



SEVIO

User Guide - R Series



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More information about Sevio can be found at the following Internet address: <https://sevio.it/>.

Version history

| Revision | Data | Description |
|----------|------------|-------------|
| 24_05 | 01/05/2024 | Emission |



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General description



The Sevio System provides the Customer with simultaneous access to physically independent and geographically dispersed networks, preserving the original characteristics.

It consists of:

- **Sevio Router** - VPN Client - installed on machines/equipment used to identify remote networks;
- **Workstations** - VPN Clients - used by Operators to reach remote networks;
- **Infrastructure** - Cloud-based - that enables communication between VPN Clients;

It is mainly used for:

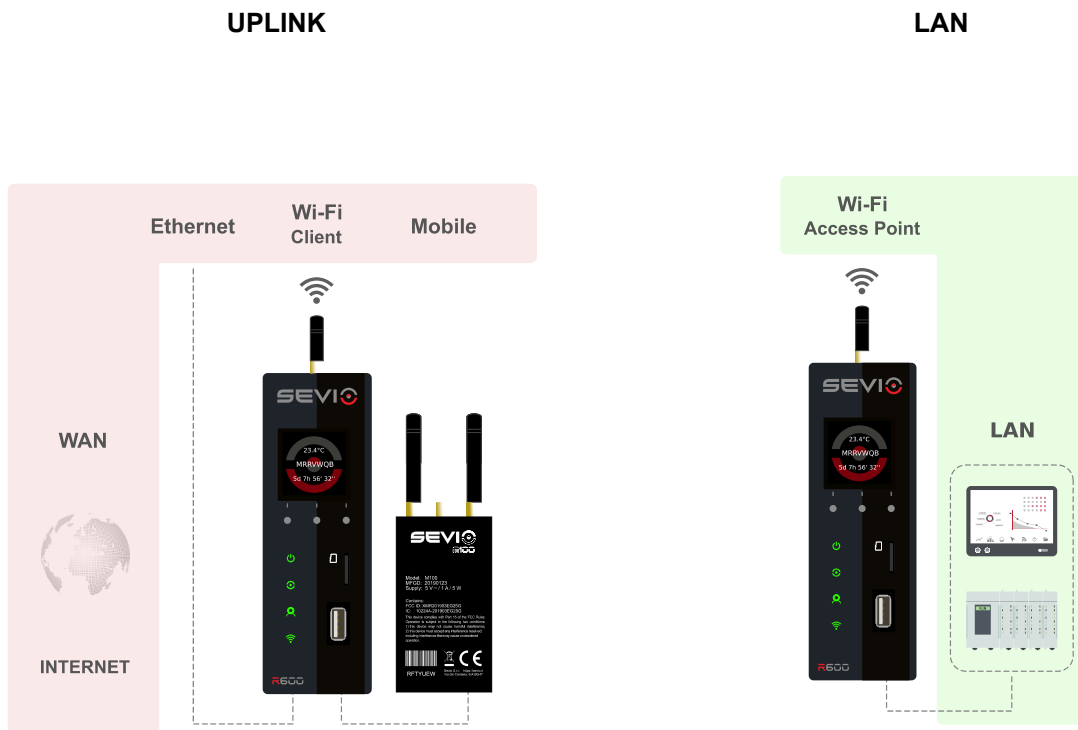
- remote maintenance;
- real-time **comparison** between two or more LANs-directly on automation applications;
- **simultaneous** access by multiple operators to the same LAN;
- **remote dialogue between** LANs via VPN, through the Intra-LAN service.

The set of **remote networks**, **Operators** and **Workstations** (PCs, tablets, smartphones) constitute the **Realm**.

Operators with specific roles, have the ability to manage the Realms and access remote networks through Workstations that, properly authenticated, can access connected devices on their respective automation networks.

At locations where remote access and/or access to the automation network is provided, **Sevio Routers** are installed, offering multiple features including:

- Network segmentation: isolation between automation network and installation site network;
- Active troubleshooting: automatic execution of testing for connectivity support;
- Parameter display through Display (only on R600 ref. manual [Web Interface Guide](#))
- Firewall rules for local communication between network place of installation and automation network;
- Local access via Wi-Fi to the automation network (available only on R600);
- Provide a secure connection according to IEC standards Between the Workstations and the secure automation networks between the automation networks and the Workstations;
- Fully remotely managed configuration via **Sevio Portal**;
- Local configuration via **Web Interface** with remote access capability (when routers are online).



Using Sevio System

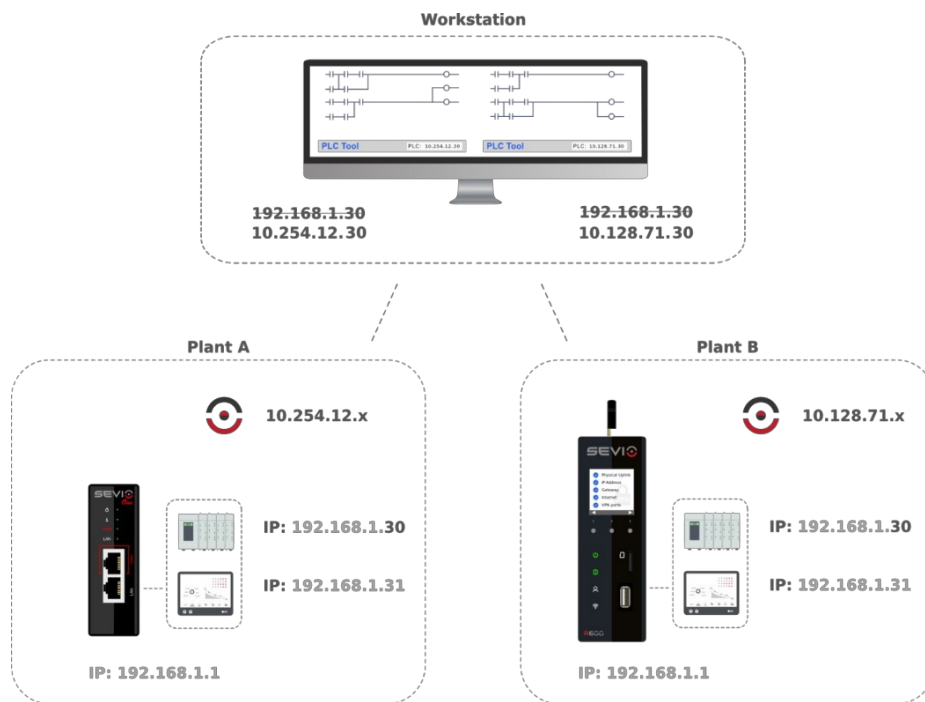
The Sevio System allows you to use the VPN service that best suits your connection needs:

Via NAT

Through **Realm's VPN** service, it is possible to connect, without the aid of specific software, to all automation networks from one or more Workstations.

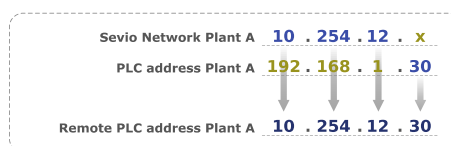
The possible usage scenarios:

- Remote Maintenance;
- Real-time monitoring and comparison of variables directly from automation devices, across multiple plants;
- Real-time acquisition of variables directly from automation devices, of multiple plants.



Each Sevio Router within the Realm is distinguished by a specific Sevio network consisting of three octets. In the example above, the Sevio network of Plant A is 10.254.12.x, while the Sevio network of Plant B is 10.128.71.x.

To access the PLC of Plant A from the remote access Station, simply combine the first three octets of the specific Sevio network with the fourth octet of the actual PLC IP address:

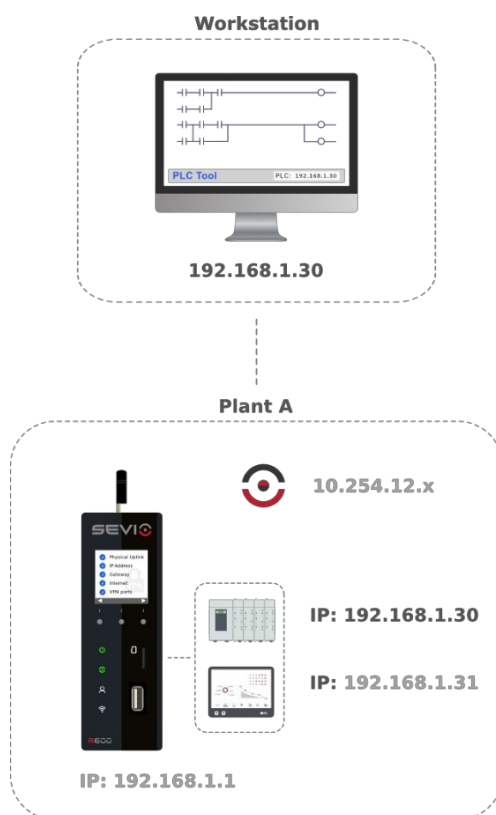


Via Layer 2

Through the VPN L2 service, the Sevio System allows connection to a specific automation network. A connection can be managed, using the IP addresses of the hardware configuration of the remote devices.

The possible usage scenarios:

- Remote maintenance with automation applications that do not support NAT
- LAN network scanning via MAC Address: nodes without pre-set IP Address.

