



# M-Link Mobile Unit Gateway R19.3 Evaluation Guide

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Installing and configuring R19.3 of M-Link Mobile Unit Gateway for Constrained Networks for use over SatCom (IP) and HF (STANAG 5066) links.

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## Introduction

This guide demonstrates how to get up and running with M-Link Mobile Unit Gateway R19.3

### Objectives

By the end of this evaluation you will have:

- Installed M-Link MU Gateway R19.3
- Requested a Product Activation Key (PAK)
- Receive and installed the PAK.
- Created and configured a XEP-0361 Zero Handshake Server to Server Protocol Link
- Created and configured a Peer Control with an X2X Link
- Tested the 5066 Subsystem using S5066 Console
- Created a connection to Icon-5066 Server
- Created and configured a SLEP Link
- Created and configured a Peer Control with the SLEP Link

### 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 [support@isode.com](mailto: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 [www.isode.com/products/supported-platforms.html](http://www.isode.com/products/supported-platforms.html) 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 [www.isode.com/evaluate/evalrequest.html](http://www.isode.com/evaluate/evalrequest.html).

## Product Activation Key

M-Link Mobile Unit Gateway requires a valid Product Activation Key from Isode before it will run correctly. Keys are issued by Isode Customer Services. You will be show in this guide how to copy and send the Product Activation Key request to [support@isode.com](mailto:support@isode.com).

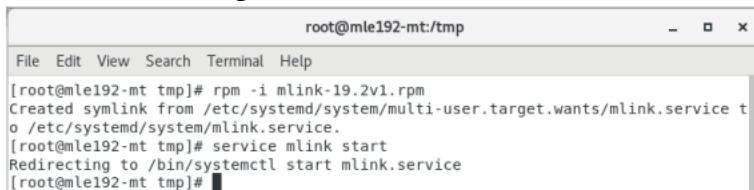
## External XMPP Server Details

This guide assumes that you already have access to external XMPP servers, which this installation will interact with

## Installing M-Link MU Gateway

### Linux

Run the following commands:

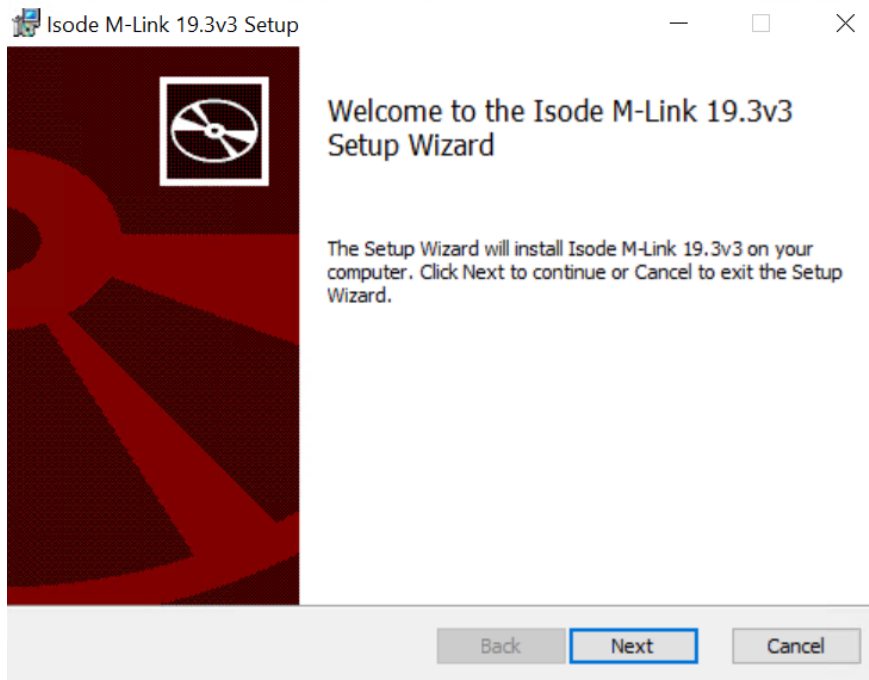
A terminal window titled 'root@ml192-mt/tmp' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows the following commands and output:

```
[root@ml192-mt tmp]# rpm -i mlink-19.2v1.rpm
Created symlink from /etc/systemd/system/multi-user.target.wants/mlink.service to /etc/systemd/system/mlink.service.
[root@ml192-mt tmp]# service mlink start
Redirecting to /bin/systemctl start mlink.service
[root@ml192-mt tmp]#
```

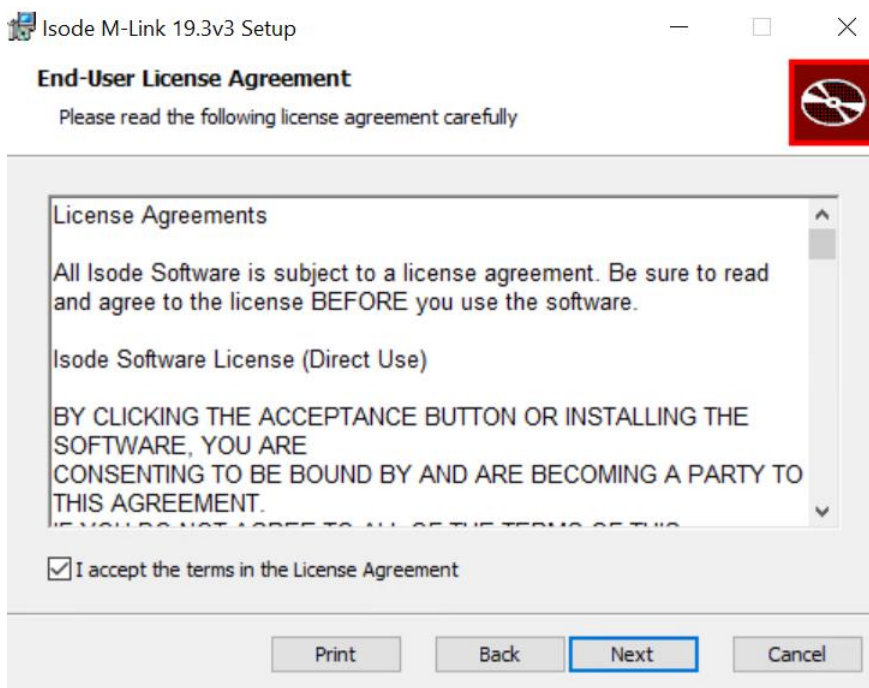
Then jump to the browser screen of the Windows Install (on Page 8) and point your browser at - <https://localhost:5221>

## Windows

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

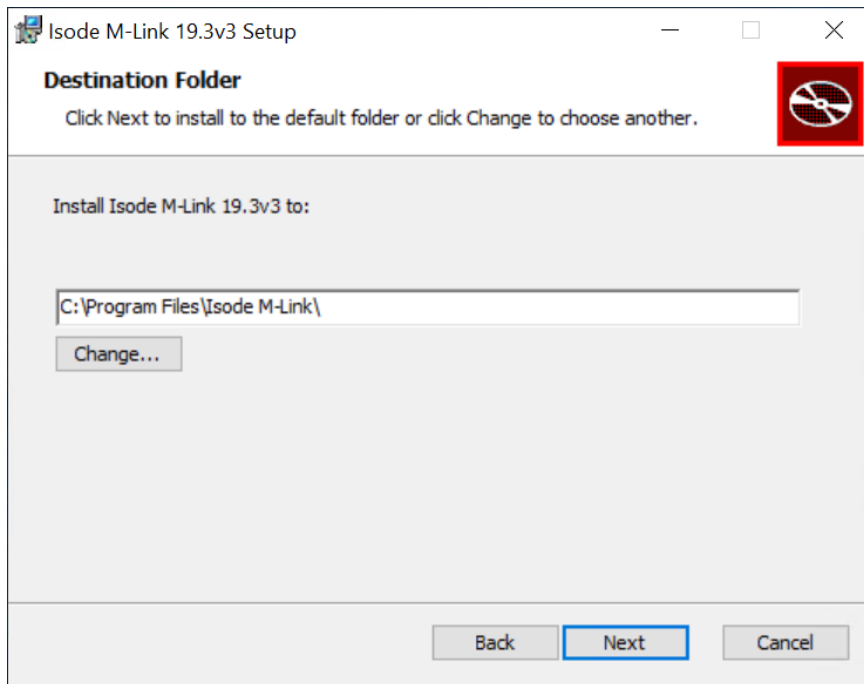


Click "Next"

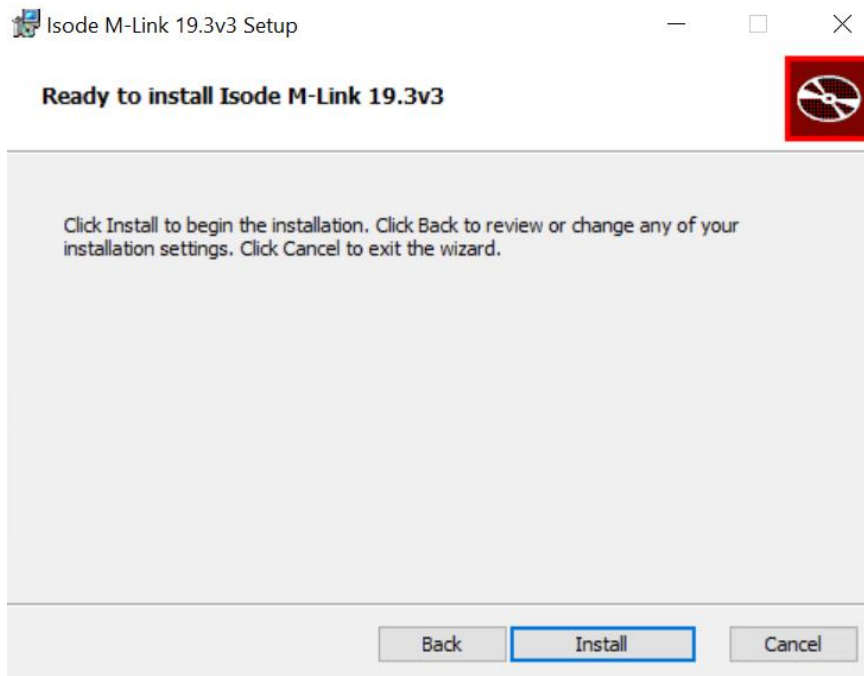


Check the checkbox to accept the terms of the license and click "Next"

