

Preparing Enterprise Infrastructure and Staging On-Premise Workloads for AI

An executive guide to trusted data, high-concurrency storage, and production-ready AI

Featuring Dell PowerScale and the Dell AI Data Platform

THE AI REALITY CHECK

The Model Is Rarely The First Problem

Enterprise AI breaks down when fragmented data and legacy storage cannot supply trusted context at the speed workloads demand.

- Data is scattered across finance, operations, sales, e-commerce, and unstructured repositories.
- Competing definitions create multiple versions of truth.
- Governance, lineage, and access controls are inconsistent.
- Storage bottlenecks keep AI compute waiting for data.

The consequence

Confidently wrong answers, stalled pilots, and infrastructure that cannot scale into production.



A PRACTICAL READINESS FRAMEWORK

AI Readiness Has Three Interdependent Layers

A production architecture must align meaning, movement, and performance.

1. Trusted meaning

- Business data models
- Data glossary and ownership
- Ontology and relationships
- Role-based access
- Lineage to the source

2. Governed movement

- Secure ingestion
- Clean and conformed staging
- Gated pipeline execution
- Reusable transformations
- Business-ready distribution

3. Infrastructure performance

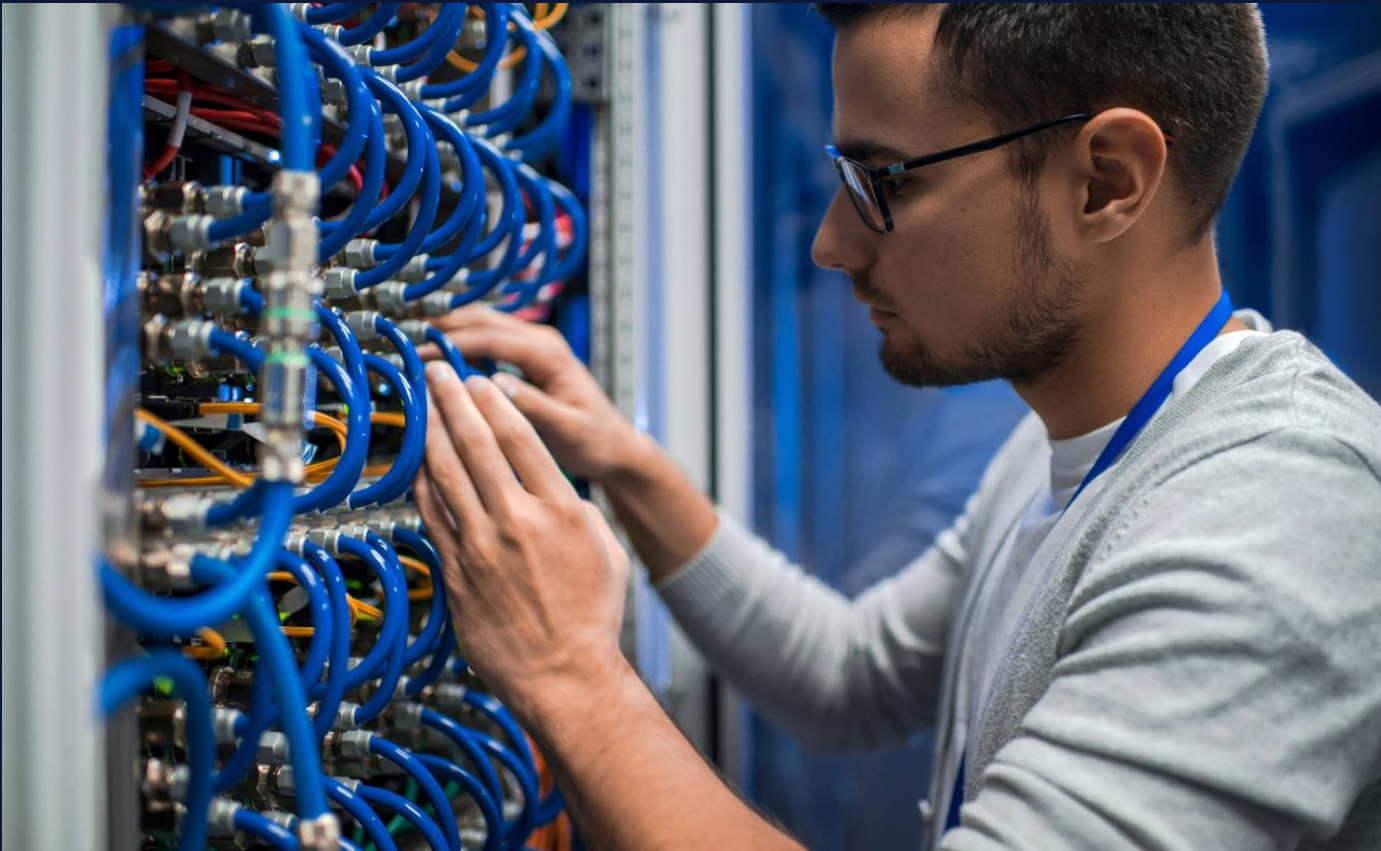
- Unified unstructured data
- High-concurrency access
- Scalable throughput
- Highly available staging
- Efficient delivery to AI compute

READINESS OUTCOME AI receives the right data, with the right context, through an architecture designed to sustain the workload.

THE HIDDEN BOTTLENECK

AI Compute Is Only As Productive As The Data Path Feeding It

The architecture must sustain ingestion, preparation, retrieval, training, checkpointing, and inference without creating operational friction.



