



# NI2CE Messenger

NATO Interoperable Instant Communication Environment Messenger

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## How To Guide

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**Version 07 May 2025**

Contact [@jeroen.franssen:matrix.ilab.zone](mailto:@jeroen.franssen:matrix.ilab.zone) if you have suggestions on new features or improvements

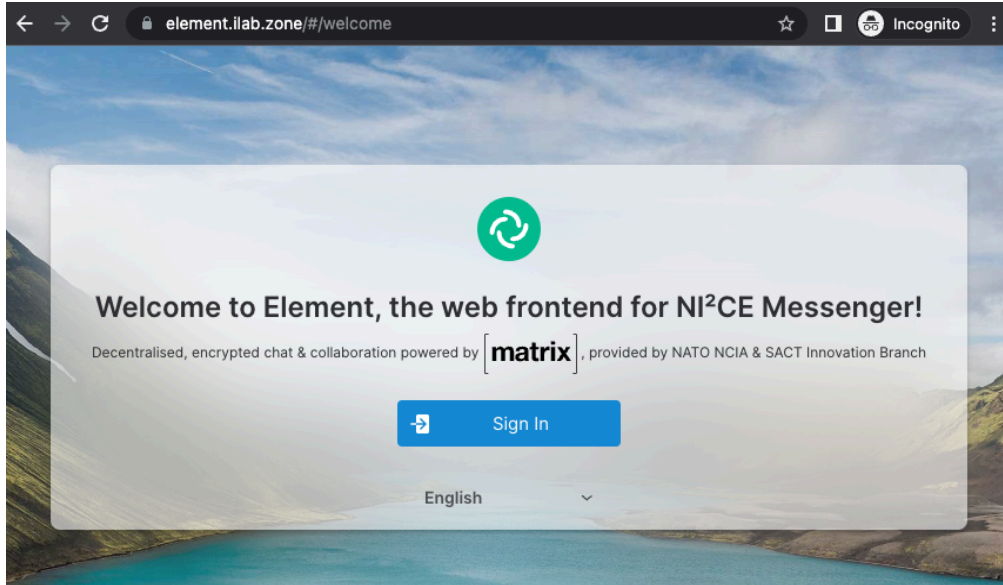
This short **How to Guide** explains the onboarding process for new users on the Matrix MVP hosted on the Innovation Hub infrastructure. For more information about this project, please see [Project Description](#).

### Step 1: Create your account

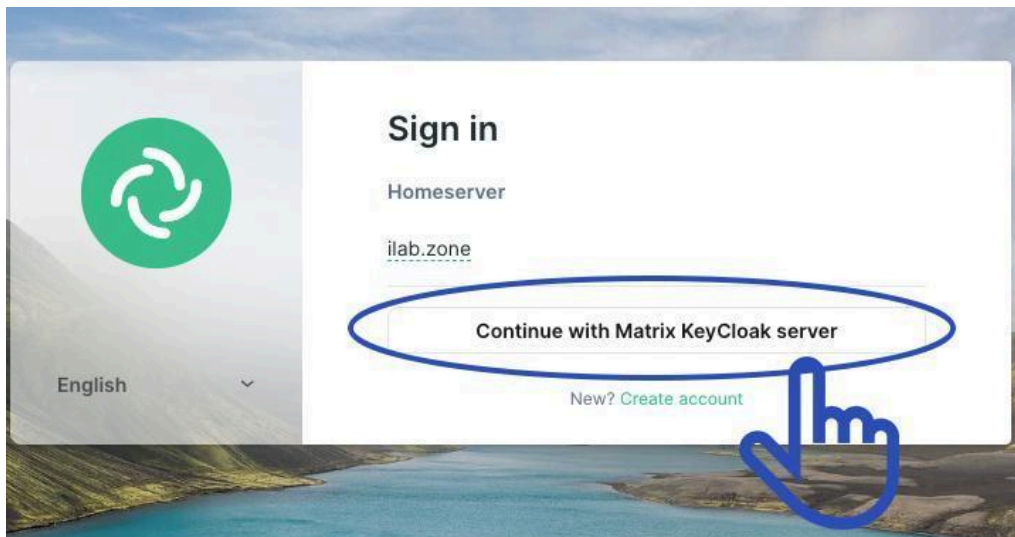
- Before you can start using your Matrix account, you need to register as a user. At the moment, everybody with the following email domain names can self-register:
  - [@innovationhub-act.org](mailto:@innovationhub-act.org)
  - [@\\*.nato.int](mailto:@*.nato.int) (so [act.nato.int](mailto:act.nato.int), [ncia.nato.int](mailto:ncia.nato.int), ...)
  - [@mil.be](mailto:@mil.be) (Belgium)
  - [@emfa.pt](mailto:@emfa.pt) (Portuguese Airforce)
  - Several COE's

Contact me or send a mail to [NI2CE@innovationhub-act.org](mailto:NI2CE@innovationhub-act.org) if you want your domain to be added

- Go to <https://element.ilab.zone> in the browser you prefer.  
*This doesn't have to be a NATO computer and you can use this service on the internet and on the NU network.*
- Click on "**Sign In**" (see picture below)



- Click on the "**Continue with KeyCloak server**" button. Keycloak is an authentication system that we use for all our MVP's.



- The KeyCloak page opens.

# MATRIX

## Sign in to your Matrix account

Username or email

Password

[Forgot Password?](#)

All content of this IHLC platform and its associated sub-systems are PROPRIETARY INFORMATION and remain the sole and exclusive property of the Innovation Hub Lab Capability. Only authorized personnel are allowed to access this platform. They are permitted to perform only authorized activities related to their roles and may not transcend the authorized limits. Disclosure of information found in this platform for any unauthorized use is \*STRICTLY PROHIBITED\*. All activities on this platform are monitored. Any misconduct on this system is subject to disciplinary action or can result in a legal action.

