Security and compliance at the core

A comprehensive informatics solution for multi-omics data at scale

- Designed with data privacy and security provisions like HIPAA, GDPR, and other key regulations in mind
- Written business associate agreements (BAAs) to maintain protected health information (PHI) security and overall compliance
- Data residency to comply with local data privacy and compliance requirements
- ISO/IEC 27001–certified information security management system
- Robust infrastructure with encryption, two-factor authentication, role-based access, and other security features
- Industrial-level, secure cloud solution

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Overview

Our customers trust us with sensitive information; to analyze, handle, and store this large-scale genomics data for research, clinical therapeutics, and human diagnostics.

That's a lot of responsibility, requiring enterprise-level protection.

To keep our platform, products, and web applications secure for everyone, we partnered with top-tier cloud providers around the globe and built the Illumina Analytics Platform with security at the core.

By committing to local and global security policies, we aim to reduce roadblocks for the world to realize the true potential of genomic data and solutions.

Key features of Illumina Connected Analytics

Availability

In the context of cloud-computing services, internal and external availability risks exist. To address this, Illumina built a business continuity and disaster recovery plan into its business process. The platform is installed on a high-availability cloud infrastructure in ISO/IEC 27001:2013–certified facilities that adhere to Uptime Institute Tier III design standards to guarantee dedicated network connectivity, redundancy, uninterruptible power supply (UPS), and effective data backup strategies.

Audit trailing

A full audit trail ensuring IT accountability for all actions and objects within the platform is recorded, including viewing an object.

API protection

ICA was built with application programming interface (API) protection in mind. Pipelines are executed within a container to ensure they stay within boundaries set out by the platform, safe from malicious activities.

Confidentiality

The platform features data encryption "in transit" (TLS 1.2) and "at rest" (AES-256).

Data isolation

ICA offers the highest degree of isolation by implementing industry-standard data segregation techniques to prevent accidental disclosure of data to unauthorized parties.

Data management and retention

A fully automated data management platform, ICA stores customer data synchronously across multiple availability zones within a geographic region, performs regular data integrity checks, and self-heals to protect against data loss.

Global standards and certifications

ICA is ISO 27001 certified and developed following ISO 13485 requirements.

Integrity

ICA uses public key infrastructure (PKI); hashing techniques ensure data flow integrity and origination across the entire solution.

Login policies

ICA enforces strong password requirements, a renewal period, an inactivity timeout,
and the option to implement single sign-on (SSO).

Portability

There's no vendor lock-in, removing legal impediments to export client data.

Privacy by design

ICA has been designed to be in accordance with current data protection laws such as General Data Protection Regulation (GDPR) and the Health Insurance Portability and Accountability Act (HIPAA).

Role-based access

Fine-grained security controls govern user access to data and capabilities within the platform.

Transparency

ICA complies with most data residency and privacy requirements; data center regions and providers are disclosed.

Two-factor authentication

Step-up authentication protects sensitive actions.

Guaranteed data residency

Dedicated to security and privacy, Illumina offers ICA as a distributed model where omics data files and metadata or health data are stored in the region selected by the user. In globally distributed, high-performance computing centers, the central platform regulates access to the data; the actual omics data flow, including data download and data view, occurs between the browser and the regional web server directly. When collaborating with partners in different regions, users can implement cross-regional access, reducing latency while ensuring data residency.

Current data centers supporting ICA with more to come:

- Virginia, United States
- Montreal, Canada
- Frankfurt, Germany
- London, United Kingdom
- Sydney, Australia

Why choose a cloud solution?

The sky is the limit with the cloud. Keeping your data in the cloud means that Illumina and our cloud-service partners' security and compliance teams are watching it 24/7. Our cloud partners support industry-leading security standards, offer the ability to encrypt data, provide cost-effective data-archiving, enable rapid deployment and implementation, and more. ICA also supports customers seeking a Bring Your Own Cloud environment.

By choosing the cloud-based ICA platform instead of building and maintaining a local, high-performance cluster, you always have access to the most up-to-date technology and can scale your storage, compute power, and other resources as needed—saving you both time and money.

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