O2 Cluster Status

This page shows all service outages for the O2 cluster, including planned maintenance and unplanned events.

We also post updates on the HMS RC Twitter page.

- O2 will be completely offline for maintenance on Sunday Aug 25: 8am - midnight
- /n/scratch2 will be offline for maintenance starting Friday Aug 23: 8am through the end of the Aug 25 O2 cluster outage.

Two Factor Authentication:

Since December 2018, all O2 cluster logins from outside of the HMS network require two-factor authentication. Please see:

- Two Factor Authentication on O2
- Two Factor Authentication FAQ

Scheduled Maintenance and Current Outages:

<table>
<thead>
<tr>
<th>Date</th>
<th>Service</th>
<th>Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019-08-23</td>
<td>/n/scratch2</td>
<td>Planned service outage for /n/scratch2 filesystem:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Begins: Friday Aug 23 2019, 08:00AM</td>
</tr>
<tr>
<td>2019-08-25</td>
<td></td>
<td>An update for the /n/scratch2 filesystem requires a service outage.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Service will be restored as soon as possible on Sunday 8/25, although</td>
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<tr>
<td></td>
<td></td>
<td>the outage is scheduled for all day, as needed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>During this outage, all other O2 cluster services will be up and running</td>
</tr>
<tr>
<td></td>
<td></td>
<td>until Sunday morning 8/25 (see below).</td>
</tr>
</tbody>
</table>

Please note:

- We will disable the auto-deletion script for old files under /n/scratch2 for a few days after the outage.
- For jobs requiring /n/scratch2 which may need to run during this outage window, make sure to submit those with the following sbatch option so they will not start running until the maintenance is completed: --constraint=scratch2
The O2 cluster will have planned maintenance during this window:

- Begins: Friday Aug 25 2019, 08:00AM

An update for the /n/scratch2 filesystem will require a service outage for all O2 systems. Cluster services will be restored as soon as possible on Sunday 8/25, although the outage is scheduled for all day, as needed.

No user data will be deleted or otherwise changed during the outage. But, as a precaution, please make sure you have copies of any critical data under /n/scratch2 in particular, since that filesystem is not backed up.

Cluster jobs will not be able to run during the upgrade, so we have configured Slurm such that:

- Any job submitted with a wall time which crosses into the maintenance window will remain pending until the outage is over.
- If there are any running jobs on O2 when the outage begins (e.g. long jobs that were started awhile ago), they will be paused and Slurm will attempt to restart them after the outage, but we cannot guarantee such jobs will run successfully.

During the outage, you WILL NOT be able to:

- Login to O2 login servers nor file transfer servers
- Run any Slurm commands, such as: sbatch, srun, [etc.]
- Run nor start any cluster jobs on O2

Websites hosted by Research Computing will not be functionally affected, unless they submit jobs to the cluster (only a few websites do this). But, web developers will be unable to login and edit files.

