

Quick Start guide

MESH Installation

**Improving lives with
data and technology**

Contents

Introduction	3
Mesh Client installation on Windows	4
Test environment	4
Live Environment	6
Useful links	8
Running Mesh as a Windows service	9
MESH UI	10

Introduction

The purpose of this document is to help the reader step by step process to install MESH and use it.

MESH (Message exchange for Social Care and Exchange) is a centralised service managed by NHS Digital. It supports clinical and business processes requiring the secure transfer of data between NHS and affiliated organisations.

MESH consists of:

- a) **MESH client** – It is usually integrated into supplier provided applications installed at end-sites (individual organisations)

MESH client allows secure transfer of data via an encrypted link between the end-site application (your organisation) and the central MESH server.

- b) **Central MESH server** – It is located within the Spine Core Messaging Service.

The central MESH server stores data sent to it until the intended recipient site connects to the service and, with its MESH client, collects the data addressed to it over an encrypted link.

Kindly refer to [MESH client user guide](#) for user guidance on how you to use MESH client once installed, including how to send and receive messages.

Mesh Client installation on Windows

We highly recommend that you install the MESH client on your server or a shared folder, rather than a local drive on your personal computer. This ensures many individuals can access the MESH client at once, and that it will be available to run even when your computer is off.

Test environment

Follow the below steps to set the MESH test environment.

1. [Request a mesh mailbox](#) – once you have a mailbox ID and password proceed.
2. Ensure [Java 1.6](#) or later is installed.
3. Download the [Mesh installation pack](#).
4. Open the pack and click “Extract to” and choose the location you wish to extract these files to.
5. Run the .jar file by either double clicking on the icon in your folders, or right-click on the .jar file and click “Open With”, then select the appropriate Java Runtime.
6. Follow the instructions on the installer and keep a note of the installation path and the data path.
7. The MESH client will have been installed in your chosen folder. Find this folder (if you did not adjust the install destination previously, it will be in “MESH-APP-HOME”). You should have a series of folders, including “log”, “proxy” and “KEYSTORE”. The following configuration steps require access to the files beneath these folders.
 - a. Download the [INT_internet.keystore](#) and place it in the KEYSTORE folder in MESH-APP-HOME
 - b. Within the MESH-APP-HOME directory you will find a **meshclient.cfg**,
8. Open this in a text editor such as notepad and edit the lines **highlighted**:

```
<?xml version="1.0"?>
```

```
<MESHConfig>
```

```
<PrimaryURL>https://msg.intspineservices.nhs.uk</PrimaryURL> -- change from live URL to Test URL
```

```
<LogPath>MESH-APP-HOME\log</LogPath>
```

```
<KeyStorePath>C:\MESH-APP-HOME\KEYSTORE\INT_internet.keystore</KeyStorePath> -- change the keystore
```

```
<KeyStorePassword>Spine2Int</KeyStorePassword> -- This is the password for the downloaded keystore
```

```
<WorkPath>MESH-APP-HOME\working</WorkPath>
```

```
<ProxyPath>MESH-APP-HOME\proxy</ProxyPath>
```

```
<SignalPath>MESH-APP-HOME\sig</SignalPath>
```

```
<PollPeriod>30</PollPeriod>
```

```
<ServerRetry>3</ServerRetry>
```

```
<MaxMessages>100</MaxMessages>
```

```
<MaxConnections>4</MaxConnections>
```

```
<AutoUpgrade>Y</AutoUpgrade>
```

```
<Client>
  <ClientIdentity>YOUR_MAILBOX_ID</ClientIdentity> -- enter your mailbox ID provided
  <ClientAuthentication>YOUR_MAILBOX_PASSWORD</ClientAuthentication> -- enter your mailbox
password here
  <MailboxType>MESH</MailboxType>
  <InterfaceRoot>\MESH-DATA-HOME\YOUR_MAILBOX_ID</InterfaceRoot>
  <CollectReport>Y</CollectReport>
  <TransferReport>N</TransferReport>
  <PollReport>N</PollReport>
  <SaveSent>Y</SaveSent>
</Client>
</MESHConfig>
```

9. Once this is done, save the file and you can run the “runMeshClient.bat” file to start up MESH.
10. Check your log folder for a log file, this should indicate if any errors have occurred.

