Scale Up

Current configuration:

1. 1 server
2. 1 load-balancer (HAproxy) configured as cluster with the other one
3. Split components (web server, application server, database) with their own server

Reconfiguring the previous infrastructure to have separate servers for each component (web server, application server, database) and using a load balancer (HAproxy) as a cluster brings several benefits:

- **Improved Scalability**: Each component can now be scaled independently based on its specific resource requirements and workload demands. For example, if the database server experiences increased traffic, additional database servers can be added to handle the load without affecting other components.
- **Enhanced Fault Tolerance**: By separating components onto different servers, the risk of a single point of failure is reduced. If one server fails, it only affects the corresponding component, minimizing the impact on the overall system. Additionally, using a load balancer cluster provides redundancy and high availability, ensuring continuous service even if one load balancer node fails.
- **Simplified Maintenance and Updates**: Having dedicated servers for each component simplifies maintenance tasks and updates. For instance, updates or configuration changes to the database server can be performed independently without affecting the web or application servers.
- **Isolation and Security**: Separating components onto different servers provides isolation between them, reducing the risk of security breaches or

unauthorized access. Each server can be configured with appropriate security measures tailored to its specific role and requirements.

- **Flexibility and Customization**: With separate servers for each component, we have greater flexibility to customize and optimize each server based on its specific workload and requirements. This allows for better resource allocation, performance tuning, and scalability planning.