

M-Link User Server R19.4 Evaluation Guide

Using Isode's M-Link XMPP Server and Swift XMPP Client to set up an instant messaging system suitable for 1:1 and Multi-User chat.

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Introduction

This guide details the process for creating an instant messaging and multi-user chat system using Isode's M-Link User Server and Swift XMPP Client. The M-Link User Server is one of a family of XMPP products which comprises:

- M-Link User Server (XMPP Server)
- M-Link Edge (XMPP Boundary Guard)
- M-Link IRC Gateway (XMPP/IRC Gateway)
- M-Link Mobile Unit Gateway (XMPP Messaging for low-bandwidth and/or high-latency networks)
- Swift (multi-platform XMPP client)

M-Link products are widely deployed in the Government, Military, and Intelligence markets.

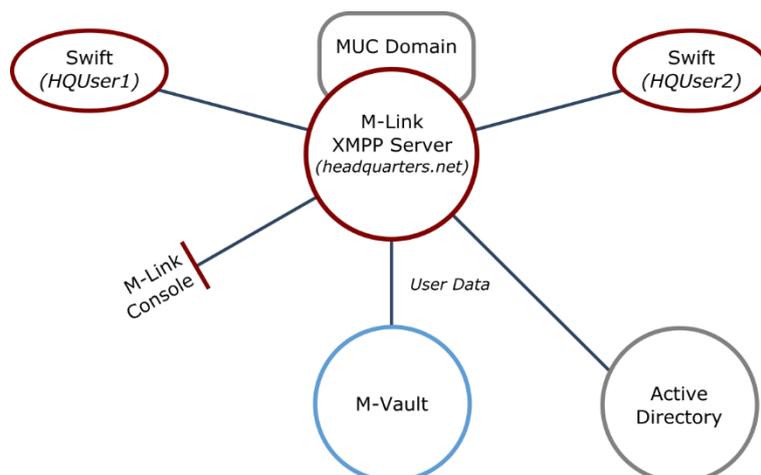
Use of TLS: Due to UK Export Controls we are unable to provide Evaluation Licenses to certain Geographic regions that would allow the use of TLS so this guide will not configure any TLS. Should you wish to use TLS please contact your Account Manager and if you are located in an approved region we can provide a license (MAC Address of Server required) and additional instructions for configuring TLS.

Objectives

By the end of this guide, you will have:

1. Created an XMPP server for 1:1 chat using either Isode's M-Vault Directory Server or Microsoft's Active Directory to hold user information. With or without TLS.
2. Set up a multi-user chat domain for the XMPP server and created a permanent multi-user chat (MUC) room.

The diagram which follows shows the main elements of the system.



For the purposes of this evaluation, we have assumed this is a "clean" installation of M-Link User Server on to a physical or virtual machine. If you have previously installed an M-Link product on the hardware or VM you are using for this evaluation, please make sure you have completely uninstalled that version before proceeding.

Using Isode Support

You will be given access to Isode support resources when carrying out your evaluation. Any queries you have during your evaluation should be sent to isode.support@isode.com. Please note that access to the Self-Service Portal for web-based ticket submission and tracking is not available to evaluators.

Preparation

You should visit <https://www.isode.com/support/platform-support/> to discover which operating systems are supported for Isode evaluations. In addition to the server platforms listed, we support the use of Isode server products on Windows 10 for simple evaluations and demonstrations.

Isode supports the use of the latest versions of Google Chrome, Mozilla Firefox and Microsoft Edge browsers with the Harrier web client. Internet Explorer is not supported.

External Dependencies

You will need a Chrome Browser installed on the Server and set as the default browser.

Product Download

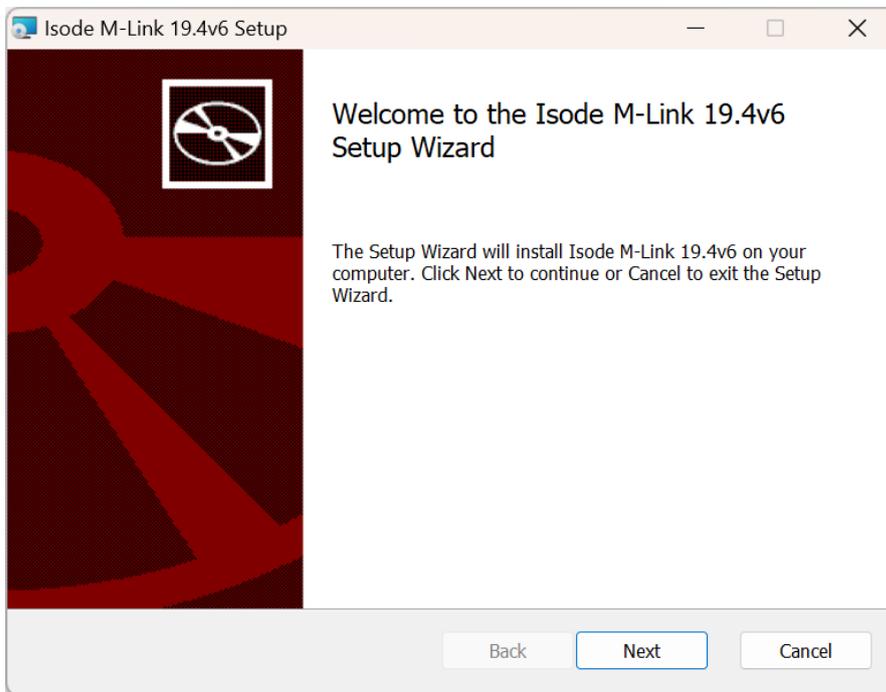
Product downloads are held in a password-protected section of the Isode website. If you have not already done so you should apply for a username/password by filling in the form located at <https://www.isode.com/evaluations/>.

Product Activation Key

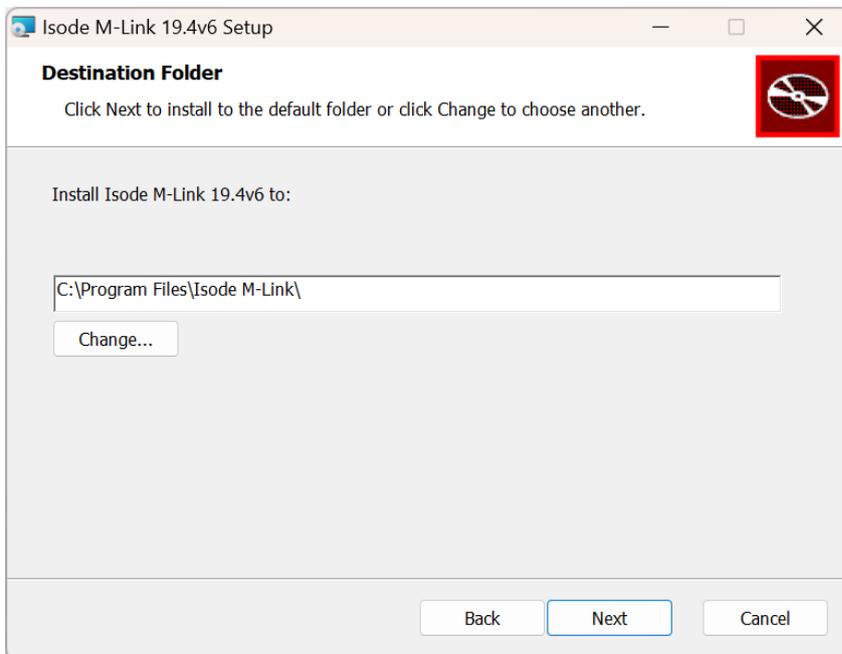
M-Link User Server R19.4 requires a valid Product Activation Key from Isode before it will run correctly. Keys are issued by Isode Customer Services. You will be shown in this guide how to copy and send the Product Activation Key request to isode.support@isode.com.

Installing M-Link User Server R19.4

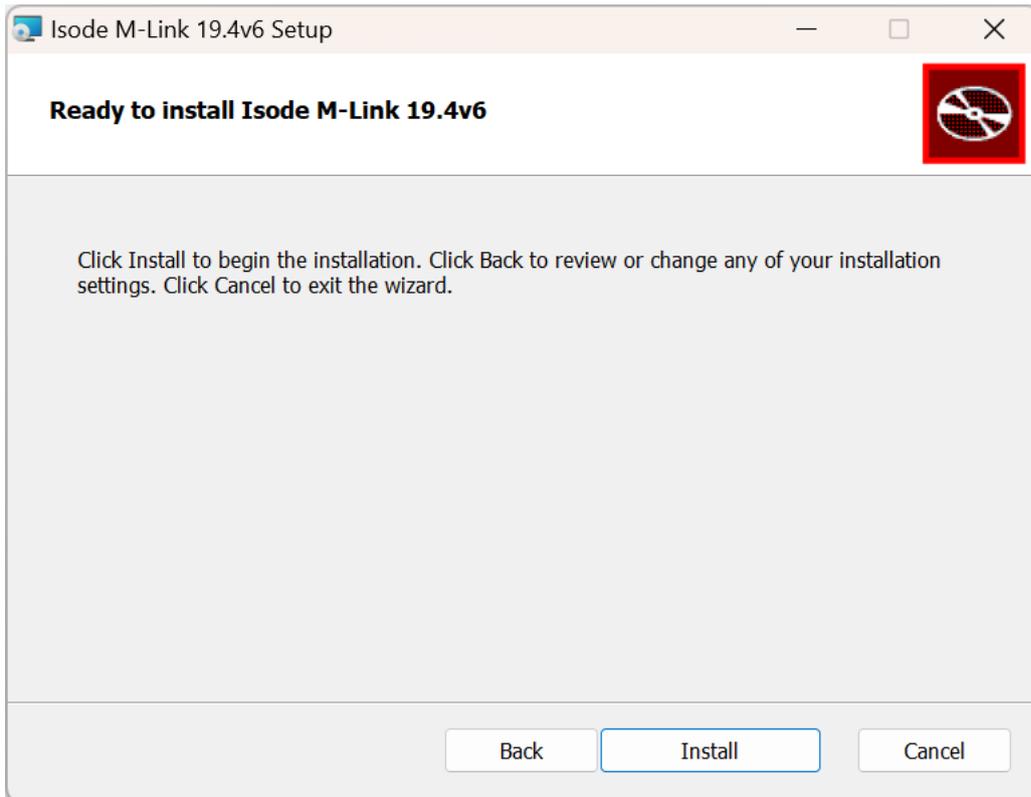
Double-click the .msi file that you downloaded earlier and follow the instructions for a fresh install.



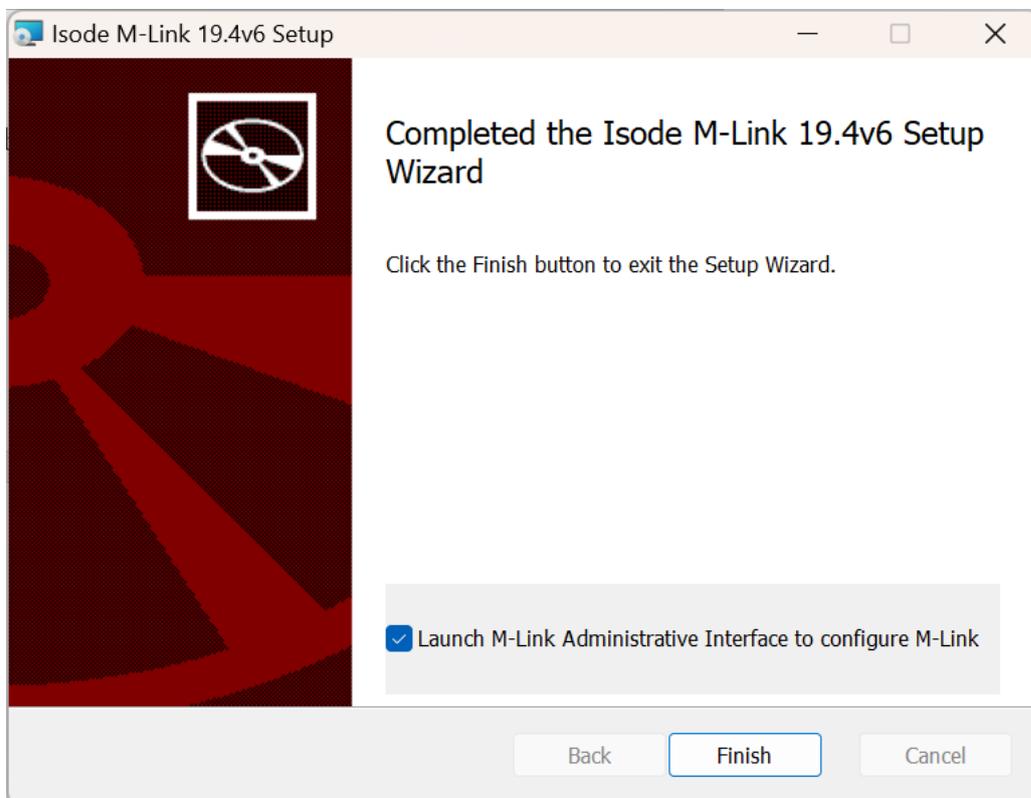
Click "Next"



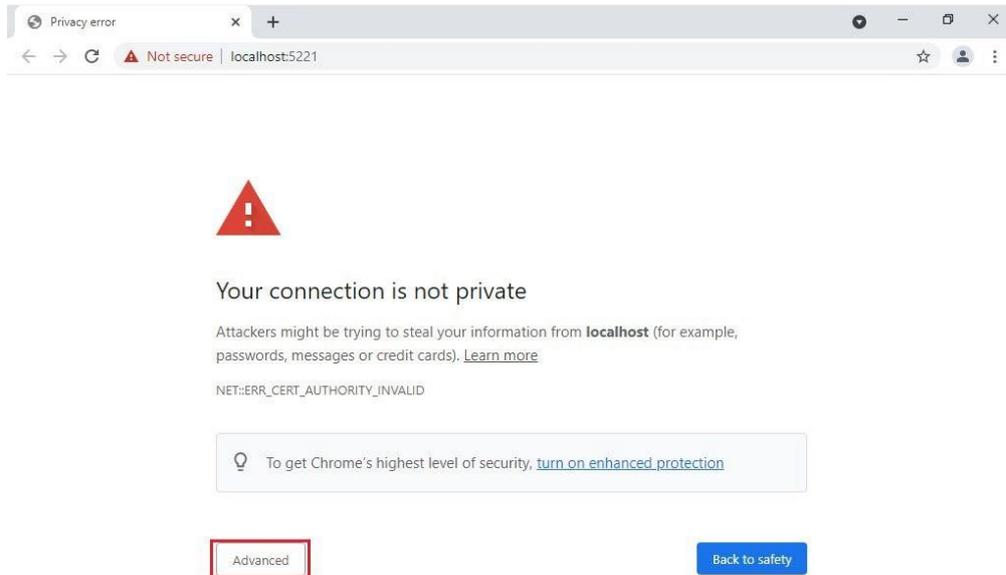
Check the checkbox to accept the terms of the license and click "Next".



