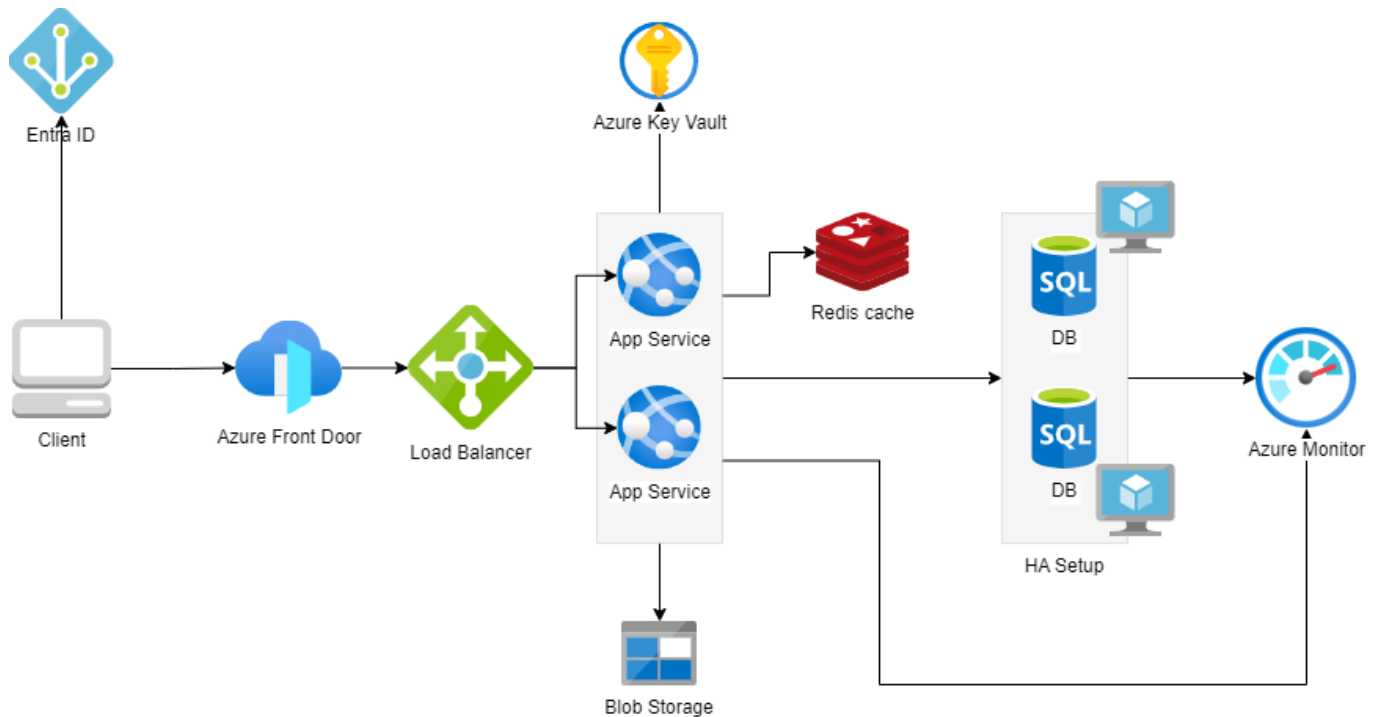


PV293 - Architecture

Infrastructure



1. Azure active directory

- Is used for user authentication
- Enhances security through features such as Multi-Factor Authentication and conditional access policies

2. Azure Front Door

- Is used for security to protect application from DDoS attacks, malicious actors and bots
- Increases availability
- *Better than normal gateways since it works on higher scale*

3. Load Balancer

- Is used to balance the load between two instances of app service

4. App Service

- Is used for hosting web applications.
- Provides features like automatic scaling and continuous deployment

5. Azure Key Vault

- Is used for managing sensitive information
- All secrets are stored in secure centralized repository

6. Blob Storage

- Is used for storing files and images.

7. Redis cache

- Is used for in-memory-caching

8. Databases

- SQL Database
- Configured in high-availability mode

9. Azure Monitor























- Provides insights into the performance and health of applications and databases
- Provides features as alerts, logs, and dashboards

Estimations

a) 1 000 Users

- **Database as VMs**
 - Count: 2
 - Size: 20 GB
 - RAM: 4 GB
- **Web Server**
 - Count: 2
 - RAM: 1,75 GB
- **Redis cache**
 - RAM: 8 GB
- **Storage account (Blob Storage)**
 - 500 GB
- **Estimation:**
Number of request per second: 5