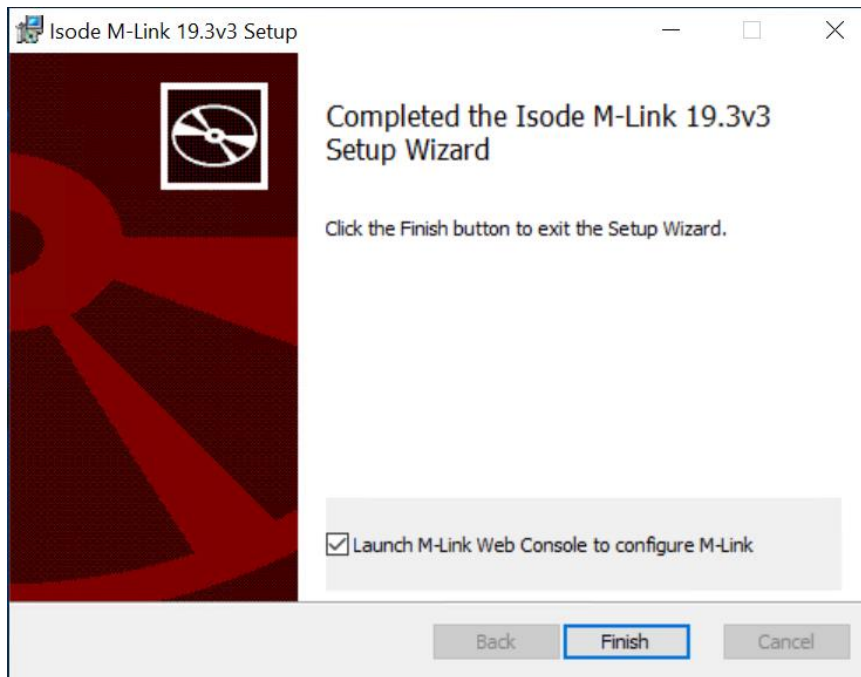
# Isode



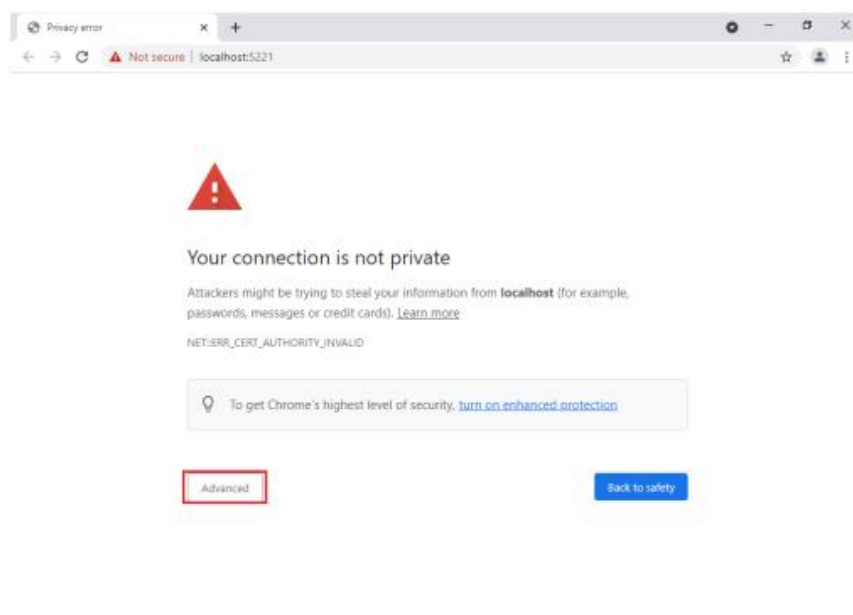
Click "Next"



Click "Install"

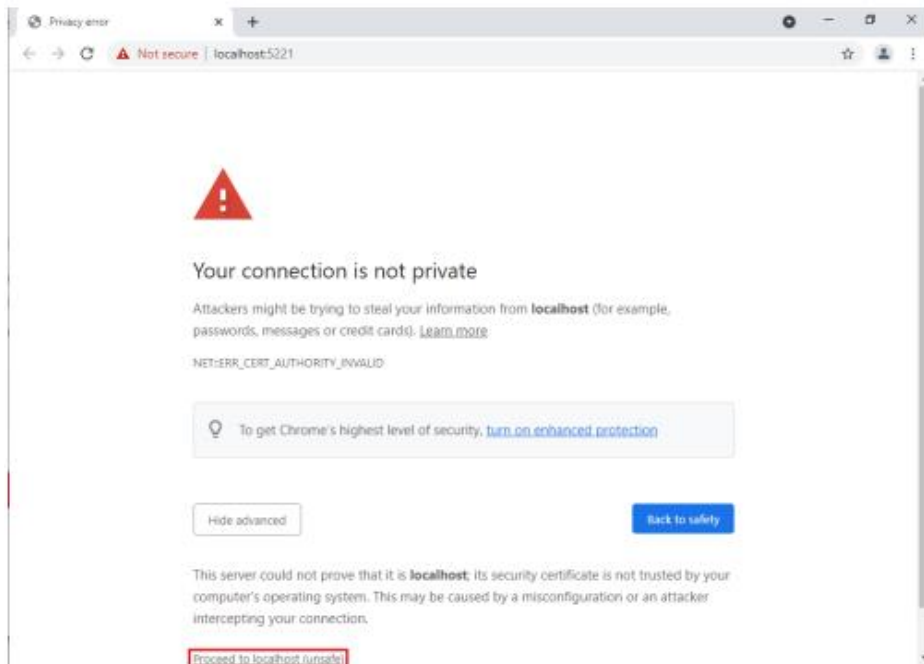


Click “Finish” and the following Browser window will open:

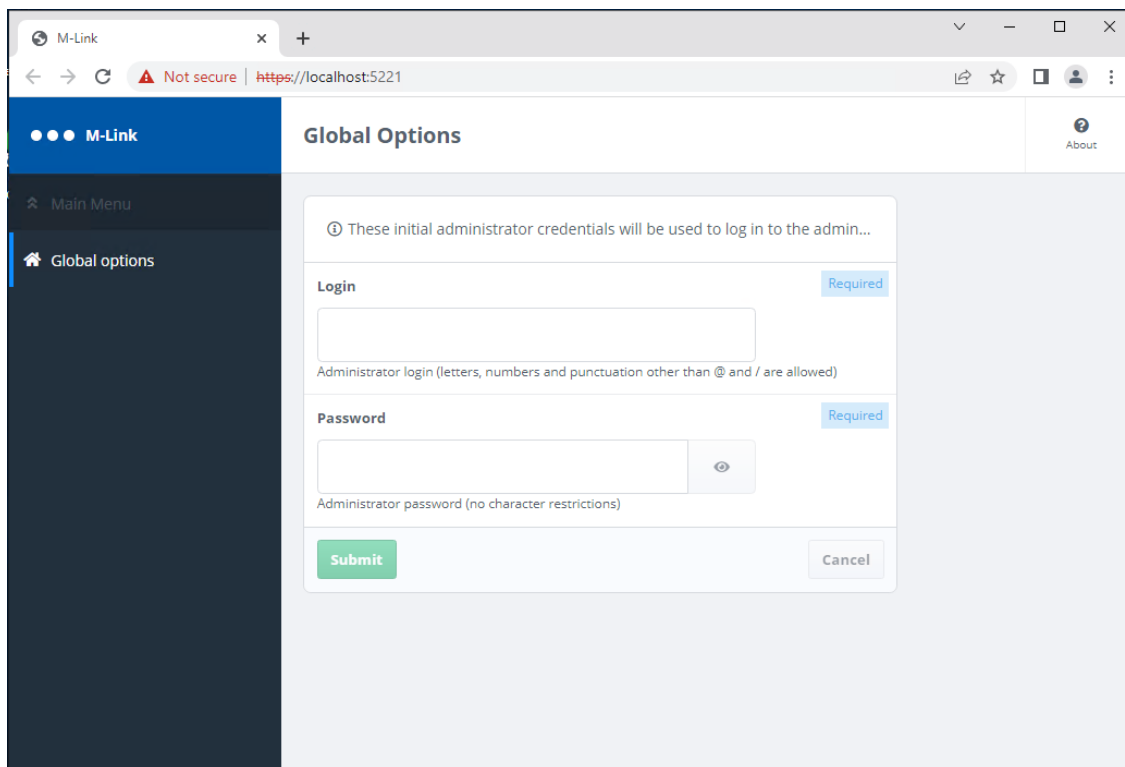


Click “Advanced”

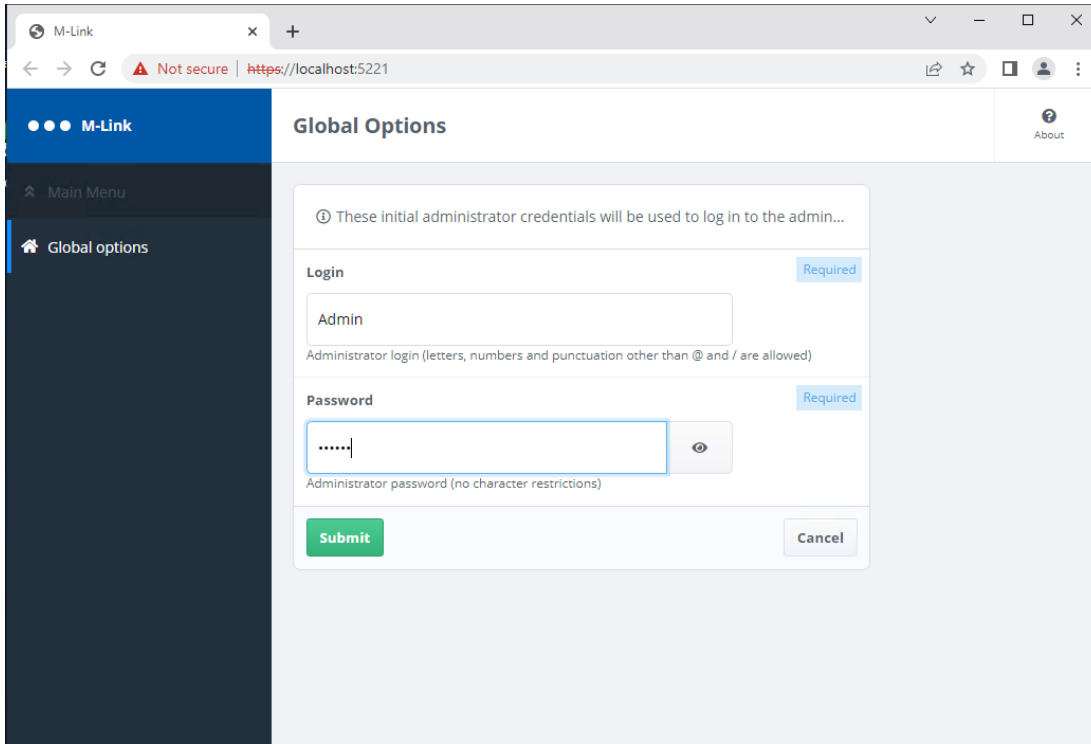




Click “Proceed to localhost (unsafe)”