[Sign In To Matrix](#)

New user? [Register](#)

- Click on “**New user? Register**”
- The registration screen opens

# Register

\* Required fields

Username \*

Password \*

Confirm password \*

Email \*

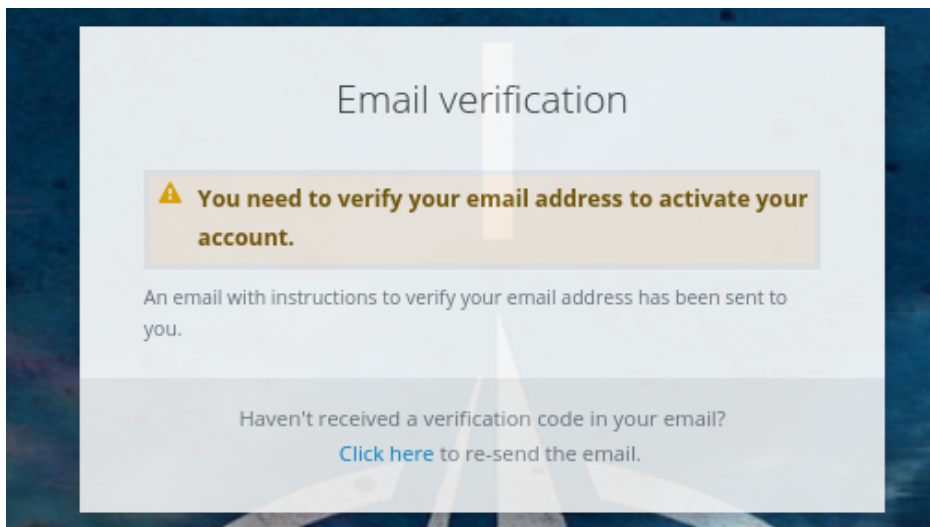
First name \*

Last name \*

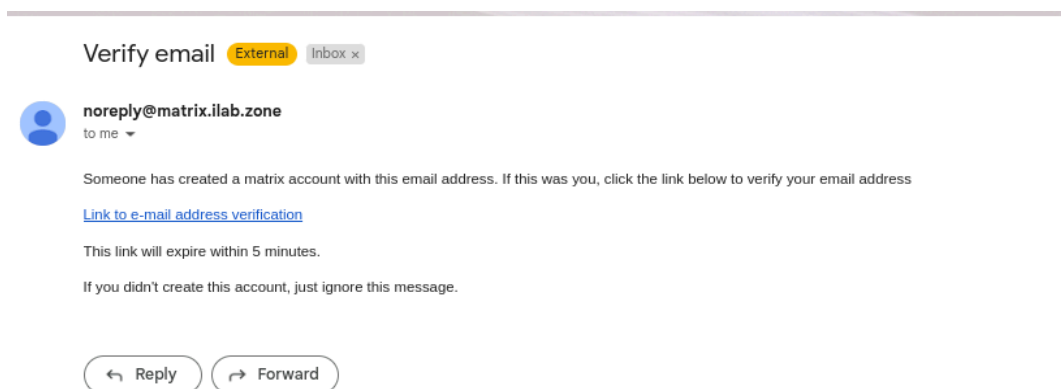
[Back to Login](#)

[Register](#)

- Fill in the fields. You can choose your own username. Be careful what you choose, usernames can not be changed afterwards. We suggest you use firstname.lastname but you are free to choose. **Don't use your email address as a username!**
- Click on the bottom on the "Register" link
- The system has created an account and requested you to verify your identity via the link sent to the email address you provided. This is necessary so Keycloak knows it can contact you there for password resets.

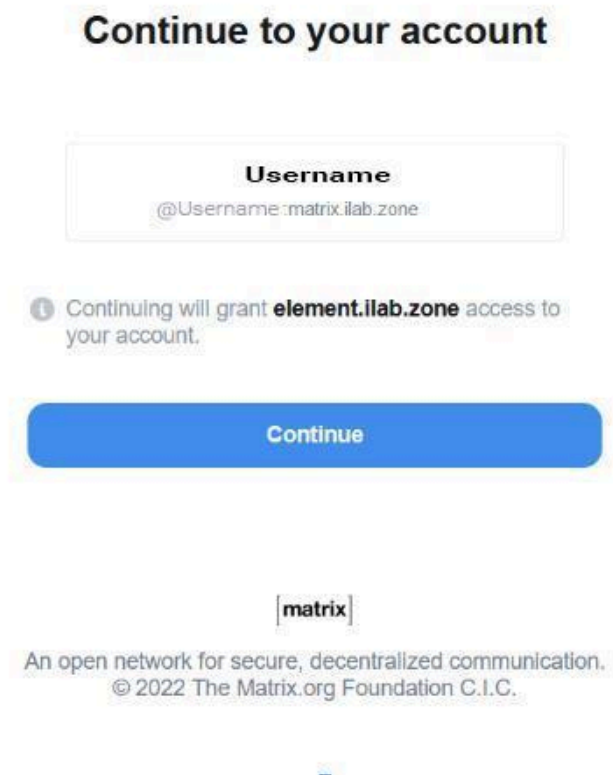


- **Important remark:** Please note your password or keep it in a password manager. Resetting will be done via the Keycloak portal.
- You will get an email with a link that needs to be clicked to verify your email address.

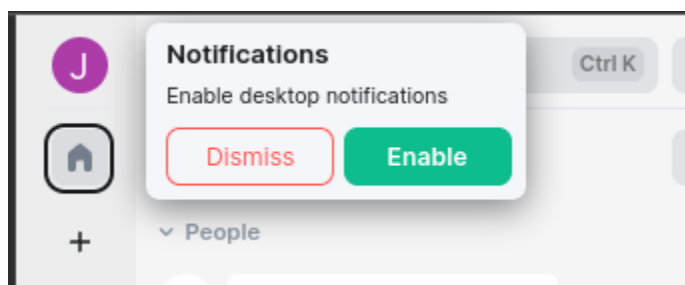


- Click on the link to finish the registration process.

- A web page will open that asks final confirmation to link Element and Keycloak:



- You should see Element open and get a pop-up to allow your browser to send you Element notifications. Enable them.



- Your account is now ready! You can connect with Android, iOS and other web browsers as much as you like, with the same security features..
- There is one additional step to do: backup your encryption key. It's important to recover encrypted information if you would lose access to your open sessions. It's very easy, see




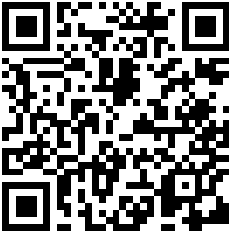
below for a step-by-step guide.

Make a backup of your encryption key and encryption password phrase in a safe place..