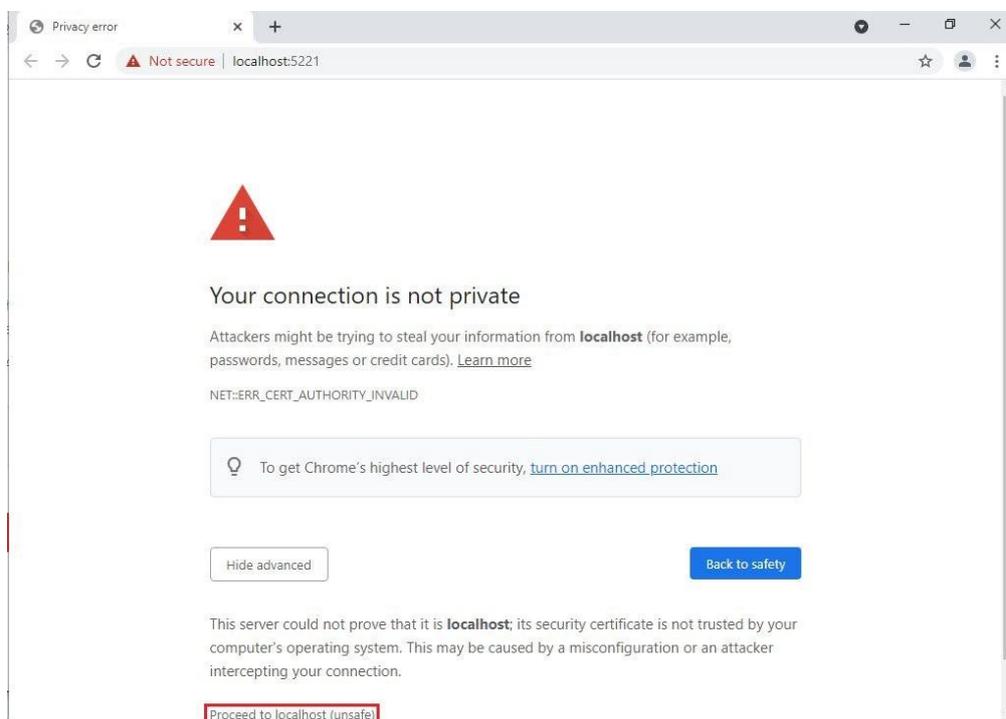
Click “Install”



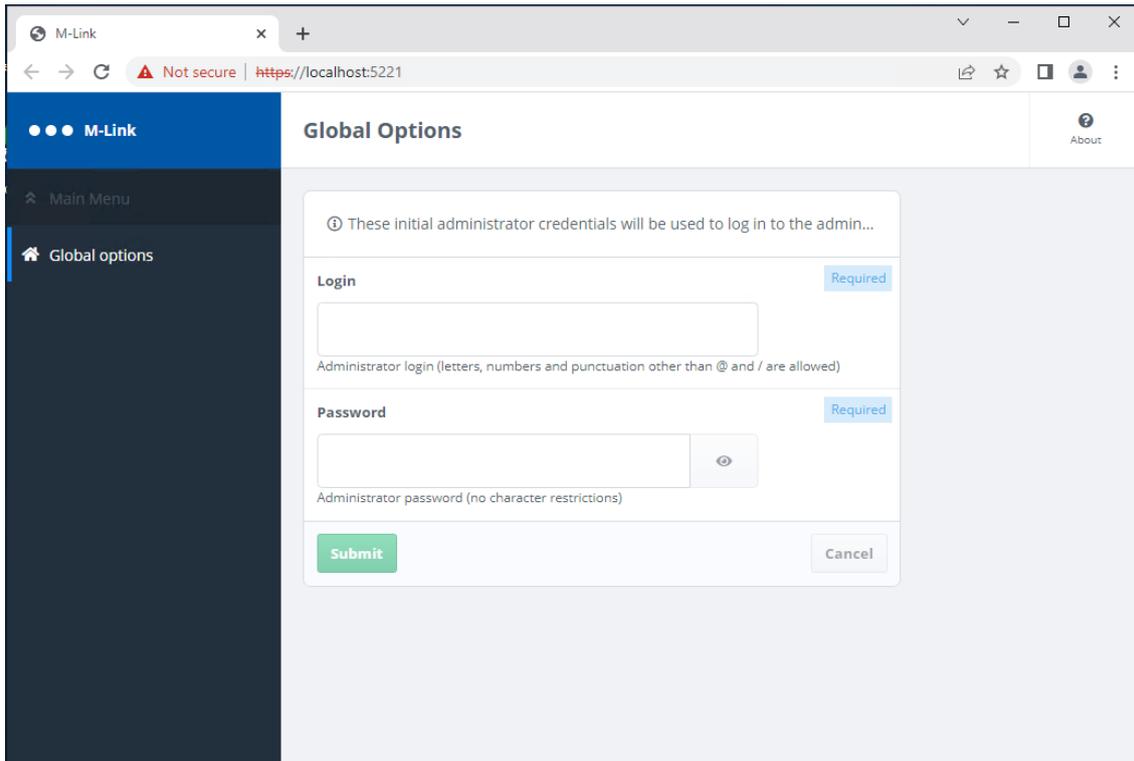
Click “Finish” and the following Browser window will open:



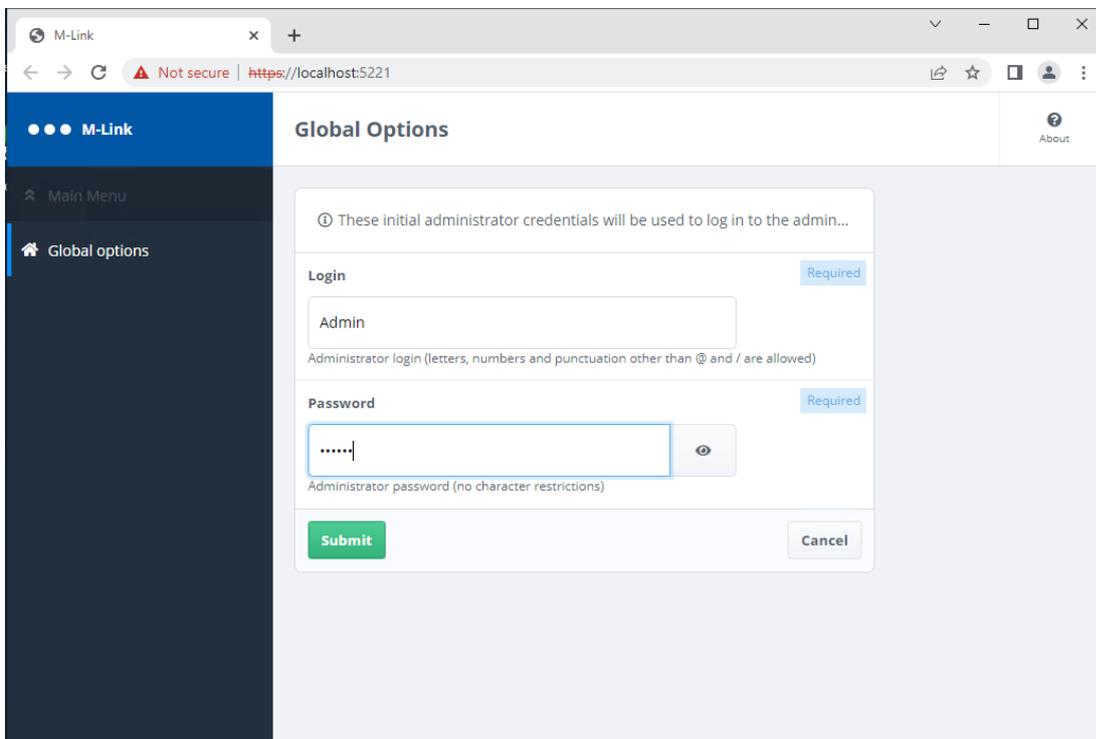
Click “Advanced”



Click “Proceed to localhost (unsafe)”

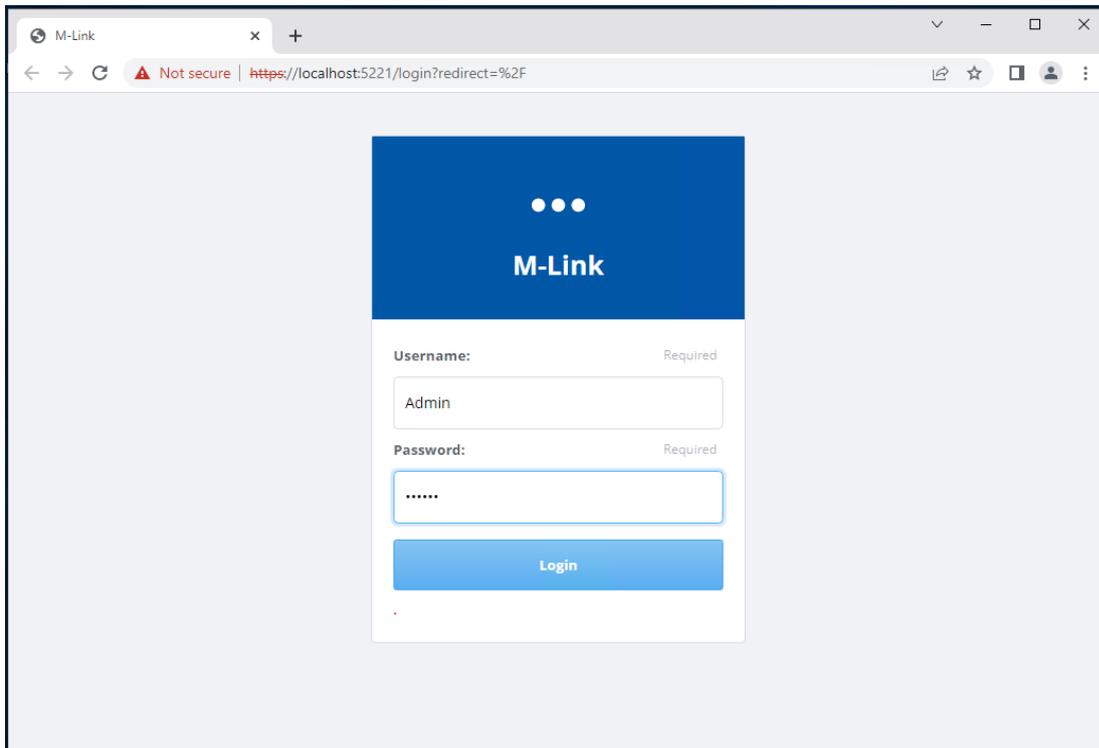


Enter an Administrator Login Name of your choice and set a password.

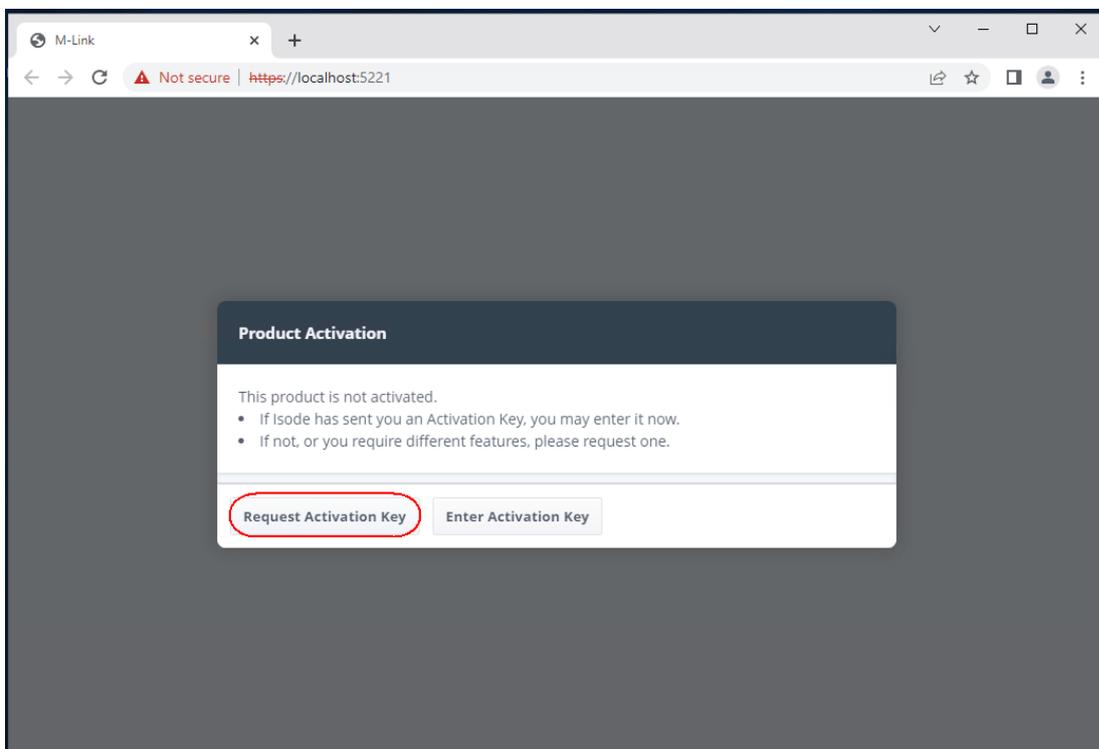


Click "Submit"

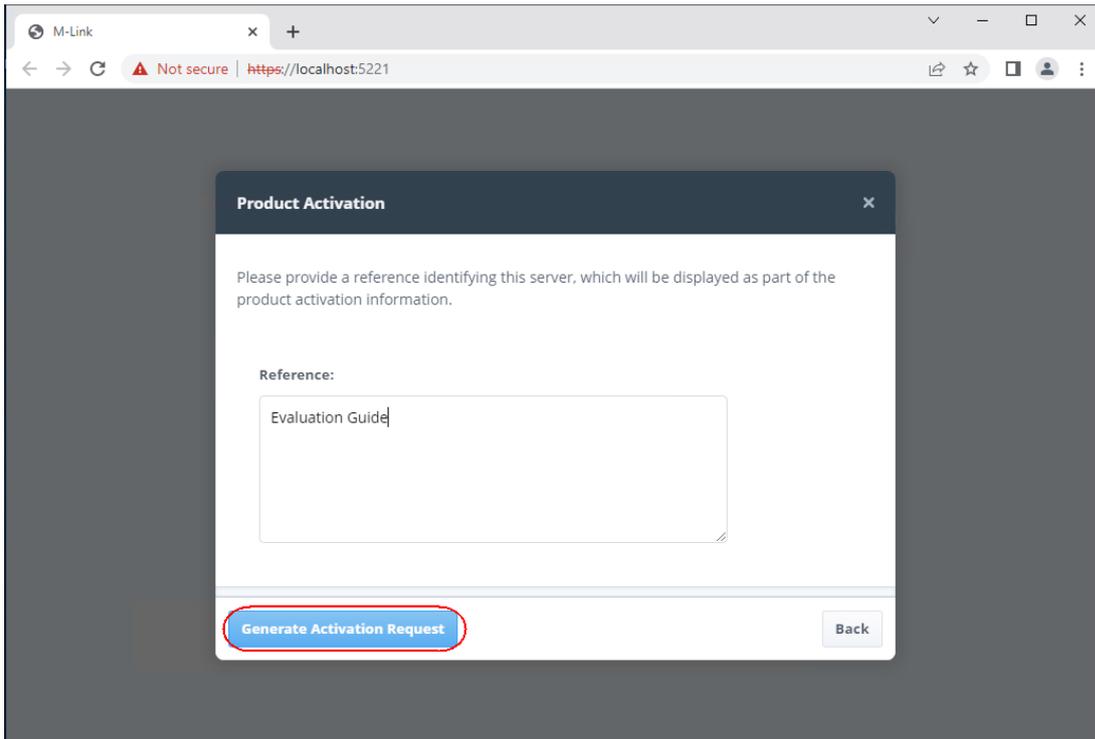
Enter the Administrator Login Name and Password you created previously. Click “Login”



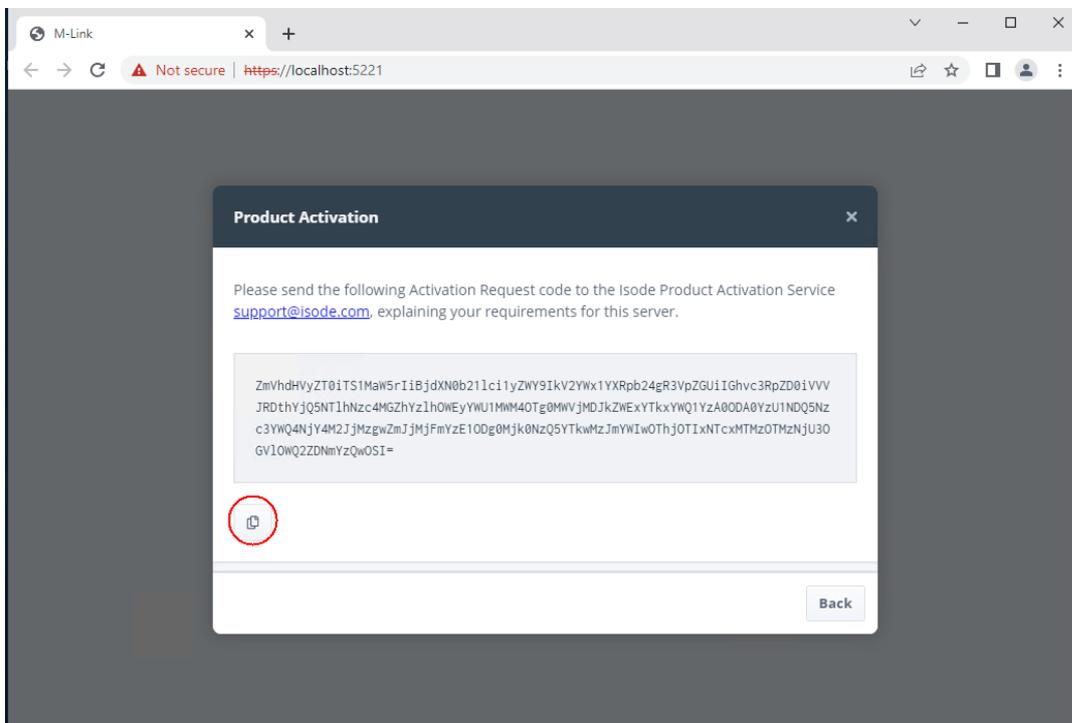
At the Product Activation screen click “Request Activation Key”



