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Mac OS X: Set Port Forwarding Nat Router (Internet Sharing)

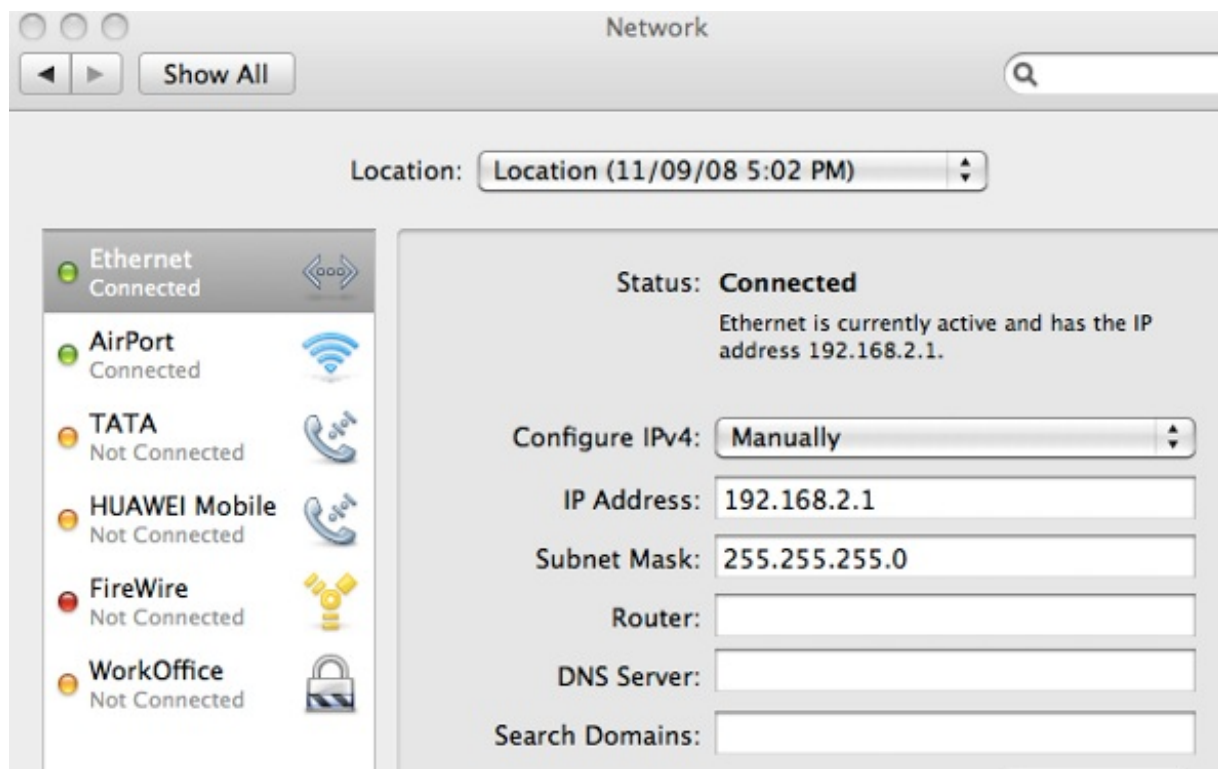
Posted by [Vivek Gite](#) <vivek@nixcraft.com>

I'd like to set my Macbook as a router for my other desktop computer. How do I set NAT and port forwarding under MAC OS X? How do I forward ports using OS X for BitTorrent clients?



Network address translation (NAT) is the process of modifying network address information in IP packet headers while in transit across a traffic routing device for the purpose of remapping a given address space into another. Almost all modern Operating system provides NAT support. In other words, if your Mac book connected to the Internet, you can share its Internet connection with other computers on your LAN.

In this example, your Macbook is connected to the Internet via Airport and you are sharing the Internet via Ethernet which is connected to your desktop. Airport gets a public IP address via ISP connection and Ethernet has the following manual IP settings:



[2]

