iCER SERVICE REPORT

778

Compute 92%

Support 33%

RESEARCHERS USED ICER SERVICES

70%
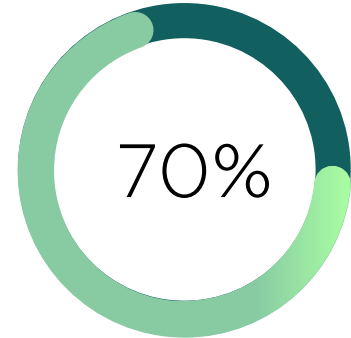
PERCENTAGE OF BUY-IN ON LACONIA

NUMBER OF USERS USING iCER SERVICES IN MAY

Number of users

800	
700	
600	
500	
400	
300	
200	
100	
0	

Total   Batch Queue   Developer Nodes   Tickets   Mapped Drives   Workshops   Office Hours
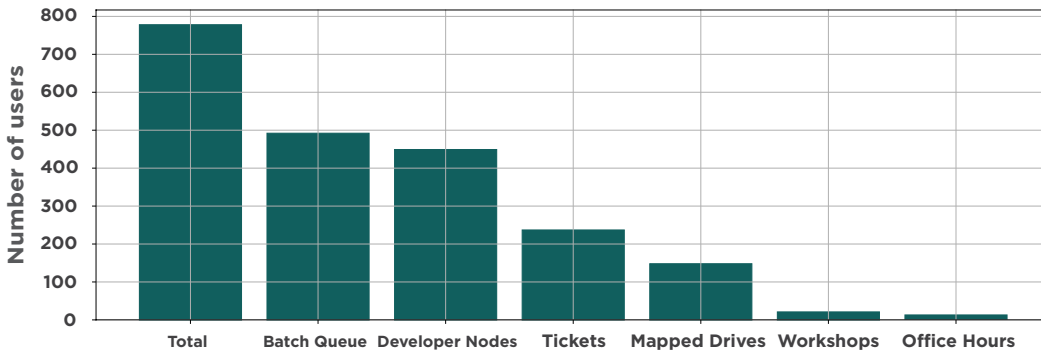
Batch Queue:
Users that run jobs on the main clusters

Developer Nodes:
Users that log into one of our developer nodes

Mapped Drives:
Users that map HPC drives to their local computer (using samba)

Tickets:
Users with active support tickets

Workshops:
Users that attended iCER supported workshops

Office Hours:
Users that attended iCER open office Hours (Mondays and Thursdays 1-2pm)

NUMBER OF USERS USING iCER SUPPORT SERVICES IN MAY

■ **Tickets**   ■ **Workshops***   ■ **Office Hour**

This figure shows a breakdown of users that use iCER support services. These support services include support tickets, iCER workshops and office hours.
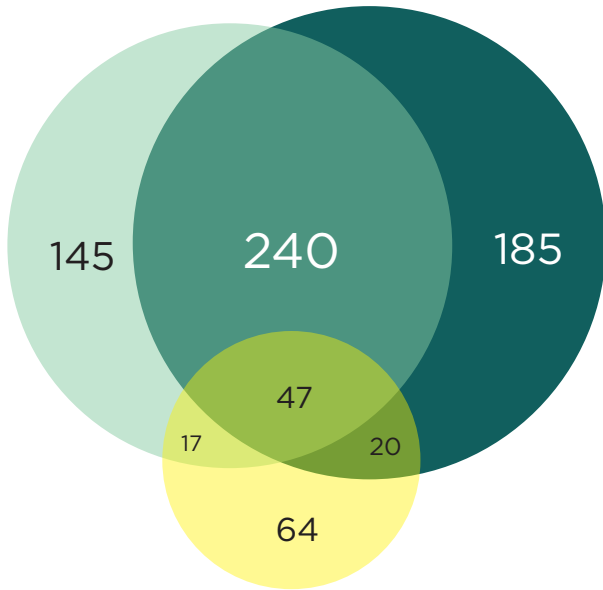
List of iCER workshops in May:

> Introduction to HPCC
> Introduction to Linux/Unix
> Introduction to Git
> Parallell Computing on HPCC
> Broad Overview of Parallel Programming

* Webinars and video conferences not included

11 2   **222**   **13** 8
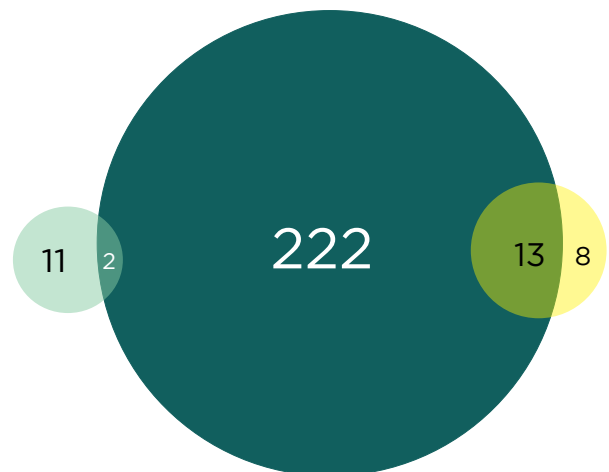
Developer/Login Nodes   **Batch Queue**   **Mapped Home Drive**

NUMBER OF USERS USING iCER COMPUTE SERVICES IN MAY

This figure shows a breakdown of users that use iCER compute services:

287 users (240+47) use the developer nodes to submit jobs to the queue.

