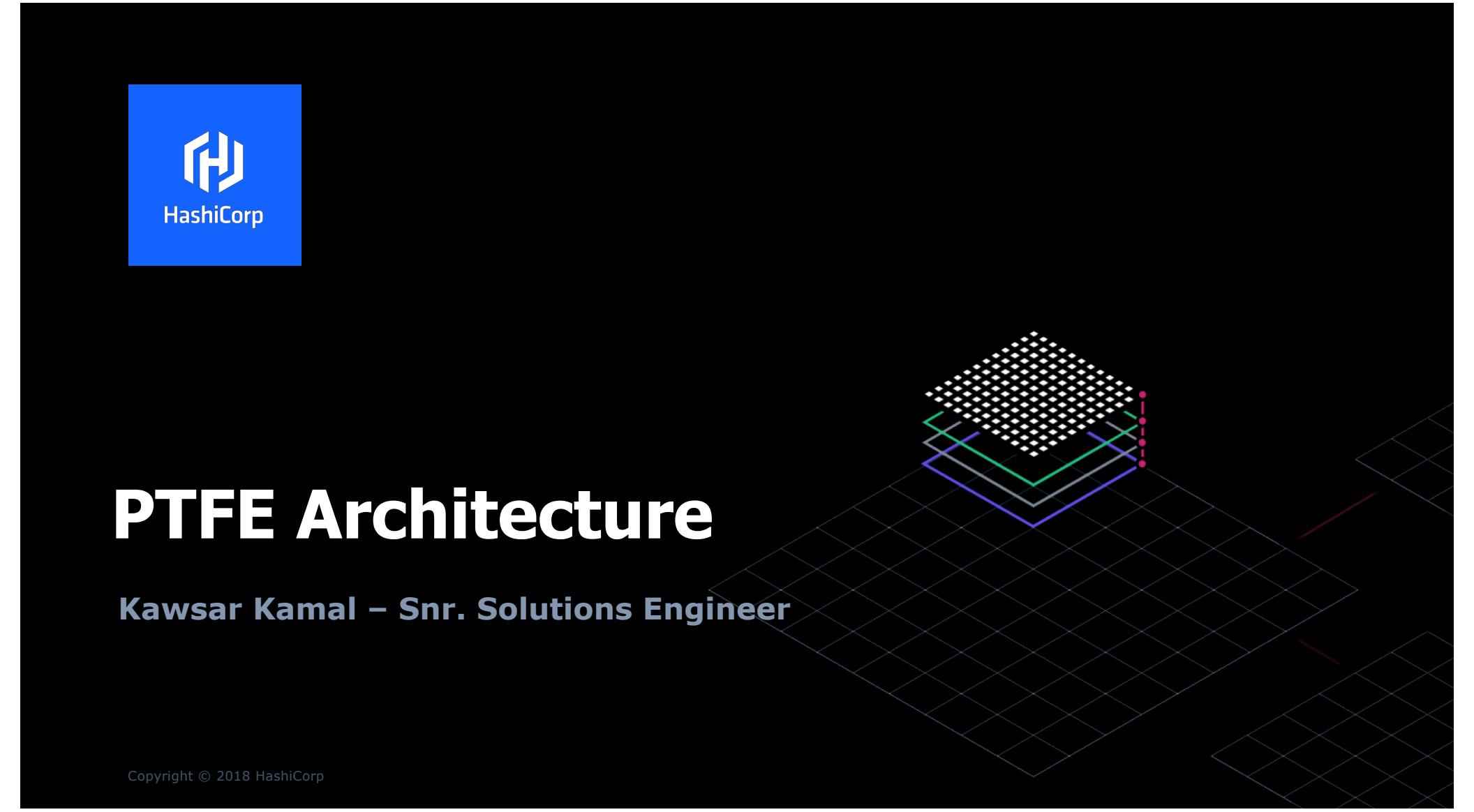


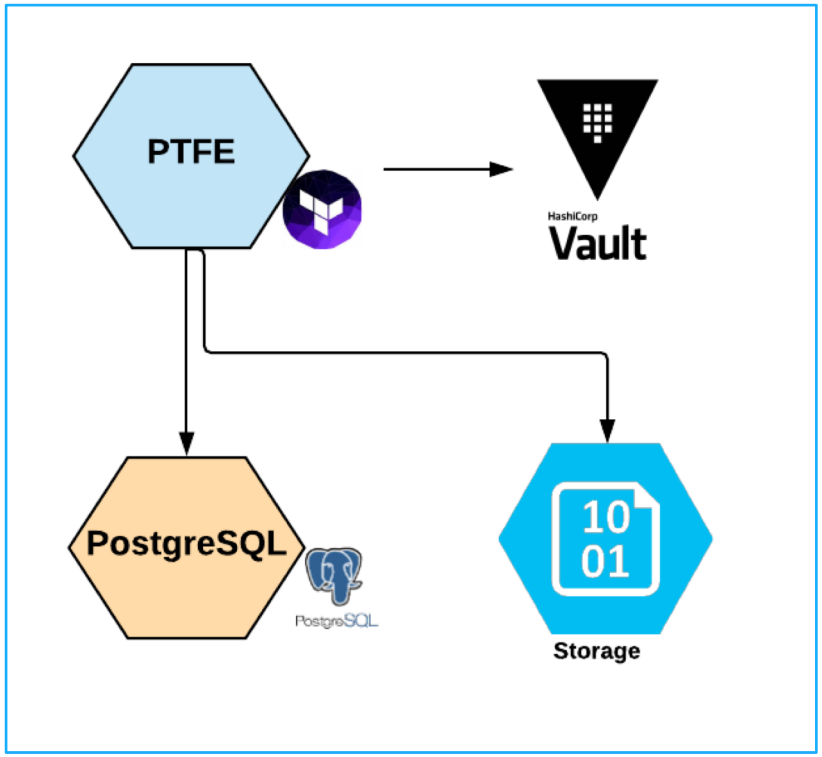
PTFE Architecture

Kawsar Kamal – Snr. Solutions Engineer

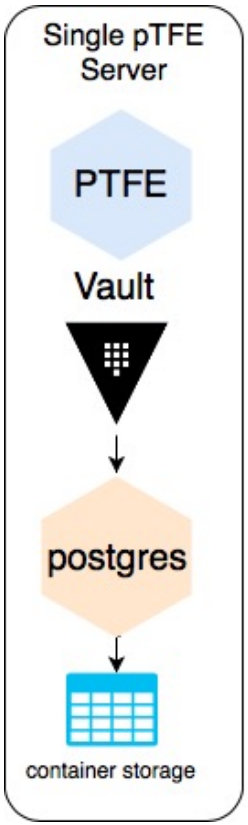
Private Terraform Enterprise Install (PTFE) questions

Platform and Providers	
Region	Single Region or Datacenter / Multiple
Environments	Production, Staging etc.
Resiliency goals	RPO, RTO etc.
Storage type	Mounted disk / External Services (PostgreSQL, Object store)
VCS integration	

