DATA SHEET

Tanium communication architecture

Tanium's communication architecture provides real-time visibility and actionability at any scale.

AT A GLANCE

- Vastly increase speed of endpoint communication to get accurate, real-time data on demand
- Execute instant actionability at scale
- Reach all endpoints in remote, cloud, and on-prem extensive environments

You can't solve today's problems with yesterday's tools

Everyday IT operations and security teams struggle with difficult processes to both manage complex environments and execute essential actions. They aim to get complete endpoint inventory, distribute software and patches for hundreds of thousands of endpoints, and combat erratic cyberattacks across expansive, complex environments. The list never ends, and the tasks get more difficult.

Typical outdated security and systems management tools all share a common fatal flaw — they were simply not architected to perform well at scales beyond tens of thousands of endpoints. The traditional products using hub-and-spoke model bring high traffic to the WAN and suffer from constriction. The result is sluggish endpoint communication and performance issues. For IT operations teams, it takes days or even weeks to fully deploy critical patches. For security teams, quickly stopping attacks underway is prevented. And, as environments continue to expand so does the load applied on networks, impacting the functionality of structure.

IT operations and security teams both continuously ask and receive questions that can't be easily answered with the existing tools. Retrieving the required data typically requires lengthy, manual processes. This results in frustration when managing endpoints and fulfilling the IT operations and security needs of the environment.

> "Managing, tracking and controlling the software, licensing and patch levels for tens of thousands of server instances is extremely challenging on its own," says Matt Reid, Elsevier's technology infrastructure and operations director. "Then amplify this with the transitory nature of these instances – in an environment that scales unpredictably and bidirectionally – and things quickly get really complicated." [1]

1. https://explore.tanium.com/c/cs-elsevier?x=bhq-T4

The Tanium architecture — real-time endpoint communication at scale

Tanium is the first and only enterprise platform that empowers security and IT operations teams with real-time visibility and control to secure and manage every endpoint, even across the largest global networks. At the heart of this platform is Tanium's patented linear chain endpoint communication.

Traditional architecture

The most common architecture is called hub and spoke or star topology. The server (hub) is connected to multiple endpoints (spokes) individually, and each server must be connected to the central server. Communication occurs to and from the hub to each connected spoke. With a company's growing number of endpoints, this structure leads to overcrowded WAN segments and decelerated performance.

Example: 10k endpoints needing a Windows 10 cumulative update to version 22H2, 372 mb is transferred per endpoint.

In traditional architecture, each endpoint directly downloads the file, adding up to 10k connections and 3.72TB . With Tanium, if 100 endpoints are in each linear chain, they download the file from each other only once. The connections outside of the linear chain would then typically reduce to 100 and 37.2 GB. The total used bandwidth used in this process could be reduced to only 1% of the bandwidth in traditional architecture.

Tanium's linear-chain architecture

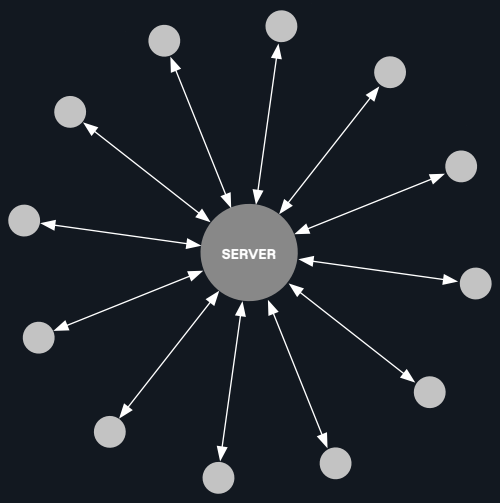
Tanium's unique, patented architecture increases the speed and scalability of endpoint communication. This results in operators' ease of asset inventory management, accessing endpoint data, and taking actions across the entire environment.

With Tanium's architecture, each endpoint is automatically aware of which nearby endpoints to connect with to form a linear chain. Communication starts with the centralized server, then connects to one leading endpoint starting the chain. The leader sends information to its neighbor, and the neighbor passes it onto the next endpoint in chain. This continues until it reaches another leading endpoint that communicates directly back to the Tanium server. The server collects aggregated results from the end of the chain.

