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Solving Visibility Challenges for the Financial Services Industry

A Use Case-based Approach

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Financial Service Industry Facing Intense Challenges

A host of factors is intersecting to change how the banking and financial services industry will evolve in the next few years.

Customer expectations are constantly shifting. For instance, more customers are using their mobile phones for transactions. According to Business Insider Intelligence's Mobile Banking Competitive Edge Study, 89% of survey respondents said they use mobile banking. Further, a massive 97% of millennials indicated that they use mobile banking.[1] Covid-19 has only accelerated this trend toward mobile banking. However, Baby Boomers still expect in-person options for service, especially for complex financial needs.

Millennials are also setting expectations for how quickly they should receive services. Fifty-seven percent said opening a bank account should take no longer than one hour, and 47% said a mortgage application should take no longer than one day.[2]

73% of finance staff say they face pressure to speed up.

The Need for Speed; Getting faster in finance where it matters, Gartner 2018

According to the 2019 FIS survey, the top 20% of firms are changing policies to promote and emphasize digital innovation. Leading firms have already taken a number of steps in this direction over the past year: 50% are recruiting digital technology expertise; 43% are encouraging more open innovation across roles; and 39% were appointing board-level roles with responsibility for digital innovation.

Increasing cyber threats and regulatory compliance

Security is always top of the mind for financial services firms, but as technology empowers banks to create increasingly digital, mobile and customer-centric experiences, it also brings a growing assortment of cybersecurity threats and compliance headaches.

The surge of teleworking due to Covid-19 has further increased these risks. Millions of transactions are now made through remote working structures or online interactions—and not all with the same levels of protections available within the confines of the organization. Even as we come out of the pandemic, Gartner expect 20% of employees to continue to work from home in the new "work from anywhere" reality, so these issues will not entirely go away.[3]

As a result, financial cybercrimes are rapidly evolving, and traditional prevention methodologies are falling short in protecting consumers against increasingly frequent and sophisticated attacks. As consumers gravitate toward a digital, mobile banking experience, new security challenges are emerging too quickly for traditional cybersecurity efforts to keep pace. For example, Carbon Black (2020), a cybersecurity company, noted that ransomware attacks had increased 148% in March 2020 over baseline levels in February 2020. Among the different sectors, the finance sector was the top target, with a 38% increase in cyberattacks.

[1] https://www.businessinsider.com/mobile-banking-market-trends
[2] https://www.americanbanker.com/slideshow/9-tech-challenges-facing-banks
[3] Gartner, COVID-19 Bulletin: Executive Pulse, 3 April 2020

Full-fidelity visibility eliminates blind spots

As discussed, digital innovation is a top emphasis for financial organizations, but a staggering 70% of digital transformations fail.[4] Even as you make widespread upgrades to improve agility, flexibility, speed, and scalability, one flaw can undermine all of your investments—a lack of network and application visibility. How do you achieve it, and why is it important?

A lack of visibility can slow or undermine your success. As you transform your data centers to support digital and mobile financial services, you need full-fidelity visibility that provides the insights to understand where you are. Without it, you can't understand where you are going.

Riverbed® Unified NPM

Riverbed's unified network performance management (NPM) ensures you have no blind spots. It collects data across on-premises, virtual private cloud, hybrid cloud, and multi-cloud environments. Riverbed NPM collects all packet data, all flow data, and all device metrics, all the time. These metrics can be integrated into a single, unified dashboard for a cohesive view of enterprise performance. Riverbed NPM offers cross-domain analytics and threat intelligence that bubble up problems so you can triage and troubleshoot issues faster. Its troubleshooting workflows are very efficient, helping you to get from the diagnosis to the answer in the shortest time and number of clicks. Riverbed provides the only unified NPM platform available that delivers the depth, breadth and scale of telemetry needed for global financial services organizations.

Why should you consider Riverbed Unified NPM? Let's take a look:

Representative financial use cases

Monitoring digital banking

Riverbed® AppResponse can decrypt web traffic to see into the underlying services to help you understand how your digital banking applications are performing, whether they are commercial or investment banking apps. With Riverbed, waterfall charts map out performance, isolating the individual object performance on the page and overall end user experience for the page. Response time composition charts immediately highlight whether an issue is network or application based so you don't need 20 people on a war room call to pinpoint the problem.

