



## SNTP Setup using CLI or Web GUI

### Topic Covered

<b>SNTP Description .....</b>	<b>2</b>
<b>Initial Preparation .....</b>	<b>2</b>
<b>Connecting to the 10RX.....</b>	<b>4</b>
<b>Configuring SNTP using the GUI.....</b>	<b>6</b>
<b>Configuring SNTP using the CLI.....</b>	<b>10</b>

### Featured Brands



## General Information

### 1 SNTP Configuration:

SNTP (Simple Network Time Protocol) is a 10RX feature that allows the configuration of time synchronization server. Setting up a remote time synchronization means that all time related or time sensitive functions in the local 10RX will be “synchronized” with all other systems in the network that also use the same synchronization servers.

### 2 Initial Preparation

Gather the information, tools and equipment needed to complete this task. The example values given in this document are not meant to be thought of as recommended as each installation is unique and has its own requirements.

#### 2.1 Tools and equipment:

##### 2.1.1 Cables

Console cable RJ45 to DB9 for systems with serial port (**Model CONSOLE-CBLQD**) or

Console cable RJ45 to USB for systems with only USB ports (**Model CONSOLE-CBLQU**)

RJ45 Ethernet cable

1	RTS	Request to Send
2	Not Used	No Connection
3	TXD	Transmit Data (out)
4	GND	Signal ground
5	Not Used	No Connection
6	RXD	Receive Data (in)

7	Not Used	No Connection
8	CTS	Clear to Send

**RJ45 Console port pin assignments**

**2.1.2 Software**

Terminal Server Software for a Windows PC supporting serial and SSH connections to access the 10RX CLI;

Recommended, not supplied by Belden.

Examples: TeraTerm (<http://en.osdn.jp/projects/tssh2/releases/>)

Putty (<http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html>)

Internet Browsers used to access the 10RX Graphical User Interface, hereafter called the GUI.

Examples: Firefox (<https://www.mozilla.org/>)

Chrome (<https://www.google.com/chrome/>)

These are third party software and as such are not supported by Belden.

**2.1.3 Laptop or Desktop Personal Computer required**

These devices are not supplied nor supported by Belden

**2.2 Information to get before starting:**

This information may be supplied by your IT department or the network administrator for the network where the 10RX will be installed.

**2.2.1 IP address assigned to the SNTP/NTP or time synchronization server**

Example Value Used: 172.29.1.1

**2.2.2 Version of SNTP server software**

Example Value Used: version 4 (only version 3 or 4 acceptable)

### 2.2.3 Polling rate of the SNTP server

Example Value Used: 180 (range is 16 to 16284 seconds)

### 2.2.4 The method used to access the SNTP/NTP or time synchronization server

Example Used: unicast (unicast, broadcast and multicast available)

## 3 Connecting to the 10RX

### 3.1 Console Port Connections

The console port of the 10RX is an RJ45 connector that can be located on either the front or rear of the system. It is always located with the LED indicators (power, activity or connectivity)

Use the appropriate cable to connect from the laptop to the console port. Start the Terminal program installed on your PC (TeraTerm in this document), select the appropriate serial port (this will vary from system to system depending on the cable and the adapter used) and configure the serial port properties as follows:

- 38400 Baud rate
- 8 Data bits
- 1 Stop bit
- No Parity
- No Flow Control

After completing this and hitting the enter key you should see a **login:** prompt. The default username and password is **manager**.

### 3.2 SSH Connections

Before connecting to the Ethernet port on the 10RX the IP address of the Laptop/PC must be set to be in the same subnet as the default IP of the 10RX, **in this example it is set to 172.29.1.5 mask 255.255.255.0.**

Only Ethernet port 1/1 is enabled when the 10RX is first powered up. This port is always the top left port set when facing the system. The 10RX Ethernet ports 1 and 2 are RJ45/SFP socket port pairs only one or the other can be used. When first setting up the system it is recommended that the fiber port not be used till all initial setup is done. The default address is 192.168.1.2.

Some Terminal Server software will take what seems a long time to make the first connection, do not despair a lot of back and forth occurs just this once and usually once all this has completed you will be asked to accept a key (not accepting this key will not allow you to login).

