

Quill Business Continuity Whitepaper

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Introduction

With over 15 years experience designing and delivering robust cloud based software solutions to UK businesses, we've learnt that service-interrupting events can occur at any time. That's why we work hard to ensure we deliver consistent performance 24x7 so that your business can continue without disruption.

This paper outlines the systems of prevention and recovery that we apply to Quill's suite of cloud software products and services.

Infrastructure

Quill's server infrastructure is built on the Google Cloud Platform (GCP). Google builds and runs award winning¹ highly secure data centres throughout the world, with thousands of miles of fibre optic cable and multiple points of presence, providing fast, scalable and consistent performance.

Each regional data centre is divided into a number of isolated zones each with independent power, cooling, networking and control planes. Quill's server infrastructure is distributed across three zones within the **London UK region**.

Power, cooling and fire prevention

To keep things running 24x7 and ensure uninterrupted services, GCP data centres feature redundant power systems and environmental controls with every critical component having a primary and alternate power source. Diesel engine backup generators can provide enough emergency electrical power to run each data center at full capacity. Cooling systems maintain a constant operating temperature for servers and other hardware, reducing the risk of service outages. Fire detection and suppression equipment helps prevent damage to hardware. Heat, fire, and smoke detectors trigger audible and visible alarms in the affected zone, at security operations consoles, and at remote monitoring desks.

Premium tier connectivity

Quill are "Premium Tier" customers which means traffic is delivered over Google's well-provisioned, low latency, highly reliable network: with at least three independent paths (termed N+2 redundancy) between any two locations on the network to ensure that traffic continues to flow between the locations even in the event of a disruption.

¹ Forrester Insight PaaS <https://cloud.google.com/forrester-wave-leader/>



Resilience and scalability

- Quill's server resources are **load balanced** across three isolated zones to provide a **highly available** service to our users
- The “elastic” nature of the GCP architecture allows us to quickly scale up when demand increases to prevent any degradation in performance to existing users

Transparent maintenance

Live migration ensures there is no disruption to Quill's systems when scheduled GCP maintenance work occurs, such as: firmware or operating system upgrades, hardware replacements, network or power grid maintenance etc. This happens automatically and transparently.

Quill may also schedule maintenance windows from time to time (outside of normal working hours) to perform routine checks or updates. We inform our users well in advance of this.

DDoS protection and mitigation

Our software and network architecture is designed with best practices in mind such as: proxy based load balancing; API rate limiting; and auto scaling. This, in addition to built-in GCP features, ensures our architecture is as resilient to Distributed Denial of Service attacks as possible.

Uptime and monitoring

Quill targets **99.95% system uptime** during normal working hours as detailed in your contract.

We use a combination of monitoring methods including: **real time metrics** that show us the current health of our servers and web services; **automated alerts** when certain thresholds are exceeded; and **historic analysis** to identify trends or unusual activity.

Disaster recovery (DR)

The multi-regional and multi-zonal nature of GCP forms the backbone of Quill's DR planning.

Please refer to the “Service Levels and Credits” section of your contract which detail our Recovery Time and Recovery Point Objectives.



Multiple regions and zones

Quill's server resources are load balanced across the three "zones" within GCP's London region. Each zone has independent power, cooling, networking and control planes: effectively three data centres in one.

We will always default to the London UK region except in extreme circumstances where we may utilise an alternative region (but always within the EEA).

Data and backups

Backups are taken hourly, daily (overnight) and prior to month-end completion. All backups are stored **cross-regionally** (within EEA) and **multi-versioned** with **encryption-at-rest** employed throughout.

Changes to this document

Quill's Business Continuity and Security strategies are dynamic and evolving processes undergoing constant scrutiny and evaluation and are therefore subject to change without notice.

