

System Message Logging (Syslog)

Keyword	Severity	Description	
Emergency	0	System unusable	Severe
Alert	1	Immediate action required	
Critical	2	Critical Event (Highest of 3)	Impactful
Error	3	Error Event (Middle of 3)	
Warning	4	Warning Event (Lowest of 3)	
Notification	5	Normal, More Important	Normal
Informational	6	Normal, Less Important	
Debug	7	Requested by User Debug	Debug

```
SW1(config)#int fa0/1
SW1(config-if)#no shutdown
SW1(config-if)#
000042: Sep  3 22:56:20 India: %LINK-3-UPDOWN: Interface FastEthernet0/1, changed state to up
000043: Sep  3 22:56:23 India: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
```

- **Sequence Number** : 000042
- **A timestamp**: Sep 3 22:56:20 India
- **The facility on the router that generated the message**: %LINK
- **The severity level**: 3
- **A mnemonic for the message**: UPDOWN
- **The description of the message**: Interface FastEthernet0/1, changed state to up



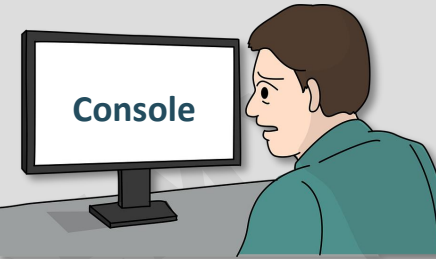
System Message Logging (Syslog)

```
enable
conf t
logging console -----
end
```

SW1



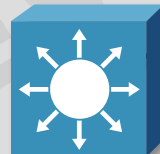
Console Cable



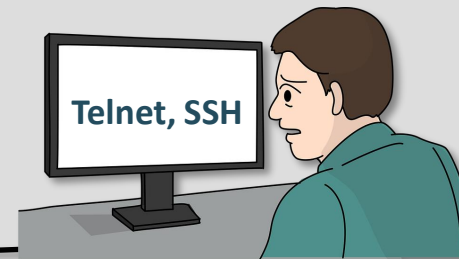
➤ By default, the **console** receives **debugging** messages and numerically **lower** levels

```
enable
conf t
logging monitor -----
exit
```

SW1



UTP Cable



vlan1
IP Add : 192.168.1.100

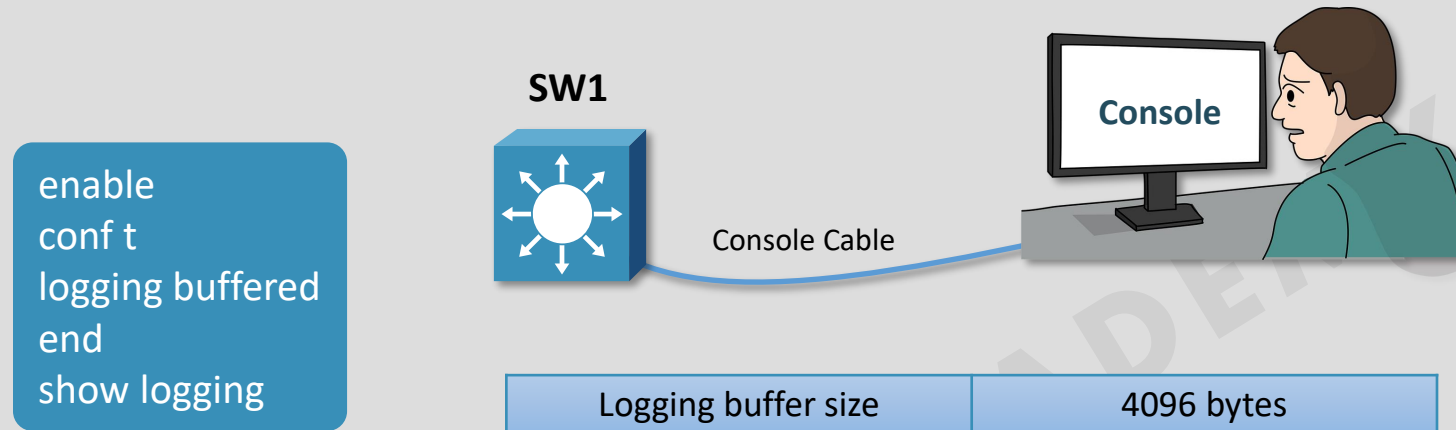
Ethernet
IP Add : 192.168.1.4

```
enable
terminal monitor
```