TruePlot visualizations analyze every transaction for performance outliers and patterns. In short, for anyone that logs into his or her banking website, if the performance is poor, Riverbed can isolate it.

Unique features: AppResponse Web Transaction Analysis with end user experience monitoring and TruePlot visualizations.

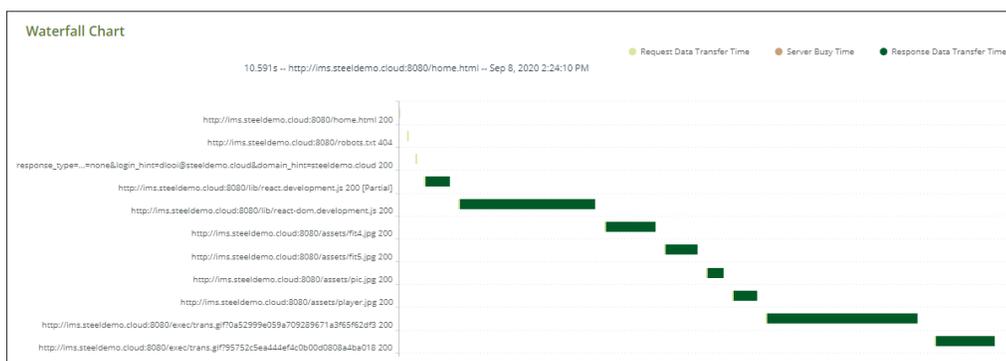[4] https://www.mckinsey.com/industries/retail/our-insights/the-how-of-transformation

Figure 1: Waterfalls charts tell you the overall user experience of this poorly performing web app (10.5 secs) and breaks the app down into it component performance network request and reponse time and sever busy time so you know exactly where problems are occuring—at a glance. We can see the bulk of the problems with this app are network response problems (green).

Monitoring global network segments

Large financial organizations have networks that are truly global in nature. They span multiple data centers and are very complex. The internet segment, commonly known as the DMZ, typically spans multiple regions and data centers and hosts multiple load balancers, multiple firewalls, etc. It is very difficult to troubleshoot efficiently.

Riverbed® NPM monitors the DMZ by using packet visibility in the data centers that have Internet entry/exit points. By leveraging virtual interface groups (VIFG) using AppResponse, it enables IT to understand performance at multiple points along a path. For example, when you have different Virtual LANs (vLANs), you can see what is happening with traffic before and after a firewall and load balancer.

Riverbed helps financial organizations troubleshoot the DMZ and other critical points at scale and with detail. It captures from all different points (on the WAN side and LAN side) and then aggregates the data from multiple solutions into a single, global view using Riverbed® Portal.

Portal consolidates all AppResponse intelligent application analysis and metrics so you are not always downloading packets. It also brings together data from our flow and infrastructure monitoring solutions so you have a unified and global view of your network performance. This ability to see the whole picture, in detail, is the power of the Riverbed unified NPM platform.

