Four9s

Advanced observability and diagnostics for Microsoft SQL Server environments where continuity, performance, and rapid response are critical.

From intuition to evidence: understanding what is happening, why it is happening, and how to act

What is Four9s?

Four9s is a specialised platform that correlates, second by second, SQL Server engine activity with system metrics, sessions, locks, wait states, TempDB, execution plans, and other operational indicators. Its approach combines real-time visibility, historical analysis, and root-cause oriented diagnostics.

Detect

Identifies deviations, incidents, and anomalous behaviours with technical context.

Reconstruct

Historical replay to return to the exact instant and review before, during, and after.

Explain

Relates general symptoms to the sessions, queries, or objects that cause them.

Decide

Provides verifiable evidence to prioritise actions and reduce manual investigation.

A Platform born from a real need

Four9s emerged in a highly demanding transactional environment, when existing tools failed to offer the granularity and depth required to reconstruct complex incidents. It was conceived by database specialists and evolved into a commercial solution used across organisations in multiple sectors.

Value proposition

Continuous and correlated visibility to accelerate diagnostics, reduce investigation time, and safeguard operational continuity.

Scope

On-premise, virtualised, cloud, and hybrid SQL Server environments, with a modular architecture scalable by monitored instances.



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Why is incident investigation still a challenge?

Detecting an alert is only the beginning. The real challenge is recovering sufficient technical context to explain what occurred and make decisions.

What problem does it help solve?

The difficulty of transitioning from a general symptom to a concrete technical explanation, especially when multiple sessions, resources, objects, and time windows are involved.

Why investigations are usually slow?

Because evidence remains distributed across metrics, logs, queries, and perceptions from different teams. Without correlation, teams must manually reconstruct an incomplete narrative.

What happens when *live* evidence no longer exist?

Intermittent, overnight, or retroactively reported incidents can disappear before being observed. Without granular history, hypotheses remain difficult to validate.

How to make decisions with incomplete information?

A technical decision improves when it can contrast what changed, which process was active, and which resource degraded, rather than relying solely on averages or recollections.

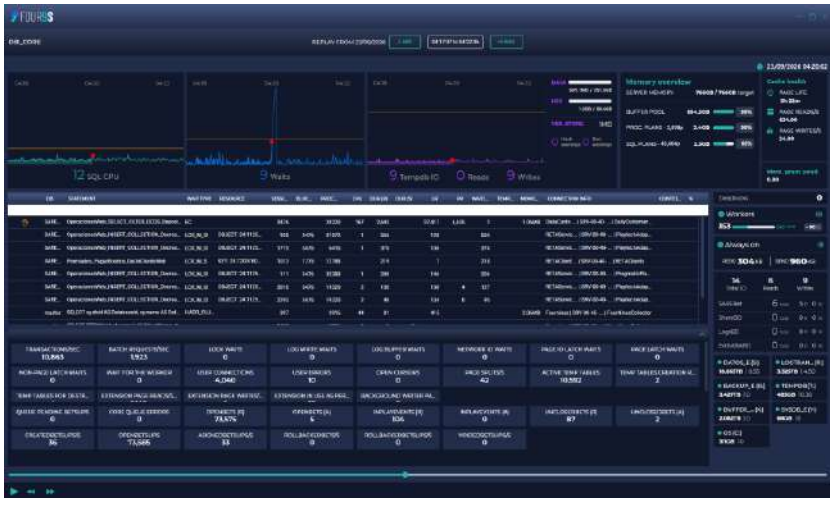
The Four9s' approach: Detect → Investigate → Explain

Real Time
Correlates system metrics with exact SQL Server activity.

Historical Replay
Replays past environment state second by second.

Deep analysis
Enables drilling down to sessions, objects, statements, plans, and changes.

Time-based comparison
Distinguishes whether a variation stems from higher volume or average performance.



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Multi-sector experience

Sucess stories in high-performance operations

Four9s has been adopted in organisations where data availability, service continuity, and diagnostic capability have a direct impact on operations.

A single technical specialization applied to highly diverse operational realities

Government & public Sector

Diputación Foral de Bizkaia, Diputación Foral de Álava, Lantik, IZFE y BilbaoTIK. Environments supporting public services, citizen platforms, and mission-critical IT infrastructure.

Industry & energy

Nemak, Grupo DISA, AMPO y Betsaide. Manufacturing, energy, and production contexts with corporate and industrial processes dependent on stable data platforms.

Tecnology & services

GBM y OPPLUS. Platforms combining tech services, automation, analytics, and critical business process support.

Finance & insurance

Pepper Advantage España, Admiral Seguros, Agroseguro, Mutualia y SURNE. Operations where stability, traceability, and rapid response underpin financial, insurance, and healthcare services.

Transport & logistics

Fred. Olsen Express y Algeposa Grupo. Systems linked to bookings, port operations, transport, and time-sensitive logistical coordination.