205 interactive users (185+20) only use iCER developer nodes to do their work. This includes users:
> Only need access to software (ex. Matlab, mathematica)
> Still in software development process and have not submitted a job
> Find development nodes are sufficient for their research.

64 users only used the iCER file systems to store their files.

**269 researchers (185+20+64) used iCER hardware outside of the batch queue.**


Queued   **Start**   **Finish**
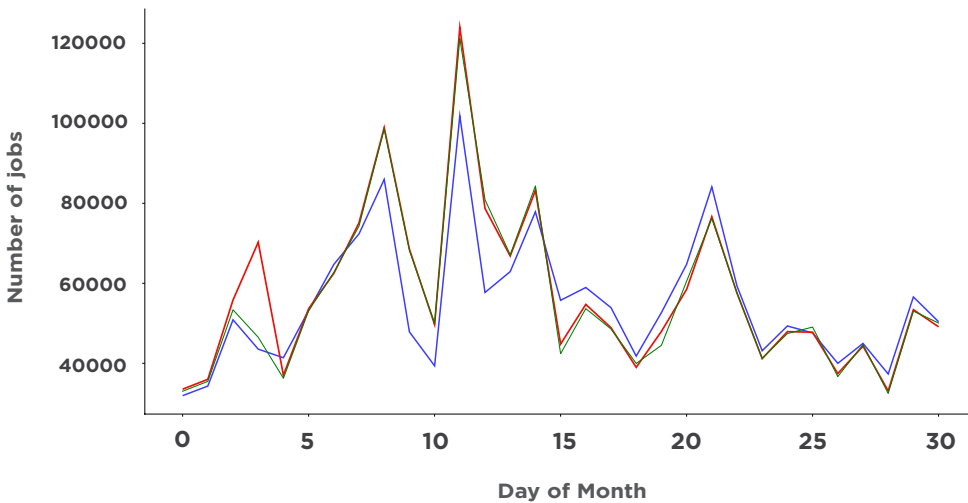
DAILY SCHEDULER ACTIVITY IN MAY

This figure shows the activity of the batch scheduling system by day. There were two scheduler issues early in this month, and the HPCC team restared the scheduler to address the problem. On a typical day, the scheduler processes approximately 164018 jobs. This includes jobs that are queued, jobs that start and jobs that end. Put in another way, the scheduler manages approximately 113 jobs per minute.

COMPARISON BETWEEN NUMBER OF USERS USING iCER SUPPORT AND COMPUTE SERVICE IN MAY

Compute

Support
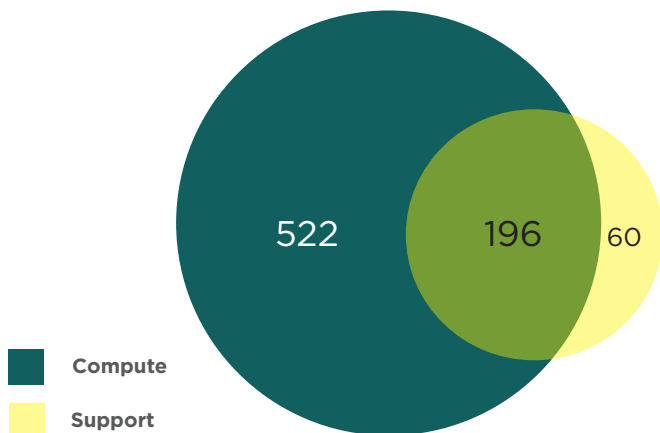
NUMBER OF MAPPED HOME DIRECTORIES PER SERVER IN MAY
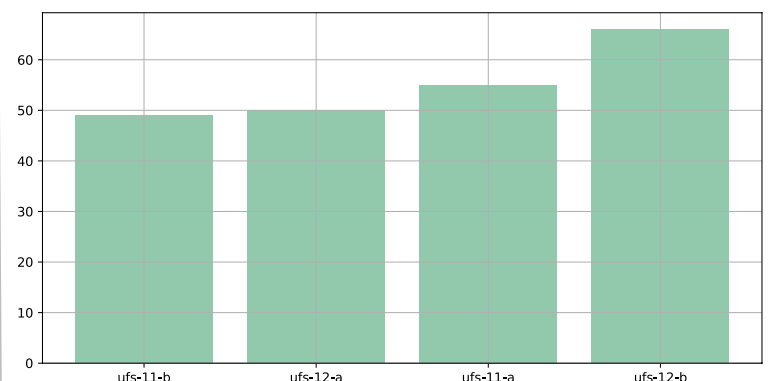
TICKET ACTIVITY SUMMARY IN MAY

