

Alluvio Unified Observability Family

Complexity Drives need for Intelligence and Automation, Built on Full-fidelity Telemetry

Today's modern digital environments are more complex than ever before. Companies are adopting hybrid cloud, work from anywhere, and advanced networking and security architectures in record numbers. As a result, IT is experiencing new blind spots and a resulting increase in the volume, variety, and velocity of data and alerts. In addition, ITOps teams also have difficulty hiring qualified troubleshooting experts, putting even more strain on operations.

Riverbed has a different and superior vision for unified observability. Alluvio's enterprise-wide, full-fidelity observability portfolio provides the depth and breadth that IT teams – from the CxO to Service Desk to NetOps and SecOps – need to monitor all applications and all users, across the network. Alluvio Unified Observability unifies data, generates insights, and automates actions, empowering IT teams to deliver seamless digital experiences and end-to-end performance.

Full-fidelity Data Collection

Alluvio Unified Observability captures full-fidelity data from across the enterprise for a total view of performance. Alluvio supports endpoint devices, networks, servers, applications, cloud-native environments, and user experience. Unlike other products that sample data to deal with the scale of today's distributed environments, our platform captures every transaction, packet, and flow. It also analyzes actual user experience (quantitative and qualitative) for every type of application, including cloud, SaaS, and mobile.

AIOps Automates Problem Isolation and Remediation

Advanced analytics and logic-based techniques, like AI, machine learning, and correlation, help support decision-making and automate problem identification. The result is fewer, more impactful alerts.

All Alluvio solutions use a variety of anomaly detection techniques to generate actionable insights from the vast quantity of operational data it collects, including:

- **Behavioral analytics** compare an historically derived “normal” baseline to current performance metrics to identify patterns, trends, or other changes in behavior that are outside the known, expected range. It usually considers weekly, monthly, and seasonal variations in usage. By zeroing in on anomalous changes, IT can quickly identify events that significantly impact business performance.
- **Variance analysis** compares predicted and actual outcomes.
- **Thresholds** are simple “tripwires” applied to metrics that will quickly create an indicator when the associated threshold is violated. Thresholds work well in situations where there is a known range, such as when a device is down or when interface utilization is above 90%. Thresholds are also paired with behavioral analysis to handle cases where high values are normal.

Alluvio IQ, Riverbed's SaaS-based unified observability service, then applies correlation and statistical techniques to isolate the root cause:

- **Correlation** determines if there are any commonalities or relationships between the detected anomalies. This is done to reduce noise. It organizes indicators into associated groupings to connect related indicators through use of time, location, connection, and relationship maps.
- **Iterative investigative analysis** automatically collects supporting data needed to expedite troubleshooting and faster remediation.

Automate to Reduce Costs and Improve Service Quality

Powered by the Alluvio LogiQ Engine, the Alluvio portfolio uses AI, correlation, and automation to streamline repeatable processes with minimal human intervention, lower costs, and improved user satisfaction. Alluvio uniquely offers broader

Intelligent Ticketing

With the Alluvio portfolio's full-fidelity insights, complex ticketing workflows become razor sharp, highly automated processes. Alluvio's triage, diagnostic and remediation runbook automations streamline ServiceNow ticket creation and escalation. The integration between ServiceNow and Alluvio

Alluvio Unified Observability Portfolio

Unified Observability evolves and extends the benefits of visibility and monitoring by adding intelligence and automation to create actionable insights that help IT make better, faster decisions, prioritize actions, and quickly resolve problems.

automation use cases that extract insights from across Alluvio telemetry and existing 3rd party tool silos to enable faster time to resolution. With its powerful automation, analytical and integration capabilities, Alluvio offers four automation use cases: incident response, security forensics, smart trouble ticketing, and desktop remediations.

products replicate advanced investigative processes and provide IT with context-driven, network and end user experience insights directly into their ServiceNow ITSM, empowering teams to proactively resolve issues without escalating.

It leverages full-fidelity telemetry of Alluvio DEM and NPM solutions (see Figure 1) to provide an enterprise view of digital experience. In short, Unified Observability enables IT to turn monitoring data into actionable insights and automated actions.

