EVAC

User Manual

EVAC Device
Cyber-secure remote connection and EN54-15 monitoring
Physical interface and setting

LDA audioTech

INDEX

APPENDIX INDEX

1 INTRODUCTION

EVAC devices are a family of hardware solutions from LDA Audio Tech designed to extend supervision, connectivity, control and audio management capabilities in public address and voice alarm PA/VA systems.

This family includes EVAC Cloud, EVAC Control and Dante16 devices. Although each model is intended for a specific function, all of them share a common hardware platform and a web configuration interface, EVAC Settings, from which the general device settings are configured.

EVAC Cloud is a solution intended for the remote management and supervision of PA/VA systems. It allows remote access to associated devices, facilitating real-time monitoring, optimized system configuration and centralized management of multiple installations from any location.

EVAC Control is a solution based on LDA Audio Tech's EVAC EcoSystem platform. It extends the capabilities of the EN54-16 system by incorporating additional features to the online connectivity provided by EVAC Cloud. It provides a web-based graphical interface for distributed control, user management and advanced automation of the NEO+ system.

Dante16 is a device designed to integrate and convert IP audio channels between the Dante protocol and the AES67 standard. It allows centralized management of up to 16 audio channels, facilitating the administration and conversion of digital audio in PA/VA systems.

This manual describes the common hardware section of EVAC devices, including inputs and outputs, mounting, connection and HDMI console. It also includes the description of EVAC Settings as the common web configuration interface for the three devices.

2 INPUTS AND OUTPUTS

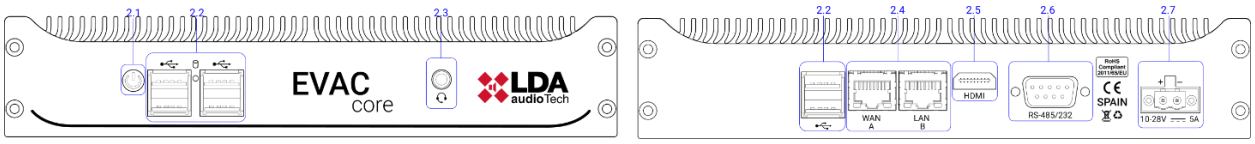

Figure 1. Front and back panels of the EVAC device.

2.1 Power button

Turn the device on and off. Note that the device turns on automatically when connected to the electrical current.

2.2 USB Ports

Allows connection of standard input and output peripherals, such as a keyboard or storage drive.

2.3 Audio input and output port

3.5mm female CTIA jack connector.

2.4 Ethernet Ports

Two ethernet ports, one for connection to the Internet with the WAN label and one for connection to EN54-16 systems with the LAN label.

2.5 HDMI port

Video output of the device.

2.6 RS-485/232 port

9-pin Sub-D type connector for RS-485 or RS-232 communications.

NOTE: by default, it is configured as **RS-485**, for the **RS-232 configuration** it must be requested at the factory.

2.7 Power input

2-pin Euroblock type connector.

3 INSTALLATION

3.1 Mounting

Along with the EVAC device, the necessary parts for mounting and rack installation are supplied:

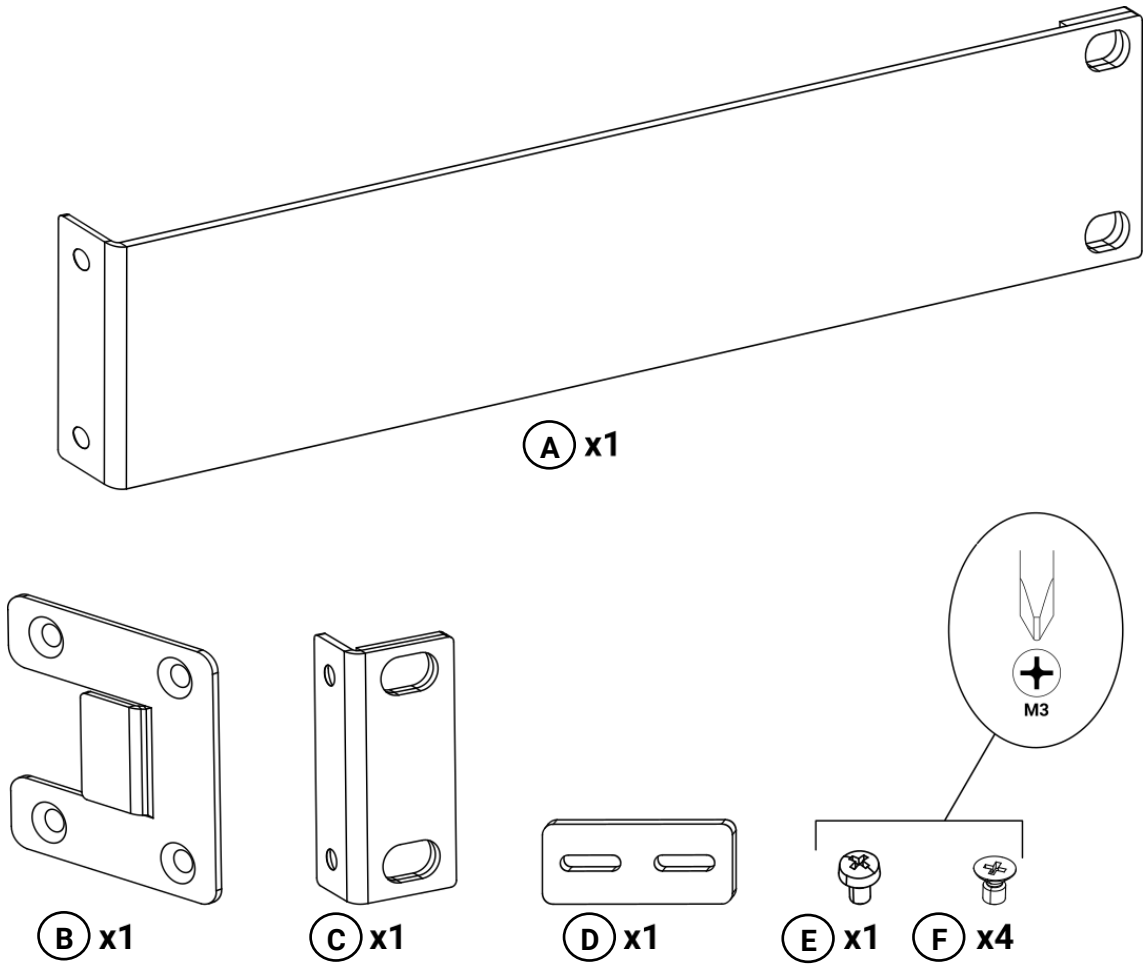

Figure 2. Parts supplied for rack mounting.

A. 1 × Long fixing bracket.
B. 1 × Side Binding Plate.
C. 2 × Short fixing bracket.
D. 1 × Rear Binding Plate.
E. 1 × M3 Pan Head Screw.
F. 4 × M3 countersunk screw.

3.1.1 Single-device rack mounting

For rackmount of a single device, the following parts will be used:

A. 1 × Long fixing bracket.
C. 1 × Short fixing bracket.
F. 4 × M3 countersunk screw.

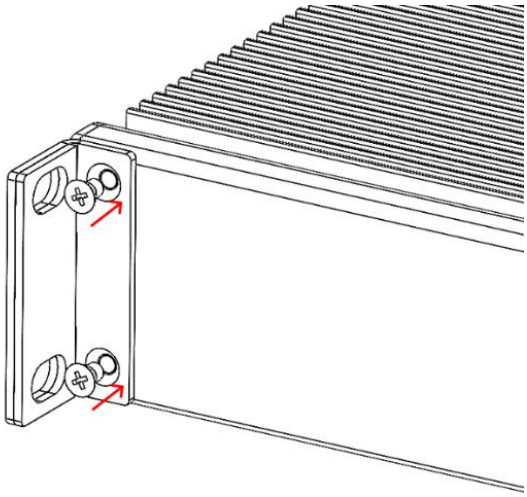

Figure 3. Short fixing bracket assembly.

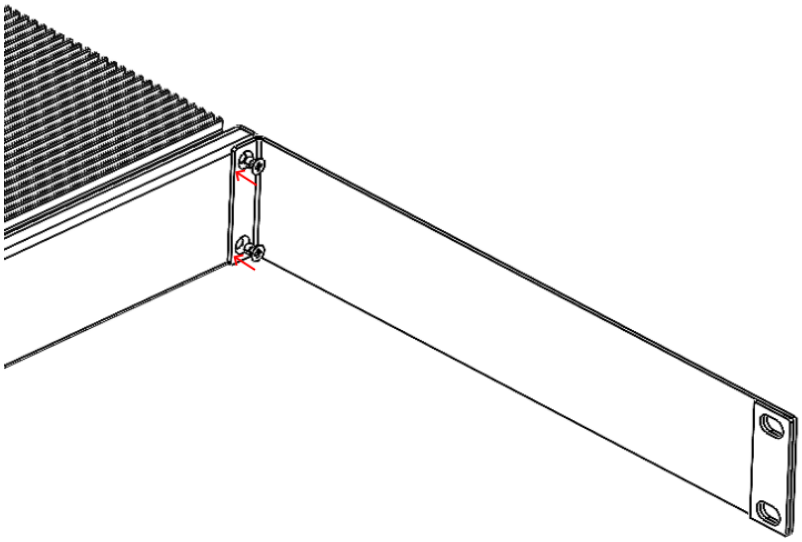

Figure 4. Long fixing square assembly.

