

Clock Commands

This module describes the commands used to set and display the internal clock settings in Cisco IOS XR software.

For more information about manually setting the router clock, see *Cisco ASR 9000 Series Aggregation Services Router Getting Started Guide*.

For more information about configuring the router to synchronize to Network Time Protocol (NTP), see the *Implementing NTP on Cisco IOS XR Software* module in *System Management Configuration Guide for Cisco ASR 9000 Series Routers*.

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clock read-calendar

To manually copy the hardware clock (calendar) settings into the software clock, use the **clock read-calendar** command in EXEC modeAdmin EXEC mode.

clock read-calendar

Syntax Description

This command has no keywords or arguments.

Command Default

Read calendar is disabled.

Command Modes

EXEC mode

Admin EXEC mode

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

The *calendar clock* is a hardware system clock that runs continuously, even if the router is powered off or rebooted. The hardware system clock is separate from the software clock settings, which are erased when the router is power cycled or rebooted.

Use the **clock read-calendar** command to manually copy the hardware clock setting into the software clock.

In the following example, the hardware clock settings are copied to the software clock with the **clock read-calendar** command. The **show clock** command is then entered to display the new software clock settings.

```
RP/0/RSP0/CPU0:router# clock read-calendar
RP/0/RSP0/CPU0:router# show clock

14:31:57.089 PST Tue Feb 10 2008
```

Related Topics

clock set, on page 3
clock update-calendar, on page 11
show clock, on page 20
update-calendar

clock set

To change the software clock settings, use the **clock set** command in EXEC mode Admin EXEC mode.

clock set *hh*:*mm*:*ss* {*day month* | *month day*} *year*

Syntax Description

hh : *mm* : *ss*	Current time in hours (24-hour format), minutes, and seconds. Colons are required between values.
day	Current day (by date) in the month.
month	Current month (by name).
year	Current year (no abbreviation). Enter a valid four-digit year.

Command Default

Clock is not set.

Command Modes

EXEC mode

Admin EXEC mode

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Generally, if the system is synchronized by a valid outside timing mechanism, such as a Network Time Protocol (NTP) clock source, or if you have a networking device with calendar capability, you need not set the software clock. Use the **clock set** command if no other time sources are available. The time specified in this command is relative to the configured time zone.

Task ID

Task ID	Operations
host-services	execute

Setting the Software Clock

This example shows how to set the software clock using the **clock set** command with the *day month* arguments first.

```
RP/0/RSP0/CPU0:router# clock set 14:12:00 10 feb 2005

14:12:00.114 JST Fri Feb 10 2009
```

This example shows how to set the software clock using the **clock set** command with the *month day* arguments first.

```
RP/0/RSP0/CPU0:router# clock set 14:38:00 feb 10 2005

14:38:00.069 PST Tue Feb 10 2009
```

Displaying the Clock Settings

This example shows how to display the settings of the software clock:

```
RP/0/RSP0/CPU0:router# show clock

14:38:11.292 PST Tue Feb 10 2009
```

This example shows how to use th **clock set** command:

```
RP/0/RSP0/CPU0:router# clock set 06:10:00 12 ?

    january    Month of the Year
    february
    march
    april
    may
    june
    july
    august
    september
    october
    november
    december
```

Related Topics

clock timezone, on page 7
show clock, on page 20
clock summer-time, on page 5

clock summer-time

To configure the system to switch automatically to summer time (daylight saving time), use the **clock summer-time** command in global configuration mode. To remove the daylight saving time setting, use the **no** form of this command.

Note This command is applicable only to Cisco IOS XR 32-bit operating system on Cisco ASR 9000 Series Routers.

clock summer-time *zone* {**date** {*date month year hh*:*mm date month year hh*:*mm* | *month date year hh*:*mm month date year hh*:*mm*} | **recurring** *week day month hh*:*mm week day month hh*:*mm*} [*offset*]
no clock summer-time

Syntax Description

zone	Name of the time zone (for example, PDT) to be displayed when summer time is in effect. Table 1: Common Time Zone Acronyms, on page 7 lists common time zone acronyms used for the *zone* argument.
date	Indicates that summer time should start on the first specific date listed in the command and end on the second specific date in the command.
date	Date of the month.
month	Month.
year	Year (no abbreviation).
hh : *mm*	Time (24-hour format) in hours and minutes.
recurring	Indicates that summer time should start and end on the corresponding specified days every year.
week	Week of the month (values are 1 to 5, first or last).
day	Day of the week.
offset	(Optional) Number of minutes to add during summer time.