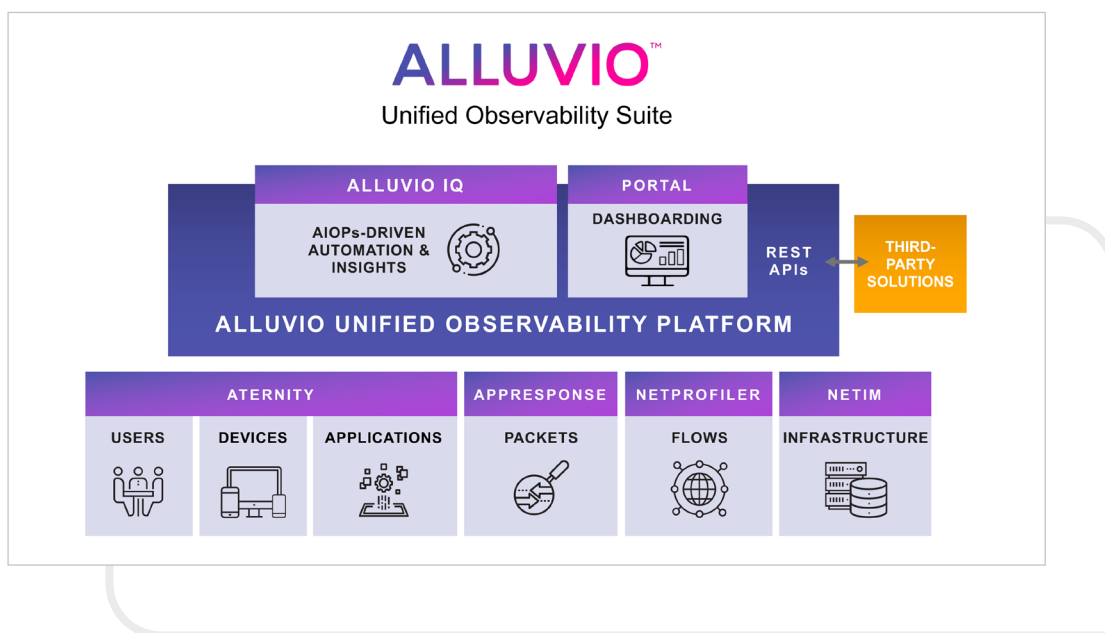


Figure 1: Alluvio full-fidelity telemetry provides rich data to Alluvio Unified Observability and Portal dashboarding to provide a comprehensive and actionable view of enterprise performance issues for accelerated root cause analysis.

Integrated Dashboarding

Alluvio™ Portal redefines how companies visualize, monitor, report, and troubleshoot enterprise performance metrics by integrating Alluvio user experience, application, and network data into centralized, dynamic dashboards. The holistic views

keeping IT resources focused on strategic trouble spots and enable operational teams, executives, and line of business teams to collaborate more effectively on enterprise performance. Ultimately, IT can fast-track troubleshooting across the entire hybrid network.

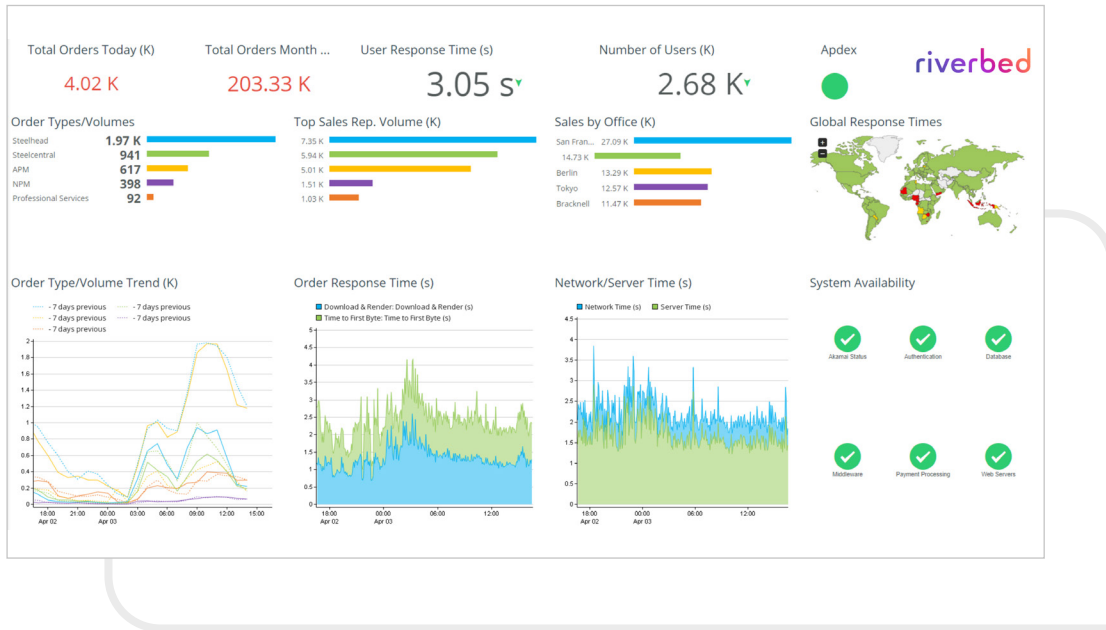


Figure 3: Integrated Dashboarding.

