FORWARD

Adopt autonomous networking safely.

Turn the network from the thing AI waits on into the thing it runs on.

Overview

Every other part of IT tests changes before they go live. The network still doesn't. Someone makes the change, the team watches what happens, and rolls it back if it breaks.

As a result, the changes that matter most get deferred. An OS patch for a known CVE waits. A firewall rule update waits. Not because anyone doubts they should ship, but because no one can first verify the impact. That isn't a discipline problem. It's what happens when production is the only test environment. For the business, that means known risks stay open and new initiatives wait on the network.

The intent-reality gap

When your operations run on a mathematically accurate digital twin, everything changes. Not incrementally, but fundamentally. Change windows shrink because impact is verified before anything touches production. Security gaps close because every possible path is verified, not assumed. Compliance stops being a quarterly fire drill. Your teams and AI agents have the verified foundation to know what's true, predict what's next, and move with confidence.

Why it matters now

AI is pulling on the gap from two directions. Networks are being rebuilt to carry AI workloads: by 2028, more than half of data center switch spending will support AI, up from under 30% today (Gartner1). And AI agents are starting to propose and execute network changes themselves.

An agent's mistake can propagate at machine speed, causing many changes to occur simultaneously before it is detected.

> "This gap has been manageable, if uncomfortable, as long as changes moved at human speed and human scale. It will not survive contact with agents operating continuously, in parallel, and faster than any human can review."
>
> **The Network Digital Twin Guide**

What the gap costs today

$500K+
Connectivity risk
Cost of one hour of unplanned network downtime
Gartner[2]
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54%
Security risk
Share of edge-device vulnerabilities fully fixed. Median time: 32 days
Verizon 2025 DBIR[3]

$10M+
Compliance risk
Average U.S. breach cost, more than double the global average
IBM Cost of a Data Breach 2025[4]

Weeks to months
Delivery risk
To approve and ship a routine change, like a firewall rule update
Customer testimonial

Software never ships without a staging environment. The network never had one it could trust.

A network digital twin is that environment: a software model of your entire production network that can predict how it will behave. But the term now covers two very different approaches. Most tools called a "digital twin" test only the scenarios in a test plan, while Forward's digital twin automatically computes every possible path traffic could take using mathematical verification. That difference matters most when an outage comes from a scenario outside the test plan.

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What verification buys the business

Change review in minutes, not months.
Proposed changes are tested against the twin and refined before they touch production. CAB reviews become a model run instead of months of peer checks..

Predictable operations.
Teams check how the network actually behaves instead of reasoning through it device by device.

Continuous security and compliance.
Because the twin computes exactly what can reach what, it can show whether a known vulnerability is actually exposed and whether segmentation still holds. Configuration drift shows up when it happens, not at the next audit.

Evidence the board can trust.
Every change comes with a record of what was verified and when, ready for auditors, the CAB, and the board.

The foundation for autonomous networking

Enterprises are moving toward AI agents that make network changes on their own, faster than anyone can review. The risk of each change is the same as when a person makes it. What changes is the speed and volume. Forward makes sure every change is evaluated first:

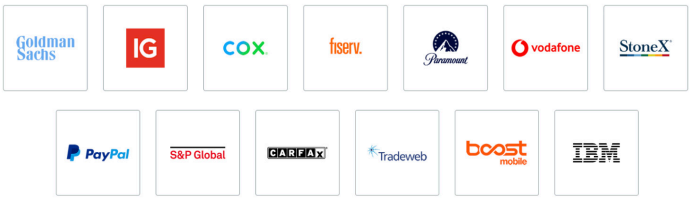
- **Same standard for people and agents:** every change runs against the same production-equivalent twin.
- **Nothing ships unverified:** only changes that pass every check reach production.
- **No blind spots:** the twin computes every outcome, so it catches unintended consequences that nobody thought to test.
- **Trustworthy AI answers:** ask your network questions and get the same mathematically accurate response every time.

> "The network is no longer a bottleneck on the business; it is a business accelerant."
>
> **The Network Digital Twin Guide**

> "For a human engineer, seeing the impact of a change before it touches production is a better way of working. For an AI agent, it is the only thing that makes autonomy survivable."
>
> **The Network Digital Twin Guide**

Trusted by the world's most demanding networks

Forward built its network digital twin over more than a decade inside some of the world's largest and most complex networks, including global financial institutions, U.S. federal agencies, and critical infrastructure operators. Today, it's trusted by Fortune 500 companies.



1. Gartner, "2026 Strategic Roadmap for Enterprise Networking," Document ID G00837707. 17 October 2025.
2. Gartner, "Market Guide for Network Automation Platforms," Document ID G00840289. 29 April 2026.
3. Verizon Business, "2025 Data Breach Investigations Report," 2025.
4. IBM and Ponemon Institute, "Cost of a Data Breach" report, 2025.

See it in your own network

Book an executive briefing to understand how a mathematically accurate digital twin can transform your organization, or start a free trial and put it in front of your team.

GET STARTED www.forwardnetworks.com/request-a-demo

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