

Network Time Protocol (NTP)

Lab Summary

Configure and verify Network Time Protocol (NTP) service on all routers.

Figure 1 Lab Topology



Lab Configuration

Start Packet Tracer File: **ntp.ptk**

Step 1: Click *R1* icon and select *CLI* folder.

Step 2: Enter global configuration mode.

```
R1> enable  
R1# configure terminal
```

Step 3: Enable NTP on R1 to receive time synchronization updates from an NTP server.

```
R1(config)# ntp server 192.168.3.1  
R1(config)# ntp authentication-key 35 md5 cisco  
R1(config)# ntp trusted-key 35  
R1(config)# ntp authenticate
```

Step 4: Configure the local time zone on R1 for PST.

```
R1(config)# clock timezone PST -8  
R1(config)# end  
R1# copy running-config startup-config
```

Step 5: Click *R2* icon and select *CLI* folder.

Step 6: Enter global configuration mode.

```
R2> enable  
R2# configure terminal
```

Step 7: Enable NTP on R2 to receive time synchronization updates from an NTP server.

```
R2(config)# ntp server 192.168.3.1
R2(config)# ntp authentication-key 35 md5 ciscoet
R2(config)# ntp trusted-key 35
R2(config)# ntp authenticate
```

Step 8: Configure the local time zone on R2 for PST.

```
R2(config)# clock timezone PST -8
R2(config)# end
R2# copy running-config startup-config
```

Step 9: Verify Lab

Confirm that NTP is synchronized for R1 and R2 from the NTP server.

```
R1# show ntp status
```

Clock is synchronized, stratum 2, reference is 192.168.3.1

nominal freq is 250.0000 Hz, actual freq is 249.9990 Hz, precision is 2**19
reference time is E10EB2BE.0000038A (19:34:22.906 UTC Fri Sep 27
2019) clock offset is 0.00 msec, root delay is 0.00 msec
root dispersion is 0.02 msec, peer dispersion is 0.02 msec.

```
R2# show ntp status
```

Clock is synchronized, stratum 2, reference is 192.168.3.1

nominal freq is 250.0000 Hz, actual freq is 249.9990 Hz, precision is 2**19
reference time is E10EAE73.000000F9 (19:16:03.249 UTC Fri Sep 27
2019) clock offset is 0.00 msec, root delay is 0.00 msec
root dispersion is 0.02 msec, peer dispersion is 0.02 msec