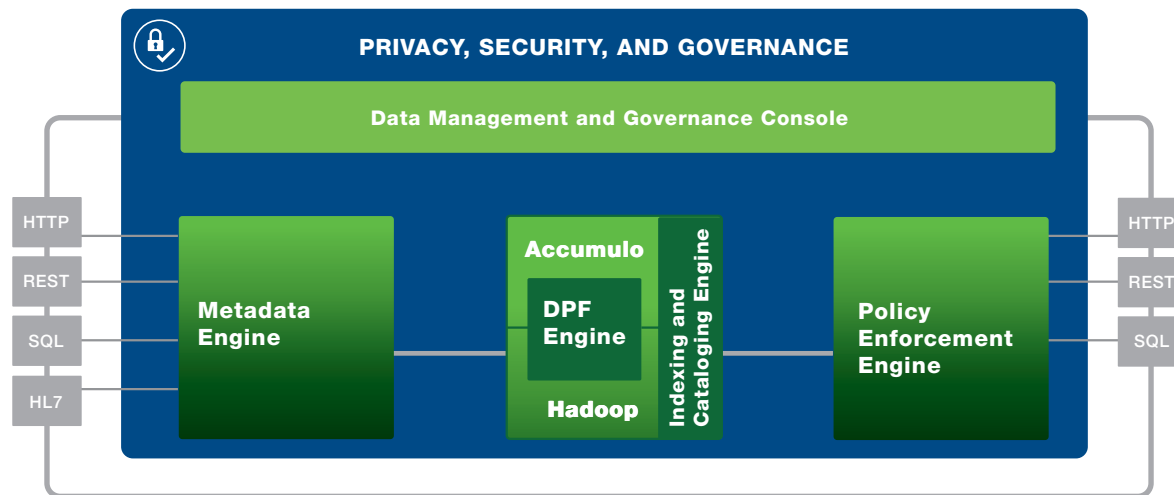


Privacy, Security, and Governance

Protect Sensitive Information at Scale

Information governance is about controlling an organization's data. The data may be sensitive; or perhaps it is important that the data be absolutely accurate; or perhaps the organization must achieve legislative and compliance targets. Data governance includes the process and policies around the protection, curation, and access to data. Data governance encompasses all of privacy protection, data security, and data audit. PHEMI Central helps organizations achieve compliance objectives by providing an industry-pioneering set of capabilities to manage the privacy, security, and governance of data. These capabilities are fully configurable and are automatically enforced throughout the data lifecycle.



Privacy is Built Right Into PHEMI Central Design

Privacy by Design Principles	PHEMI Central Implementation	PHEMI Design Innovation
Proactive, not reactive	Metadata enables policies to define data access	Data firewalls protect data internally, not just externally Rely on automated operational policies, instead of manual processes Proper management and control enables positive use of private data
Privacy as default setting	Assets are immutable. Policies required to access data	
Privacy embedded in design	Metadata and computational access are the core of the system	
Full functionality — positive sum, not zero sum	Data governance policies enable data use/analysis and do not create restrictions	
End-to-end security — full lifecycle protection	Digital assets self-specify how they are managed and handled	
Visibility and transparency — keep it open	Metadata and auditing provide accountability	
Respect for user privacy — keep it user-centric	Data steward defines and sets policies on use	

Privacy by Design

PHEMI Central was built from the ground up on an **innovative Privacy by Design framework** to define, manage, and enforce data sharing agreements and privacy policies. Because PHEMI Central's privacy, security, and governance features are one coordinated design across the system, you don't have to rely on a cobbled-together mish-mash of security mechanisms to protect your organization's sensitive data.

Privacy, Security, and Governance continued

Build Your Access Policies Quickly and Easily

PHEMI Central tags sensitive data to identify its visibility, captures user authorizations, and combines them in simple, powerful access rules for attribute-based access control.

Role Based Access Control

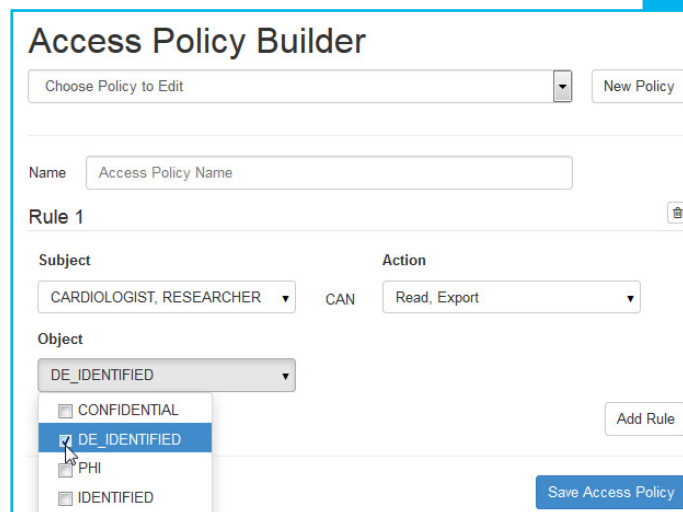
User roles determine what operations a user can perform. For example, only users with a role of administrator can configure the system, while only users with a role of data analyst can execute or export a dataset.

