

Time Settings on a Cisco Business 250 or 350 Switch

Objective

This article provides instructions on how to configure the system time settings on your Cisco Business 250 or 350 series switch.

Applicable Devices | Software Version

- CBS250 ([DataSheet](#)) | 3.0.0.69 ([Download latest](#))
- CBS350 ([Data Sheet](#)) | 3.0.0.69 ([Download latest](#))
- CBS350-2X ([Data Sheet](#)) | 3.0.0.69 ([Download latest](#))
- CBS350-4X ([Data Sheet](#)) | 3.0.0.69 ([Download latest](#))

Introduction

System time configuration is of great importance in a network. Synchronized system clocks provide a frame of reference between all devices on the network. Network time synchronization is critical because every aspect of managing, securing, planning, and debugging a network involves determining when events occur. Without synchronized clocks, accurately correlating log files between devices when tracking security breaches or network usage is impossible.

Synchronized time also reduces confusion in shared file systems, as it is important for the modification times to be consistent, regardless of the machine on which the file systems reside.

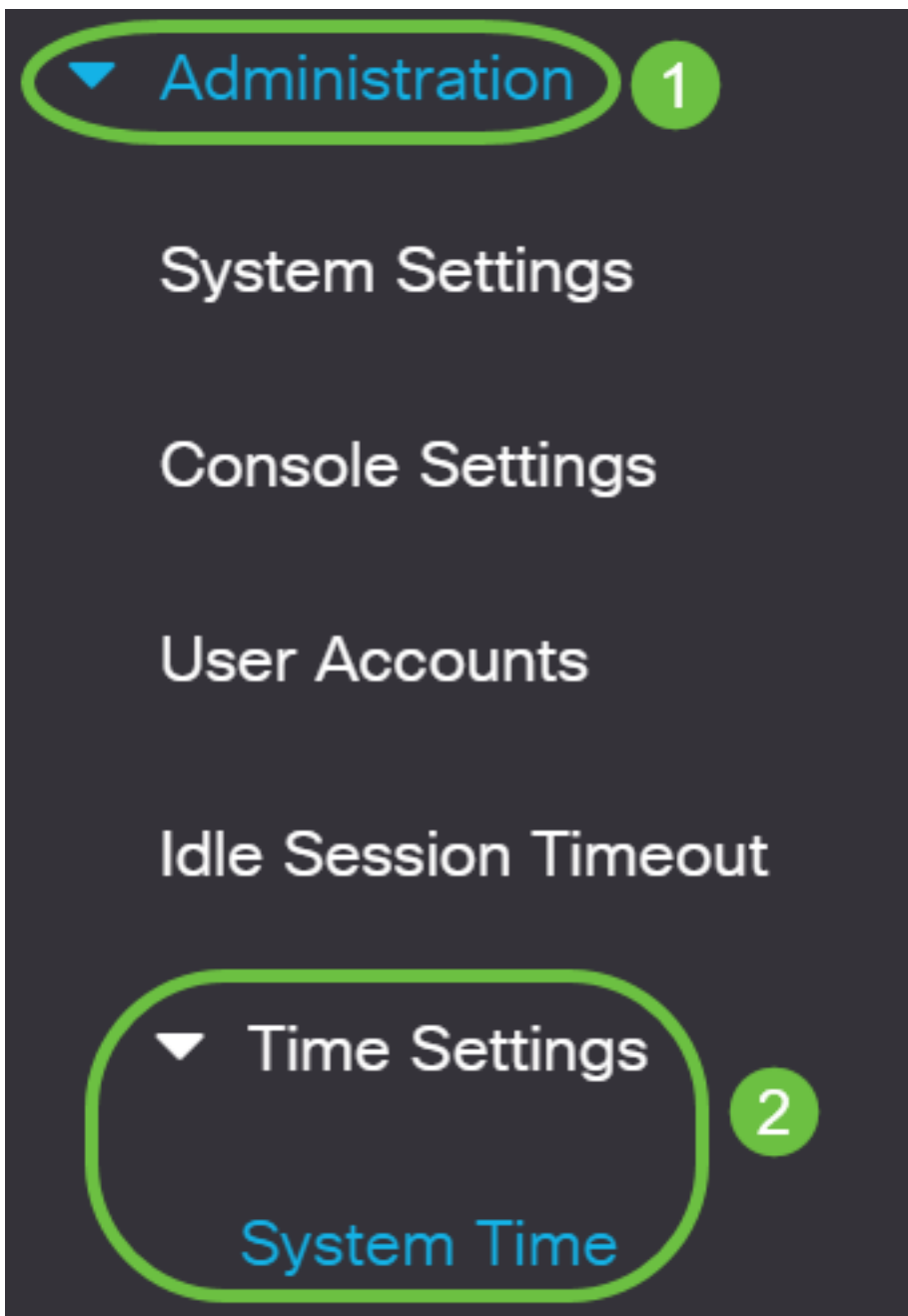
The Cisco Small Business Switches support Simple Network Time Protocol (SNTP) and when enabled, the switch dynamically synchronizes the device time with time from an SNTP server. The switch operates only as an SNTP client, and cannot provide time services to other devices.

