

A man in a dark suit and light-colored shirt is smiling and presenting to an audience. He is standing next to a whiteboard that has "CASE STUDY" written on it. The whiteboard contains a network diagram with nodes and arrows. The background shows a modern office environment with large windows and glass partitions.

CASE STUDY

Network Automation Takes Flight at US Federal Agency

The Big Picture

At one large federal agency in the United States, the LAN group within the IT organization was tasked with mapping the entire network of over 6,000 nodes. The agency needed comprehensive device details and diagnostic information for every single node in the network, as well as the relationships each node had to its neighbours.

To help automate the process and enhance productivity, the LAN group brought in NetBrain. By adopting NetBrain, they dramatically reduced the time it took to pull together the required documentation while also increasing the accuracy and accessibility. And as adoption increased, the agency started to find additional uses for NetBrain's capabilities and today, more than 400 people at 15 sites are taking advantage of network automation for troubleshooting and visibility.

A Simple Beginning

As Adam, the lead for the LAN group project, explained, "NetBrain was only meant for the LAN group. There were a dozen people on the team who had been working for more than a year to map our entire network. This information was needed for tracking and auditing purposes and every one of our 6,000 nodes had a map to itself. At last count, there were over 10,000 maps!"

NetBrain was adopted to automate network documentation, increasing the accuracy of the network maps and significantly reducing the effort required to create these maps. In the process, the improved documentation led to better visibility across the network and to the discovery of numerous issues that needed to be addressed.

"With the limitations of the manual process we were using, nobody had the ability to connect all the nodes together to see how the entire environment actually worked," said Adam. "With NetBrain automation, we now have visibility in near real-time across the network, including application paths."

Looping NetBrain Into the Troubleshooting Process

Although not the initial intent when bringing NetBrain into the agency, the speed and comprehensive information gathered by the automation platform proved useful in identifying and repairing even tricky network issues. One case that stands out in Adam's mind had everyone on the team stumped for quite some time.

“
Out of 400 users, across 15 sites it [NetBrain] has gained such momentum that the entire company is now very focused on the project.”

Adam
System

“

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**Adam
System**

There was a device on the network that had two different host names but the same IP address, and it was connected to itself on a loop and then out to a firewall. This configuration was creating havoc and because of the loop, the device could not be traced. Adam found the issue by using NetBrain's path analysis capabilities and was able to remove a serious security threat by taking the device offline.

According to Adam, "Quickly finding that device showed the wider IT team that NetBrain was a constructive tool for troubleshooting." The team soon started using NetBrain Data Views to automate the collection of information on each node or set of nodes to help show what was happening in the network on a Dynamic Map. This led to the building a number of Qapps, which feature Executable Runbooks that automate the gathering of common diagnostic information, as well as a "crime scene" map that has proved effective for troubleshooting.

At this point, Adam and his team knew NetBrain's value wasn't simply limited to discovery and documentation and started to outwardly market the solution for network troubleshooting.

Selling NetBrain Across the Agency

NetBrain was already being used by other engineers on the IT team because they needed to re-map all of their sites as part of an ongoing effort to maintain current maps for auditing and compliance efforts. According to Adam, "I told everyone that they could do more than just mapping within NetBrain. There's line analysis, path analysis, route cause analysis, views of network health, and more."

Soon, other teams realized the true value of NetBrain. "With NetBrain, they could see if a network issue was a Personal Identity Verification (PIV) violation, how the network was performing (the speed), and a host of other information that they didn't realise was available on the Dynamic Map," said Adam. "It was as easy as telling them to zoom in on the map to see what VLANs they're on, what OID, and other info they never had access to before. They had to type it into Visio."

Automation Everywhere

NetBrain started to take off across the entire IT organization. Teams in charge of PBX (Private Branch Exchange), VoIP, UPS, Security, EMON, CNO (Corporate Network Operations Centre), and WAN started to use NetBrain, asking "how else can NetBrain help us troubleshoot issues?"

To date, various team across the agency have made thousands of different queries to better understand and resolve network issues. And, more people are using NetBrain to gather this information themselves instead of relying on other teams, saving time and resources by democratizing network automation.

For example, one of Adam's colleagues ran a health check on the network and found a broken pathway. Before NetBrain, he would have had to manually log into every switch's CLI until he found the root cause. And with 900 switches, this task would have taken days unless they got lucky early in the process.

With NetBrain, the colleague was able to run the same diagnostics on all 900 switches with the click of a button. He created a Data View that showed a map of all the switches in the network. All the healthy switches were in green, and the one bad switch was in red. This problem was fixed in minutes and handled by a single network engineer.

In addition, NetBrain is now the primary tool for inventory and baselining all network devices and segments. NetBrain is the primary map maker and once the network had been discovered, new network maps can be generated quickly and shared with other groups.

According to Adam, "We have a lot of tools that do parts of the inventory process, but because NetBrain is so accurate, it's become the benchmark".

Automating an ACI Environment

Adam also points out that they have now implemented ACI into their mapping and documentation within NetBrain. This now gives a better view of the Data Center and how they are all connected. “We can check statuses of the links, Leafs and Spins as well as the APIC’s. This has never been done before in the company’s history. To have the ability to navigate in real time the ACI environment that was put in place and have a visual scope of the network and how it interacts with the rest of the LAN network adds a whole new layer of value”.

What’s Next?

Despite the rapid growth, the adoption of NetBrain across the wider organization has been relatively smooth. Having been through the NetBrain University training, Adam started off training new colleagues until the team at NetBrain introduced him to online courses his colleagues could use. Even still, there were a lot of people who just jumped into NetBrain without formal training.

Adam has helped a huge number of teams adopt and abstract huge amounts of value from NetBrain by simply promoting the solution’s broader troubleshooting capabilities, educating and training his colleagues, and being open to empower them. Now, because of the results, NetBrain has executive attention and buy-in.

As Adam explains, “The leadership team is looking at NetBrain as a unifying automation platform and wondering why other applications aren’t up to par with NetBrain.”

NetBrain for CMMC Compliance

Does your organization need to meet the Cybersecurity Maturity Model Certification (CMMC)? See how NetBrain helps you automate to comply.

[Read our CMMC Solution Brief](#)

About NetBrain

Founded in 2004, NetBrain is the market leader for network automation. The NetBrain platform automates the resolution of every network incident, helping NetOps teams resolve 100s or 1,000s of tickets daily. Today, more than 2,400 of the world’s largest enterprises and managed services providers use NetBrain to automate network troubleshooting, accelerate change management and documentation, and strengthen network security – all while integrating with a rich ecosystem of network management tools. NetBrain is headquartered in Burlington, Massachusetts, with offices in Sacramento, California; Munich, Germany; London, the United Kingdom; Toronto, Canada and Beijing, China.