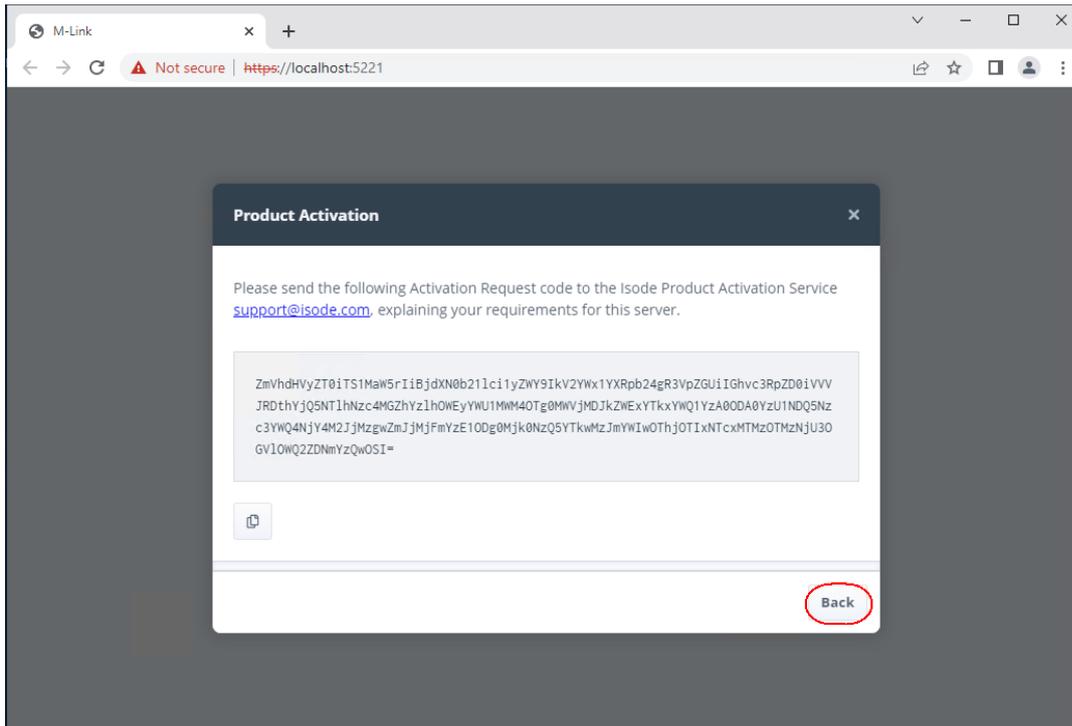
Enter a reference for your server, then click “Generate Activation Request”



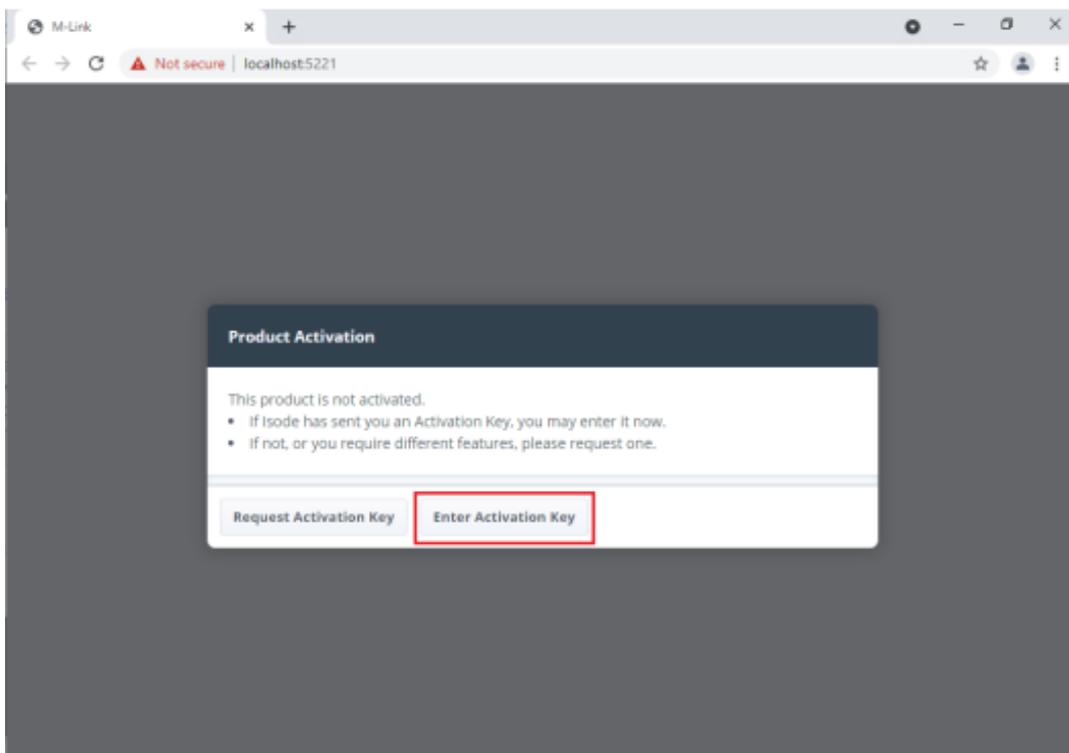
Use the “Copy” button (bottom left) to copy this “Activation Request” and then email it to support@isode.com



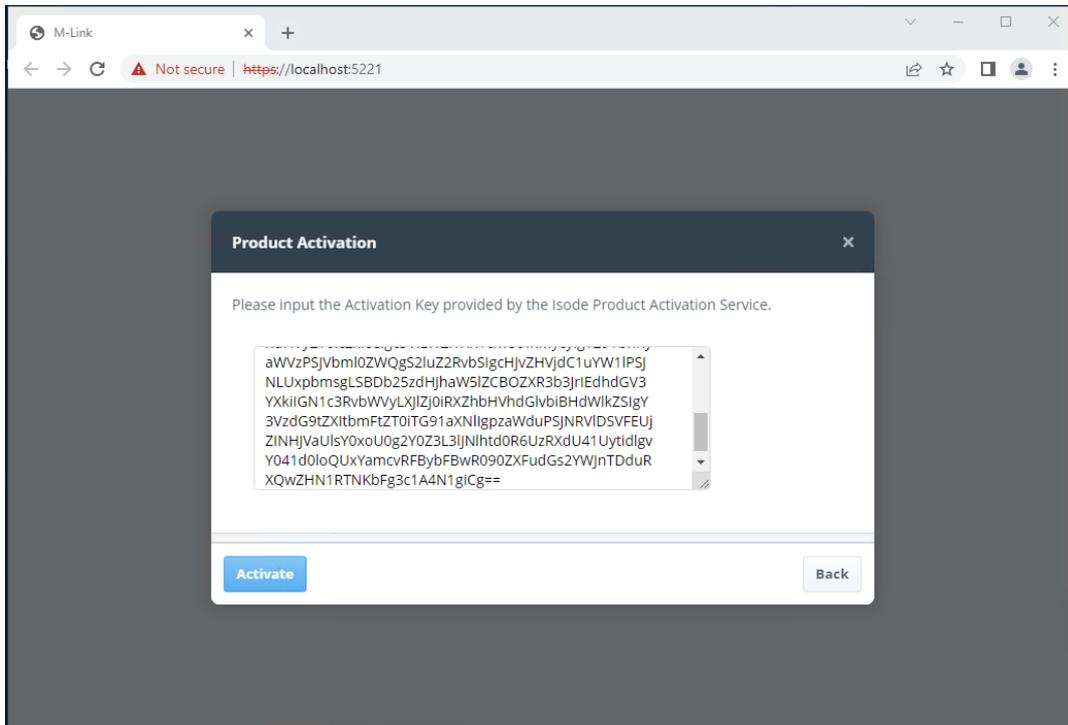
Click “Back”



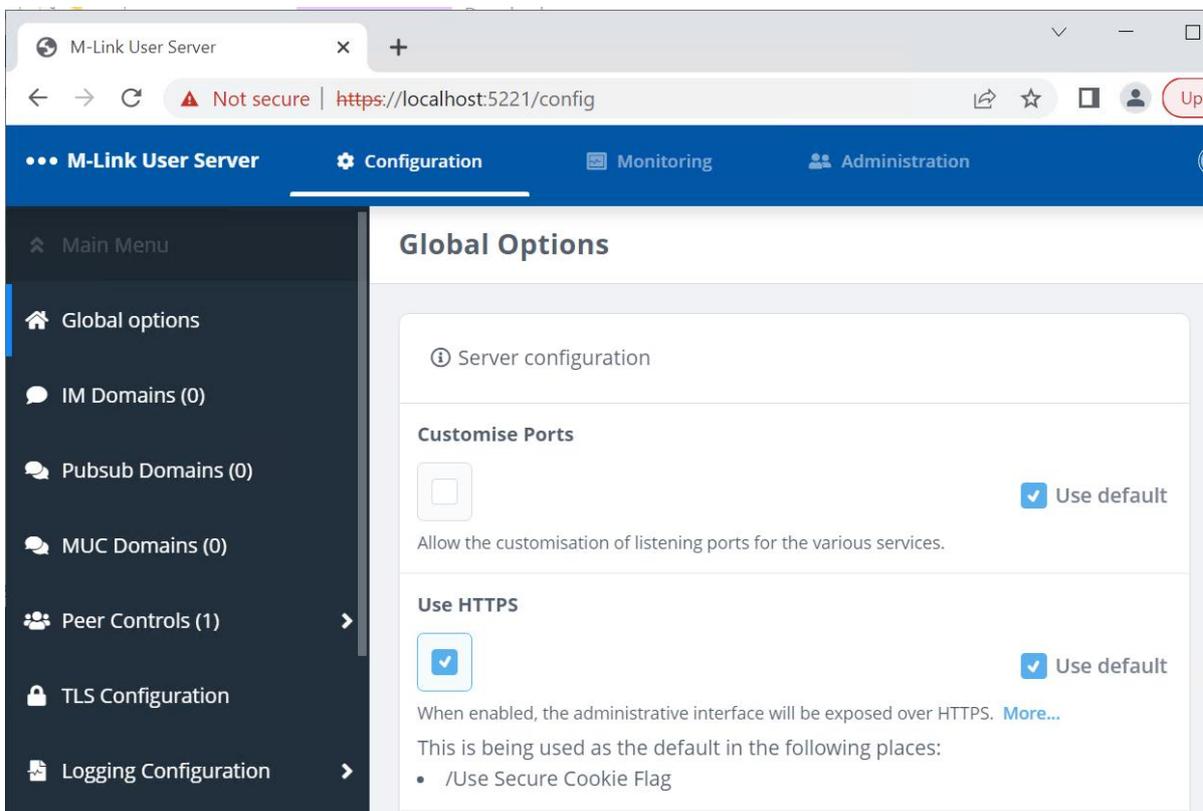
When you receive the “Product Activation Key” from Isode Support, you should then Click “Enter Activation Key”.



Paste the “Product Activation Key” in the space provided. Then click “Activate”



The following screen should appear. Your server is now ready for further configuration:



TLS Configuration (Optional)

Before you start this you will need the following.

- A Certificate Chain file in PEM format containing your Server Certificate, CA Certificate and any Intermediate CA Certificates.
- A Private Key file in PEM format (you must know the passphrase for the Private Key).
- As a Minimum the Certificate Subject should be the hostname of the server, e.g. cn=hostname and have a Subject Alternative Name of DNS Name=Hostname.
- The issuing CA Certificate should either be either a Globally Trusted Root CA or in the Trusted Root CA Store.

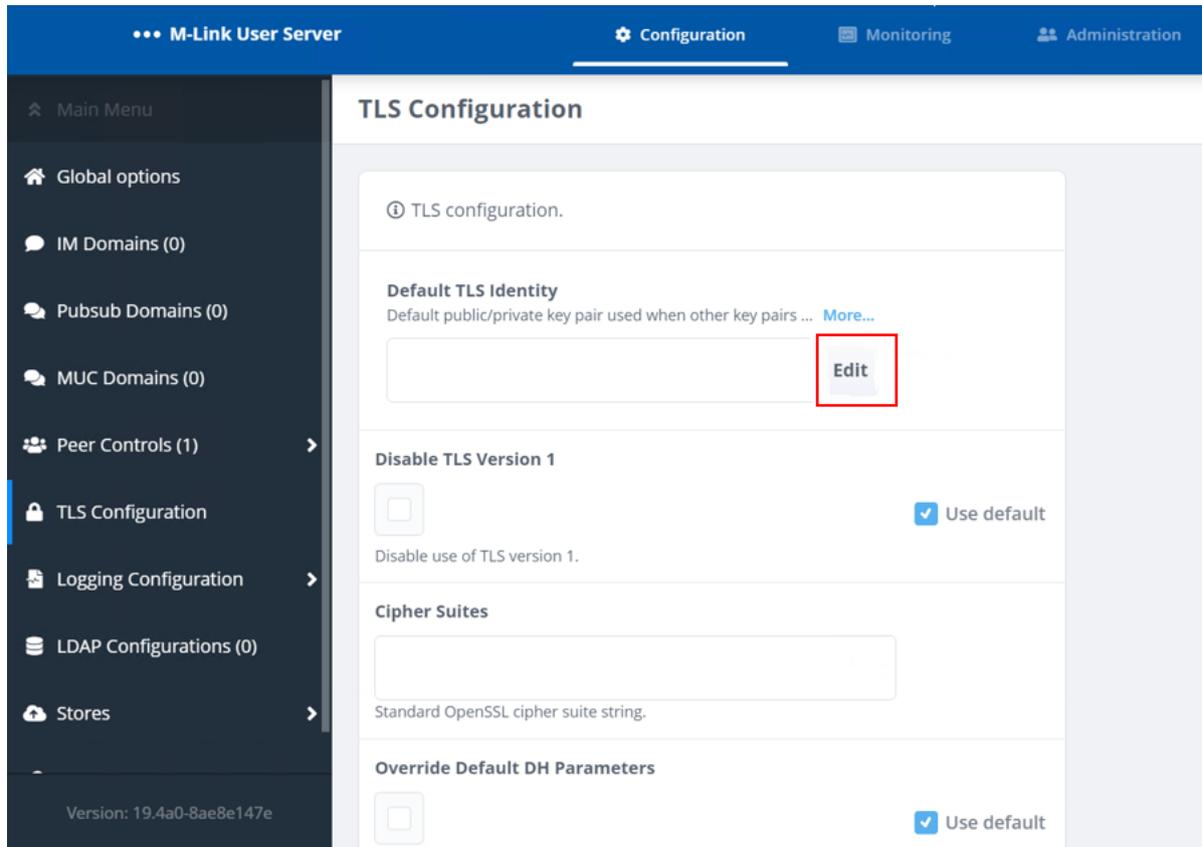
From the “Home” – Global Options screen Click “TLS Configuration”

The screenshot shows the M-Link User Server interface. The top navigation bar includes "M-Link User Server", "Configuration", "Monitoring", and "Administration". The left sidebar menu lists various configuration options, with "TLS Configuration" highlighted by a red circle. The main content area is titled "TLS Configuration" and contains the following sections:

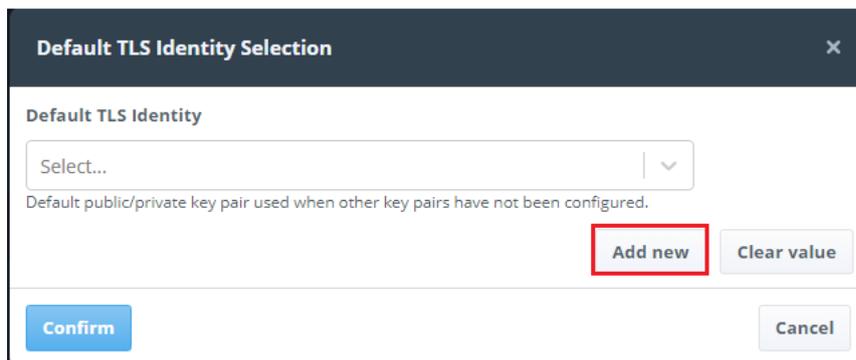
- Default TLS Identity**: A text input field for the default public/private key pair, with an "Edit" button and a "More..." link.
- Disable TLS Version 1**: A checkbox (currently unchecked) and a checked "Use default" checkbox. Below the checkbox is the text "Disable use of TLS version 1."
- Cipher Suites**: A text input field for the standard OpenSSL cipher suite string.
- Override Default DH Parameters**: A checkbox (currently unchecked) and a checked "Use default" checkbox.