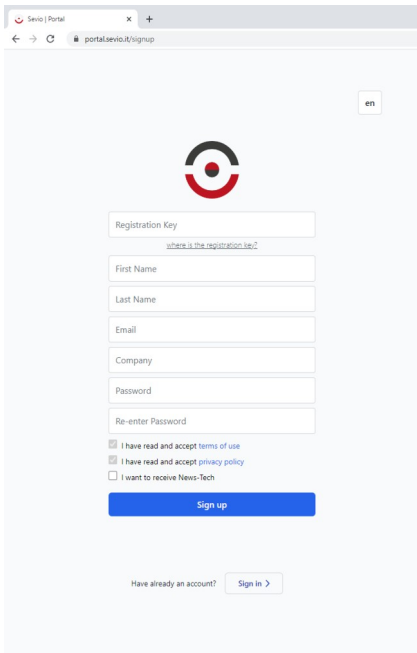


The ways to configure this function, are available in the [specific section](#) of this manual.

Note: Concurrent access in Layer 2 to the same LAN is not allowed, but it permits with VPN Realm.

Sevio Portal Registration

Sevio Portal registration is for Operators accessing the Sevio System **for the first time**.



The screenshot shows a web browser window with the URL 'portal.sevio.it/signup'. The page features the Sevio logo at the top center. Below the logo is a registration form with the following fields: 'Registration Key' (with a placeholder 'where is the registration key?'), 'First Name', 'Last Name', 'Email', 'Company', 'Password', and 'Re-enter Password'. There are three checkboxes for terms and conditions: 'I have read and accept terms of use' (checked), 'I have read and accept privacy policy' (checked), and 'I want to receive News-Tech' (unchecked). A blue 'Sign up' button is at the bottom of the form. At the very bottom, there is a link 'Have already an account? Sign in >'.

A new registration requires:

- a Sevio Router not yet associated with a Realm and the corresponding Registration Sheet in the purchase package, where you can find the Registration Key to use for registration (also found on the router, under the barcode);
- The Operator's email not yet associated with a Realm. The email together with the login password constitute the Operator's credentials, used for accessing Sevio Portal and configuring the [Workstations](#). Through acceptance of the [Sevio Terms of Use](#) and [Policies](#), the User accepts the terms of use of the Sevio System and consents to the processing of personal data, i.e. email, first and last name.
- Flag News-Tech: consents to receive via email, exclusively technical communications about new Portal features, new Router features, service changes, and anything else the System offers.

By pressing the **Register** button, the Operator completes:

- the creation of a Realm that will have the name given in the Company field;
- The creation of their own account;
- The association of the new Sevio Router.

The new Operator receives confirmation of the address via email. In the Profile section in the personal area, via the [Change Password](#) function he can later change his credential.

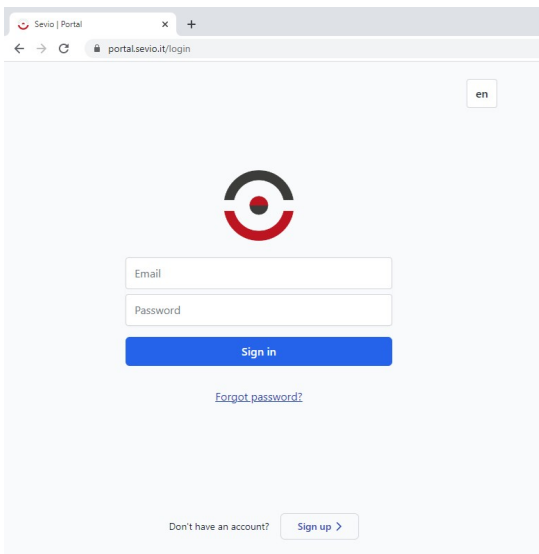
Note: Access to Sevio Portal and the use of VPN clients, gives the Operator the ability to interact with and give access to plant configurations. Therefore, it is essential to take every safeguard on access privileges, storing them securely, changing them whenever there is any doubt of vulnerability in their systems, and changing passwords in a systematic and scheduled manner, following security best practices in the field. To add an additional layer of security, it is advisable to enable the MFA (Multi-Factor Authentication) method.

Sevio Portal Access

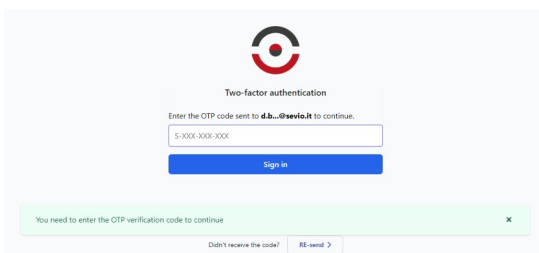
Through Sevio Portal, the Sevio System Web-App, it is possible to manage Sevio Routers associated with the Realm, determine the access of specific Operators, and activate new personal Workstations.

No software installation is required; access is via the Sevio Portal button from the <https://sevio.it/> page or, alternatively, via the URL <https://portal.sevio.it/>.

From this section you can:



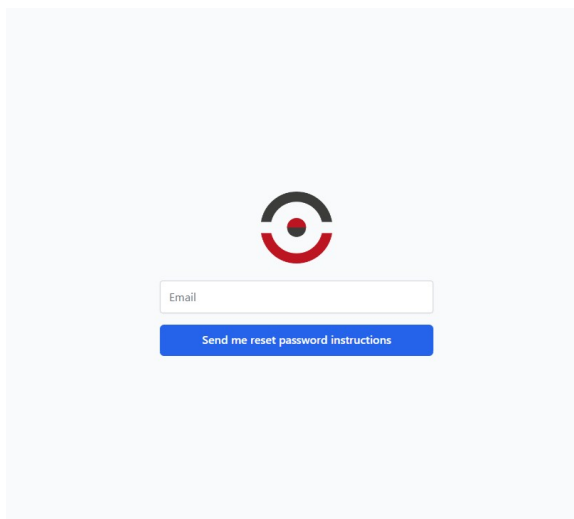
- for the Operator who is a first-time user of the Sevio System, register a new Realm by acting on the **First Registration** button;
- for the Operator who already has login credentials, log in to the Operator account by entering their email and password, then **Sign In**;
- if the Operator password is lost, reset the password by acting on **Forgot Password**.



If the MFA (Multi-Factor Authentication) method is enabled on the Personal Profile or established by Reame, during the Login procedure confirm your identity through the OTP code received via email. Refer to the Profile section of this manual for details.

Operator password reset

The Operator password is used to access Sevio Portal and to configure the VPN client on the Workstations. In case of loss of the same, Sevio Portal allows the creation of a new password. It is the responsibility of the Operator to reset the password set in the VPN clients with the newly created one.

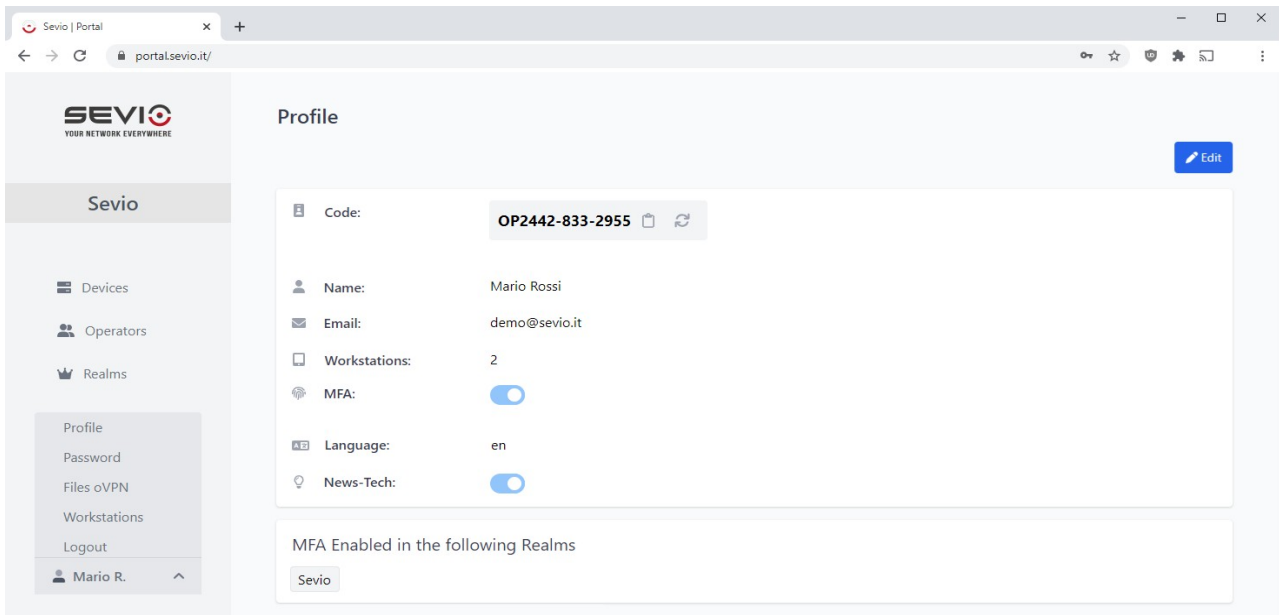


From login area, by pressing the **Forgot Password** button the Operator will receive a link via email, through which he can create a new one with which to access Sevio Portal.

Note: Access to Sevio Portal and the use of VPN clients, gives the Operator the ability to interact with and give access to plant configurations. Therefore, it is essential to take every safeguard on access privileges, storing them securely, changing them whenever there is any doubt of vulnerability in their systems, and changing passwords in a systematic and scheduled manner, following security best practices in the field. To add an additional layer of security, it is advisable to enable the MFA (Multi-Factor Authentication) method.

