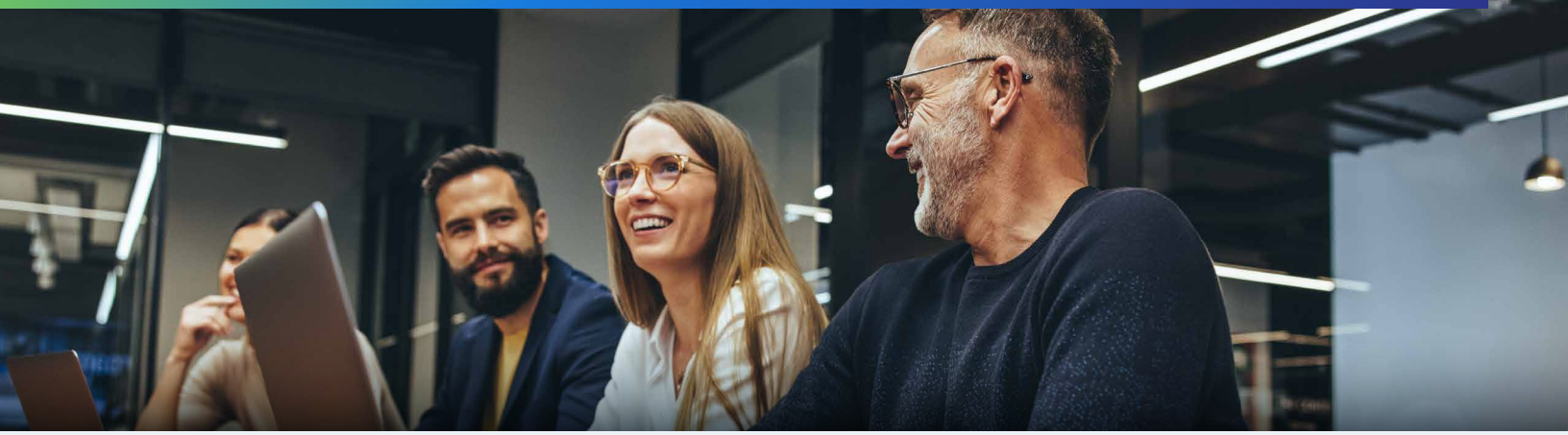
DATASHEET

NetBrain for Multi-Cloud Network Automation

Application and Service-Delivery Enforcement Across Hybrid-Cloud Infrastructures



It's time to automate network configuration enforcement, visibility, compliance and security for your entire network, from datacenter to public cloud. Get the real-time data you need to understand and troubleshoot your hybrid-cloud network so you can support the services your business depends on.

NetBrain extends its network visibility all the way from the endpoint to the public-cloud and everything in between. NetBrain has native support for your multi-cloud infrastructure (Amazon Web Services/AWS, Microsoft Azure and Google Cloud Platform/GCP), traditional networking infrastructures, along with your software-defined WAN and SDN deployments.

Hybrid-Cloud Network Challenges

Adoption of public cloud environments has become nearly ubiquitous across enterprise sectors. The rapid growth of emerging application areas such as work-from-home, distance learning, telehealth, and IoT, just to name a few, is increasing the role of public cloud in enterprise networks. This has added another dimension to already complex network infrastructures.

Even seasoned network operations professionals may find themselves under a learning curve when it comes to multi-cloud environments.

- Lack of visibility and observability into cloud infrastructure
- Too many tools
- No single source of truth
- Inconsistent skill sets
- Siloed operations teams

Fortunately, NetBrain Next-Gen provides a platform to automate hybrid-cloud networks at scale. NetBrain users can visualize and automate their hybrid-cloud networks, leveraging the same unique capabilities of the NetBrain solution that have enabled success for physical and software-defined network infrastructures.

Strategically Manage Hybrid-Cloud Networks

Auto-Discovery of Hybrid-and Multi-Cloud Networks

While many organizations treat cloud-based services as black-box services, which allow little if any network visibility, NetBrain offers visibility from datacenter to cloud and across multiple clouds. This enables real-time application pathing in hybrid-cloud environment- even if both ends are in the public cloud!

