Syncing multiple servers

If you have more than one machine to sync, it is best to designate one as the master NTP server. Set up the master server to connect to an outside NTP server, then have the other machines sync to the master. This setup reduces the number of outgoing connections and guarantees that all of your machines have their time set to the same value. This configuration requires changes to the server settings in the ntp.conf files on each machine.
Set up any external servers you want to use on the master machine. For example, if you want to use the NTP pool servers you can set the server values in the master ntp.conf file to:

```
server 0.pool.ntp.org iburst
server 1.pool.ntp.org iburst
server 2.pool.ntp.org iburst
server 3.pool.ntp.org iburst
```

Point the ntp.conf to your master server on every other machine for which you want to sync the time. For example, if your master server is "main.example.com," you would alter the ntp.conf files on the secondary machines so that the server entries are as follows:

```
server main.example.com iburst
```

After setting the server parameters and ensuring that the iptables don't block connections to your main NTP server, restart the NTP services on each machine to get them syncing.

Adjusting iptables

NTP uses UDP port 123 to conduct its business, either connecting out to another NTP server or accepting incoming connections. If you have iptables filtering incoming traffic on the main NTP server in your cluster, then you'll need to open port 123 to UDP traffic to allow the other servers to connect to it. You can open port 123 for UDP traffic with the following iptables arguments:

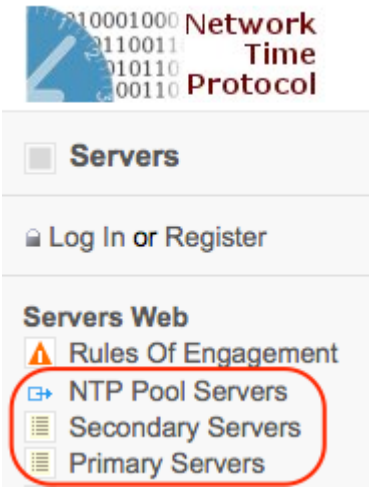
```
-I INPUT -p udp --dport 123 -j ACCEPT
-I OUTPUT -p udp --sport 123 -j ACCEPT
```

Choosing an NTP server

When syncing one or more machines via NTP, you'll want at least one of them to set their time from a reliable external server. There are many public servers out there that are either synced directly from an atomic clock (guaranteeing an absolutely accurate time), or are synced from another server that syncs to an atomic clock.

Public NTP server lists

The best source for lists of public NTP servers is the NTP Servers WebHome at the main NTP site. At the site is a description of the servers available, and in the sidebar are links to three levels of NTP servers: Primary, secondary, and pool.



Deciding what type of server to sync from will depend on how accurate you need your servers to be.

NTP pool servers

For most users, the pool servers are the best choice. Pool servers are machines that have volunteered to make their NTP server available to the public. They typically sync from a secondary NTP server so their time is accurate, but not necessarily accurate to the nearest millisecond.

Most users don't need their machine time accurate to the nearest millisecond; they just want to know what time it is. Use the pool servers unless you need pinpoint accuracy.

Using the NTP pool servers is as easy as setting the server entries in your ntp.conf file to:

```
server 0.pool.ntp.org iburst
server 1.pool.ntp.org iburst
server 2.pool.ntp.org iburst
server 3.pool.ntp.org iburst
```

To ensure that you only connect to pool servers in your own country or region, visit the pool servers pagefor more specific addresses. For most people, the above entries will be more than sufficient. Those addresses rotate among a huge list of volunteer NTP servers worldwide so the load on any one machine never gets too great.