Common errors:

Attempting to send from a non-England IP address will lead to a 500 error in the logs which looks like this

```
2022-02-04 13:17:45,284:[Mailbox:YOURMAILBOX
]:ERROR:AuthenticationService:Unexpected response from server. Status Code:500
```

```
2022-02-04 13:17:45,301:[Mailbox: YOURMAILBOX
]:ERROR:AuthenticationService:Failed to Authenticate Mailbox: YOURMAILBOX
```

```
2022-02-04 13:17:45,301:[Mailbox: YOURMAILBOX ]:WARN :MailboxProcessor
:Authentication failed for Mailbox: YOURMAILBOX. Remote Server may be unavailable.
```

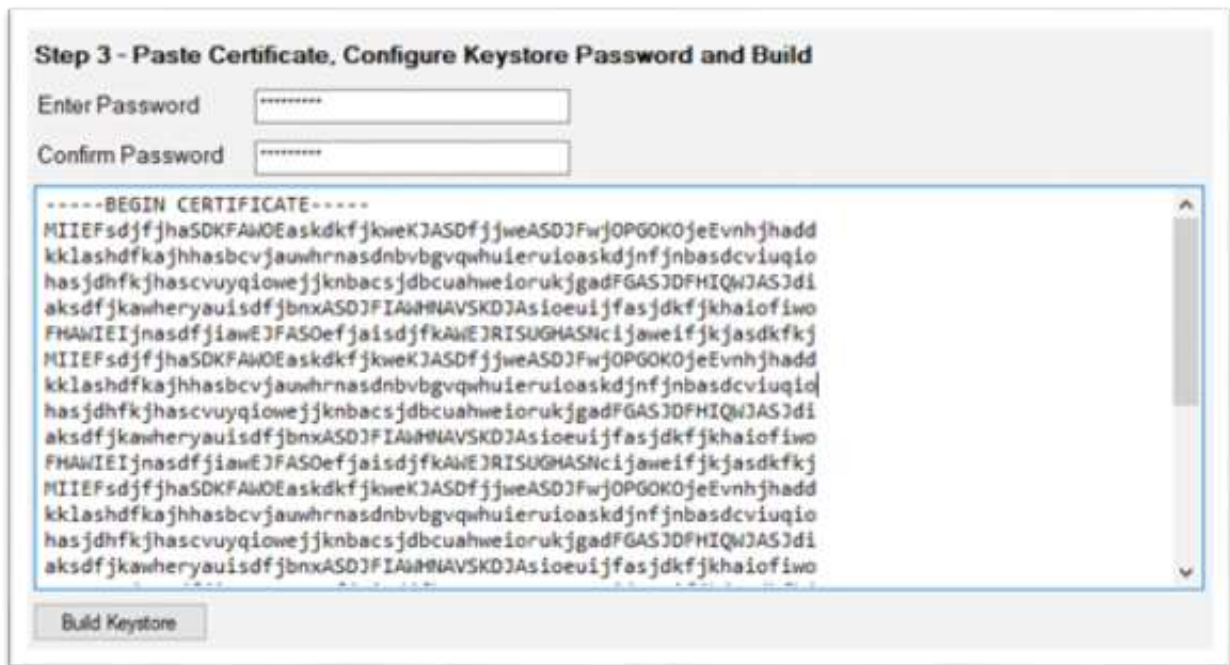
Live Environment

Follow the below steps to set the MESH LIVE environment.