Digital Experience Management (DEM)

Alluvio™ Aternity full-spectrum Digital Experience Management provides insight into the business impact of both the customer and employee digital experience by capturing and storing technical telemetry at scale, capturing data across employee devices, every type of business application, cloud-native application services, and end-user sentiment. It unifies the digital experience for customers interacting with the digital services on

your website and for employees servicing customers in the contact center, retail branch, or back office.

With the aggregation of insights across application and device performance along with human reactions, Aternity ultimately provides organizations with total experience for both employees and their customers.

End User Experience

Deployed as an agent on end-user devices, **Alluvio Aternity** measures what users actually see for every transaction and every application running on any device. It automatically discovers EVERY app in your enterprise, tracks actual usage, and provides a score for app performance and health, based on crashes, hangs, errors, page load time and wait time. Isolate the causes

of delay to the network, device, or application backend to quickly diagnose and resolve user-impacting issues. Leverage the Alluvio Aternity library of remediation scripts to automatically resolve the most common device or user issues. With Alluvio Aternity, you'll boost customer satisfaction and optimize the productivity of your tech-dependent workforce.

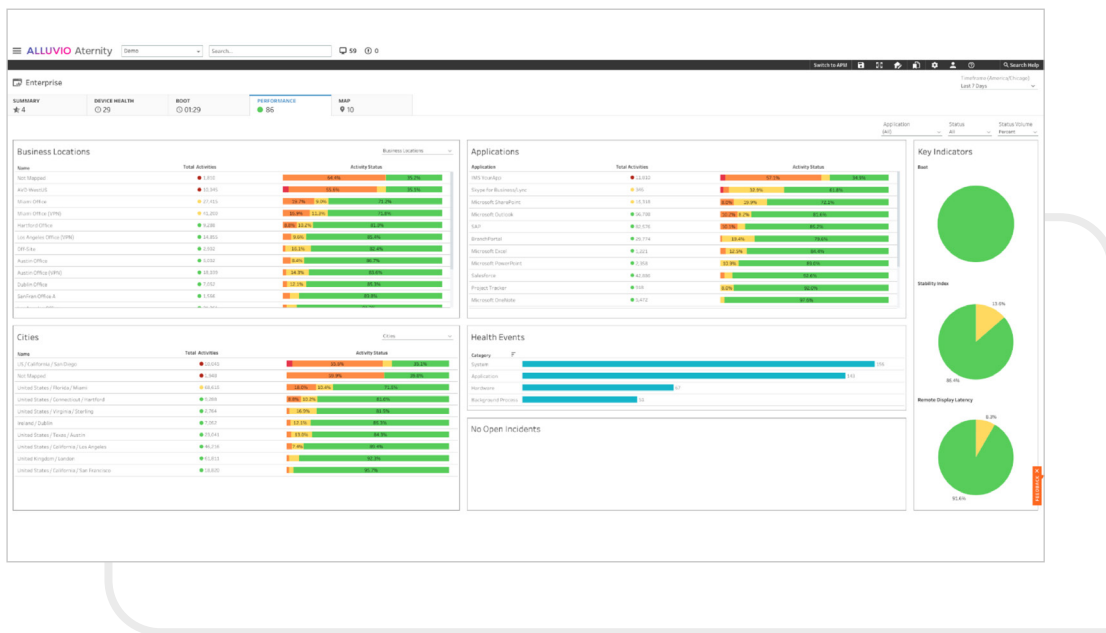


Figure 4: End User Experience.

User Journey Intelligence

Alluvio User Journey Intelligence (UJI) monitor users' digital experience along their journey across your web sites and associate performance to business metrics like revenue, conversion rate, and abandonment rate. It helps increase engagement by optimizing the performance of high converting journeys and cost-justifies improvements where poor customer experience

results in drop-offs. UJI helps prioritize optimizations by web page, device, browser, geography, user persona, traffic source and medium, etc. It automatically locates broken links or out of stock inventory and prioritizes the business impact of repairing those links to improve business metrics and the digital customer experience.

