

EPLEXITY

Envision Energy Case Study

Project: DevOps for high performance computing

Company: Envision Energy

Industry: Energy

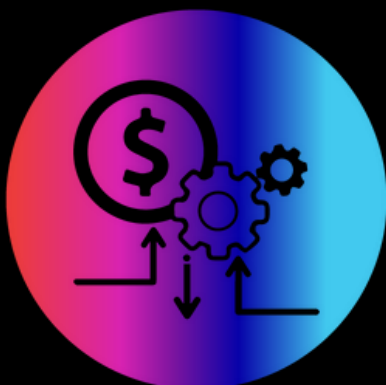
About:

Envision Energy is committed to creating a sustainable future by revolutionizing the energy industry through advanced technologies. Since its foundation in 2007, Envision Energy has maintained rapid growth in its business operations, becoming a top tier global provider for smart energy technologies and services, including sales of smart turbines, smart energy management software and technological services. Envision Energy's R&D efforts include building machine learning and data analysis technologies that turn data into valuable information.



Challenge:

In a traditional architecture, gaining actionable insights for various computational intensive workloads can present a challenge in areas of cost, velocity, and scale. Due to the vast amount of data being computed, a new DevOps and HPC approach was desired in order to quickly scale the compute resources needed to keep R&D velocity. The economics of purchasing IT solutions for peak workloads that lasted only a few minutes each day did not make sense.



Intensive workloads increased cost.



Large amounts of data needed to scale to keep R&D velocity.



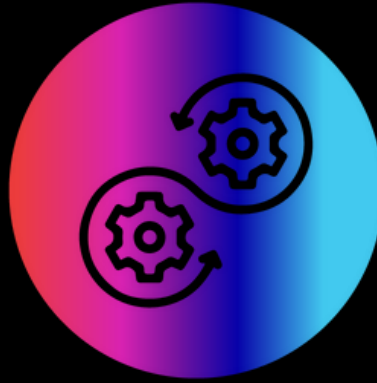
Supported scaling around the clock.

Solution:

Envision depends on ML and data analysis to turn renewable energy data into actionable insights. With high-performance compute and large storage requirements, Eplexity designed and implemented a DevOps process to support Envision's rapid, dynamic workload scaling. Automation included cluster sizing based on job metrics and compute node availability, spin-up and clean-up of HPC Clusters, large data set archival, and DR systems provisioning. Utilized EC2, ELB, S3, EFS, Glacier, CFNCluster, and SLURM.



Implemented DevOps processes to support scaling.



Cluster sizing, spin-up and clean-up of HPC clusters, archival of large sets of data, and DR systems provisioning.



Utilized EC2, ELB, S3, EFS, Glacier, CFNCluster, and SLURM.

Outcome:

Faster Time to Results: Increase the speed of R&D and reduce the time-to-results by running scalable HPC solutions in AWS

Concurrent Clusters On-Demand: Use open source & AWS services together for an on-demand, cost effective, and high-performance solution

Unlimited Infrastructure: AWS enables scaling to an unlimited number of parallel tasks than would be practical in most on-premises

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