After this you will see a **login:** prompt. The default username and password is **manager**.

**NOTE:** Remember that once the IP address of the 10RX has been changed this initial SSH connection will no longer be valid and a new session with the new address must be started to continue.

### 3.3 Web/GUI Connections

Before connecting to the Ethernet port on the 10RX the IP address of the Laptop/PC must be set to be in the same subnet as the default IP of the 10RX, **in this example it is set to 172.29.1.5 mask 255.255.255.0.**

Only Ethernet port 1/1 is enabled when the 10RX is first powered up. This port is always the top left port set when facing the system. The 10RX Ethernet ports 1 and 2 are RJ45/SFP socket port pairs only one or the other can be used. When first setting up the system it is recommended that the fiber port not be used till all initial setup is done. The example address is 172.29.1.1 and a secure connection is required. Thus the URL/Address to access will be **https://172.29.1.100.**

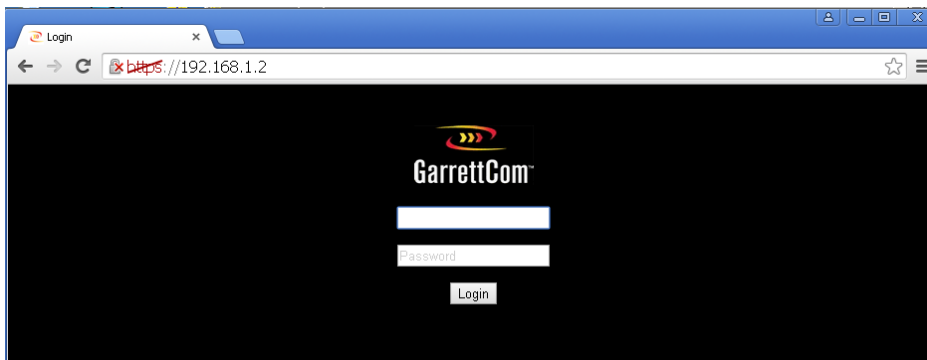
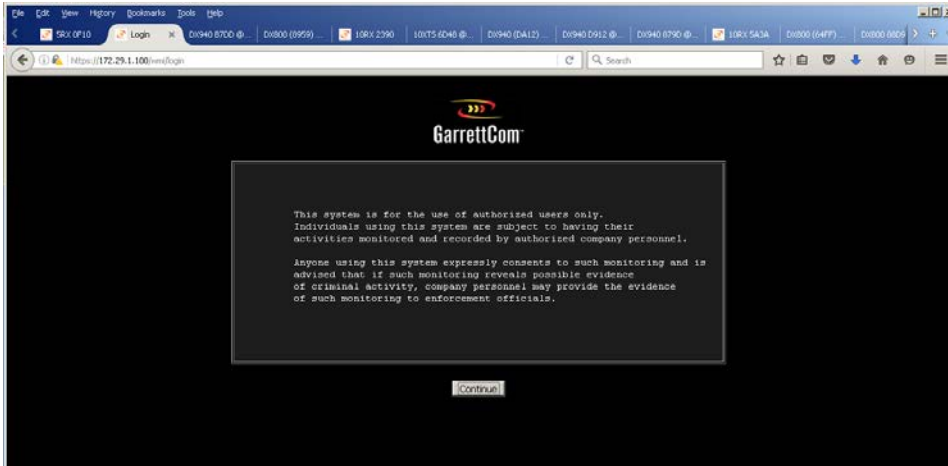
**NOTE:** All newer web browsers and all older browsers that have all of the security updates installed are configured by default to reject self-signed certificates (these certificates are used to setup the SSL secure connection). However you are offered as the user the opportunity to bypass this block and continue to the web page. You will be required to do this for the 10RX.