Configure System Time Settings on your Switch

Access the System Time Page

The System Time page of the web-based utility provides ways to configure system time, time zone, and Daylight Saving Time (DST).

Step 1. Log in to the web-based utility of your switch then choose **Administration > Time Settings > System Time**.



The following fields are displayed:

System Time

Dynamic Time Zone and Daylight Saving Time configurations from DHCP, if received, override manual configurations.

Actual Time (From SNTP Server):	23:18:05; 2021-Jan-20;
Last Synchronized Server:	Unsynchronized

- Actual Time (From SNTP Server) - System time on the device. This shows the Dynamic Host Configuration Protocol (DHCP) time zone or the acronym for the user-defined time zone if these were defined.
- Last Synchronized Server - Address, stratum and type of the SNTP server from which system time was last taken.

Step 2. Choose your preferred system time configuration:

- **Automatic Settings** - If this is enabled, the system time is obtained from an SNTP

server.

- **Manual Settings** - Set the date and time manually. The local time is used when there is no alternate source of time, such as an SNTP server.

Configure Automatic Time Settings

Important: Before configuring this feature, you must first configure a connection to an SNTP server. To learn how, click [here](#) for instructions.

You may also enforce authentication of the SNTP sessions. For instructions on how to configure this feature, click [here](#).

Step 1. In the Main Clock Source (SNTP Servers) area under Clock Source Settings, check the **Enable** check box to dynamically synchronize the switch time with time from an SNTP server.

This option is checked by default.

Clock Source Settings

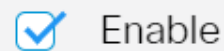
Main Clock Source (SNTP Servers):



Step 2. (Optional) In the Alternate Clock Source (PC via active HTTP/HTTPS sessions) area, check the **Enable** check box to set the date and time from the configuring computer using Hypertext Transfer Protocol (HTTP).

Clock Source Settings

Main Clock Source (SNTP Servers):

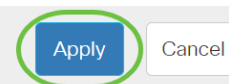


Alternate Clock Source (PC via active HTTP/HTTPS sessions):



Step 3. Click **Apply**.

System Time



Dynamic Time Zone and Daylight Saving Time configurations from DHCP, if received, override manual configurations.

Actual Time (From SNTP Server):

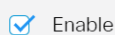
23:18:05; 2021-Jan-20;

Last Synchronized Server:

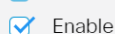
Unsynchronized

Clock Source Settings

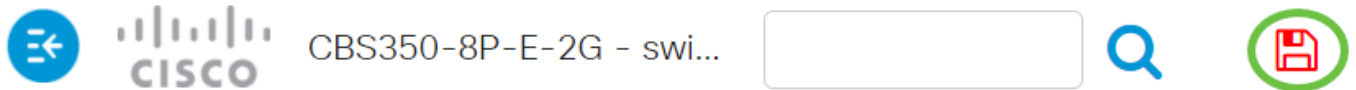
Main Clock Source (SNTP Servers):



Alternate Clock Source (PC via active HTTP/HTTPS sessions):



Step 4. (Optional) Click **Save** to save settings to the startup configuration file.



System Time

Dynamic Time Zone and Daylight Saving Time configurations from DHCP, if received

Actual Time (From SNTP Server):	23:18:05; 2021-
Last Synchronized Server:	Unsynchronized

You should now have successfully configured the automatic system time settings of your switch.

