EBOOK

The Foundation for Zero Disruption IT Operations

Why Complete Visibility Across Devices, Applications, and Networks **Changes Everything**

riverbed®

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The Missing Foundation

The digital experience is not created in one place. It is shaped by how device, application, and network interact in real time. The truth is, most DEX solutions observe only part of the system and only at the surface. Signals are collected. But understanding remains incomplete.

When visibility is fragmented, outcomes become unreliable. What appears to be an application issue may be caused by the network. What looks like a device problem may originate in the cloud. Without full context, IT is left to infer what is happening.

And inference leads to:

- Slower resolution
- Inconsistent outcomes
- Continued disruption
- Imprecise AI outcomes

This is the gap. Not a lack of device data. Not a lack of tools. But a lack of full-fidelity, cross-domain visibility. To move beyond this, IT requires a different foundation. Data that is:

- Complete across device, application, and network
- Deep within each domain, not just surface-level metrics
- Connected to reflect how the environment actually operates
- Real-time at enterprise scale

This is where Riverbed is fundamentally different.

Riverbed brings together deep, full-fidelity data across device, application, and network, combining decades of domain expertise into a single, unified view of the digital experience, delivered through Riverbed Aternity.

This is the foundation for Zero Disruption IT Operations.

Why Partial Visibility Fails

The challenge is not just incomplete visibility.
It's how that visibility is created.

Over time, organizations have accumulated tools to monitor different parts of the environment. Some focus on devices. Others track application performance. Still others analyze network behavior Each provides useful insight. But none provides the full picture.

This is not a tooling problem. It is a design problem.

DEX solutions, while well-intended, were designed around the device — not the full system. Some extend into applications, but only at a surface level. Very few provide meaningful visibility into the network.

As a result, the digital experience is never observed as a complete system.

Instead of understanding how device, application, and network interact, IT is left with disconnected signals across tools and teams.

This leads to a familiar pattern:

- An issue occurs
- Data is scattered across tools
- Teams investigate in parallel
- Signals conflict
- Root cause is debated
- Resolution is delayed

Even when data exists, it lacks context. Without a unified view, IT cannot distinguish cause from symptom. And without that clarity, every issue becomes harder to resolve.

This is why partial visibility fails. It does not create understanding. It creates approximation. And approximation cannot deliver:

- Consistent outcomes
- Reliable automation
- Or precise AI-driven operations

Without full-fidelity, cross-domain visibility, IT remains reactive. And disruption remains inevitable.

DEX Begins — and Ends — with Applications

Nobody buys a device to stare at the keyboard. They buy it to run an application. That's where work happens, productivity is measured, and experience is defined. But that experience is never created by the application alone. It is shaped by:

- Application performance
- Device health
- Network Conditions

If any one of these breaks down, the experience breaks down.

Device-only visibility falls short.

It shows CPU, memory, and device health but misses network behavior, cloud dependencies, and backend performance. When visibility is limited, conclusions are incomplete. And incomplete understanding leads to reactive IT.

You Need 360-Degree Visibility

Autonomous IT does not happen by chance. It requires a complete, connected view of the entire digital experience. Not just one layer, but every layer. And not just eventually but in real time and at scale.

360° visibility brings together:

- Real user experience
- Network performance from flows to packets
- Application behavior across SaaS and on-prem
- Cloud dependencies and APIs
- Encrypted and zero trust environments

When these signals are connected, you don't infer. You see. Root cause becomes clear. **And action becomes possible.**

Without complete visibility, autonomous IT is not possible. With it, preventing disruption becomes achievable.

Why This Matters for AI

Across the industry, digital experience platforms are evolving toward AI-enabled operations, with a clear ambition of moving toward autonomous IT. The vision is compelling: systems that can detect issues, understand root cause, and resolve problems before users are impacted.

However, this vision depends on something more fundamental. AI is only as effective as the data it is built on—and in many environments, that data remains incomplete.

Most platforms still operate with a limited view of the environment, often centered on the device, with partial visibility into applications. Few have a complete understanding of how device, application, and network conditions interact, and fewer still have the depth required to interpret what is happening beneath the surface.

As a result, AI can assist with troubleshooting and provide recommendations, but it cannot reliably act. Without a complete and deeply accurate data foundation, decisions remain probabilistic rather than precise.

To move from AI-assisted operations to autonomous systems, the requirements change. Data must be complete across domains, deeply accurate within each domain, and available in real time at enterprise scale. Only then can AI move beyond identifying patterns to understanding causality and taking meaningful action.

This is what separates aspiration from execution.

While much of the industry is moving toward AI-enabled operations, progress remains constrained by incomplete data. Riverbed has already built the foundation required to go further—enabling AI to operate with the precision needed to prevent disruption, not just respond to it.

It’s not just scale. It’s depth.

Full-fidelity data is often described as coverage. Device. Application. Network. But coverage alone is not enough. You need depth.

Riverbed delivers insight others simply cannot:

- Below the OS, through Intel—into hardware behavior and peripherals
- Into the experience, with Aternity Replay—seeing what users actually experience
- Across blind spots—zero trust, encrypted traffic, off-network activity
- Down to packets—the ultimate source of truth
- Into live communications—diagnosing voice and video in real time

Without depth, data shows symptoms.
With depth, it reveals truth.

The Riverbed Advantage

Riverbed captures and correlates data across device, application, and network, bringing these domains together into a single, unified view of the experience.