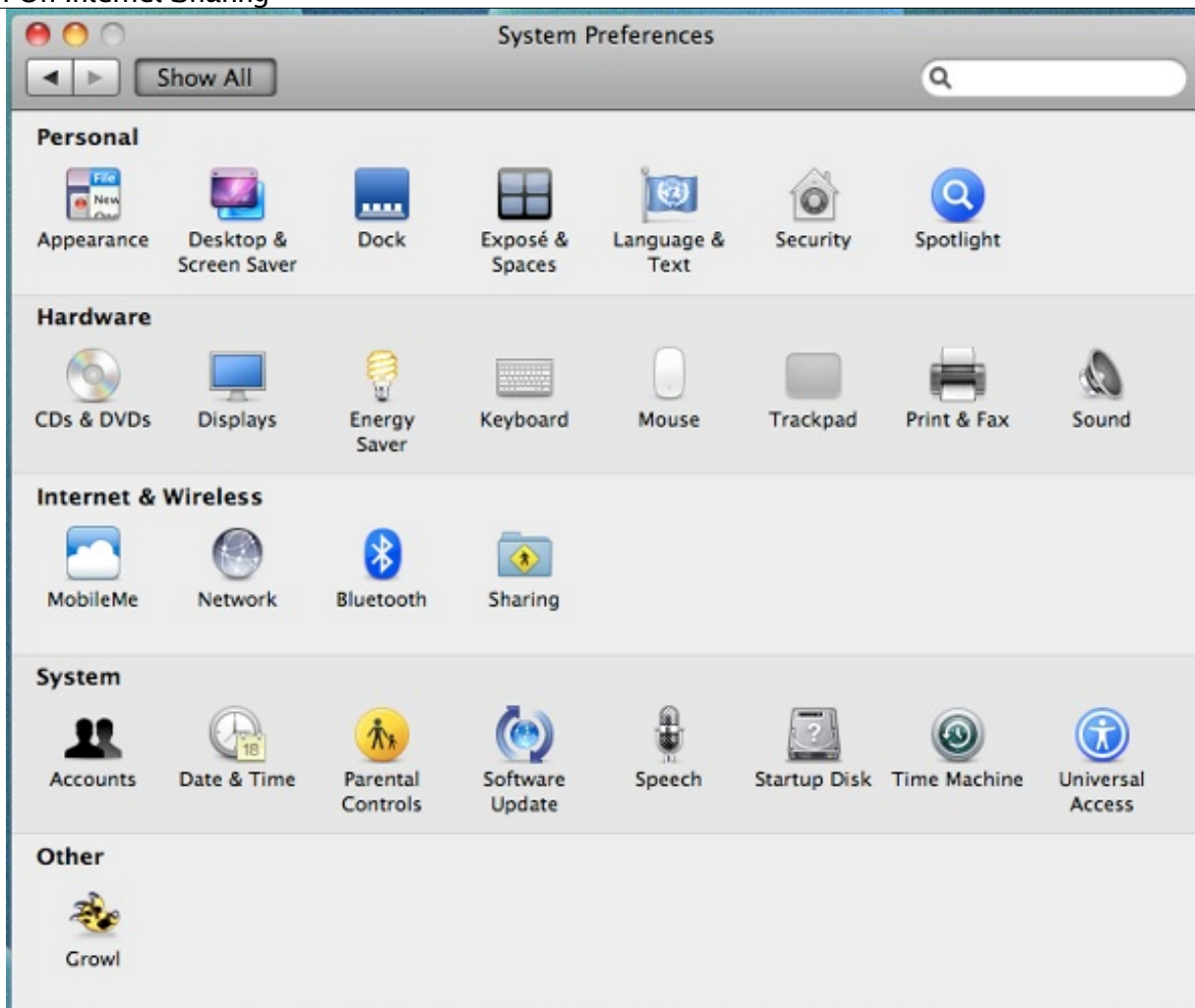
Mac OS X Ethernet Network Settings



WARNING! These examples may stop networking and the Internet on your laptop and desktop computer if not executed with care. You must have basic understanding of TCP/IP networking.