Configure Manual Time Settings

Step 1. In the Main Clock Source (SNTP Servers) area under Clock Source Settings, uncheck the **Enable** check box to allow manual configuration of time settings.

Clock Source Settings

Main Clock Source (SNTP Servers): Enable

Step 2. (Optional) In the Alternate Clock Source (PC via active HTTP/HTTPS sessions) area, check the **Enable** check box to set the date and time from the configuring computer using Hypertext Transfer Protocol (HTTP).

In this example, this option is left unchecked.

Clock Source Settings

Main Clock Source (SNTP Servers): Enable

Alternate Clock Source (PC via active HTTP/HTTPS sessions): Enable

Step 3. In the Manual Settings area, enter the current date in the *Date* field in YYYY-
MMM-DD format.

Clicking the [here](#) link in the sentence above the Date field automatically obtains time settings stored on your computer. If this option is clicked, skip to [Step 5](#).

Manual Settings

Set the date and time manually, or click [here](#) to import them from your computer.

⚙ Date:

2021-Jan-20

YYYY-MMM-DD

In this example, 2021-Jan-20 is used.

Step 4. In the *Local Time* field, enter the time in the HH:MM:SS format.

Manual Settings

Set the date and time manually, or click [here](#) to import them from your computer.

⚙ Date:

2021-Jan-20

YYYY-MMM-DD

⚙ Local Time:

23:28:46

HH:MM:SS

In this example, 23:28:46 is used.

[Step 5](#). (Optional) Under the Time Zone Settings area, check the Get Time Zone from DHCP to enable dynamic configuration of the time zone and the DST from the DHCP server. Whether one or both of these parameters can be configured depends on the information found in the DHCP packet. If this option is enabled, DHCP client must be enabled on the device.

Note: The DHCP Client supports Option 100 providing dynamic time zone setting. Enabling this feature will reset Manual Settings entered in Steps 3 and 4. If you enabled this feature, skip to [Step 8](#).

Time Zone Settings

Get Time Zone from DHCP:



Enable

Time Zone from DHCP:

N \ A

In this example, this option is left unchecked.

The Time Zone from DHCP area displays the acronym of the time zone configured from the DHCP server. This acronym appears in the Actual area.

Step 6. Choose the time zone offset from the Time Zone Offset drop-down list.

The screenshot shows a configuration interface with the following elements:

- Time Zone Offset:** A dropdown menu currently showing "UTC".
- Time Zone Acronym:** A text field that is currently empty.
- Daylight Savings Settings:** A section containing several fields:
 - Daylight Savings:** A checkbox that is currently unchecked.
 - * Time Set Offset:** A dropdown menu currently showing "UTC".
 - Daylight Savings Type:** A dropdown menu currently showing "UTC".
 - * From:** A dropdown menu currently showing "UTC".
 - * To:** A dropdown menu currently showing "UTC".

The "UTC" option in the "Time Set Offset" dropdown is highlighted with a green oval.

In this example, UTC is chosen.

Step 7. Enter the time zone acronym next to the *Time Zone Acronym* field.

Time Zone Offset:

Time Zone Acronym: (3/4 characters used). Only letters can be included

In this example, PST or Pacific Standard Time is used.

[Step 8](#). In the Daylight Savings Settings area, check the **Enable** check box to enable automatic adjustment of the current time for Daylight Saving Time.

Daylight Savings Settings

Daylight Savings:



[Step 9](#). In the Time Set Offset field, enter the number of minutes offset from GMT ranging from 1 to 1440. The default value is 60.

Daylight Savings Settings

Daylight Savings:

Enable

Time Set Offset:

min (Range: 1 - 1440, Default: 60)

[Step 10](#). In the Daylight Savings Type area, choose the Daylight Savings Type that you want to implement.

Daylight Savings Type:

- USA
- European
- By dates
- Recurring

The options are:

- USA - Daylight Savings Time (DST) is set according to the dates used in the USA.
- European - DST is set according to the dates used by the European Union and other countries that use this standard.
- By dates - DST is set manually, typically for a country other than the USA or a European country. Enter the parameters described below. If this option is chosen, skip to [Step 11](#).
- Recurring - DST occurs on the same date every year. If this option is chosen, skip to [Step 12](#).

In this example, USA is chosen.

