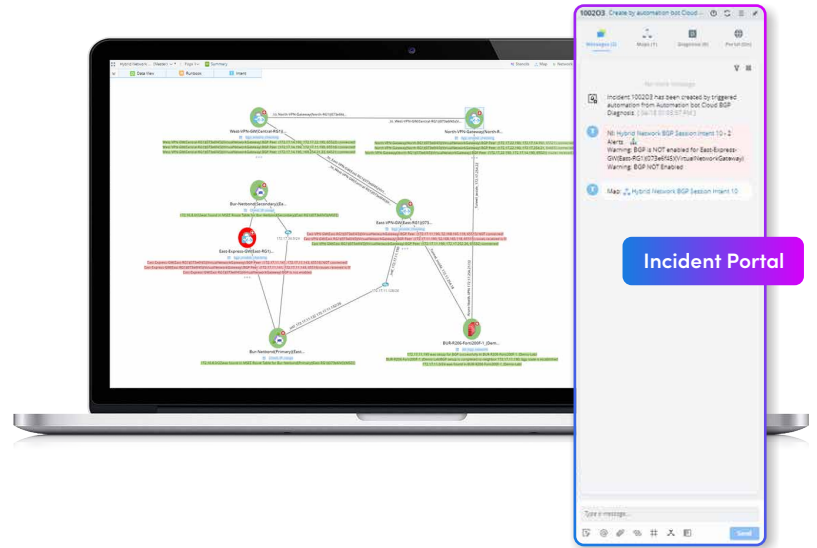
Lower MTTR with Event-Triggered Automation

After configuration, your ITSM automatically triggers NetBrain Next-Gen to begin problem diagnosis the instant any service ticket is generated, not hours or days after the problem has been reported, facilitating the resolution of intermittent or transient issues.

Once triggered, NetBrain Next-Gen automatically finds the network information it needs from the service ticket using advanced traffic path discovery. It takes real-time information from routing tables, NAT policies, ACLs, VRFs, MAC address tables, and even layer 2 devices into consideration when discovering the problem. Then, it generates a real-time map of all the involved network devices in the problem area, including the devices, paths, and intents.

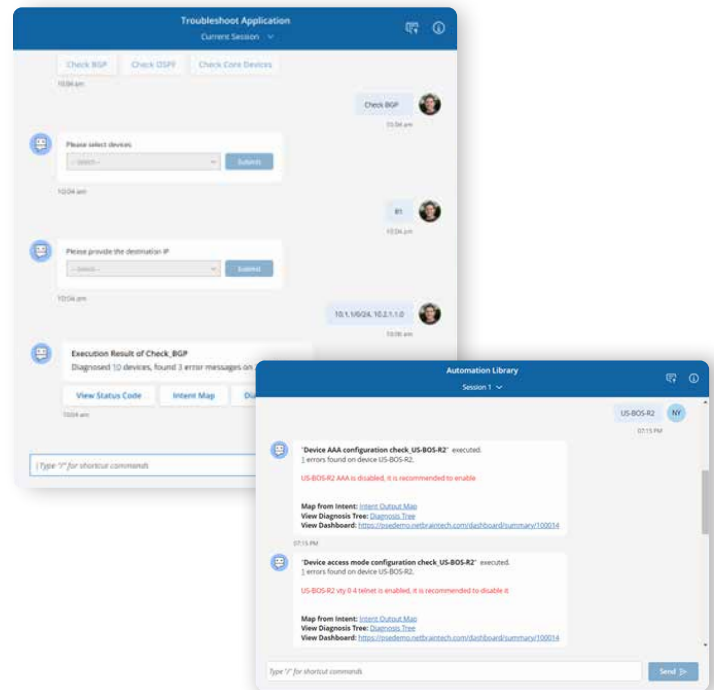
Map-Driven Diagnostics

Leverage pre-built automation assets such as Intents/Maps/Paths organized by devices to visually troubleshoot network problems on maps and paths. Next-Gen enhances the ability to perform follow-up diagnostics to downstream or related devices, if a change is detected, and for tickets reporting errors. The system leverages pre-built intents to automatically generate contextual color-coded diagnostics on maps.

