



SEVIO R Series

Web interface



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Version History

Revision	Date	Description
0	01/05/2024	Emission



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General Description

The Sevio Router R Series web interface is an integral part of the Sevio System, allowing all operational and connectivity parameters to be changed.

Before continuing reading this manual, be sure to read the User's Guide and Installation Guide of the relevant router.

The Sevio router gateway introduces the concept of **network segmentation**.

Isolating the automation network - **LAN** - from the installation site network - **WAN** - is synonymous with security and ease of installation.

It allows the same IP addresses to be used on both networks.

Below are some possible uses of the web interface:

- Troubleshooting on connectivity (also available on LCD Display only for R600);
- WAN - Ethernet parameter configuration;
- WAN configuration and parameter search - Wi-Fi
- Configuration and detailed information on Mobile connection;
- LAN parameter configuration;
- Networking Rules;
- Troubleshooting on LAN network;
- Router status.

Although it requires some level of networking and security expertise, configuration is usually very simple and automated.



Web interface access

In order to proceed with the following steps, make sure that you have associated the new router to the Realm or in case it is your first use of the Sevio System, have done the First Registration to Sevio Portal - ref. R-Series User Guide at <https://sevio.it/>.

Router Default Parameters:

WAN - Ethernet port:	DHCP Client
LAN IP address:	192.168.150.1
LAN - DHCP Server:	enabled

The first access via Ethernet:

Connect a Workstation to the LAN port of the router.

Open an updated web browser and enter the following IP address in the URL:

- 192.168.150.1

Note: The Workstation in static IP, must have the same IP network as Sevio Router.

Note: After it is properly configured, you will also be able to connect via Wi-Fi (R600 only).

Login Area

- Username: admin
- Password: present in Sevio Portal in the parameters of the specific router



Main

System Information

This panel contains the characteristic data of the Router.

Name: Plant identification name given by the Operator assigned via Sevio Portal.

Model: Sevio Router model, depending on the device may vary the presence of other parameters.

Service tag: This Code is used to uniquely identify the current Sevio Router. This Code will be requested in case of technical support.

Sevio Network: Unique network pre-assigned to Sevio Router, used for reaching remote devices connected to the Sevio Router LAN.

WAN MAC: Physical address of the Ethernet interface. WAN MAC Address can be requested during installation of the Sevio Router via wired connection on the installation network, by the IT division of the End Customer.

WLAN MAC: Physical address of the Wi-Fi interface (R600 only). WLAN MAC Address can be requested during installation of the Sevio Router via Wi-Fi connection on the installation network, by the IT division of the End Customer.

LAN MAC: Physical address of the LAN interface.

Firmware: Current version present in the Router. You can update (if available) the profile, refer to the [Profile](#) section of the R-Series User Guide manual.

Status

Temperature: indicates the internal temperature of the control cabinet.

CPU Load: processor load

Memory: allocation of RAM

Local Time: Current Time - defined by NTP Server. The default parameter is on NTP Sevio. Other options can be set, refer to the [Timezone](#) section of this manual.

Uptime: indicates the uptime of the router.



Digital I/O

If connections have been defined to enable the intended functionality (ref. I/O Connection on the [Installation Guide manual](#)), the status of the Digital Inputs and Outputs will be as follows:

I1 Lock VPN: Off: VPN allowed

On: VPN block selected by operator at installation site. Intra- LAN Service is not available. All local services remain active. Internet LAN connectivity services remain active.

I2 Lock Access: Off: remote access allowed

On: lock remote access selected by operator at installation site. Intra-LAN Service is not available. All local services remain active. LAN Internet connectivity services remain active.

O1 VPN Connected: Off: VPN not connected

On: VPN connected

O2 Access in prog: Off: no Remote access in progress

On: Remote access in progress

Network

Configuration

WAN - Internet Access

The presence of Sevio Router does not require changes to the network at the installation site. When operating as a network client (to access the public network), the device behaves like an ordinary IP device connected to the Internet. The WAN network is used by Sevio Router to reach the default Internet gateway.

