

Statement of Data Center Tier Equivalence & Independence

1. Introduction

TLDTR's Registry Service Provider (RSP) infrastructure is hosted on **Google Cloud Platform (GCP)**. While Google data centers utilize proprietary design standards that exceed traditional Uptime Institute Tier III and Tier IV classifications, they maintain equivalent or superior levels of redundancy, fault tolerance, and availability.

This document serves as an attestation that the selected infrastructure meets the "**Tier III or equivalent**" requirement set forth by ICANN, ensuring at least 99.982% availability and allowing for concurrent maintainability without service interruption.

2. Geographic Independence (No Inter-dependencies)

To satisfy the requirement for "at least two data centers having no inter-dependencies," TLDTR deploys its registry services across two physically distinct Google Cloud Regions (e.g., `europa-west3` in Frankfurt and `us-central1` in Iowa).

- **Physical Separation:** These regions are separated by thousands of kilometers, operating on completely independent power grids, flood plains, and tectonic plates.
- **Operational Isolation:** Each region operates with its own control plane. A catastrophic failure or maintenance event in one region (Region A) has zero impact on the availability or integrity of the other (Region B).
- **Network Autonomy:** The regions are connected via Google's private global backbone but maintain independent uplinks to the public internet, ensuring that routing failures in one jurisdiction do not cascade to the other.

3. Tier III+ Facility Specifications

The underlying physical infrastructure provided by Google Cloud adheres to the following specifications, which align with or exceed Tier III standards:

3.1. Power Redundancy (Concurrent Maintainability)

- **Requirement:** Tier III requires multiple power and cooling distribution paths, with only one path active.
- **GCP Implementation:** Google data centers utilize a redundant electrical architecture (typically 2N or N+1 at minimum). Every server rack is served by dual power feeds from independent PDUs (Power Distribution Units). Backup generators and UPS systems maintain operations seamlessly during utility grid failures.

3.2. Cooling and Environmental Controls

- **Requirement:** Continuous cooling capability even during maintenance.
- **GCP Implementation:** Advanced cooling systems utilize closed-loop water cooling and machine-learning-optimized airflow management. Cooling infrastructure is fully redundant, allowing for component repair or replacement without shutting down IT equipment.

3.3. Physical Security

- **Standard:** Multi-layered access control.
- **GCP Implementation:** The facilities feature custom-designed electronic access cards, perimeter fencing, metal detectors, and biometrics. The data center floors are guarded 24/7/365 by security personnel and monitored via high-resolution video surveillance.

4. Certification Mapping

The operational excellence and redundancy of these facilities are verified through third-party audits provided in our application attachments:

1. **ISO/IEC 27001:2022:** Validates the Information Security Management System covering physical and environmental security.
2. **SOC 2 Type II Report:** Provides an independent audit of the controls relevant to security, availability, and processing integrity.
3. **SOC 3 Report:** Publicly affirms Google's adherence to rigorous availability standards comparable to Tier III/IV classifications.

5. Conclusion

TLDTR confirms that its primary and secondary hosting environments are geographically autonomous, physically robust, and functionally equivalent to Tier III data centers, thereby guaranteeing the stability and resilience required for Top-Level Domain operations.