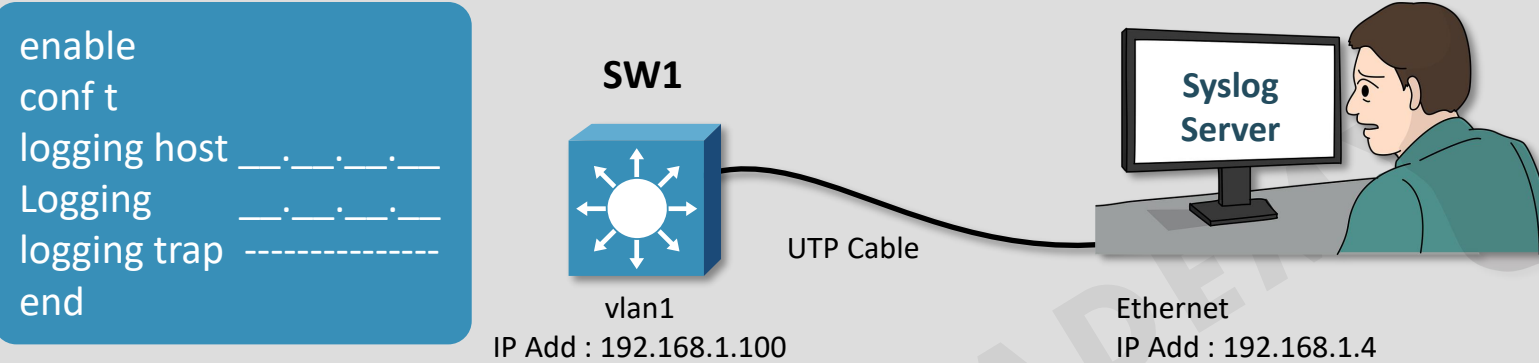
➤ By default, the **terminal** receives **debugging** messages and numerically **lower** levels



System Message Logging (Syslog)



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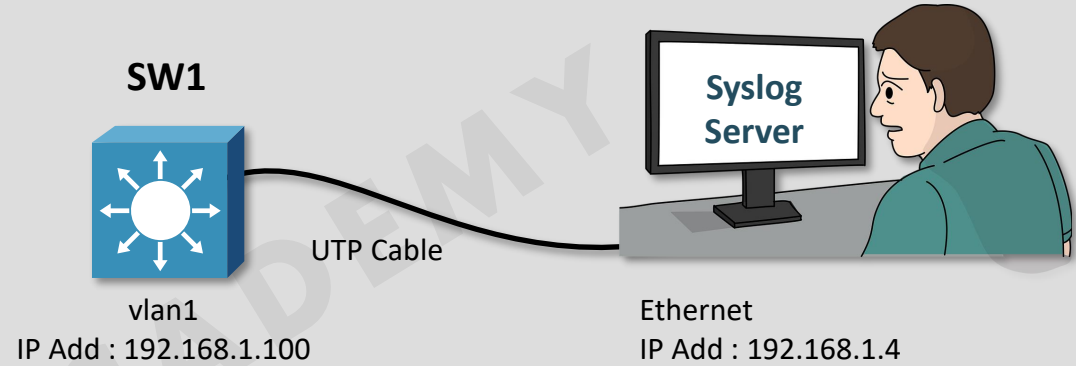


- By default, syslog **servers** receive **informational** messages and numerically **lower** levels



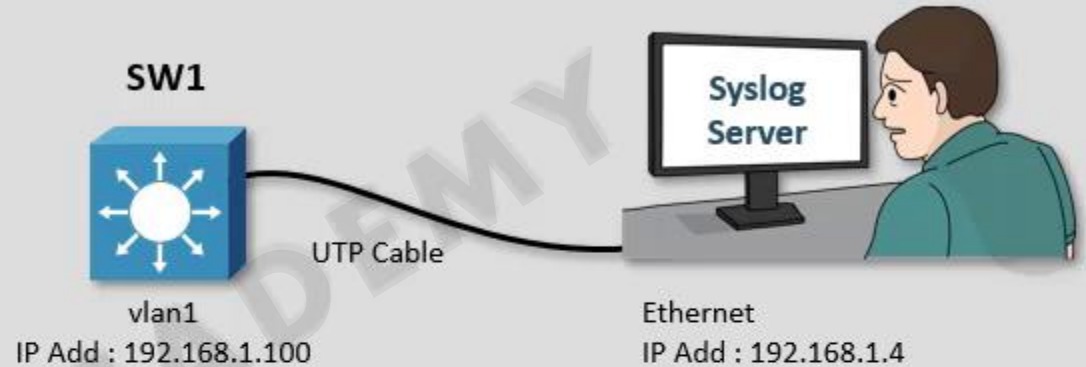
System Message Logging (Syslog)

```
enable
conf t
service timestamps
service sequence-numbers
service timestamps log datetime localtime show-timezone
end
```