Turn On Internet Sharing

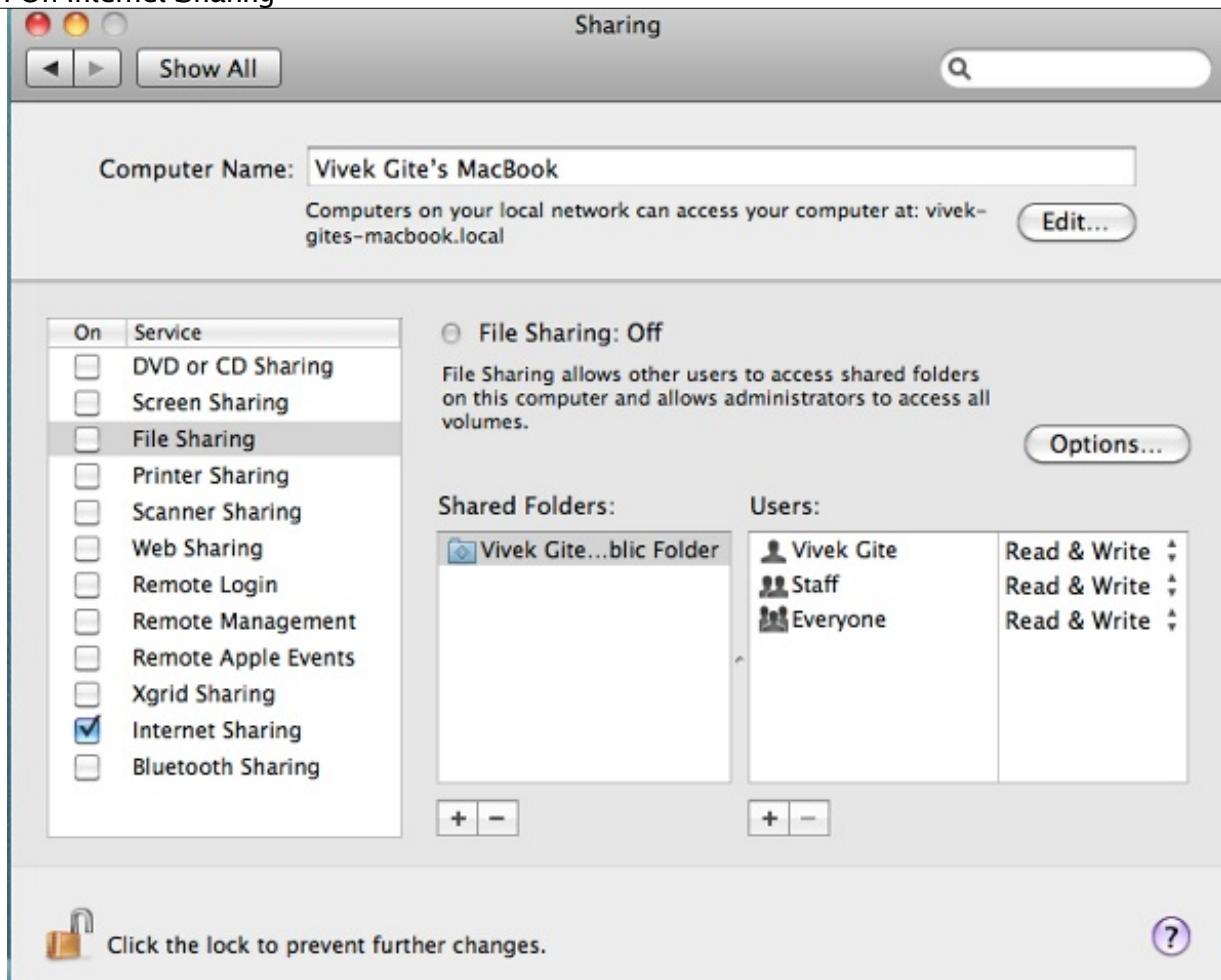
Open System Preferences by visiting **Apple menu** > **System Preferences**:



[3]

