How to backup data from an experiment:

This is a brief introduction. For comprehensive information, go to tape procedure (http://groups.nscl.msu.edu/hira/ppt/tape_procedure.pdf)

1) Experimental data backup:

1. Find a computer that has a LTO2 drive attached to it (machine on DAQ side of the network), and log on as the experiment you want to back up (e.g. 02019).
2. These are systems with tapedrives located in the rack to the right of Data-U2. Choose the correct meda with the correct drive type.
3. Login to the system daqtape2.nscl.msu.edu for LTO-2 tape. (daqtape1 for LTO-1)
4. Know the directories you want to back up. For HiRA experiments, there are two directories to back up, first is the main data, which can be found in the home directory of your experiment /user/experiment_number/ and the second is the evt files in /user/experiment_number/stagearea (follow symbolic link in order to know the actual location). It is good policy to make two backup tapes one (or more) with event (*.evt) files ONLY and second with the home directory (everything else).
5. Determine the size of the data. The tape capacity is 200 GB. You can find out the size of the data by executing the following command. **cmd> du -Dch *** (flag -D is to allow following of symbolic links)
6. Insert the tape into the drive, and start the back up procedure by performing the following command. **cmd>tar -c -v -f /dev/st1 directory_to_backup**
7. e.g. the following command was used to back up 02019.
   cmd>tar -cvf /dev/st1 /user/02019/* /user/event5/02019/*

2) Reading experimental data backup from tape:

1. Login to tapehost in Data-U2 (or other machine on OFFICE side of the network) as the experiment you are working with.
2. **cmd>cd /evtdata/expnumber/** if one was assigned to you. Remember this directory is not backed-up by computer department! That is the reason why you should read the data from tape not copying it over the network!
3. **cmd>tar -xvf /dev/st1** - command will unpack the whole tape and create the same directory structure as the one written on tape.

3) Organizing the data

After the Experiment ends, and the experiment data is backed up on a tape, all data stored on the tape backup should be written to eventdata area. This is done in two parts.

1. Assigned directory is located in / **evtdata** /experiment_*number*/ copy the whole tape(s) to this directory.
2. Create two subdirectories in /user/experiment_number/ directory:
   a. **cmd>mkdir daq** (in / **evtdata** /experiment_number/ directory!!)
   b. **cmd>mkdir evt** (in / **evtdata** /experiment_number/ directory!!)

3. Move all experimental *.evt files to /**evtdata** /experiment_number/evt/ directory. Event files (*.evt) are usually in ~/stagearea directory for each experiment.
4. Move everything else to /**evtdata**/experiment_number/daq directory.