Personal Area and MFA

Within the Sevio Portal restricted area, the Operator menu is visible, through which the following sections can be accessed:



1. Profile-Personal settings section:

- Code - Identifier to be communicated to Support Sevio via email, to run tests with Operator impersonation
- Master Data – First and Last Name editing section
- MFA - Multi-Factor Authentication: Enabling and disabling the two-factor authentication method of your account, for accessing Sevio Portal and using the VPN Client. After enabling the MFA method, for accessing Sevio Portal and using the VPN, you will be required to confirm your identity via OTP codes, which will be sent to the email Indicated in this section.

Sevio Portal supports multi-Realm management, i.e., the ability by the Operator to participate in multiple Realms. Through the MFA panel, it is possible to identify which Realms have adopted the MFA method on a mandatory basis, extending the obligation to use it to all users, regardless of personal setting.

- Lingua - Sezione di scelta della lingua di Sevio Portal.
- News-Tech - Sezione abilita/disabilita ricezione comunicazioni tecniche da parte di Sevio.

Note: In case the Operator password is lost, please refer to the section [Resetting Operator Password](#).

Note: Access to Sevio Portal and the use of VPN clients, gives the Operator the ability to interact with and give access to plant configurations. Therefore, it is essential to take every safeguard on access privileges, storing them securely, changing them whenever there is any doubt of vulnerability in their systems, and changing passwords in a systematic and scheduled manner, following security *best practices* in the field. To add an additional layer of security, it is advisable to enable the MFA (Multi-Factor Authentication) method.

2. **Password** - Section dedicated to changing the current Password.
3. **Files oVPN** - Section dedicated to downloading configurations prefixed to the OpenVPN,remote and Secure Local Access clients.
4. **Workstations** - Section for managing personal Workstations.
5. **Logout** - Exit the restricted area of the Sevio Portal.

Press the **Edit** button, after performing the configuration change, save with the **Update** button. Press the **Cancel** button and the parameters will resume the previous value.

Workstations

Workstations are the personal devices (PCs, tablets, smartphones...) that Operators use to access remote devices connected through Sevio networks. Workstations do not require any software, so they can be equipped with any operating system. The Sevio System allows the use of standard VPN profiles found on widely used operating systems using natively integrated features, such as SSTP. The use of other VPN clients is still possible.

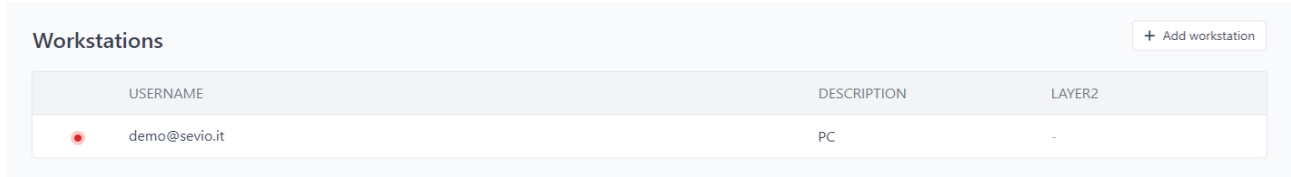
The parameters required to configure the Workstations are:

- Server name or address: vpn.sevio.it;
- User name and password: the email and password used to access Sevio Portal.

Configuration of Workstations VPN clients may vary depending on the operating system used (refer to the [Workstations](#) manual for detailed procedures).

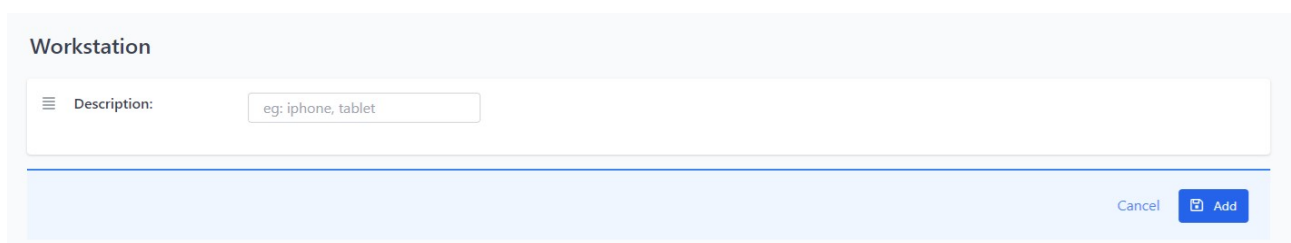
Simultaneous use from multiple Workstations

To ensure simultaneous access from multiple PCs, tablets or smartphones of the Operator, it will be sufficient to create additional credentials to be associated with the new workstations, directly from Sevio Portal, personal area section Workstations, as below.



| USERNAME | DESCRIPTION | LAYER2 |
|---------------|-------------|--------|
| demo@sevio.it | PC | - |

Press the **Add Location** button.



Workstation



Description:

Cancel

At the Operator's discretion, a description can be added to identify the new location. Then press the **Add** button.


Note: A maximum of 7 Workstations can be added.


Workstations + Add workstation


| USERNAME | DESCRIPTION | LAYER2 |
|---|-------------|--------|
|  demo@sevio.it | PC | - |
|  demo@sevio.it-1 | Smartphone | - |

Use the Username generated for the configuration of the new location, (in the example the Username for the first location is **demo@sevio.it**, for the second location it will be **demo@sevio.it-1**). For both, the password will be the same as for the Operator account.

Workstation < List Delete Edit

 Username: demo@sevio.it-1

 Created at: January 21, 2023 12:12

 Description: Smartphone

From the Locations list it is possible to select a specific location, to edit its description or to delete it from the list, using the Delete button.

Workstations Configuration Files

In this section you can download the configuration files intended for using the OpenVPN client.

Files oVPN

| NAME | FILE |
|---------------------|---------------------------------------|
| Realm VPN | sevio.ovpn |
| Layer2 VPN | sevio-L2.ovpn |
| Secure Local Access | sevio_servicetag.ovpn |

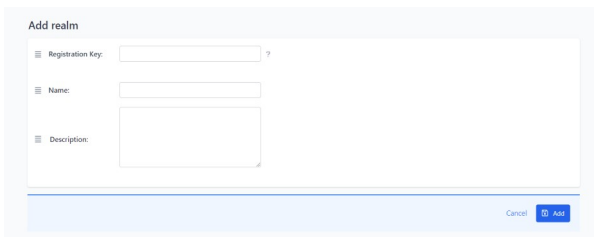
The configuration of Workstations VPN clients may vary depending on the operating system installed, (refer to the [Workstations VPN Configuration](#) manual for detailed procedures).

Realms

The Realm consists of the set of Sevio Routers associated with it and all the Workstations of the Operators authorized for access.

During the [Sevio Portal registration](#) phase, the first Realm is automatically created with which the first Sevio Router and Operator are associated.

Sevio Portal supports multi Realm management, i.e., the ability by the Operator to participate in multiple Realms and possibly create additional ones.

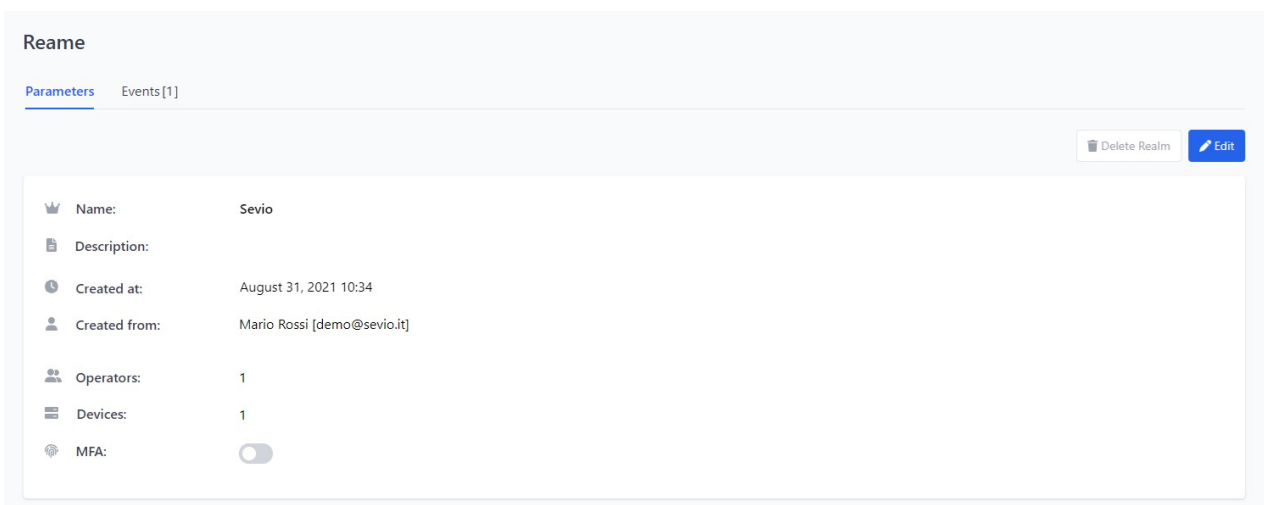


Using the **Add Realm** button, the Operator can add a new Realm, of which he/she will automatically be Admin, by entering the Registration Key of the new router with which new Sevio Routers (see [new Sevio Router association](#) section), additional Operators (see [Operators](#) section) and add a public description visible to all admins later can be associated.

The Realms section: shows **the list of all Realms to** which the Operator is allowed access and parameterization depending on the role assigned to it. By enabling one of the present Realms, it will be possible to access the list of Realm devices via the appropriate **Devices** button.

Once the Realm is selected, only for Owner and Admin roles, the set of parameters and the ability to rename it will be visible.

Note: The Operator Owner, will have the ability to delete a Realm, only if it is devoid of Devices.