282   **419**   **272**   **23**

Tickets **Created**   Tickets **Updated**   Tickets **Resolved**   **Open** Tickets
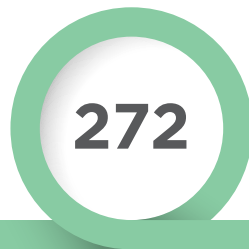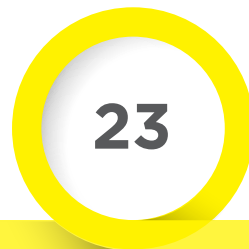
TICKET MESSAGE SUMMARY IN MAY

570
Total User's Message

899
Total iCER's Message

YOUNGJUN CHOI
Research Consultant

MAY TICKET HIGHLIGHTS

HOW TO INSTALL PYTHON PACKAGE ON HPCC

RESOLUTION STATISTIC FOR TICKETS CREATED IN MAY

33%

181
Tickets are resolved

60%

7%
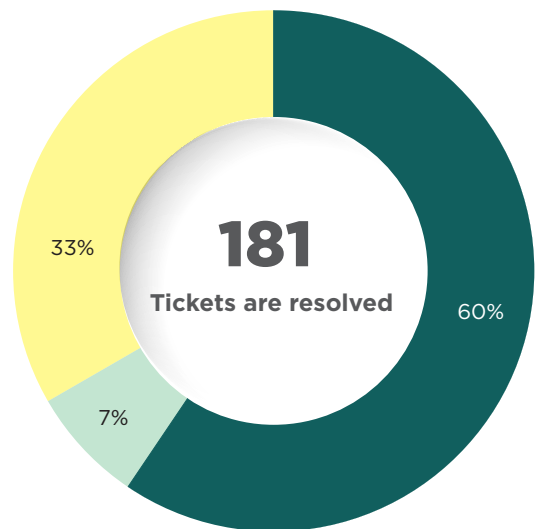
■ Tickets resolved within 24 hours

■ Tickets resolved within 24-48 hours

■ Tickets resolved in more than 48 hours

42
New User Accounts are created
in May

In an effort to better serve our users, we have been analyzing the software that is being used on the HPC by recording which software modules are being loaded using the "module load" command. Clearly this is not a complete view; many users install their own software in their home directories, some modules are automatically loaded as part of a user profile and there will be a bias toward pleasantly parallel codes which will load their required modules every time a job runs (as compared to bigger jobs which would only load the modules once). However, we find this data interesting and wanted to share it with you.
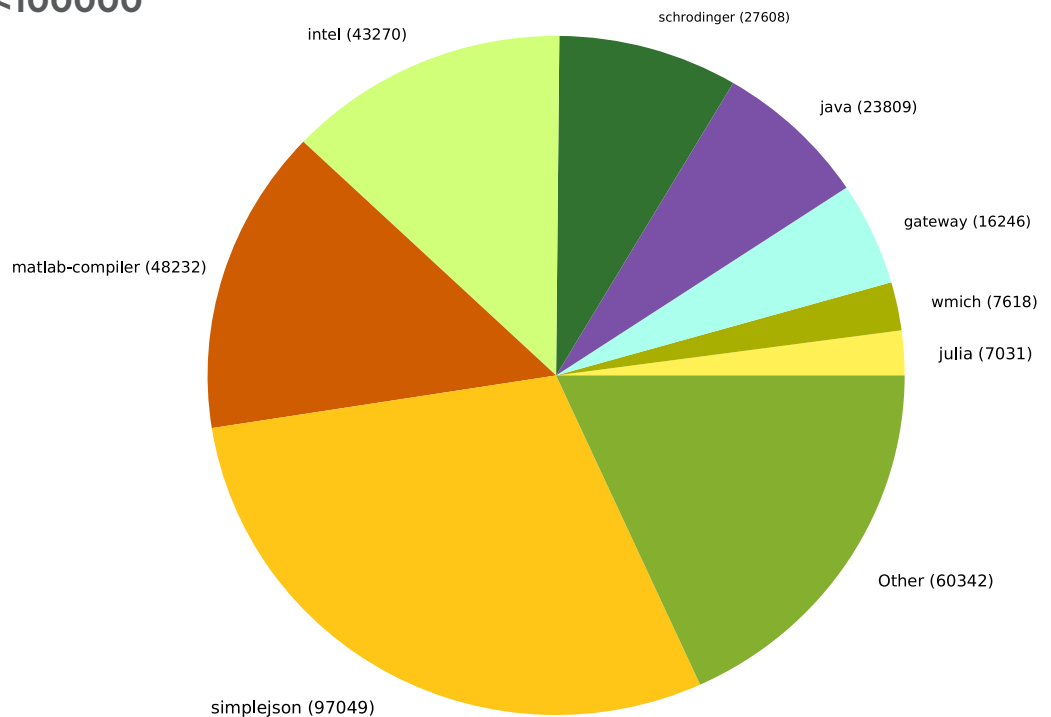
ALL MODULE LOAD COUNTS <10000000

