

NTP in CCNA (Cisco Certified Network Associate)

In the **CCNA syllabus**, **NTP (Network Time Protocol)** is an important topic under **network device management and configuration**. You'll learn how to:

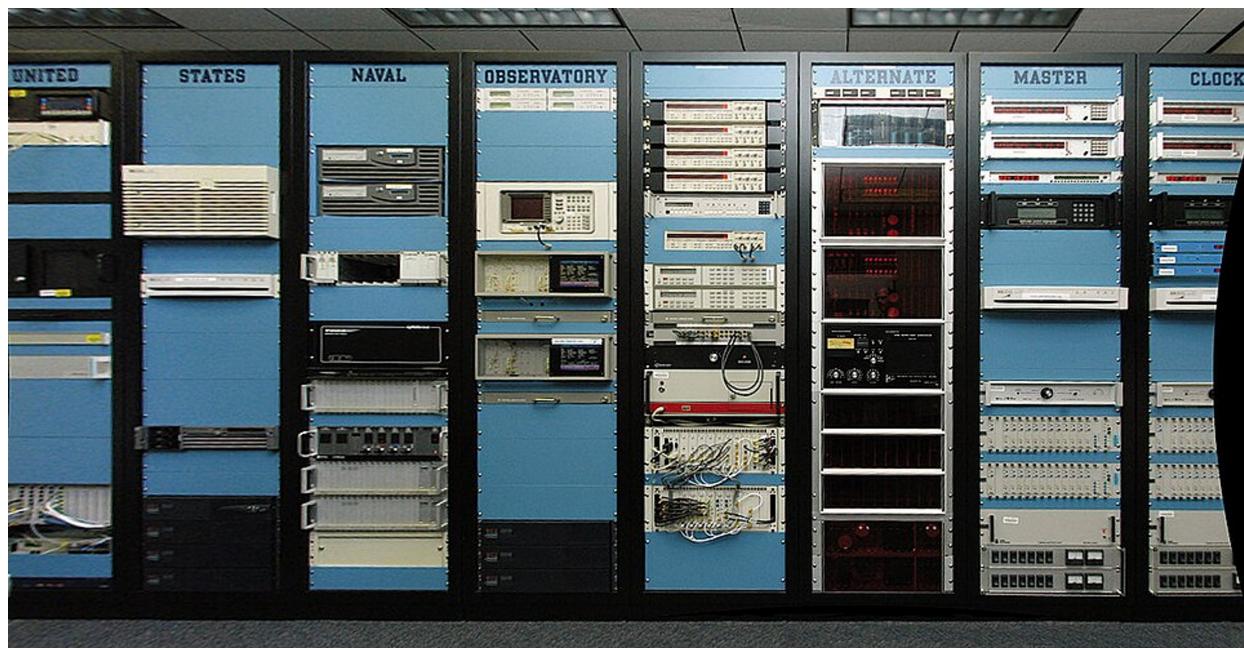
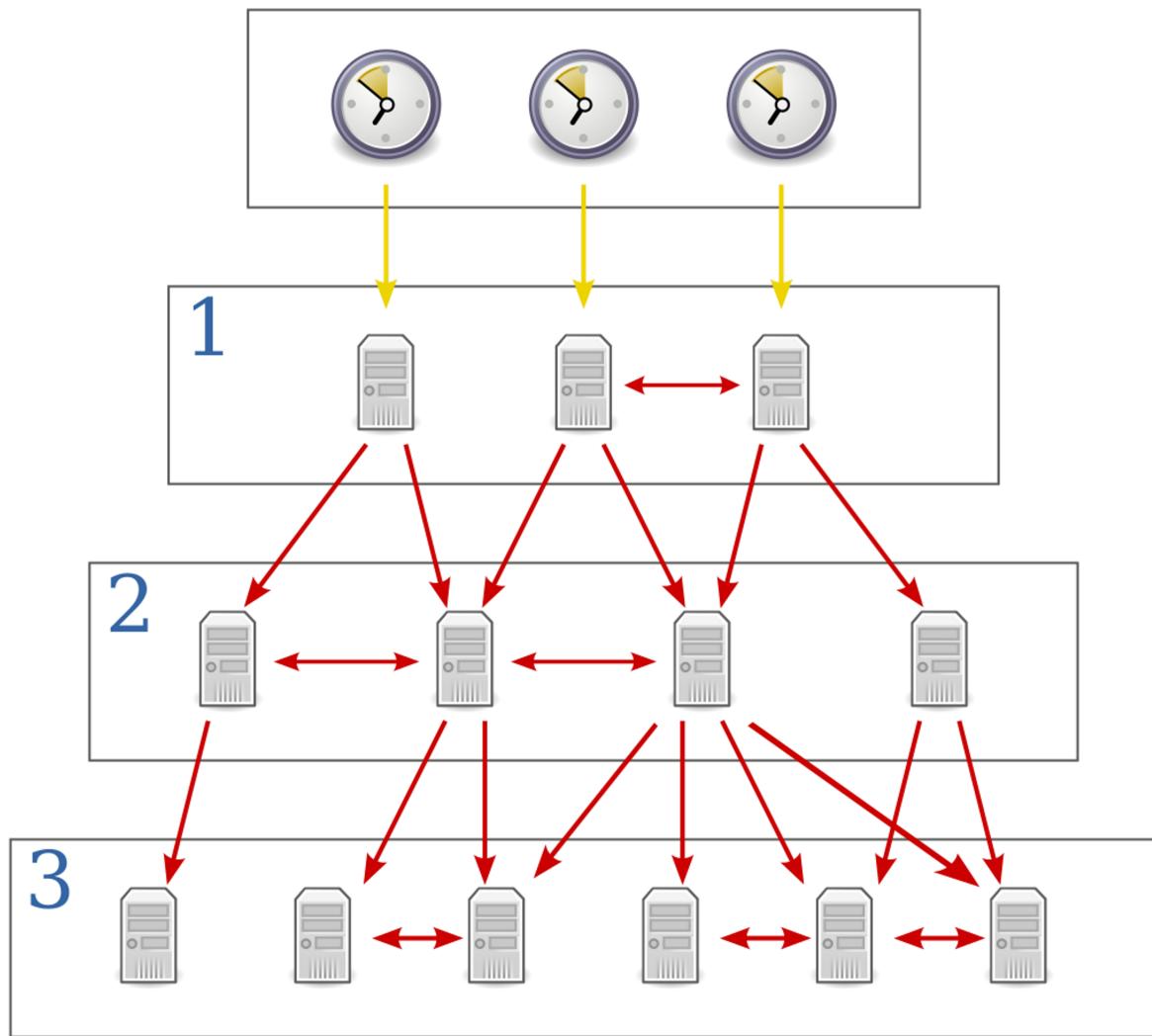
- Configure NTP on Cisco routers/switches
- Sync time between network devices
- Understand stratum levels and time accuracy