Step 11. (Optional) If By dates was chosen, enter the time and date for which Daylight Savings takes place.

By dates
 Recurring

From: 2021-Mar-01 YYYY-MMM-DD 02:00 HH:MM
To: 2022-Mar-01 YYYY-MMM-DD 01:00 HH:MM

- From - Day and time that DST starts.
- To - Day and time that DST ends.

In this example, DST starts at 02:00 of March 1, 2020 and ends at 01:00 of March 1, 2021.

Step 12. (Optional) If Recurring was chosen, enter the appropriate information in the highlighted *From* and *To* fields.

By dates
 Recurring

* From: 2021-Mar-01 YYYY-MMM-DD 02:00 HH:MM
* To: 2022-Mar-01 YYYY-MMM-DD 01:00 HH:MM

From: Day: Sun Week: 2 Month: Mar Time: 02:00 HH:MM
To: Day: Sun Week: First Month: Oct Time: 02:00 HH:MM

- From - Chooses the date which DST begins each year.
- Day - Day of the week when DST begins every year.
- Week - Week within the month when DST begins every year.
- Month - Month of the year when DST begins every year.
- Time - Time when DST begins every year.
- To - Date when DST ends each year.
- Day - Day of the week when DST ends every year.
- Week - Week within the month when DST ends every year.
- Month - Month of the year when DST ends every year.
- Time - Time when DST ends every year.

In this example, DST starts every second Sunday of March at 02:00 and ends every first

Sunday of October at 02:00.





Step 13. Click **Apply** to save the settings.

System Time **Apply** Cancel

Dynamic Time Zone and Daylight Saving Time configurations from DHCP, if received, override manual configurations.

Actual Time (From SNTP Server):	23:40:11; 2021-Jan-20;
Last Synchronized Server:	Unsynchronized

Step 14. (Optional) Click **Save** to save the settings to the startup configuration file.

  CBS350-8P-E-2G - swi...  

System Time

You have now successfully configured the manual system time settings of your Cisco Business 250 or 350 series switch.

Looking for more articles on your CBS250 or CBS350 switch? Check out any of the links below for more information!

[SNMP Settings](#) [SNMP Views](#) [SNMP Groups](#) [DHCP Image Upgrade](#) [Password Strength](#) [TCP and UDP Settings](#) [Port Security](#) [Upgrade Firmware](#) [Smartport Best Practices](#) [Troubleshoot: No IP Address](#) [Troubleshoot Smartports](#) [Troubleshoot Link Flapping](#) [Create VLANs](#)

Article Skeleton w/ Content

Objective

This article provides instructions on how to configure the system time settings on your switch through the Command Line Interface (CLI).

Applicable Devices | Firmware Version

- CBS250 ([DataSheet](#)) | 3.0.0.69 ([Download latest](#))
- CBS350 ([Data Sheet](#)) | 3.0.0.69 ([Download latest](#))
- CBS350-2X ([Data Sheet](#)) | 3.0.0.69 ([Download latest](#))
- CBS350-4X ([Data Sheet](#)) | 3.0.0.69 ([Download latest](#))

Introduction

System time configuration is of great importance in a network. Synchronized system clocks provide a frame of reference between all devices on the network. Network time synchronization is critical because every aspect of managing, securing, planning, and debugging a network involves determining when events occur. Without synchronized clocks, accurately correlating log files between devices when tracking security breaches or network usage is impossible.

Synchronized time also reduces confusion in shared file systems, as it is important for the modification times to be consistent, regardless of the machine on which the file systems reside. The Cisco Small Business Switches support Simple Network Time Protocol (SNTP), and when enabled, the switch dynamically synchronizes the device time with time from an SNTP server.

You can manage the system time and date settings on your switch using automatic configuration, such as the SNTP, or manual configuration methods. The switch operates only as an SNTP client, and cannot provide time services to other devices.

To configure the system time settings on your switch through the Web User Interface (UI), click [here](#).

Configure System Time Settings on your Switch through the CLI

By default, there is no configured network policy on the switch. The default LLDP-MED global and interface settings are the following:

Feature	Default Setting
Clock Source	SNTP
Time from	Browser
Browser	Disabled
Time Zone	Offset is
(Static)	UTC+0
DHCP Time	Disabled
zone	
Summer Time	Disabled
(DST)	

View System Time Settings on the Switch

Step 1

Log in to the switch console. The default username and password is cisco/cisco. If you have configured a new username or password, enter the credentials instead.

```
[User Name:cisco  
[Password:*****
```

The commands may vary depending on the exact model of your switch. In this example, the CBS350 switch is accessed through Telnet.