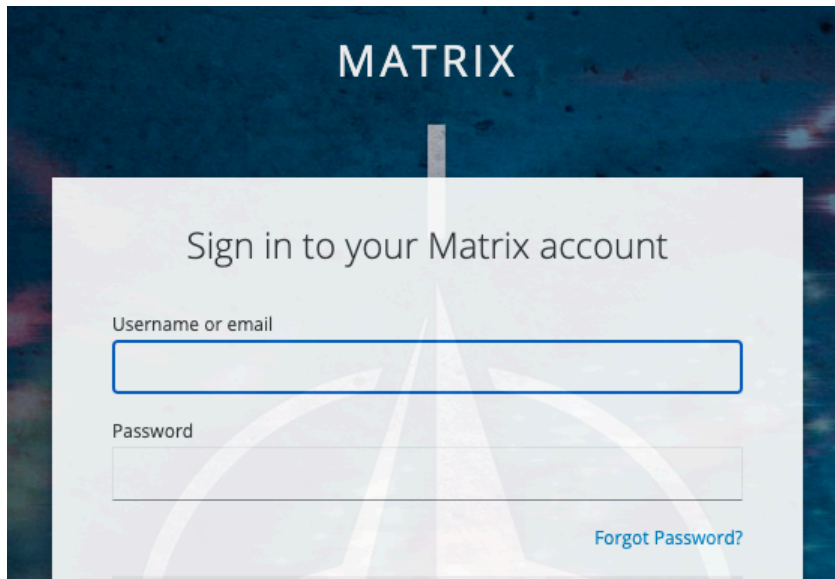
The web interface will alert you to do this.

## Step 2 : Login from a mobile device

- You can find the relevant links for desktop applications, mobile applications on this page:[Element secure messenger | Get started](#)
- We have NATO branded applications but you can also use other Matrix compatible applications (Matrix is interoperable by design).  
For installing the NI2CE Android & iOS store applications, you can scan these QR codes or look for NI2CE messenger

Android	iOS
	
	

- **IMPORTANT if you use another application then NI2CE Messenger**
  - For mobile devices or desktop applications, you'll have to use the "Custom server" option to select our NI<sup>2</sup>CE Messenger server instead of the commonly used matrix.org. Click on Edit and change the server!
  - Use this server:<https://matrix.ilab.zone>.
- When you try to sign-in in the app, NI2CE Messenger will redirect you (again) for login.
- Click on **"Sign in to Matrix"**



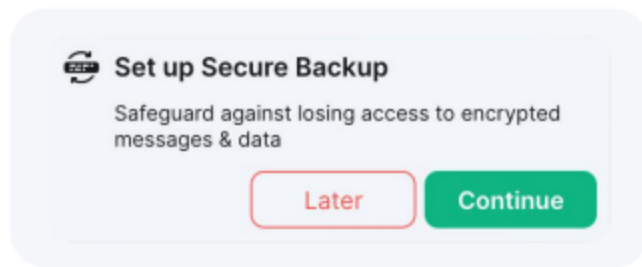
- NI2CE Messenger will detect that you already have an open session and will ask you to verify the new login from your existing session.
- You can do this by clicking on the notification and then use the QR code scanner or compare the emoji. This will allow your Element sessions to remain secure and verify that there is nobody listening to your conversations.
- When you have verified your sessions, encryption keys are distributed automatically and securely you can chat in encrypted mode in all your NI<sup>2</sup>CE messenger sessions.

## Backup your encryption keys

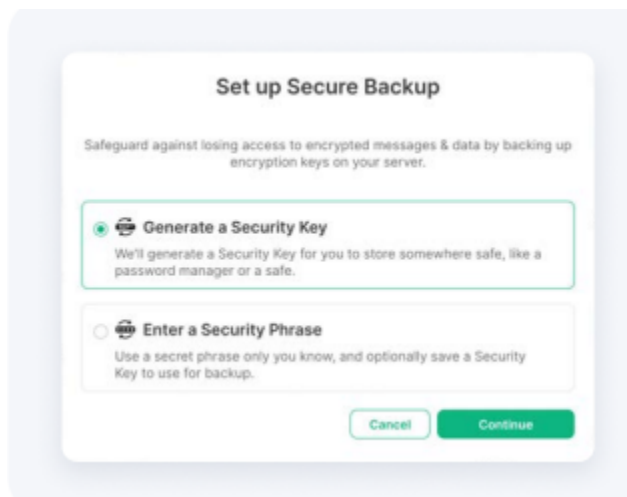
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From the Element manual:

- Secure backup is an important safeguarding step to take, to ensure you never lose access to your encrypted messages and data.
- When setting up your account, a message will appear which prompts you to do so. If you missed the prompt you can set this up from within your security and privacy settings



- Click continue to start this process.
- Choose a memorable security passphrase or security key (for file store).



- This will create an encrypted backup on your server that only you can decrypt.
- The next time you login on a new device or session, simply enter the passphrase or key to verify your session and you'll have access to all of your data.



## Threads

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Element can use threads to better distinguish between different conversations in a room. This feature is for the moment in Beta but it's very mature. You can activate it by going to the Settings menu, clicking on Labs and enabling the Threads feature.

## Categorization of contacts & groups

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You can organize your contacts & groups in a variety of ways.

There is a possibility to favorite or put as low priority and to sort by recent activity or by alphabetical order A-Z.

- Do this by clicking on the three dots button besides groups/favorites/groups



There is also the feature to create Spaces (left column) and add contacts and/or groups from

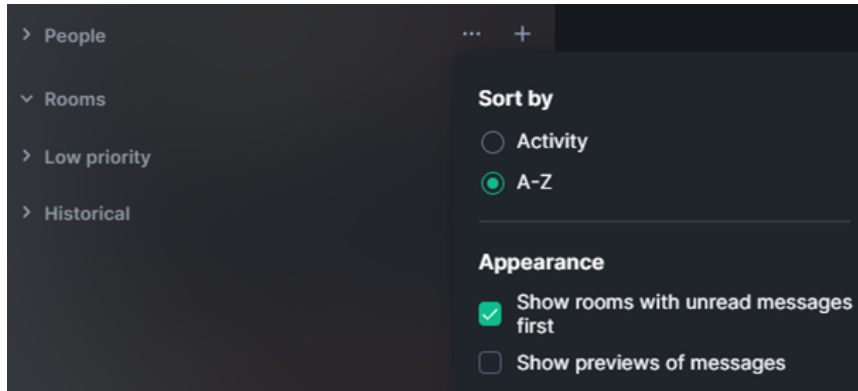
Home to specific spaces. Once groups move there, the contacts (“People”) will remain visible in both the home & the space you created.

