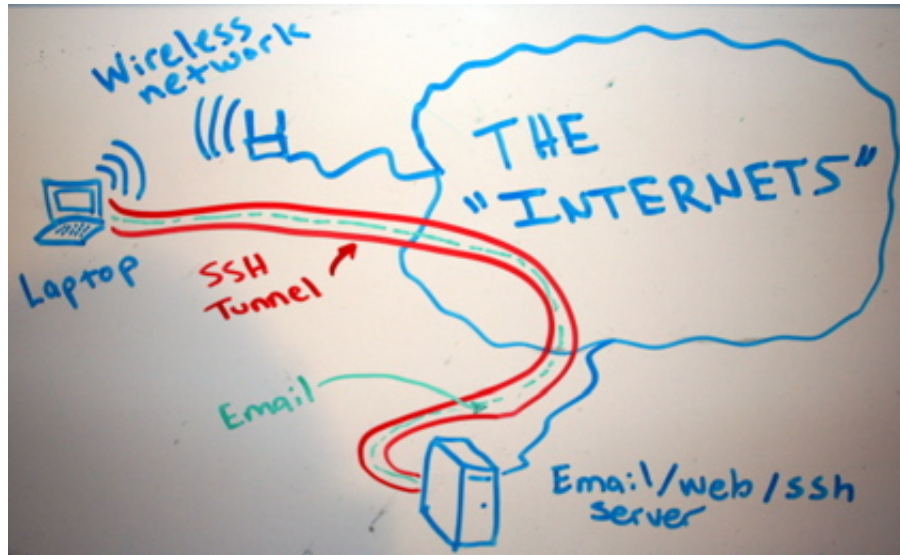


## Creating Dynamic SSH Tunnel on Windows with Plink - Scriptable SSH Tunnels on Windows

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In my earlier articles I've explained about [Creating SSH Tunnels on Linux and BSD](#) and [how to create SSH Tunnels with Putty Terminal client on Windows](#).

**Creating SSH Tunnels** is a precious knowledge every advanced computer user, a system administrator or security expert should be well aware of.

Probably still there are plenty of people for which the **SSH Tunnelling** is something never heard of or even if heard it is a mythical term covered by ancient shadows :)

So What is an SSH Tunnel? - SSH Tunnels shortly explained.

A **SSH tunnel** consists of an **encrypted tunnel created through a SSH protocol connection**.

An **SSH tunnel** can be used to **transfer unencrypted traffic over a network through an encrypted channel** between two hosts (*host A* and *Host B*) usually using remote and local port.

Requirements for SSH tunnel

Where *Host B* has to be *running a version of OpenSSH server* on some *reachable port* from *Host B*, (lets say 22).

*Host B OpenSSH server* has to be with (*enabled X11Forwarding - X11Forwarding yes* in */etc/ssh/sshd\_config*) and *Host A* needs to have some *SSH client supporting port forwarding* (*ssh* command on **Linux** - part of (*openssh-client* package) and on Windows - **Putty** / **Plink** or any other of the many available **ssh tunneling** clients).

Probably **most common SSH Tunnel use** is to *bypass firewalls that prohibits or filter certain internet services*.

In other words **SSH Tunnels can be used to get around firewall filtering**. If you never heard of [Bypassing firewalls with port forwarding I recommend to check this article](#)

We can *use a ssh tunnel to securely transfer files between a FTP server and a client even though the FTP*

**protocol itself is not encrypted, Tunnel traffic to an SQL server, Tunnel traffic from your Desktop PC to a Proxy**

*SSH tunnels can be used to tunnel outbound E-mail traffic back to your work PC to avoid having to change SMTP servers* etc.

A very **common SSH Tunnel use** is by **office workers who don't want their Custom Web browsing habits and Web history be tracked**,

For people who has to travel a lot *tunneling SSH traffic from notebook to your home based SMTP* is mandatory, otherwise your *e-mail passwords, might end up captured by someone who manages the Free WI-FI* used by you somewhere on the road or cafeteria. Another good case use of *SSH Tunnel* is to **tunnel VNC traffic**.

*SSH Tunneling* was historically very famous in days where **IRC** (*Internet Relay Chat*) and *used to be common way* (for people who want to prevent their real IP address from publicly visible) on the Internet. *SSH Tunneling* is **great way to maintain high communication security**, however because it requires some basic technical knowledge most people neglect it or never heard of it, so I hope this article will give at least basic ideas to people new to tunneling.

