



**CARRIER-GRADE NETWORK
OBSERVABILITY FOR AWS
HYBRID CLOUD
OPERATIONS**

A Cirries DART AI Use Case on AWS

INTRODUCTION

When Visibility Becomes Mission Critical

For modern network operators, the move to cloud is not optional—it is foundational. As services expand across distributed environments, the ability to see, understand, and act on network behavior becomes the difference between delivering on SLAs and falling short.

This use case reflects a representative deployment of Cirries DART AI™ on AWS, where a Tier 1/2 operator transformed its approach to observability—moving from fragmented signals to deterministic, packet-derived truth across hybrid cloud infrastructure.

THE ENVIRONMENT

A Network Without Boundaries

The operator delivers a mix of 5G, VoLTE, and enterprise services, all of which depend on consistent performance across a highly distributed architecture. Their environment spans traditional on-premises radio and core infrastructure, regional edge compute, and a growing footprint inside AWS—including VPCs, Transit Gateways, and Direct Connect.

Applications and services no longer reside in a single domain. Instead, they traverse multiple environments in real time, crossing boundaries between carrier infrastructure and cloud platforms. Every transaction, every session, and every customer interaction depends on this interconnected system behaving exactly as intended.

In this context, performance is not just a technical metric—it is a direct driver of customer experience and revenue. Even minor degradation in latency or packet delivery can cascade into service disruption, SLA violations, and operational escalation.

THE CHALLENGE

Knowing Something Is Wrong—But Not Why

As the operator expanded its AWS footprint, a familiar challenge emerged. Existing tools—while valuable—provided only partial visibility into system behavior.

Metrics showed that latency had increased. Logs captured configuration changes. Flow data revealed traffic patterns. But none of these sources could definitively explain what was happening at the level that mattered most: **the actual experience of live network traffic.**

When incidents occurred, teams were forced into reactive troubleshooting. Cloud teams reviewed infrastructure metrics. Network teams analyzed transport behavior. Application teams investigated service performance. Each domain had data, but none had the full picture. Mean Time to Resolution (MTTR) increased, not because of a lack of tools, but because of a lack of **shared, deterministic insight.**

The fundamental question remained unanswered:
What actually happened to the service—and why?

THE SOLUTION

Introducing Network Truth into Cloud Operations

To address this gap, the operator deployed Cirries DART AI™, extending AWS-native observability with a new layer of intelligence grounded in packet-level behavior.

Unlike traditional monitoring approaches, DART AI does not rely solely on inferred signals. It observes real network traffic—passively and without payload storage—and transforms it into high-value metadata that reflects how services are truly performing.

This packet-derived intelligence is then correlated with AWS-native telemetry, including CloudWatch metrics, VPC Flow Logs, and CloudTrail events. The result is a unified operational view that bridges the gap between infrastructure signals and actual service experience.

For the first time, the operator could see not just where a problem might exist—but how it manifested across the full service path, from on-prem infrastructure through AWS environments and back again.

FROM DATA TO UNDERSTANDING

The Role of AI

The introduction of packet intelligence solved one part of the problem—visibility. The next challenge was interpretation.

DART AI integrates with **Amazon Bedrock** to bring AI-driven reasoning into the observability workflow.

Rather than requiring engineers to manually correlate data across systems, the platform analyzes patterns across packet behavior and AWS telemetry to explain the underlying cause of service degradation.

This is where the transformation becomes tangible.

Instead of reviewing dashboards and forming hypotheses, operations teams receive clear, contextual insights:

A spike in latency is not just observed—it is explained as a consequence of a routing change within the Transit Gateway. Packet loss is not just detected—it is tied directly to a recent security configuration update.

This shift—from detection to explanation—fundamentally changes how incidents are handled. Troubleshooting becomes faster, more precise, and far less dependent on institutional knowledge.

OPERATIONAL TRANSFORMATION

From Reactive to Proactive

With DART AI in place, the operator's operational model evolved. Previously, issues were identified after customer impact. Now, subtle changes in packet behavior could be detected early, allowing teams to address risks before they escalated into outages.

The correlation of packet intelligence with AWS telemetry also eliminated much of the ambiguity that had previously slowed down incident response. Instead of multiple teams investigating in parallel, there was a shared understanding of where the issue originated and what actions were required.

Automation further accelerated this process. Insights generated by DART AI could be fed into AWS EventBridge and AWS Lambda, enabling predefined remediation workflows to execute automatically. What once required hours of coordinated effort could now be resolved in minutes.

ARCHITECTURE AND DEPLOYMENT

Built for Real-World Environments

The deployment model was intentionally designed to align with the operator's existing architecture.

DART AI sensors were introduced both within AWS and across on-prem environments, observing mirrored traffic without requiring any changes to network functions or application infrastructure. This passive approach ensured rapid deployment with no operational risk.

Within days, the system began delivering meaningful insights. Within weeks, it was operating as a core component of the operator's observability and service assurance strategy.

As the operator expanded its AWS footprint, the solution scaled seamlessly, extending visibility into new regions and services without requiring architectural redesign.

OUTCOMES

Measurable Impact Across Operations and Business

The impact of this transformation was both immediate and measurable. Operationally, the operator achieved significant reductions in Mean Time to Resolution, along with a marked decrease in SLA-impacting incidents. Troubleshooting became more efficient, requiring fewer manual interventions and less cross-team coordination.

From a business perspective, the benefits extended even further. The operator gained the confidence to accelerate cloud adoption, knowing that performance and reliability could be validated continuously. Customer experience improved, and SLA commitments became more defensible.

Perhaps most importantly, the organization moved away from a reactive posture and toward a model of continuous assurance, where network behavior is understood in real time and managed proactively.

WHY THIS MATTERS FOR AWS CUSTOMERS

For organizations operating complex hybrid environments, the challenge is not a lack of data—it is the inability to connect that data to real service outcomes.

DART AI addresses this gap by introducing a layer of network truth, grounded in packet behavior and enhanced by AI-driven reasoning. It complements AWS-native services, extending their value rather than replacing them.

In doing so, it enables enterprises and service providers to operate with greater confidence, faster response times, and a deeper understanding of how their systems behave under real-world conditions.

CONCLUSION

A New Standard for Observability

As cloud adoption continues to accelerate, the need for precise, actionable insight will only grow. Observability can no longer rely on partial signals or assumptions.

This use case demonstrates what is possible when packet-level intelligence, AWS telemetry, and AI-driven reasoning are brought together into a unified platform.

With Cirries DART AI on AWS, organizations gain the ability to:

**See every packet.
Understand every flow.
Act instantly.**

