NetBrain

Problem Diagnosis Automation System – Intent Library

Modern network infrastructures have a lot more in common than most people realize, and although the equipment and topology details vary widely, the kinds of operational needs are surprisingly the same.

Reduce the Number of Required Resources and Human Errors

The first of these operational needs is related to the dearth of network service and remediation tasks large enterprises experience. These can number into the thousands per month, but if the concept of similarity is considered, there may only be a few dozen unique types of problems, each of which is repeated hundreds or thousands of times. This presents a huge opportunity for optimization by leveraging automation to address these relatively few situations. These common types of problems can be solved once, and then by capturing those resolutions, simply applied to subsequent occurrences, dramatically reducing the number of resources required, increasing the consistency of resolutions, and reducing human error. In fact, up to 95% of all service tickets can be accelerated by applying reusable automation in this manner.

Reduce the Amount of Service Tickets

The second type of common operational need is the ability to be proactive. By understanding each of the enterprise applications in use and their individual network requirements, any digital infrastructure can be monitored to assure those conditions continuously exist. It is quite common for new applications to have an adverse effect upon previously installed applications, so having the ability to verify the production network operating conditions in the context of the applications that reside upon the network is key to strategic operations. By proactively looking for issues before they impact the business, problems can be eliminated before outages or service degradations occur. It has been estimated that 50% of all problems can be eliminated using proactive verification.

NetBrain Problem Diagnosis Automation System

This is the reason NetBrain's Problem Diagnosis Automation System (PDAS) was invented. NetBrain allows network automation to be applied to every problem, big or small, without complex programming or long expensive development cycles. It allows the expertise of your subject matter experts to be available when the SME themselves are not - a huge factor when it comes to scaling network infrastructures. The result is higher service availability, lower operational costs, shorter ticket duration, and more consistent problem resolutions.
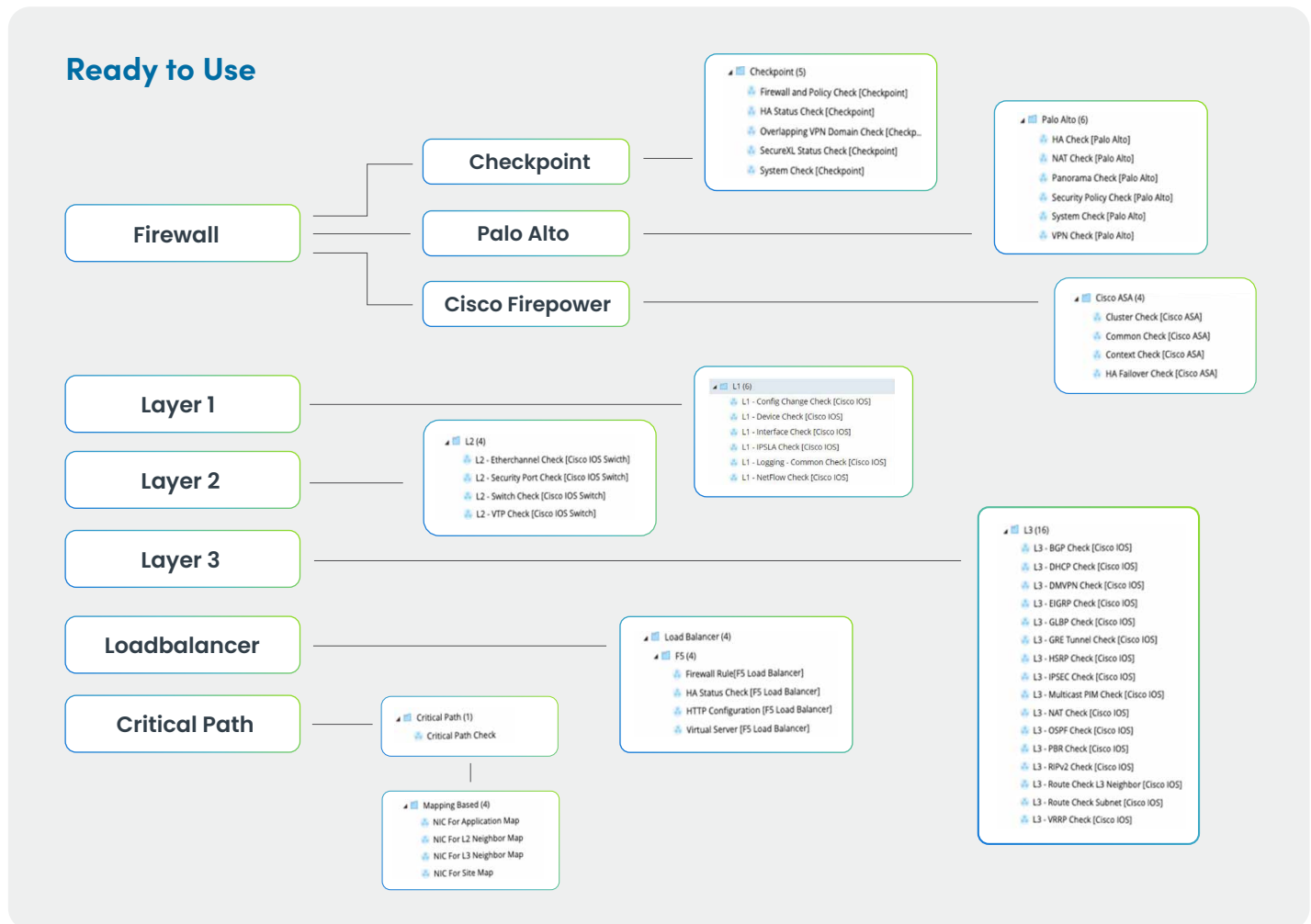
PDAS and its available NetBrain's Intent library service provides a continuously expanding library of pre-built expertise-based automation units ready to use right out of the box. These automation units address the most common scenarios seen in the vast majority of enterprises for event-driven response, such as those reported via a network helpdesk service ticket), as well as for proactive design-level compliance, security and application performance support verifications.