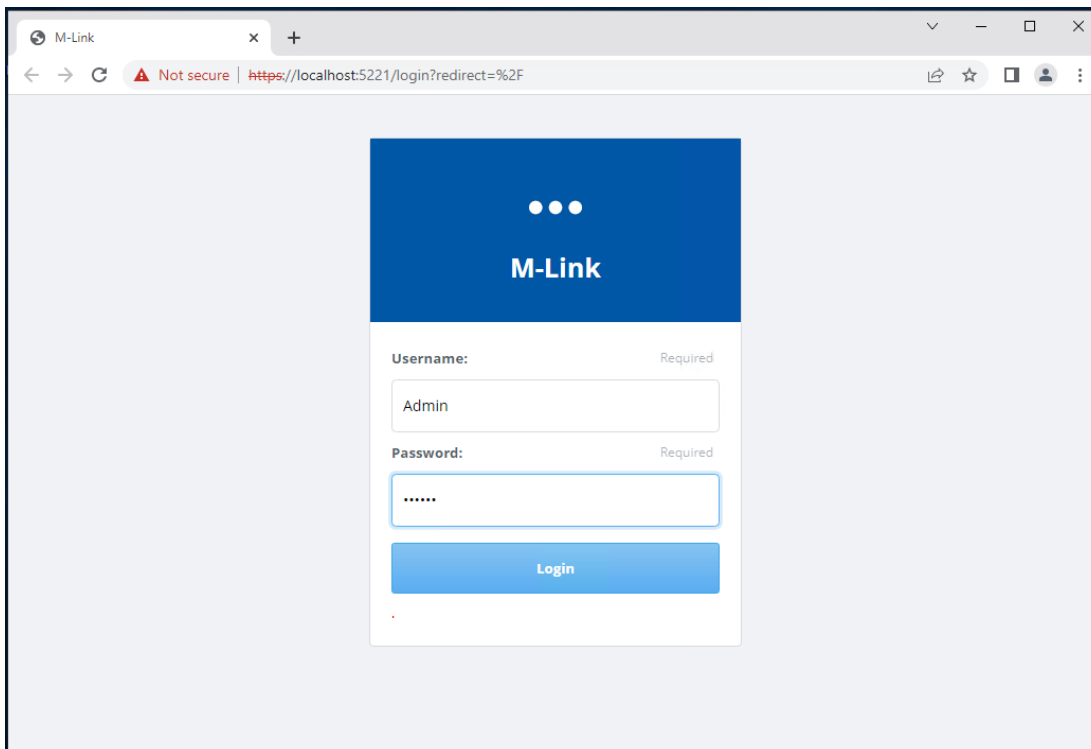


Enter an Administrator Login Name of your choice and set a password.

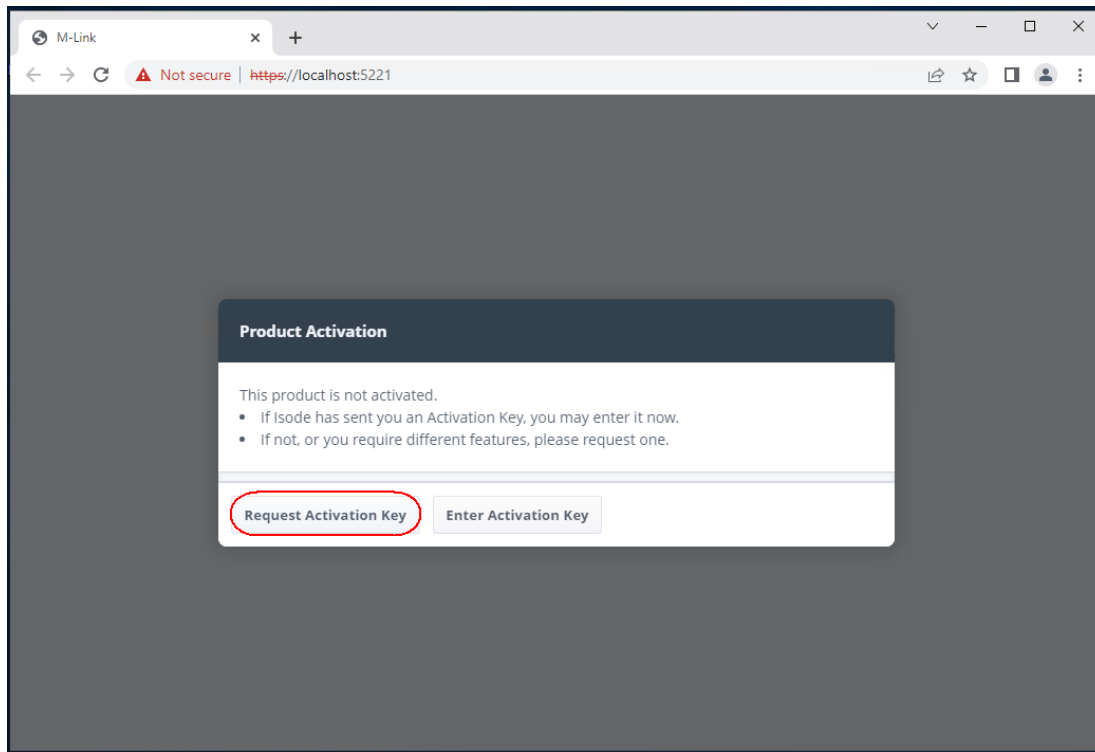


Click “Submit”

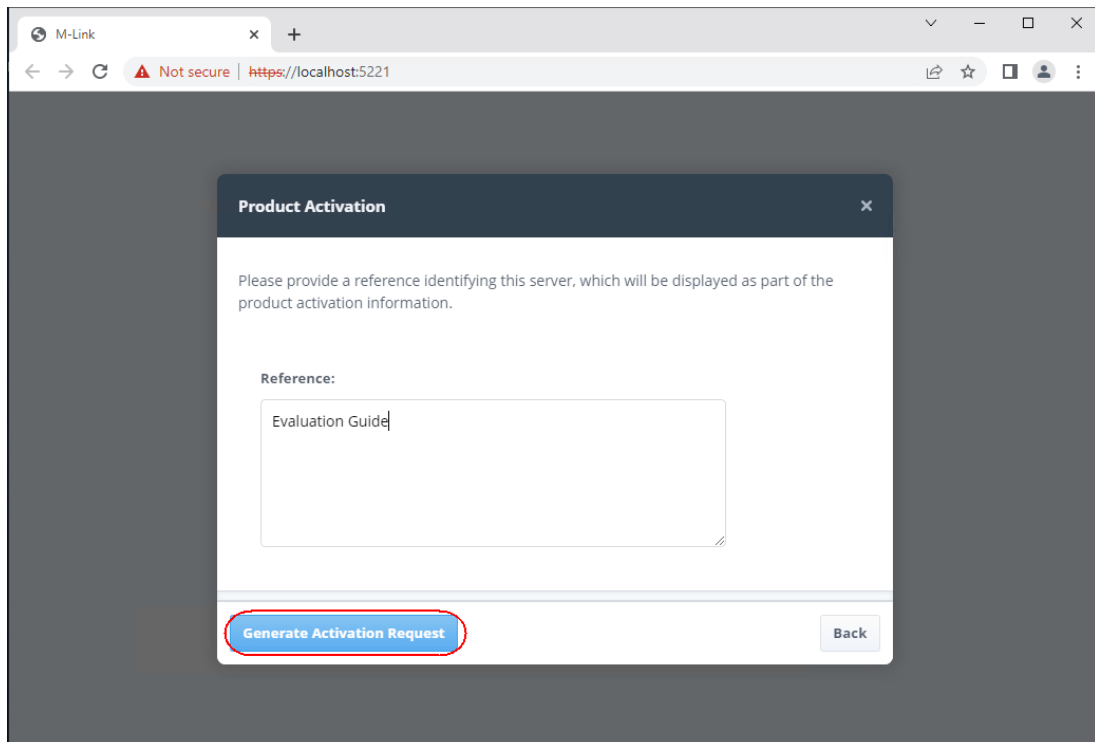
Enter the Administrator Login Name and Password you created previously. Click “Login”



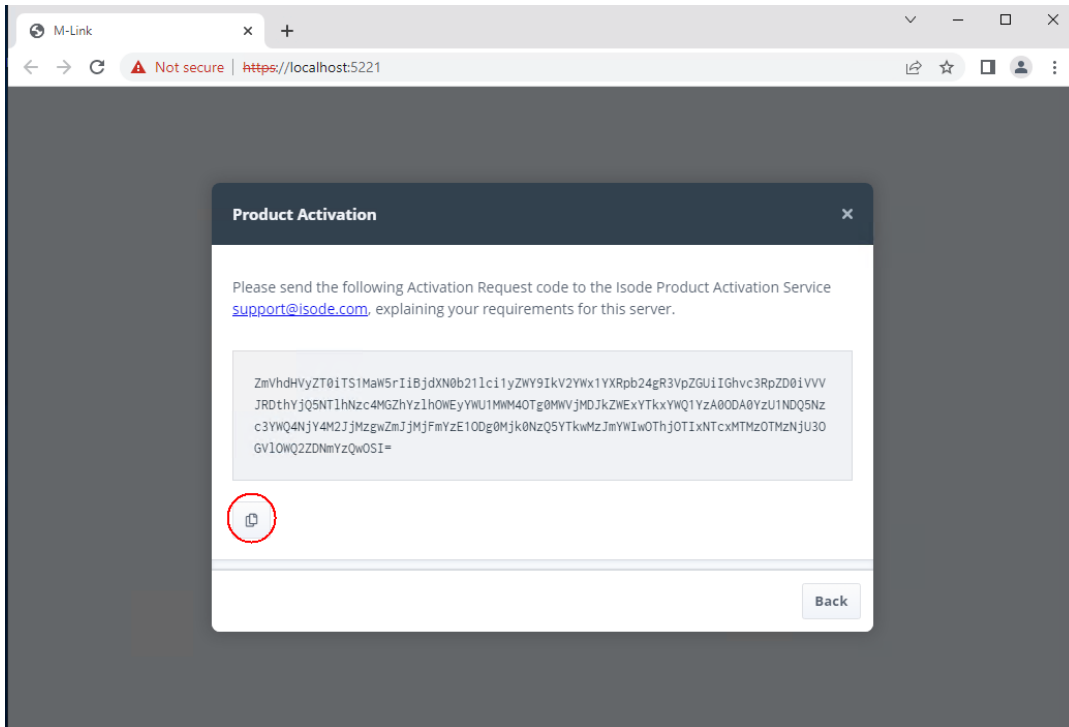
At the Product Activation screen click “Request Activation Key”



