Proposal for deploying a solution using multiple servers in an n-layer architecture

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1 Number and function of servers

The proposed architecture for deploying the solution using multiple servers in an n-layer architecture consists of the following servers:

- **Web Server:** This server will be the responsible for handling HTTP requests from users and serving static files to the client. The web server will un Django web framework and NGINX as a reverse proxy server to improve performance and security.
- **Application Server:** This server will be the responsible for handling dynamic content generation and running the business logic of the application. It will run Django application server using WSGI.
- **Database server:** This server will be responsible for storing and retrieving data from the database. It will run PostgreSQL database server.
- **Session Storage Server:** This server will be responsible for storing user sessions to provide session management. The session storage server will run Memcached or Redis.

2 Connections and dependencies amongst them

The proposed architecture requires the following connections and dependencies amongst the servers:

- **Web Server and Application Server:** The web server and the application server will be connected via c local network connection. The web server will forward requests to the application server for dynamic content generation.
- **Application Server and Database Server:** The application server will connect to the database server to store and retrieve data.

- **Application Server and Session Storage Server:** The application server will connect to the session storage server to store and retrieve user sessions.
- **Web Server and Session Storage Server:** The web server will connect to the session storage server to manage user sessions.

3 State which are required and which are optional

The following servers are required for the proposed architecture:

- Web Server
- Application Server
- Database Server
- Session Storage Server

If we think about additional servers in order to improve performance, availability, and data safety, we could state the following ones as optional:

- **Load Balancer:** The load balancer can be used to distribute the traffic across multiple web servers to improve performance and availability.
- **Backup Server:** The backup server can be used to save data from the database server and session storage server to ensure data safety and disaster recovery.
- **Monitoring Server:** The monitoring server can be used to monitor the performance and availability of the servers and services.