# iCER SERVICE REPORT

**808**

Compute 84%

Support 39%

**RESEARCHERS USED ICER SERVICES**

**70%**
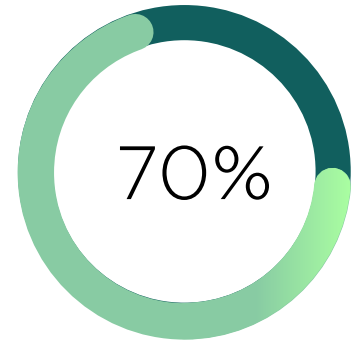
**PERCENTAGE OF BUY-IN ON LACONIA**

## NUMBER OF USERS USING iCER SERVICES IN MARCH



Number of users (y-axis: 0–800)

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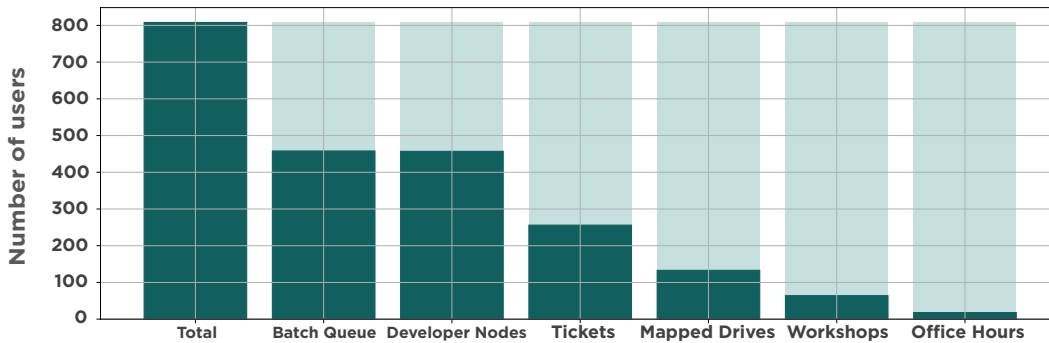
**Batch Queue:**
Users that run jobs on the main clusters

**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 MARCH

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 March:**
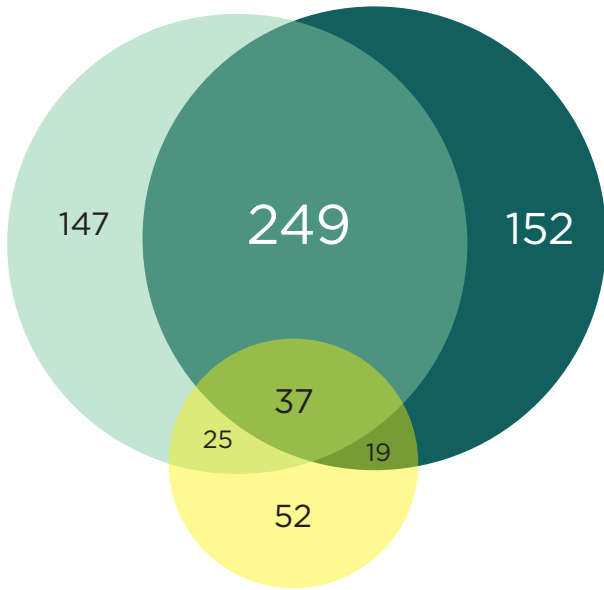
> Introduction to HPCC
> MATLAB Workshop

