

# 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.
- **Default quota**: 100GB
- **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

```
mmquota lilac:home
```

- Lilac compute storage :

### Command line

```
mmquota -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.

Filesystem	Fileset	type	blocks	quota	limit	in_doubt	grace		files	quota	limit	in_doubt	grace	Remarks
Filesystem name	Fileset name	fileset /usr/grp	Blocks currently occupied	Your block quota	Your limit for "7 days" beyond quota.	Blocks in doubt that will be counted towards your quota.  Happens when many files are added /deleted recently.	Countdown of 7 days is set once you occupy more blocks than mentioned in quota.		Number of files currently present	Your quota on number of files	Your limit on number of files for "7 days" beyond quota.	Number of files in doubt that will be counted towards your quota.	Countdown of 7 days is set once you occupy more files than mentioned in quota.	

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`.