



# MAC OS HMS UPGRADE OPERATIONS MANUAL

## Abstract

SOP for upgrading HMS on MacOS from 6.6.x.x or 6.7.x.x. to 6.8.x.x versions

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## 1) Installation Methods and OS upgrades.

The latest version of HMS is meant to run on version of MacOS 10.15 (Catalina) and above. It is recommended to HMS at MacOS 12 (Monterey) which gives upgraded security features.

This document discusses the nuances of combining the installation of HMS 6.8.x.x with the upgrade of MacOS to its latest versions.

There are 2 methods of installation and OS upgrading:

- 1) HMS installation, then OS upgrade
- 2) OS Upgrade, then HMS installation

However it should be noted that one method becomes invalid if you forget to backup the HLINK folder (backing up the HLINK folder is part of the instructions, however it should be done before the OS upgrade).

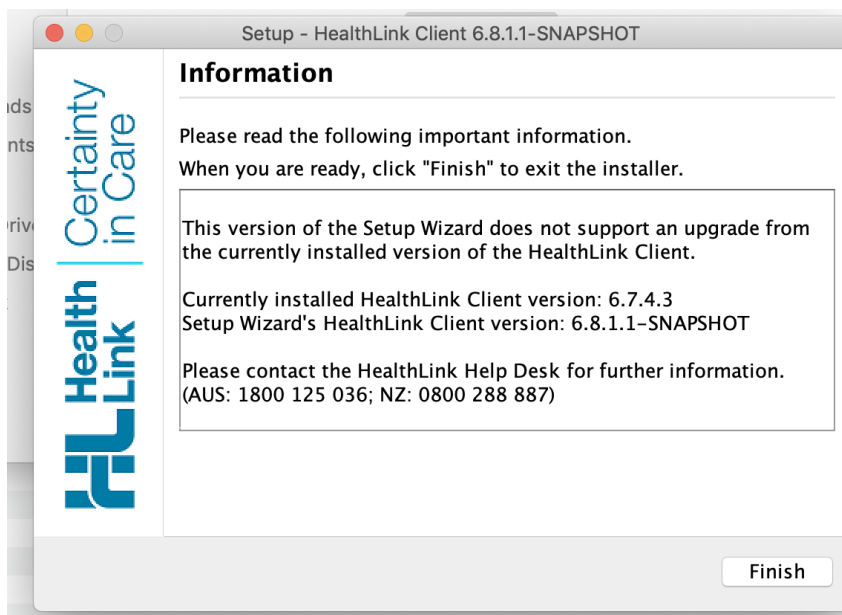
If you forget to backup the HLINK folder method 2 becomes invalid. Due to the lost data this essentially makes it look like a fresh customer's first installation.

This is due to the evolving security features of MacOS. During the OS upgrade, anything that is not directly MacOS related is deleted – including the HLINK folder.

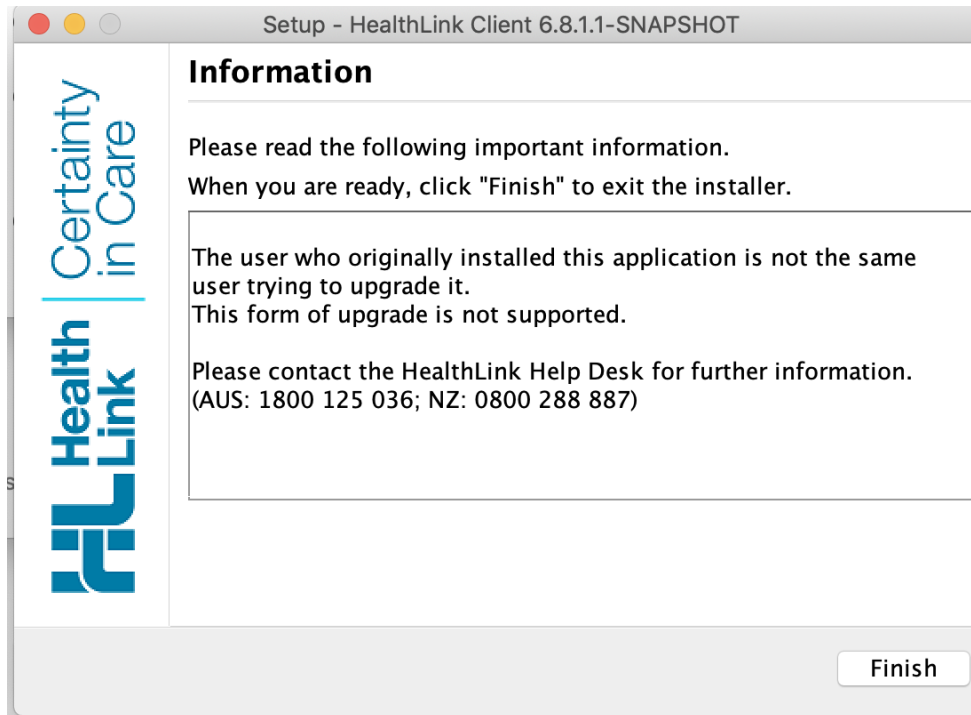
It should be noted that by 'invalid', it does not mean 'impossible', just that the HLINK folder and its data will be lost, the actual installation can proceed as normal.

## 2) Do not try to upgrade 6.6.x.x or 6.7.x.x to 6.8.x.x

Upgrading to 6.8.x.x from an earlier version is not possible due to breaking changes. An error message will be shown by the installer if you try to do so. Subsequent upgrades from 6.8.x.x will be possible once they are released.



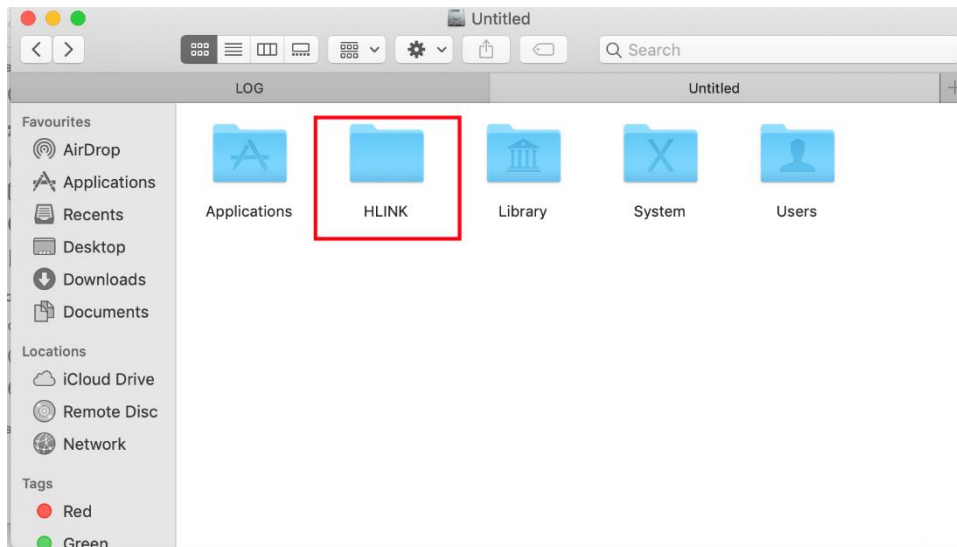
**VERY IMPORTANT: Please note that for upgrades, only the user that installed the HMS application can run the upgrade for the installation.**



