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Extracting the Value of Data with Unified Observability

Question: What is the number one challenge plaguing IT teams?

Answer: Ensuring digital service quality in increasingly complex environments.

The fundamental job of IT is to keep the services, systems, and applications that run the business functional, accessible, performant, and secure for employees, partners, and customers. And while the job hasn't changed, IT environments have. Today's environments are exponentially more complex, dynamic, distributed, and hybrid — and the enormous amount of data and alerts generated by tools designed to help IT actually make their jobs more difficult.

Most IT teams are tasked with managing a mix of traditional on-premises infrastructure with private cloud and public cloud, where performance is not always under IT's direct control. Meanwhile, cloud-native applications that are modular, ephemeral, transient, and serverless co-mingle with applications that are self-

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hosted, managed, or delivered as a service. Effectively managing this hybrid infrastructure and application architecture requires unique skill sets and expertise.

In addition to increasingly complex environments and data overload, organizations are continuing to adjust to the new challenges that come with a hybrid workforce. IT teams are now routinely tasked with supporting and securing more employees across more devices and locations than ever before.

This level of support often requires IT teams to help employees who are suffering from performance issues on home networks. Mitigating unpredictable network connectivity issues, on home networks that IT can't even see, presents quite the challenge. And as the lines that once separated home from the office disappear, IT must also protect an expanded attack perimeter.

Quite frankly, organizations (and particularly IT teams) need better insight and more context from the data they receive so they can do their job well in today's constantly evolving environment. The solution? **Observability** - the next phase in the evolution of monitoring and visibility.

But, what exactly is observability? And what are the benefits?

In this whitepaper, you will learn:

- The digital experience pain points currently plaguing IT teams.

- What observability is and why you need it.

- Riverbed's vision for Unified Observability.

The Pain Points

Transformational shifts to remote work, hybrid multi-cloud networks, and modern application architectures make it difficult for IT teams to keep digital services accessible, high-performing, and secure for both employees and customers.

While modern IT teams have more data than ever before, this data is often siloed and provides little context or actionable insights. IT teams are being overwhelmed with alerts that are essentially noise because they lack broader context and direction on the level of urgency and next steps. Without guidance on which alerts require an immediate response, IT teams can easily get bogged down in troubleshooting inconsequential events

Perhaps most challenging in this situation is the drain on resources. In many cases, IT teams have difficulty triaging alerts across domains and end up pulling in experts to solve low-level tech issues because it's difficult to tell the difference between high and low priority alerts. This means those skilled team members get pulled away from the more strategic work they should be focused on for the business.

This also highlights some of the challenges with today's version of observability tools: They limit or sample data, which can frustrate IT teams by making it difficult to proactively identify potential issues and opportunities for improvement. After all, how can IT teams be expected to consistently — and correctly — solve problems if they don't have adequate insight into the full context of the data available?

Additionally, troubleshooting issues with siloed, domain-specific tools require war rooms, manual investigation, and correlation by IT experts whose skills are scarce and hard to replicate.

To be effective in today's modern world, organizations need a better approach to ensuring digital service quality and effective collaboration in dynamic, distributed, hybrid environments. Organizations need *observability*.

What is Observability?

Observability is the ability to measure the internal states of a system by examining its outputs.

Why Observability Needs Monitoring and Visibility

While observability may seem like an answer to all your needs, it's important to note that observability is *not a replacement* for monitoring and visibility.

Monitoring provides visibility, which is a prerequisite for observability. Visibility provides transparency into the customer and employee journey from start to finish, helping IT teams predict and stop digital experience issues before they happen. But how exactly do monitoring and visibility differ from observability?

Monitoring vs Observability

The difference between monitoring and observability is that monitoring tools provide, capture, and examine pre-determined metrics and thresholds. But, to successfully leverage monitoring tools, users must know in advance what needs to be monitored and create actionable insights on their own.

Observability enables you to turn monitoring data into actionable insights, and then act on those insights through automation.