WAN installation site network and LAN automation network are isolated from the Firewall.

Ethernet: Internet access via wired network

DHCP Client

IP address, Netmask, Gateway and DNS of the Ethernet interface of Sevio Router, are automatically assigned by the DHCP Server of the network of the installation site.

Static IP

IP address, Netmask, Gateway and DNS of the Ethernet interface of the Sevio Router are set manually by the Operator with parameters provided by the IT division of the installation site.

IP address - IP address manually assigned according to the network configuration of the installation location.

Note: If Sevio Router turns out to be connected to the same network with both wired and Wi-Fi connection (Client mode), be careful not to manually set two identical static addresses.

Pref - Indicates the length of the network prefix in CIDR notation. Through the Netmask parameter, the consistency of the setting can be checked.

Netmask - Size and characterization of the network, displays the consistency of the length of the prefix set (parameter Pref.)

Gateway - IP address of the router at the installation site that forwards traffic to the Internet. (default-gateway).

DNS - IP address of the Domain Name System Server provided by the IT of the installation location.

Ethernet	
→] DHCP Client:	<input type="checkbox"/>
📄 IP Address:	192.168.1.171/24
🌐 Gateway:	192.168.1.1
🌐 DNS:	192.168.1.1

Having received all the parameters, press the **Edit** button, disable the DHCP Client selector then fill in the required fields. Confirm with **Save**.



Wi-Fi: Internet access via wireless network

Note: Sevio Routers equipped with the Wi-Fi interface can be connected to 2.4 GHz Access-Points that support WPA or WPA2 protocols, with Pre-Shared-Key (authentication key or password for network access). WEP encryption, due to its obsolete and no longer secure nature, is not supported by Sevio Router.

Enable the Wi-Fi interface with the Client switch.

SSID: Select the Neighbors button, open the drop-down list and select the SSID.

SSID LCD Hidden (R600 only): select the option to make the SSID of the Access Point to which the router is connected not visible on the display.

WPA: Enter the WPA key or password for network access.

Country: Final installation location, required to align Wi-Fi network parameters in compliance with applicable local regulations.

Frequency: Frequency channels used by the Wi-Fi network. By setting the parameter to **Auto** mode, Sevio Router will adjust the receiving frequency to that of the Access Point to which it is connected.

DHCP Client

IP address, Netmask, Gateway and DNS of Sevio Router's Wi-Fi interface are automatically assigned by the DHCP Server of the network of the installation location.

Static IP

IP address, Netmask, Gateway and DNS of the Sevio Router's Wi-Fi interface are set manually by the Operator with parameters provided by the IT division of the installation site.

IP address - IP address manually assigned according to the network configuration of the installation location.

Note: If Sevio Router turns out to be connected to the same network with both Wi-Fi (Client mode) and wired connection, be careful not to manually set two identical static addresses.

Pref - Indicates the length of the network prefix in CIDR notation. Through the Netmask parameter, the consistency of the setting can be checked.

Netmask - Size and characterization of the network, displays the consistency of the length of the prefix set (parameter Pref.)

Gateway - IP address of the router at the installation site that forwards traffic to the Internet. (default-gateway).

DNS - IP address of the Domain Name System Server provided by the IT of the installation location.



Wi-Fi

Client:	<input checked="" type="checkbox"/>
SSID:	Sevio Guests
SSID LCD Hidden:	<input checked="" type="checkbox"/>
WPA:	
Country:	IT
Frequency:	11
DHCP Client:	<input type="checkbox"/>
IP Address:	192.168.153.239/24
Gateway:	192.168.153.1
DNS:	192.168.153.1

Having received all the parameters, press the **Edit** key, disable the DHCP Client selector then fill in the required fields. Confirm with **Save**.

