

Observe, Detect, Act: Unified Observability for the Financial Services and Insurance Industries

Top Financial Services And Insurance Companies Trust Datadog



Executive Summary

To remain competitive, financial services and insurance firms must reconsider data visibility to ensure that it bridges both core systems and modern technologies.

Datadog provides a unified approach to observability—a holistic model that runs across hybrid environments, supports real-time decision-making, and helps financial services institutions confidently navigate an ever-evolving digital landscape.

Customer Challenges

Rethinking data visibility in an evolving market landscape

New market entrants, the rise of AI, and the emergence of digital financial assets like cryptocurrencies and tokenized assets have reshaped competitive dynamics. Even as these new technologies capture attention, the core challenges remain: controlling costs, boosting productivity, staying compliant, and retaining customers. At the center of meeting all these challenges lies data. Its accessibility, accuracy, and visibility are what enable institutions to adapt, compete, and thrive.

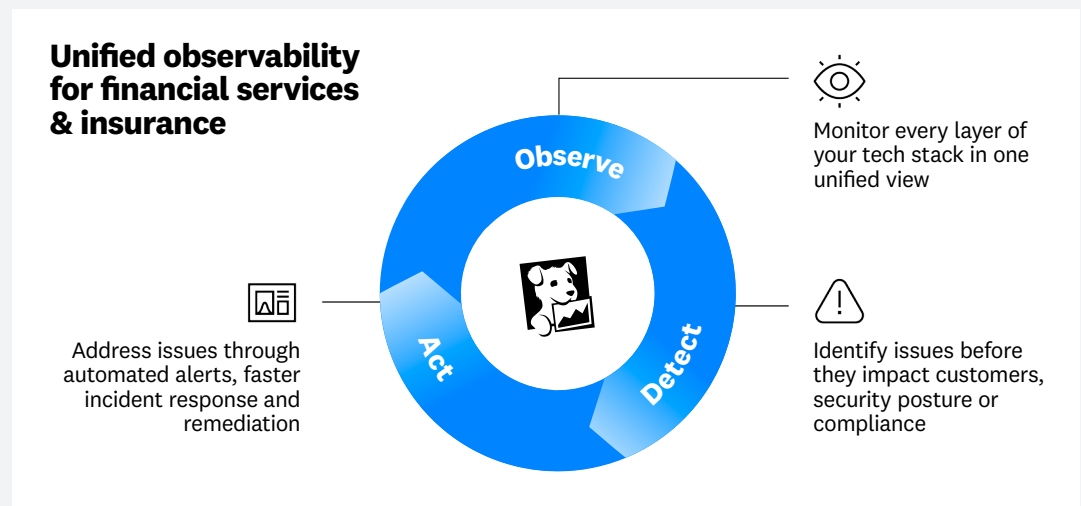
The rapid pace of change comes down to two things: a lot more data and a lot more complexity. Many organizations still rely on on-premise systems, even as they try to take advantage of newer technologies like the cloud. This creates real challenges in managing data, keeping systems connected, and staying agile in a fast-moving market. Financial services and insurance firms also operate in high-stakes environments where reliability, compliance, and customer trust are nonnegotiable.

The need for complete visibility across complex hybrid infrastructures has never been greater. That means rethinking how data is managed, monitored, and used to make faster, smarter decisions in an evolving market landscape.

Datadog Solution

A modern approach to observability for financial services and insurance organizations

Datadog offers financial services and insurance teams end-to-end visibility across their entire technology stack so they can shift from reactive “firefighting” mode to proactive, data-driven operations. Our holistic approach **observes** every metric, trace, and log in one unified view; **detects** anomalies and performance issues instantly by using AI-powered analytics; and **addresses** these issues faster through automated alerts and integrated remediation workflows.



Observe

Monitor every layer of your technology stack—from core banking applications to customer-facing mobile apps—in one place. Continuous telemetry data across infrastructure, services, APIs, and user experience ensures proactive risk detection.

- **Shadow deploys in production:** Mirror live customer traffic to new trading engines, payment services, risk-scoring models, and claims processing code—validating releases under real world load without risking existing policyholders, customers, or traders.
- **Dynamic dependency map:** Automatically discover and visualize relationships between core banking services, payment rails, trading systems, underwriting microservices, and downstream reporting systems to instantly see what will break if any component falters.
- **Critical path performance:** Track end-to-end performance of key financial workflows like trade execution, premium calculation, and policy issuance, and surface bottlenecks before they threaten settlement windows or customer service level agreements (SLAs).
- **Batch processing visibility:** Monitor nightly settlements, policy renewals, actuarial jobs, and risk-model backtests in one place, with metrics on throughput, error rates, and resource utilization.
- **SLA enforcement:** Define service-level objectives (SLOs) for payment clearing times, API response targets for digital banking, or peak-hour underwriting throughput, and automatically alert your ops teams when thresholds slip.

 **Detect**

Use AI-driven anomaly detection, machine learning alerts, and advanced analytics to identify issues before they impact customers. Security and compliance posture monitoring integrates directly with operational observability, enabling early detection of threats and non-compliance risks.