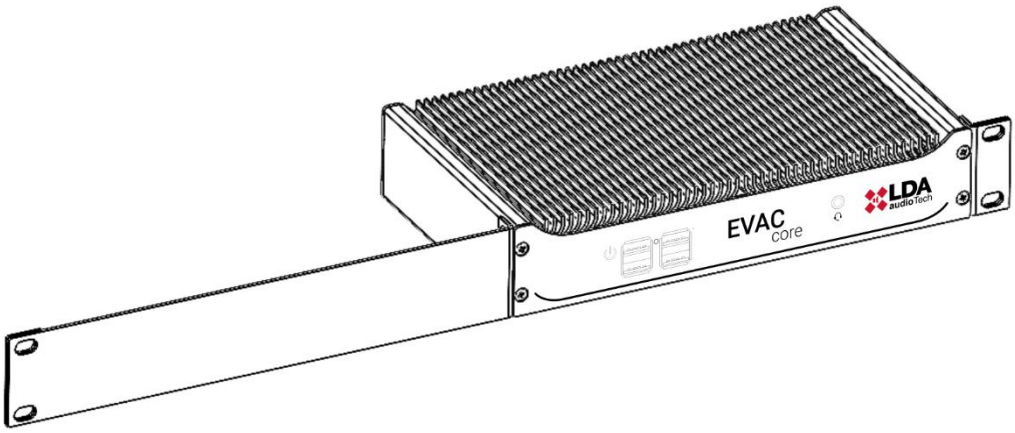

Figure 5. Front view of the rack mount of an EVAC device.

3.1.2 Two-device rack mounting

The following parts shall be used for the joint rack mounting of two devices:

B. 2 × Side Binding Plate.
C. 2 × Short fixing bracket.
D. 1 × Rear Binding Plate.
E. 2 × M3 pan head screw.
F. 8 × M3 countersunk screw.

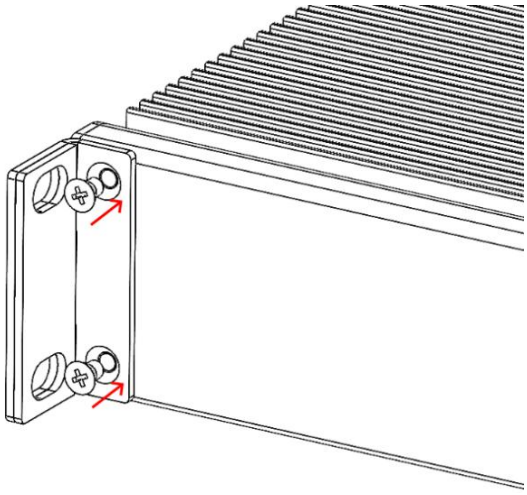

Figure 6. Short fixing square assembly.

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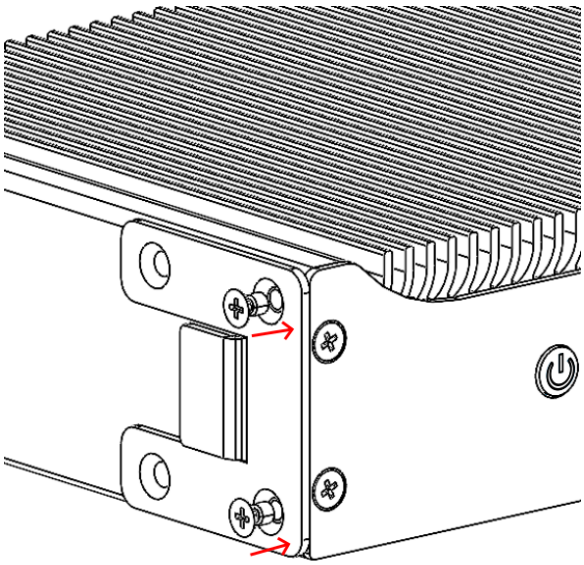


Figure 7. Side joint plate assembly.

On the second EVAC device, the side attachment plate will be mounted in the opposite direction, so that both tabs fit together.

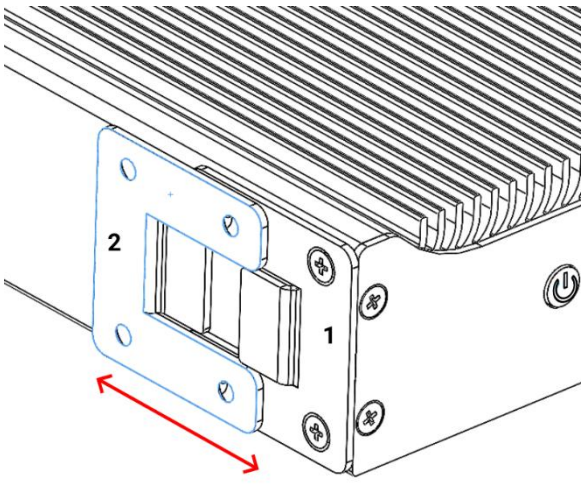


Figure 8. Insertion of the lateral joining plate of both devices.

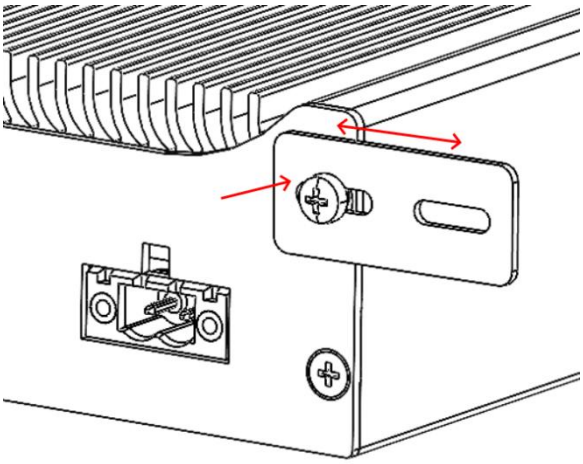


Figure 9. Mounting of the rear joint plate.

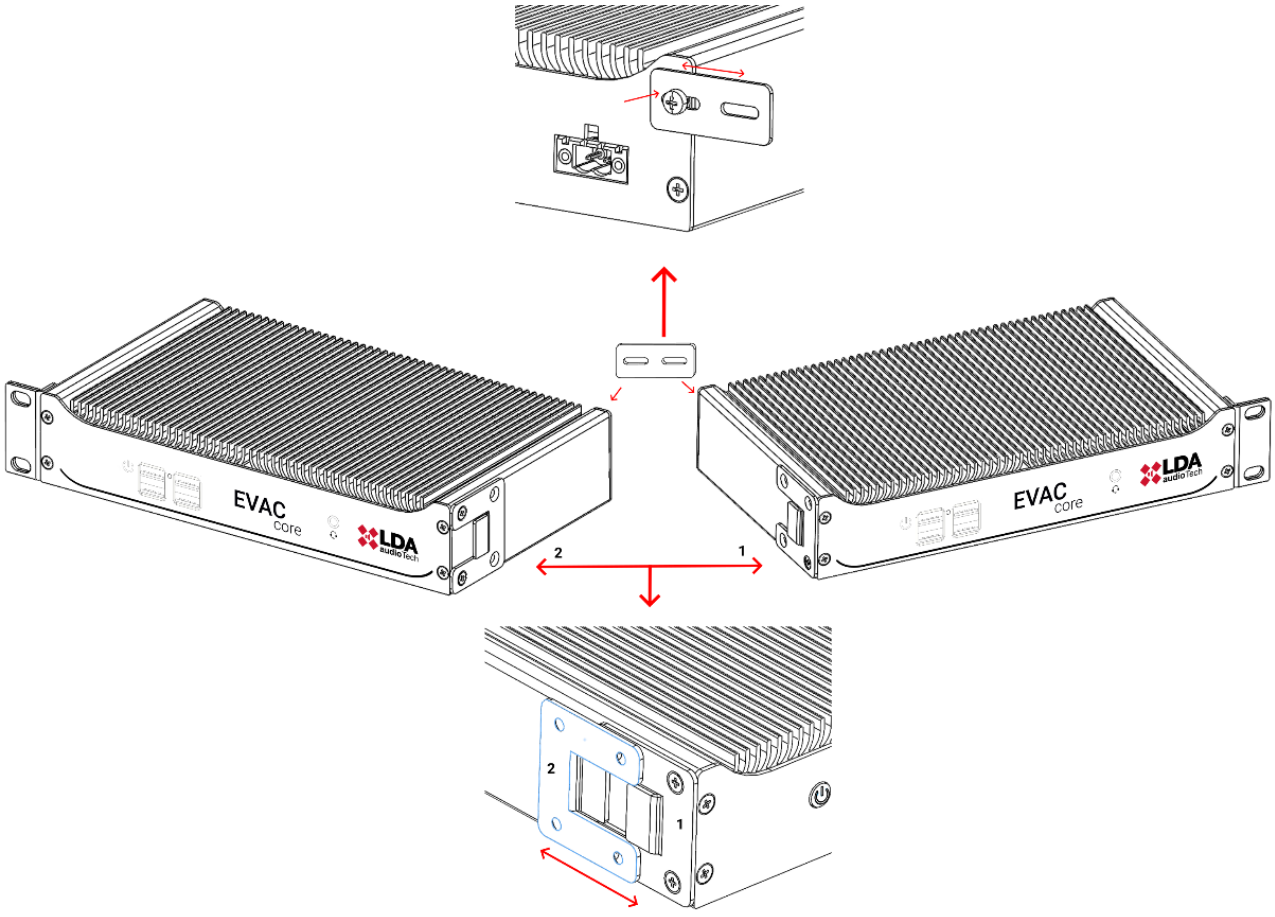


Figure 10: Rack-mount schematic of two EVAC devices.

3.2 Device connection

EVAC Cloud and EVAC Control

For the correct connection between the EVAC device and a NEO/NEO+ system, an Ethernet cable must be used and connected between the LAN port of the EVAC device and the X port of the NEO/NEO+.

- **WAN port:** Port intended for connection to the Internet, allowing EVAC to access cloud services and establish remote communication.
- **LAN Port:** Port used to connect EVAC to the NEO/NEO+ system via the X port of the connection bay.

Dante16

The Dante16 device can be integrated into a NEO+ and NEXO system, for this you have to connect in one of the ethernet ports to the audio network (Dante and AES67) and the other to the control network of the NEO+ and NEXO system.

- **Port A:** Audio Data Network, on this port both Dante and AES67 will be transmitted.
- **Port B:** Control Data Network, the data will be transmitted for the configuration of the device.