Rather than presenting isolated signals across disconnected tools, this approach reflects how the environment actually operates: as an interconnected system. And it does so in real time, at enterprise scale.

Modern IT environments have fundamentally changed. Traffic is encrypted. Access happens outside the corporate network. Applications span SaaS, cloud, and on-premises infrastructure. In this reality, traditional visibility breaks down and blind spots become the norm.

Riverbed was built for this shift. It restores visibility across environments where others lose it, spanning zero trust architectures, encrypted traffic, and distributed access patterns.

This is what ultimately changes how IT operates. When the full experience is visible end to end, teams no longer need to piece together signals across tools or debate competing interpretations of root cause. They can see what is happening, clearly and in context, and act with confidence.

This is the progression:

From managing disruption

To preventing disruption

To eliminating it altogether

Delivered Simply

Just as important as what is captured is how it is delivered. Riverbed brings full-fidelity visibility together through a single, unified agent, giving teams a connected view of device, application, and network behavior.

This removes the need to deploy multiple agents, manage fragmented tools, or stitch together data across vendors. Instead of assembling insight, teams operate from a single, consistent understanding of the environment.

For many organizations, observability has grown through accumulation, adding tools to fill gaps, then more to connect them. Over time, complexity becomes the constraint.

Riverbed takes a different approach. A unified platform replaces dozens of disconnected solutions, bringing visibility across domains together by design. What once required integration is now built in.

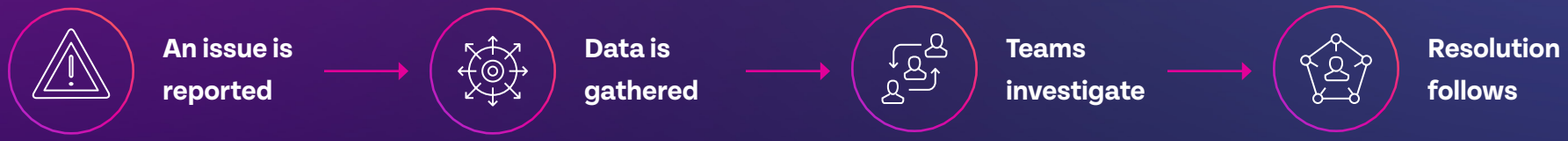
The result is a simpler model: easier to deploy, easier to manage, and faster to deliver value.

This simplicity extends beyond the technology. With Aternity 360, organizations access full employee experience capabilities through a single offering, without complex packaging, multiple SKUs, or assembling separate products. The foundation is available from the start, enabling teams to move quickly and with confidence.

Instead of managing vendors and integrations, teams can focus on outcomes, reducing complexity, lowering cost, and accelerating time to value. The fastest and simplest way to prepare for autonomous IT is to start with the right foundation.

From Data to Prevention

Full-fidelity data changes what IT is capable of. In a traditional model, IT reacts.



This model is inherently reactive. It assumes disruption will happen and focuses on fixing it faster.

With full-fidelity data, the model changes.

- Patterns become visible
- Conditions that lead to disruption can be identified early
- Actions can be taken before impact occurs

This is the shift:

- From reacting to issues
- To anticipating them
- To preventing them entirely

This is where Zero Disruption becomes real.
Not as an aspiration but as an operational model.

The Foundation for Autonomous IT

Autonomous IT is often described as the end state: systems that operate independently and detect, diagnose, and resolve issues without human intervention.

But autonomy is not achieved through automation alone. It depends on the quality of the inputs. Without complete visibility, systems lack awareness. Without connected data, they lack context. Without depth, they lack accuracy. And without these elements, autonomy breaks down.

With them, everything changes. AI can operate with precision. Decisions can be made with confidence. Actions can be taken without hesitation. This is what enables the transition from assisted operations to truly autonomous systems.

How to Get Started

Building toward Zero Disruption does not require a complete reset. It begins with the foundation. The first step is expanding visibility beyond a single domain:

From device → **To application** → **To network**

The next step is connecting that data so it can be understood as a complete system. And finally, aligning technical signals with actual user experience. This is where progress begins. Not by adding more tools, but by establishing a better foundation.

With **Aternity 360**, organizations can move quickly. They can establish full-fidelity visibility across the entire environment. And begin shifting from reactive operations to prevention.

Conclusion

Zero Disruption is not achieved by working faster. It is achieved by understanding better.
And better understanding begins with complete data. Data that is:

 Full

 Connected

 Real-time

 Deeply accurate

When this foundation is in place, everything changes. You no longer chase problems. You prevent them. Because when you can see everything, you can understand anything. And when you can understand anything, you can prevent everything.

This is the foundation of Zero Disruption and the path to autonomous IT operations.

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About Riverbed

Riverbed, the leader in AI observability, helps organizations optimize their users' experiences by leveraging AI automation for the prevention, identification, and resolution of IT issues. With over 20 years of experience in data collection and AI and machine learning, Riverbed's open and AI-powered observability platform and solutions optimize digital experiences and greatly improve IT efficiency. Riverbed also offers industry-leading Acceleration solutions that provide fast, agile, secure acceleration of any app, over any network, to users anywhere. Together with our thousands of market leading customers globally – including 95% of the FORTUNE 100 – we are empowering next-generation digital experiences. Learn more at riverbed.com.