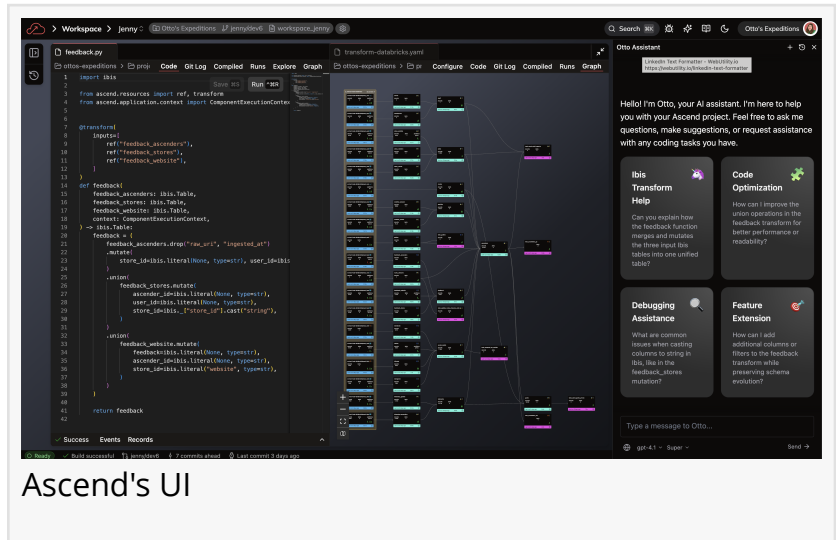


Ascend Eliminates Billion Dollar Schema Evolution Problem with Revolutionary Smart Schema Management

Breakthrough "Store Native, Resolve at Read" Technology Ends Costly Data Migrations and Pipeline Downtime

PALO ALTO, CA, UNITED STATES,
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Ascend.io, the Agentic Data Engineering platform, today announced Smart Schema Management, a revolutionary approach that eliminates the traditional pain points of schema evolution without requiring costly data migrations or pipeline downtime.



Ascend's UI

The breakthrough technology addresses what industry research identifies as a [\\$400 billion annual problem for Global 2000 companies](#) struggling with down time, [significantly contributed to by schema-related failures](#).

“

We've solved one of data engineering's most persistent and expensive problems. Schema changes that previously required days of work now happen completely transparently.”

Sean Knapp, Founder & CEO

Unlike traditional schema management approaches that force impossible trade-offs between data consistency, operational efficiency, and development velocity, Smart Schema Management introduces a fundamentally different philosophy: store each data source in its native schema and resolve differences dynamically at read time. This eliminates the need for expensive migrations, coordination overhead, and the operational risk that has plagued enterprise data teams for decades.

"We've solved one of data engineering's most persistent and expensive problems," said Sean Knapp, CEO of Ascend. "Schema changes that previously required days of planning, migration work, and careful coordination now happen completely transparently. Teams no longer have to

choose between moving fast and maintaining data reliability."

ENDING THE MIGRATION NIGHTMARE

Traditional schema management forces data teams into painful scenarios: a single field addition can trigger three-day migration windows for core analytics tables, blocking data science teams and darkening critical dashboards.

Smart Schema Management eliminates these scenarios entirely through its innovative architecture:

- Zero Migration Required:

Data files are never modified, eliminating migration risks, costs, and downtime

- Automatic Conflict Resolution:

Multiple systems can write different schemas simultaneously without coordination

- Self-Healing Recovery:

Problematic files can be removed with automatic schema correction

- Cross-Format Compatibility:

Works seamlessly across Parquet, Avro, JSON, CSV, and other structured formats

REVOLUTIONARY TECHNICAL APPROACH

Smart Schema Management operates on a deceptively simple principle that delivers profound operational benefits. When data arrives, it's stored exactly as received in its original format. When queries are executed, the system dynamically creates the "most generous union" of all schemas encountered, providing a unified view without ever touching the underlying data files.

The system follows intelligent type resolution rules that preserve data integrity while maximizing compatibility. Safe type widening (integer to float) happens automatically, while incompatible types are handled gracefully with full transparency and alerting.

"Think of it like version control for schemas," explained Oliver Hsu, Engineer at Ascend. "Git doesn't rewrite your entire repository history when you merge branches—it creates a unified view. Smart Schema does the same thing for data, creating queryable consistency without destructive operations."

DISTRIBUTED-FIRST DESIGN FOR MODERN DATA ARCHITECTURES

Smart Schema Management is architected specifically for the distributed, high-volume data environments that power modern enterprises. The system handles hundreds of concurrent writers introducing schema changes simultaneously, making it ideal for organizations processing

massive data volumes from diverse sources.

Key technical advantages include:

- Metadata-Driven Operations:

Schema resolution happens entirely through fast metadata operations, not expensive data transformations

- Distributed Zero-Coordination:

Multiple processors can write data independently without requiring coordination

- Real-Time Processing:

Optimized for streaming data pipelines where schemas evolve continuously

INDUSTRY VALIDATION AND MARKET TIMING

Smart Schema Management represents the next evolution in data platform design, building on successful metadata-driven approaches pioneered by Apache Iceberg and Delta Lake for analytical workloads. However, Ascend's solution extends these concepts to real-time data pipelines and cross-format compatibility, addressing gaps that existing table formats cannot solve.

Smart Schema Management is generally available to all Ascend customers as part of the company's Agentic Data Engineering platform.

ABOUT ASCEND

Ascend.io is on a mission to make data engineering delightful. The Ascend Data Automation Cloud empowers data teams to build, automate, and optimize data pipelines with ease. Combining a powerful metadata core, advanced automation, and integrated AI agents, Ascend eliminates engineering toil, enabling teams to focus on innovation and delivering data faster than ever before.

By unifying data engineering workloads across the entire data lifecycle, Ascend enables organizations to reduce operational overhead and enhance collaboration among data professionals. With features like DataAware orchestration, dynamic workload optimization, and end-to-end data observability, Ascend.io helps organizations power their applications, enhance decision-making, and achieve impactful business outcomes. Learn more on our website:

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