After completing the setup you can check the connection status, if established, it displays the signal strength.

Proxy

Sevio Router supports configuring Socks Proxy to enable OpenVPN using a proxy for outbound traffic, either transparently or with proxy-client authentication.

Set the **IP address** and **Port** of the proxy as provided by the local network administrator and required by the proxy server configuration.

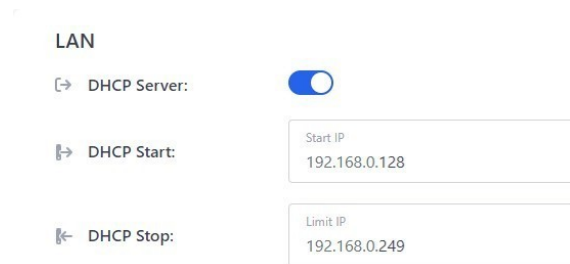
If provided, set User and Password.

LAN - Automation Device Network

The LAN of Sevio Routers is used to connect automation devices.

LAN - automation network and WAN - installation site network are isolated. Sevio Routers allow the use of the same IP addresses on both interfaces.

DHCP Server: By enabling this parameter Sevio Router can automatically assign IP addresses, Netmask, Gateway, DNS to devices in get IP automatically mode (DHCP Client), connected to LAN network. By disabling DHCP Server, all devices connected to the LAN network should have static IP.



The screenshot shows the LAN configuration page. At the top, it says 'LAN'. Below that, there are three settings:

- DHCP Server:** A toggle switch that is currently turned on (blue).
- DHCP Start:** A text input field with the value '192.168.0.128'. Above the field, it says 'Start IP'.
- DHCP Stop:** A text input field with the value '192.168.0.249'. Above the field, it says 'Limit IP'.

IP address - The IP address of the Sevio Router LAN can be changed by the Operator after verifying that the IP network conforms to the network configuration of the connected automation devices.

Note: In order for automation devices to be visible remotely, set private and not public addresses, below is the list of networks that cannot be used:

	from	to
0.0.0.0/8	0.0.0.0	0.255.255.255
127.0.0.0/8	127.0.0.0	127.255.255.255
224.0.0.0/4	224.0.0.0	239.255.255.255
240.0.0.0/4	240.0.0.0	255..255.255.255

Note: The address set in the LAN is the physical IP address of the Sevio Router on the automation network with gateway function. If it was an address already in use by another device, assign a free IP from the same network.

To check this scenario, you can use in the [Tools](#) section, the services made available.

Internet: Through this parameter it is possible to determine the Internet access mode of the devices on the automation network:

 Internet:



- **Disabled** - no Internet connectivity.
- **Enabled** - Internet connectivity via the Installation site network gateway (wired or Wi-Fi) or Mobile connection

Note: Using the "Enabled" mode, check that the network at the installation site **does not use public IPs**, otherwise isolation between the LAN and WAN network is not guaranteed and security implications may occur.

Note: Using the "Disabled" mode, VPN communications to automation devices and Intra- LAN, remain active.



Wi-Fi: Access-Point on the automation network

Access-Point mode, allows access to the LAN (automation network) from any device with a wireless card, appropriately authenticated such as PCs for device programming or tablets and smartphones for testing operations on the system.

Note: Sevio Routers equipped with the 2.4 GHz Access-Point mode Wi-Fi interface support WPA2 or WPA protocols.

Note: The connected device can be configured as a DHCP Client (get IP automatically) only if the DHCP Server parameter in the LAN network settings is enabled. Alternatively, the IP address of the connected device must be Static and conform to the LAN IP network.

Enable the Wi-Fi interface using the Enabled switch for Access-Point mode.

SSID: Name of the Wi-Fi network generated by Sevio Router. By connecting a device to the Sevio Router via SSID specified with its WPA key, it will be possible to access all automation devices in the LAN.

SSID Hidden: Select the option to hide the generated SSID.

