Resolving Industrial IoT Manufacturing Delays With NETSCOUT

Addressing Elusive Plant Operations Performance Issues With Deep-Dive Views Into PLC Compute Analytics

HIGHLIGHTS

The Challenge

- Vendor-supplied manufacturing productivity and process control solution introduced production delays
- IT unable to determine root cause to resolve the issue

The Solution

- nGeniusONE® Service Assurance platform
- NETSCOUT® InfiniStreamNG® appliances installed at Equinix Co-lo's
- vSTREAM® virtual agents deployed at manufacturing plants

The Results

- Resolved difficult-to-troubleshoot PLC reset issues
- Returned manufacturing plant operations to reliable levels

Customer Profile

This global manufacturer navigated pandemic-related business challenges by expanding their e-commerce channels to supplement traditional distribution to brick-and-mortar retailers. Their earlier investments in factory robotics helped sustain manufacturing operations during the company's own remote workforce transition. During this timeframe, the company also improved data center operations by transitioning from an outsourced to insourced model, with information technology (IT) operations using NETSCOUT solutions to enhance service visibility and real-time performance analysis.

The Challenge

Like many of today's Smart Manufacturing leaders, this company relies on Industrial Internet of Things (IIoT) technology innovations to stay ahead of today's production and distribution demands.

As part of that IIoT technology footprint, the company had deployed a vendor's productivity and process control solution that offered Human-Machine Interface (HMI) technology to connect plant floor operators to production-level manufacturing systems. In addition, this vendor technology offered Supervisory Control And Data Acquisition (SCADA) support to manufacturing operations. In supporting this solution, the manufacturer used hundreds of programmable logic controllers (PLCs) across plant floors to support their factory automation efforts.

With high-level manufacturing execution such an essential part of this company's success, any performance delay experienced on even a single plant floor needed to be quickly addressed and resolved by local IT resources. However, one performance issue that impacted the vendor productivity and process control solution proved difficult to resolve. In responding to related plant floor operators' support requests, IT Operators saw performance latency in the productivity and process control technology was responsible for manufacturing delays, but they

were unable to identify root cause despite their best efforts to do so.

As a result, IT leadership turned to their NETSCOUT business partners to determine whether the company's earlier success using nGeniusONE Service Assurance platform analytics to troubleshoot a similarly complex IIoT application performance issue at another plant could be used in this case.

Solution in Action

The manufacturer's IT team was again able to derive additional return from the NETSCOUT investment by using nGeniusONE Service Assurance real-time performance monitoring and smart data generated by deployed InfiniStreamNG (ISNG) appliances and vSTREAM virtual appliances to determine that latency in the PLC environment was causing issues earlier attributed to the productivity and process control solution.

By employing nGeniusONE performance analytics that used smart data generated by ISNG and vSTREAM from network packet traffic traversing that manufacturing plant's operations, NETSCOUT collaborated with Manufacturing Floor Technicians and the facility's Plant Architect to show them a high number of PLC retransmissions as the root cause of this issue. While retransmissions are traditionally regarded as being related to network operations in this particular manufacturing environment, nGeniusONE contextual workflows were used to visualize PLC compute logic processes. In this instance, when PLC compute sensed a processing fault condition, the technology would repeatedly send requests, with the end result being the equivalent of an "on and off switch" – one moment, the PLC would be operational, and in the next it would reset.

The deep-dive into PLC logic notwithstanding, the real-world implications of these delays were evidenced by nGeniusONE correlating increased retransmissions with decreased manufacturing performance. That was one IIoT performance issue that involved executive, manufacturing, and IT stakeholders were relieved to resolve.

The Results

The business performance of this global manufacturer has never been more important to consumers who rely on the everyday products distributed by this company. During the pandemic era, the state of the global supply chain is front-and-center, and this company's ability to repeatedly circumvent manufacturing production issues with their single-vendor NETSCOUT Visibility Without Borders investment has been a part of ongoing business delivery success.

In resolving this difficult-to-diagnose issue, NETSCOUT's performance analytics were in the hands of additional business stakeholders, increasing return on investment while simultaneously reducing mean-time-to-remediate cycles.

LEARN MORE

For more information about NETSCOUT solutions for Assuring Availability and Performance for Manufacturing Networks, visit:

netscout.com/solutions/manufacturing

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