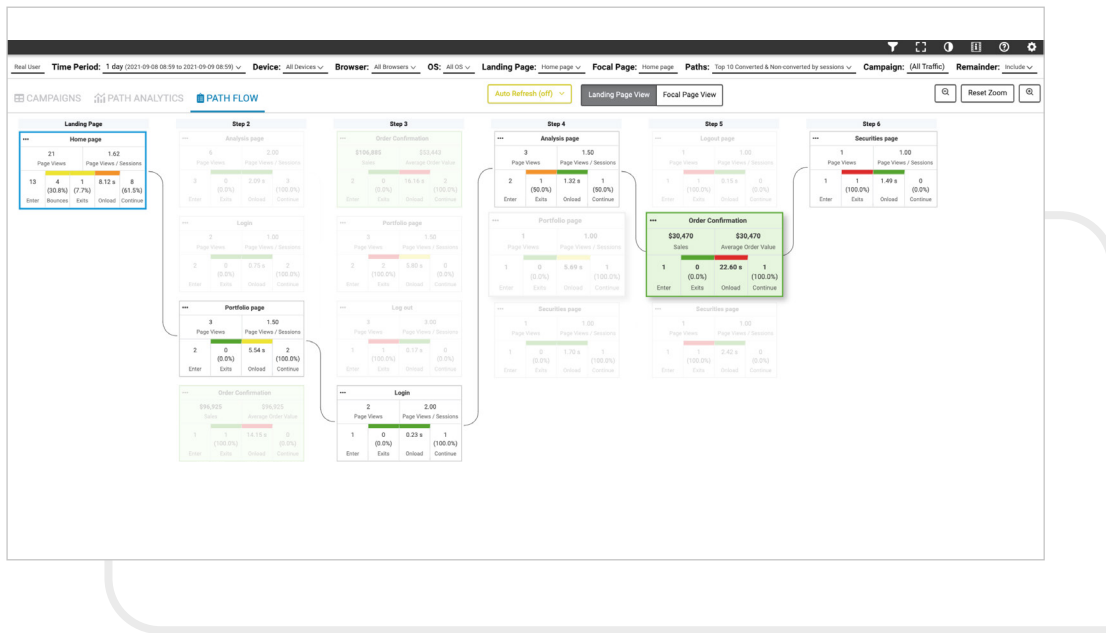


Figure 5: User Journey Intelligence.

Digital Experience Index (DXI)

Alluvio Aternity Digital Experience Index automatically identifies digital experience hot spots impacting employees and customers across your enterprise, then sets you on a path to action and improvement. It enables you to tailor your digital experience goals based on industry benchmarks or to your own historical baselines. DXI automatically shows the business impact

of potential improvements on employee productivity by trending performance, associating gaps to lost productivity or revenue, and enabling quick root cause analysis and rapid remediation of the worst performing areas.

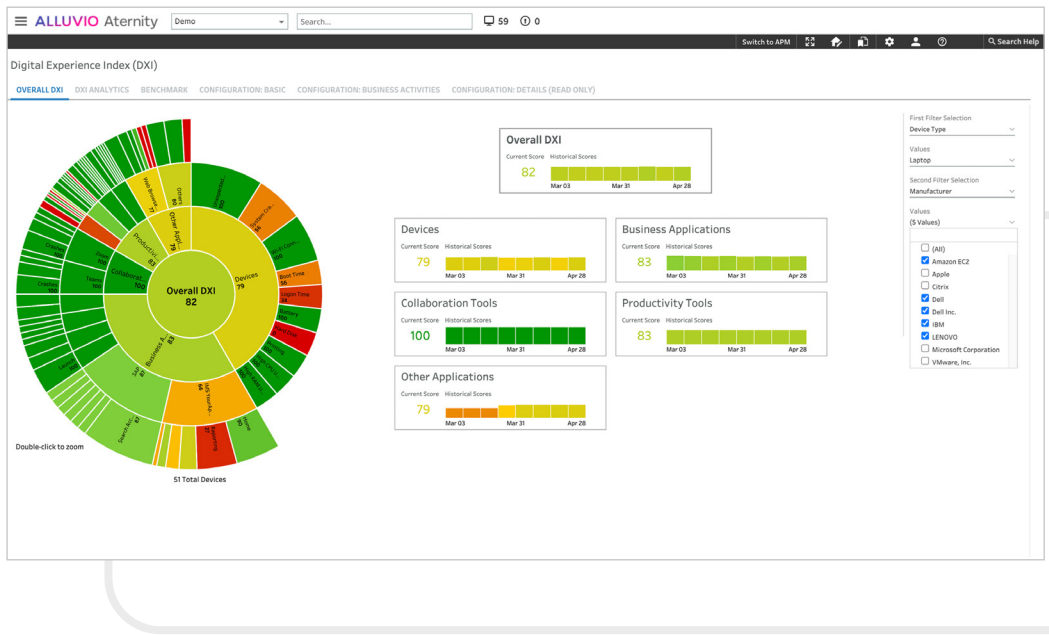


Figure 6: Digital Experience Index.