## End to end encryption

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End to end encryption means that your information is encrypted and only readable at the endpoints of the communication link. The transferred data and database content is encrypted and unreadable for somebody who doesn't have your encryption keys.

Matrix uses two layers of protection: the transfer is protected by HTTPS (same technology as your bank website etc.) and the e2ee capabilities is the second layer.

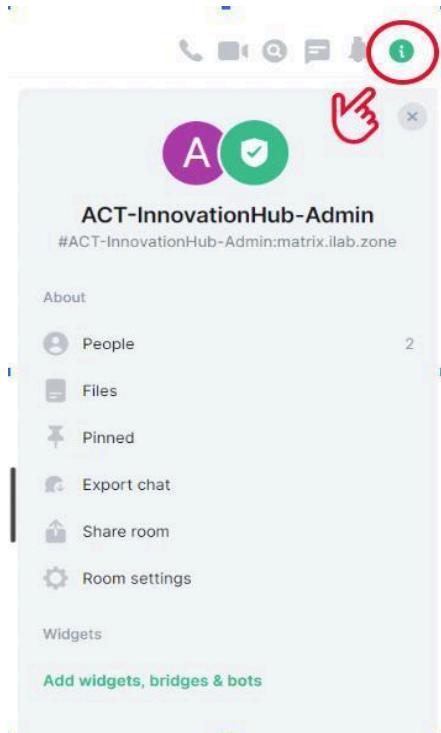


## Enable in room

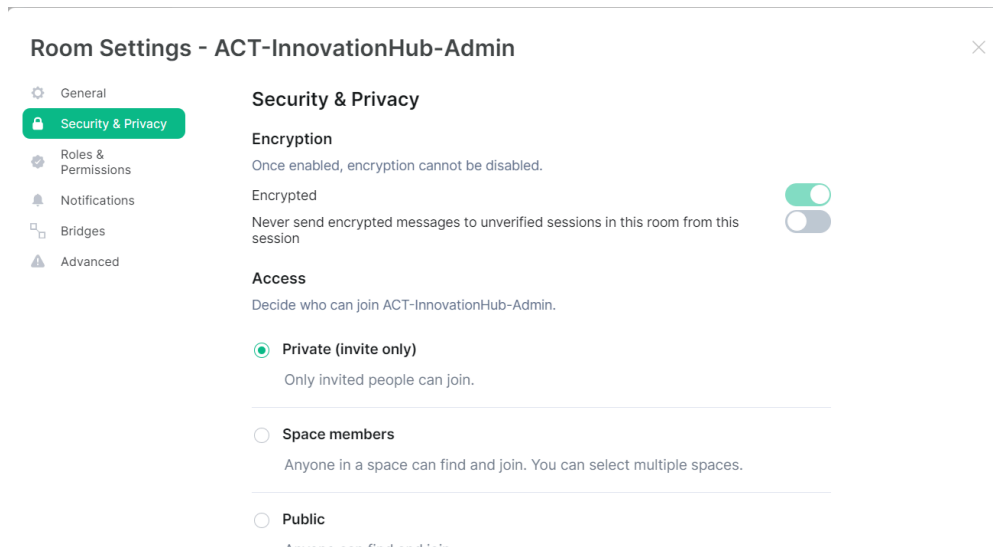
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Make sure that your room is encrypted!

Check this by clicking on the room name or the Information icon.



Click on Settings in the option menu and then select Security & Privacy:



Make sure that the Encryption switch is activated.

**Remark:** It's NOT necessary to activate the second toggle (never send encrypted...) as this will disable communication between devices that have not been verified. This is an additional security feature but doesn't impact the encryption as such and will block you from communicating with unverified other sessions.

## Verify devices

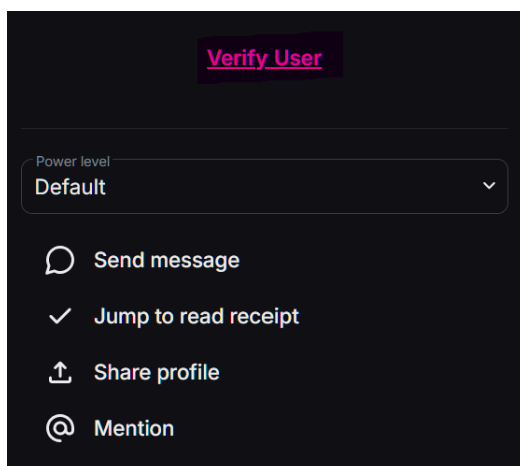
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- You can check for all your logins (or devices) that they are part of your verification chain.
- Do this by opening the settings menu and then open the Security & Privacy tab.
- Here you can see all your sessions. If the shield is green, you are good to go. For black or red sessions, you need to verify the device by selecting it and clicking on verify
- If you no longer want some device to be active, you can force a sign out by selecting the device and clicking on “Sign out”.

## Verify users

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- You can verify users to make sure that there is no man-in-the-middle ongoing. You can do this by clicking the Room Info button (top right corner in Element Web) and then clicking on People.
- Then click on the person's name and you'll see the sessions he's using. You can also launch the verification process by clicking on Verify User and then start this verification process (follows steps identified screen).



# Help

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Please review the user guide at <https://static.element.io/pdfs/element-user-guide.pdf> for a quick introduction on using Element the best way possible. Interesting sections on how to create Spaces & groups.

## Advanced users

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### Install Element as PWA (progressive web application)

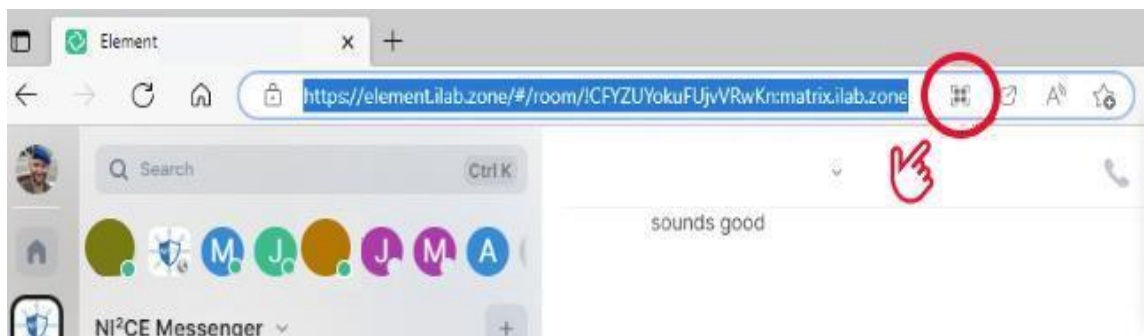


You can install Element on computers with Chrome based browsers, such as Edge, as a progressive web application, also on our NATO UNCLASSIFIED browser.