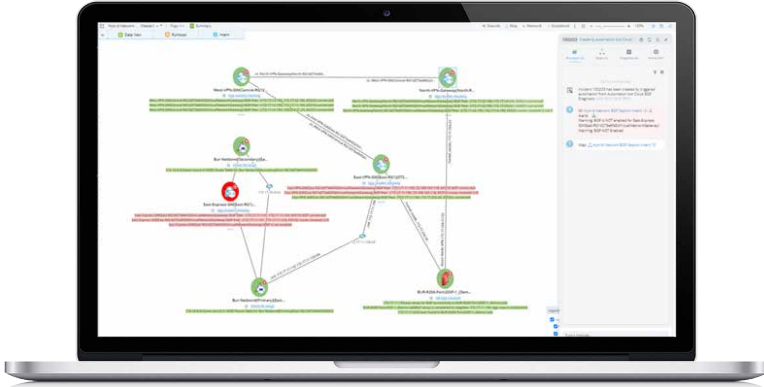


Self-Service and Collaborative Automation

An automation chatbot lets end users execute multi-step intent-based automations to solve real-world challenges fast using a simple chat conversation. Pull and share maps, prompt users, and share findings with others to speed troubleshooting, compliance tasks and change management. If the bot finds an issue it can open a ticket or send an email to the appropriate team and yes will execute the proper intent and draw a map and a dashboard.



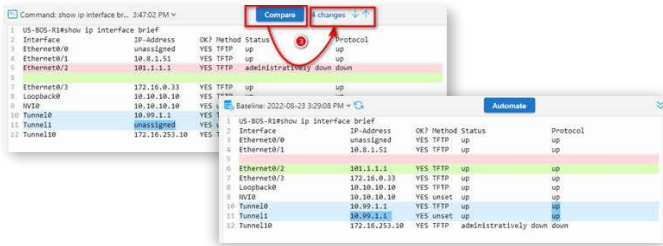
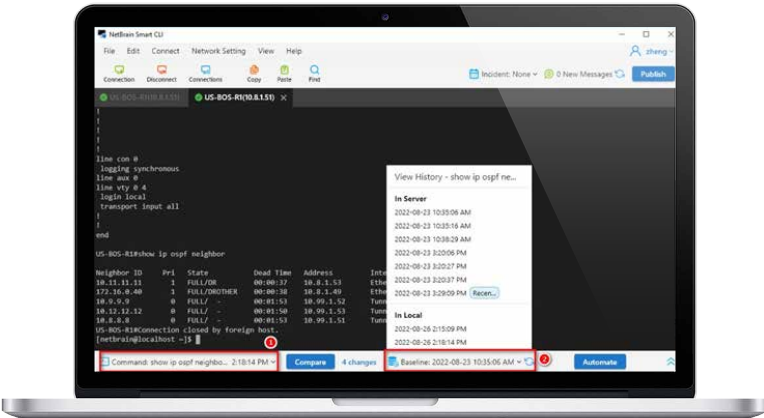
If Next-Gen cannot match the incident to an existing issue or further troubleshooting is required, you can also use the chatbot for fast collaboration to communicate and share information with anyone via the Incident Portal.



Interactive Automation Framework

NetBrain Next-Gen enhances Level 2 troubleshooting diagnosis with real-time collaboration.

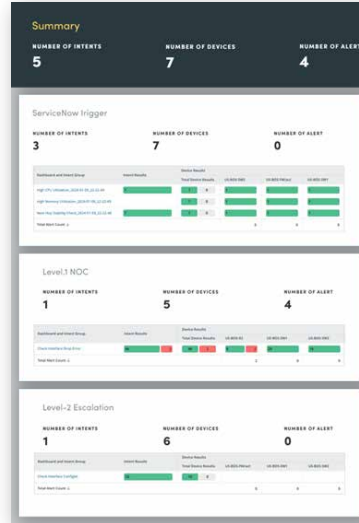
- **Incident Portal** – a shared environment to securely share findings, provide access to an incident page, and collaborate with non-NetBrain users.
- **SmartCLI** – allows user to compare live data with historical data and highlight changes for root cause troubleshooting. troubleshoot by running live CLI commands and comparing CLI command output against a baseline, then save, share, or use in a Runbook. Runbooks can execute CLI/API-based diagnosis automation, document diagnosis process and knowledge for sharing and execute changes and impact analysis.