After this you will see a **login:** screen. The default username and password is **manager.**

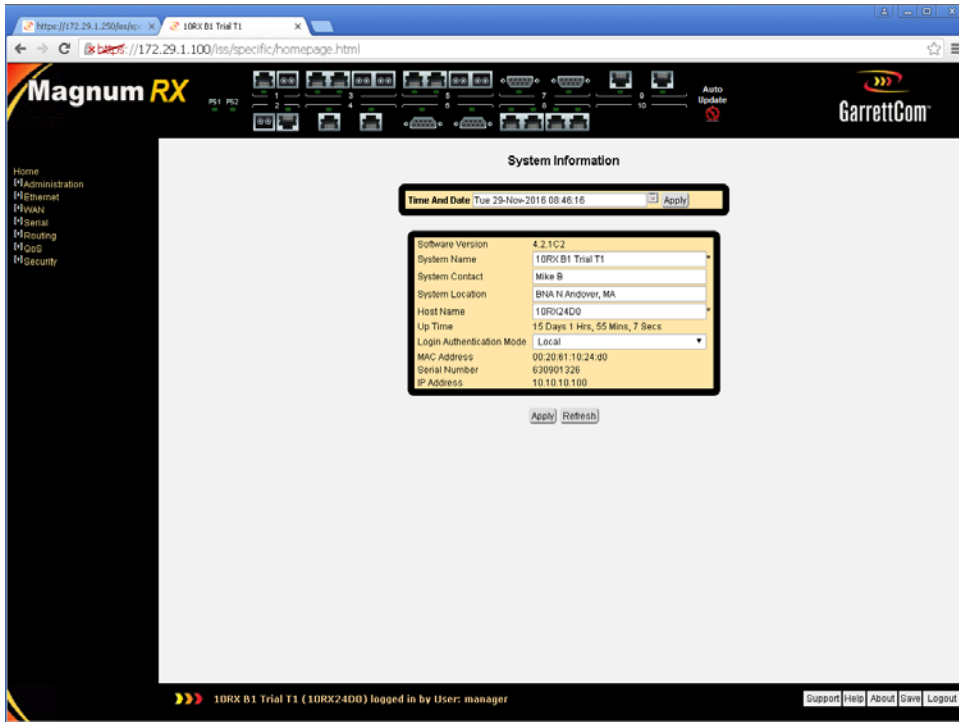
## 4 Configuring SNTP Using the GUI

### 4.1 Logging in to the 10RX using the browser

The Chrome browser was used for screen captures for this document, screens will vary from browser to browser.



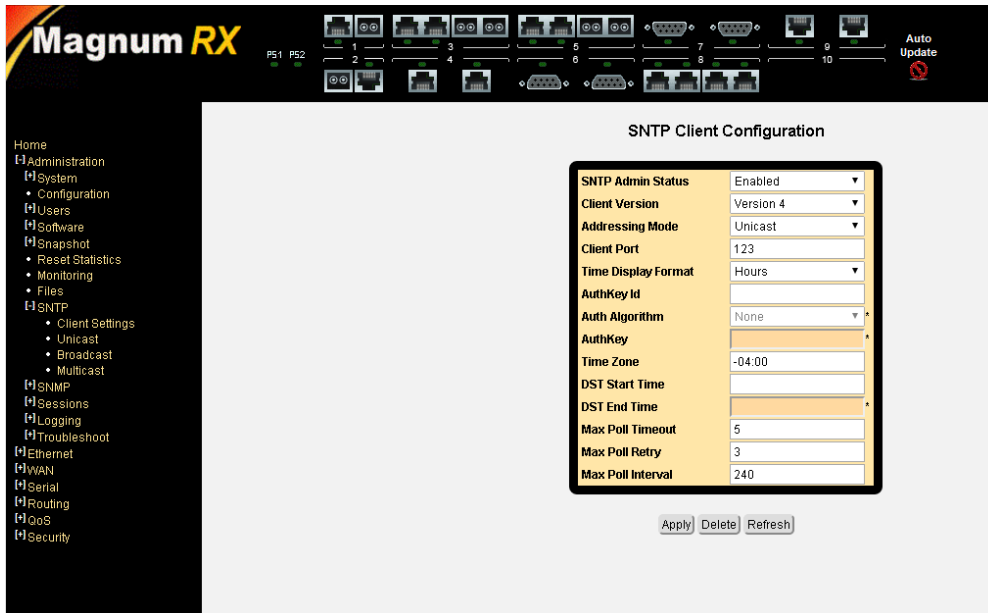
Now you can login using the username: **manager** and password: **manager**