Step 2

To display the current configuration settings of the port or ports that you want to configure, enter the following:

```
CBS350#show clock [detail]
```

- detail - (Optional) Displays the time zone and summer time configuration.

The following information are displayed:

- Actual Time - System time on the device. This shows the Dynamic Host Configuration Protocol (DHCP) time zone and the acronym of the time zone.
- Time source - The external time source for the system clock.
- Time from Browser - Specifies if the date and time of the switch is set from the configuring computer using a web browser.
- Time zone (Static) - The time zone for display purposes.
- DHCP timezone - Specifies that the time zone and the Summer Time or Daylight Saving Time (DST) settings of the system can be taken from the DHCP Timezone option.

```
#show clock detail  
01:41:47 UTC May 19 2017  
Time source is sntp  
Time from Browser is disabled  
  
Time zone (Static):  
Offset is UTC+0  
  
DHCP timezone: Disabled
```

Step 3

Choose your preferred system time configuration:

- [Automatic Settings](#) - If this is enabled, the system time is obtained from an SNTP server.
- [Manual Settings](#) - Set the date and time manually. The local time is used when there is no alternate source of time, such as an SNTP server.

Configure Automatic Time Settings

Step 1

In the Privileged EXEC mode of the switch, enter the Global Configuration context by entering the following:

```
CBS350#configure terminal
```

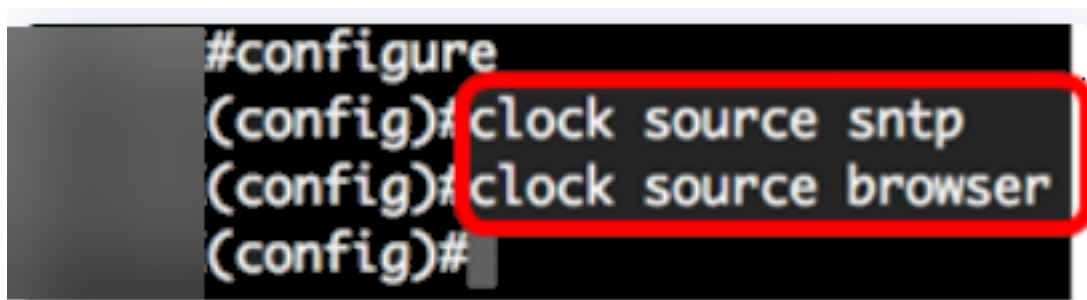
Step 2

To configure an external time source, enter the following:

```
CBS350(config)#clock source [sntp|browser]
```

The options are:

- sntp - (Optional) Specifies that an SNTP server is the external clock source.
- browser - (Optional) Specifies that if the system clock is not already set (either manually or by SNTP), the system clock will be set according to the time information of the web browser once a user logs in to the switch, either via Hypertext Transfer Protocol (HTTP) or HTTP Secure (HTTPS).

A terminal window screenshot showing the configuration process. The prompt is '#configure'. The user enters '(config)#clock source sntp' and '(config)#clock source browser'. The second command is highlighted with a red rounded rectangle. The prompt '(config)#' is visible at the end of the line.

```
#configure  
(config)#clock source sntp  
(config)#clock source browser  
(config)#
```

Step 3 (Optional)

To display the configured system time settings, enter the following:

```
CBS350#show clock detail
```

```
#show clock detail
01:41:47 UTC May 19 2017
Time source is sntp
Time from Browser is disabled

Time zone (Static):
Offset is UTC+0

DHCP timezone: Disabled
```

Step 4 (Optional)

In the Privileged EXEC mode of the switch, save the configured settings to the startup configuration file, by entering the following:

```
CBS350#copy running-config startup-config
```

```
copy running-config startup-config
Overwrite file [startup-config]... (Y/N)[N] ?
```

Step 5 (Optional)

Press **Y** for Yes or **N** for No on your keyboard once the Overwrite file [startup-config]... prompt appears.

```
copy running-config startup-config
Overwrite file [startup-config]... (Y/N)[N] ?Y
19-May-2017 15:09:52 %COPY-I-FILECPY: Files Copy - source URL running-config des
tination URL flash://system/configuration/startup-config
19-May-2017 15:09:54 %COPY-N-TRAP: The copy operation was completed successfully
```

You should now have automatically configured the system time settings on your switch through the CLI.