Command Default

Summer time is not configured.

offset: 60

Command Modes

Global configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **clock summer-time** command if you want the system to switch automatically to summer time (for display only):

- Use the **recurring** keyword to apply the rules on the configured day each year. If **clock summer-time** *zone* **recurring** is specified without parameters, the summer time rules default to United States standards. The default for the *offset* argument is 60 minutes.
- Use the **date** keyword to specify a start and end date for summer time if you cannot use the first form.

In both forms of the command, the first part of the command specifies when summer time begins and the second part specifies when it ends. All times are relative to the local time zone. The start time is relative to standard time. The end time is relative to summer time. If the starting month is after the ending month, the system assumes that you are in the Southern Hemisphere.

Task ID

Task ID	Operations
host-services	read, write

The following example specifies that summer time starts on the first Sunday in April at 02:00 and ends on the last Sunday in October at 02:00. The **recurring** keyword indicates that the rules apply every year.

```
RP/0/RSP0/CPU0:router(config)# clock summer-time PDT recurring 1 Sunday April 2:00
last Sunday October 2:00
```

If you live where summer time does not follow the pattern in the first example, you could set it to start on October 12, 2008 at 02:00 and end on April 26, 2009 at 02:00, with the following example. The **date** keyword indicates that the rules apply for the current year only.

```
RP/0/RSP0/CPU0:router(config)# clock summer-time PDT date 12 October 2008 2:00 26
April 2009 2:00
```

Related Topics

clock set, on page 3
clock timezone, on page 7

clock timezone

To set the time zone for display, use the **clock timezone** command in Admin Configuration mode or Global Configuration mode. To remove the time zone setting, use the **no** form of this command.

clock timezone *zone hours-offset* [*minutes-offset*]
no clock timezone

Syntax Description

zone	Name of the time zone to be displayed when standard time is in effect.
hours-offset	Hours offset from Coordinated Universal Time (UTC). Range is from –23 to +23.
region	Sets the offset according to the region specified.
minutes-offset	(Optional) Minutes offset from UTC.

Command Default

UTC

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

Use the **clock timezone** command to display the time zone only when setting the time manually. The system keeps time internally in UTC.

This table lists common time zone acronyms used for the *zone* argument.

Table 1: Common Time Zone Acronyms

Acronym	Time Zone Name and UTC Offset
Europe	
GMT	Greenwich Mean Time, as UTC.
BST	British Summer Time, as UTC plus 1 hour.
IST	Irish Summer Time, as UTC plus 1 hour.
WET	Western Europe Time, as UTC.
WEST	Western Europe Summer Time, as UTC plus 1 hour.
CET	Central Europe Time, as UTC plus 1 hour.

Acronym	Time Zone Name and UTC Offset
CEST	Central Europe Summer Time, as UTC plus 2 hours.
EET	Eastern Europe Time, as UTC plus 2 hours.
EEST	Eastern Europe Summer Time, as UTC plus 3 hours.
MSK	Moscow Time, as UTC plus 3 hours.
MSD	Moscow Summer Time, as UTC plus 4 hours.
United States and Canada	
AST	Atlantic Standard Time, as UTC minus 4 hours.
ADT	Atlantic Daylight Time, as UTC minus 3 hours.
ET	Eastern Time, either as EST or EDT, depending on place and time of year.
EST	Eastern Standard Time, as UTC minus 5 hours.
EDT	Eastern Daylight Saving Time, as UTC minus 4 hours.
CT	Central Time, either as CST or CDT, depending on place and time of year.
CST	Central Standard Time, as UTC minus 6 hours.
CDT	Central Daylight Saving Time, as UTC minus 5 hours.
MT	Mountain Time, either as MST or MDT, depending on place and time of year.
MST	Mountain Standard Time, as UTC minus 7 hours.
MDT	Mountain Daylight Saving Time, as UTC minus 6 hours.
PT	Pacific Time, either as PST or PDT, depending on place and time of year.
PST	Pacific Standard Time, as UTC minus 8 hours.
PDT	Pacific Daylight Saving Time, as UTC minus 7 hours.
AKST	Alaska Standard Time, as UTC minus 9 hours.
AKDT	Alaska Standard Daylight Saving Time, as UTC minus 8 hours.
HST	Hawaiian Standard Time, as UTC minus 10 hours.
Australia	
WST	Western Standard Time, as UTC plus 8 hours.
CST	Central Standard Time, as UTC plus 9.5 hours.