Visibility vs Observability

The difference between visibility and observability is that visibility uses internal data to help predict and stop problems.

Observability evolves and extends the benefits of visibility by adding intelligence, actionable insights, and automation to help IT understand and use all this data to make decisions, prioritize actions, and solve problems.

Observability gives IT the flexibility to dig into "unknown unknowns" on the fly. It enables access to actionable insights by correlating information across disparate tools and providing appropriate context around why things are happening.

While observability should bring together the benefits of monitoring, visibility, and automation, most observability tools available today have limitations.

The Limitations of Today's Observability Solutions

Most of today's observability tools are designed specifically for DevOps teams, SREs, cloud-native environments, and APM use cases. In these situations, the tools only provide limited data (metrics, events, logs, traces) and sampled data. The tools also provide massive volumes of alerts on single points or metrics with little context or actionable insights. And limited data cannot provide a complete picture of your IT environment.

Even with observability solutions in place, IT teams still need to perform manual investigation and correlation of alerts with the help of IT experts, whose skills are hard to find and replicate. With all their time spent on troubleshooting issues, your most senior-level IT experts are unable to work on more important business activities that only they can do.

> *"The conversation around IT operations has evolved and operations now support more complex distributed systems with many architectures, integrations, and dependencies. The unpredictability of these systems requires new automated detection, observability, and healing."*
> – *Gartner®, Hype Cycle™ for Monitoring, Observability and Cloud Operations, 2021 Padraig Byrne and Pankaj Prasad, July 2021* GARTNER and HYPE CYCLE are trademarks and service marks of Gartner. Inc. and/or its affiliates and are used herein with permission. All rights reserved.

We're Changing the Game: Our Vision for Unified Observability

Riverbed understands that finding actionable insights from all your data is extremely difficult, time-consuming, and costly. These insights are like gold in an alluvium—it's there, but hard to find. That's why we're on a path to deliver Alluvio Unified Observability, a portfolio of new and existing technologies that work together to provide actionable insights and intelligent automation for seamless, secure digital experience and business performance.

What are We Unifying?

Unified Data

Alluvio Unified Observability captures full-fidelity data across diverse sources (devices, networks, servers, applications, cloud-native environments, users, and third-party feeds) for a complete view of IT performance. Unlike other solutions that sample data to deal with the scale of today's distributed environments, we capture every transaction, packet, and flow, as well as the actual user experience for every type of application.

Full-fidelity data gives IT a complete picture of what's happening and what has happened, without missing key events due to sampling.

Unified Insights

While other products correlate disparate events and alerts based primarily on time or require lengthy asset database integrations, Riverbed automates the process of gathering and correlating every relevant metric from various domains to provide unified, context-rich, filtered, and prioritized insights that help IT teams understand the scope and severity of issues and the cause of poor performance.

Unified Actions

Automated scripted investigations replicate the best practices of IT experts to provide probable cause, recommended actions, and self-healing of common issues. By unifying knowledge across all skill levels, IT teams can accelerate problem-solving, break down silos, and avoid time-consuming war rooms.

The Pillars of Unified Observability:

Riverbed's vision for Unified Observability builds upon the company's market-leading, end-to-end visibility solutions and new, innovative AI, ML, and data science capabilities.

Full-Fidelity Telemetry

Full-fidelity data is captured across the entire IT ecosystem, from client devices, networks, servers, applications, cloud-native environments, and users themselves. This complete picture enables IT to understand what is happening and what has happened while avoiding missing key events due to sampling.

This, coupled with the analysis of *actual* user experiences, not just sample data, offers organizations a deeper level of insight that augments quantitative measures of user experience with qualitative measures of employee sentiment.

Intelligent Analytics

Applying AI, ML, and proprietary data science techniques across disparate data streams, including third-party data, can help organizations better detect anomalies and changes. By doing so, it can surface the most important issues faster and with precision.

This is a significant difference from existing observability tools available today because organizations can better understand the impact and severity of issues from the start. This enables better prioritization so they can focus their time and effort on the areas that matter most.

