

Network Utilities

1. Networking Utilities

1.1 Introduction

CSCI 330
UNIX and Network Programming



Networking
Utilities



1.2 Networking Utilities

Networking Utilities

- most network protocols were developed on UNIX
- most (not all) UNIX systems provide them
- login to another computer
 - telnet, rlogin, rsh, ssh
- copy files to another computer
 - rcp, scp
 - ftp, sftp
- Linux Mint provides GUI-enabled tools
 - file manager

1.3 Login to another computer

Login to another computer

- telnet, rlogin, rsh no longer used
 - transmit userid/password without encryption
- ssh
 - invokes shell on remote computer securely
 - used to:
 - remote login
 - run command on remote computer
- part of OpenSSH open source effort

1.4 ssh

ssh

Syntax:

```
ssh [user@]hostname [command]
```

- logs in user to hostname, or
- if command is given, runs it on remote host
- prompts for password

Note: asks for confirmation on first connection to unknown host

1.5 ssh common options

ssh common options

-l login-name
-X enable X11 forwarding

• Examples:

```
➡ % ssh turing.cs.niu.edu  
➡ % ssh z123456@hopper.cs.niu.edu  
➡ % ssh z123456@hopper.cs.niu.edu w  
➡ % ssh -X turing.cs.niu.edu -l z123456  
➡ % ssh -X ege@turing.cs.niu.edu thunar
```

1.6 Copy files to another computer

Copy files to another computer

- rcp is no longer used
- currently in use:
 - ftp file transfer
- secure, encrypted, part of OpenSSH
 - sftp secure file transfer
 - scp secure copy to remote host

1.7 ftp

ftp

- command to use the file transfer protocol

Syntax:

ftp hostname

- will prompt for userid and password
- most servers allow anonymous ftp
 - userid: ftp or anonymous
 - password: your email address

1.8 ftp commands

ftp commands

- passive
 - enable connections from behind firewall
- ls
 - list files on remote host
- cd
 - change directory on remote host
- put, get
 - copy a file from local to remote host, or vice versa
- mput, mget
 - put/get multiple files, can use wildcards
- bye

1.9 sftp

sftp

- secure file transfer
- part of OpenSSH suite

Syntax:

sftp user@hostname

- will prompt for password
- uses same commands as ftp

1.10 scp

scp

Syntax:

scp source target

- source and target use extended form of pathname:

user@host:pathname

1.11 scp common options

scp common options

- r recursively copy entire directories
- C enables compression
- l limits bandwidth, specified in Kbit/s

- Examples:

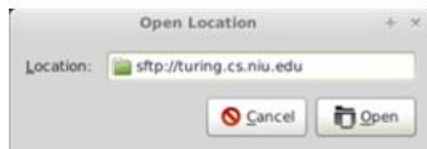
scp screenshot.png z123456@turing.cs.niu.edu:

scp z123456@hopper.cs.niu.edu:assign1.cc .

1.12 GUI-based tools in Linux

GUI-based tools in Linux

- file manager allows to specify remote locations
- use prefix: ftp or sftp



1.13 sftp to turing demo



1.14 Summary

Summary

- Networking Utilities
 - ssh
 - ftp, sftp
 - scp
- File Manager