Terraform Enterprise Components

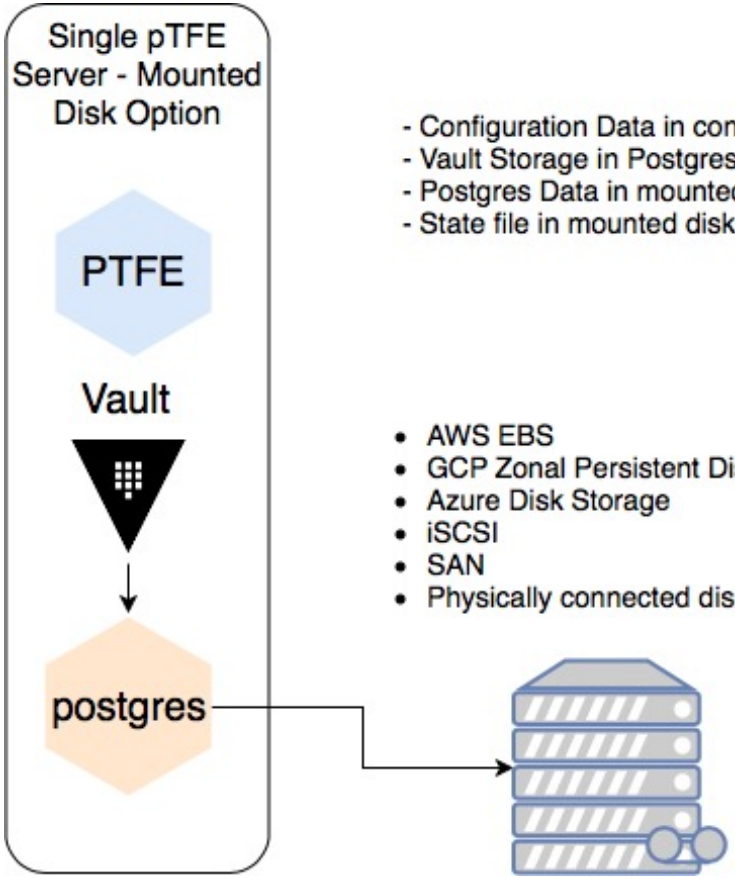


Terraform Enterprise Deployment (Demo Mode)



- Configuration Data in container
- Vault Storage in Postgres
- Postgres Data in container storage
- State file in container

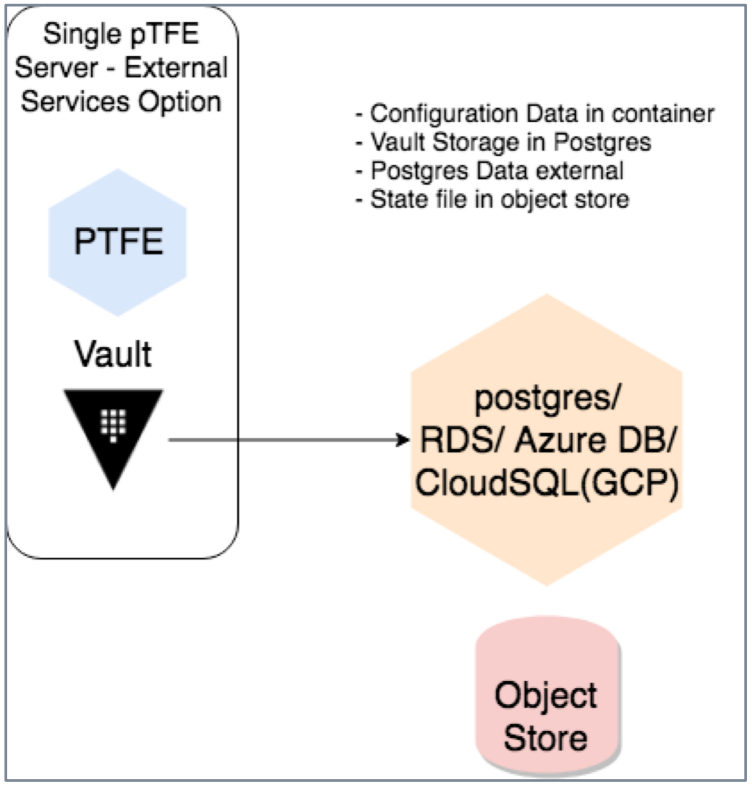
Terraform Enterprise Deployment (Mounted Disk)



- Configuration Data in container
- Vault Storage in Postgres
- Postgres Data in mounted disk
- State file in mounted disk