How to create SSH Tunnels on Microsoft Windows

SSH Tunneling has been originally invented on *UNIX / Linux* platform, luckily nowadays it is easily possible to create SSH tunnels on almost any modern OS (including *Mac OS X* and *M\$ Windows*).

Using Plink it is possible to create easily (batch) scriptable SSH tunnels on Windows

Generally here is example of basic plink use syntax:

```
plink.exe {remote-host} -P 22 -C -D 10080 -l username -pw password
```

To make a Tunnel with Plink to remote SSH Server (**remote-ssh-server.com**) listening for connections on **port 22** on localhost **10022**

```
"C:\Program Files (x86)PuTTY\plink.exe" -ssh remote-username@tunnel-to-ssh-server-host.com -pw PASSWORD123 -C -T -D 127.0.0.1:10022 -N
```

**-D** - option instructs *Plink* to make "*Dynamic SOCKS-based port forwarding*"

Dynamic Socks-based port forwarding will make your ssh client a simple socks server which listen to port 10022 for incoming connections.

**-T** - tells *plink* not to open interactive shell on remote server (disable pty allocation)

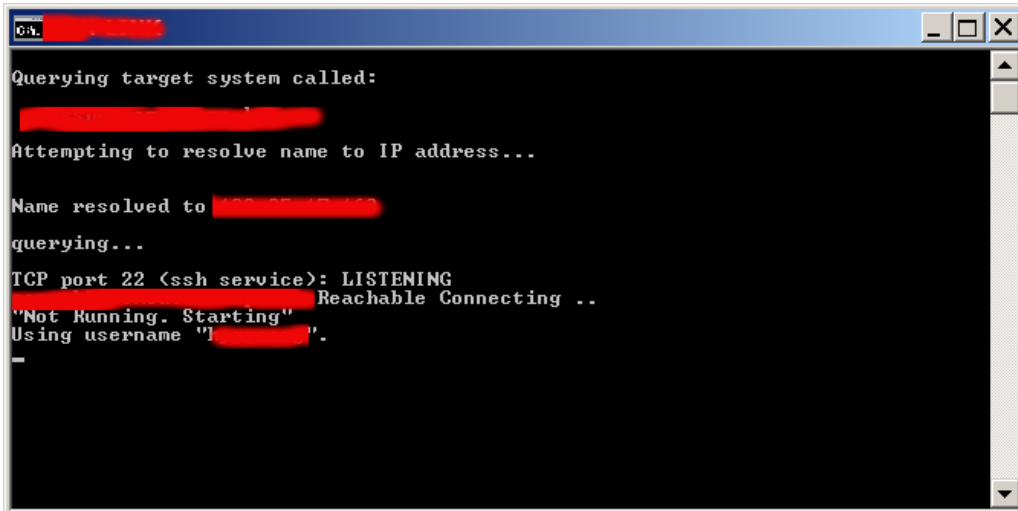
**-C** - enables traffic compression

Using the **-D** option you can prepare tunnel to traffic all your outgoing server traffic via the SSH tunneling host.

E. g. **-D** allows you to use the remote ssh server as a proxy server with no need for remote server to run anything except SSH service and have Internet connection.

**-N** - stands for "*don't start shell/command SSH-2 only*"

On success of SSH Tunnel establishing you will get a pop-up window similar to below screenshot (note that some of the messages in cmd line are from a batch script - if no batch script is used you wil only get a window with "**Using Username**":



```
C:\> plink [redacted] [redacted]
Querying target system called:
[redacted]
Attempting to resolve name to IP address...
Name resolved to [redacted]
querying...
TCP port 22 (ssh service): LISTENING
[redacted] Reachable Connecting ..
"Not Running. Starting"
Using username ""''".
-
```

*Note: That if you're about to be using Plink command frequently [add it to your Windows SYSTEM PATH \(check my previous article - how to add Putty to System PATH\)](#) to enable it invocable without writing the full command path location.*