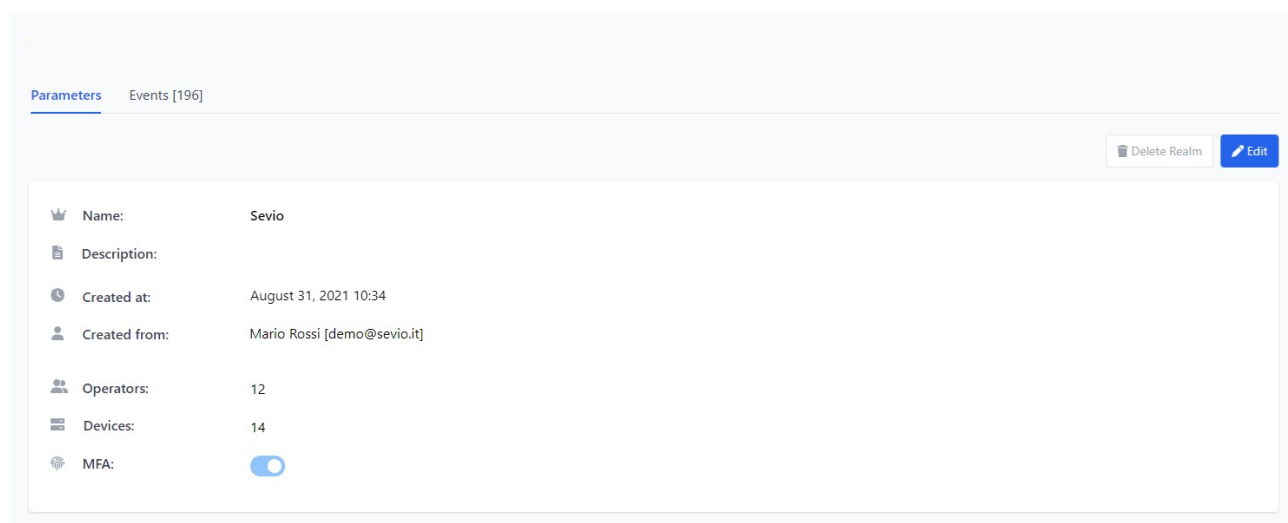


Enabling Multi-Factor Authentication (MFA) on Realm.

The Realm Owner can set the MFA method, as the mandatory access to the Sevio System, **all** Realm Operators must then use MFA authentication to access Sevio Portal and use the VPN Client.

To enable the MFA method on the whole Realm:

- Access the Realms section;
- Enter the parameters of the specific Realm;
- select Edit then enable the MFA method and save.



Note: The MFA method for Multi-Realms Operators, (Operators who can select multiple Realms) will be applied to each access to Sevio Portal and each use of the VPN Client.

Note: The Personal Profile of Multi-Realms Operators will display all Realms that adopt this authentication mode.

Realm Events

In this section you can monitor all Realm activities:

Sevio

Parametri [Eventi \[8\]](#)

| OPERATION | STATUS | USER | CREATED AT |
|-------------------|----------|---------------|----------------------|
| update operator | Executed | Andrea Gialli | June 12, 2022 18:07 |
| add router | Executed | Andrea Gialli | June 12, 2022 15:34 |
| add operator | Executed | Marco Verdi | June 12, 2022 18:03 |
| add router | Executed | Mario Rossi | May 08, 2022 14:25 |
| add router | Executed | Mario Rossi | May 06, 2022 13:00 |
| update realm data | Executed | Mario Rossi | May 03, 2022 11:55 |
| add router | Executed | Mario Rossi | May 02, 2022 11:05 |
| add operator | Executed | Mario Rossi | April 30, 2022 17:56 |

< Prev 1 Next >

- Adding/editing/removing Operators
- Adding router
- Disassociate router (from Owner role only) and allow to use Registration Key again.
- Edit Realm Parameters

Sevio

Parameters [Events \[8\]](#)

▶ Operation: add router Executed

👤 Managed by: Mario Rossi

📱 Device: R7CKQ11

🕒 Managed at: 09 agosto 2022 13:00

[Back](#)



Operators

In the Operators area, Owner and Admin can invite other Operators and determine access privileges: an Operator invited as Admin will be able to access all Sevio routers in the Realm, an external integrator or an End Customer can be invited as Super User or User and have access only to predetermined installations.

Below is an outline with privileges for each role:

Roles

| | Owner | Admin | Super User | User |
|---|---------------------|---------------------|--------------------------------|-------------------------------|
| MFA Enablement on Realm | Yes | No | No | No |
| MFA Enablement on Personal Account | Yes | Yes | Yes | Yes |
| Unbind router from Realm | Yes | No | No | No |
| Access to Sevio Portal | Yes | Yes | Yes | Yes |
| Change your account master and password | Yes | Yes | Yes | Yes |
| Access to the Posts section | Yes | Yes | Yes | Yes |
| Access to the Operators section | Yes | Yes | No | No |
| Access to the Firewall section | Yes | Yes | No | No |
| List of Sevio Routers associated with the Realm | All | All | Only authorized Sevio Routers | Only authorized Sevio Routers |
| Accessing Sevio Router Parameters | Reading and writing | Reading and writing | Reading and writing | Reading |
| Remote access to Sevio networks via NAT | All | All | Only authorized Sevio Routers | Only authorized Sevio Routers |
| Remote access to Sevio networks via Layer 2 | All routers R | All routers R | Only authorized Sevio Router R | No |
| Change Web Server Password | Yes | Yes | Only authorized Sevio Router R | No |

Note: Only one Owner per Realm can be defined.

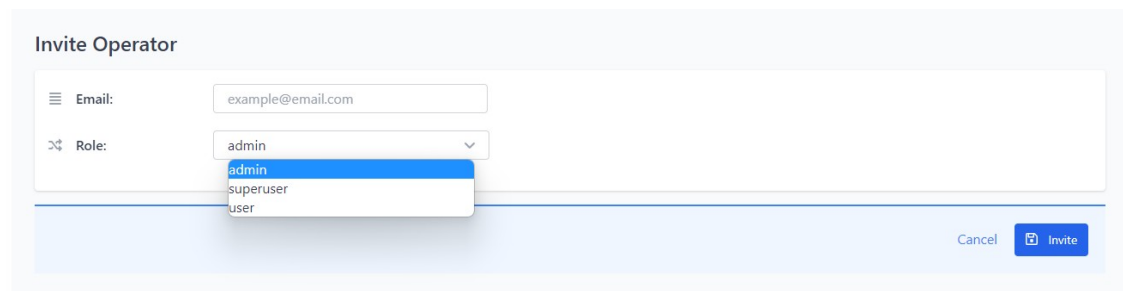
Note: The Owner role is obtained, by changing the Admin role in the Operators section.

Note: Only the Owner can change his role to Admin.

New Operator Invitation

The Sevio System allows an unlimited number of Operator invitations.

Below is the procedure for inviting a new Operator and role assignment, for all specifics refer to the [Roles](#) section.



The screenshot shows a web interface titled "Invite Operator". It features two input fields: "Email" with the value "example@email.com" and "Role" with a dropdown menu. The dropdown menu is open, showing three options: "admin", "superuser", and "user". The "admin" option is currently selected. At the bottom right of the form, there are two buttons: "Cancel" and "Invite".

- Enter the email of the new Operator to be invited to the current Realm;
- select the role (**admin**, **superuser** or **user**) to be assigned to the Operator, the role will still be editable at any time as indicated in [Edit Operator](#);
- Press the **Invite** button;
- the new Operator will receive an email indicating instructions for completing the registration process and defining his/her password;
- until accepted by the new Operator, the invitation status will be visible as pending in the Operators area of Sevio Portal;
- the invited operator has the right to decline the invitation.

Note: Operators owner and admin, will have access to all present and future Sevio Routers associated with the specific Realm, Operators superuser and user will only have access to Sevio Routers enabled by an admin, in the Operators [Edit Operator](#) section or in the [Access](#) section of a specific Sevio Router.

Edit Operator

Once the Operator has been selected, it can be disassociated from the current Realm using the **Remove Operator** button.

In the **Parameters** section, selecting the **Edit** button allows you to:

- change the role of the current Operator and ability to enter public notes.

Note: Before selecting the owner role, carefully read the [Roles](#) section of this manual.

Operator

Parameters Devices [2]

Created at: August 31, 2021 10:34

Name: Mario Bianchi

Email: m.bianchi@sevio.it

Role: admin

Public Notes:

Cancel Save

In the **Devices** section, by selecting the **Edit** button you can:

- Determine which Sevio Routers the Operator will have access to.