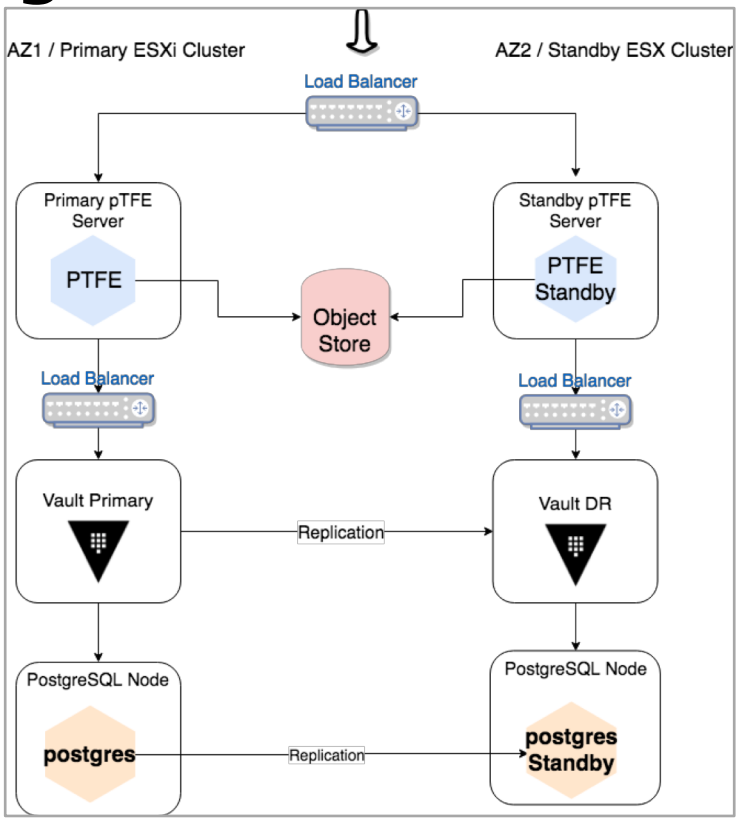
- AWS EBS
- GCP Zonal Persistent Disk
- Azure Disk Storage
- iSCSI
- SAN
- Physically connected disks as in non-cloud hardware

Terraform Enterprise Deployment (External with Local Vault)



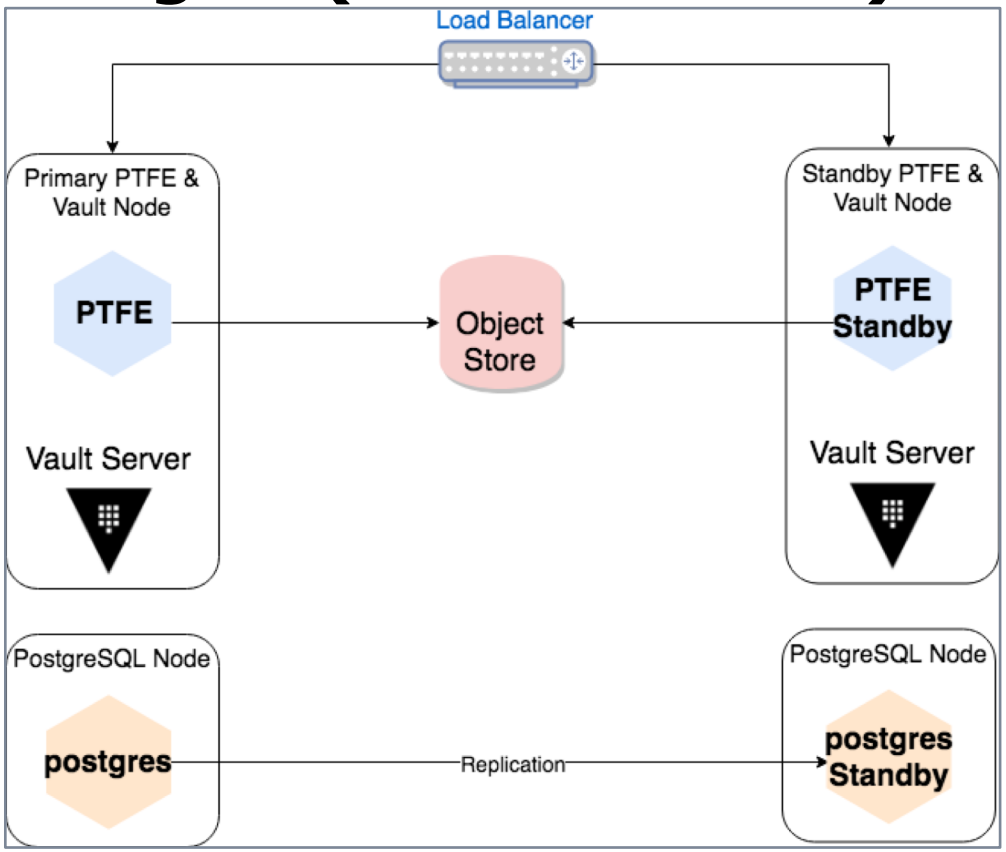
Terraform Enterprise External Services with External Vault – Single Region