The linear-chain functions in low-latency LAN traffic, reducing the WAN impact. It extensively decreases the direct endpoint-to-server relayed communication. The result is massively increased speed, efficient performance, and easy adaptation with scalable environment.

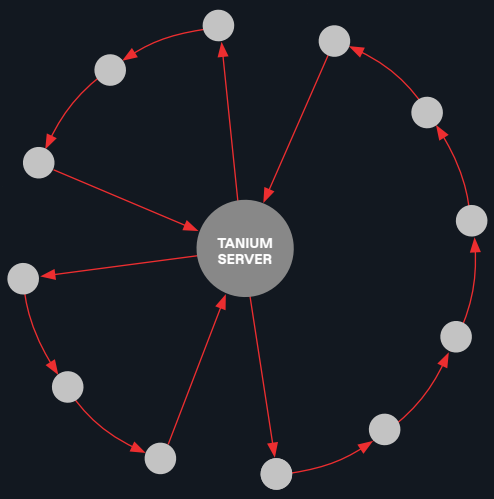
Traditional hub-and-spoke architecture

- Overcrowding network
- Slow response times (hours or weeks)
- Slower performance



Tanium's linear chain architecture

- Reduced impact on network
- Fast response times (seconds)
- High level performance



Linear chain exponentially improves communication speed

Retrieving both accurate and real-time data is a constant challenge for IT operations and security. Unlike the traditional systems, Tanium is designed to disseminate queries and actions to every endpoint across global environments. Whether the endpoints are on-prem, in cloud, or amongst millions of endpoints, Tanium's linear chain proceeds end-to-end communication at scale and in seconds.

The impact of speed and scale

This breakthrough architecture empowers IT operations and security teams with visibility, control, and remediation.

Visibility – See every endpoint, everywhere.

IT operations and security teams get complete, accurate, and real-time asset inventory and data. For instance, companies tend to use multiple tools to operate at scale which produce data that is days or weeks old and does not align. Challenges continue when company growth increases complexity and requires cumbersome implementation. With Tanium, get timely, context-rich data and see a complete, informative view of your environment in minutes.

"Operating on a global scale provides a lot of challenges when it comes to knowing your environment. For the first time, we've been able to get a fast and accurate picture of our environment with Tanium."

Torels Oerting, Group Chief Security Officer, Barclay[1]

Control – Take control of your entire IT estate in real-time.

Using Tanium's architecture, you can quickly improve endpoint management and meet requirements. For example, stay up to date with security patches to meet compliance benchmarks and reduce the amount of time needed to monitor, update, and upgrade. Use Tanium as the single source of truth to maintain compliance through both IT operations and Security teams, making it easy to execute real-time actionability.

"Prior to using Tanium, our patch compliance was low. Now with Tanium, we have crossed the 90% patch-compliance mark for three months in a row. That is significant."

Manish Chopra, IT Director, Honeywell[2]

Remediation – Investigate and respond to incidents with complete, high-fidelity data .

Both IT Operations and Security teams must confidently hunt and remediate instances across millions of endpoints with speed. For example, when the widespread and serious Log4J vulnerability occurred, every enterprise needed to immediately investigate their environment and take necessary steps to reduce likelihood of cyberattacks. If and when ransomware strikes, Tanium can help organizations recover by hastily and efficiently taking actions.

"Using Tanium to gain visibility around Log4j took Aptiv less than five minutes," Cunha says. Tanium then gave him all the information Aptiv needed for a remediation strategy.

Luis Cunha Director, Security Architecture and Engineering, Aptiv[3]

REQUEST A DEMO TODAY

Find out even more ways Tanium provides IT Operations and Security with a single source of truth for successful visibility, control, and remediation.

Try Tanium now

1 https://explore.tanium.com/c/cs-barclays-2020?x=bhq-T4
2 https://explore.tanium.com/c/honeywell-servicenow-patching-case-study-2022?x=bhq-T4
3 https://explore.tanium.com/c/cs-tanium-and-aptiv?x=6FiXIQ

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