



# FOCUS ON SECURITY

GQ Life Sciences and its applications are HIPAA and SOC 2 (one of the AICPA's latest security and control standards for technology and cloud computing service organizations) compliant today.

## Data Center

GQ Life Sciences hosts its GenomeQuest service in a SOC 2, Type II, certified data center located in a carrier grade hardened facility with enhanced levels of security, providing a fully redundant IP and MPLS fiber-optic backbone network specifically designed for high reliability, high speed and efficient routing with low latency. High performance routers support each node with silicon switching engines, redundant protected power and dual entrance facilities. The unmarked data center's physical security is comprised of several elements including a card swiper mechanism, security cameras and human photo ID verification by a data center employee for all entrants to the data center. The data center utilizes a double, pre-action dry pipe fire suppression system and a state-of-the-art smoke detection and alarm system is in place. Should the power feed fail, the fully redundant UPS and generators are all "hot-synced" allowing either set of UPS to back up the other, or allowing either generator to backup the other. The main power switchboards, the UPS control units and the PDUs are all alarmed and monitored 24 hours a day.

## Data Backup

In order to ensure recovery of potentially lost or degraded customer data, GQ Life Sciences performs incremental backups on a daily basis with a full backup once a week. We can restore a customer's data daily up to one (1) week prior to a requested restore and weekly for up to three (3) months prior to a requested restore. The backups are replicated automatically to virtual tape Libraries on a server that is located at an Alternate data center.

## Disaster Recovery

GQ Life Sciences utilizes our third party data center to provide our DR back-up infrastructure, recovery space, emergency support taping and testing. The combination of our access to DR infrastructure and offsite data backup provides our customers with the secure and redundant hosting environment they require.

## Layered, End-to-End Security Architecture

The GQ Life Sciences security architecture is unique because of the breadth of its implemented security features. It is a comprehensive, end-to-end architecture that addresses security at every layer, from the application down to the physical wire.

Security features include:

### Perimeter Security (Firewalls) and Intrusion Detection

GQ Life Sciences utilizes virtual firewalls (VDMs) and Intrusion Prevention and Detection Systems (IPS/IDS) to complement physical firewalls, and basic firewalling services such as port blocking and management, Internet Protocol Security (IPSec) and Secure Socket Layer (SSL) VPN to prevent and recognize unauthorized access to the GenomeQuest network and applications. Systems are monitored 24x7x365 to detect any suspicious usage and/or access patterns so that any attack can be detected before an intruder has gained access to the network, application, or operating system.

Sound firewall policies are at the root of any secure environment. Minimizing open ports to only the required services helps to minimize the overall risk of a security incident. The GenomeQuest application requires the following protocols be available on the firewalls:

- Port 443 (HTTPS)
- Port 80 (HTTP) (redirected to port 443)
- Port 25 (SMTP)
- Ports 20/21 (FTP)
- Port 22 (SSH)

GQ Life Sciences employs various malicious code (e.g., viruses, worms, Trojan horses, spyware) protection mechanisms at critical information system entry and exit points (e.g., firewalls, electronic mail servers, web servers, proxy servers, remote-access servers) and at servers, desktops and mobile

computing devices on the network to detect, block and eradicate malicious code protection software as soon as new releases are available in accordance with the company's policy and procedures. GQ Life Sciences and multiple third party partners perform regular audits and external scans of the hosted environments on an ongoing basis.

#### Operating System Hardening

GQ Life Sciences utilizes operating system hardening, configuring the operating system so that as many services and functions as possible are removed or disabled, to limit the number of potential avenues for an unauthorized attack. In addition, known "holes" or security vulnerabilities identified in security CERT (Computer Emergency Response Team) notifications and from other advisory organizations (e.g. SANS) are patched in a hardened operating system. These precautions make it more difficult for hackers to access or disable a system.

#### Network Management

The network management system is an innovative solution based on proven technology and a standard management approach to distributed environments providing 24x7x365 monitoring, troubleshooting, and support of the network from a manned NOC. It consists of a unified method for providing configuration and change management; proactive monitoring of system-level events, processes, and thresholds.

#### Access Control and Privacy/Confidentiality (Encryption)

The GenomeQuest hosted service is comprised of a layered security approach for all customers. Users of the GenomeQuest hosted service are granted access to the system via a secure web browser session using 256-bit encryption after they are authenticated. GenomeQuest passwords are indecipherable when entered and displayed (using a cryptographic hash function) and 256-bit encrypted when in transit and when stored. GenomeQuest employs a variety of encryption approaches using public key/private key encryption technologies to ensure that data is decipherable only to users with authorized access. Once authenticated, the user has access to different capabilities, different amounts of information, or different types of information based on their defined roles.

Customer data are logically separated (in an accounting group) from all other customer information. There is no web-based mechanism to share information outside of a given accounting group. No customers have any access to GQ Life Science's servers through any other means than the web interface. While customer data will be placed on the same disk array as other customers' data, all data is placed in specific subdirectories,

each associated with a specific user. The directory name is obfuscated through a hashing mechanism, such that looking at the directory name provides no identifying information about either the user or organization owning the data. Only GQ Life Sciences administration has the ability to decode the hash. All data in the GenomeQuest system is 256-bit encrypted in transit over the private GQ Life Sciences private network and over public networks (e.g. the Internet).

#### Corporate Security Policy/Logging/Auditing

GQ Life Sciences Inc. has a comprehensive Corporate Security Policy designed to protect corporate, employee and customer information, data and assets. In addition to documenting such policies, the Policy describes the process for implementation, review and update, incident response and policy enforcement. All GQ Life Sciences, Inc. employees and consultants are required to acknowledge in writing that they have received and read the company's Corporate Security Policy.

Logging and Auditing provides information about use characteristics (including username, time of login and logout, commands, areas accessed, etc.) on each system. GQ Life Sciences monitors this information in real-time and stores it so that forensic information can be gathered from these systems in the case of a suspected security breach.

Our data center, where the GenomeQuest system resides, goes through a thorough SOC 2, Type II Audit by an AICPA certified audit firm each year that includes testing for security vulnerabilities over a six-month period. In addition, GQ Life Sciences periodically, at least annually, hires a third party assessment company to do independent security vulnerability testing of our software application. Various automated security scans run daily, monthly and quarterly.

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## CONTACT

To contact us or for more information on how GQ Life Sciences can help you with patent searches, visit our website at: [www.gqlifesciences.com](http://www.gqlifesciences.com).

GQ Life Sciences  
4325 Alexander Drive Suite 100  
Alpharetta, GA 30022