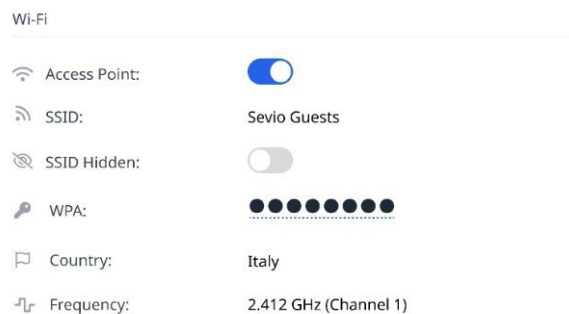
Note: Hiding the SSID does not generate more security. Password management best practices are recommended to protect against unwanted access.

WPA: Pre-shared key/password to be set on wireless devices that will connect to Sevio Router's Wi-Fi.

Note: Minimum password requirements 8 characters, lower case, upper case and number.

Country: Final installation location, required to align Wi-Fi network parameters in compliance with local applicable regulations.

Frequency: Allows you to select one of the Wi-Fi channels that will be used for connecting devices connected to Sevio Router wirelessly. Sevio Router and the connected devices will need to have the same frequency set.



Firewall

Each Sevio Router is equipped with a firewall that isolates the LAN (automation network) from the WAN (installation site network), providing the following benefits:

- Network segmentation: independence between WAN and LAN, using the same IP networks without generating conflicts;
- Protection of the automation network from unauthorized access and preservation of OEM know-how;
- Privacy protection of the installation site network for both local and remote connections, allowing access to the LAN only to Operators and authorized devices.

Access to the automation network from the WAN is necessary, for example, to handle production data stored in a PLC or operator panel or when a device belonging to the automation network needs to be able to obtain data from a Workstation belonging to the network at the installation site.

This type of operation is possible using the Rules, without the need to install additional tools and without modifying any pre-existing configuration.

WAN to LAN

Using this function, you can access from the installation site network (WAN) to a device in the automation network (LAN).

Port Redirect

You can route traffic between WAN and LAN via a specific communication port through the IP address of the WAN interface.

WAN to LAN

Enabled:

All Ports:

Protocol: TCP

Source (WAN): Port 2000

Destination (LAN): IP Address 192.168.1.10, Port 4840

Add a Rule and select the protocol (TCP or UDP).

Set a defined port for communication (Source WAN Port), then set the IP address of the device and its service port to be reached (IP Address and Destination Port).

In the example, the WAN Source port enabled on the IP Router on the Ethernet interface is redirected to the dedicated OPC-UA protocol port - 4840 - on the LAN device - 192.168.1.10.

Note: Multiple rules can be configured; they cannot be configured on the same source WAN Port.

IP Redirect

With this function, all ports of an IP address can be redirected between WAN and LAN via an additional IP address on the WAN interface.

The screenshot shows the 'WAN to LAN' configuration page. It includes the following fields and controls:

- Enabled:** A toggle switch that is currently turned on.
- All Ports:** A toggle switch that is currently turned on.
- Source Interface:** A dropdown menu showing 'Ethernet' as the selected option, with 'Wi-Fi' also visible in the list.
- Source (WAN):** A text input field containing the IP address '192.168.1.50'.
- Destination (LAN):** A text input field containing the IP address '192.168.1.10'.

Add a Rule, choose the network interface used for communication (Ethernet or Wi-Fi).

Set an IP address for communication (Source WAN IP address) assigned by the IT division of the installation location, then set the IP address of the device to be reached (Destination IP address).

In the example Source WAN IP address is redirected to the IP address of the LAN device - 192.168.1.10.

Note: Using the IP Redirect function, the WAN interface (Ethernet or Wi-Fi) will show up on the installation site network with two or more IP addresses.

Note: Multiple rules can be configured; they cannot be configured on the same source WAN IP address.