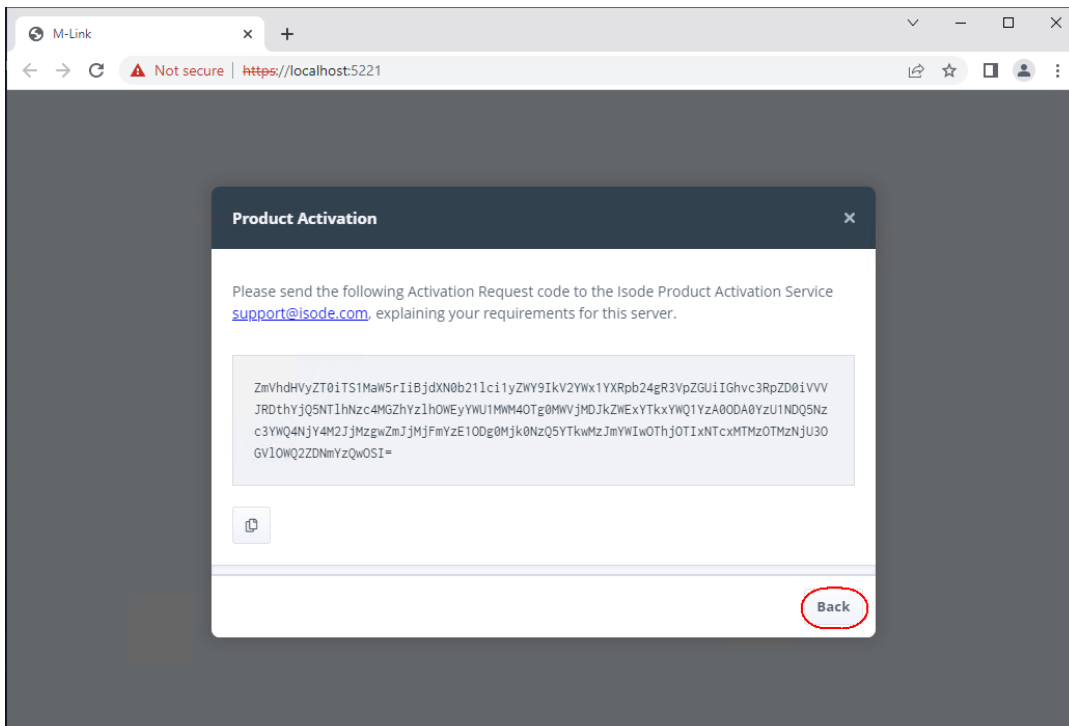
Enter a reference for your server, then click “Generate Activation Request”



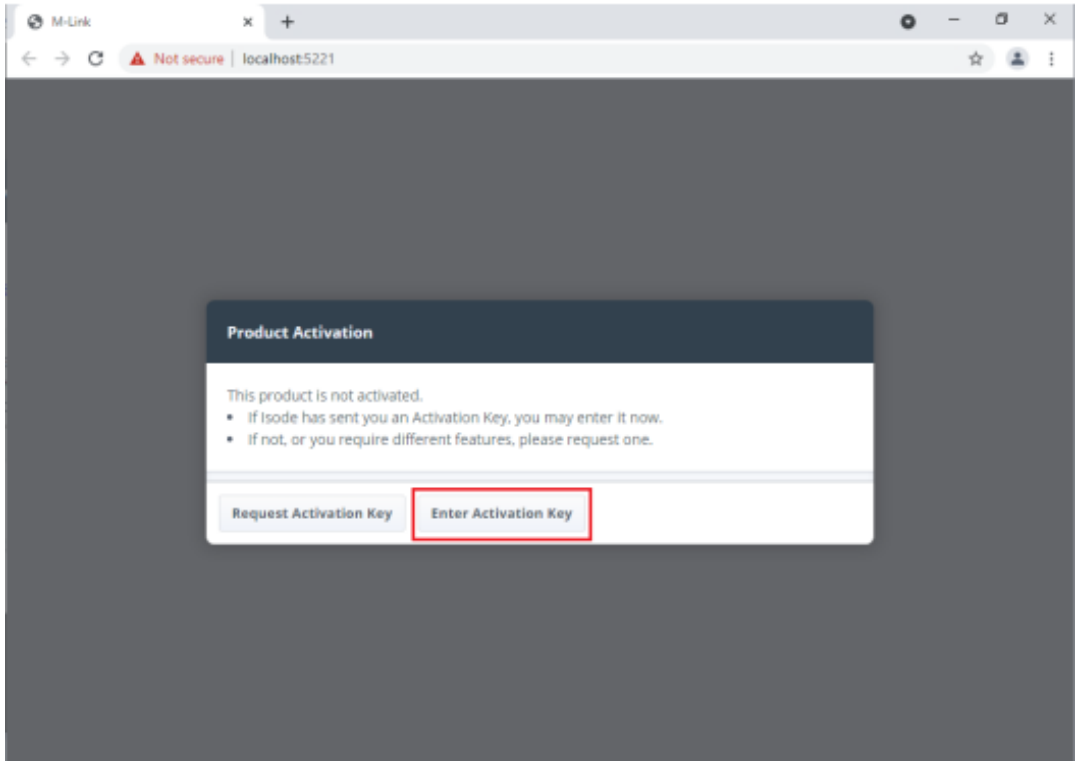
Use the “Copy” button (bottom left) to copy this “Activation Request” and then email it to [support@isode.com](mailto:support@isode.com)



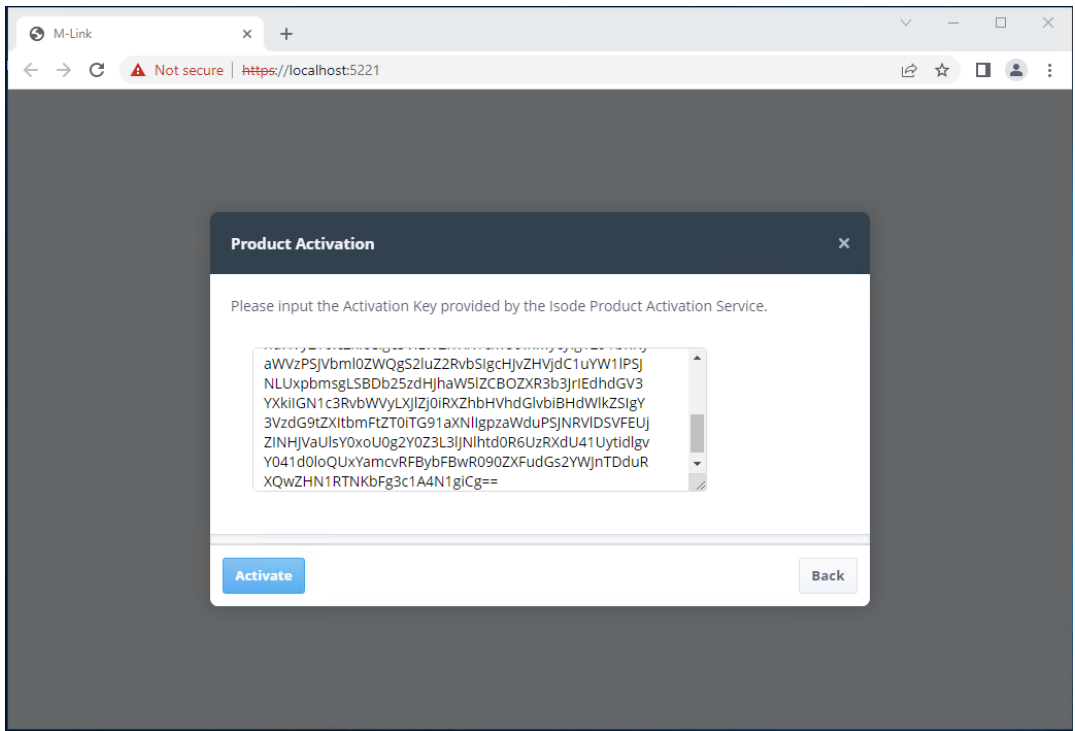
Click “Back”



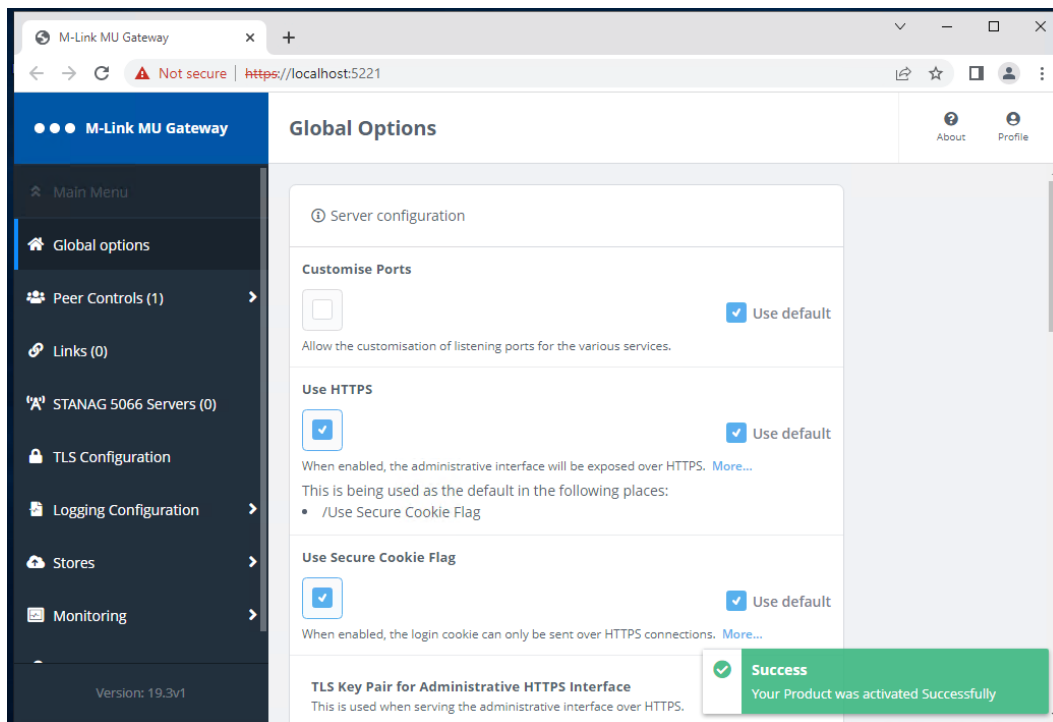
When you receive the “Product Activation Key” from Isode Support, you should then Click “Enter Activation Key”.