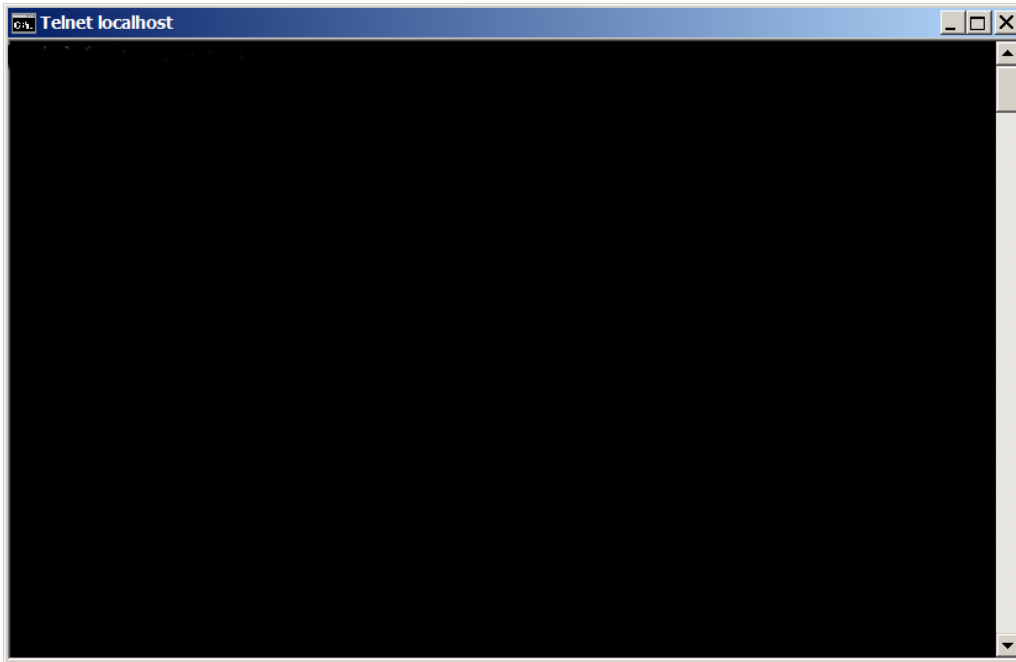
Once this Window is open if you still have doubt, where the tunnel is established, the quickest way to test whether tunnel is working is to **open telnet to localhost port 10022**.

In Windows command prompt type:

```
C:> telnet localhost 10022
```

```
...
```

You will get a remote server SSH version printed, like on below shot:



Now lets say now you would like to *access the internet via just created SSH tunnel*. You can do it by simply **setting Socks Proxy in your Firefox / Opera** (or whatever browser you use).

Whether you **want to run the SSH Tunnel permanent and periodically check whether tunnel is allve and respawn** it in case **plink** quit, you can use a very simple batch script like one below:

```
@ECHO OFF
tasklist /FI "IMAGENAME eq plink.exe" 2>NUL | find /I /N "plink.exe">NUL

if "%ERRORLEVEL%"=="0" ( echo Programm is running exiting
exit
)
echo "Not Running"
start /b "C:\Program Files (x86)\PuTTY\plink.exe" -ssh remote-username@tunnel-to-ssh-
server-host.com -pw Password123 -T -C -D 127.0.0.1:10022 -N"
```

If you're a Linux guy and you don't want to mess around with **Plink** but still want to *create your SSH tunnels following SSH client UNIX command line syntax*, setup the [Cygwin port of OpenSSH for](#)

### [Windows.](#)

Or if you're unsure whether remote server is always reachable (you're moving with your notebook from (Country) network to network), you can [use also portqry - windows port scanner to check whether remote ssh server port is opened](#):

```
@ECHO OFF
tasklist /FI "IMAGENAME eq plink.exe" 2>NUL | find /I/N "plink.exe">NUL
if "%ERRORLEVEL%"=="0" ( echo Programm is running exiting
pause
exit
)
portqry -n tunnel-to-ssh-server-host.com -p tcp -e 22
if %ERRORLEVEL%==0 echo tunnel-to-ssh-server-host.com Reachable Connecting ..
if NOT %ERRORLEVEL%==0 (echo tunnel-to-ssh-server-host.com.com Unreachable
exit)
echo "Not Running. Starting"
"C:\Program Files (x86)\PuTTY\plink.exe" -ssh remote-username@tunnel-to-ssh-server-
host.com -pw Password123 -T -C -D 127.0.0.1:10080 -N
```

Here is another sample use of Plink to create tunnel via SSH host *tunnel-to-ssh-server-host.com* to **listen for connections on localhost port 1234** and forward all incoming traffic to squid proxy server on **192.168.1.5** on port **3128**.

```
C:\Users\georgi>plink.exe -v -x -a -T -C -noagent -ssh -L 127.0.0.1:1234:192.168.1.5:3128
remote-username@tunnel-to-ssh-server-host.com
```

Setting then 127.0.0.1:1234 in **Firefox Proxy browser settings** will make all *traffic from your browser to flow securely to your own proxy server* (letting you hide your "custom traffic" from company Web sniffers (Proxying) and Web filtering).