Attribute Based Access Control

Users can be tagged with attributes that describe their level of authorization. Data can be tagged with attributes that describe its level of sensitivity or its requirements for privacy. Together, these two attributes can be combined to allow sophisticated access privileges to identified, unidentifiable, de-identified, or anonymized data.

Audit Log

PHEMI Central maintains complete audit logs of system and user operations. They include all create/modify/delete operations, along with a record of all queries made to the system through the REST interface. These log files are completely tamperproof for all users. Approved users can filter log files and export the information for downstream analysis and compliance reporting.



The 'Access Policy Builder' interface shows a form for creating or editing an access policy. It includes a dropdown for 'Choose Policy to Edit' and a 'New Policy' button. The 'Name' field is labeled 'Access Policy Name'. Under 'Rule 1', there are sections for 'Subject' (set to 'CARDIOLOGIST, RESEARCHER'), 'Action' (set to 'CAN Read, Export'), and 'Object' (a dropdown menu with options: CONFIDENTIAL, DE_IDENTIFIED (selected), PHI, and IDENTIFIED). There is an 'Add Rule' button and a 'Save Access Policy' button.

Build Access Policies

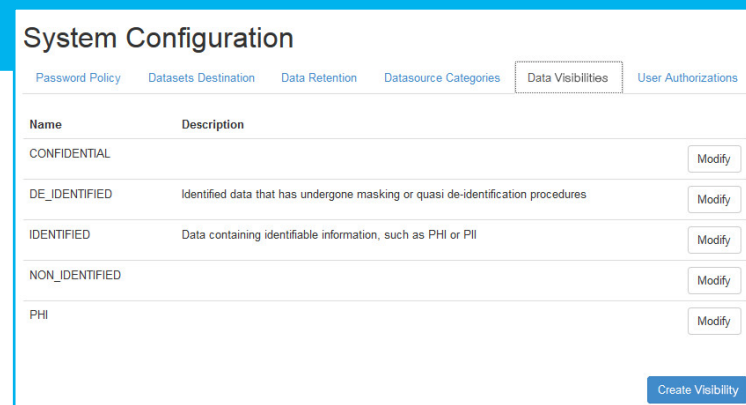
Encryption at Rest

For performance reasons, it is usually unnecessary to encrypt all data. Instead, encryption of only personally identifiable information is advised. PHEMI Central allows you to specify what data must be encrypted when at rest within the system.

Encryption in Motion

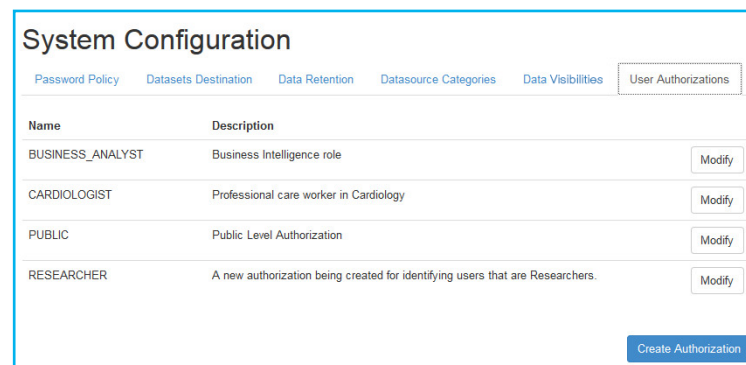
PHEMI Central can encrypt links from data sources and to consuming applications and analytics tools using either Secure Sockets Layer (SSL) or Transport Layer Security (TLS).

Privacy, security, and governance features are one coordinated design across the system — no need for a cobbled-together mish-mash of security mechanisms.



The 'System Configuration' interface for 'Data Visibilities' shows a table with columns 'Name' and 'Description'. The table lists: CONFIDENTIAL, DE_IDENTIFIED (Identified data that has undergone masking or quasi de-identification procedures), IDENTIFIED (Data containing identifiable information, such as PHI or PII), NON_IDENTIFIED, and PHI. Each row has a 'Modify' button. There is a 'Create Visibility' button at the bottom right.

Define Data Visibilities



The 'System Configuration' interface for 'User Authorizations' shows a table with columns 'Name' and 'Description'. The table lists: BUSINESS_ANALYST (Business Intelligence role), CARDIOLOGIST (Professional care worker in Cardiology), PUBLIC (Public Level Authorization), and RESEARCHER (A new authorization being created for identifying users that are Researchers). Each row has a 'Modify' button. There is a 'Create Authorization' button at the bottom right.

Define User Authorizations