Note: By enabling the Redirect feature, apparatuses from the automation network will be exposed in the installation site network (or vice-versa). Therefore, this functionality must necessarily be used taking into account the perimeter shift and security delimitation at the installation site.

LAN to WAN

Using this function, a device on the automation network (LAN) can be accessed from a device on the installation site network (WAN).

Port Redirect

It is possible to route traffic between LAN and WAN via a specific communication port through the IP address of Sevio Router's LAN interface.

LAN to WAN

Enabled:

All Ports:

Protocol: TCP

Source (LAN): Port 1000

Destination (WAN): IP Address 192.168.1.100, Port 22

Add a Rule and select the protocol.

Set a defined port for communication (Source LAN Port), then set the IP address of the device and its service port to be reached (IP Address and Destination Port).

In the example, the LAN Source port enabled on the IP Router on the Ethernet interface is redirected to the port dedicated to SFTP service - 22 - on the WAN device - 192.168.1.100.

Note: The Port Redirect rule is active on the LAN IP address of the Sevio Router.

Note: Rules cannot be applied on the following ports: 80,22 (TCP) and 53,123 (UDP).

Note: Multiple rules can be configured; they cannot be configured on the same source LAN Port.

IP Redirect

With this function, all ports of an IP address can be redirected between LAN and WAN via an additional IP address on the LAN interface.

LAN to WAN

Enabled:

All Ports:

Source (LAN): IP Address 192.168.1.200

Destination (WAN): IP Address 192.168.1.100

Add a Rule.

Set a free IP Address for communication (LAN Source IP Address) on the automation network, then set the IP Address of the device to be reached (WAN Destination IP Address).

In the example the Source IP is redirected to WAN destination IP address - 192.168.1.100.



Note: Using the IP Redirect function, the LAN interface will show up on the automation network with two or more IP addresses.

Note: Multiple rules can be configured; they cannot be configured on the same Source LAN IP address.

Note: Enabling the Redirect functionality will expose devices from the automation network to the installation site network (or vice-versa). Therefore, this functionality must necessarily be used taking into account the perimeter shift and security delimitation at the installation site.

Ethernet Ports

The following section depicts the parameters and lostatus of the Ethernet ports:

WAN:

Enabled: Ability to disable the port if not used

Plugged: Detects Ethernet cable connection

Auto Neg.: Indicates port speed negotiation

Speed: Indicates the data transfer rate handled by the port

Note: max 100BASE-T

Note: Disabling the WAN port prevents the use of the wired interface for local/remote communication.

LAN: 1-5 (switch available only on R600):

Enabled: Ability to disable unused ports

Plugged: Detects Ethernet cable connection

Auto Neg.: Indicates port speed negotiation

Speed: Indicates the data transfer rate handled by the port

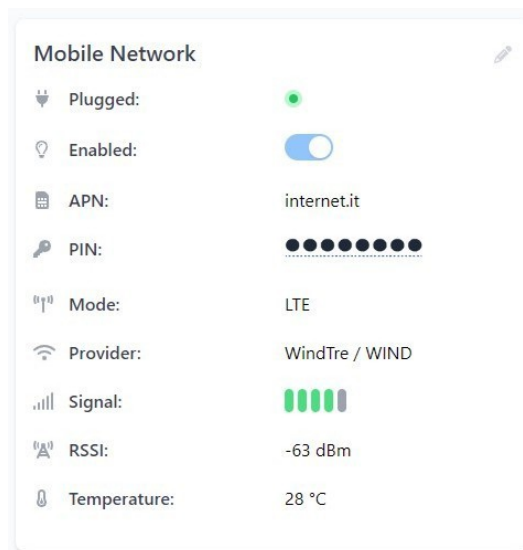
Note: max 100BASE-T on router R200, max 1000BASE-T on router R600

Note: LAN port 1 (R600) and LAN (R200) cannot be disabled.