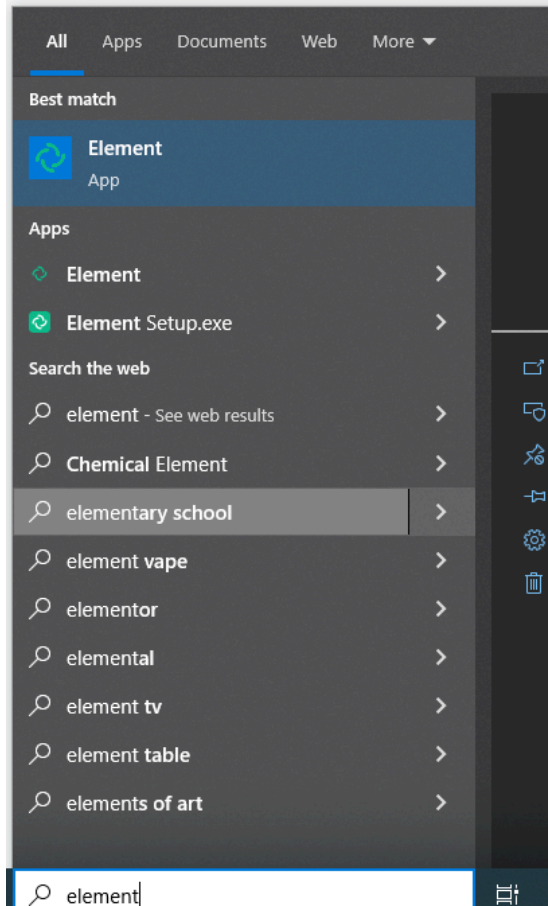
This way it behaves itself like a native windows application, without the need to install anything on your computer.

It's easy to do this with one click:


- Open NI<sup>2</sup>CE Messenger on <https://element.ilab.zone>
- In the address bar, you will see this icon:



- Click on it. It will install Element with a separate icon that you can access in the start menu:



- Right click on the Element icon in the taskbar to pin it there for easier access.

 **iOS** You can install Element on computers with Chrome based browsers, such as Edge, as a progressive web application in the same way.

- Open NI<sup>2</sup>CE Messenger on <https://element.ilab.zone>
- In the address bar, you will see this icon: 
- Click on it. It will install Element with a separate icon that you can access in the Dock.

## Bridges (experimental)

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NI2CE can operate with other networks such as WhatsApp & Signal. This is done with a service that is called a bridge.

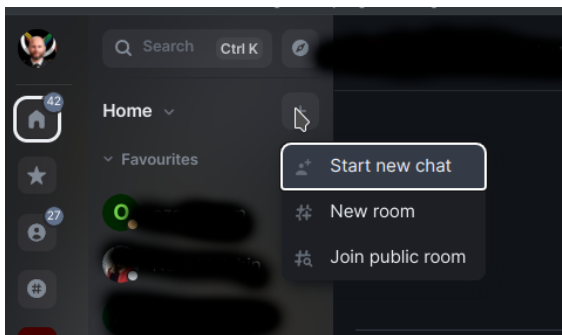
These bridges will be included in the NI2CE hosting in the future but for now, they run in separate servers as we try to confirm our assumption that this is a requirement for users. The bridges have “best effort” support and might have temporary downtime at different periods.

### Signal

The Signal bridge allows E2EE bridging between Signal and NI2CE. All instant communication features work. Voice & video calling don't.

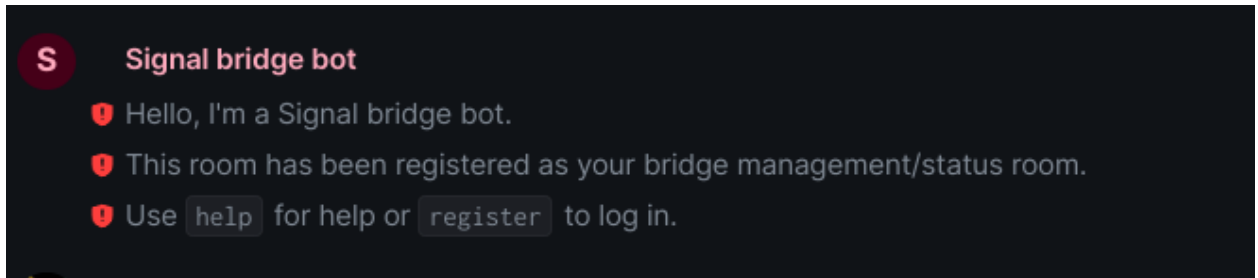
Follow these steps to connect your NI2CE account to Signal. You need a working Signal account to use this and your phone needs to be connected and available to link NI2CE with Signal. This only needs to be done once and can be done from any of the NI2CE sessions you are using.

- Login to NI2CE
- Start a chat with the bot.



- The bot is called @signalbot:defencegeeks.net
- NI2CE will create a room, invite you and the bot to the room.
- Start a conversation with the bot by typing help

- The bot will reply:



- Start the connection process by typing login
- The bot will ask you to link your NI2CE session with Signal with the QR code.
- Open Signal, settings and go to linked devices. Add a device and scan the QR code in NI2CE.
- You need to be fast! For security reasons, the code is shown only briefly. If you were too slow, try again with login in the Signal bot room

## Update email address

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The following procedure will identify how to update your email address if for any reason you move to different email accounts and want to keep your existing messages.