Your Estimate



















					   
Virtual Machines	①	2 A2 v2 (2 Cores, 4 GB RAM) x 730 Hours (Pay as yo...	 	Upfront: US\$0.00	Monthly: US\$189.80
App Service	①	Basic Tier; 2 B1 (1 Core(s), 1.75 GB RAM, 10 GB Stor...	 	Upfront: US\$0.00	Monthly: US\$109.50
Virtual Machines	①	1 B2as v2 (2 vCPUs, 8 GB RAM) x 730 Hours (Pay as ...	 	Upfront: US\$0.00	Monthly: US\$69.79
Azure Front Door	①	Azure Front Door (Classic) - Outbound Data Transfe...	 	Upfront: US\$0.00	Monthly: US\$5.90
Load Balancer	①	Basic Load Balancer is free of charge	 	Upfront: US\$0.00	Monthly: US\$0.00
Storage Accounts	①	Block Blob Storage, General Purpose V2, Hierarchic...	 	Upfront: US\$0.00	Monthly: US\$41.91
Azure Monitor	①	Log analytics: Log Data Ingestion: 0 GB Daily Analyti...	 	Upfront: US\$0.00	Monthly: US\$0.00
Key Vault	①	Vault: 0 operations, 0 advanced operations, 0 renew...	 	Upfront: US\$0.00	Monthly: US\$0.00
Azure Active Directory External Identities	①	Premium P1 tier: 50,000 monthly active user(s), 0 S...	 	Upfront: US\$0.00	Monthly: US\$0.00

Total Cost **US\$416.90**

b) 10 000 Users

- **Database as VMs**
 - Count: 2
 - Size: 40 GB
 - RAM: 8 GB
- **Web Server**
 - Count: 2
 - RAM: 3,5 GB
- **Redis cache**
 - RAM: 16 GB
- **Storage account (Blob Storage)**
 - 1000 GB
- **Estimation:**

Number of request per second: 520

Virtual Machines	①	2 A4 v2 (4 Cores, 8 GB RAM) x 730 Hours (Pay as yo...	 	Upfront: US\$0.00	Monthly: US\$400.04
App Service	①	Basic Tier; 2 B2 (2 Core(s), 3.5 GB RAM, 10 GB Stora...	 	Upfront: US\$0.00	Monthly: US\$219.00
Virtual Machines	①	1 B4as v2 (4 vCPUs, 16 GB RAM) x 730 Hours (Pay a...	 	Upfront: US\$0.00	Monthly: US\$139.43
Azure Front Door	①	Azure Front Door (Classic) - Outbound Data Transfe...	 	Upfront: US\$0.00	Monthly: US\$5.90
Load Balancer	①	Basic Load Balancer is free of charge	 	Upfront: US\$0.00	Monthly: US\$0.00
Storage Accounts	①	Block Blob Storage, General Purpose V2, Hierarchic...	 	Upfront: US\$0.00	Monthly: US\$41.91
Azure Monitor	①	Log analytics: Log Data Ingestion: 0 GB Daily Analyti...	 	Upfront: US\$0.00	Monthly: US\$0.00
Key Vault	①	Vault: 0 operations, 0 advanced operations, 0 renew...	 	Upfront: US\$0.00	Monthly: US\$0.00
Azure Active Directory External Identities	①	Premium P1 tier: 50,000 monthly active user(s), 0 S...	 	Upfront: US\$0.00	Monthly: US\$0.00

Total Cost **US\$806.28**

c) 1 000 000 Users

- **Database as VMs**

- Count: 2
- Size: 605 GB
- RAM: 14 GB
- **Web Server**
 - Count: 5
 - RAM: 7 GB
- **Redis cache**
 - RAM: 128 GB
- **Storage account (Blob Storage)**
 - 2000 GB

- **Estimation:**

Number of request per second: 100

Virtual Machines	2 A4 (8 Cores, 14 GB RAM) x 730 Hours (Pay as you ...	Upfront: US\$0.00	Monthly: US\$1,051.20
App Service	Basic Tier; 5 B3 (4 Core(s), 7 GB RAM, 10 GB Storage...	Upfront: US\$0.00	Monthly: US\$1,095.00
Virtual Machines	1 A2 (2 Cores, 3.5 GB RAM) x 730 Hours (Pay as you...	Upfront: US\$0.00	Monthly: US\$131.40
Azure Front Door	Azure Front Door (Classic) - Outbound Data Transfe...	Upfront: US\$0.00	Monthly: US\$5.90
Load Balancer	Basic Load Balancer is free of charge	Upfront: US\$0.00	Monthly: US\$0.00
Storage Accounts	Block Blob Storage, General Purpose V2, Hierarchic...	Upfront: US\$0.00	Monthly: US\$461.49
Azure Monitor	Log analytics: Log Data Ingestion: 0 GB Daily Analyti...	Upfront: US\$0.00	Monthly: US\$0.00
Key Vault	Vault: 0 operations, 0 advanced operations, 0 renew...	Upfront: US\$0.00	Monthly: US\$0.00
Azure Active Directory External Identities	Premium P1 tier: 50,000 monthly active user(s), 0 S...	Upfront: US\$0.00	Monthly: US\$0.00

Total Cost **US\$2,744.99**