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:



## Operation over IP Networks

M-Link MU Gateway is an M-Link server with no local users, it is used to enable communication between groups of XMPP Servers over slow network links, enabling the optimization of the server-to-server protocol over the slow links.

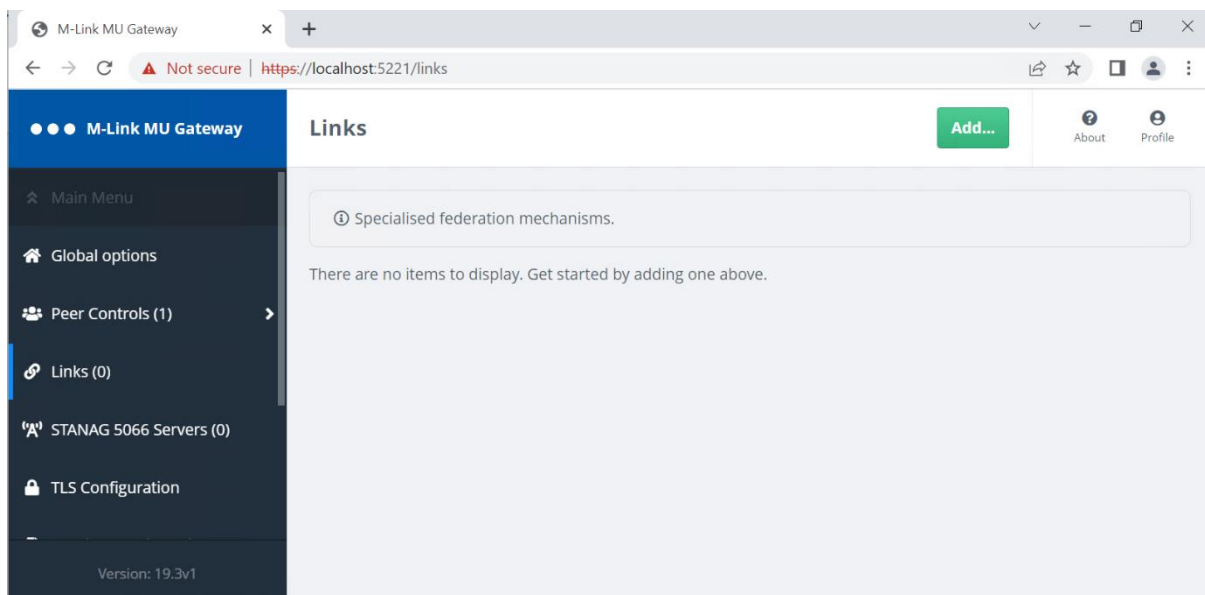
## Firewall Settings

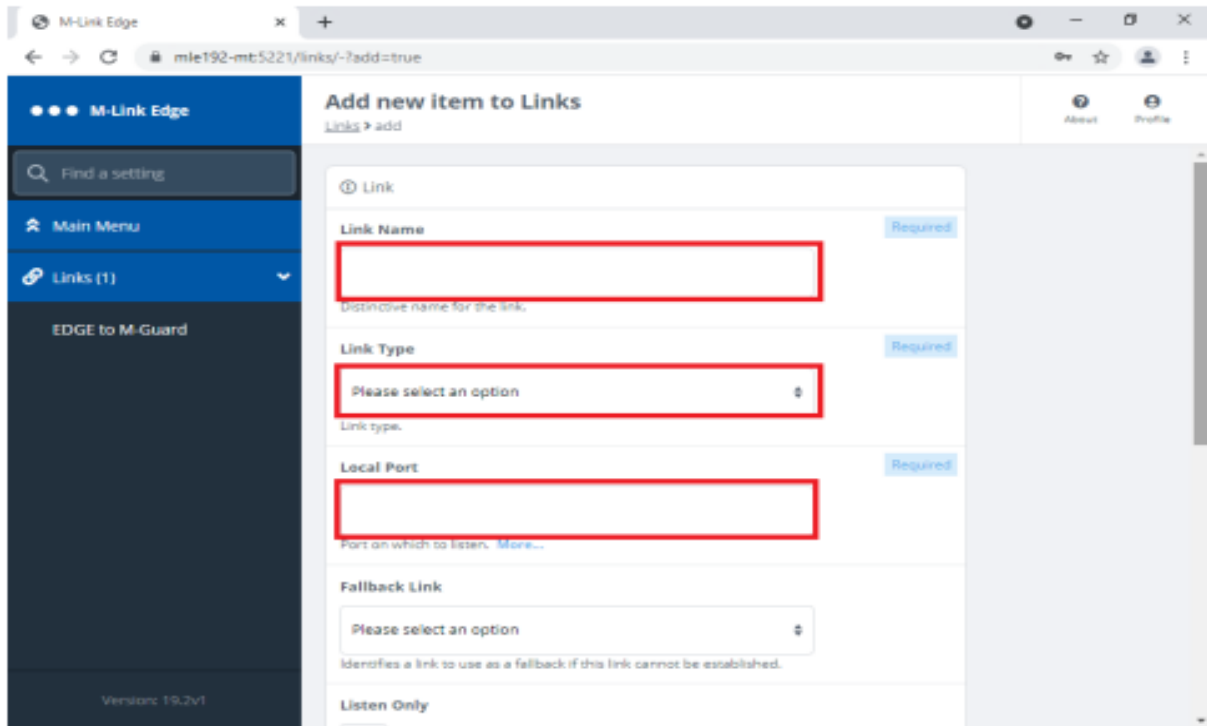
On server systems, firewalls should be turned off or the relevant TCP Port enabled, we've used 65510 in this guide for the Zero Handshake protocol.

## Configuring a XEP-0361 Zero Handshake Server to Server Protocol Link

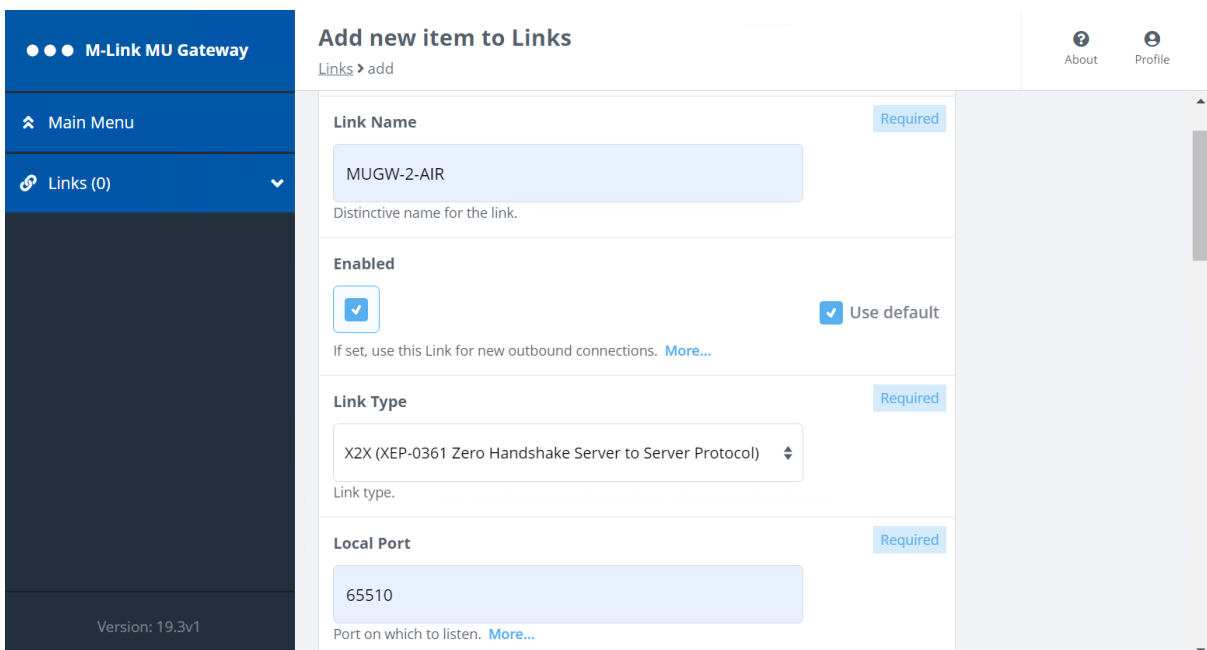
A XEP-0361 Zero Handshake Server to Server Protocol Link is typically used for connecting over a Low Bandwidth TCP/IP Connection e.g. SATCOM or some 3rd Party XMPP Guards

From the M-Link MU Gateway, click on “Links” then click “Add”





The “Link Name” is a “Friendly Name” that you should use to identify the Link, the “Link Type” will be “XEP-0361 Zero Handshake Server to Server Protocol Link” selected from the drop down. The Port will be agreed between the two servers.



Isode

Scroll down and enter the “Remote Host” IP or Hostname and “Remote Port” of the external XMPP Server:



**M-Link MU Gateway**

**Add new item to Links**

Links > add

Remote Host Required

AIRCRAFT1

Host to which to connect.

Remote Port Required

65510

Port to which to connect.

Enable XEP-0198  Use default

If set, this link will use XEP-0198 Stream Management requests and acknowledgements.

XEP-0198 Version Use default

Normal XEP-0198 (v1.6, using urn:xmpp:sm:3)

Allows setting the version of XEP-0198 to support over this link. [More...](#)

Version: 19.3v1  
https://localhost:5221

Scroll down and click “Add”. Your XEP-0361 Zero Handshake Server to Server Protocol Link is now complete and we can proceed to add it to a Peer Control Configuration.

**M-Link MU Gateway**

**Links** Add...

Specialised federation mechanisms.

