BRYANT CCNA 14 - Network Time Protocol

SEC 14.1 NTP - What's Going On?

Correct time for our routers is important for both the time ranges we saw before and also other important features, like the syslog.

Synched time is also critical for digital certificate operation as well.

NTP allows us to specify time sources for our switches and routers, whether that time source is another router or multilayer switch in the same network, or an external time source.

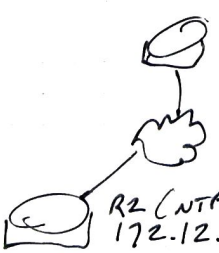
Stratum-0 devices are at the top of the hierarchy and are typically atomic clocks, but ya cannot configure a Cisco router to get its time directly from a stratum-0 server.

The number following "stratum" is the number of hops the device is away from a Stratum-0 device. Stratum-1 servers are generally referred to as time servers, and we can configure a Cisco router to get its time from a Stratum-1 device.

Cisco routers can be NTP servers, clients, or peers. They can also depend on NTP broadcasts.

- Servers send the correct time to clients
- Clients accept time synch messages from the server and set their internal clock accordingly. Clients do not send NTP time synch messages back.
- Peers send NTP messages back and forth to each other, and either peer can send time synch messages to the other.

In our lab, we will configure R1 as our NTP server, with R2 as its only client.



SEC 14.2 NTP Client Lab

First, verify that R1 has the correct time.
R2's time is likely wrong...
To setup R1 as a NTP server:

```
R1(config)# ntp master
```

And, R2 as a client

```
R2(config)# ntp server 172.12.123.1
```

for information about NTP status we can use 2 commands.

```
# show ntp association
# show ntp status
```

It will take some time for the clocks to synch.

SEC 14.3 Peering Lab.

In this lab we will add R3.

```
R2(config)# ntp peer 172.12.23.3
R3(config)# ntp peer 172.12.23.2
```

SEC 14.3 Broadcast Mode

with R1 still configured as master, but NTP now disabled on the other routers we can enable ntp broadcast, which is an interface command.

```
R1(config)# int serial 0/1/0
R1(config-if)# ntp broadcast
```

```
R2(config)# int serial 0/1/0
R2(config-if)# ntp broadcast client
```