**VERY IMPORTANT: Please also close the EMR to ensure no more HMS messages are streamed into the HLINK folder before starting the upgrade process.**

### 3) Backup the /HLINK folder

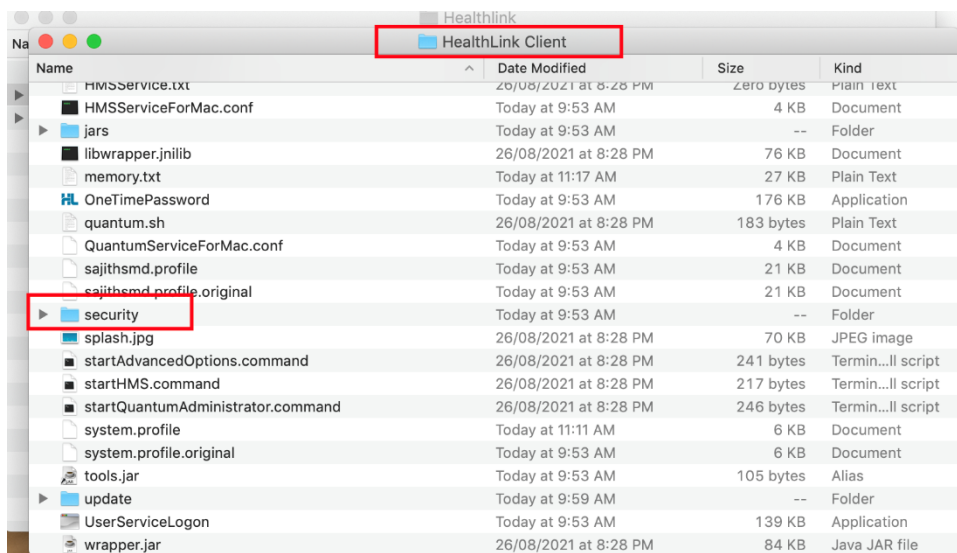
Before the upgrade process starts, make sure to backup the /HLINK folder.

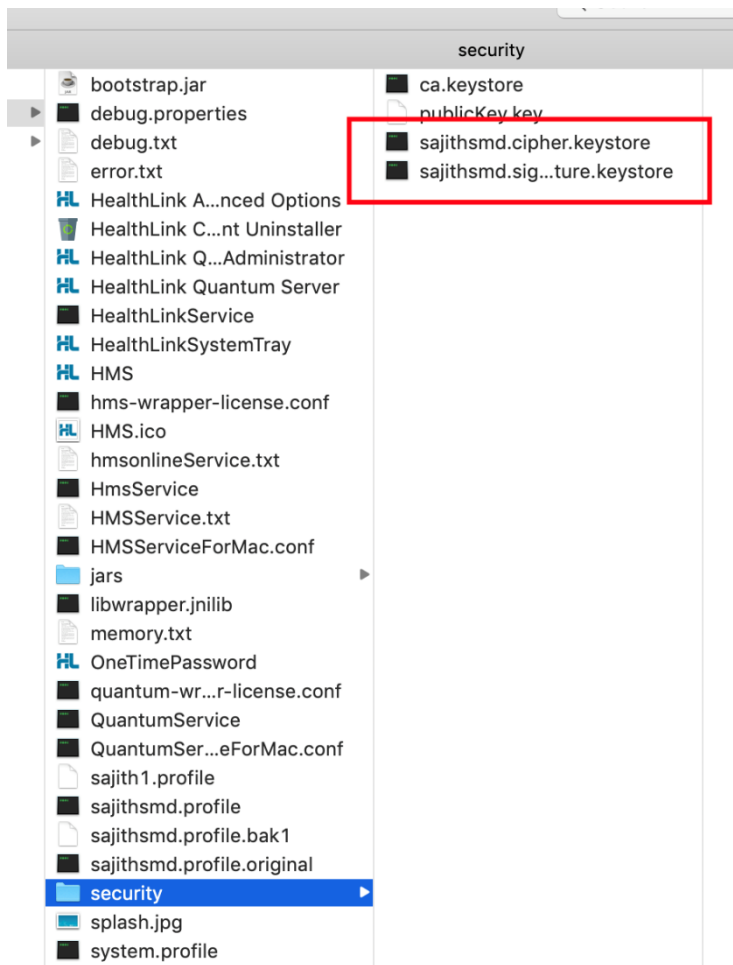


### 4) Backup the security folder and the cert/keystore files

Backup the /Applications/Healthlink/Healthlink Client/Security/\*.keystore files.

All the \*.cipher/signature.keystore files need to be backed up except for ca.keystore. The new installation will provide an updated version of the ca.keystore file.



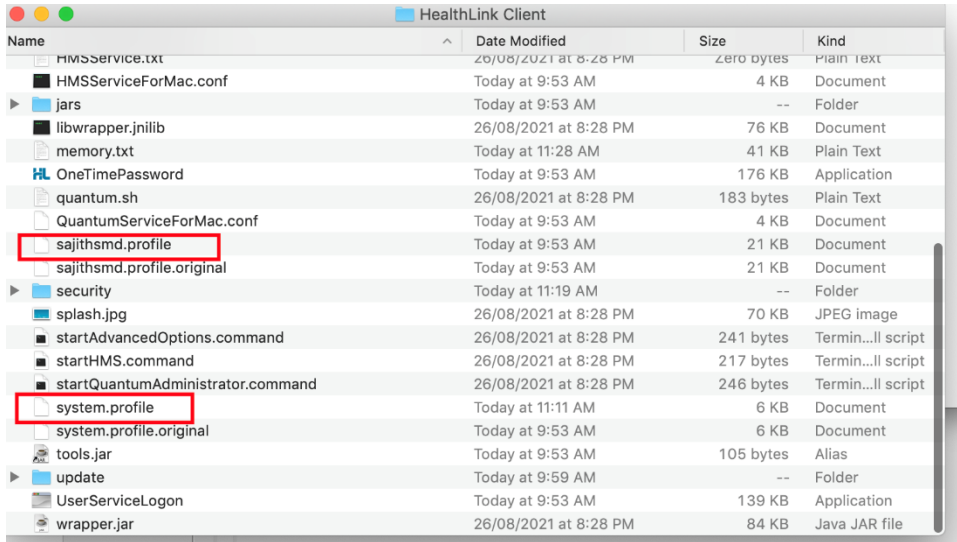


## 5) Backup the profiles

Backup /Applications/Healthlink/Healthlink Client/\* .profile. This is only a safety measure and will not be used later. The installation and subsequent steps will provide more up-to-date versions.

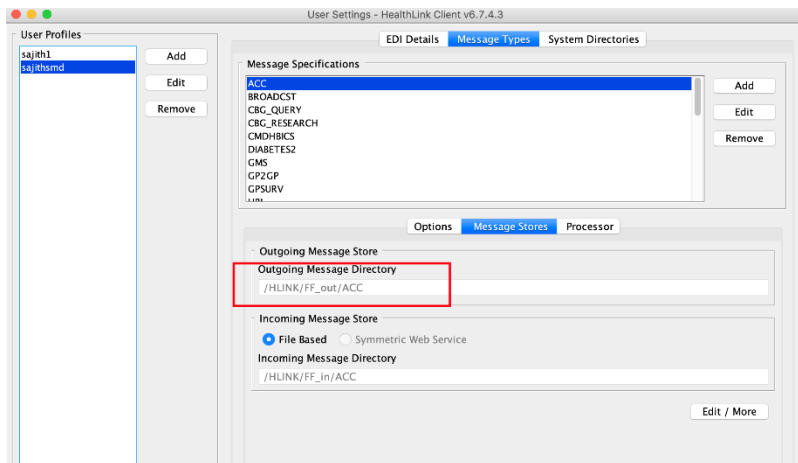
However, it is good to have these files backed up so that Helpdesk and support teams can debug issues that may come up (especially with system.profile).