Configure Manual Time Settings

If no other source of time is available, you can manually configure the time and date after the system is restarted. The time remains accurate until the next system restart. It is recommended that you use manual configuration only as a last resort. If you have an outside source to which the switch can synchronize, you do not need to manually set the system clock.

Important: If you have an outside source on the network that provides time services such as an SNTP server, you do not need to manually set the system clock.

To manually configure the system time settings on your switch, follow these steps:

Step 1

In the Privileged EXEC mode of the switch, enter the following:

```
CBS350#clock set [hh:mm:ss] [month] [day] [year]
```

The options are:

- hh:mm:ss - Specifies the current time in hours (military format), minutes, and seconds. The range are the following:
 - hh - 0 to 23
 - mm - 0 to 59
 - ss - 0 to 59
- day - Specifies the current day of the month. The range is from 1 to 31.
- month - Specifies the current month using the first three letters of the month name. The range is from Jan (January) to Dec (December).
- year - Specifies the current year. The range is from year 2000 up to 2037.

After reboot, the system clock is set to the time of the image creation. In this example, the clock time is set to 12:15:30 with the clock date of May 12, 2017.

```
#clock set 12:15:30 may 12 2017
```

Step 2

In the Privileged EXEC mode of the switch, enter the Global Configuration context by entering the following:

```
CBS350#configure terminal
```

Step 3

To disable the SNTP as the time source for the system clock, enter the following:

```
CBS350(config)#no clock source sntp
```

Step 4 (Optional)

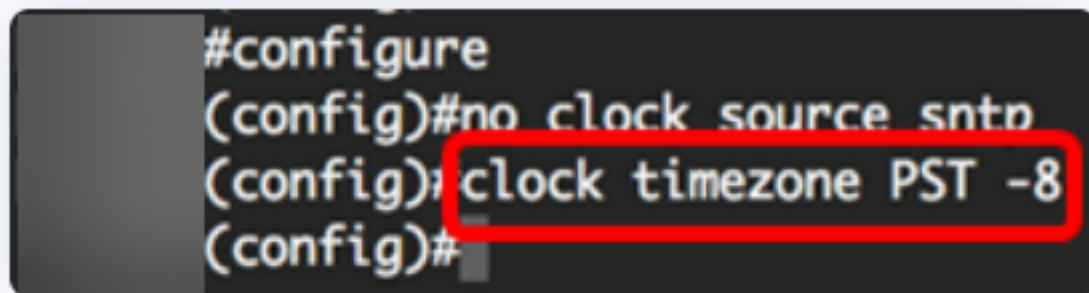
To set the time zone for display purposes, enter the following:

```
CBS350(config)#clock timezone [zone] [hours-offset] [minutes-offset]
```

The options are:

- zone - The acronym of the time zone. The range is up to four characters.
- hours-offset - The hours difference from UTC. The range is from -12 to +13.
- minutes-offset - (Optional) The minutes difference from UTC. The range is from 0 to 59.

The system internally keeps time in UTC, so this command is used only for display purposes and when the time is manually set.



```
#configure
(config)#no clock source sntp
(config)#clock timezone PST -8
(config)#
```

Step 5 (Optional)

To restore the default time zone configuration settings, enter the following:

```
CBS350(config)#no clock timezone
```

Step 6 (Optional)

To specify that the time zone and the Summer Time (DST) of the system can be taken from the DHCP time zone option, enter the following:

```
CBS350(config)#clock dhcp timezone
```

Upon configuring the DHCP time zone, check the following guidelines:

- The time zone taken from the DHCP server has precedence over the static time zone.
- The Summer Time taken from the DHCP server has precedence over static Summer Time.
- The time zone and Summer Time remain effective after the IP address lease time has expired.
- The time zone and Summer Time that are taken from the DHCP server are cleared after

reboot.