Employee Sentiment

Aternity Sentiment, built into the Aternity DEM solution, enables IT teams to identify user experience issues and take prescriptive, targeted actions, to increase employee productivity, satisfaction, service quality and business performance. With Sentiment, Aternity provides the most complete view of total digital employee experience by tightly correlating quantitative and qualitative measures. Aternity already offers

the deepest quantitative insights into employee and customer experience and the ability to benchmark digital experience against industry peers. With Sentiment, Aternity correlates aggregated insights on application and device performance data to human reactions, providing total experience management for employees and customers.

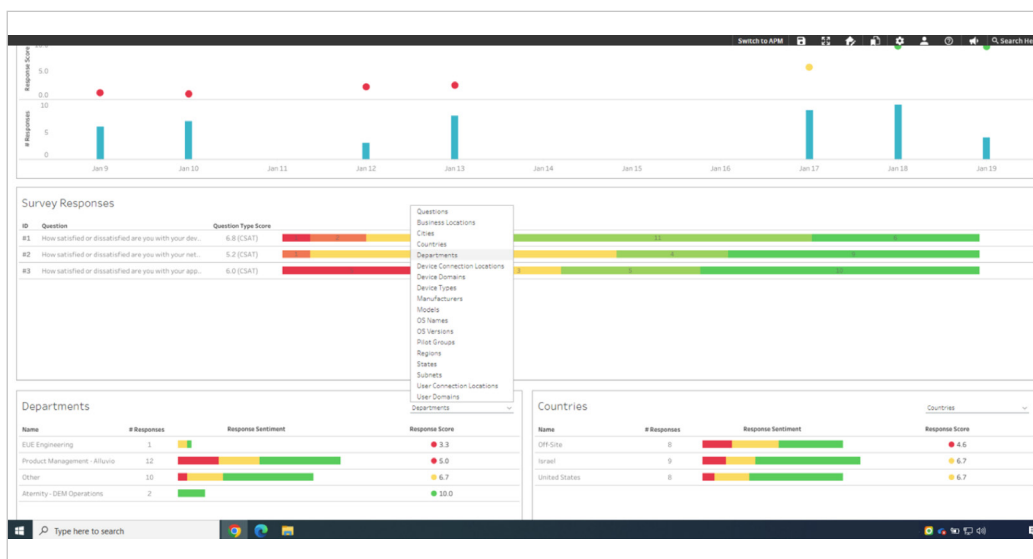


Figure 7: Employee Sentiment.

Application Performance Management (APM)

Alluvio Aternity delivers comprehensive [application performance monitoring](#) and observability for transactions running on modern cloud and application infrastructures, including Docker, Kubernetes, Pivotal, Red Hat OpenShift, OpenStack, Amazon Web Services, Google Cloud Platform, and Azure. It captures, stores, and indexes across billions of transactions a day without sacrificing data completeness, granularity, or depth, letting you reconstruct incidents in detail with the most

complete distributed tracing in the industry. Designed for simplicity, agility, and collaboration in alignment with modern DevOps requirements, Alluvio Aternity uses lightweight, non-intrusive instrumentation to automatically discover new code components and container instances. Its alerts, metrics, and diagnostics can be consumed across the enterprise IT ecosystem for immediate insight into even infrequent or intermittent issues.

