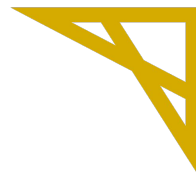




University
of Manitoba



Digital Research
Alliance of Canada

UofM Spring Workshop

HPC and Cloud resources for UManitoba users

May 17th-19th, 2023

GreX and UManitoba HPC Team:

Grigory Shamov

Stefano Ansaloni

Ali Kerrache



- ★ Updates on Research computing resources available for UManitoba researchers (20 min, Grigory Shamov)
- ★ Basics of Linux Shell (50min, Stefano Ansaloni)
- ★ (Break)
- ★ Beginner introduction to using HPC machines (1 h 30 m, Dr. Ali Kerrache)
 - National and local HPC resources overview
 - Getting account and connecting, transferring data
 - Working with SLURM HPC scheduler
 - Examples



- ★ Beginner HPC software overview (1 h 20 min, Dr. Ali Kerrache)
 - How to find software on HPC systems
 - Using Environment Modules (Lmod)
 - Installing software from sources
 - Installing libraries for Python and R
- ★ (Break)
- ★ Using OpenOnDemand Web portal on Grex (30 min, Grigory Shamov)
 - Introduction to OSC OpenOnDemand
 - Examples of typical Applications (Matlab, Jupyter, Desktops)
- ★ Using HPC clusters efficiently (30 m, Dr. Ali Kerrache)
 - Working with SLURM partitions
 - Optimizing your resource asks for specific kind of jobs



- ★ Advanced HPC software (30 min, Dr. Ali Kerrache)
 - HPC Software stacks, CVMFS
 - Using Containers in HPC
- ★ Using GPUs on HPC systems, National and Local (30 min, Grigory Shamo)
 - GPU hardware available
 - Specifying GPU resources and using GPU software
 - Using containers for GPU software
- ★ (Break)
- ★ Beginners introduction using Cloud computing (1 h 20 m, Stefano Ansaloni)
 - Getting access to National community cloud
 - Getting started with OpenStack
 - Creating VMs and deploying an application on the cloud.
- ★ Overview of further training and materials available across Western and National DRI partners (20 min, Everyone)