Primary Region

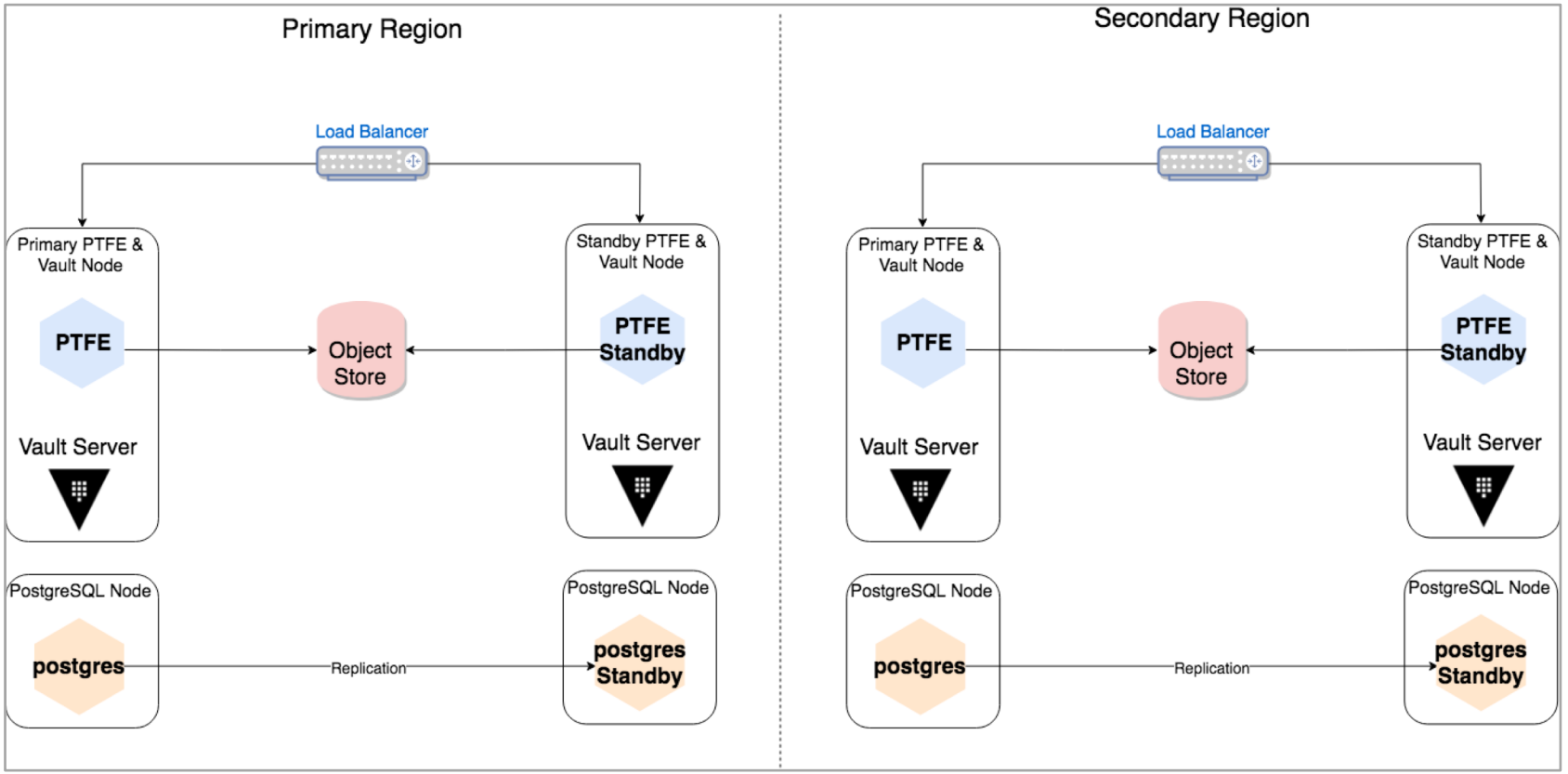


Terraform Enterprise External Services with Internal Vault – Single Region (Recommended)