Retail, healthcare & other services

Deoleo, Orbea, HT Médica, RACE y RETAbet. From global operations and roadside assistance to medical imaging diagnostics and high-intensity digital transactions.

What this Experience demonstrate?

- **Proven Applicability**: Four9s delivers value in complex and regulated scenarios without being limited to a single industry.
- **Adaptable Depth**: Technical depth adapts to various objectives: continuity, performance, investigation, prevention, and operational learning.
- **Essential Support**: The diversity of clients confirms the relevance of this approach whenever SQL Server supports essential services or critical transactions.

FOUR KEY POINTS TO UNDERSTAND THE ENTERPRISE IMPACT OF FOUR9S

(1) When the problem appears

The first key moment occurs when an alert, degradation, or shift in behaviour demands separating the symptom from its root cause. Four9s brings together engine activity and system metrics into a single view to prevent fragmented investigations.

Key Insight: Detecting does not always mean understanding.

Second by second visibility

Processes, sessions, CPU, wait states, locks, TempDB, memory, and other signals are observed in a correlated manner.

At-a-glance context

The operator can identify which query, stored procedure, application, or session is associated with the detected behaviour.

What changes in practice?

- **Trend Verification**: Confirm whether the event is isolated or part of a wider trend.
- **Targeted Focus**: Prioritise where to investigate before navigating through multiple tools.
- **Faster Diagnosis**: Reduce the time between the initial alert and a substantiated technical hypothesis.

Four9s' Difference: We transform an alert into a context-rich starting point..



Gain complete visibility into your SQL Server environments with second-by-second insight.

Correlate infrastructure metrics, SQL Server engine activity, and business processes within a single interface to quickly identify resource-intensive queries, blocking processes, and application performance bottlenecks.

Business Benefit: Identify and resolve performance issues before they impact business operations

FOUR KEY POINTS TO UNDERSTAND THE ENTERPRISE IMPACT OF FOUR9S

(2) When Reconstructing What Occurred

Many incidents are no longer active when investigation begins. Four9s preserves environment behaviour and allows returning to a specific time window to examine the actual sequence of events.

Key Insight: The past must also be observable.

Historical replay

Replay the system second by second, with pause, fast-forward, rewind, and navigation to specific moments.

Before, during and after

Review how degradation started, which processes were involved, and how impact evolved.

What changes in practice?

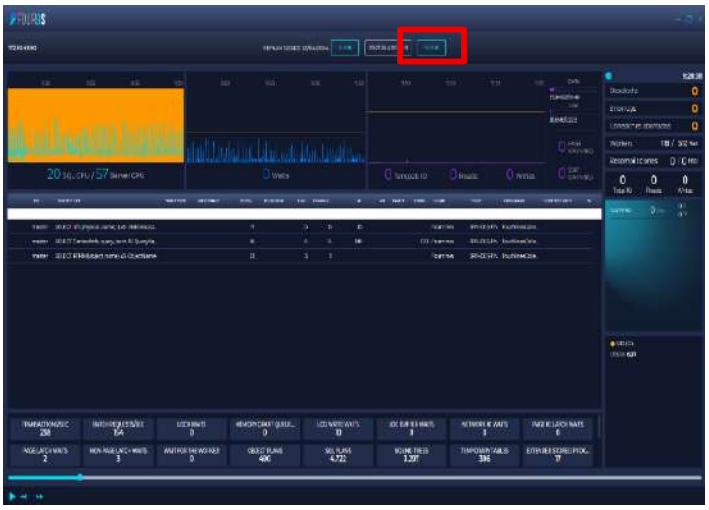
- **Off-Hours Incidents:** Investigate overnight, intermittent, or retroactively reported incidents.
- **Evidence Contrast:** Cross-reference user observations with stored technical evidence.
- **Fact-Based Analysis:** Prevent diagnostics from relying on isolated screenshots or incomplete memories.

Four9s' difference: We turn historical data into navigable evidence.

Replay past incidents as if they were happening in real time.

By capturing activity at one-second intervals, Four9s enables precise investigation of blocking events, CPU spikes, performance degradation, and other historical incidents.

Business Benefit: Drastically reduce the time required to diagnose and resolve complex issues



FOUR KEY POINTS TO UNDERSTAND THE ENTERPRISE IMPACT OF FOUR9S

(3) When seeking root cause

Once the critical moment is located, the difference lies in descending from general signals down to the object, statement, execution plan, or change that explains the behavior. Four9s guides this pathway without losing temporal context.

Key insight: Seeing the event is not enough: it must be explained.

Object analysis

Examine procedures, statements, resource consumption, execution plans, historical evolution, and code changes.

