

**Here are the reasons behind adding each additional element to this infrastructure:**

**1. Load Balancer (HAproxy):**

- Reason: Load balancing for distribution of traffic among Application Servers.
- Benefit: Improved efficiency, prevents server overload, and reduces downtime risk.

**2. Dedicated Application Servers\*\*:**

- Reason: Isolation of application logic to enhance performance and resource management.
- Benefit: Better stability and responsiveness of the application.

**3. Component Separation:**

- Reason: Enhanced security and simplified maintenance by isolating components.
- Benefit: Reduces attack surface and enables focused updates/troubleshooting.

**4. Application Files Replication:**

- Reason: Ensures redundancy and availability in case of server failures.
- Benefit: Reduces downtime by allowing another server to serve the application.

**5. Shared Database (MySQL):**

- Reason: Centralized data storage and consistency for both Application Servers.
- Benefit: Avoids data discrepancies and ensures uniform access.

**6. Load Balancer Cluster:**

- Reason: High availability through clustered load balancers.
- Benefit: Continuous service even if one load balancer fails.