**Overview**

Grex is a High-Performance Computing system of the University of Manitoba. Its current compute capacity consists of three parts: legacy compute nodes, new compute nodes purchased in 2020 and 2021, and researcher-contributed nodes. There is also now partially community-funded storage on Grex.

This call is for renewing and updating the allocation of the resources of the Grex HPC system (CPU time in core years and storage in TBs). These resources are as follows:

* New compute nodes added in 2020 and 2021
  + two GP GPU nodes (Intel 5218 Cascade Lake, 4x NVIDIA V100)
  + 12 of 40 core Intel CascadeLake 6248 2.5GHz compute nodes, 384GB RAM
  + 42 of 52 core Intel CascadeLake 6230R 2.1GHz compute nodes, 96GB RAM
* Contributed GPU nodes
  + 3 of 4x NVIDIA V100 nodes, 32 core Intel CPUs, 192 GB RAM
  + 1 of 16x NVIDIA V100 HGX-2 node 48 core Intel CPU, 1.5TB of RAM
  + 2 of 2x NVIDIA A30 nodes, 24 AMD CPU cores, 256 GB RAM
* Legacy compute nodes from 2011
  + About 230 remaining original compute nodes, 12 cores 2.67GHz Nehalem processors each with 48GB RAM
* Storage: NVMe /home (15TB) , /scratch (418TB legacy parallel ) and new /project (1PB, 750TB reserved to the contributing Faculties of Science and Engineering).
  + Both /scratch and /project space are allocated by default RAS process, but research groups from the contributor Faculties may ask for large storage allocation.
  + It is still possible to expand the /project storage should there be a need and more contributed funding.

In this round of resource allocations, we will allocate newly added compute nodes only (a total of **2664** CPU cores in 54 CascadeLake nodes).

* General GP GPUs nodes are available on a first-come, first-served basis. Please indicate if you might need GPUs in your proposal.
* The legacy 316 compute nodes will likely be decommissioned in near future. Until that, they are available on a first-come, first-served basis. Please indicate if you need these nodes in your proposal.
* Contributed GPU nodes are not allocatable, they are available for opportunistic, preemptible use when not used by their contributors.

Proposals for the use of Grex resources will be reviewed by the Advanced Research Computing (ARC) Committee. They will also be reviewed by Grex technical staff to ensure that Grex resources will be used appropriately and efficiently.

**Categories of Resource Requests**

The request for ARC resources must come from a PI. There are two (2) categories of resource requests:

1. Rapid Access Service (RAS) ts limited to less than 30 core-years, 2 GB memory/core, and 5TB of storage per research group. For information and access please email [arc@umanitoba.ca](mailto:arc@umanitoba.ca)
2. Resource Allocation Competition (RAC). This includes resources more than those allocated for RAS and requires the completion of a proposal in the format outlined below.

**Proposal Format**

Please use the attached 2022 RAC Request Template for your proposal. You may remove all explanations (text in italics) if desired.

This template attached is intended as a guide. Please remove any section or sub-section that does not apply to your application. Maximum lengths for each section are included in the template, but your proposal may use (much) less space depending on the size and complexity of the request.

Proposals should be sent by email to [ARC@umanitoba.ca](mailto:ARC@umanitoba.ca) by 4:30 pm **October 11,** **2022**.