Acronym	Time Zone Name and UTC Offset
EST	Eastern Standard/Summer Time, as UTC plus 10 hours (plus 11 hours during summer time).

This table lists an alternative method for referring to time zones, in which single letters are used to refer to the time zone difference from UTC. Using this method, the letter Z is used to indicate the zero meridian, equivalent to UTC, and the letter J (Juliet) is used to refer to the local time zone. Using this method, the International Date Line is between time zones M and Y.

Table 2: Single-Letter Time Zone Designators

Letter Designator	Word Designator	Difference from UTC
Y	Yankee	UTC minus 12 hours.
X	Xray	UTC minus 11 hours.
W	Whiskey	UTC minus 10 hours.
V	Victor	UTC minus 9 hours.
U	Uniform	UTC minus 8 hours.
T	Tango	UTC minus 7 hours.
S	Sierra	UTC minus 6 hours.
R	Romeo	UTC minus 5 hours.
Q	Quebec	UTC minus 4 hours.
P	Papa	UTC minus 3 hours.
O	Oscar	UTC minus 2 hours.
N	November	UTC minus 1 hour.
Z	Zulu	Same as UTC.
A	Alpha	UTC plus 1 hour.
B	Bravo	UTC plus 2 hours.
C	Charlie	UTC plus 3 hours.
D	Delta	UTC plus 4 hours.
E	Echo	UTC plus 5 hours.
F	Foxtrot	UTC plus 6 hours.
G	Golf	UTC plus 7 hours.
H	Hotel	UTC plus 8 hours.

Letter Designator	Word Designator	Difference from UTC
I	India	UTC plus 9 hours.
K	Kilo	UTC plus 10 hours.
L	Lima	UTC plus 11 hours.
M	Mike	UTC plus 12 hours.

The following example shows how to set the time zone to PST and offset 8 hours behind UTC:

```
RP/0/RSP0/CPU0:router(config)# clock timezone PST -8
```

The following example shows how to set the time zone to Newfoundland Standard Time (NST) for Newfoundland, Canada, which is 3.5 hours behind UTC:

```
RP/0/RSP0/CPU0:router(config)# clock timezone NST -3 30
```

Related Topics

clock set, on page 3
show clock, on page 20
clock summer-time, on page 5

clock update-calendar

To copy the software clock settings to the hardware clock (calendar), use the **clock update-calendar** command in EXEC mode Admin EXEC mode.

clock update-calendar

Syntax Description

This command has no keywords or arguments.

Command Default

No default behavior or values

Command Modes

EXEC mode

Admin EXEC mode

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The hardware clock (calendar) runs continuously, even if the router is powered off or rebooted. If the software clock and calendar are not synchronized and the software clock is more accurate, use this command to update the hardware calendar clock to the correct date and time.

Task ID

Task ID	Operations
host-services	execute

The following example shows how to copy the current time from the software clock to the hardware clock:

```
RP/0/RP0/CPU0:router# clock update-calendar
```

Related Topics

clock read-calendar, on page 2

confdConfig cli timezone local

To specify the timezone that must be used when displaying the time in the CLI, use the **confdConfig cli timezone local** command in System Admin Config mode.

confdConfig cli timezone local

Syntax Description

timezone	Specifies the timezone that must be used when displaying the time in the CLI. If **local** is specified then the timezone that is configured on the device is used.

Command Default

The default value is **local**.

Command Modes

System Admin Config

Command History

Release	Modification
Release 6.3.1	By default, the sysadmin **confdConfig** configuration is visible in the sysadmin running configuration.

Usage Guidelines

This command is available in Cisco IOS XR 64 bit OS.

This example shows you how to configure the timezone:

```
sysadmin-vm:0_RP0# config
Thu May  23 23:19:47.567 UTC+00:00
Entering configuration mode terminal
sysadmin-vm:0_RP0(config)# confdconfig cli timezone local
Thu May  23  23:19:47.567 UTC+00:00
```

confdConfig cli utcOffset

To specify the UTC offset measured in minutes, use the **confdConfig cli utcOffset** command in System Admin Config mode.

confdConfig cli utcOffset *integer*

Syntax Description

integer	Specifies the UTC offset measured in minutes.