Fig.01: Mac OS X System Preferences

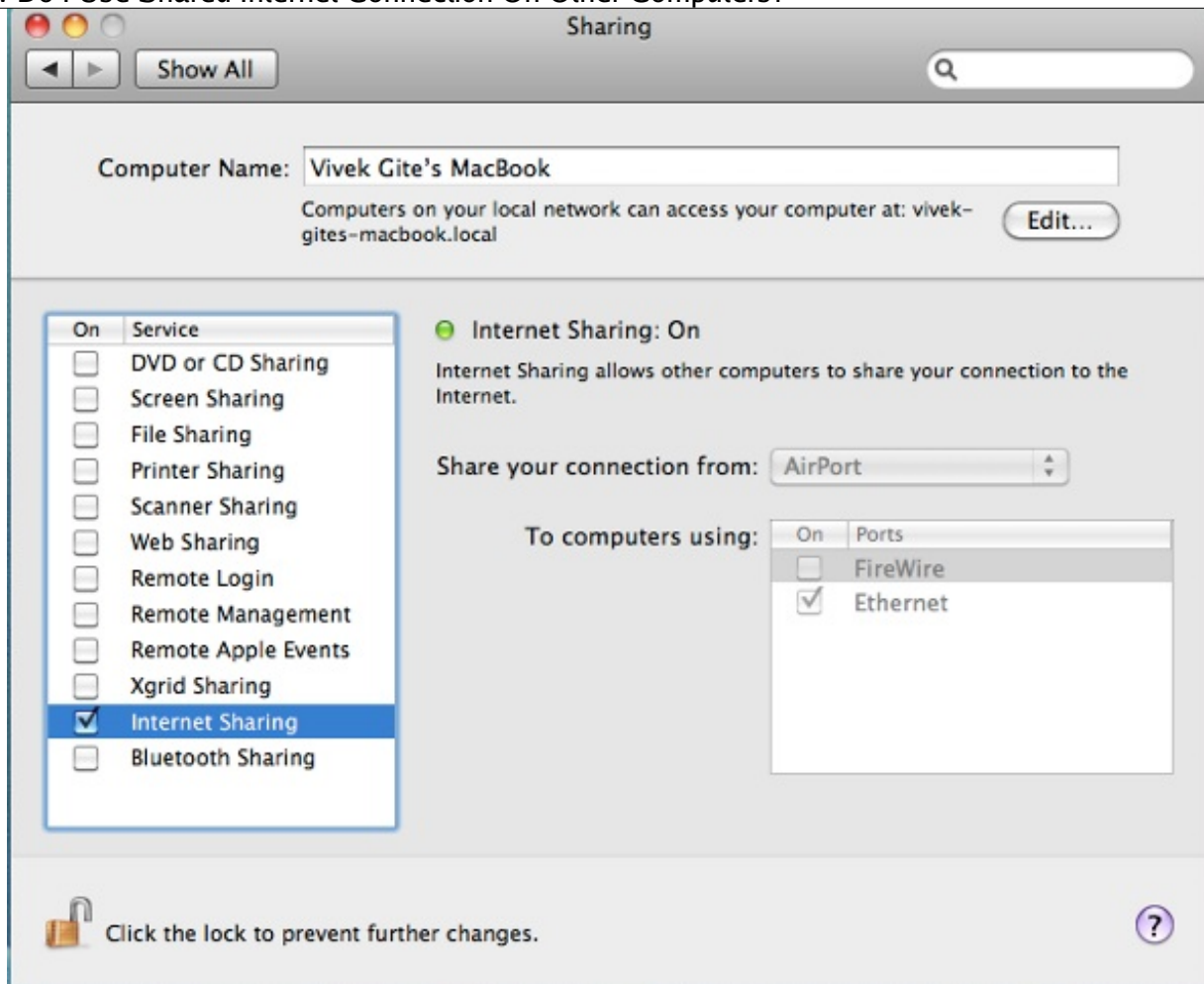
Click **Sharing**:



[4]

Fig.02: Mac OS X Sharing the Internet Connection

Select **Internet Sharing**:



[5]

Fig.03: Mac OS X Sharing Airport Internet Connection With Ethernet Connected Computers

You need to select your Internet connection using Airport. Also use select "Ethernet". Change these settings as per your requirement.

How Do I Use Shared Internet Connection On Other Computers?

You need to input the following networking settings for desktop computer called desktop1:

- IP address 192.168.2.2
- IP netmask 255.255.255.0
- IP gateway 192.168.2.1
- IP DNS server 192.168.2.1

For example, if you are using **Ubuntu Linux** on desktop update networking configuration as follows in `/etc/network/interfaces`:

```
auto eth0
iface eth0 inet static
address 192.168.2.2
netmask 255.255.255.0
network 192.168.2.0
broadcast 192.168.2.255
gateway 192.168.2.1
```

How Do I Setup Port Forwarding OS X Router?

Macbook OS X has no direct GUI option to configure port forwarding. However, you can create a shell script as follows (open terminal and create a script called `osx_fw.sh`):

```
#!/bin/bash
```

```
# bit-torrent port forwarding with mac os x
killall -9 natd
sleep 5
# The following will forward 6881 to 6999 port to desktop computer located at 192.168.2.2
# 192.168.1.100 => airport IP
# 192.168.2.2 => Desktop client ip
# natd provides a Network Address Translation facility for use with divert(4) sockets und
# -----
/usr/sbin/natd -alias_address 192.168.1.100 -interface en1 -use_sockets -same_ports -unregi
```

