

Continuous Deployment on the Kubernetes Platform using AWS CodePipeline

aws partner network

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Executive Summary

TOKENEED is a global tokenization ecosystem that builds on full transparency, community empowerment, and regulatory compliance. As an Agile team, TOKENEED frequently releases its product into the hands of end users, and then responds to feedback—whether critical or appreciative. Based on their requirements, we helped them build a continuous deployment process, which allowed application code to be released to the production environment in a more efficient way than their traditional manual process by 80%. As a result, it enabled a quicker return on the economic investment into the product.

TOKENEED's Challenge: Frequent Releases

TOKENEED manages a Kubernetes platform on AWS, and containerizes and deploys the application as Kubernetes pods, services and deployments. As a fast-growing enterprise in the field of tokenization, TOKENEED updates its production frequently to meet the requirements of the market and new technical tools and regulations. In legacy deployment processes, a package was built based on source code, and a new docker image was created, delivered to the Kubernetes platform and then deployed in the production environment. Without a systematic continuous deployment pipeline, this process was time-consuming, unstable, unstandardized, and had the tendency to rigidly revert back to the previous version.

Why Use AWS Codepipeline

AWS CodePipeline is a continuous delivery service that can be used to model, visualize, and automate the steps required to release new software. In CodePipeline, different stages of a software release process can be quickly patterned, configured and integrated with other AWS services such as CodeBuild, Lambda, CodeDeploy and ECS. This suite of tools is completely serverless—which enables a small team to focus on product development rather than spending valuable time on infrastructure maintenance. In this case, CodePipeline automated the steps required to continuously release TOKENEED's software changes.

Why Choose ASCENDING

ASCENDING team members are highly experienced in containerization and AWS infrastructure automation. Prior to this project, we have completed similar assignments for organizations and entities on different scales. Before the continuous Deployment job, ASCENDING worked with TOKENEED on AWS architecture design and application development. This built up trust in our team's professionalism, accountability and productivity. For this reason, we were chosen to perform this complex assignment.

About TOKENEED

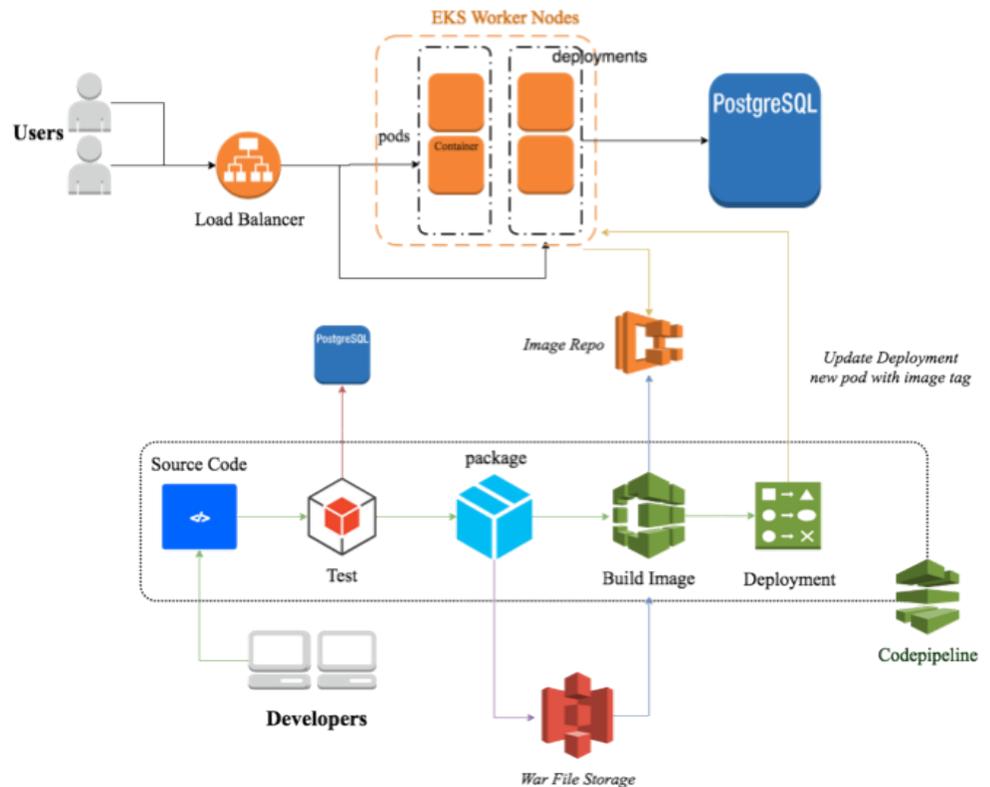


TOKENEED is a global tokenization ecosystem that builds on full transparency, community empowerment, and regulatory compliance. TOKENEED bridges world-class blockchain projects with global investors through our complete tokenization system that ensures sustainable success for our partners and our community members.

Our Solution for Continuous Deployment on AWS

Our Continuous Deployment process includes the following stages:

1. **Source:** Retrieve source code from GitHub and AWS CodeCommit.
2. **Test:** Connect to test database to do unit tests—this stage may happen before or after the **Build Stage**.
3. **Build:** Build a **.war** file and a docker image and store them on S3 and ECR respectively, or directly transmit them to the next stage.
4. **Deployment:** Deploy the most current version to the running application. In this stage, the deployment strategy can be **Rolling**, **Immutable** or **Blue/Green**—which ensures that the application will have zero downtime for users.
5. **Monitor:** The status of each stage and the health of the application is monitored and alarmed during the entire continuous deployment process.



Note: The key step in deployment is to update the image version. Both Lambda and CodeBuild can be used to execute the deployment process. We have [a detailed blog](#) explaining how to technically achieve it.

Results and Benefits:

Rapid Iteration on Product and Quick Return on Economic Investment

Our continuous deployment process saved more than 80% of the time spent on the product release for TOKENEED—which helped them get a quicker return on investment. In addition, ASCENDING also helped TOKENEED standardize the application deployment process by reinforcing the consistent deployment behavior of each product release. TOKENEED also benefitted from this well designed architecture for its security, high availability and stability. And each deployment process was tagged with a unique hash code, which made it easy to trace back to previous versions of production—all with zero downtime for customers!

About ASCENDING LLC

ASCENDING is an AWS Standard Consulting Partner. We provide AWS Cloud consulting services to enterprise customers and AWS certification training. Our main focus is on Java Spring application development, CI/CD of micro-service containers & serverless applications, DevOps maintenance and cost optimization etc.