Any changes to this file in the old version will not be translated into the new version as it is a fresh installation. It will need to be copied over manually after the upgrade. This step will not be required in almost all cases as system.profile will not have been changed originally.

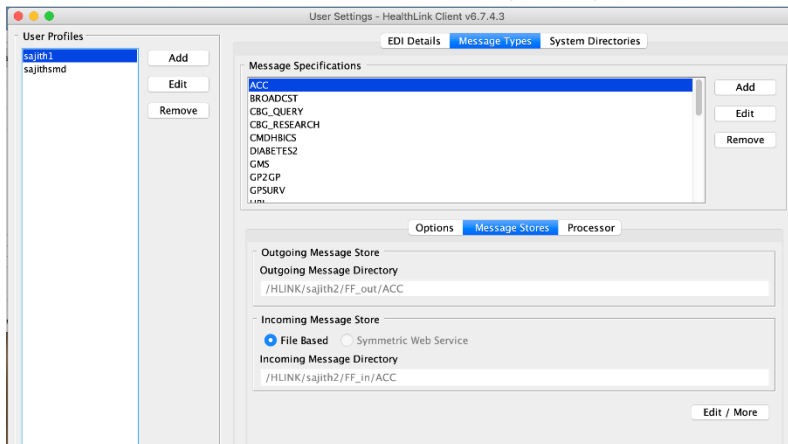


## 6) Folder paths

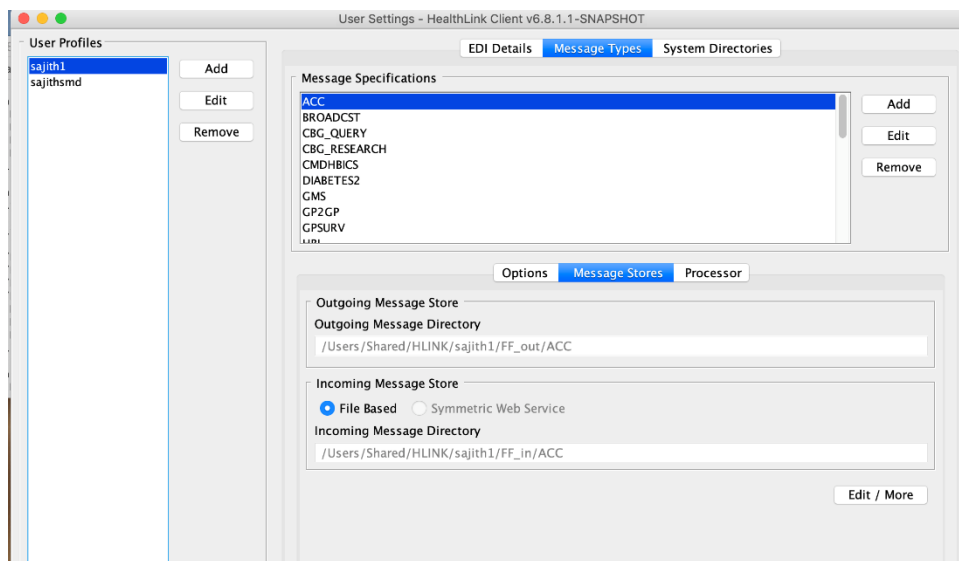
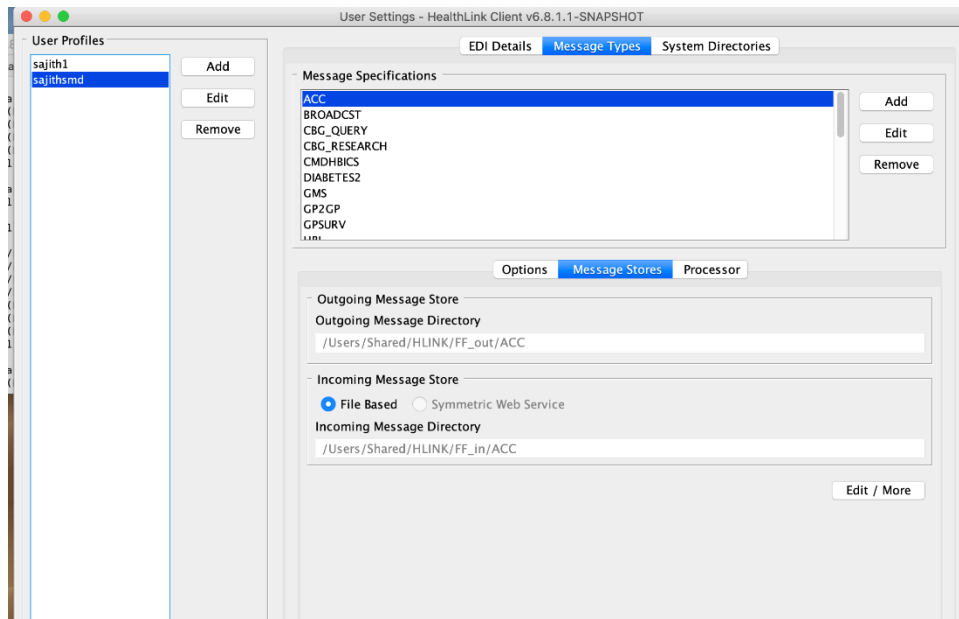
Take note of the folder paths for the users in HMS Client using the Advanced Options. For example, in 6.7.4.3 for the master EDI the folder base path should be /HLINK.



Whereas for non-master EDIs it should be /HLINK/username



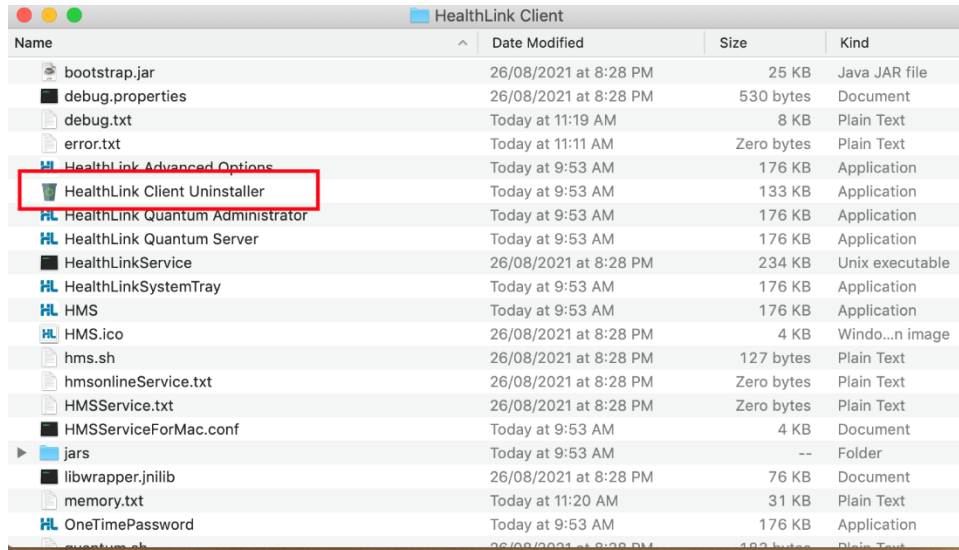
This becomes important later because in 6.8.x.x, the folder paths change to /Users/Shared/HLINK and /Users/Shared/HLINK/username





