Lilac Storage

This page documents the various questions related to lilac storage. Lilac storage is primarily divided into 4 categories.

Lilac home storage:
- **Description**: GPFS shared parallel filesystem, not replicated, and not backed up.
- **Purpose**: To store software related code and scripts, default quota size is small and fixed.
- **Mount**: /home/<user>
- **Access**: All Lilac nodes, including compute storage and login nodes.
- **Snapshots**: 7 days of snapshots. (not backed up). Can be accessed in /home/.snapshots/<user>
- **Replicated**: no

Lilac compute storage:
- **Description**: GPFS shared parallel filesystem, not replicated, and not backed up.
- **Purpose**: For jobs to read and write compute data from login and compute nodes, default quota size is larger with flexibility to request larger quota.
- **Mount**: /data/<lab group>
- **Access**: All Lilac nodes, including compute storage and login nodes.
- **Default quota**: 1TB (Increased/Decreased on request)
- **Snapshots**: 7 days of snapshots. (not backed up). Can be accessed in /data/.snapshots/<date>/<lab group>
- **Replicated**: no

Lilac warm storage:
- **Description**: GPFS shared parallel filesystem, not replicated but will be replicated in near future, and not backed up. Comparatively slower than lilac compute storage.
- **Purpose**: To store long term data. Only accessible from login nodes and cannot be accessed from compute nodes.
- **Mount**: /warm/<lab group>
- **Access**: Only lilac and luna login nodes.
- **Default quota**: 1TB (Increased/Decreased on request)
- **Snapshots**: 7 days of snapshots. (not backed up). Can be accessed in /warm/.snapshots/<date>/<lab group>
- **Replicated**: no (will be replicated in near future)

Lilac local scratch storage:
- **Description**: XFS filesystem, not replicated, and not backed up. Local and not a shared filesystem, slower than GPFS.
- **Purpose**: To store local temporary data related to compute jobs. Since this is not a shared filesystem, the temporary data needs to be cleaned up and copied back to shared filesystem after job completion.
- **Mount**: /scratch/
- **Access**: Only lilac compute nodes.
- **Default quota**: No quota and limited to free disk space in /scratch.
- **Snapshots**: No snapshots.
- **Replicated**: no

How to:

Check Quota for GPFS filesystem:
- **Lilac home storage**:
  
  **Command line**
  ```
  mmlsquota lilac:home
  ```

- **Lilac compute storage**:
  
  **Command line**
  ```
  mmlsquota -j data_<lab group name> --block-size auto lilac
  ```

- **Lilac warm storage (oscar)**:
Command line

mmlsquota -j warm_<lab group name>  --block-size auto oscar

mmlsquota gives information about quota on number of files too, along with information about block quota.

<table>
<thead>
<tr>
<th>Filesystem name</th>
<th>Fileset name</th>
<th>Fileset</th>
<th>Blocks currently occupied</th>
<th>Blocks</th>
<th>Your block quota</th>
<th>Your limit for &quot;7 days&quot; beyond quota.</th>
<th>Blocks in doubt that will be counted towards your quota.</th>
<th>Number of files currently present</th>
<th>Your quota on number of files</th>
<th>Your limit on number of files for &quot;7 days&quot; beyond quota.</th>
<th>Number of files in doubt that will be counted towards your quota.</th>
<th>Countdown of 7 days is set once you occupy more blocks/files than mentioned in quota.</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filesystem name</td>
<td>Fileset name</td>
<td>Fileset</td>
<td>/usrgrp</td>
<td>Blocks</td>
<td>Your block quota</td>
<td>Your limit for &quot;7 days&quot; beyond quota.</td>
<td>Blocks in doubt that will be counted towards your quota.</td>
<td>Number of files currently present</td>
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<td>Remarks</td>
</tr>
</tbody>
</table>

Once the number of blocks or number of files reach the value mentioned in "quota" - Storage system will give 7 days as a grace period, to fill up until the max value mentioned in "limit" is reached. Storage system will not allow any more data to be written when:

1. The block limit/file limit is reached.
2. 7 days have passed since the blocks/files have occupied more than "quota". The grace field will show you the number of days left, before which the number of blocks/files need to go less than the value mentioned in "quota".

2. Copy files from other clusters:

   - Juno:
     To copy files from other clusters, first ssh -A into the other cluster to forward your keys.

       Command line

       ssh -A $USERNAME@$CLUSTER

       We recommend rsync -va to copy files and directories.

       Make note of the source directory/source files and destination directory/files on Lilac and copy them as below:

       Command line

       rsync -av --progress $SOURCEPATH lilac:$DESTPATH

       - Depending on the size and number of files to copy, you may run multiple rsync commands simultaneously to copy different directories.
       - The HPC private network is faster than the MSKCC campus network, so using short names like lilac will often make transfers faster than using the fully qualified domain name lilac.mskcc.org.