

# InterSystems IRIS for Health



Interoperability,  
data management,  
analytics, and AI —  
all in one platform.

## Overview

InterSystems IRIS® for Health is the interoperability-first healthcare data platform built for creating advanced healthcare applications that connect, analyze, and act on data in real time. It unifies data management, interoperability, analytics, and AI within a single, high-performance engine — reducing integration complexity while accelerating innovation. Trusted globally by organizations such as Epic, LabCorp, Sonic, and BioReference, InterSystems IRIS for Health powers solutions that manage over a billion health records worldwide.

## Core Capabilities

InterSystems IRIS for Health brings together interoperability, data management, analytics, and security into one unified platform. It natively supports all major healthcare data standards to ensure seamless exchange across diverse systems, while its multimodel, multiworkload data engine delivers high-performance transactional, analytical, and vector operations side by side. Built-in scalability and enterprise-grade security ensure organizations can grow confidently and govern data responsibly across cloud, on-premises, or hybrid environments.

- **Interoperability:** Speak healthcare natively with built-in support for HL7® FHIR®, HL7 V2®, CDA/CCDA, IHE profiles (XDS.b, XCA, PIX/PDQ, MHD), DICOM, and X12. Prebuilt transformations enable seamless data exchange between legacy and modern systems without replatforming.
- **Data platform:** A multimodel, multiworkload database supporting transactional, analytical, and vector workloads in one environment. Real time ingestion and query performance enable live operational and analytical workloads side by side.

FHIR SQL Builder transforms complex FHIR into analytics-ready views — without moving data.

- **Scalability:** Automatic parallelization for vertical scaling and Enterprise Cache Protocol (ECP) plus sharding for horizontal scaling. Combined, these provide transparent concurrency and volume scalability for high performance cloud deployments.
- **Security and governance:** Enterprise-grade security with authentication (including two-factor), role-based authorization, auditing, and encryption at rest and in motion. Includes full lifecycle API management through InterSystems API Manager (IAM).

## AI & Analytics

InterSystems IRIS for Health integrates AI and analytics directly into the data layer, enabling operational AI and insights close to governed healthcare data. Teams can build predictive and generative AI applications without moving data to external systems.

- **IntegratedML<sup>®</sup>:** Create, train, and deploy models with simple SQL commands for real-time inference.
- **Native vectors:** Store embeddings and perform similarity searches using built-in vector datatypes and optimized functions (e.g., `vector_cosine`).
- **Embedded python:** Run Python code directly within the database engine, integrating libraries like LangChain and LlamaIndex for low-latency AI workflows.
- **FHIR SQL builder:** Transform complex FHIR graphs into relational projections for analytics — no data movement required.
- **Columnar storage:** Enable faster aggregations and hybrid transactional or analytical queries for clinical and operational analytics.

## Developer & Deployment Experience

Developers can use InterSystems IRIS for Health's unified low-code environment to visually design integrations, transformations, and business processes. Support for multiple languages — Java, .NET, Node.js, Python, and ObjectScript — enables flexibility across projects.

Built-in message management, auditing, and visual tracing streamline operations, while full API lifecycle management simplifies governance of REST and FHIR interfaces.

Deploy on any cloud, in data centers, or hybrid environments. Smart Health Data Services, including the InterSystems FHIR Server and FHIR Transformation Service, provide managed interoperability components for cloud-native solutions.

## Example Use Cases

InterSystems IRIS for Health provides the flexibility and power required to support a wide range of real-world healthcare scenarios. By combining native interoperability, a high-performance data platform, and built-in analytics and AI capabilities, it enables organizations to streamline operations, improve care delivery, and accelerate digital innovation. The following examples illustrate how the platform can be applied across clinical, operational, and partner-integration workflows.

- **Cross-vendor EHR and partner integration:** Normalize HL7 V2, FHIR, CDA, and X12 data for seamless care coordination.
- **Population health and quality programs:** Leverage Bulk FHIR and analytics to measure and improve care quality.
- **Imaging and diagnostics:** Combine DICOM and operational data to automate workflows and reduce turnaround time.
- **AI-assisted care and operations:** Ground LLMs and predictive models in trusted, real-time FHIR data for safe and explainable AI.
- **Developer-friendly FHIR apps:** Rapidly build and deploy standards-based healthcare applications on a unified platform.

## Key Capabilities at a Glance

InterSystems IRIS for Health brings together the essential components needed to build modern, connected healthcare solutions. Its unified architecture simplifies complex data environments while delivering the performance, interoperability, and intelligence required for today's clinical and operational demands. The capabilities below highlight the core strengths that set the platform apart.

- **Interoperability:** HL7 V2, HL7 FHIR (server, repository, Bulk FHIR, OAuth), IHE, CDA, DICOM, X12.
- **Data platform:** Multimodel, multiworkload (transactional + analytical), embedded vectors.
- **AI & analytics:** IntegratedML, NLP, Embedded Python, FHIR SQL Builder, Columnar Storage.
- **Security & governance:** Authentication, authorization, auditing, encryption, API management.
- **Flexible deployment:** Managed service and portable software across public cloud, private cloud, on premises, and hybrid; Smart Health Data Services for FHIR and transformation.

## Why InterSystems

InterSystems IRIS for Health can accelerate your interoperability strategy, streamline data flows, and power next-generation healthcare applications with real-time insights and AI capabilities. Whether you're modernizing legacy integrations, building FHIR-native solutions, or preparing your organization for scalable, governed analytics, our team is ready to help you take the next step.

Are you a developer? Try one of our [interactive tutorials](#).

To learn more about InterSystems IRIS for Health and contact an InterSystems expert, [click here](#).

From FHIR to vectors to analytics — build connected care without compromise.