

ULI101: INTRODUCTION TO UNIX / LINUX AND THE INTERNET

WEEK 6:

FILE TRANSFER / SENDING EMAIL MESSAGES

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LESSON 1 TOPICS

Using **SSH Utilities**

- **scp**
- **sftp**
- Demonstration

Using **SSH Utilities**

- **mail**
- Sending Messages / Attachments
- Demonstration

Perform **Week 6 Tutorial**

- Investigations 1, 2 & 3
- Review Questions (Questions 1 – 12)

TRANSFERRING FILES BETWEEN UNIX / LINUX SERVERS

The **ssh** Linux command is a **suite of tools** to allow the user to **securely connect** among Unix / Linux servers, as well as **securely copy** and **transfer** files among Unix/Linux servers.

You will learn different methods to securely transfer files from your Matrix Linux account to other computers using the **scp**, **sftp** and **mail** Linux commands.

SSH / SCP / SFTP

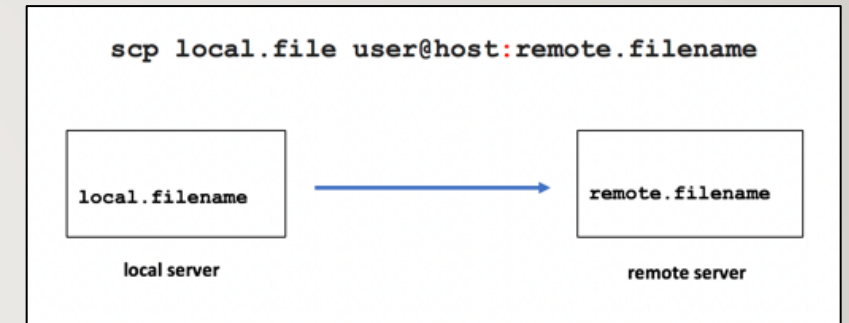


TRANSFERRING FILES BETWEEN UNIX / LINUX SERVERS

Secure Copy (scp)

*Secure copy protocol (**scp**) is a means of securely transferring computer files between a local host and a remote host or between two remote hosts. It is based on the Secure Shell (SSH) protocol. "SCP" commonly refers to both the Secure Copy Protocol and the program itself.*

Reference: https://en.wikipedia.org/wiki/Secure_copy



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Secure Copy (scp)

Usage:

```
scp local.file user@host:destination-pathname
```

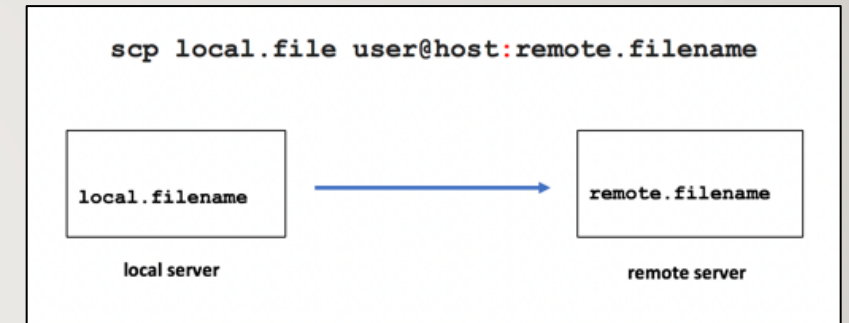
```
scp local.file user@host:
```

```
scp local.file host:
```

The usage for the **scp** command is like the **cp** command with the addition of host names.

The most common **mistake** that students make is forgetting to add the **colon** character " : " after the remote hostname.

The username in the command can be **omitted** if it's the same as on the local host. Multiple file and **recursive** directory copy (i.e. option **-R**) is supported.



TRANSFERRING FILES BETWEEN UNIX / LINUX SERVERS

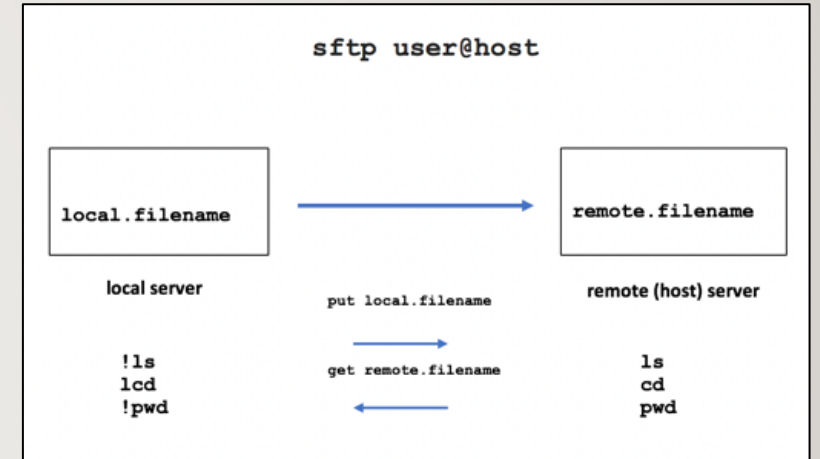
Secure File Transmission Protocol (sftp)

sftp is a file transfer program, similar to *ftp*, which performs all operations over an encrypted *ssh* transport. It may also use many features of *ssh*, such as **public key authentication** and **compression**.

