EBOOK

Zero Disruption IT Operations Are Here

Experience Autonomous IT in Action
with Riverbed

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Redefining What “Good IT” Looks Like

Teams responsible for employee experience are being asked to deliver something very different. Not just uptime—but uninterrupted work.

Employees no longer measure IT by whether systems are available. They measure it by whether they can stay productive without disruption. In most environments, disruption doesn’t show up as a major outage. It appears as subtle degradation: applications slowing down, devices behaving unpredictably, or access failing at critical moments. Individually, these issues may seem minor. At scale, they are not. They interrupt workflows, reduce productivity, and erode confidence in IT.

In response, many organizations have leaned into self-service models, often driven by device-only visibility. While this approach can reduce ticket volume, it does not eliminate disruption. It shifts responsibility to the employees, asking them to troubleshoot, diagnose, or work around issues themselves.

Employees are not looking to do IT’s job. They expect systems to function reliably. Shifting work to the employee is not innovation. Eliminating that work entirely is.

From Reactive to Autonomous: The Evolution of IT Operations

A new operating model is emerging, one powered by generative AI and agentic systems capable of detecting, understanding, and resolving issues before employees are even aware of them. This marks the transition toward autonomous IT operations.

Traditionally, IT has operated within a reactive framework: detecting issues after they occur, investigating root causes, and then resolving them. While tools and processes have improved over time, the model itself has remained unchanged; disruption still happens first.

Autonomous IT introduces a fundamentally different approach. Instead of reacting to problems, systems identify early signals, correlate them across the environment, and take action before impact occurs.

- Reactive IT responds to disruption
- Autonomous IT prevents disruption

The goal is no longer faster response.
It is eliminating the need to respond altogether.

The Journey to Autonomy

The path to Zero Disruption Operations

Autonomous IT is not about who performs the work. It is about whether disruption happens at all. Most approaches to AI focus on replacing human effort. This shift is not about replacing human effort. It is about eliminating disruption at its source. The progression is not from manual to automated. It is from disruption to prevention.

This transition does not happen overnight

It requires both the maturation of the technology and the confidence to trust it. As AI becomes more capable, organizations must also establish clear governance, ensuring actions are applied with control, visibility, and accountability.

It began with reactive operations

IT responded after impact. Issues were detected only once employees felt them. Support improved but disruption always came first.

It evolved with assisted operations

AI began to accelerate diagnosis and resolution. Decisions became guided. Actions became faster. But the experience did not fundamentally change. Disruption still happened first.

It advanced through intelligent resolution

Systems started to understand conditions across device, network, application, and cloud. AI could correlate signals, identify root cause, and resolve issues more consistently. Many problems were resolved before they escalated. But the model was still anchored in response.

Now comes autonomous prevention

Systems continuously evaluate conditions and act before impact occurs. There is no ticket. No user effort. No disruption. Employees remain productive because problems never surface.

IT is not just managing disruption, it is often extending it.

Self-Service vs. Zero Disruption

Much of the industry has focused on self-service as a way to improve efficiency. This model assumes that problems will occur and that employees should play an active role in resolving them. While self-service can reduce ticket volumes, it does not eliminate the underlying disruption. It simply redistributes effort.

The limitation lies in visibility. Device-only approaches provide a narrow view of the environment, missing the broader context across network, application, and cloud layers. Without full visibility, IT cannot fully understand or prevent issues.

True innovation lies not in enabling employees to fix problems, but in ensuring those problems never arise.

A Better Model: Zero Disruption Operations

Zero Disruption Operations redefines the role of IT. Instead of managing issues after they occur, it focuses on preventing them entirely.

In this model, IT operates quietly in the background, ensuring seamless performance without user involvement, so employees can stay focused on their work.

- Issues are prevented, not managed
- Employees are removed from troubleshooting processes
- IT operates proactively and invisibly

Prevention, not participation, becomes the defining principle.

Why Device-Only Visibility Falls Short

Modern digital experiences are shaped by multiple interconnected layers—device, network, application, and cloud. Device-only visibility captures only a fraction of this picture.

Without a complete view, IT lacks the context required to accurately diagnose and prevent issues. This limitation becomes even more critical in AI-driven environments, where outcomes are directly tied to data quality.

When AI operates on **partial data**, it produces:

- Incomplete analysis
- Inaccurate root cause
- Suboptimal actions

When AI operates on **complete, full ecosystem data**, it delivers:

- Precise understanding
- Accurate root cause
- Confident action

Partial data guarantees partial outcomes. Complete ecosystem data produces more precise AI outcomes.

The Riverbed Agentic Framework

Eliminating disruption requires more than insight; it requires execution. The Riverbed Agentic Framework serves as the control plane for AI-driven IT operations, transforming intelligence into real-time action. This framework connects signals from across the environment, applies contextual understanding through unified data, and executes actions using reusable capabilities known as “skills.” These skills are designed to resolve issues, optimize performance, and improve employee experience dynamically.

Operating across device, network, and application layers, the framework continuously ingests signals, correlates them in real time, determines appropriate responses, and applies corrective actions, creating a closed loop of continuous improvement.

It supports multiple operational modes, allowing organizations to evolve at their own pace:

- AI-assisted
- AI-enabled
- Fully autonomous

This flexibility ensures that autonomy is achieved with trust, control, and measurable progress.

