

# Mass Storage Systems: Lou1 and Lou2

## Category: Archiving Data

**Summary:** Users are provided with long-term storage space on one of two NAS mass storage systems. While there are currently no disk quota limits on home filesystems, there *are* limits on the number of files you can store, with associated grace periods.

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The NAS environment contains two mass storage systems, Lou1 and Lou2, to provide long-term data storage for users. These systems are SGI Altix computers running the Linux operating system. The combined disk space for the two systems is over 3 PB, split into filesystems ranging from 60-450 TB in size.

## Which Lou System I Should Use?

You should be able to log into either of the Lou systems, but will only have storage space on one of them. To determine which system you should store data on:

1. Log in to either Lou1 or Lou2. For example:

```
your_localhost% ssh nas_username@lou2.nas.nasa.gov
```

2. Type the command **mylou** to find out your mass storage host. For example:

```
lou2% mylou  
Your Mass Storage host is lou2  
Store files there in your home directory, /u/your_nas_username
```

Be aware that Lou1 and Lou2 do not share their home filesystems.

3. Use the home filesystem on your Lou system for your long-term storage. For example:

```
pfe20% scp foo lou2:
```

## Quota Limits On Lou

On either Lou system, there are no disk quota limits on your home filesystem. However, there *are* limits on the number of files (inodes):

- 250,000 inode soft limit (14-day grace period)
- 300,000 inode hard limit

See also: [Quota Policy on Disk Space and Files](#).

## Data (Un)Migration Between Disk and Tapes

In addition to the 3 PB of disk space, Lou1 and 2 have a combined total of 70 LTO-5 tape drives. Each LTO-5 tape holds 1.5 TB of uncompressed data, for a total storage capacity of approximately 115 PB.

Data stored on Lou's home filesystems (disk) is automatically migrated to tape when necessary to make room for more data. Two copies of your data are written to tape media in silos located in separate buildings.

Data migration (from disk to tape) and unmigration (from tape to disk) are managed by the [SGI Data Migration Facility \(DMF\)](#).

If you need to retrieve data that is on tape, make sure to unmigrate the data from tape to your home filesystem on Lou before transferring it to other systems.

**TIP:** If the [Shift](#) client is used for file transfers, it will automatically ensure that files on Lou are online before transfer.

If you are not using Shift (`shiftc`), use the following DMF commands:

```
$ dmls -al list_of_files # show the status of your files.  
$ dmget list_of_files& # retrieve your file from tape.
```

At this point, you can start your transfer and the files will transfer as they come online.

**WARNING:** Do not store your data on Pleiades or Columbia; as their name suggests, the `/nobackup` and `/nobackupp` directories are for temporary use only.

For more tips on how to use the Lou storage systems more effectively, see: [Portable File Names and Sizes](#) and [Dealing with Slow File Retrieval](#).

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