Mobile

Mobile Network

If there is no Internet connectivity at the installation site, Sevio M100, the USB Cellular Adapter provided by Sevio, and a data-ready SIM (not included) can be used. See the [Installation Manual - M100](#) for more information.



Enabled: allows to enable or disable communication via Mobile.

Plugged: the USB cable of the M100 module is properly plugged into the dedicated port.

APN: displays the Access Point Name setting entered by the Operator related to the SIM used.

PIN: defines the numeric security code associated with/set on the Data SIM.

Mode: displays through which cellular connection standard the Data SIM is connected.

Provider: displays the operator who is handling the connection.

Signal: displays the receiving status of the device.

RSSI - Received Signal Strength Indicator : displays the values in -Dbm * (decibels per milliwatt) of the device's reception status.

Temperature: indicates the internal temperature of Sevio M100



Note: Although the Sevio System is compatible with PIN management, caution is suggested to avoid **irreversibly locking the SIM card**. Conversely, in case of no PIN, leave the field blank. In case of lockout, it will not be possible to recover the SIM card using the PUK code from the configuration panel, but it will be necessary to remove the SIM card and perform unlocking in an external mobile device.

* **RSSI**

From	To	Status
- 30	- 50	Excellent
- 50	- 60	Good
- 60	- 70	Discreet
- 70	- 85	Poor
- 85	...	Unreliable

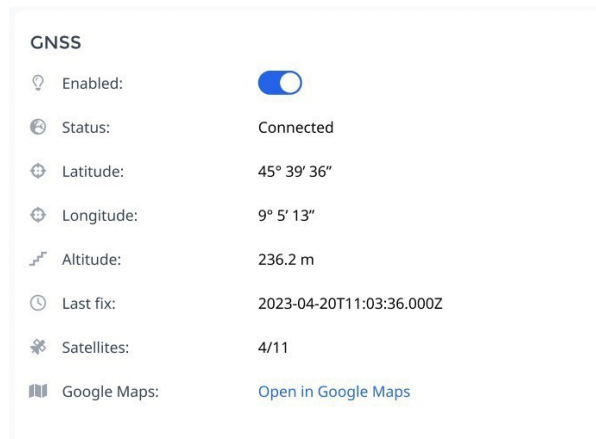
Reference ranges for signal level are given in this table.

GNSS

It is a global navigation satellite system that enables geo-radiolocation of an application using a network of satellites.

In this panel, geo-spatial positioning parameters with coordinate determination are represented.

Note: The following M100 option codes and the corresponding AGC300/500 antenna must be used in order to use the service.



Enabled: Enable or Disable the service

Status: Displays the status of the service, Enabled or Disabled

Latitude: Geographic coordinate that specifies the location of a point north or south relative to the equator.

Longitude: Geographic coordinate that specifies the position of a point east or west of the Greenwich Meridian.

Altitude: Absolute height representing the vertical distance of a point from sea level.

Last fix: Last position alignment from satellite

Satellites: Satellites reached/available satellites

Google Maps: through the link the location of the installation will be displayed.

Note: In order to use the service, the antenna must be installed in a location that provides a completely unobstructed view of the sky.

Note: Alignment of satellite data may take several minutes.

Note: Service also available without an active Data SIM.



Tools

In this section, a series of troubleshooting tools, both automated and manual, are made available to Operators with access to the Web interface to support all commissioning and installation management activities.

VPN Status

It is the automated troubleshooting tool that allows you to check the reachability of Sevio infrastructure through the Uplink interface. (Ethernet, Wi-Fi or Mobile).

Physical Uplink: indicates the active network interfaces on

the router. Green LED: the reference interface is active.

Gray LED: the reference interface is not active.

Wi-Fi authenticated: if the LED is red, verify that it is properly configured in Client mode and that the corresponding Access Point is aligned with the Sevio Router characteristics;

Mobile authenticated: if the LED is red, verify that M100 is connected in the dedicated USB port and properly configured for the specific SIM.