System Message Logging (Syslog)

```
enable
conf t
service timestamps
service sequence-numbers
service timestamps log datetime localtime show-timezone
end
```



```
COM6 - Tera Term VT
File Edit Setup Control Window Help
SW1(config)#exit
SW1#
000016: *Mar  1 05:50:53 India: %SYS-5-CONFIG_I: Configured from console by console
SW1#
SW1#
SW1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
SW1(config)#log
SW1(config)#logg
SW1(config)#logging 192.168.1.4
SW1(config)#logg
SW1(config)#logging tr
SW1(config)#logging trap 6
SW1(config)#
```

!	Date	Time	Priority	Hostname	Message
	09-04-2021	01:25:18	Local7.Info	192.168.1.100	22: 000018: *Mar 1 05:52:07 India: %SYS-6-LOGGINGHOST_STARTSTOP: Logging to host 192.168.1.4 Port 514 started - CLI initiated
	09-04-2021	01:25:17	Local7.Notice	192.168.1.100	21: 000017: *Mar 1 05:52:06 India: %SYS-5-CONFIG_I: Configured from console by console

enable
conf t
service t
service se
service t
end



net
: 192.168.1.4

COM6 - Tera Term VT

File Edit Setup Control Window Help

```
SW1(config)#log
SW1(config)#logg
SW1(config)#logging 192.168.1.4
SW1(config)#logg
SW1(config)#logging tr
SW1(config)#logging trap 6
SW1(config)#
SW1(config)#end
SW1#
000017: *Mar 1 05:52:06 India: %SYS-5-CONFIG_I: Configured from console by console
SW1#
000018: *Mar 1 05:52:07 India: %SYS-6-LOGGINGHOST_STARTSTOP: Logging to host 192.168.1.4 Port 514 started - CLI initiated
SW1#
```

Network Time Protocol (NTP)

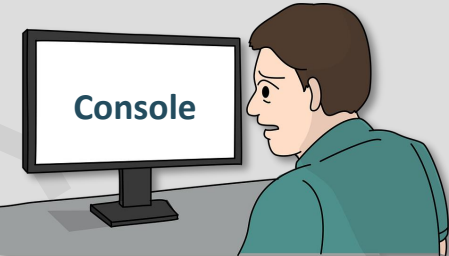


Setting the Time and Timezone:

Router



Console Cable



❑ India --> India Standard Time (IST)

```
conf t
clock timezone IST +5 30
exit
clock set 13:30:00 6 September 2021
clock update-calendar
```

```
Router#
Router#show calendar
11:39:05 UTC Mon Sep 6 2021
Router#
```

Coordinated Universal Time (UTC)

```
Router#
Router#show clock detail
*11:39:21.343 UTC Mon Sep 6 2021
Time source is hardware calendar
Router#
```

Coordinated Universal Time (UTC)

```
Router#
Router#show clock detail
13:30:20.243 IST Mon Sep 6 2021
Time source is user configuration
Router#
```

Indian Standard Time (IST)

```
Router#
Router#show calendar
17:11:39 IST Mon Sep 6 2021
Router#
```

Indian Standard Time (IST)



Network Time Protocol (NTP)

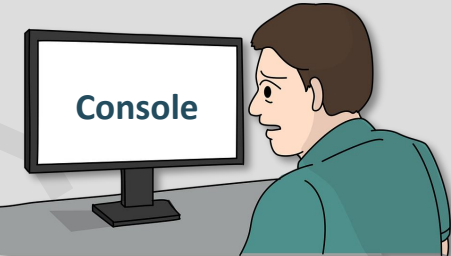


Setting the Daylight Saving Time:

