

Healthcare Provider Solves Imaging Application Slowdown Issues in their Virtual Server Environment with NETSCOUT

Adding vSTREAM Virtual Appliance to nGeniusONE Platform Deployment Provides End-to-End Visibility

OVERVIEW

Business Challenge

- Doctors and nurses were suffering significant wait times of up to 20 minutes delay in pulling up cardiology images
- Daily war rooms with 20 members at a time trying to pinpoint the source of the slowdowns were time-consuming and ineffective, as third-party vendors claimed innocence
- Lacked visibility into the virtualized application servers hosting the radiology services

NETSCOUT Solution

- Expanded the existing NETSCOUT® deployment with vSTREAM™ virtual appliances to the virtualized radiology application servers in their private data center
- Leveraged nGeniusONE® Service Assurance platform, InfiniStreamNG™ appliances, and vSTREAM virtual appliances for end-to-end visibility of the cardiac imaging applications
- Contextual workflows and drill-downs ruled out the network and other possible sources of slowdowns like interoperability, and identified a problem with the radiology application as the source of the issue

Business Value

- IT team has reduced cardiac image retrieval from 20 minutes to seconds with the addition of NETSCOUT's vSTREAM visibility in their virtualized radiology application servers
- Restored efficiencies and productivity for the doctors and nurses reading cardiology images
- Improved collaboration with actionable intelligence among network operations, applications, and the radiology application vendor to reduce MTTR for patient-impacting issues



Customer Profile

A leading U.S. healthcare provider, this 100-year old non-profit delivers both health insurance and healthcare services across member hospitals, medical centers, and group practices serving the needs of their community. Beyond operating a Level 1 Trauma Center and several hospitals, their over 1,200 physicians and 15,000 full-time employees deliver exceptional care to literally millions of admitted and walk-in patients every year in over 40 specialty areas, including cardiology, neurology, orthopedics, oncology, and more. They make teaching and research a cornerstone of their services and are regarded as a premier academic medical center.

Business Challenge

The healthcare organization was experiencing radiology application slowdown issues that were impacting patients. Doctors and nurses were suffering significant wait times of up to 20 minutes delay in pulling up cardiology images. These cardiology images were critical to have available during patients' exams for evaluation and diagnosis. Given the nature of the cardiology practice, minutes can mean the difference between life and death.

The radiology information system (RIS), that leverages the DICOM protocol (Digital Imaging and Communications in Medicine) to communicate, was responsible for the file transfers, how the documents are stored, and how the doctors are able to access the right radiology image for the patient in question.

In trying to triage the problem over a few weeks, several war room calls were conducted that included a number of the healthcare organization's IT staff as well as third-party vendors, including the application provider. At times, there were upward of 20 people on the daily call trying to pinpoint the source of the problem. A great deal of time was lost as each vendor tried to prove it wasn't their part of the environment which was creating the slowdown.

NETSCOUT Solution

The healthcare company was already utilizing NETSCOUT solutions across its private data center, affiliated hospitals, and medical buildings. The nGeniusONE Service Assurance platform, a variety of InfiniStreamNG appliances, and nGenius 3900 series packet flow switches for visibility were already deployed in private cloud and hospital locations. The radiology application was hosted on virtualized servers in the private cloud, where historically there was a lack of visibility capabilities that could interoperate with a holistic service assurance monitoring solution. Network Operations recommended implementing the vSTREAM virtual appliance to monitor wire-data in several of the virtualized radiology application servers to send Adaptive Service Intelligence™ (ASI) smart data to the existing nGeniusONE platform. Strategically, this provided the IT team comprehensive, vendor-independent, end-to-end visibility and service assurance for its patient-impacting services like radiology.

NETSCOUT Solution in Action

The network operations team worked with the application team to research the issue. With nGeniusONE analyzing ASI information from the InfiniStreamNG appliances in the private data center, the IT team had previously concluded that the network was not the source of the problem. Leveraging nGeniusONE's HL7 (Health Level 7) Service Monitor for in-depth analysis, they also ruled out interoperability as an issue.

Further analysis of the radiology DICOM protocol showed high retransmissions with hundreds of thousands of retransmissions occurring in an hour, which pointed to server-to-server issues. Leveraging vSTREAM visibility into east-west traffic patterns in the radiology application servers, the IT staff discovered that the radiology application was operating incorrectly as it would archive images in third-tier public cloud storage, which was causing significant delays in retrieval and playback. Working with the radiology vendor, the IT staff secured a correction to the application. When the images were appropriately stored in the private cloud, responsiveness of the application and viewing of the images greatly improved to acceptable levels.

Business Value

This healthcare IT team has reduced cardiac image retrieval from 20 minutes to seconds with the addition of NETSCOUT's vSTREAM visibility in their virtualized radiology application servers. When the source of delays for the radiology application and the corrective actions were revealed to the healthcare organization's executive management team,

"This almost certainly saved a life!" – The Healthcare's Executive Director

Pinpointing the source of the problem with slow downloads has also restored efficiencies and productivity for the doctors and nurses.

The IT network operations and application teams are further benefiting from holistic visibility across their healthcare organization - from the hospitals, to the private cloud data centers, to the virtualized radiology application servers - which has reduced mean-time-to-resolve (MTTR) patient-impacting issues. They were also able to use the evidence discovered by the nGeniusONE solution to have the radiology application vendor correct the application to store images in the private data center rather than send off-premise to cloud storage.

The nGeniusONE solution with support for wire traffic throughout the healthcare environment is providing a single source of information offering the healthcare organization the benefits of well-coordinated collaboration within their own network and applications teams, as well as improved the relationship with their third-party provider vendors, including the radiology application provider.



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