At the bottom left of the sidebar, the version number "Version: 19.4a0-8ae8e147e" is displayed.

Select “Edit” next to “Default TLS Identity”.



Click “Add new”.



Upload File(s) [X]

Certificate Chain Required
The certificate chain in PEM format

No file selected Choose a file...

Private Key Required
The private key in PEM format

No file selected Choose a file...

Passphrase
The passphrase with which the private key has been encr... [More...](#)

[Redacted] [Eye icon]

Name Required
Provide a name to identify the file

[Redacted]

Upload Cancel

Use the “Choose a file...” buttons to load the Certificate chain and Private Key, enter the Private Key Passphrase and Provide and “Name” of your choice for the “Identity”.

Upload File(s) [X]

Identity or Certificate Chain Required
Either a complete identity (private key and certificat... [More...](#)

ml-141-chain.pem Choose a file...

Private Key
The private key in PEM format, if a complete identity... [More...](#)

ml-141-mt.pem Choose a file...

Passphrase
The passphrase with which the identity or private ke... [More...](#)

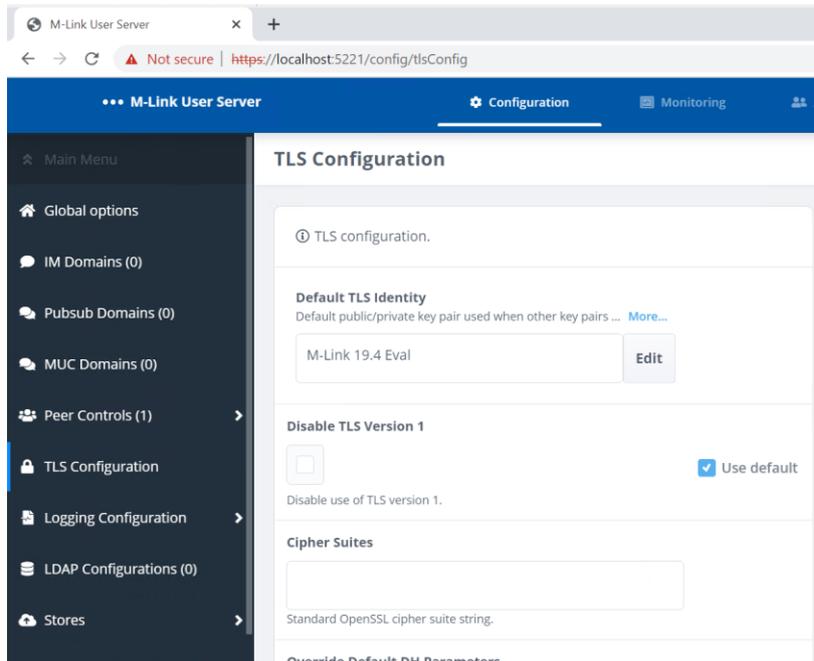
..... [Eye icon]

Key Chain Name
Provide a name which identifies this Key Chain

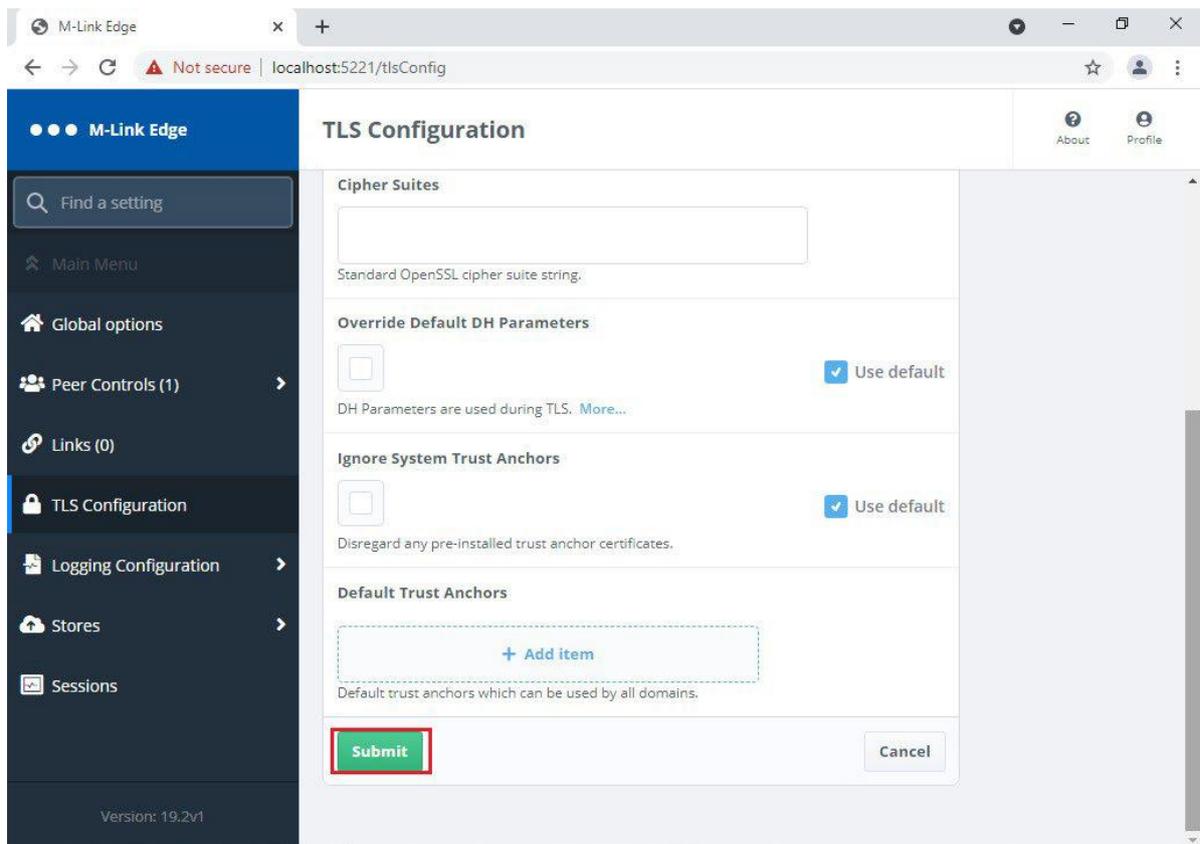
ml-141-chain

Upload Cancel

Click “Upload”. Then click “Confirm”

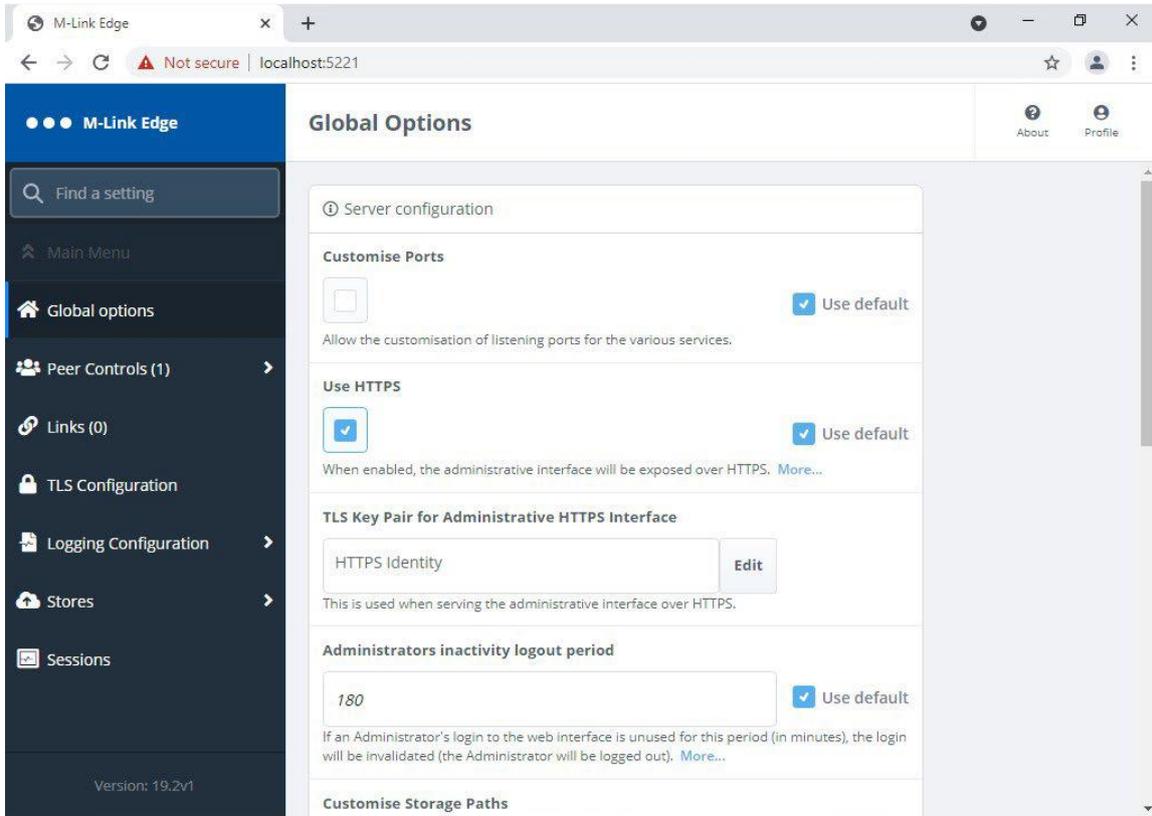


Scroll down to the bottom of the screen.

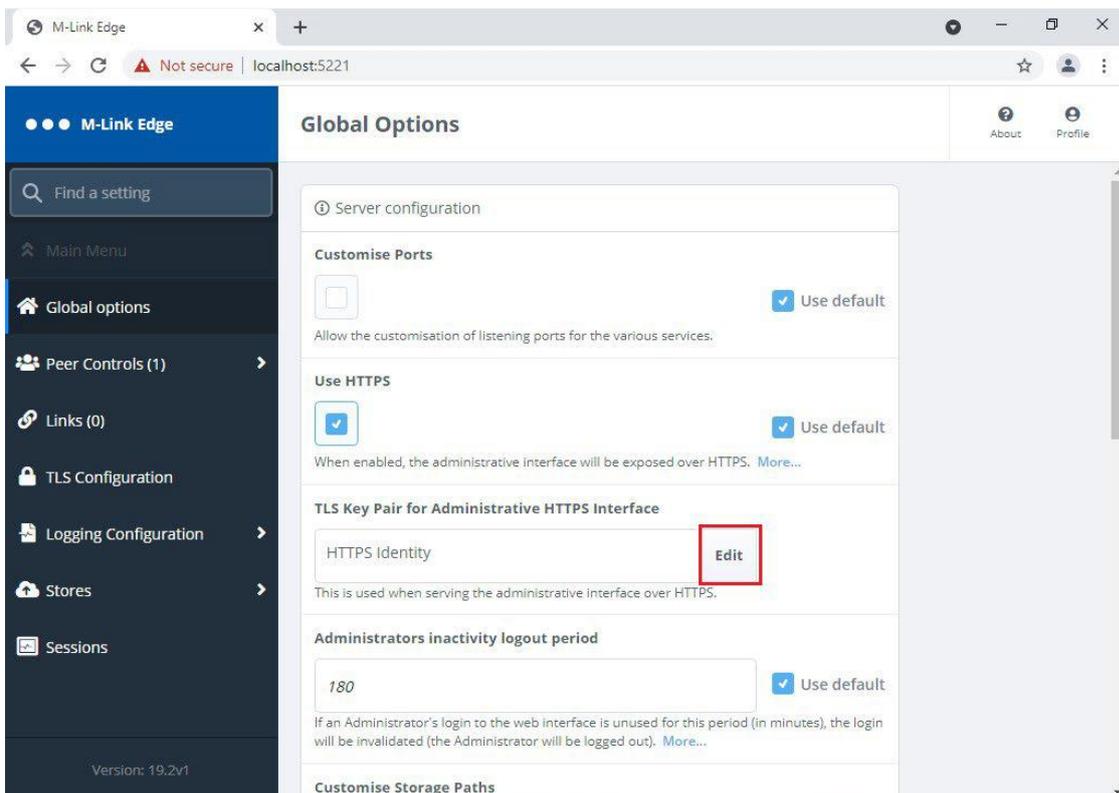


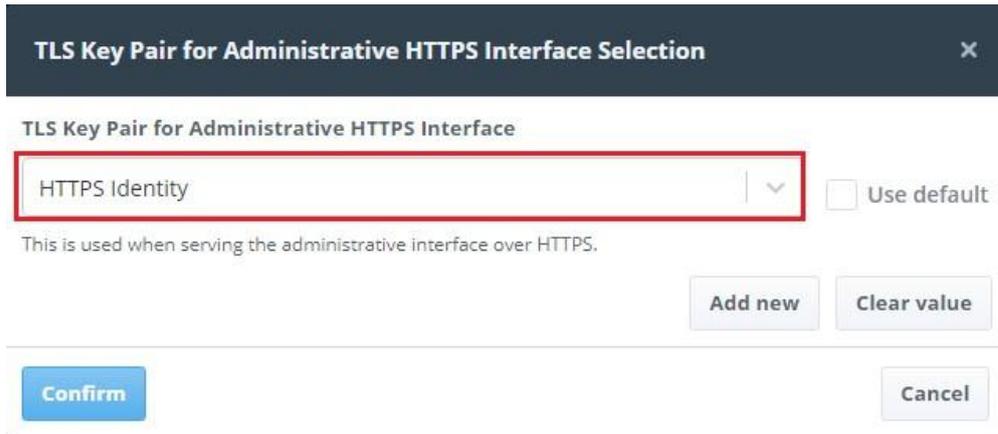
Click “Submit”

Click “Global options”, the following screen is displayed.

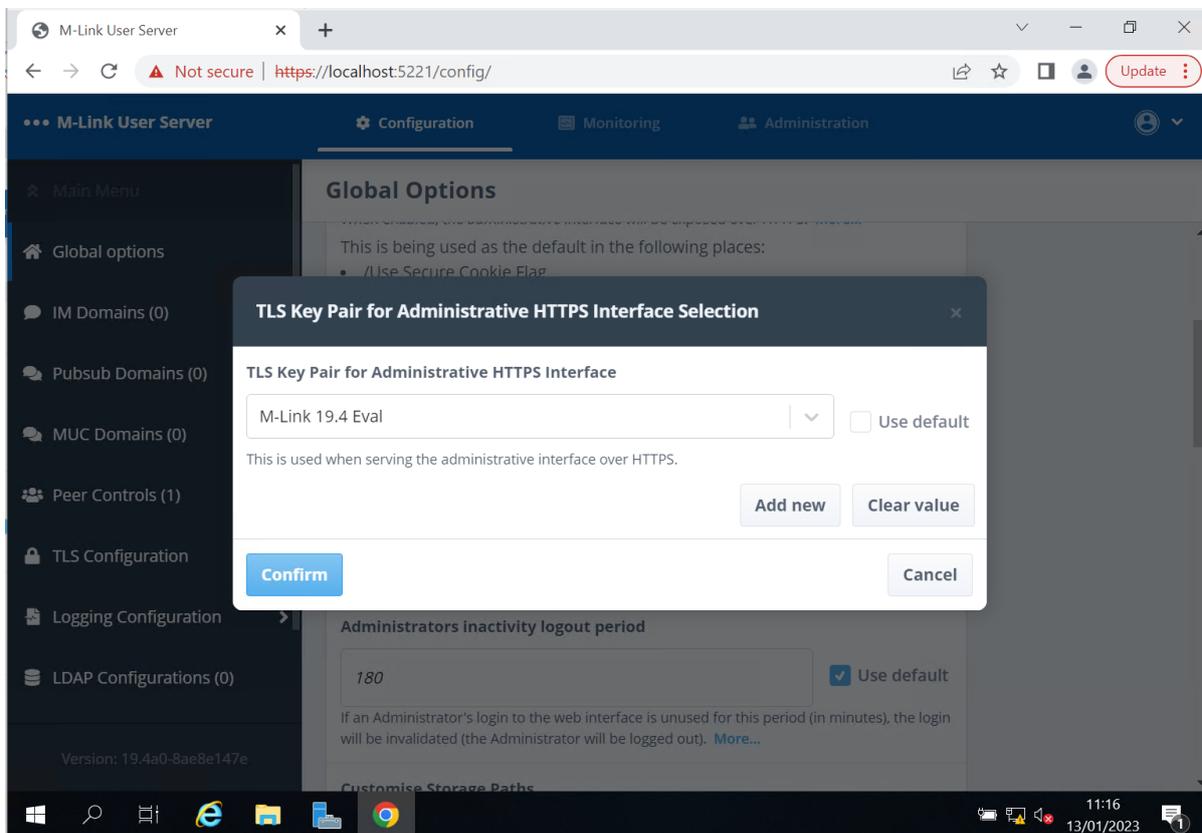


Click “Edit” on the “TLS Key Pair for Administrative HTTPS Interface”.