> *"Alluvio Unified Observability by Riverbed overcomes the limitations that exist with today's version of observability — empowering IT teams to continuously enhance digital experience and improve business outcomes"*

Actionable Insights

With a powerful combination of AI- and ML-enabled automation, organizations gain context-rich, filtered, and fix-first insights ready for IT action. These insights enable effective cross-domain collaboration because it offers a single source of truth, allowing for more efficient decision-making to accelerate mean time to resolution.

In fact, this approach also reduces time spent in war rooms, finger-pointing, and excessive escalations. Through open APIs, these actionable insights can be imported from or exported to a broader ecosystem of third-party systems, including ITSM and security tools, to continuously improve digital experiences and IT service quality.

Automated Remediation

Consider what your organization could do with an expandable library of pre-configured and customizable actions to support manual remediation and automated self-healing of common issues. Remediation actions are recommended by the system based on the issue being investigated, but IT maintains decision-making control on whether and when to execute the suggested corrective action. This approach ensures that actions can be implemented in alignment with an organization's primary goals and objectives.

The Benefits of Unified Observability

Unified Observability is the best way to extend the benefits of observability to all of IT and the business. Specific Benefits include:

- **Ensures seamless business continuity** with actionable insights and intelligent automation that improves digital service quality and keeps customers and employees happy and productive.

- **Increases agility and productivity** by reducing alert fatigue so operators can focus on fewer, more critical events and resolve issues without escalation.

- **Improves service availability and reduces cost** by reducing the time and effort required to identify root causes and by augmenting, accelerating, or automating remediation.

- **Bridges silos across domain-specific IT teams** by eliminating data silos that cause finger-pointing and impede collaboration and decision-making across IT teams.

Everyone Can Use Observability

With Alluvio Unified Observability, observability is not just for DevOps teams, SREs, cloud-native environments, and APM use cases anymore.

	Challenges	How Observability Helps
Network Teams and Fault Management	Network and Fault Management teams are tasked with identifying and mitigating the dependencies within an organization's network that can lead to errors or impact service quality. This is a manual, time-intensive process that can result in missing priority alerts or having to mitigate repeat issues.	With deeper observability into the network, Network and Fault Management teams can gain a better understanding of network health. This insight can also enable the teams to more effectively predict and plan for corrective actions that may be required after new software, hardware, traffic surges, or other forms of variation are introduced to the network.
End-User Services and Service Desk Teams	With the shift to hybrid work, BYOD, SaaS, and Shadow IT, end-user service teams must support a massive variation of personal and professional devices, connectivity, and applications used by their employees. Additionally, the increasing employee expectations for performance means qualitative metrics of how employees feel about the IT service they receive are as important as quantitative metrics, logs, and application transactions for IT performance	With increased visibility into employee networks, IT teams can efficiently and effectively correlate IT performance across ranges of devices, applications, and networks. A bonus: IT teams can marry the network data with employee sentiment to further enhance digital experience.
Line of Business IT	Line of Business IT teams are responsible for the business-critical applications used by the line of business staff. As application owners, their challenges are similar to those of DevOps teams who build the applications used by their teams. The main challenge facing this group is navigating the massive scale and ephemeral nature of cloud-native environments and microservices-based architectures.	Unified Observability enables Line of Business IT teams to aggregate metrics, traces, logs, and events from a distributed software system and correlate them across various application components and services. Doing so enables the identification of complex interactions between elements and allows them to troubleshoot performance issues, improve management, and optimize cloud-native infrastructure and applications.

How to Leverage Unified Observability

Unifying data, insights, and actions across IT will help organizations eliminate data silos and alert fatigue, improve decision-making, apply expert knowledge broadly, and continuously improve digital service quality.

With Alluvio Unified Observability, you can capture full-fidelity data on every transaction across the digital ecosystem. By continuously applying AI and ML, you will gain actionable insights based on intelligent automation. Basically, you'll gain insights that enable stronger actions to create better business outcomes.

Learn more at: riverbed.com/products/unified-observability.

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