PHEMI Central® Precision Medicine Edition

A big data management system for genotypic and phenotypic information at the whole genome level, purpose-built for privacy, performance, and governance

Customers in precision medicine need a solution that presents a unified view across genotypic and phenotypic information at the whole genome level for thousands of samples. PHEMI Central Precision Medicine Edition offers a ready-to-use environment for collection, curation, and analysis of clinical data and billions of genomic observations, while protecting privacy.

Centralize Data from Silos

The PHEMI system collects all organizational data assets scattered across different applications and databases into a central repository where it is annotated, indexed, and made available for analysis, reporting, sharing, and collaboration.

Curate and Prepare for Analytics

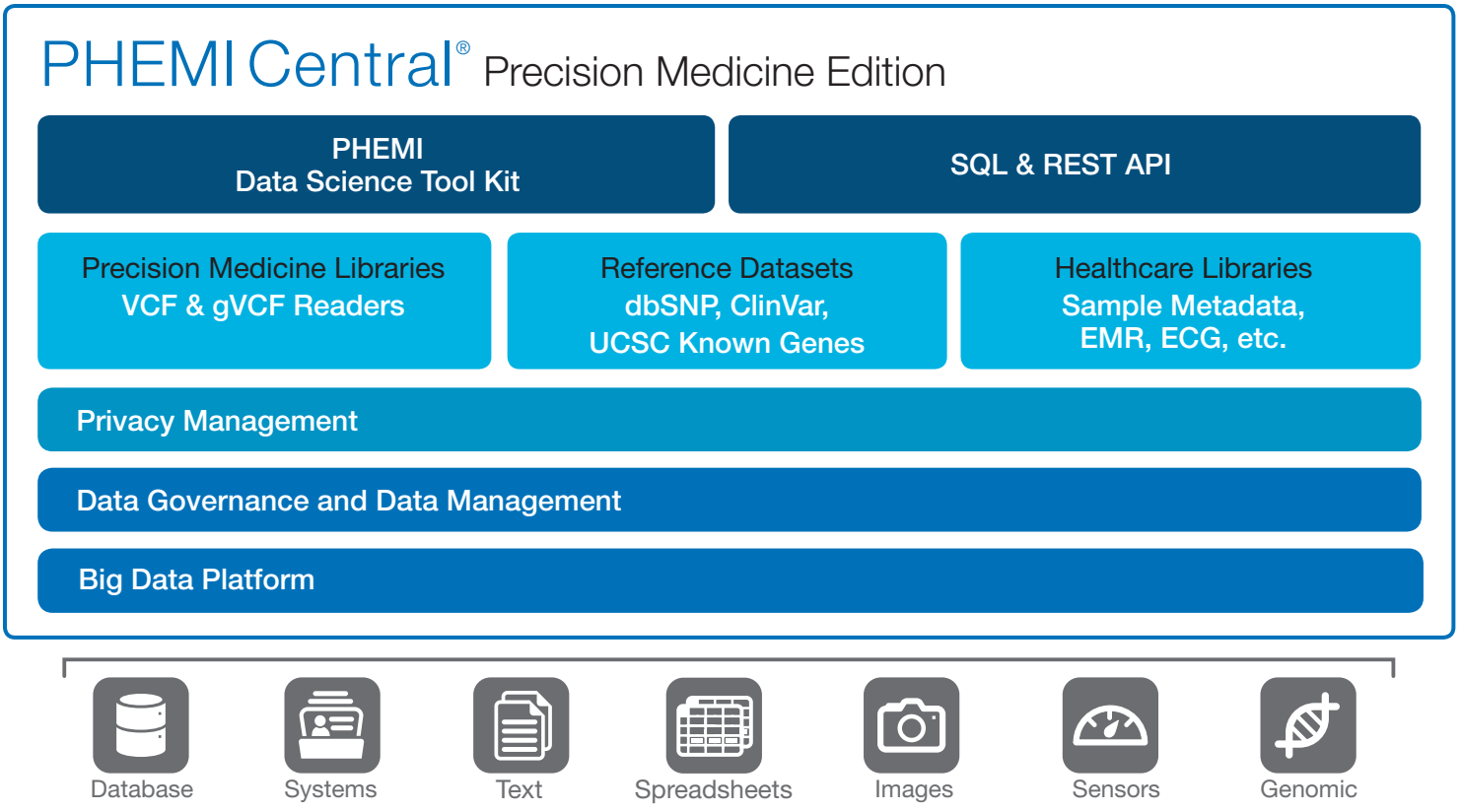
The PHEMI system automatically indexes imported genomic, reference, and phenotype files for sub-second query performance for common access patterns. With support for keyword, graph, and geospatial indexes you have the flexibility to catalog and find just the data you need—at speed.

