

TRANSFORM RESEARCH PRODUCTIVITY AND COLLABORATION WITH HPE EZMERAL RUNTIME ENTERPRISE AND FLYWHEEL

Accelerate your R&D with streamlined data management, analytics, and safe sharing

Data is key to healthcare innovation. To be useful, data needs to be aggregated in one place, curated to common standards and easily and securely shareable with collaborators. Given the volume and complexity of medical data, making this happen can be incredibly time consuming.

Flywheel is a cloud-based research data platform that streamlines data ingest from multiple sources, curates it to common standards, automates processing and machine learning pipelines, and provides secure collaboration in life sciences, clinical, and academic research.

[HPE Ezmeral Runtime Enterprise](#) makes it easy to build industry-scale data analytics applications. [HPE Ezmeral Runtime Enterprise](#) also includes a multitude of other easy-to-use features to simplify

app modernization, data and model collaboration, policy management, and runtime security. A variety of data access options are also supported including native access within the [HPE Ezmeral Runtime Enterprise](#) across tenants, including external data in data lakes or object stores, and getting from edge to cloud with the embedded [HPE Ezmeral Data Fabric](#).

The combination of Flywheel's data management and collaboration platform and HPE Ezmeral Runtime Enterprise enables academic, clinical, and life sciences organizations to accelerate their R&D objectives. Now, researchers can streamline data curation, large-scale processing, and safe sharing with a robust, distributed ML framework solution on their private cloud or on-premises servers.

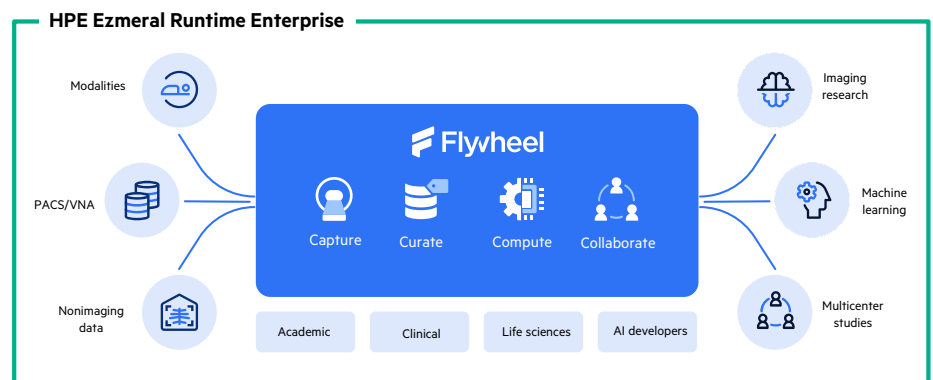


FIGURE 1. Flywheel—the research data platform

KEY CAPABILITIES OF FLYWHEEL

- **Streamlines capture of any medical data:**

Flywheel enables rapid and automated data capture for both retrospective and prospective data utilizing connectors for imaging modalities, picture archiving and communication system (PACS), raw data, or file system. It is designed for multimodality research and supports a wide variety of data types including imaging, electronic medical record (EMR), digital pathology, omics, and more.

- **Automates data curation for easy search and reuse across your institution:**

Flywheel provides a standardized research data model to keep you organized and consistent but offers the extensibility to meet the needs of any project. Our data curation platform automates quality assurance and employs data validation tools to help ensure that data is complete and consistent.

- **Integrates image processing pipelines, machine learning workflows, and analytics:**

Flywheel automates data preprocessing workflows and analytic pipelines via standard container-based applications. We provide open APIs and SDKs to enable rapid integration with existing tools and pipelines. Flywheel records derivative information when gears are run to support the consistency and reproducibility of a project.

- **Empowers safe collaboration and sharing:**

Flywheel's safe, access-controlled projects allow data and algorithm sharing with internal and external partners. Our federated identity service makes it easy to invite collaborators to your project while helping ensure proper security.

- **Enables data privacy and regulatory compliance:** Flywheel's safe projects enable you to manage collaboration in compliance with Institutional Review Boards (IRB), Health Insurance Portability and Accountability Act (HIPAA), General Data Protection Regulation (GDPR), and 21 Code of Federal Regulations (CFR) Part 11. Our audit trails, digital signatures, and approval workflows enable tracking and authorization.

KEY CAPABILITIES OF HPE EZMERAL RUNTIME ENTERPRISE

- **Offers integrated platform for AI, Big Data analytics, and data science:**

Purpose-built for Big Data (large scale) and/or AI applications—including data science, analytics, ML, and deep learning (DL)—using enterprise-grade security, networking, and support for a variety of local and remote storage options.

- **Allows for on-premises and/or on the public cloud:** Can be deployed on-premises, in the public cloud, or in a hybrid environment that includes both public cloud and on-premises resources.

- **Enables compute and storage separation:** Decouples analytical processing from data storage, giving you the ability to independently scale compute and storage capacity instantly on an as-needed basis. This enables more effective utilization of infrastructure resources and reduces overall costs.

- **Provides superior performance:** Provides storage I/O optimizations to deliver data to Big Data and AI applications without the penalties commonly associated with virtualization and containerization or the separation of compute and storage resources. The CPU cores and RAM in each host are pooled and then partitioned into virtual resource groups based on tenant requirements.

- **Implements multitenancy and enterprise-grade security model:**

Integrates with enterprise Lightweight Directory Access Protocol (LDAP) and Active Directory authentication systems. Administrators can create groupings of

users and resources that restrict access to jobs, data, or clusters based on department membership and/or roles. The result is an integrated, secure, multitenant infrastructure.

WHY FLYWHEEL ON HPE EZMERAL RUNTIME ENTERPRISE?

- **Do AI at scale:** Flywheel is an industry-leading bioinformatics solution that combined with HPE Ezmeral Runtime Enterprise accelerates discovery and development of trusted, production-ready models at scale.
- **Keep data safe:** Keep your healthcare records safe with HPE Ezmeral Runtime Enterprise and its ability to deploy on private cloud or on-premises servers to meet security and compliance needs and GDPR. With this option, your confidential data is fully in-house.
- **Boost collaboration:** Take advantage of a safe collaboration in life sciences, clinical, and academic research using data from multiple research locations and hospitals without any risk to your data. HPE Ezmeral Data Fabric unifies data from any source into a single database and then democratizes it with self-service access to trusted data. A data fabric operationalizes data, so it can be used across multiple use cases and processes no matter where the data is located.
- **Transform team productivity:** Empower your data scientists to focus on higher value tasks that drive growth and innovation rather than the routine tasks of data curation, iterating over models or managing infrastructure resources to support model development.
- **Audit readiness:** Flywheel supports reproducibility by tracking versioning of file data in the platform. File versions will be automatically recorded with all provenance, analyses, and jobs logs allowing the necessary tracking required for regulatory compliance.

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