

Keysight Technologies



Electronics manufacturing firm leverages Alluvio and Riverbed Acceleration solutions to gain network visibility and enable faster troubleshooting and better performance.

Overview

Keysight Technologies, an American-based manufacturer of software-centric electronic design, emulation, test, and measurement equipment, wanted to improve visibility into its network environment to proactively resolve any potential issues. Due to the nature of its business, large files are distributed from

one location to another on a daily basis, requiring significant time and resources. Keysight sought assistance to improve efficiencies with Alluvio by Riverbed and Riverbed Acceleration solutions.

Keysight Technologies is an S&P 500 technology company that empowers engineers with software-centric design, emulation, and test solutions that serve across the design and development environment to enable innovation breakthroughs with speed and reduced risk. Headquartered in California and with offices and manufacturing worldwide, Keysight customers span the communications, industrial automation, aerospace and defense, automotive, energy, semiconductor, and general electronics markets.

Challenge: Need for maximum visibility to understand dependencies

Keysight relies on a number of custom applications to manufacture its devices, and analyzing these applications' dependencies was critical for the company.

“A lot of our software development is tied to tool sets that are deeply integrated into public internet, which makes isolating performance issues extremely challenging,” says Ray Schumacher, Network Architect, at Keysight. “We needed visibility into the app environment to resolve any performance issues. We wanted to be notified early when apps did not work by setting alert thresholds.”

25% improvement in network performance

In Brief

Challenges

- Desired additional visibility into the network and application environment
- Wanted to better isolate network performance issues
- Interested in tracing dependencies
- Needed to optimize network capacity

Solution

- Alluvio™ NPM
 - Alluvio™ AppResponse
 - Alluvio™ NetProfiler
- Riverbed® Acceleration (Riverbed SteelHead)

Benefits

- Improved visibility and the ability to zoom into specific problematic sites
- Faster troubleshooting of server issues, streamlined general troubleshooting
- Early warning of increased consumption
- Improved disaster recovery strategy with faster backups
- Faster long-distance file transfers
- True caching led to a 25% improvement in network performance

Solution: Expanding the use of Riverbed solutions

Keysight has partnered with Riverbed for years, providing network packet brokers that can be used by Alluvio NPM solutions to simplify filtering, deduplication, and decryption of network traffic.

As a long-time Riverbed customer, Keysight uses SteelHead WAN optimization to scale its existing bandwidth and achieve better performance and control. “Riverbed’s acceleration solution SteelHead has been very useful to us and has improved our network performance by 25%. It enables true caching and is extremely effective in reducing the time we spend on transferring files from one office to another,” said Schumacher.

“We wanted to use more Riverbed products to maximize our visibility across networks and applications and their dependencies.”

“Riverbed’s acceleration solution, SteelHead, has improved our network performance by 25%. It enables true caching and is extremely effective in reducing the time we spend on transferring files from one office to another.”

Ray Schumacher,
Network Architect, Keysight Technologies

The company wanted the additional Riverbed visibility tools to seamlessly integrate with SteelHead and digest all the data that was passing through the SteelHead WAN optimization products. “When we found out how we could get real-time performance characteristics on a per-application basis with Alluvio by Riverbed, we decided to implement it,” explains Schumacher.

Keysight started the implementation process with Alluvio NetProfiler, and then added Wireshark to decode the packet capture. This was followed by Alluvio AppResponse, which provided better visibility

for real-time troubleshooting and historical packet data at any campus. Keysight then started expanding its footprint to all its infrastructure to increase visibility and gain the ability to zoom in on a particular site. While the cores and critical sites of Keysight are empowered with packet analysis through AppResponse, other sites across the globe employ NetProfiler as well as SteelHead, which support flow monitoring and on-demand packet analysis. AppResponse and NetProfiler are part of the Alluvio Unified Observability portfolio from Riverbed.

Benefits: Overcoming long-distance and location challenges during file transfer

Using SteelHead technology, Keysight can accelerate the transfer of large files from one office to another on a daily basis. Schumacher explains, “We have four high-bandwidth applications that are very critical, and we move files back and forth between the US and offshore site daily using either NetApp or Network File System (NFS). There are also many ad hoc SSL file movements of images from location to location. With our image repositories located in the US, we’re pushing caching servers on SteelHead to various locations all over the world, so they don’t have to come all the way back to get an image. That itself results in about a 25-30% improvement in application performance, increasing the productivity of our engineers and giving them more time to develop new applications.”

Additionally, SteelHead improved disaster recovery capabilities by dramatically speeding up device backups across offices around the world.

Fast diagnosis and troubleshooting

Visibility and actionability are the biggest gains Keysight achieved with the Alluvio solution. Alluvio played a pivotal role in helping Keysight better orchestrate and architect some of the applications that were being used across different business towers. Additionally, having AppResponse on internet ports allows the company to capture

changes in throughput and responsiveness when they face performance issues, a feature that’s proven its worth in troubleshooting problems. “When things are suspicious and we see way too many re-transmissions or responses, Alluvio AppResponse helps us perform deep analysis,” explains Schumacher. “We can dive into the visibility of AppResponse and NetProfiler to determine if there’s something in common between the different thresholds. Looking into the network is instrumental to see what’s really going on in the environment, which provides us with insights that we can act on to improve productivity and performance.”

“Today we’ve incorporated Alluvio AppResponse to support our system, data centers, and hub sites,” Schumacher enthuses. “By having this rich visibility, it makes it easier to see where problems are and allows us to be proactive on identifying and diagnosing problems before our user communities raise tickets.”

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Ray Schumacher,
Network Architect, Keysight Technologies

Moving to a future of zero tickets

According to Schumacher, the number one benefit of Alluvio is “the ability to go back in time and see what was going on in the environment when there was an issue.”

“Alluvio NPM solutions can digest data and provide visibility from all kinds of sources. I can go back in time and look at packets from eight hours ago from a Wireshark capture,” Schumacher explains. “It is a really nice feature to see and use historical traffic data to continue developing and understanding how we utilize the network. For forensic purposes, should we need to look at past raw data and interactions from some time ago, we can do so thanks to Riverbed’s Alluvio tools that we have put in here.”

Today, Keysight has become more proactive with Alluvio, resulting in more uptime and ultimately a better digital experience for users. Instead of users opening a ticket for every reported instance, the Keysight team is using the platform to fix issues proactively and gain greater visibility. “We are aiming for near-zero tickets. Everything should be proactively resolved before a user raises a ticket. That is the goal in my mind,” concludes Schumacher.

“Today we’ve incorporated Alluvio AppResponse throughout our system. It enables us to proactively identify and resolve potential issues before any tickets are raised, resulting in near-zero tickets.”

Ray Schumacher, Network Architect, Keysight Technologies



Riverbed – Empower the Experience

Riverbed is the only company with the collective richness of telemetry from network to app to end user that illuminates and then accelerates every interaction so that users get the flawless digital experience they expect across the entire digital ecosystem. Riverbed offers two industry-leading solution areas – Alluvio by Riverbed, an innovative and differentiated Unified Observability portfolio that unifies data, insights, and actions across IT, so customers can deliver seamless digital experiences; and Riverbed Acceleration, providing fast, agile, secure acceleration of any app over any network to users, whether mobile, remote, or on-prem. Together with our thousands of partners, and market-leading customers across the world, we empower every click, every digital experience. Learn more at riverbed.com.