SingleStore™

Powering Operational Intelligence for Defense

Real-time data. Trusted decisions. Mission advantage.

The mission data challenge

Defense organizations operate in environments where **tempo, complexity, and consequence** continue to increase. Whether coordinating multi-domain operations, sustaining global logistics, or leveraging AI for decision support, success depends on **data that is timely, consistent, and trusted.**

Yet, most Defense data architectures cannot meet this demand. The legacy separation between **systems of record and systems of insight** slows decision-making and erodes confidence in analytics and AI outputs.

Common mission impacts include **delayed or reactive decisions** driven by stale data pipelines, **reduced operational tempo during** surges or disconnected operations, **inconsistent or mistrusted AI outputs** caused by fragmented data, and increased **governance complexity** due to excessive replication and data copies.

The result: commanders and analysts must act on incomplete or outdated situational awareness—an unacceptable risk in an environment where every second matters.

The imperative: Real time means n*ow*, not later

In the modern battlespace, **data must flow as fast as the mission itself.** Traditional architectures built around replication, staging, and batch analytics were designed for insight after the fact—not for real-time decision dominance. These architectures introduce:

Pipeline latency that turns live data into stale snapshots.

Brittle ETL processes that break under operational pressure.

High governance risk through countless synchronized data copies.

Performance drag during peaks where concurrency surges.

Defense decision makers need a **single, trusted operational picture**—delivered reliably and instantaneously across missions, domains, and echelons.

Beyond real-time analytics: Real-time investigation

Many data platforms claim “real-time analytics,” but what they actually deliver is real-time dashboards on pre-structured, pre-aggregated data. When mission context changes or analysts need to ask a new question, those systems stall. That requires new pipelines, new models, or manual data reshaping.

SingleStore goes further. Its unified execution engine enables **live, ad-hoc investigation of operational data without replication or delay.** Analysts, data scientists, and AI assistants can query live mission data in any dimension, at any time, while operations continue uninterrupted.

This flexibility transforms data from static situational reporting into interactive operational decision support. It empowers mission teams not just to see what is happening, but to immediately explore why and decide what happens next — all within a trusted, governed data environment.

The SingleStore advantage

SingleStore is a unified data engine that enables **operational, analytical, and AI workloads** to run on the **same authoritative live data**, with predictable performance and built-in governance. This unified execution model delivers three mission-critical outcomes:

1

Accelerate operational decisions
Bridge the gap between data events and decision execution. Analytics, AI, and operators all work from the same real-time data pipelines—no replication, no lag.

2

Assure trust and control

Centralize data lineage and enforce governance policies at the execution layer. Single source of truth means fewer copies, lower risk, and simplified accreditation and audit.

3

Sustain predictable performance at scale
Maintain deterministic latency even during surge conditions or tactical disconnections. Thousands of concurrent users and AI agents receive consistent responses.

Together, these capabilities transform how the Defense enterprise acts on data—enabling **timely, defensible, and data-driven decisions**.

Translating capabilities into mission impact

These mission-aligned outcomes reflect real operational constraints and measurable impact—directly supporting decision advantage, readiness, and resilience.

Mission area	Operational need	SingleStore impact
Readiness and sustainment	Integrate live equipment, personnel, and supply data to predict and prevent downtime.	Unified view reduces unplanned maintenance and elevates mission-capable rates.
Operations and mission planning	Maintain real-time situational awareness across domains and units.	Shortens time from observation to action through live, trusted data feeds.
Logistics and supply chain	Adapt to supply chain disruptions or mission reprioritization.	Aligns inventory, movement, and demand signals in real time, eliminating reconciliation lag.
AI-assisted workflows	Provide AI agents and copilots with current operational context.	Ensures AI-generated recommendations reflect reality—not stale summaries.
Intelligence and analysis	Fuse diverse data streams for time-sensitive targeting and rapid assessment.	Enables analysts to query, visualize, and model live data with low-latency responsiveness.

Why SingleStore is different

Many vendors promise “real time.” SingleStore **delivers it deterministically** with an architecture designed for **mission assurance under load**.

Critical capability	Why it matters for defense
Unified execution engine	Operational, analytical, and AI workloads access the same data —no replication or sync delays.
Deterministic latency	Performance remains predictable even under extreme concurrency and data surges.
Security and governance built in	Access control and lineage live at the data layer, supporting Zero Trust and simplified ATO.
Deployment consistency	Deploy seamlessly on-prem, in IL5+ clouds, or at the tactical edge—identical code path, same performance.

This combination resolves the structural constraints seen across legacy architectures that rely on fragile pipelines and duplicated stores.