NOTE: WAN-A and LAN-B ports must not be on the same network, as this could generate a network loop (storm), affecting the stability and operation of the system.

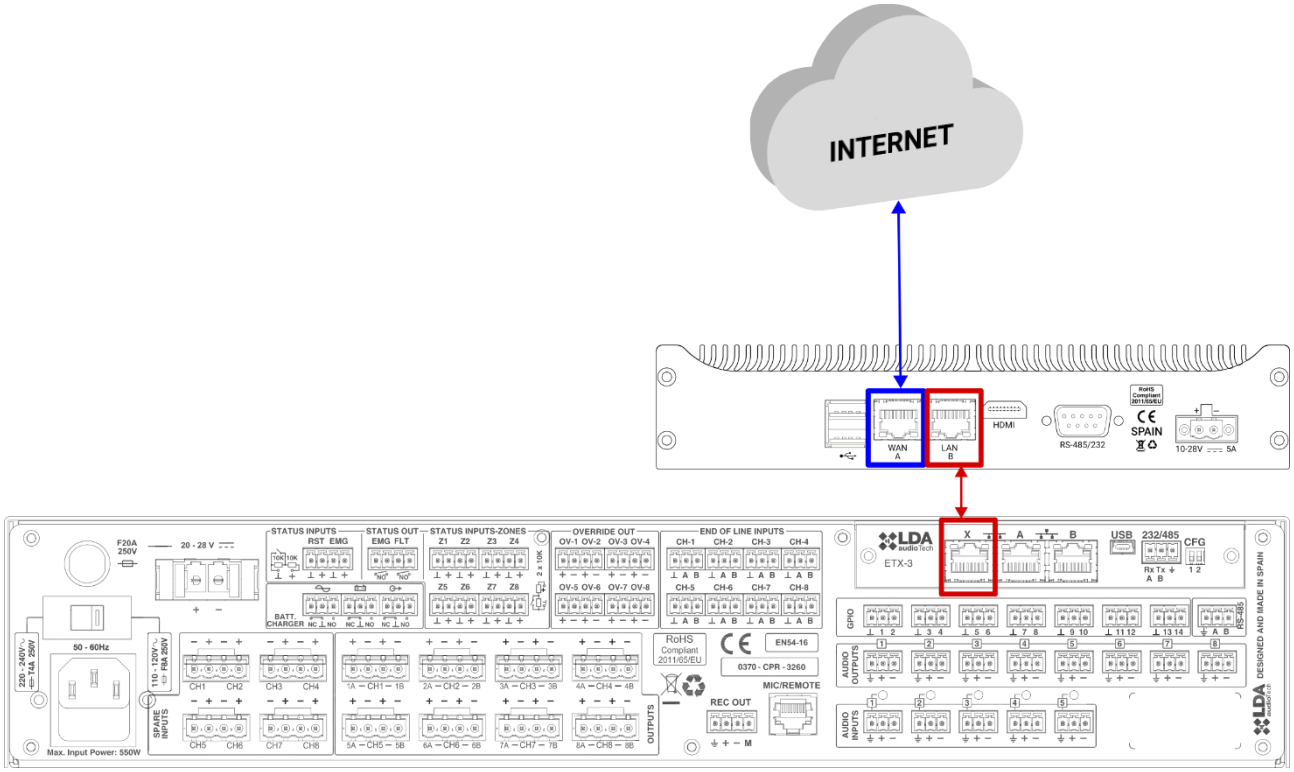


Figure 11. Device conection

3.2.1 EVAC Control connection with NEO+ systems

NEO+ systems must have the VLAN Control configuration equal to VLAN Audio. In this way, communication of both control data and audio data can be established between both devices.

CFG Position		Port X
01		Control + Audio Untagged

Table 1: CFG NEO+ Position

Audio transmission can be done both digitally and analogously.

Digital audio compatible with AES67 streaming uses channels 1 and 2 from stream 31, previously set to NEO+.

Analog audio is transmitted through the physical output of the EVAC Control device.

3.2.2 EVAC Control connection with NEO systems

NEO systems only allow separate VLAN Control and VLAN Audio configuration. Therefore, the communication established is exclusively control data.

CFG Position		Port X
01		Control

Table 2: CFG NEO Position

For audio transmission, the physical analog audio output of the EVAC Control device must be used.

4 HDMI CONSOLE

Plugging a monitor into the HDMI port will display the system console where messages related to the following can be displayed:

- **Starting** or **ending** the EVAC service, both at startup and at its end after a shutdown or restart of the device or service.
- **Device identifier**. Value that will have the following format:

  EVACControl-aabbcc

  EVACCloud-aabbcc

  Dante16-aabbcc

  Where "***aabbcc"*** is a six-character alphanumeric string that can contain both numbers and lowercase letters. An example of a possible device identifier could be:

  EVACControl-645595

  EVACCloud-645595

  EVACDante-645595

- **Status** and **configuration of** LAN **and** WAN **network interfaces**, updating the values when any changes occur in them.
- **Device connection** status with the LDA Audio Tech cloud.

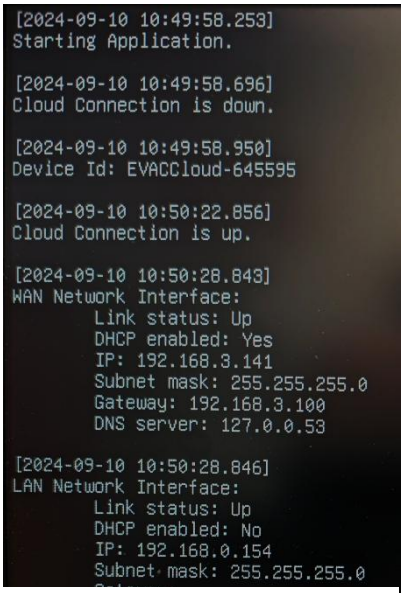


Figure 12. HDMI console.

5 EVAC SETTINGS

EVAC Settings is the web application for configuring and monitoring EVAC devices.

It allows access to system management, network configuration, users management and device status monitoring functions.

5.1 Access

To access the web application, it is necessary to use a computer with an up-to-date web browser connected to the same local network as the **LAN** port of the **EVAC device**. In the browser address bar, enter the device URL, whit the following format:

https://evaccontrol-aabbcc.local

https://evaccloud-aabbcc.local

https://dante16-aabbcc.local

The string “aabbcc” corresponds to the device identifier. See section 5.4.1(a) System summary. A possible URL could be:

https://evaccontrol-645595.local

https://evaccloud-645595.local

https://dante16-645595.local

It is also possible to use the IP address of the **LAN** interface. Factory default value:

https://192.168.0.253 (Control)

https://192.168.0.254 (Cloud)

https://192.168.0.251 (Dante16)

Once a valid URL is entered in the browser, the EVAC Settings login page is accessed directly.

It is also possible to access EVAC Settings from the EVAC Cloud web platform, using the direct access to the device.

5.2 Login

When accessing the EVAC Settings web application, the login screen is displayed.Enter the system default credentials to access the device configuration:

- Username: **core**
- Password: **G2BepK2Hj%mcKY**

For the creation of new local users, see section 5.4.2(c) Users.

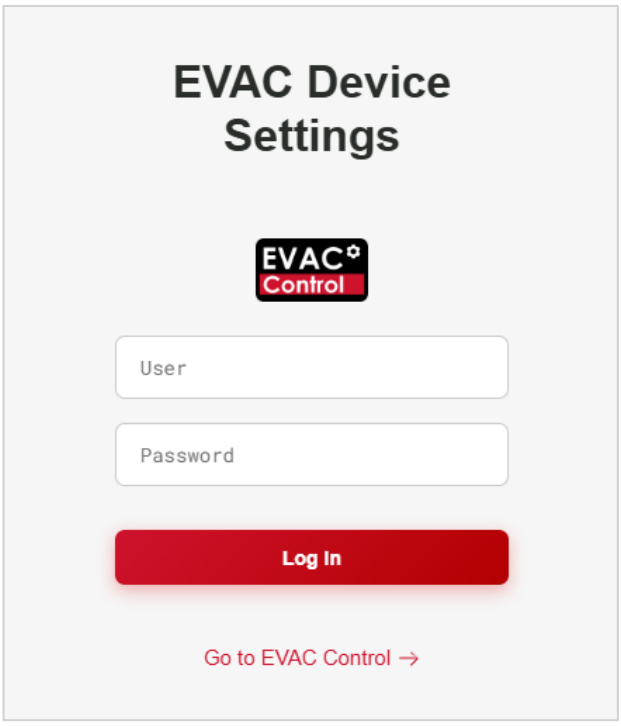


Figure 13. Login page.

5.3 Interface

After logging in, the EVAC Settings main page is displayed. It is divided into three main areas:

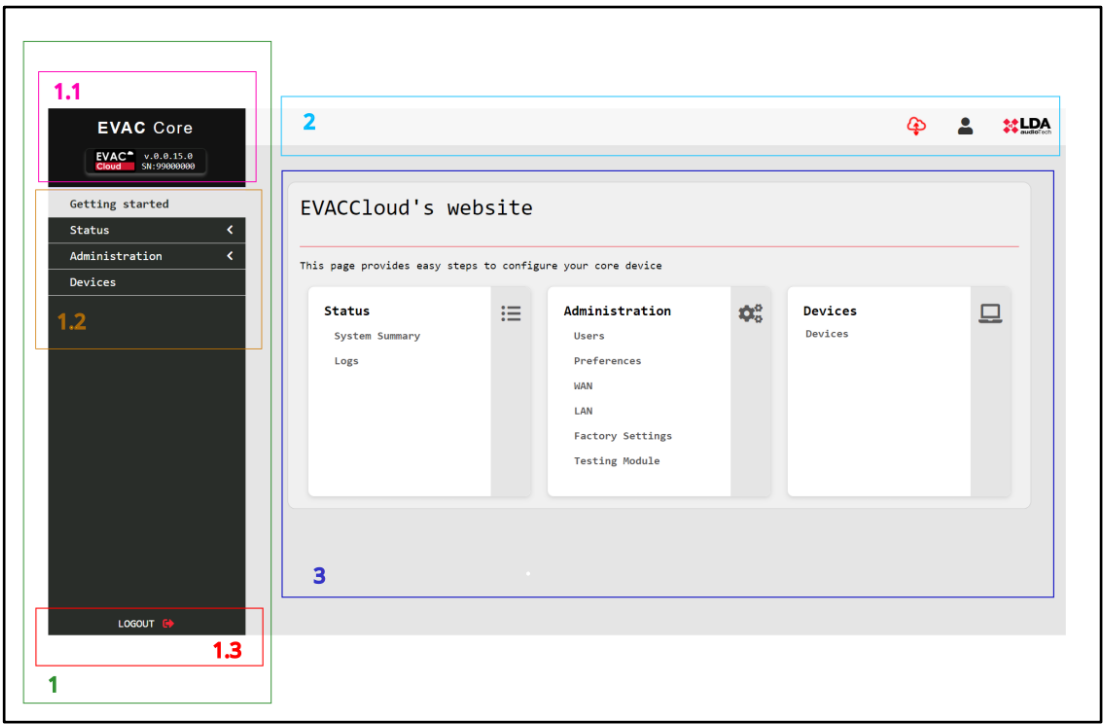


Figure 14. Content distribution.