- In case of multiple DHCP-enabled interfaces, the following precedence is applied:
 - The information received from DHCPv6 precedes information received from DHCPv4
 - The information received from DHCP client running on lower interface precedes information received from DHCP client running on higher interface
- Disabling the DHCP client from where the DHCP-timezone option was taken clears the dynamic time zone and Summer Time configuration.

```
#configure
(config)#no clock source sntp
(config)#clock timezone PST -8
(config)#clock dhcp timezone
(config)#
```

Step 7 (Optional)

To restore the default DHCP time zone configuration, enter the following:

```
CBS350(config)#no clock dhcp timezone
```

Step 8 (Optional)

To configure the system to automatically switch to Summer Time (DST), enter one of following:

```
CBS350(config)#clock summer-time [zone] recurring {usa | eu |
{week day hh:mm week day hh:mm}} [offset] CBS350(config)#clock
summer-time zone recurring {usa | eu | {[day month year
hh:mm] [day month year hh:mm]}} [offset] CBS350(config)#clock
summer-time [zone] date [month day year hh:mm] [month day
year hh:mm] [offset]
```

The options are:

- zone - The acronym of the time zone to be displayed when summer time is in effect. The range is up to four characters.
- recurring - Indicates that summer time starts and ends on the corresponding specified days every year.
- date - Indicates that summer time starts on the first date listed in the command and ends on the second date in the command.
- usa - The summer time rules are the United States rules. The rules are:
 - Start - Second Sunday in March

- End - First Sunday in November

- Time 2 a.m. local time

- eu - The summer time rules are the European Union rules. The rules are:

- Start - Last Sunday in March

- End - Last Sunday in October

- Time 1 a.m. local time

- week - Week of the month. The week can be 1 to 5, first to last. Week within the month when DST begins or ends every year.
- day - Day of the week (first three characters by name, such as Sun). Day of the week when DST begins or ends every year.
- date - Date of the month. The range is from 1 to 31.
- month - Month (first three characters by name, such as Feb). Month of the year when DST begins or ends every year.
- year - year (no abbreviation). The range is from year 2000 up to 2097.
- hh:mm - Time in military format, in hours and minutes. Time when DST begins or ends every year. The range are the following:

- hh - 0 to 23

- mm - 0 to 59

- ss - 0 to 59

- offset - (Optional) Number of minutes to add during summer time. The range is from 0 to 1440 minutes and the default is 60.

```
#configure
(config)#no clock source sntp
(config)#clock timezone PST -8
(config)#clock dhcp timezone
(config)# summer-time pst recurring 1 sun mar 00:00 2 sun nov 00:00 60
(config)#
```

In this example, a recurring DST is configured with PST time zone. It starts every 00:00 on the first Sunday of March, and ends every second Sunday of November. The offset time is 60 minutes.

