

Local File Transfer Commands

Category: File Transfers

Columbia Phase Out:

As of Feb. 8, 2013, the Columbia21 node has been taken offline as part of the Columbia phase out process. Columbia22-24 are still available. If your script requires a specific node, please make the appropriate changes in order to ensure the success of your job.

The following file transfer commands can be used when both the source and destination locations are accessible on the same host where the command is issued. Basic information about each command is provided below.

cp

cp is a UNIX command for copying files between two locations (for example, two different directories of the same filesystem or two different filesystems such as NFS, CXFS or Lustre).

Where is it installed at NAS?

cp is available on all NAS systems except SFE[1,2], and DMZFS[1,2].

Examples

```
pfe20% cp $HOME/foo $HOME/newdir/foo2
pfe20% cp $HOME/foo /nobackup/username
```

cxfs cp

cxfs cp is a program from SGI for quickly copying large files to and from a CXFS filesystem (for shared-memory systems such as Columbia). It can be significantly faster than **cp** on CXFS filesystems since it uses multiple threads and large direct I/Os to fully utilize the bandwidth to the storage hardware.

For files less than 64 kilobytes in size, which will not benefit from large direct I/Os, **cxfs cp** will use a separate thread for copying these files using buffered I/O similar to **cp**.

Where is it installed at NAS?

cxfs is installed on cfe2, all Columbia hosts, and the Pleiades bridge nodes.

When to use it?

The Columbia CXFS filesystems (/nobackup[1-2][a-i]) are mounted on all Columbia hosts (cfe2, c21-24), and the Pleiades bridge nodes (bridge[1-4]). The command **cxfs** can be issued on any of these hosts to copy large files to and from Columbia's /nobackup[1-2][a-i]. This is an easy way to transfer files between Columbia and Pleiades without the need for **scp**, **bbftp** or **bbscp**.

Examples

```
cfe2% cxfs /nobackup2a/username/foo /nobackup2a/username/new_dir
bridge2% cxfs $HOME/foo /nobackup2a/username
bridge2% cxfs /nobackup/username/foo /nobackup2a/username
```

Performance

Some benchmarks done by NAS staff show that **cxfs** is typically 4-7 times faster than **cp** for large files (2+ GB) and can achieve up to 400 MB/sec.

For more information, read **man cxfs**.

shiftc

shift is a NAS-developed tool for performing automated local and remote file transfers. It utilizes a variety of underlying file transports to achieve maximum performance for files of any size on any file system.

Where is it installed at NAS?

shift is installed on cfe2, Lou[1-2], the Pleiades front-end nodes (pfe[20-27]), and the Pleiades bridge nodes (bridge[1-4]).

When to use it?

The command **shiftc** can be used as a drop-in replacement for **cp** at any time on any system on which it is installed.

Examples

```
cfe2% shiftc /nobackup2a/username/foo /nobackup2a/username/new_dir
lou2% shiftc /nobackup/username/foo $HOME
bridge2% shiftc $HOME/foo /nobackup2a/username
bridge2% shiftc /nobackup/username/foo /nobackup2a/username
```

Performance

Some benchmarks done by NAS staff show that **shifc** can be up to 10 times faster than **cp** for large files (2+ GB) and can achieve up to 1.8 GB/sec on a single host.

For more information, see [Reliable Local and Remote File Transfers Using Shift](#).

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Data Storage & Transfer -> File Transfers -> Local File Transfer Commands

<http://www.nas.nasa.gov/hecc/support/kb/entry/141/?ajax=1>