- **Fine-grained latency measurement:** Correlate traces, logs, and metrics down to the millisecond—from legacy mainframes to containerized pricing engines—to pinpoint exactly where delays creep into payment confirmations, trading clearance, or claim adjudications.
- **Message-flow monitoring:** Gain deep insight into insurance event streams, payment queues, and FIX messages, complete with replayable timelines of publish/subscribe activity across Kafka, SQS, and proprietary messaging layers.
- **Transaction latency tracking:** Monitor every customer transaction—whether a funds transfer, quote request, or claims API call—in real time, surfacing slowdowns in third-party credit checks, data warehouse queries, and blockchain nodes.
- **Failure isolation and prevention:** Instantly detect and quarantine dead-letter-queue buildup in your policy event pipelines, crashed trading engines, schema mismatches in your data lake, or “poison-pill” payloads before they cascade into regulatory violations or revenue-impacting outages.

“We have over 2,500 people that log into Datadog a week. It’s becoming our central hub for all of our data.”

Ankit Patel

Senior Manager, Digital SRE at Discover

 **Act**

Enable faster incident response and remediation by correlating technical signals with business impact. Teams can automate workflows, ensure regulatory reporting accuracy, and drive operational scalability.

- **Automated incident response:** Drive down mean time to resolution (MTTR) trading halts, claims processing backlogs, and legacy core system disruptions with built-in runbooks, automated escalation chains, and one-click postmortem reports tailored to your compliance requirements.
- **Fraud and risk alerting:** Use AI-powered anomaly detection to spot suspicious trading patterns, authorization mismatches, synthetic-identity insurance applications, and out-of-pattern claims so you can block fraudulent behavior and meet “know your customer” and anti-money laundering mandates in real time.

- **PCI-DSS and data protection:** Ensure PCI-DSS compliance by encrypting and retaining cardholder data securely, applying rigorous access controls to memory and logs, and generating audit-ready reports to satisfy regulators and auditors.
- **Isolation and scrubbing of PII:** Automatically detect, isolate, and redact sensitive personal information from logs, traces, and metrics to ensure that only authorized users can access certain data and teams can investigate issues without exposing customer PII or violating GDPR, DORA, or local data protection mandates.

By combining workflows into a single, unified platform, Datadog enables your teams to catch issues early, escalate them only when necessary, and resolve incidents faster. This ultimately minimizes downtime, safeguarding your customers and accelerating innovation.

Datadog helped Discover move from manual documents to Datadog Notebooks, improving workflows and accountability.



Discover, one of the largest digital banking and payment companies in the United States, operates an extensive technology stack supporting over 16,000 employees.

CHALLENGE

Multiple monitoring tools created silos, delays, and heated, blame-oriented postmortems. As a result, Discover needed to streamline investigations and improve its incident response.

SOLUTION

By leveraging Datadog's platform and tools, Discover was able to reduce alert noise, accelerate root cause analysis, and drive cross-team alignment.

RESULTS

~40%

Ticket volume reduction

~45%

Drop in false failures from 90%



Smoother postmortem workflows

Key Features and Benefits

DATADOG FEATURE	BENEFIT
Unified Dashboards and Business Analytics	Combines operational, security, and business KPIs in a single pane, enabling both executives and engineering teams to monitor SLAs, volume metrics, and risk metrics in real time.
Comprehensive Correlation and Root Cause Analysis (RCA)	Uses built-in intelligence to link related alerts, logs, and traces, accelerating incident resolution for trading halts or payment failures.
AI-driven Anomaly Detection	Continuously learns business-as-usual behavior and surfaces deviations in transaction latency and throughput, helping detect fraud patterns and system degradation early.
Security and Compliance Toolkit	Provides cloud SIEM, posture management, and audit-ready reporting, streamlining PCI-DSS, SOC 2, and ISO 27001 compliance across on-prem and cloud assets.
Extensive Integration Ecosystem and Open APIs	Integrates with 900+ data sources from third-party providers—from trading platforms to core banking systems—enabling rapid onboarding and custom workflows via REST or SDKs.
Synthetic Monitoring and Real User Insights	Combines scripted endpoint checks and user session replay to validate digital banking and insurance portals, catching issues before customers are impacted.
Scalable, High-availability Architecture	Supports autoscaling ingestion and storage to handle market-driven spikes, ensuring that observability remains intact during volume surges.
Long-term Log Retention and Storage	Stores logs, metrics, and traces for extended periods for as long as years to support audits and compliance reviews, such as FINRA WORM, and forensic investigations without data loss.

Why Datadog?

- Proven experience serving Tier-1 institutions across banking, insurance, and fintech
- Maintains a broad set of security and compliance attestations and features—including SOC 2 Type II, ISO 27001, PCI DSS, and support for FINRA WORM retention—and provides controls to help customers meet GDPR and DORA obligations
- Integrates with 900+ data sources—from trading platforms to core banking systems—allowing for end-to-end observability, rapid onboarding, and custom workflows
- Broad integration ecosystem for cloud, CI/CD, and security tools
- Dedicated support and onboarding tailored for regulated industries

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