rescale

RESCALE FOR THE ENERGY SECTOR

High Performance Computing
Built for the Cloud

Industry Solutions Overview

- » Discover new energy technologies
- » Increase energy system efficiency
- » Accelerate project timelines
- » Improve operational safety
- » Meet strict compliance standards

"Rescale simplifies high performance computing, which helps us improve our models and make new discoveries faster. Ultimately it's about commercializing our technology faster so we can accelerate global decarbonization."

— Seonghoon Woo Ph.D., CEO, Amogy

Powering Engineering Breakthroughs to Meet Growing Global Energy Demands

Energy companies from oil & gas and renewables to producers and utilities depend on new computational tools to meet growing efficiency and safety requirements. High performance computing (HPC) was traditionally managed on-premises but the rapid growth in energy complexity combined with new technologies available in the cloud has driven leading energy companies to move their digital engineering to the cloud to transform their capabilities and productivity.

northvolt · sse · NOV · Ørsted · Kairos Power · AMOGY

Enable Advanced HPC Applications

Computational fluid dynamics (CFD), particle fluidics, Finite Element Analysis (FEA), Hydrodynamics and other solving methods applied to energy use-cases:

- Offshore platform simulation
- Windmill turbine placement
- Sub-sea exploration
- Turbine components
- Flexible pipelines
- Mooring stabilization

Drive Measurable Business Value

Reduced Time to HPC Deployment

"We saw a 95% reduction in time to deployment and successfully ran HPC jobs in the cloud - from 9 months on our own to just a few days with Rescale."

- Oil and Gas Customer

Increased engineering efficiency:

"Rescale accelerated job performance 70%, giving our engineers answers in just hours versus days."

- Utility Customer

Cost savings:

"Thousands of dollars saved per week due to CFD workload optimization and maximizing license utilization."

- Renewable Energy Customer

Leading HPC software for the Energy Sector, Pre-installed and Ready to Deploy Today!

Ansys · BARRACUDA · LS-DYNA · orcina · ROCKY · SIMULIA Abaqus · STAR-CCM+ · RFD

Ansys Aqwa, Fluent, and Mechanical, STAR-CCM+, SIMULIA Abaqus, BARRACUDA CPFD, Rock Flow Dynamics, LS-DYNA SPH, Orcina Orcaflex, RockyDEM and **800+ software on Rescale**

Rescale gives you turnkey access to the latest technologies on-demand

Latest HPC applications and versions
Pre-installed, tuned, and ready to deploy today.

STAR-CCM+ · ROCKY · orcina · SIMULIA Abaqus · Ansys · LS-DYNA

PLUS 800+ COMMERCIAL AND OPEN SOURCE SOFTWARE

Any application
rescale
Any infrastructure

World's largest selection of specialized hardware
Thousands of HPC architecture configurations

Azure + AzureGovernment · aws + GovCloud · Google Cloud · ORACLE CLOUD · AMD · NVIDIA · intel

Intuitive, time-saving user interface

Rescale automates cloud HPC complexity, making job submission as easy as a few clicks

Engineering Tasks · Infrastructure Tasks

Cloud HPC with Rescale

Run jobs in minutes, accessible to anyone with a browser

Requirements

A computer with an internet browser (e.g., Chrome) allows ease of access for scientists, researchers and engineers.

Steps to run a job

1. Sign into Rescale from any browser
2. Upload software input files
3. Choose ANSYS Fluent and use auto-recommended hardware or customize
4. Submit Job and download results

VS

Cloud HPC without Rescale (e.g. DIY with Cloud Provider)

Requires HPC IT experties and days of technical work to run a job

Requirements

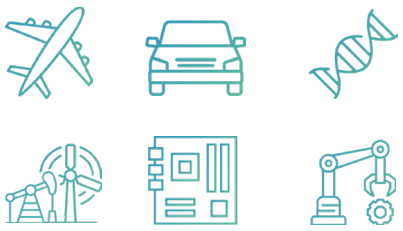
- A computer with an internet browser (e.g., Chrome)
- An cloud provider account with IAM user with Admin privileges
- Familiarity with cloud provider infrastructure services
- Familiarity with Linux terminal commands
- Access to install files and familiarity with using commercial software

Steps to run a job

1. Create a VPC and Subnet on your CSP account
2. Create a storage bucket on your CSP account
3. Create an IAM role for accessing your storage bucket
4. Request increase your service quota
5. Setup a budget in CSP Budget
6. Select optimal VM/Instance types
7. Create machine images and templates for workload
8. Configure cluster networking
9. Configure license servers
10. Create / configure a parallel file system for working directories
11. Launch the cluster
12. Connect to the cluster via command line or interactive session
13. Upload software input files
14. Move files from storage to the parallel file system
15. Create a scheduler job submission script
16. Submit job to the scheduler
17. Wait to see if job completes successfully
18. Copy results to storage bucket once the simulation is complete
19. Shutdown the cluster and cleanup resources
20. Download results from storage bucket

More Time to Accelerate

Science and engineering discoveries

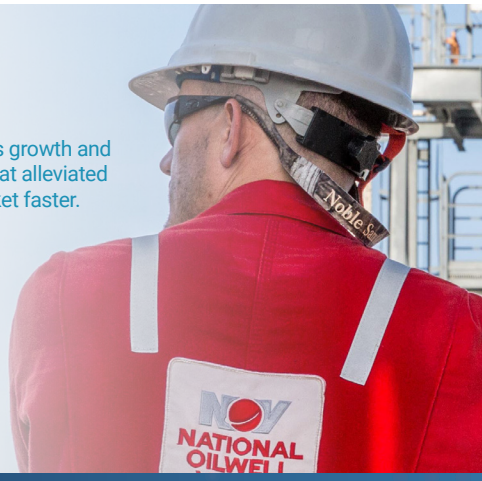


NOV Goes All-In on Cloud HPC With Rescale to Unlock Engineering Productivity & Manage Growth

NOV faced increasing engineering delays from HPC resource queuing and backlogs of IT support caused by business growth and new R&D initiatives. Engineering and IT teams decided to pursue a global cloud HPC strategy managed on Rescale that alleviated resource constraints and unlocked new capabilities in oil and gas and renewables R&D to bring new products to market faster.

"Being cloud-native gives NOV the advantage of improved agility and efficiency across our many areas of R&D from offshore to renewables. Rescale streamlined our cloud transformation and continues to help us find new ways to improve our engineers' productivity and develop new products faster."

- Matthew Robinson, Engineering Systems Manager, NOV



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About Rescale

Rescale is high performance computing built for the cloud to empower engineers while giving IT security and control. From supersonic jets to personalized medicine, industry leaders are bringing new product innovations to market with unprecedented speed and efficiency with Rescale, a cloud platform delivering intelligent full-stack automation and performance optimization. IT leaders use Rescale to deliver HPC-as-a-Service with a secure control plane to deliver any application, on any architecture, at any scale on their cloud of choice.