- **Runbooks** – house intent automation steps to run against a live digital twin, often interactively, automating CLI-based troubleshooting steps.

Incident Summary Dashboard

The Incident Summary Dashboard is automatically generated for every incident and organizes, analyzes, and lets you share data easily by summarizing a history of automation actions over time and across locations and NOC levels.



Automated Alerts

Achieve successful outcomes with automated notifications such as email alerts so the right team can act immediately with the relevant information to resolve any problem.

Diagnosis Tree

Before or after executing automation, view the diagnosis tree to see all the diagnosis automation across diagnosis nodes. The diagnosis tree is fully interactive. Double-click on any intent and view it to navigate and interact with it. Double-click on device to see details and the CLI. Double click on diagnosis and see what was looked at and compare and uncheck changed and unchanged for improved ease of use.



Deep Integrations Automate Ticket Handling

NetBrain extends the ITSM capabilities to your hybrid network to reduce your MTTR and prevent outages. Automation uses ticket data to streamline network troubleshooting workflows by auto-triggering diagnostic automation.

Intents and maps are the cornerstone of the Next-Gen platform and now can be added to incidents for troubleshooting transient problems, periodic ongoing compliance execution, and to correlate data with 3rd-party tools. Use intents to perform diagnostics on API-based SDN and cloud networks while integrating data from external observability systems for a unified view.

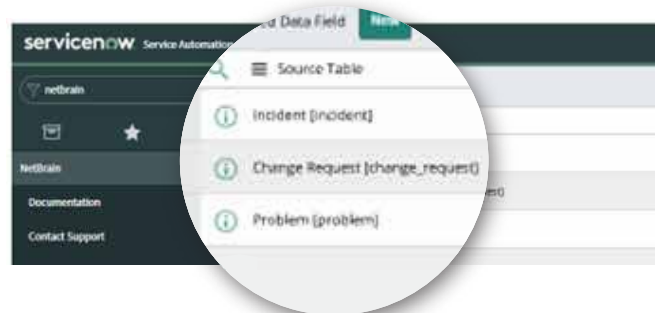
Pre-built API connectors provide a single source of truth integrating data and events from your existing systems. Pre-program notifications to alert the right teams fast via 1) Email to ITSM system (ServiceNow) to create tickets or use the 2) Webhook API to send data to 3rd-party systems, like Splunk.

As a result, NetOps reduces ticket duration and overall MTTR by automating the most common tasks associated with your most common problems. In most cases, up to 95% of all tickets can have their duration reduced by half.

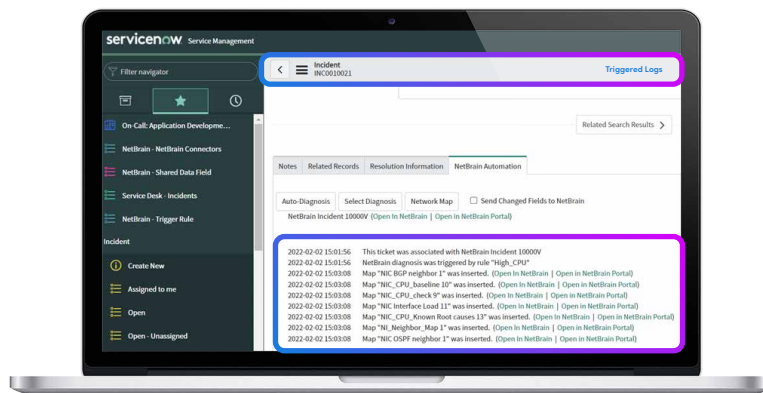
ServiceNow Integration

NetBrain's out-of-the-box connector for ServiceNow tightly joins the two systems together enriching the value of your ticket system deployment. And the connector setup is simple: once the connector installed, the NetBrain administrator performs all remaining configuration steps without the need to involve ITSM admins.