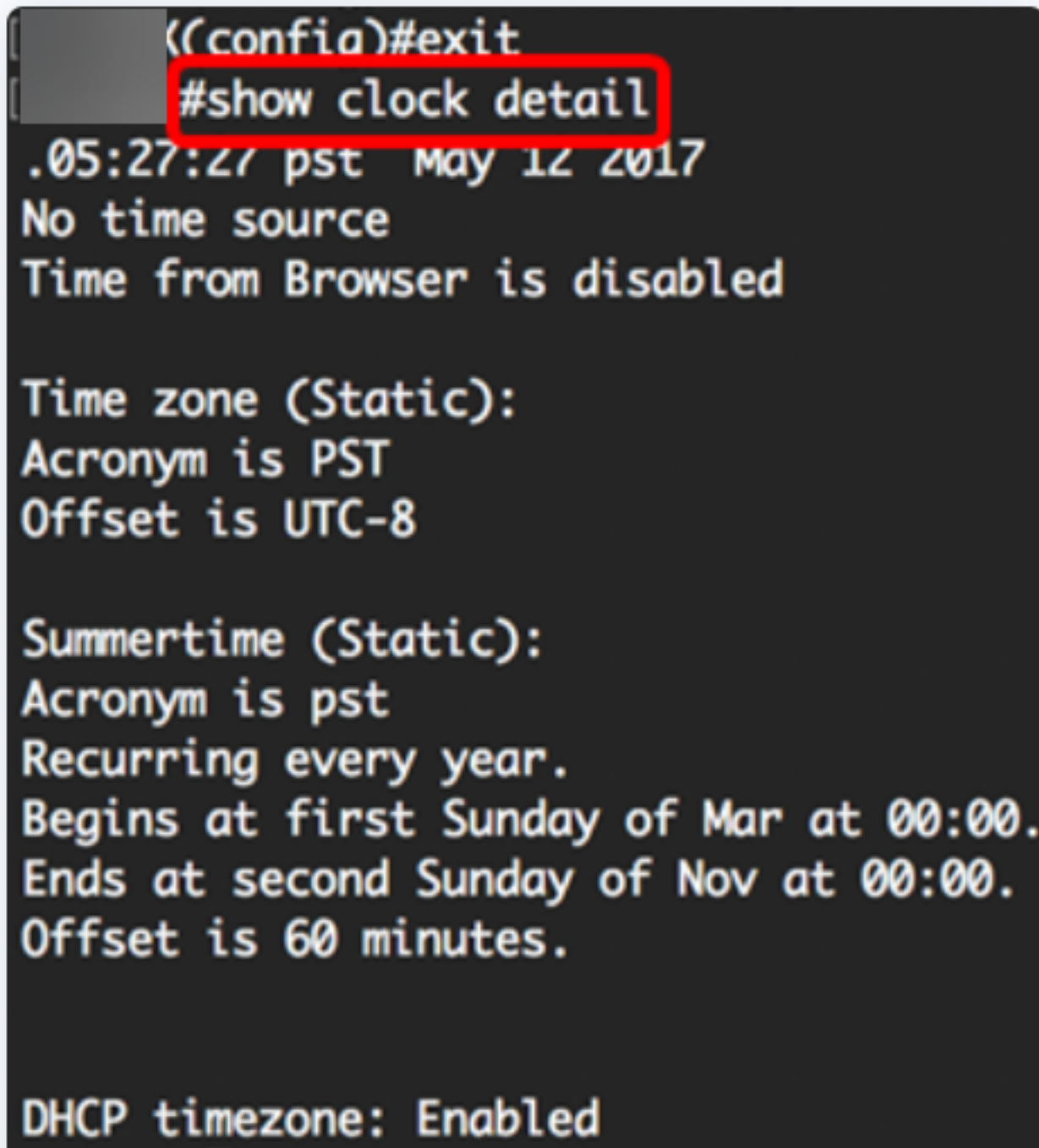
Step 9

Enter the exit command to go back to the Privileged EXEC mode:

```
CBS350(config)#exit
```

Step 10. (Optional) To display the configured system time settings, enter the following:

```
CBS350#show clock detail
```



```
((confia)#exit
#show clock detail
.05:27:27 pst May 12 2017
No time source
Time from Browser is disabled

Time zone (Static):
Acronym is PST
Offset is UTC-8

Summertime (Static):
Acronym is pst
Recurring every year.
Begins at first Sunday of Mar at 00:00.
Ends at second Sunday of Nov at 00:00.
Offset is 60 minutes.

DHCP timezone: Enabled
```

Step 11 (Optional)

In the Privileged EXEC mode of the switch, save the configured settings to the startup configuration file, by entering the following:

```
CBS350#copy running-config startup-config
```

Step 12 (Optional)

Press **Y** for Yes or **N** for No on your keyboard once the Overwrite file [startup-config]... prompt appears.

```
#copy running-config startup-config
Overwrite file [startup-config]... (Y/N)[N] ?Y
12-May-2017 14:31:29 %COPY-I-FILECOPY: Files Copy - source URL running-config des
tination URL flash://system/configuration/startup-config
12-May-2017 14:31:32 %COPY-N-TRAP: The copy operation was completed successfully
```

You have now successfully manually configured the system time settings on your switch through the CLI.

Looking for more articles on your CBS250 or CBS350 switch? Check out any of the links below for more information!

[SNMP Settings](#) [SNMP Views](#) [SNMP Groups](#) [DHCP Image Upgrade](#) [Password Strength](#) [TCP and UDP Settings](#) [Port Security](#) [Upgrade Firmware](#) [Smartport Best Practices](#) [Troubleshoot: No IP Address](#) [Troubleshoot Smartports](#) [Troubleshoot Link Flapping](#) [Create VLANs](#)