Unique features: AppResponse VIFG groups, SSL/TLS decryption, intelligent application analysis, Portal aggregation.
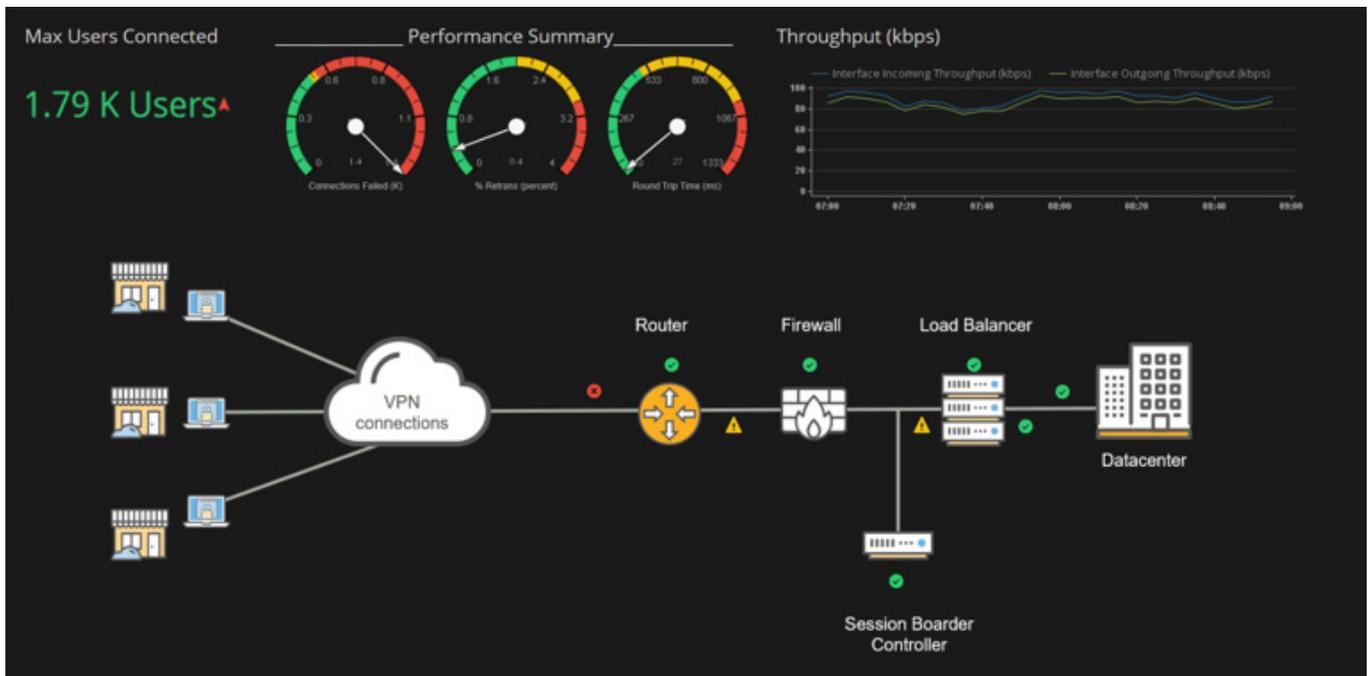

Figure 2: Riverbed Portal brings together flow, packet and infrastructure monitoring in one dashboard. In this example, we are monitoring status of the infrastructure devices with SNMP and everything is green. Flow monitoring (red) provides visibility into top talkers and DSCP. If we look at the top of the dashboard, we see that it's probably high throughput. Finally, the packet analysis (yellow) is happening on the segments between each device. In this case, we see issues on the WAN side of the firewall and load balancer.

Application migrations

Any financial organization that is thinking about cloud computing and wants to move their applications from their existing data center to the cloud, or even from one data center to another, needs to understand their application dependencies before the move. I.e., how are their applications set up, and how do they perform in the current form factor, how will the perform in the new environment.

Currently, migrating applications is typically a manual effort. It is also a herculean effort because of all the data that needs to be analyzed. Using a combination of network flow and packets, Riverbed NPM can inform you about dependencies, chattiness, and performance so you will understand what kind of performance you'll get when you move to the cloud or even another data center. Riverbed's REST API can extract the data; our dependency mapping capabilities can map out your applications; and our application analysis can baseline performance before and after the move. Riverbed® SteelHead™ can be used to efficiently move the data to the cloud. Read how Mondadori France uses Riverbed to make migration to the cloud a reality.

