

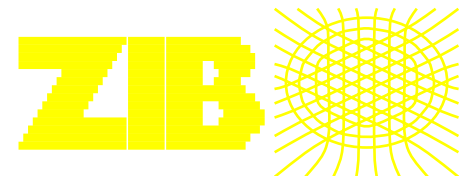
Fast File Transfer in a Secure Environment

UNIX only

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How to copy a large file to a remote server if ssh (Secure Shell) is the only way to access the server?

scp ?

scp of 100 MB to a heavily loaded Cray/J90 takes 1480 seconds (69 KB/sec)
max file size using scp is 2GB

The idea is:

- to handle the Metadadata secretly
- to get copied the user data securely

Solution:

- session control via Secure Shell
- user data transfer via a separate port (with access check)

dmscp copies to/from:

- a remote file
- a remote set of files (fragments)
- a remote (pipe from/to a) remote command

The local source/destination can be:

- a local file
- a pipe from/to a process

This approach is more flexible than ftp/rcp

Main Features of dmscp

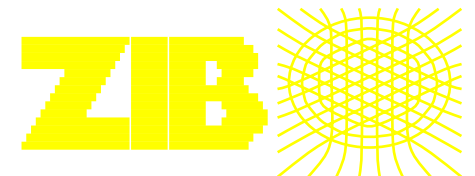
- Session control via (any) Secure Shell
- Data transfer via a separate port
- Connection to the data port on the server using a dynamically generated (one time) password transmitted to the client via the secret line
- own 64 bit arithmetic --> large data streams even if the OS doesn't support that

Secure Data Transfer

- Success check by
 - Size check (as good as possible)
 - optional checksum
- In case of error cleaning up as good as possible

Data Migration related features

- Handling of 'disc full' on a file system controlled by DMF (retrying until timeout occurs)
- file fragmentation (usefull if cache small or only small files supported)
- Trigger migration at close of file/fragments (DMF / UNICOS, IRIX)



Performance (up to twice as fast as ftp)

- async. File/Net-IO on most UNIX platforms
- means of optimizing the Net transfer (usefull esp. with high speed WAN and high latency)

The commmand line syntax

is a bit cryptic - BUT - a user front end similar to rcp/scp is provided (perl sript yscp)

Easy to install

- runs on most UNIX platforms
- no additional daemon needed (sshd[1 or 2] on the server is enough)
- no administrator privileges needed
- default installation in /usr/local
- a 'quickeninstall' installs everything in \$HOME/bin and \$HOME/man

It's free (public domain)

Paper and source see

http://mss.zib.de/mss/dmscp_paper_20000220.html

http://mss.zib.de/mss/dmscp_paper_20000220.ps

<http://mss.zib.de/mss/dmscp>

