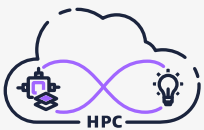


High Performance Computing with Intel and AWS

⚠ Challenges

Challenges with on-premises HPC

High Performance Computing (HPC) has always been about solving the world's most complex problems. For too long, however, HPC applications and workloads have been constrained by limited infrastructure capacity, high capital expenditures required to procure and install on-premises HPC infrastructure, over-subscription of capacity to cater to increasing demands for compute resources, and the constant need for technology refreshes.



The AWS and Intel Solution

Innovate without infrastructure constraints

Together, AWS and Intel offer customers a broad and deep set of leading compute, networking, storage, cloud orchestration and visualization technologies with a vibrant partner ecosystem. This results in a customizable computing environment suitable for a broad range of HPC workloads, from scientific computing to computer aided design to AI and ML/DL. This enables customers to run the most compute-intensive HPC workloads faster, at higher scale, securely and more cost-effectively. With virtually unlimited infrastructure capacity, moving HPC workloads to AWS enables engineers and researchers to innovate without constraint.

Common Use Cases



FINANCIAL SERVICES

Utilize grid computing to power actuarial calculations, determine capital requirements, model risk scenarios, price products, and perform other critical business operations. By taking these compute-intensive workloads out of the data center and using the latest Intel® Xeon® CPU powered EC2 instances on AWS, you can realize increased speed, scalability, and cost savings.



LIFE SCIENCES

Deliver insights to doctors and researchers faster and more cost-effectively. Maintain strong security and compliance, aided by technologies like Intel® Advanced Encryption Standard New Instructions (Intel® AES NI). Eliminate long queues for HPC clusters to help keep researchers productive.



ENGINEERING SIMULATION

Empower your team to run the simulations they need without waiting for access to on-premises HPC clusters by leveraging Amazon EC2 instance types powered by the latest Intel Xeon processors. Leverage existing simulation and modeling software in concert with native AWS services.

★ Key Benefits



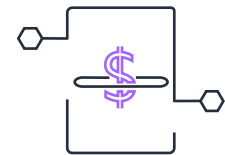
ACCELERATE INNOVATION

Enable engineers and researchers to innovate without constraints allowing scalability and agility not attainable on-premises. You can quickly migrate to newer, more powerful Amazon EC2 instances with Intel Xeon processor technology. This removes the risk of on-premises CPU clusters becoming obsolete or poorly utilized as your needs change over time.



COLLABORATE SECURELY

AWS is compliant with the latest revisions of GDPR, HIPAA, FISMA, FedRAMP, PCI, and other regulations. Encryption and granular permission features guard sensitive data without interfering with your ability to share data across approved users. The AWS global infrastructure enables you to share and collaborate efficiently with team members across the globe without compromising on security.



OPERATE COST-EFFECTIVELY

Choose from any combination of pay-as-you-go pricing options, procuring only the capacity you need, for the duration that it's needed. This enables you to break free from the time- and budget-constraining, CapEx-intensive data center model. With AWS and Intel, your HPC solution parallels both the compute demands of the engineers and researchers, and the finance team's budget.

Fabric Genomics Case Study



Fabric Genomics is a software genomics company that provides end-to-end genomic data analysis, annotation, curation, classification, and reporting solutions to clinical labs, hospital labs, life science companies, country sequencing programs, and research institutions. By identifying which genome variants are disease-causing, Fabric Genomics helps doctors determine the best treatment and medications for their patients based

on the patient's genetics. Strong performance and reliability is key to the solution's customer value proposition, so they choose to run it on AWS. In a typical lab, which uses on-premises clusters, it takes roughly 12 weeks to sequence and interpret a genome. With AWS, Fabric Genomics can perform this same analysis in two hours. By leveraging the AWS global infrastructure, customers have the flexibility to run Fabric Genomics' software in an AWS Region close to them, which reduces distance-based latency to deliver high-performance.

Intel and AWS

AWS HPC solutions leverage the power of the latest Intel® technologies and flexible configuration options to help companies across nearly every industry achieve their HPC results. From the traditional HPC applications like genomics, life sciences research, financial risk analysis, computer-aided design, and seismic imaging, to the emerging applications like machine learning and autonomous vehicles, AWS and Intel's HPC solutions are enabling rapid innovation. With AWS and Intel, you can simplify operations, save money, and get results to market faster across your entire HPC practice.

Learn more about Intel and AWS at aws.amazon.com/intel

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