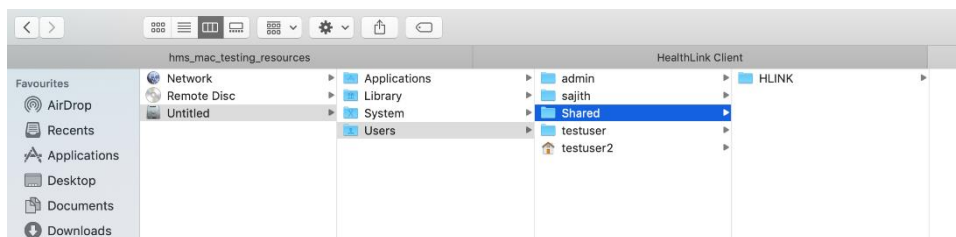
## 7) Uninstall the existing version - 6.6.x.x or 6.7.x.x

Uninstall the existing version using the uninstaller at /Applications/Healthlink/Healthlink Client/Healthlink Client Uninstaller.app



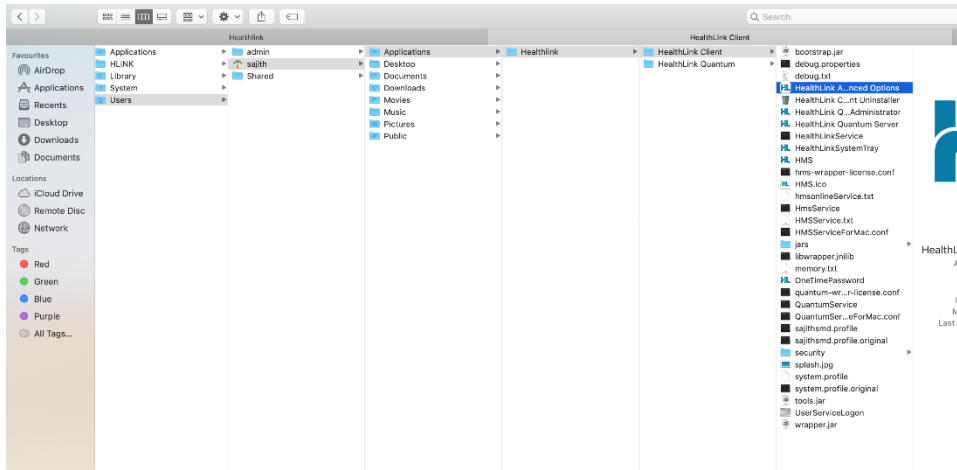
## 8) Copy the HLINK folder to /Users/Shared

Copy over the backed up HLINK folder to /Users/Shared, making it /Users/Shared/HLINK. This should help merge the old HLINK and new HLINK folder correctly during the installation. The installer will override the important files with its new ones.



## 9) Install 6.8.x.x

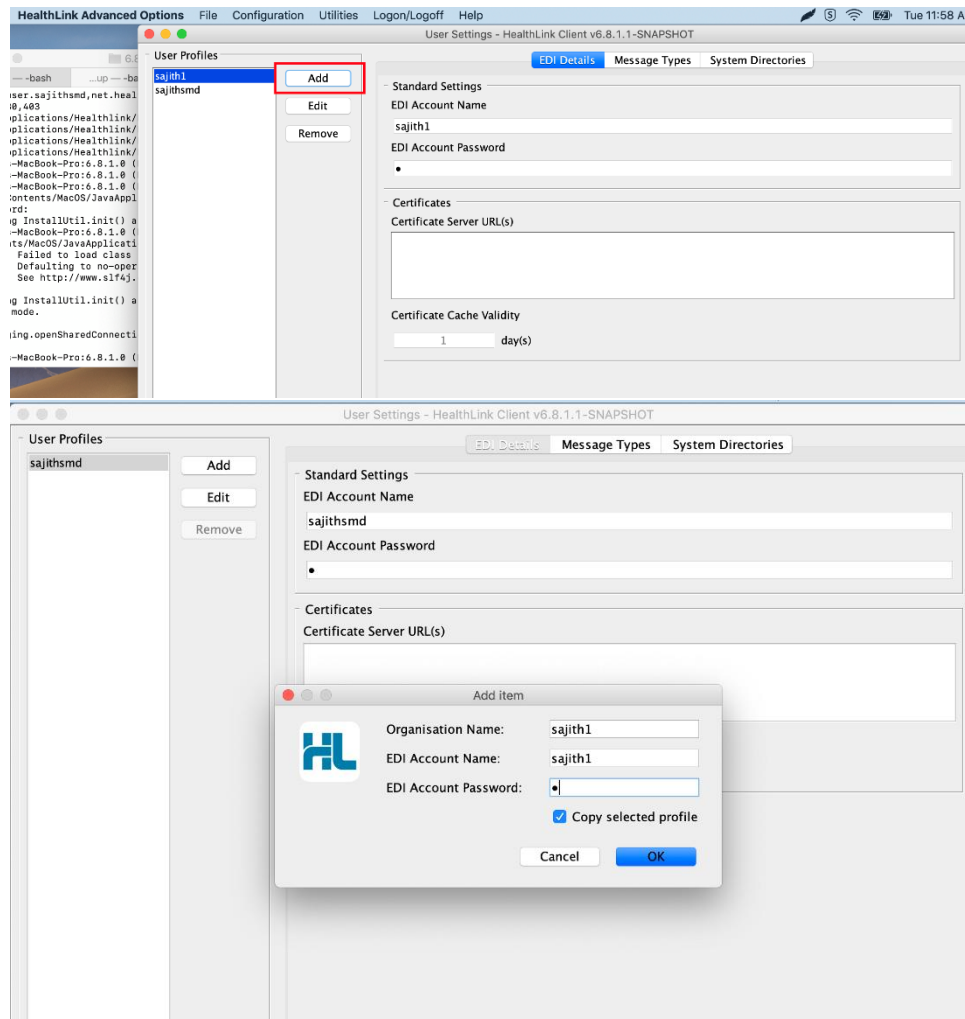
Install 6.8.x.x as a fresh installation. Note that the new installation ends up in the /Users/username/Applications/Healthlink folder, not the common /Application/Healthlink folder anymore. This is in keeping with Apple's best practice guidelines.



