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HSK-SBS SYTEM GUIDE

1. Google Cloud Platform (GCP) Environment

- Compute Engine VM Instance
- Cloud DNS (commented out, but mentioned)
- Secret Manager
- Storage Bucket (for website)
- Firewall Rules

2. Local Environment

- Terraform Configuration
- Ansible Playbook
- SSH Key Management

3. External Services

- GitHub (for storing SSH key as a secret)

4. Main Components

a. GCP Compute Instance

- Runs Debian 11
- Hosts WordPress

b. Web Server

- Nginx
- Configured for PHP-FPM and WordPress

c. Database

- MariaDB
- WordPress database and user

d. PHP

- PHP 7.4-FPM
- Various PHP extensions for WordPress

e. WordPress

- Latest version (6.4.3 as of the playbook)
- WP-CLI for management

f. SSL/TLS

- Let's Encrypt via Certbot
- Configured for both staging and production

5. Networking

- Firewall allows HTTP (80) and HTTPS (443) traffic
- Nginx configured to redirect HTTP to HTTPS

6. Security

- SSH keys for instance access
- Passwords generated for database and WordPress admin
- SSL/TLS certificates for encrypted connections

7. DNS

- Manual DNS configuration mentioned (not managed by Terraform)
- DNS propagation check before SSL certificate issuance

8. Deployment Process

- Terraform creates infrastructure
- Ansible:
 - Installs and configures all software components
 - Sets up WordPress, database, and web server
 - Deploys custom themes and plugins
 - Configures SSL/TLS
 - Installs and uses WP-CLI for WordPress management

9. Custom Content

- WordPress themes (synced from local environment)
- WordPress plugins (synced from local environment)

10. Performance and Security Tuning

- Increased PHP upload limits
- Increased Nginx client max body size
- Proper file permissions and ownership

11. SYSTEM DIAGRAM

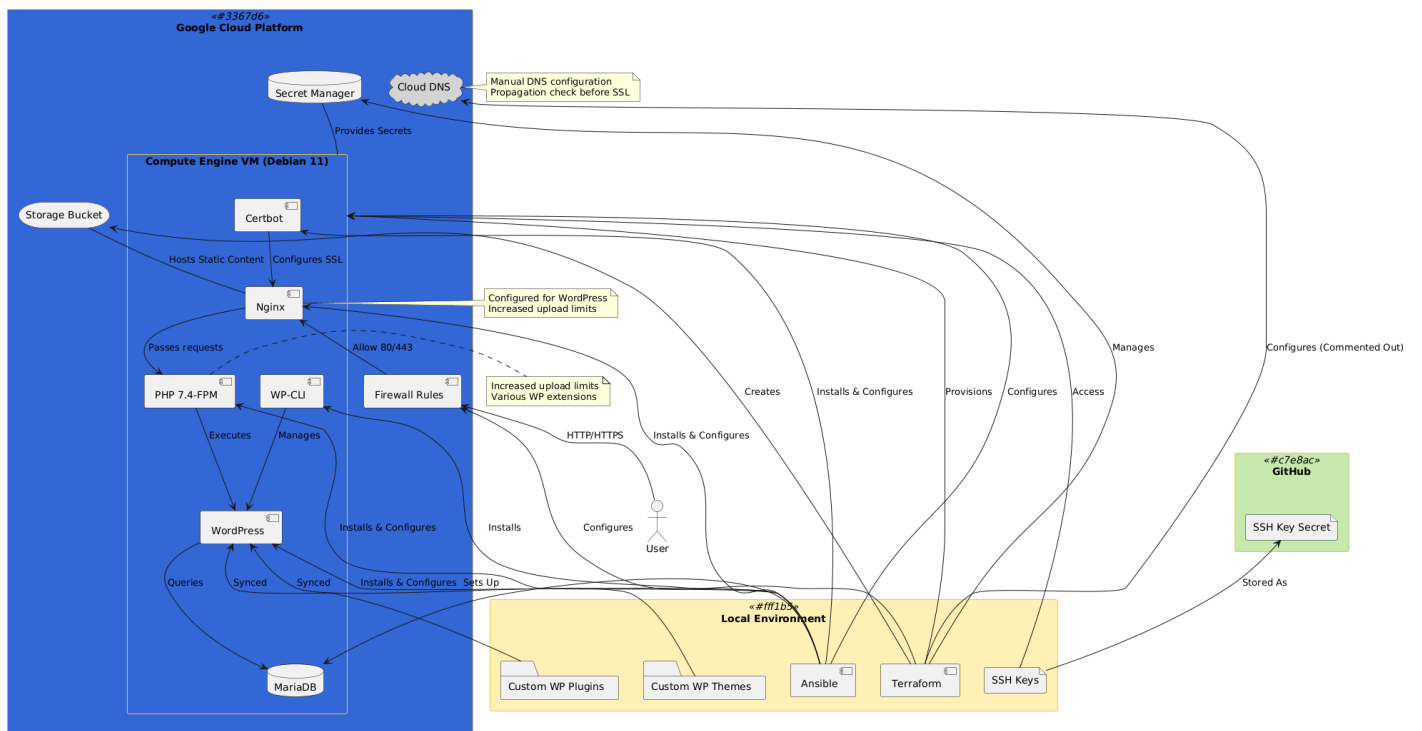


Figure 1: System Diagram