Command Default

The default value is **0**.

Command Modes

System Admin Config

Command History

Release	Modification
Release 6.3.1	By default, the sysadmin **confdConfig** configuration is visible in the sysadmin running configuration.

Usage Guidelines

This command is available in Cisco IOS XR 64 bit OS.

This example shows you how to configure the UTC offset:

```
sysadmin-vm:0_RP0# config
Thu May  23 23:19:47.567 UTC+00:00
Entering configuration mode terminal
sysadmin-vm:0_RP0(config)# confdconfig cli utcOffset 0
Thu May  23  23:19:47.567 UTC+00:00
```

confdConfig cli idleTimeout

To specify the maximum idle time before terminating a CLI session, use the **confdConfig cli idleTimeout** command in System Admin Config mode.

confdConfig cli idleTimeout *time*

Syntax Description

time	Specifies the idle timeout value. It must be in this format: (nYnMnDnHnMnS).

Command Default

The default value is **PT10M**, which is 10 minutes. **PT0M** means no timeout.

Command Modes

System Admin Config

Command History

Release	Modification
Release 6.3.1	By default, the sysadmin **confdConfig** configuration is visible in the sysadmin running configuration.

Usage Guidelines

This command is available in Cisco IOS XR 64 bit OS.

This example shows you how to configure the idle timeout of 25 minutes:

```
sysadmin-vm:0_RP0# config
Thu May  23 23:19:47.567 UTC+00:00
Entering configuration mode terminal
sysadmin-vm:0_RP0(config)# confdconfig cli idleTimeout 25m
Thu May  23  23:19:47.567 UTC+00:00
```

confdConfig cli timestamp

To enable or disable the display of timestamps, use the **confdConfig cli timestamp** command in System Admin Config mode.

confdConfig cli timestamp {*enabled* | *disabled*}

Syntax Description

enabled	Enables the display of timestamps.
disabled	Disables the display of timestamps.

Command Default

The default value is **enabled**.

Command Modes

System Admin Config

Command History

Release	Modification
Release 6.3.1	By default, the sysadmin **confdConfig** configuration is visible in the sysadmin running configuration.

Usage Guidelines

This command is available in Cisco IOS XR 64 bit OS.

This example shows you how to enable the display of timestamp:

```
sysadmin-vm:0_RP0# config
Thu May  23 23:19:47.567 UTC+00:00
Entering configuration mode terminal
sysadmin-vm:0_RP0(config)# confdconfig cli timestamp enabled
Thu May  23  23:19:47.567 UTC+00:00
```

locale country

To set the default country of use, use the **locale country** command in

global configuration

mode. To remove the country setting, use the **no** form of this command.

locale country *country*
no locale country

Syntax Description

country	Country, where *country* is a two-character country code. Case is not important.

Command Default

No default behavior or values

Command Modes

Global configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Note This command is not fully supported at this time.

To display a complete listing of the available country codes, use the online help (**?**) function:

```
RP/0/RSP0/CPU0:router(config)# locale country ?

    AD    Andorra
    AE    United Arab Emirates
    AF    Afghanistan
    AG    Antigua and Barbuda
    AI    Anguilla
    AL    Albania
    AM    Armenia
    AN    Netherlands Antilles
    AO    Angola
    AQ    Antarctica
    AR    Argentina
    AS    American Samoa
    AT    Austria
    AU    Australia
    AW    Aruba
    AZ    Azerbaijan
    BA    Bosnia and Herzegovina
    BB    Barbados
    BD    Bangladesh
    BE    Belgium
```

```
--More--
```

Task ID

Task ID	Operations
host-services	read, write

The following example shows how to set the country of use to Australia:

```
RP/0/RSP0/CPU0:router(config)# locale country au
```

Related Topics

locale language, on page 18

locale language

To set the default language of use, use the **locale language** command in

global configuration

mode. To remove the language setting, use the **no** form of this command.

locale language *language*
no locale language

Syntax Description

language	Two-character code that specifies the language. Case is not important.

Command Default

No default behavior or values

Command Modes

Global configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Note This command is not fully supported at this time.