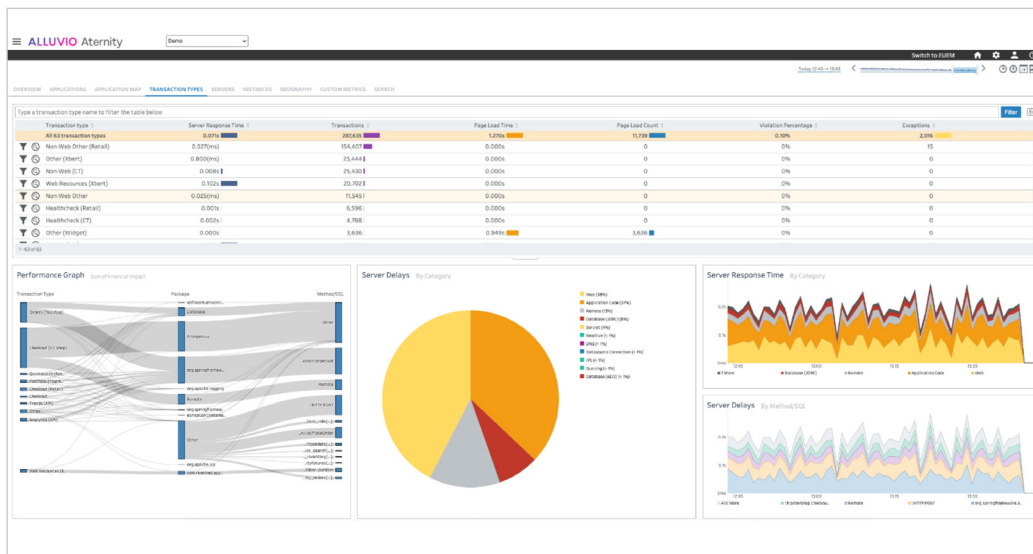


Figure 8: Application Performance Management.

“We’ve completely transformed the way we manage issues, moving from being reactive to proactive and now we can actually foresee and manage issues before they arise. Alluvio Aternity has transformed the way we work and how IT is perceived as a department throughout the business.”

Donna Lloyd, Senior Enterprise Product Manager, Platforms & Enablement, Enterprise IT, EDF

Network Performance Management (NPM)

Alluvio™ NPM is an integrated, but modular solution—it can be used to provide a holistic network and application visibility while any component can be used independently to solve domain-specific problems. This allows investment protection as the NPM solutions can be extended at any time to provide additional breadth, depth, or capacity.

The Alluvio NPM portfolio delivers increased business resilience, accelerating operational transformation and improving business responsiveness as organizations transition from legacy to multi-cloud networks.

Our solution helps IT teams adapt to disruptions while maintaining continuous operations and safeguarding people, assets and overall brand equity. Unlike other NPM solutions, Alluvio NPM delivers granular visibility across network domains with full-fidelity data, extracted from packets, flows and device metrics to deliver fast action and insight across hybrid environments. Sustained network innovation of scalability, performance, and throughput further solidifies Alluvio as the market leader for not only Network Performance Management but also for organizations focused on improving business resiliency for operational transformation.

Packet Capture and Analysis

Alluvio™ AppResponse provides powerful, flexible network and application analytics and workflows to speed problem diagnosis and resolution. Functional out of the box with pre-defined insights and a rich variety of performance metrics. AppResponse helps you get answers fast. It combines network forensics, application analytics and end-user experience monitoring in a single solution so you have everything you need at your fingertips to resolve network and application performance issues quickly. AppResponse passively monitors the network and collects packet data for continuous, real-time, and historical application

monitoring. Continuous packet capture means rich troubleshooting details are always available when you need them, saving time and money by minimizing the effect downtime has on business productivity and reducing or avoiding business-stopping slowdowns or outages.

Alluvio AppResponse is tightly integrated with Packet Analyzer Plus, which speeds real-time network pack analysis of large trace files using an intuitive graphical user interface and a broad selection of pre-defined analysis views.