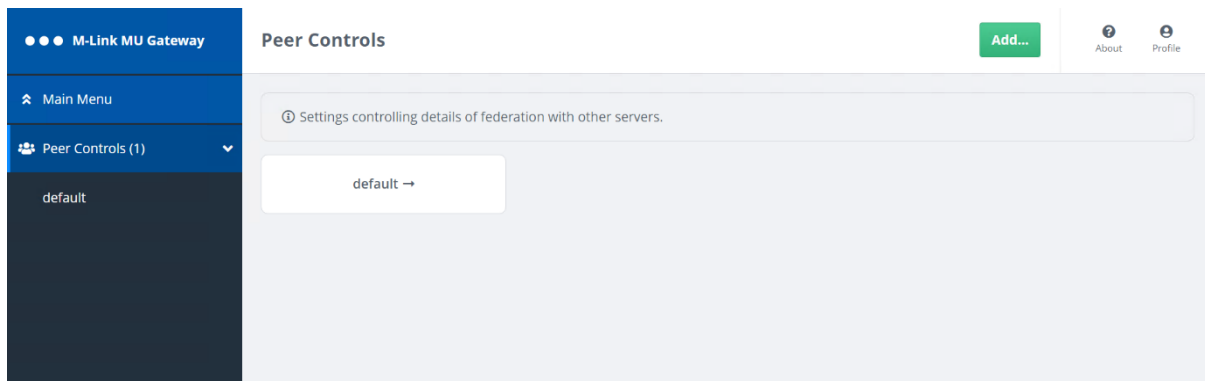
MUGW-2-AIR →

Links (1)

MUGW-2-AIR

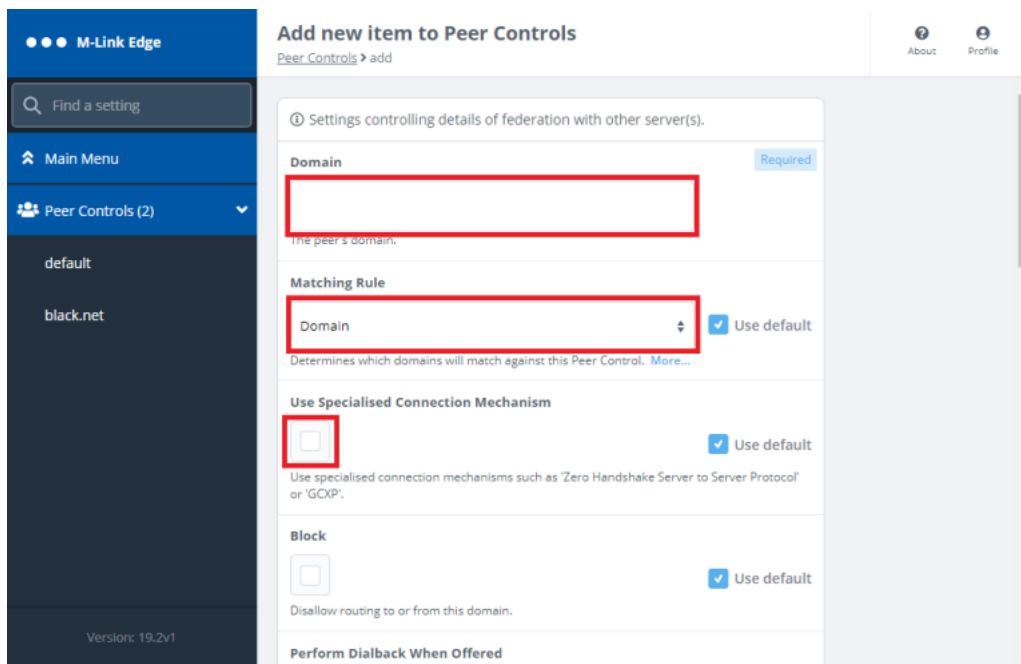
About Profile

From the Main Menu click “Peer Controls”:

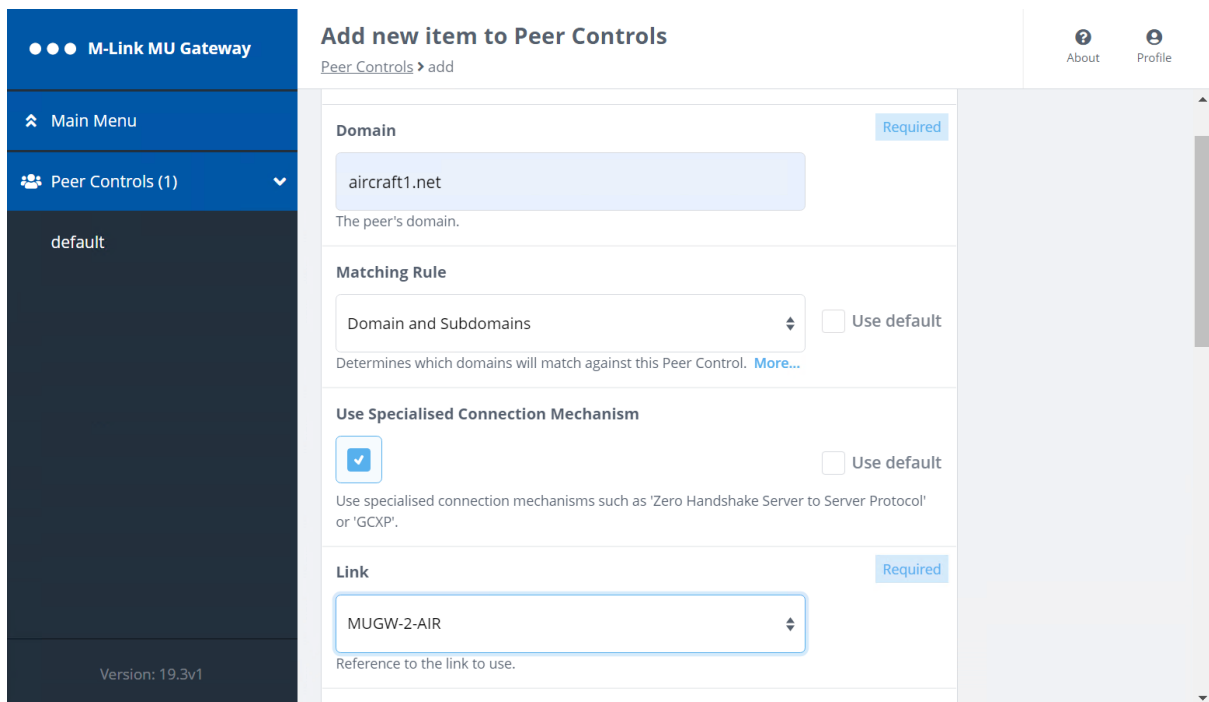


Click on “Add”

Complete the “Domain”, “Matching Rule” and Check the “Use Specialised Connection Mechanism” Checkbox

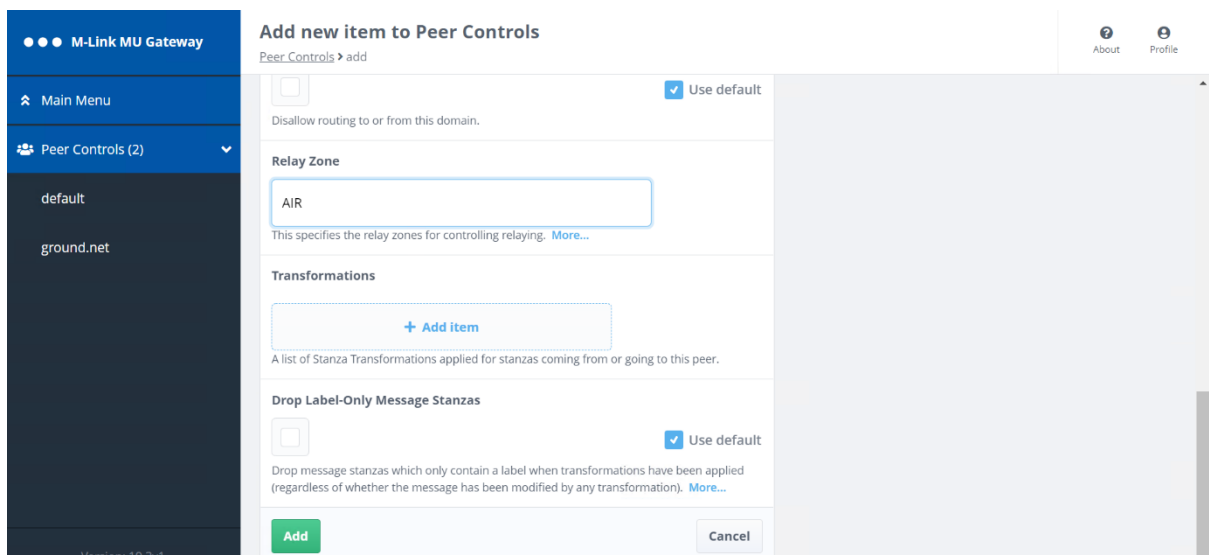


The “Domain” should be the XMPP Domain of the Server you are connecting to. The “Matching Rule” should be “Domain and Subdomain” if you want to include both the 1 to 1 Domain and Multi User Chat (MUC) Domain. You should then select the “Link” you have just created from the drop down:



Scroll down to “Relay Zone”

The M-Link MU Gateway Server does not have a Domain of its own, so it typically relays between different XMPP Domains. In order to do this, each Peer Control needs a unique “Relay Zone” defined. This is a free text name, so should be something to remind you of where you are relaying between:



Click “Add”

You have now completed configuring the XEP-0361 Zero Handshake Server to Server Protocol Link (X2) Link and associated Peer Control.

The screenshot shows the 'Peer Controls' section of the M-Link MU Gateway. On the left is a dark blue sidebar with the following items: 'M-Link MU Gateway' (with three white dots), 'Main Menu' (with a white arrow icon), 'Peer Controls (2)' (with a white arrow icon and a dropdown arrow), 'default', and 'aircraft1.net'. At the bottom of the sidebar, it says 'Version: 19.3v1'. The main content area has a title 'Peer Controls' and a green 'Add...' button. Below the title is a light gray box containing the text 'Settings controlling details of federation with other servers.' Underneath this are two white buttons: 'default →' and 'aircraft1.net →'. In the top right corner, there are two icons: 'About' (with a question mark icon) and 'Profile' (with a person icon).

## Operation over HF Radio (STANAG 5066)

The M-Link MU Gateway uses the SIS Layer Extension Protocol protocol with Server to Server communication over STANAG 5066 ARQ ([XEP-0365](#)) to enable communication over STANAG 5066 services, such as HF radio via the STANAG 5066 Subnet Interface Service. The use of SLEP provides a reliable bidirectional stream service which can support compression.