Examples of common problem diagnosis situations contained in the Intent Library:

Intent-driven NetBrain PDAS Intent Library	
Design-Level Enforcement	**Event or Ticket Remediation Application**
Design / Feature / Technology / Security • Must-have or Forbidden Routes • QoS and Multicast Rule validation • Firewall rule/ACL validation • Failover/Redundancy rules	**Network** • Access errors • Configuration errors • BGP or OSPF errors
Incident & Feature Agnostic • CPU, Memory, Power • Link utilization, Latency, Interfaces • Device reachability	**Device** • Host or Service Unreachable • Printer/Database Device unavailable • Permission restrictions
Key Applications and Paths • Voice, Internet, VPN path • DCI Paths • Other key application paths	**Application** • Data unavailable • Voice Choppy • Response Times Reduced

The Intent library is extensible as well. The intents can be installed as templates (Network Intent Templates) that can replicate network intents across the entire network to scale in just a few clicks intuitively. The NIT decoding service creates a list of qualified devices to replicate the intent to. A Timer helps it keep up with updates to baseline and changes to devices. Through no-code mechanisms built into the PDA System, your own subject matter experts can create additional situation and site-specific automation routines without any coding and add them to the Intent library. Any network engineer or operator can use the automation routines to quickly and accurately solve problems when they reoccur. Subject Matter Expertise becomes available when the subject matter experts are not!

The NetBrain Intent library is leveraged as the central console for intents throughout the PDA System. When coupled with an ITSM/ITOM system, NetBrain PDAS triggered automation will draw from the intent library to implement the most useful set of diagnostics in response to specific events.

Ready to Use

Firewall
- **Checkpoint**
- **Palo Alto**
- **Cisco Firepower**

Checkpoint (5)
- Firewall and Policy Check [Checkpoint]
- HA Status Check [Checkpoint]
- Overlapping VPN Domain Check [Checkp…
- SecureXL Status Check [Checkpoint]
- System Check [Checkpoint]

Palo Alto (6)
- HA Check [Palo Alto]
- NAT Check [Palo Alto]
- Panorama Check [Palo Alto]
- Security Policy Check [Palo Alto]
- System Check [Palo Alto]
- VPN Check [Palo Alto]

Cisco ASA (4)
- Cluster Check [Cisco ASA]
- Common Check [Cisco ASA]
- Context Check [Cisco ASA]
- HA Failover Check [Cisco ASA]

Layer 1

L1 (6)
- L1 - Config Change Check [Cisco IOS]
- L1 - Device Check [Cisco IOS]
- L1 - Interface Check [Cisco IOS]
- L1 - IPSLA Check [Cisco IOS]
- L1 - Logging - Common Check [Cisco IOS]
- L1 - NetFlow Check [Cisco IOS]

Layer 2

L2 (4)
- L2 - Etherchannel Check [Cisco IOS Switch]
- L2 - Security Port Check [Cisco IOS Switch]
- L2 - Switch Check [Cisco IOS Switch]
- L2 - VTP Check [Cisco IOS Switch]

Layer 3

L3 (16)
- L3 - BGP Check [Cisco IOS]
- L3 - DHCP Check [Cisco IOS]
- L3 - DMVPN Check [Cisco IOS]
- L3 - EIGRP Check [Cisco IOS]
- L3 - GLBP Check [Cisco IOS]
- L3 - GRE Tunnel Check [Cisco IOS]
- L3 - HSRP Check [Cisco IOS]
- L3 - IPSEC Check [Cisco IOS]
- L3 - Multicast PIM Check [Cisco IOS]
- L3 - NAT Check [Cisco IOS]
- L3 - OSPF Check [Cisco IOS]
- L3 - PBR Check [Cisco IOS]
- L3 - RIPv2 Check [Cisco IOS]
- L3 - Route Check L3 Neighbor [Cisco IOS]
- L3 - Route Check Subnet [Cisco IOS]
- L3 - VRRP Check [Cisco IOS]

Loadbalancer

Load Balancer (4)
F5 (4)
- Firewall Rule[F5 Load Balancer]
- HA Status Check [F5 Load Balancer]
- HTTP Configuration [F5 Load Balancer]
- Virtual Server [F5 Load Balancer]

Critical Path

Critical Path (1)
- Critical Path Check

Mapping Based (4)
- NIC For Application Map
- NIC For L2 Neighbor Map
- NIC For L3 Neighbor Map
- NIC For Site Map

NetBrain Intent Library Subscription

You can obtain a free compilation of fully function basic intents from the Intent Library. A collection of more complex intents is included as part of our Premium Support Service plans.

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.

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