NetBrain auto-discovers and provides native support for Amazon Web Services (AWS), Microsoft Azure, and Google Cloud public cloud environments. It then visualizes these using Dynamic Maps to show application dependencies across clouds, SDN and on-premises infrastructure reduces time to pinpoint problems and accelerate cloud troubleshooting. It then provides a consolidated view of key operational data that integrates with the cloud providers' native cloud monitoring, logging, and billing tools.

Full-stack Digital Twin Enables Scalable No-Code Automation

NetBrain's digital twin is unique because it captures, in real-time, your entire hybrid-cloud network. NetBrain goes beyond basic device and topology-level understanding with real-time forwarding and diagnostic logic. The entire network in real-time—every device, every platform, every firmware version – contains all the topology data and baseline configuration, and performance analysis.

This foundational data model offers real-time telemetry dynamically constructing real-time models for any hybrid multi-cloud network, upon which automation is built.

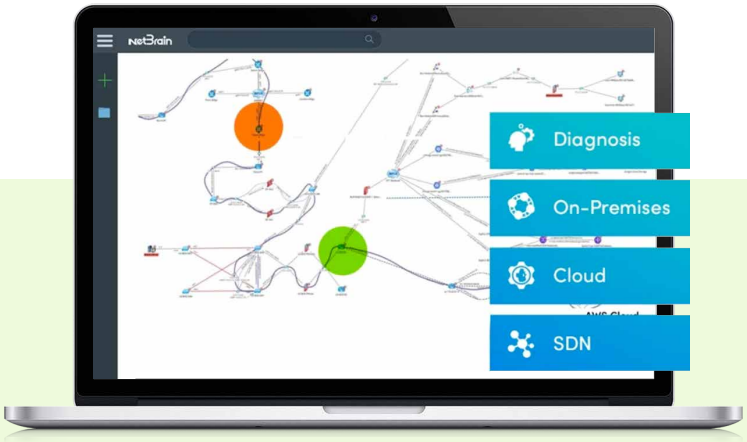
No-Code Intent-Based Automation for Hybrid-Cloud Networks

NetBrain's powerful network automation platform can be extended to various automated diagnostics for different customers' hybrid-cloud network use cases.

Network Intent revolutionizes network operations management by offering a no-code approach to auto-discovering multi-vendor, hybrid-cloud network devices and their architectures, establishing design rules and baselines, and ensuring network design enforcement. With Network Intent, engineers can document design baselines, operational states, and conditions without coding. Most importantly, Network Intent enables the automated validation and verification of network designs. NetBrain lets you capture intent once and auto-replicate it across a thousand 'similar' designs in your hybrid multi-vendor network.

Cloud Support

Azure Google Cloud aws



API Support

API integration enables the diagnosis of SDN and cloud networks with a single pane of glass using Intent Data Views to add color-coded diagnostic information directly onto any map or path for easy troubleshooting with the relevant connectivity details and context to help you solve problems fast.

Visualize Hybrid-Cloud Networks with Dynamic Maps

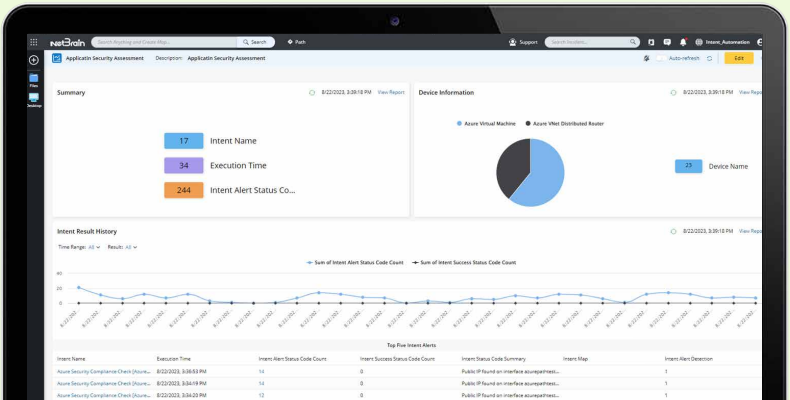
NetBrain's end-to-end visibility and automation capabilities fully extends to the public clouds to support thousands of accounts and millions of virtual servers providing important information about interface statistics and conditions of resources (e.g. CPU, memory, and storage). This enables NetBrain users to:

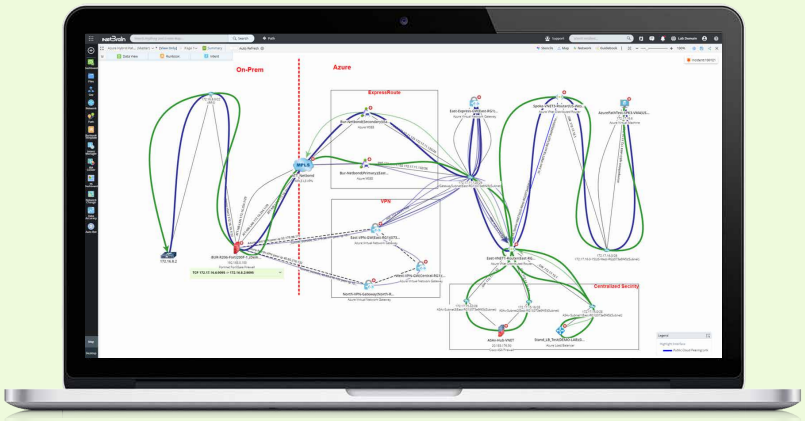
- facilitate faster troubleshooting with collaboration across traditional and cloud operations teams
- troubleshoot complex service connectivity issues which include one or more public cloud endpoints
- ensure maximum availability and lowest MTTR for cloud-based applications
- unify all parts of any organizations' digital infrastructure including their public cloud-based services.

Map the hybrid infrastructure in seconds cloud path map
Map the entire network, including AWS VPC/EC2, Azure VNet/VM and Google VPC/VM Instance. Extend this visibility to new devices and new people without tedious cloud querying.

True, contextual end-to-end visibility
See the boundaries between cloud and other technologies in one easy-to-read map. Normalize the data between network elements to help NetOps understand how cloud architecture relates to the rest of the network in a meaningful and contextualized way.

Solve hybrid network documentation problems
Export dynamic maps and reports for audits and to ensure compliance.





Map Traffic Flows End-to-End with A-B Path Calculator

When it comes to operational tasks like troubleshooting application slowness, teams must be able to discover the hop-by-hop path of the application. NetBrain's A-B Path Calculator can perform this analysis automatically, all the way from the public cloud to the network edge. Path logic assesses many traffic-forwarding characteristics like Security Groups and ACL across subnets, VPCs, network virtualization appliances like firewalls, direct connections, ExpressRoute, VNets, and more.

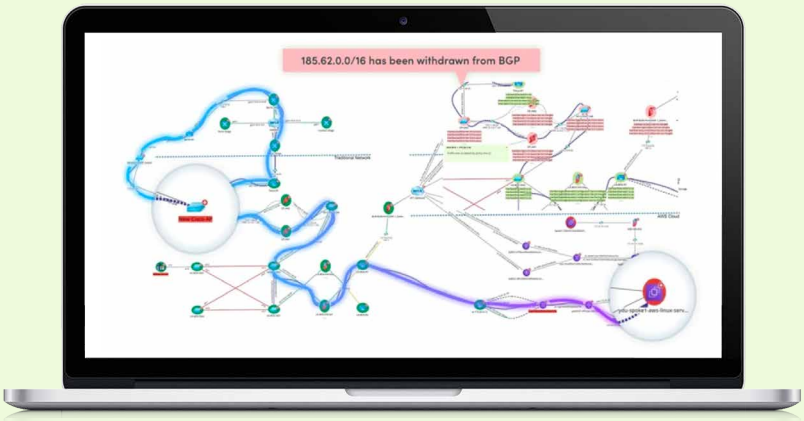
In addition, NetBrain uses self-designed algorithm to calculate the NCT Virtual Route Table for VGW, Direct Connect Gateway, etc., which is not in the route table on the cloud console, but provides a clearer connectivity understanding.