1. Side navigation panel.
    1.1. Header.
    1.2. Drop-down menu.
    1.3. Logout.
2. Top bar.
3. Main content area.

5.3.1 Side menu

(a) Header

Located in the upper left area, it shows the main parameters that identify the device:

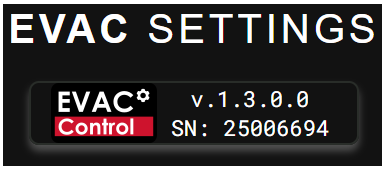


Figure 15. Side menu header.

- **Model:** Shows the device model. This can be EVAC Cloud, EVAC Control or Dante16. In the figure, the model shown is **EVAC Cloud**.
- **Version:** Firmware version number running on the device.
- **Serial number:** Unique device identifier assigned by the manufacturer.

(b) Drop-down menu

Organizes the available screens into main groups and subgroups.

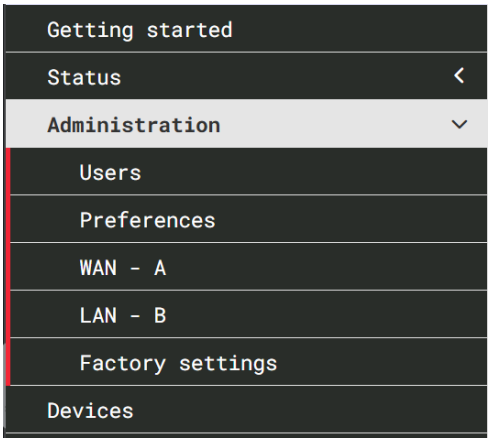


Figure 16. Side drop-down menu.

(c) Logging Out

Button used to log out the user.

Figure 17. Sign-out button.

5.3.2 Top Bar

The top bar displays, on its far right, information about the LDA Audio Tech cloud connection status, basic information and user session control functions.

Figure 18. Top bar.

NOTE: In this manual, “connection to the LDA Audio Tech cloud” means that the device has an Internet connection through the WAN interface, required to access remote services. From this point onwards, “cloud” is used to refer to these services.

(a) LDA Audio Tech Cloud Connection Status

This icon indicates the connection status of the device to the LDA Audio Tech cloud, that is, Internet access through its WAN interface.

 The device is connected to the cloud and can be accessed both locally and remotely

 The device is not connected to the cloud and can only be accessed locally.

(b) User Panel

To the right of the connection status indicator, the user icon displays a window with information and basic functions for the active user.

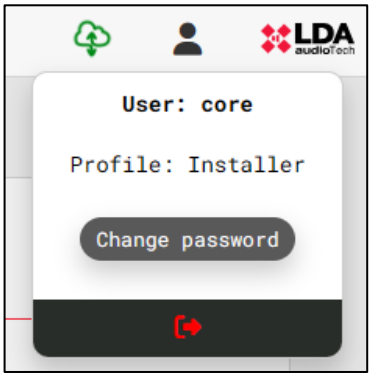


Figure 19. User information drop-down menu.

- **User:** Name of the logged-in user.
- **Profile:** User profile.
- **Change password:** Allows the user to change the current password to a new one.

NOTE: Only local users can change their password. Users who access through the cloud using remote management applications cannot change their credentials, as these are managed through the LDA Audio Tech cloud.

Figure 20. Login user password change window.

- **Logout**: Ends the session and returns to the authentication page.

Figure 21. Logout.

5.3.3 Content Distribution

This section groups the system configuration and monitoring functions and screens.

Each section can be accessed from the side menu or through shortcuts on the main screen.

(a) Getting Started

Section displayed by default after authentication.

It provides shortcuts organized by available content groups.

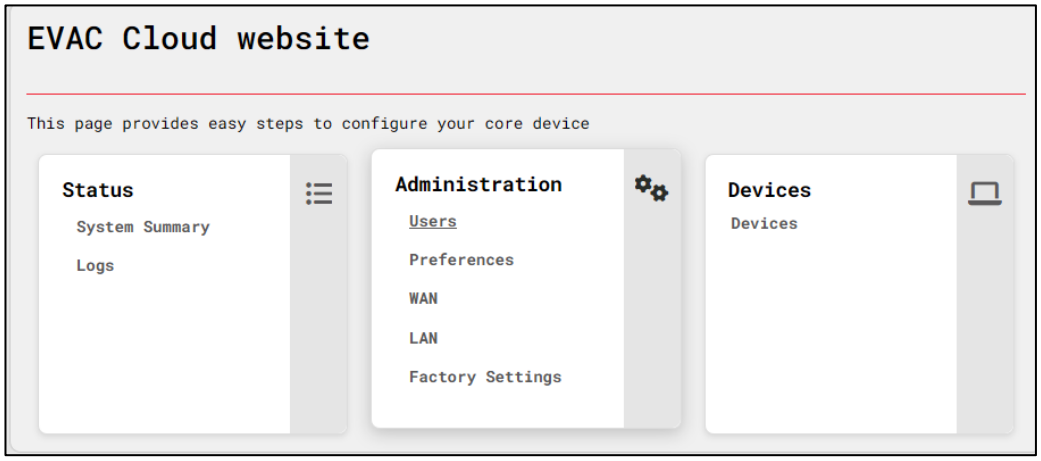


Figure22. Getting Started window.

(b) Status

Groups the basic system information and the activity log or logs.

(c) Administration

Allows configuration of the different functional sections of the EVAC system, including user management, system preferences and network parameters.

(d) Devices

Module for monitoring devices on the EVAC device LAN network and managing remote connections through the cloud. It allows automatic detection of EN54-16 system controllers and manual addition of devices.

5.4 Content

5.4.1 Status

This section groups the basic information of the EVAC system and its activity log.

It includes the following subsections:

(a) System summary

Shows a summary of the EVAC device data and its associated information in the cloud. The information is organized into two blocks:

Cloud

- **Cloud connection status:** Indicates whether the device has an Internet connection (cloud access). This status matches the indicator in the top bar: green when active, red when not active.

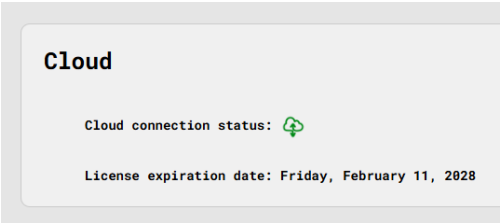


Figure 23. System summary. Cloud

System

- **Serial number:** Device serial number.
- **Version number:** Device firmware version.
- **Operation System Version:** EVAC operating system version.
- **Device Id:** Device model identifier and alphanumeric reference.
- **Name:** Name assigned to the device.
- **Account name**: Account or company to which the device belongs.
- **Country:** Country where the device is located.

Figure 24. System Summary. System

- **Location:** More precise location where the device is located.
- **Project name:** Name of the project to which the device is assigned.
- **Partner:** Authorized distributor.

(b) Logs

Allows the system activity log to be downloaded. The log is not displayed automatically. To view it, press the **"Show Logs"** button.

Figure 25. Logs.

Once loaded, the information on the events recorded by the EVAC device is displayed.

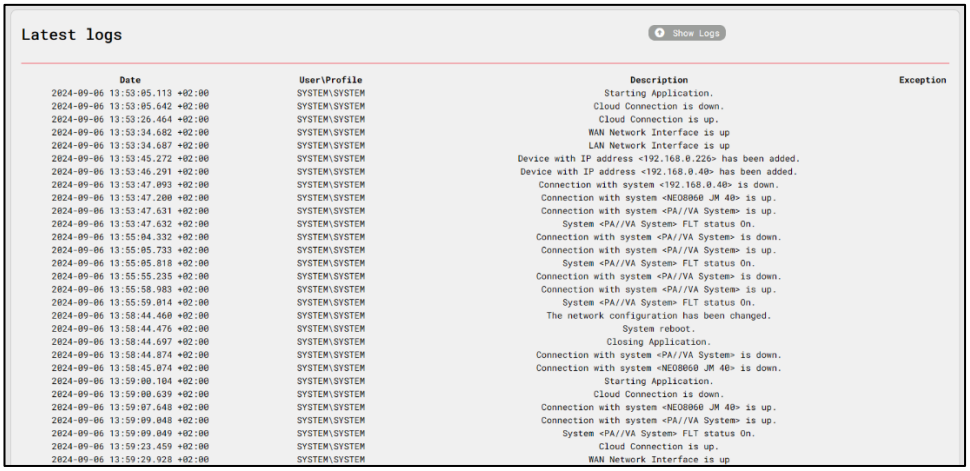


Figure 26. Log downloaded.

The columns show the following information:

- **Date:** UTC date and time of the event.
- **User\Profile:** User and profile that generate the event. For actions generated by the system, **"SYSTEM\SYSTEM"** is displayed.
- **Description:** Event description.
- **Exception:** Additional information in case of error.

