

Reduced Release Delivery Timeline from 90 Minutes to 10 Minutes

Highly complex multi-region Kubernetes deployment on AWS

ABOUT ACCESS.IO

ACCESS.IO offers world-class Managed Cloud Services to businesses worldwide. In a relatively short period of time, ACCESS.IO has already served a number of enterprise clients, and has quickly evolved into a niche consulting firm specializing in Cloud Advisory, Cloud Managed Services and DevOps Automation.

ABOUT DDS Wireless

Headquartered in Canada with offices in several other locations in North America and Europe, DDS Wireless is re-envisioning transportation for the 21st century. By developing cutting-edge solutions to book, manage and optimize trips, DDS is revolutionizing transportation tech and making it future-ready. Its patented 'routing and scheduling' and 'closest cab dispatch' algorithms are among the best in the global industry. The company provides both hardware and software, making it one of the undisputed leaders in integrated transportation solutions.

THE CHALLENGE

Every DDS transport tech SaaS-based solution helps optimize transportation with a “people-first” approach. However, in late 2020, DDS had a serious problem: the time required to roll out both fixes and new releases was going way beyond acceptable limits and set SLAs. Customers were also complaining about the company’s lowered service availability. DDS was also struggling to adequately support unplanned or sudden spiky workloads, which presented unique architectural challenges at unexpected times. Finally, due to a monolithic and complex deployment process, the risk of system breakdown during critical production deployments was very high.



THE SOLUTION

First, we enabled auto-scaling at both the node and pod levels. With auto-scaling, the size of the node pool is automatically increased (or decreased) based on resource requests rather than on actual resource utilization of pods running on that pool's nodes. The solution periodically checks pod and node status, and takes appropriate action. E.g., if pods are unschedulable, the auto-scaler adds nodes. And if nodes are under-utilized, it automatically removes nodes. By keeping the managed instance group sizes balanced when scaling up, it prevents uneven node distribution among managed instance groups in multiple zones of the node pool.

Next, we redesigned deployment pipelines for atomic deployments, i.e. deployments where the switch to the new version requires a single “atomic” step. The main aim here was to eliminate the maintenance window so that all DDS apps are always available to users. The atomic deployment pipeline is especially useful when lots of files need to be deployed to the server, or when the nature of the service means that downtime tolerance (e.g. for changes) is very low or even nil. This also makes it easy to customize and expand the workflow by adding additional actions, or to rollback changes to a previous version.

Finally, we created a design and roadmap for multi-region deployments. Here the goal was to enable DDS to more easily control updates to infrastructure for applications deployed across primary and secondary regions, and meet availability SLAs for customers in all these regions.

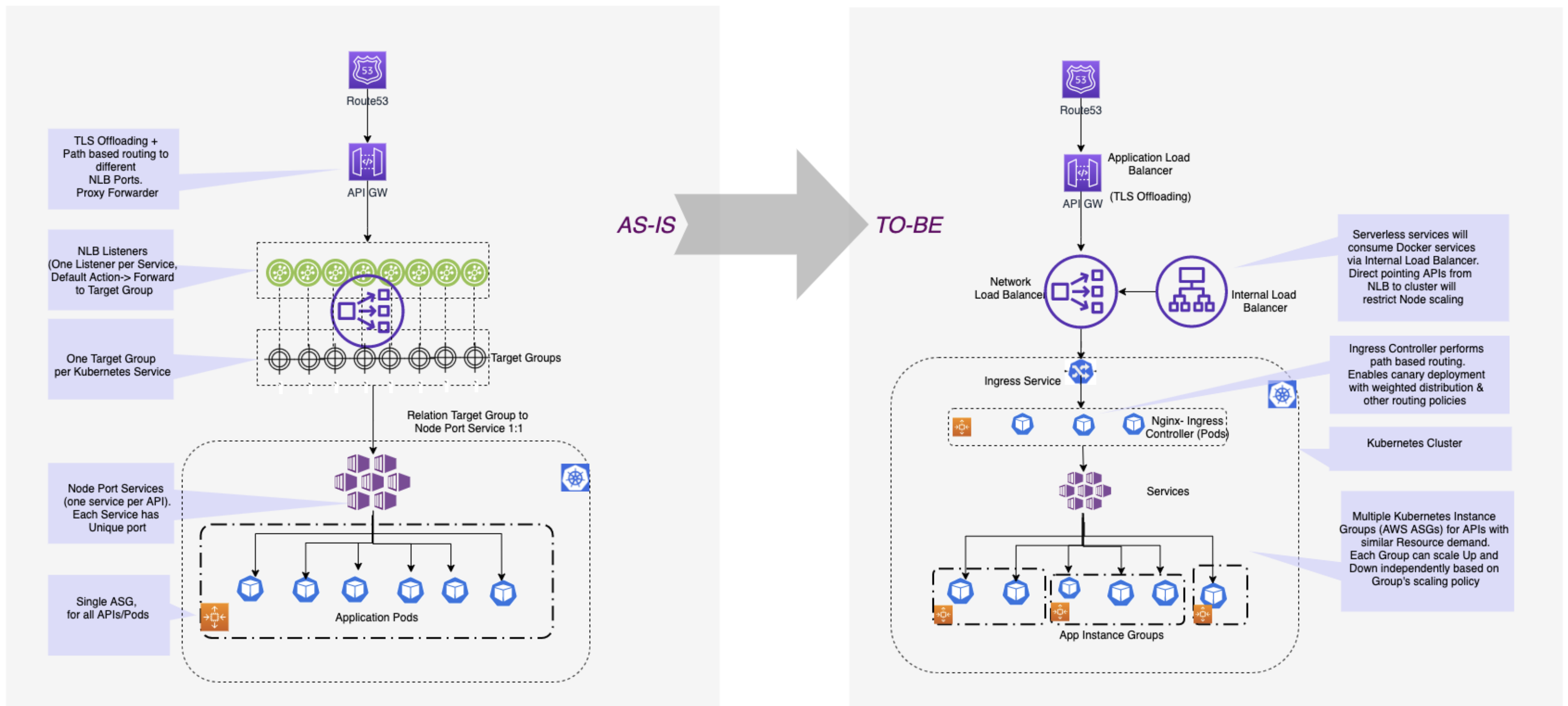
Key solution elements:

1. Enable auto-scaling at node and pod levels
2. Redesigned deployment pipelines for atomic deployments
3. Design and roadmap for multi-region deployments

PROJECT DURATION

From planning to deployment to full migration and integration:

This was a 12 weeks projects which involved as-is system analysis, solution design, implementation and roll-out.



THE BENEFITS



Massively reduced deployment time

The deployment time for DDS reduced from 90 minutes to just 10 minutes



Support for spiky loads

Elastic service deployments support any kind of spiky load with minimal impact on development efficiency or productivity



Easier multi-region deployments

Developers can quickly deploy and manage applications across multiple regions so SLAs are never missed .

NEXT STEPS

To learn how cloud migration, AWS and Aaccess.io can help your business achieve long-term digital transformation at low cost, email sales@access.io or visit our website.