

Simplify deployment and management of HPC workloads

As the first cloud-based product to be verified as an [Intel Select Solution](#), AWS ParallelCluster enables customers to easily deploy high-performance computing (HPC) workloads on AWS.

What are Intel Select Solutions?

Intel Select Solutions are designed to save customers time and enable them to deploy Intel Xeon-based infrastructure with even greater confidence, by providing pre-validated solutions optimized for real-world performance.

Every Intel Select Solution is built to meet high thresholds of resiliency, system agility and service reliability.

HPC in the cloud

\$8.8bn

projected end user spend on cloud-based HPC by 2024¹



2.5x

expected growth rate of HPC in the cloud compared to on-premises, to 2024²

How AWS ParallelCluster transforms HPC workloads

Simplify migration to the cloud

AWS ParallelCluster supports a range of batch schedulers and operating systems, enabling you to move many existing HPC workloads to the cloud with minimal or no modification. This provides a simple, cost-effective, and low-risk way to free yourself from on-premises constraints and experience the elasticity, flexibility and cost-optimization offered on AWS.

Optimize production workloads and free up staff time

Every HPC workload needs the right blend of compute, storage, and networking resources. Sizing and managing traditional HPC environments can be time-consuming. AWS ParallelCluster streamlines the management of multiple HPC clusters, and enables users to optimize clusters to match workload requirements. This frees up time to focus on analysis and innovation.

Rapid provisioning enables rapid prototyping

Engineers and researchers, innovating at pace, often require HPC clusters to test their products at short notice. AWS ParallelCluster helps them provision their infrastructure quickly, without manual actions or custom scripts.

AWS ParallelCluster as an Intel Selection Solution

Choose from three families of AWS EC2 instances (C5n, M5n and R5n).

Configure the resources you need for your HPC applications and enable your Intel Select Solution with a single parameter or by using pre-built templates.

Use a range of job submission queues and schedulers, including AWS Batch and Slurm.

Benefits of using AWS ParallelCluster as an Intel Select Solution

AWS ParallelCluster is free to use: Only pay for the AWS resources you use.

Save time when provisioning and managing HPC clusters: Use pre-certified cluster configurations. Provision resources safely and reproducibly, without the need for manual actions or custom scripts.

Scale resources automatically, to match real-time demands: Use a text file to model, provision and dynamically scale resources automatically. Use Elastic Fabric Adapter for low-latency, low-jitter inter-instance communication.

Optimize performance: Run on Intel Xeon Scalable processors and 100 Gbps networking bandwidth. Use the high-performance Amazon FSx for Lustre filesystem for sub-millisecond latencies, and to scale to hundreds of Gbps throughput and millions of IOPS.

Customer story: Flying Whales

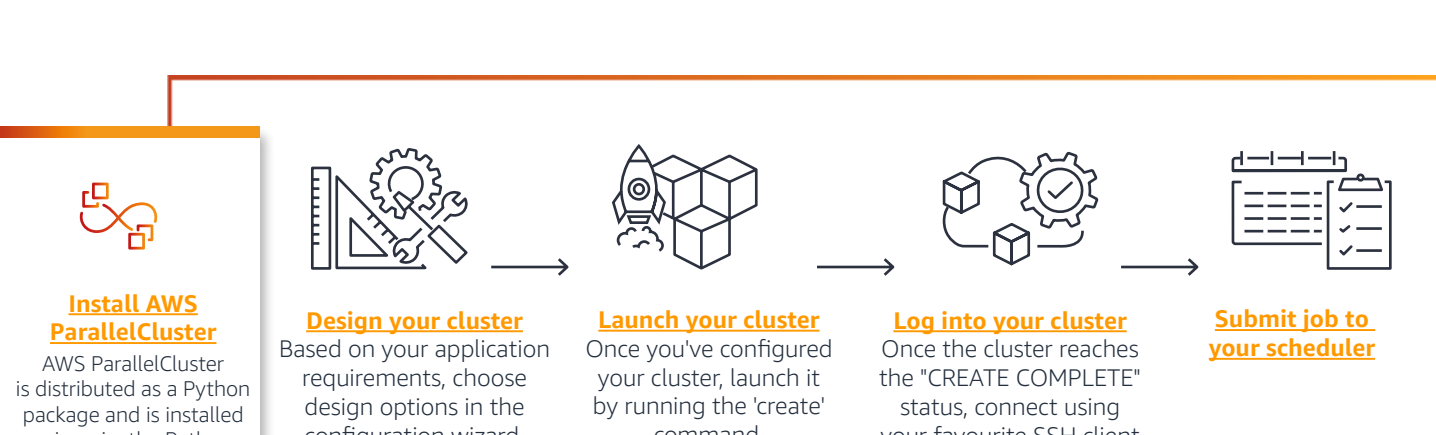
Flying Whales is able to launch its HPC clusters in 15 minutes, and run computational fluid dynamics (CFD) workloads up to 15x faster than in its previous on-premises environment, using AWS ParallelCluster.

[Read the full case study.](#)

The technology behind AWS ParallelCluster

AWS ParallelCluster is an open source cluster management tool released via the Python Package Index (PyPI). Its source code is hosted in the [AWS repository on GitHub](#).

Get started



To learn more, visit <https://aws.amazon.com/hpc/parallelcluster/>

1,2 <https://www.youtube.com/watch?v=9LXTku-yrmM>, Hyperion Research, 2020

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