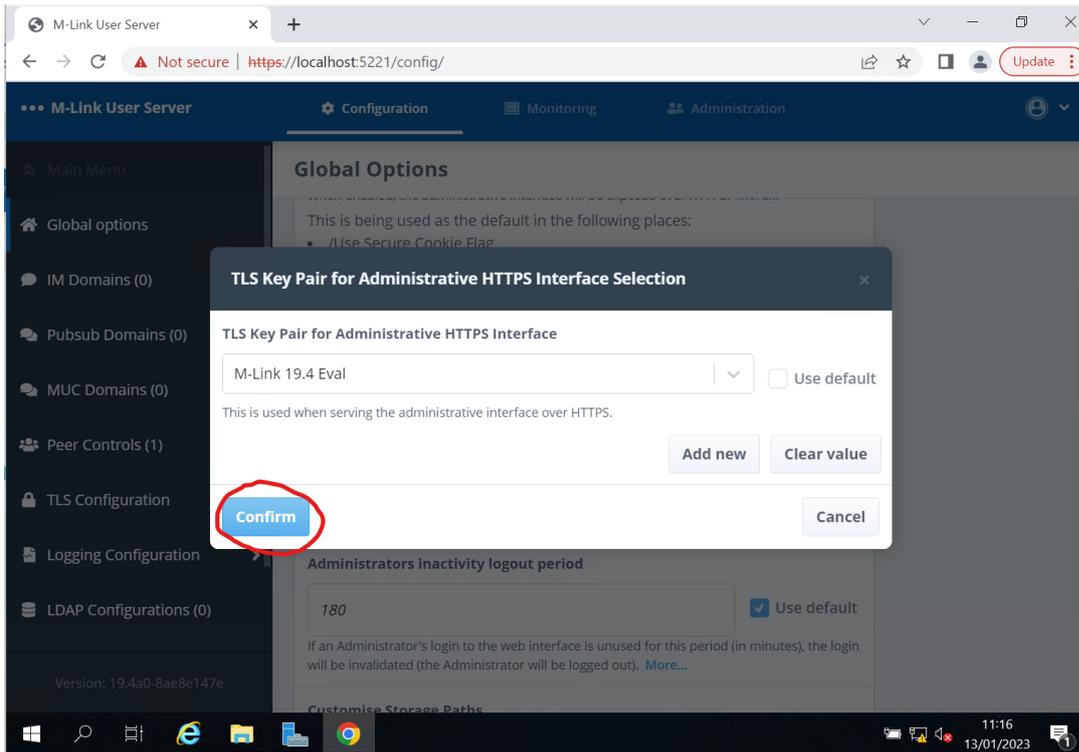




Select the “Dropdown”.

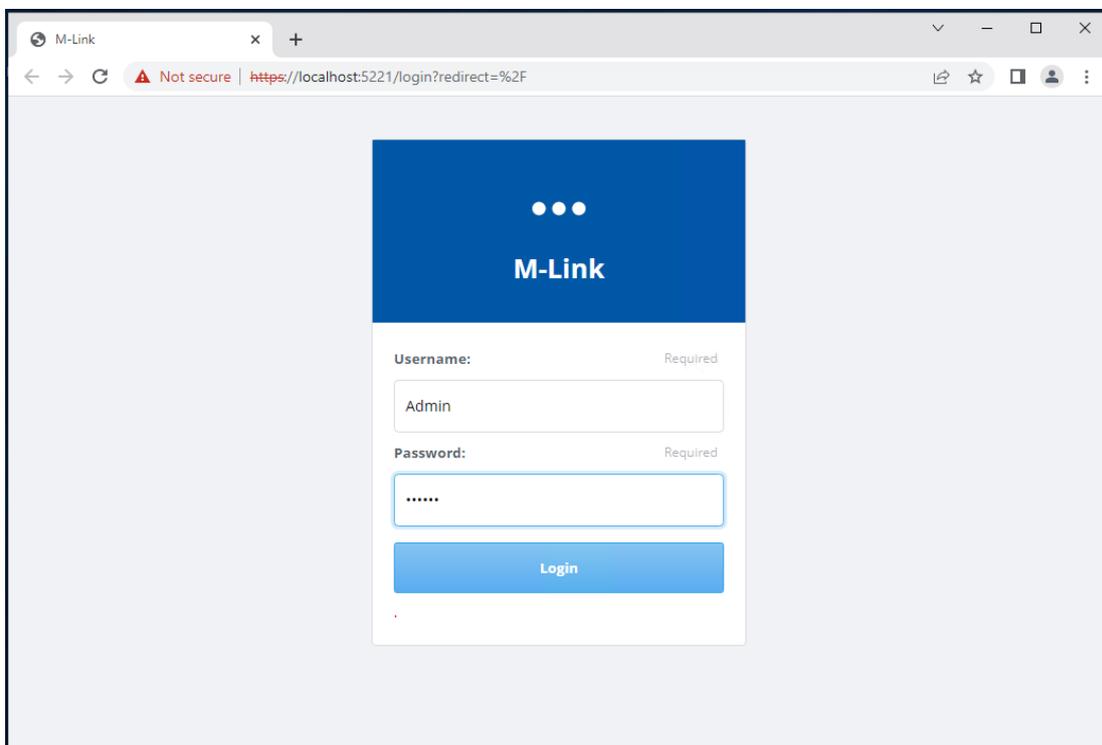


Select the Identity you just loaded.

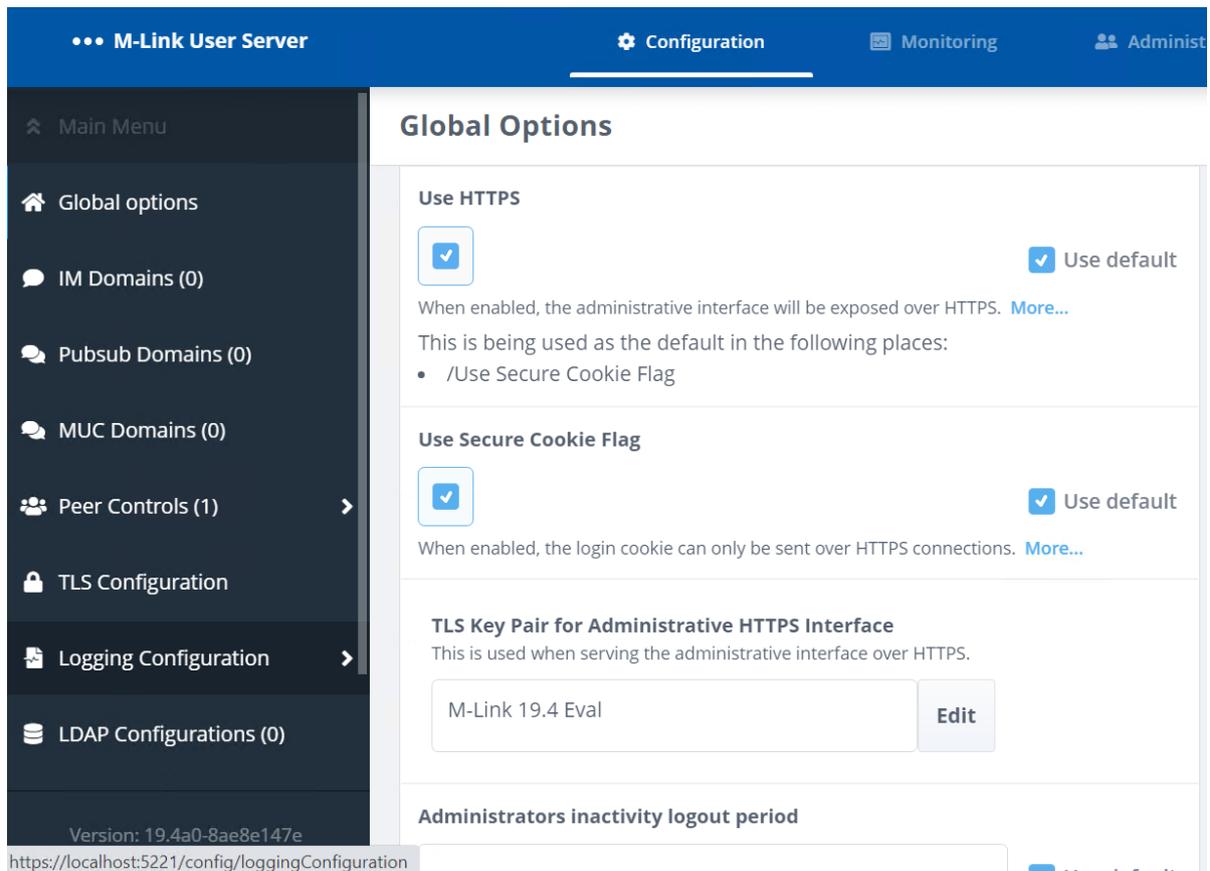


Click “Confirm”.

Enter the “Admin” Username and Password you previously configured.

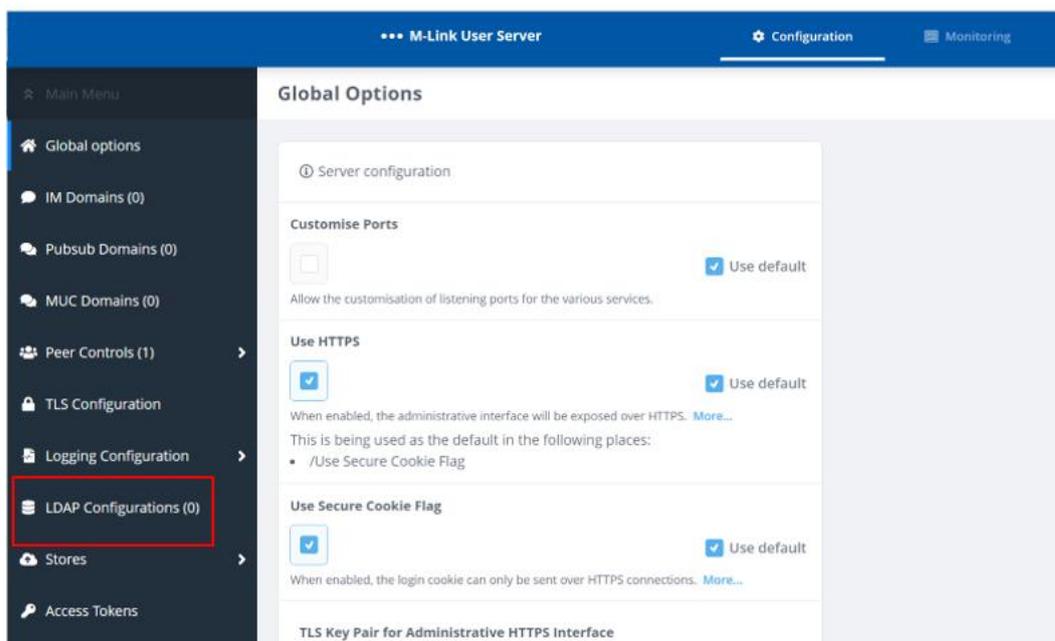


Your TLS configuration is now complete, you can proceed to configuring other options.

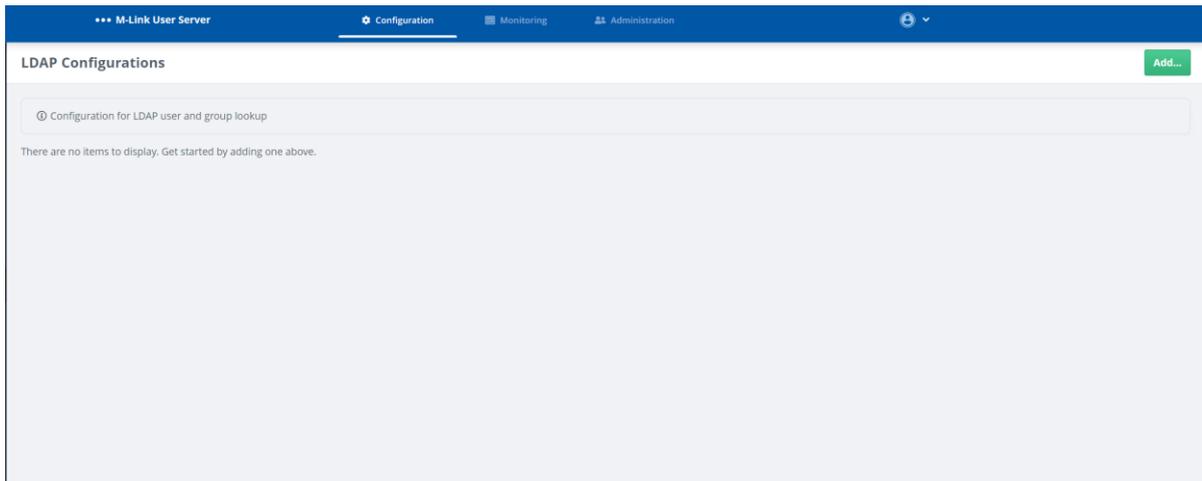


Connecting to LDAP (Active Directory)

Click “LDAP Configurations” .



Click "Add".



Settings controlling LDAP user and group lookup.

Configuration Name Required

A descriptive name given to this configuration

LDAP URI Required

LDAP URI.

Use TLS

Require TLS Use default

Control the use of TLS. [More...](#)

LDAP Authentication Identity

The identity used for authentication to the LDAP directory. [More...](#)

LDAP Authorization Identity Use default

The identity used for authorization by the LDAP directory, if different from the Authentication Identity.

LDAP Password

LDAP password.

- Name your LDAP under “Configuration Name”
- Enter your LDAP URI address
- Enter your LDAP Authentication Identity
- Enter your LDAP Authorization Identity
- Enter the LDAP Password:

The screenshot shows the M-Link Configuration page for adding a new LDAP configuration. The interface includes a top navigation bar with 'M-Link', 'Configuration', 'Monitoring', and 'Multi-User Chat'. A left sidebar contains a search bar and a menu with 'Main Menu', 'LDAP Configurations (1)', and 'Node1'. The main content area is titled 'Add new item to LDAP Configurations' and contains several form fields:

- Configuration Name:** A text input field containing 'Active Directory'. A 'Required' label is present in the top right corner of this field.
- LDAP URI:** A text input field containing 'ldap://AD.net:389'. A 'Use default' checkbox is to the right.
- Use TLS:** A dropdown menu set to 'Require TLS' with a 'Use default' checkbox checked.
- LDAP Authentication Identity:** A text input field containing 'CN=Mlink Admin,CN=Users,DC=AD,DC=net'.
- LDAP Authorization Identity:** A text input field containing 'CN=Mlink Admin,CN=Users,DC=AD,DC=net' with a 'Use default' checkbox.
- LDAP Password:** A password input field with a toggle icon to the right.

Each field has a descriptive text block below it explaining its purpose. The version '19.4v6' is displayed at the bottom of the sidebar.

Scroll down, enter in the LDAP User Base, under LDAP User Attribute add “sAMAccountName”:

The screenshot shows the 'Add new item to LDAP Configurations' page in the M-Link interface. The left sidebar contains a search bar and navigation options: Main Menu, LDAP Configurations (1), and Node1. The main content area is titled 'Add new item to LDAP Configurations' and contains several configuration fields:

- LDAP User Base** (Required): A text input field containing 'CN=Users,DC=AD,DC=net'. Below it is a description: 'LDAP User Base (string encoded DN). For example "cn=Users, cn=...". [Less...](#)
- LDAP User Attribute**: A text input field containing 'sAMAccountName'. Below it is the label 'LDAP User Attribute.'
- LDAP User Search Scope**: A dropdown menu set to 'One Level' with a 'Use default' checkbox checked. Below it is the label 'LDAP User Search Scope.'
- LDAP User Filter**: An empty text input field. Below it is the label 'LDAP User Filter.'
- LDAP Group Base (must be set for LDAP Group lookup)**: This section is currently empty.

