**Scalable architecture of a web application:**

Let us discuss the architecture of a Cloud agnostic scalable web application which can be used in any private or public cloud platforms.

**Components used:**

* **Load Balancer(Nginix/HA proxy)**
* **Auto scaling group in case of VM**
* **HPA in case of Kubernetes Clusters**
* **Application Server (Hosted on VM/container)**
* **Managing through Kubernetes**
* **Primary Database**
* **Standby Database**
* **Monitoring**

**Load Balancer (Nginix/ HA Proxy):**

Distributes incoming traffic from clients to backend servers based on load, ensuring high availability and reliability. It performs health checks, routes traffic to healthy servers, and may handle SSL termination.

**Auto scaling groups (in case of VM):**

Automatically adjusts the number of VM instances based on traffic. Maintains a minimum number of instances to handle sudden load spikes, scaling up or down as needed.

**HPA (in case of K8 clusters):**

Horizontal Pod Autoscaler scales the number of application pods in Kubernetes clusters dynamically based on metrics like CPU, memory usage, or custom metrics, ensuring optimal resource utilization.

**Application server (VM/container):**

We host the web application on a Virtual Machine or a Container. We recommend using container to deploy our web application to isolate the application to use its own libraries and dependencies from the Host OS libraries and its dependencies.

**Managing through the Kubernetes:**

Kubernetes automates deployment, scaling, and management of containers across public or private cloud platforms. It ensures fault tolerance, load distribution, and cluster management.

**Primary Database:**

An open-source database in the cloud stores user and application data with 99.9% availability. Read replicas are used for high availability, scalability, and disaster recovery.

**Standby Database:**

A backup database synchronized with the primary, ready to take over in case of primary database failure, ensuring high availability and minimal downtime.

**Monitoring:**

We make use Tools like Splunk, Grafana, and AppDynamics monitor application performance, resource usage, and availability. They provide alerts, logs, and analytics to ensure system health and quick issue resolution.