Reference:

<http://man7.org/linux/man-pages/man1/sftp.1.html>

FTP is an acronym for **File Transfer Protocol** which provides a set of **rules** on how to convert data that is transferred between computer servers (both identical and different operating systems).



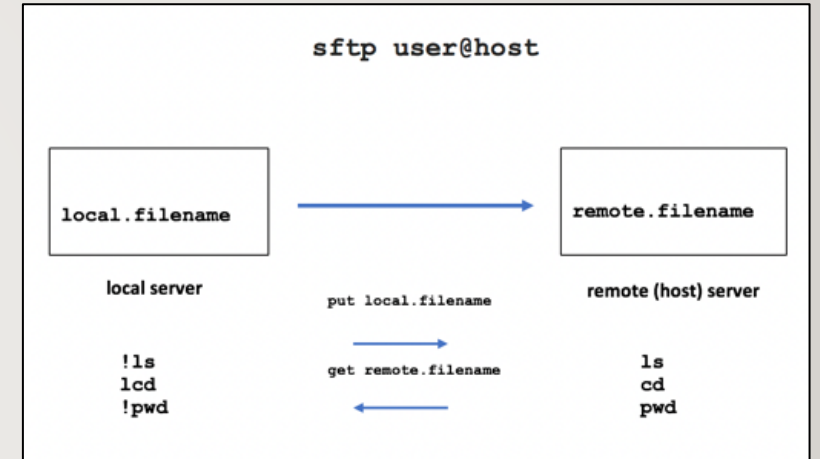
TRANSFERRING FILES BETWEEN UNIX / LINUX SERVERS

Secure File Transmission Protocol (sftp)

When you login via the sftp command, the **sftp command prompt** appears. This prompt acts like the Bash shell prompt, but with a limited number of commands.

The table below displays common **FTP commands** for transferring files between servers.

Operation	Local Server	Remote Server
Display current working directory	!pwd	pwd
Display directory contents	!ls	ls
Create Directory	!mkdir	mkdir
Change directory location	lcd	cd
Upload file to remote server	put	
Download file to local server	get	



TRANSFERRING FILES BETWEEN UNIX / LINUX SERVERS

UNIX Mail (mail)

mail is a command-line email client for Unix and Unix-like operating systems.

Reference: [https://en.wikipedia.org/wiki/Mail_\(Unix\)](https://en.wikipedia.org/wiki/Mail_(Unix))

NOTE: In order to use the **mail** command, your Unix or Linux server must be running an **email server** and have the appropriate **mail client application** installed.



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UNIX Mail (mail)

Although you can use the **mail** command to send and read email messages, we will only be using the mail command to send messages in this course.

Steps to Send an Email Message:

1. Type: `mail username@hostname` and press **ENTER**
2. Enter **subject line** and press **ENTER**
3. Type the **body of the message** and then when finished, press `ctrl+d` to send message

NOTE: You can use the **mail** command with the **-a** option to specify a file to send as an attachment to your email message.

Example:

```
mail recipient@hostname -a filename
```



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UNIX Mail (mail)

Alternative Method to Send Email with Attachment

Use the **-s** option in the command to specify the subject line of the command and use stdin redirection to send a text file as the body of the message.

NOTE: You would have to use this method since you have used **stdin** redirection to attach the file's so you can't input the subject line from the terminal!

Example:

```
mail -s "your subject line" recipient@hostname < filename
```



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Instructor Demonstration

Your instructor will now demonstrate redirection:

- Setting up Matrix Account (Tutorial 6 – Investigation #1)
- Using the **scp** command
- Using the **sftp** command
- Using the **mail** command



TRANSFERRING FILES BETWEEN UNIX / LINUX SERVERS

Getting Practice

To get practice to help perform assignment #1, perform **Week 6 Tutorial:**

- [INVESTIGATION 1: USING SECURE COPY](#)
- [INVESTIGATION 2: USING SECURE FILE TRANSMISSION CONTROL PROTOCOL](#)
- [INVESTIGATION 3: USING THE MAIL COMMAND TO SEND FILE ATTACHMENTS](#)
- [LINUX PRACTICE QUESTIONS](#) (Questions 1 – 12)