FORWARD NETWORKS

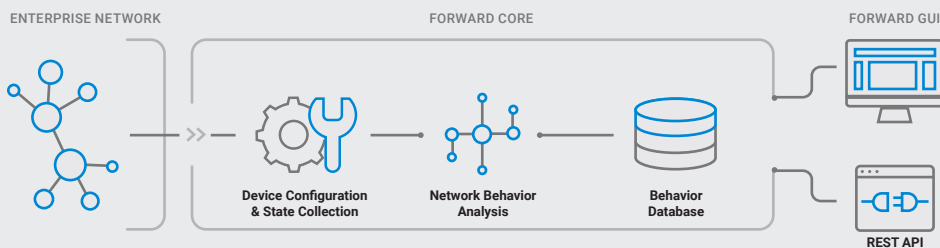# Network Operations. *Simplified.*

ACHIEVE PROACTIVE NETWORK ASSURANCE

Forward Networks industry-leading verification platform, Forward Enterprise, analyzes and verifies network behavior to proactively surface configuration errors and policy intent violations. The platform can compare the intent of the network designers to actual end-to-end behavior in order to expose any inconsistencies. Network IT teams can now obtain quick access to relevant network data to troubleshoot rapidly and eliminate problems prior to a security breach or network outage.

Forward Enterprise shifts the focus from a purely reactive approach to troubleshooting to the proactive approach of network assurance and verification. Get away from tedious, manual device-specific processes, to automated, end-to-end verification in minutes. Other key benefits include the ability to certify that proposed changes are compliant with existing policies quickly before going live, and increasing the overall responsiveness of the IT team to change requests and network updates.

In addition to traditional on-premises networks, Forward Enterprise provides unmatched flow visibility and behavior verification for hybrid multi-cloud environments.

FORWARD ENTERPRISE ARCHITECTURE

ENTERPRISE NETWORK   FORWARD CORE   FORWARD GUI

Device Configuration & State Collection

Network Behavior Analysis

Behavior Database

REST API

Forward Enterprise collects device configuration data and state information from every network device, including switches, routers, load balancers and firewalls. Forward Enterprise can then emulate the behavior of the entire network, end-to-end, to report on potential vulnerabilities, policy violations or risk exposure.

KEY FEATURES AND CAPABILITIES

FORWARD SEARCH
A POWERFUL SEARCH ENGINE FOR YOUR NETWORK
Fast, easy-to-use search over all possible network behaviors with an always up-to-date mirror of your network design and documentation.

FORWARD VERIFY
IS THE NETWORK DOING WHAT IT SHOULD?
Continuously validate application connectivity, security and configuration requirements amidst rapid changes and updates.

FORWARD PREDICT
HOW WILL A CHANGE AFFECT MY NETWORK?
Determine how changes in ACL rules and NAT policies will affect network behavior and policies.

NETWORK QUERY ENGINE
QUERY YOUR NETWORK LIKE A DATABASE
Write customized verification checks to scan your network devices for configurations and state consistency and correctness

BEHAVIOR DIFFS
WHAT HAS CHANGED?
Validate all the changes in design and behavior between any two points in time to accelerate problem isolation and compliance requests.

SECURITY POSTURE ANALYSIS
HOW ARE MY ACTUAL POLICIES IMPLEMENTED BETWEEN SECURITY ZONES?
Verify that the security policies are implemented as intended between respective zones within the entire network.

BLAST RADIUS ANALYSIS
HOW DOES MY COMPROMISED DEVICE AFFECT THE REST OF THE NETWORK
Find out the reachability of a compromised host throughout the network to implement containment for risk reduction.

DEVICE VULNERABILITY ANALYSIS
WHICH DEVICES ARE AFFECTED BY A SECURITY VULNERABILITY?
Effectively identify the devices affected by one or more security vulnerabilities based on their severity throughout the inventory.

DEPLOYMENT OPTIONS

Forward Enterprise can be deployed on-premises or as a SaaS solution in the Forward cloud. Network requirements: SSH must be configured and working on the network devices from which the Forward Collector will collect data. The OS instance on which the Forward Collector is installed must have IP and SSH port reachability to the network devices, either directly, or via a jump server.

ON-PREMISES DEPLOYMENT REQUIREMENTS:

Forward Enterprise is deployed as a Virtual Machine (VM-OVA format) for KVM and ESXi environments. The deployment requires the following resources (for up to 1000 network elements):

- Cores: 16
- RAM: 128 GB of reserved memory. Performance may improve with more memory availability, but only when individual snapshots are large.
- Disk: 250 GB of disk. The amount of disk consumed will depend on the number of historical snapshots to be stored, as well as the size of each one.

(For more than 1000 elements, requirement varies)

SAAS DEPLOYMENT REQUIREMENTS:

A machine (virtual or physical) with at least two dedicated cores and 4GB of RAM.

- Supported Operating Systems: Ubuntu Linux (14.04 and 16.04), Mac OS X (10.12 or later versions), and Windows 7 (or later versions).
- The machine must be able to access the https://fwd.app web page via HTTPS.
- The user must have admin privileges on the machine.
- The latest versions of supported browsers Chrome, Edge (Chromium-based versions only), Firefox and Safari (Mac only) are required to access the Forward Enterprise UI.
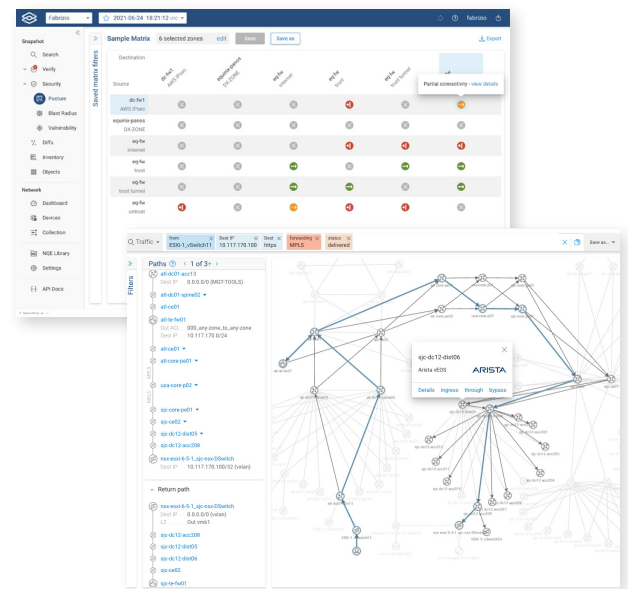
SUPPORTED VENDORS AND DEVICES

Forward Enterprise supports over 456 device types and more than 1479 OS versions, including:

Cloud support (client virtual devices hosted in cloud platforms):

Please contact us at info@forwardnetworks.com for more details about supported devices and vendors.

ABOUT FORWARD NETWORKS

Forward Networks' mission is to de-risk and accelerate network operations, by increasing efficiency, reducing outages and verifying network intent. Built on a series of breakthrough algorithms, the Forward Platform provides enhanced network visibility, policy verification and change modeling for legacy, SDN or hybrid environments.

Forward Networks is headquartered in Palo Alto, California, and funded by top-tier investors, including Andreessen Horowitz, DFJ, A.Capital, SV Angel, and several luminaries in the networking and systems space.