Legend: **Tickets** | **Workshop** | **Office Hour**



238   4   58   2   0   12   4
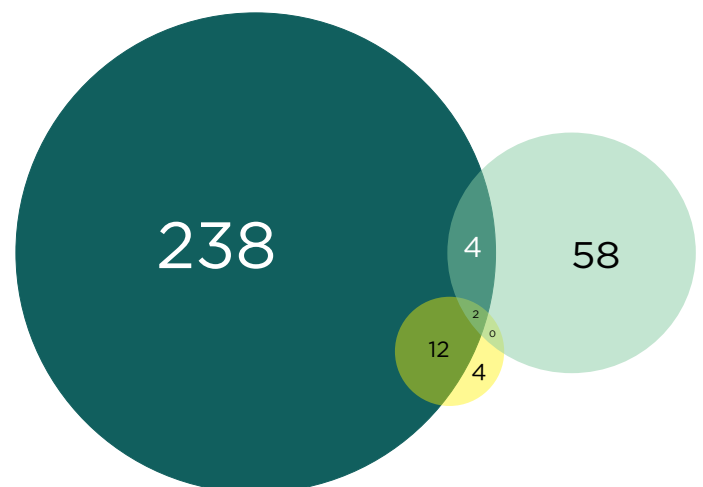
**Developer/Login Nodes**  **Batch Queue**  **Mapped Home Drive**



147
249
152
37
25
19
52

## NUMBER OF USERS USING iCER COMPUTE SERVICES IN MARCH

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

**286 users (249+37) use the developer nodes to submit jobs to the queue.**

**171 interactive users  (152+19) 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.

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

**223 researchers (152+19+52)  used iCER hardware outside of the batch queue.**
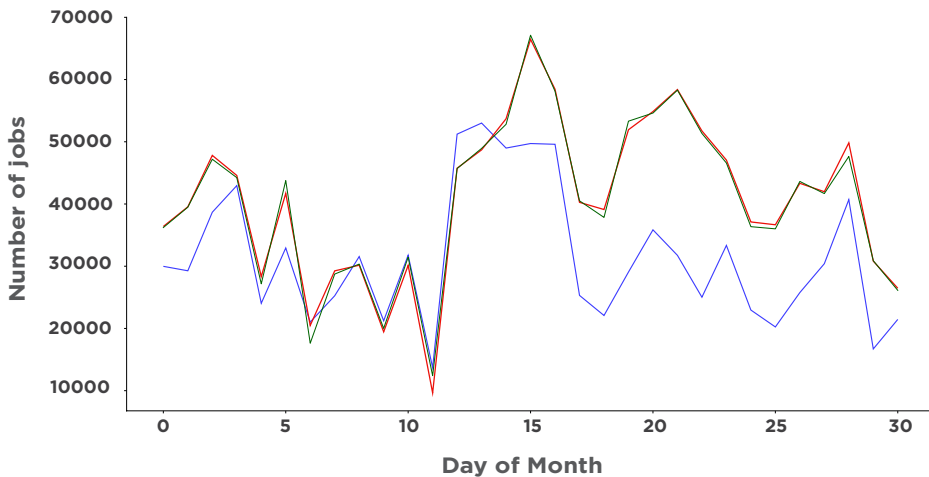
## DAILY SCHEDULER ACTIVITY IN MARCH



Queued   Start   Finish

This figure shows the activity of the batch scheduling system by day.  On a typical day, the scheduler processes approximately 115458 jobs. This includes jobs that are queued, jobs that start and jobs that end. Put in another way, the scheduler manages approximately 80 jobs per minute.