NetBrain enhances all event processing stages as defined by ServiceNow, including Problem, Incident, and Change. After generating detailed maps of the problem area referenced in the ticket, the user defines the most applicable types of automation to execute, including health and performance checks.



NetBrain handles the most common and repetitive diagnostics which would otherwise be executed by responding engineers or operators. These include checking networking device CPU and memory utilization, port status, OSPF neighbor status, path integrity, QoS parameters, protocol and address security filters, forward/backward paths, and much more. Ultimately all this diagnostic information, along with the maps that had been previously generated are made available to the ServiceNow system.



The result? The NetBrain documentation and diagnostic results are populated and available inside the ServiceNow ticket itself. The provided detail shows each step of the triggered events with the timestamps, such as creating an incident, creating a map, and each of the steps executed within a Runbook.

And since NetBrain stores all reference detail back inside the service ticket, responding network technicians and engineers can streamline their continued remediation efforts, shaving hours off the time it takes to resolve any ticket. And if the user needs more detail, he/she can open the Incident Portal directly to get richer data and other related diagnostic history.

Multi-tenant for Managed Service Provider (MSP)

The diagnosis trigger supports multiple tenants and domains for MSPs to manage their clients' networks in isolation. The connector supports the multi-tenant environment by mapping the related ServiceNow data (called Scope) to NetBrain tenants and domains. The ServiceNow Scope is used to match a triggered API call to a NetBrain tenant. The Scope is the display name (label) identifying which client a ServiceNow ticket belongs to, such as company name and customer ID. Ultimately, the MSP has a stronger and more differentiated business service-delivery offering when their NetBrain and ServiceNow solutions are interconnected. NetBrain enables the MSP to offer services with lower MTTR. [Read more about ServiceNow integration.](#)

Decreasing the Number of Service Tickets through Preventive Automation

In addition to decreasing the duration of handling service tickets through the triggered automation sequences described elsewhere, NetBrain Next-Gen becomes more intelligent over time, allowing intentions to be captured and executed in an on-going fashion to enforce service delivery as the business applications demand.

- Guided remediation is available from network intelligence via your own automation library. Operators can use Next-Gen, along with these pre-built automation units, as they complete ticket resolution.
- Continuous validation of desired network intents ensures the production hybrid network delivers the connectivity services as required by the software application architects.

Now, you can prevent unexpected changes to the network and avoid problems from arising using Preventive Automation. Since NetBrain Next-Gen captures ticket analysis, design analysis, best practice rules, it can continuously monitor the network for deviations from normal conditions.

NetBrain Maximizes Automation Value

By connecting directly at the program level, NetBrain Next-Gen triages and documents every network service ticket before operators begin working. With NetBrain, more than 95% of all network service tickets can be automated, reducing their duration by more than half. And moreover, it can detect abnormal network conditions before they impact production, further reducing the number of service tickets that IT must handle. This serves to lower the risk profiles of the entire network infrastructure, since risk-producing abnormalities are corrected before they affect business.

By understanding the intentions of application architects and business leadership, NetBrain Next-Gen dramatically simplifies the management of any network. NetBrain is built upon the concept of network intents. No-code technology allow the network to be defined as a series of network intent, rather than an aggregation of hundreds or thousands of box-level devices. This simplifies the goal of network management to be service-delivery oriented. NetBrain focuses on maintaining service delivery, and when problems occur, reducing the time it takes to address each. NetBrain redefines network automation, making it more intelligent, more available, and more responsive to supporting the business. Let us help you explore the possibilities.

About NetBrain

Founded in 2004, NetBrain is the market leader for NetOps automation, providing network 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 documentation, accelerate troubleshooting, and strengthen network security—while integrating with a rich ecosystem of partners. NetBrain is headquartered in Burlington, Massachusetts, with locations in London, United Kingdom; Munich, Germany; Toronto, Canada; and Beijing, China. For more information, visit www.netbrain.com.

