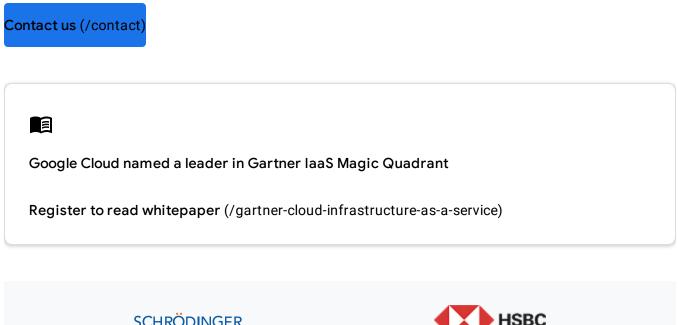New A2 VM Family : Based on the NVIDIA A100 GPU, for your most demanding applications.
Request access to our alpha here
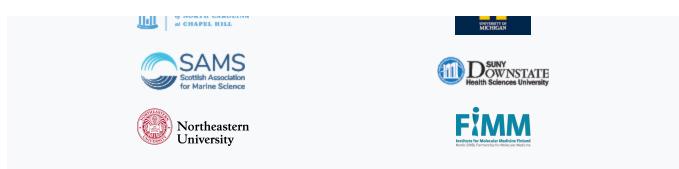(https://inthecloud.withgoogle.com/nvidia-interest-20/dl-cd.html).

JUMP TO (#)   ⌄

High performance computing

High performance computing (HPC) is all about scale and speed. Google Cloud's
flexible and scalable offerings help accelerate time to completion, so you can convert
ideas into discoveries and inspirations into products.

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📖

Google Cloud named a leader in Gartner IaaS Magic Quadrant

Register to read whitepaper (/gartner-cloud-infrastructure-as-a-service)

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BENEFITS

A powerful and flexible infrastructure to support scalable workloads

Cut the queues

Each team can access their own scalable, tailor-made cluster to reduce queue times for large-batch workloads and relieve compute resource limitations.
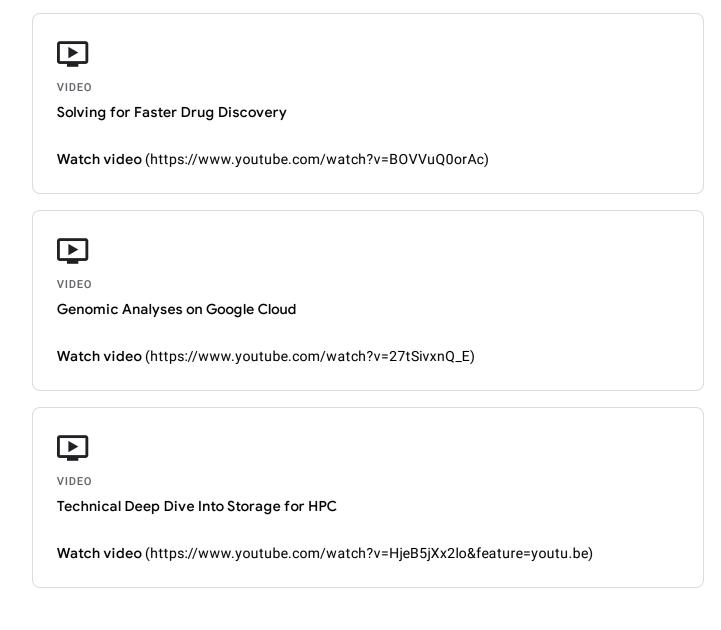
Pay only for what you need

Access custom machine configurations (/custom-machine-types) to control costs with committed (/compute/docs/instances/signing-up-committed-use-discounts) and sustained (/compute/docs/sustained-use-discounts) use discounts. Get up to 80% cost savings with Preemptible VMs (/preemptible-vms).

Innovate with high-performance, on-demand resources

Build your own supercomputer using the latest Intel and AMD processors, NVIDIA GPUs (/gpu), and high-throughput, low-latency object (/storage) and file (/solutions/filers-on-compute-engine) storage.
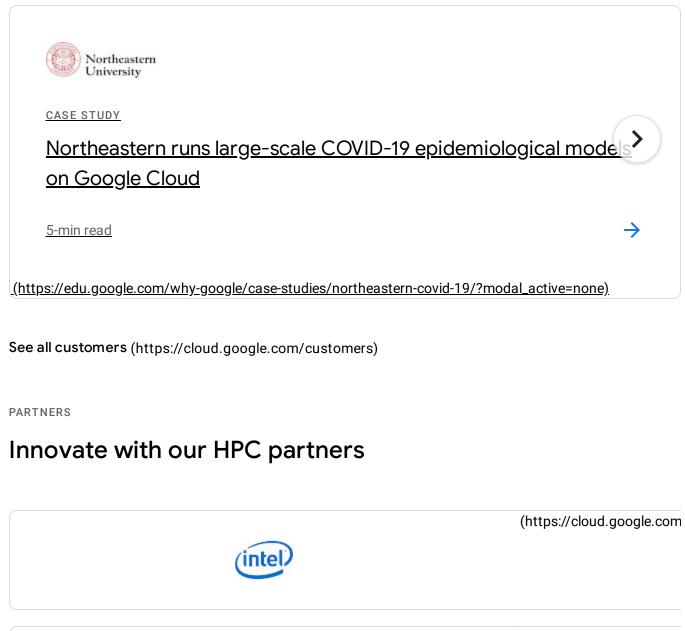
Read more about HPC in Hyperion Research's <u>The Future of HPC Cloud Computing</u> (https://services.google.com/fh/files/misc/gcp_hyperion_tech_spotlight_aug_2019.pdf) report.

