1. **NFS (Network File System)**:

**Install NFS server on the host machine**:  
  
sudo apt-get update

sudo apt-get install nfs-kernel-server

**Configure NFS exports**: Edit the /etc/exports file to specify which directories to share and the permissions. For example:  
  
/path/to/shared\_directory 192.168.1.0/24(rw,sync,no\_subtree\_check)

* + This allows access to the /path/to/shared\_directory from the subnet 192.168.1.0/24 with read-write permissions.

**Restart NFS server**:  
  
sudo systemctl restart nfs-kernel-server

**Mount NFS share on the guest VM**:  
  
sudo apt-get update

sudo apt-get install nfs-common

sudo mount -t nfs <host\_ip>:/path/to/shared\_directory /mnt/shared

1. **SSHFS (SSH File System)**:

**Install SSHFS on both host and guest**:  
  
sudo apt-get update

sudo apt-get install sshfs

**Mount remote directory on the guest VM**:  
  
sudo sshfs -o allow\_other <username>@<host\_ip>:/remote\_directory /mnt/shared

1. **Rsync**:

**Install Rsync on both host and guest**:  
  
sudo apt-get update

sudo apt-get install rsync

**Sync directories between host and guest**:  
  
rsync -avz /path/to/source/ <username>@<host\_ip>:/path/to/destination/

1. **FTP (File Transfer Protocol)**:

**Install FTP server on the host machine** (e.g., vsftpd):  
  
sudo apt-get update

sudo apt-get install vsftpd

* + **Configure FTP server**: Edit the configuration file /etc/vsftpd.conf to set up users, permissions, etc.

**Start FTP server**:  
  
sudo systemctl start vsftpd

* + **Access FTP server from the guest VM**: You can use any FTP client (e.g., FileZilla) on the guest VM to connect to the host machine's FTP server using its IP address and the configured port (usually 21).