Operator

Parameters Devices [5]

| NAME | NETWORK | SERVICE TAG | |
|----------------------------------|--------------|-------------|-------------------------------------|
| Sevio | 10.239.195.X | FYMWBE8 | <input type="checkbox"/> |
| Mitsubishi Plant - One | 10.237.58.X | HFDVVCX | <input type="checkbox"/> |
| Siemens Plant - One | 10.250.247.X | RNK6BFG | <input type="checkbox"/> |
| Schneider Electric Plant - R600 | 10.253.67.X | DFQW9AV | <input checked="" type="checkbox"/> |
| Schneider Electric Plant - Basic | 10.193.8.X | PGTG6US | <input checked="" type="checkbox"/> |
| Eaton Plant - One | 10.250.246.X | 59R82G5 | <input type="checkbox"/> |
| Eaton Plant - Basic | 10.193.10.X | D4SMEZF | <input checked="" type="checkbox"/> |
| Mitsubishi Plant - R600 | 10.192.43.X | NL9PSAQ | <input checked="" type="checkbox"/> |
| Siemens Plant - Basic | 10.236.70.X | 4GQZ4GR | <input checked="" type="checkbox"/> |

Cancel Save

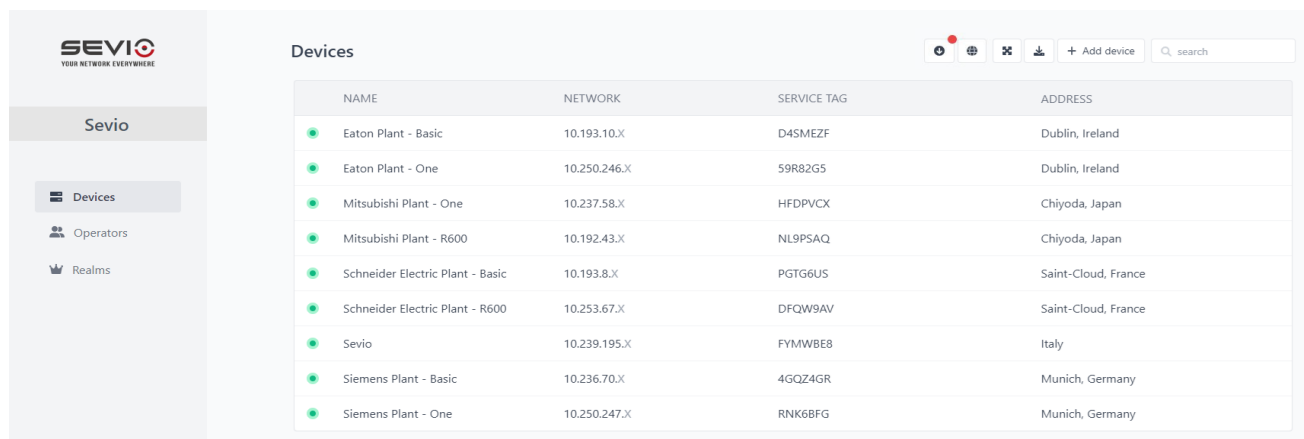
Devices

The Realm consists of the set of Sevio Routers associated with it, all the Operators authorized for access, and their Workstations.

During the [Registration](#) phase of [Sevio Portal](#), the first Realm is automatically created with which the first Sevio Router and the first Operator are associated. The first Operator will have admin privileges.

From this section you can manage the Sevio Routers in the current Realm.

To view the elements of a different Realm refer to the [Realms](#) section.



| NAME | NETWORK | SERVICE TAG | ADDRESS |
|----------------------------------|--------------|-------------|---------------------|
| Eaton Plant - Basic | 10.193.10.X | D4SMEZF | Dublin, Ireland |
| Eaton Plant - One | 10.250.246.X | 59R82GS | Dublin, Ireland |
| Mitsubishi Plant - One | 10.237.58.X | HFDPVXC | Chiyoda, Japan |
| Mitsubishi Plant - R600 | 10.192.43.X | NL9PSAQ | Chiyoda, Japan |
| Schneider Electric Plant - Basic | 10.193.8.X | PGTG6US | Saint-Cloud, France |
| Schneider Electric Plant - R600 | 10.253.67.X | DFQW9AV | Saint-Cloud, France |
| Sevio | 10.239.195.X | FYMWBEB | Italy |
| Siemens Plant - Basic | 10.236.70.X | 4GQZ4GR | Munich, Germany |
| Siemens Plant - One | 10.250.247.X | RNK68FG | Munich, Germany |

1. **Devices** - List and manage devices associated with the current Realm.
2. **Updates** - Displays devices with available updates (R-series routers only)
3. **Map button** - Allows display or deactivation of the map with the list of devices throughout the installation area (if set as a Location parameter in the specific Router).
4. **Zoom button** - Zoom out on map.
5. **Download Devices button** - Allows you to download the .csv file with the list of Devices.
6. **Add Device button** - Button used to associate a new Sevio Router with the current Realm.
7. **Search field** - Allows searching for devices by Name, Network, Service TAG, Location, Tags.

Note: It is possible to order each column in the desired order.

Devices List

The list of devices shows the set of Sevio Routers present in the current Realm or, in the case of access by an Operator with Super User or User role, the only Sevio Routers in the Realm and granted to him for viewing.

| NAME | NETWORK | SERVICE TAG | ADDRESS |
|----------------------------------|--------------|-------------|---------------------|
| Eaton Plant - Basic | 10.193.10.X | D45MEZF | Dublin, Ireland |
| Eaton Plant - One | 10.250.246.X | 59R82G5 | Dublin, Ireland |
| Mitsubishi Plant - One | 10.237.58.X | HFDPVCX | Chiyoda, Japan |
| Mitsubishi Plant - R600 | 10.192.43.X | NL9PSAQ | Chiyoda, Japan |
| Schneider Electric Plant - Basic | 10.193.8.X | PGTG6U5 | Saint-Cloud, France |
| Schneider Electric Plant - R600 | 10.253.67.X | DFQW9AV | Saint-Cloud, France |
| Sevio | 10.239.195.X | FYMWBE8 | Italy |
| Siemens Plant - Basic | 10.236.70.X | 4GQZ4GR | Munich, Germany |
| Siemens Plant - One | 10.250.247.X | RNK68FG | Munich, Germany |

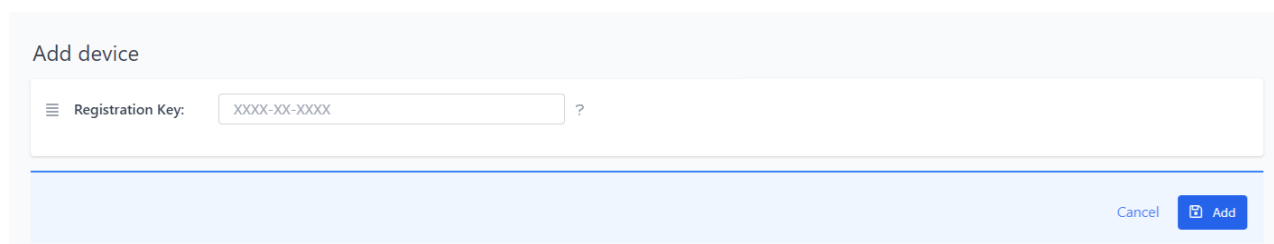
In this section the fields are visible:

- 1 **Status** - Status of Sevio Router, green - online (connected and remotely reachable), or red - offline (disconnected or not remotely reachable).
- 2 **Name** - Name given by the Operator ([Sevio Router Characteristic Data](#) section) to facilitate plant recognition.
- 3 **Network** - Sevio Network: the private IP address pre-assigned to the Sevio Router and used to remotely reach the device (see [Sevio System Usage](#) section).
- 4 **Service TAG** - Alphanumeric code identifying the Sevio Router.
- 5 **Location** - Place of installation (optional) assigned by the Operator ([Device List](#) section) to facilitate recognition of the installation and determine its location on the map.

The parameters of the Sevio Router can be accessed by clicking on it.

New Sevio Router Association

During the Sevio Portal registration phase, the first Sevio Router is associated with the Realm being created. Adding additional Sevio Routers to the Realm requires:



The screenshot shows a web form titled "Add device". It contains a text input field labeled "Registration Key:" with a placeholder "XXXX-XX-XXXX" and a question mark. Below the input field, there are two buttons: "Cancel" and "Add".

1. Select the **Add device** button;
2. Enter the Registration Key of a Sevio Router not yet associated with a Realm. The Registration Key can be found on the Registration Sheet in the package or printed above the barcode on the router;
3. Press the **Add** button.

Note: In case the Operator has access to multiple Realms, pay attention to the selected Realm, as Sevio Router will be associated with the current Realm.

Note: In case it has been associated in a different Realm, please refer to Step 5 in the [Router Parameter Configuration](#) chapter.



Sevio Router Configuration

All functional parameters on Sevio Portal are propagated in real time to Sevio Routers in online state. In case the Sevio Routers are not reachable (offline state), parameters can be transferred via the offline device edit procedure.

If the router is locally reachable, the functional parameters and all operational parameters can be configured directly from the web interface.

Online editing Sevio Router

Parameter editing requires pressing the **Edit** button, varying the contents of the fields and confirming through the **Save** button. By pressing the **Cancel** buttons, the parameters will resume the previous value.

Note: Changing any parameter on the Sevio Portal involves a relative change in the configuration of the Sevio Router whose operational settings are to be changed. It is therefore possible that, for a few seconds, the connectivity provided by the Sevio network may be lost and remote access may not be operable. On Sevio Routers equipped with switches, L2 connectivity and packet-forwarding between ports are still guaranteed.

Offline editing Sevio Router

In case Sevio Router is not reachable (offline status), change a connectivity parameter (Ethernet, Wi-Fi or Mobile) after saving the parameters proceed as follows:

1. Press the **Offline Configuration** button. The configuration file will be saved on your PC;
2. Transfer the configuration file to an empty USB stick formatted with FAT32 filesystem (for R also FAT, EXFAT or NTFS);
3. Insert the USB key into the appropriate port on the Sevio Router, which is currently powered;
4. Wait for confirmation from the router that the configuration has been correctly done. (signaling via LED).

Edit via Web Server

Local access

Connect the Workstations to one of the LAN ports or connect to the router's Wi-Fi (if previously enabled).

Open an updated Web Browser and point:

- 192.168.150.1 (default IP address) or set IP address
- Login credentials:
 - Username: admin
 - Password: present in Sevio Portal (editable)

For all settable functions and features, refer to the [r_series_web_interface](#) manual.