At the bottom left of the sidebar, the version 'Version: 19.4v6' is displayed.

Scroll down and click “Add”

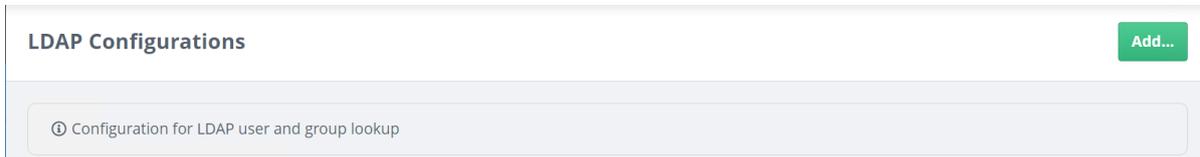
This screenshot shows the same 'Add new item to LDAP Configurations' page, but scrolled down to reveal the 'LDAP Group Base' section. The configuration fields are:

- LDAP User Filter**: An empty text input field. Below it is the label 'LDAP User Filter.'
- LDAP Group Base (must be set for LDAP Group lookup)**: A text input field. Below it is the label 'LDAP Group Base (string encoded DN). [More...](#)
- LDAP Group Scope**: A dropdown menu set to 'Single Level' with a 'Use default' checkbox checked. Below it is the label 'LDAP Group Scope.'
- LDAP Group Filter**: An empty text input field. Below it is the label 'LDAP Group Filter.'

At the bottom of the form, there are two buttons: a green 'Add' button and a grey 'Cancel' button. The version 'Version: 19.4v6' is visible at the bottom left of the sidebar.

Connecting to LDAP (M-Vault)

Click “LDAP Configurations”. Click “Add”



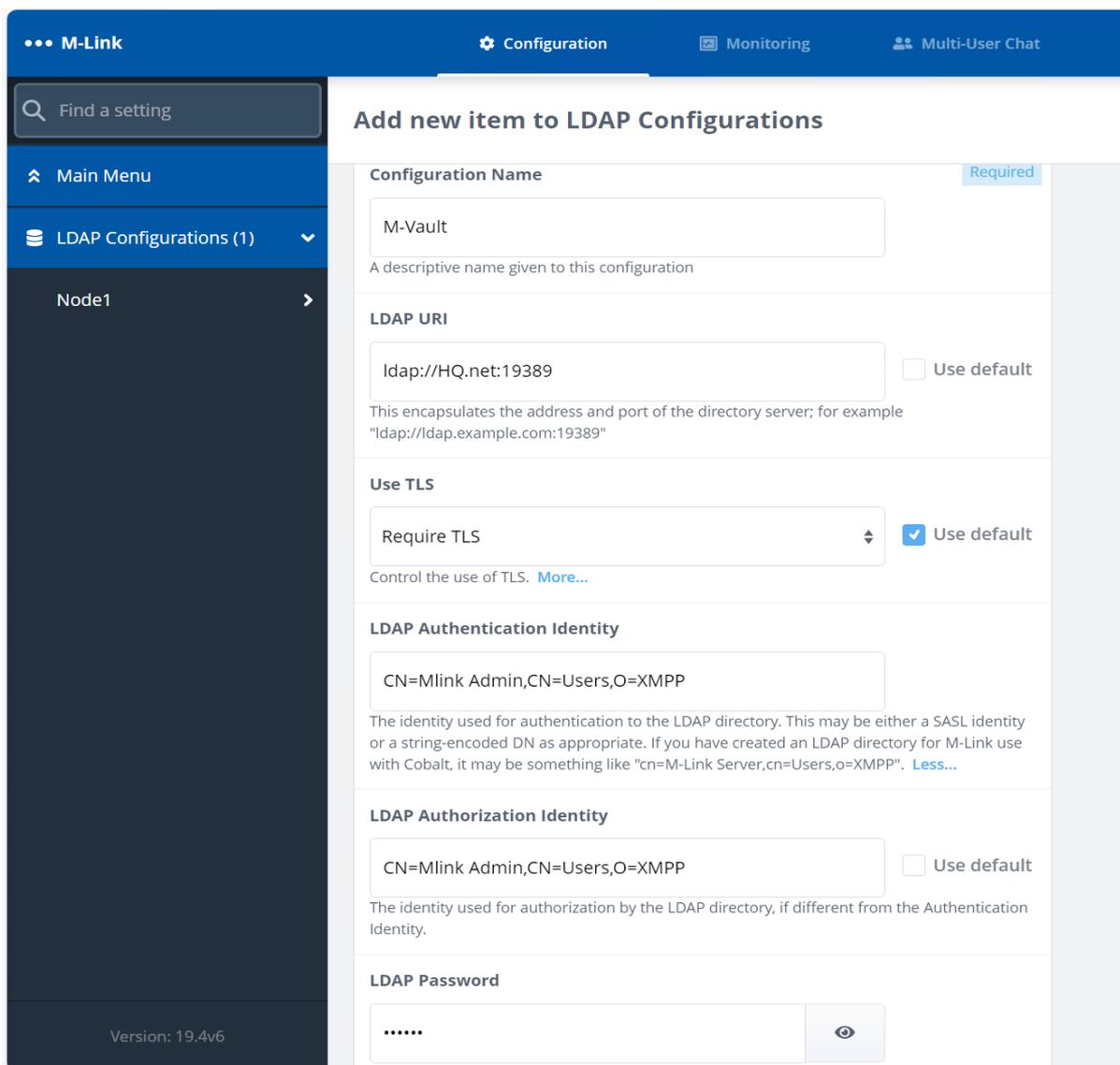
Name your LDAP under “Configuration Name”

Enter your LDAP URI address

Enter your LDAP Authentication Identity

Enter your LDAP Authorization Identity

Enter the LDAP Password



Scroll down, enter in the LDAP User Base, under LDAP User Attribute add “mail”:

The screenshot displays the M-Link configuration interface. The top navigation bar includes 'M-Link', 'Configuration', 'Monitoring', and 'Multi-User Chat'. A search bar on the left contains the text 'Find a setting'. The left sidebar menu shows 'Main Menu', 'LDAP Configurations (1)', and 'Node1'. The main content area is titled 'Add new item to LDAP Configurations' and contains several configuration sections:

- Trust Anchors:** A checkbox labeled 'Use default' is checked. Below it is a text input field with the value 'Disregard any pre-installed trust anchor certificates.'
- Trust Anchors:** A dashed box contains a '+ Add item' button. Below it is the text 'Trust anchors to be used when verifying the LDAP server certificate.'
- Perform authentication by binding to the DSA:** A checkbox labeled 'Use default' is checked. Below it is the text 'Select how user password validation takes place. [More...](#)'
- LDAP User Base:** A text input field contains 'cn=Users,o=XMPP'. A 'Required' label is to the right. Below it is the text 'LDAP User Base (string encoded DN). For example "cn=Users, cn=...". [Less...](#)'
- LDAP User Attribute:** A text input field contains 'mail'. Below it is the text 'LDAP User Attribute.'
- LDAP User Search Scope:** A dropdown menu is set to 'One Level'. A checkbox labeled 'Use default' is checked. Below it is the text 'LDAP User Search Scope.'
- LDAP User Filter:** A text input field is empty.

At the bottom left of the sidebar, the text 'Version: 19.4v6' is visible.

Scroll down and click “Add”

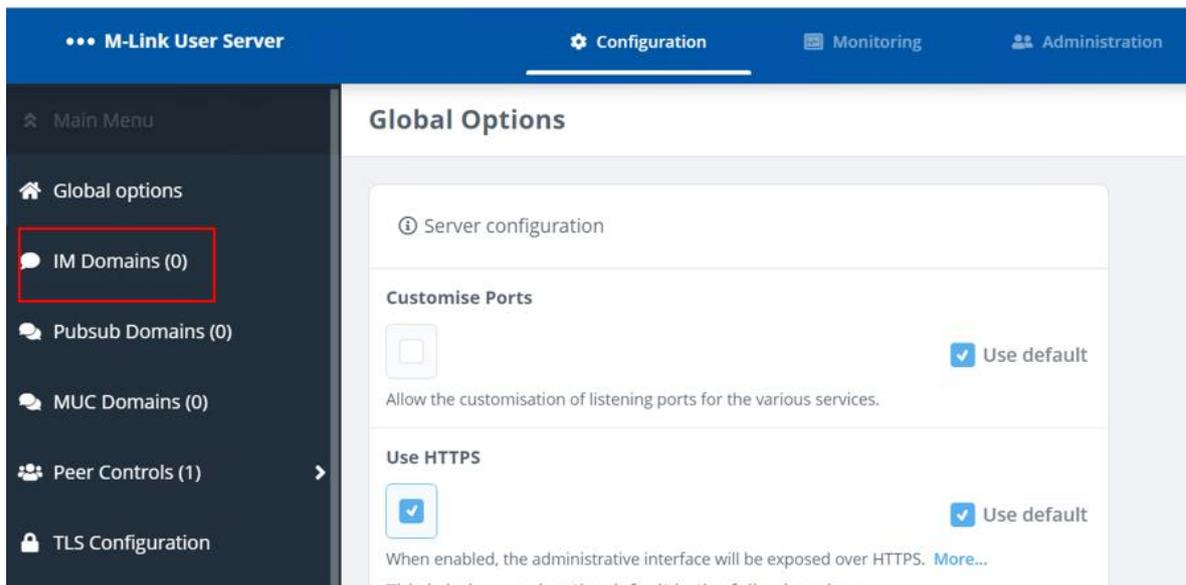
The screenshot displays the M-Link Configuration interface. The top navigation bar includes 'M-Link', 'Configuration', 'Monitoring', and 'Multi-User Chat'. A search bar on the left contains the text 'Find a setting'. The left sidebar shows a 'Main Menu' and 'LDAP Configurations (1)' with a dropdown arrow. Under 'LDAP Configurations (1)', 'Node1' is listed with a right-pointing arrow. The main content area is titled 'Add new item to LDAP Configurations' and contains the following fields:

- LDAP User Filter:** A text input field.
- LDAP Group Base (must be set for LDAP Group lookup):** A text input field with a note below it: 'LDAP Group Base (string encoded DN). [More...](#)'
- LDAP Group Scope:** A dropdown menu currently set to 'Single Level' with a 'Use default' checkbox checked.
- LDAP Group Filter:** A text input field.

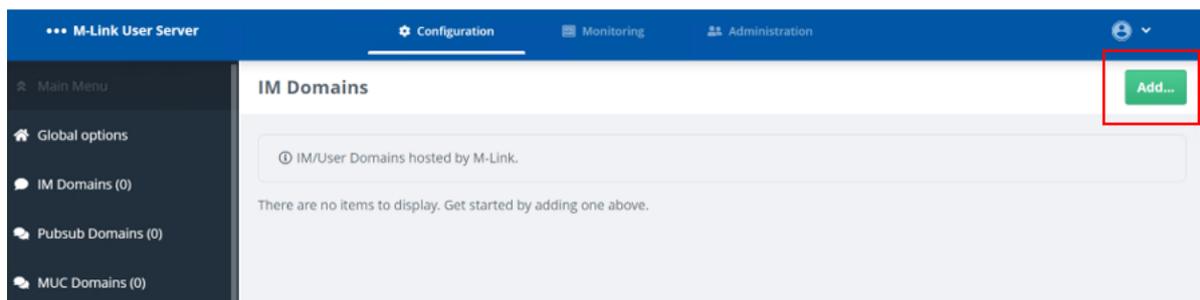
At the bottom of the form are two buttons: a green 'Add' button and a grey 'Cancel' button. The version number 'Version: 19.4v6' is visible in the bottom left corner of the interface.

Creating an IM Domain

From the Global Option page click on “IM Domains:



Click “Add”.



Enter your Domain name

Click “Authentication Type” and select “LDAP”

Click “LDAP Configuration” and select your previous LDAP Configuration

The screenshot shows the M-Link Configuration interface. The top navigation bar includes 'M-Link', 'Configuration', 'Monitoring', and 'Multi-User Chat'. A search bar is present with the text 'Find a setting'. The left sidebar shows 'Main Menu', 'IM Domains (1)', and a list item 'ml194.net'. The main content area is titled 'Add new item to IM Domains' and contains the following form fields:

- Domain** (Required): A text input field containing 'headquarters.net'. Below it, the text 'Domain name.' is visible.
- Authentication Type** (Required): A dropdown menu with 'LDAP' selected. Below it, the text 'Authentication type.' is visible.
- LDAP Configuration** (Required): A dropdown menu with 'Active Directory' selected. Below it, the text 'Reference to the LDAP configuration to use.' is visible.
- TLS Required**: A checked checkbox. To its right, there is a 'Use default' checkbox.

At the bottom of the sidebar, the text 'Version: 19.4v6' is displayed.

Scroll down and click “Submit”:

The screenshot shows the M-Link Configuration interface, specifically the 'Archive Scope' and 'Allow Message Archive Management' sections. The sidebar on the left shows 'Version: 19.4v6'. The main content area contains the following form fields:

- Archive Scope**: A dropdown menu with 'Messages and Events' selected. To its right, there is a 'Use default' checkbox. Below it, the text 'What should be archived' is visible.
- Allow Message Archive Management**: A checked checkbox. To its right, there is a 'Use default' checkbox. Below it, the text 'Enable the Message Archive Management (XEP-0313) feature for this domain' is visible.

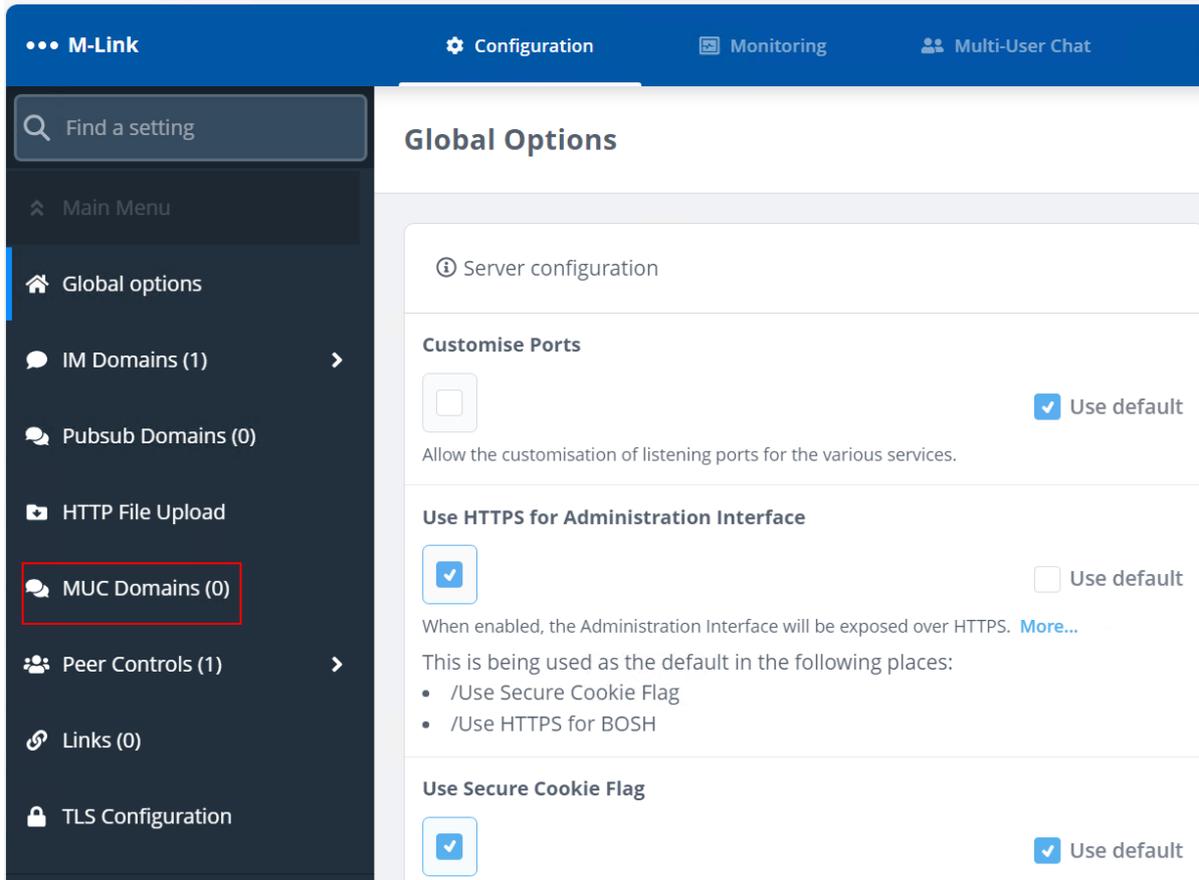
At the bottom of the form, there are two buttons: 'Add' (green) and 'Cancel' (grey).

