Xrootd Disk Usage

Disk Usage

The xrootd data server disk space is obtained twice a day and written to a nfs log directory. From these values a simple table with the last usage values is created:

> *disk usage*

The data are also loaded to an Oracle database and are accessible through a web application (currently in test stage):

> *diskusage web app*

Data in Oracle

The disk space usage values are stored in Oracle. A key-value together with the date is recorded. The following key names are used:

Key	Description
xrootd_freeGB_<server>	free disk space in GB for <server>, e.g.: xrootd_freeGB_wain021
xrootd_diskGB_<server>	disk size in GB for <server>
xrootd_usedGB_<server>	used disk space in GB for <server>, (xrootd_diskGB_server> - xrootd_freeGB_<server>)
xrootd_all_freeGB	free disk space in GB summed over all xrootd data servers.
xrootd_all_xrdfreeGB	free space that XRootD sees. A XRootD server is full once its space drops below a minimum (~2% of total space).
xrootd_all_diskGB	disk size in GB summed over all xrootd data servers.
xrootd_all_usedGB	used disk space in GB summed over all xrootd data servers, (xrootd_all_diskGB - xrootd_all_freeGB)

Cron job that collects the disk space info

The cronjob, running in crontab on each xrootd data server, is

> */opt/xrootd/admin/mon_diskspace.sh*

It collects the total and free diskspcae as well as the inode usage for ufs file systems (zfs has no inode restrictions).

The disk usage is stored in files:

> */nfs/farm/g/glast/u15/xrootd/diskspace/df_**server**_YYYYMM*

where **server** is the server name and **YYYYMM** is the year and month the values were collected. For example

> */nfs/farm/g/glast/u15/xrootd/diskspace/df_wain020_200806*

Each line in these files shows the disk usage for a particular date. The format is:

> *DF <date> <server> <totalSpace> <freeSpace> <%Used> [<inodesFree> <%inodesFree>]*

The format of date is YYYYMMDDTHHMMSS, e.g. 20080712T123258. The totalSpace and freeSpace are in GB. The inode info is only shown for serves that use the ufs file system (all sulkies) but not for the servers that employ zfs.
In order to calculate the free disk and total disk space of the xrootd cluster the values, taken around the same time , for all data servers have to be summed.

Loading the disk space values to Oracle is performed by *ScaLoadDiskusage* which runs as a cronjob on fermilnx-v06 (but check ~glastdat/config/crontab) under the glastdat user.