Setting Up a Git Server on Ubuntu (VirtualBox)
1. Prepare Ubuntu VM
a. Update Ubuntu:
sudo apt update && sudo apt upgrade -y
b. Install Git:
sudo apt install git -y
2. Set Up the Git Server
a. Create a Git User:
sudo adduser git
b. Switch to the 'git' user:
sudo su - git
c. Create a Bare Repository:
mkdir -p repos/myproject.git
cd repos/myproject.git
git initbare
d. Exit back to your main user:
exit

3. Configure SSH
a. Install OpenSSH Server:
sudo apt install openssh-server -y
b. Check SSH Service:
sudo systemctl status ssh
If not active, start it:
sudo systemctl start ssh
sudo systemctl enable ssh
4. Set Up Port Forwarding in VirtualBox
a. VirtualBox Settings:
- Go to Settings > Network > Advanced > Port Forwarding.
- Add the rule:
Protocol: TCP
Host IP: Leave blank
Host Port: 2222
Guest IP: Leave blank
Guest Port: 22
b. Restart the VM.

Access the Git Server from Windows

1. Install Git on Windows

Download and install Git for Windows: https://git-scm.com/
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2. Generate an SSH Key
a. Open Git Bash on Windows and run:
ssh-keygen -t rsa -b 4096 -C "your_email@example.com"
Save the key (default is ~/.ssh/id_rsa).
b. Copy the Public Key:
cat ~/.ssh/id_rsa.pub
c. Add the Key to the Git Server:
- SSH into the VM:
ssh -p 2222 git@localhost
- Add the public key to the server:
echo " <your_public_key>" >> ~/.ssh/authorized_keys</your_public_key>
chmod 600 ~/.ssh/authorized_keys
3. Clone and Push
a. Clone the repository:
git clone ssh://git@localhost:2222/home/git/repos/myproject.git
b. Add, commit, and push changes:

cd myproject

echo "Hello Git Server" > README.md
git add README.md
git commit -m "Initial commit"
git push origin master

Troubleshooting

Verify SSH Service:sudo systemctl status ssh

Firewall Rules:
 sudo ufw allow OpenSSH
 sudo ufw enable

Debug SSH on Windows:ssh -v -p 2222 git@localhost