This section assumes that you have access to a STANAG 5066 server. Isode's own "Icon-5066" product is available for this purpose and an evaluation guide for Icon5066 is available from [www.isode.com/evaluate/evaluate-network.html](http://www.isode.com/evaluate/evaluate-network.html).

To configure Isode applications to use STANAG 5066, two parameters are needed:

- The domain (or IP address) of the STANAG 5066 server
- The TCP ports of the STANAG 5066 server (port 5066 is commonly used)

Prior to running Isode applications over an S5066 link, we recommend testing the STANAG 5066 subsystem, using Isode's 'STANAG 5066 Console' tool.

## Testing the 5066 Subsystem using S5066 Console

Isode's STANAG 5066 Console is intended to help set up, test, and monitor STANAG 5066 infrastructure. In Windows click Start, and from the Programs menu, select "Isode 17.0 > S5066 Console". In Linux execute the following command:

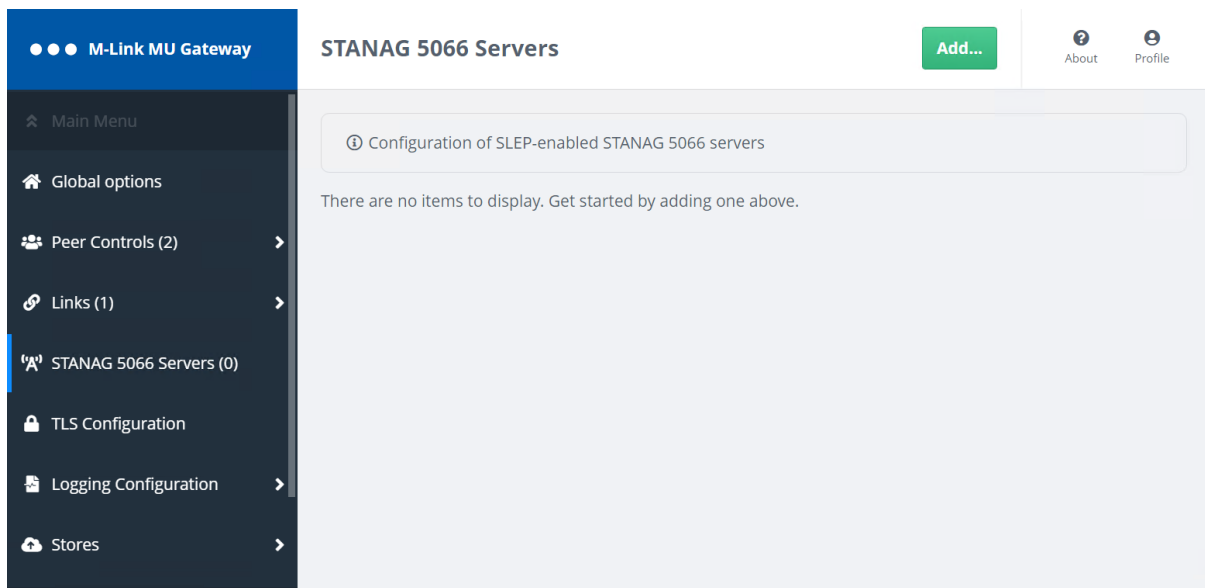
```
/opt/isode/bin/s5066console
```

Within the S5066 Console tool, select "View > S5066Console" followed by "S5066 Server>Add". S5066 server parameters screen should be completed as follows:

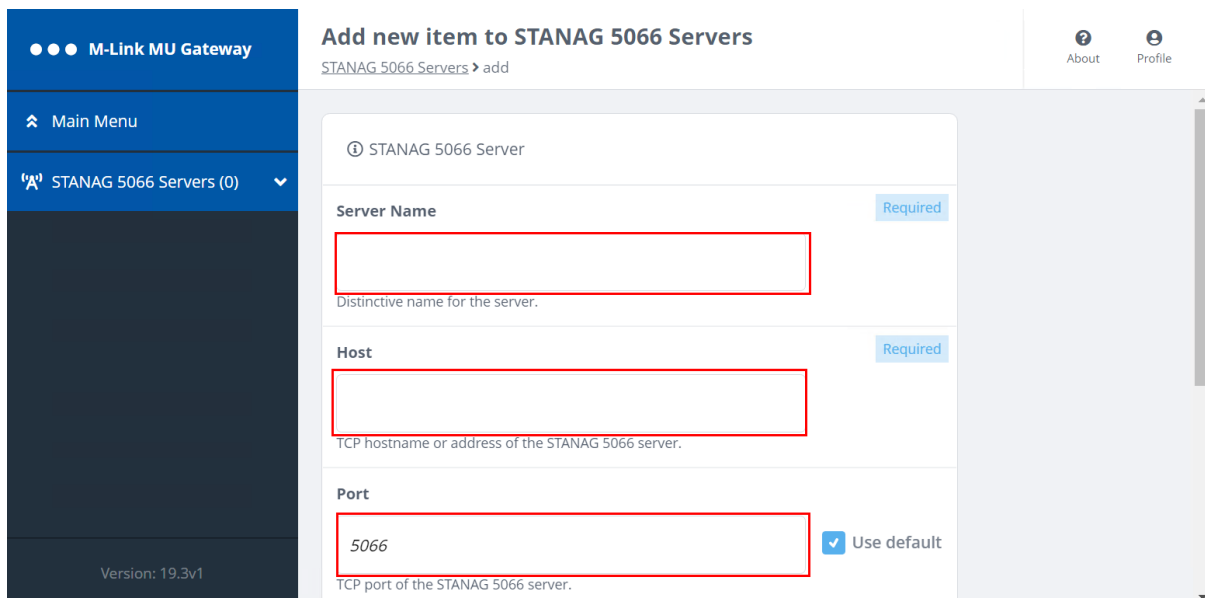
- Friendly Name: Give the S5006 server an identifying name
- Hostname/Port: Fill in the Host and Port of the S5066 server
- Auto-discover: select this option
- Transmission Mode: Set to ARQ
- Broadcast Address: Configure the broadcast address, which will be set by the server.

## Link Setup for STANAG 5066

From the M-Link MU Gateway click on “STANAG 5066 SERVERS”



Click “Add”



The “Server Name” is a “Friendly Name” that you should use to identify the STANAG server. The “Host” will be IP or Host name of the 5066 Server. The “Port” is the TCP port of the STANAG 5066 Server

**Add new item to STANAG 5066 Servers**  
STANAG 5066 Servers > add

STANAG 5066 Server

**Server Name** Required  
Icon5066-Node1  
Distinctive name for the server.

**Host** Required  
Icon5066SVR  
TCP hostname or address of the STANAG 5066 server.

**Port**  
5066  Use default  
TCP port of the STANAG 5066 server.

Scroll down.

In “Local SIS Address” Add the local SIS address of the STANAG 5066 server, “SAP ID” add the SAP ID used for this link.

**Add new item to STANAG 5066 Servers**  
STANAG 5066 Servers > add

5066  Use default  
TCP port of the STANAG 5066 server.

**Local SIS Address** Required  
10.50.66.0  
Local SIS address of the STANAG 5066 server.

**SAP ID** Use default  
6  
The SAP ID used for this link.

**Add** **Cancel**

Version: 19.3v1

Click “Add”

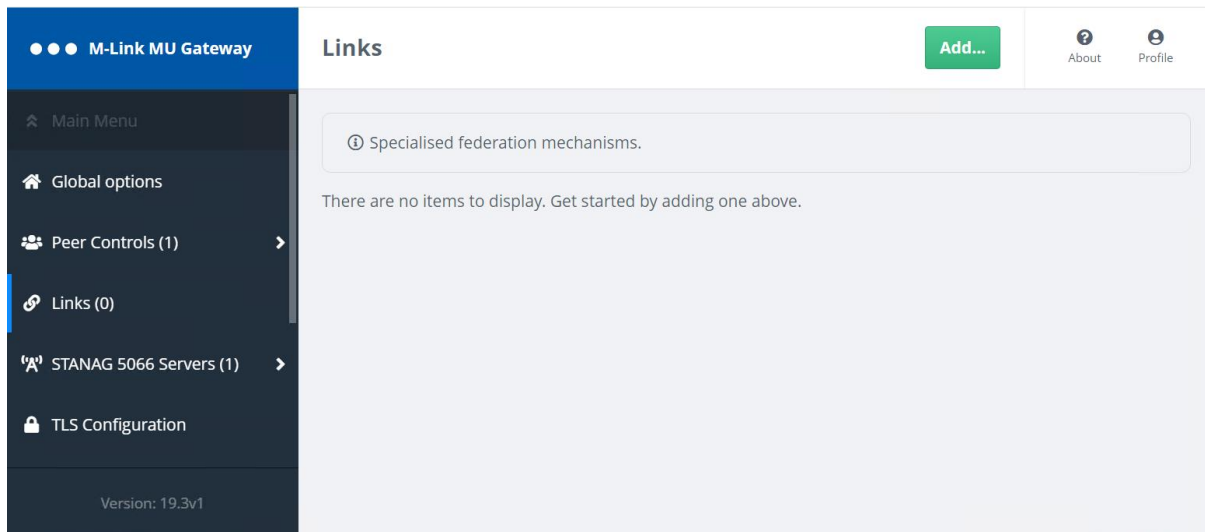
The configuration of the STANAG 5066 Server is now complete and we can proceed to add it to a Link.