5.4.2 Administration

Allows configuration of the different functional sections of the EVAC system, including user management, preferences and network parameters.

(c) Users

This section shows a table with the local users of the system. Local users can only access the web application through the device LAN network.

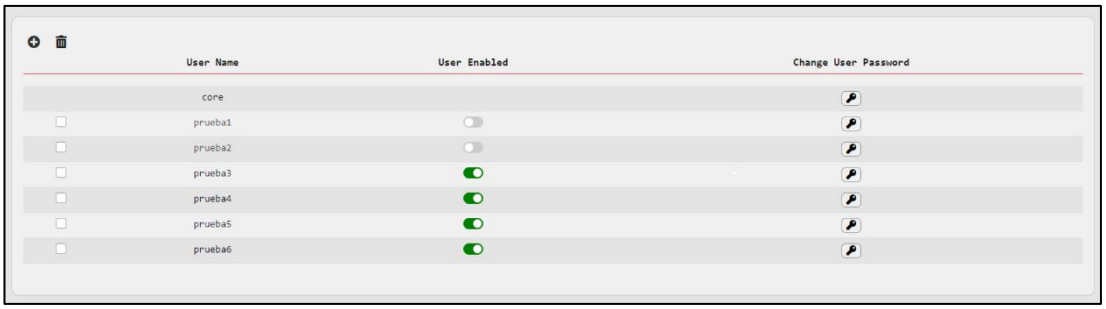


Figure 27. List of users.

The columns show the following information:

- **User Name:** Unique identification of the local user.
- **User Profile:** Profile assigned to the local user.
- **User Enabled:** Allows the user web access to be enabled or disabled. The active user cannot disable themselves.
- **Edit User:** Allows the local user profile to be modified. Only users with an Installer profile or higher can modify other user profiles.
- **Change User Password:** Allows the local user password to be changed. If the active user password is changed, the current password is also requested.

The buttons for **adding** and **deleting** users are located in the upper left area of the table.

(c).1 Add a new user

Allows a new local user to be created.

The following data must be entered: name, profile and password.

The password must contain at least 14 alphanumeric characters, one uppercase letter and one symbol or special character.

Figure 28. Window to add a new user.

(c).2 Delete user

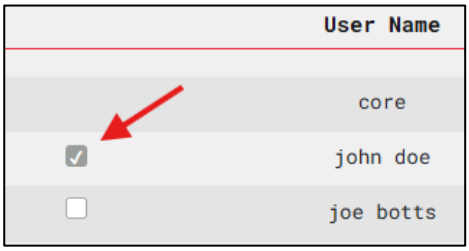


Figure 29. User selection

Allows one or more users to be deleted using multiple selection.

Select the users by marking the corresponding checkboxes and pressing the delete button.

The active user cannot delete themselves.

Confirmation is requested before deletion.

(d) Preferences

Allows the device time zone to be configured.

Figure 30. Preferences window.

The time zone is selected from a drop-down menu with the available options.

To apply the changes, press the **“Apply Changes”** button.

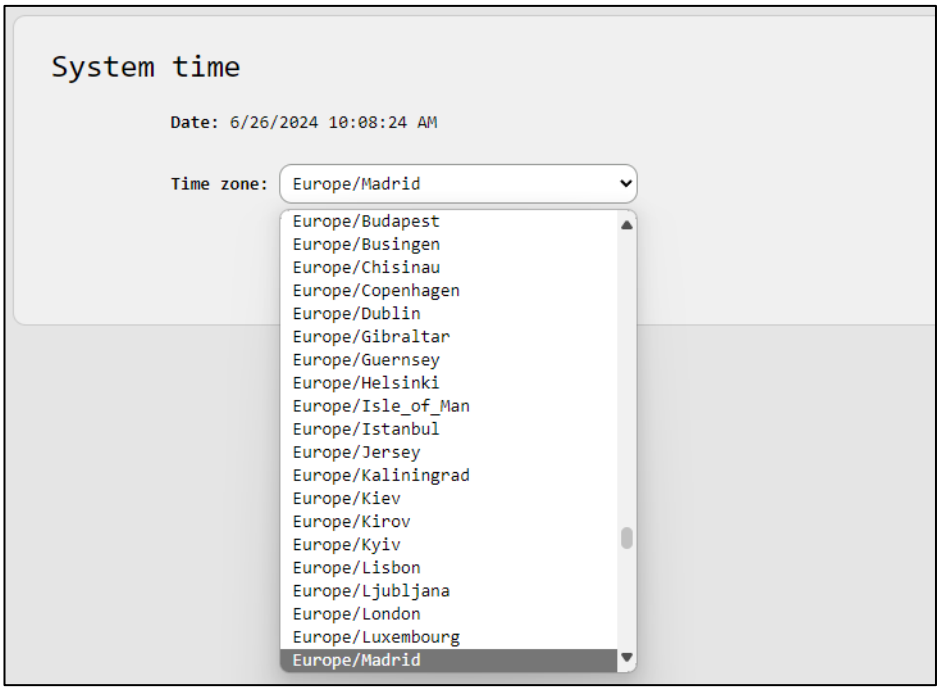


Figure 31. Time zone selection.

(e) WAN

Allows the device Ethernet WAN interface parameters to be configured, providing Internet access for cloud connection.

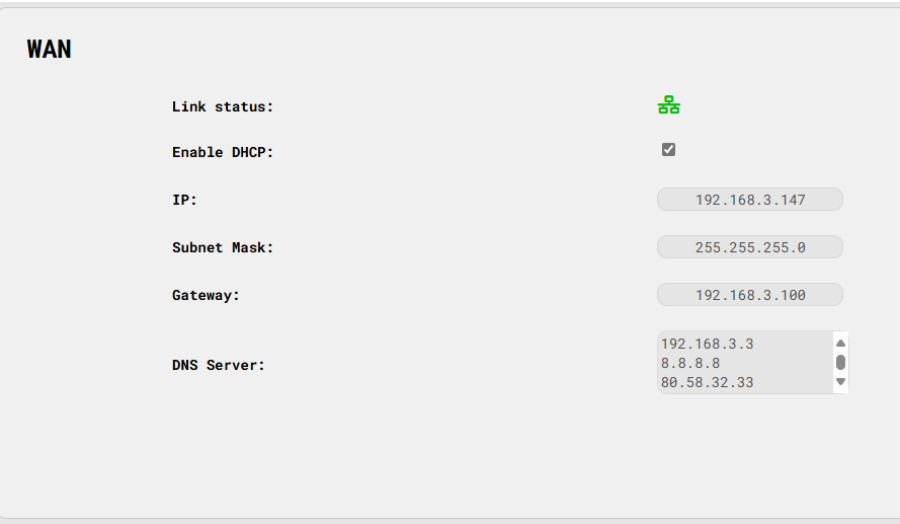


Figure 32. WAN interface configuration.

Parameters:

- **Link status:** Indicates the physical connection status. Green: active connection. Red: no connection.
- **Enable DHCP:** Enables or disables automatic network assignment.
- **IP:** Device IP address (IPv4).
- **Subnet Mask:** Network mask.

- **Gateway:** Gateway address. **DNS Server:** DNS server address or addresses.

To configure the network parameters manually, DHCP must be disabled.

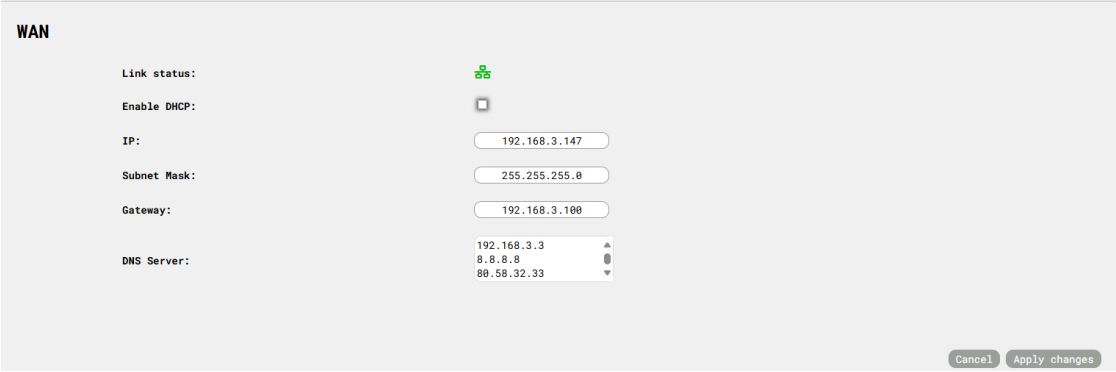


Figure 33. DHCP WAN disabled.

The **“Cancel”** button restores the current unapplied values.

To apply the changes, press **“Apply changes”**. The device restarts automatically.

(f) LAN

Allows the device Ethernet LAN interface parameters to be configured. It is used for communication with systems on the local network, access and monitoring of LDA systems.

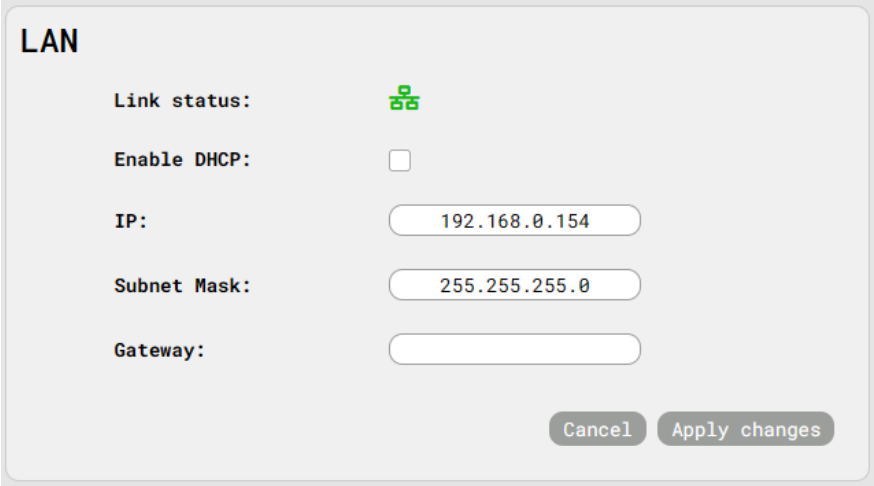


Figure 34. LAN interface configuration.