This is the default start screen for the 10RX

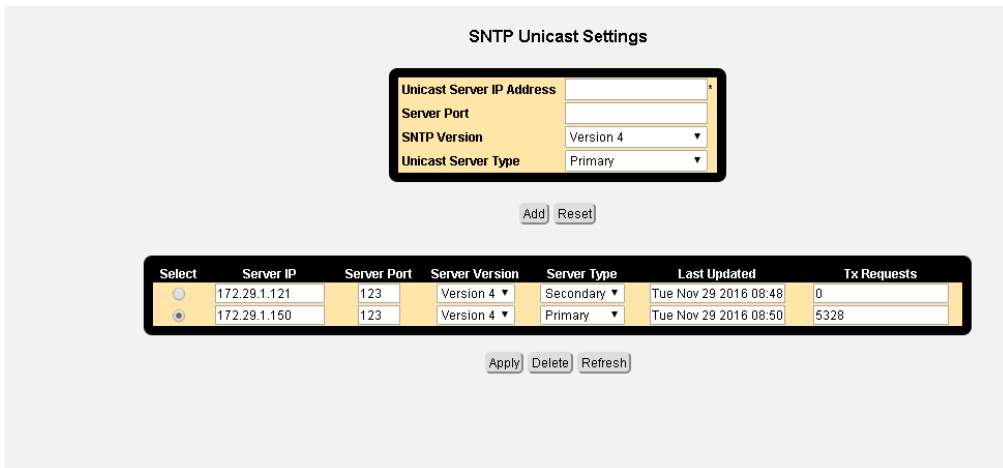
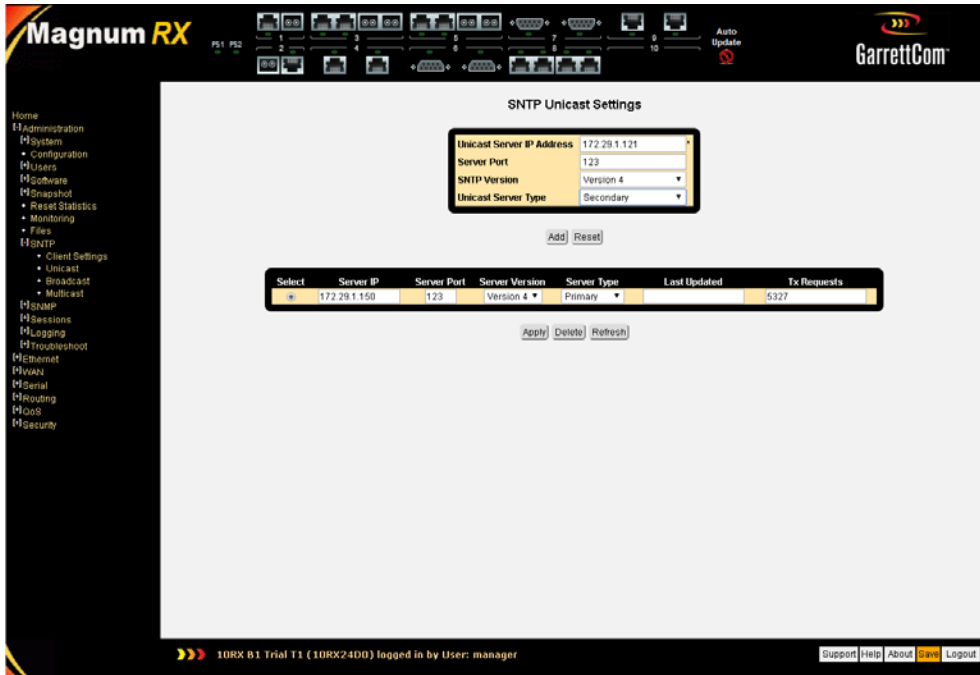
## 4.2 Configuring SNTP

First we must navigate to the SNTP configuration screens this is located in the System subsection.