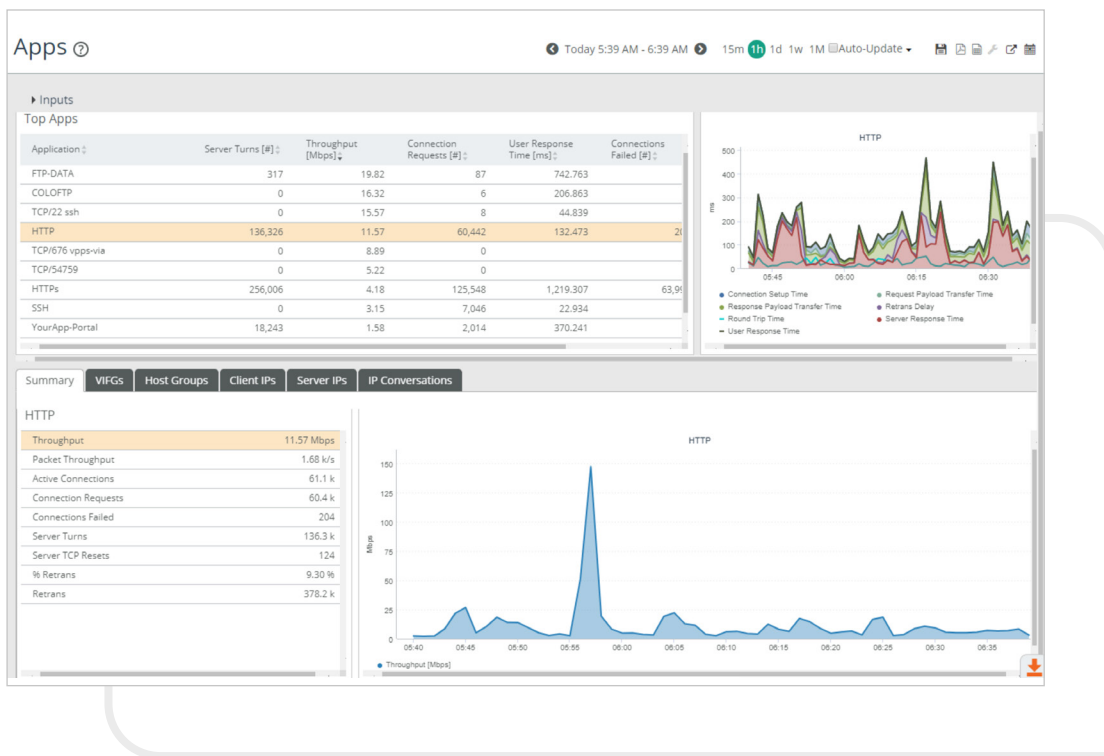


Figure 9: Packet Capture and Analysis.

Enterprise Flow Monitoring

Alluvio™ NetProfiler is centralized network flow reporting and analysis that you can use to quickly view hybrid network performance and troubleshoot issues before your end users ever know there is a problem. It can combine network flow data with packet-based performance metrics to provide proactive monitoring, analysis, and reporting. NetProfiler uses automated discovery

and dependency mapping to help you understand the application services in your environment and automated behavior analytics to baseline normal performance and alert on abnormal changes as soon as they occur—typically before users are even aware that performance is degrading. NetProfiler leverages Alluvio Flow Gateway for flow collection, aggregation, and de-duplication.

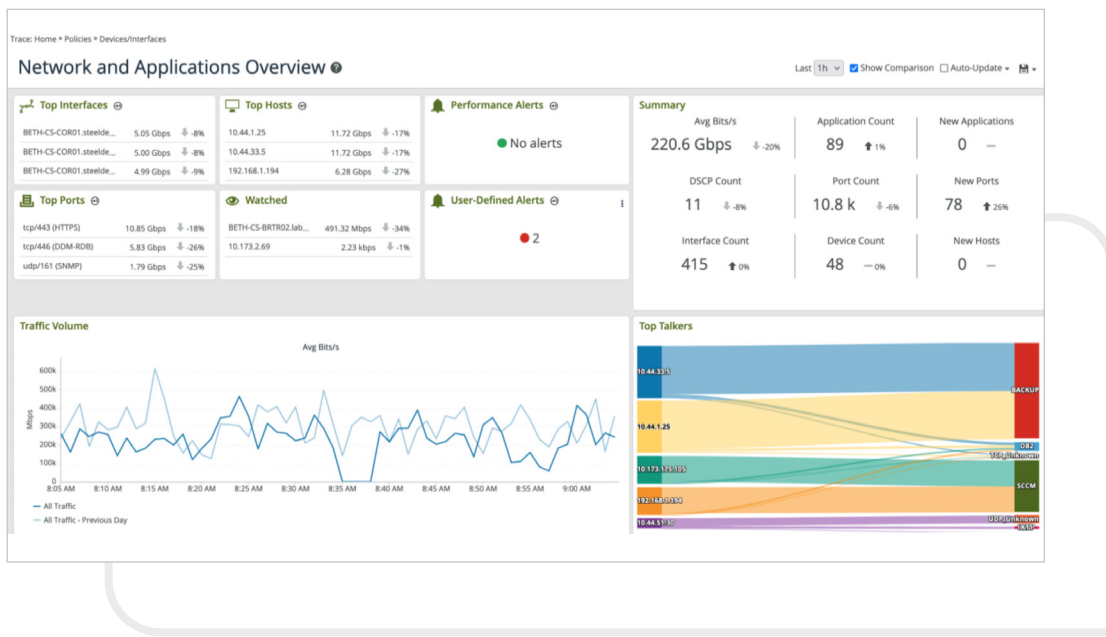


Figure 10: Enterprise Flow Monitoring.