To display a complete listing of the available language codes, use the online help (?) function:

```
RP/0/RSP0/CPU0:router(config)# locale language ?

aa    Afar
ab    Abkhazian
af    Afrikaans
am    Amharic
ar    Arabic
as    Assamese
ay    Aymara
  --More--
```

Task ID

Task ID	Operations
host-services	read, write

The following example shows how to set the language of use to English:

```
RP/0/RSP0/CPU0:router(config)# locale language en
```

Related Topics

locale country, on page 16

show clock

To display the system clock, use the **show clock** command in EXEC

mode.

show clock [**detail**]

Syntax Description

detail	(Optional) Indicates the time zone, time source, and current summer time setting (if any).

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The system clock keeps an "authoritative" flag that indicates whether the time is authoritative (believed to be accurate). If the system clock has been set by a timing source, such as system calendar or Network Time Protocol (NTP), the flag is set. If the time is not authoritative, it is used only for display. Until the clock is authoritative and the "authoritative" flag is set, the flag prevents peers from synchronizing to the clock when the peers have invalid times.

The leading symbols that precede the **show clock** command display are shown in this table

Table 3: show clock Display Leading Symbol Descriptions

Symbol	Description
*	Time is not authoritative.
(blank)	Time is authoritative.
.	Time is authoritative, but NTP is not synchronized.

The following sample output shows the current clock settings:

```
RP/0/RSP0/CPU0:router# show clock

16:18:28.927 PST Tue Feb 10 2009
```

The following sample output shows the current clock detail, including the time zone and time source:

```
RP/0/RSP0/CPU0:router# show clock detail
```

```
16:18:07.164 PST Tue Feb 10 2009
Timezone: PST8PST Timesource: User configured
```

Related Topics

clock set, on page 3

show clock sync

To show the time difference between the clocks on route processors (RPs) and other line cards (LCs), use the **show clock sync** command in EXEC command mode.

show clock sync

Command Default

Displays the clock time for each RP or LC in a secure domain router (SDR), relative to the clock time on the RP where the command is entered.

Command Modes

EXEC

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

In a router running Cisco IOS XR software the time clock in the primary RP is synchronized with the other RPs, DRPs, and LCs in the system. This synchronization ensures that the standby RP has an accurate time setting if it assumes the primary role and that the events in logs between different RPs and LCs can be easily correlated during debugging.

The **show clock sync** command verifies that the cards in the router are synchronized with the primary RP. When this command is run, the primary RP queries the clocks on each card in the system and displays the time difference between each card and the primary RP. If the time setting on the card is different from the time on the primary RP, the display shows if the clock on the card is being adjusted to synchronize with the primary RP.

Note The **show clock sync** command shows the relative time difference between the RP where it is run and the cards in that SDR. If the command is run on the primary RP for the owner SDR, then the results show the relative time settings for the cards assigned to the owner SDR. If the command is run on the DSDRSC for a non-owner SDR, then the results are for the cards in that SDR. The **show clock sync** command can also be run on the standby RP, but the times displayed are relative to that RP.

Task ID

Task ID	Operations
ip-services	read
basic-services	read

The following example illustrates sample output from the **show clock sync** command:

```
RP/0/0/CPU0:router# show clock sync
```

```
                RoundTrip    Time
Slot   Card       Delay     Offset    Local Time
-------------------------------------------------------------------------
  0  RP   Card      0 ms    0.000 s   16:00:05.798 UTC Sun Apr 09 2006
  1  RP   Card      1 ms    0.001+s  +16:00:05.798 UTC Sun Apr 09 2006
  2  Line Card      2 ms    0.000 s  -16:00:05.798 UTC Sun Apr 09 2006
  3  Line Card     15 ms    0.004+s  -16:00:05.802 UTC Sun Apr 09 2006
  4  Line Card      1 ms    0.001+s  -16:00:05.798 UTC Sun Apr 09 2006
  5  Line Card      2 ms    0.002+s  +16:00:05.799 UTC Sun Apr 09 2006
```

Table 4: show clock sync Field Descriptions

Field	Description
Slot	Physical slot number of the card.
Card	Type of card on the specified slot.
RoundTrip Delay	Time (in milliseconds) required for the test message to travel between the RP and LC and back.
Time Offset	Time difference (in seconds) between cards shown in the display.
Local Time	Displays the system clock setting. This is the same as the output displayed with the **show clock** command. The positive (+) or negative (-) sign is added if the card is being adjusted to run faster or slower.