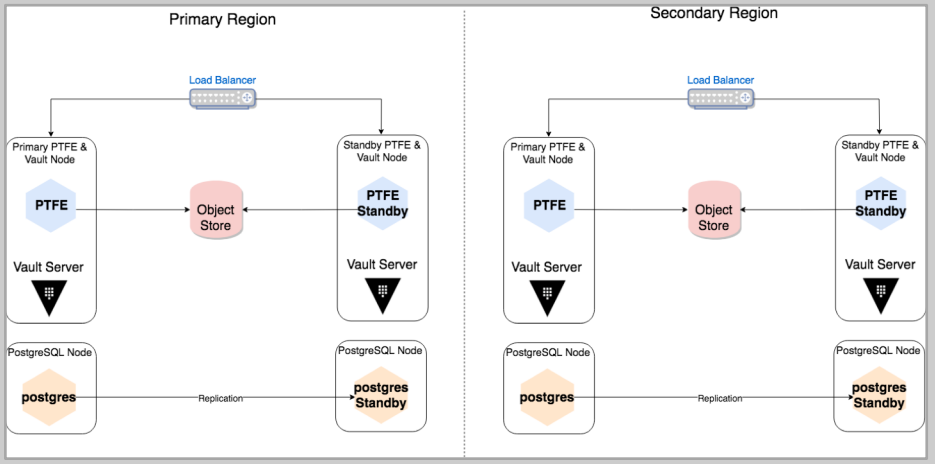
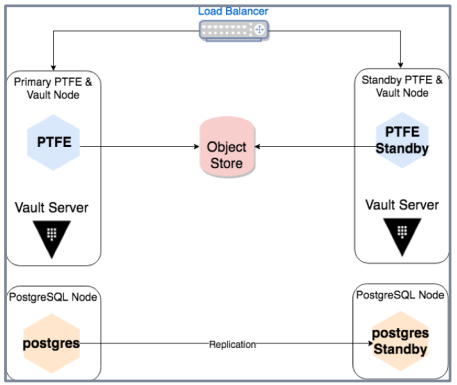
Primary Region



Terraform Enterprise Production – Multi-Region



Terraform Enterprise Environments

Production and Staging	 x2
Dev and QA	 x2

Terraform Enterprise Storage and Security

Private Terraform Enterprise - Security

Private Terraform Enterprise (PTFE) takes the security of the data it manages seriously. This table lists which parts of the PTFE app can contain sensitive data, what storage is used, and what encryption is used.

Object	Storage	Encrypted
Ingressed VCS Data	Blob Storage	Vault Transit Encryption
Terraform Plan Result	Blob Storage	Vault Transit Encryption
Terraform State	Blob Storage	Vault Transit Encryption
Terraform Logs	Blob Storage	Vault Transit Encryption
Terraform/Environment Variables	PostgreSQL	Vault Transit Encryption
Organization/Workspace/Team Settings	PostgreSQL	No
Account Password	PostgreSQL	bcrypt
2FA Recovery Codes	PostgreSQL	Vault Transit Encryption
SSH Keys	PostgreSQL	Vault Transit Encryption
User/Team/Organization Tokens	PostgreSQL	HMAC SHA512
OAuth Client ID + Secret	PostgreSQL	Vault Transit Encryption
OAuth User Tokens	PostgreSQL	Vault Transit Encryption
Twilio Account Configuration	PostgreSQL	Vault Transit Encryption
SMTP Configuration	PostgreSQL	Vault Transit Encryption
SAML Configuration	PostgreSQL	Vault Transit Encryption
Vault Unseal Key	PostgreSQL	*encryption password*

Note on PTFE recent changes

- Note: **Vault Unseal Key** will now be stored in PostgresSQL and Encrypted with an encryption password setting supplied during install.

- Reference (to be updated soon with above): https://www.terraform.io/docs/enterprise/private/data-security.html

Terraform Enterprise Managed PostgreSQL Requirements

PostgreSQL Requirements

Sizing Requirements

Type	CPU	Memory	Storage
Minimum	2 core	8 GB RAM	50GB
Recommended	4-8 core	16-32 GB RAM	50GB

Port Requirements

- Default port is 5432
- Can be changed using the PGPORT env variable.