Next we enter the data collected earlier into the Interface setting screen:

- This screen only requires that SNMP Admin Status be set to Enabled



Next we enter the data collected earlier into the Interface setting screen:

- Unicast ServerIP Addr
  - **Example: 172.29.1.121**
- Server Port
  - **Example:123**
  - currently restricted to 1025 to 32564
  - if left blank port 123(the default) is used



- SNTP Version set for the lowest version the SNTP/NTP server supports
  - **Example: Version 4**
- Unicast Server Type First server is Primary all additional should be set to secondary
  - **Example: Primary**

**NOTE:** Make sure that you click on the save button in the lower right hand corner (note color change of save button) of the GUI at this time as the information is not currently saved and should you lose power or reload the system all of the changes will be lost.

You have now completed configuring SNTP of the 10RX using the GUI.

## 5 Configuring SNTP Using the CLI

### 5.1 Logging into the 10RX using either SSH or Console port to access the CLI

Once the connection is made via SSH or Console port you should see the following on the Terminal Server screen:

This system is for the use of authorized users only.

Individuals using this system are subject to having their activities monitored and recorded by authorized company personnel.

Anyone using this system expressly consents to such monitoring and is advised that if such monitoring reveals possible evidence of criminal activity, company personnel may provide the evidence of such monitoring to enforcement officials.

Login: manager

Password:

After Logging into the system you see the system prompt:

```
Magnum 10RX#  
Magnum 10RX#  
Magnum 10RX# show ip inter  
vlan1 is up, line protocol is up  
Internet address is 172.29.1.100/24  
Broadcast address is 172.29.1.255  
Magnum 10RX# show ip route  
Codes: C - connected, S - static, R - RIP, B - BGP, O - OSPF
```

```
E1 - OSPF external type 1, E2 - OSPF external type 2

IA - OSPF inter area

C 172.29.1.0/24 is directly connected, vlan1

Magnum 10RX#

Magnum 10RX# show runn

!

login block-for 1 attempts 3

login password-strength 75

vlan 1

!

interface gigabitethernet 1/1

no shutdown

!

interface gigabitethernet 2/1

!

interface gigabitethernet 3/1

!

interface gigabitethernet 3/2

!

interface gigabitethernet 5/1

!

interface gigabitethernet 5/2

!

interface vlan 1

ip address 172.29.1.100 255.255.255.0

no shutdown
```

!  
interface serial 6/1  
!  
interface serial 6/2  
!  
interface serial 7/1  
!  
interface serial 7/2  
!  
interface serial 7/3  
!  
interface serial 7/4  
!  
interface serial 8/1  
!  
interface serial 8/2  
!  
interface t1e1 4/1  
!  
interface t1e1 4/2  
!  
interface gigabitethernet 1/1  
!  
interface gigabitethernet 2/1  
!  
interface gigabitethernet 3/1

```
!  
interface gigabitethernet 3/2  
  
!  
interface gigabitethernet 5/1  
  
!  
interface gigabitethernet 5/2  
  
!  
interface gigabitethernet 1/1  
  
!  
interface gigabitethernet 2/1  
  
!  
interface gigabitethernet 3/1  
  
!  
interface gigabitethernet 3/2  
  
!  
interface gigabitethernet 5/1  
  
!  
interface gigabitethernet 5/2  
  
!  
interface vlan 1  
  
!  
end  
  
Magnum 10RX#
```

I have also shown 3 commands to allow you to see the current configuration.

- show ip inter (shows the current IP addresses and associated interfaces)
- show ip route (shows the current IP routes and protocols used)
- show runn (shows the current running system configuration)

**NOTE:** the configuration is for the specific 10RX system hardware that I am using your configuration most likely will be different and reflect your hardware.