**STANAG 5066 Servers** **Add...** **About** **Profile**

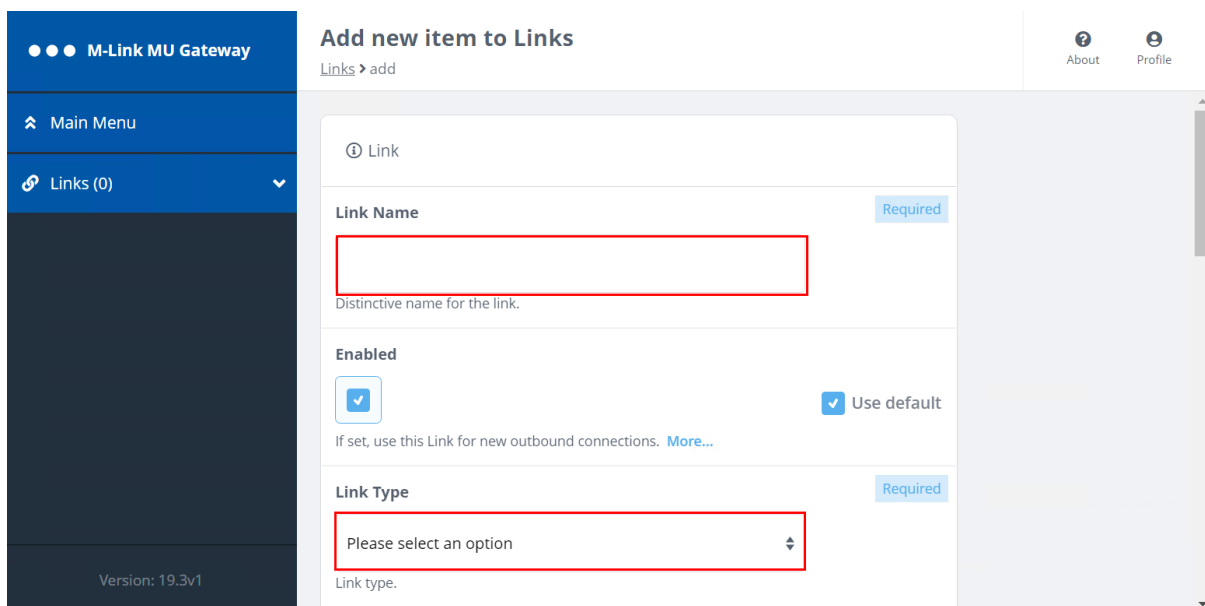
① Configuration of SLEP-enabled STANAG 5066 servers

Icon5066-Node1 →

Click “Main Menu”, click on “Links”



Click “Add”



The “Link Name” is a “Friendly Name” that you should use to identify the Link, the “Link Type” will be “SLEP” selected from the drop down.



M-Link MU Gateway

### Add new item to Links

Links > add

About Profile

Link

**Link Name** Required

MUGW-2-AIR

Distinctive name for the link.

**Enabled**

Use default

If set, use this Link for new outbound connections. [More...](#)

**Link Type** Required

SLEP

Link type.

Version: 19.3v1

Scroll down.

M-Link MU Gateway

### Add new item to Links

Links > add

About Profile

**Session Idle Timeout**

3600  Use default

Sessions will be closed if no stanzas are sent or received for this number of seconds.

**STANAG 5066 Server** Required

Please select an option

STANAG 5066 Server definition that is to be used by this link.

**Remote SIS Address** Required

Remote STANAG 5066 SIS Node address.

Version: 19.3v1

From “STANAG 5066 Server” select 5066-node1. “Remote SIS Address enter the IP address of the remote STANAG 5066 SIS Node Address

M-Link MU Gateway

Links > add

STANAG 5066 Server Required

5066-Node1

STANAG 5066 Server definition that is to be used by this link.

Remote SIS Address Required

10.50.66.1

Remote STANAG 5066 SIS Node address.

PDU Priority

10  Use default

Priority of this SLEP link

Compress  Use default

If enabled, SLEP compression will be enabled for this link.

Add Cancel

Version: 19.3v1

About Profile

Click "Add"

Your SLEP Link is now complete, we can proceed to add it to a Peer Control Configuration.

M-Link MU Gateway

Links Add...

Specialised federation mechanisms.

MUGW-2-AIR →

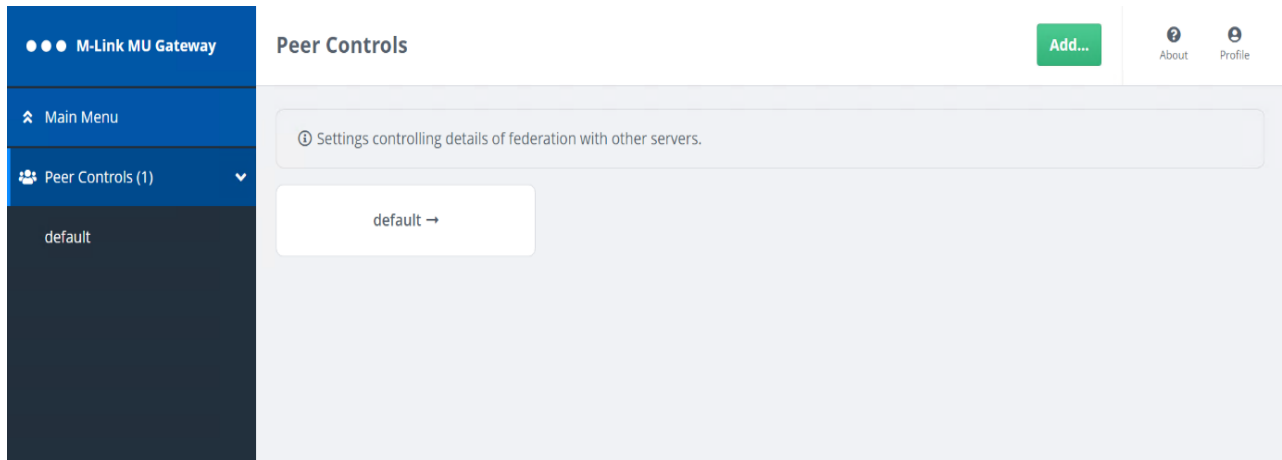
Main Menu

Links (1)

MUGW-2-AIR

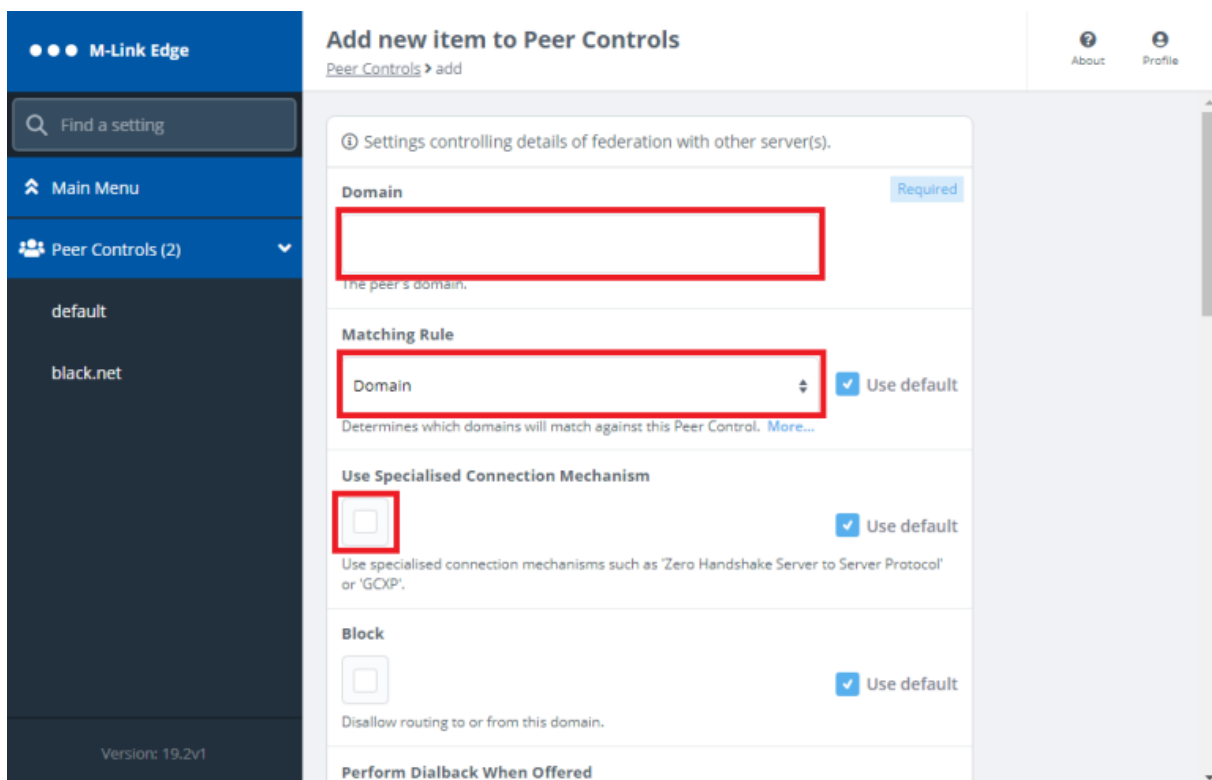
About Profile

From the Main Menu click “Peer Controls”:



Click on “Add”

Complete the “Domain”, “Matching Rule” and Check the “Use Specialised Connection Mechanism” Checkbox



The “Domain” should be the XMPP Domain of the Server you are connecting to. The “Matching Rule” should be “Domain and Subdomain” if you want to include both the 1 to 1 Domain and Multi User Chat (MUC) Domain. You should then select the “Link” you have just created from the drop down.

**M-Link MU Gateway**

**Add new item to Peer Controls**

Peer Controls > add

**Domain** Required

aircraft1.net

The peer's domain.

**Matching Rule**

Domain and Subdomains  Use default

Determines which domains will match against this Peer Control. [More...](#)

**Use Specialised Connection Mechanism**

Use default

Use specialised connection mechanisms such as 'Zero Handshake Server to Server Protocol' or 'GCXP'.

**Link** Required

MUGW-2-AIR

Reference to the link to use.

Scroll down to “Relay Zone”

The M-Link MU Gateway Server does not have a Domain of its own, so it typically relays between different XMPP Domains. In order to do this, each Peer Control needs a unique “Relay Zone” defined. This is a free text name, so should be something to remind you of where you are relaying between:

**M-Link MU Gateway**

**Add new item to Peer Controls**

Peer Controls > add

Use default

Disallow routing to or from this domain.

**Relay Zone**

AIR

This specifies the relay zones for controlling relaying. [More...](#)

**Transformations**

[+ Add item](#)

A list of Stanza Transformations applied for stanzas coming from or going to this peer.

**Drop Label-Only Message Stanzas**

Use default

Drop message stanzas which only contain a label when transformations have been applied (regardless of whether the message has been modified by any transformation). [More...](#)

**Add** **Cancel**

Click “Add”

You have now completed configuring the “SLEP” Link and associated Peer Control.

You have also reached the end of this Guide. Further Advanced Configuration Options can be found in the M-Link R19.3 User Manual or by contacting [support@isode.com](mailto:support@isode.com).

## Other Evaluations

This guide is one many relating to Isode's XMPP Messaging Products, other guides are:

- Setting up an XMPP System for 1:1 and Multi-User Chat
- Connecting XMPP and IRC Chat Services
- XMPP for Constrained Network Environments (M-Link R17.0 only)
- M-Link EDGE 19.3 Evaluation Guide

Information on all of these evaluations can be found at [www.isode.com/evaluate/evaluate-xmpp.html](http://www.isode.com/evaluate/evaluate-xmpp.html) . For messaging evaluations outside the scope of these guides, please contact us. 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/](http://www.isode.com/whitepapers/).

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