Remote access (only if online router and VPN enabled)

Select the router and log in with Login, reference the [Router Parameter Configuration](#) section.

Router Parameters Configuration

This section represents the parameters for configuring Routers via Sevio Portal:

1. **L2** button - Workstation IP setting section for Layer 2 - more details in the [specific section](#).
2. **Enable L2** button - Allows connection reservation to the specific facility.
3. **Restart** button - Restarts the Sevio Router currently online.
4. **Offline configuration** button - Download the configuration file of the Sevio Router that is currently offline. (See the section [Editing Offline Sevio Router](#) for more details).
5. **Registration Sheet** button - Download the Registration Sheet document, depicting the main parameters currently set.



6. **Remove** Button - Allows only the Owner role, to disassociate the Sevio router from the Realm, making the Registration Key usable again.

Note: Router parameters will **not** be reset to factory values.

Note: Firewall Access and Devices rules will be deleted.

7. **System Information** - Characteristic data of Sevio Router.
8. **WAN** - Wired network of the installation site, used as an access point to the Internet.
9. **Proxy** - Configuring the Proxy address for Internet access via the installation site network (Ethernet or Wi-Fi in Client mode) in transparent mode or with User and Password authentication.
10. **LAN** - Network of automation devices.
11. **Wi-Fi** - Wireless network that can be used in Access-Point mode to access the automation network or Client mode to provide an access point to the Internet (available only for R600).
12. **Mobile** - Configuring data SIM parameters, for Internet access point via Sevio M100 Cellular adapter.
13. **Web interface** - Password configuration for access to the Web Interface of the specific Router.
 - Realm VPN: Login – remote access via Realm VPN
 - VPN L2/P2P: Login – remote access via L2 VPN/local
14. **Tags** - Allows you to enter for each router, up to 4 identification tags.
15. **Public Notes** - Area available to share information about the specific installation.

Note: The edit and action keys are disabled for the User role.

Sevio Router Characteristic Data

| Sevio R-Series | | | |
|----------------|------------------------------------|-----------|-------------------|
| Model: | r600 | MAC WAN: | 54:DE:D0:00:00:04 |
| Network: | 10.168.207.0 | MAC WLAN: | 54:DE:D0:00:00:05 |
| Service tag: | VO19TER | MAC LAN: | 54:DE:D0:00:00:03 |
| Address: | <u>Pembroke Rd, 30, Dublin, IE</u> | Firmware: | 1.0.2 |

Status - Status of Sevio Router, green - online (connected and remotely reachable) or red - offline (disconnected or not remotely reachable).

Name - Name identifying the plant assigned by the Operator assigned via Sevio Portal, the name will appear in the device list for better recognition.

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

Network - Unique network pre-assigned to Sevio Router, used for reaching remote devices connected to the Sevio Router LAN. Refer to the [Sevio System Usage](#) section for more details.

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

Address - Location of the installation site assigned by the Operator. The location will appear in the device list for better recognition. To change the set location enter the new data and select one of the proposals in the list.

Note: Correct setting of the address parameter allows Sevio infrastructure to determine the concentrator closest to the installation location, optimizing performance.

MAC - Physical address of the specific interface. The MAC Address can be requested during the installation of the Sevio Router on the installation network, by the IT division of the End Customer.

Firmware - Current version of firmware. You can update (if available) the profile, refer to the Router [Profile](#) section.

WAN


The presence of Sevio Router does not require changes to the network at the installation site.

It is a network segment whose primary task is to isolate the WAN (installation site network) from the LAN (automation network).

Ethernet: Internet access through wired network

In terms of connectivity, the wired network is used only as an Internet connection point. The default setting is


DHCP Client:

| WAN | |
|----------------|--|
| → DHCP client: | <input checked="" type="checkbox"/> |
| IP address: | 192.168.1.174/24  |
| Gateway: | 192.168.1.1 |
| DNS: | 192.168.1.1 |

DHCP Client

IP Address, Netmask, Gateway and DNS are automatically assigned by the DHCP Server of the network present at the installation site (eg. 192.168.1.174).

Note: The network parameters that the DHCP Server (router at the installation site, if any) has assigned to the Ethernet interface are displayed. Through the **Refresh** button, it is possible to query Sevio Router about the status change.

| WAN | |
|----------------|--|
| → DHCP client: | <input type="checkbox"/> |
| IP address: | 192.168.1.174/24  |
| Gateway: | 192.168.1.1 |
| DNS: | 192.168.1.1 |

Static IP

IP address, Netmask, Gateway and DNS are set manually by the Operator.

IP Address - Address manually assigned to Sevio Router congruent to the network 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.

Prefix. - 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 (Prefix parameter).

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

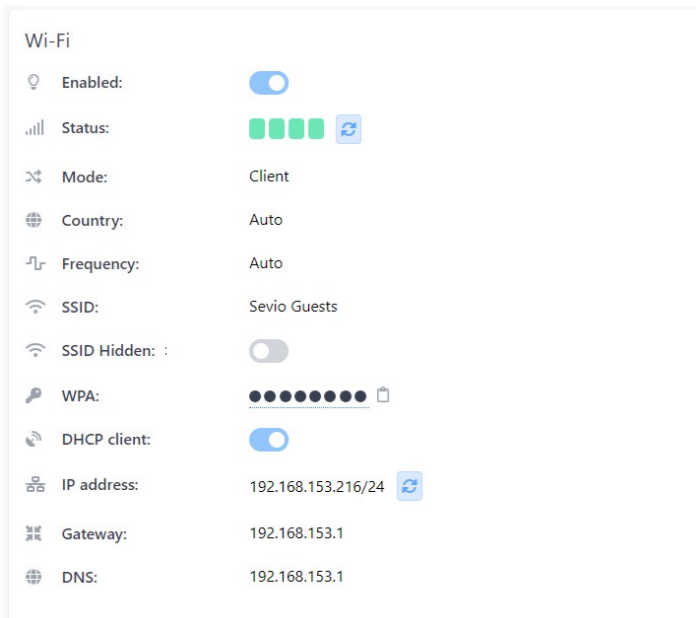
DNS - Domain Name System IP address provided by the IT of the installation location.

Wi-Fi: Internet access via wireless network

Through the Wi-Fi network, two distinct scenarios arise:

- the Access Point mode, allows access to the LAN (the automation network) from any device with a wireless card that is properly authenticated, such as PCs for device programming or tablets and smartphones for testing operations on the system. Refer to [Wi-Fi: Access-Point on the automation network for the](#) configuration of Access Point mode.
- the Client mode, allows the Sevio Router to connect directly to the Wi-Fi network of the installation site equipped with Internet access. Such access can also be provided through a mobile hotspot generated by a common smartphone.

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 outdated and no longer secure nature, is not supported by Sevio Router.



Enable the Wi-Fi interface via the **Enabled** button to select the **Client** mode. When the configuration is complete, through the **SSID** parameter you can check the connection status and, if the connection is operational, the reception signal level. Through the **Refresh** button, it is possible to query Sevio Router about any change in status.

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

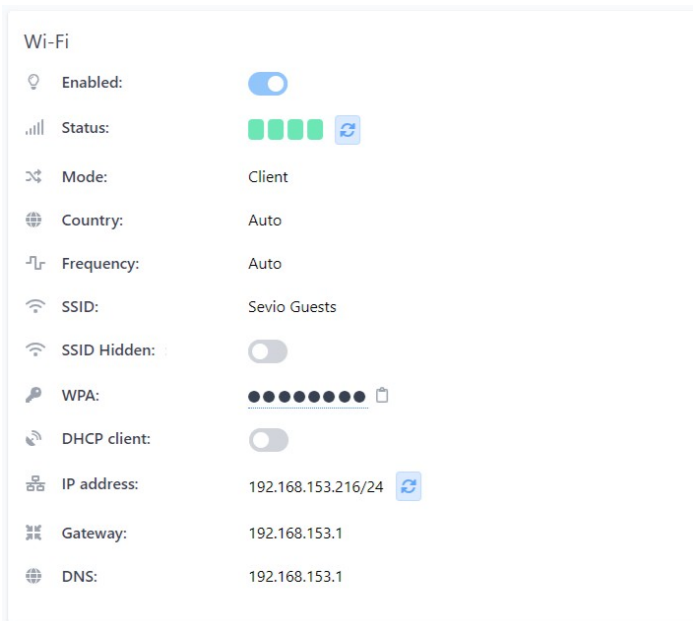
Frequency - Frequency channels used by the Wi-Fi network. By setting the parameter to Auto mode, Sevio Router will adjust the receiving frequency to that of the Access Point to which it is connected.

SSID - Name of the Wi-Fi network that Sevio Router connects to.

WPA - WPA or WPA2 password used to allow Sevio Router to connect to the Access- Point at the installation site.

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

Note: All the parameters that the DHCP Server (router at the installation site) has assigned to the Wi-Fi interface are displayed. Through the **Refresh** button, it is possible to query Sevio Router about the status change.



Static IP

IP address, Netmask, Gateway and DNS are set manually by the Operator.

IP address – IP address manually assigned to Sevio Router congruent with the network present at 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.

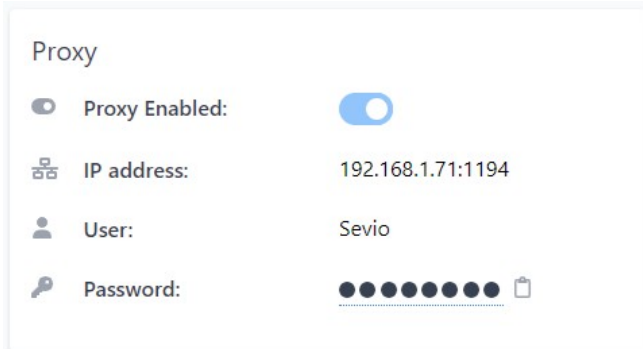
Netmask - Size and characterization of the network, displays the consistency of the length of the prefix set (Pref. parameter.).