A remark to make here is 192.168.1.5 is (a internal server with Squid Proxy, configured to pass traffic to the internet ).

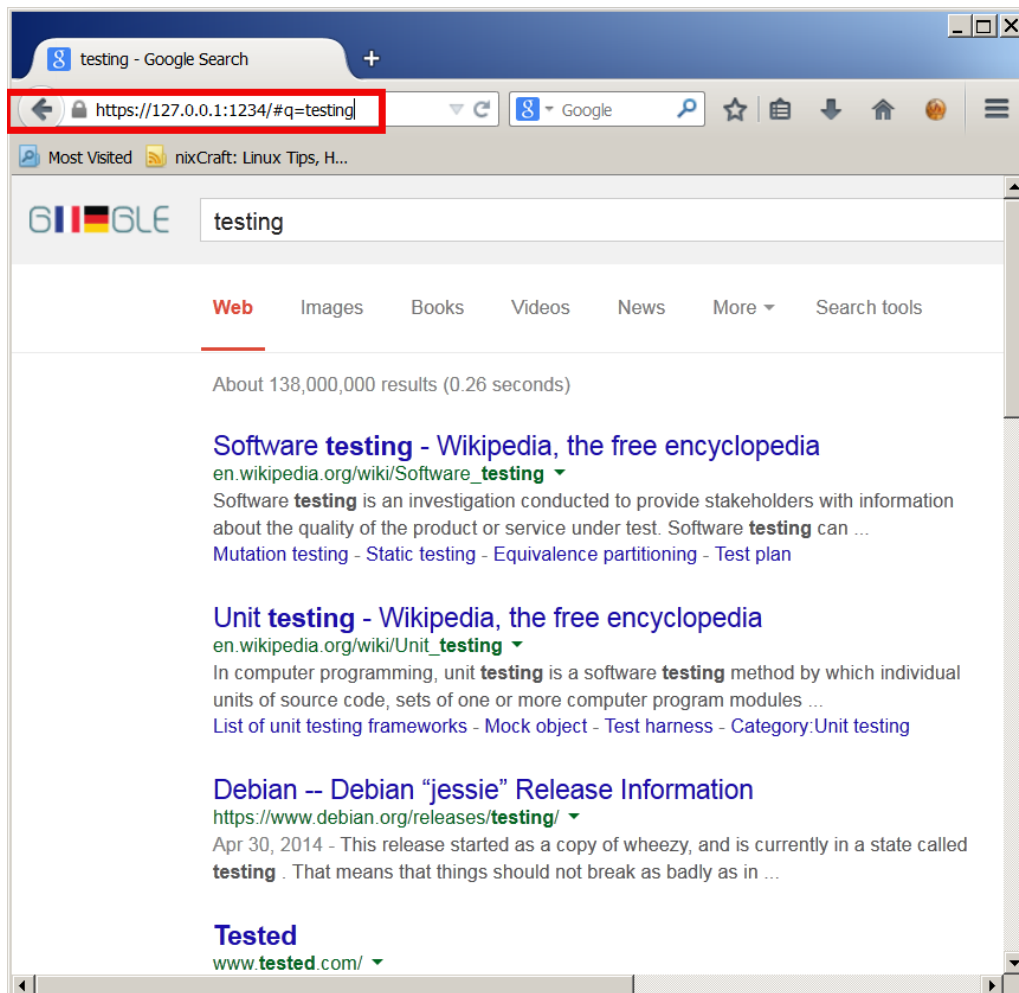
Here is a way to make tunnel between your remote SSH server and local Desktop PC to make Google

queries without being logged by your ISP or company where you're working:

```
plink.exe "-v -x -a -T -C -noagent -ssh -L 127.  
0.0.1:1234:95.158.130.242:443 -pw SecretPassword123 -l hipo pc-freak.net"
```

**95.158.130.242** - is one of the IPs [www.google.com](http://www.google.com) resolves to  
**pc-freak.net** - is name of my home router.

To make tunneled queries to Google then open in browser <https://127.0.0.1:1234>



If you're a lazy windows user and *don't want to bother to make your tunnels from* command line and you want [need nice gui way to manage multiple tunnels - check out putty-tunnel-manager](#).

I myself am not a SSH Tunnel expert and thus I would be happy to learn further from people for some interesting cases and custom ways to do SSH Tunnels. If you know of better advantageous ways to tunnel traffic, please share.

**Happy tunneling ! :)**