## 10) Master EDI and other EDI entry

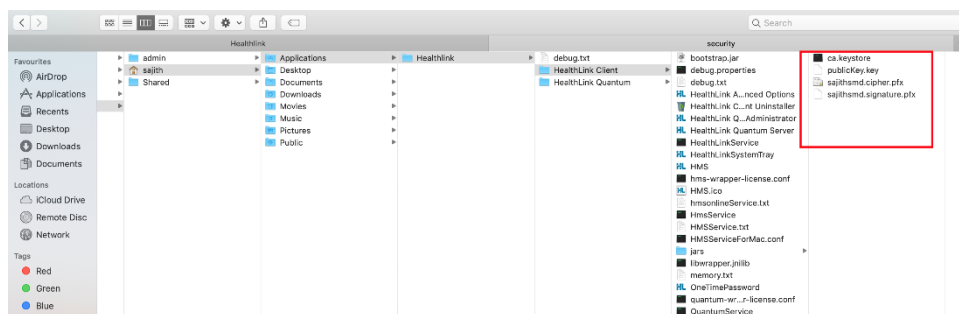
You need to enter the details of the master EDI during the 6.8.x.x installation as follows:

Using Advanced Options, add the rest of the EDIs. The customer will be able to provide the passwords for all the EDIs. PTO for example screens:



## 11) Adding back the .keystore files

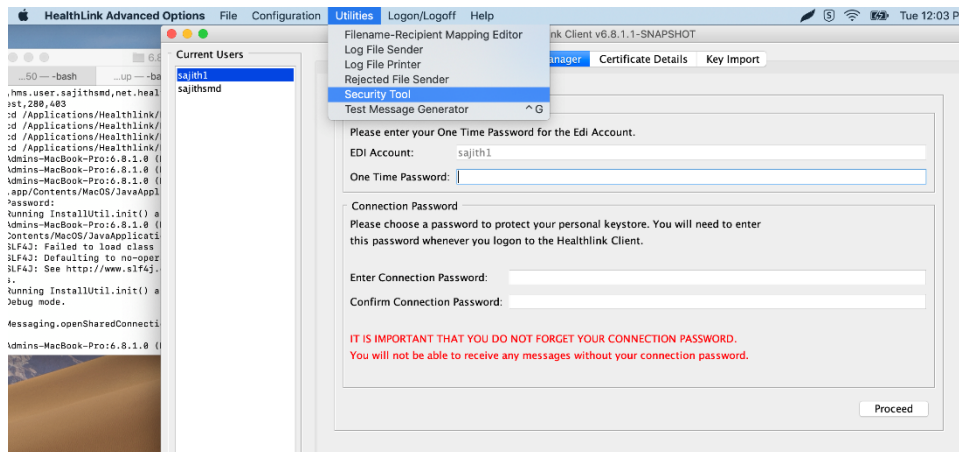
Next copy all the \*.keystore files from the backed-up security folder and paste them to /Users/Applications/Healthlink/Healthlink Client/security:



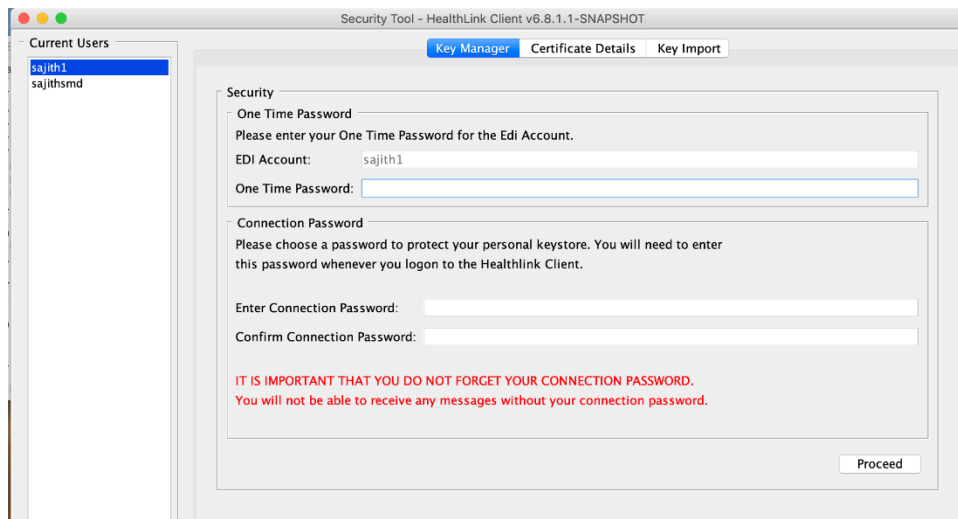
**DO NOT copy over the ca.keystore or the publickey.key, only the username.cipher/signature.keystore files**

## 12) Validate keystores

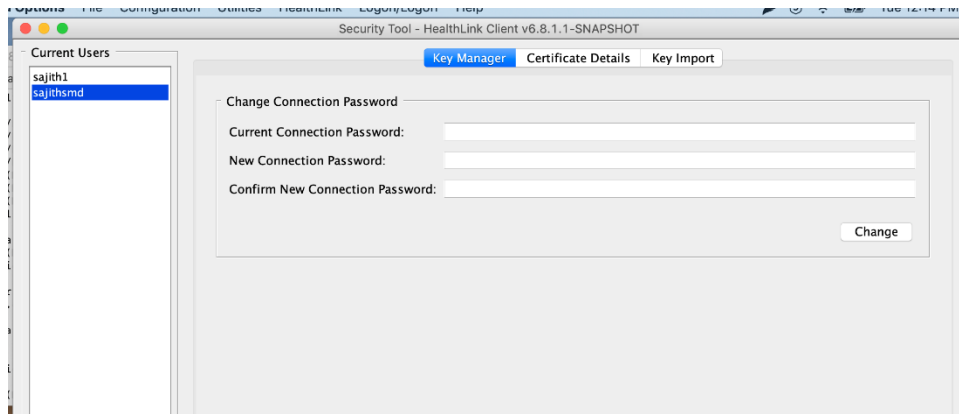
To make sure the security folder is set up correctly go to: Advanced Options -> Utilities -> Security Tool



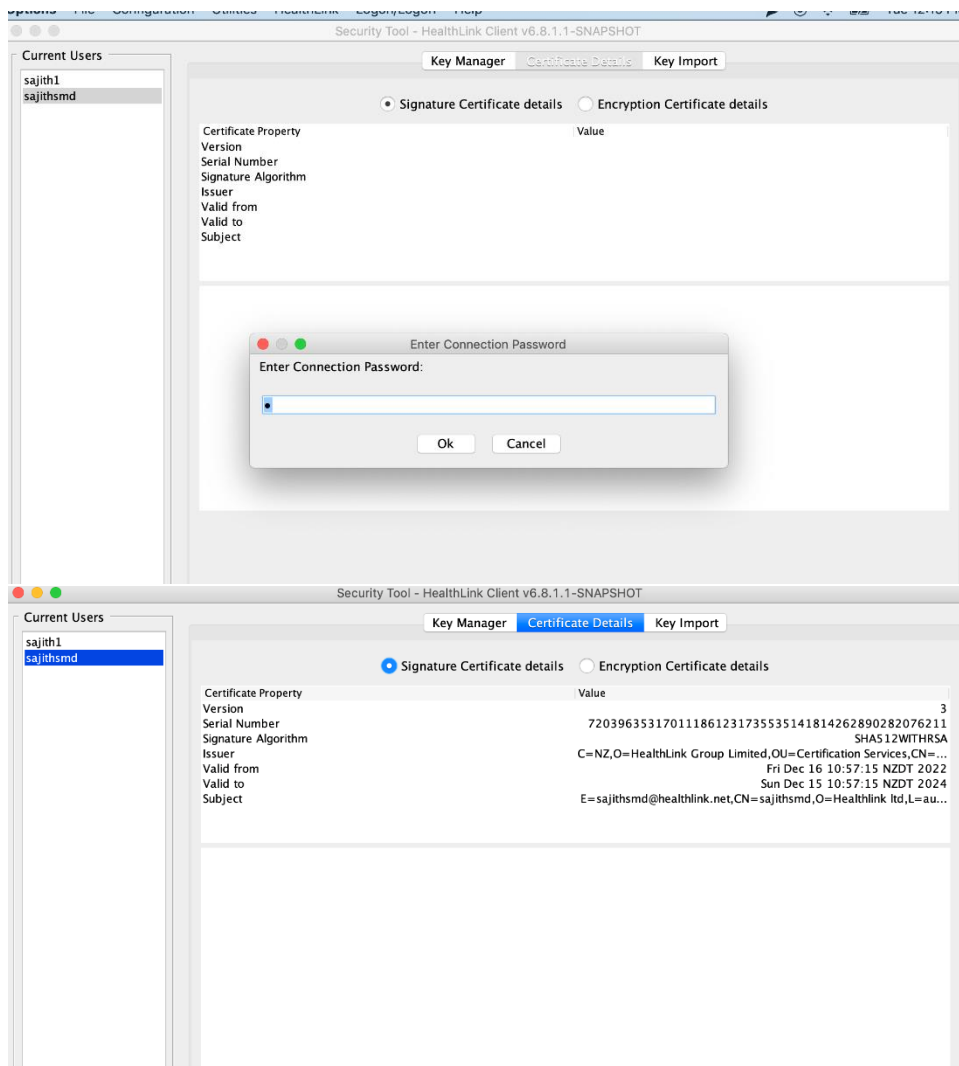
For EDIs that do not have their certificates setup correctly, the One Time Password screen will show up as follows:



For EDIs that have been setup correctly, a different screen will appear as follows:



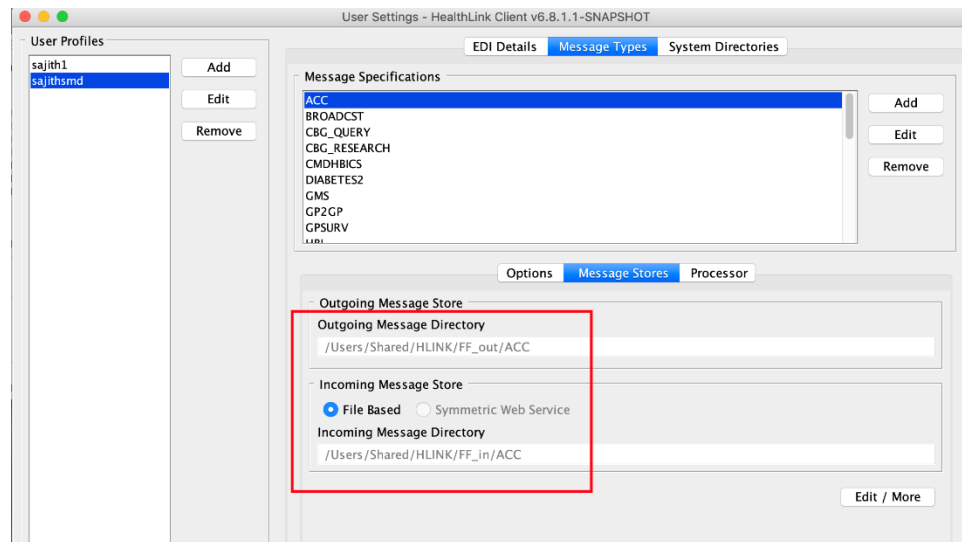
You can also view the certificate details for reference by going to the Certificate Details tab and selecting a certificate type and entering the password (which is customer specific):



## 13) HLINK folder validation (Advanced Options)

Make sure the HLINK folder paths match up correctly for the EDIs (refer step 5)

**It is vitally important that the folder paths are updated to /Users/Shared/HLINK/(username)**

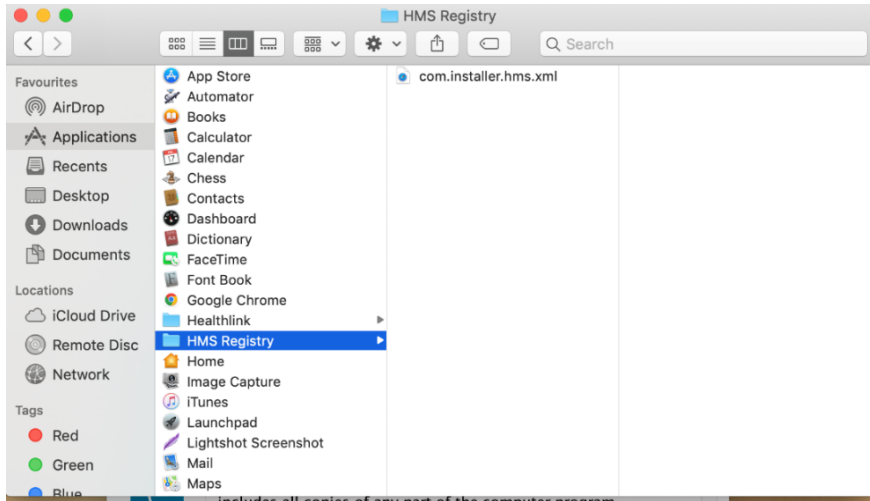


## 14) EMR updates

Note that now the HLINK folder has moved to /Users/Shared/HLINK. EMRs will have to update their configuration to point to these new folders. EMRs reliant on hms\_config.xml can find it at /Users/Shared/HLINK/hms\_config.xml, and will have to update their configuration paths to point to this file in order to derive HMS Client folder locations.

## 15) HMS Registry folder

The HMS Registry folder which is used to manage upgrades of HMS Client is still found at the root /Applications/HMS Registry folder:



## 16) Mac OS HMS folder permissions

For security purposes the Mac OS installation starting from 6.8.x.x will be given more restrictive permissions to its folders.

An understanding of the file permissions in \*nix based systems has been reproduced below

Permission string	Octal code	Meaning
rwxrwxrwx	777	Read, write, and execute permissions for all users.
rwxr-xr-x	755	Read and execute permission for all users. The file's owner also has write permission.
rwxr-x---	750	Read and execute permission for the owner and group. The file's owner also has write permission. Users who aren't the file's owner or members of the group have no access to the file.
rwx-----	700	Read, write, and execute permissions for the file's owner only; all others have no access.
rw-rw-rw-	666	Read and write permissions for all users. No execute permissions for anybody.
rw-rw-r--	664	Read and write permissions for the owner and group. Read-only permission for all others.
rw-rw----	660	Read and write permissions for the owner and group. No world permissions.
rw-r--r--	644	Read and write permissions for the owner. Read-only permission for all others.
rw-r-----	640	Read and write permissions for the owner, and read-only permission for the group. No permission for others.
rw-----	600	Read and write permissions for the owner. No permission for anybody else.
r-----	400	Read permission for the owner. No permission for anybody else.