What We’ve Learned Building Autonomous IT

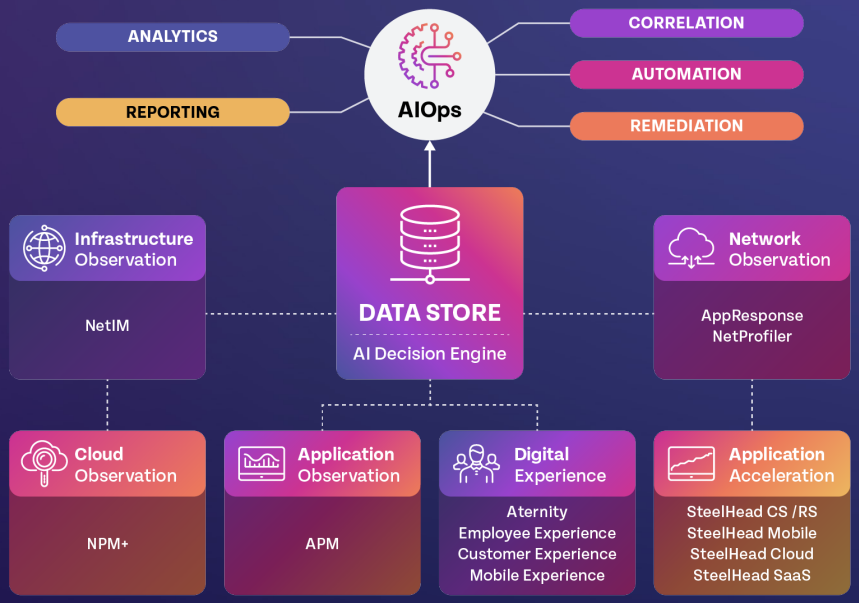
Riverbed is now in its third generation of AI-driven operations. Through multiple generations of AI-driven operations, a few principles have become clear. Reactive AI alone is insufficient, data quality directly determines AI accuracy, and device-only visibility limits both insight and action.

Autonomous IT requires a connected, comprehensive foundation, not isolated tools layered onto existing systems. This demands a new architectural approach built on:

- Complete data visibility
- Context-aware intelligence
- Governed and trusted AI

The Foundation for Autonomous IT

A successful autonomous IT strategy is built on a robust and unified data foundation. This includes full-fidelity data across device, network, and application layers, combined with experience visibility through replay and telemetry. A structured data layer, such as the **Riverbed Data Store**, ensures that information is organized for real-time correlation and decision-making. Eliminating blind spots, even across zero-trust and off-network environments is critical.



Data alone is not enough. It must be structured, correlated, and made instantly accessible. Without a unified data foundation, AI operates on fragments—limiting its ability to make accurate decisions and take consistent action. Together, these capabilities enable continuous, real-time understanding and action, making Zero Disruption possible.

The Architecture Behind Zero Disruption

Zero Disruption is not achieved through incremental improvements. It requires a fundamentally different architecture. Three capabilities define this model:

- **Complete visibility** – across device, network, application, and cloud
- **Context-aware intelligence** – correlating signals to determine cause and impact
- **Trusted, governed AI** – acting with precision and control

Most platforms deliver parts of this. Very few deliver all of it.

The Riverbed Advantage

Riverbed uniquely delivers this architecture through five key capabilities:

Full Ecosystem Visibility

Real-time, full-fidelity data across device, application, and network—at enterprise scale. Not limited to endpoint signals.

No Blind Spots

Visibility preserved across zero trust and cloud environments—even when traffic is encrypted or off-network.

Unified Data Foundation

All data—Riverbed and third-party—brought together into a single, real-time model for accurate correlation and AI.

Open Platform

Integrates with existing tools and exports data via open standards—extending, not replacing, current investments.

Experience as Evidence

Session replay combined with telemetry—showing exactly what users experienced and why.

Why It Matters

Autonomous IT requires more than insight. It requires a system that can:

See the experience

Understand it in context

Act before impact occurs

This is what enables the shift from response to prevention to Zero Disruption.

Autonomy with Control

Autonomous IT does not remove control, it enhances it. Organizations define where to assist, where to automate, and where to retain human oversight. Control is applied intentionally across different levels of operation:

Some actions remain human-driven

Others are AI-assisted

Some are fully automated

With full visibility into outcomes, IT teams can continuously evaluate performance, identify opportunities for automation, and refine processes.

Autonomy operates within clearly defined boundaries, ensuring trust, transparency, and accountability.

How to Get Started with Autonomous IT

Autonomous IT is not a distant goal, it is a practical transformation that can begin immediately. The most effective approach is focused and incremental, starting with the areas that limit visibility, insight, and action.

Organizations should begin by eliminating blind spots across the environment, ensuring visibility extends beyond corporate networks into wherever work happens. From there, unifying telemetry across device, network, and application layers is essential to create a complete operational picture.

Equally important is integrating employee experience into telemetry, ensuring that technical data is aligned with real user impact. Establishing a structured data foundation enables AI to operate effectively, supporting faster correlation, more accurate insights, and scalable action.

Initial efforts should focus on AI-assisted improvements in high-volume, repeatable scenarios. As confidence grows and patterns emerge, automation can be expanded strategically, prioritizing predictable, low-risk opportunities.

Autonomous IT is ultimately built on three pillars: **visibility, connected data, and experience-driven insight.**

Conclusion: Measuring Success Differently

Reducing ticket volume is not the true measure of success. The real benchmark is uninterrupted work. The most effective IT operations are those that employees never notice, because everything simply works.

Understanding autonomous IT is important. **Experiencing it is transformative**.

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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.