

Intro to Linux



1.5.4 – Remote Networking Tools

Remote Server Management

Students will learn about the tools used to remotely manage servers and file transfers:

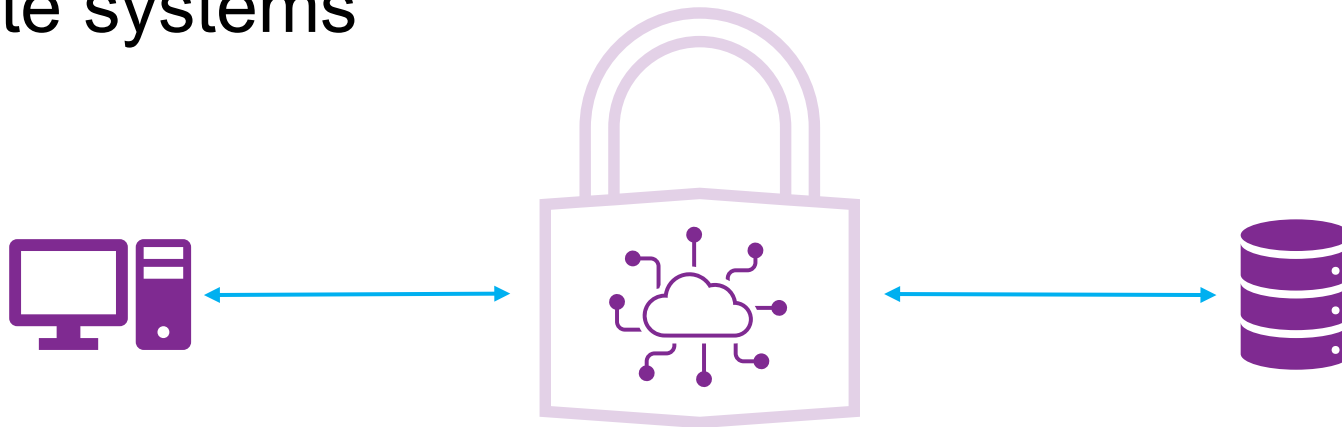
- Secure Shell (SSH)
- wget
- cURL
- nc
- rsync
- Secure Copy Protocol (SCP)
- SSH File Transfer Protocol (SFTP)



Encrypted Communication

When connecting remotely to a server via an unencrypted method, network sniffers can view any data sent or received.

Secure Shell (SSH) resolved this by using an encrypted communication. SSH is currently the standard way to send data from remote systems



Retrieving Files

wget is an open-source command-line tool that can retrieve files from remote servers using FTP, FTPS, HTTP, or HTTPS protocols.

Specify the protocol, server name, and file to download using a standard URL format.

```
wget http://remotehost/filename
```



Transferring Data

curl is another command-line tool for transferring data that supports even more protocols. **curl** is powered by libcurl.

This tool is preferred for automation because it is designed to work without user interaction.

curl will also check for self-signed certificates or if certificates are signed by an untrusted certificate authority (CA).



Netcat

Netcat, or `nc`, is a utility that uses TCP or UDP connections to read and write in a network.

Netcat is great for debugging a network and investigating and is available on all operating systems.



Remote Synchronization

rsync is a software utility for Unix that efficiently syncs files and directories between two machines, the localhost (source) and the remote host (destination).

rsync can transfer only the differences between files in the local-host, and existing files in the remote host.



Secure Copy Protocol

scp (Secure Copy Protocol) is used to copy files between servers securely. It can transfer between a local and remote host, or two remote hosts.

The authentication method used by **scp** is the same as Secure Shell (SSH).

scp is known for simplicity, security, and being preinstalled in most Linux environments.



Secure File Transfer Protocol

SFTP (Secure File Transfer Protocol) is the advanced version of FTP (File Transfer Protocol) which ensure data security when transferring files.

While SSH (Secure Shell) works on port 22, SFTP can use port 22 or 115.

