

Well Architected Reviews support greater data sharing and collaboration by enhancing platform performance, security, and reliability



About National Biodiversity Network Trust

For more than twenty years the [National Biodiversity Network Trust \(NBN Trust\)](#) has been making the UK's biodiversity data accessible, to support better decisions about the natural world and to connect people with nature. The charity's data portal, the [NBN Atlas](#), is one of the world's largest repositories of publicly available biodiversity data. With more than 200 million records of over 46,000 UK species, the NBN Atlas is at the heart of the data flow for nature's recovery and is a vital resource for those who wish to understand and protect nature.



The Challenge

The NBN Atlas development team had just embarked on a major project to upgrade the NBN Atlas platform. The project included optimising the management of the AWS infrastructure and modernising DevOps practices.

With only a small development team, NBN Trust was spending too much time manually managing the platform and knew that they were not making full use of the available AWS services. Also, as a non-profit organisation with controlled budgets, they were keen to make sure instances across the platform were the right size and cost-optimised.

The Solution

AWS recommended CirrusHQ to perform a Well Architected Review. For the review, two application stacks were chosen. A frontend web portal and a biodiversity data web service that included a Cassandra cluster and a Solr cloud.

The scope of the review was to implement Security Defence in Depth, increase operational visibility and streamline operational methods to a fully automated solution. This included the implementation of security best practices from the ground up including enforcing encryption at rest and in transit. We also included scope to implement a centralised logging solution with actionable security events.

Operational health, performance, and cost optimisation reviews were carried out to stabilise the workload, reduce downtime, and adapt a performance vs cost balance approach. Monitoring was implemented to notify when essential workload resource Key Performance Indicators are at risk and the CI/CD process to build, test, and deploy application releases was also reviewed.

The Benefits

Reduced scaling requirements

Trade-off analysis to adapt a highly scalable, performant, and cost optimised architecture

Greater platform security and Disaster Recovery reliability

Secure and regularly scheduled AWS Backup for AWS EBS Volumes to significantly improve RPO

Optimised platform performance and increased supportability

CloudWatch monitoring and alerts for at-risk performance and service metrics

Enhanced awareness of how to cut costs and monitor spend

New ability to track workload spend and identify cost savings

About APN Partner CirrusHQ and Amazon Web Services

National Biodiversity Network Trust was introduced to CirrusHQ by AWS as an Advanced Consulting Partner with the correct certifications and accreditations to assist them via the Well-Architected Framework.

This framework was used to deliver an evaluation of their architecture's key concepts and design principles and to implement architectural best practices for running workloads in the AWS Cloud. A Review is designed to help organisations find opportunities for significant cost savings, improved application performance and reduced security risks.

Next Steps

To learn more about how AWS and APN Partner CirrusHQ can help your business, visit www.cirrushq.com

“CirrusHQ were helpful, friendly, and happy to pass on knowledge which we're now using to drive further cost savings. They identified and optimised two workstreams with new logging, monitoring, and security capabilities, and we now feel more confident with automated backups that were previously manual. CirrusHQ also right-sized our instances to ensure we're not paying too much and have adequate capacity, setting budget alarms so we no longer get any unexpected surprises.”

Helen Manders-Jones, Lead Developer, National Biodiversity Network Trust