Collaborate with Confidence

Share data with researchers, physicians, geneticists, and collaborators knowing that privacy, security, and access rules are universally and consistently enforced for each user and data element, reducing the risk of data breach.

Scale Economically

PHEMI software leverages proven Hadoop big data technology, so you can scale performance and capacity using commodity servers and inexpensive disk drives, lowering your overall cost of ownership by 60% compared to a traditional data warehouse approach. Moreover, built-in fault-tolerance capabilities keep your system up and running when a hard drive or an entire node fails.



PHEMI® Big Data. Shared. Simply. Securely.

A unified view across the genotype and phenotype

Our customers in precision medicine have told us they need two key things: a unified view across genotypic and phenotypic information at the whole genome level, and the ability to query that data at speed. With PHEMI Central Precision Medicine Edition, customers get interactive performance across the genotype and phenotype at scale, regardless of the amount and types of data in the system.

Simplify Your Infrastructure

PHEMI Precision Medicine Edition helps you simplify your bioinformatics infrastructure, eliminating proliferation of databases and isolated data sources, multiple bolt-on data management software packages, and specialized hardware. Data analytic workloads run *in situ* on the PHEMI cluster, without transferring large volumes of data to external system, protecting privacy and delivering faster performance.

Get Performance at Scale

VCF Import: 86 sec/VCF (amortized)

gVCF Import: 77 sec/gVCF (non-amortized)

Query by RCV Accession: <1 sec (13 billion variant observations)

Query by Gene + Depth + Tumor Status: <1 sec

Query by CHR1 + 0/1 + experiment ID + Depth + Site: 34 sec

Query performance measured on a dataset with 13 billion variant observations on an 18 node cluster with 192 CPU cores, 640GB RAM, and 10GbE interconnect

Integrate with Your Infrastructure

PHEMI Central Precision Medicine Edition integrates with your existing bioinformatics and datacenter infrastructure. Users are authenticated against your existing LDAP directory. Standard interfaces allow you to quickly and easily work with your existing tools and remain confident that as new tools evolve, PHEMI Central Precision Medicine Edition will seamlessly adapt.

Choose Your Deployment Type

PHEMI Central Precision Medicine Edition is available preinstalled on the Oracle Big Data Appliance, as on-premise software, or as a managed cloud service, depending on your IT preferences.

Key Benefits

1. Enrich and annotate genomic data from multiple sources.
2. Consolidate data silos.
3. Enable collaboration across researchers, clinicians, and other authorized users.
4. Enforce privacy, security, and data sharing policies.
5. Eliminate performance bottlenecks.
6. Free up scarce IT resources.
7. Adapt to quickly changing requirements.
8. Use standard analytics tools.
9. Shorten your implementation time by leveraging the simplicity of the PHEMI Central Precision Medicine Edition.

cloudera HORTONWORKS amazon web services Microsoft Azure ORACLE BIG DATA APPLIANCE OPTIMIZED

Contact us at info@phemi.com for a demo or to discuss your precision medicine data management needs.

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