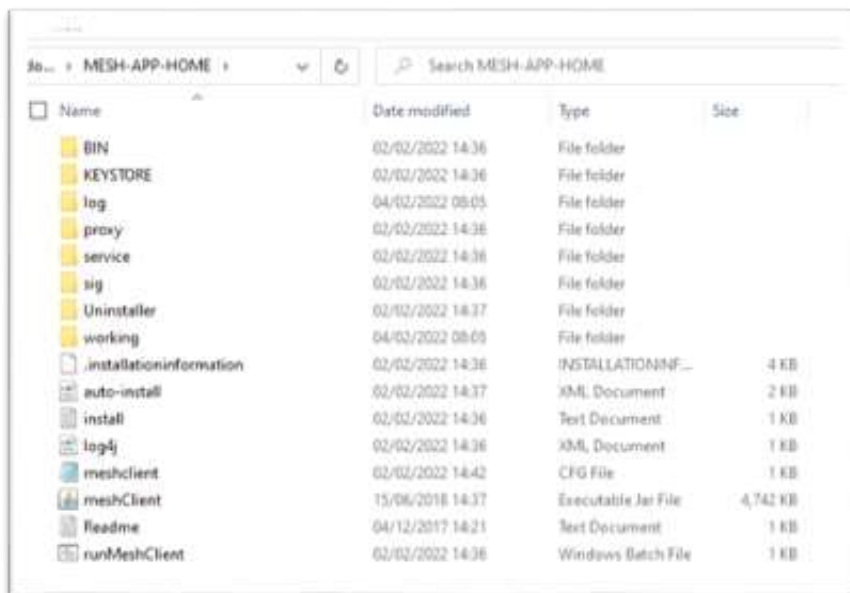
1. [Request a live mesh mailbox](#) – once you have a mailbox ID and password proceed.
2. Ensure [Java 1.6](#) or later is installed.
3. Download the [Mesh installation pack](#).
4. Open this pack and click “Extract to” and choose the location you wish to extract these files to.
5. Open the .jar file by either double clicking on the icon in your folders, or right-click on the .jar file and click “Open With”, then select the appropriate Java Runtime.
6. Follow the instructions on the installer and keep a note of the installation path and the data path.
7. The MESH client will have been installed in your chosen folder. Find this folder (if you did not adjust the install destination previously, it will be in “MESH-APP-HOME”). You should have a series of folders, including “log”, “proxy” and “KEYSTORE”. The following configuration steps require access to the files beneath these folders on the list.
 - a. Download the [Mesh certificate tool](#) and extract to your desktop
 - b. Open the certificate tool fill in your ODS code, Mailbox ID and select Client from the system type dropdown. Click generate and a certificate signing request will be saved on your desktop and copied to your clipboard. This needs to be sent to national service desk to get a certificate.



8. Paste the signed certificate returned from national service desk, into the certificate tool and enter a keystore password. Then click Build Keystore. This will save a keystore to your desktop.



9. This Keystore needs to be moved to the mesh installation keystore directory.



10. Edit the meshclient.cfg file with your MESH mailbox details, keystore password.

Editing the fields highlighted:

```
<?xml version="1.0"?>
```

```
<MESHConfig>
```

```
<PrimaryURL>https://mesh-sync.national.ncrs.nhs.uk</PrimaryURL> -- this URL can be used on the HSCN network. For access from the internet use:
```

```
<PrimaryURL>https://mesh-sync.spineservices.nhs.uk</PrimaryURL>
```

```
<LogPath>C:\MESH-APP-HOME\log</LogPath>
```

```
<KeyStorePath>C:\MESH-APP-HOME\KEYSTORE\mesh.keystore</KeyStorePath>
```

```
<KeyStorePassword>YOUR KEYSTORE PASSWORD</KeyStorePassword>
```

```
<WorkPath>C:\MESH-APP-HOME\working</WorkPath>
<ProxyPath>C:\MESH-APP-HOME\proxy</ProxyPath>
<SignalPath>C:\MESH-APP-HOME\sig</SignalPath>
<PollPeriod>30</PollPeriod>
<ServerRetry>3</ServerRetry>
<MaxMessages>100</MaxMessages>
<MaxConnections>4</MaxConnections>
<AutoUpgrade>Y</AutoUpgrade>
<Client>
  <ClientIdentity>YOURMAILBOXID</ClientIdentity>
  <ClientAuthentication>YOURMAILBOXPASSWORD</ClientAuthentication>
  <MailboxType>MESH</MailboxType>
  <InterfaceRoot>C:\PATH\TO\MESH-DATA-HOME\MAILBOXID</InterfaceRoot>
  <CollectReport>Y</CollectReport>
  <TransferReport>N</TransferReport>
  <PollReport>N</PollReport>
  <SaveSent>Y</SaveSent>
</Client>
</MESHConfig>
```

11. Once this is done, save the file and you can run the “runMeshClient.bat” file to start up MESH.
12. Check your log folder for a log file, this should indicate if any errors have occurred.