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

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

Proxy

Sevio Router supports SOCKS Proxy configuration, to enable the oVPN connection using a proxy for outbound traffic, transparently without authentication and with client authentication.



Proxy

Proxy Enabled:

IP address: 192.168.1.71:1194

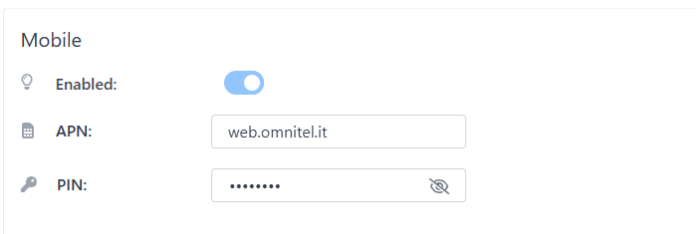
User: Sevio

Password:

Set the Proxy **IP address**, its **Port**, and use credentials as directed by the local network administrator, and required by the proxy server configuration.

Mobile: Internet access through Sevio M100 cellular adapter

In the absence of Internet connectivity provided by the network at the installation site, it is possible to use Sevio M100 (optional), the USB Cellular Adapter provided by Sevio, and a data-ready SIM (not included). See the [Installation Manual - M100](#) for more information.



Mobile

Enabled:

APN: web.omnitel.it

PIN:

Enable the Mobile interface using the **Enabled** button, set the **APN** of the Phone Operator in use and the **PIN** of the SIM card.

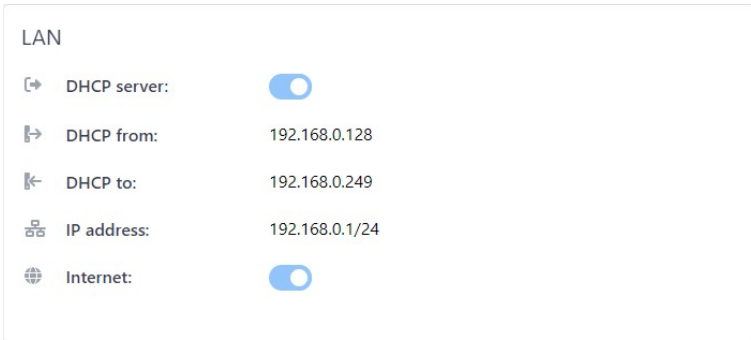
Note: Although the Sevio System is compatible with PIN management, caution is suggested to avoid **irreversibly** locking **the SIM card**. Conversely, in case of no PIN, leave the field blank. In case of lockout, it will not be possible to recover the SIM card using the PUK code from the configuration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

LAN: automation device network

The LAN of Sevio Routers is the network to which the automation devices on the IP network are connected.

All devices on the LAN are found to be remotely reachable through the Sevio infrastructure.

One or more switches can be cascaded on the LAN to expand the number of ports and devices in accordance with the Ethernet standard, up to a maximum configuration of 253 IP devices.



The screenshot shows the LAN configuration interface with the following settings:

| Parameter | Value |
|--------------|-------------------------------------|
| DHCP server: | <input checked="" type="checkbox"/> |
| DHCP from: | 192.168.0.128 |
| DHCP to: | 192.168.0.249 |
| IP address: | 192.168.0.1/24 |
| Internet: | <input checked="" type="checkbox"/> |

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

Note: The assignment of IP addresses is settable, in descending order.

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

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 of the same network.

Note: In case the IP WAN network coincides with the IP LAN network, the IP LAN Sevio Router cannot have the same IP Address as the Gateway of the installation location, so as not to lose DNS functionality.

Note: In case the devices connected to the LAN were configured with static IP, set the IP address of the Sevio Router LAN interface as their gateway address.

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 |

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



- **Disabled** - no Internet connectivity.
- **Enabled** - Internet connectivity via the Gateway of the installation site network (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.

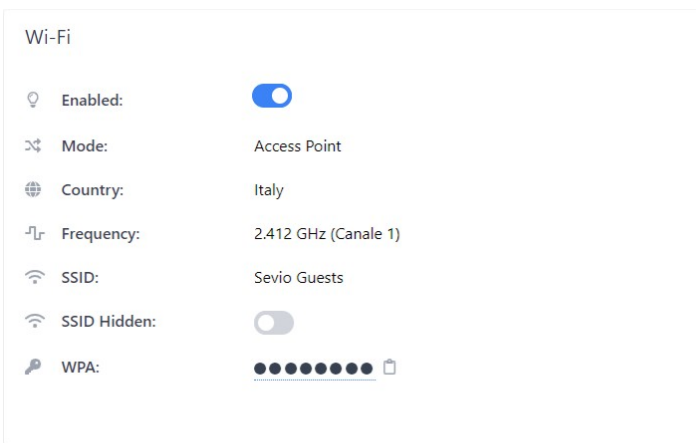
Note: Using the "Disabled" mode, VPN communications to automation devices and Intra- LAN, remain active.

Wi-Fi: Access-Point on the automation network

Through the Wi-Fi network, two distinct scenarios arise:

- the Client mode, allows the Sevio Router to connect directly to the Wi-Fi network of the installation site equipped with Internet access. Such access can also be provided through a mobile hotspot generated by a common smartphone. For configuration of Client mode, refer to the section: [Wi-Fi: Internet access through wireless network](#).
- the Access-Point mode, allows access to the LAN (automation network) from any device with a properly authenticated wireless card, 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.



Enable the Wi-Fi interface using the **Enabled** button to select the Access Point mode.

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

Frequency - Allows you to select one of the Wi-Fi channels that will be used for connecting devices connected to Sevio Router wirelessly. You can leave it to Sevio Router to find the available channel through Auto mode. Sevio Router and the connected devices will need to

have the same frequency set.

SSID - Name of the Wi-Fi network generated by Sevio Router. Connecting a device to the Sevio Router with the specified SSID will allow access to all automation devices on the LAN.

SSID Hidden – function to disable transmission of the SSID so that it is not displayed in available networks.

Note: Using the hidden SSID function, **does not replace the** importance of creating a secure password for access to the automation network.

WPA - Pre-Shared-Key/password to be set on the wireless devices that will connect to the Wi-Fi Sevio.

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 of the connected device must be LAN network compliant.

Web Interface

In this panel you can set the Password for accessing to the Web Interface.

Depending of VPN service connected, it is possible log-in to remote Web Interface:

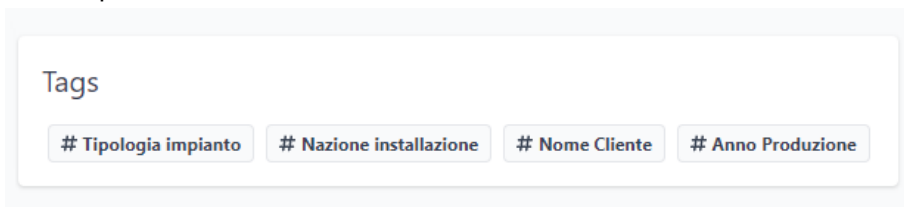
- Realm VPN: Login – remote access via VPN di Realm
- VPN L2/P2P: Login – remote access via VPN Layer2/local

Note: For all features ref to [r_series_web_server](#) manual.

Tags

This feature allows each router to be characterized with up to 4 identifiers, chosen to optimize research and analysis on Sevio routers.

In example:



Firewall – rules for local communications

The section for configuring local communication rules between WANs and LANs is available in the [r_series_web_server](#) manual.

Firewall Accesses

In this section of the Firewall you view and determine which Operators will have access to the LAN of the current Sevio Router.

Mitsubishi Plant - One

Parameters Accesses Devices Events [3] Profile L2

[Edit](#)

| FIRST NAME | LAST NAME | EMAIL | ROLE | |
|------------|-----------|--------------------|-----------|-------------------------------------|
| Mario | Bianchi | m.bianchi@sevio.it | owner | <input checked="" type="checkbox"/> |
| Mario | Rossi | m.rossi@sevio.it | admin | <input checked="" type="checkbox"/> |
| Andrea | Gialli | a.gialli@sevio.it | superuser | <input checked="" type="checkbox"/> |
| Marco | Verdi | m.verdi@sevio.it | user | <input checked="" type="checkbox"/> |

In the **Access** section, Owner and Admin Operators can determine the accesses to the specific LAN of the current Sevio Router. In case the Operator being edited has Super User or User role, it will display or not display the specific Sevio Router in the list of Reame devices.

You can accomplish the same configuration in the Operators section, determining which Sevio Routers the Operator will have access to.

Firewall Devices

In the **Devices** section of the Firewall, you determine which devices will have access to the LAN of the current Sevio Router and consequently establish dialogue between remote plants, for example, between two PLCs of two plants installed in different locations. Refer to the [Intra-LAN Communication between Remote Devices](#) chapter for more details.