If both an M-Vault & Active Directory LDAP exists both can be added and be swapped between under “LDAP Configuration”

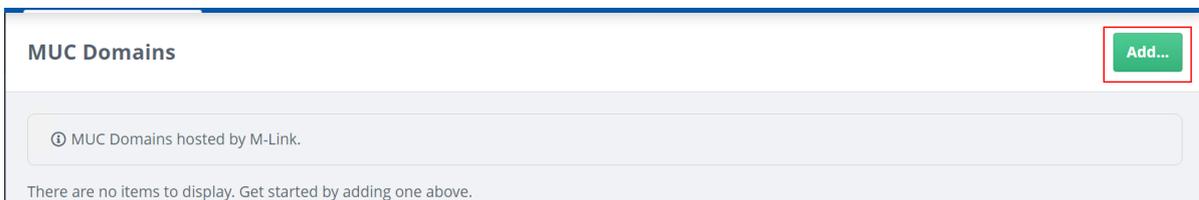
Adding a Multi-User Chat (MUC) Domain

The XMPP Service we've set up will allow 1:1 instant messaging by default. In order to enable multi-user chat we need to set up a multi-user chat domain within which chat rooms can be created.

From the Global Option page click on “MUC Domains”:



Click “Add”



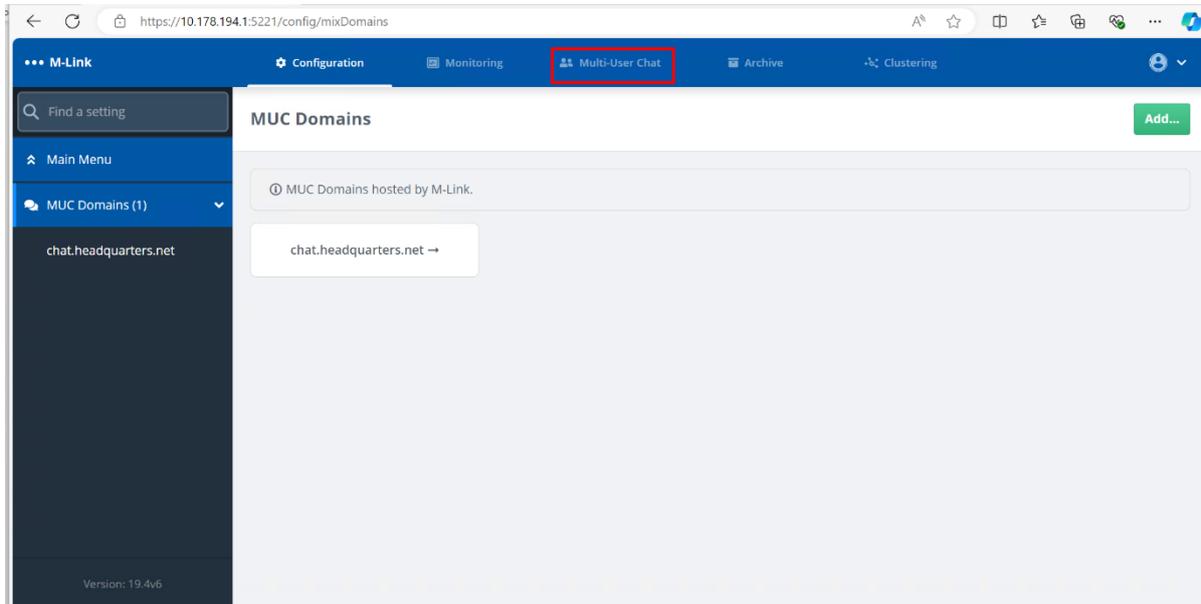
Enter your desired MUC domain name
 Enter a description of said MUC

The screenshot shows the 'Add new item to MUC Domains' configuration page. The left sidebar contains a search bar and a menu with 'Main Menu' and 'MUC Domains (0)'. The main content area has a title 'Add new item to MUC Domains' and a subtitle 'A MUC Domain hosted by M-Link.' Below this are four sections: 'Domain' with a text input containing 'muc.headquarters.net' and a 'Required' label; 'Description' with a text input containing 'Isode M-Link Chat Rooms' and a 'Use default' checkbox; 'TLS Identity' with an empty text input and an 'Edit' button; and 'MUC Domain Security Label' with an empty text input and an 'Edit' button. The footer shows 'Version: 19.4v6'.

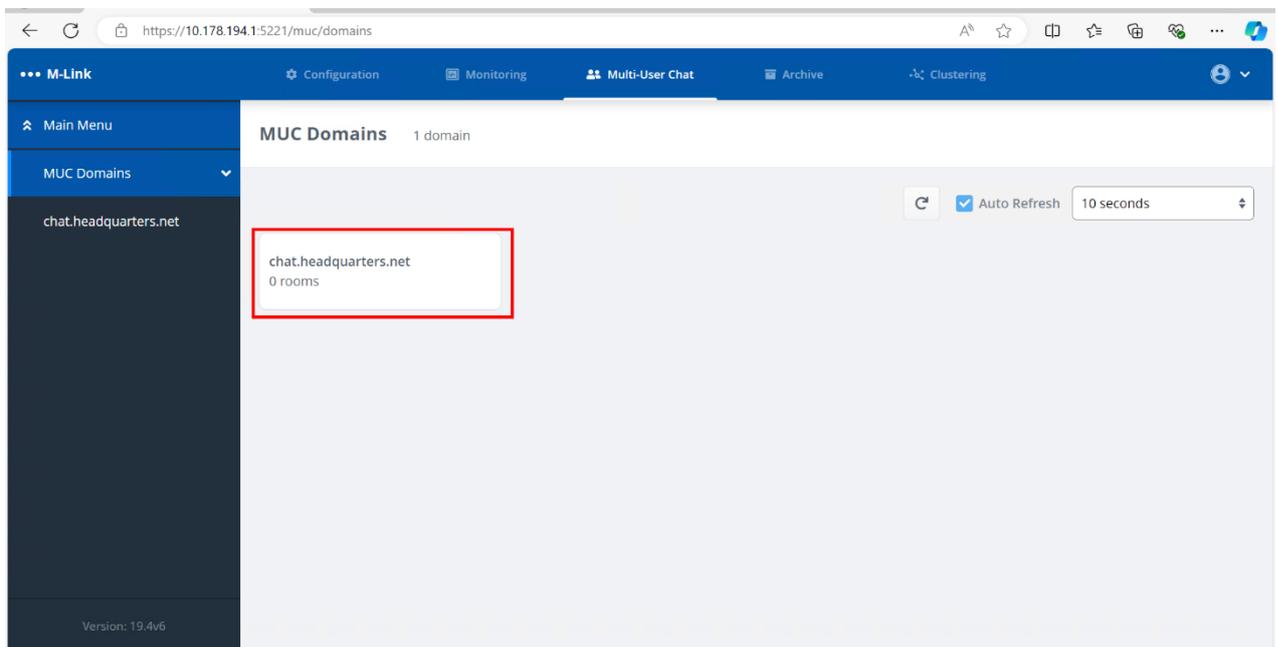
Scroll down and click “Add”:

This screenshot shows the same configuration page but scrolled down to reveal more settings. The 'Default stanza security label' field is now visible. Below it are 'MUC Domain Security Clearance' (empty text input), 'Archive Scope' (dropdown menu set to 'Messages and Events'), and 'Allow Message Archive Management' (checkbox checked). At the bottom, there are 'Add' and 'Cancel' buttons. The footer shows 'Version: 19.4v6'.

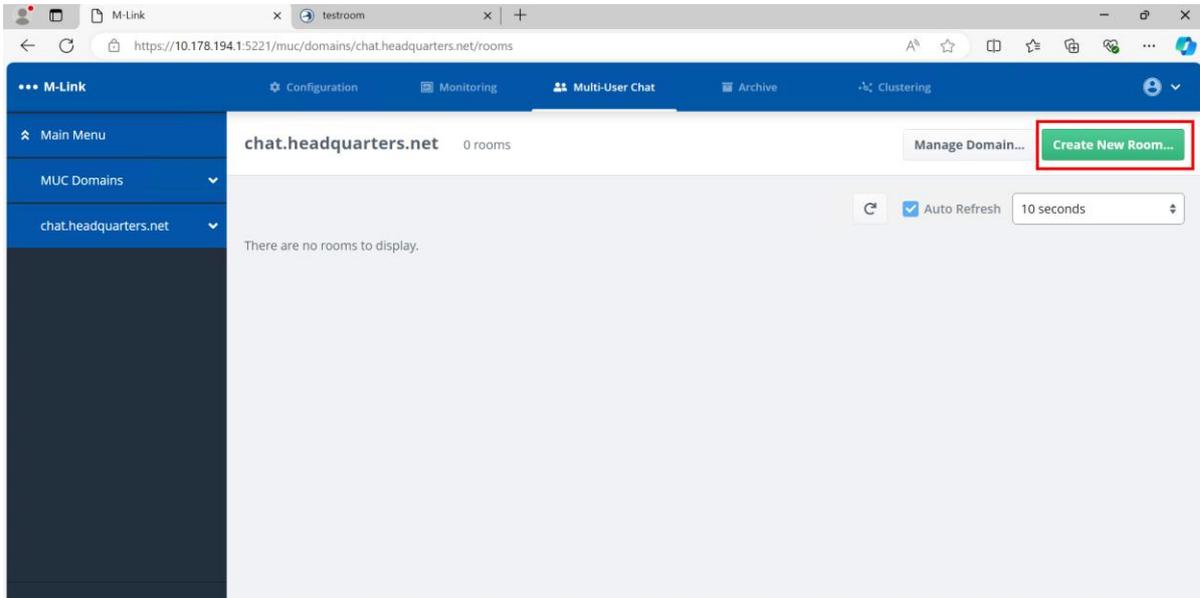
From the menu at the top, select Multi User Chat:



Click on your chat domain:



Click on “Create New Room”



Type in the details for your new room, then click “Add”

Create a New Room in chat.headquarters.net

Room configuration

Room Name @ chat.headquarters.net Required

Unique room identifier (node part of a JID)

Room Title

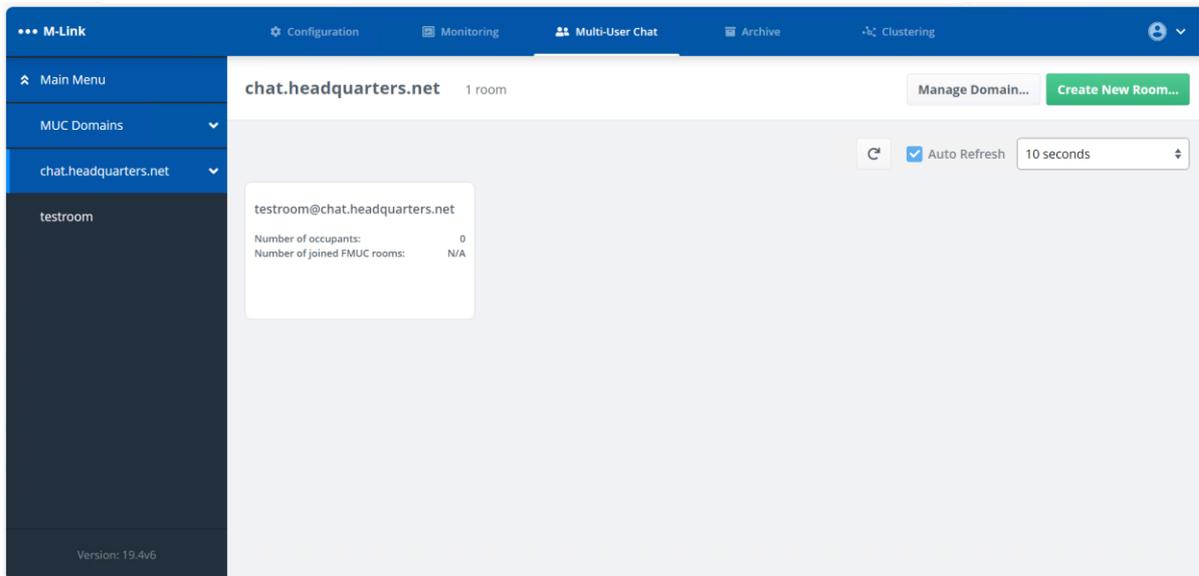
The formal name of the room.

Description

The description of the room.

Marking

You will now see your new room:

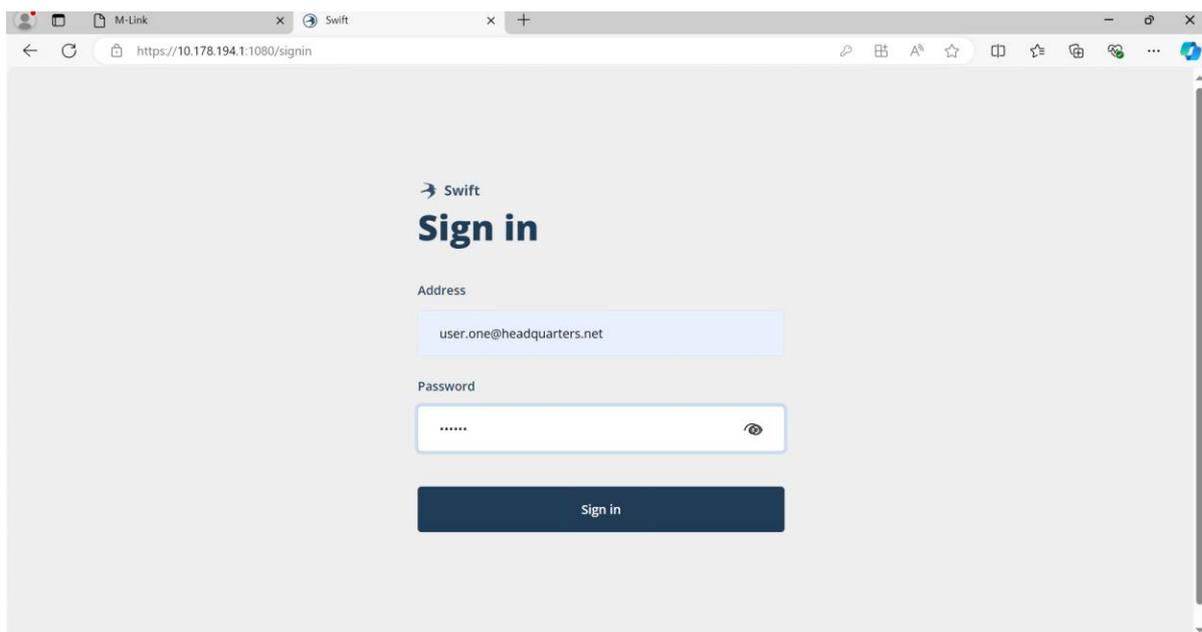


Testing with the Swift 6 XMPP Web Client

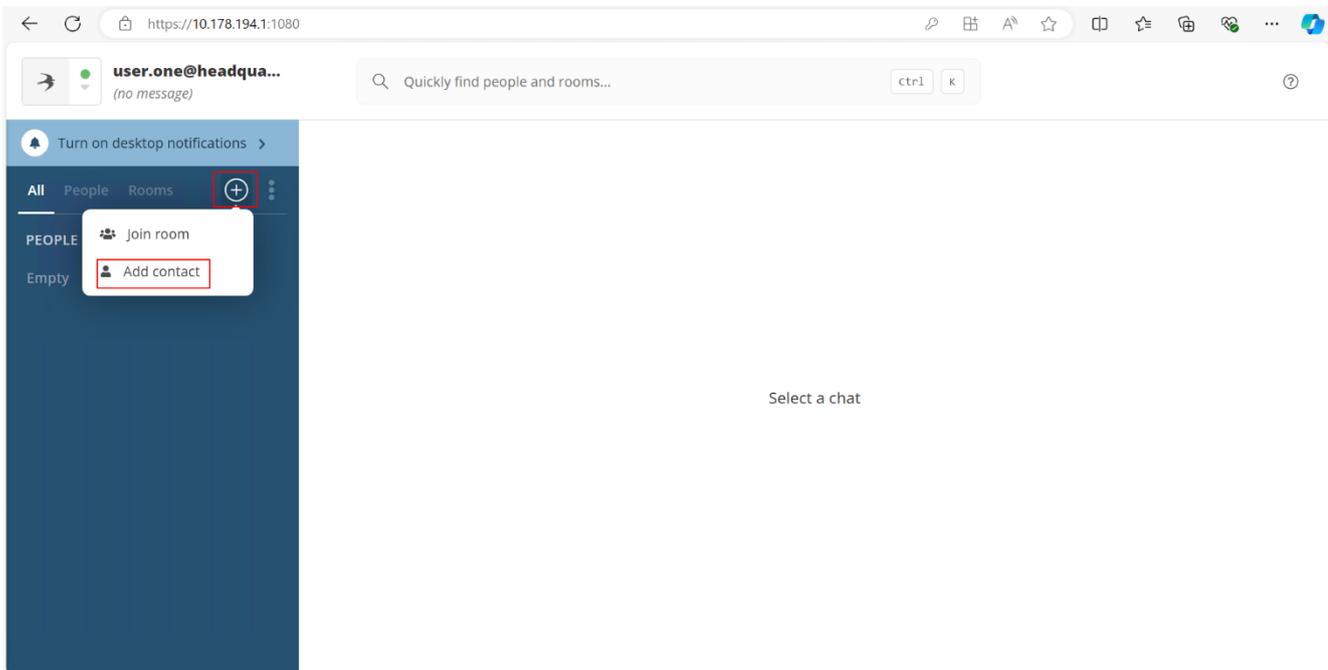
There are a number of free XMPP clients available but for the purposes of this evaluation we're going to use the Swift 6 web client. Instructions for obtaining and installing Swift 6 for your platform can be found at [<https://www.isode.com/product/xmpp-client/>]

