



Optimizing cloud investments with a digital twin

The technology transforms the efficiency and security of hybrid and multi-cloud systems



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A NETWORK DIGITAL TWIN offers insights into operations, engineering and security by creating a mathematical model of Layers 2 - 4 of a network. It is a valuable tool for modernizing mission-critical networks via the cloud and reducing cybersecurity risk.

Think of those early handheld GPS devices that let drivers map a journey from Point A to Point B but didn't adapt to changing conditions. Compare them to an app like Waze that incorporates a wealth of information to help drivers get where they want to go in the most efficient way possible. That's the difference between a

model and a digital twin.

By collecting current information on the state and configuration of network devices, a digital twin can broaden and deepen administrators' understanding of their networks so they can make better decisions about improving and managing complex IT systems.

Providing a single source of truth

In most agencies, it's impossible for any person to get an understanding of all traffic flows and behavior. Agencies need access to normalized data presented in easy-to-consume visuals to ensure

compliance, reduce outages and prevent incidents. Similarly, multi-cloud environments incorporate a wide variety of services and products, and it is essential to have a unified view that links what's in the cloud (or clouds) and what's on premises.

A digital twin can supply that single source of truth and ensure that applications are readable across clouds and on-premises systems and that the network's security posture is not being invalidated. And just as robust GPS apps will find the most efficient path, a digital twin knows all the possibilities and can answer agencies' questions about the most efficient, secure and cost-effective way to route cloud activities.

Forward Networks' Forward Enterprise platform provides a mathematically accurate network digital twin that enables agencies to visualize complex networks, verify policy implementations and predict the network's behavior before they make changes.

Agencies often want to move fast when they're deploying cloud technology, but sometimes this results in unintended consequences beyond the visibility of a single team (e.g., NOC or SOC) or individual. These can range from unintended connectivity to expensive and unnecessary routing between clouds. A digital twin can help agencies answer questions at scale





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and as quickly as an automated solution can deploy any changes.

Forward Enterprise allows agencies to layer intent checks into their networks to make sure that cloud paths have been optimized and that new apps and services won't create security or performance problems. We have API integrations with Intential and ServiceNow, for example, so an agency can run intent checks before companies deploy automated updates on the network.

Verifying the zero trust posture

A network digital twin also plays a key role in zero trust architectures. Rather than rely on micro-segmentation, filters or firewalls to block activity, a digital twin offers a clear-eyed view into what an agency is implicitly trusting (that it might not know it's trusting) and identifies any back doors that have inadvertently been left open.

Furthermore, the technology allows agencies to visualize their zone-based network access so employees can only reach

the resources they need. That minimizes both insider threats and a hacker's ability to move freely through a network. The approach is a crucial element of zero trust.

A tool like Forward Enterprise significantly improves IT administrators' ability to verify that their networks are behaving exactly as intended across on-premises and cloud-based systems. ■

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