## 5.2 Configuring SNTP

The CLI configuration process is a layered approach based on what is being configured, it is modeled after the IOS CLI.

```
Magnum 10RX#  
Magnum 10RX# conf t  
Magnum 10RX(config)# set sntp enable  
Magnum 10RX(config)# sntp client version v4  
Magnum 10RX(config)# sntp client addressing-mode unicast  
Magnum 10RX(config)# sntp unicast-server ipv4 172.29.1.150  
Magnum 10RX(config)# sntp unicast-poll-interval 180  
Magnum 10RX(config)# exit  
Magnum 10RX(config)# exit  
Magnum 10RX# write startup-config  
Building configuration ...  
  
[OK]  
  
Magnum 10RX#  
Magnum 10RX # show sntp status  
  
sntp client is enabled  
  
current sntp client version is v4
```

```
current sntp client addressing mode is unicast
sntp client port is 123
sntp client clock format is 24 hours
sntp client authenticatin key id not set
sntp client authentication algorithm is not set
sntp client auth Key is not set
sntp client time zone is +00:00
sntp client dst start time is not set
sntp client dst end time is not set
Magnum 10RX # 10RX24D0# show sntp unicast-mode status
auto discovery of sntp/ntp servers is disabled
unicast poll interval value is 180
unicast max poll time out value is 5
unicast max retry time value is 3
unicast primary server address is 172.29.1.150
unicast primary server version is 4
unicast primary server port is 123
Magnum 10RX # 10RX24D0# show sntp clock
    current time : Mon Jul 13 2015 13:08:11 (UTC + 0: 0 )
Magnum 10RX #
```

- Conf t (configure from the terminal)
- Set sntp enable (enables sntp)
- sntp client version v4 (the 10RX as client will respond send version 4 sntp requests)

- sntp client addressing-mode unicast (the 10RX as client will use unicast mode to send sntp requests)
- sntp unicast-server ipv4 172.29.1.150 (the 10RX will send ipv4 sntp requests using unicast to the configured server) **Example:172.29.1.150**
- sntp unicast-poll-interval 180 (the 10RX will send sntp requests using the configured interval in seconds) **Example:180**
- exit (leave this layer of the configure tree)
- write startup-config (saves the current running configuration)
- show sntp status (shows the configuration of the 10RX client)
- show sntp unicast-mode status (shows the configuration used by the 10RX to send requests to the SNTP server)
- show sntp clock (shows the setting of the 10RX clock)

### 5.3 Checking the new configuration for all of the changes

```
Magnum 10RX#  
Magnum 10RX# show startup-config  
!  
login block-for 1 attempts 3  
login password-strength 75  
vlan 1  
!  
interface gigabitethernet 1/1  
no shutdown  
!  
interface gigabitethernet 2/1  
!  
interface gigabitethernet 3/1  
!  
interface gigabitethernet 3/2  
!  
interface gigabitethernet 5/1
```



```
!  
interface gigabitethernet 5/2  
  
!  
interface vlan 1  
ip address 172.29.1.1 255.255.255.0  
no shutdown  
  
!  
interface serial 6/1  
  
!  
interface serial 6/2  
  
!  
interface serial 7/1  
  
!  
interface serial 7/2  
  
!  
interface serial 7/3  
  
!  
interface serial 7/4  
  
!  
interface serial 8/1  
  
!  
interface serial 8/2  
  
!  
interface t1e1 4/1  
  
!  
interface t1e1 4/2
```

```
!  
!  
!  
!  
ip route 0.0.0.0 0.0.0.0 172.29.1.100  
!  
!  
interface gigabitethernet 1/1  
!  
interface gigabitethernet 2/1  
!  
interface gigabitethernet 3/1  
!  
interface gigabitethernet 3/2  
!  
interface gigabitethernet 5/1  
!  
interface gigabitethernet 5/2  
!  
interface gigabitethernet 1/1  
!  
interface gigabitethernet 2/1  
!  
interface gigabitethernet 3/1  
!  
interface gigabitethernet 3/2
```

```
!  
interface gigabitethernet 5/1  
!  
interface gigabitethernet 5/2  
!  
interface vlan 1  
!  
!  
!  
!  
!  
set sntp enable  
snmp unicast-poll-interval 180  
snmp unicast-server ipv4 172.29.1.150 primary  
!  
end  
  
Magnum 10RX#
```

You have now configured SNTP via the CLI, saved the new configuration and checked that the changes were made and saved.