HPCC workshop

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Seeking help

- FAQ

- Search on the wiki or browse by topics

- Send us a ticket

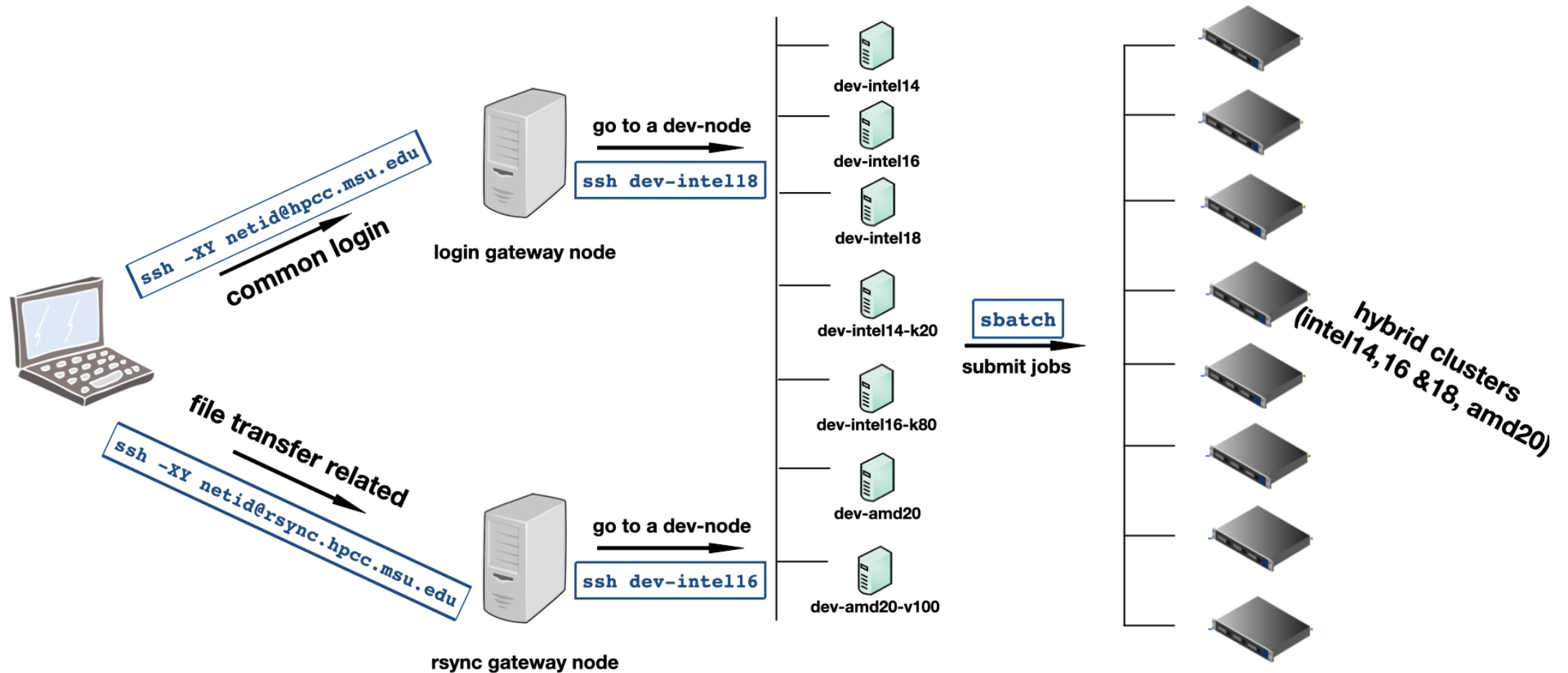- Remote helpdesk hours: Mondays and Thursdays 1-2pm, via our Teams channel

Topics

- Login

- File systems and storage

- File transfer

- Loading software modules

1. Login

🔗 Install a client: https://docs.icer.msu.edu/install_ssh_client/

🔗 Connect: https://docs.icer.msu.edu/Connect_to_HPCC_System/

🔗 File transfer: https://docs.icer.msu.edu/File_transfer/

The HPCC layout

ssh -XY netid@hpcc.msu.edu

common login

login gateway node

go to a dev-node

ssh dev-intel18

file transfer related

ssh -XY netid@rsync.hpcc.msu.edu

rsync gateway node

go to a dev-node

ssh dev-intel16

dev-intel14

dev-intel16

dev-intel18

dev-intel14-k20

dev-intel16-k80

dev-amd20

dev-amd20-v100

sbatch

submit jobs

hybrid clusters
(intel14,16 &18, amd20)

A **development node** is mainly for:
  -file navigation/editing
  -software installation
  -program testing (2-hr limit)
  -job submission with sbatch

900+ **compute nodes**
(connected by high speed network)

Using the dev-nodes

- ⚠️ Any long running jobs (**over 2 CPU hours**) on dev-nodes will be killed automatically without advance notice

- Three dev-nodes are GPU-enabled: `dev-intel14-k20` , `dev-intel16-k80` and `dev-amd20-v100`

- Intel14 dev-nodes may have incompatibility issue for some software ("Illegal instruction" error)

  ➡️ use intel16/18 instead

2. File systems and storage

(1) **Home directory** (`~` or `/mnt/home/your_id/`)

- 1 TB for free (request at https://contact.icer.msu.edu/quota)
- Pay annually for beyond (https://contact.icer.msu.edu/large_quota)
- ⚠️ Up to 1 million files each user

(2) **Scratch space**

- ⚠️ Temporary; purged if last modification time is older than 45 days
- Two systems, with ufs18 for heavy use
    - `gs21` (GPFS): `/mnt/gs21/scratch//your_id`
    - `ufs18` (GPFS): `/mnt/ufs18/scratch/your_id`
- ⚠️ Up to 50 TB and 1 million files each user

(3) **Research space** (requested by lab PI and shared among group members)

All these are in the network file system and mounted to all nodes (dev and compute).

3. File transfer

We recommend FileZilla (🔗 https://docs.icer.msu.edu/File_transfer/)

⚠️ Using `hpcc.msu.edu` as the host doesn't work. Use `rsync.hpcc.msu.edu` instead.

4. OS/software on the HPCC

1. Operating system (currently CentOS 7)

   👷 system administrators

2. Software installations

   👷 research consultants & system administrators & users

3. Software usage/code debugging/etc.

   👷 users (and us if we have expertise)

Loading software modules

🔗 https://docs.icer.msu.edu/How_to_find_and_load_software_modules/

Key commands:

- `module purge` (clear out all loaded modules)
- `module spider` (search for module in the entire system)
- `module avail` (search for module in context)
- `module load` (load the module)

Software running notes/tips

- If a program requires GUI, X-11 client needs to be installed on your computer.

- **Always run** `module purge` before loading a new module.

- Upon your login, a list of default modules are already loaded (use `module list` to check)
  E.g., executables `htseq-count` and `cutadapt` are directly available.

- Have run `module purge` and want to go back to the original shell?
  Run `exec bash -l`.