

NAME

dsub – DMOVER submission utility

SYNOPSIS

```
dsub -f file [-c credential] [-C dmover_config] [-h] [-F]
[-k myproxy_credential_name] [-L logdir] [-m email_address] [-n nodes]
[-o output] [-q queue] [-r re-queue] [-R retry] [-s stripes]
[-w walltime]
```

DESCRIPTION

dsub is a utility of the DMOVER package used to facilitate scheduled data transfer for distributed, computational workflows.

DMOVER provides a portable method for scheduling, coordinating and executing data transfers using GridFTP. Users submit a DMOVER job with arguments requesting a number of GridFTP server "DMOVER nodes" and the number of data stripes required. Users may also specify a file containing source and destination URLs of files to be transferred automatically.

When the DMOVER job is released, a prologue task automatically configures and starts GridFTP servers on the allocated DMOVER nodes, with the data stripes distributed among the servers. The DMOVER job executes the file transfers specified by the user. Users may track progress of DMOVER jobs by monitoring detailed DMOVER transfer log output written to a user-specified file. Upon completion of the transfers, an epilogue task automatically shuts down the GridFTP servers and writes additional diagnostic information to the DMOVER transfer log. DMOVER nodes are then released for use by other jobs.

DMOVER jobs are incorporated in distributed computational workflows by establishing job start dependencies between computational jobs and DMOVER jobs. For example, a DMOVER job may be submitted with a dependency that requires that the DMOVER job not be released to execute from the scheduler queue until a specific prior data-generating computational job has completed successfully. Likewise, computational jobs may be submitted with a dependency upon successful completion of a prior DMOVER job.

The command-line options are as follows:

- c** *credential*
Specify a credential to use for authentication. Defaults to X509_USER_PROXY. Path to proxy cert file, e.g. /tmp/x509up_u\$UID.
- C** *dmover_config*
Specify a dmover_config file to use. DMOVER reads the default file \$HOME/.dmover/config. See dmover_config(1) for options.
- f** *file*
Specify the file containing pairs of source and destination URLs of the files to be transferred. URLs follow standard GlobusURL syntax. NOTE: port specification is optional.

Example file contents:

file:///bessemer/joeuser/src gsiftp://hostname:port/directory/dst
file:///bessemer/joeuser/src gsiftp://hostname/directory/dst
gsiftp://hostname:port/directory/src file:///bessemer/joeuser/dst
gsiftp://hostname/directory/src file:///bessemer/joeuser/dst

Additionally source and destination pairs can be aliases specified in a dmover configuration file. See dmover_config(1) for more detail.

Example dmover transfer pair using host aliases:

```
bigben:/home/joeuser/foo fi le:///home/joeuser/
```

```
fi le:///home/joeuser/foo bigben:/home/joeuser/
```

- F** Force DMOVER to attempt fi le transfers when the test transfer fails. DMOVER attempts a 10 byte transfer from /dev/zero -> /dev/null between source and destination hosts before initiating the transfer. Without -F, DMOVER will skip and flag transfers for retry.
- F** Displays this help message.
- k** *myproxy_credential_name*
Specify the name of the credential to be retrieved or renewed via myproxy-logon. DMOVER will attempt to renew credentials that are about to expire when properly set up with myproxy-init.
- L** *log_directory*
Specify a directory on BigBen where dmover should write log fi les to. Additionaly job output is written here if not explicitly specifi ed by the user.
- m** *email_addr*
Enable mail notifi cation on failed/requeued transfers.
- n** *nodes*
Specifi es the number of nodes to be allocated from the DMOVER pool.
- o** *output*
Specify the location of the client output fi le. Will default to **dmover.out** in the log directory if unspecifi ed.
- q** *queue*
Specify the queue that handles DMOVER type jobs. The default queue name is 'dmover'
- r** *re-queue*
Specify the number of attempts DMOVER should re-queue failed fi le transfers. Note: DMOVER automatically retries failed transfers. This option allows DMOVER to resubmit a new DMOVER job that attempts to complete unsuccessful transfers at a later time.
- R** *retry*
Specify the number of attempts DMOVER should retry a fi le transfer. Retries happen within the job. Any fi les not completed in the specifi ed retries will be flagged as failures and re-queued if specifi ed. See above for re-queue options.
- s** *stripes*
Specify the number of stripes **per node** that should be confi gured. Example:

```
$ dsub -s 2 -n 3 -f foo
```


Will allocate 3 nodes and run 2 stripes on each node for a total of 6, 2*3, stripes.
- w** *walltime*
Specify the walltime (currently in PBS format) of the DMOVER job. PBS format is "HH:MM:SS"; i.e. "1:00:00" specifi es a one hour walltime.

Default values for DMOVER are defi ned in `$DMOVER_HOME/conf/dmover.conf`