Engineered for security and governance

In Defense operations, **security, governance, and accountability** are non-negotiable. SingleStore embeds these principles into the architecture—not as afterthoughts, but as core capabilities.

By minimizing data duplication, the platform reduces exposure points and replication risk, while built-in data lineage enables continuous audit and provenance tracking. Role-based access control (RBAC) and fine-grained permissions align with Zero Trust Data principles, and consistent enforcement across environments simplifies compliance and accreditation efforts.

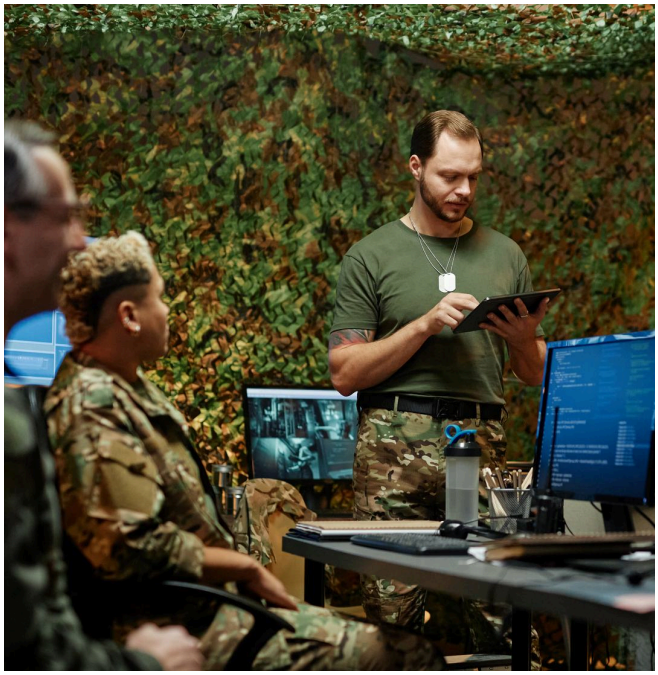
Together, these attributes directly support **mission trustworthiness** and defense mandates for **data-centric security models** under DoD CIO's Zero Trust framework.

Deploy anywhere the mission demands

Defense missions operate across every environment—from enterprise centers to the tactical edge. SingleStore's consistent execution layer runs across:

- **On-premise classified networks** and secure enclaves.
- **Cloud or hybrid cloud** deployments within authorized government regions.
- **Disadvantaged or intermittent connectivity environments** at the edge.

Whether running in IL6 SCIFs or forward-deployed systems, SingleStore enables c**onsistent, predictable performance** without redesigning architectures or compromising security.



Alignment to defense modernization priorities

SingleStore directly supports the data fabric and interoperability goals of key modernization programs and, by integrating within these frameworks, amplifies—not replaces—existing Defense data modernization investments:

- **CJADC2** – Provides real-time, multi-domain data synchronization and sense-making.
- **ADVANA and data mesh initiatives** – Unifies siloed data sources under governed, queryable live data.
- **Zero Trust architecture goals** – Centralizes policy enforcement and telemetry at the data layer.
- **AI and autonomy acceleration** – Ensures machine learning models act on current, validated data, reducing verification workload.

From assessment to operations: Path to impact

Every SingleStore Defense engagement begins with mission-oriented steps that de-risk adoption and accelerate deployment, and these sessions ensure your path to operational intelligence is **low-risk, rapid, and outcomes-driven**.

1

Operational data readiness assessment
Identify where data latency and fragmentation impact decisions.

2

Reference architecture session
Design a scalable, secure execution model aligned with enterprise and edge environments.

3

Use case prioritization workshop
Map critical mission workflows to measurable readiness and decision metrics.

Call to action: Achieve decision advantage

Connect with the SingleStore team — or one of our trusted Defense integration partners — to:

- **Validate your current data execution architecture** and identify latency chokepoints.
- **Align governance, security, and performance** with mission and accreditation requirements.
- **Accelerate analytics and AI adoption** on authoritative, live data across all domains.

In summary

Data fragmentation is slowing decisions and eroding trust across Defense missions. SingleStore addresses this by unifying live data execution so leaders and systems can act on trusted, real-time insight.

The result is improved mission tempo, higher confidence in decisions, and greater operational resilience, all delivered through a secure, deterministic platform that can be deployed anywhere missions operate. The recommended next step is a readiness assessment and mission architecture workshop to align these capabilities with your specific operational needs.

Learn more

To explore how SingleStore can enhance operational intelligence across your defense missions, get in touch.

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