### Important Note:

If you have moved to / connecting from a new PC or domain then it is possible that the new domain could be:

- Blocked by your organisation
- Domain not whitelisted on “our side” within the NI2CE platform

Therefore, the recommendation is that you should initially contact us providing the details of the domain where you are connecting from. We can then check this is currently allowed and make the necessary changes from our side to allow you to connect to NI2CE messenger (if required). We then recommend that you check with your local IT support team to make sure traffic is allowed to flow between the two domains. (**see Step 1 above for more details**)

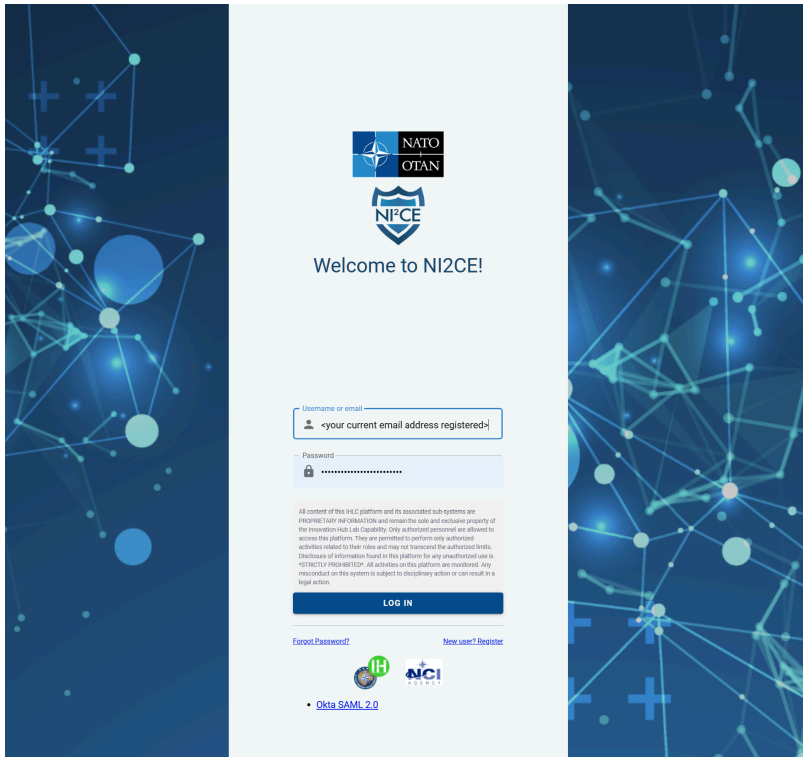


Following are the steps to update the email (assuming the above is all in place):

**Step 1 – Go to the following address from your browser:**

- <https://matrix-iam.ilab.zone/auth/realms/matrix/account>

## Step 2 – Login with your existing credentials (user / password ):



The login page features a central white panel on a dark blue background with a network diagram. At the top are the NATO and NI2CE logos, followed by the text "Welcome to NI2CE!". Below this is a login form with two fields: "Username or email" containing the placeholder "<your current email address registered>" and "Password" with masked characters. A "LOG IN" button is positioned below the fields. A small disclaimer text is located between the password field and the login button. At the bottom of the panel are links for "Forgot Password?", "New user? Register", and "Okta SAML 2.0".

Username or email  
<your current email address registered>

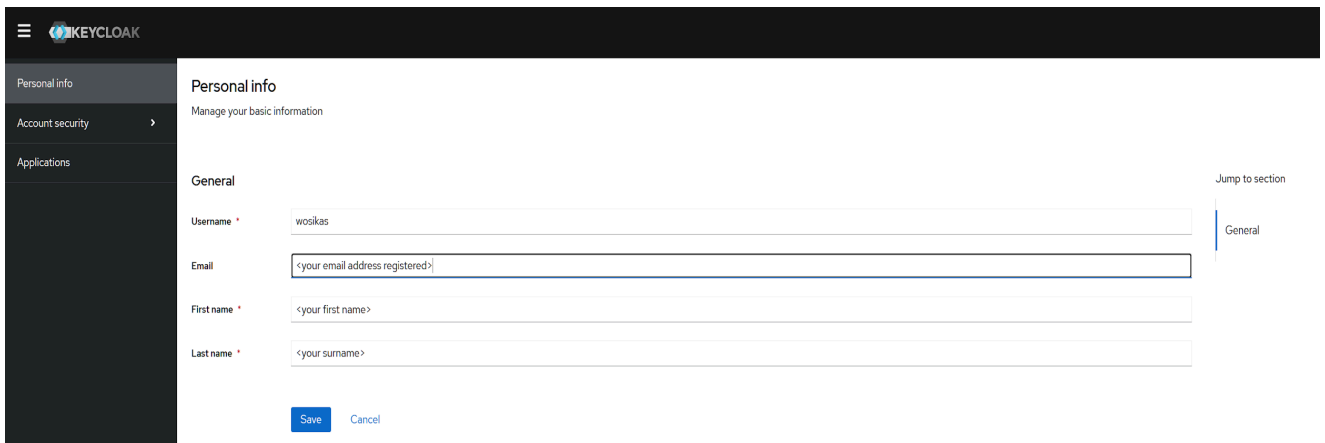
Password  
\*\*\*\*\*

LOG IN

[Forgot Password?](#) [New user? Register](#)

[Okta SAML 2.0](#)

## Step 3 – Update the existing email and click on save



The Keycloak interface shows a sidebar with "Personal info", "Account security", and "Applications". The main area is titled "Personal info" with the subtitle "Manage your basic information". Under the "General" section, there are four input fields: "Username" (filled with "wosikas"), "Email" (with placeholder "<your email address registered>"), "First name" (with placeholder "<your first name>"), and "Last name" (with placeholder "<your surname>"). "Save" and "Cancel" buttons are at the bottom. A "Jump to section" dropdown on the right is set to "General".

Personal info  
Manage your basic information

General

Username \* wosikas

Email <your email address registered>

First name \* <your first name>

Last name \* <your surname>

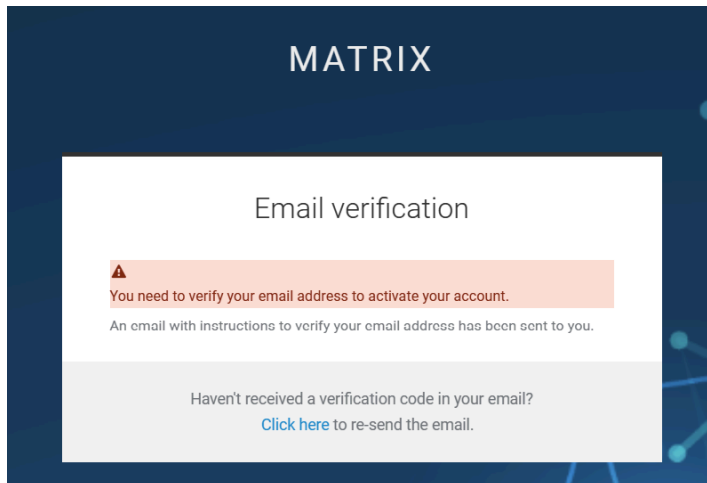
Save Cancel

Jump to section  
General

## Step 4 – Login again to NI2CE

## Step 5 – Verify your new email account

- You will now get the following message when you login.