Router



Console Cable



☐ Lebanon --> Eastern European Time (EET)

```
enable
conf t
clock timezone EET +2
clock summer-time EEST recurring last Sun Mar 0:00 last Sun Oct 0:00
end
clock set 13:30:00 6 September 2021
```

```
Router#
Router#show clock detail
13:30:45.763 EEST Mon Sep 6 2021
Time source is user configuration
Summer time starts 00:00:00 EET Sun Mar 28 2021
Summer time ends 00:00:00 EEST Sun Oct 31 2021
Router#
```



Network Time Protocol (NTP)

Stratum 0



Stratum 1

NTP Server with internal time reference (Master) or input reference from a Stratum 0 device



Stratum 2

NTP Server without internal time reference



Stratum 3

NTP Server without internal time reference



NTP Clients

Routers, switches, workstations,....

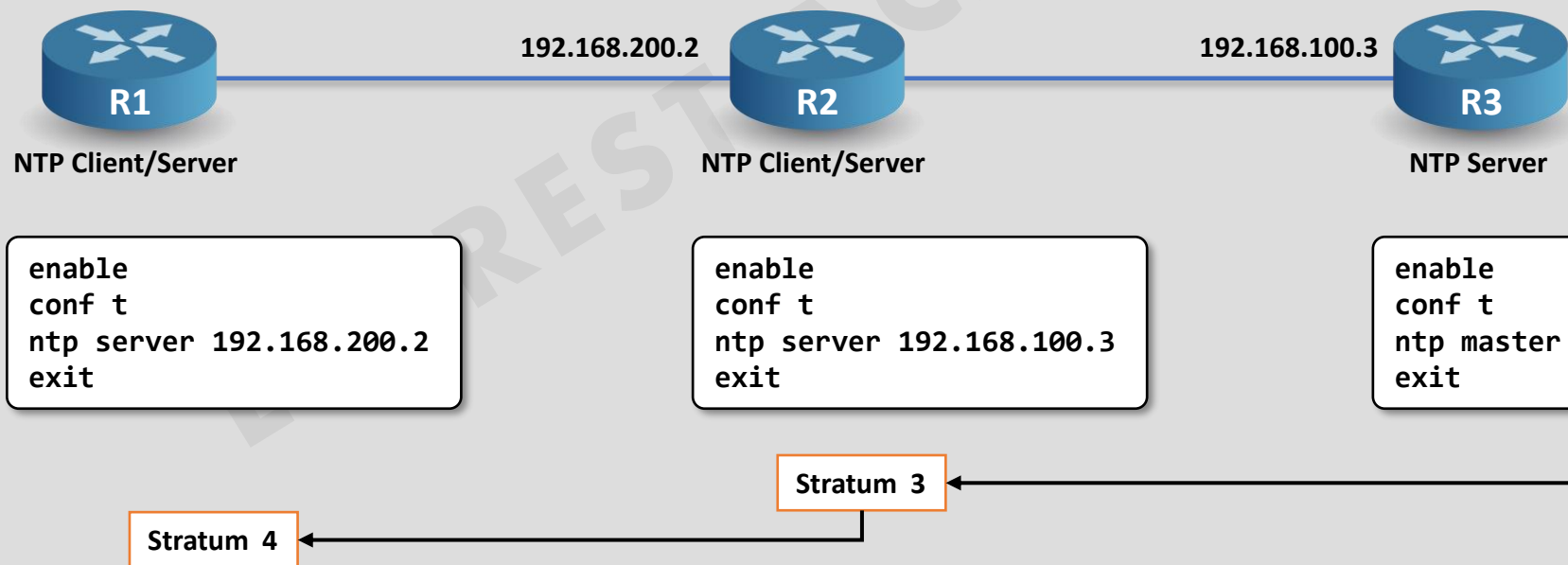


Network Time Protocol (NTP)



Basic NTP Configuration:

NTP server mode	# ntp master {stratum-level}	<ul style="list-style-type: none"> The device acts only as an NTP server, and not as an NTP client. The device gets its time information from the internal clock on the device. A Cisco router/switch uses its internal device hardware to determine the time.
NTP client/server mode	# ntp server {address hostname}	<ul style="list-style-type: none"> The device acts as both client and server. First, it acts as an NTP client, to synchronize time with a server. Once synchronized, the device can then act as an NTP server, to supply time to other NTP clients.



Cisco Discovery Protocol (CDP)



Cisco Discovery Protocol (CDP)