Useful links

For more details on the MESH Client installation, see <https://digital.nhs.uk/services/message-exchange-for-social-care-and-health-mesh/mesh-guidance-hub/client-installation-guidance>

For information about the MESH certificates, go to <https://digital.nhs.uk/services/message-exchange-for-social-care-and-health-mesh/mesh-guidance-hub/certificate-guidance>

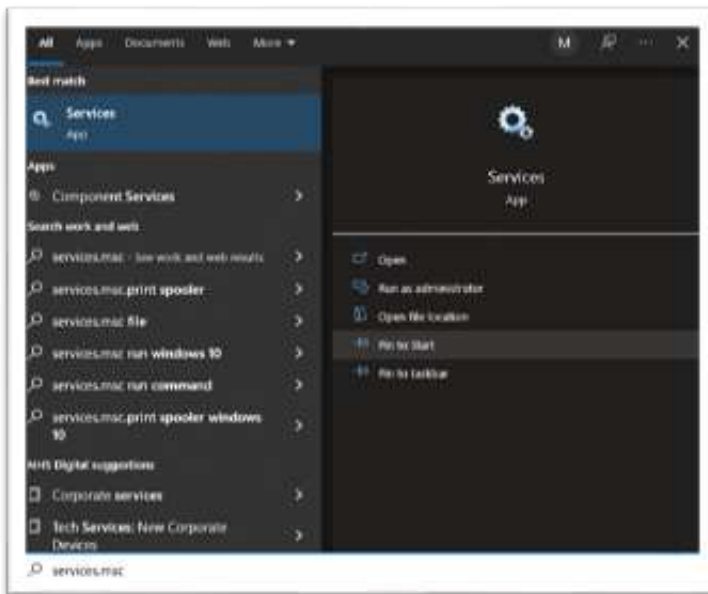
For information on how the MESH client works and on how to create the .CTL control file, go to <https://digital.nhs.uk/services/message-exchange-for-social-care-and-health-mesh/mesh-guidance-hub/client-user-guide>

Running Mesh as a Windows service

Running MESH as a service allows it to run in the background and restarts upon server reboot.

Detailed instructions [here](#)

1. To run MESH as a service,
 - o set AutoUpgrade to N in the meshclient.cfg file.
 - o [Download the service pack](#).
2. Extract the files into the installation path of the MESH client.
3. Double click mesh_service_install.bat and follow the instructions
4. Search for services.msc find the MESH client service and click start



Link-Layer Topology Discove...	Creates a Ne...	Disabled	Local Service	
Local Session Manager	Core Windo...	Running	Automatic	Local System
ManageEngine UEMS -Agent	ManageEngi...	Running	Automatic	Local System
MESH Client Service	MESH Client...	Running	Automatic	Local System
Microsoft (R) Diagnostics Hu...	Diagnostics ...	Manual	Local System	
Microsoft Account Sign-in A...	Enables user...	Manual (Trigg...	Local System	
Microsoft App-V Client	Manages Ap...	Disabled	Local System	

5. For an item in the system tray, to manage the meshclient, double click mesh_service_systray.bat

For advanced configuration settings, or to install on a Linuxlinux operating system please refer to the [advanced settings guide](#)

MESH UI

If the files you wish to send are below 50Mb then the MESH UI may be worth considering.

1. [Request a mesh mailbox](#) – once you have a mailbox ID and password proceed.
2. **Request a MESH UI account** (required for MESH UI only). The organisation needs to complete and submit [an online form](#) providing the Mailbox ID to which the account is to be linked to and their smartcard details if they are connecting over HSCN. The NSD will create a MESH UI account and let the user know that it is ready for them to connect to.
3. **Register 2FA** (required for MESH UI connections over the Internet). A MESH UI connection over the Internet requires 2 factor authentication. Once their account has been created, the user must register a PIN at <https://portal.spineservices.nhs.uk/meshui/twofactorreg>