IT Infrastructure Management

Alluvio™ NetIM provides integrated mapping, monitoring, and troubleshooting for your IT infrastructure. With NetIM, you can capture infrastructure topology information, detect, and troubleshoot performance issues, map application network paths, and diagram your network. NetIM provides agentless infrastructure component monitoring (SNMP, WMI, CLI,

API, synthetic testing, and streaming telemetry) to deliver a comprehensive picture of how your infrastructure is affecting network and application performance and how that affects user experience. NetIM infrastructure management complements Riverbed's network and application performance visibility.

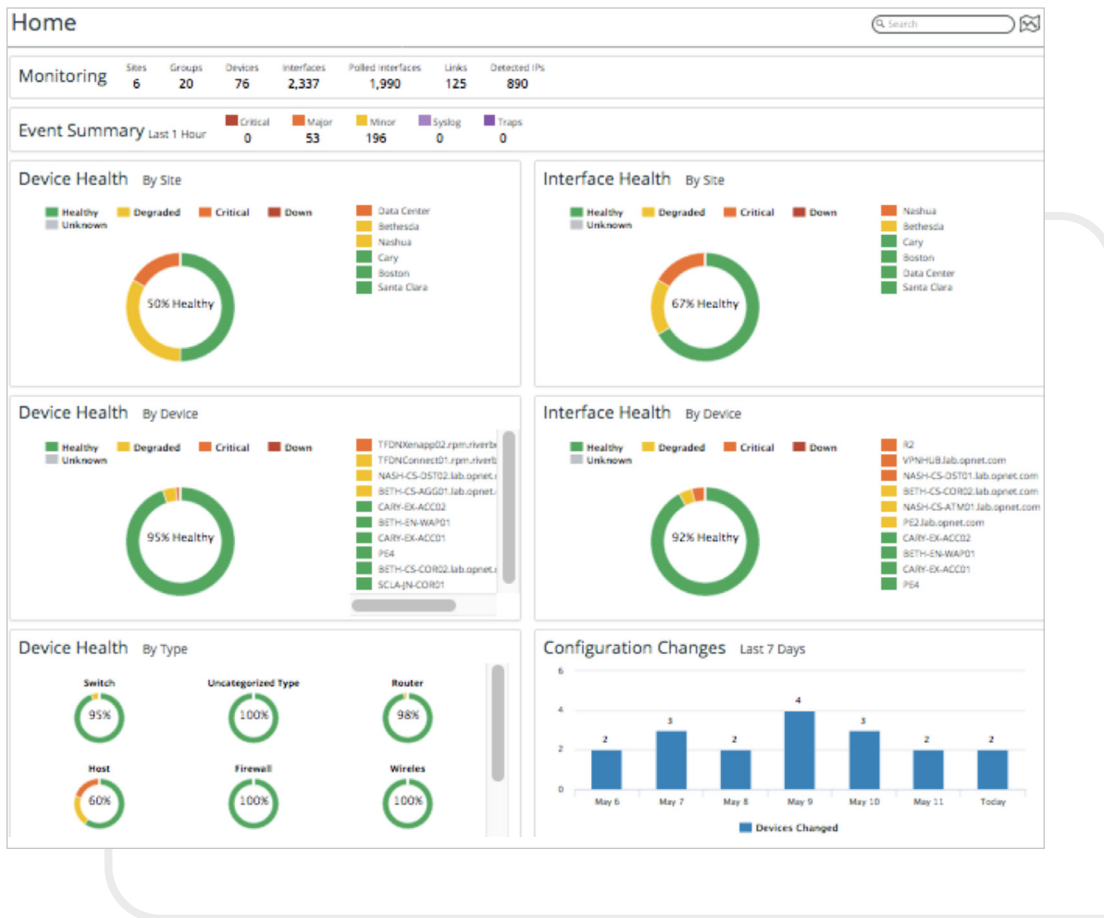


Figure 11: IT Infrastructure Management.

“There’s no other product that can find the root cause of issues faster than Riverbed’s Network Performance Management solution.”

Mehmet Arpa, IT Manager, Halkbank

Learn more

For more information about the Alluvio Unified Observability portfolio or to download a [free trial](https://www.riverbed.com), visit [riverbed.com](https://www.riverbed.com).



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/unified-observability.