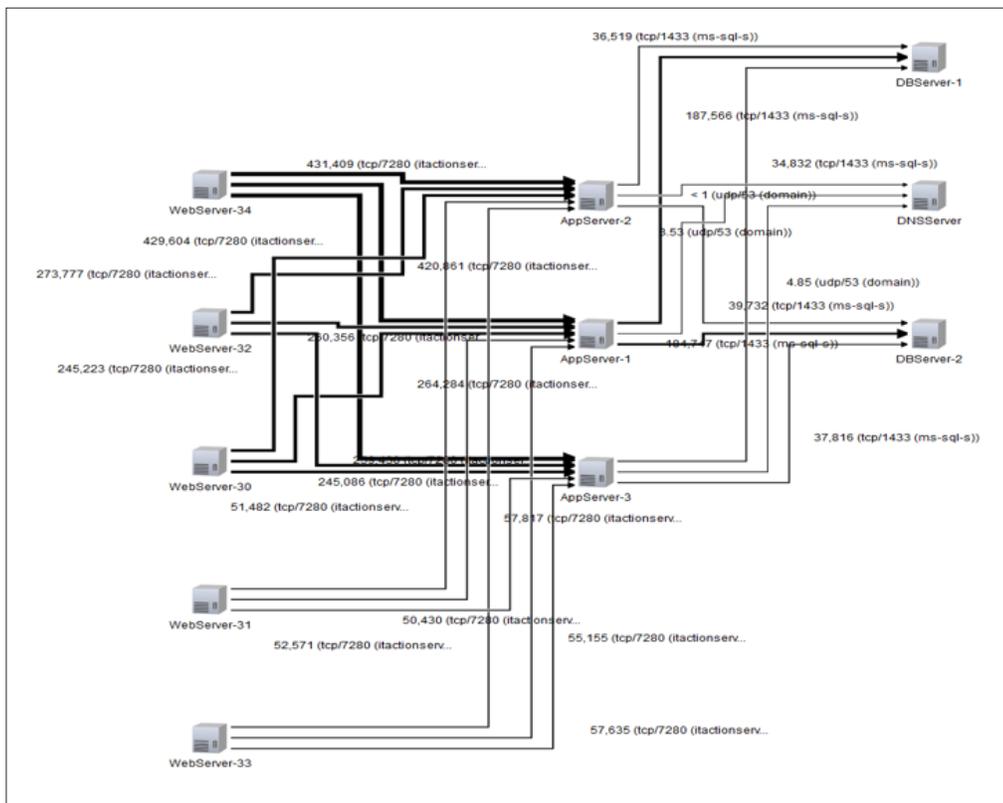**Unique features**: Dependency mapping, REST API.

Figure 3: Build dependency maps in real time. Discover all tiers of a multi-tier app, their interdependencies, and respective throughput (darker lines indict heavier load).

Citrix monitoring

Many financial institutions use Citrix Virtual App and Virtual Desktop to securely deliver their apps and data to any device. The problem is that network teams find troubleshooting extremely difficult; it's like looking into a black box—totally opaque. The AppResponse Citrix Analysis module lets you see inside the ICA stream to correlate the frontend user session with the backend server performance to troubleshoot the entire process from end to end. It allows you to drill into the performance of the network, database, Web applications or other Citrix application tiers or monitor client-side latency, application execution time, host resource allocation, and infrastructure latency.

Unique features: AppResponse Citrix Analysis module, Aternity™ end user experience.

Troubleshooting VoIP performance

Riverved AppResponse supplies real-time and historical data in a business context about application performance and voice and video call quality. Understand conversational and transmission quality and performance metrics for call and video by monitoring MOS, jitter, packet loss, and retransmissions metrics. For example, when someone is experiencing a call quality issue, you can search for the individual's phone number and download the packets for that call to determine what is wrong. A second example is to monitor inbound and outbound Zoom DSCP/QoS to ensure it receives EF1 priority transport to guarantee users can see and hear each other clearly.

Unique feature: VoIP Analysis module; Packet Analyzer Plus.

Data Export/Import

Sometimes data and metrics exist in your Riverbed NPM infrastructure that you need to view in a specific way or share with certain groups. The SteelScript Application Framework provides the foundation for querying, processing, and visualizing Riverbed metrics on your terms. REST APIs expose data or metrics from the Riverbed systems, services, configuration options and system status so that you can create custom analysis.

For example, you can:

- Exporting indexed packets from Riverbed AppResponse for custom views and analysis
- Customizing your view of network traffic data from Riverbed® NetProfiler alongside IT ticketing data

Learn More

As a market leader, the Riverbed NPM platform offers the most comprehensive solution for network performance management to ensure your applications operate at peak performance. Riverbed delivers full-fidelity visibility across the distributed hybrid enterprise—remote user, branch, cloud, and data center—for an exceptional end-user experience. To learn more about the Riverbed NPM platform, go to riverbed.com/NPM.

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