- **Link status:** Indicates the physical connection status. Green: active connection. Red: no connection.
- **IP:** Device IP address (IPv4). Default values:
  - EVAC Control: 192.168.0.253
  - EVAC Cloud: 192.168.0.254
  - Dante16: 192.168.0.251
- **Subnet Mask:** Network mask. Default value: 255.255.255.0

The **“Cancel”** button restores the current unapplied values.

To apply the changes, press **“Apply changes”**. The device restarts automatically.

(g) Factory settings

Includes system information, software update and device restore functions.

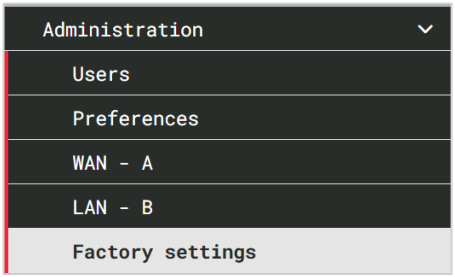


Figure 35. Factory Settings

System settings

Shows device information and allows software updates to be checked.

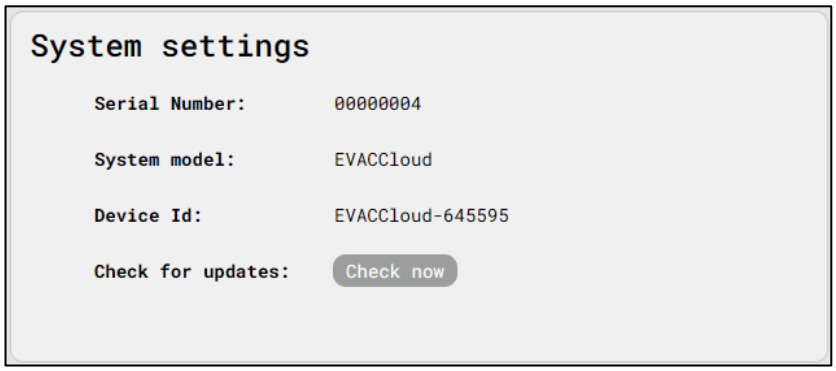


Figure 36. System settings.

- **Serial number:** Device serial number. **Model:** Device model.
- **Device Id:** Device model identifier and alphanumeric reference.
- **Check for updates:** “Check now” button used to check whether a new software version is available.
    - If the system is up to date, the following message is displayed: “The system is up to date with the latest version.If a new version is available, the button changes to **“Upgrade”** and the available version is indicated. After pressing “Upgrade”, the device downloads and installs the new version and restarts automatically.

NOTE: If the device does not have an Internet connection, it is not possible to check for or perform software updates.

Do not turn off the device during the update. This may cause system failures.

During the process, the connection to the web application is lost. Once completed, reload the page to verify the update. **System Reset**

Allows the device to be restarted or restored.

Figure 37. System reset.

- **Factory reset**: Restores the factory settings. Deletes custom settings, users, monitored devices and system logs. It also restores the network parameters.
- **Reboot**: Restarts the device while keeping the current configuration.

Confirmation is requested before these actions are executed.

5.4.3 Devices

This section allows monitoring and management of devices on the EVAC device LAN network, as well as configuration of remote connections through the cloud.

The system automatically detects EN54-16 system controllers and extensions present on the network.

It also allows devices to be added manually for monitoring or remote access.

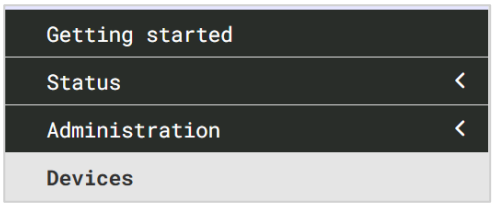
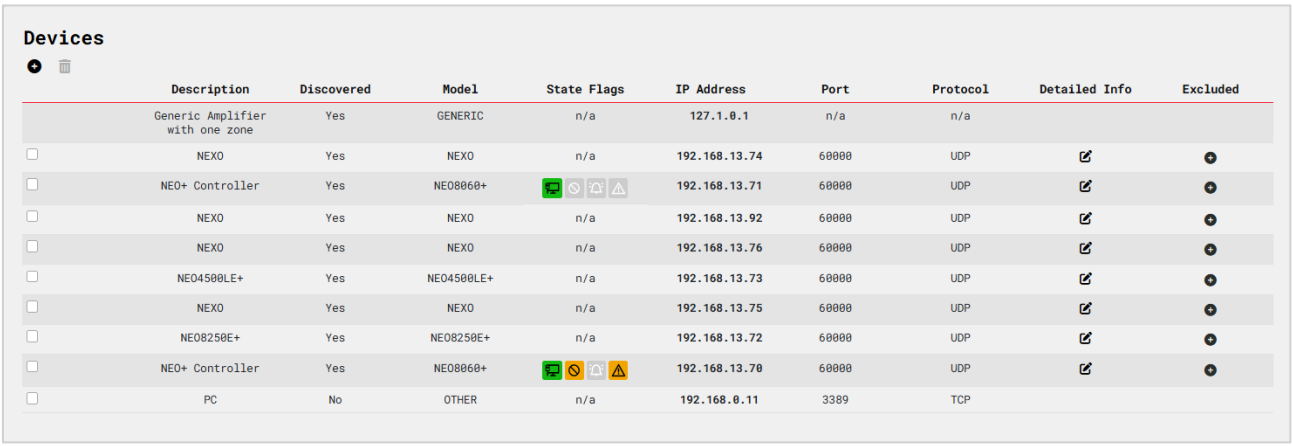


Figure 38. Devices menu

Main functions:

- Automatic detection of devices on the LAN network
- Monitoring of EN54-16 controller status: FLT, EMG, DIS and connection
- Access to detailed device information
- Configuration of remote connections
- Inclusion or exclusion of devices from monitoring



	Description	Discovered	Model	State Flags	IP Address	Port	Protocol	Detailed Info	Excluded
	Generic Amplifier with one zone	Yes	GENERIC	n/a	127.1.0.1	n/a	n/a		
☐	NEXO	Yes	NEXO	n/a	192.168.13.74	60000	UDP	✎	⊕
☐	NEO+ Controller	Yes	NEO8060+		192.168.13.71	60000	UDP	✎	⊕
☐	NEXO	Yes	NEXO	n/a	192.168.13.92	60000	UDP	✎	⊕
☐	NEXO	Yes	NEXO	n/a	192.168.13.76	60000	UDP	✎	⊕
☐	NEO4500LE+	Yes	NEO4500LE+	n/a	192.168.13.73	60000	UDP	✎	⊕
☐	NEXO	Yes	NEXO	n/a	192.168.13.75	60000	UDP	✎	⊕
☐	NEO8250E+	Yes	NEO8250E+	n/a	192.168.13.72	60000	UDP	✎	⊕
☐	NEO+ Controller	Yes	NEO8060+		192.168.13.70	60000	UDP	✎	⊕
☐	PC	No	OTHER	n/a	192.168.0.11	3389	TCP		

Figure 39. Devices.

(a) Status indicators

Cloud connection: Indicates whether the device is correctly connected to the cloud platform for monitoring.

Disarm (DIS): Indicates that the system has one or more zones disarmed. It is activated when one or more system zones are disabled.

Emergency (EMG): Indicates that the system is in emergency status. It is activated when the system enters VA operation, either by manual activation, automatic activation from the fire control panel or from emergency inputs.

Fault (FLT): Indicates that the system is in fault status. It is activated when a fault is detected in any of the supervised system functions.

(b) Add Device

Allows LDA devices and generic devices to be added manually.

If the added LDA device is an EN54-16 system controller, its status conditions are also monitored: FLT, EMG, DIS and connection.

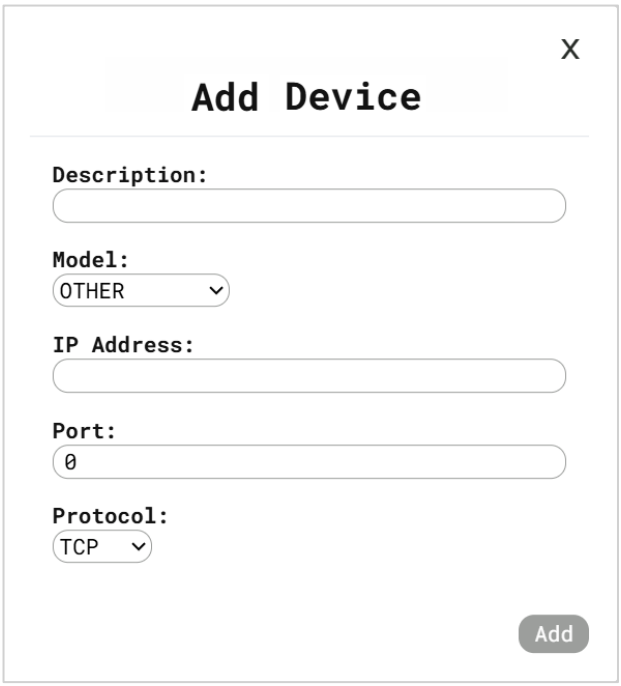


Figure 40. Add a device.

- **Description**: Descriptive text used to identify the device in the list.
- **Model:** Device model selection. The “OTHER” value allows generic devices or services accessible by IP address, port and protocol to be added, such as a web server or remote desktop.