See what challenges HPC is solving for

VIDEO

Solving for Faster Drug Discovery

Watch video (https://www.youtube.com/watch?v=BOVVuQ0orAc)

VIDEO

Genomic Analyses on Google Cloud

Watch video (https://www.youtube.com/watch?v=27tSivxnQ_E)

VIDEO

Technical Deep Dive Into Storage for HPC

Watch video (https://www.youtube.com/watch?v=HjeB5jXx2lo&feature=youtu.be)

CUSTOMERS

Explore HPC case studies

Northeastern
University

CASE STUDY

Northeastern runs large-scale COVID-19 epidemiological models on Google Cloud

5-min read   →

 (https://edu.google.com/why-google/case-studies/northeastern-covid-19/?modal_active=none)

See all customers (https://cloud.google.com/customers)

PARTNERS

Innovate with our HPC partners

(https://cloud.google.com

(intel)

(https://cloud.google.com/r

NVIDIA.

(https://www.amd.com/en/processors/epyc-google-

AMD

(https://github.com/SchedMD/slurm

SchedMD

SchedMD

(https://console.cloud.google.com/marketplace/partners/ddn-p

ddn

(https://cloud.google.com/ne

NetApp

(https://www.rescale.com

rescale

(https://www.ansys

Ansys

(https://atos.net/en/about-us/partners-and-alliances/google-cloud-and-atos-global-partne

Atos

(https://www.burwood.com/g

burwood group, inc.

(https://cloud.withgoogle.com/partners/detail/?
id=ACkb94Yz_fpvKR81S3pKogl_6FwGTrvBwEDNG3t47quoxxhWb2Df0XGkRaBy4CpMo5t8zmAkBran&

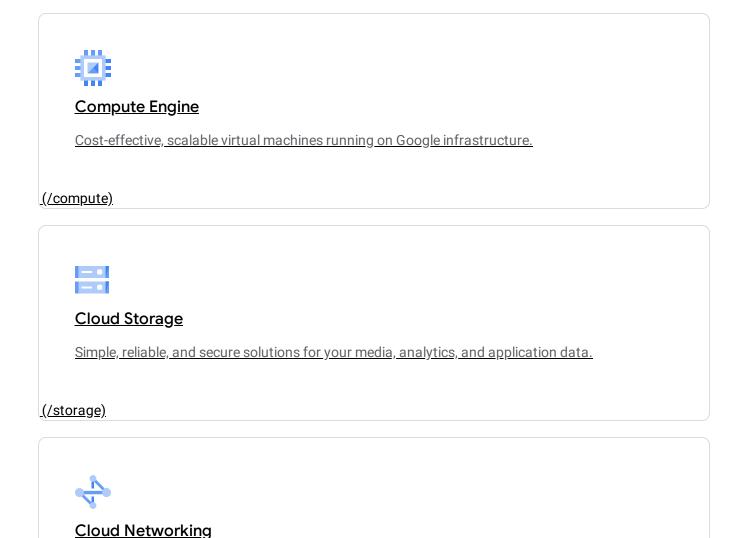(https://www.nag.com/content/nag-cloud-hpc-migration-se

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Cloud Networking

A global fiber network connecting you to the world.

(/products/networking)

DOCUMENTATION

See tutorials, guides, and resources for this solution

BEST PRACTICE

Best practices for running tightly coupled HPC applications

Learn best practices for tuning Google Cloud resources for optimal Message Passing
Interface (MPI) performance.

Learn   (https://cloud.google.com/solutions/best-practices-for-using-mpi-on-compute-
more   engine)

TUTORIAL

Deploy an auto-scaling HPC cluster with Slurm

Gain a solid understanding of the ease of provisioning and operating an autoscaling
Slurm cluster.

Learn more (https://codelabs.developers.google.com/codelabs/hpc-slurm-on-gcp/#0)

TUTORIAL

Genomics: Running a GATK best practices pipeline

Run a pipeline on Google Cloud using the GATK Best Practices for variant discovery in whole genome sequencing data provided by the Broad Institute.

Learn more (/life-sciences/docs/tutorials/gatk)

Create a virtual GPU-accelerated Linux workstation

Create a virtual Linux workstation running CentOS with one of three attached display-capable NVIDIA GPUs T4, P4, and P100.

Learn more (/solutions/creating-a-virtual-gpu-accelerated-linux-workstation)

Google Cloud Public Datasets

Explore high-demand public datasets, making it easy for you to access and uncover new insights in the cloud.

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WHAT'S NEW

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BLOG POST   (/blog/topics/inside-google-cloud/how-google-
                                                    cloud-is-helping-covid-19-academic-research)
How Google Cloud is helping COVID-
19 academic research with HPC   ❯

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