Simply run this script whenever you need to forward ports:

```
chmod +x osx_fw.sh
sudo ./osx_fw.sh
```

Sample ipfw rules

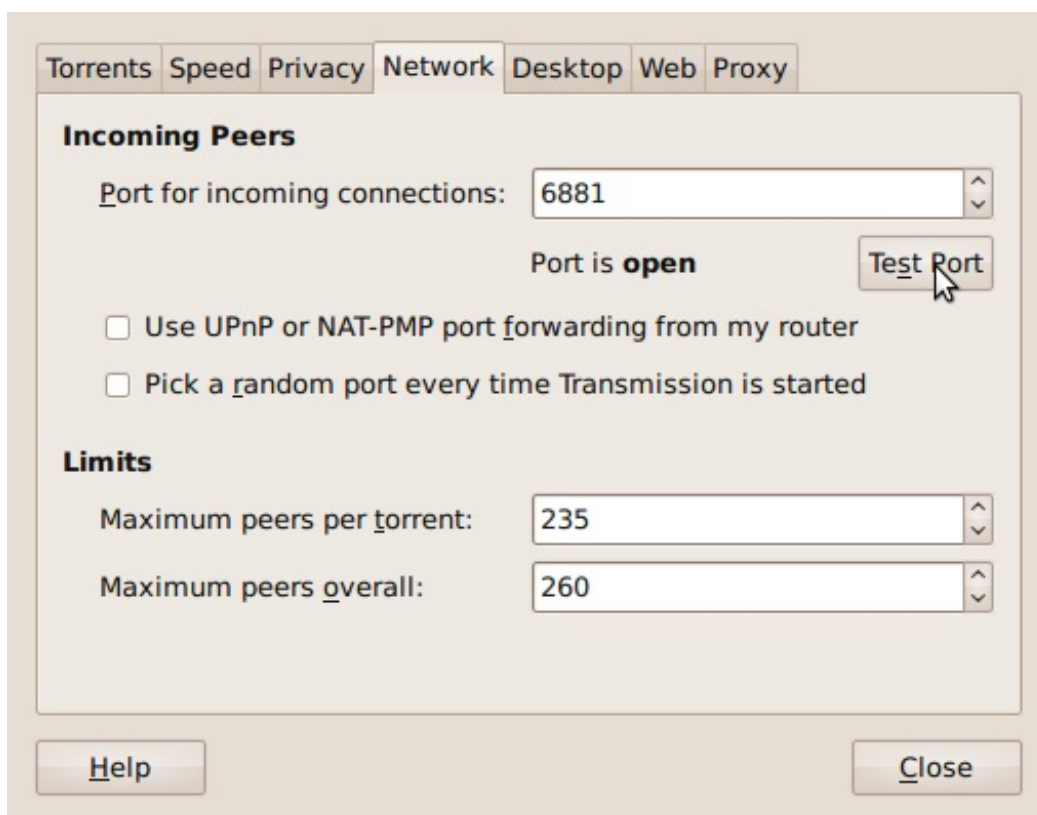
Type the following command to list current rules (these are set by above Internet sharing procedure):

```
sudo ipfw list
```

Sample outputs:

```
00010 divert 8668 ip from any to any via en1
33300 deny log icmp from any to me in icmptypes 8
65535 allow ip from any to any
```

See ipfw man page to secure your network via firewall. My Ubuntu desktop connected to transmission BT client:



[6]

Fig.04: Transmission Ubuntu BT Client Connected To The Internet Via OS X Router

References:

- [Apple natd\(8\)](#) ^[7] man page.
- [ipfw\(8\)](#) ^[8] man page.

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[3] Image: <http://www.cyberciti.biz/faq/howto-configure-macosx-as-nat-router/osx-system-preferences/>

[4] Image: <http://www.cyberciti.biz/faq/howto-configure-macosx-as-nat-router/osx-sharing-internet-connection/>

[5] Image: <http://www.cyberciti.biz/faq/howto-configure-macosx-as-nat-router/osx-as-router/>

[6] Image: <http://www.cyberciti.biz/faq/howto-configure-macosx-as-nat-router/transmission-bt-client/>

[7] Apple natd(8):

<http://developer.apple.com/mac/library/documentation/Darwin/Reference/ManPages/man8/natd.8.html>

[8] ipfw(8): <http://developer.apple.com/mac/library/documentation/Darwin/Reference/ManPages/man8/ipfw.8.html>

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