### Previous Service Outages:

<table>
<thead>
<tr>
<th>Date</th>
<th>Service</th>
<th>Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019-07-07</td>
<td>O2 logins</td>
<td>A network firewall issue during planned maintenance caused O2 cluster logins to fail and new SLURM job submissions to remain pending. Jobs already running on compute nodes should not have been affected.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Date: Sunday June 7 2019</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Duration: 6:50 AM to 8:00AM</td>
</tr>
<tr>
<td>2019-06-30</td>
<td>network issues</td>
<td>unplanned service outage for all of o2 cluster. One of the networking devices failed and caused multiple issues across HMS including o2 cluster logins and SLURM job submissions. The</td>
</tr>
<tr>
<td>2019-07-01</td>
<td></td>
<td>- Date: Sunday June 30 2019</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Duration: 10:30 PM to 3:30AM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Issue is resolved by replacing the faulty hardware.</td>
</tr>
<tr>
<td>2019-05-24</td>
<td>/n/scratch2</td>
<td>Unplanned service degradation for /n/scratch2 filesystem.</td>
</tr>
<tr>
<td>2019-05-25</td>
<td></td>
<td>- Date: Friday May 24 2019</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Duration: 10:30PM to 1AM.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Resolved by restarting a service on the filesystem.</td>
</tr>
<tr>
<td>Date</td>
<td>Location</td>
<td>Event Description</td>
</tr>
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<td>------------</td>
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</table>
| 2019-03-{18-22} | /n/scratch2               | Unplanned service degradation. The /n/scratch2 filesystem is currently showing intermittent instability. We are monitoring it closely and will be implementing a number of hardware and software fixes this week resolve the performance problem.  
  - Duration: 4 days  
    Implemented hardware and software fixes to resolve the core issue on the scratch2 filesystem. |
| 2019-03-09  | Slurm Job Scheduler       | The Slurm Job Scheduler will have planned maintenance during this window:  
  - Date: Saturday, Mar 9  
  - Time: 08:00-19:00  
  Cluster jobs will not be able to run during the upgrade, so we have configured Slurm such that:  
    - Any job submitted with a wall time which crosses into the maintenance window will remain pending until the outage is over.  
    - If there are any running jobs on O2 when the outage begins (e.g. long jobs that were started awhile ago), they will be paused and Slurm will attempt to restart them after the outage, but we cannot guarantee such jobs will run successfully.  
  During the outage, you **WILL** still be able to:  
    - Login to O2 to access data  
    - Copy data to/from the O2 file transfer servers (transfer.rc.hms.harvard.edu) – except to /n/files (due to the storage outage for /n/files also on Mar 9)  
  During the outage, you **WILL NOT** be able to:  
    - Run any Slurm commands, such as: sbatch, srun, [etc.]  
    - Run nor start any cluster jobs on O2  
  Websites hosted by Research Computing will not be affected, unless they submit jobs to the cluster (only a few websites do this). |
| 2019-03-09  | /n/files filesystem        | The research.files server will have planned maintenance during this window:  
  - Date: Saturday, Mar 9  
  - Time: 09:00-15:00  
  During this window, the directory /n/files will not be available from the O2 file transfer servers and compute nodes. |
| 2019-02-28  | /n/scratch2                | Unplanned Outage: A performance degradation on /n/scratch2 could cause jobs using /n/scratch2 to fail.  
  Duration: 7.00AM - 9.00PM |
| 2018-12-05  | /n/scratch2 filesystem     | The automated process that deletes old files under /n/scratch2 (specifically, files that were last accessed more than 29 days ago), was intentionally disabled by Research Computing for approximately the past month due to an issue on the scratch2 filesystem. So, there are currently files older than 30 days on /n/scratch2 which have not yet been purged as they normally would have been.  
  We fixed that filesystem issue and resumed the purging of these old files starting Wed, Dec 5. |
| 2018-12-03  | O2 logins                 | **All O2 cluster logins from outside of the HMS network will start requiring two-factor authentication.**  
  For more details, please see: Two Factor Authentication (2FA) on O2 and Two Factor Authentication FAQ  
  Currently, O2 only requires a password login using your eCommons ID. Due to increased hacking attempts on O2, it is necessary to increase the security of our systems and going to two factor authentication is a big step.  
  HMS users already must use two factor authentication for Harvard Key and HMS VPN logins. O2 logins will work similarly.  
  Two-factor authentication will be required when logging in from:  
    - the HMS Public wireless network  
    - Other Harvard networks (FAS, etc)  
    - Networks at HMS affiliates (hospitals, etc)  
    - Any other external network (home, etc), NOT using the HMS VPN  
    - an HMS system (even on campus) which has a public-facing IP address (this is mostly for web and other application servers, not your desktop) |
<table>
<thead>
<tr>
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</tr>
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</table>
| 2018-11-28 | MySQL and PostgreSQL Databases  
Twiki server  
A planned maintenance window at:  
**Wednesday, 2018-11-28, 6pm - 7pm**  
for the following services:  
- PostgreSQL (production and staging database servers)  
- MySQL (production and staging database servers)  
- Twiki (the website: [wiki.med.harvard.edu](http://wiki.med.harvard.edu))  
Only websites and cluster jobs using these database services were affected. |
| 2018-11-20 | /n/scratch2  
Intermittent storage issues affected the availability of the /n/scratch2 directories across O2 systems.  
Duration: 6:00 AM - 6:00 PM |
| 2018-10-24 | /n/groups /n/data2  
Intermittent storage issues affected the availability of the /n/groups and /n/data2 directories across O2 systems. |
| 2018-10-10 | authentication service  
Instability in O2's authentication service was causing some user accounts to lose group memberships across O2 systems.  
Services were restored to normal at approximately 10:18am |
| 2018-10-01 | /n/scratch2 directory  
When attempting to write to files under /n/scratch2, you may see errant behavior such as:  
- Files are successfully written, but warning/error messages are generated  
- Files can not be written, with error messages such as "Bad Address"  
Issue was resolved with a bug fix on the scratch2 storage server. |
| 2018-09-08 | O2 Login servers  
Unplanned Outage: a core HMS network outage caused O2 login nodes unreachable. The issue is resolved by HMS Networking team  
Duration: 02.30 PM - 5.30 PM |
| 2018-08-17 | PostgreSQL (production, staging)  
MySQL (staging) Request Tracker (RT)  
These will be offline for approximately 1 hour starting at 9pm EDT for urgent maintenance. |
| 2018-08-14 | O2 Cluster and web services  
Unplanned Outage: a failure in the HMS virtual machine hosting infrastructure caused service outages in Research Computing's web services and, to a lesser extent, on the O2 cluster. The outage did not affect running cluster jobs, though.  
Duration: 02:20 pm - 06:20 pm |
| 2018-08-06 | O2 Cluster  
Unplanned outage: Cisco networking hardware failed and caused many jobs to fail. The defect hardware has been replaced and everything is stable.  
Duration: 05:00 am - 08:00 pm |
| 2018-04-25 2018-04-26 | O2 login servers  
2 login servers, login03 and login05, required reboots due to resource-intensive end user processes locking up those systems. |
| 2018-04-11 | O2 /home cluster  
A severe network latency to the /home storage cluster impacted logins and processes trying to access this cluster. Duration: 11.00am - 05.00pm |
| 2018-04-10 | O2 Cluster  
Unplanned outage: networking issues disrupted communication to/from the login nodes. Running/pending jobs were not impacted. |
| 2018-04-03 | /home filesystem  
The filesystem for /home was getting close to maximum capacity and running on older hardware.  
This planned maintenance involved migrating all /home to data to a new filesystem with more capacity. This required a full shutdown of O2's Slurm job scheduler and unmounting /home from all cluster and infrastructure systems. |
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<tr>
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<th>Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018-03-13</td>
<td>/n/scratch2 filesystem</td>
<td>A hardware failure on the /n/scratch2 fileserver resulted in /n/scratch2 being non-writable.</td>
</tr>
<tr>
<td>2018-03-14</td>
<td></td>
<td>On 3/14, hardware was replaced and the filesystem repaired, after which service returned to normal.</td>
</tr>
</tbody>
</table>