Reference: <https://www.wikihow.com/Change-File-Permissions-in-Linux-from-the-Terminal>

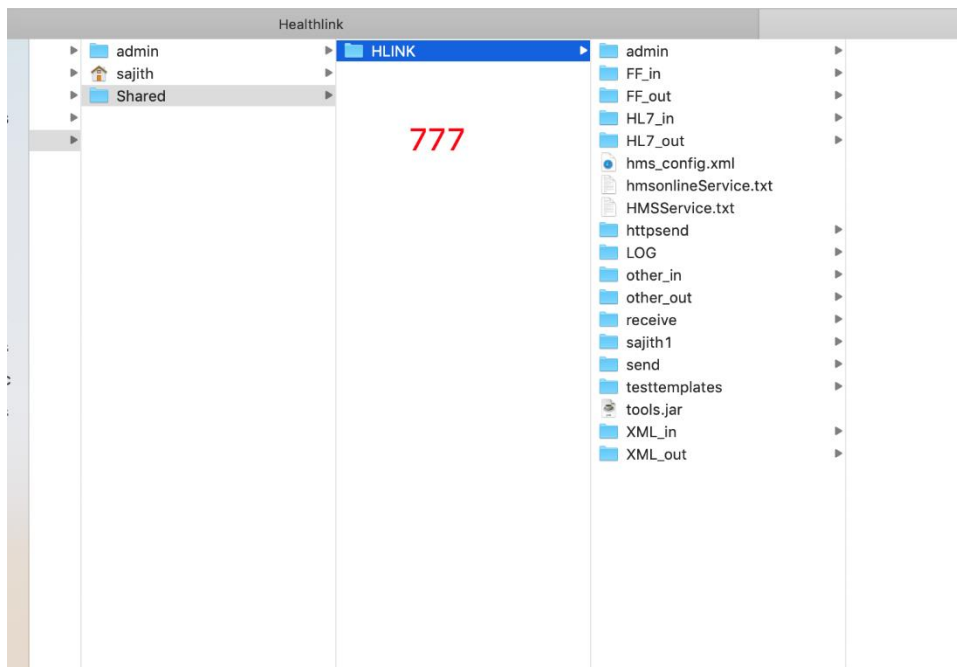
The 744 permission's description can be found below:

**744**, which is a typical default permission, allows read, write, and execute permissions for the owner, and read permissions for the group and "world" users.

Reference: <https://www.linode.com/docs/guides/modify-file-permissions-with-chmod/>

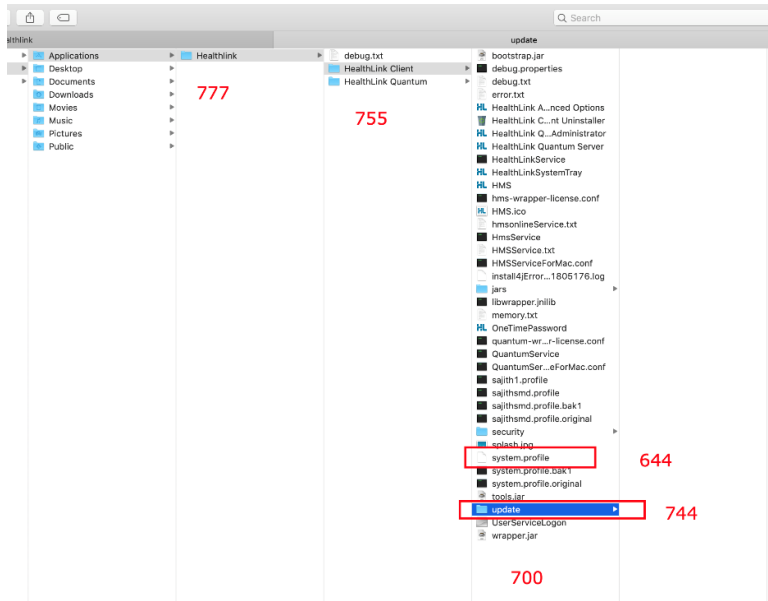
- The /Users/Shared/HLINK folder has been given 777 permissions so that anyone can read/write to it.
- The Healthlink folder has been given 777 permissions.
- The Healthlink/Healthlink Client and Healthlink Quantum folder has been given 755 permissions.
- The files inside the Client and Quantum folder have been given 700 permissions.
- The system.profile has been given 644 permissions
- The Healthlink Client/updates folder has been given 744 permissions.
- The Quantum/logs folder has been given 744 permissions.
- The HMS Registry folder has been set to 744 permissions
- The xml file inside the registry folder has been set to 644 permissions.