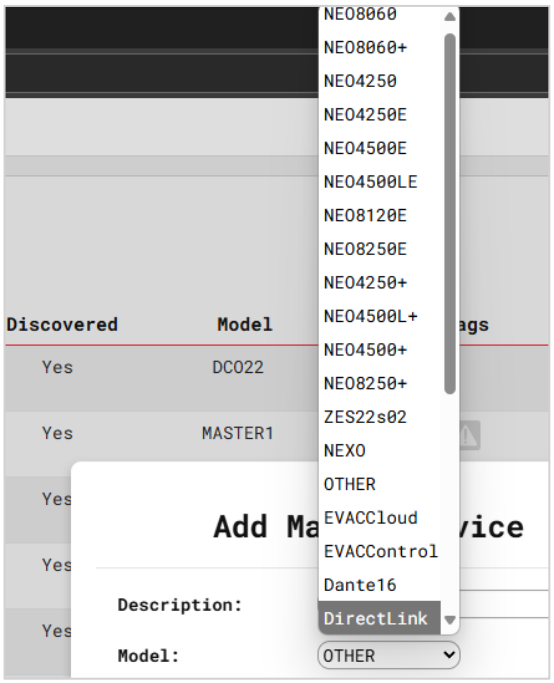


Figure 41. Model selection.

- **IP Address:** Device IP address (IPv4).
- **Port:** Connection port, with values between 1 and 65535. For LDA models, the port is 60000.
- **Protocol**: Communication protocol. For LDA models, the protocol is UDP.
    - TCP
    - UDP
    - HTTP
    - HTTPS

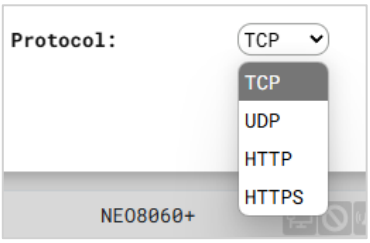


Figure 42. Protocol selection.

To add the device, all fields must be valid.

Devices with the same IP Address, Port and Protocol combination cannot be added.

(c) Device List

Shows the devices automatically detected on the LAN network and those added manually.

- **Description:** Device description. For automatically detected devices, a generic description is displayed.
- **Discovered:** Indicates whether the device has been detected automatically or added manually.
- **Model:** Device model.
- **State Flags:** EN54 status indicators (connection, disarm, emergency and fault).
- **IP Address:** Device IP address (IPv4).
- **Port:** Communication port.
- **Protocol:** Communication protocol.
- **Detailed Info:** Allows access to detailed information, if the device is present and visible on the LAN network, and allows parameters such as IP or connection type to be modified.

- Model
- Y/N
- MAC Address
- Fw Version
- IP Adress
- Type of connection
  - “Plug and Play”: The device is detected automatically and is removed on each new search.
  - “Linked”: Fixes the device in the list permanently.
- Duration: Time during which the device LEDs flash during execution of the “Identify” function, which allows the device to be physically located.

FIgure 43. Detailed device information.

- **Excluded:** Allows the device to be included in or excluded from monitoring and remote access. Only devices automatically detected on the LAN network can be excluded.

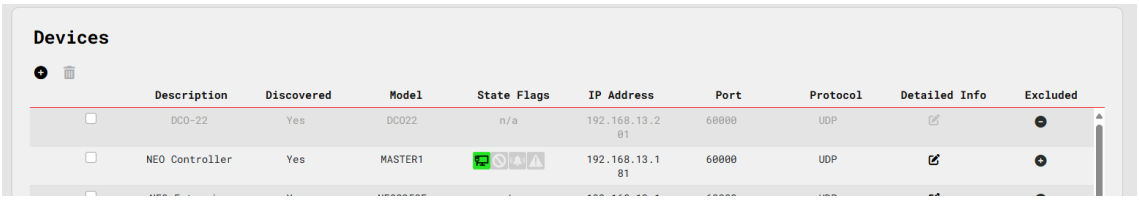


Figure 44. Device excluded.

(d) Remove Device

Allows devices to be removed from the list using multiple selection.

Select the devices by marking the corresponding checkboxes and pressing the delete button.

If a removed device is detected again on the LAN network, it is automatically added again.

It is recommended to use this function to remove devices that have been permanently disconnected from the network

Appendix I SSL Certificate

NOTE: The screenshots shown belong to Google Chrome. Other browsers display warning windows very similar to those shown here.

If the following message appears after loading the web application:

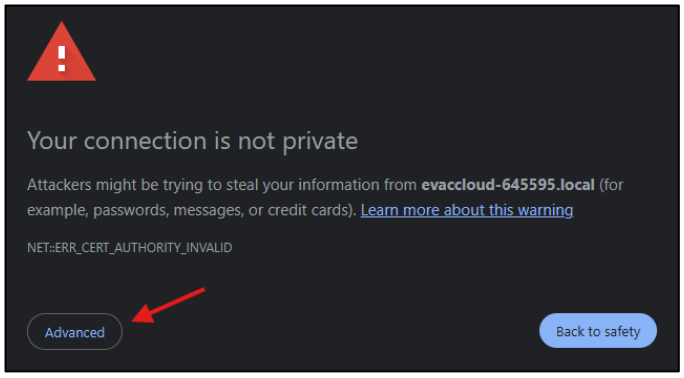


Figure 45. Privacy error.

click the “Advanced” button located in the lower left corner. The warning window expands to show additional information.

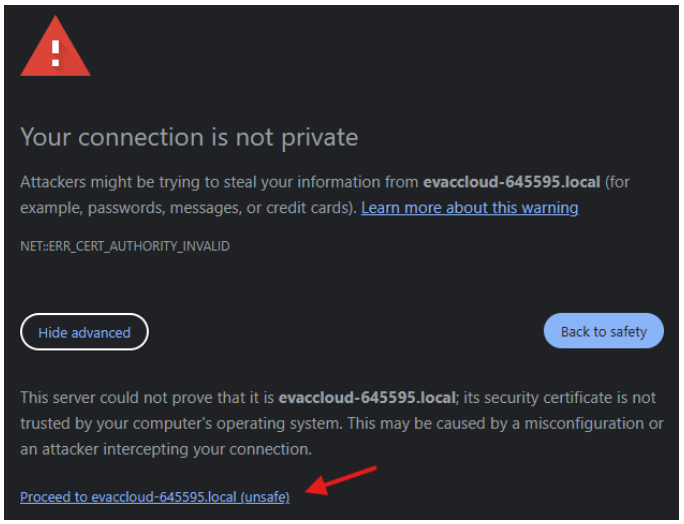


Figure 46. Privacy error 2.

Next, click on the ***"Proceed to..."*** link located at the bottom, where the URL entered in the browser is displayed.

After completing the previous steps, the EVAC Settings web login page is displayed.

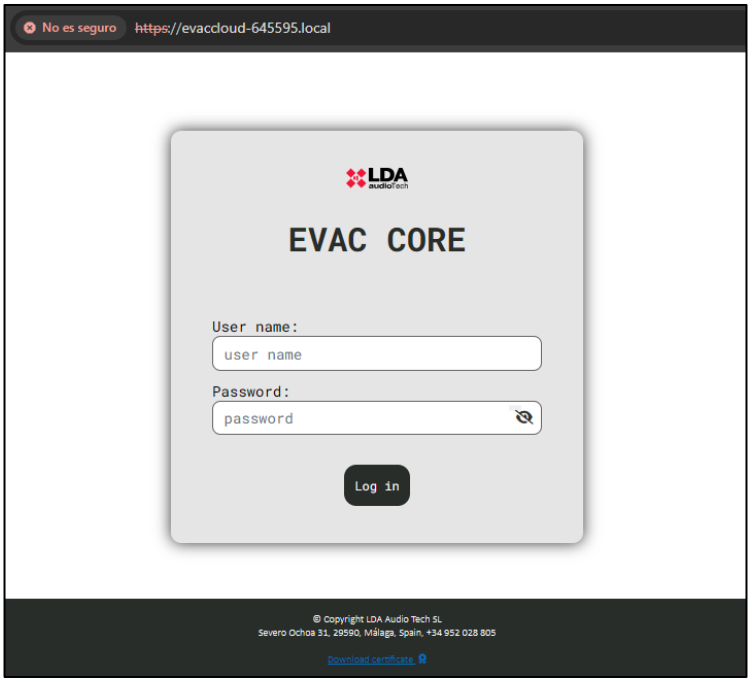


Figure 47. Login page.

At the bottom of the website page, a link with the text ***"Download certificate"*** is displayed:

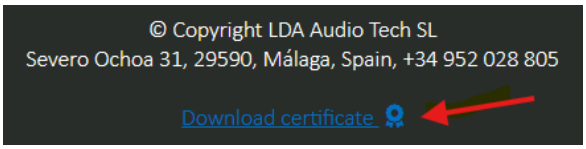


Figure 48. Download certificate.

Click this link to download the certificate. Once installed, the certificate allows secure access to the local web application.

Once downloaded, go to the folder where the certificate file has been saved and double-click it to start the certificate installation wizard.

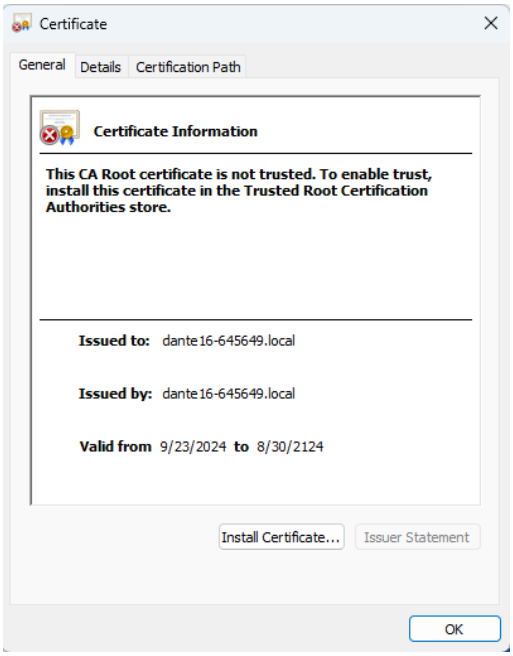


Figure 49. Certificate.

Click the **“Install Certificate…”** button. In **“Store Location”**, select **“Current User”** and click **“Next”**.