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



490   191   127

**Compute**

**Support**
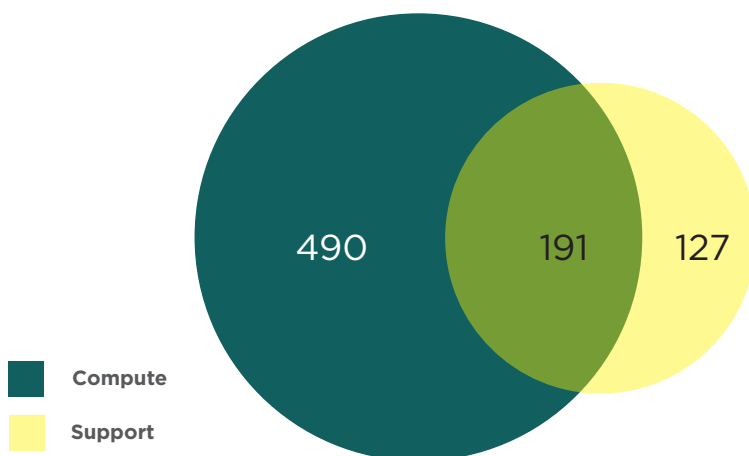
## NUMBER OF MAPPED HOME DIRECTORIES PER SERVER IN MARCH
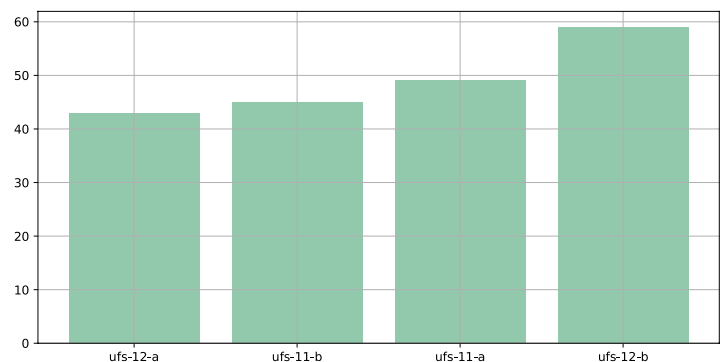
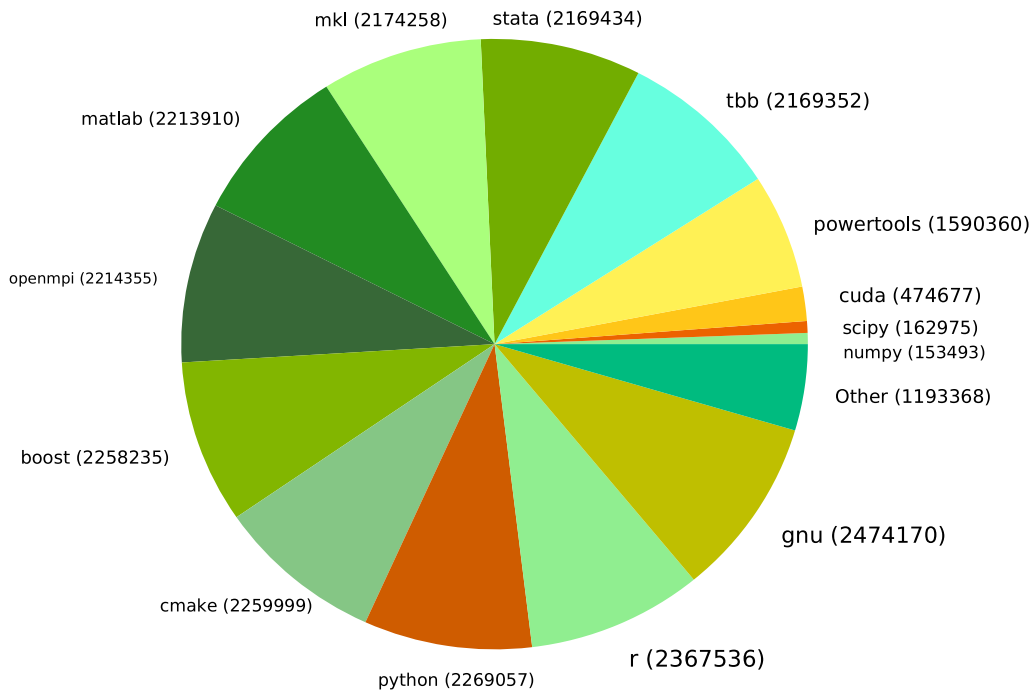In an effort to better serve our users, we have been analyzing the software that is being used on the HPC by recording which software modules are being loaded using the "module load" command. Clearly this is not a complete view; many users install their own software in their home directories, some modules 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.
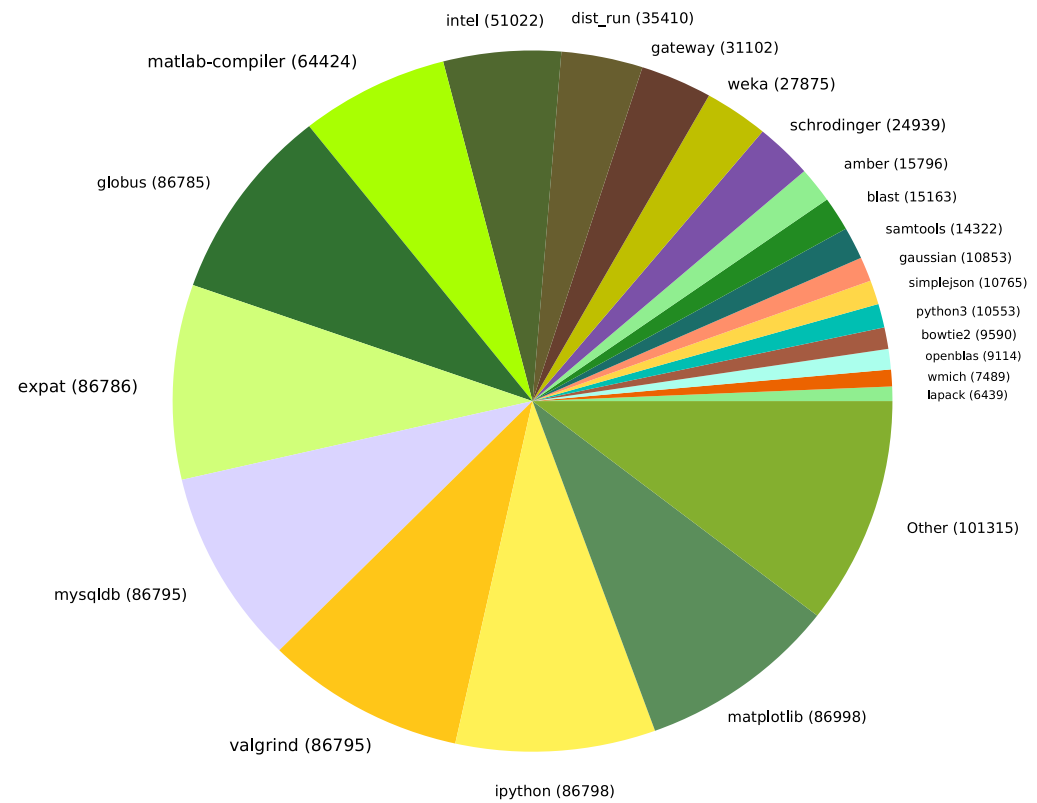
## ALL MODULE LOAD COUNTS <10000000



mkl (2174258)
stata (2169434)
tbb (2169352)
matlab (2213910)
powertools (1590360)
openmpi (2214355)
cuda (474677)
scipy (162975)
numpy (153493)
Other (1193368)
boost (2258235)
gnu (2474170)
cmake (2259999)
r (2367536)
python (2269057)

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 31102 gateway connections in March. From our service report we know that 457 unique individuals used a developer node in March. This means that on average each person is logging into gateway approximately 68 times in the month or about 2 times a day (on average).



intel (51022)
dist_run (35410)
gateway (31102)
matlab-compiler (64424)
weka (27875)
schrodinger (24939)
amber (15796)
blast (15163)
globus (86785)
samtools (14322)
gaussian (10853)
simplejson (10765)
python3 (10553)
bowtie2 (9590)
openblas (9114)
wmich (7489)
lapack (6439)
expat (86786)
Other (101315)
mysqldb (86795)
matplotlib (86998)
valgrind (86795)
ipython (86798)

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