PostgreSQL Requirements

- See https://www.terraform.io/docs/enterprise/private/install-installer.html#network-requirements
- PostgreSQL version 9.4 or greater. Go to https://www.postgresql.org/download/ to install.
- Any user with schema create access will do. Default user is “ptfe”

Terraform Enterprise PTFE Instance requirements

Private TFE server (VM)

Example Sizing Requirements (VMWare)

Type	CPU / Total Cores	Memory	Storage
Minimum	2 / 2	8 GB RAM	40GB
Recommended	2 / 4	16-32 GB RAM	50GB

Network Requirements

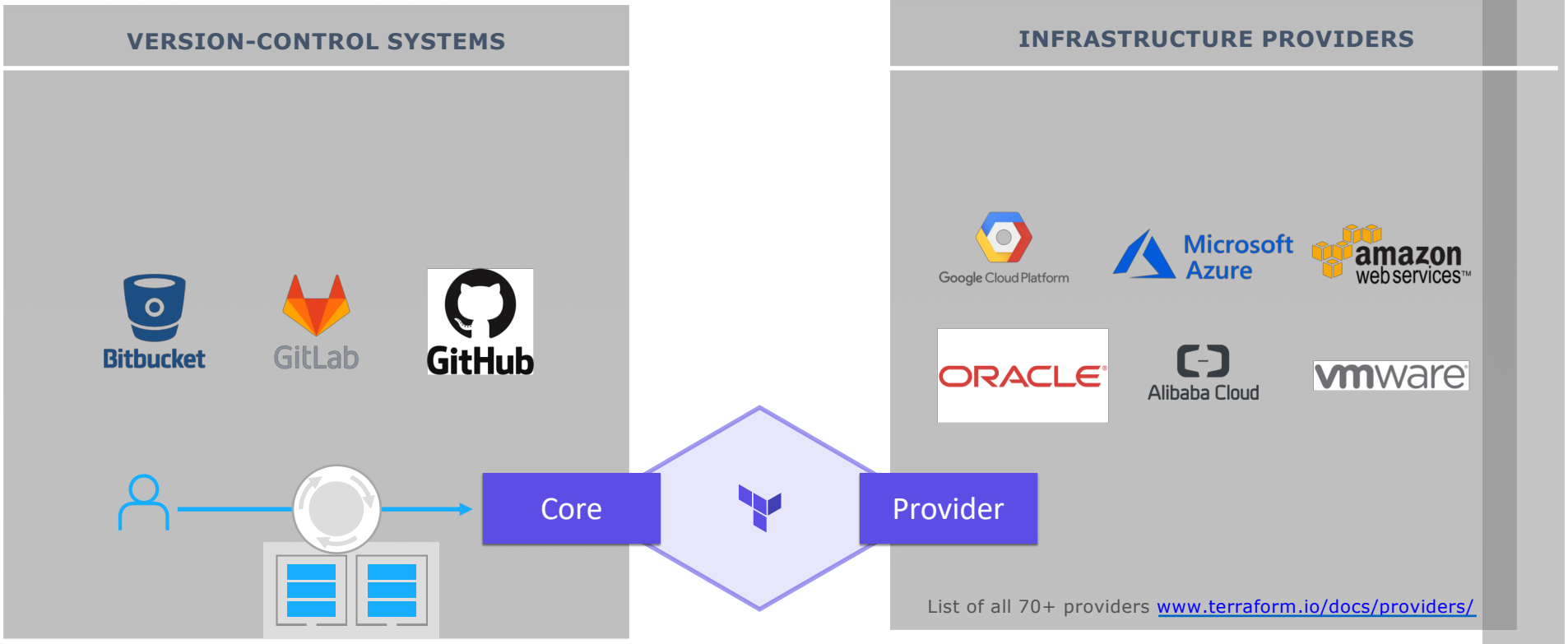
- 22, 8800, 80 / 443 and 9870-9880
- TLS Private key and certificate
- Proxy configuration
- Trusting SSL/TLS certificates

OS Requirements

- Linux OS version and Kernel
- Docker version
- Disable SELinux
- Trusting SSL/TLS certificates

Terraform Ecosystem

Partnerships with 25+ technology providers, community support for many more



Terraform Ecosystem

Driving Ecosystem Standardization