

Architecture Critical Analysis and Response

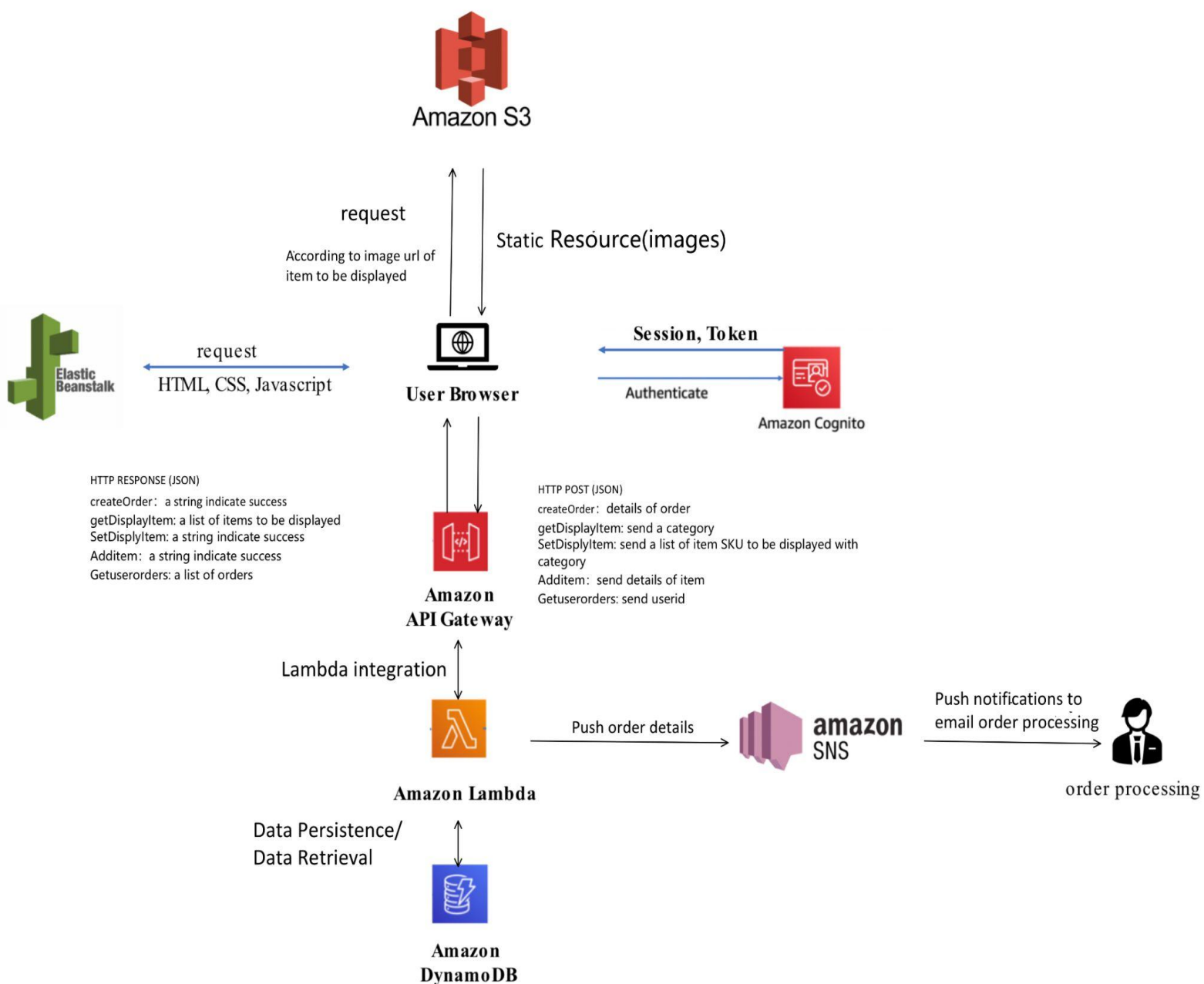
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Architecture of System



Important aspects:

1. Elastic Beanstalk is our most important component in our architecture. It is the platform where we host our website page, html css, and javascript. Every user should communicate with Elastic Beanstalk when opening our website. So we assume it will need to handle the most traffic and therefore, need the highest availability in our system.
2. API Gateway is our second most important component in our architecture. It is called to process every request made by registered users. Most of our functions, like creating orders, retrieving items' information, will need to access the API in this service. We assume this service is required to handle a large amount of request, therefore need a high availability as well.

Architecture Comparison

Similar Architecture:

The most similar architecture to our project in class is service load balancing.

Differences:

The difference between our project and the service load balancing is the service load balancing architecture will distribute the workload to the different virtual servers, and our project will distribute the workload to different ports according to the request path.

Since we are using Elastic Beanstalk in our project, AWS Elastic Beanstalk creates an Elastic Load Balancing load balancer dedicated to the environment. Since we are using the default load balancer setting for our project, it will create an Application Load Balancer for your environment.

According to the official document, an application layer load balancer will route HTTP or HTTPS request traffic to different ports on environment instances based on the request path.

In the class, we learned that the service load balancing architecture will distribute the workload to virtual servers instead of ports. That is the key difference between our work and the one we learned in class, they are similar in structure, but the destination of the distributed work is different.

Architecture Analysis

1. In our architecture, our performance is based on the amount we pay for amazon. There are some architectures that may show better performance. For example, **Cloud Bursting Architecture** allows hybrid implementations, and it increases the security for some aspects of the app.
2. **Cloud Balancing Architecture** is providing higher availability because it provides a failover system that adds resiliency. Its IT resources can be load balanced across multiple clouds so it is more stable compared to our architecture.
3. **Dynamic Scalability Architecture** should theoretically show better scalability, it could scale up(When more compute capacity is needed) or scale out with fluctuations. This architecture could dynamically relocate IT resources, it is flexible when the IT resources need to be changed.

Reference:

"Load balancer for your elastic ... - docs.aws.amazon.com." [Online]. Available: <https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features.managing.elb.html>. [Accessed: 20-Mar-2022].