Capacity is not enough

AI pipelines require sustained throughput and concurrent access, not simply more terabytes.

Silos increase delay

Copies, exports, and one-off scripts slow refresh cycles and weaken governance.

Compute waits

When storage cannot sustain the workload, expensive acceleration resources remain underfed.

THE FOUNDATIONAL STORAGE ARCHITECTURE

Dell Powerscale Creates A Unified Data Layer For AI

PowerScale anchors the on-premise staging environment and supplies unstructured data to analytics and AI pipelines.

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PowerScale

Unified file and object storage for AI and unstructured data

Consolidate unstructured data

Reduce copies and fragmented repositories.

Scale performance and capacity

Expand the data foundation as demand grows.

Support concurrent AI access

Feed data-intensive pipelines and accelerated compute.

Maintain an on-premise staging ground

Keep high-value data close to governance, applications, and infrastructure.

REFERENCE ARCHITECTURE

From Enterprise Data To Production AI

A governed flow combines the original Collection, Staging/Core, and Infomart model with an AI-ready infrastructure layer.



Controls across every stage

Security • Data Quality • Access • Business Definitions • Monitoring • Recovery

Gated stage chaining protects downstream reports and AI outputs when upstream processes fail.

OPERATIONALIZING TRUSTED DATA

The Data Platform Must Define What Data Means And How Systems Act On It

Infrastructure performance and semantic trust should be designed together.

Business data model

Defines the entities and relationships the organization uses.

Role architecture

Ensures administrators, contributors, and consumers access the proper data.

PowerScale foundation

Provides the persistent, scalable storage layer for high-value enterprise data.

Glossary and ontology

Adds plain-language definitions, ownership, rules, and conceptual relationships.

Lineage and monitoring

Traces issues to the source and prevents incomplete data from reaching production.

AI-ready distribution

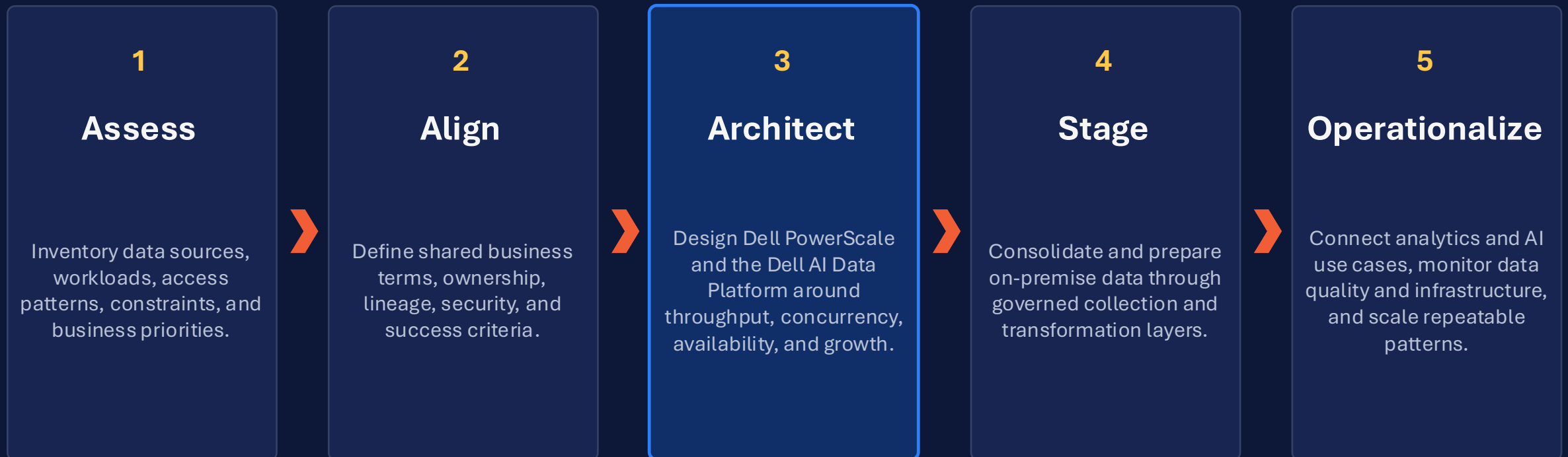
Delivers trusted data to agents, models, applications, reports, and dashboards.

Business outcome: teams stop debating whose number is right and start making decisions with shared context.

ELEVATE'S INTEGRATION APPROACH

Move From Readiness Assessment To A Production Operating Model

Elevate connects data engineering, governance, storage, and AI infrastructure so the platform is designed as one system.



One partner across the data and infrastructure lifecycle

INFRASTRUCTURE ASSESSMENT

Five Questions To Answer Before Scaling An AI Pilot

The assessment establishes whether the data foundation can support production demands.

- 1 Where does high-value structured and unstructured data live?
- 2 Which definitions, owners, and access policies establish trust?
- 3 What throughput and concurrency will ingestion, RAG, training, and inference require?
- 4 How will the staging layer remain available, secure, and recoverable?
- 5 Which workloads should remain on premises, integrate with cloud services, or use a hybrid pattern?

OUTPUT: PRIORITIZED AI INFRASTRUCTURE ROADMAP

YOUR NEXT STEP

Schedule an AI Infrastructure Assessment

Elevate will evaluate your data landscape, storage architecture, concurrency requirements, governance model, and on-premise staging strategy.

LET'S EVALUATE YOUR READINESS

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**Dell PowerScale + Dell AI Data
Platform**