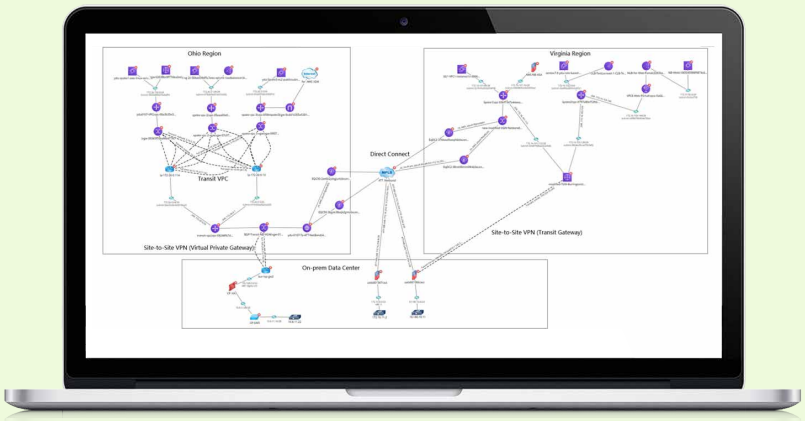
This lets you gain complete visibility into Service Groups and source to destination pathing to uncover the causes of application performance degradations.

- **Live A-B Path Discovery** – Retrieves the routing table from the live network and presents both forward and reverse paths. NetBrain automatically calculates a hybrid map of the traffic flow mapping it, in real-time. Path logic assesses the traffic-forwarding characteristics of all the devices involved including the routers, switches, firewalls, load balancers, and more. It automatically calculates the path types such as IPsec VPN, based on the topology dependency of the outbound interface at each hop. You can use this data to isolate the critical network components when investigating network or application problems, as part of design review projects, or to proactively assure application availability.
- **Mapping A-B Application Paths** – Visualize every hop for every application on their paths from public cloud to edge. Show path details like which security rule or route entry matched for specific traffic.
- **Historical A-B Golden Path Calculation** – Determine what a "normal" network path looks like (e.g., for a given application) and how it may have changed over time.

Hybrid-Cloud Network Automation Use Cases

- Troubleshoot BGP issues
- Assess and troubleshoot routing configuration and status, VPN tunnel and cloud private connectivity like Azure ExpressRoute and AWS Direct Connect
- Cloud Security and Compliance





Amazon Web Services (AWS)

NetBrain can discover AWS public cloud resources, visualizing not only all AWS resources like VPC, Firewall, Load Balancer, TGW, VGW, EC2 but also topology and techniques like VPC Peering, Direct Connect and Site-to-Site VPN used from on-premises to AWS cloud.

Microsoft Azure

NetBrain can discover Microsoft Azure public cloud resources, visualizing not only all Azure resources like Virtual Network (VNet), Firewall, Load Balancer, MSEE, Virtual Hub/VHub, VPN Gateway, ExpressRoute Gateway, VM but also topology and techniques like ExpressRoute Connection and Site-to-Site VPN used from on premises to Azure cloud.

Google Cloud Platform (GCP)

NetBrain can discover Google Cloud public cloud resources, visualizing not only all Google Cloud resources like VPC, Firewall, Cloud VPN, Cloud Router, VM but also topology and techniques like VPC Peering, Partner interconnect, Dedicated Interconnect and Site-to-Site VPN used from on premises to Google Cloud.

Benefits

- **Gain Visibility Across Hybrid-Cloud Networks**
  Obtain accurate and up-to-date visibility into the public cloud, alongside software-defined and physical networks in a consistent and familiar way.
- **Reduce "Mean Time to Repair"**
  Public clouds increases the complexity of identifying where problems originate. Get a quick answer as to whether a problem is a network problem or not.
- **Align IT team and cloud providers**
  Unified visibility of on-, collocated, and public cloud infrastructure helps each responsible team better collaborate and get to resolution faster.
- **Troubleshoot application dependencies**
  Quickly locate the network components associated with an application during troubleshooting to find the root cause.
- **Improve security posture**
  Intents make identifying security design and hardening issues much easier, but also aids in maintaining compliance.
- **Support bursting**
  NetBrain learns to identify when bursting is occurring, automatically adjusting, and providing licensing flexibility where required.

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.

NetBrain

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