mkl (1105959)
stata (1105419)
matlab (1137452)
tbb (1105412)
penmpi (1145034)
powertools (668186)
cuda (356442)
scipy (136263)
numpy (131825)
r (1172192)
Other (1156295)
cmake (1223812)
gnu (1294542)
python (1230077)
boost (1242655)
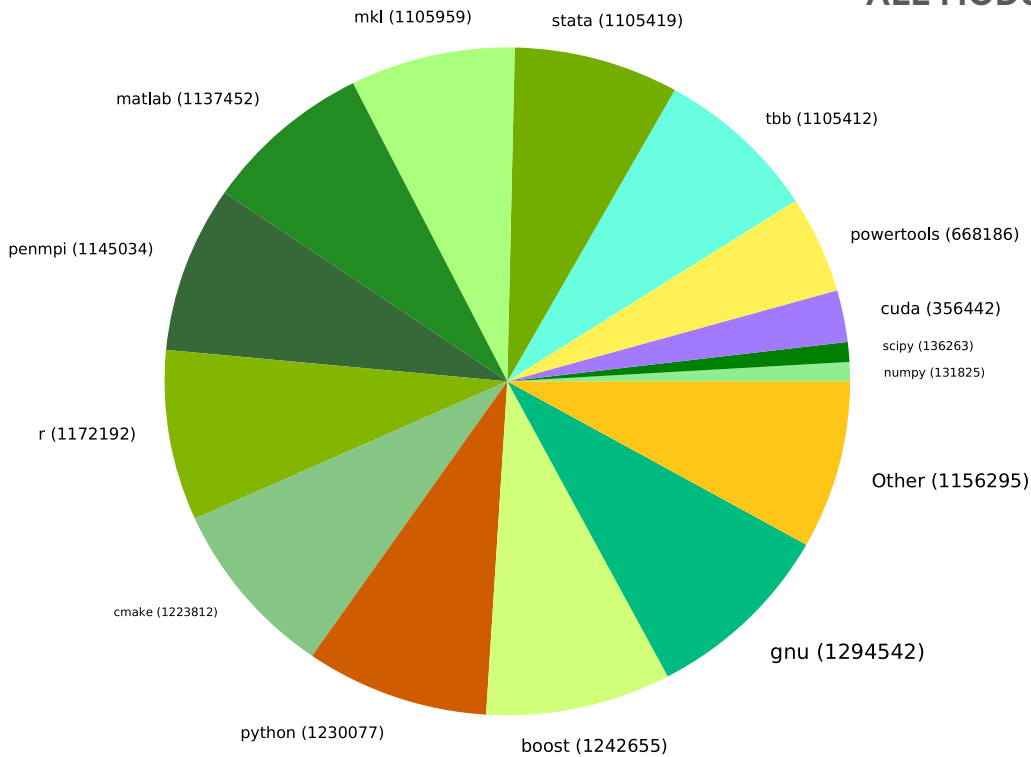
The pie chart shows the most commonly loaded modules. Note again that the biggest ones are the ones included in a user's default profile such as MATLAB, Python, and R. These modules get loaded every time they log in or run a job. As can be seen clearly, the default modules get loaded in an order of magnitude more than many of the other modules.

ALL MODULE LOAD COUNTS <100000

After taking out the default modules, the pie chart on the right shows more modules that users are choosing to include in their .bashrc files and being submitted on a lot of jobs. This group also includes the gateway module which gets loaded every time someone logs onto gateway. This by itself is interesting and shows that we had 16246 gateway connections in May. From our service report we know that 492 unique individuals used a developer node in April. This means that on average each person is logging into gateway approximately 33 times in the month or about 1 times a day (on average).

schrodinger (27608)
intel (43270)
java (23809)
gateway (16246)
matlab-compiler (48232)
wmich (7618)
julia (7031)
Other (60342)
simplejson (97049)

Report Contributors:
Camille Archer
Chun-Min Chang
Jim Leikert
Kelly Osborn
Michael Rometty
Nicol Springer
Xiaoxing (Adele) Han
Yongjun Choi