

# **Data Management**

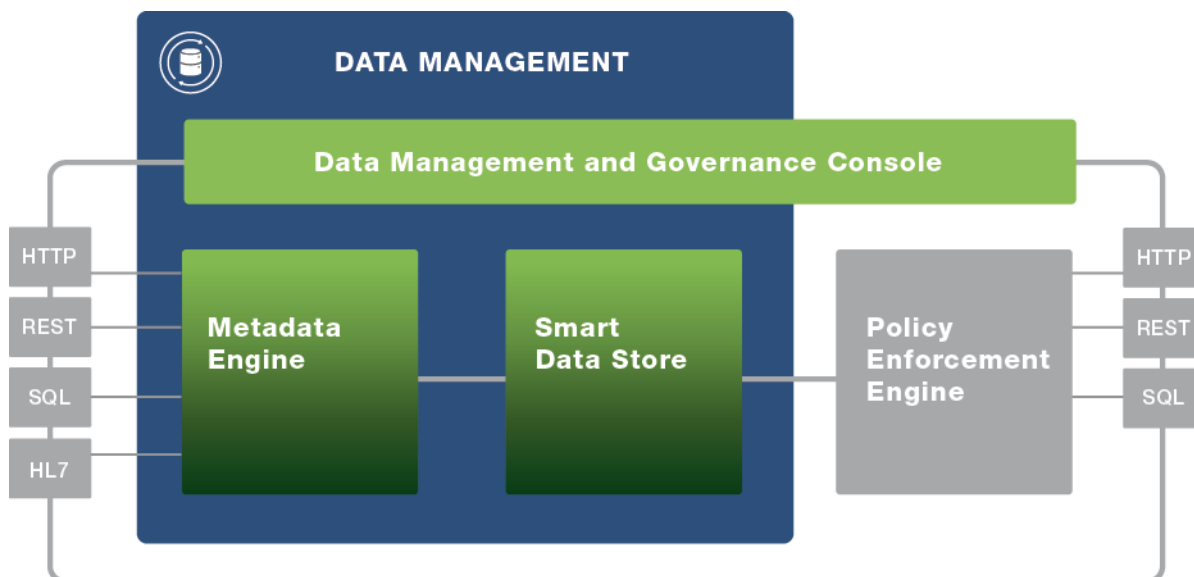
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## Data Management

Proper management of data through its lifecycle is critical as volumes grow and variety increases.

PHEMI Central includes advanced data management features such as version control, rollback, and retention rules. A sophisticated metadata framework allows information to be managed at the field level throughout its lifecycle. This family of features brings the data management capabilities of enterprise-grade traditional data warehouses to big data.



## Metadata Framework

The power and sophistication of PHEMI Central's data management capability arises from its powerful metadata framework, which extends across the system.

Metadata is applied on ingestion and enriched by cataloging, indexing, and invoking Data Processing Functions. The result is data description at the element level that embeds the rules and policies governing the element, as well as configured properties such as the data collection ownership, retention time (time to live), and what visibility the element should have. This means that de-identification, encryption, and masking, and other privacy restrictions can be enforced per data item, at the cell level.

PHEMI Central's metadata framework, with its distributed key-value store means that system designers do not have to worry how to structure the system. PHEMI Central structures data automatically, on the fly. Data scales to large volumes while still providing fast access, and changes to requirements do not necessitate changes to design of the data store. Users and integrated applications benefit from the metadata because they can use simple queries based on the properties of the data, rather than having to navigate complex directories or schemas to find the data they seek.

## Lifecycle Management

PHEMI Central uses organization-specific retention rules to manage digital assets throughout their entire life cycle, from data creation through curation, usage, and end of life.

Retention rules are captured in the Management and Governance Console, and from that information together with the time of ingestion, the system calculates a time to live for every data element. Retention rules also prevent users from deleting data during the configured retention period and helps automatically de-identify, delete, or otherwise process information when the retention period does expire.

## Data Immutability

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PHEMI Central stores all data in a write-only data system that is never modified.

Data is only deleted when its precalculated time to live expires, as derived from the organization's retention policy. This approach provides assurance of data integrity for audit and compliance requirements.

## Version Control

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PHEMI Central has robust version control and rollback capabilities to ensure data is never lost, corrupted, or overwritten.

The system keeps a history of data revisions and allows administrators to trace changes over time, including the ability to audit who made changes and when, plus the ability to roll back changes if necessary. This design provides a complete history for audit and compliance requirements.