- Check the mail you will have received in your “new” mail inbox and click on the link identified.



noreply@matrix.ilab.zone  
to me ▼

Someone has created a matrix account with this email address. If this was you, click the link below to verify your email address

[Link to e-mail address verification](#)

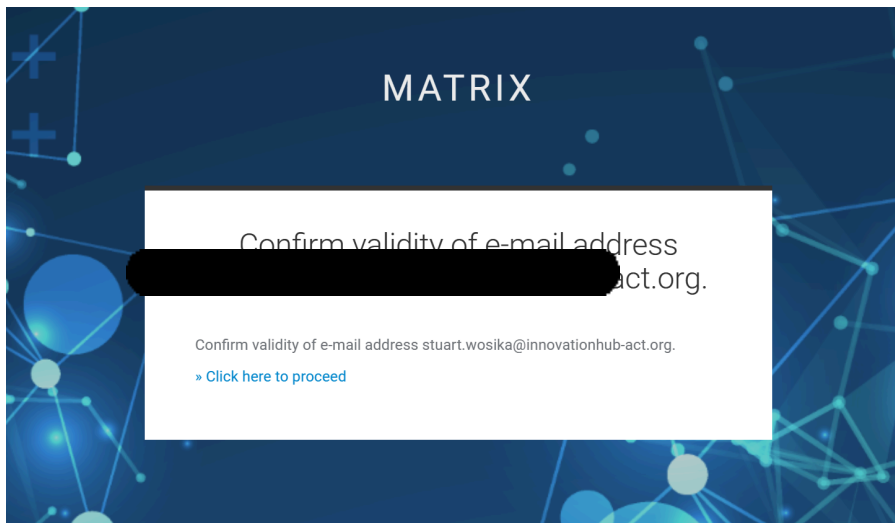
This link will expire within 5 minutes.

If you didn't create this account, just ignore this message.

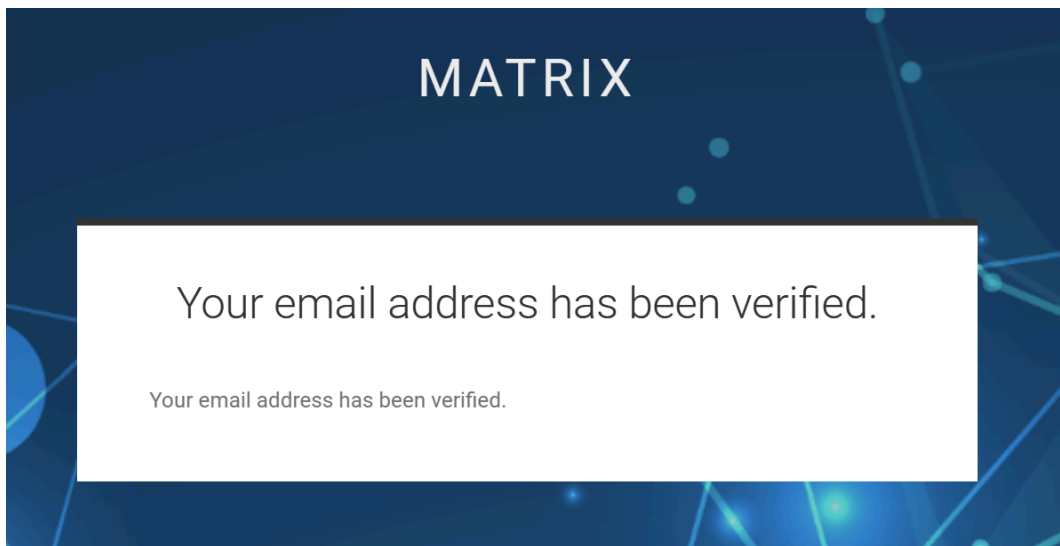
← Reply

→ Forward

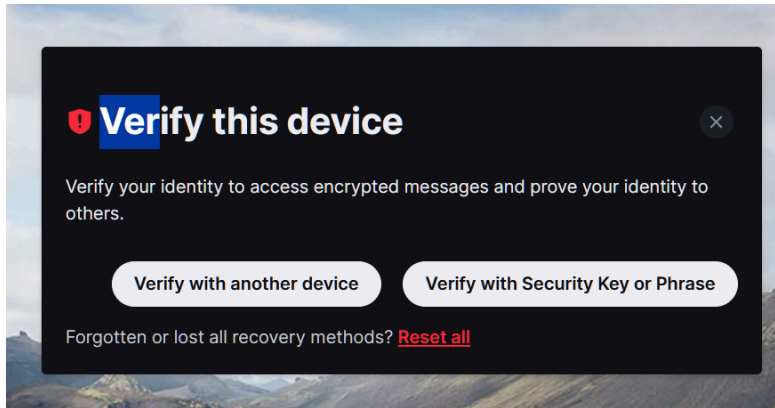
- Confirm validity of the new email address clicking on the link in the pop-up window.



- You should receive a message identifying that the email address has been verified.



- If you are connecting from a new device (PC) then you will probably now see another pop-up from NI2CE identifying that you need to verify this device. Choose the appropriate option and follow the steps.



- Everything should now be complete, and you should be logged in to NI2CE at <https://element.ilab.zone/> or via your mobile device. Note: You may find it takes a few minutes to decrypt some of your messages. This should resolve itself.

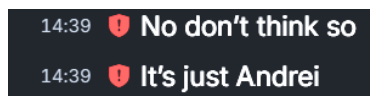
## Verify sessions

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A key element from a security perspective is to make sure that your conversations are secure and you are communicating with the person you think you are. This is to make sure that you are not being hit by a man in the middle attack for example.

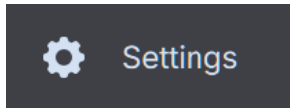
Unverified sessions show up with a red shield with an exclamation mark in the middle. These often occur when you change the device you are using to communicate via NI2CE (which could be mobile, laptop, pc or a different browser on the device).

