QUESTIONS

1. **How would you update a concrete artifact inside the web server layer?**

To solve one or more updates in some of them our services, it is higly recommendable to use a functionality docker give us for that purpose. We should use **Rolling Updates** of Docker engine.

The main goal is to tell docker which updates the service who has been re-written or modified, so docker then applies these new changes in our services to all replicas in whole docker cluster.

This process of updating it could be carry out of two modes: updating in paralel or updating sequentially.

Reference: https://docs.docker.com/engine/swarm/swarm-tutorial/rolling-update/

2. **How would you assure HA for the whole application?**

Here we have a real isssues if we do not be able to design a cluster which responds or at least can reduce the time from a request made by a user or resquest from a service request.

2.1 Add one or more node to our cluster design.

We can suppose that we will have to increase the number of nodes of our cluster if the number of replicas are not enough.
On the other hand, this solution above it could be not appropiate because the entry point to our cluster is an external load balancer but if this load balancer goes down?, our cluster is going down too.

2.2 Design a cluster or a network of some load balancers distribuited.

We can create a network of load balancer which when one of them go down due to any reason , we can redirect our traffic web to other load balancer and then this to our cluster stack.
This way we will reduce failures in our apps or web server.

3. **How would you improve your solution? Mention next steps to be considered.**

3.1 Security layer.

I think this design can have a security layer mounted or implemented on other node of this cluster. We can create a container/s listening eacht other with the goal of tryint to discover malicious code that can be enter to our app and our network too.

3.2 Virtual machines design of the cluster.

The virtual machines create an isolated environment due to they run one OS for each VM. It could be a bit costly because much resources are needed but on the other hand VM could be a stronger solution because each VM maintains separate of other and has a security layer more than docker nodes, by default.
But it will depend on the specification and needed of each stack technology design.