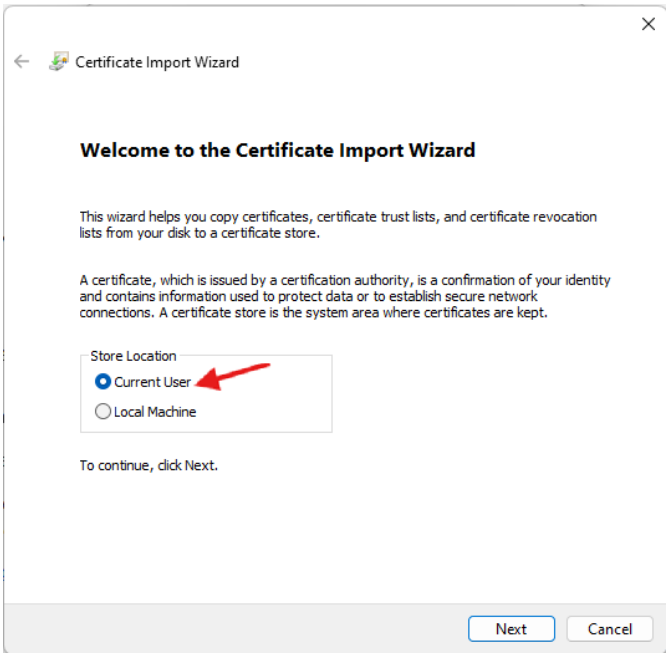


Figure 50. Certificate installation wizard.

Select "**Place all certificates in the following store**" and click "**Browse...**".

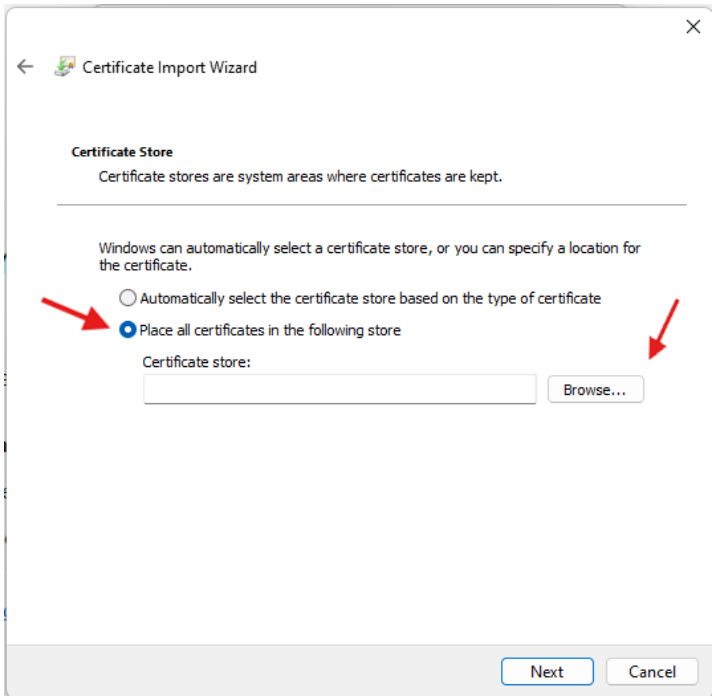


Figure 51. Certificate store.

In the new window, select **“Trusted Root Certification Authorities”** and click **“OK”.**

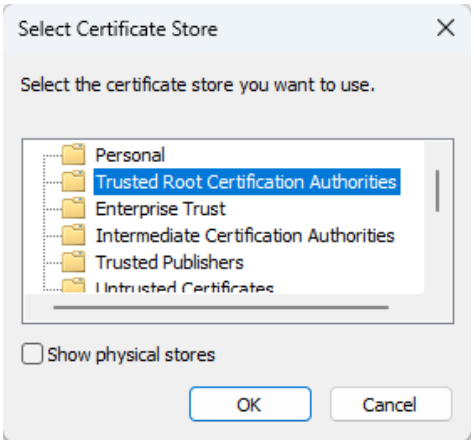


Figure 52. Certificate store selection.

The pop-up window closes. Click **“Next”**.

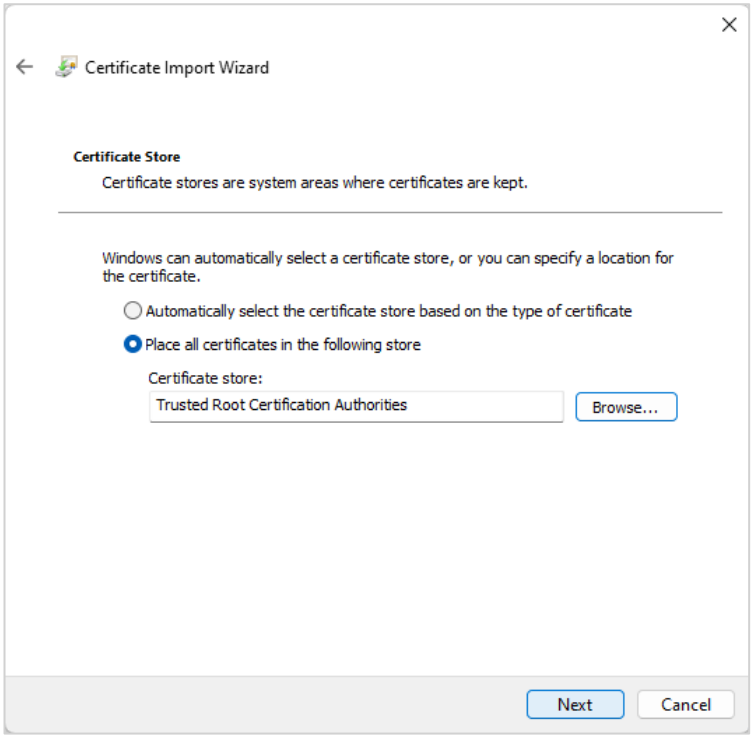


Figure 53. Certificate store acknowledgment.

Finally, click "**Finish**".

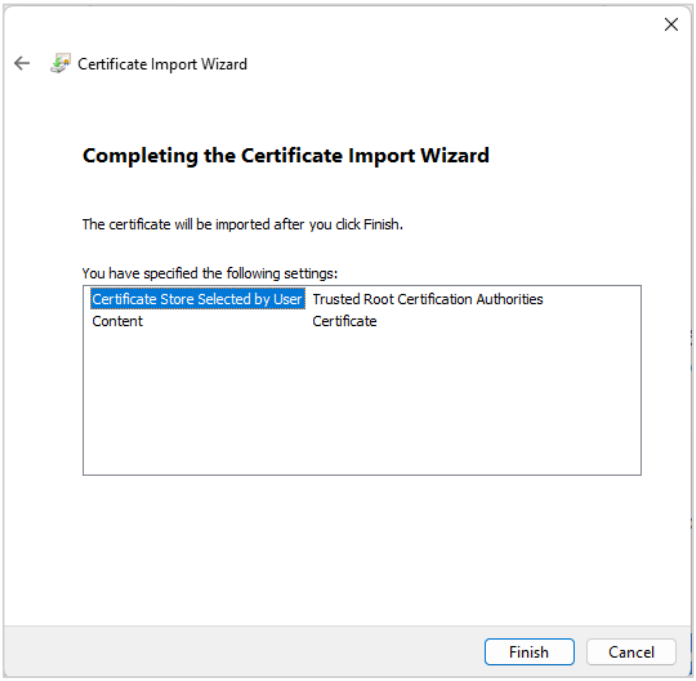


Figure 54. Completing the Install Certificates Wizard.

Confirm the installation by clicking "**Yes**".

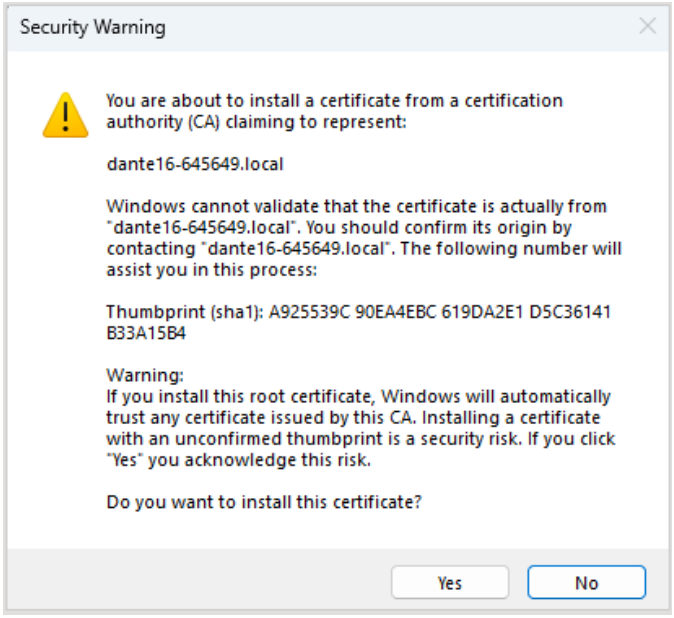


Figure 55. Safety warning when installing certificate.

If the process is completed correctly, a confirmation message is displayed.

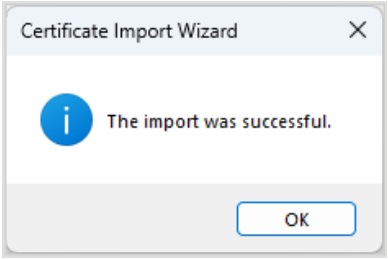


Figure 56. Certificate installation confirmation.

It is advisable to restart the web browser by closing all its windows. Once restarted, the security warning is no longer displayed when the web application is loaded again.

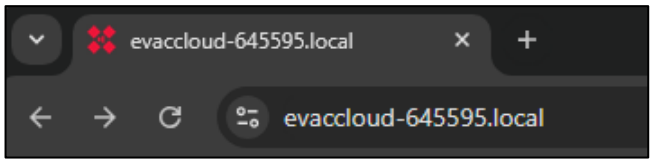


Figure 57. URL to access the website.

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