Mitsubishi Plant - One

Parameters Accesses Devices Events [3] Profile L2

[Edit](#)

| | NAME | NETWORK | SERVICE TAG | |
|-------------------------------------|----------------------------------|--------------|-------------|--------------------------|
| <input checked="" type="checkbox"/> | Siemens Plant - One | 10.250.247.X | RNK6BFG | <input type="checkbox"/> |
| <input checked="" type="checkbox"/> | Schneider Electric Plant - R600 | 10.253.67.X | DFQW9AV | <input type="checkbox"/> |
| <input checked="" type="checkbox"/> | Schneider Electric Plant - Basic | 10.193.8.X | PGTG6US | <input type="checkbox"/> |
| <input checked="" type="checkbox"/> | Eaton Plant - One | 10.250.246.X | 59R82G5 | <input type="checkbox"/> |
| <input checked="" type="checkbox"/> | Mitsubishi Plant - R600 | 10.192.43.X | NL9PSAQ | <input type="checkbox"/> |
| <input checked="" type="checkbox"/> | Siemens Plant - Basic | 10.236.70.X | 4GQZ4GR | <input type="checkbox"/> |

Events

In this section you can monitor all the activities of the specific Router:

Sevio R-series

Parameters Accesses Devices [0] **Events [8]** Profile L2

search...

| OPERATION | SOURCE | STATUS | USER | CREATED AT |
|----------------------|--------|----------|---------------|---------------------|
| layer2 disable | Portal | Executed | Andrea Gialli | June 18, 2022 18:07 |
| layer2 enable | Portal | Executed | Andrea Gialli | June 18, 2022 15:34 |
| update configuration | Portal | Executed | Marco Verdi | May 10, 2022 18:03 |
| accesses update | Portal | Executed | Mario Rossi | May 10, 2022 14:25 |
| update configuration | Router | Executed | Mario Rossi | May 10, 2022 13:00 |
| update configuration | Router | Executed | Mario Rossi | May 10, 2022 11:55 |
| accesses update | Portal | Executed | Mario Rossi | May 10, 2022 11:05 |
| update configuration | Portal | Executed | Mario Rossi | May 10, 2022 17:56 |

< Prev 1 Next >

Profile

In this section you can update (if available) the firmware profile of the current router:

The screenshot shows the SEVIO interface for an Eaton Plant - R600 router. The top navigation bar includes 'Parameters', 'Accesses [9]', 'Devices [0]', 'Events [37]', 'Profile [●]', and 'L2'. The 'Profile' section is active and displays two panels: 'Current profile' and 'Available profile'. The 'Current profile' panel shows: Model: r600, Firmware: 1.0.0, and OS Version: 21.02.2. The 'Available profile' panel shows: Firmware: 1.0.2 and OS Version: 22.03.2. At the bottom right of the 'Available profile' panel, there are two buttons: 'Update now' and 'Update on reboot'.

| Current profile | |
|-----------------|---------|
| Model: | r600 |
| Firmware: | 1.0.0 |
| OS Version: | 21.02.2 |

| Available profile | |
|-------------------|---------|
| Firmware: | 1.0.2 |
| OS Version: | 22.03.2 |

With the **Update Now** option, the router will be updated instantly.

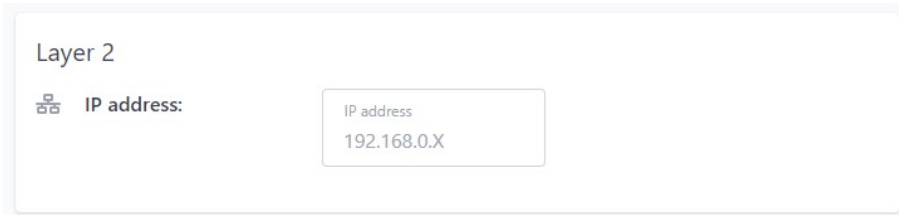
During the profile update, all local and remote router activities will be inoperable.

By choosing the **Update on reboot** option, the router will download the update and apply it only on the first reboot.

Layer 2

In this panel you can enter the IP address to be obtained by the remote access Station during the connection.

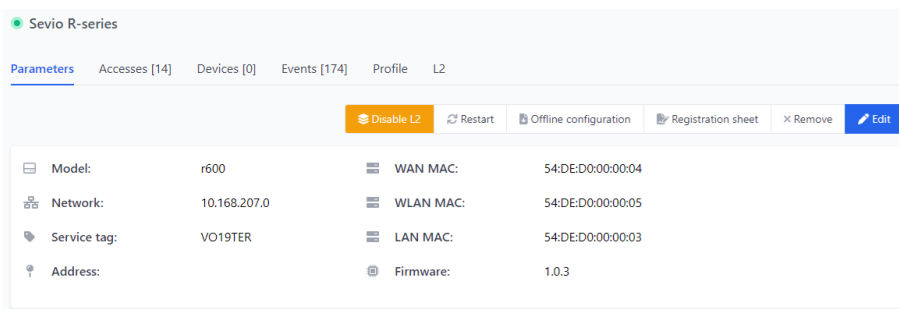
Once the parameter has been set from the specific device page, it will be possible to make the connection.



Layer 2

IP address:

Select **Enable L2** function on specific router menu.



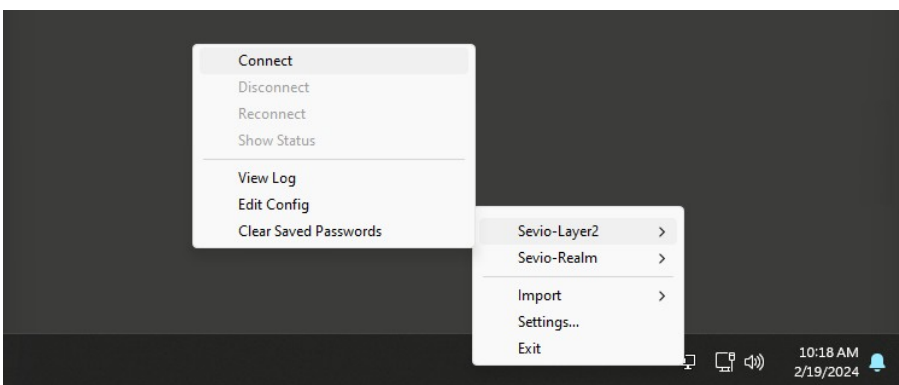
Sevio R-series

Parameters | Accesses [14] | Devices [0] | Events [174] | Profile | L2

Disable L2 | Restart | Offline configuration | Registration sheet | Remove | Edit

| | | | |
|--------------|--------------|-----------|-------------------|
| Model: | r600 | WAN MAC: | 54:DE:D0:00:00:04 |
| Network: | 10.168.207.0 | WLAN MAC: | 54:DE:D0:00:00:05 |
| Service tag: | VO19TER | LAN MAC: | 54:DE:D0:00:00:03 |
| Address: | | Firmware: | 1.0.3 |

Then connect oVPN L2 service on your Workstation.



Note: Layer 2 VPN can be connected only with the original email account - e.g. demo@sevio.it

Note: Only one Layer 2 service can be connected at a time.

Intra-LAN – remote devices communication

One of the distinctive features of the Sevio System, is the functionality of **Intra-LAN**, that is, authorizing communication via VPN between devices of different Sevio networks, which are part of the same Realm.

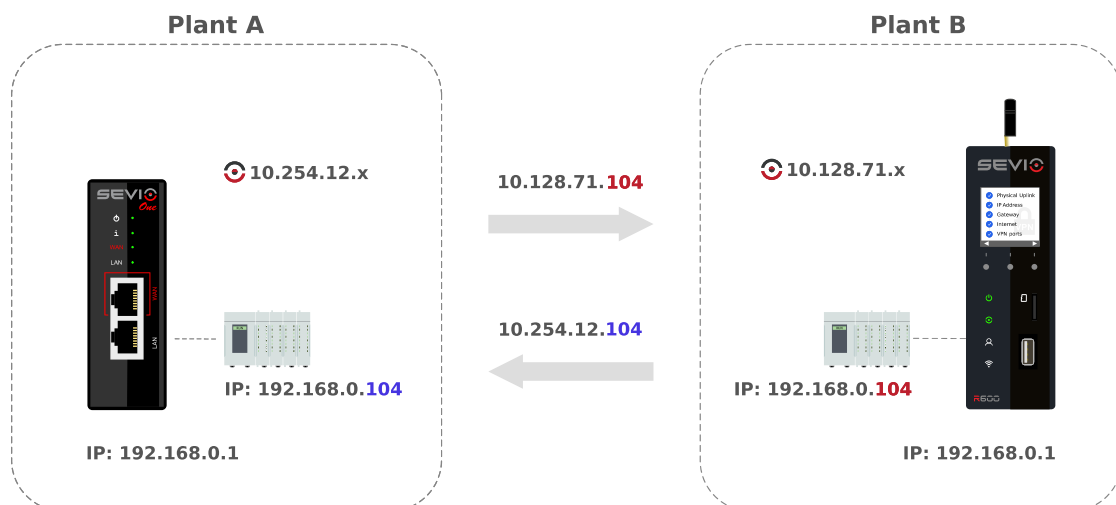
To use this function, it is necessary that all automation devices, in addition to their IP address and Netmask, have set as their Gateway address the LAN IP address of the Sevio Router to which they are connected (in example 192.168.0.1).

Communication is allowed from a sender device to a receiver device, or both can be senders and consequently receivers.

For the first scenario, in the Firewall-Devices of the receiving router, the Service tag of the sending router will be enabled, authorizing incoming communication; in the second, both Firewalls will have to be enabled.

| NAME | NETWORK | SERVICE TAG |
|---------|--------------|-------------|
| Plant O | 10.255.176.X | T2HPQ2H |
| Plant R | 10.209.165.X | GX7NM9F |
| Plant P | 10.192.43.X | MQV6S62 |
| Plant D | 10.168.207.X | VO19TER |
| Plant A | 10.254.12.X | 59R82G5 |

Remote communication will be through the respective Sevio Networks.





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