### HLINK folder permissions

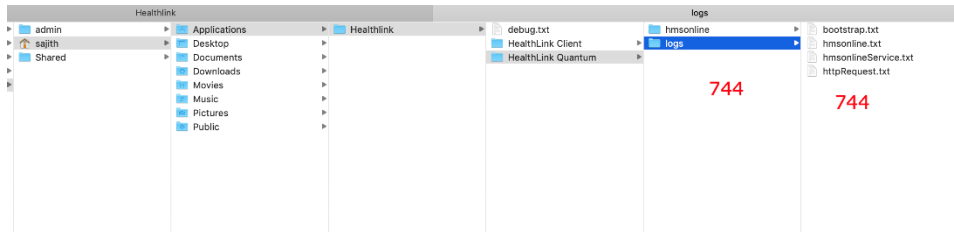


### Healthlink and Client folder permissions

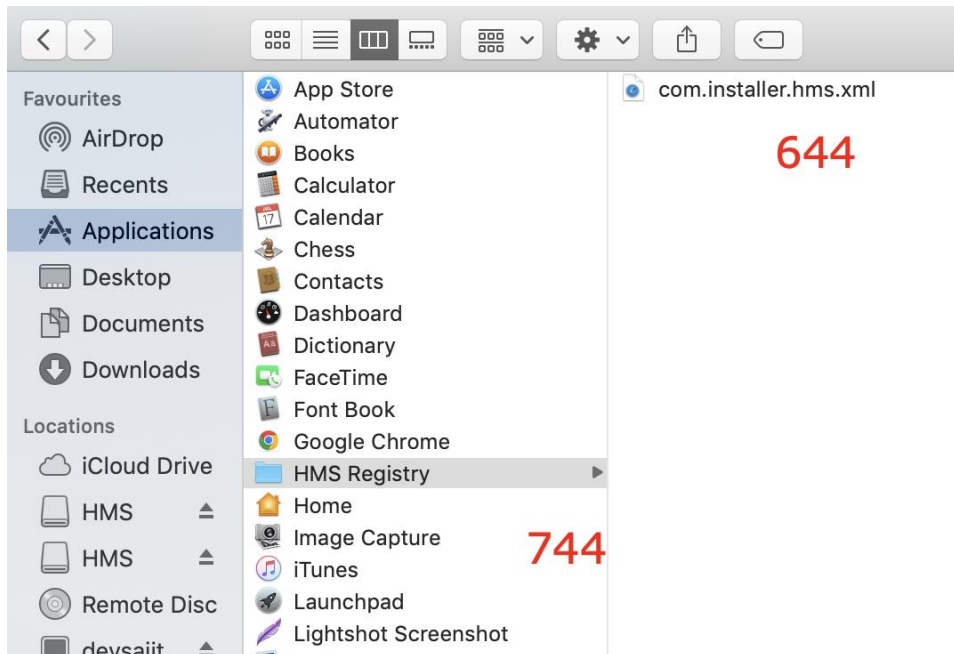




### Quantum logs folder permissions



### HMS Registry folder permissions



### Healthlink Client folder permissions viewed by terminal

```

-----
|Admins-MacBook-Pro:HealthLink Client sajith$ ls -lrth
'total 43560
-rwx----- 1 sajith staff 22K 24 Jan 11:57 sajithsmd.profile.bak2
-rwx----- 1 sajith staff 6.5K 24 Jan 11:57 system.profile.bak2
-rwx----- 1 sajith staff 24K 24 Jan 12:06 sajith1.profile
-rwx----- 1 sajith staff 5.3K 24 Jan 13:08 install4jError622081261591805176.log
-rwx----- 1 sajith staff 124K 24 Jan 13:09 wrapper.jar
-rwx----- 1 sajith staff 17M 24 Jan 13:09 tools.jar
-rwx----- 1 sajith staff 68K 24 Jan 13:09 splash.jpg
-rwx----- 1 sajith staff 509B 24 Jan 13:09 quantum-wrapper-license.conf
-rwx----- 1 sajith staff 0B 24 Jan 13:09 memory.txt
-rwx----- 1 sajith staff 234K 24 Jan 13:09 libwrapper.jnilib
-rwx----- 1 sajith staff 0B 24 Jan 13:09 hmsonlineService.txt
-rwx----- 1 sajith staff 518B 24 Jan 13:09 hms-wrapper-license.conf
-rwx----- 1 sajith staff 530B 24 Jan 13:09 debug.properties
-rwx----- 1 sajith staff 18K 24 Jan 13:09 bootstrap.jar
-rwx----- 1 sajith staff 105K 24 Jan 13:09 QuantumService
-rwx----- 1 sajith staff 105K 24 Jan 13:09 HmsService
-rwx----- 1 sajith staff 1.2M 24 Jan 13:09 HealthLinkService
-rwx----- 1 sajith staff 0B 24 Jan 13:09 HMSService.txt
-rwx----- 1 sajith staff 4.2K 24 Jan 13:09 HMS.ico
drwx----- 3 sajith staff 96B 24 Jan 13:25 HMS.app
drwx----- 3 sajith staff 96B 24 Jan 13:25 HealthLink Advanced Options.app
drwx----- 3 sajith staff 96B 24 Jan 13:25 HealthLink Client Uninstaller.app
drwx----- 3 sajith staff 96B 24 Jan 13:25 HealthLink Quantum Administrator.app
drwx----- 3 sajith staff 96B 24 Jan 13:25 HealthLink Quantum Server.app
drwx----- 3 sajith staff 96B 24 Jan 13:25 HealthLinkSystemTray.app
drwx----- 3 sajith staff 96B 24 Jan 13:25 OneTimePassword.app
drwx----- 3 sajith staff 96B 24 Jan 13:25 UserServiceLogon.app
drwx----- 159 sajith staff 5.0K 24 Jan 13:25 jars
drwx----- 7 sajith staff 224B 24 Jan 13:25 security
-rw-r--r-- 1 sajith staff 22K 24 Jan 13:26 sajithsmd.profile.bak1
-rwx----- 1 sajith staff 22K 24 Jan 13:26 sajithsmd.profile.original
-rw-r--r-- 1 sajith staff 6.5K 24 Jan 13:26 system.profile.bak1
-rwx----- 1 sajith staff 6.5K 24 Jan 13:26 system.profile.original
-rwx----- 1 sajith staff 3.8K 24 Jan 13:26 QuantumServiceForMac.conf
-rwx----- 1 sajith staff 3.9K 24 Jan 13:26 HMSServiceForMac.conf
drwxr-xr-x 2 sajith staff 64B 24 Jan 13:30 update
-rwxrwxrwx 1 sajith staff 22K 24 Jan 13:33 sajithsmd.profile
-rwxrwxrwx 1 sajith staff 24K 24 Jan 13:34 sajithtest.profile
-rwxrwxrwx 1 sajith staff 6.9K 24 Jan 13:34 system.profile
-rwx----- 1 sajith staff 15K 24 Jan 13:34 error.txt
-rwx----- 1 sajith staff 95K 24 Jan 13:34 debug.txt
Admins-MacBook-Pro:HealthLink Client sajith$ '

```

### Healthlink folder's permission's viewed by terminal

```

total 16
-rw-r--r-- 1 sajith staff 4.5K 24 Jan 13:06 debug.txt
drwxr-xr-x 4 sajith staff 128B 24 Jan 13:25 HealthLink Quantum
drwxr-xr-x 45 sajith staff 1.4K 24 Jan 13:34 HealthLink Client
Admins-MacBook-Pro:Healthlink sajith$ █

```

### Quantum logs folder permissions viewed by terminal

```

|Admins-MacBook-Pro:HealthLink Quantum sajith$ ls -lrth
total 0
drwx----- 12 sajith staff 384B 24 Jan 13:25 hmsonline
drwxr--r-- 6 sajith staff 192B 24 Jan 13:25 logs
Admins-MacBook-Pro:HealthLink Quantum sajith$ █

```

## Base Healthlink folder's permissions

```
[Admins-MacBook-Pro:Applications sajith$ ls -lrth
total 0
drwxr-xr-x  6 sajith  staff   192B 24 Jan 11:52 Healthlink
Admins-MacBook-Pro:Applications sajith$ █
```

## HMS Registry folder permissions viewed by terminal

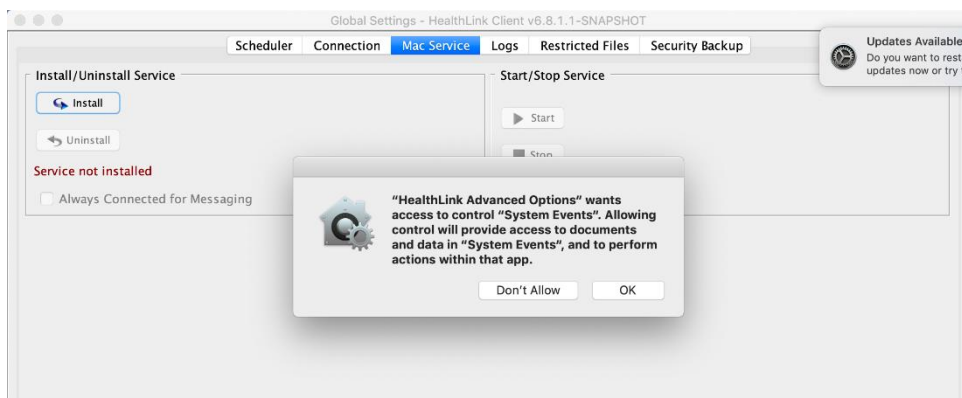
```
admins-MacBook-Pro:Applications sajith$ ls -lrth
drwxr--r--  3 sajith  admin   96B 26 Jan 09:33 HMS Registry
admins-MacBook-Pro:Applications sajith$ █
```

```
admins-MacBook-Pro:HMS Registry sajith$ ls -lrth
total 8
-rw-r--r--  1 sajith  admin  966B 26 Jan 10:18 com.installer.hms.xml
admins-MacBook-Pro:HMS Registry sajith$ █
```

## 17) Start HMS Service (HMS Advanced Options)

**IMPORTANT NOTE:** Due to the limitations of MacOS, the HMS service is no longer installed by default during the HMS installation. Instead it has to be manually installed by going to the HMS Advanced Options -> Mac Service.

**Additional Note:** For first time users/installers a popup may be shown by the MacOS when first trying to install the HMS service (shown below). This is a MacOS security feature. Press 'OK' to install the HMS service.



## 18) Start Quantum Service (HMS Quantum Administrator)

**IMPORTANT NOTE:** Due to the limitations of MacOS, the Quantum service is no longer installed by default during the HMS installation. Instead it has to be manually installed by going to the HMS Quantum Administrator.