WAN IP Address: displays IP addresses obtained via DHCP or set as static IP, for each active network interface.

Eth. IP Addr. : in DHCP mode if the LED is red and no IP is depicted, contact the IT Manager to check the presence of DHCP Server on the network of the installation site.

Wi-Fi IP Addr. : in DHCP mode if the LED is red and no IP is depicted, contact the IT Manager to check the presence of DHCP Server on the network of the installation location.

Mobile IP Addr: If authenticated, the IP received from the Provider will be displayed.

Gateway: displays the reach and its IP address of the default gateway of the respective active network interface.

If the LED is red and no IP is depicted, contact the IT Manager to verify the correctness of the network configuration or any restrictions of the respective network interface.

Server Reachable: displays the reach of Sevio infrastructure.

If the LED is red, contact the IT Manager to verify compliance with the [R-Series Internet Connection Requirements](#) on the firewall at the installation site.

VPN Connection: displays the VPN connection.



If the LED is red, contact the IT Manager to verify compliance with the [R-Series Internet Connection Requirements](#) on the firewall at the installation site.

ARP Scan

A protocol for monitoring IP addresses and their associated MAC Addresses, within the LAN.

Ping LAN

Utility that allows you to reach a network device and monitor LAN hardware.

Where required by the rules of Device Accesses, remote hardware can be verified to be reached, with the Intra-LAN service.

Traceroute WAN

Utility to derive the path followed by packets in reaching a destination.

System

Sync

Portal Sync: indicates the current configuration between web interface and portal

Restart

Router Restart: through the selection of this function, the router will restart immediately.

Logout

Procedure for exiting the current session.

Timezone

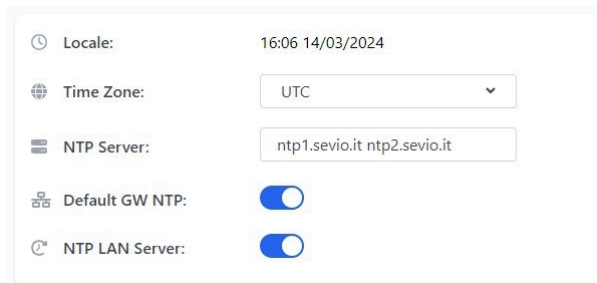
In this section you can set the time acquisition parameters via NTP. The default setting is set as:

Time Zone: UTC

NTP Server: ntp1.sevio.it ntp2.sevio.it

Default GW NTP: Enabled

NTP LAN Server: Enabled



The screenshot shows a configuration panel with the following settings:

- Locale:** 16:06 14/03/2024
- Time Zone:** UTC (selected from a dropdown menu)
- NTP Server:** ntp1.sevio.it ntp2.sevio.it
- Default GW NTP:** Enabled (toggle switch)
- NTP LAN Server:** Enabled (toggle switch)

Local: Displays the current time according to settings, Timezone and NTP Server.

Time Zone: Defines the format by which the time zone to be displayed will be passed:

- UTC - Universal Time Coordinated
- GMT - Greenwich Mean Time

NTP Server: Server equipped with NTP protocol for clock synchronization. Can be set to internal service or external (cloud) service.

Note: To use an NTP Server external to the installation site network, check reachability through the dedicated port 123 refer to the [R-Series Internet Connection Requirements](#) file.

Default GW NTP: enables as NTP Server also the default Gateway on the WAN.

NTP LAN Server: enables the NTP Server on the LAN network for assignment now to automation devices.

Note: The NTP Server LAN function assigns the current time only after acquiring it from the NTP Server service set in the previous fields.



Sevio Srl - Via della Pusterla, 36 Misinto (MB) - IT

Tel. +39 02 97070785

Customer service: support@sevio.it

Sales department: sales@sevio.it

<https://sevio.it/>