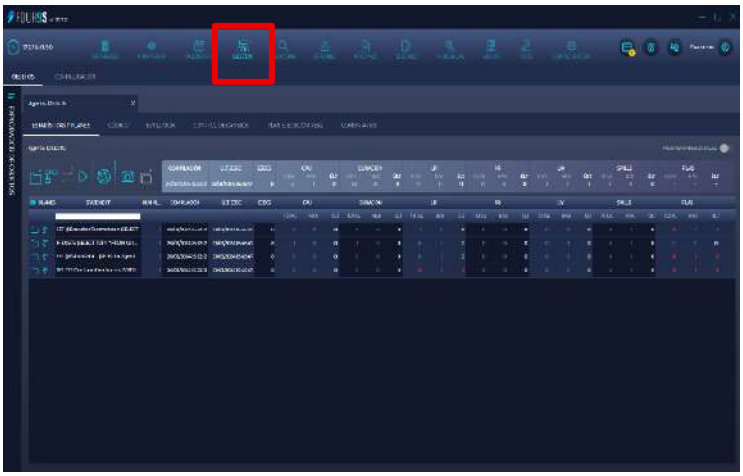
Temporal Comparison

Compare time slots and distinguish between volume increases, higher execution counts, or average performance degradation

What Changes in Practice?

- Resource Mapping: Relate spikes in resource usage directly to the responsible processes.
- Anomaly Identification: Identify plan changes, blocking, wait states, or anomalous patterns.
- Shared Ground: Provide a common baseline for DBAs, development, infrastructure, and operations teams.

Four9s' difference: We shorten the path between symptom and technical explanation in just a few clicks.



Analyse the behaviour of stored procedures, functions, and triggers over time.

Track performance trends, identify execution plan changes, and detect code modifications that may affect application stability and database efficiency.

Business Benefit: Accelerate root cause analysis and improve application

FOUR KEY POINTS TO UNDERSTAND THE ENTERPRISE IMPACT OF FOUR9S

(4) When anticipating and improving

Value does not end when an incident is resolved. Historical data, baselines, comparisons, and trends transform operational experience into prevention, optimization, and better-informed decisions.

Key insight: every incident should yield knowledge.

Operational learning

History helps recognize normal patterns, relevant changes, and conditions preceding degradation.

Continious improvment

Analysis of growth, indexes, statistics, jobs, incidents, and reports supports maintenance and capacity planning.

What changes in practice?

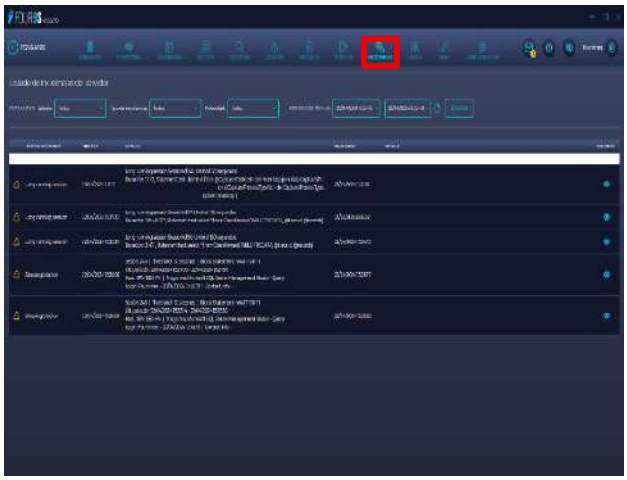
- **Objective baselines**: Build an objective benchmark of regular system behavior
- **Proactive detection**: Detect deviations before they escalate into major operational issues.
- **Evidence-based planning**: Plan capacity and optimization backed by accumulated evidence.

Four9s' difference: move from reacting to incidents to truly understanding and anticipating your environment.

Transform detected events into actionable operational workflows.

Configure alerts, automate incident creation, and access detailed diagnostics directly from the notification with a single click.

Business Benefit: Move from reactive troubleshooting to proactive operations management



Detect. Reconstruct. Explain. Anticipate.

Four9s integrates these four key phases into a specialized observability and diagnostic experience for Microsoft SQL Server.

The complexity of modern environments means detecting an incident is only part of the challenge. Understanding what occurred, accurately identifying its cause, and having sufficient evidence to make decisions remains a task that consumes time, resources, and specialized expertise.

Four9s was created specifically to help organizations bridge the gap between symptoms and explanations. Its approach combines specialized observability, historical context, and advanced diagnostic capabilities tailored exclusively to Microsoft SQL Server, enabling operational data to be transformed into actionable insight for investigation, optimization, and continuous improvement.

Proven experience across public administrations, financial institutions, insurers, industrial enterprises, logistics operators, tech companies, and mission-critical services demonstrates that while operational challenges vary, the need to quickly and accurately understand database behavior remains constant.

If any of the scenarios described in this document resonate with your organization, we would be delighted to share a detailed overview of the platform and demonstrate how our clients turn hours of manual investigation into seconds of automated diagnosis.

Let us connect and review a real-world use case together to evaluate how this approach can bring value to the SQL Server environments you manage today.

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