Following shows an example of a session that is not verified:

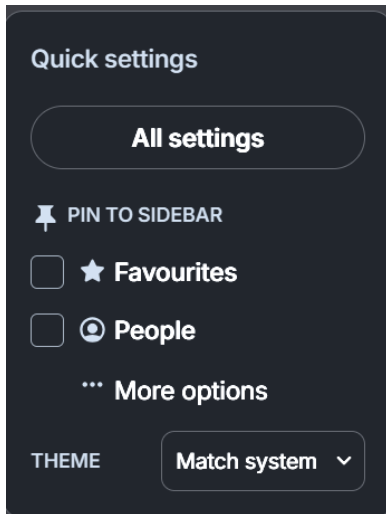


When you hover your mouse cursor over the symbol it will identify “**Encrypted by a device not verified by its user**”.

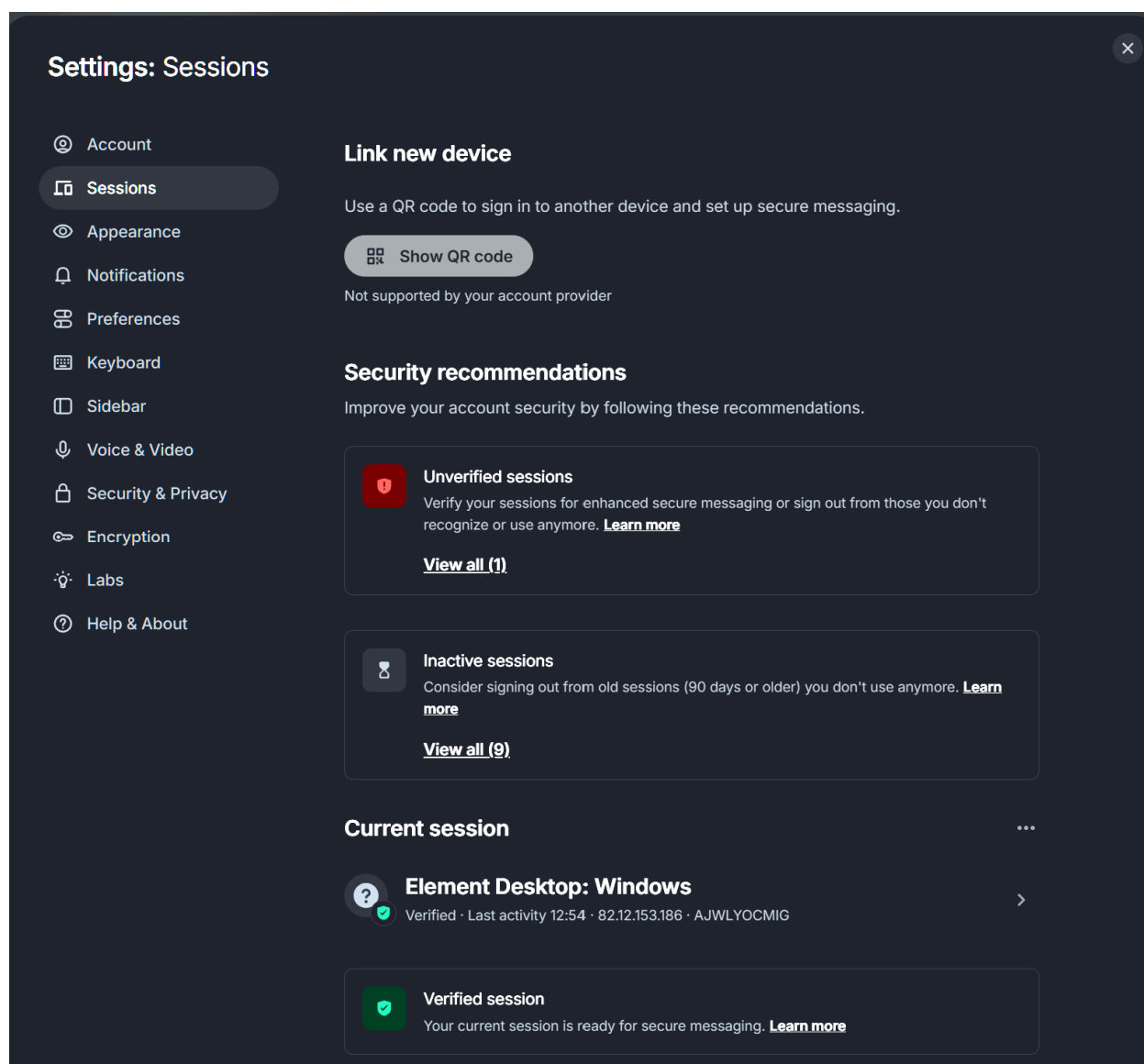
In this case go to settings in the bottom left-hand corner of your NI2CE window and click on the icon:



Then “**All settings**”:



Click on “Sessions” and you will see a screen similar to the following:



Go through the list of unverified sessions. More details can be found at the following link ::  
<https://ems-docs.element.io/books/element-support/page/sessions>

**NOTE:** If you are specifically in a session, you can instead follow the guidance “**Verify users**” highlighted on **Page 12** above to verify specific sessions.

More information in device linking in Signal:

<https://support.signal.org/hc/en-us/articles/360007320551-Linked-Devices>

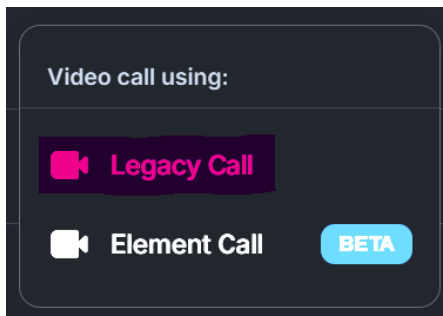
## How to share your screen with other people

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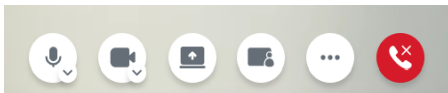
- Firstly, you need to make sure you are in a room talking to one or more people
- Initiate the video call (top right corner of main screen) and choose the first option highlighted below:



- Choose the “**Legacy**” option:



- Once you have initiated the call and others have accepted the call, the video call session will start. You will see on the screen the following icons. The one highlighted is the button to share your screen. Click on this and follow the steps identified. You will then start to share the contents of your desired screen.





## Interesting NI2CE Rooms to Join

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- **Help:** #help:matrix.ilab.zone
- **Feedback:** #requirements:matrix.ilab.zone