Using Swift

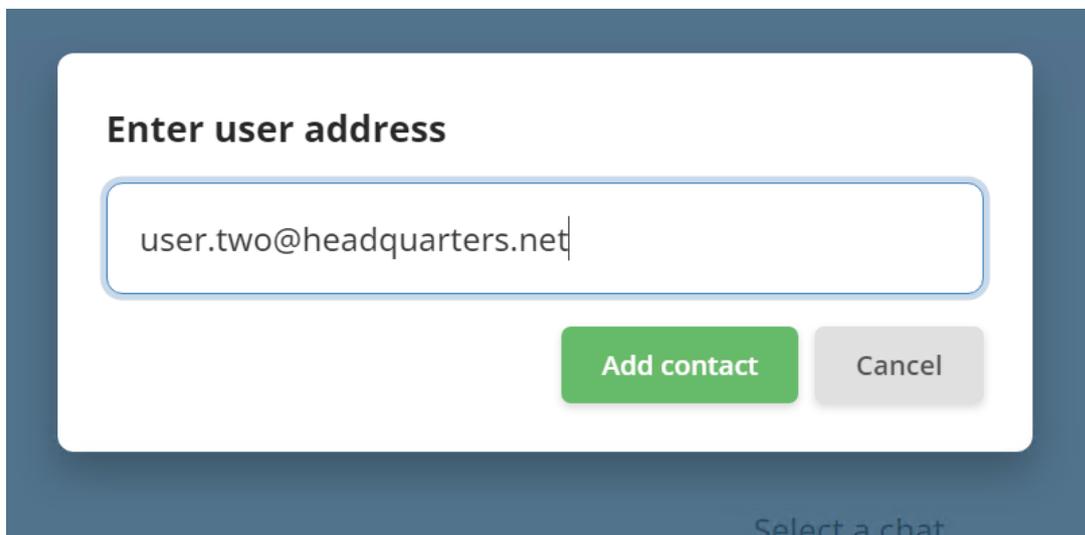
Launch Swift 6 and type in the login details of a user:



Once you've logged in, you'll see that you have an empty roster. To add a contact, click on the + button and select **[Add Contact]** :

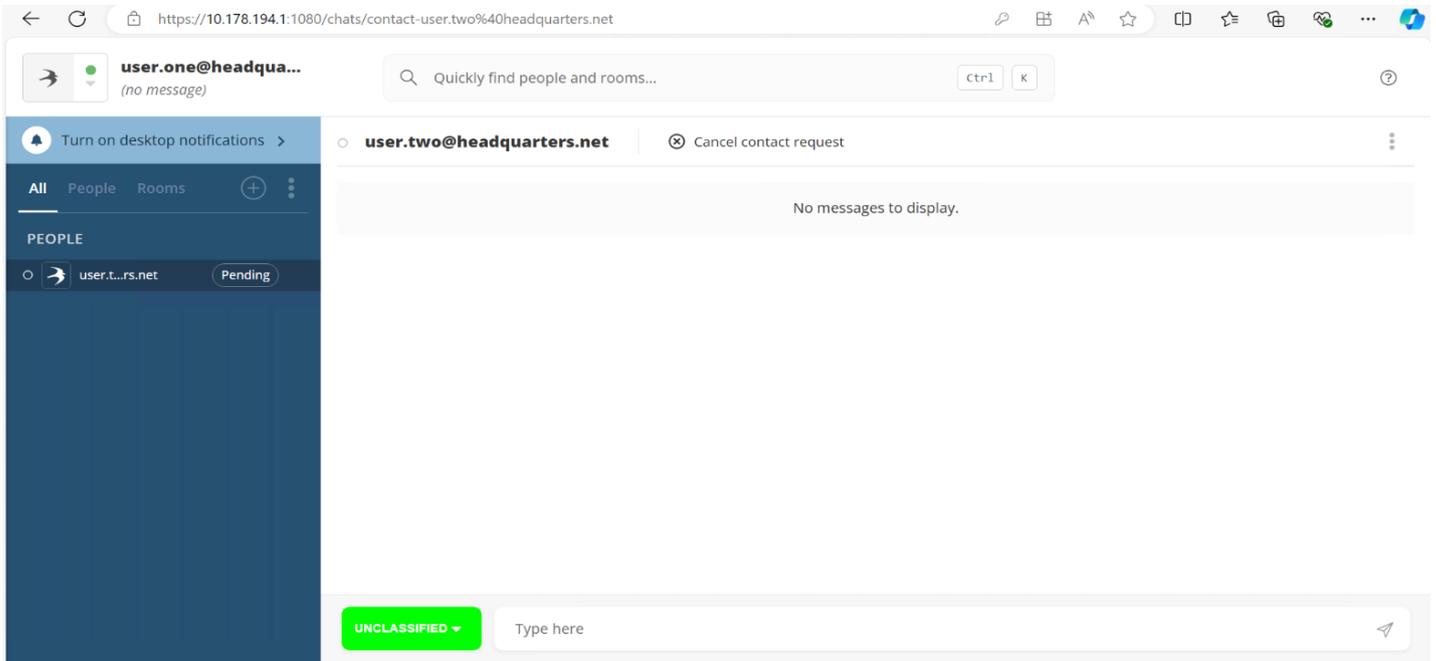


Type in the full JID of the user you want to add:

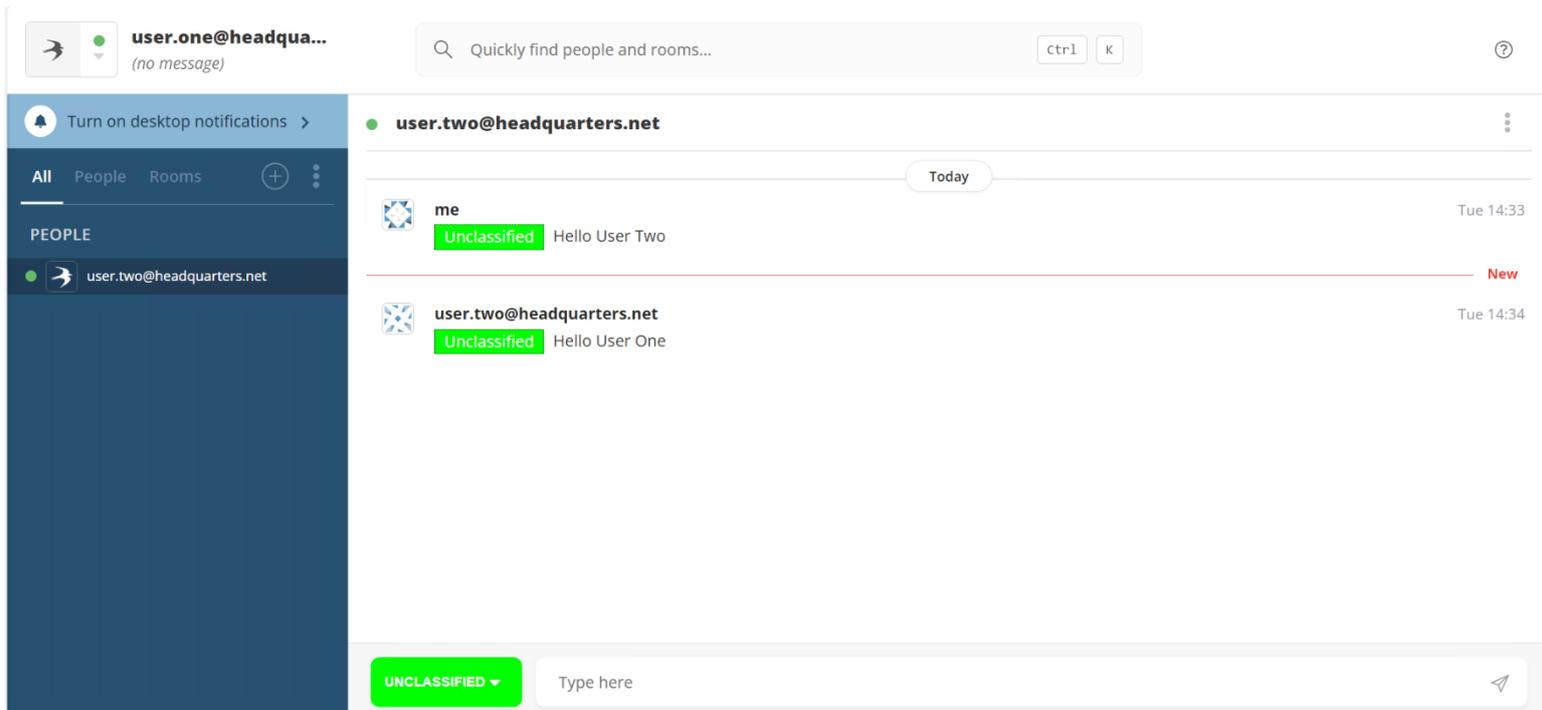


Click "Add Contact"

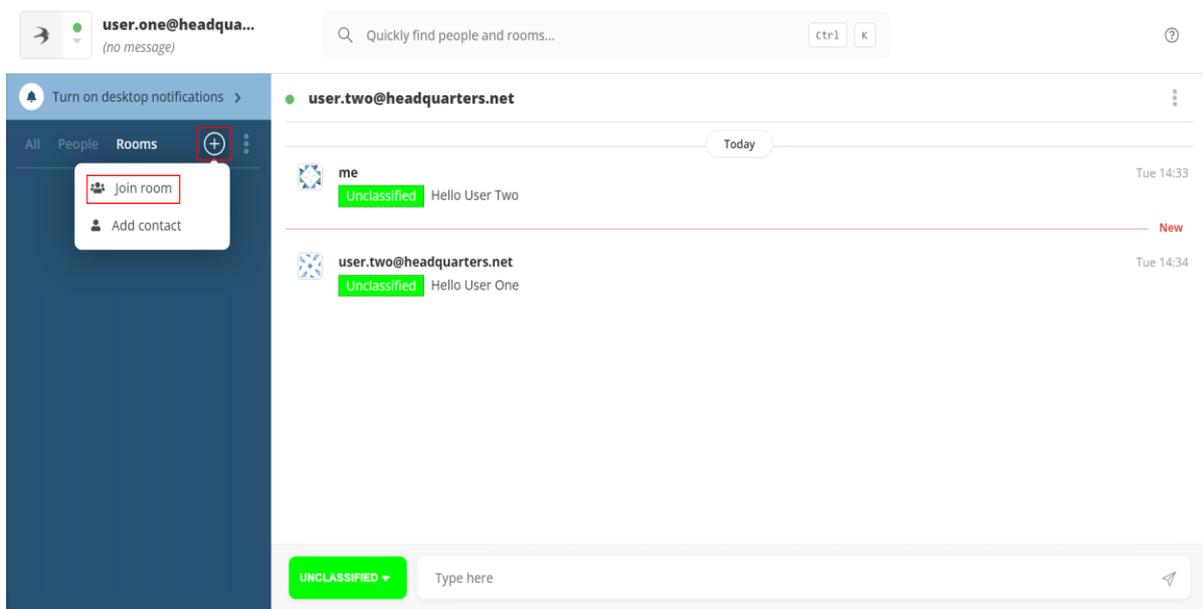
You will see that your request is pending:



Once the other user accepts your request, you can then engage a 1-2-1 chat:



Earlier we set up a persistent chat room using in M-Link. In order to enter that room, click the + button and select “Join Room”



Click on “Browse rooms” you should now see the room you created earlier:

Join room ⓧ

By address Browse rooms

Filter by name or address:

Choose domain:

In-room nickname: *none set (using global nickname)* ✎

Isode M-Link Multi-User Chat Service (1 rooms) ^

 **Test Room**
testroom@chat.headquarters.net

[Join room](#)

Click “join room”

Then click “Open room”

Join room ⓧ

By address Browse rooms

Filter by name or address:

Choose domain:

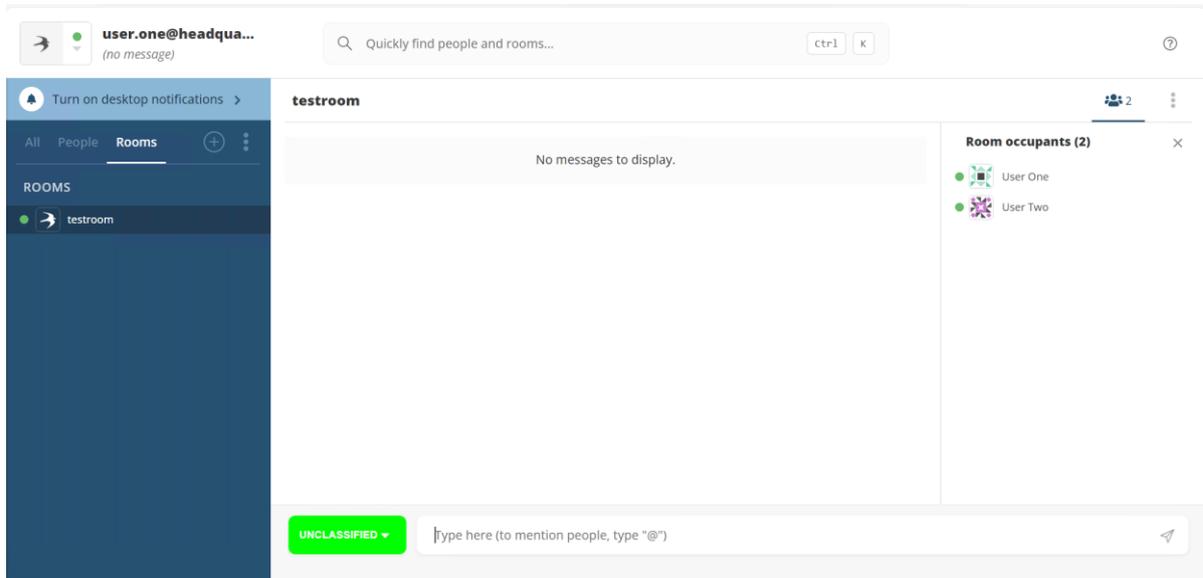
In-room nickname: *none set (using global nickname)* ✎

Isode M-Link Multi-User Chat Service (1 rooms) ^

 **Test Room**
testroom@chat.headquarters.net

[Open room](#)

You will now enter the chat room:



Conclusion

Congratulations, you now have a fully configured install of M-Link 19.4 (TLS Optional) with LDAP and MUC rooms configured.

What Next?

More information on the M-Link User Server can be found on the Isode website at <https://www.isode.com/product/xmpp-server/>

Information on the Swift XMPP client can be found at <https://www.isode.com/product/xmpp-client/>

Detailed configuration and operational information on all variations of M-Link can be found in the M-Link Administration Guide available from the Isode website at <https://www.isode.com/support/guides-downloads/>.

Whitepapers

Isode regularly publishes whitepapers on technical and market topics related to its products. A full list of these can be found at www.isode.com/whitepapers/.

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