What is NTP in CCNA?

NTP is used to **synchronize time across all devices** in a network (routers, switches, servers, PCs), so logs and operations happen in correct order.

NTP Concepts You Must Know for CCNA

Term	Meaning
NTP Server	Device that provides the time
NTP Client	Device that requests-syncs time
Stratum Level	Distance from the reference clock (0 = most accurate)
NTP Master	A Cisco device acting as an NTP server
NTP Associations	Shows from which server the router is syncing time



The [U.S. Naval Observatory](#) Alternate Master Clock at [Schriever AFB \(Colorado\)](#) is a stratum 0 source for NTP.

From <https://en.wikipedia.org/wiki/Network_Time_Protocol>

Why Time Sync is Important in Networks

- Correct log timestamps
- Secure communications (certificates, logs)
- Troubleshooting and auditing
- Coordinating backup and scheduled tasks

CCNA Lab Example – NTP Configuration

Scenario:

- R1 is the NTP Server (Master)
- R2 and R3 are Clients

◆ Step 1: Set R1 as NTP Master

R1(config)# ntp master 1

- 1 is stratum level (optional)

◆ Step 2: Configure R2 and R3 as NTP Clients

R2(config)# ntp server 192.168.1.1

R3(config)# ntp server 192.168.1.1

- Replace 192.168.1.1 with R1's IP address

◆ Step 3: Verify NTP Status

R2# show ntp associations

R2# show ntp status

Additional NTP Commands for CCNA

Command	Description
ntp server <ip>	Configure an NTP client
ntp master <level>	Configure a router as NTP server
show clock	Show system time
show ntp associations	View NTP peers
show ntp status	Verify if time is synced

Port Number Used by NTP

- UDP Port 123

Summary for CCNA

Topic	Key Point
Protocol Name	NTP (Network Time Protocol)
Purpose	Synchronize time across network devices
Port	UDP 123
Stratum 0	Atomic clock/GPS
Configure Master	ntp master <stratum>
Configure Client	ntp server <IP>
Verify	show ntp status, show ntp associations